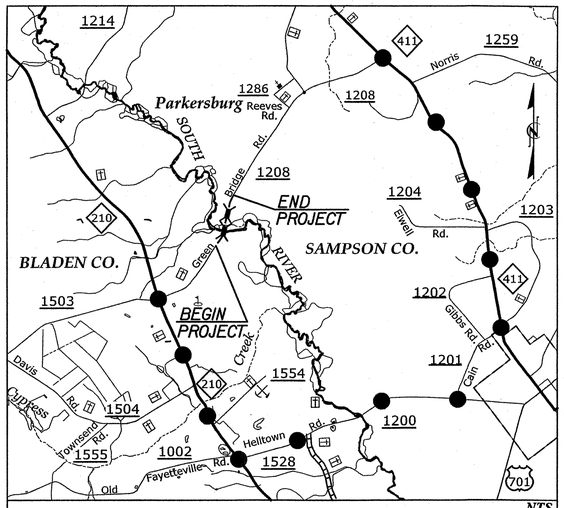
TIP PROJECT: BD-5103S

CONTRACT: C203383

STATE	PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
NC	BD-5103S	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
45349.1.19	BRZ-1208(5)	P.E.
45349.1.12	BRZ-1208(6)	P.E.
45349.2.19	BRZ-1208(5)	R/W
45349.3.FD19	BRZ-1208(5)	CONST.

See Sheet 1-A For Index of Sheets



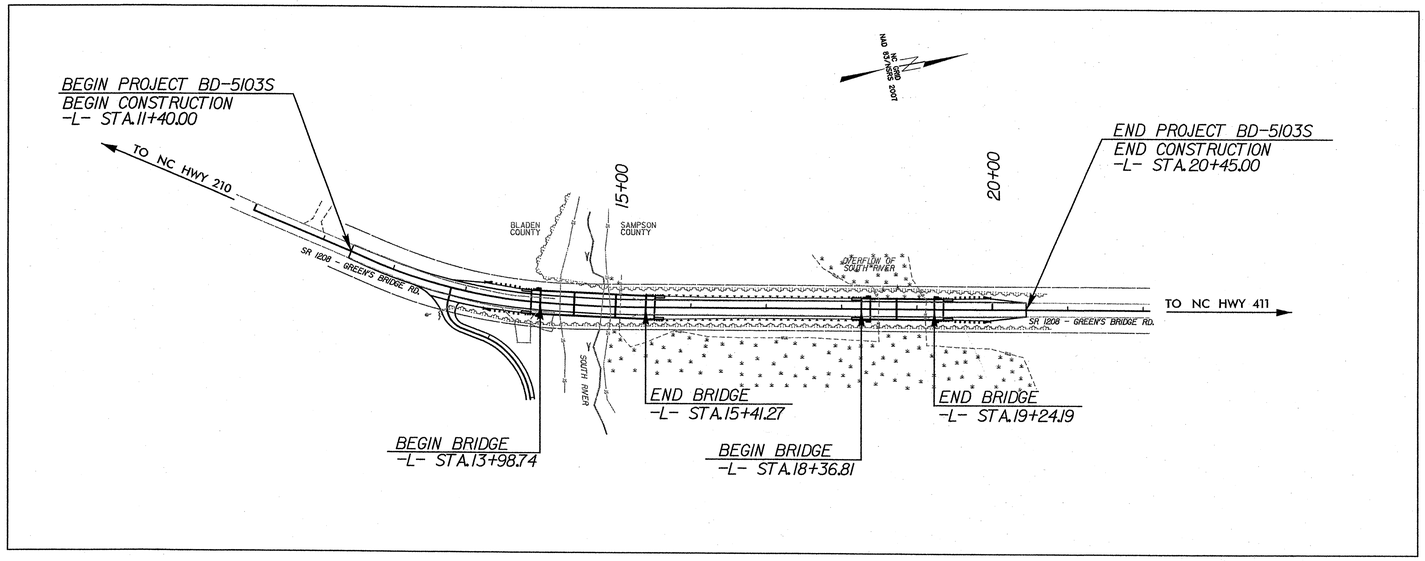
VICINITY MAP — NTS — DETOUR ROUTE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BLADEN & SAMPSON COUNTY

LOCATION: BRIDGE NO. 077 OVER OVERFLOW OF SOUTH RIVER AND BRIDGE NO. 078 OVER SOUTH RIVER ON SR 1208 (GREENS BRIDGE RD.)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, & STRUCTURES.



GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2007 = 400
ADT 2035 = 800
DHV = 10%
D = 60%
T = 6% *
STATUTORY = 55 MPH
ADVISORY = 45 MPH
* TTST 2% DUAL 4%
FUNC CLASS = RURAL COLLECTOR
SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT BD-5103S =	0.127 MI.
LENGTH OF STRUCTURE TIP PROJECT BD-5103S =	0.044 MI.
TOTAL LENGTH OF TIP PROJECT BD-5103S =	0.171 MI.

Prepared In the Office of:

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MAY 1, 2012

LETTING DATE:
SEPTEMBER 17, 2013

ENRICO A. ROQUE, P.E.
PROJECT ENGINEER

ANTHONY THOMPSON, P.E.
PROJECT DESIGNER

AMANDA GLYNN, P.E.
NCDOT CONTACT

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 15764 ENGINEER JAMES A. BYRD
SIGNATURE: James A. Byrd P.E. 6/11/13

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 19824 ENGINEER ENRICO A. ROQUE
SIGNATURE: Enrico A. Roque P.E. 6/11/13

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

6/11/2013
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PROJECT REFERENCE NO.	SHEET NO.
BD-5103S	1-A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 19824 ENGINEER
6/13/13

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES & LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL PLAN SHEET SYMBOLS
1-C	SURVEY CONTROL SHEET & CENTERLINE COORDINATE LIST
2	TYPICAL SECTION SHEET
2A	GUARDRAIL ANCHOR DETAIL 862d03
3	SUMMARY OF QUANTITIES
3A	SUMMARY OF DRAINAGE
3B	SUMMARY OF GUARDRAIL, EARTHWORK, PAVEMENT REMOVAL, SHOULDER BERM GUTTER, ROW SUMMARY AND PARCEL INDEX
4	PLAN & PROFILE SHEET
TMP-1 THRU TMP-2	TRAFFIC CONTROL PLANS
EC-1 THRU EC-6	EROSION CONTROL PLANS
RF-1	REFORESTATION DETAIL SHEET
X-1A	CROSS SECTION SUMMARY
X-1 THRU X-7	-L- CROSS SECTION SHEETS
S-1 THRU S-39A	BD5103S - STRUCTURE PLANS

EFF. 01-17-2012
REV. 10-30-2012

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
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
DIVISION 4 - MAJOR STRUCTURES	
422.10	Reinforced Bridge Approach Fills
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
815.02	Subsurface Drain
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
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
848.02	Driveway Turnout - Radius Type
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units (Beg. March 2013 Letting use detail in lieu of Standard)
876.02	Guide for Rip Rap at Pipe Outlets

GENERAL NOTES:

2012 SPECIFICATIONS
EFFECTIVE: 01-17-2012
REVISED: 07-30-2012

GRADE LINE:
GRADING AND SURFACING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. 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.

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 AND/OR STD. NO. 225.05 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION 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 AND/OR STD. NO. 560.02

SUBSURFACE DRAINS:

SUBSURFACE DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.02 AT LOCATIONS DIRECTED BY THE ENGINEER.

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 848.02 USING 3' RADII OR RADII AS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

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.

SUBSURFACE PLANS:

NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

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

Water - Sampson County Water and Bladen County Water

Power - South River Electric

Phone - Star Telephone

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

RIGHT-OF-WAY MARKERS:

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

12/05/11

PROJECT REFERENCE NO.	SHEET NO.
BD-5103S	1-B

Note: Not to Scale

****S.U.E. = Subsurface Utility Engineering***

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
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Known Soil Contamination: Area or Site
- Potential Soil Contamination: Area or Site

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

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

RIGHT OF WAY:

- Baseline Control Point
- Existing Right of Way Marker
- Existing Right of Way Line
- Proposed Right of Way Line — RW
- Proposed Right of Way Line with Iron Pin and Cap Marker — RW
- Proposed Right of Way Line with Concrete or Granite R/W Marker — RW
- Proposed Control of Access Line with Concrete C/A Marker — CA
- Existing Control of Access — CA
- Proposed Control of Access — CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage / Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE
- Proposed Permanent Easement with Iron Pin and Cap Marker

ROADS AND RELATED FEATURES:

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

VEGETATION:

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

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

UTILITIES:

POWER:

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

TELEPHONE:

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

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- Recorded U/G Water Line — W
- Designated U/G Water Line (S.U.E.*) — W
- Above Ground Water Line — A/G Water

TV:

- TV Satellite Dish
- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- Recorded U/G TV Cable — TV
- Designated U/G TV Cable (S.U.E.*) — TV
- Recorded U/G Fiber Optic Cable — TV FO
- Designated U/G Fiber Optic Cable (S.U.E.*) — TV FO

GAS:

- Gas Valve
- Gas Meter
- Recorded U/G Gas Line — G
- Designated U/G Gas Line (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
- Recorded SS Forced Main Line — FSS
- Designated SS Forced Main Line (S.U.E.*) — FSS

MISCELLANEOUS:

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

PROJECT REFERENCE NO.	SHEET NO.
BD-5103S	IC

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SURVEY CONTROL SHEET

POINT	NORTH	EAST	ELEV
BL-1	386789.076	2162902.477	63.83
BL-2	387789.751	2163155.143	64.73
BL-3	387009.445	2162974.295	64.93
BL-4	387423.734	2163054.365	64.64

CENTERLINE COORDINATE LIST

POINT	STATION	NORTHING	EASTING
POT	10+00.00	386,648.8813	2,162,795.6474
BEGIN	11+40.00	386,765.7066	2,162,872.7957
PC	11+64.73	386,786.3428	2,162,886.4233
PCC	13+97.73	386,997.8063	2,162,981.8846
PT	15+51.61	387,147.7035	2,163,016.4959
END	20+45.00	387,632.2739	2,163,109.3832
POT	22+08.27	387,792.6226	2,163,140.1204

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	13+70.00	-43.17	386984.0418	2162932.9223
L	13+70.00	-27.14	386979.2677	2162948.2234
L	14+22.00	-41.10	387031.5422	2162948.2940
L	14+22.00	-26.85	387027.9810	2162962.0900
L	19+35.00	-45.00	387532.7128	2163044.4779
L	19+35.00	-30.00	387529.8889	2163059.2097
L	19+50.00	-30.00	387544.6206	2163062.0336
L	19+50.00	-45.00	387547.4446	2163047.3019

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
NCDOT FOR MONUMENT "BL-3"
WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF
NORTHING: 387009.445(ft) EASTING: 2162974.295(ft)
ELEVATION: 64.93(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS: 0.999904199
THE N.C. LAMBERT GRID BEARING AND
LOCALIZED HORIZONTAL GROUND DISTANCE FROM
"BL-3" TO -L- STATION 10+00 IS
S26 21' 24.90"W 402.39'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

HNTB
HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
BD-5103S	2
R/W SHEET NO.	

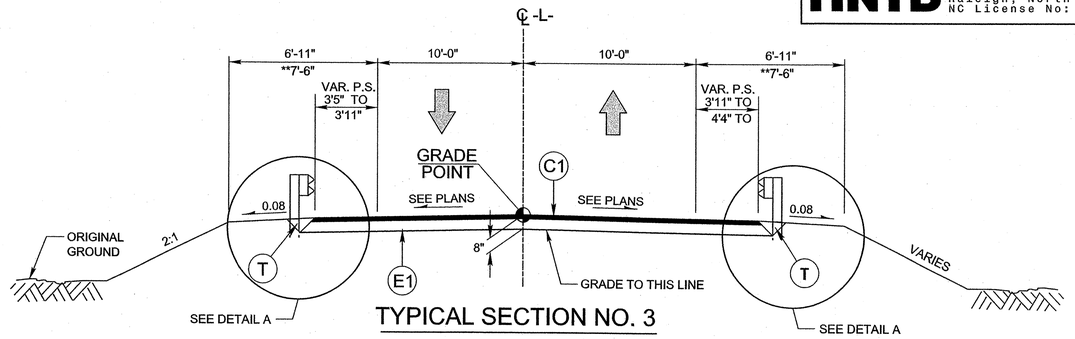
ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 19824 ENGINEER — 6/7/13

PAVEMENT DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 22886 ENGINEER — CLARK S. MORRISON — 6/10/13

PAVEMENT SCHEDULE

C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YARD IN EACH OF TWO LAYERS.
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YARD.
E2	PROP. VARIABLE DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER INCH. DEPTH TO BE PLACED IN LAYERS NOT GREATER THAN 5.5" IN DEPTH OR LESS THAN 3" IN DEPTH.
R	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING (SEE DETAIL)

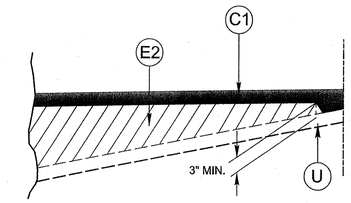
ALL PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE



TYPICAL SECTION NO. 3

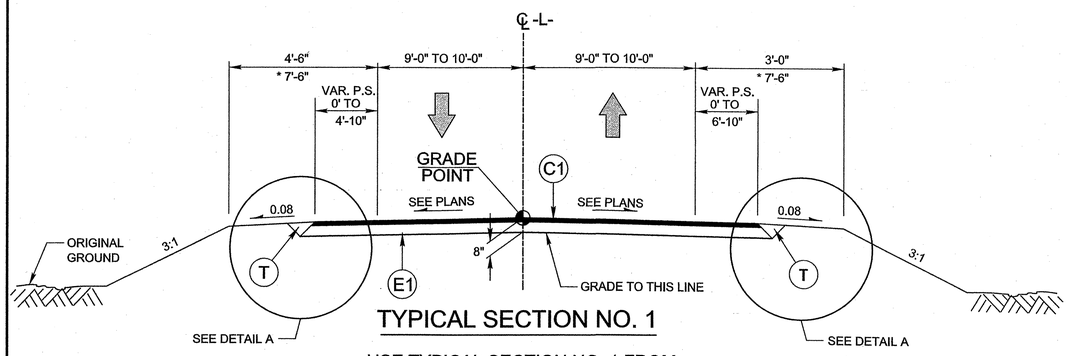
USE TYPICAL SECTION NO. 3 FROM:

-L- STA. 15+41.27 (END BRIDGE) TO -L- STA. 18+36.81 (BEGIN BRIDGE)
**TAPER SHOULDER FROM 7'-6" (END BRIDGE)
@50:1 TO 6'-11". SEE PLAN SHEET DIMENSIONS



DETAIL SHOWING METHOD OF WEDGING

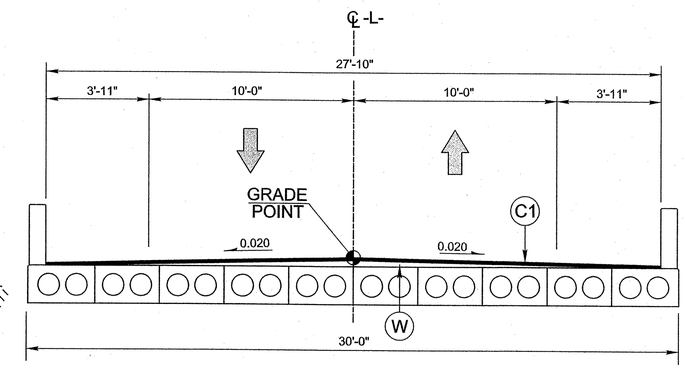
SEE TYPICAL SECTIONS



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 FROM:

-L- STA. 11+40 TO -L- STA. 13+98.74 (BEGIN BRIDGE)

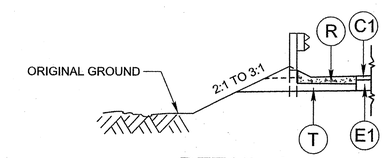


TYPICAL SECTION NO. 4

CORED SLAB BRIDGE OVERLAY

USE TYPICAL SECTION NO. 4 FROM:

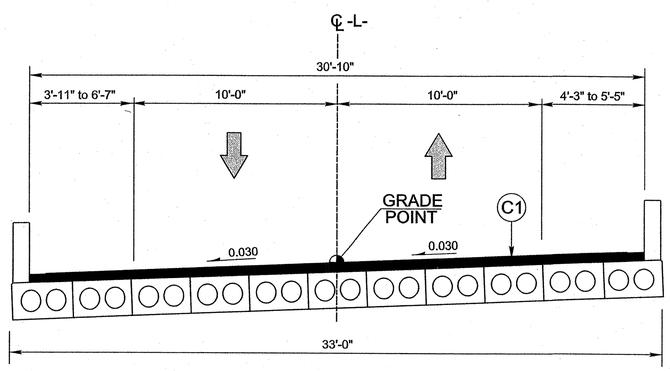
-L- STA. 18+36.81 (BEGIN BRIDGE) TO -L- STA. 19+24.19 (END BRIDGE)



DETAIL A

SHOULDER BERM GUTTER LOCATIONS
SEE TYPICAL #2 FOR 2:1 LOCATIONS

-L- STA. 13+74.5 TO -L- STA. 13+87.0 LT
-L- STA. 13+76.0 TO -L- STA. 13+88.5 RT
-L- STA. 15+52.9 TO -L- STA. 15+65.4 LT
-L- STA. 15+51.7 TO -L- STA. 15+64.2 RT
-L- STA. 18+13.3 TO -L- STA. 18+25.8 LT & RT
-L- STA. 19+35.2 TO -L- STA. 19+47.7 LT & RT

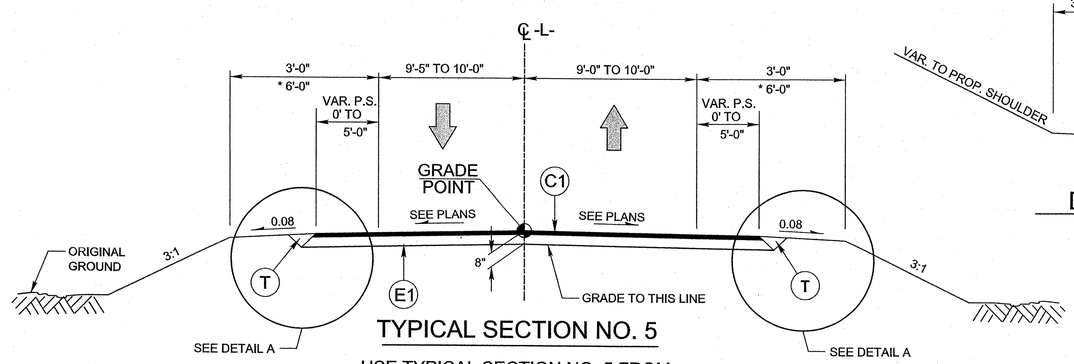


TYPICAL SECTION NO. 2

CORED SLAB BRIDGE OVERLAY

USE TYPICAL SECTION NO. 2 FROM:

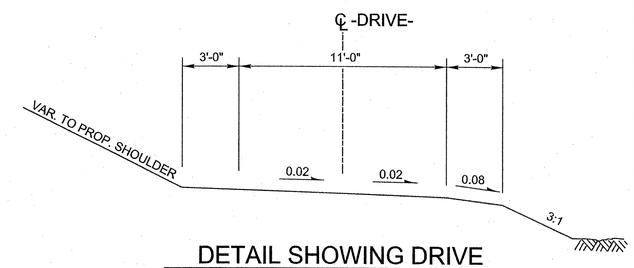
-L- STA. 13+98.74 (BEGIN BRIDGE) TO -L- STA. 15+41.27 (END BRIDGE)



TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5 FROM:

-L- STA. 19+24.19 (END BRIDGE) TO -L- STA. 20+45.00



DETAIL SHOWING DRIVE

SEE PLANS FOR LOCATION
(SOIL DRIVEWAY)

NOTES: * SHOULDER WIDTH INCREASED 3' WITH THE USE OF GUARDRAIL

REVISIONS

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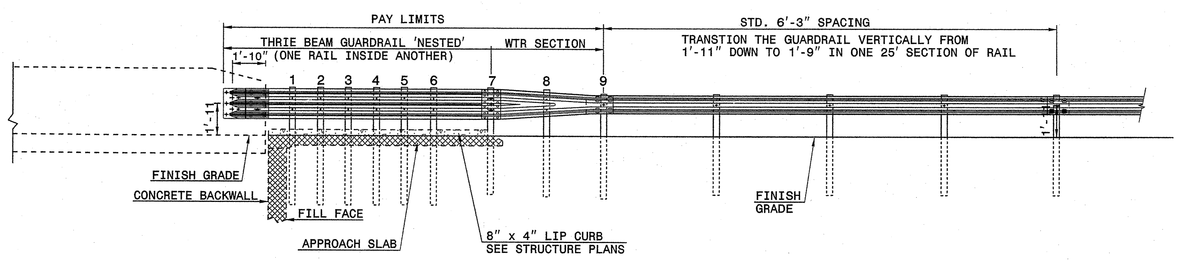
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

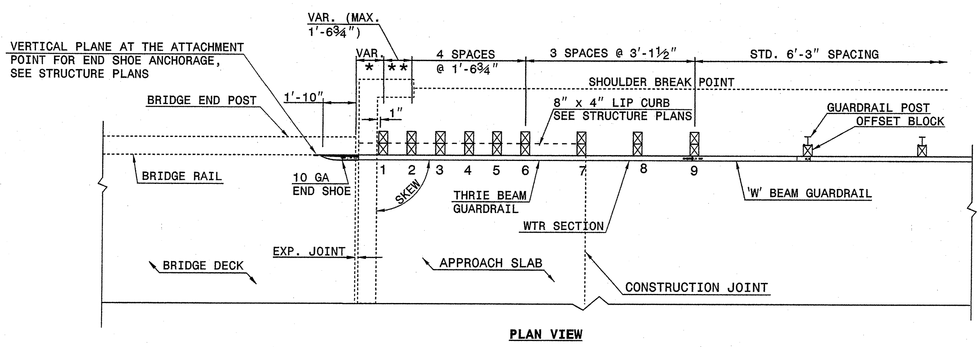
ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7
862d03



ELEVATION

NOTE:
**POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
*THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11½" IF CONCRETE BACKWALL IS NOT PRESENT.
-SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
-MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
-LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
-SEE SHEET 5 FOR POST SECTIONS 1 THRU 9.



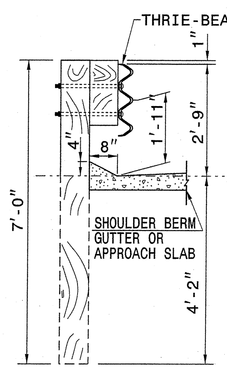
PLAN VIEW

GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER

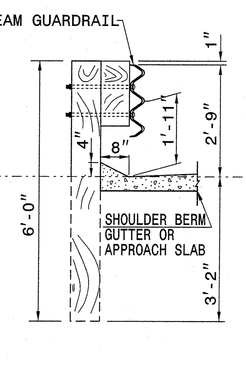
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III

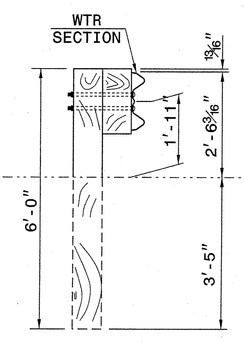
SHEET 3 OF 7
862d03



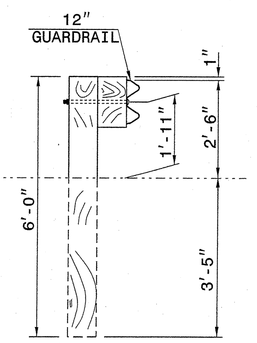
SECTION OF THRIE BEAM POSTS 1 THRU 6



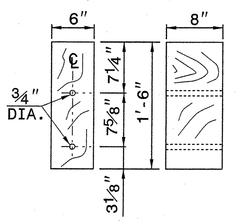
SECTION OF THRIE BEAM POST 7



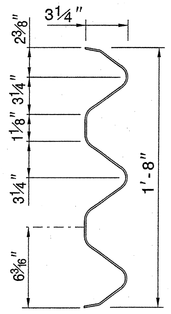
SECTION OF WTR BEAM POST 8



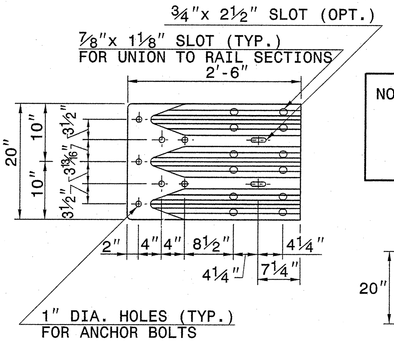
SECTION OF 'W' BEAM POST 9



THRIE BEAM OFFSET BLOCK

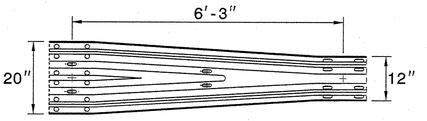


THRIE-BEAM SECTION

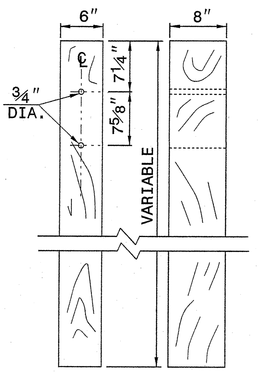


END SHOE

NOTE: THE MID POST AND OFFSET BLOCK OF THE WTR SECTION WILL REQUIRE SPECIAL BOLT HOLE DRILLING IN THE THRIE BEAM OFFSET BLOCK AND LINE POST.



WTR SECTION
ELEVATION VIEW



THRIE BEAM LINE POST

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

ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III

SHEET 3 OF 7
862d03

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

SEE TITLE BLOCK

ORIGINAL BY: J. HOWERTON DATE: 06-22-12
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.:

NORTH CAROLINA PROFESSIONAL SEAL 022366 ENGINEER

PROJECT REFERENCE NO. BD-5103S
SHEET NO. 2A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C203383

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING
0029000000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ********** (14+70)
0029000000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ********** (18+80.5)
0043000000-N	226	Lump Sum		GRADING
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB-BING
0057000000-E	226	300	CY	UNDERCUT EXCAVATION
0195000000-E	265	300	CY	SELECT GRANULAR MATERIAL
0196000000-E	270	500	SY	GEOTEXTILE FOR SOIL STABILIZA-TION
0366000000-E	310	68	LF	15" RC PIPE CULVERTS, CLASS III
1220000000-E	545	25	TON	INCIDENTAL STONE BASE
1489000000-E	610	560	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
1525000000-E	610	510	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A
1575000000-E	620	60	TON	ASPHALT BINDER FOR PLANT MIX
2022000000-E	815	22.4	CY	SUBDRAIN EXCAVATION
2026000000-E	815	100	SY	GEOTEXTILE FOR SUBSURFACE DRAINS
2036000000-E	815	16.8	CY	SUBDRAIN COARSE AGGREGATE
2044000000-E	815	100	LF	6" PERFORATED SUBDRAIN PIPE
2070000000-N	815	1	EA	SUBDRAIN PIPE OUTLET
2077000000-E	815	6	LF	6" OUTLET PIPE
2286000000-N	840	3	EA	MASONRY DRAINAGE STRUCTURES
2308000000-E	840	1.54	LF	MASONRY DRAINAGE STRUCTURES
2367000000-N	840	3	EA	FRAME WITH TWO GRATES, STD 840.29
2556000000-E	846	100	LF	SHOULDER BERM GUTTER

SUMMARY OF QUANTITIES - BD-5103S

ItemNumber	Sec #	Quantity	Unit	Description
3030000000-E	862	550	LF	STEEL BM GUARDRAIL
3150000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
3215000000-N	862	8	EA	GUARDRAIL ANCHOR UNITS, TYPE III
3270000000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
3649000000-E	876	2	TON	RIP RAP, CLASS B
3656000000-E	876	10	SY	GEOTEXTILE FOR DRAINAGE
4400000000-E	1110	431	SF	WORK ZONE SIGNS (STATIONARY)
4410000000-E	1110	69	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
4420000000-N	1120	2	EA	PORTABLE CHANGEABLE MESSAGE SIGN
4445000000-E	1145	64	LF	BARRICADES (TYPE III)
4810000000-E	1205	7,240	LF	PAINT PAVEMENT MARKING LINES (4")
4900000000-N	1251	11	EA	PERMANENT RAISED PAVEMENT MARKERS
6000000000-E	1605	1,890	LF	TEMPORARY SILT FENCE
6009000000-E	1610	35	TON	STONE FOR EROSION CONTROL, CLASS B
6012000000-E	1610	40	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	1.5	ACR	TEMPORARY MULCHING
6018000000-E	1620	100	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	0.03	TON	FERTILIZER FOR TEMPORARY SEED-ING
6024000000-E	1622	200	LF	TEMPORARY SLOPE DRAINS
6029000000-E	SP	500	LF	SAFETY FENCE
6030000000-E	1630	60	CY	SILT EXCAVATION
6036000000-E	1631	1,100	SY	MATTING FOR EROSION CONTROL
6042000000-E	1632	140	LF	1/4" HARDWARE CLOTH
6048000000-E	SP	95	SY	FLOATING TURBIDITY CURTAIN
6071012000-E	SP	465	LF	COIR FIBER WATTLE
6071020000-E	SP	40	LB	POLYACRYLAMIDE (PAM)

ItemNumber	Sec #	Quantity	Unit	Description
6084000000-E	1660	3	ACR	SEEDING & MULCHING
6087000000-E	1660	3	ACR	MOWING
6090000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
6096000000-E	1662	50	LB	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	1.25	TON	FERTILIZER TOPDRESSING
6114500000-N	1667	10	MHR	SPECIALIZED HAND MOWING
6117000000-N	SP	13	EA	RESPONSE FOR EROSION CONTROL
6123000000-E	1670	1	ACR	REFORESTATION

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
BD-5103S	3A
R/W SHEET NO.	

NOTE: Invert Elevations are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300–5".

SUB–REGIONAL & REGIONAL
LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE
-L- 13+76.50	LT	0401		65.98															
-L- 13+76.50	LT	0401	OUT		60.06	59.62													
-L- 19+45.50	RT	0402		65.43															
-L- 19+45.50	LT	0403		65.43															
-L- 19+45.50	CL	0402	0403		60.43	59.80											X	X	X
-L- 19+45.50	LT	0403	OUT		59.80	59.38													
TOTAL																			

STATION	C.S. PIPE 12" .064	15" .064	18" .064	24" .064	36" .079	42" .109	48" .109	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"
-L- 13+76.50																						
-L- 13+76.50								24														
-L- 19+45.50																						
-L- 19+45.50																						
-L- 19+45.50								24														
-L- 19+45.50								20														
TOTAL								68														

STATION	**" R. C. PIPE (CLASS V)	**" R. C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE	**" R. C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. *FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02
-L- 13+76.50								1	0.92		
-L- 13+76.50											
-L- 19+45.50											
-L- 19+45.50								1			
-L- 19+45.50								1	0.62		
-L- 19+45.50											
TOTAL								3	1.54		

STATION	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G		CONCRETE TRANSITIONAL SECTION CATCH BASIN	DROP INLET	T.B.D.I. STD. 840.35	T.B.D.I. FRAME AND TWO GRATES STD. 840.29	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
-L- 13+76.50							1	1									
-L- 13+76.50																	
-L- 19+45.50																	
-L- 19+45.50							1	1									
-L- 19+45.50							1	1									
-L- 19+45.50																	
TOTAL							3	3									

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

REVISIONS

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Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

HNTB
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343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
BD-5103S	3B
R/W SHEET NO.	

REVISIONS

ROW AREA DATA SUMMARY

PARCEL NO.	PROPERTY OWNERS NAMES	TOTAL ACREAGE	AREA TAKEN	AREA REMAINING RT.	AREA REMAINING LT.	CONST. EASE.	PERM. DRAIN. EASE.	TEMP. DRAIN. EASE.
1	KYLE T. CASHWELL	–				1824.3	749.2	
2	WALTER G. PETERSON	–				3172.1	225.0	
3	WAYNE HOWARD, JR.	–				0.21		
4	FOUR PINES, LLC	–				702.3		

PAVEMENT REMOVAL SUMMARY
IN SQUARE YARDS

LOCATION	REMOVAL OF ASPHALT PAVEMENT	BREAKING OF ASPHALT PAVEMENT
-L- STA. 11+40 TO 14+20	561	
-L- STA. 15+22 TO 18+45	674	
-L- STA. 19+14 TO 20+45	275	
GRAND TOTAL	1510	
SAY	1520	

SUMMARY OF EARTHWORK
IN CUBIC YARDS

STATION	STATION	UNCLASSIFIED EXCAVATION	EMBANK. +%	BORROW	WASTE
–L– STA. 11+40.00	–L– STA. 14+19.00	398	1216	818	
–L– STA. 15+17.00	–L– STA. 17+00.00	180	279	99	
–L– STA. 17+00.00	–L– STA. 18+57.00	183	222	39	
–L– STA. 19+04.00	–L– STA. 20+45.00	207	43		164
PROJECT SUBTOTAL		968	1760	956	164
WASTE TO REPLACE BORROW				–164	–164
PROJECT TOTAL		968	1760	792	
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT				40	
GRAND TOTALS:		968		832	
SAY:		970		840	

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOULDER 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	XI	GRAU 350	TYPE 350 (TL-3)	XIII	CAT-1	III	BIC	AT-1	EA	G	NG				
–L–	13+24.25	13+99.25	RT	75.0			13+99.25		3	6	50		1					1			1									
–L–	13+23.20	13+98.20	LT	75.0				13+98.20	3	6		50		1				1			1									
–L–	15+36.80	18+36.80	RT	300			18+36.80	15+40.75	3.92	6											2									
–L–	15+36.80	18+36.80	LT	300			15.41.80	18+36.80	3.92	6											2									
–L–	19+24.20	19+99.20	RT	75.0				19+24.20	3	6		50		1				1			1									
–L–	19+24.20	19+99.20	LT	75.0			19+24.20		3	6	50		1					1			1									
	LESS ANCHOR DEDUCTIONS																													
	TYPE 350, TL-3	4 @ 50.00'	=	200.00																										
	TYPE III	8 @ 18.75'	=	150.00																										
			TOTAL	550.00														4			8									
			SAY	550.00																										
	(5 ADDITIONAL GUARDRAIL POST)																													

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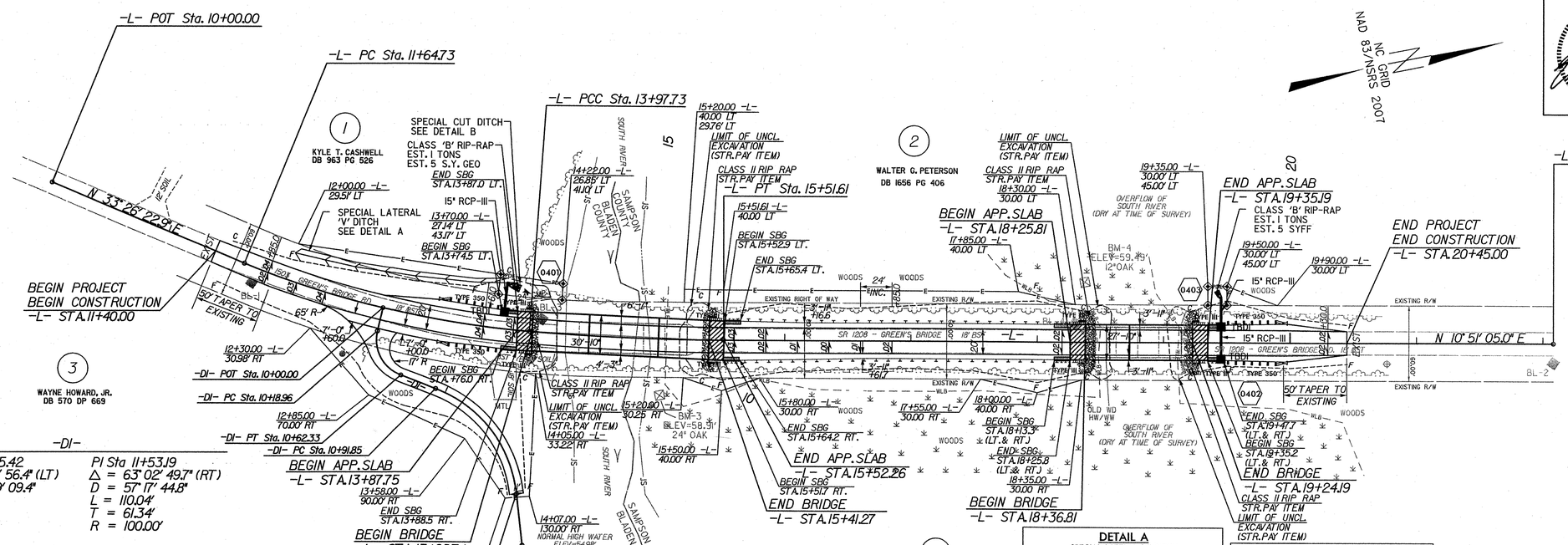
PLAN

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

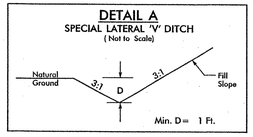
PROJECT REFERENCE NO.	SHEET NO.
BD-5103S	4
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 19824 ENGINEER — RICHARD O. ROBERTS — 6/7/13

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 037634 ENGINEER — JAMES A. BYRD — 6/7/13

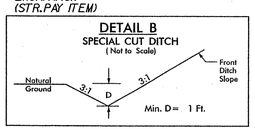


DETAIL A
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



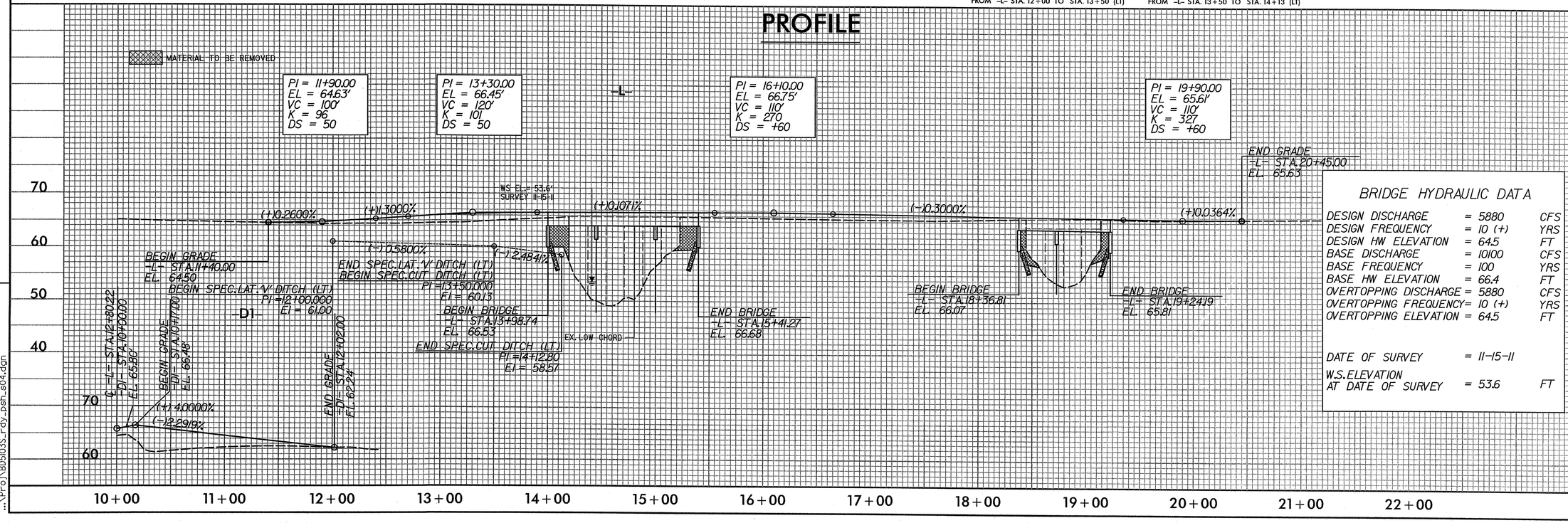
FROM -L- STA. 12+00 TO STA. 13+50 (LT)

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)



FROM -L- STA. 13+50 TO STA. 14+13 (LT)

PROFILE



BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 5880	CFS
DESIGN FREQUENCY	= 10 (+)	YRS
DESIGN HW ELEVATION	= 64.5	FT
BASE DISCHARGE	= 10100	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 66.4	FT
OVERTOPPING DISCHARGE	= 5880	CFS
OVERTOPPING FREQUENCY	= 10 (+)	YRS
OVERTOPPING ELEVATION	= 64.5	FT
DATE OF SURVEY	= 11-15-11	
W.S. ELEVATION AT DATE OF SURVEY	= 53.6	FT

REVISIONS

6/7/2013
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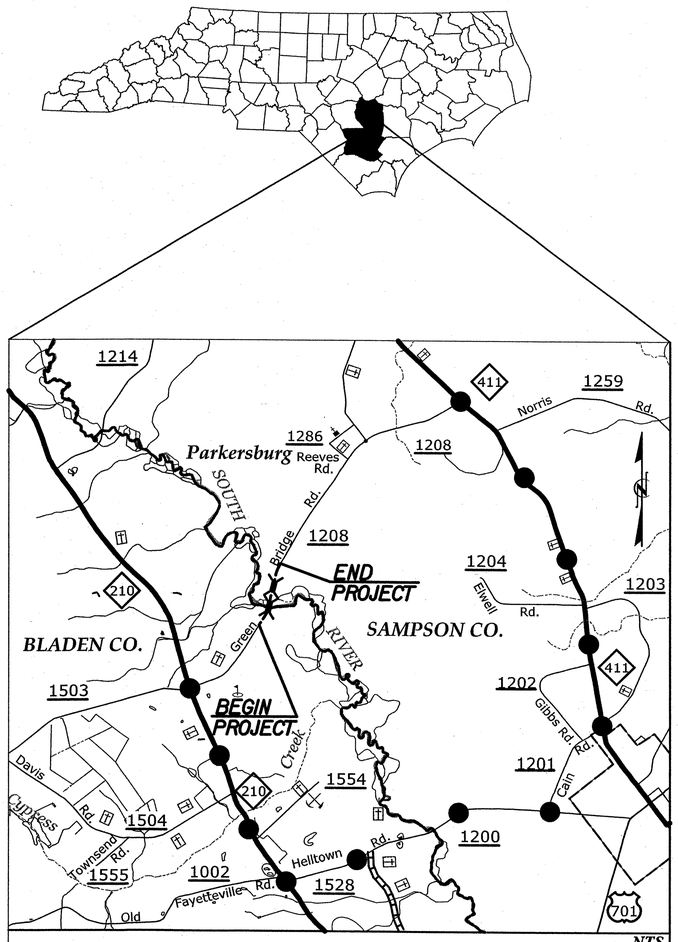
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

SAMPSON AND BLADEN COUNTY



INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET,INDEX OF SHEETS AND LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS
TMP-1A	PHASING AND GENERAL NOTES
TMP-2	DETOUR SIGNING

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C. DATED JAN 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.03	TEMPORARY ROAD CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	PAVEMENT MARKER SPACING
1251.01	RAISED PAVEMENT MARKERS - (TEMPORARY & PERMANENT)
1261.01	GUARDRAIL AND BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATOR TYPE
1262.01	GUARDRAIL END DELINEATION

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Raleigh, North Carolina 27609
NC License No: C-1554

R. B. EARLY, PE — *TRAFFIC CONTROL PROJECT ENGINEER*
R. B. EARLY, PE — *TRAFFIC CONTROL PROJECT DESIGN ENGINEER*
J. A. PHILLIPS — *TRAFFIC CONTROL DESIGN ENGINEER*

APPROVED: Rhonda B. Early
DATE: 6/6/13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 023521 ENGINEER RHONDA B. EARLY

WORK ZONE SAFETY & MOBILITY
"from the MOUNTAINS to the COAST"

N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)
PHONE: (919) 773-2800 FAX: (919) 771-2745

KATHERINE HITE, PE — *DIVISION TRAFFIC ENGINEER*

DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

SHEET NO.
TMP-1

BD-5103S

TIP PROJECT:

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HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJ. REFERENCE NO.	SHEET NO.
BD-5103S	TMP-1A

PHASING

PHASE I

PRIOR TO ANY CONSTRUCTION OPERATIONS, PLACE AND COVER OFF-SITE DETOUR SIGNS AS SHOWN ON TCP-2 AND IN ACCORDANCE WITH RSD 1101.03 (SHEET 1 OF 9). PLACE CMS AND ACTIVATE.

PHASE II

USING OFF-SITE DETOUR, UNCOVER DETOUR SIGNS, CLOSE -L- (SR 1208 / GREEN'S BRIDGE RD.) TO TRAFFIC AND CONSTRUCT BRIDGE, APPROACHES AND ROADWAY UP TO AND INCLUDING THE FINAL LAYER OF SURFACE COURSE.

PHASE III

UPON COMPLETION OF BRIDGE, APPROACHES AND ROADWAY, PLACE FINAL PAVEMENT MARKINGS AND MARKERS IN ACCORDANCE WITH ROADWAY STANDARD DRAWINGS. REMOVE BARRICADES AND DETOUR SIGNS AND OPEN -L- (SR 1208 / GREEN'S BRIDGE RD.) TO TRAFFIC.

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

LANE AND SHOULDER CLOSURE REQUIREMENTS

A) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.

B) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.

TRAFFIC PATTERN ALTERATIONS

C) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

D) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

E) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.

PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN ON THIS SHEET.

F) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.

COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.

G) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

H) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

I) INSTALL AND ACTIVATE CMS BOARDS 2 WEEKS PRIOR TO ROAD CLOSURE.

PAVEMENT MARKINGS AND MARKERS

J) INSTALL PAVEMENT MARKINGS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKERS
SR 1208 (GREEN'S BRIDGE RD)	PAINT	RAISED

K) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

L) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS.

M) PASSING ZONE WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.

APPROVED: Rhonda B. Early DATE: 6/6/13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 023521 ENGINEER RHONDA B. EARLY

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

TRANSPORTATION OPERATIONS PLAN

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$$$$USERNAME$$$$

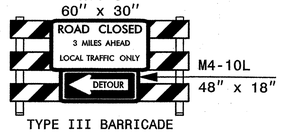
HNTB
HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJ. REFERENCE NO.	SHEET NO.
BD-5103S	TMP-2

(A)

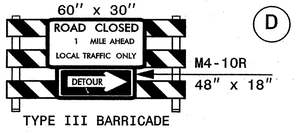
TYPE III BARRICADE

(B)



TYPE III BARRICADE

(C)



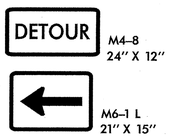
TYPE III BARRICADE

(D)

MESSAGE NO. 1	MESSAGE NO. 2
BRIDGE CLOSED	00/00/00 TO 00/00/00

CHANGEABLE MESSAGE SIGN

(1)



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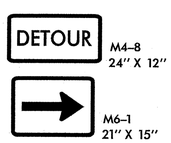

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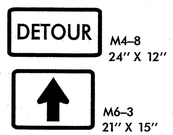

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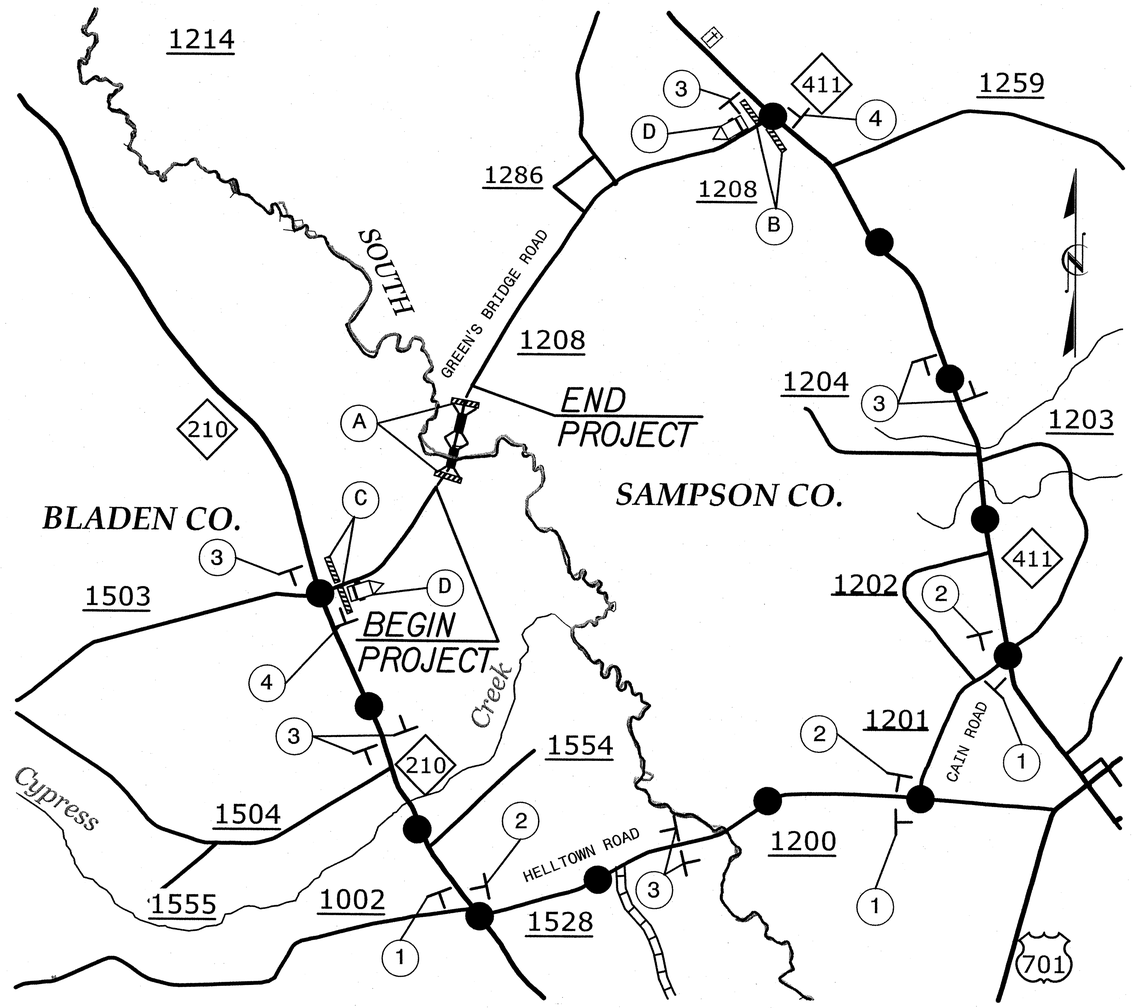

PROPOSED DETOUR

DETOUR ROUTE

DETOUR LENGTH 14.2 MILES

APPROVED: Rhonda B. Early DATE: 6/12/13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 023521 ENGINEER RHONDA B. EARLY

DETOUR SIGNING

SCALE:	NONE
DATE:	06/04/12
DWG. BY:	JAP
DESIGN BY:	JAP
REVIEWED BY:	RBE

REVISIONS

CADD FILE

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TIP PROJECT: BD-5103S

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BD-5103S	EC-1	6

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

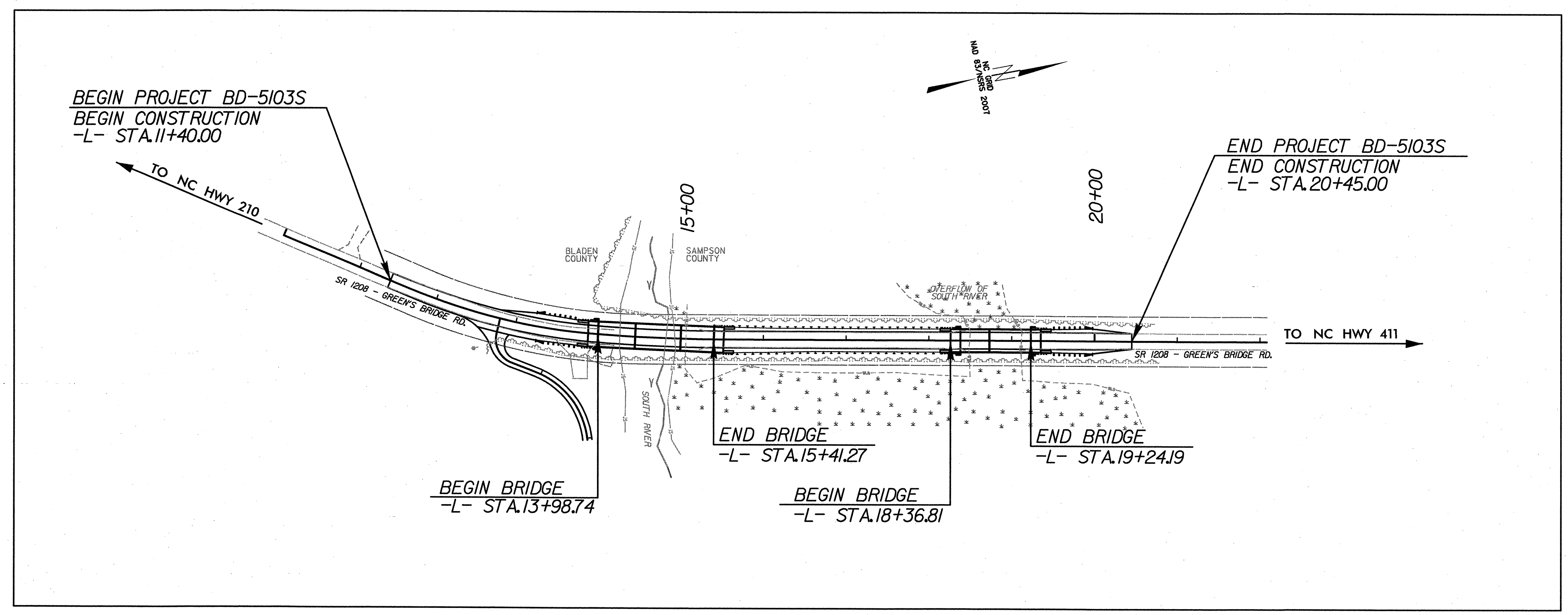
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

SAMPSON COUNTY

LOCATION: SAMPSON COUNTY BRIDGE NO. 077 OVER OVERFLOW OF SOUTH RIVER AND BRIDGE NO. 078 OVER SOUTH RIVER ON SR 1208 (GREENS BRIDGE RD.)

TYPE OF WORK: LOW IMPACT BRIDGE REPLACEMENT



EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
	Temporary Rock Silt Check Type-B	
	Wattle / Coir Fiber Wattle	
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
1630.06	Special Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT

Refer To E. C. Special Provisions for Special Considerations.

HIGH QUALITY WATER(S) EXIST ON THIS PROJECT

High Quality Water Zone(s) Exist
From Sta. 11+40.00
to Sta. 20+45.00
Refer To E. C. Special Provisions for Special Considerations.

GRAPHIC SCALE

0
PLANS
0
PROFILE (HORIZONTAL)
0
PROFILE (VERTICAL)

ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

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

Prepared In the Office of:

HNTB
HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

2012 STANDARD SPECIFICATIONS

PHILLIP E. ROGERS, P.E.
EROSION CONTROL
LEVEL III-A
CERTIFICATION #330

Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2012 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type B
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Check Type A
1622.01	Temporary Berms and Slope Drains	1633.02	Temporary Rock Silt Check Type B
1630.01	Riser Basin	1634.01	Temporary Rock Sediment Dam Type A
1630.02	Silt Basin Type B	1634.02	Temporary Rock Sediment Dam Type B
1630.03	Temporary Silt Ditch	1635.01	Rock Pipe Inlet Sediment Trap Type A
1630.04	Stilling Basin	1635.02	Rock Pipe Inlet Sediment Trap Type B
1630.05	Temporary Diversion	1640.01	Coir Fiber Baffle
1630.06	Special Stilling Basin	1645.01	Temporary Stream Crossing
1631.01	Matting Installation		

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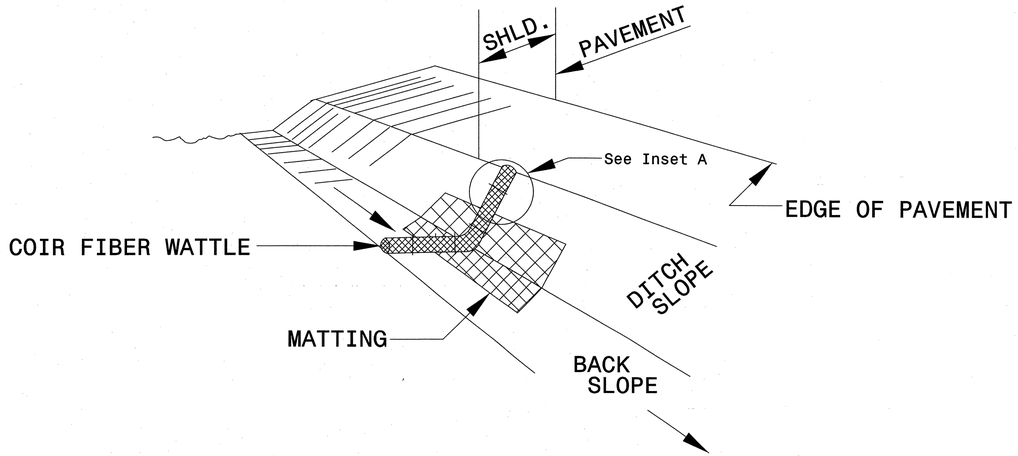
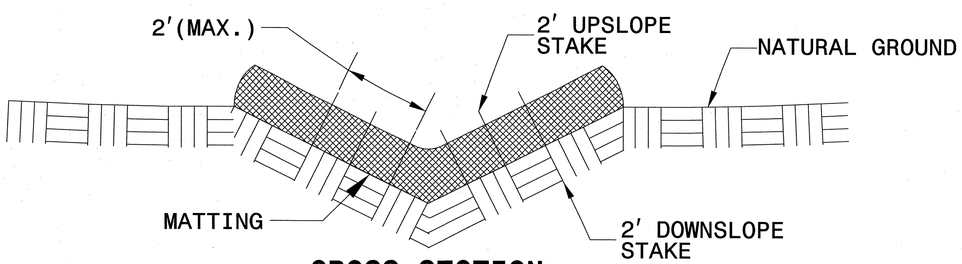
PROJECT REFERENCE NO.	SHEET NO.
BD-5103S	EC-2

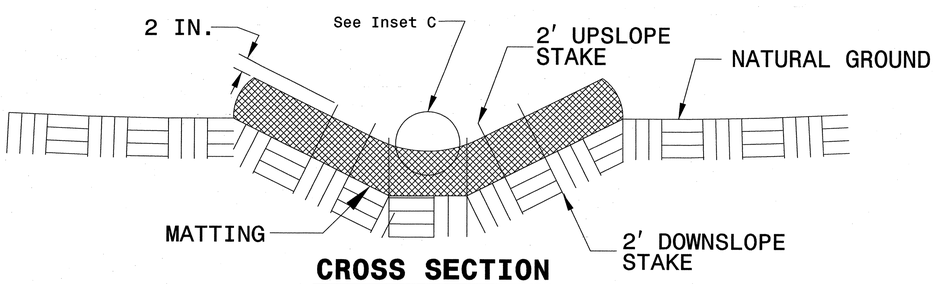
COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



ISOMETRIC VIEW



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH

NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

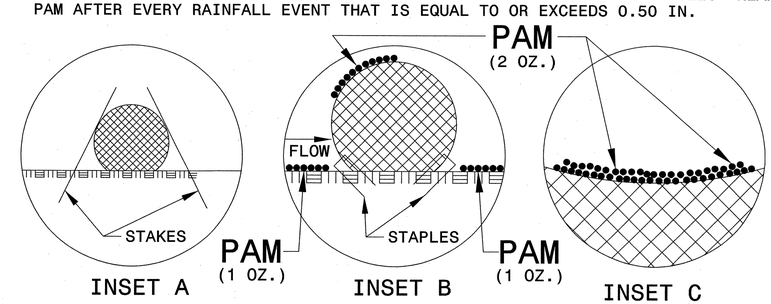
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

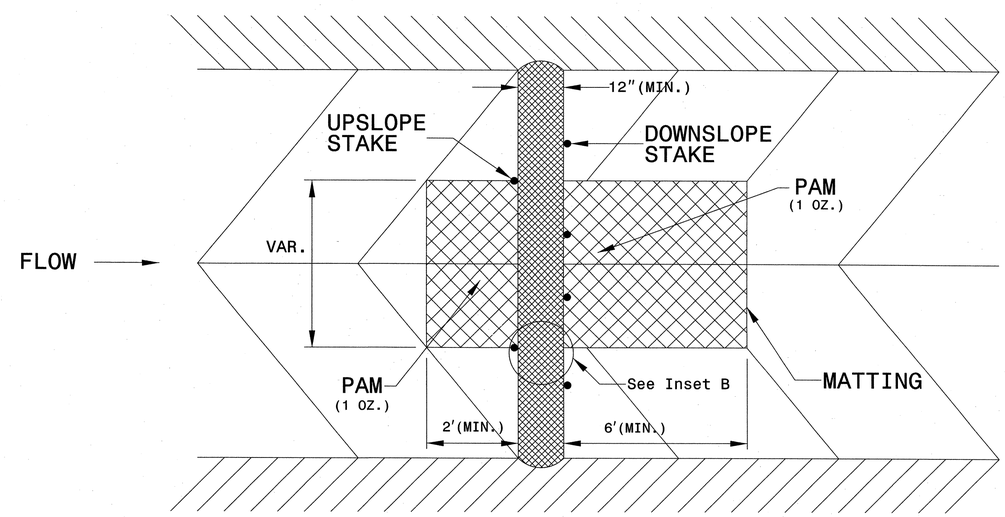
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.





TOP VIEW

6/2/99

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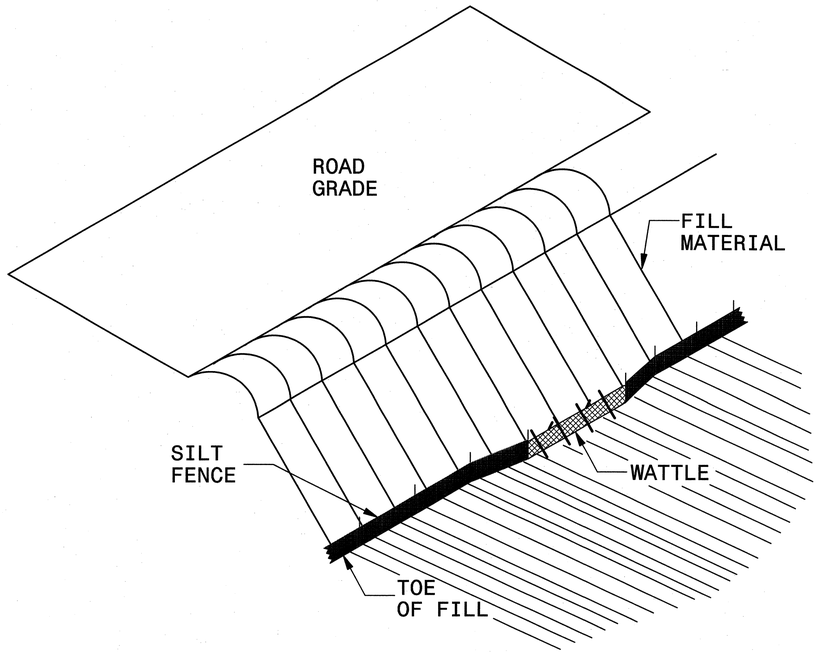
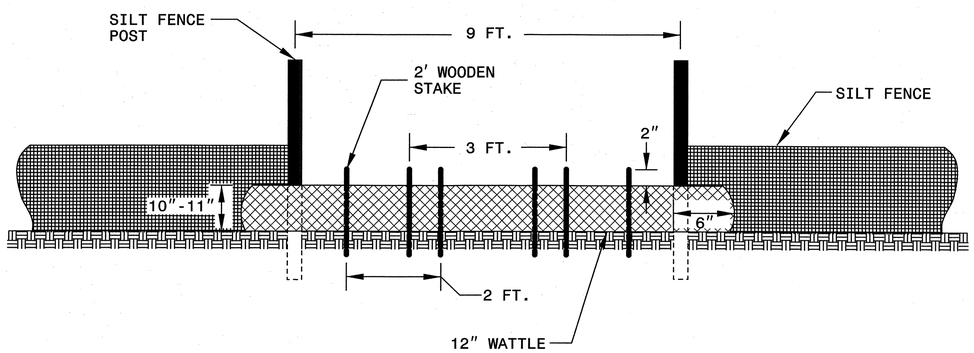
PROJECT REFERENCE NO.	SHEET NO.
BD-5103S	EC-3
R/W SHEET NO.	

SILT FENCE COIR FIBER WATTLE BREAK DETAIL



ISOMETRIC VIEW



VIEW FROM SLOPE

NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE AND LENGTH OF 10 FT.

EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE WATTLE ON TOE OF SLOPE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.

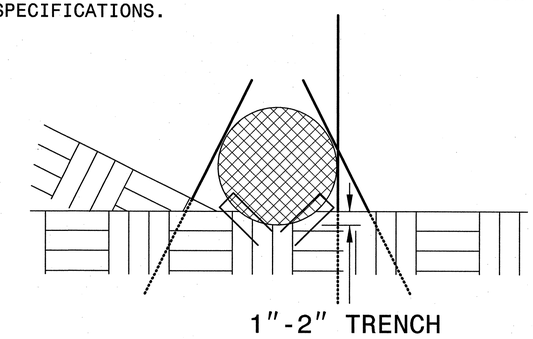
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

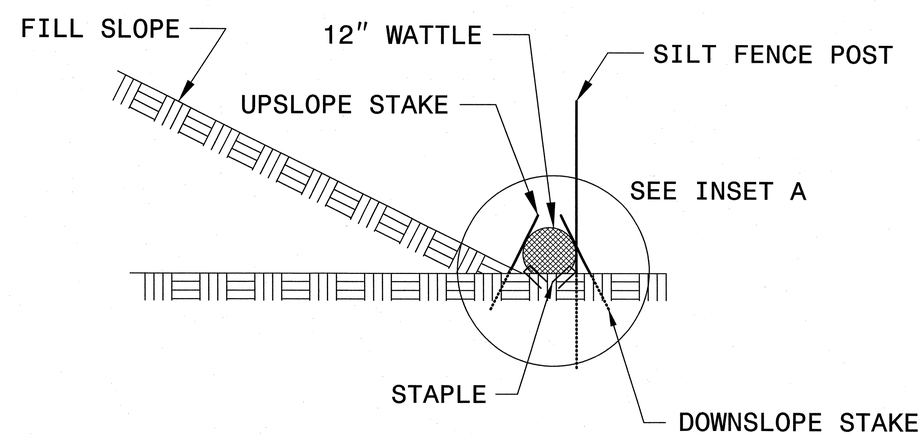
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.

INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.

INSET A

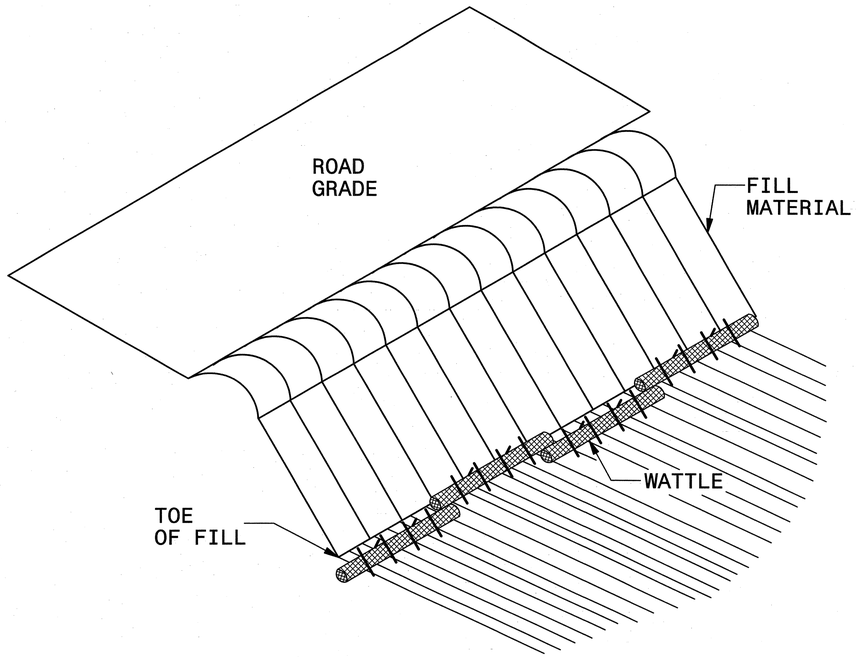




SIDE VIEW

PROJECT REFERENCE NO.	SHEET NO.
BD-5103S	EC-4
R/W SHEET NO.	

COIR FIBER WATTLE BARRIER DETAIL



ISOMETRIC VIEW

NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT) WATTLE AND LENGTH OF 10 FT.

EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE WATTLES ON TOE OF SLOPE.

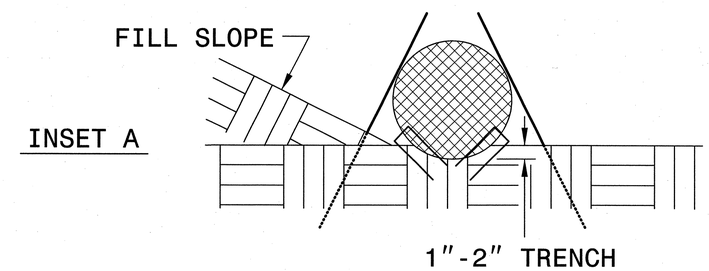
USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

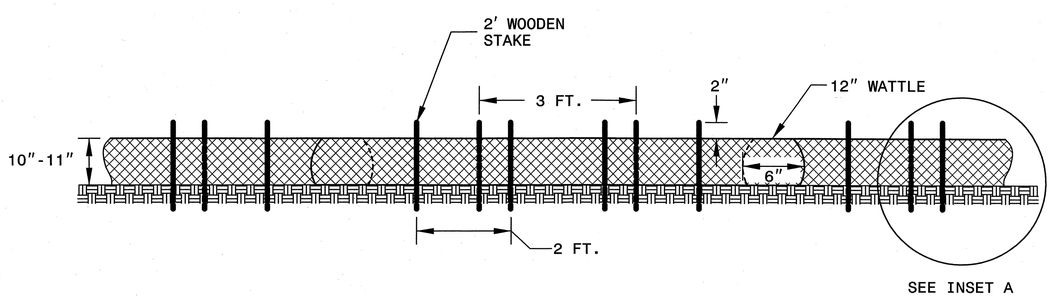
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.

PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

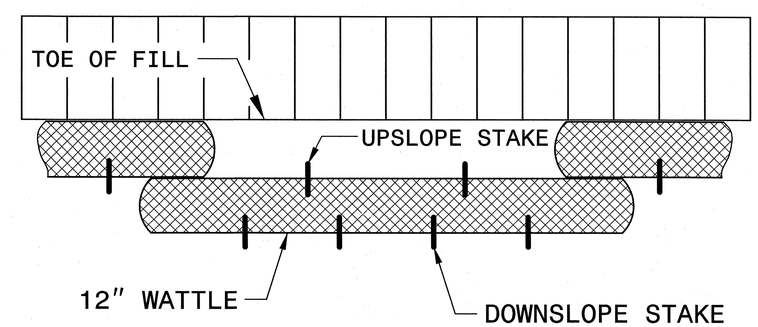
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

FOR BREAKS ALONG LARGE SLOPES, USE MAXIMUM SPACING OF 20 FT.





FRONT VIEW



TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
BD-5103S	EC-5

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

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.

MATTING FOR EROSION CONTROL

SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)	REMARKS
EC-6	-L-	13+50	14+22	RT	60	INSTALL IN PROP. DITCH
EC-6	-L-	15+40	18+32	LT	220	INSTALL ON SIDE SLOPES
EC-6	-L-	15+40	18+32	RT	220	INSTALL ON SIDE SLOPES
				SUBTOTAL	500	
				GEOTECHNICAL CONTINGENCY	600	
				TOTAL	1100	
				SAY	1100	

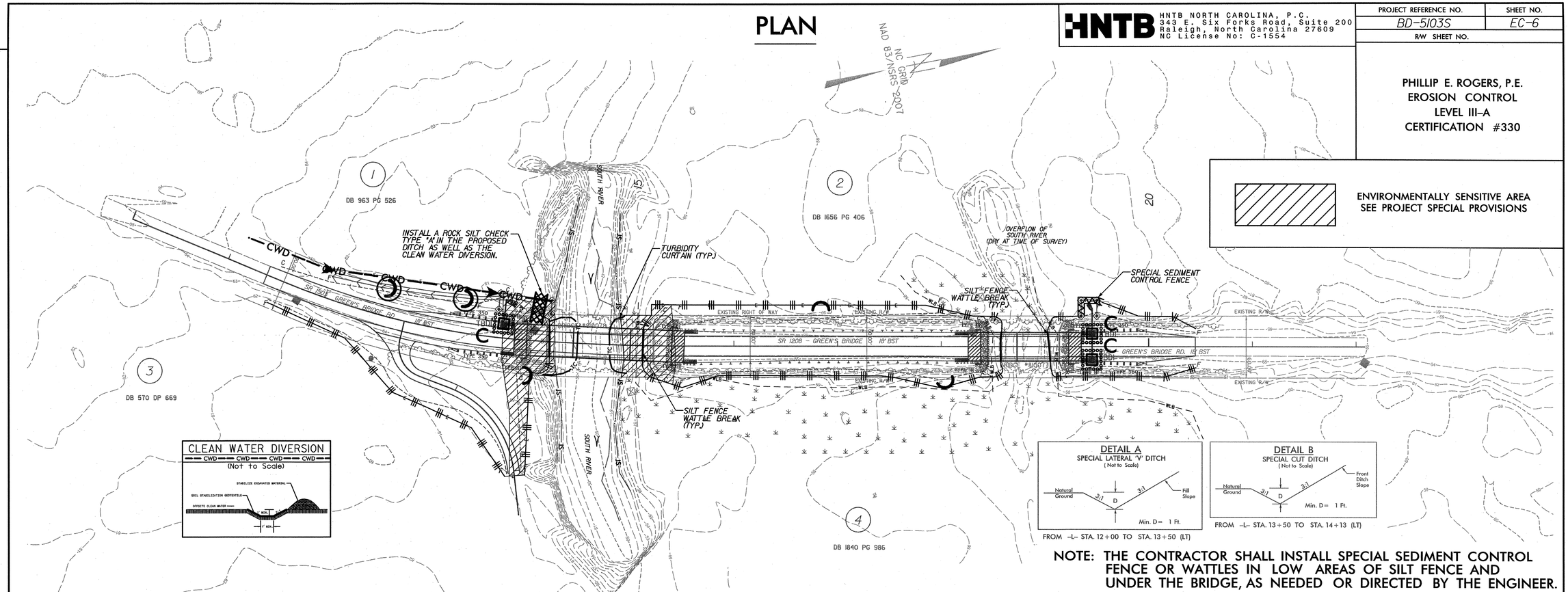
HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
BD-5103S	EC-6
R/W SHEET NO.	

PHILLIP E. ROGERS, P.E.
EROSION CONTROL
LEVEL III-A
CERTIFICATION #330

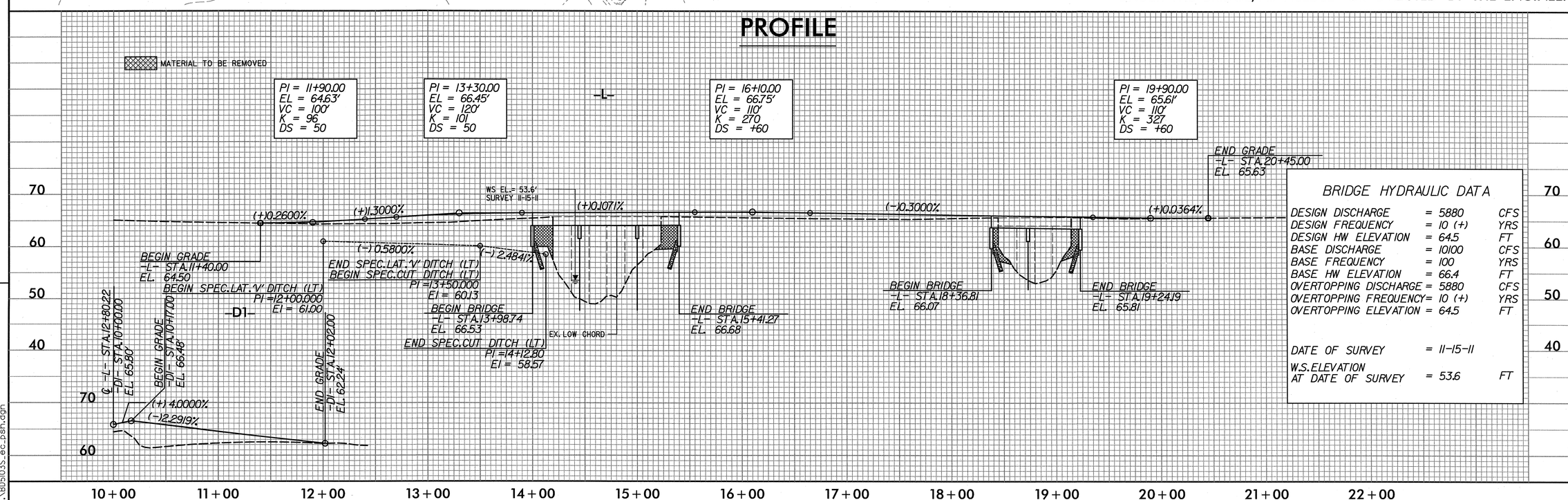
ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

PLAN



NOTE: THE CONTRACTOR SHALL INSTALL SPECIAL SEDIMENT CONTROL FENCE OR WATTLES IN LOW AREAS OF SILT FENCE AND UNDER THE BRIDGE, AS NEEDED OR DIRECTED BY THE ENGINEER.

PROFILE



BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	=	5880	CFS
DESIGN FREQUENCY	=	10 (+)	YRS
DESIGN HW ELEVATION	=	64.5	FT
BASE DISCHARGE	=	10100	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	66.4	FT
OVERTOPPING DISCHARGE	=	5880	CFS
OVERTOPPING FREQUENCY	=	10 (+)	YRS
OVERTOPPING ELEVATION	=	64.5	FT
DATE OF SURVEY	=	11-15-11	
W.S.ELEVATION AT DATE OF SURVEY	=	53.6	FT

REVISIONS

6/4/2013
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STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BD-5103S	RF-1	1

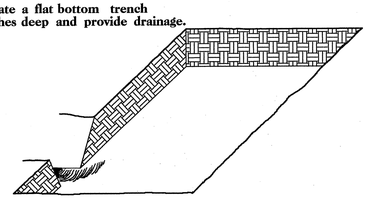
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

PLANTING DETAILS

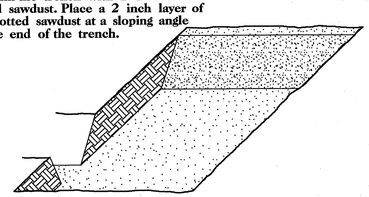
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

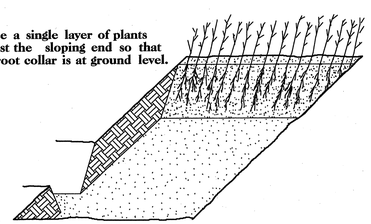
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



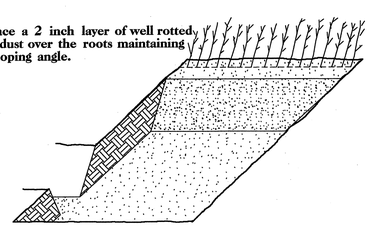
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



4. Place a single layer of plants against the sloping end so that the root collar is at ground level.

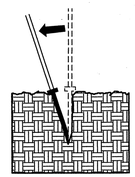


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

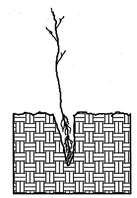


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

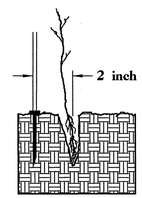
DIBBLE PLANTING METHOD
USING THE KBC PLANTING BAR



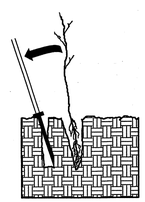
1. Insert planting bar as shown and pull handle toward planter.



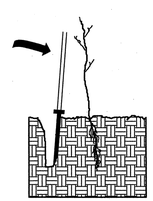
2. Remove planting bar and place seedling at correct depth.



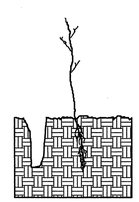
3. Insert planting bar 2 inches toward planter from seedling.



4. Pull handle of bar toward planter, firming soil at bottom.



5. Push handle forward firming soil at top.



6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

PLANTING BAG
During planting, seedlings shall be kept in a moist canvas bag or similar container to prevent the root systems from drying.

KBC PLANTING BAR
Planting bar shall have a blade with a triangular cross section, and shall be 12 inches long, 4 inches wide and 1 inch thick at center.

ROOT PRUNING
All seedlings shall be root pruned, if necessary, so that no roots extend more than 10 inches below the root collar.

REFORESTATION

☐ TREE REFORESTATION SHALL BE PLANTED 6 FT. TO 10 FT. ON CENTER, RANDOM SPACING, AVERAGING 8 FT. ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.

REFORESTATION

MIXTURE, TYPE, SIZE, AND FURNISH SHALL CONFORM TO THE FOLLOWING:

25%	LIRIODENDRON TULIPIFERA	TULIP POPLAR	12 in - 18 in BR
25%	PLATANUS OCCIDENTALIS	SYCAMORE	12 in - 18 in BR
25%	FRAXINUS PENNSYLVANICA	GREEN ASH	12 in - 18 in BR
25%	BETULA NIGRA	RIVER BIRCH	12 in - 18 in BR

REFORESTATION DETAIL SHEET

N.C.D.O.T. - ROADSIDE ENVIRONMENTAL UNIT

PROJ. REFERENCE NO.	SHEET NO.
BD-5103S	X-1A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

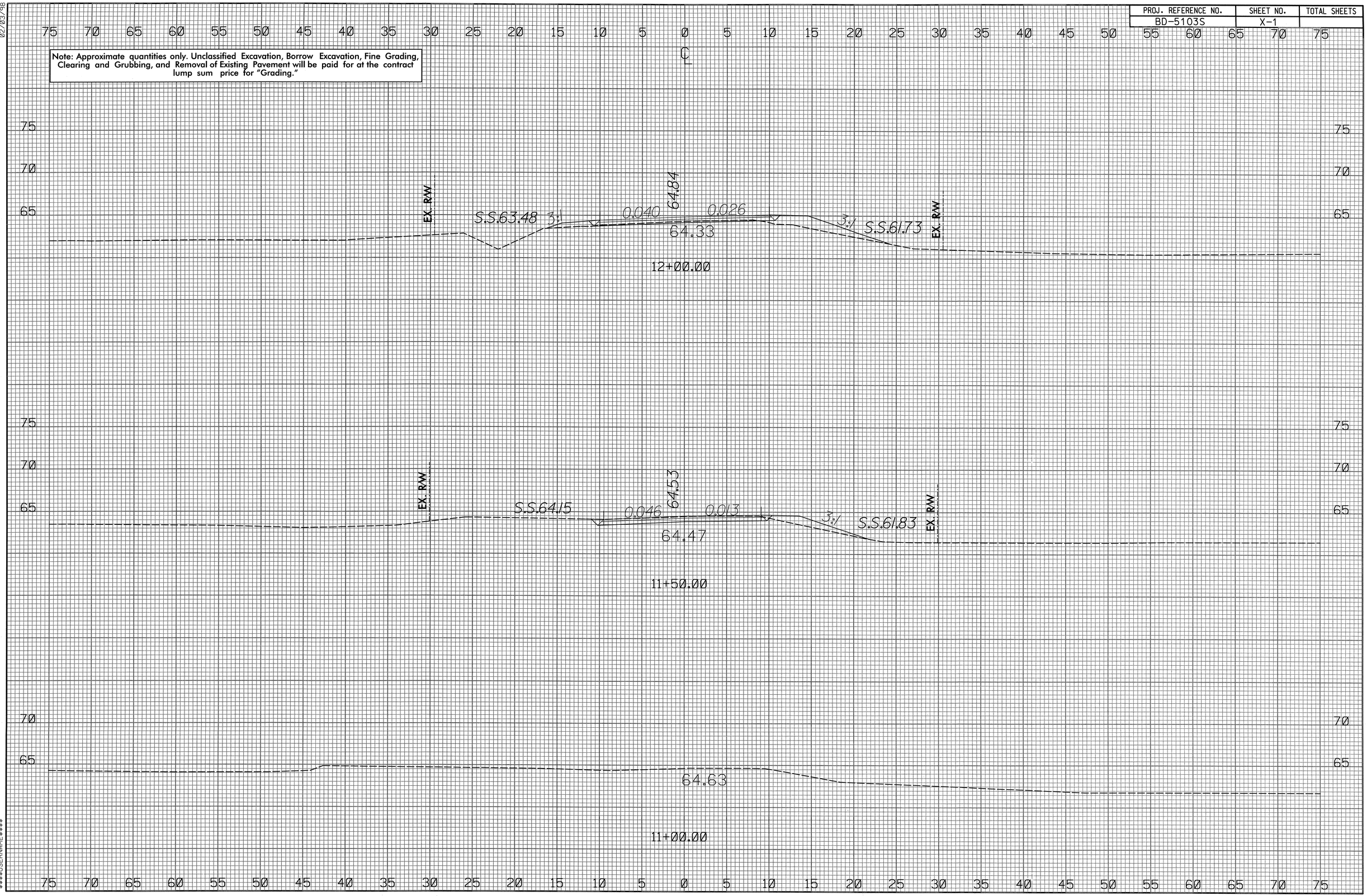
NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT

CROSS-SECTION SUMMARY

Station L	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)	Station L	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)	Station L	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)	Station L	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)	Station L	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)	Station L	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
11+00.00	0	0															
11+50.00	2	1															
12+00.00	14	19															
12+50.00	6	72															
13+00.00	8	282															
13+50.00	8	411															
14+00.00	193	188															
14+50.00	167	0															
15+00.00	0	0															
15+50.00	180	12															
16+00.00	0	75															
16+50.00	0	71															
17+00.00	0	65															
17+50.00	0	70															
18+00.00	0	77															
18+50.00	175	30															
19+00.00	8	0															
19+50.00	169	10															
20+00.00	26	21															
20+50.00	12	3															

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
BD-5103S	X-1	

Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."



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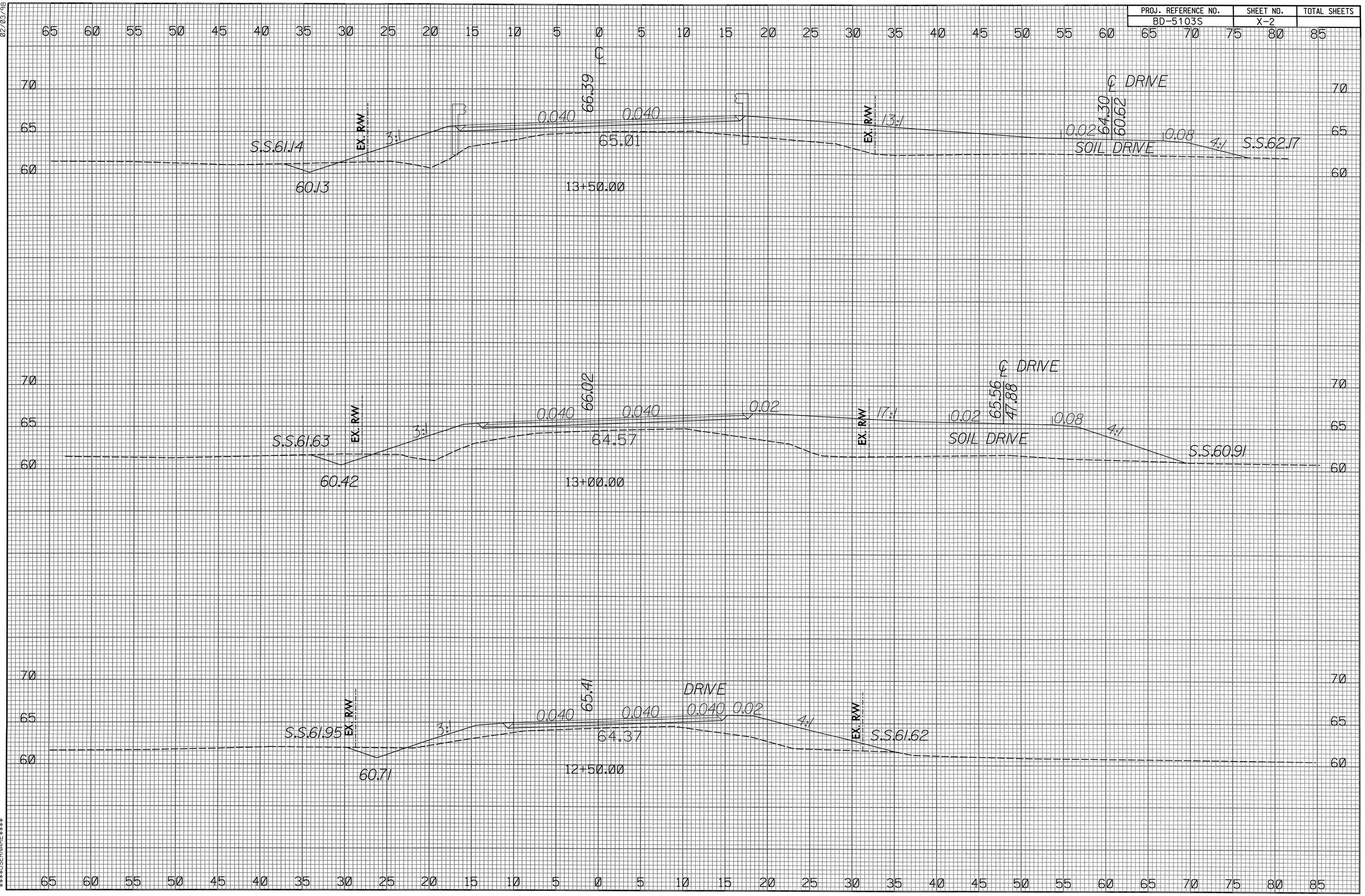

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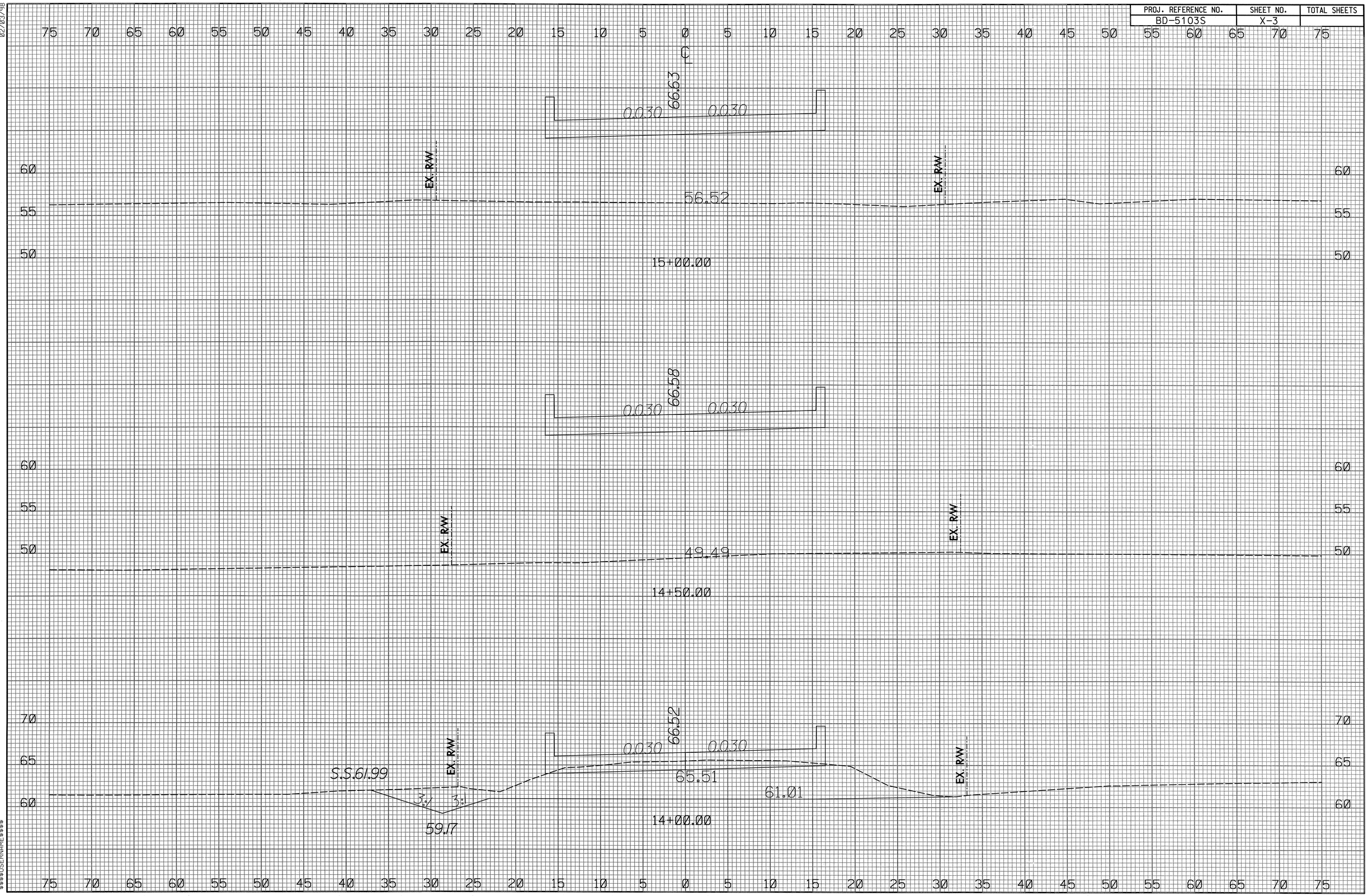

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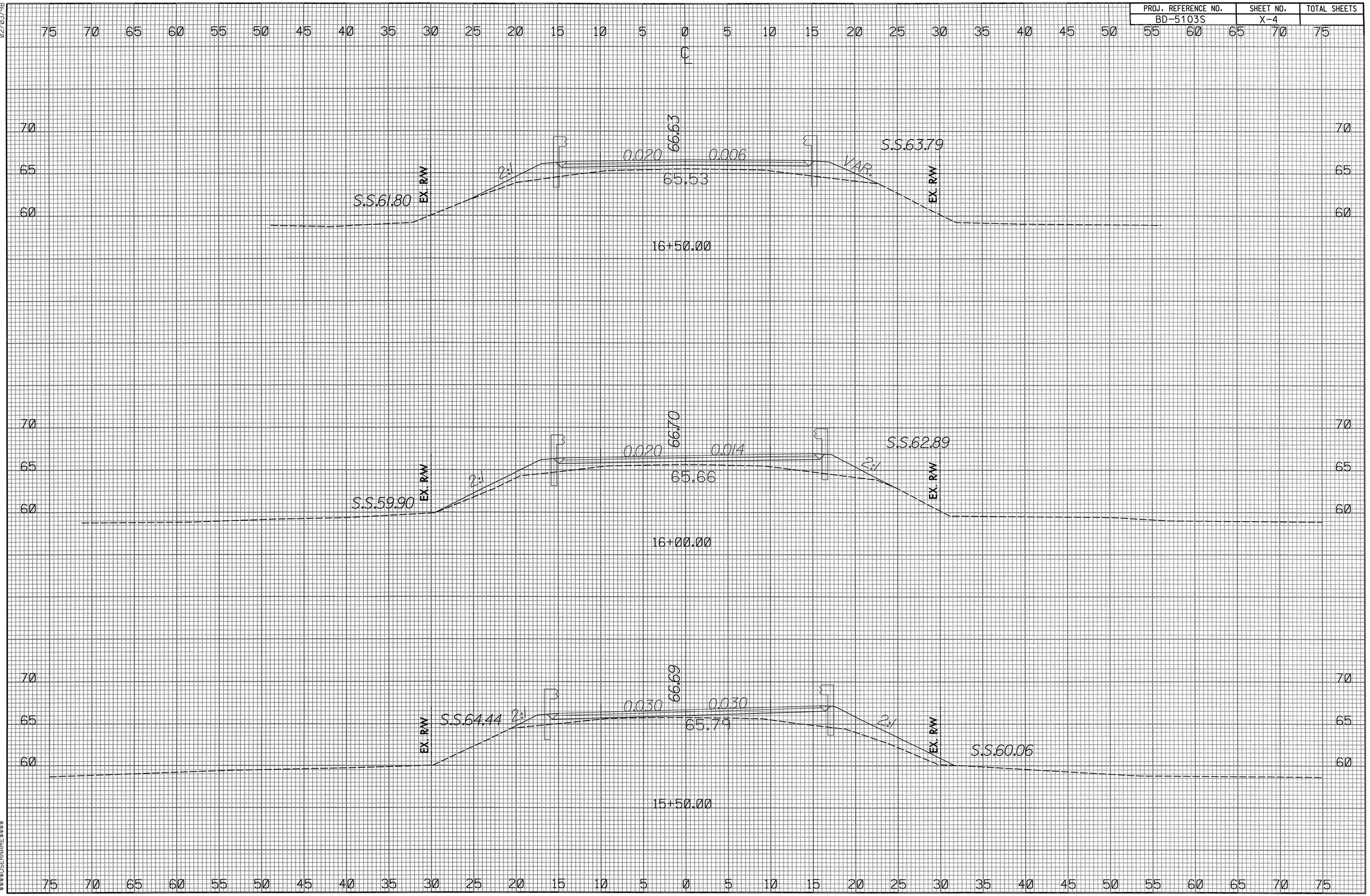

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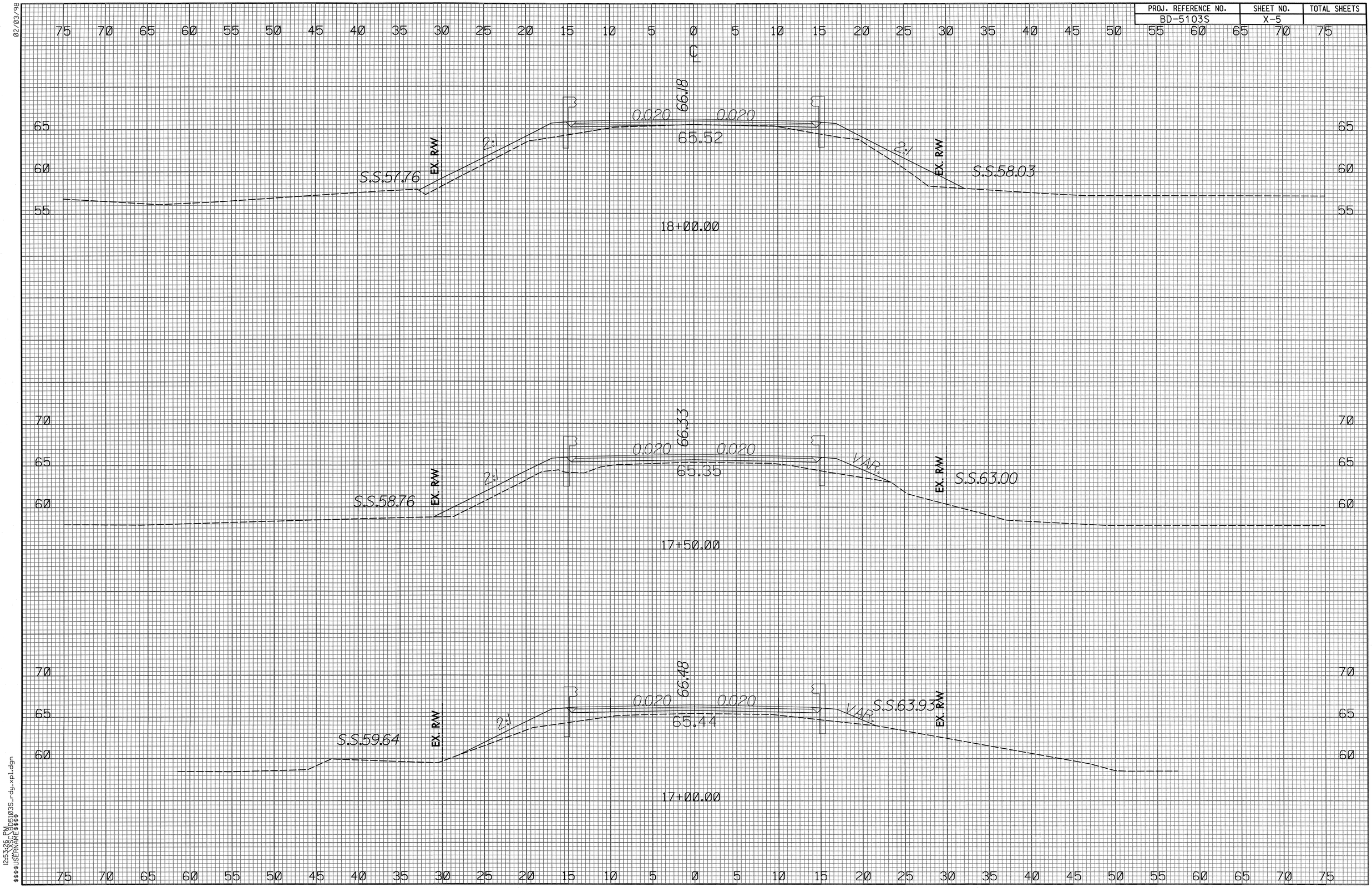

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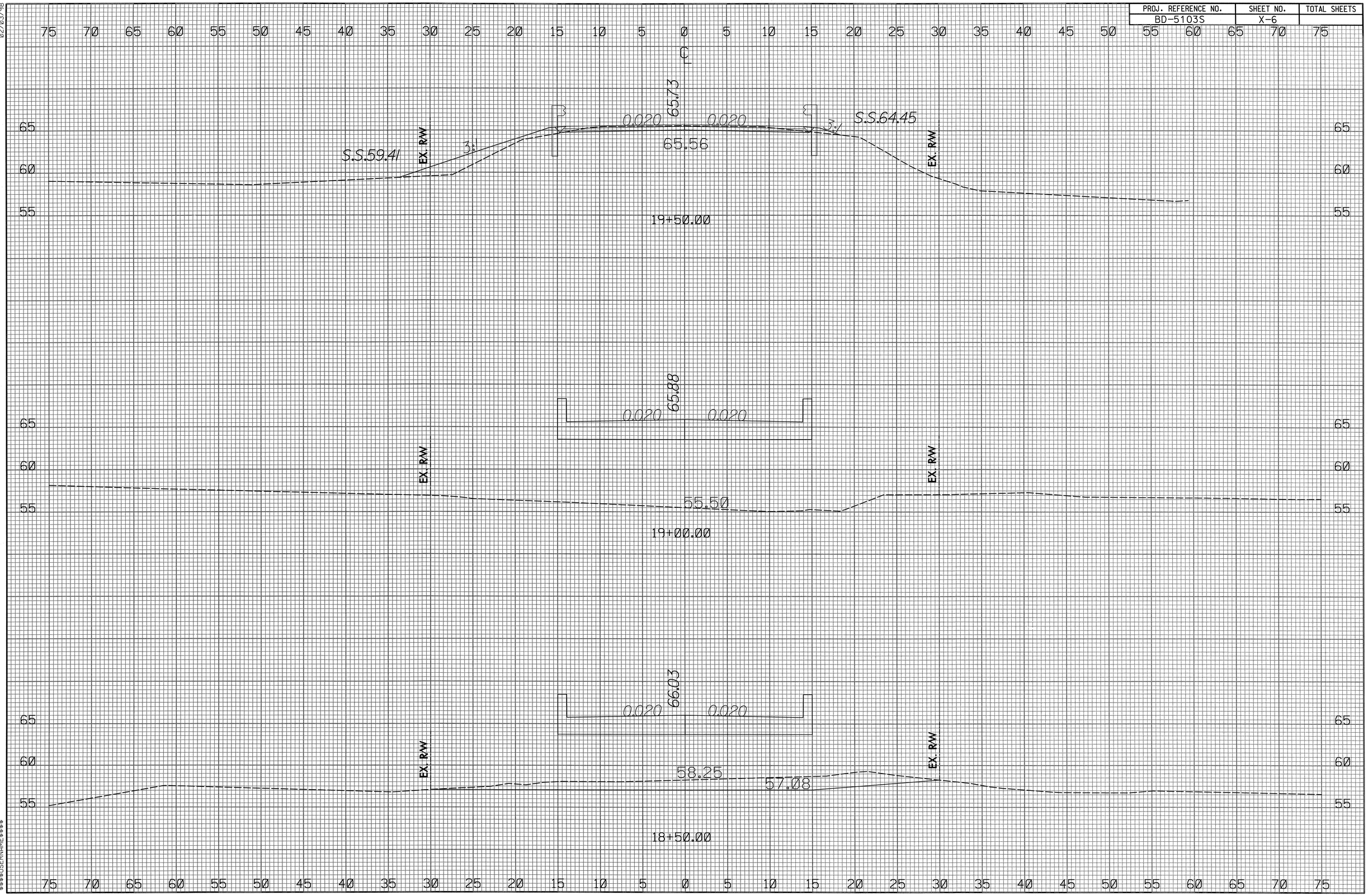
BD-5103S	X-6	



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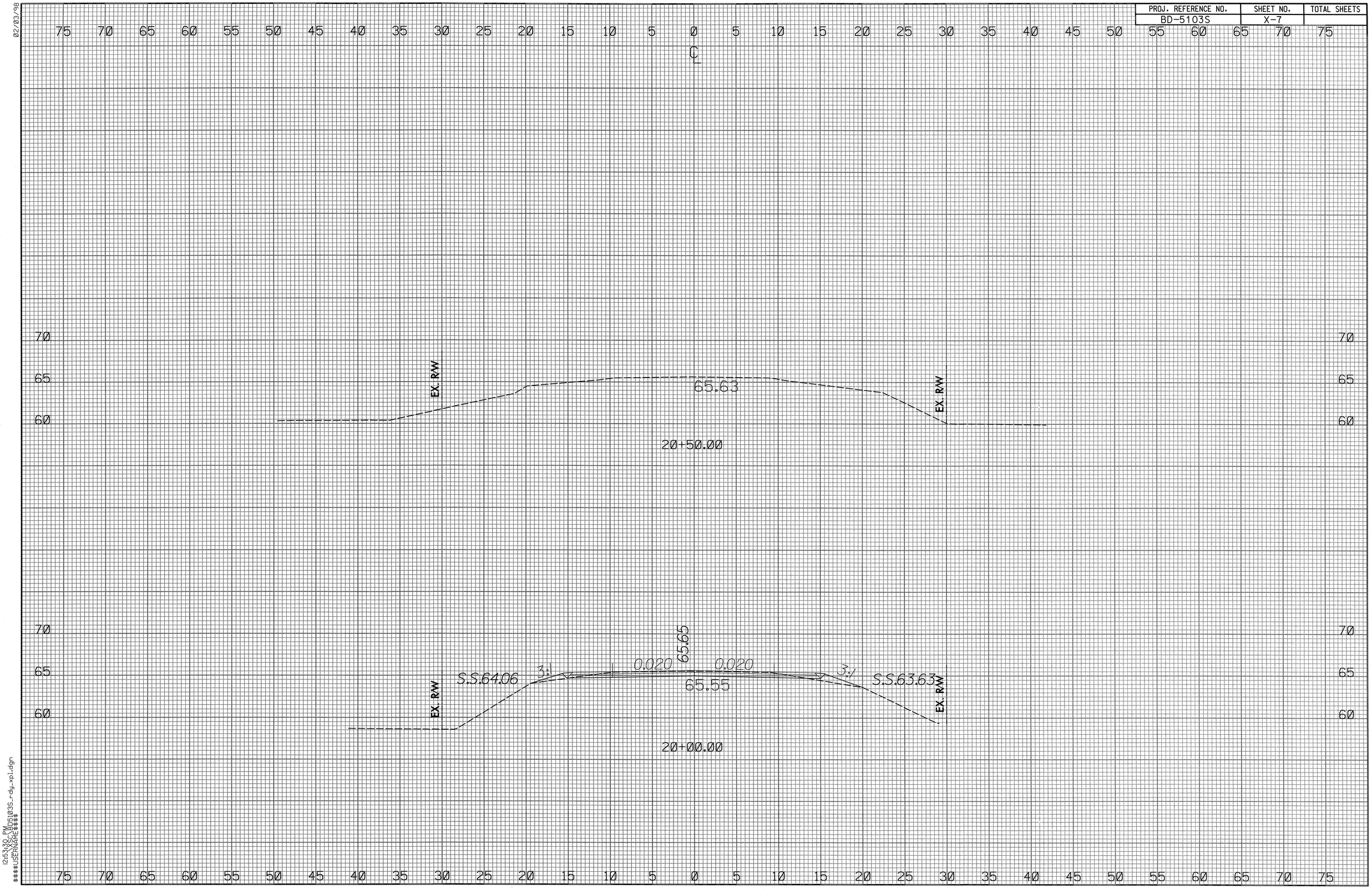

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