

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-4758	1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
40192.1.1		P.E.	
40192.2.1		R.O.W.	
40192.3.1		Construction	

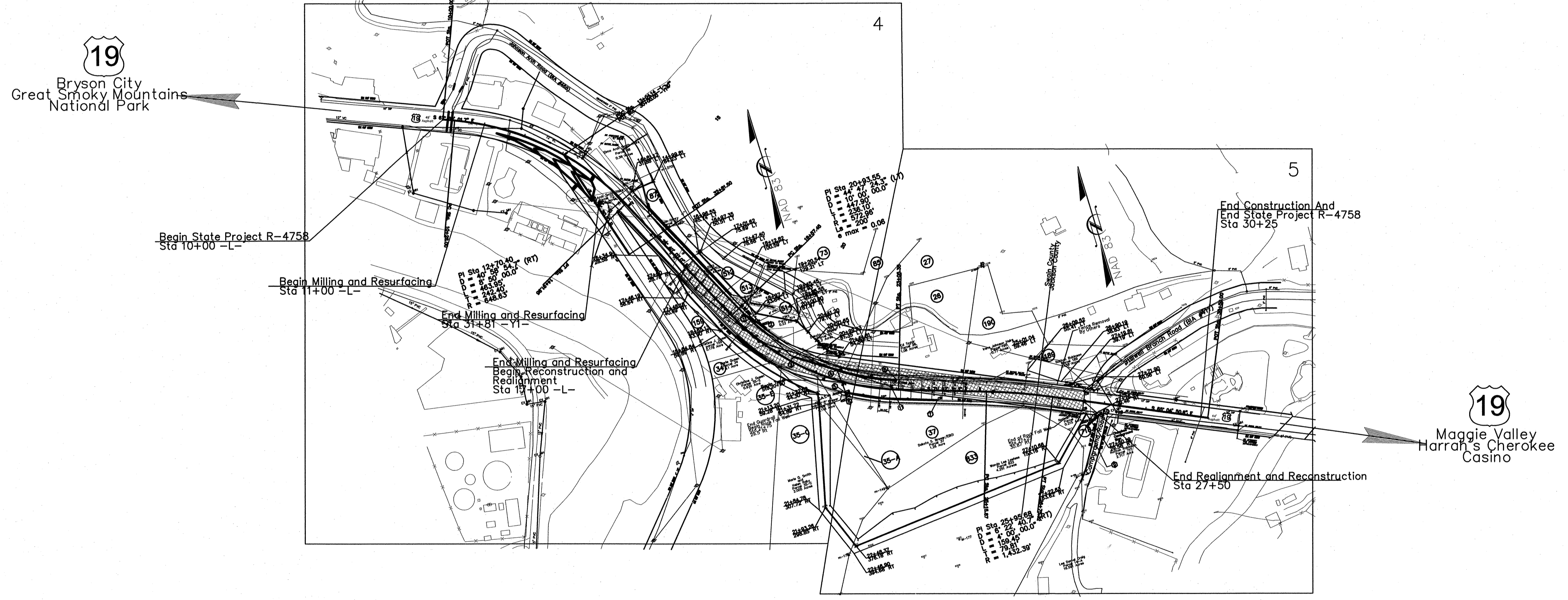
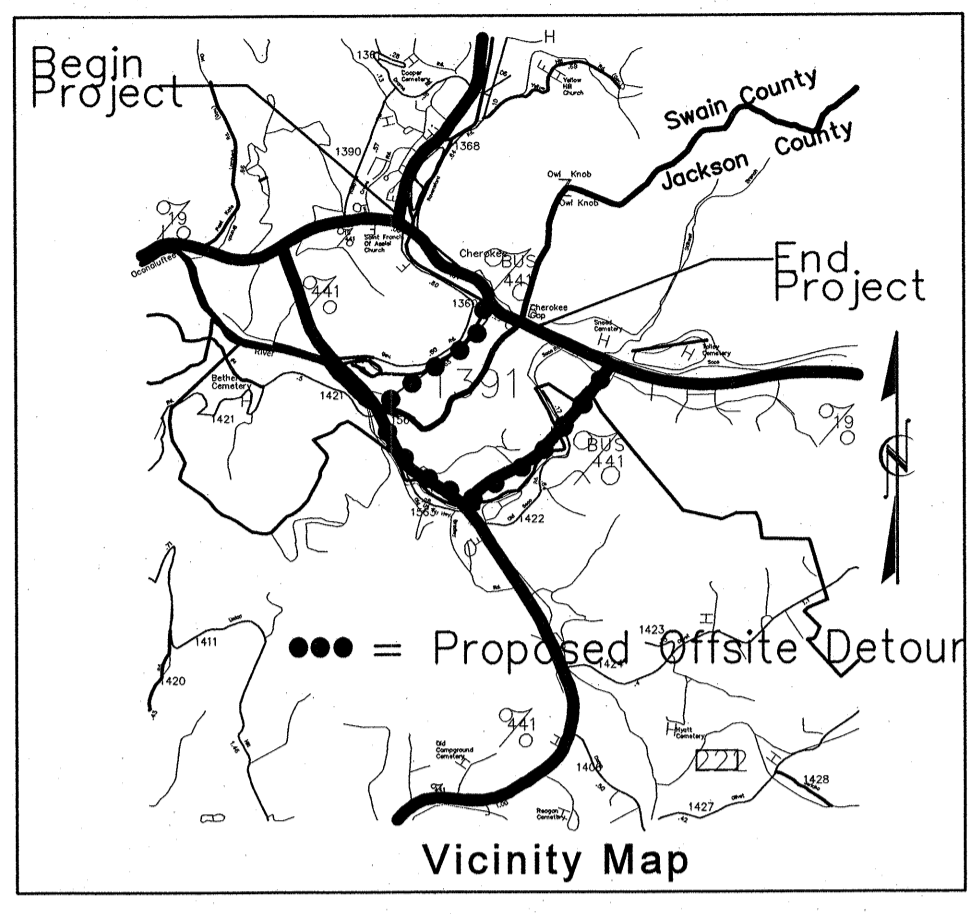
STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

SWAIN AND JACKSON COUNTY U.S. 19 IN DOWNTOWN CHEROKEE

LOCATION: 0.039 Mile West of Intersection of Whitewater Drive
(Old US 441) to 0.042 Mi East of Campground Drive

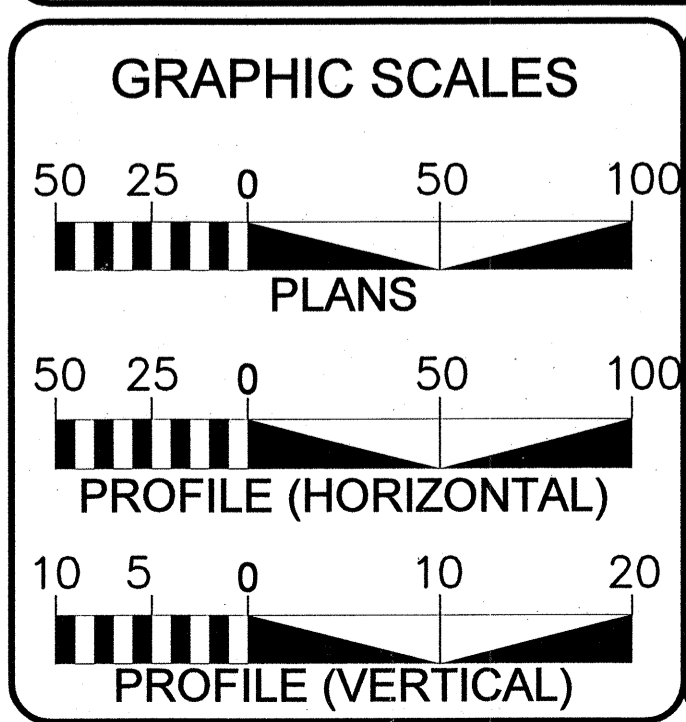
TYPE OF WORK: Realignment, Slope Stabilization, Resurfacing,
Retaining Walls, Lighting, Grading and Drainage

See Sheet 1-A For Index of Sheets



TIP PROJECT: R-4758

CONTRACT: C201514



DESIGN DATA

ADT 2007 = 13,100
ADT 2027 = 18,400
DHV = 11 %
D = 55%
T = 4% *
V = 40 mph
TTST = 1% Dual = 3 *

PROJECT LENGTH

Length State Project WBS 40192 = 0.365 mile
Length Roadway Project WBS 40192 = 0.365 mile

Prepared in the Office of:
DIVISION OF HIGHWAYS
Division 14 Design and Construct
253 Webster Road Sylva, NC 28779

2006 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE: November 1, 2005	Paul R. White, P.E. PROJECT ENGINEER
LETTING DATE: SEPTEMBER 18, 2007	Richard L. Hardison, P.L.S., P.E. PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SEAL 30368
RICHARD L. HARDISON
ENGINEER
P.L.S., P.E.

Signature: *[Signature]* P.L.S., P.E.

ROADWAY DESIGN ENGINEER

SEAL 30368
RICHARD L. HARDISON
ENGINEER
P.L.S., P.E.

Signature: *[Signature]* P.L.S., P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER	P.E.
-----------------------	------

Index of Sheets		Roadway English Standard Drawings	
Sheet #	Description	Std. Number	Description
1	Title Sheet	200.02	Method of Clearing II
1A	Index of Sheets, general Notes, and Standard Drawings	225.02	Guide For Grading Subgrade
1B	Conventional Symbols	225.04	Method of Obtaining Superelevation - 2 lane Pavement
1C	Survey Control	300.01	Method of pipe Installation - Method 'A'
2-2A	Typical Sections	840.01	Brick Catch Basins
3	Summary of Quantities	840.02	Concrete Catch Basins
3A-3B	Earthwork, Guardrail and Drainage Summaries	840.03	Frames, Grates, and Hood - For Use on Standard catch Basin
3C	Right of Way Data	840.14	Concrete Drop Inlet
4-5	Plan	840.15	Brick Drop Inlet
6	Profile	840.16	Drop Inlet Frame and Grate
TCP1 - TCP12	Traffic Control Plans	840.31	Concrete Junction Box
PM1 - PM2	Pavement Marking Plans	840.32	Brick Junction Box
PM3	Pavement Marking Intersection Detail	840.45	Precast Drainage Structure
E1-E4	Lighting Plans	840.54	Manhole Frame and Cover
EC-1	Erosion Control	846.01	Concrete Curb
Sign1	Signing Plan	848.01	Concrete Sidewalk
X1 - X13	Cross Sections	848.05	Wheelchair Ramp
X1A	Cross Section Summary	862.01	Guardrail Placement
S1-S16	Structure Plans (Retaining and catchment)	862.02	Guardrail Installation
RW1-RW4	Right of Way Plan		



GENERAL NOTES
2006 SPECIFICATIONS
EFFECTIVE: 07-18-06

GRADE LINE, GRADING AND SURFACING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

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

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 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.

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.

SUBSURFACE PLANS:

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

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE DUKE POWER, VERIZON, CHEROKEE WATER AND SEWER, CHEROKEE CABLEVISION

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS (SEE SHEET 5 FOR NOTE ON POLE REMOVAL)

RIGHT-OF-WAY MARKERS:

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

WHEELCHAIR RAMPS:

WHEELCHAIR RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS. THE CONSTRUCTION OF ALL WHEELCHAIR RAMPS SHALL BE IN ACCORDANCE WITH DETAILS IN PLANS.

TEMPORARY DRIVEWAY

TEMPORARY DRIVEWAY AT APPROXIMATE STATION 19+50 LEFT, SHALL NOT BE CLOSED AND REMOVED UNTIL CHEROKEE DOT HAS REOPENED JOHNSON ARCH ROAD TO TRAFFIC. CHEROKEE DOT MAY BE REACHED AT 497-1894.

SIDEWALK

ALL SIDEWALK FROM STATION 15+38 LEFT TO STATION 27+85 LEFT SHALL BE REMOVED AND REPLACED WITH A SIDEWALK 6 FEET WIDE. A WHEELCHAIR RAMP SHALL BE CONSTRUCTED AT EACH END. THE SIDEWALK FROM APPROXIMATELY 23+00 RIGHT TO THE INTERSECTION WITH CAMPGROUND ROAD SHALL BE REMOVED INCIDENTAL TO ROADWAY EXCAVATION AND NOT REPLACED.

JOHNSON ARCH ROAD AND REACTION BLOCKS

RECONSTRUCTION OF JOHNSON ARCH ROAD SHALL BE CARRIED OUT IN COOPERATION WITH CHEROKEE DOT (497-1894) AS THE PATTERNED GROUND ANCHORS (SHEETS S1-S15) ARE CONSTRUCTED.

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○
Property Corner	⊕
Property Monument	⊕
Parcel/Sequence Number	①23
Existing Fence Line	—x—x—x—
Proposed Woven Wire Fence	—○—
Proposed Chain Link Fence	—□—
Proposed Barbed Wire Fence	—◇—
Existing Wetland Boundary	—WLB—
Proposed Wetland Boundary	—WLB—
Existing Endangered Animal Boundary	—EAB—
Existing Endangered Plant Boundary	—EPB—

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or UG Tank Cap	○
Sign	⊕
Well	⊕
Small Mine	⊕
Foundation	▭
Area Outline	▭
Cemetery	⊕
Building	▭
School	▭
Church	⊕
Dam	▭

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	▭
Jurisdictional Stream	—JS—
Buffer Zone 1	—BZ 1—
Buffer Zone 2	—BZ 2—
Flow Arrow	←
Disappearing Stream	→
Spring	○
Swamp Marsh	⊕
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 Marker	⊕
Existing Control of Access	⊕
Proposed Control of Access	⊕
Existing Easement Line	—E—
Proposed Temporary Construction Easement	—E—
Proposed Temporary Drainage Easement	—TDE—
Proposed Permanent Drainage Easement	—PDE—
Proposed Permanent Utility Easement	—PUE—

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	—C—
Proposed Slope Stakes Fill	—F—
Proposed Wheel Chair Ramp	⊕
Proposed Wheel Chair Ramp Curb Cut	⊕
Curb Cut for Future Wheel Chair Ramp	⊕
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	▭
Bridge Wing Wall, Head Wall and End Wall	⊕
MINOR:	
Head and End Wall	▭
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	⊕
Paved Ditch Gutter	-----
Storm Sewer Manhole	⊕
Storm Sewer	-----

UTILITIES:

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

TELEPHONE:

Existing Telephone Pole	⊕
Proposed Telephone Pole	⊕
Telephone Manhole	⊕
Telephone Booth	⊕
Telephone Pedestal	⊕
Telephone Cell Tower	⊕
UG Telephone Cable Hand Hole	⊕
Recorded U/G Telephone Cable	-----
Designated U/G Telephone Cable (S.U.E.*)	-----
Recorded U/G Telephone Conduit	-----
Designated U/G Telephone Conduit (S.U.E.*)	-----
Recorded U/G Fiber Optics Cable	-----
Designated U/G Fiber Optics Cable (S.U.E.*)	-----

WATER:

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

TV:

TV Satellite Dish	⊕
TV Pedestal	⊕
TV Tower	⊕
UG TV Cable Hand Hole	⊕
Recorded U/G TV Cable	-----
Designated U/G TV Cable (S.U.E.*)	-----
Recorded U/G Fiber Optic Cable	-----
Designated U/G Fiber Optic Cable (S.U.E.*)	-----

GAS:

Gas Valve	⊕
Gas Meter	⊕
Recorded U/G Gas Line	-----
Designated U/G Gas Line (S.U.E.*)	-----
Above Ground Gas Line	-----

SANITARY SEWER:

Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
UG Sanitary Sewer Line	-----
Above Ground Sanitary Sewer	-----
Recorded SS Forced Main Line	-----
Designated SS Forced Main Line (S.U.E.*)	-----

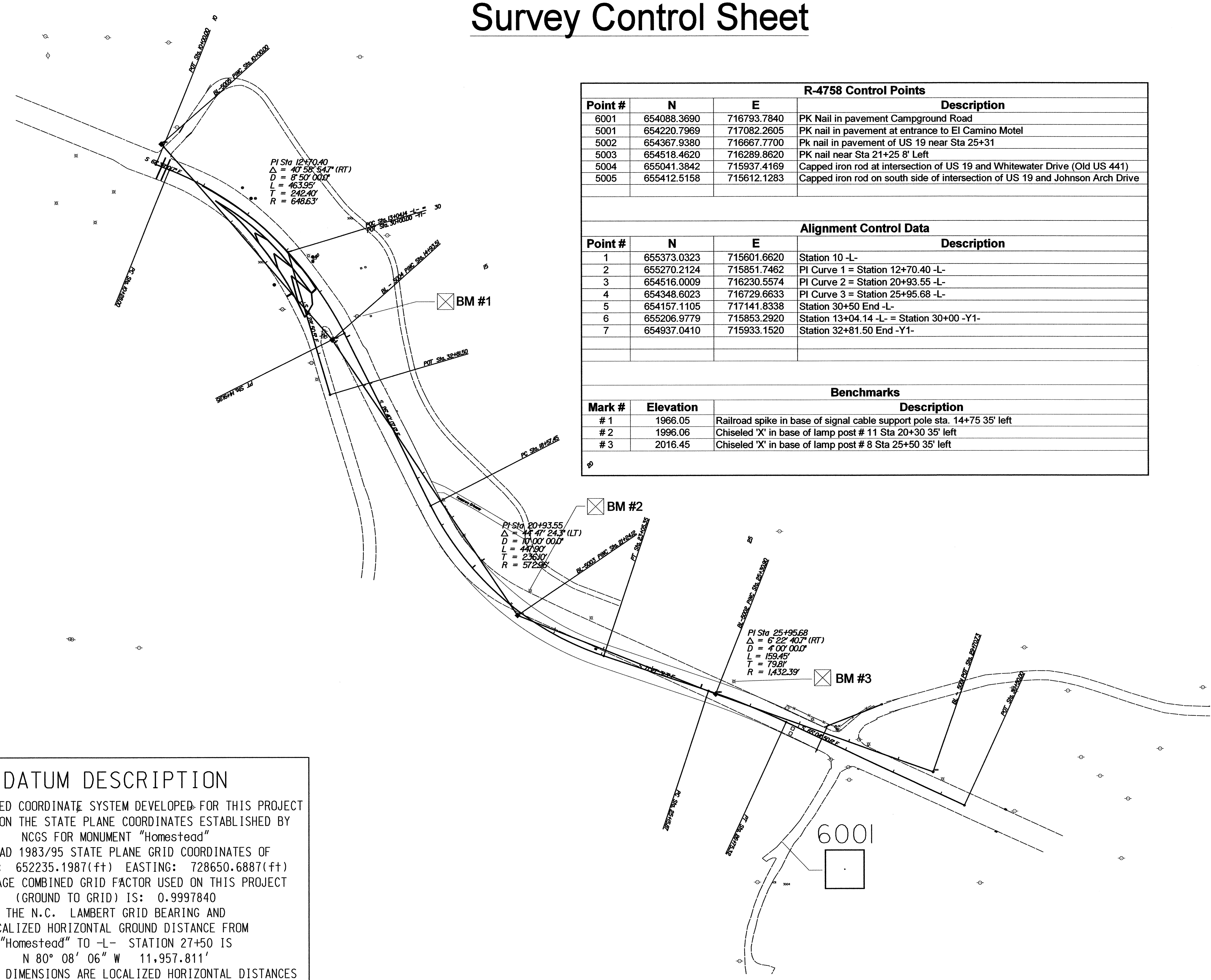
MISCELLANEOUS:

Utility Pole	⊕
Utility Pole with Base	⊕
Utility Located Object	⊕
Utility Traffic Signal Box	⊕
Utility Unknown U/G Line	-----
UG Tank; Water, Gas, Oil	▭
AG Tank; Water, Gas, Oil	▭
UG Test Hole (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

8/17/99

Survey Control Sheet

PROJECT REFERENCE NO. R-4758	SHEET NO. 1-C
RW SHEET NO.	
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 30368 RICHARD L. HARDISON 10-12-06	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 30368 RICHARD L. HARDISON 10-12-06



R-4758 Control Points			
Point #	N	E	Description
6001	654088.3690	716793.7840	PK Nail in pavement Campground Road
5001	654220.7969	717082.2605	PK nail in pavement at entrance to El Camino Motel
5002	654367.9380	716667.7700	PK nail in pavement of US 19 near Sta 25+31
5003	654518.4620	716289.8620	PK nail near Sta 21+25 8' Left
5004	655041.3842	715937.4169	Capped iron rod at intersection of US 19 and Whitewater Drive (Old US 441)
5005	655412.5158	715612.1283	Capped iron rod on south side of intersection of US 19 and Johnson Arch Drive

Alignment Control Data			
Point #	N	E	Description
1	655373.0323	715601.6620	Station 10 -L-
2	655270.2124	715851.7462	PI Curve 1 = Station 12+70.40 -L-
3	654516.0009	716230.5574	PI Curve 2 = Station 20+93.55 -L-
4	654348.6023	716729.6633	PI Curve 3 = Station 25+95.68 -L-
5	654157.1105	717141.8338	Station 30+50 End -L-
6	655206.9779	715853.2920	Station 13+04.14 -L- = Station 30+00 -Y1-
7	654937.0410	715933.1520	Station 32+81.50 End -Y1-

Benchmarks		
Mark #	Elevation	Description
# 1	1966.05	Railroad spike in base of signal cable support pole sta. 14+75 35' left
# 2	1996.06	Chiseled 'X' in base of lamp post # 11 Sta 20+30 35' left
# 3	2016.45	Chiseled 'X' in base of lamp post # 8 Sta 25+50 35' left

DATUM DESCRIPTION


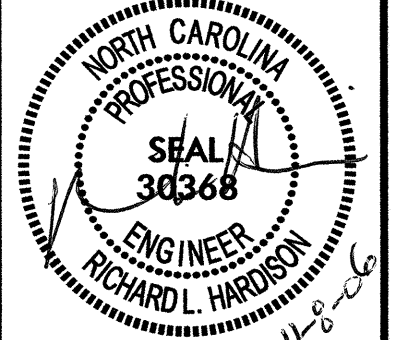
THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "Homestead"

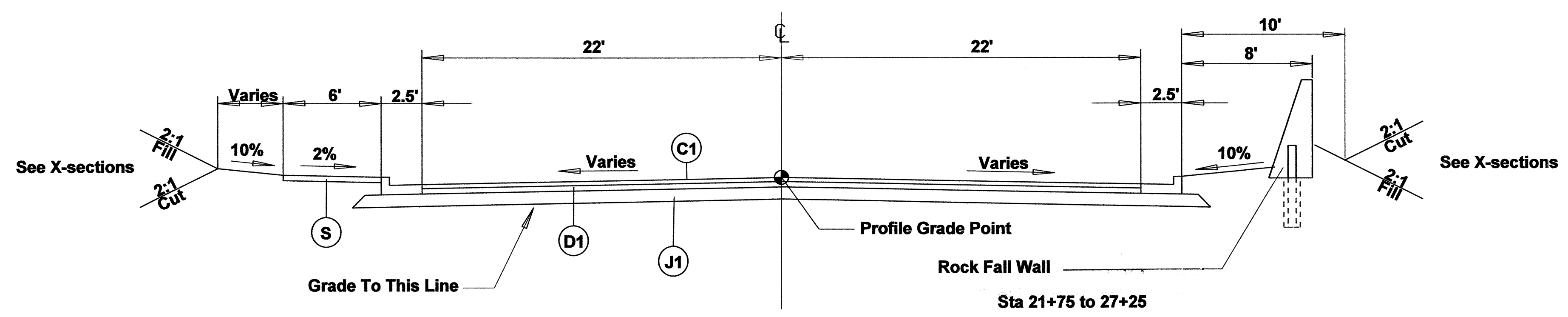
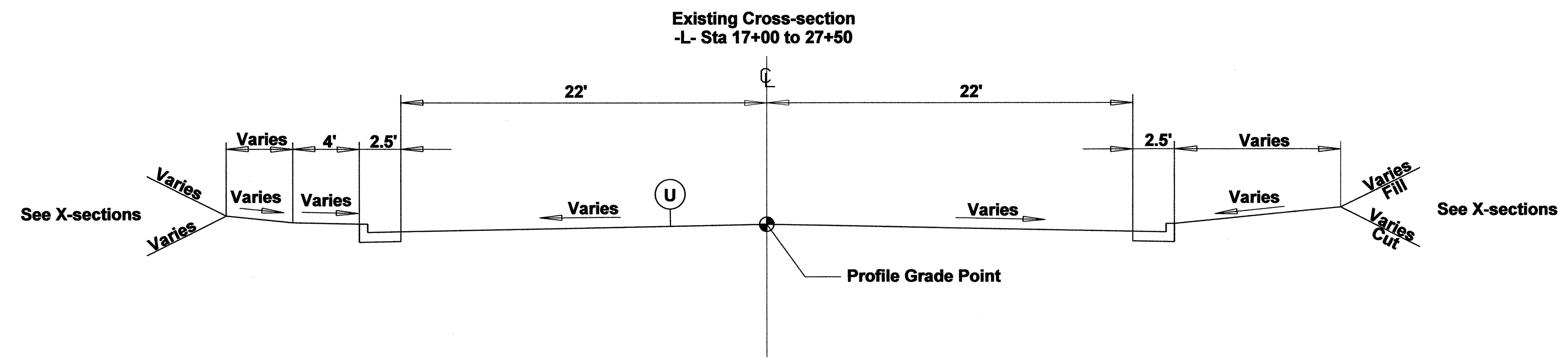
WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF
 NORTHING: 652235.1987(ft) EASTING: 728650.6887(ft)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9997840

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "Homestead" TO -L- STATION 27+50 IS
 N 80° 08' 06" W 11,957.811'

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

8/17/99

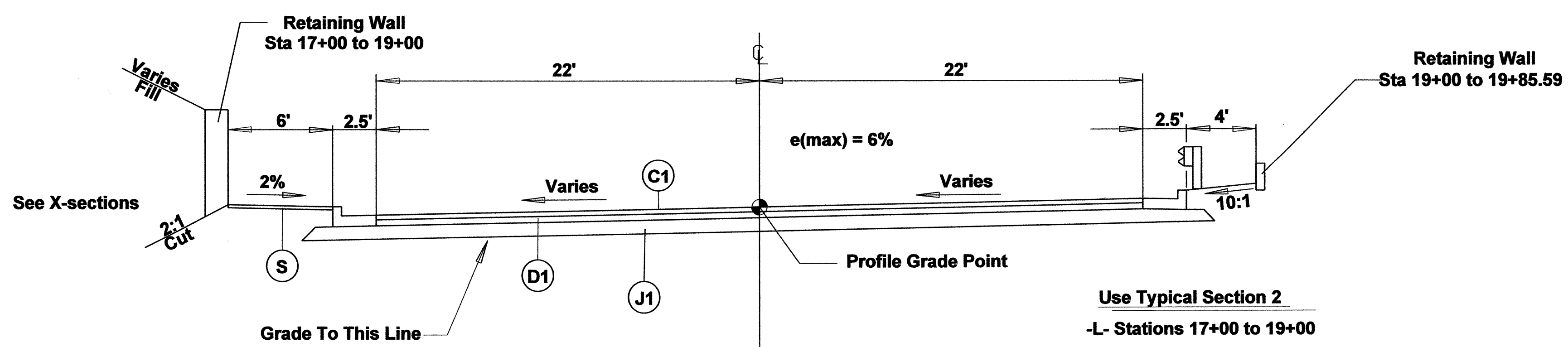
PROJECT REFERENCE NO. <i>R-4758</i>	SHEET NO. <i>2</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
	



Typical Section 1
Use Typical Section 1
-L- Stations 19+00 to 27+50

Pavement Schedule	
U	Existing Asphalt Pavement
C1	Prop. Approx. 4" Asphalt Surface Course, Type S9.5B at and average rate of 448 lb per square Yard in 2" Lifts
D1	Prop. Approx. 3" Asphalt Intermediate Course, Type I19.0B at and average rate of 342 lb per square Yard
J1	Prop. 10" Aggregate Base Course
S	4" Sidewalk
V	2" Milling Asphalt Pavement


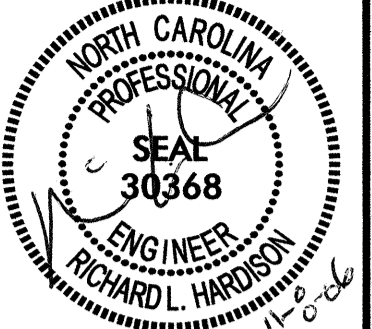
Note: pavement milling and resurfacing shall be performed within the limits of -L- Sta 17+00 to 17+00, -L- Sta 27+50 to 27+85, and -Y1- 30+00 to 31+81. Resurfacing shall be performed with same material as C1 on this sheet.



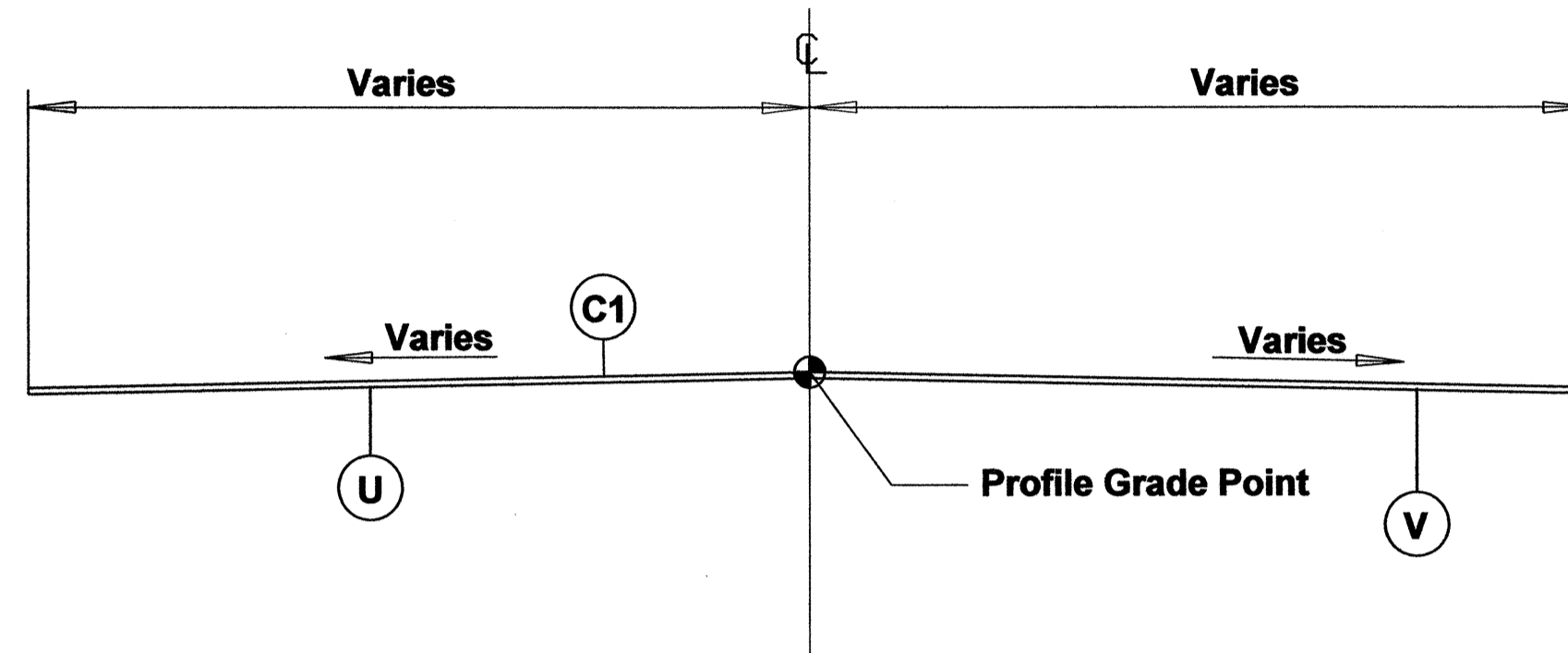
Typical Section 2
Use Typical Section 2
-L- Stations 17+00 to 19+00

Note: Guard Rail from Station 17+00 to Station 21+00
See Sheet 4 for reset location.

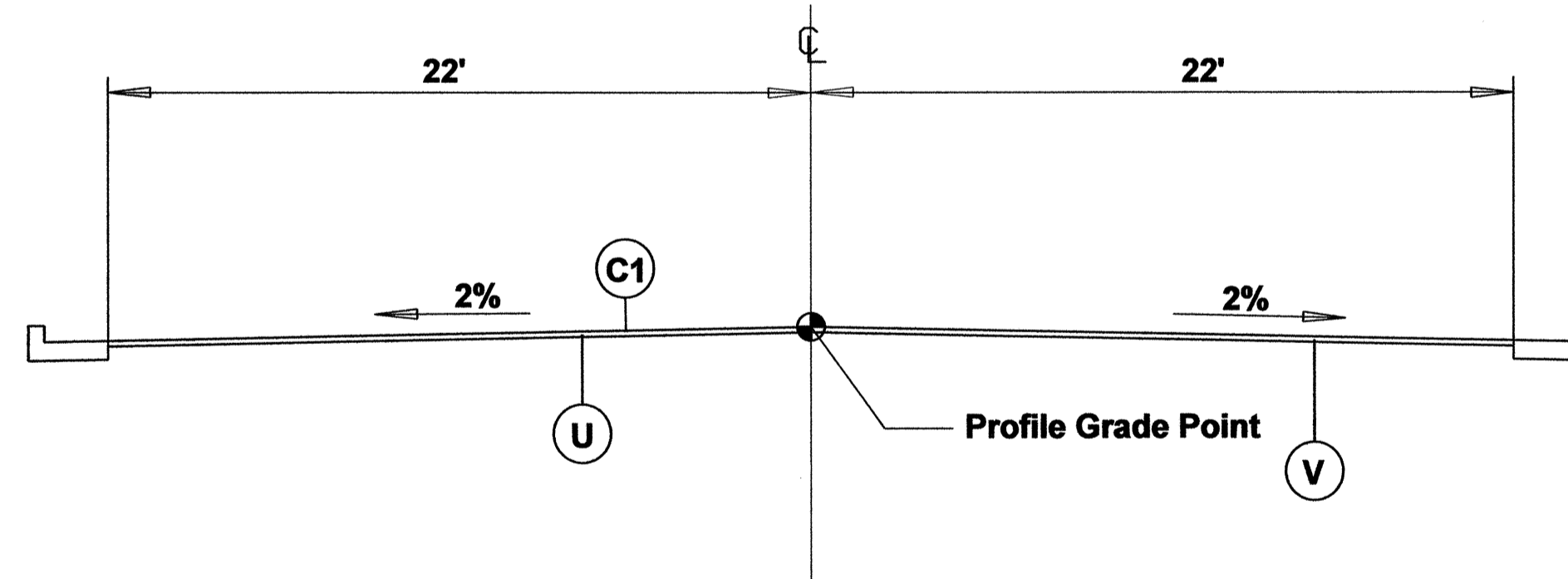
8/17/99

PROJECT REFERENCE NO. R-4758	SHEET NO. 2-A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
	

Resurfacing
 11+00 to 14+68 -L-
 27+50 to 27+85 -L-
 30+00 to 31+81 -Y1-



Resurfacing
 Station 14+68 to 17+00 -L-



Pavement Schedule	
U	Existing Asphalt Pavement
C1	Prop. Approx. 4" Asphalt Surface Course, Type S9.5B at and average rate of 448 lb per square Yard in 2" Lifts
D1	Prop. Approx. 3" Asphalt Intermediate Course, Type I19.0B at and average rate of 342 lb per square Yard
J1	Prop. 10" Aggregate Base Course
S	4" Sidewalk
V	2" Milling Asphalt Pavement

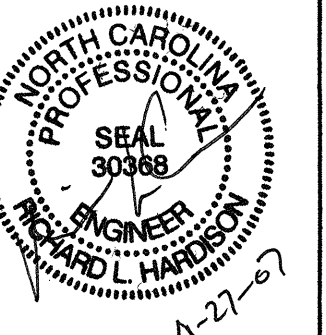
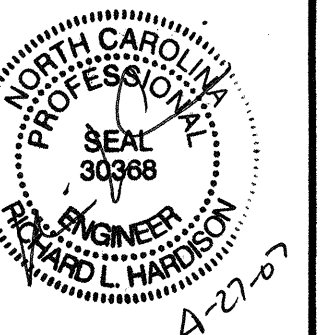
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-4758	3

8/17/99

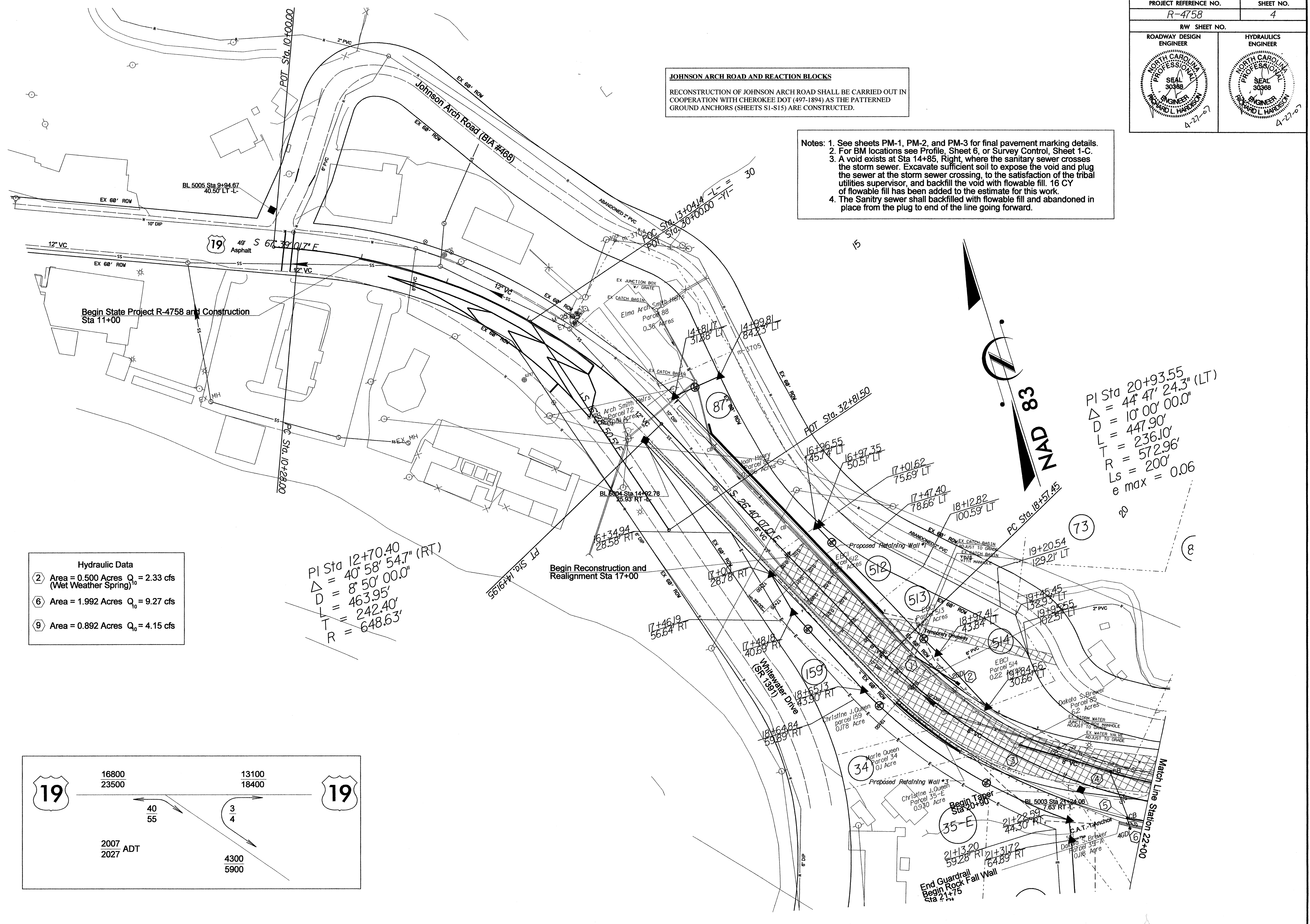
Right of Way Summary

Parcel Number	Owner	Side	Original Area (Acre)	Existing Easement (Acre)	Take (Acre)	Remainder (Acre)	Construction Easement (Acre)
34	Marie Queen	Left	0	0	0	0	0
		Right	0.1	8 sf	721 sf	3627 sf	781 sf
35-A	Dakota S. Brewer/EBCI	Left	0.001	0.001	0	0	0
		Right	0.117	0.001	0.116	0	0
35-C	Marie Q. Smith and Helen Raby	Left	0	0	0	0	0
		Right	2.005	0.015	0.643	1.347	0.164
35-E	Christine J. Queen	Left	0	0	0	0	0
		Right	0.93	50 sf	667 sf	0.91	944 sf
37	Dakota S. Brewer/EBCI	Left	0.01	0.01	0	0	0
		Right	1.25	0.04	1.21	0	0
85	Dakota S. Brewer	Left	6.2	3684 sf	3416 sf	6	696 sf
		Right	50 sf	50 sf	0	0	0
87	Joan Henry	Left	0.383	0.236	0.147	0	0
		Right	0.003	0.003	0	0	0
159	Christine J. Queen	Left	0	0	0	0	0
		Right	8599 sf	0	555 sf	8044 sf	1742 sf
189	Nathan Robinson	Left	3.458	0.041	0	3.458	752 sf
		Right	0	0	0	0	0
190	Irene Johnson Heirs	Left	0.77	3305 sf	0	0.77	0
		Right	0	0	0	0	0
512	EBCI	Left	9293 sf	3402 sf	1622 sf	4269 sf	4269 sf
		Right	0.005	0.005	0	0	0
513	EBCI	Left	9787 sf	2245 sf	1260 sf	6282 sf	5282 sf
		Right	0	0	0	0	0
514	EBCI	Left	9542 sf	653 sf	3920 sf	4969 sf	658 sf
		Right	0	0	0	0	0
718	Nathan Robinson	Left	0	0	0	0	0
		Right	9359 sf	1952 sf	3726 sf	3681 sf	718 sf
833	Wanda Lee Lawless	Left	0	0	0	0	0
		Right	4.251	0	1.486	2.764	0.212

PROJECT REFERENCE NO.		SHEET NO.	
R-4758		4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
			

JOHNSON ARCH ROAD AND REACTION BLOCKS
 RECONSTRUCTION OF JOHNSON ARCH ROAD SHALL BE CARRIED OUT IN COOPERATION WITH CHEROKEE DOT (497-1894) AS THE PATTERNED GROUND ANCHORS (SHEETS S1-S15) ARE CONSTRUCTED.

- Notes: 1. See sheets PM-1, PM-2, and PM-3 for final pavement marking details.
 2. For BM locations see Profile, Sheet 6, or Survey Control, Sheet 1-C.
 3. A void exists at Sta 14+85, Right, where the sanitary sewer crosses the storm sewer. Excavate sufficient soil to expose the void and plug the sewer at the storm sewer crossing, to the satisfaction of the tribal utilities supervisor, and backfill the void with flowable fill. 16 CY of flowable fill has been added to the estimate for this work.
 4. The Sanitary sewer shall be backfilled with flowable fill and abandoned in place from the plug to end of the line going forward.

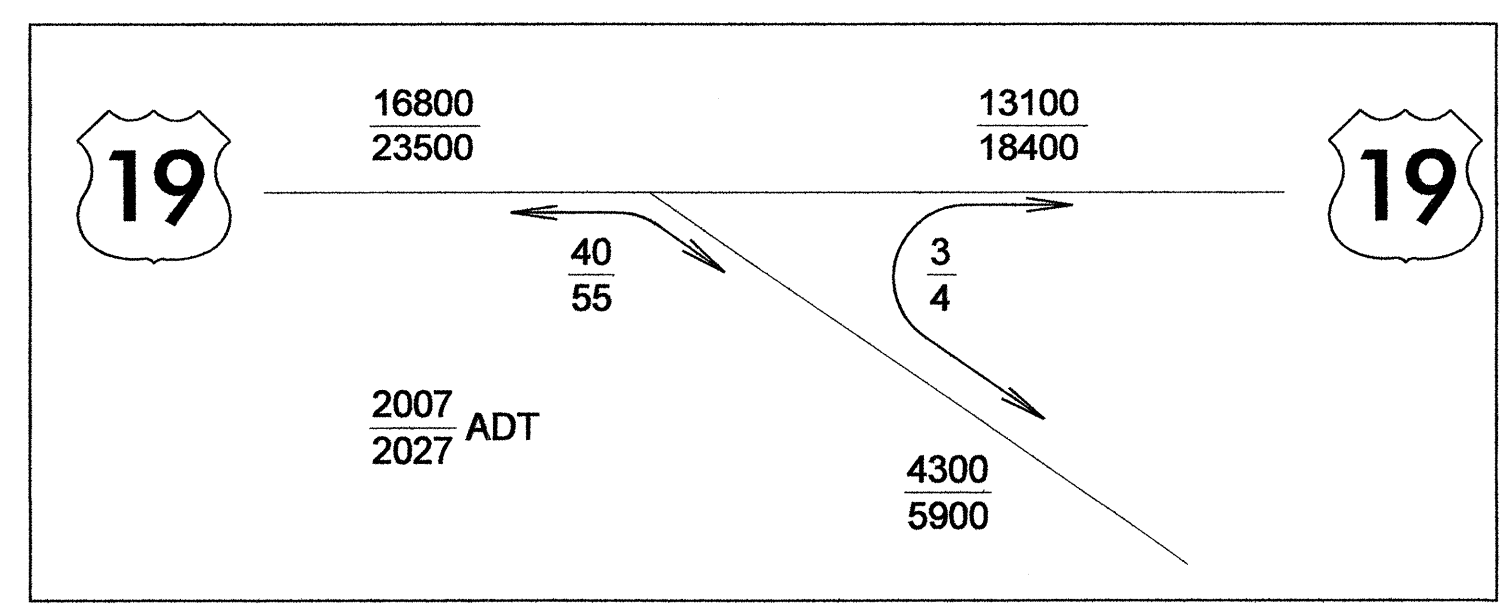


Hydraulic Data

②	Area = 0.500 Acres	$Q_{10} = 2.33$ cfs (Wet Weather Spring) ¹⁰
⑥	Area = 1.992 Acres	$Q_{10} = 9.27$ cfs
⑨	Area = 0.892 Acres	$Q_{10} = 4.15$ cfs

PI Sta 12+70.40
 $\Delta = 40' 58" 54.7"$ (RT)
 $D = 8' 50" 00.0"$
 $L = 463.95'$
 $T = 242.40'$
 $R = 648.63'$

PI Sta 20+93.55
 $\Delta = 44' 47" 24.3"$ (LT)
 $D = 10' 00" 00.0"$
 $L = 447.90'$
 $T = 236.10'$
 $R = 572.96'$
 $e_{max} = 0.06$

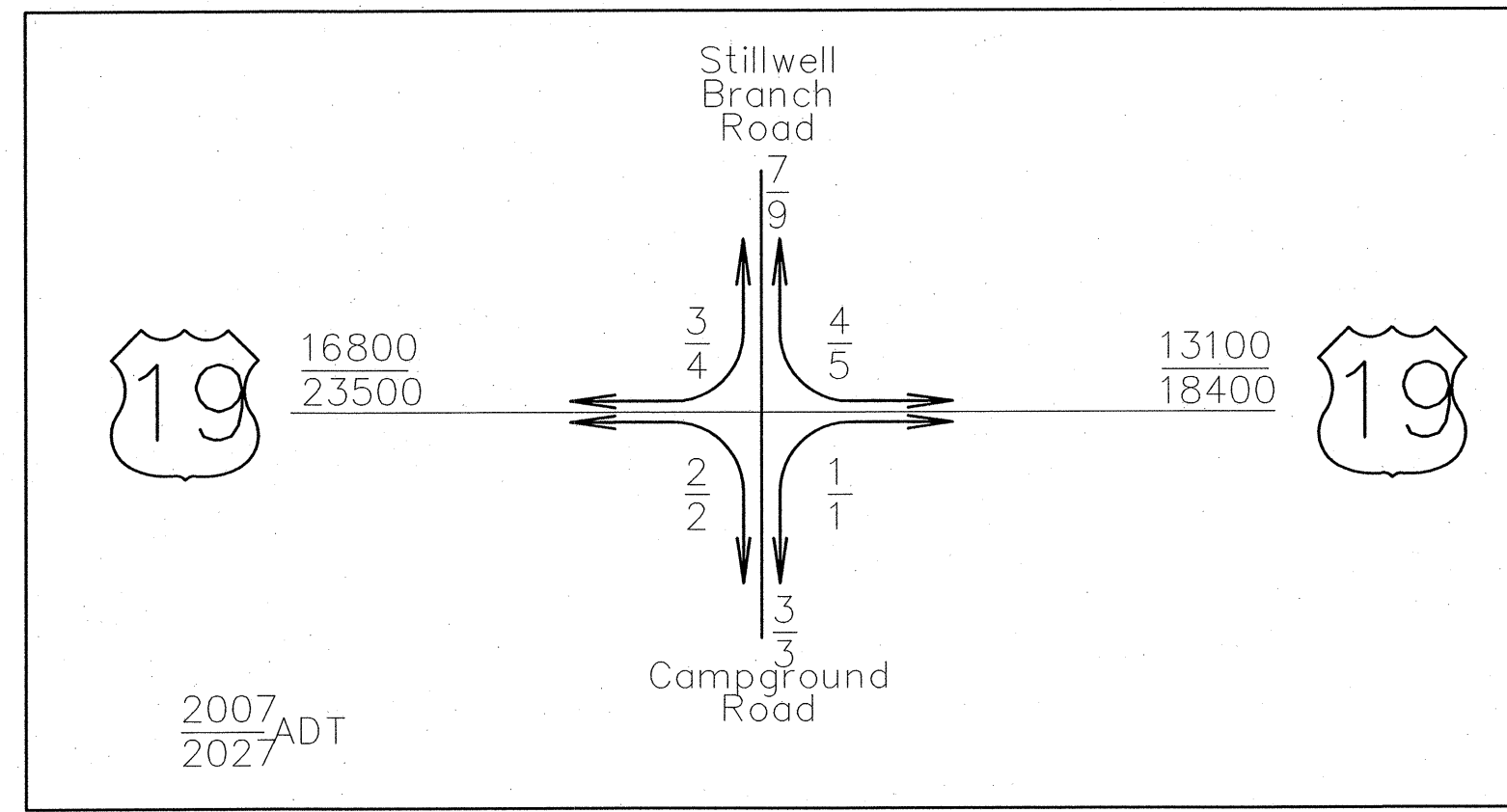


End Guardrail
 Begin Rock Fall Wall
 Sta 21+75

Match Line Station 22+00

8/17/98

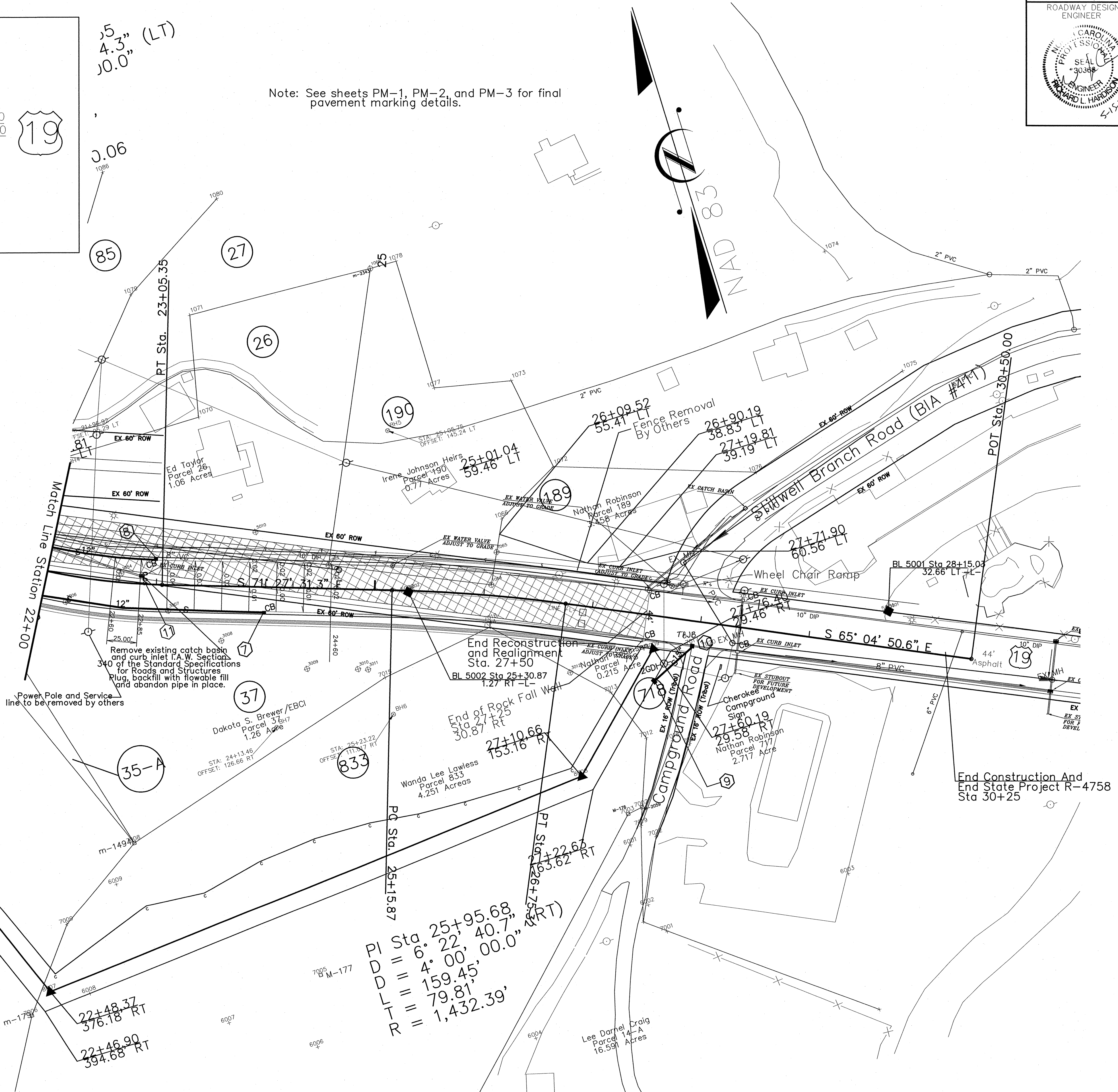
PROJECT REFERENCE NO. R-4758	SHEET NO. 5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 30388 CAROLINA PROFESSIONAL ENGINEER MICHAEL L. HARDISON 5-15-2007	HYDRAULICS ENGINEER SEAL 30388 CAROLINA PROFESSIONAL ENGINEER MICHAEL L. HARDISON 5-15-2007



5.5"
4.3" (LT)
10.0"

Note: See sheets PM-1, PM-2, and PM-3 for final pavement marking details.

Hydraulic Data	
② Area = 0.500 Acres	$Q_0 = 2.33$ cfs (Wet Weather Spring)
⑥ Area = 1.992 Acres	$Q_0 = 9.27$ cfs
⑨ Area = 0.892 Acres	$Q_0 = 4.15$ cfs



PI Sta. 25+95.68
 D = 6.22, 40.7, 40.0
 DD = 4.00, 00.0
 L = 159.45'
 T = 79.81'
 R = 1,432.39'

End Construction And End State Project R-4758 Sta 30+25

