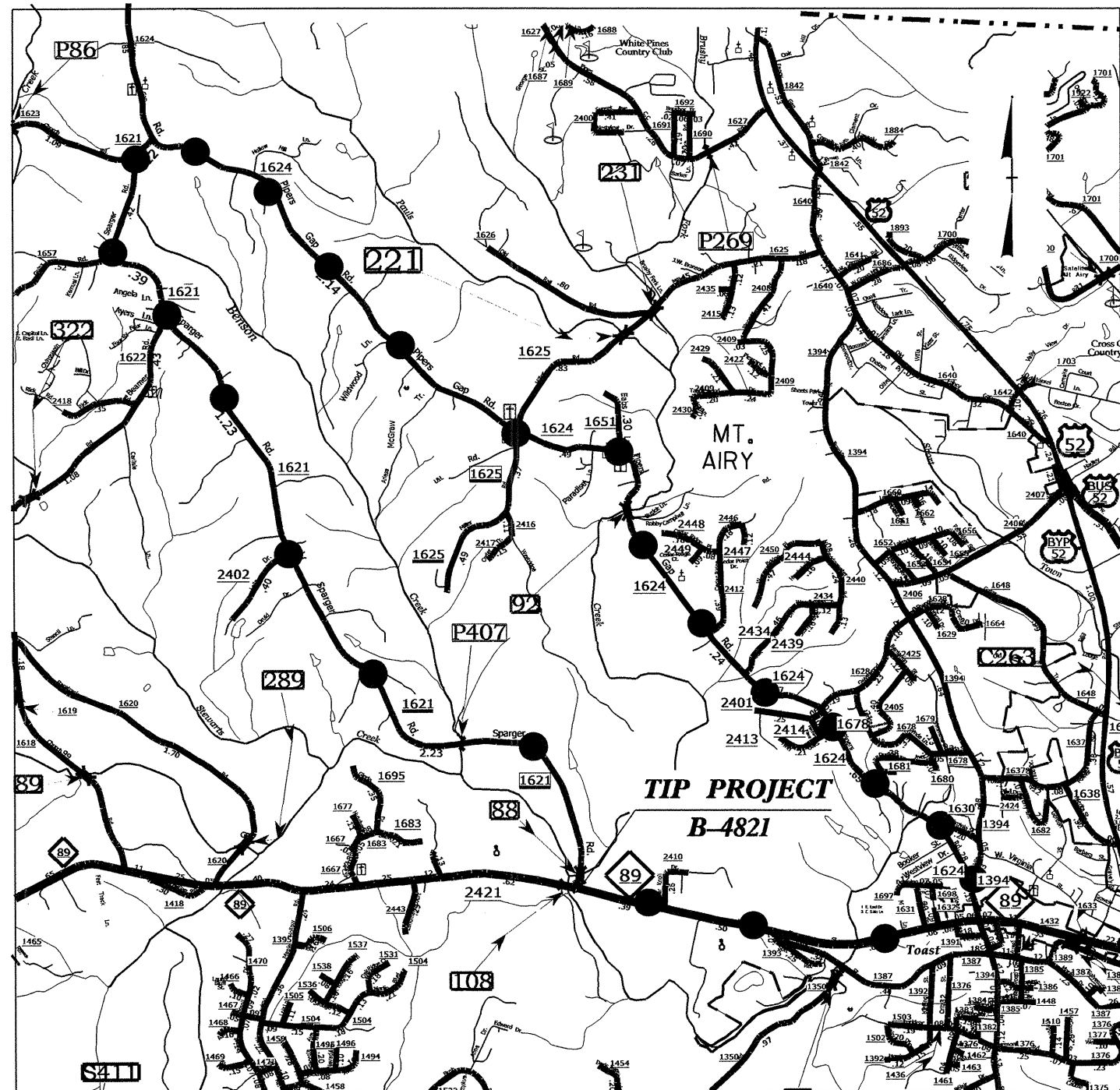


09/08/99

See Sheet 1-A For Index of Sheets

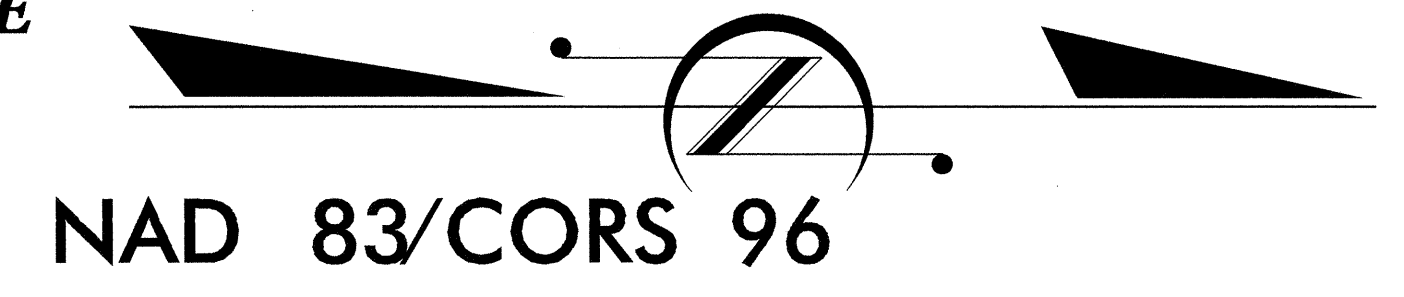


VICINITY MAP
OFFSITE DETOUR ROUTE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
SURRY COUNTY

LOCATION: BRIDGE 88 OVER PAUL'S CREEK ON SR 1621 (SPARGER RD.)

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



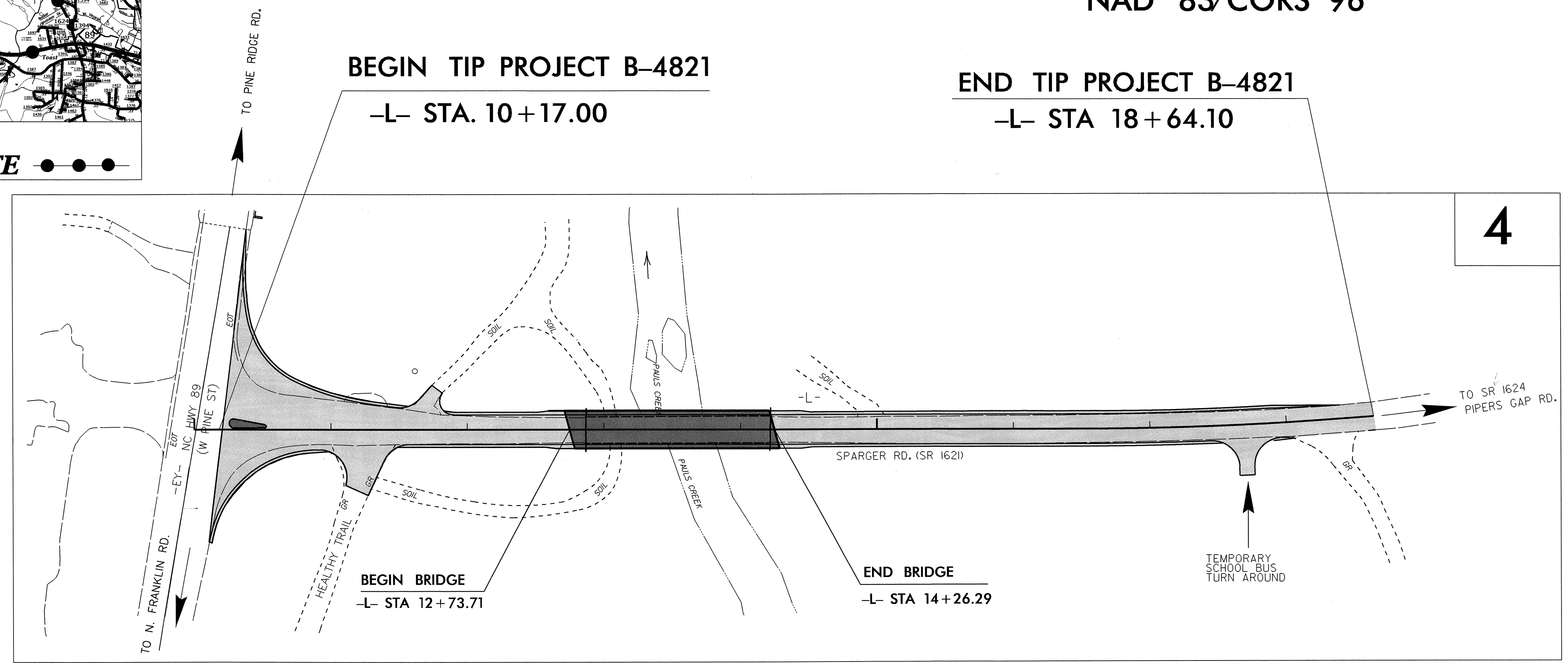
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4821	1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
38591.1.1	BRZ-1621(4)	P.E.	
38591.2.1	BRZ-1621(4)	RW & UTIL	
38591.3.FD1	BRZ-1621(4)	CONST.	

TIP PROJECT: B-4821

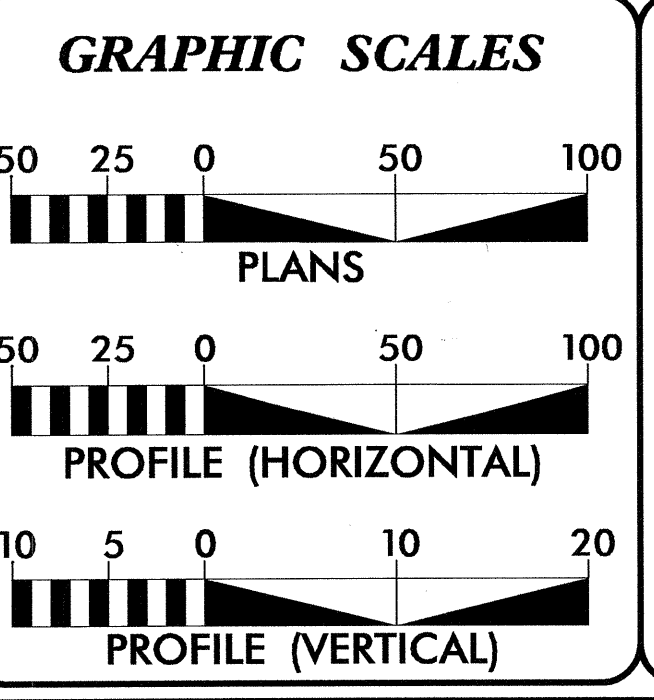
CONTRACT: C203287

BEGIN TIP PROJECT B-4821
-L- STA. 10+17.00

END TIP PROJECT B-4821
-L- STA 18+64.10



** DESIGN EXCEPTION REQUIRED FOR SAG VERTICAL CURVE K FACTOR AND NIGHTTIME SSD.



DESIGN DATA

ADT 2012 =	1750
ADT 2035 =	2100
DHV =	11 %
D =	55 %
T =	6 % *
V =	55 MPH
* TTST = 1% DUAL = 5%	
FUNC CLASS =	LOCAL
SUB REGIONAL TIER	

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT B-4821 =	0.131 MI
LENGTH OF STRUCTURE TIP PROJECT B-4821 =	0.029 MI
TOTAL LENGTH OF TIP PROJECT B-4821 =	0.160 MI

Prepared in the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

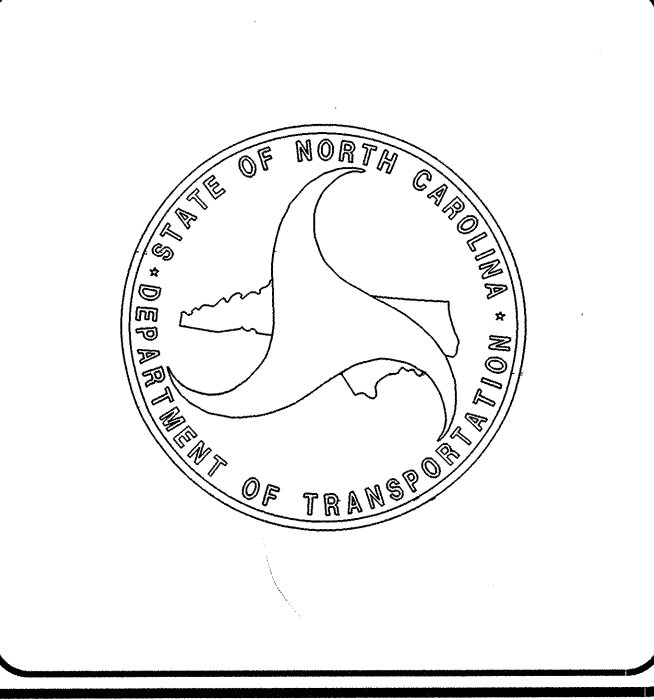
2012 STANDARD SPECIFICATIONS	
RIGHT WAY WAY DATE:	JAMES A. SPEER, P.E. PROJECT ENGINEER
DECEMBER 4, 2012	
LETTING DATE:	ALLISON K. WHITE PROJECT DESIGN ENGINEER
DECEMBER 17, 2013	

HYDRAULICS ENGINEER

SIGNATURE: Jason D. Lawing 9-20-13 P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: James A. Speer 9/18/2013 P.E.



18-SEP-2013 08:42 R:\Roadway\N\B4821\RDY_1.fsh.dgn \$\$\$\$SERVNAME\$\$\$\$



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C	SURVEY CONTROL SHEET
2	PAVEMENT SCHEDULE, TYPICAL SECTION, AND WEDGING DETAILS
2-A	INTERSECTION AND ISLAND DETAIL
2-B	DITCH DETAIL SHEET
3	SUMMARY OF QUANTITIES
3-A	SUMMARY OF DRAINAGE QUANTITIES, SUMMARY OF GUARDRAIL, SUMMARY OF SHOULDER BERM GUTTER, EARTHWORK SUMMARY, ASPHALT PAVEMENT REMOVAL AND SUMMARY OF SUBSURFACE DRAINAGE
4	PLAN SHEET
5	PROFILE SHEET
TMP-1 THRU TMP-4	TRANSPORTATION MANAGEMENT PLANS
PMP-1	PAVEMENT MARKING PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
UO-1 THRU UO-2	UTILITY BY OTHERS PLANS
X-1A	CROSS SECTION VOLUME SHEET
X-1 THRU X-5	PROPOSED CROSS SECTIONS
S-1 THRU S-22	STRUCTURE PLANS

#REF!
#REF!

GENERAL NOTES: 2012 SPECIFICATIONS
EFFECTIVE: 01-17-12
REVISED: 07/30/12

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 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. 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.

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.

UNDERDRAINS:
UNDERDRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.03 AT LOCATIONS 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
DUKE Energy - Power Distribution
Century Link (Spirit, Emborg) - Telecommunications
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 CONTRACT.

#REF!
#REF!

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	
200.03	Method of Clearing - Method III
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
310.02	Parallel Pipe End Section - Precast Concrete Section for 15" to 24" Pipe
310.04	Parallel Pipe End Section - Prefabricated Steel Section for 15" to 24" Pipe
310.10	Driveway Pipe Construction
DIVISION 4 - MAJOR STRUCTURES	
422.11	Reinforced Bridge Approach Fills - Sub Regional Tier
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
815.03	Pipe Underdrain and Blind Drain
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
840.34	Traffic Bearing Junction Box - for Use with Pipes 42" and Under
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
840.71	Concrete and Brick Pipe Plug
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
852.01	Concrete Islands
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.02	Guide for Rip Rap at Pipe Outlets

8/17/99

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	----- (IP)
Property Corner	----- (X)
Property Monument	----- (ECM)
Parcel/Sequence Number	----- (23)
Existing Fence Line	----- (X-X-X)
Proposed Woven Wire Fence	----- (O)
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	----- (Skull & Crossbones)
Potential Soil Contamination: Area or Site	----- (Skull & Crossbones)

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	----- (O)
Sign	----- (S)
Well	----- (W)
Small Mine	----- (M)
Foundation	----- (F)
Area Outline	----- (A)
Cemetery	----- (C)
Building	----- (B)
School	----- (S)
Church	----- (C)
Dam	----- (D)

HYDROLOGY:

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

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	----- (MILEPOST 35)
Switch	----- (SWITCH)
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY:

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, IP)
Proposed Right of Way Line with Concrete or Granite RW Marker	----- (RW, CM)
Proposed Control of Access Line with Concrete C/A Marker	----- (C/A)
Existing Control of Access	----- (C/A)
Proposed Control of Access	----- (C/A)
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	----- (E, IP)

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	----- (X)
Single Tree	----- (☼)
Single Shrub	----- (☼)
Hedge	-----
Woods Line	-----

VEGETATION:

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	----- (PH)
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	----- (T)
Telephone Pedestal	----- (T)
Telephone Cell Tower	----- (T)
U/G Telephone Cable Hand Hole	----- (PH)
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	----- (M)
Water Valve	----- (V)
Water Hydrant	----- (H)
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	----- (S)
TV Pedestal	----- (T)
TV Tower	----- (T)
U/G TV Cable Hand Hole	----- (PH)
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	----- (M)
Recorded U/G Gas Line	----- (G)
Designated U/G Gas Line (S.U.E.*)	----- (G)
Above Ground Gas Line	----- (A/G Gas)

SANITARY SEWER:

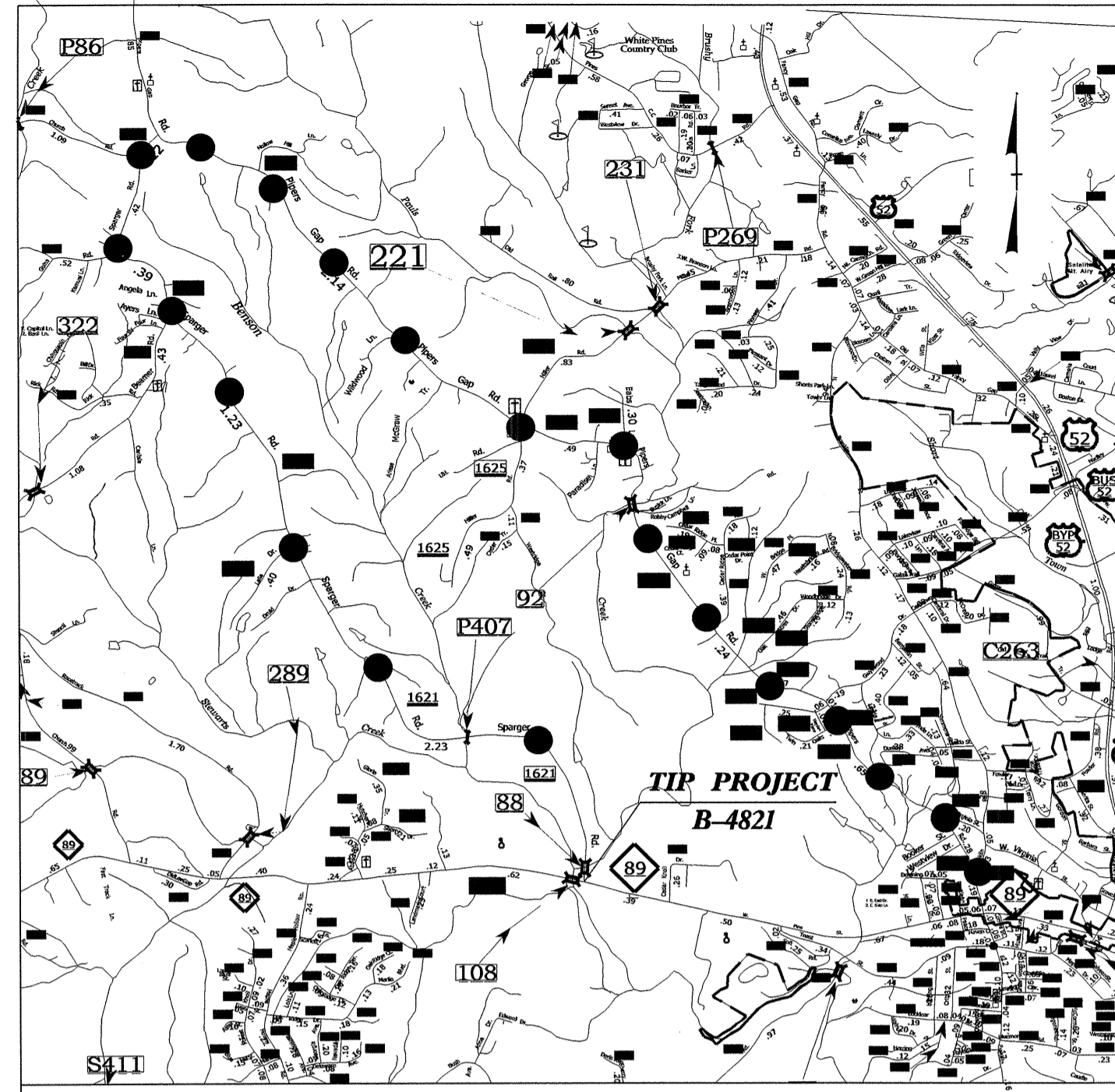
Sanitary Sewer Manhole	----- (SS)
Sanitary Sewer Cleanout	----- (SC)
U/G Sanitary Sewer Line	----- (SS)
Above Ground Sanitary Sewer	----- (A/G Sanitary Sewer)
Recorded SS Forced Main Line	----- (FSS)
Designated SS Forced Main Line (S.U.E.*)	----- (FSS)

MISCELLANEOUS:

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

04/16/11

SURVEY CONTROL SHEET B-4821



VICINITY MAP

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
11	BL-11		1006124.7984	1510086.0035	1062.71	OUTSIDE PROJECT LIMITS	
12	BL-12		1006586.1947	1510106.3729	1060.65	14+33.15	12.24 RT
1	OPS B4821-1		1007078.6059	1510125.0178	1083.06	OUTSIDE PROJECT LIMITS	
2	GPS B4821-2		1007954.6741	1509860.4738	1118.01	OUTSIDE PROJECT LIMITS	

.....
 BM*1 ELEVATION = 1051.80
 N 1006557. E 1510014.
 L STATION 13+97.91 78' LEFT
 RAILROAD SPIKE SET IN ROOT OF 30' SYCAMORE

**NC DOT GPS STATION B4821-2
 LOCALIZED COORDINATES**

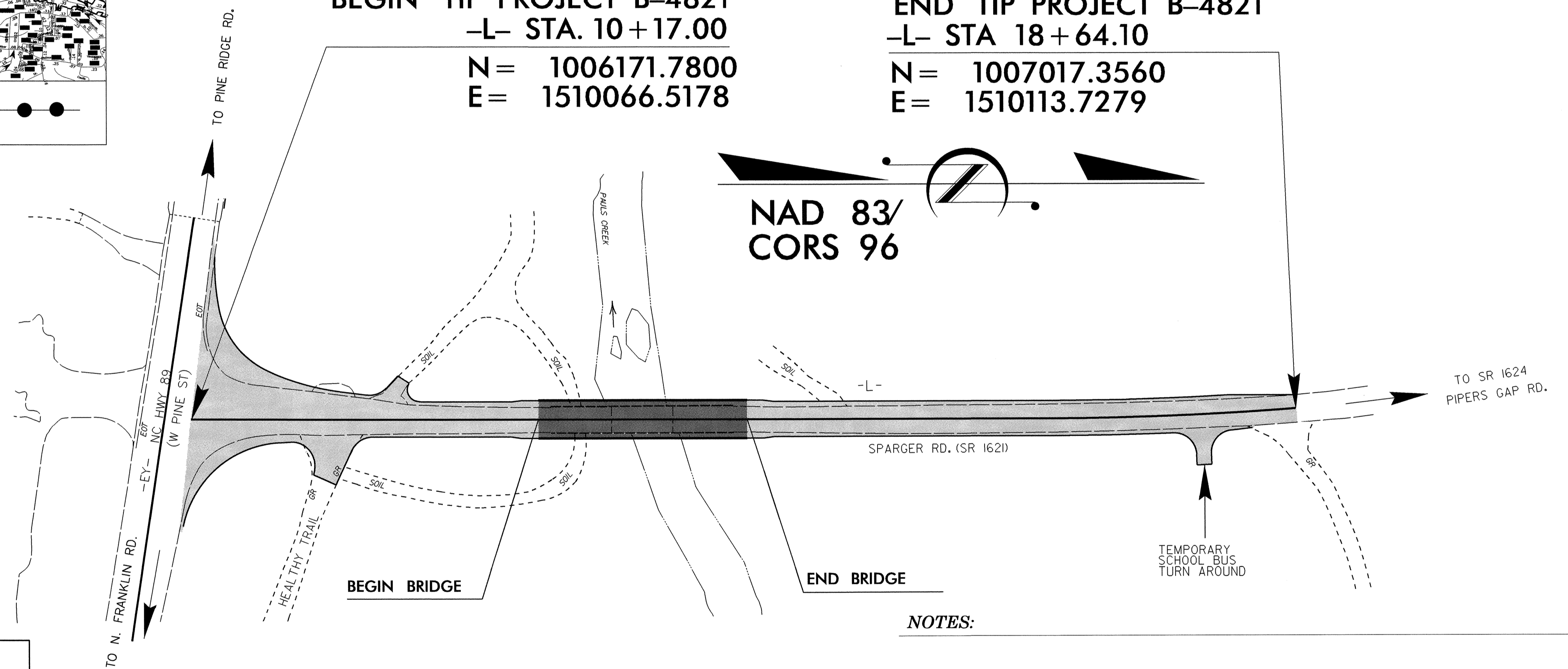
N = 1007954.6741
 E = 1509860.4738

**NC DOT GPS STATION B4821-1
 LOCALIZED COORDINATES**

N = 1007078.6059
 E = 1510125.0178

BEGIN TIP PROJECT B-4821
 -L- STA. 10+17.00
 N = 1006171.7800
 E = 1510066.5178

END TIP PROJECT B-4821
 -L- STA 18+64.10
 N = 1007017.3560
 E = 1510113.7279



NAD 83/
 CORS 96

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4821-1"
 WITH NAD 83/CORS 96 STATE PLANE GRID COORDINATES OF
 NORTHING: 1007078.6059(±) EASTING: 1510125.0178(±)
 ELEVATION: 1083.06(±)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99993465
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4821-1" TO -L- STATION 10+17.00 IS
 S 03°41'38" W 908.7109
 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:
[HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.ncdot.org/doh/preconstruct/highway/location/project/)

THE FILES TO BE FOUND ARE AS FOLLOWS:
 B4821_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.
 NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING SERVICE (OPUS)

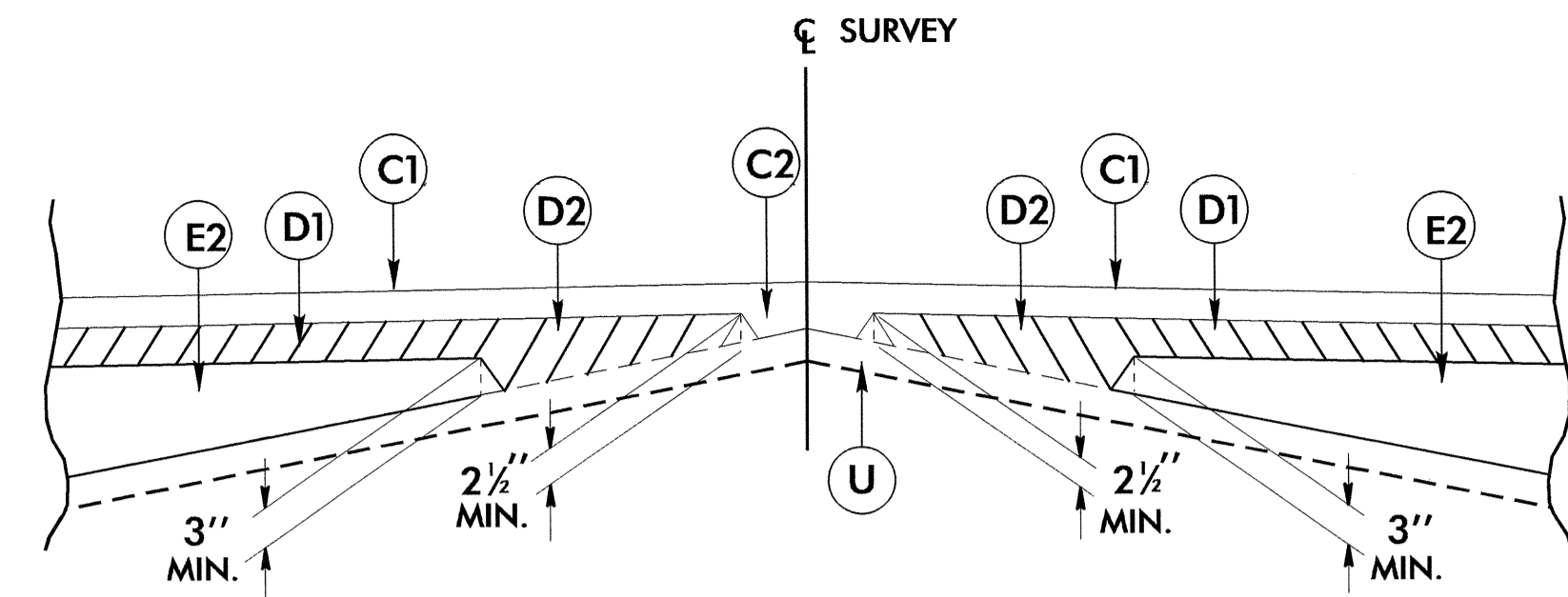
NOTE: DRAWING NOT TO SCALE

6/2/99

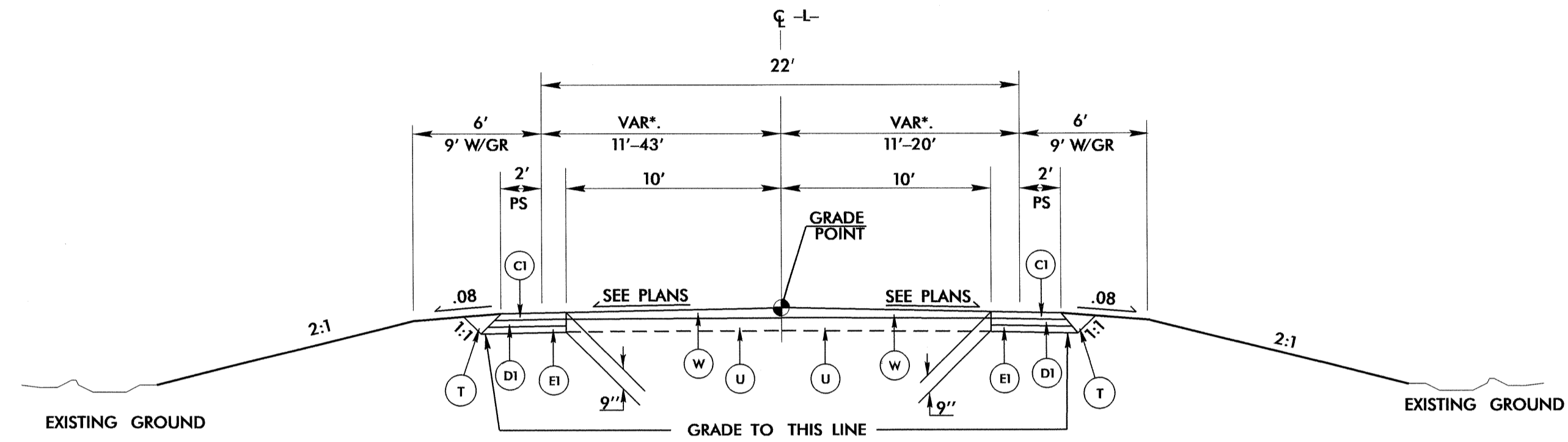
16-SEP-2013 10:26
 G:\Roadway\Projects\B4821\1s-1c.dgn
 11:51:15 AM

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1.5" IN DEPTH.
D1	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, 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 5 1/2" IN DEPTH.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL NO. 1).

NOTE: ALL SLOPES 1:1 UNLESS SHOWN OTHERWISE.



Detail Showing Method of Wedging No. 1



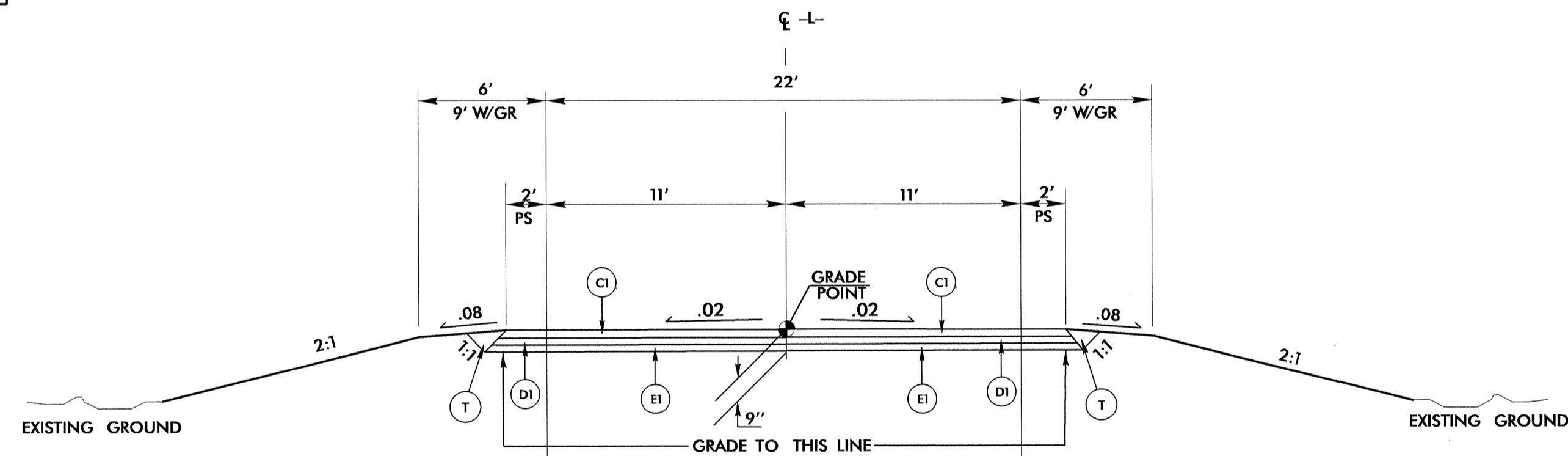
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 AS FOLLOWS

- *-L- STA. 10+17.00 TO STA. 12+00.00
- L- STA. 16+51.81 TO STA. 18+40.00

NOTE: TRANSITION FROM TYPICAL SECTION NO.1 TO EXISTING WIDTH

- L- STA. 18+40.00 TO STA.18+64.10



TYPICAL SECTION NO. 2

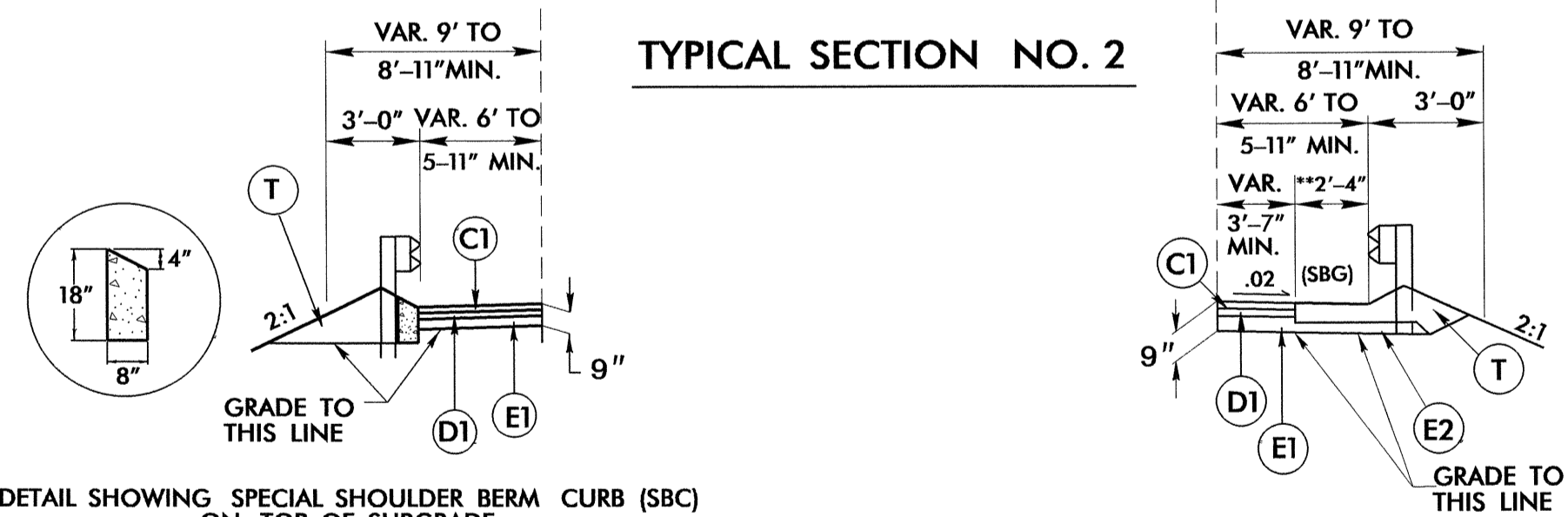
USE TYPICAL SECTION NO. 2 AS FOLLOWS

- L- STA. 12+00.00 TO -L- STA. 12+73.71 (BEGIN BRIDGE)
- L- STA. 14+26.29 (END BRIDGE) TO -L- STA. 16+51.81

NOTE:

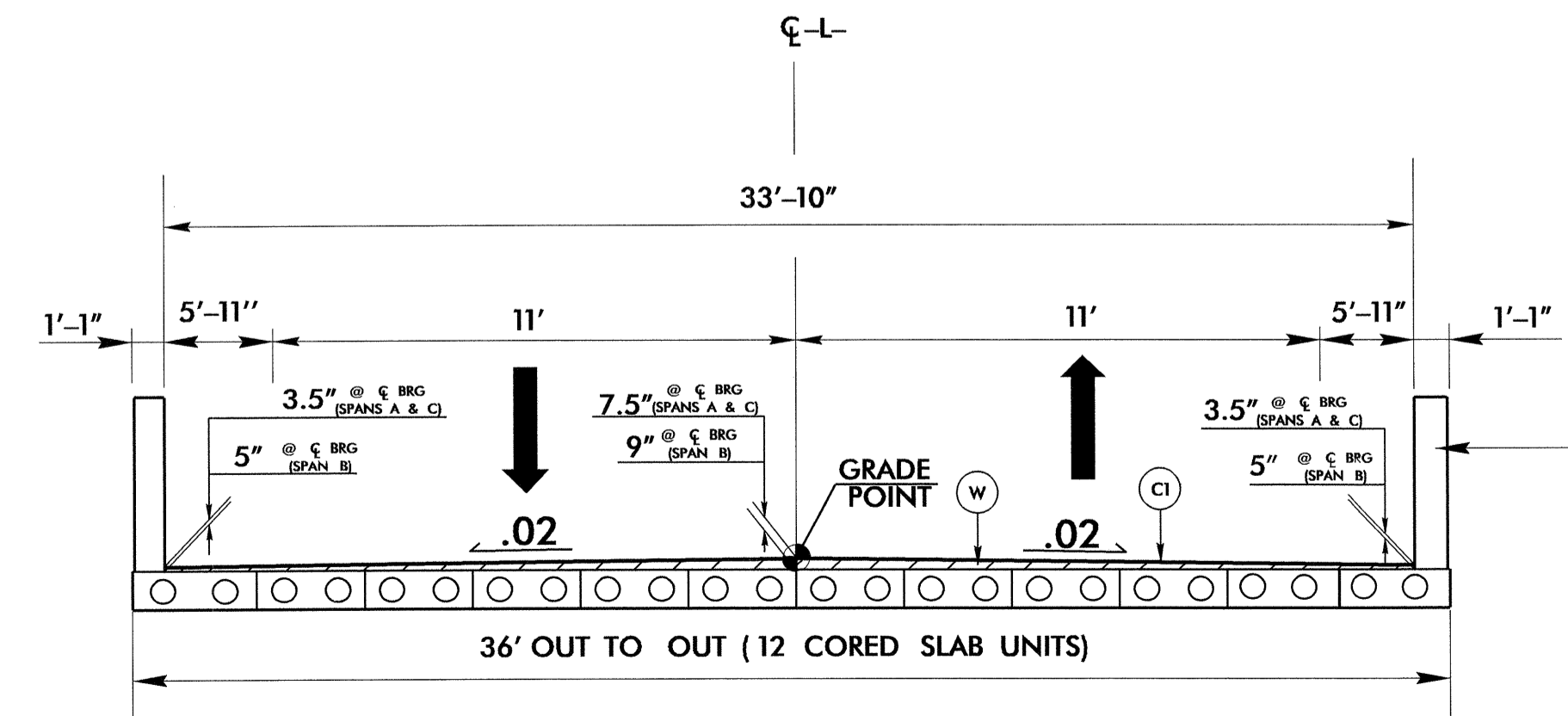
** INSTALL SHOULDER BERM GUTTER (SBG) AS FOLLOWS:

- L- STA. 14+33.00 TO STA. 15+14.00 (LT)
- L- STA. 14+41.00 TO STA. 15+56.00 (RT)
- SEE ROADWAY STD. DWG. NO 846.03



DETAIL SHOWING SPECIAL SHOULDER BERM CURB (SBC) ON TOP OF SUBGRADE

- L- STA. 12+56.69 TO -L- STA. 12+58.09 (BEGIN APPROACH SLAB) (RT)
- L- STA. 12+65.75 TO -L- STA. 12+67.15 (BEGIN APPROACH SLAB) (LT)



TYPICAL SECTION ON STRUCTURE

BEGIN BRIDGE -L- STA. 12+73.71 TO END BRIDGE -L- STA. 14+26.29

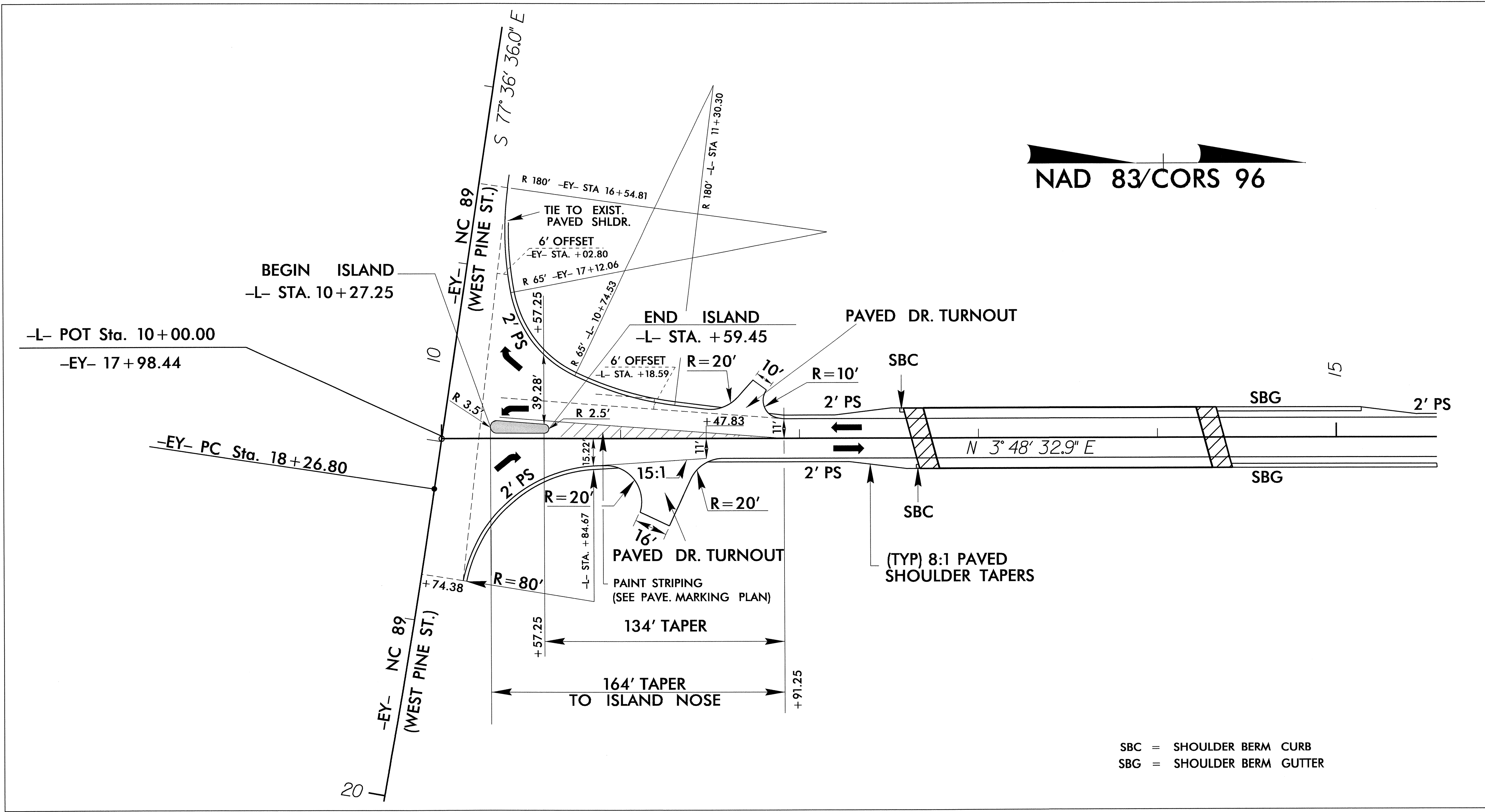
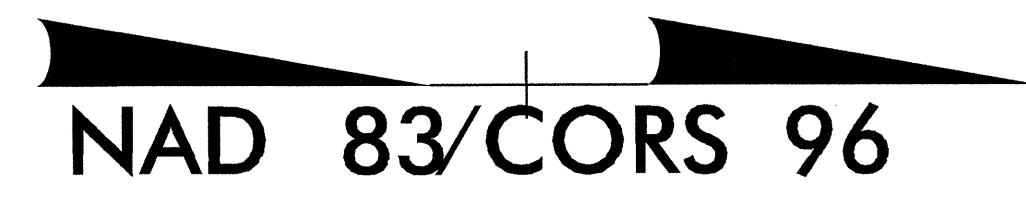
NOTE : USE -L- PAVEMENT DESIGN, FOR DRIVE TURNOUTS

NOTE : USE "INCIDENTAL STONE BASE" FOR TEMPORARY SCHOOL BUS TURNAROUND @ -L- STA. 17+79.00 (RT)

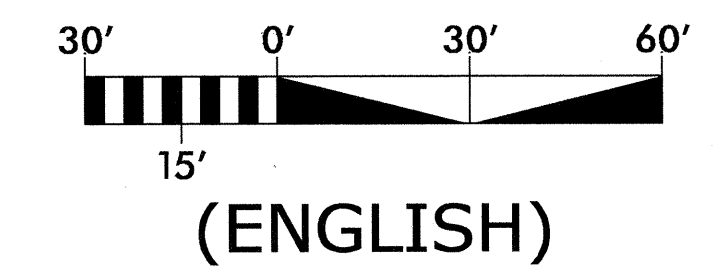
6/2/09

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INTERSECTION AND ISLAND DETAIL

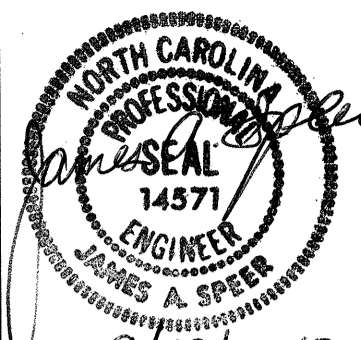



SBC = SHOULDER BERM CURB
 SBG = SHOULDER BERM GUTTER

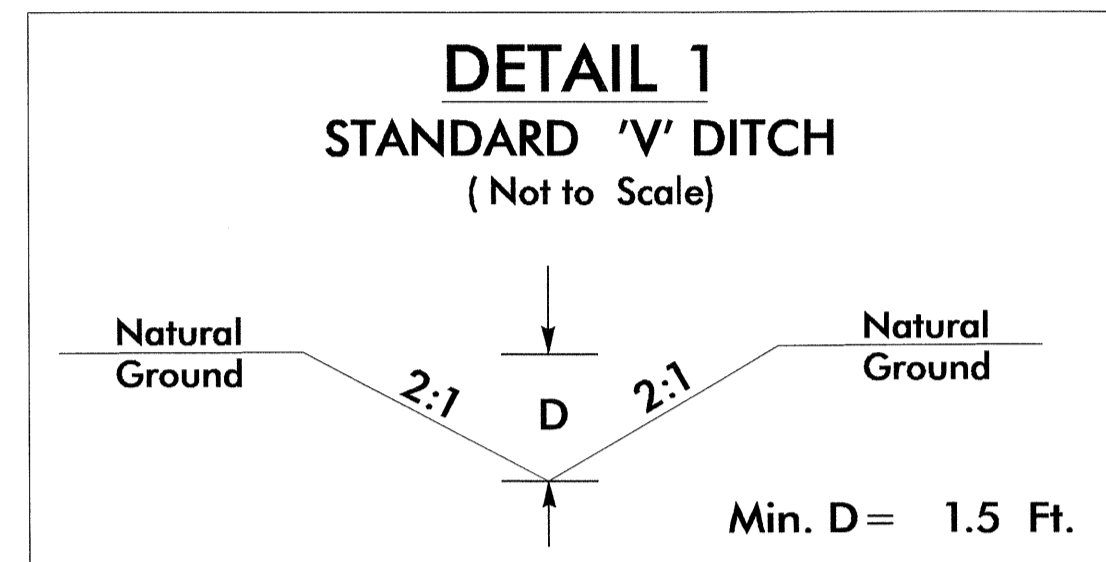


REVISIONS

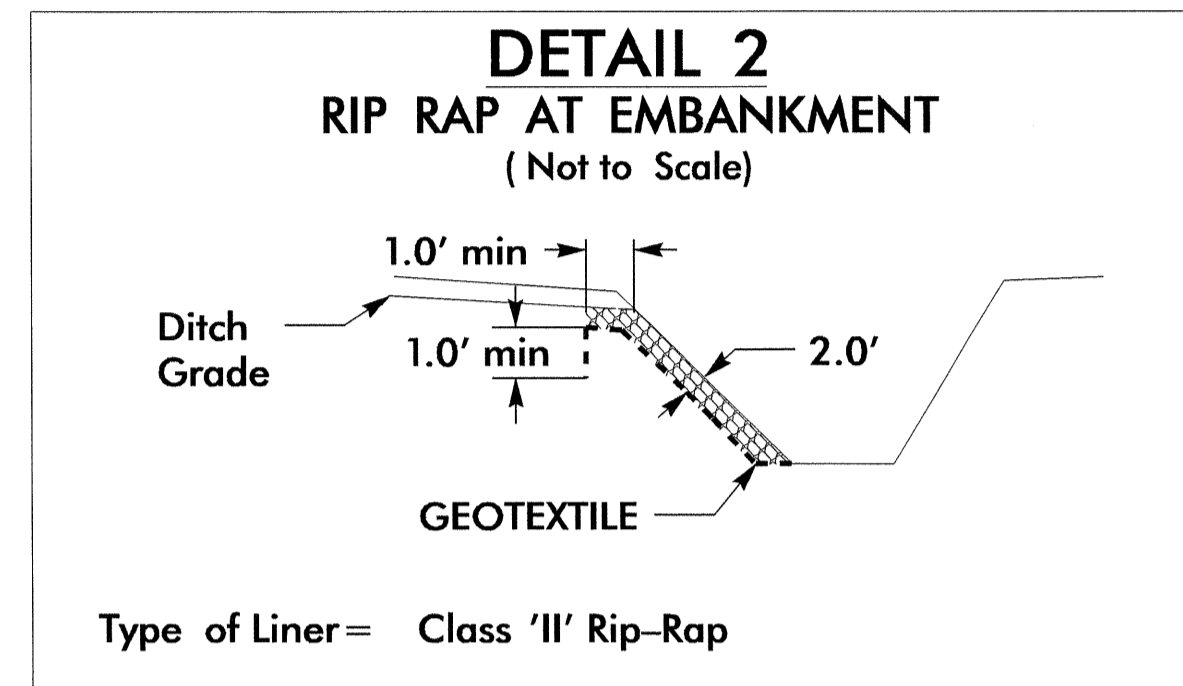
8/17/99
 15 SEP 2013 10:26 B:\4821\Redj-Intersection Detail\2A.dwg
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PROJECT REFERENCE NO. B-4821	SHEET NO. 2-B
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER 
9/18/2013	9-20-13

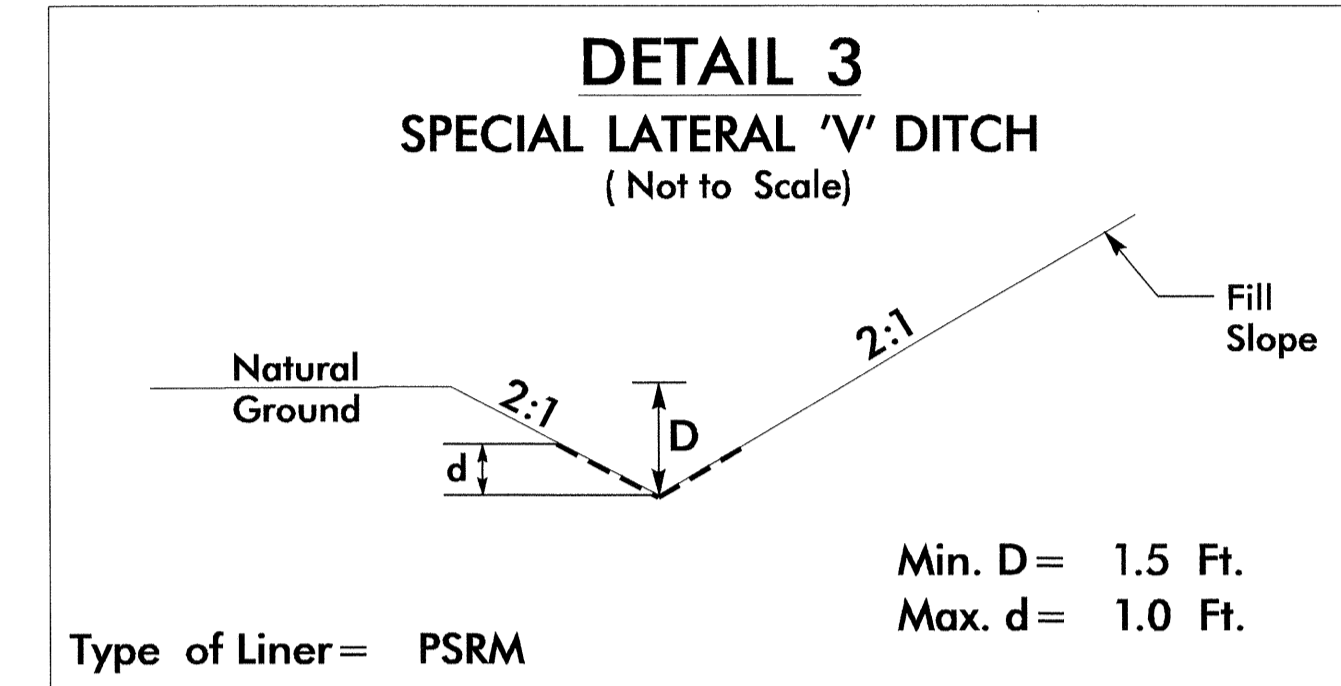
DITCH DETAIL SHEET



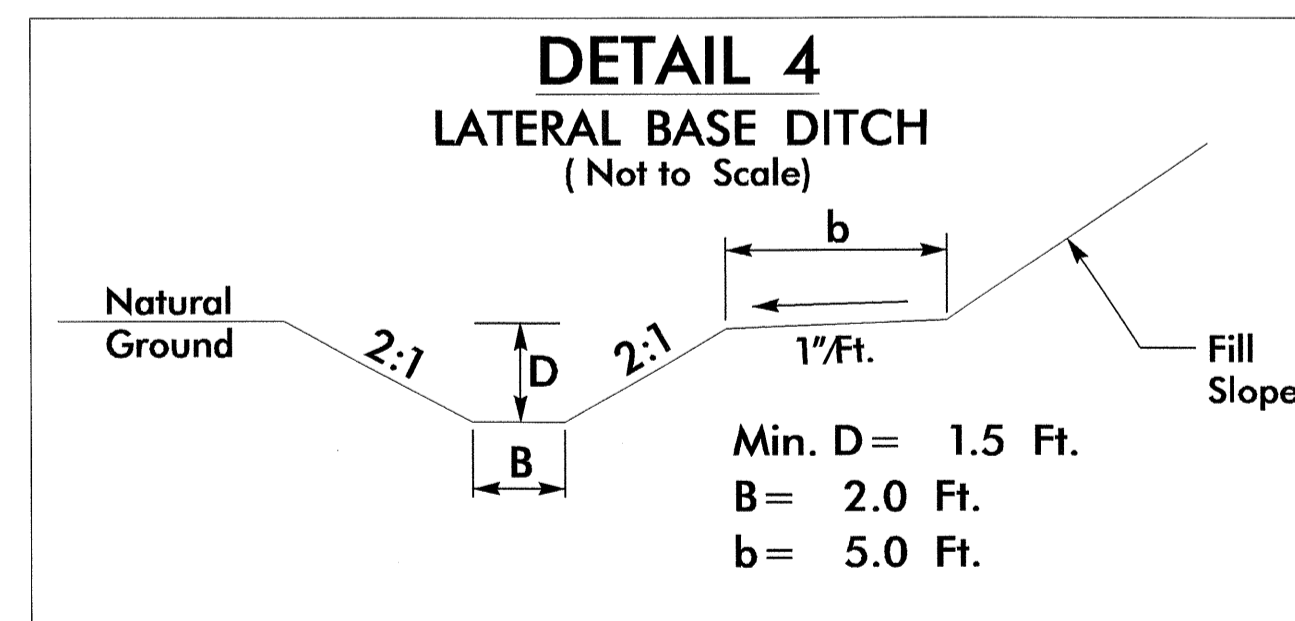
FROM STA. 13+00 TO STA. 13+53 -L- (RT)
DDE = 45 CY
Min. D = 1.5 Ft.



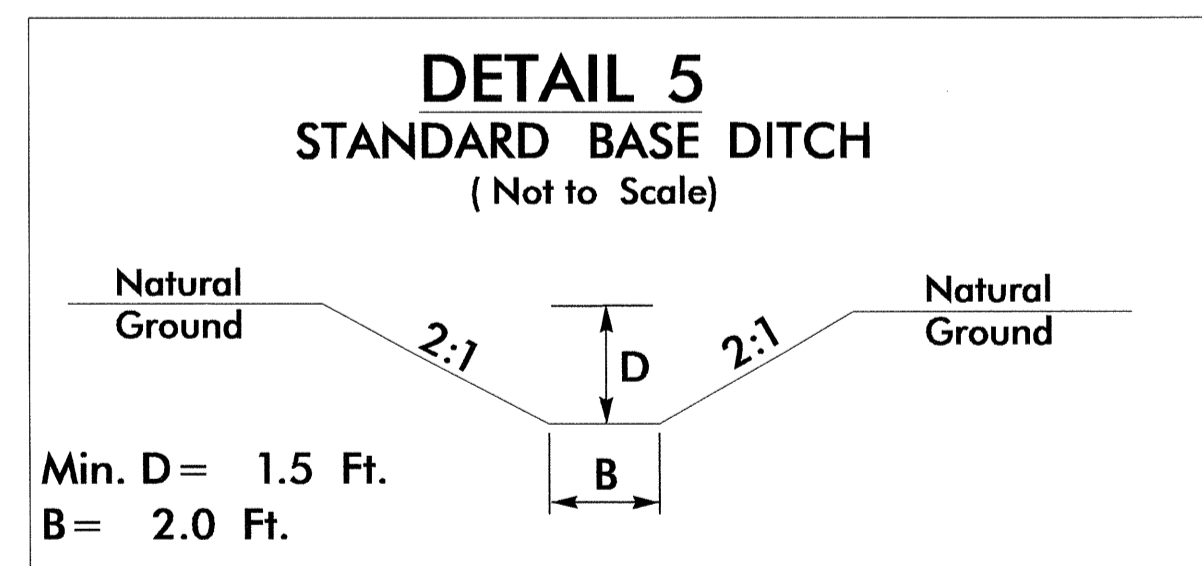
Type of Liner = Class 'II' Rip-Rap
STA. 13+53 -L- (RT)
STA. 13+77 -L- (LT)



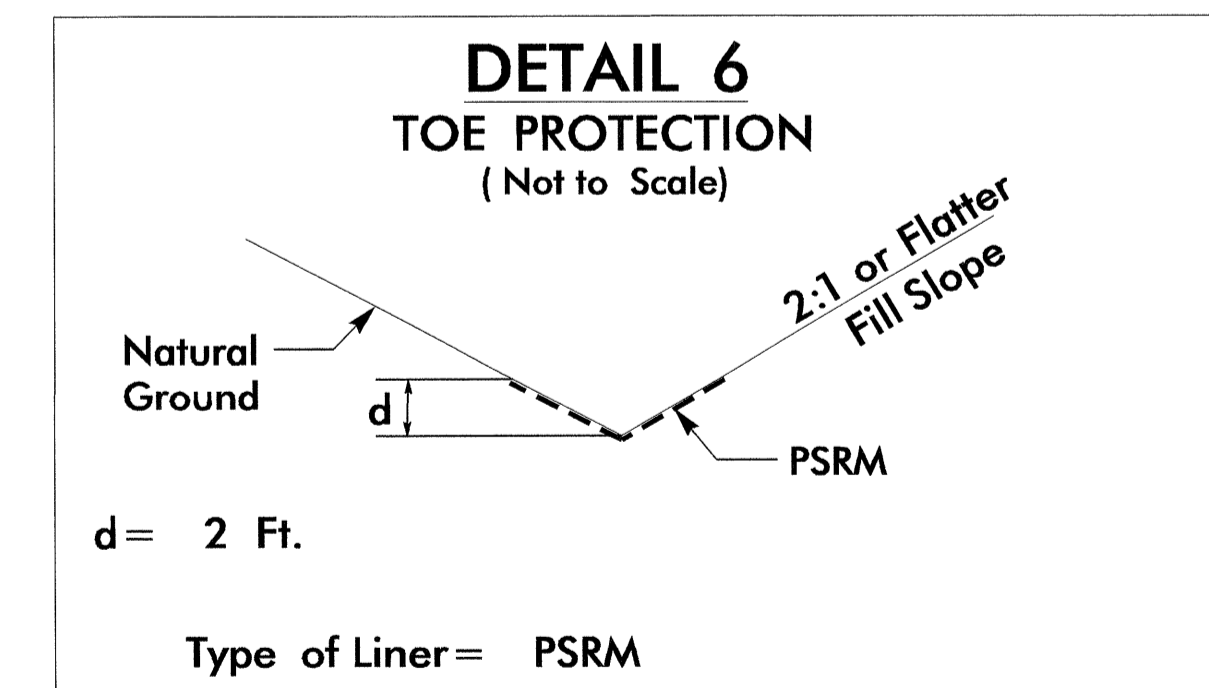
Type of Liner = PSRM
FROM STA. 17+73 TO STA. 18+40 -L- (LT)
Min. D = 1.5 Ft.
Max. d = 1.0 Ft.



FROM STA. 14+39 TO STA. 17+00 -L- (LT)
DDE = 276 CY
Min. D = 1.5 Ft.
B = 2.0 Ft.
b = 5.0 Ft.



FROM STA. 13+77 TO STA. 14+39 -L- (LT)
DDE = 85 CY
Min. D = 1.5 Ft.
B = 2.0 Ft.



FROM STA. 11+75 TO STA. 12+45 -L- (RT)
d = 2 Ft.
Type of Liner = PSRM

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C203287														
ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION	1489000000-E	610	610	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B	3270000000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
0000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING	1498000000-E	610	320	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE 119.0B	3635000000-E	876	65	TON	RIP RAP, CLASS II
0030000000-N	SP	Lump Sum		BRIDGE APPROACH FILL - SUB REGIONAL TIER, STATION ***** (13+50.00)	1525000000-E	610	370	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A	3649000000-E	876	20	TON	RIP RAP, CLASS B
0043000000-N	226	Lump Sum		GRADING	1575000000-E	620	70	TON	ASPHALT BINDER FOR PLANT MIX	3656000000-E	876	1,110	SY	GEOTEXTILE FOR DRAINAGE
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB-BING	1693000000-E	654	8	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR	4400000000-E	1110	306	SF	WORK ZONE SIGNS (STATIONARY)
0057000000-E	226	300	CY	UNDERCUT EXCAVATION	2000000000-N	806	4	EA	RIGHT OF WAY MARKERS	4405000000-E	1110	112	SF	WORK ZONE SIGNS (PORTABLE)
0134000000-E	240	410	CY	DRAINAGE DITCH EXCAVATION	2022000000-E	815	100.8	CY	SUBDRAIN EXCAVATION	4410000000-E	1110	89	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
0195000000-E	265	500	CY	SELECT GRANULAR MATERIAL	2023000000-E	815	50.4	CY	SUBDRAIN FINE AGGREGATE	4430000000-N	1135	25	EA	CONES
0196000000-E	270	1,300	SY	GEOTEXTILE FOR SOIL STABILIZATION	2044000000-E	815	300	LF	6" PERFORATED SUBDRAIN PIPE	4445000000-E	1145	192	LF	BARRICADES (TYPE III)
0318000000-E	300	40	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES	2070000000-N	815	1	EA	SUBDRAIN PIPE OUTLET	4450000000-N	1150	150	HR	FLAGGER
0320000000-E	300	130	SY	FOUNDATION CONDITIONING GEOTEXTILE	2077000000-E	815	6	LF	6" OUTLET PIPE	4516000000-N	1180	25	EA	SKINNY DRUM
0335300000-E	305	36	LF	18" DRAINAGE PIPE	2264000000-E	840	0.13	CY	PIPE PLUGS	4810000000-E	1205	7,617	LF	PAINT PAVEMENT MARKING LINES (4")
0335400000-E	305	84	LF	24" DRAINAGE PIPE	2286000000-N	840	5	EA	MASONRY DRAINAGE STRUCTURES	4820000000-E	1205	76	LF	PAINT PAVEMENT MARKING LINES (8")
0335850000-E	305	2	EA	*** DRAINAGE PIPE ELBOWS (18")	2308000000-E	840	6	LF	MASONRY DRAINAGE STRUCTURES	6000000000-E	1605	1,350	LF	TEMPORARY SILT FENCE
0335850000-E	305	2	EA	*** DRAINAGE PIPE ELBOWS (24")	2367000000-N	840	4	EA	FRAME WITH TWO GRATES, STD 840.29	6006000000-E	1610	165	TON	STONE FOR EROSION CONTROL, CLASS A
0378000000-E	310	68	LF	24" RC PIPE CULVERTS, CLASS III	2396000000-N	840	1	EA	FRAME WITH COVER, STD 840.54	6009000000-E	1610	185	TON	STONE FOR EROSION CONTROL, CLASS B
0448200000-E	310	96	LF	15" RC PIPE CULVERTS, CLASS IV	2556000000-E	846	200	LF	SHOULDER BERM GUTTER	6012000000-E	1610	310	TON	SEDIMENT CONTROL STONE
0448300000-E	310	92	LF	18" RC PIPE CULVERTS, CLASS IV	2647000000-E	852	22	SY	5" MONOLITHIC CONCRETE ISLANDS (SURFACE MOUNTED)	6015000000-E	1615	1	ACR	TEMPORARY MULCHING
0453000000-E	310	1	EA	*** PIPE END SECTION (24")	2752000000-E	SP	4	LF	GENERIC PAVING ITEM SPECIAL SHOULDER BERM CURB	6018000000-E	1620	100	LB	SEED FOR TEMPORARY SEEDING
0995000000-E	340	20	LF	PIPE REMOVAL	2845000000-N	858	1	EA	ADJUSTMENT OF METER BOXES OR VALVE BOXES	6021000000-E	1620	1.25	TON	FERTILIZER FOR TEMPORARY SEEDING
1099500000-E	505	300	CY	SHALLOW UNDERCUT	3030000000-E	862	487.5	LF	STEEL BM GUARDRAIL	6024000000-E	1622	200	LF	TEMPORARY SLOPE DRAINS
1099700000-E	505	600	TON	CLASS IV SUBGRADE STABILIZATION	3045000000-E	862	75	LF	STEEL BM GUARDRAIL, SHOP CURVED	6029000000-E	SP	100	LF	SAFETY FENCE
1220000000-E	545	150	TON	INCIDENTAL STONE BASE	3150000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS	6030000000-E	1630	760	CY	SILT EXCAVATION
1330000000-E	607	100	SY	INCIDENTAL MILLING	3195000000-N	862	1	EA	GUARDRAIL ANCHOR UNITS, TYPE AT-1	6036000000-E	1631	2,200	SY	MATTING FOR EROSION CONTROL
					3215000000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE III	6037000000-E	SP	220	SY	COIR FIBER MAT
										6038000000-E	SP	90	SY	PERMANENT SOIL REINFORCEMENT MAT
										6042000000-E	1632	355	LF	1/4" HARDWARE CLOTH
										6070000000-N	1639	8	EA	SPECIAL STILLING BASINS
										6071010000-E	SP	210	LF	WATTLE
										6071020000-E	SP	65	LB	POLYACRYLAMIDE (PAM)
										6071030000-E	1640	270	LF	COIR FIBER BAFFLE
										6071050000-E	SP	4	EA	*** SKIMMER (1-1/2")
										6084000000-E	1660	1.5	ACR	SEEDING & MULCHING
										6087000000-E	1660	0.5	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	1.5	TON	FERTILIZER TOPDRESSING
										6114500000-N	1667	10	MHR	SPECIALIZED HAND MOWING
										6117000000-N	SP	25	EA	RESPONSE FOR EROSION CONTROL

5/28/99

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUB-REGIONAL & REGIONAL

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

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".

Main table listing pipe details including Station, Location, Structure No., Top Elevation, Invert Elevation, Slope, Critical, Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC), C.S. Pipe, R.C. Pipe (Class III), R.C. Pipe (Class IV), Endwalls, Quantities for Drainage Structures, Frame, Grates and Hood Standard 840.03, Concrete Transitional Section, M.H. Frame & Cover Std. 840.54, T.B.D.I. Std. 840.34, T.B.D.I. Std. 840.35, T.B.D.I. (N.S.) Frame with Two Grates Std. 840.29, Drainage Pipe Elbows No. & Size, Parallel Pipe End Section Std. 310.02 or 310.04, Pipe Plug (CY), Pipe Removal Lin. Ft., and Remarks.

"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

Table with columns: Survey Line, Beg. Sta., End Sta., Location, Length (Straight, Shop Curved, Double Faced), Warrant Point (Approach End, Trailing End), "N" Dist. from E.O.L., Total Shoulder Width, Flare Length (Approach End, Trailing End), W (Approach End, Trailing End), Anchors (Type III, GRAU-350 TL-3, AT-1), Impact Attenuator Type 350 (EA, G, NG), Single Faced Guardrail, Remove Existing Guardrail, Remove and Stockpile Existing Guardrail, Remarks.

SUMMARY OF EARTHWORK

Table with columns: Station, Station, UNCL EXCAV., EMBANK. +%, BORROW, WASTE. Includes sub-totals for PROJECT TOTALS, FOR BORROW PIT, GRAND TOTALS, and SAY.

SUMMARY OF SUBSURFACE DRAINAGE

Table with columns: Station, Station, Location LTR/VCL, Drainage Type UD/BD/SD, LF.

"UD" = UNDERDRAIN
"BD" = BLIND DRAIN
"SD" = SUBSURFACE DRAIN

ASPHALT PAVEMENT REMOVAL IN SQUARE YARDS

Table with columns: Line, Begin Station, End Station, Location, Length. Includes a sub-total for SAY.

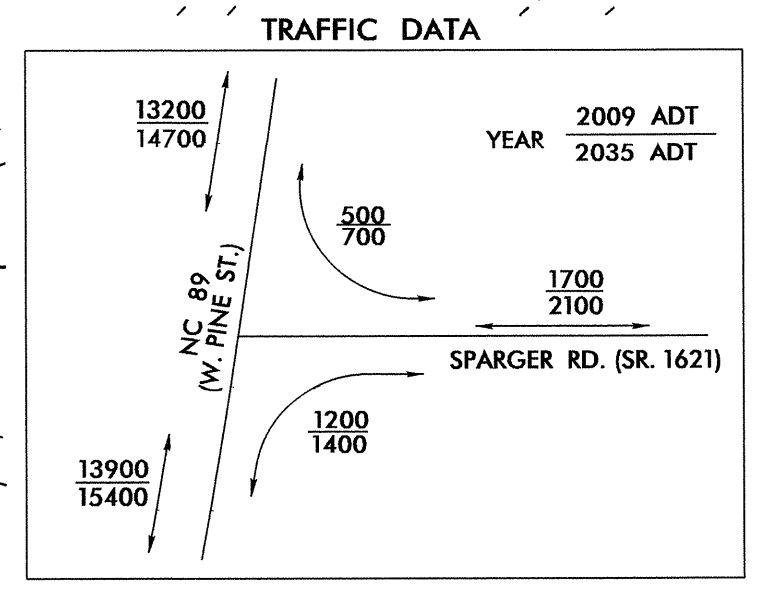
Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

SHOULDER BERM GUTTER SUMMARY

Table with columns: Line, Begin Station, End Station, Location, Length. Includes a sub-total for SAY.

4/04/06 SEP-2013 10:00 AM NB-4821-Rdy-sum.dgn



-L-
 $PI\ Sta\ 17+45.66$
 $\Delta = 4\ 23'\ 16.1''\ (LT)$
 $D = 2\ 20'\ 19.0''$
 $L = 187.62'$
 $T = 93.86'$
 $R = 2,450.00'$
 $SE = 0.044$
 $RUNOFF = 106'$

-EY-
 $PI\ Sta\ 20+70.83$
 $\Delta = 4\ 52'\ 39.2''\ (RT)$
 $D = 1\ 00'\ 00.0''$
 $L = 487.76'$
 $T = 244.03'$
 $R = 5,729.58'$

NAD 83/CORS 96

BEGIN TIP PROJECT B-4821
 -L- 10+17.00

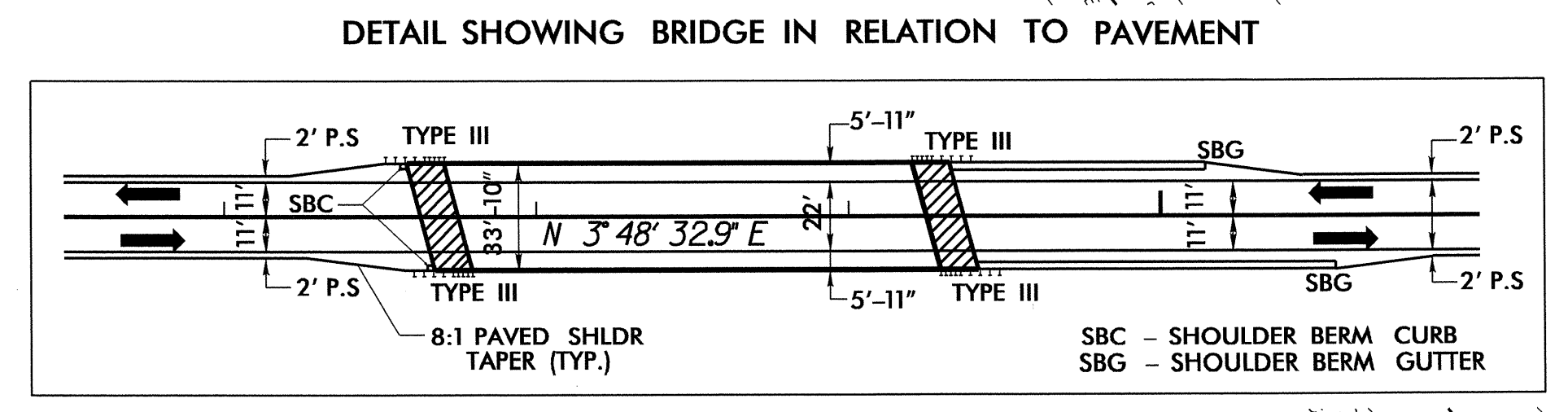
BEGIN APPR. SLAB
 -L- STA. 12+62.75

BEGIN BRIDGE
 -L- STA. 12+73.71

END APPR. SLAB
 -L- STA. 14+37.25

END BRIDGE
 -L- STA. 14+26.29

END TIP PROJECT B-4821
 -L- 18+64.10



SEE SHEET 2A FOR INTERSECTION AND ISLAND DETAIL SHEET

SEE SHEET 2B FOR DITCH DETAIL SHEET

SEE SHEET 5 FOR PROFILE
 SEE SHEET S1 THRU. S22 FOR STRUCTURE PLANS

8/17/99

REVISIONS

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 MATT 123 42

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE = 4100 CFS
DESIGN FREQUENCY = 25 YRS
DESIGN HW ELEVATION = 1053.3 FT
BASE DISCHARGE = 5700 CFS
BASE FREQUENCY = 100 YRS
BASE HW ELEVATION = 1054.85 FT
OVERTOPPING DISCHARGE = 15500 CFS
OVERTOPPING FREQUENCY = 500 YRS
OVERTOPPING ELEVATION = 1061.7 FT

DATE OF SURVEY = March 22, 2012
W.S. ELEVATION AT DATE OF SURVEY = 1042.9 FT

-L-

BEGIN GRADE
-L- STA. 10+17.00
ELEV. = 1063.48

CL STA 13+50.00 -L-
21" and 24" CORED SLABS
1 @ 40', 1 @ 70', 1 @ 40'
W/SPILL THROUGH SLOPES
CL ELEV = 1062.09'
75 ^ SKEW

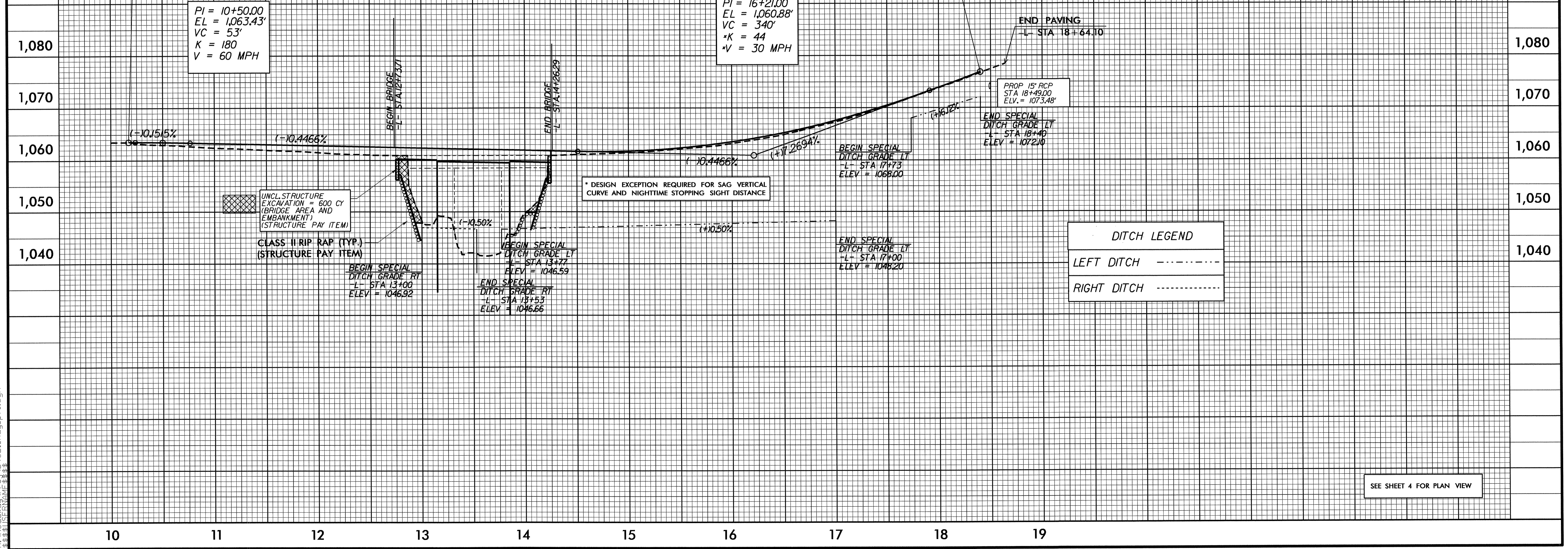
END GRADE
-L- STA. 18+40.00
ELEV. 1076.80

BM # 1 RAIL SPIKE SET IN
ROOT OF 30" SYCAMORE
-L- STA. 13+97.91
78.20' LT
ELEV. 1051.80'

PIPE HYDRAULIC DATA

-L- Sta. 18+49.20

DRAINAGE AREA = 11 AC
DESIGN FREQUENCY = 25 YRS
DESIGN DISCHARGE = 2.60 CFS
DESIGN HW ELEVATION = 1075.45 FT
100 YEAR DISCHARGE = 3 CFS
100 YEAR HW ELEVATION = 1075.54 FT
OVERTOPPING FREQUENCY = N/A YRS
OVERTOPPING DISCHARGE = N/A CFS
OVERTOPPING ELEVATION = N/A FT



DITCH LEGEND

LEFT DITCH - - - - -

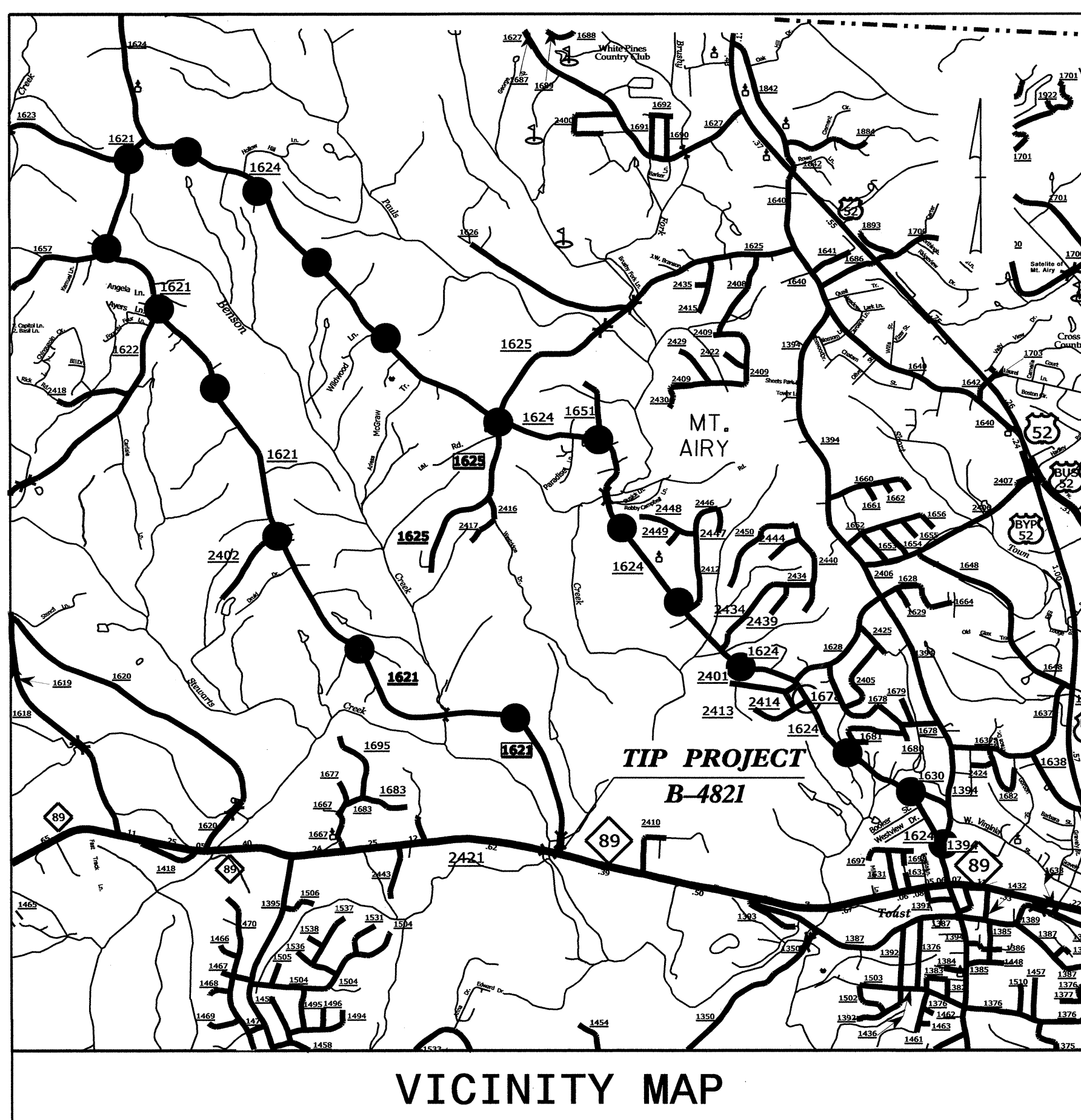
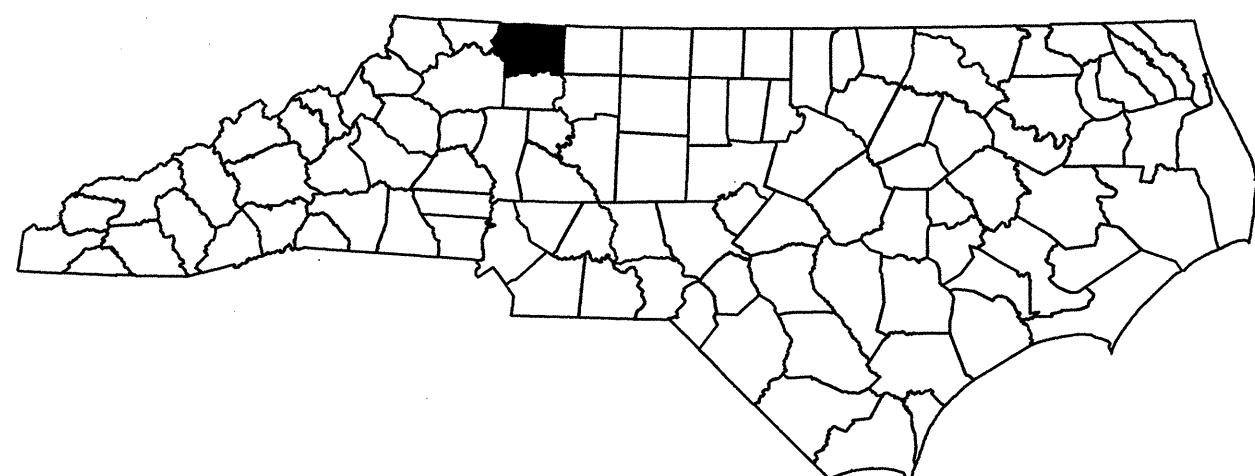
RIGHT DITCH - - - - -

SEE SHEET 4 FOR PLAN VIEW

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

SURRY COUNTY



VICINITY MAP

INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES AND GENERAL NOTES)
TMP-2	SPECIAL SIGN DESIGN
TMP-3	PLAN DETAILS AND PHASING
TMP-4	DETOUR ROUTE

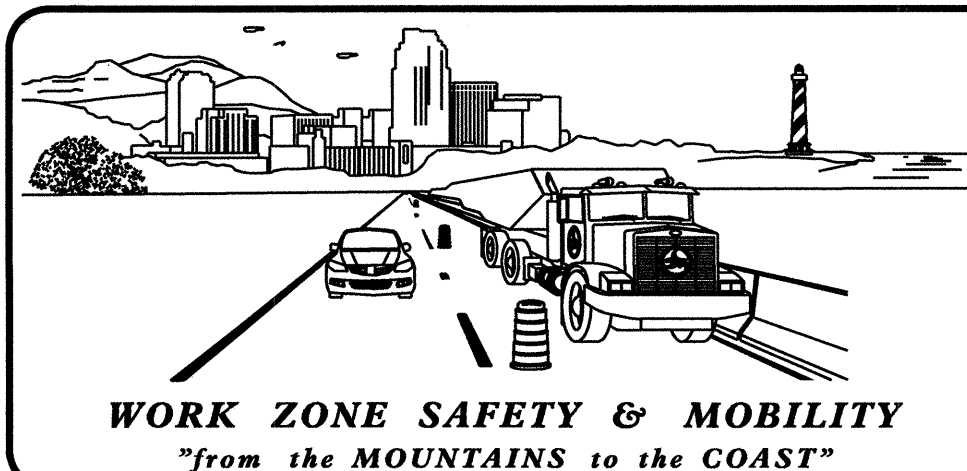
SHEET NO.

TMP-1

B-4821

TIP PROJECT:

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KBroadwell AT TE266004



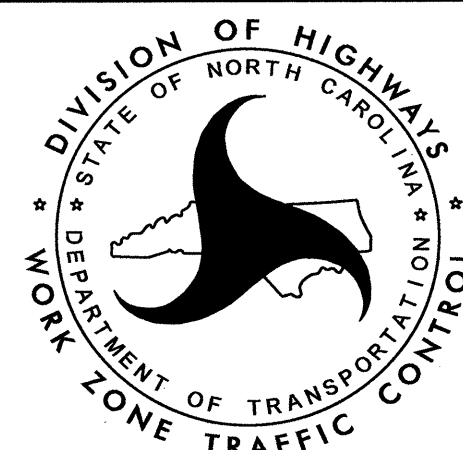
N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)
PHONE: (919) 773-2800 FAX: (919) 771-2745

J. S. BOURNE, P.E. STATE TRAFFIC MANAGEMENT ENGINEER

G. L. GETTIER, P.E. TRAFFIC CONTROL PROJECT ENGINEER

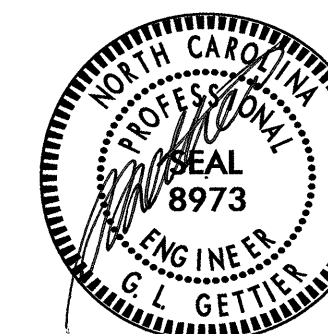
J. W. GILSTRAP *JWG* TRAFFIC CONTROL PROJECT DESIGN ENGINEER

KEN BROADWELL TRAFFIC CONTROL DESIGN ENGINEER *KPB*



APPROVED: _____
DATE: _____

SEAL



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 JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

<u>STD. NO.</u>	<u>TITLE</u>
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES - TYPE III
1150.01	FLAGGING DEVICES
1180.01	SKINNY - DRUM

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- NORTH ARROW

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM SKINNY DRUM

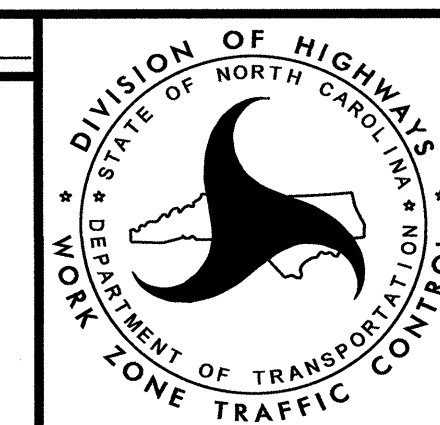
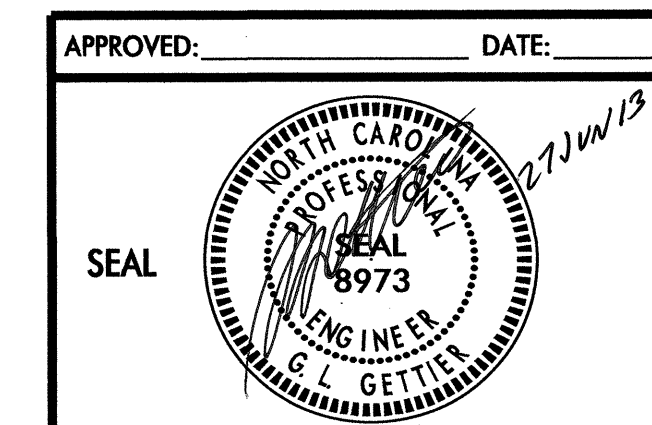
TEMPORARY SIGNING

- STATIONARY SIGN

PAVEMENT MARKING SCHEDULE

N/A

27-JUN-2013 06:57
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 kbroodwell AT TE266004



ROADWAY STANDARD
DRAWINGS AND LEGEND

TRANSPORTATION OPERATIONS

CONSTRUCTION

REMOVE AND REPLACE EXISTING STRUCTURE AND APPROACHES ALONG THE EXISTING ROADWAY ALIGNMENT AS SHOWN IN THE CONSTRUCTION PLANS.

TMP DESIGN PARAMETERS

A TEMPORARY SCHOOL BUS TURN AROUND SHALL BE CONSTRUCTED PRIOR TO CLOSING SR 1621 (SPARGER RD. -L-) (SEE SHEET TMP-3).

TRAFFIC SHALL BE DETOURED OFFSITE DURING THE CONSTRUCTION PERIOD.

THE OFFSITE DETOUR SHALL INCLUDE NC 89, SR 1394 AND SR 1624. (SEE SHEET TMP-4).

TRAFFIC SHALL BE MAINTAINED TO THE EXISTING ROADWAY & DRIVEWAY LOCATED WITHIN THE PROJECT LIMITS. (SEE SHEET TMP-3).

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 UNDESIRE 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.

TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
1. NC 89	MONDAY THRU FRIDAY (SCHOOL DAYS ONLY) 7:00 AM - 9:00 AM AND 2:30 PM - 3:30 PM

LANE AND SHOULDER CLOSURE REQUIREMENTS

- B) 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.
- C) 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.
- D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- E) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

PAVEMENT EDGE DROP OFF REQUIREMENTS

F) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS A DROP-OFF AS FOLLOWS:

BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.

BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.

TRAFFIC PATTERN ALTERATIONS

G) NOTIFY THE ENGINEER THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

H) 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 IN THE TRAFFIC CONTROL PLANS.

I) 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.

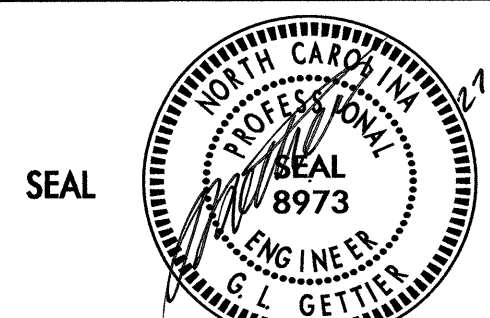


J) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

K) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

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

27-JUN-2013 11:59 \\dot\dfsroot\01\Proj\TIP\Projects-B\B4821\Traffic\TrafficControl\TCP\TMP-1.dgn kbr\codwell AT 1E266004

APPROVED: _____ DATE: _____			<h2>TRANSPORTATION OPERATIONS & GENERAL NOTES</h2>
			

SIGN NUMBER: SP13075 BACKG COLOR: Fluorescent Orange		DESIGN BY: W. Johnson	CHECKED BY:	DATE: Mar 25, 2013
TYPE: STATIONARY COPY COLOR: Black		PROJECT ID: B-4821	DIV: 11	
QUANTITY: SEE PLANS				
SIGN WIDTH: 4'-0"				
HEIGHT: 1'-6"				
TOTAL AREA: 6.0 Sq.Ft.				
BORDER TYPE: INSET				
RECESS: 0.38"				
WIDTH: 0.63"				
RADII: 1.5"				
NO. Z BARS:				
LENGTH:				

SYMBOL	X	Y	WID	HT

MAT'L: 0.080" (2.0 mm) ALUMINUM

BORDER 3.95" 40.1" 3.95"
R=1.5"
TH=0.63"
IN=0.38"

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

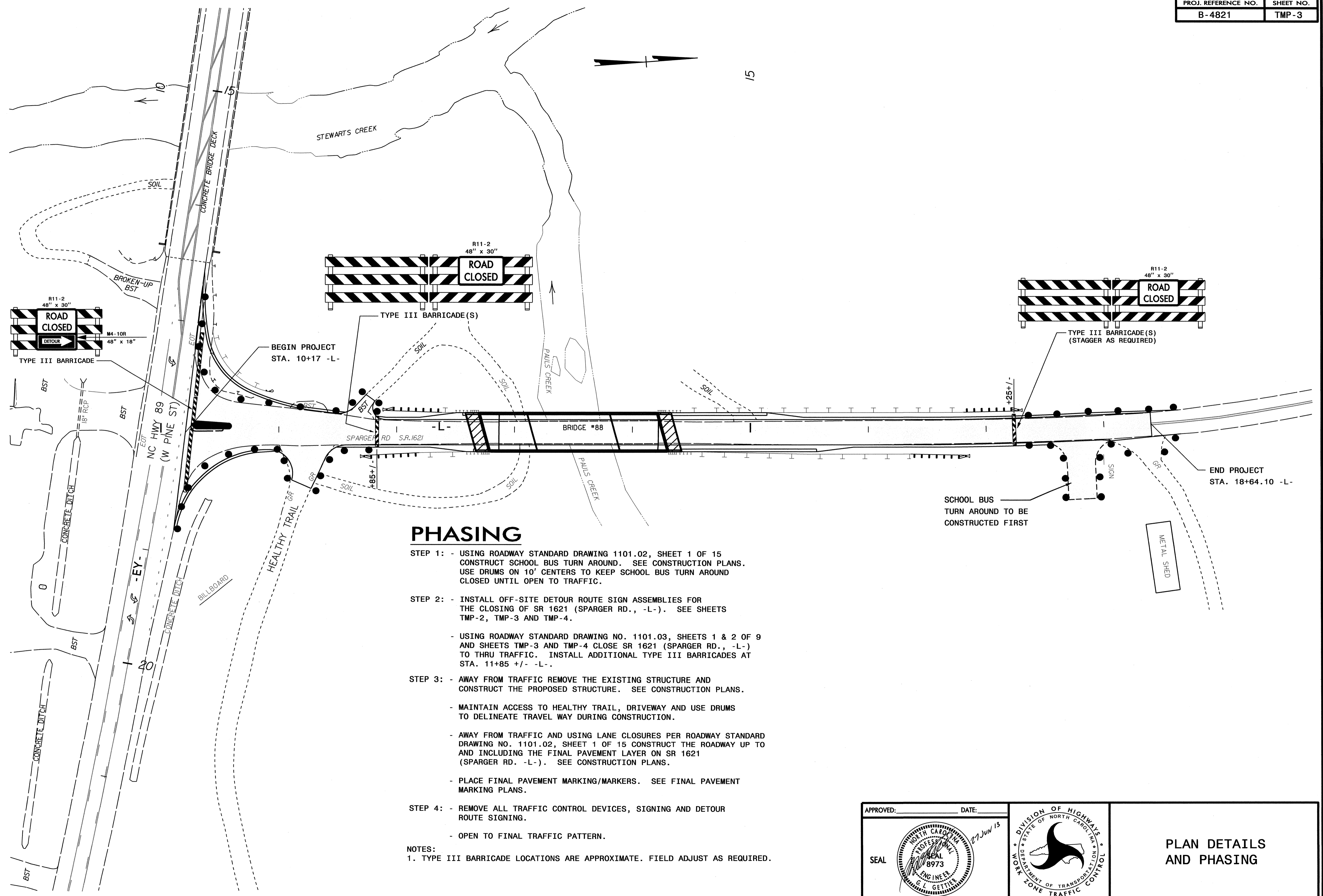
Letter spacings are to start of next letter

Letter spacings are to start of next letter														Series/Size	
														Text Length	
S	p	a	r	g	e	r	R	d							D 2000
3.9	5	4.3	4.6	2.8	4.6	4.4	2.3	4	4.7	3.6	3.9				40.1

FILENAME: Sign Design NORTH CAROLINA D.O.T. SIGN DETAIL

"The special sign design shown on this sheet was provided through a sealed document from Signing and Delineation. The document was submitted to WZTC on April 1, 2013 and sealed by a Professional Engineer, Ronald W. King, license # 022959".

APPROVED: _____ DATE: _____			SPECIAL SIGN DESIGN
SEAL			



PHASING

- STEP 1: - USING ROADWAY STANDARD DRAWING 1101.02, SHEET 1 OF 15 CONSTRUCT SCHOOL BUS TURN AROUND. SEE CONSTRUCTION PLANS. USE DRUMS ON 10' CENTERS TO KEEP SCHOOL BUS TURN AROUND CLOSED UNTIL OPEN TO TRAFFIC.
- STEP 2: - INSTALL OFF-SITE DETOUR ROUTE SIGN ASSEMBLIES FOR THE CLOSING OF SR 1621 (SPARGER RD., -L-). SEE SHEETS TMP-2, TMP-3 AND TMP-4.
- USING ROADWAY STANDARD DRAWING NO. 1101.03, SHEETS 1 & 2 OF 9 AND SHEETS TMP-3 AND TMP-4 CLOSE SR 1621 (SPARGER RD., -L-) TO THRU TRAFFIC. INSTALL ADDITIONAL TYPE III BARRICADES AT STA. 11+85 +/- -L-.
- STEP 3: - AWAY FROM TRAFFIC REMOVE THE EXISTING STRUCTURE AND CONSTRUCT THE PROPOSED STRUCTURE. SEE CONSTRUCTION PLANS.
- MAINTAIN ACCESS TO HEALTHY TRAIL, DRIVEWAY AND USE DRUMS TO DELINEATE TRAVEL WAY DURING CONSTRUCTION.
- AWAY FROM TRAFFIC AND USING LANE CLOSURES PER ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 15 CONSTRUCT THE ROADWAY UP TO AND INCLUDING THE FINAL PAVEMENT LAYER ON SR 1621 (SPARGER RD. -L-). SEE CONSTRUCTION PLANS.
- PLACE FINAL PAVEMENT MARKING/MARKERS. SEE FINAL PAVEMENT MARKING PLANS.
- STEP 4: - REMOVE ALL TRAFFIC CONTROL DEVICES, SIGNING AND DETOUR ROUTE SIGNING.
- OPEN TO FINAL TRAFFIC PATTERN.

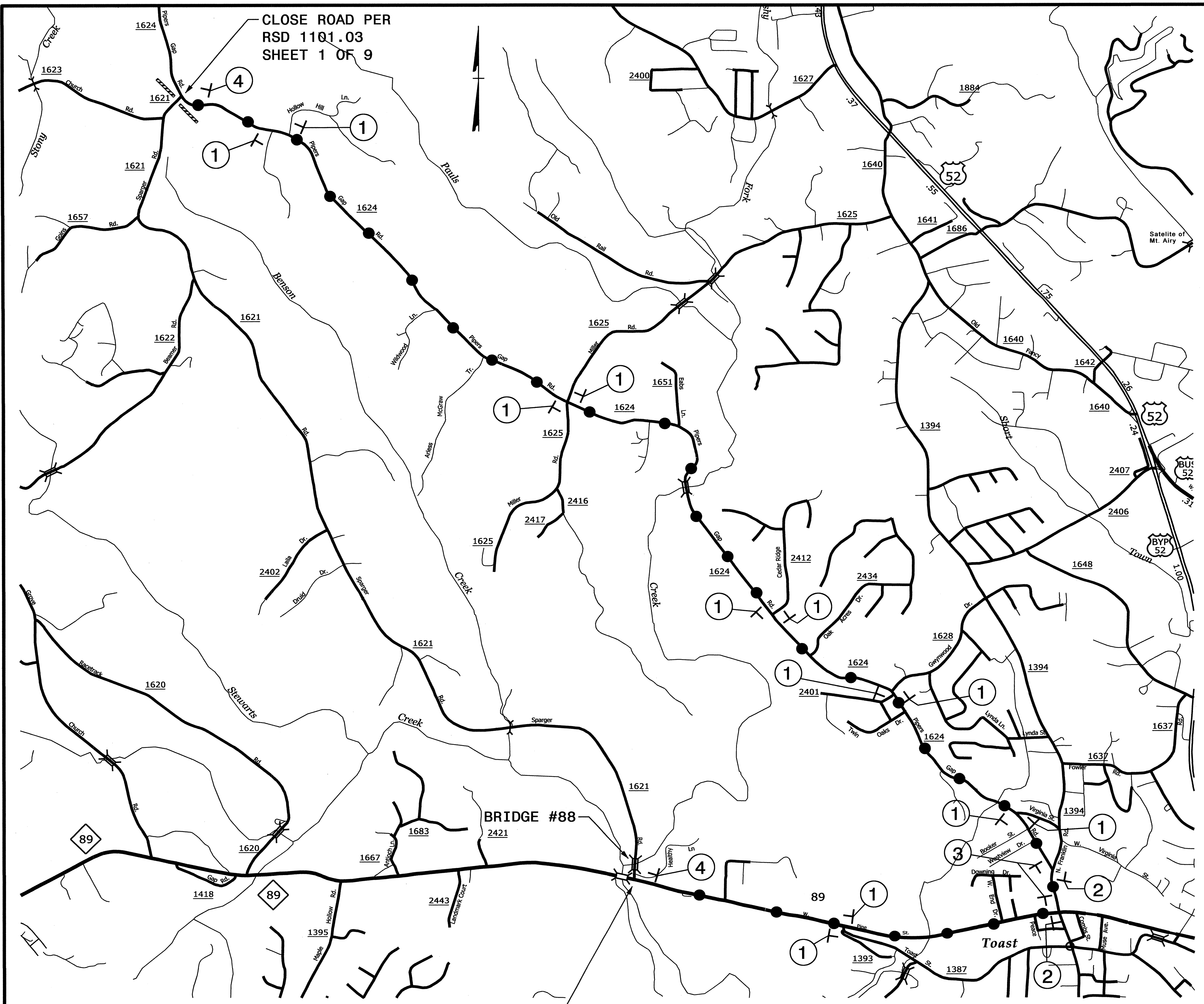
NOTES:
 1. TYPE III BARRICADE LOCATIONS ARE APPROXIMATE. FIELD ADJUST AS REQUIRED.

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 kbr codwell AT 1E266004

APPROVED: _____ DATE: _____

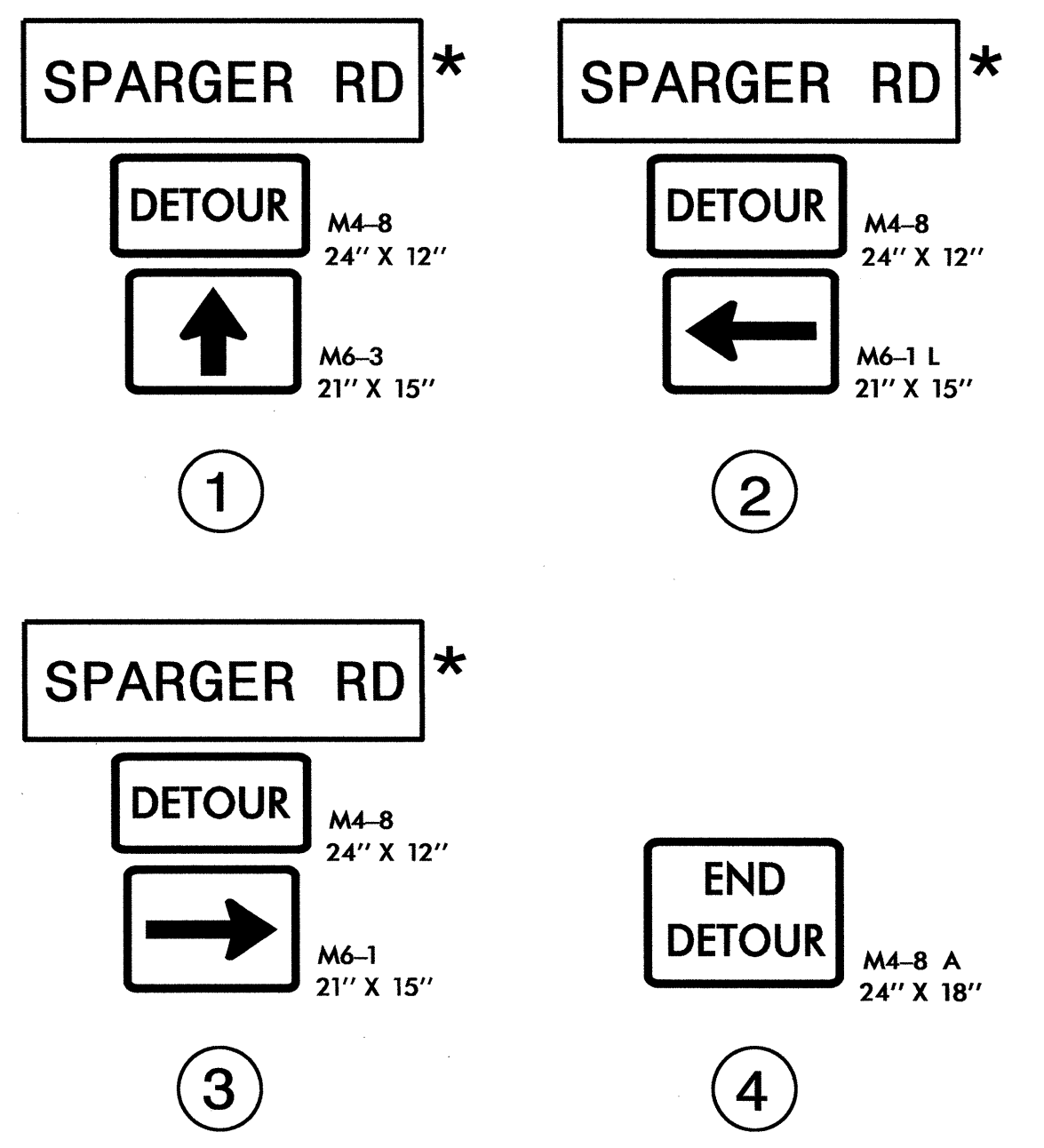
SEAL

PLAN DETAILS
AND PHASING



CLOSE ROAD PER
RSD 1101.03
SHEET 1 OF 9

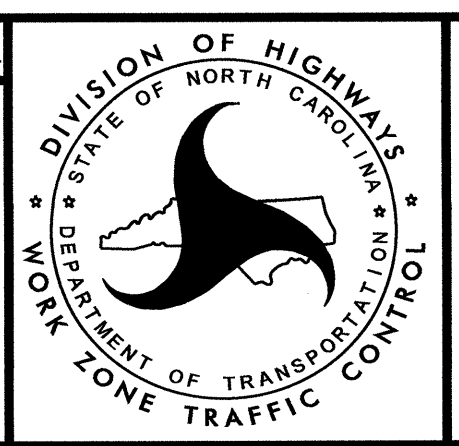
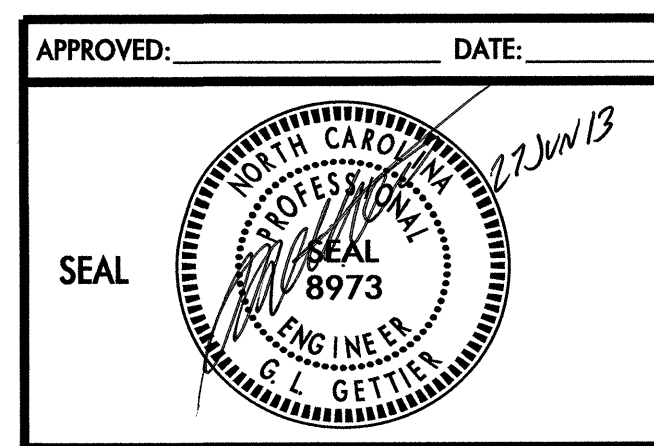
CLOSE SR 1621
PER RSD 1101.03
SHEET 2 OF 9.
SEE SHEET TMP-3
FOR ADDITIONAL
DETAILS



NOTES

* — SEE SHEET TMP-2 FOR SPECIAL SIGN DESIGN.

27-JUN-2013 07:01
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DETOUR ROUTE

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN
SURRY COUNTY

LOCATION: BRIDGE 88 OVER PAUL'S CREEK ON SR 1621 (SPARGER RD.)

TIP NO. B-4821	SHEET NO. PMP-1
APPROVED: <i>[Signature]</i>	
DATE: 7/17/13	
SEAL	

T.I.P.: B-4821

CONTRACT: C203287

ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - 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
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.12	PAVEMENT MARKINGS - BRIDGES
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

PAVEMENT MARKING SCHEDULE

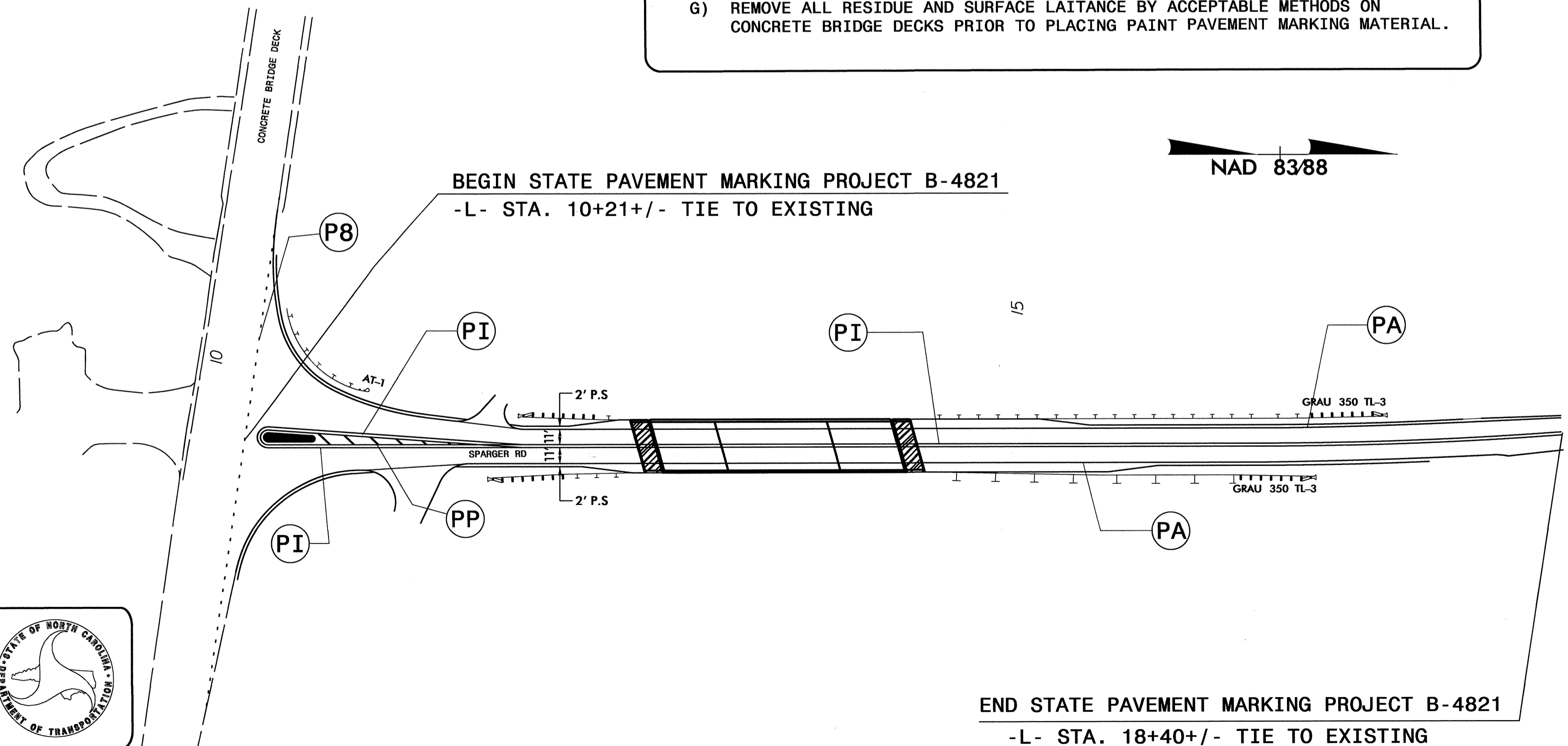
SYMBOL	DESCRIPTION
P8	2FT-6FT/SP WHITE MINISKIP (4")
PA	WHITE EDGE LINE (4")
PI	DOUBLE YELLOW (4")
PP	YELLOW DIAGONAL (8")

GENERAL NOTES

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.

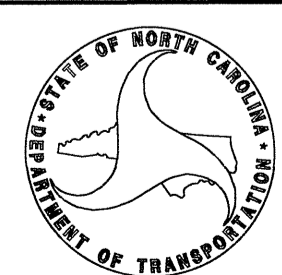
- A) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKER
SPARGER RD.	PAINT	NONE
- B) PLACE TWO APPLICATIONS OF PAINT PAVEMENT MARKINGS ON THE FINAL WEARING SURFACE. PLACE THE SECOND APPLICATION OF PAINT UPON SUFFICIENT DRYING TIME OF THE FIRST.
- C) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- D) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.
- E) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.
- F) STOP BAR LOCATION AT NON-SIGNALIZED INTERSECTIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER.
- G) REMOVE ALL RESIDUE AND SURFACE LAITANCE BY ACCEPTABLE METHODS ON CONCRETE BRIDGE DECKS PRIOR TO PLACING PAINT PAVEMENT MARKING MATERIAL.



PLAN PREPARED BY: N.C.D.O.T. SIGNING AND DELINEATION UNIT

KELVIN JORDAN SIGNING & DELINEATION REGIONAL ENGINEER
WALTER JOHNSON SIGNING & DELINEATION PROJECT DESIGN ENGINEER



TIP PROJECT: B-4821

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS
 PLAN FOR PROPOSED
 HIGHWAY EROSION CONTROL
SURRY COUNTY

LOCATION: BRIDGE 88 OVER PAUL'S CREEK ON SR 1621 (SPARGER RD.)

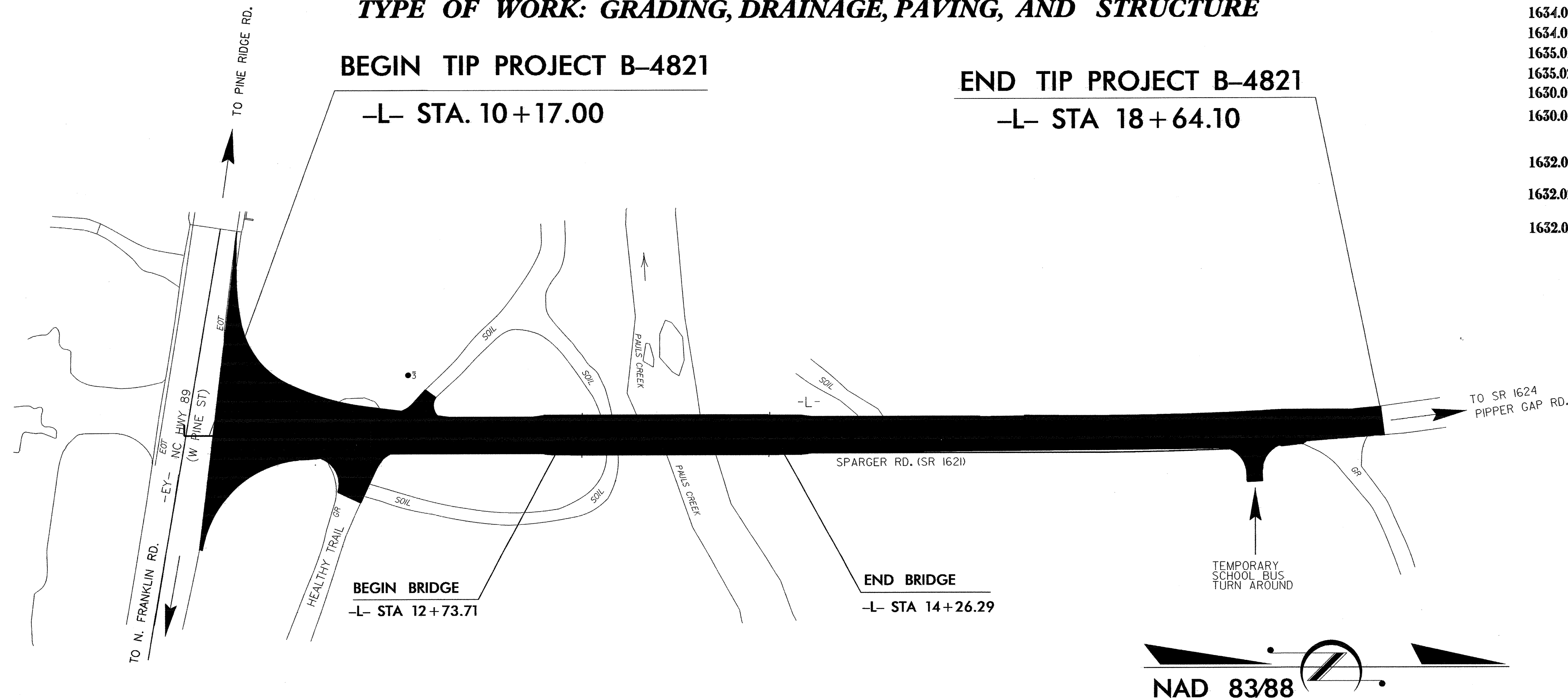
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE

BEGIN TIP PROJECT B-4821

END TIP PROJECT B-4821

-L- STA. 10+17.00

-L- STA 18+64.10



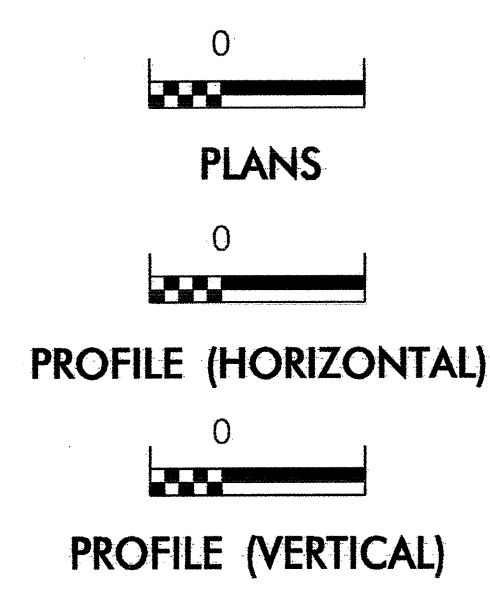
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4821	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	III III III
1606.01	Special Sediment Control Fence	▲▲▲▲▲▲▲▲
1622.01	Temporary Berms and Slope Drains	— T —
1630.02	Silt Basin Type B	▨
1633.01	Temporary Rock Silt Check Type-A	▩
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	▩
1633.02	Temporary Rock Silt Check Type-B	▶
	Wattle/Coir Fiber Wattle	— W —
	Wattle/Coir Fiber Wattle with Polyacrylamide (PAM)	— W —
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	U
1635.02	Rock Pipe Inlet Sediment Trap Type-B	U
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 CONTAINS EROSION CONTROL PLANS FOR CLEARING AND GRUBBING PHASE OF CONSTRUCTION.

GRAPHIC SCALE



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:
ROADSIDE ENVIRONMENTAL UNIT
 1 South Wilmington St.
 Raleigh, NC 27611
2012 STANDARD SPECIFICATIONS

Roadway Standard Drawings

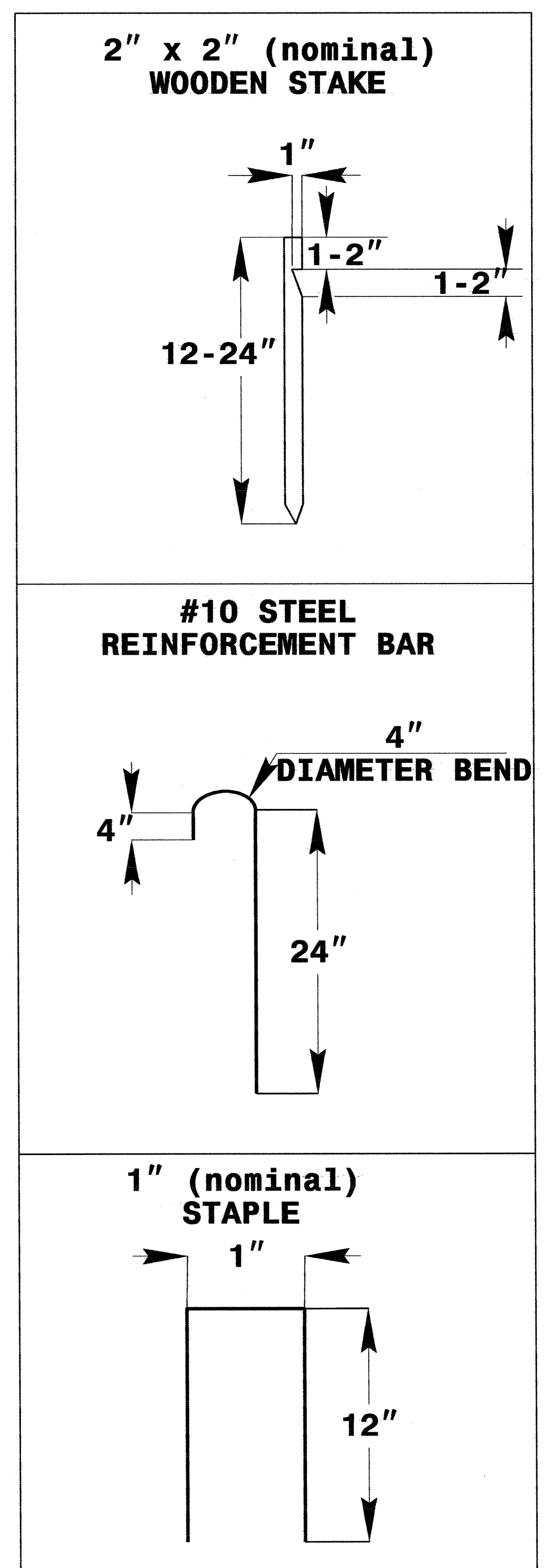
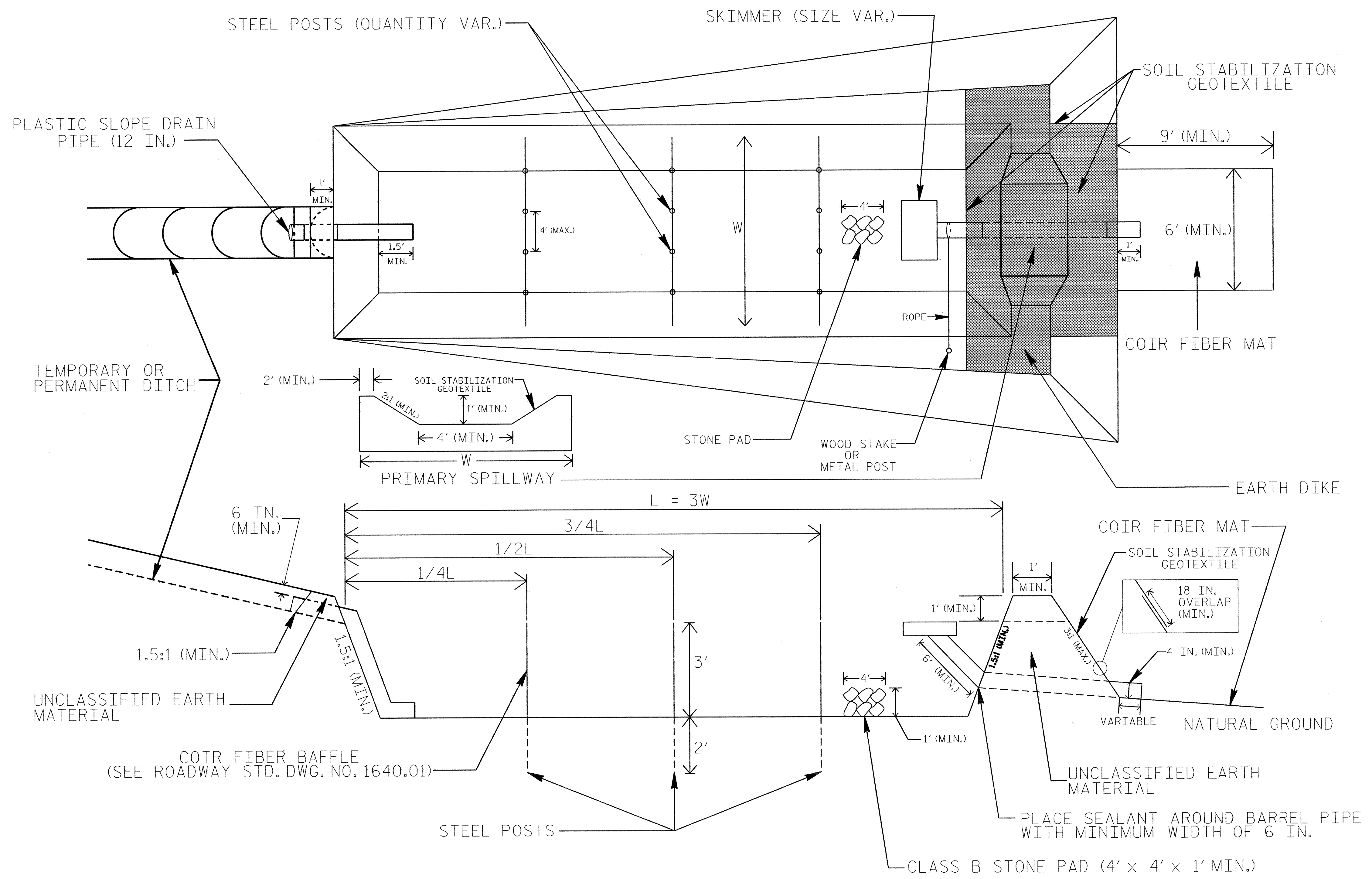
The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2012 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

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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 jeb@dotm.nc.gov

PROJECT REFERENCE NO. B-4821	SHEET NO. EC-02
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SKIMMER BASIN WITH BAFFLES DETAIL



COIR FIBER MAT ANCHOR OPTIONS

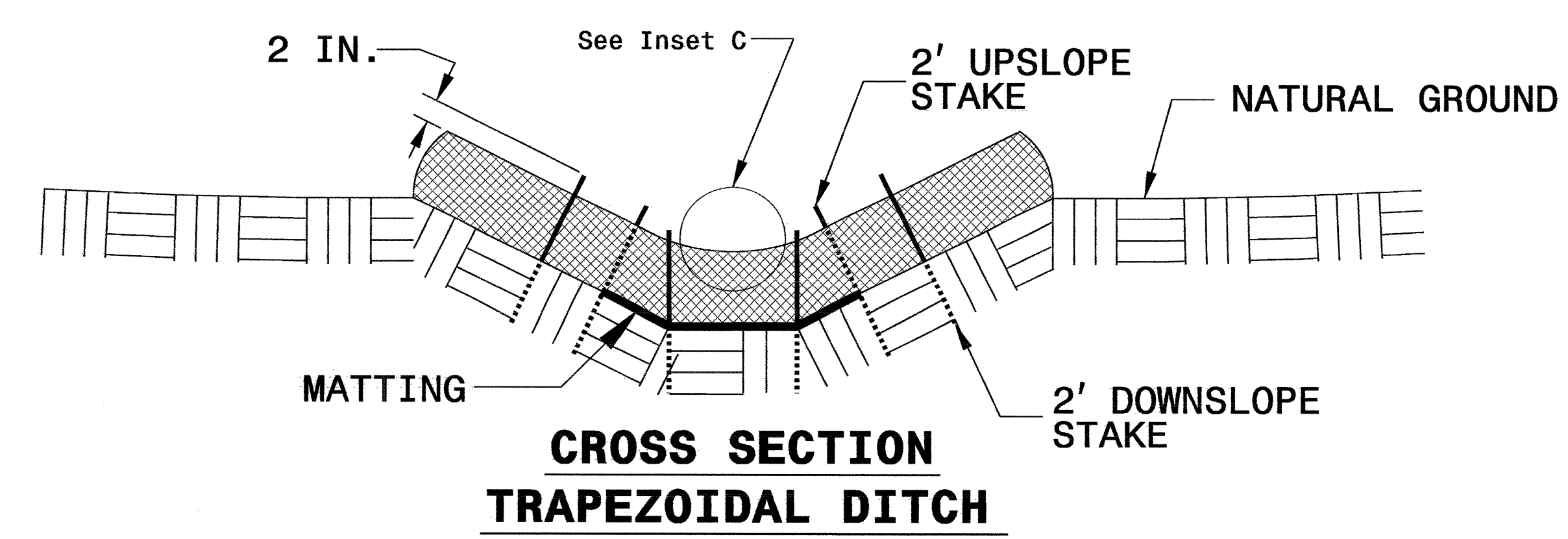
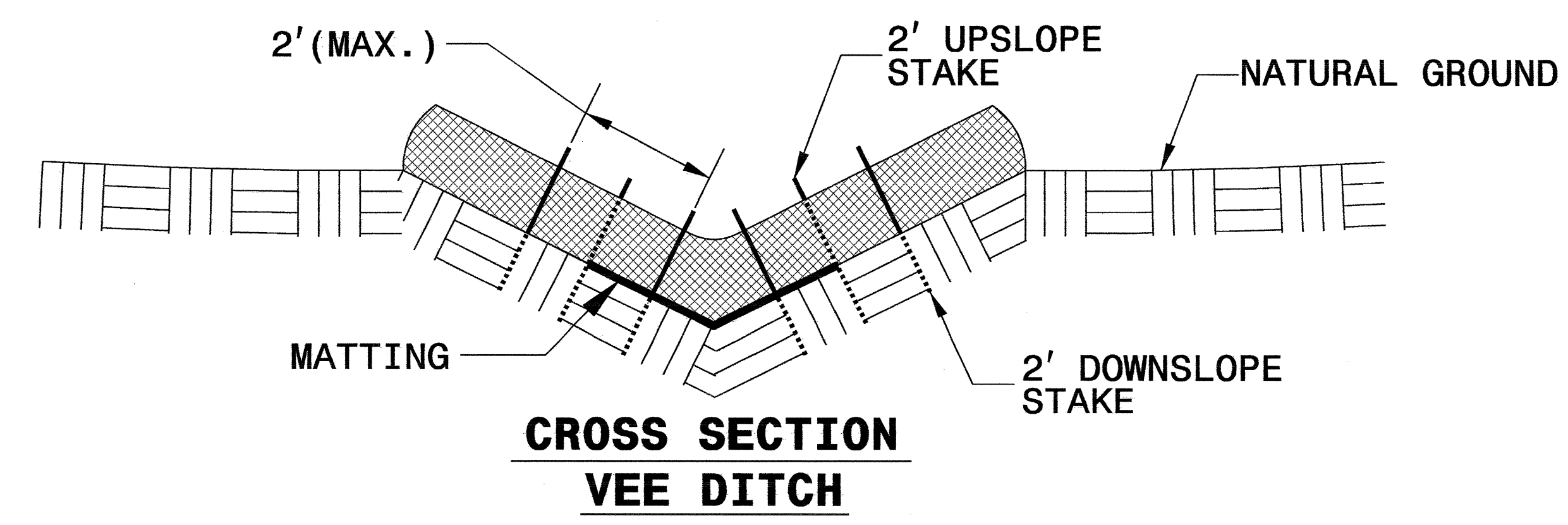
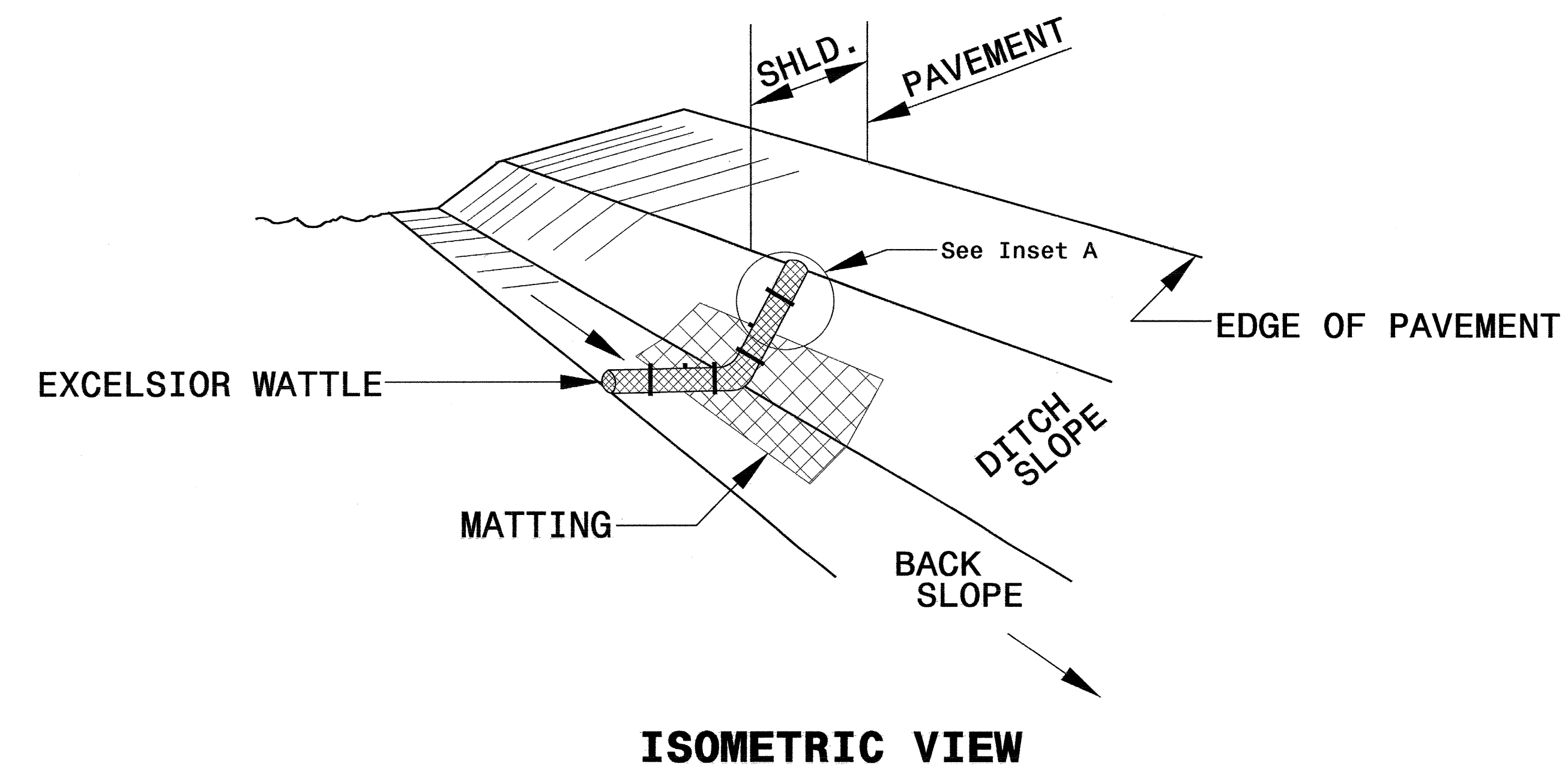
NOTES

1. SEED AND PLACE MATTING FOR EROSION CONTROL ON INTERIOR AND EXTERIOR SIDESLOPES.
2. LIMIT EARTH DIKE HEIGHT TO 5 FT.
3. FOR BASIN DEPTH OF 3 FT., THE MINIMUM BASIN WIDTH SHALL BE 9 FT.
4. DETERMINE PRIMARY SPILLWAY WEIR LENGTH (FT.) USING $Q/0.4$, WHERE Q IS FLOW RATE (CFS) INTO BASIN.
5. PLASTIC SLOPE DRAIN PIPE AT INLET OF BASIN MAY BE REPLACED BY FILTRATION GEOTEXTILE OR TARP AS DIRECTED.
6. SOIL STABILIZATION GEOTEXTILE FOR PRIMARY SPILLWAY SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

NOT TO SCALE

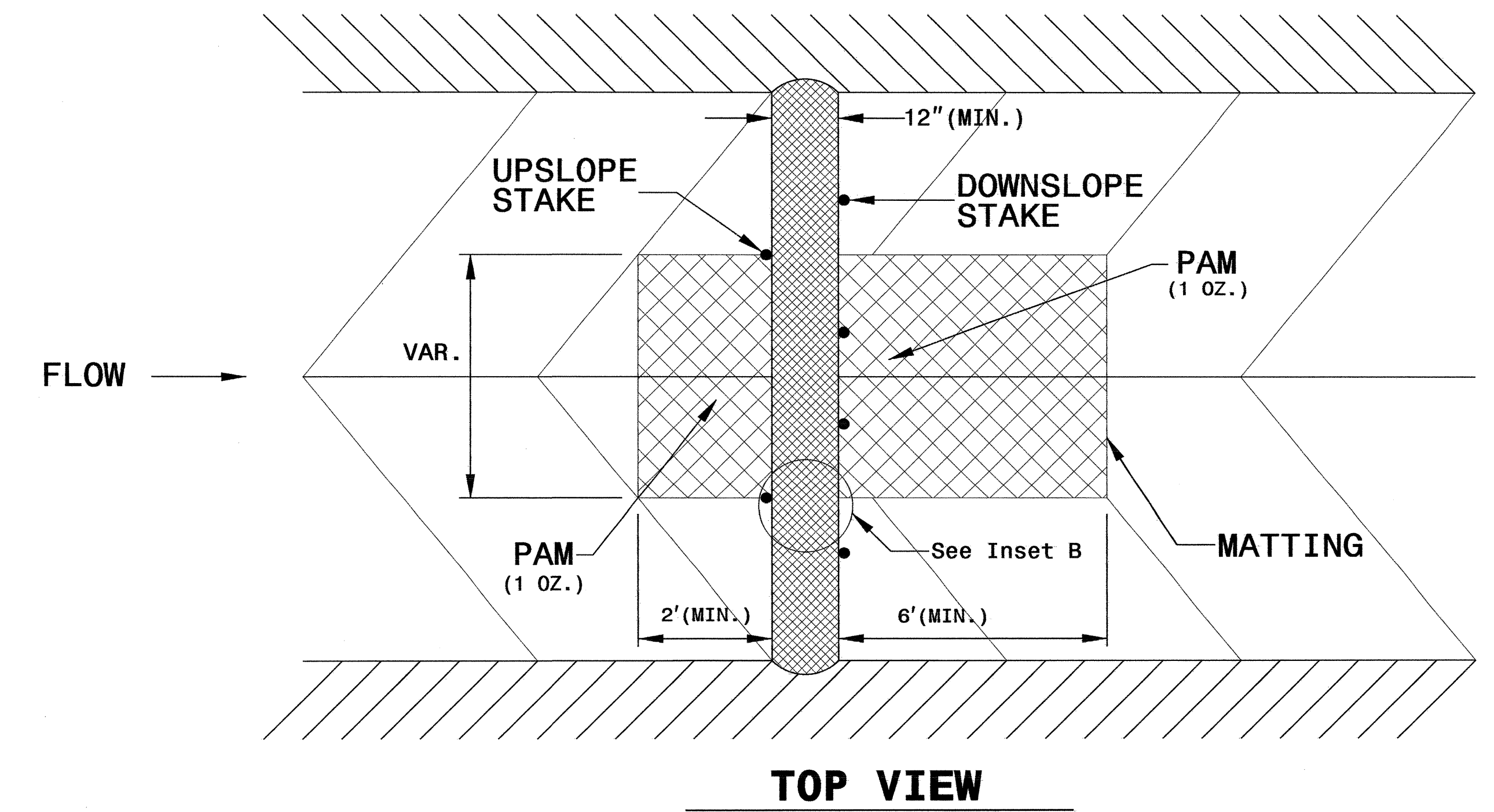
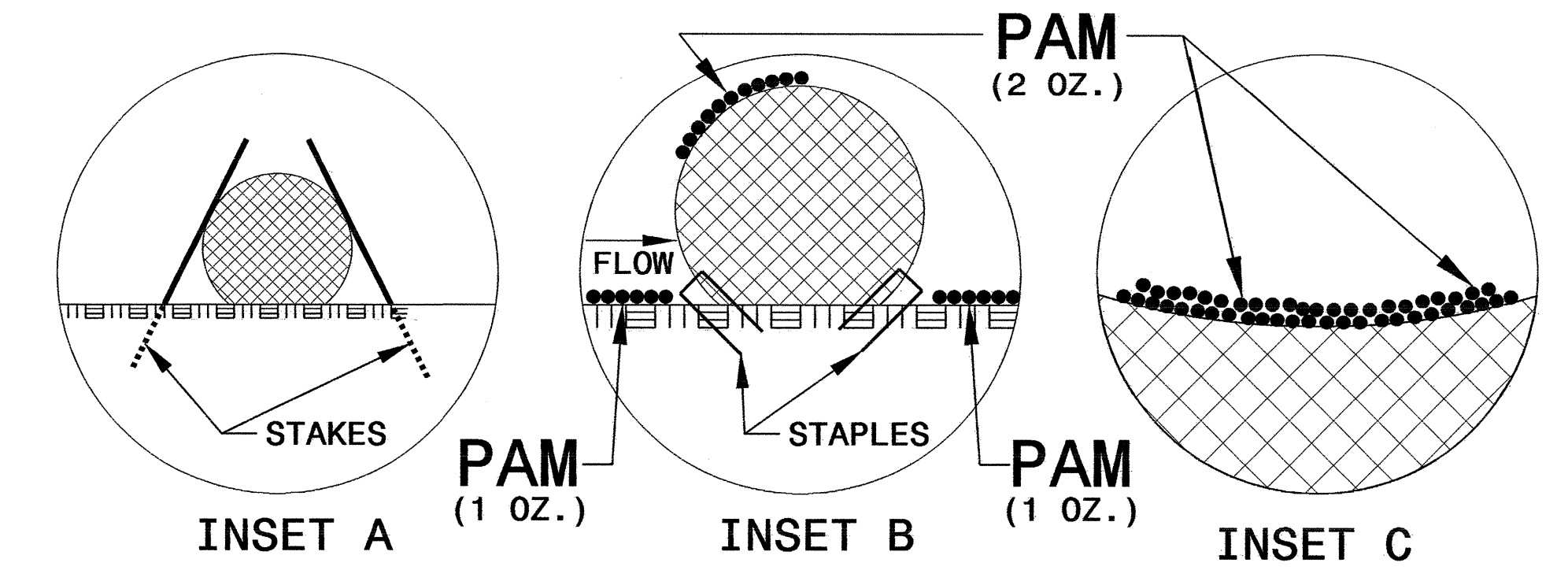
PROJECT REFERENCE NO. B-4821	SHEET NO. EC-2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



NOTES:

- USE MINIMUM 12 IN. DIAMETER EXCELSIOR 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.



DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. <i>BB-482I</i>	SHEET NO. <i>EC-3A</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SOIL STABILIZATION TIMEFRAMES

<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
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.

8/17/99

NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 04

NOTE: UTILIZE SKIMMER BASIN OR SPECIAL STILLING BASIN AS STILLING BASIN WHERE APPLICABLE.

PROJECT REFERENCE NO. B-4821	SHEET NO. EC-04/CONST.04
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 8388

BEGIN TIP PROJECT B-4821
-L- 10+17.00

BEGIN APPR. SLAB
-L- STA. 12+62.62
BEGIN BRIDGE
-L- STA. 12+73.77

46 x 23 x 3
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
12 ft. weir
ID 4.3

END APPR. SLAB
-L- STA. 14+37.38
END BRIDGE
-L- STA. 14+26.29

FILL EXIST DITCH TO EXIST PIPE LOCATION
INSTALL SHOULDER BERM CUTTER FROM STA. 14+33 TO 15+14 -L- (LT)

-L- POT Sta. 10+00.00
EY 17+98.44

PC Sta. 18+26.80

CLAUDE L. PUCKETT, JR.
DB 399 PG 989
DB 399 PG 990
DB 399 PG 991
PB 8 PG 12

HOWARD W. HULL
DB 170 PG 921

CLASS 'B' RIP RAP
OUTLET PROTECTION
EST 3 TONS
EST 10' SY FF

28 x 12 x 3
1.5 inch Skimmer
with 0.375 inch
Orifice Diameter
4 ft. weir
ID 4.1

32 x 14 x 3
1.5 inch Skimmer
with 0.5 inch
Orifice Diameter
6 ft. weir
ID 4.2

END TIP PROJECT B-4821
-L- 18+64.10

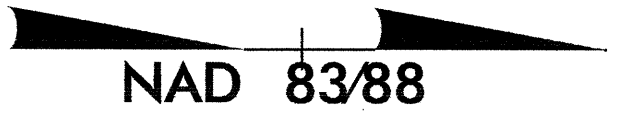
JOYCE A. KING
DB 713 PG 847

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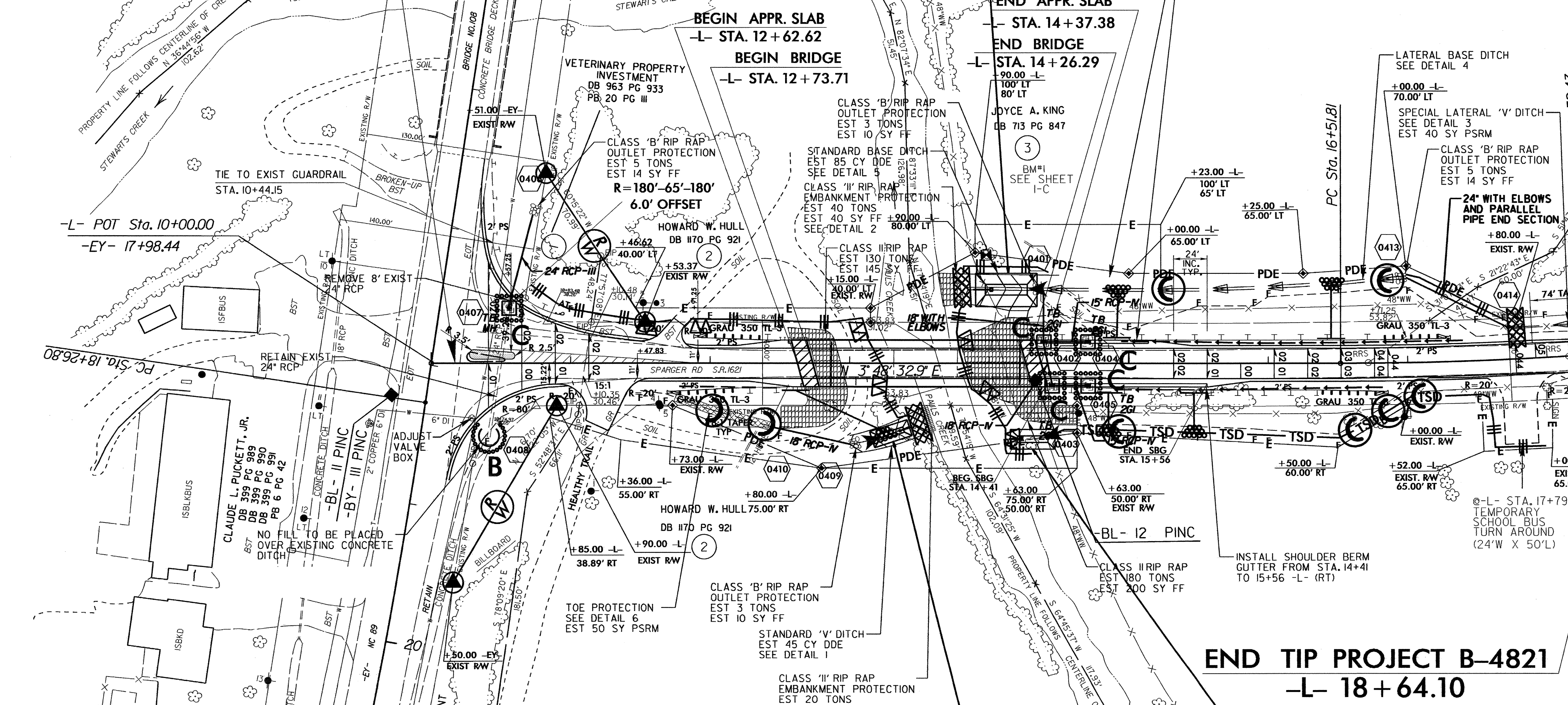
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B-4821		EC-05/CONST.04	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

NOTE:
UTILIZE SKIMMER BASIN OR SPECIAL STILLING BASIN AS STILLING BASIN WHERE APPLICABLE.



BEGIN TIP PROJECT B-4821
-L- 10+17.00

44 x 24 x 3
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
12 ft. weir
ID 4.3F



END TIP PROJECT B-4821
-L- 18+64.10

28 x 12 x 3
1.5 inch Skimmer
with 0.375 inch
Orifice Diameter
4 ft. weir
ID 4.1

32 x 14 x 3
1.5 inch Skimmer
with 0.5 inch
Orifice Diameter
6 ft. weir
ID 4.2

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MATT
23
42

TIP PROJECT: B-4821

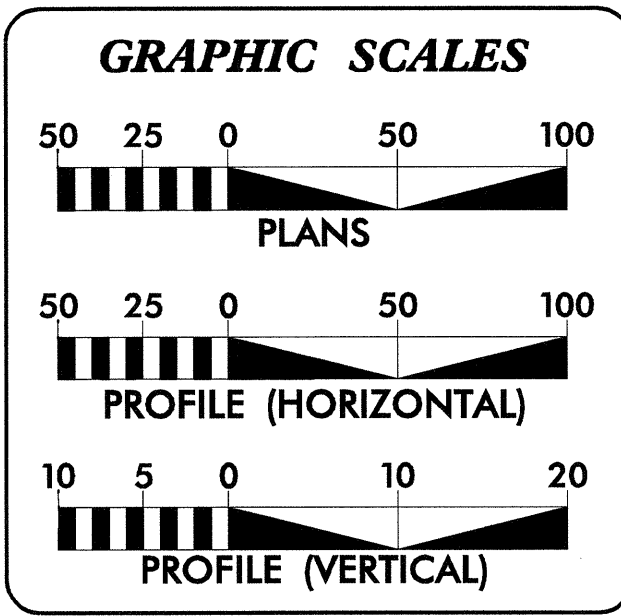
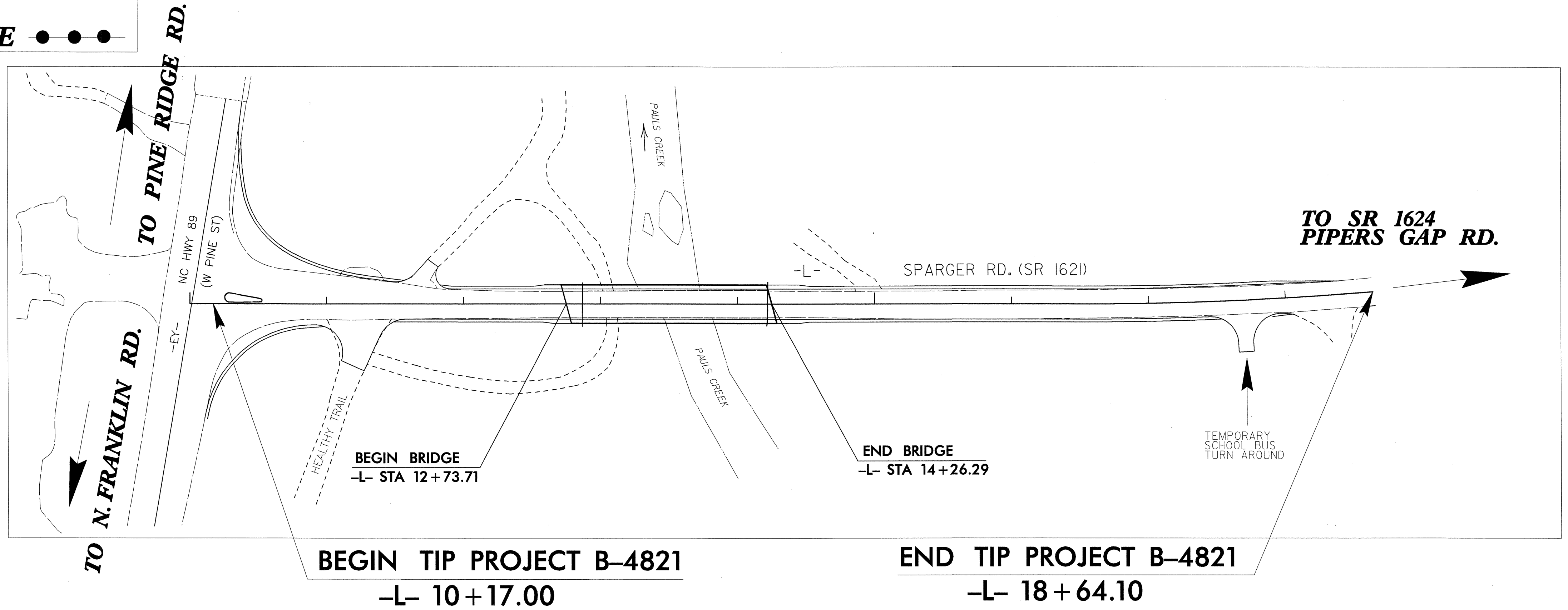
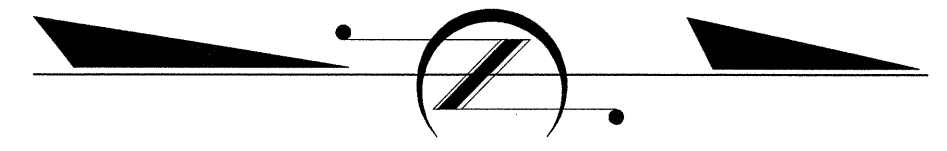
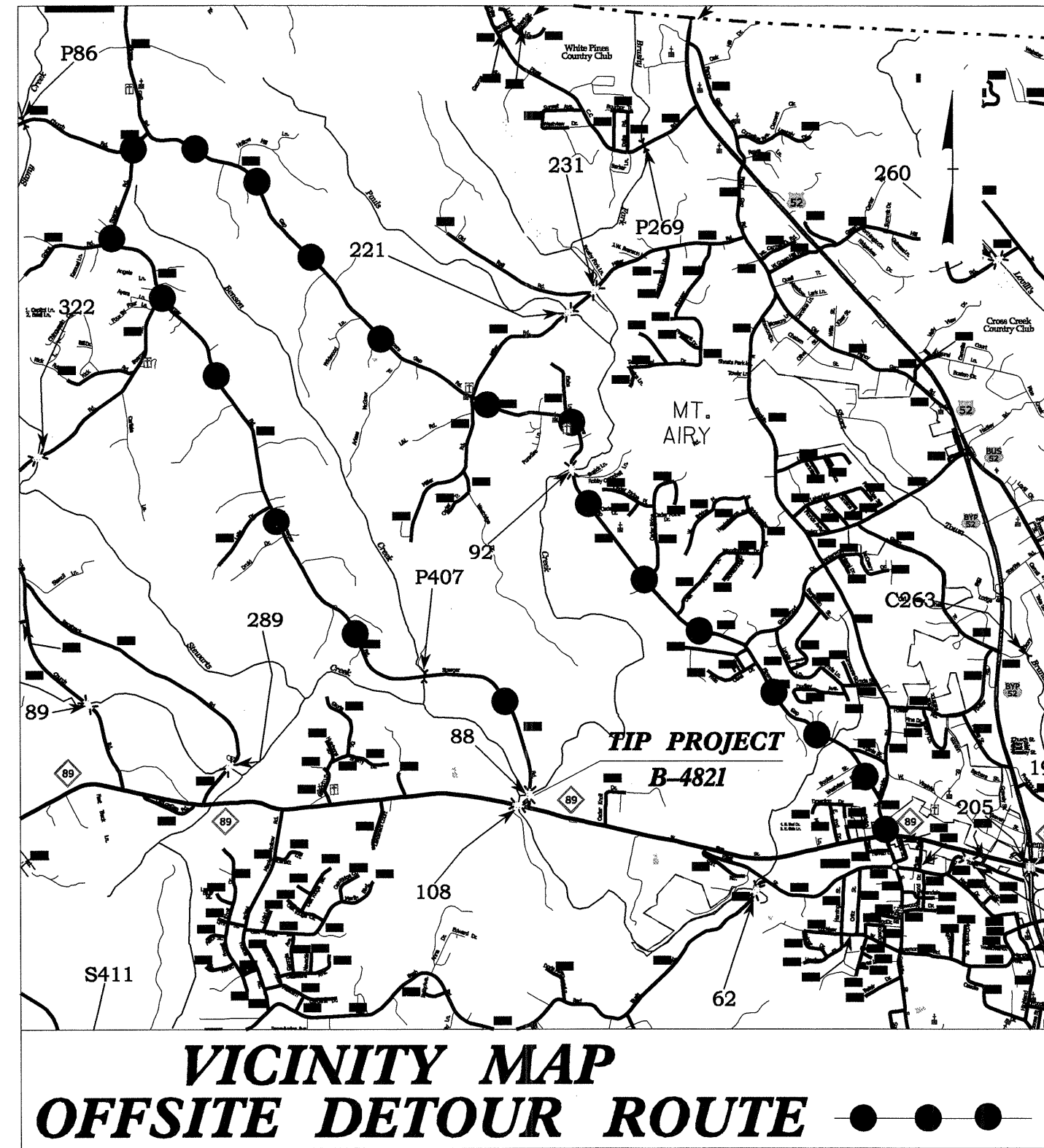
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
B-4821	UO-1

SURRY COUNTY UTILITIES BY OTHERS PLAN

**LOCATION: REPLACE BRIDGE NO. 88 OVER PAUL'S CREEK
ON SPARGER RD (SR 1621)**

**TYPE OF WORK: POWER DISTRIBUTION AND
TELEPHONE COMMUNICATIONS RELOCATION**



INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2	UTILITIES BY OTHERS PLAN SHEET

UTILITY OWNERS ON PROJECT

(1) DUKE ENERGY (POWER DISTRIBUTION)
(2) CENTURY LINK (TELECOMMUNICATIONS)

Baker

Michael Baker Engineering, Inc.
8000 Regency Parkway, Suite 600
Cary, NC 27518
919-463-5488

UTILITIES COORDINATION
CONSULTANT

Gus Kretschmer

PREPARED IN THE OFFICE OF:

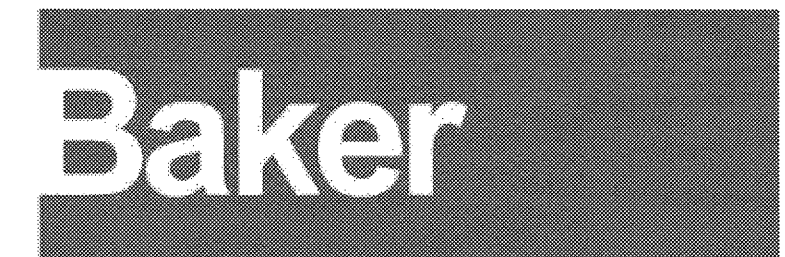
**DIVISION OF HIGHWAYS
UTILITIES UNIT
UTILITIES ENGINEERING**

1555 MAIL SERVICES CENTER
RALEIGH NC 27699-1555
PHONE (919) 707-6690
FAX (919) 250-4119

Roger Worthington, P.E. UTILITIES SECTION ENGINEER
Carl Barclay, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER
James Swinson UTILITIES PROJECT DESIGNER

UTILITIES BY OTHERS

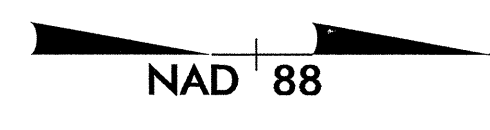
NOTE:
ALL PROPOSED UTILITY WORK
SHOWN ON THIS SHEET WILL
BE DONE BY OTHERS



Michael Baker Engineering, Inc.
8000 Regency Parkway, Suite 600
Cary, NC 27518
919-463-5488

PI Sta 17+45.66
 $\Delta = 4' 23'' 16.1''$ (LT)
 $D = 2' 20'' 19.0''$
 $L = 187.62'$
 $T = 93.86'$
 $R = 2,450.00'$
 $SE = 0.044$
 $RUNOFF = 106'$

PI Sta 20+70.83
 $\Delta = 4' 52'' 39.2''$ (RT)
 $D = 1' 00'' 00.0''$
 $L = 487.76'$
 $T = 244.03'$
 $R = 5,729.58'$



BEGIN TIP PROJECT B-4821
-L- 10+17.00

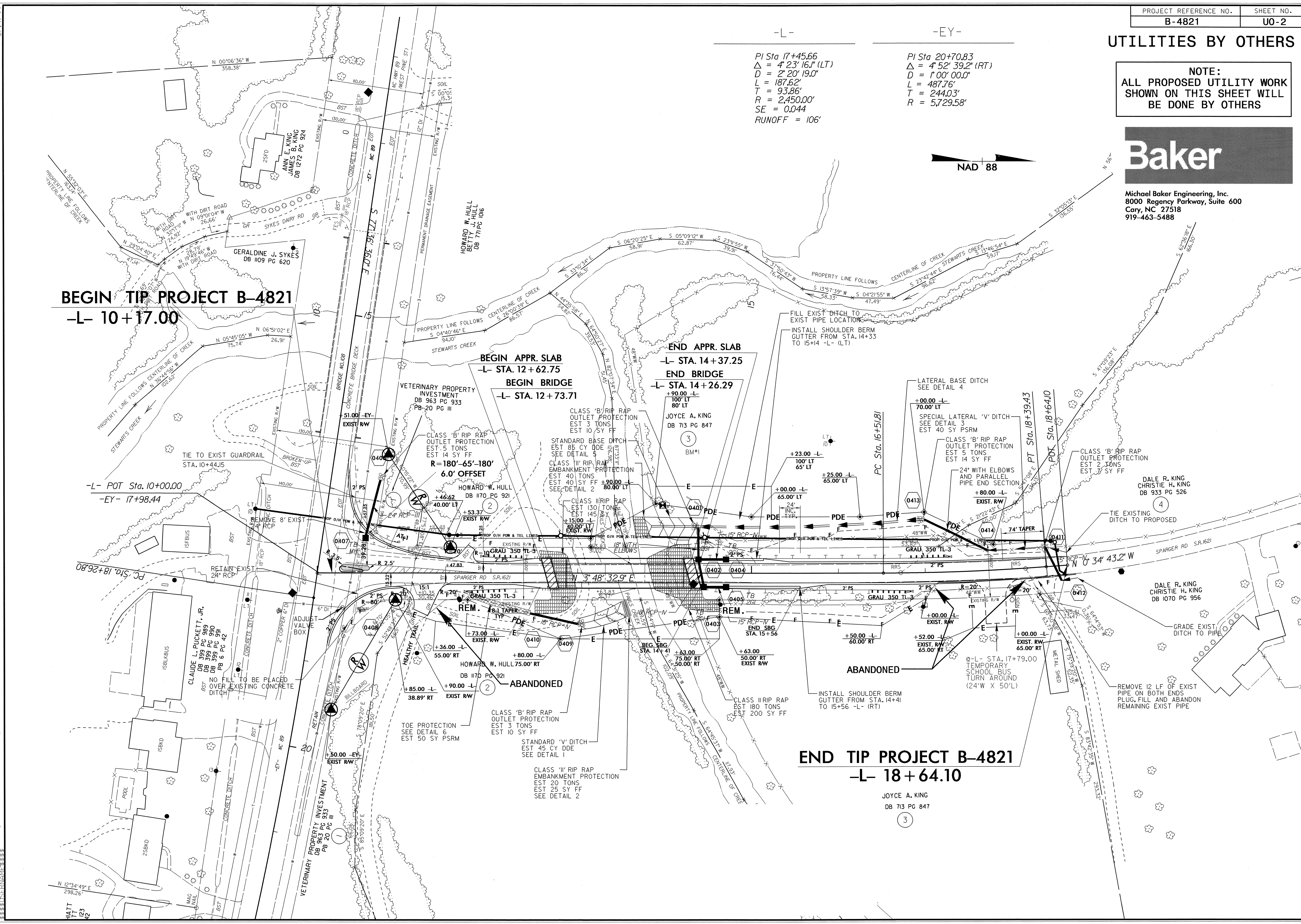
-L- POT Sta. 10+00.00
-EY- 17+98.44

BEGIN APPR. SLAB
-L- STA. 12+62.75
BEGIN BRIDGE
-L- STA. 12+73.71

END APPR. SLAB
-L- STA. 14+37.25
END BRIDGE
-L- STA. 14+26.29

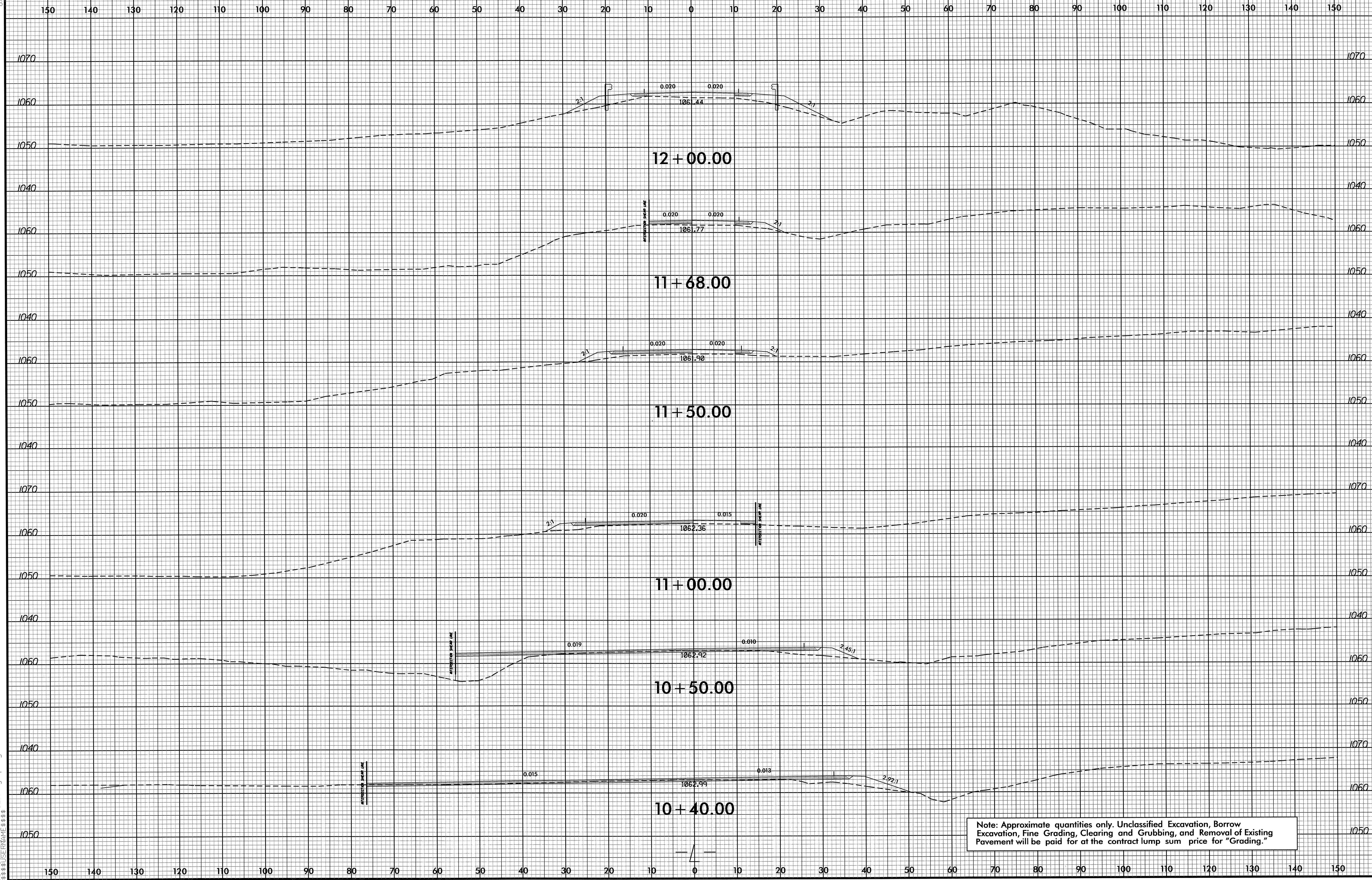
END TIP PROJECT B-4821
-L- 18+64.10

JOYCE A. KING
 DB 713 PG 847



5/14/99
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 MATT 10/23/92

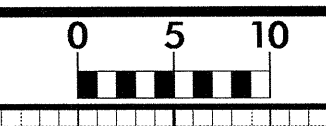
8/23/99



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."

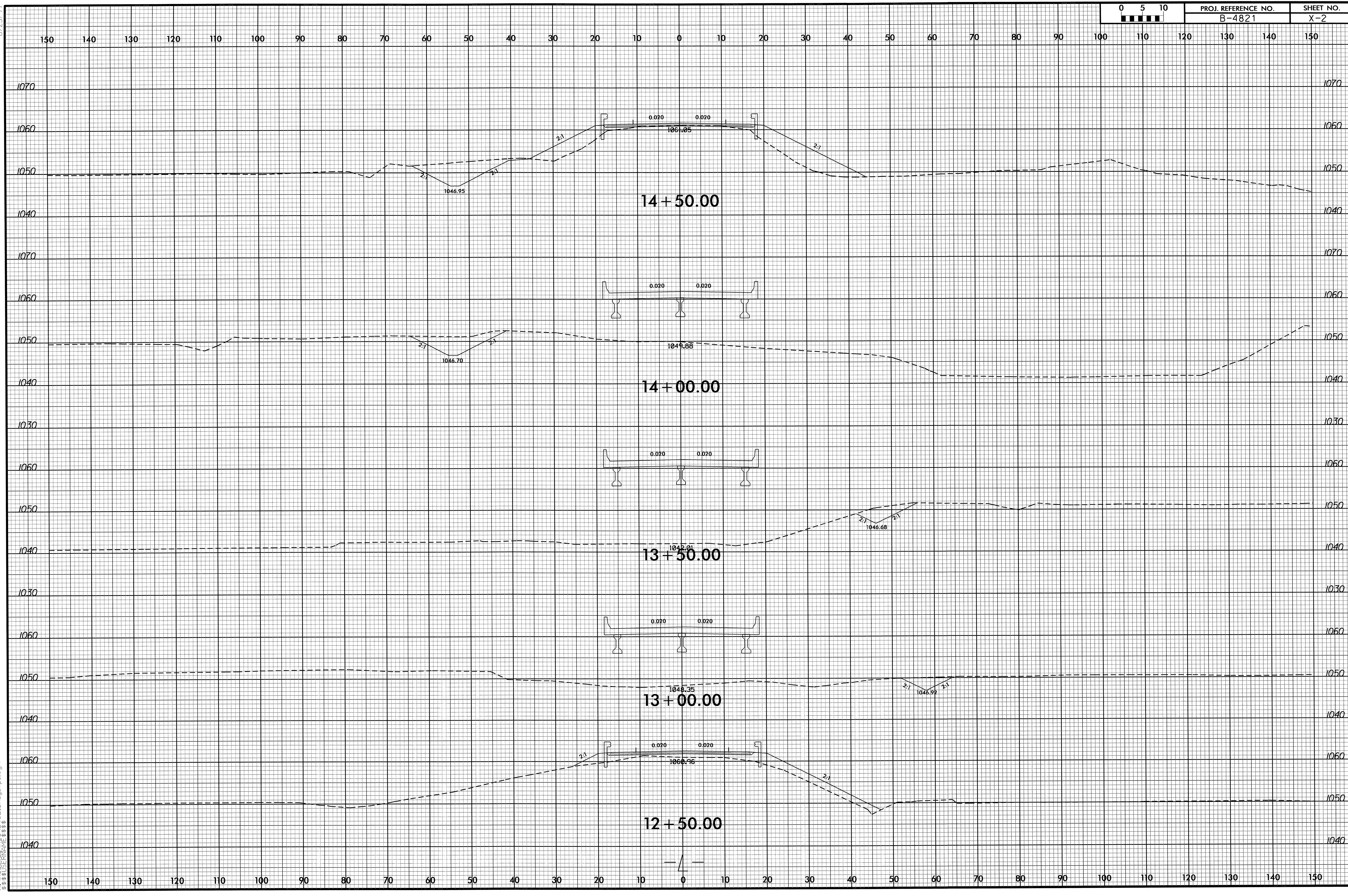
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 \$\$\$SUBEDITING\$\$\$

8/23/99

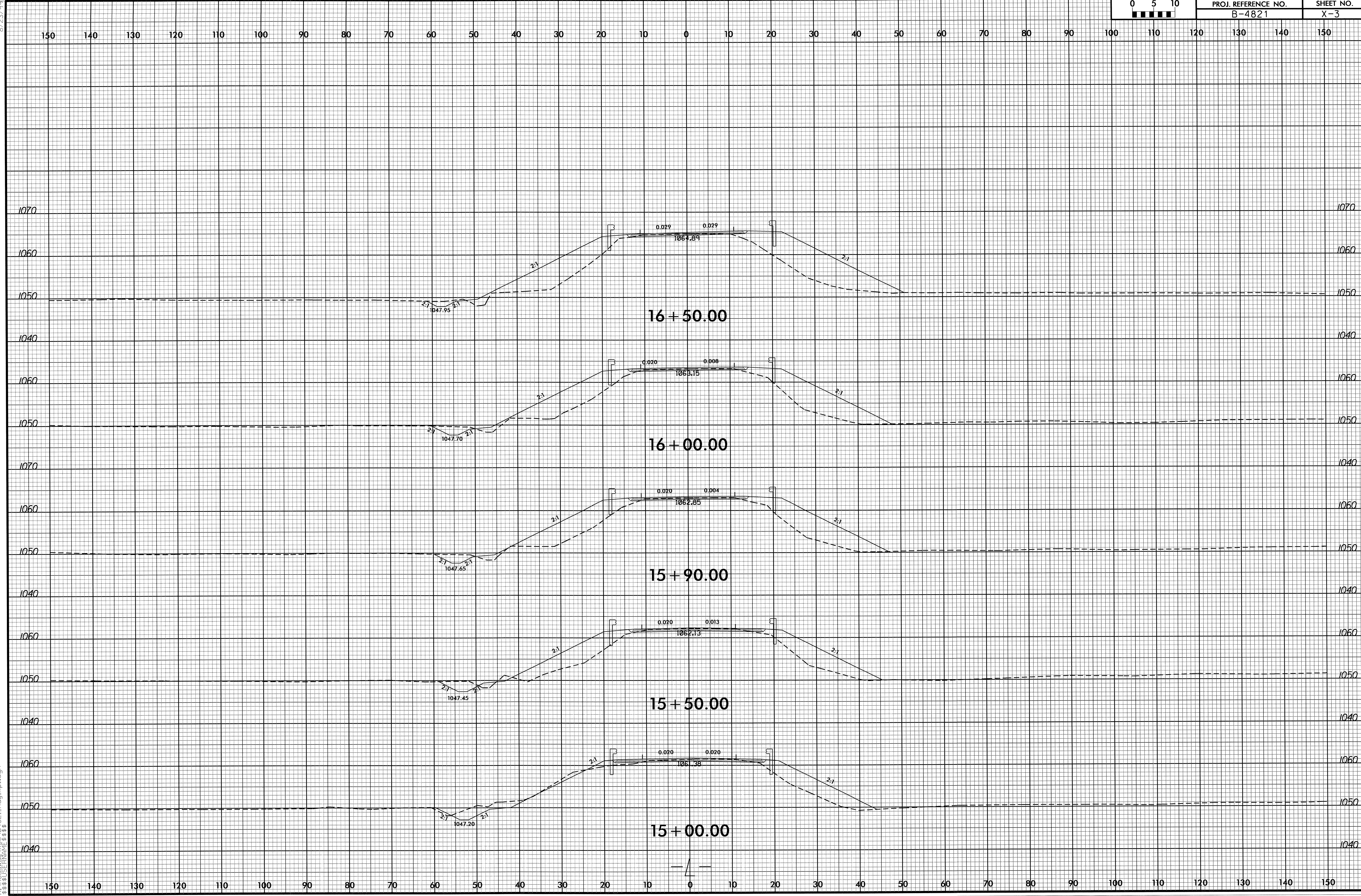


PROJ. REFERENCE NO.
B-4821

SHEET NO.
X-2

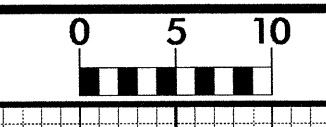


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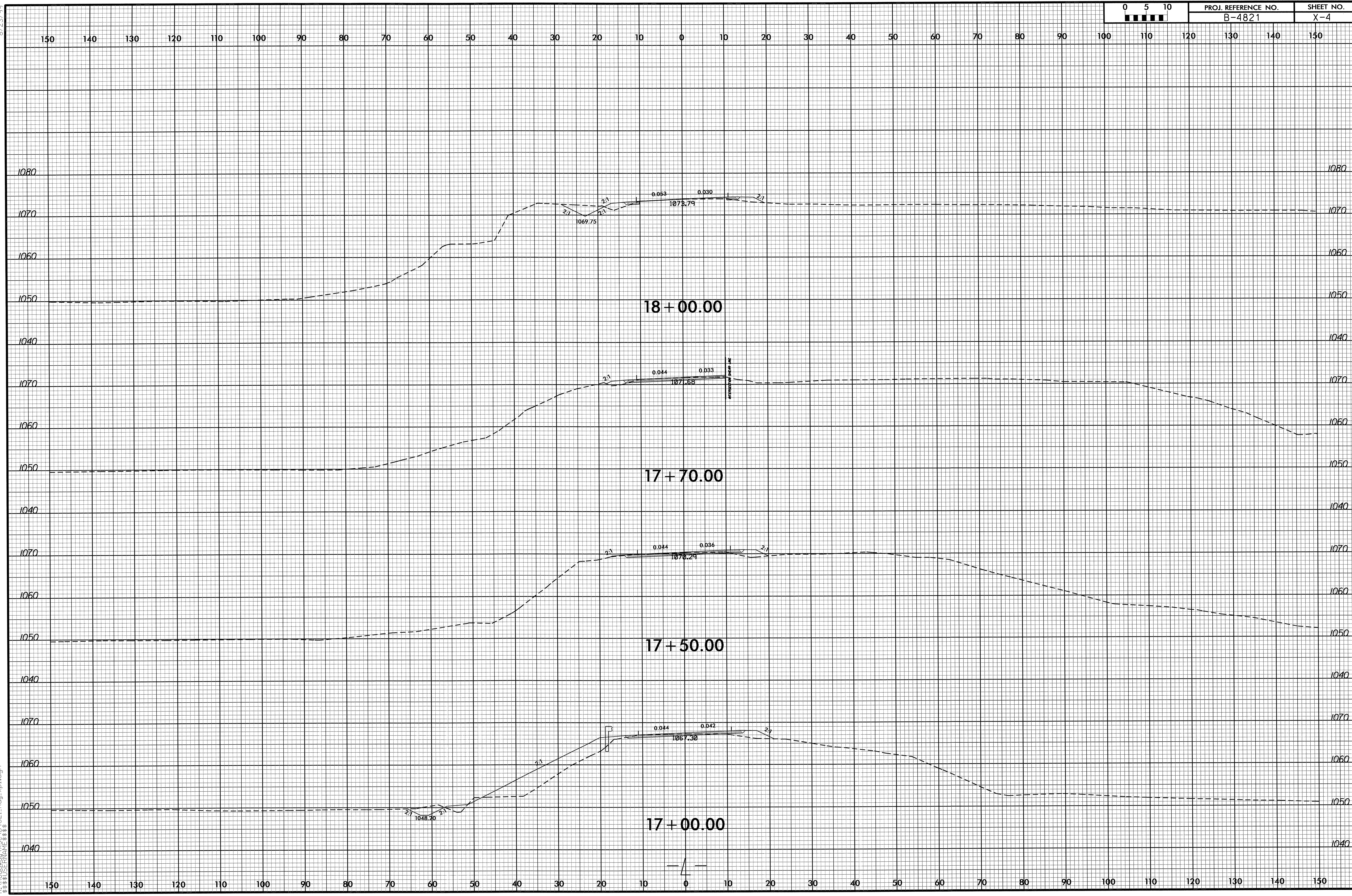


8/23/99
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8/23/99



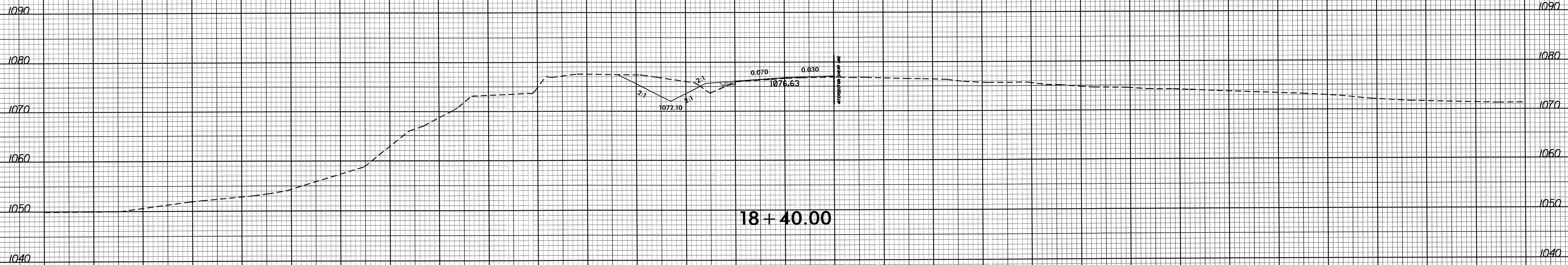
PROJ. REFERENCE NO.	SHEET NO.
B-4821	X-4



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B/23/99

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17-SEP-2013 07:39
4440 SCHEMATIC.dwg