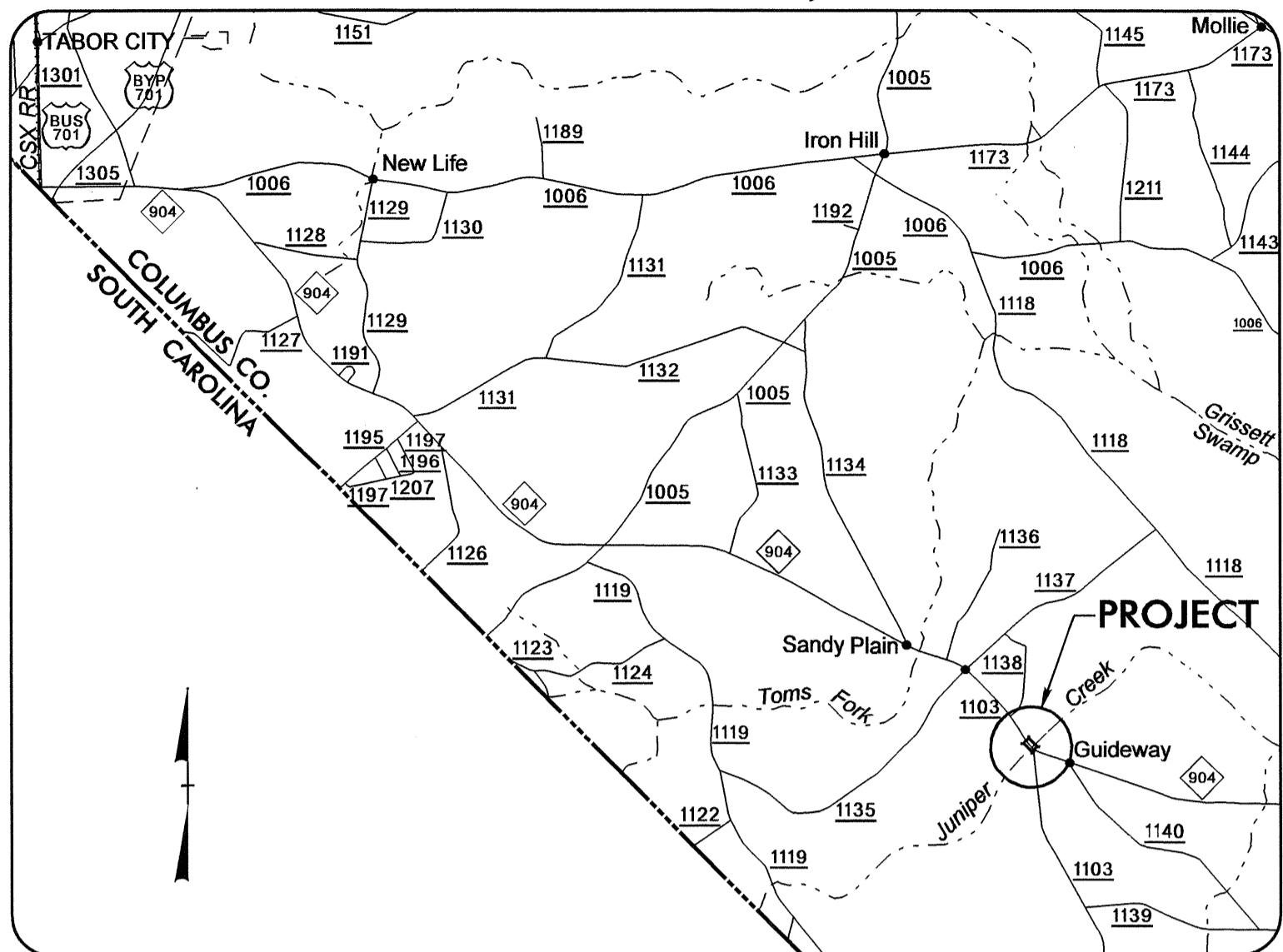


TIP PROJECT: B-4471

CONTRACT: C202844

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



VICINITY MAP

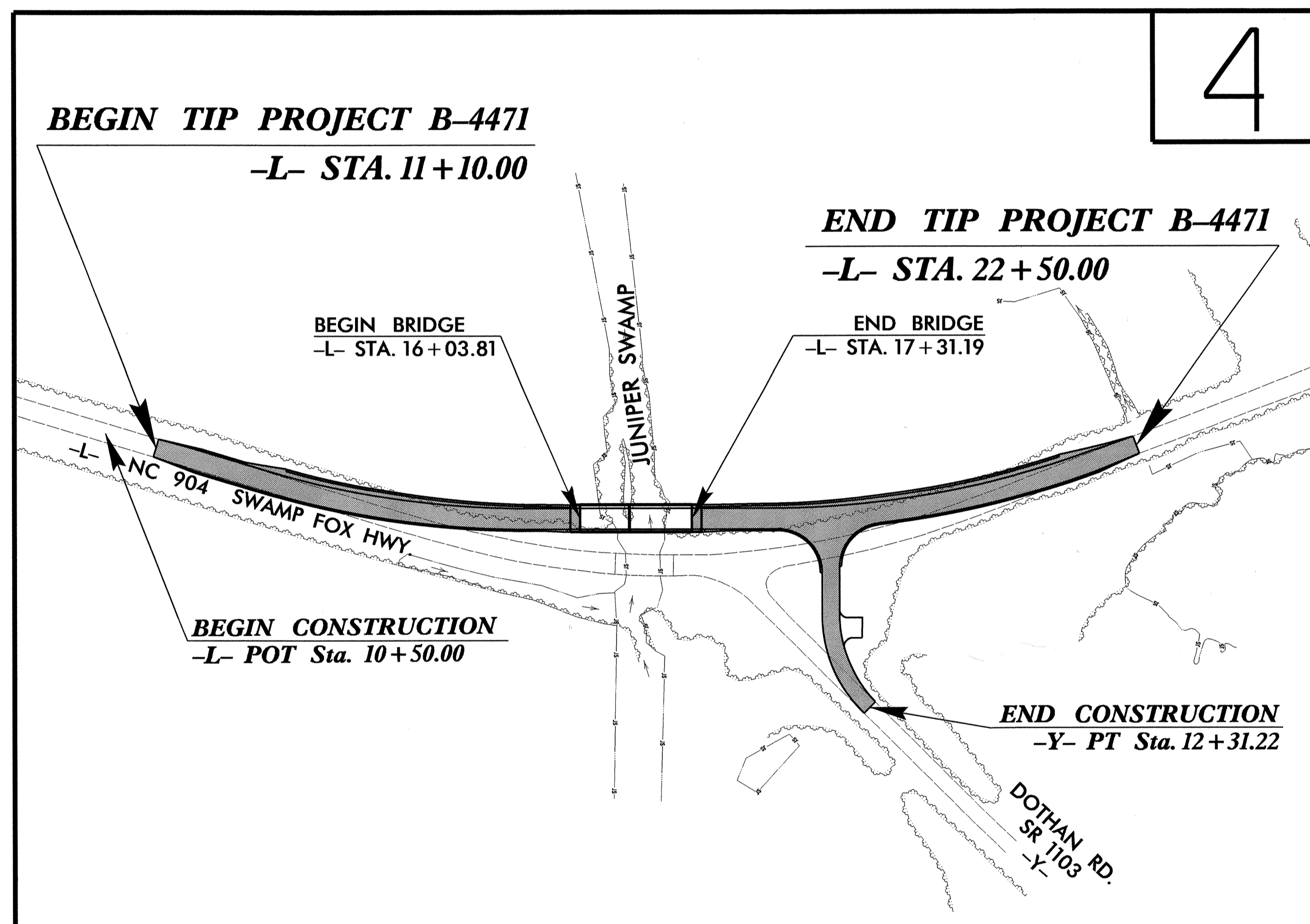
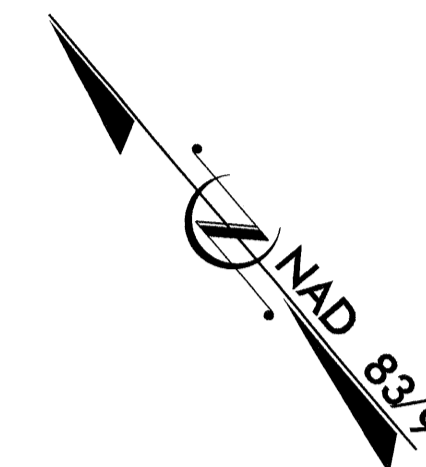
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

COLUMBUS COUNTY

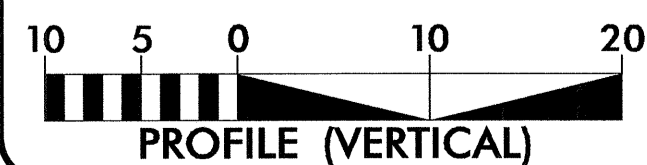
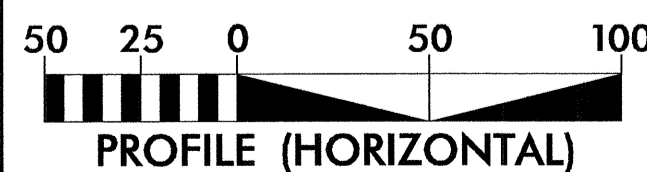
LOCATION: BRIDGE NO. 44 OVER JUNIPER SWAMP ON NC 904

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4471	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33720.1.1	BRSTP-0904(4)	PE	
33720.2.1	BRSTP-0904(4)	RW & UTILITY	
33720.3.1	BRSTP-0904(4)	CONST.	



GRAPHIC SCALES



DESIGN DATA

ADT 2012 = 1,863
ADT 2032 = 3,113
DHV = 12%
D = 60%
T = 9%*
V = 60 MPH
*TTST = 4% DUAL = 5%
FUNCTIONAL CLASS = RURAL COLLECTOR REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4471 = 0.192 MILES
LENGTH STRUCTURE TIP PROJECT B-4471 = 0.024 MILES
TOTAL LENGTH TIP PROJECT B-4471 = 0.216 MILES

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JULY 15, 2011

LETTING DATE:
JULY 17, 2012

GARY LOVERING, PE
PROJECT ENGINEER

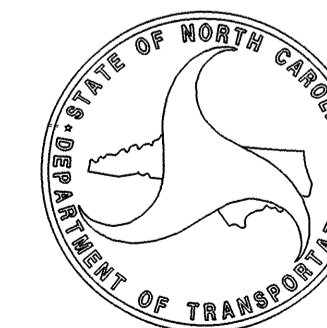
KEVIN E. MOORE, PE
PROJECT DESIGN ENGINEER

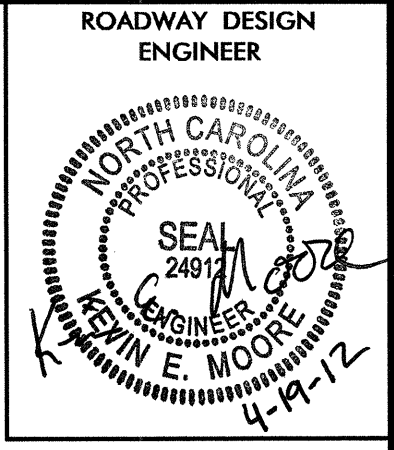
HYDRAULICS ENGINEER

Professional Engineer Seal for Kevin E. Moore, No. 31977, State of North Carolina. Signature: K.E. Moore, dated 4-18-12.

ROADWAY DESIGN ENGINEER

Professional Engineer Seal for Kevin E. Moore, No. 24912, State of North Carolina. Signature: K.E. Moore, dated 4-19-12.





SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL PLAN SHEET SYMBOLS
1-C	SURVEY CONTROL SHEET
2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
3	SUMMARY OF QUANTITIES
3A	SUMMARY OF DRAINAGE, GUARDRAIL, EARTHWORK, ASPHALT PAVEMENT REMOVAL, SHOULDER BERM GUTTER, HYDRAULIC RIP RAP, AND PARCEL INDEX
4	PLAN SHEET
5	-L- & -Y- PROFILE SHEET
TMP-1 THRU TMP-6	TRAFFIC MANAGEMENT PLAN
PMP-1 THRU PMP-2	PAVEMENT MARKING PLAN
RF-1	REFORESTATION PLAN
EC-1 THRU EC-5	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-3	SIGNING PLAN
UC-1 THRU UC-10	UTILITY CONSTRUCTION PLANS
UO-1 THRU UO-8	UTILITIES PLANS
X-1A	CROSS SECTION SUMMARY SHEET
X-1 THRU X-6	CROSS-SECTIONS
S-1 THRU S-19	STRUCTURE PLANS

GENERAL NOTES: 2012 SPECIFICATIONS
EFFECTIVE: 01-17-12
REVISED: 11/01/11

GRADING AND SURFACING OR RESURFACING AND WIDENING:
THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

SUPERELEVATION:
ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. 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 Columbus County Public Utilities, CenturyLink, Progress Energy
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

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

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
310.10	Driveway Pipe Construction
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 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
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
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.46	Traffic Bearing Precast Drainage Structure
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.02	Guide for Rip Rap at Pipe Outlets

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
Property Corner	-----
Property Monument	□ ECM
Parcel/Sequence Number	⑩ 23
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	○
Well	○ W
Small Mine	✕
Foundation	□
Area Outline	□
Cemetery	□
Building	□
School	□
Church	□
Dam	□

HYDROLOGY:

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

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○
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	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	○
Proposed Right of Way Line with Concrete or Granite RW Marker	○
Proposed Control of Access Line with Concrete C/A Marker	○
Existing Control of Access	○
Proposed Control of Access	○
Existing Easement Line	-----
Proposed Temporary Construction Easement	-----
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	-----

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	----- CONC
Bridge Wing Wall, Head Wall and End Wall	----- CONC WW
MINOR:	
Head and End Wall	----- CONC HW
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	□ CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	○
Storm Sewer	-----

UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊕
Power Line Tower	⊗
Power Transformer	⊗
U/G Power Cable Hand Hole	□
H-Frame Pole	●
Recorded U/G Power Line	----- P
Designated U/G Power Line (S.U.E.*)	----- P

TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊕
Telephone Booth	□
Telephone Pedestal	⊕
Telephone Cell Tower	⊗
U/G Telephone Cable Hand Hole	□
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	⊕
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	□
TV Tower	⊗
U/G TV Cable Hand Hole	□
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

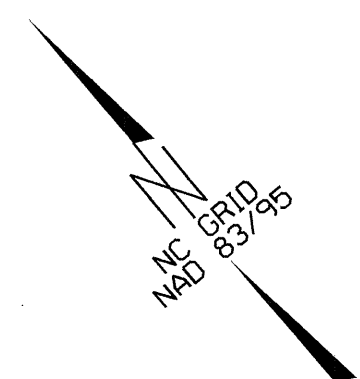
MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	□
Utility Unknown U/G Line	----- UTL
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	⊕
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.

6/22/99

SURVEY CONTROL SHEET B-4471

PROJECT REFERENCE NO.	SHEET NO.
B-4471	I-C
Location and Surveys	



BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
B44712	B4471-2	122669.0165	2069785.1583	53.01	OUTSIDE PROJECT LIMITS	
BL5	B4471 BL-5	122151.9916	2070129.9705	51.07	10+68.34	15.10 RT
BL6	B4471 BL-6	121549.4505	2070565.2237	52.39	17+96.91	100.23 RT
BL7	B4471 BL-7	121388.4968	2071020.2202	52.97	22+54.07	15.58 RT
BL8	B4471 BL-8	121247.4266	2071427.9699	59.84	OUTSIDE PROJECT LIMITS	

BY POINT	DESC.	NORTH	EAST	ELEVATION	Y STATION	OFFSET
BY6	B4471 BL-6	121549.4505	2070565.2237	52.39	11+02.25	93.04 RT
BY9	B4471 BY-9	121150.6872	2070601.0620	56.34	14+51.00	11.69 RT

 BM6 ELEVATION = 51.05
 N 121463 E 2070528
 Y STATION 11+62.00 67 RIGHT
 R/R SPIKE IN 24' POPLAR

ROW MARKER IRON PIN AND CAP - E					
ALIGN	STATION	OFFSET	NORTH	EAST	
L	11+40.75	-50.00	122126.6917	2070223.9927	
L	11+40.75	-30.00	122115.8037	2070207.2161	
L	11+10.00	30.00	122108.9340	2070140.1462	
L	11+10.00	50.00	122098.0461	2070123.3697	
L	22+50.00	-30.00	121432.8935	2071031.3027	
L	15+45.58	-50.00	121926.4372	2070470.2796	
L	18+24.62	-50.00	121645.2926	2070883.3679	
L	22+14.70	-50.00	121463.3263	2071004.5799	
L	12+34.67	-50.00	122047.9048	2070275.1250	
L	12+34.67	50.00	121993.4652	2070191.2421	
L	14+36.48	50.00	121828.1850	2070322.4180	
L	14+70.25	56.36	121798.5461	2070342.8974	
L	17+55.88	81.95	121589.5013	2070545.6896	
L	16+71.10	92.58	121644.1576	2070490.5409	
L	15+45.58	70.02	121734.7849	2070392.7968	

L			
TYPE	STATION	NORTH	EAST
POT	10+00.00	122217.5370	2070105.4275
PC	12+34.67	122020.6850	2070233.1835
PT	15+45.58	121788.2537	2070437.3993
PC	18+24.62	121688.1091	2070651.0876
PT	22+14.70	121416.0850	2070988.2012
POT	25+31.57	121312.3130	2071287.5117

Y			
TYPE	STATION	NORTH	EAST
POT	10+00.00	121567.4632	2070702.2690
PC	11+13.34	121480.9099	2070629.1170
PT	12+31.22	121371.4769	2070594.1970
POT	14+58.64	121144.8593	2070613.2884

ROW MARKER IRON PIN AND CAP - E					
ALIGN	STATION	OFFSET	NORTH	EAST	
Y	12+20.00	-29.66	121982.9547	2070623.3364	
Y	10+57.08	-50.00	121491.5907	2070703.6198	
Y	11+13.34	-50.00	121448.6285	2070667.2996	

ROW MARKER PERMANENT EASEMENT - E					
ALIGN	STATION	OFFSET	NORTH	EAST	
L	14+00.29	111.88	121814.5854	2070250.5782	

ROW MARKER PERMANENT EASEMENT - E					
ALIGN	STATION	OFFSET	NORTH	EAST	
Y	11+81.52	40.35	121430.6565	2070559.1044	

NCDOT GPS STATION (B4471-1)
 LOCALIZED PROJECT COORDINATES
 N=123169.6618
 E=2069373.3842
 ELEV=64.11'

NCDOT GPS STATION (B4471-2)
 LOCALIZED PROJECT COORDINATES
 N=122669.0165
 E=2069785.1583
 ELEV=53.01'

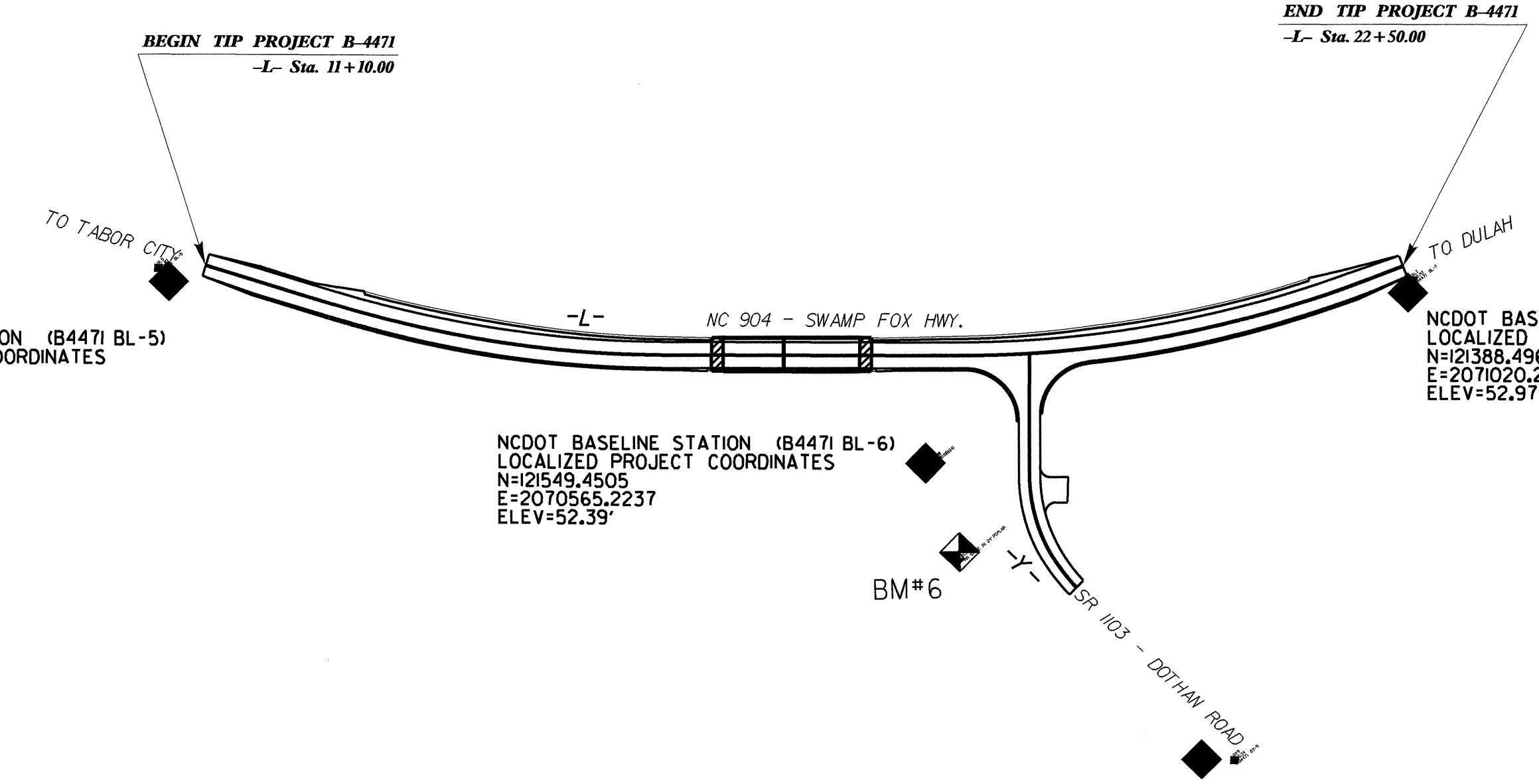
NCDOT BASELINE STATION (B4471 BL-5)
 LOCALIZED PROJECT COORDINATES
 N=122151.9916
 E=2070129.9705
 ELEV=51.07'

NCDOT BASELINE STATION (B4471 BL-6)
 LOCALIZED PROJECT COORDINATES
 N=121549.4505
 E=2070565.2237
 ELEV=52.39'

NCDOT BASELINE STATION (B4471 BY-9)
 LOCALIZED PROJECT COORDINATES
 N=121150.6872
 E=2070601.0620
 ELEV=56.34'

NCDOT BASELINE STATION (B4471 BL-7)
 LOCALIZED PROJECT COORDINATES
 N=121388.4968
 E=2071020.2202
 ELEV=52.97'

NCDOT BASELINE STATION (B4471 BL-8)
 LOCALIZED PROJECT COORDINATES
 N=121247.4266
 E=2071427.9699
 ELEV=59.84'



DATUM DESCRIPTION
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "GUIDE RM3" WITH NAD 83/95 STATE PLANE GRID COORDINATES OF NORTHING: 114971.0102(ft) EASTING: 2090733.1971(ft) ELEVATION: 60.56(ft)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.0000724
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GUIDE RM3" TO -L- STATION 11+10.00 IS N 70°49'13.71" W 21776.6230'
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NAVD 88

NOTES:

- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.NCDOT.ORG/DOH/Preconstruct/HighwayLocation/Project/B4471_LS_Control.txt](http://www.ncdot.org/DOH/Preconstruct/HighwayLocation/Project/B4471_LS_Control.txt)
 THE FILES TO BE FOUND ARE AS FOLLOWS:
 B4471_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 EXISTING HARN MONUMENTATION
 SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

NOTE: DRAWING NOT TO SCALE

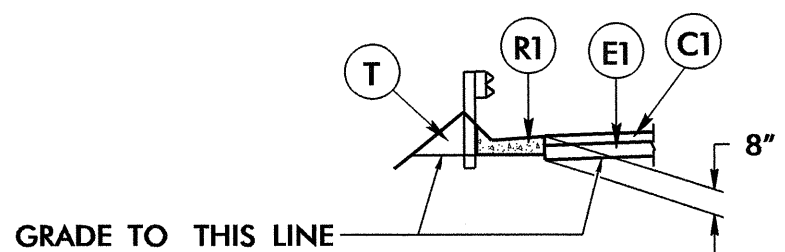
21-FEB-2002 07:45
 P:\Location\Surveys\B4471_LS_1c.dgn

6/2/99

**PAVEMENT SCHEDULE
FINAL DESIGN**

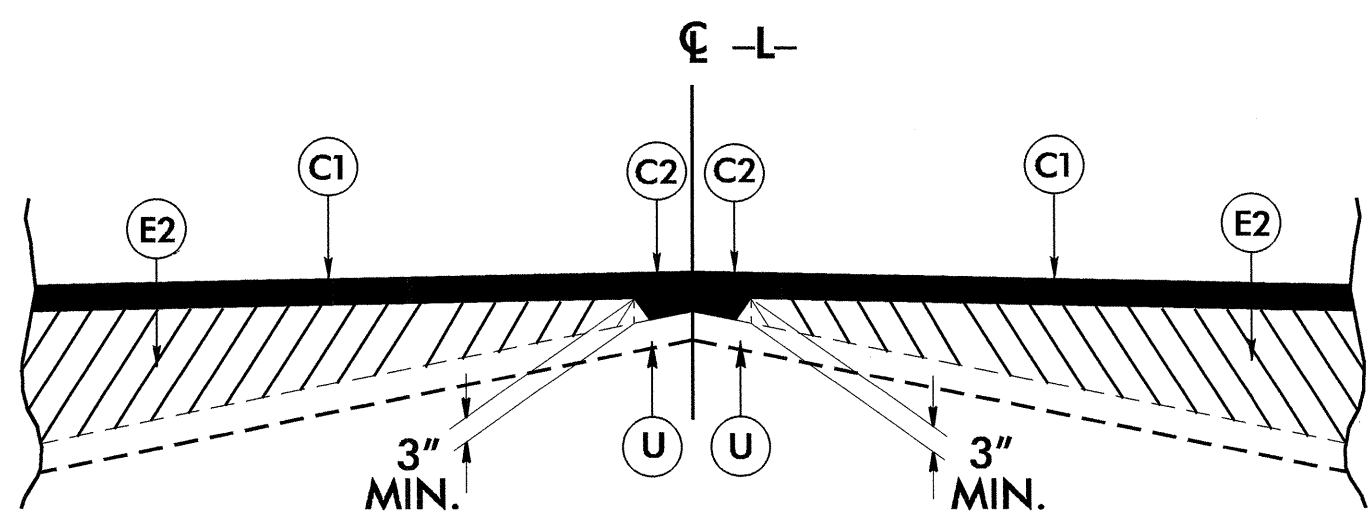
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 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.
R1	SHOULDER BERM GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)

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

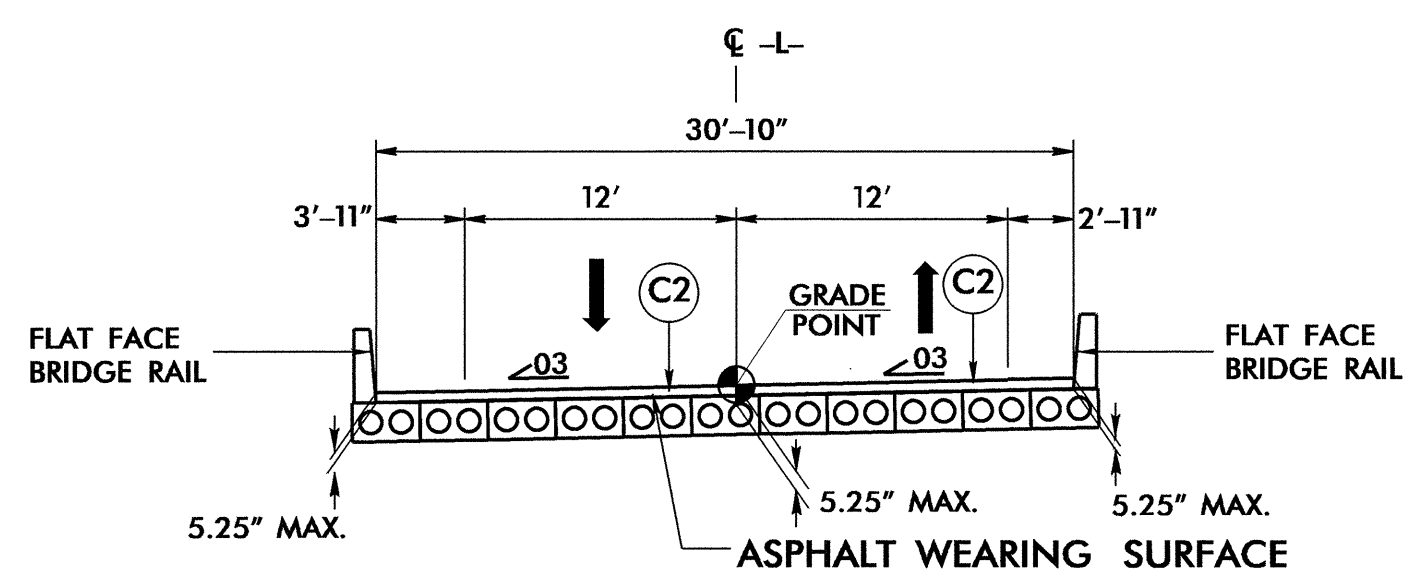


**DETAIL SHOWING SHOULDER BERM
GUTTER ON TOP OF SUBGRADE**

- L- STA. 12+60.06 TO -L- STA. 15+92.81 (BEGIN APPROACH SLAB) LT.
- L- STA. 17+42.19 (END APPROACH SLAB) TO -L- STA. 21+62.44 LT.
- L- STA. 15+88.81 TO -L- STA. 15+92.81 (BEGIN APPROACH SLAB) RT.
- L- STA. 17+42.19 (END APPROACH SLAB) TO -L- STA. 17+46.19 RT.

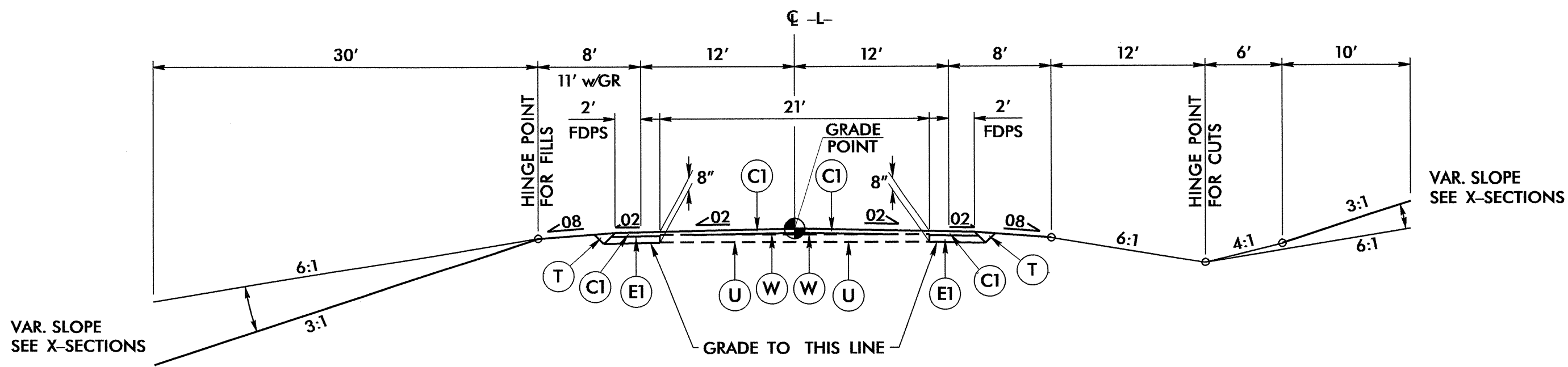


WEDGING DETAIL



TYPICAL SECTION ON STRUCTURE

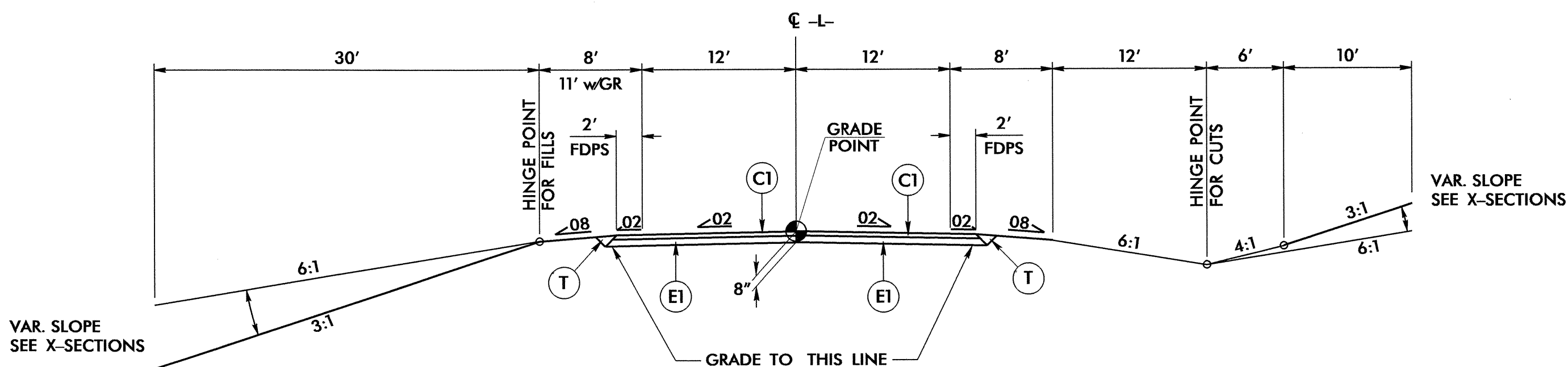
- L- STA. 16+03.81 (BEGIN BRIDGE)
TO -L- STA. 17+31.19 (END BRIDGE)



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

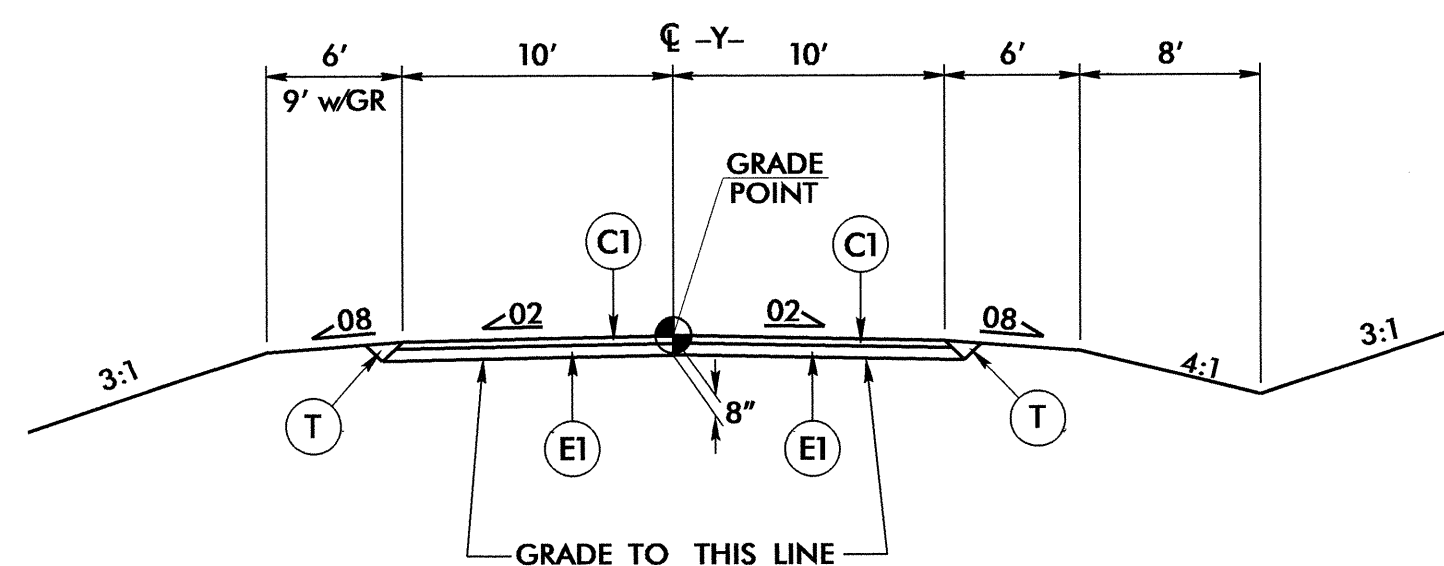
- L- STA. 11+10.00 TO -L- STA. 14+69.00
- L- STA. 19+71.00 TO -L- STA. 22+50.00



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

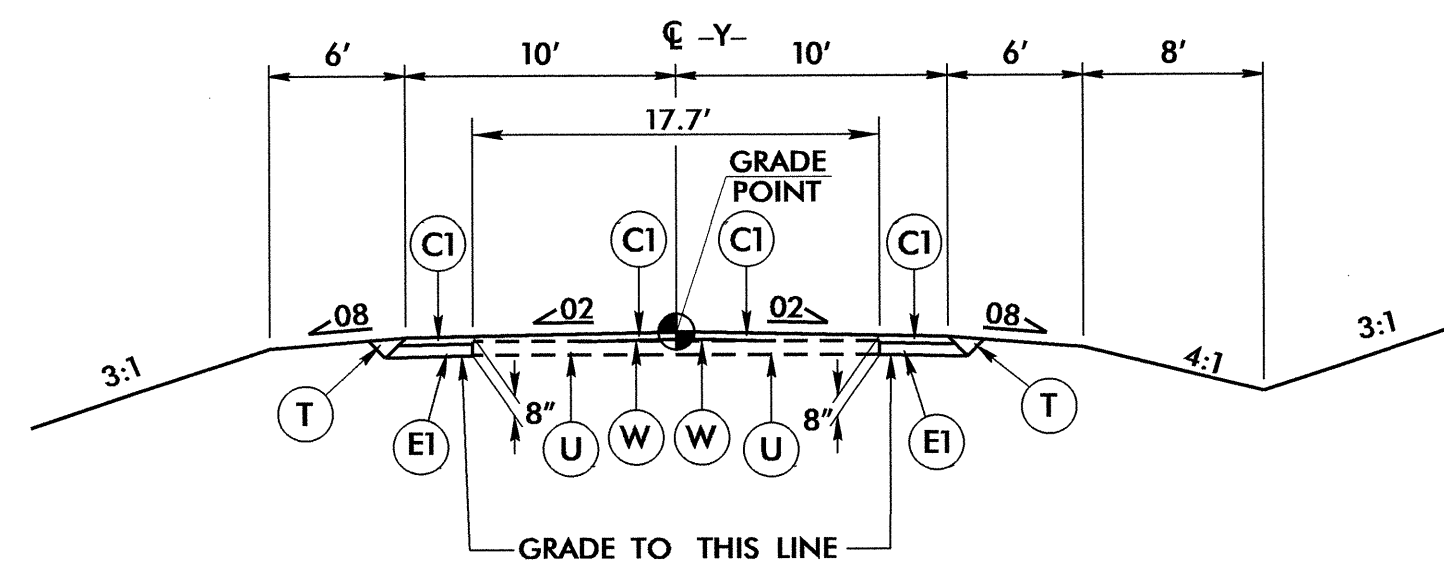
- L- STA. 14+69.00 TO -L- STA. 16+03.81 (BEGIN BRIDGE)
- L- STA. 17+31.19 (END BRIDGE) TO -L- STA. 19+71.00



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3

- Y- STA. 10+12.02 TO -Y- STA. 11+56.00



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4

- Y- STA. 11+56.00 TO -Y- STA. 12+31.22

PROJECT REFERENCE NO. B-4471	SHEET NO. 2
ROADWAY DESIGN ENGINEER <i>Kevin E. Moore</i>	PAVEMENT DESIGN ENGINEER <i>Clark S. Morrison</i>

17-APR-2012 13:23
S:\PROJECTS\114471\rdy_tjpb.dgn

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202844

ItemNumber	Sec #	Quantity	Unit	Description
000100000-N	800	Lump Sum		MOBILIZATION
000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING
002900000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ***** (16+67.50 -L-)
004300000-N	226	Lump Sum		GRADING
005000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB- BING
005700000-E	226	400	CY	UNDERCUT EXCAVATION
013400000-E	240	170	CY	DRAINAGE DITCH EXCAVATION
019500000-E	265	400	CY	SELECT GRANULAR MATERIAL
019600000-E	270	500	SY	GEOTEXTILE FOR SOIL STABILIZA- TION
031800000-E	300	80	TON	FOUNDATION CONDITIONING MATE- RIAL, MINOR STRUCTURES
032000000-E	300	1,440	SY	FOUNDATION CONDITIONING GEO- TEXTILE
033520000-E	305	32	LF	15" DRAINAGE PIPE
034300000-E	310	32	LF	15" SIDE DRAIN PIPE
044830000-E	310	56	LF	18" RC PIPE CULVERTS, CLASS IV
099500000-E	340	76	LF	PIPE REMOVAL
122000000-E	545	80	TON	INCIDENTAL STONE BASE
133000000-E	607	140	SY	INCIDENTAL MILLING
148900000-E	610	840	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
151900000-E	610	900	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B
157500000-E	620	95	TON	ASPHALT BINDER FOR PLANT MIX
169300000-E	654	24	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR
202200000-E	815	22.4	CY	SUBDRAIN EXCAVATION
203300000-E	815	16.8	CY	SUBDRAIN FINE AGGREGATE
204400000-E	815	100	LF	6" PERFORATED SUBDRAIN PIPE
207000000-N	815	1	EA	SUBDRAIN PIPE OUTLET

SUMMARY OF QUANTITIES - B-4471

ItemNumber	Sec #	Quantity	Unit	Description
207700000-E	815	6	LF	6" OUTLET PIPE
228600000-N	840	2	EA	MASONRY DRAINAGE STRUCTURES
236700000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840.29
255600000-E	846	765	LF	SHOULDER BERM GUTTER
303000000-E	862	1,075	LF	STEEL BM GUARDRAIL
304500000-E	862	75	LF	STEEL BM GUARDRAIL, SHOP CURVED
315000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
319500000-N	862	1	EA	GUARDRAIL ANCHOR UNITS, TYPE AT-1
321500000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE III
327000000-N	SP	3	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
364900000-E	876	2	TON	RIP RAP, CLASS B
365600000-E	876	740	SY	GEOTEXTILE FOR DRAINAGE
407200000-E	903	58	LF	SUPPORTS, 3-LB STEEL U-CHANNEL
410200000-N	904	3	EA	SIGN ERECTION, TYPE E
415500000-N	907	14	EA	DISPOSAL OF SIGN SYSTEM, U- CHANNEL
440000000-E	1110	145	SF	WORK ZONE SIGNS (STATIONARY)
440500000-E	1110	344	SF	WORK ZONE SIGNS (PORTABLE)
441000000-E	1110	73	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
442200000-N	1120	2	DAY	PORTABLE CHANGEABLE MESSAGE SIGN (SHORT TERM)
443000000-N	1130	46	EA	DRUMS
444500000-E	1145	104	LF	BARRICADES (TYPE III)
445500000-N	1150	83	DAY	FLAGGER
448000000-N	1165	2	EA	TMA
465000000-N	1251	19	EA	TEMPORARY RAISED PAVEMENT MARKERS
468500000-E	1205	2,659	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)

ItemNumber	Sec #	Quantity	Unit	Description
468600000-E	1205	2,647	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)
481000000-E	1205	10,709	LF	PAINT PAVEMENT MARKING LINES (4")
483500000-E	1205	27	LF	PAINT PAVEMENT MARKING LINES (24")
490000000-N	1251	18	EA	PERMANENT RAISED PAVEMENT MARKERS
532580000-E	1510	1,416	LF	8" WATER LINE
554600000-E	1515	4	EA	8" VALVE
567200000-N	1515	1	EA	RELOCATE FIRE HYDRANT
587150000-E	1550	599	LF	TRENCHLESS INSTALLATION OF 8" IN SOIL
587151000-E	1550	256	LF	TRENCHLESS INSTALLATION OF 8" NOT IN SOIL
600000000-E	1605	3,675	LF	TEMPORARY SILT FENCE
600600000-E	1610	250	TON	STONE FOR EROSION CONTROL, CLASS A
600900000-E	1610	105	TON	STONE FOR EROSION CONTROL, CLASS B
601200000-E	1610	185	TON	SEDIMENT CONTROL STONE
601500000-E	1615	3.5	ACR	TEMPORARY MULCHING
601800000-E	1620	150	LB	SEED FOR TEMPORARY SEEDING
602100000-E	1620	0.5	TON	FERTILIZER FOR TEMPORARY SEED- ING
602400000-E	1622	200	LF	TEMPORARY SLOPE DRAINS
602900000-E	SP	1,900	LF	SAFETY FENCE
603000000-E	1630	120	CY	SILT EXCAVATION
603600000-E	1631	5,500	SY	MATTING FOR EROSION CONTROL
603700000-E	SP	960	SY	COIR FIBER MAT
604200000-E	1632	240	LF	1/4" HARDWARE CLOTH
607000000-N	1639	4	EA	SPECIAL STILLING BASINS
6071012000-E	SP	240	LF	COIR FIBER WATTLE
6071020000-E	SP	40	LB	POLYACRYLAMIDE (PAM)

ItemNumber	Sec #	Quantity	Unit	Description
6071030000-E	1640	140	LF	COIR FIBER BAFFLE
6071050000-E	SP	1	EA	*** SKIMMER (1-1/2")
608400000-E	1660	3.7	ACR	SEEDING & MULCHING
608700000-E	1660	1.5	ACR	MOWING
609000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
609300000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
609600000-E	1662	100	LB	SEED FOR SUPPLEMENTAL SEEDING
610800000-E	1665	2.5	TON	FERTILIZER TOPDRESSING
611450000-N	1667	20	MHR	SPECIALIZED HAND MOWING
611700000-N	SP	25	EA	RESPONSE FOR EROSION CONTROL
612300000-E	1670	0.25	ACR	REFORESTATION

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)**

Table with columns for STATION, LOCATION (L/RT OR CL), STRUCTURE NO., TOP ELEVATION, INVERT ELEVATION, SLOPE CRITICAL, DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC), C.S. PIPE (UNLESS NOTED OTHERWISE), CLASS IV R.C. PIPE (UNLESS OTHERWISE NOTED), ENDWALLS (STD. 838.01, STD. 838.11, etc.), QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES AND HOOD STANDARD 840.03, TYPE OF GRATE, 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.F.T., 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 for 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 SHOUL. WIDTH, FLARE LENGTH (APPROACH END, TRAILING END), W (APPROACH END, TRAILING END), ANCHORS (XI MOD, III, GRAU 350, TL-2, XIII, CAT-1, VI MOD, BIC, AT-1), IMPACT ATTENUATOR TYPE 350 (EA, G, NG), SINGLE FACED GUARDRAIL, REMOVE EXISTING GUARDRAIL, REMOVE AND STOCKPILE EXISTING GUARDRAIL, and REMARKS.

**SUMMARY OF EARTHWORK
IN CUBIC YARDS**

Table with columns for LOCATION, UNCL. EXCAV., EMBANK. +%, BORROW, and WASTE. Includes subtotals for PHASE 1 BUILD PROPOSED and PHASE 2 REMOVE EXISTING.

**SUMMARY OF HYDRAULIC
RIP RAP & DDE QUANTITIES**

Table with columns for CHAIN, STATION, LOCATION, RIP RAP CLASS (TONS), GEOTEXTILE FOR DRAINAGE (SY), DDE (CY), DETAIL, and COMMENT.

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.

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."

**SUMMARY OF REMOVAL OF
EXISTING ASPHALT PAVEMENT**

Table with columns for SURVEY LINE, STATION, STATION, LOCATION (L/RT/CL), and SY. Includes PROJECT TOTAL and SAY.

**SUMMARY OF
SHOULDER BERM GUTTER**

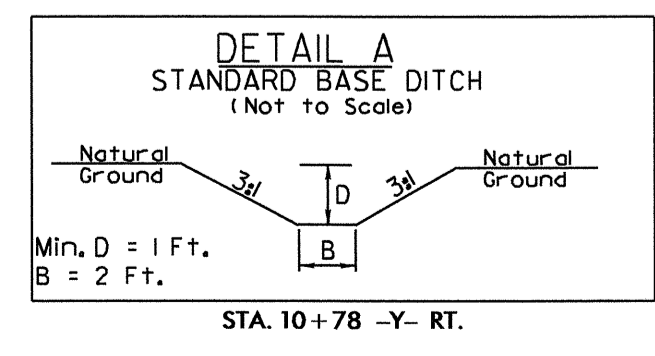
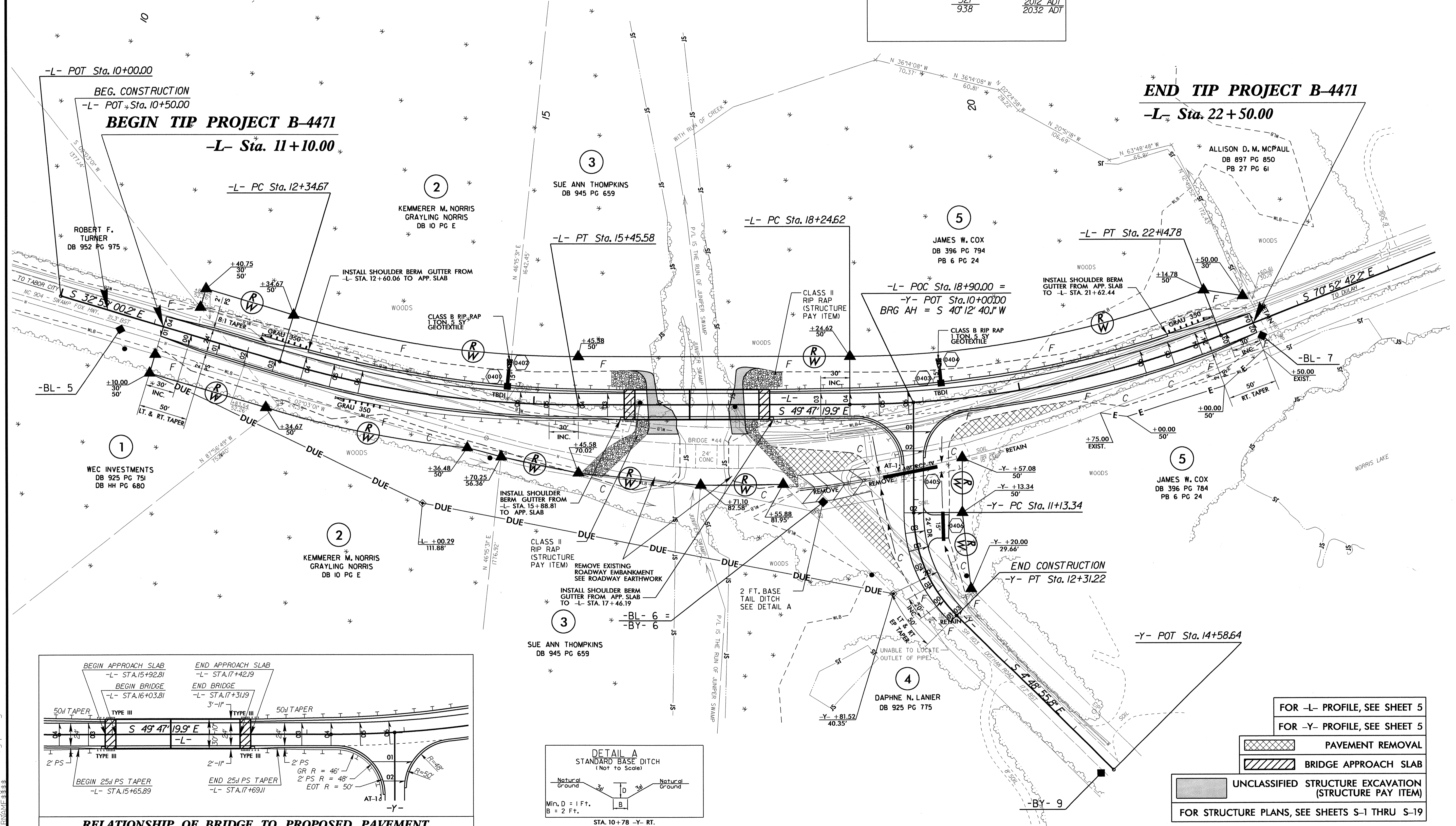
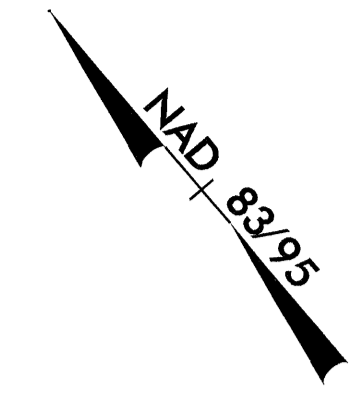
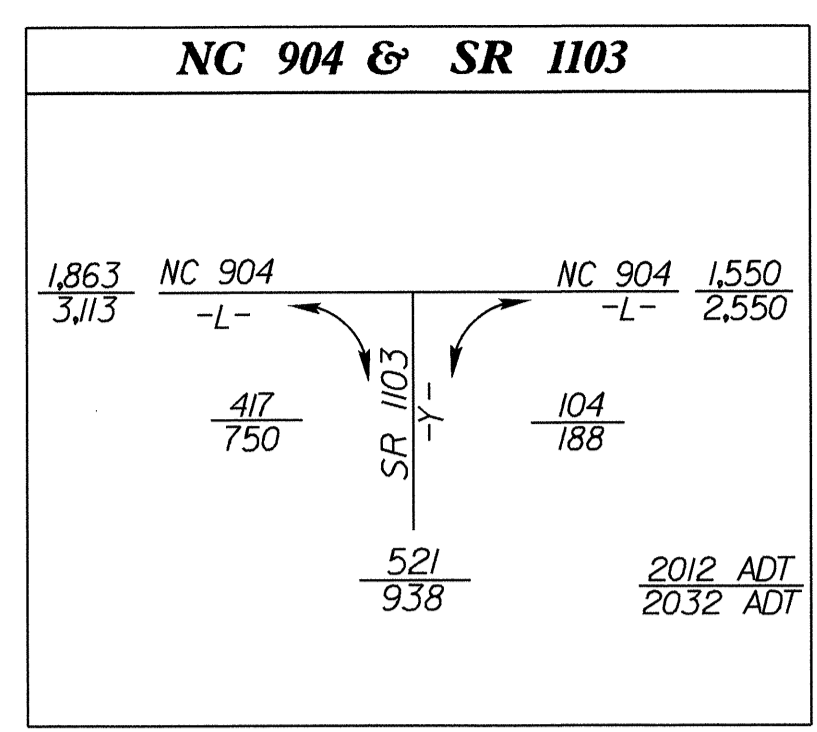
Table with columns for SURVEY LINE, STATION, STATION, and LENGTH. Includes PROJECT TOTAL and SAY.

PARCEL INDEX

Table with columns for PARCEL NO., PROPERTY OWNERS NAME, and PLAN SHEET.

ABBREVIATIONS
CY CUBIC YARD
DDE DRAINAGE DITCH EXCAVATION
FF FILTER FABRIC
RR RIP RAP
SY SQUARE YARD

-L- CURVE DATA		-Y- CURVE DATA	
PI Sta 13+91.25	PI Sta 20+21.93	PI Sta 11+75.51	
$\Delta = 16^\circ 48' 19.7''$ (LT)	$\Delta = 21^\circ 05' 22.3''$ (LT)	$\Delta = 45^\circ 01' 35.9''$ (LT)	
D = 5' 24' 18.9"	D = 5' 24' 18.9"	D = 38' 11' 49.9"	
L = 310.91'	L = 390.17'	L = 117.88'	
T = 156.58'	T = 197.32'	T = 62.17'	
R = 1,060.00'	R = 1,060.00'	R = 150.00'	
SE = SEE PLANS	SE = SEE PLANS	SE = SEE PLANS	



FOR -L- PROFILE, SEE SHEET 5
 FOR -Y- PROFILE, SEE SHEET 5

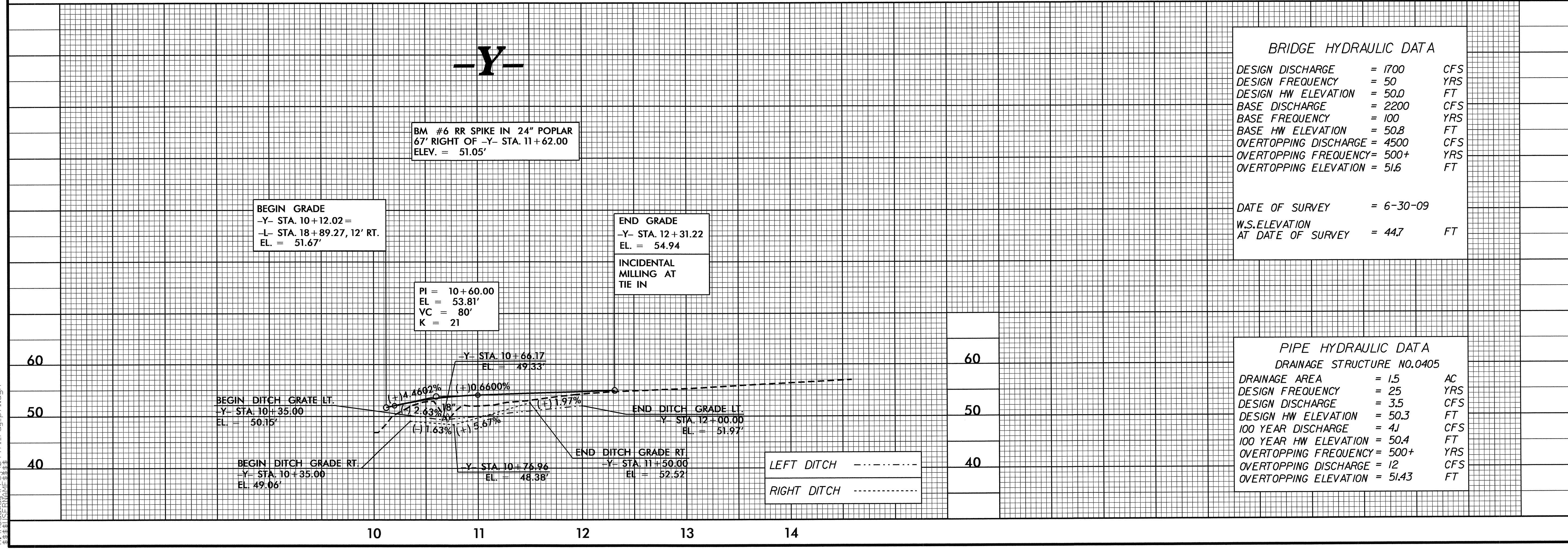
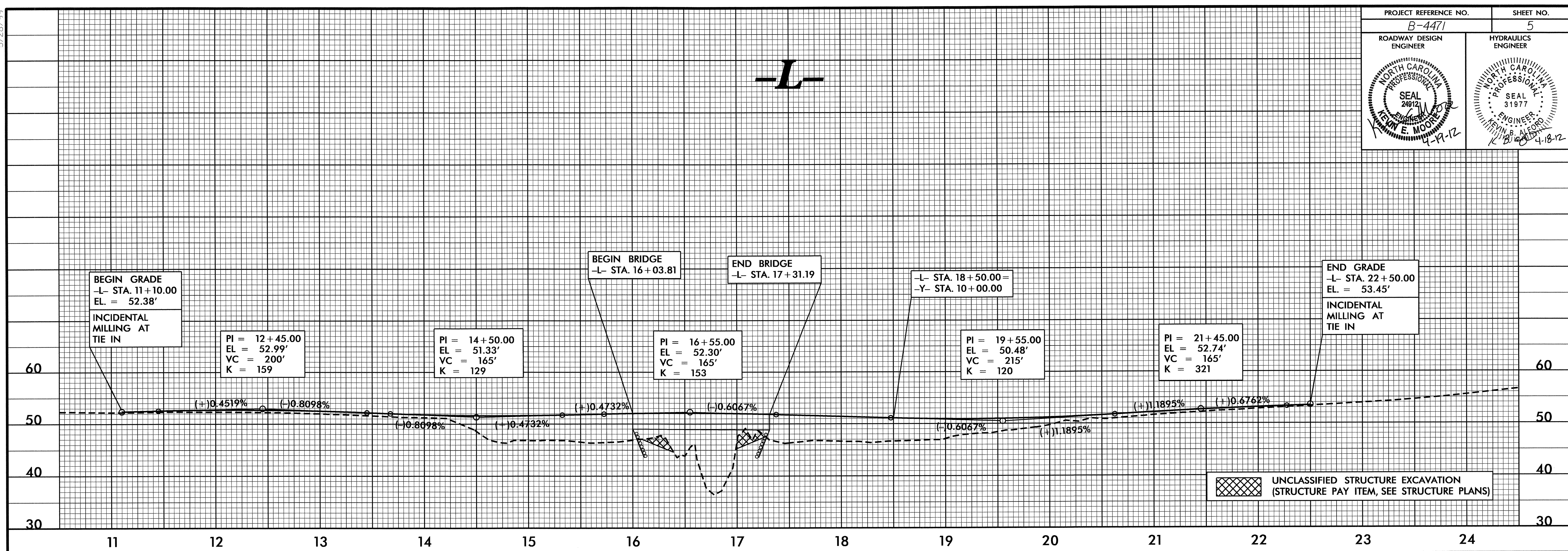
PAVEMENT REMOVAL
 BRIDGE APPROACH SLAB
 UNCLASSIFIED STRUCTURE EXCAVATION (STRUCTURE PAY ITEM)

FOR STRUCTURE PLANS, SEE SHEETS S-1 THRU S-19

09-APR-2012 09:37 RA:\MORRISLAKE\PROJECTS\B-4471-rdy.psh.dgn

5/28/99

PROJECT REFERENCE NO. B-4471	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 1700	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 50.0	FT
BASE DISCHARGE	= 2200	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 50.8	FT
OVERTOPPING DISCHARGE	= 4500	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 51.6	FT
DATE OF SURVEY	= 6-30-09	
W.S.ELEVATION AT DATE OF SURVEY	= 44.7	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.0405

DRAINAGE AREA	= 1.5	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 3.5	CFS
DESIGN HW ELEVATION	= 50.3	FT
100 YEAR DISCHARGE	= 4J	CFS
100 YEAR HW ELEVATION	= 50.4	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 12	CFS
OVERTOPPING ELEVATION	= 51.43	FT

I:\APR-2012\3123 RA_Proposed\Project\B4471_rdy.p1.dgn