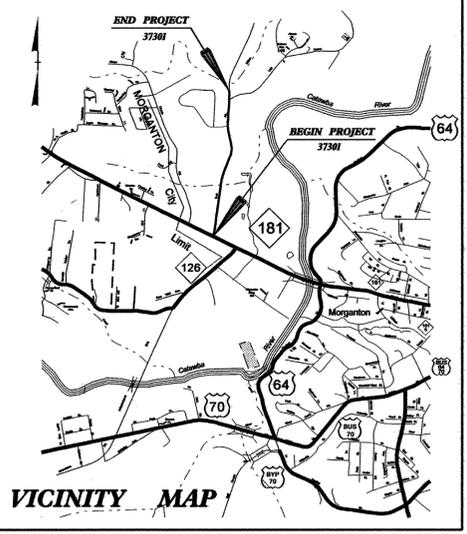


09/08/99

PROJECT: WBS 37301

PROJECT: MA13022R



See Sheet 1-A For Index of Sheets

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BURKE COUNTY

LOCATION: BOST ROAD SR 149 FROM THE INTERSECTION OF
N. C. 181, TO 409 FEET NORTH OF LOST CORNER RD. SR 1421.

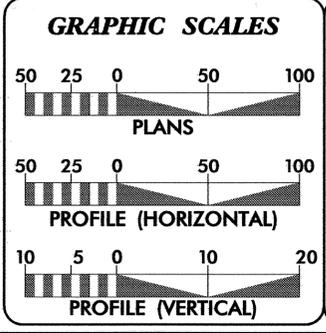
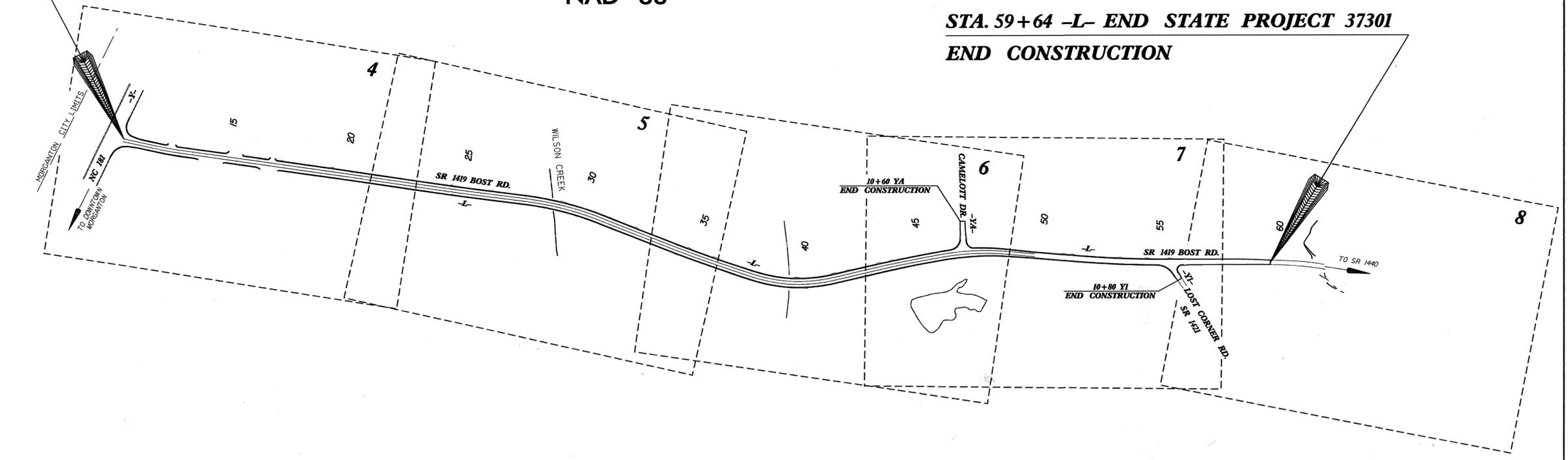
TYPE OF WORK: GRADING, DRAINAGE, WIDENING, CURB AND
GUTTER, PAVING AND THERMOPLASTIC
PAVEMENT MARKINGS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	37301	1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
37301		P.E., RW, UTILITY AND CONST.	
37301			

STA. 10+32 -L- BEGIN STATE PROJECT 37301
BEGIN CONSTRUCTION



STA. 59+64 -L- END STATE PROJECT 37301
END CONSTRUCTION



DESIGN DATA

ADT 2003 = 3,500
ADT 2023 = 5,200
DHV = 10 %
D = 60 %
T = 3 % *
V = 50 MPH

* TTST 2 % DUAL 3 %

PROJECT LENGTH

TOTAL LENGTH OF STATE PROJECT 37301 = 0.934 MILES.

Prepared In the Office of:
DIVISION OF HIGHWAYS
55 Orange Street, Asheville, N. C. 28802

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JANUARY 16, 2004

LETTING DATE:
AUGUST 15, 2006

K. A. WILSON, PE
OPERATIONS ENGINEER

M.K. PENLAND
DIVISION DESIGN ENGINEER

DIVISION OPERATIONS ENGINEER

Handwritten Signature
SIGNATURE: 6-16-06

DIVISION DESIGN ENGINEER

SIGNATURE: _____

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

P.E.

STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR

DATE

22-JUN-2006 15:40
F:\moving_ahed\sr149\0613022r\sr149_tsh.dgn
User: ahed

**STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS**

GENERAL NOTES

GENERAL NOTES: 2006 SPECIFICATIONS
EFFECTIVE: 07-18-06
REVISED:

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

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

SAFETY CLEARING:
THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE AREAS IN THE PLANS DESIGNATED SAFETY CLEARING. THE LIMITS ARE AS SHOWN AND THE CLEARING AND GRUBBING IS CONSIDERED A PART OF THE LUMP SUM ITEM FOR "CLEARING AND GRUBBING".

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.

DRIVEWAYS:
DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 USING 3' RADII OR RADII AS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

STREET TURNOUT:
STREET RETURNS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 848.04 USING THE RADII NOTED ON PLANS.

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.

UTILITIES:
UTILITY OWNERS ON THIS PROJECT ARE CITY OF MORGANTON WATER AND SEWER, DUKE POWER, BELLSOUTH, PIEDMONT NATURAL GAS, COMPAS CABLE AND INTERNET, AND CHARTER COMMUNICATIONS.
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

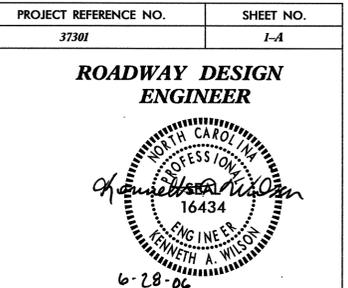
RIGHT-OF-WAY MARKERS:
ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY CONTRACT.

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.

INDEX OF SHEETS

BURKE COUNTY
PROJECT : 37301

SHEET NUMBERS	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF ROADWAY STANDARDS
1-B	CONVENTIONAL SYMBOLS
1-C	SURVEY CONTROL AND CENTERLINE COORDINATE LIST
2	TYPICAL SECTIONS, PAVEMENT SCHEDULE, AND WEDGING DETAIL
2-A	DETAIL OF REINFORCED CONCRETE ENDWALL FOR 87"X 63" PIPE ARCH 65* SKEW
2-B	DETAIL OF TEMPORARY 1" STEEL COVER OVER DRAINAGE STRUCTURE
3	SUMMARY OF QUANTITIES
3-A THRU 3-D	SUMMARY OF DRAINAGE
3-E	SUMMARIES OF PROPOSED RADIUS TYPE DRIVES, WHEELCHAIR RAMPS, PIPE REMOVAL AND FLOWABLE FILL, SANITARY SEWER MANHOLE ADJUSTMENTS, REMOVAL OF ASPHALT PAVEMENT, AND GUARDRAIL SUMMARY
3-F	SUMMARIES OF APRONS FOR DROP INLETS 840.14 AND 840.15, AND EARTHWORK
3-G	RIGHT OF WAY AREA DATA SHEET
4 THRU 8	PLAN SHEETS
9 THRU 11	GRADE AND PROFILE SHEETS
TCP-1 THRU TCP-7, NCMA-1	TRAFFIC CONTROL PLANS
PM-1 THRU PM-2	PAVEMENT MARKING PLANS
EC-1, EC-1A, EC-2 THRU EC-9	EROSION CONTROL PLANS
X-A	CROSS-SECTION SUMMARY
X-1 THRU X-26	PLAN CROSS-SECTION



LIST OF STANDARDS

EFF. 07-18-06

2006 ROADWAY STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated July 18, 2006 are applicable to this project and by reference hereby are considered a part of these plans:

STD. NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Super-elevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation - Method 'A'
310.03	Cross Pipe End Section - Precast Concrete Section for 18" to 30" Pipe
310.04	Parallel Pipe End Section - Prefabricated Steel Section for 15" to 24" Pipe
310.05	Cross Pipe End Section - Prefabricated Steel Section for 18" to 30" Pipe
310.10	Driveway Pipe Construction
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Super-elevated Curve - Method I
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
815.03	Pipe Underdrain and Blind Drain
816.01	Concrete Pads - for Shoulder Drain Installation
816.04	Markers for Drainage Structure and Concrete Pad
840.00	Concrete Base Pad for Drainage Structures
840.02	Concrete Catch Basin - 12" thru 54" Pipe
840.03	Frame, Grates and Hood - for Use on Standard Catch Basin
840.04	Concrete Open Throat Catch Basin - 12" thru 48" Pipe
840.14	Concrete Drop Inlet - 12" thru 30" Pipe
840.16	Drop Inlet Frame and Grates - for use with Std. Dwg 840.14 and 840.15
840.17	Concrete Grated Drop Inlet Type 'A' - 12" thru 72" Pipe
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.24	Frames and Narrow Slot Sag Grates
840.25	Anchorage for Frames - Brick or Concrete
840.31	Concrete Junction Box - 12" thru 66" Pipe
840.33	Angled Vane Grates and Frames
840.36	Traffic Bearing Grated Drop Inlet - for Steel (840.37) Double Frame and Grates
840.37	Steel Grate and Frame
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
840.51	Brick Manhole - 12" thru 36" Pipe
840.52	Precast Manhole - 4', 5' and 6' Diameter
840.53	Precast Manhole with Masonry Base - 12" thru 42" Pipe
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
848.01	Concrete Sidewalk
848.02	Driveway Turnout - Radius Type
848.04	Street Turnout
848.05	Wheelchair Ramp - Curb Cut
850.01	Concrete Paved Ditches
852.01	Concrete Islands
852.06	Method for Placement of Drop Inlets in Concrete Islands
862.01	Guardrail Placement
862.02	Guardrail Installation
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

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	-----
Proposed Woven Wire Fence	-----
Proposed Chain Link Fence	-----
Proposed Barbed Wire Fence	-----
Existing Wetland Boundary	-----
Proposed Wetland Boundary	-----
Existing High Quality Wetland Boundary	-----
Existing Endangered Animal Boundary	-----
Existing Endangered Plant Boundary	-----

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	-----
River Basin Buffer	-----
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	-----
Proposed Temporary Construction Easement	-----
Proposed Temporary Drainage Easement	-----
Proposed Permanent Drainage Easement	-----
Proposed Permanent Utility Easement	-----

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	-----
Proposed Slope Stakes Fill	-----
Proposed Wheel Chair Ramp	-----
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	□
U/G 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	○
U/G 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	⊗
U/G 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	⊕
U/G 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	-----
U/G Tank; Water, Gas, Oil	□
A/G Tank; Water, Gas, Oil	□
U/G Test Hole (S.U.E.*)	○
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SURVEY CONTROL DATA

THE NC LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL DISTANCE FROM "QUAKER" TO -L- STATION 10+00.00 IS S 07°47'59.96" E 15,163.6064

LINE BL

```

=====
BL-1  N 740,213.2340  E 1,194,107.7100  ELEV=1030.790  BL POT 10+00.00
      N 4 ^ 24' 02.86" E      Dist 483.7041
BL-2  N 740,695.5120  E 1,194,144.8260  ELEV=1024.149  BL PINC 14+83.70
      N 11 ^ 54' 35.12" E      Dist 766.8769
BL-3  N 741,445.8810  E 1,194,303.0870  ELEV=1018.603  BL PINC 22+50.58
      N 7 ^ 35' 03.60" E      Dist 695.5469
BL-4  N 742,135.3430  E 1,194,394.8890  ELEV=1013.008  BL PINC 29+46.13
      N 19 ^ 45' 38.30" E      Dist 958.3501
BL-5  N 743,037.2590  E 1,194,718.8990  ELEV=1041.439  BL PINC 39+04.48
      N 11 ^ 21' 05.41" W      Dist 883.0573
BL-6  N 743,903.0420  E 1,194,545.0890  ELEV=1056.617  BL PINC 47+87.54
      N 6 ^ 36' 00.23" E      Dist 771.3621
BL-7  N 744,669.2920  E 1,194,633.7480  ELEV=1063.156  BL PINC 55+58.90
      N 0 ^ 16' 23.83" E      Dist 801.7211
BL-8  N 745,471.0040  E 1,194,637.5720  ELEV=1029.788  BL PINC 63+60.62
      N 24 ^ 13' 20.01" E      Dist 612.4450
BL-9  N 746,029.5300  E 1,194,888.8440  ELEV=1037.509  BL POT 69+73.06
=====

```

End BL

BENCHMARK DESCRIPTION
NGVD 1988

BM#	GPK#	LINE STA. OFFSET	L/R	NORTH	EAST
BM1	BM101	1,030.19 -BL- 11+70.45	92' L	740,390.2030	1,194,029.5190
				8" SPIKE IN 24" OAK (AJ'S STEAKHOUSE)	
BM2	BM102	1,018.29 -BL- 25+14.36	33' R	741,702.9310	1,194,371.1080
				8" SPIKE IN 14" PINE (GOLF COURSE)	
BM3	BM103	1,030.90 -BL- 36+45.43	32' R	742,782.5350	1,194,661.7520
				8" SPIKE IN 18" PINE (GOLF COURSE)	
BM4	BM104	1,047.99 -BL- 48+36.93	66' R	743,944.5570	1,194,615.9990
				8" SPIKE IN 28" SYCAMORE	

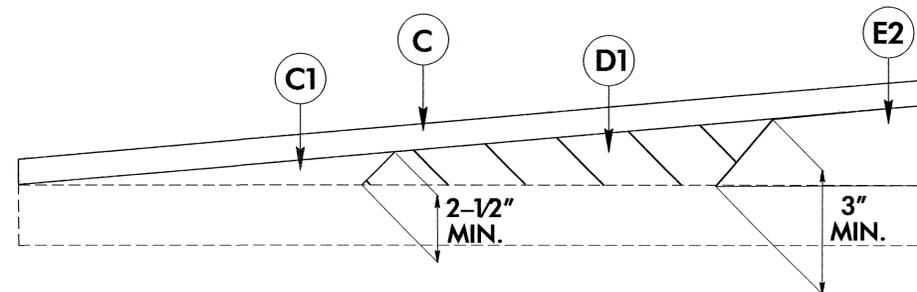
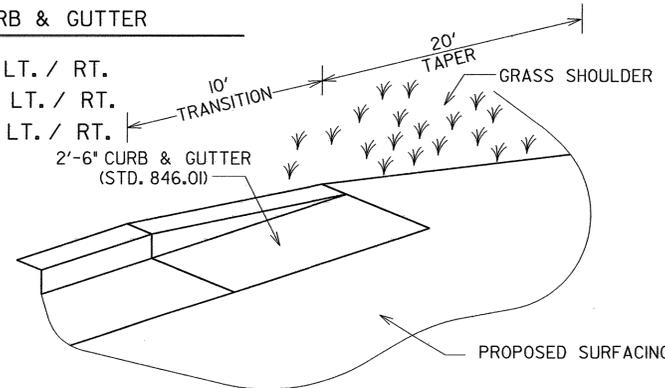
Disclaimer: This coordinate list is provided for the convenience of interested contractors and is intended for use during the project bidding process only. Coordinates are localized to this particular project and any conversion to state grid coordinates or other formats will be the responsibility of the recipient. While every effort has been made to provide up-to-date, accurate information, NCDOT makes no express guarantee as to the validity or potential for revision of this information prior to project letting.

Point #	Chain	Station	Northing(Y)	Easting(X)
1	L	10+00.00	740259.1364	1194089.8889
2	L	11+00.00	740356.7937	1194111.4074
3	L	12+00.00	740454.4510	1194132.9259
4	L	13+00.00	740552.8637	1194150.4962
5	L	14+00.00	740651.9320	1194164.1148
6	L	15+00.00	740751.0004	1194177.7334
7	L	16+00.00	740850.0687	1194191.3520
8	L	17+00.00	740949.1370	1194204.9707
9	L	18+00.00	741048.2053	1194218.5893
10	L	19+00.00	741147.2737	1194232.2079
11	L	20+00.00	741246.3420	1194245.8266
12	L	21+00.00	741345.3610	1194259.7967
13	L	22+00.00	741444.3026	1194274.3077
14	L	23+00.00	741543.2429	1194288.8273
15	L	24+00.00	741642.2017	1194303.2191
16	L	25+00.00	741741.2699	1194316.8366
17	L	26+00.00	741840.4403	1194329.6900
18	L	27+00.00	741939.6257	1194342.4277
19	L	28+00.00	742038.7021	1194355.9449
20	L	29+00.00	742136.7186	1194375.6494
21	L	30+00.00	742233.0273	1194402.4851
22	L	31+00.00	742327.1234	1194436.2737
23	L	32+00.00	742420.1940	1194472.8507
24	L	33+00.00	742513.2645	1194509.4278
25	L	34+00.00	742606.3350	1194546.0048
26	L	35+00.00	742699.6625	1194581.9175
27	L	36+00.00	742793.5998	1194616.2036
28	L	37+00.00	742888.1211	1194648.8451
29	L	38+00.00	742983.4619	1194678.9490
30	L	39+00.00	743081.5245	1194698.0631
31	L	40+00.00	743181.3724	1194700.6390
32	L	41+00.00	743280.4912	1194688.0618
33	L	42+00.00	743378.0326	1194666.0318
34	L	43+00.00	743475.5224	1194643.7668
35	L	44+00.00	743573.1691	1194622.2057
36	L	45+00.00	743671.1757	1194602.3449
37	L	46+00.00	743769.5430	1194584.3669
38	L	47+00.00	743868.9077	1194573.4597
39	L	48+00.00	743968.8605	1194572.1285
40	L	49+00.00	744068.5796	1194579.4151
41	L	50+00.00	744168.1977	1194588.1461
42	L	51+00.00	744267.8159	1194596.8772
43	L	52+00.00	744367.4750	1194605.1116
44	L	53+00.00	744467.2824	1194611.2844
45	L	54+00.00	744567.2006	1194615.2785
46	L	55+00.00	744667.1822	1194617.0918
47	L	56+00.00	744767.1812	1194616.9301
48	L	57+00.00	744867.1799	1194616.4201
49	L	58+00.00	744967.1792	1194616.1950
50	L	59+00.00	745067.1719	1194617.3227
51	L	59+64.00	745131.1545	1194618.8076

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

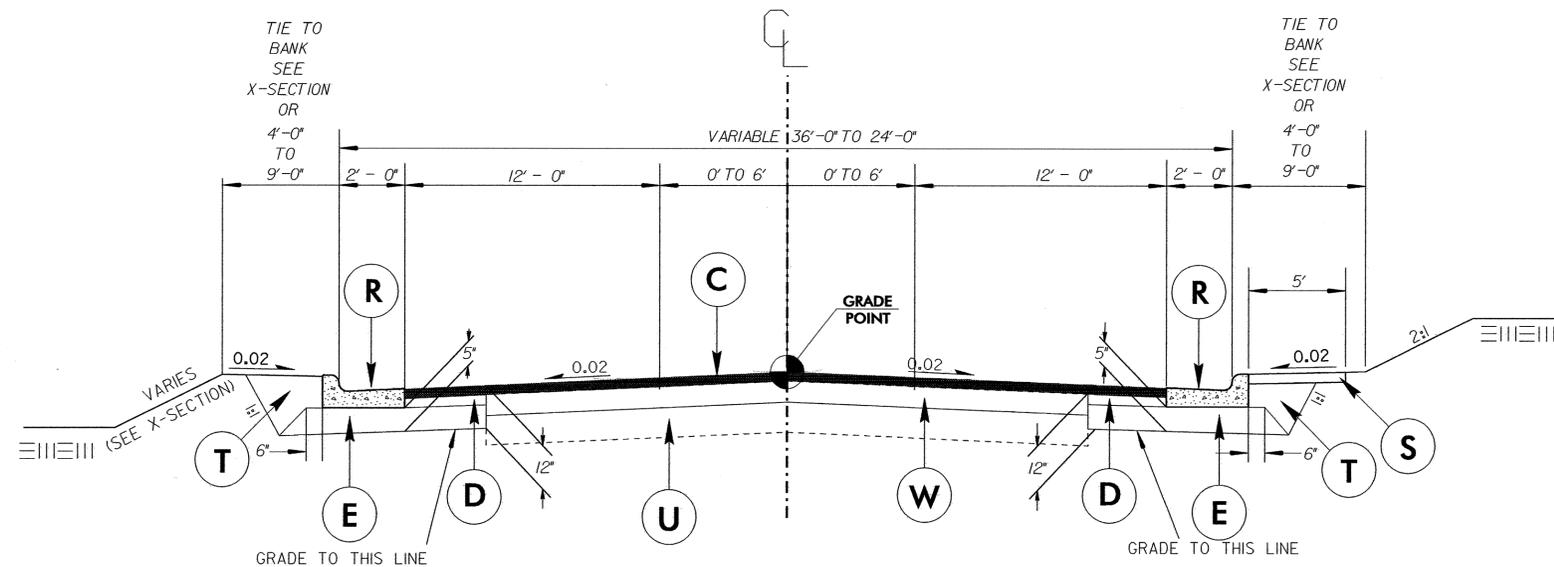
DETAIL FOR TRANSITION AT END OF 2'-6"
CONCRETE CURB & GUTTER

10+60 -YI- LT. / RT.
10+80 -YA- LT. / RT.
56+00 -L- LT. / RT.



Wedging Detail For Resurfacing

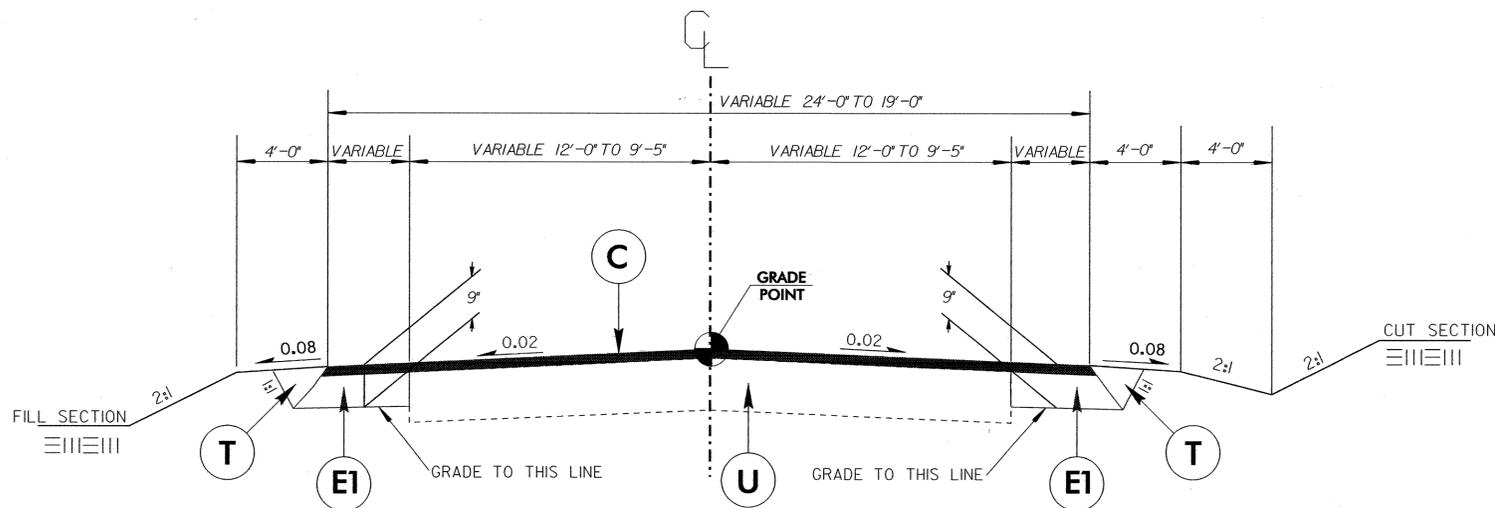
PROJECT REFERENCE NO.	SHEET NO.
37301	2
ROADWAY DESIGN ENGINEER	



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

USE FROM STA. 10+32 -L- TO STA. 56+00 -L- LT./RT.
USE FROM STA. 10+80 -YA- TO STA. 11+37.14 -YA- LT./RT.
USE FROM STA. 10+00 -YI- TO STA. 10+60 -YI- LT./RT.



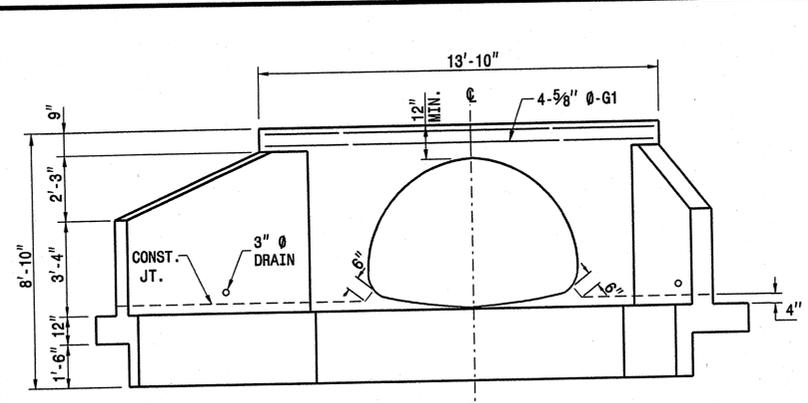
TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

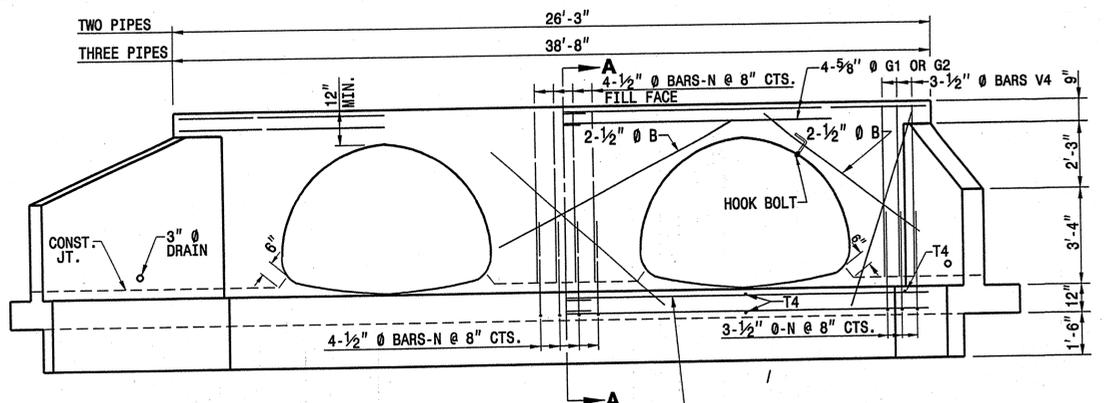
FROM STA. 56+00 -L- TO STA. 59+64 -L- LT./RT.
FROM STA. 10+60 -YA- TO STA. 10+80 -YA- LT./RT.
FROM STA. 10+60 -YI- TO STA. 10+80 -YI- LT./RT.

PAVEMENT SCHEDULE	
C	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.
C1	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.
D	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D1	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.
E	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
E1	PROP. APPROX. 6" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
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.
R	2' - 6" CONCRETE CURB AND GUTTER.
S	4" CONCRETE SIDEWALK.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)

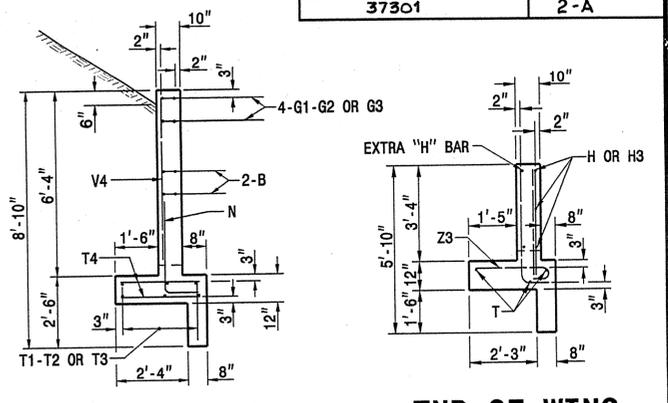
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 mkg



END ELEVATION

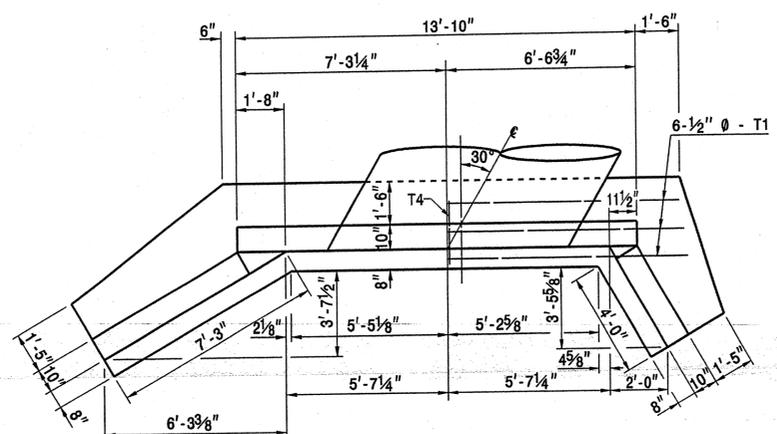


END ELEVATION

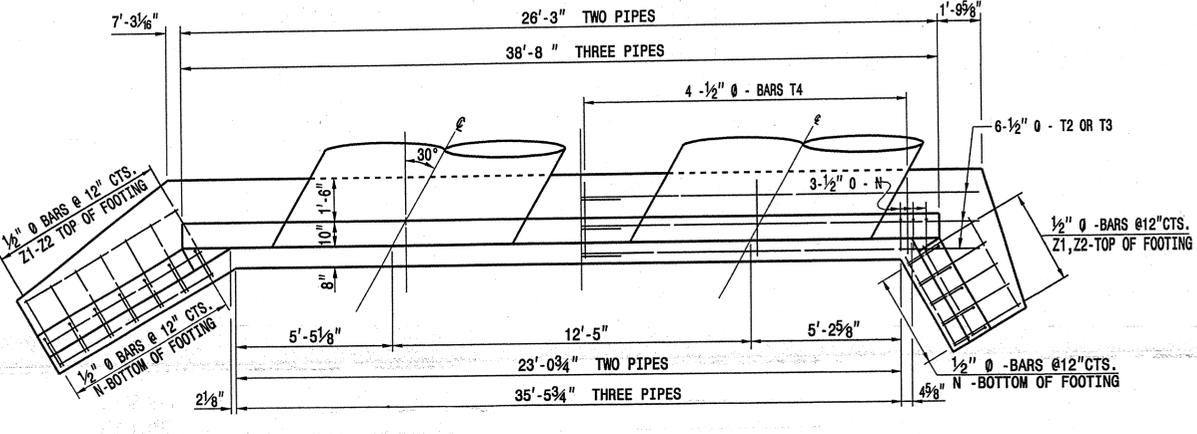


SECTION A-A FOR ALL ENDWALLS

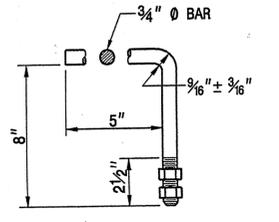
END OF WING



PLAN



PLAN



HOOK BOLT

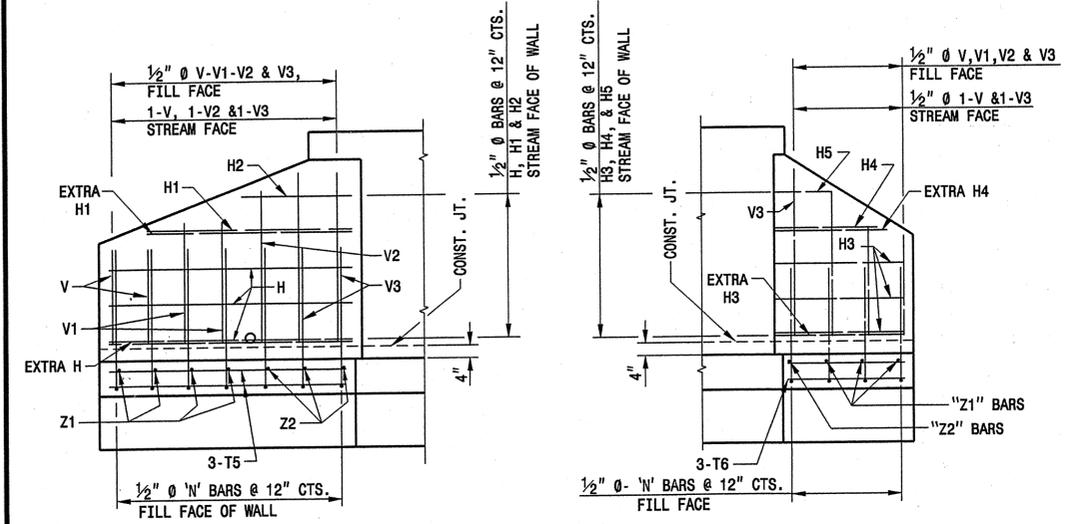
5/8" Ø X 12" BOLTS @ 2'-0" CTS. - FASTEN BOLTS TO PIPE WITH TWO NUTS TO TIE PIPE TO CONCRETE AS INDICATED.

GENERAL NOTES:

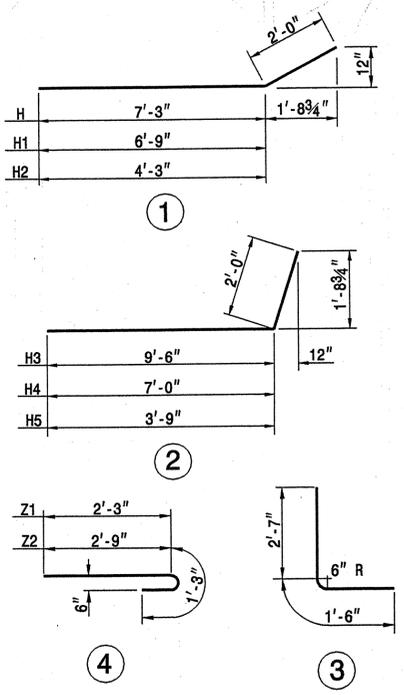
- ALL CONCRETE TO BE CLASS "A".
- ALL REINFORCING STEEL SHALL BE ASTM A615-GRADE 60.
- ALL REINFORCING STEEL SHALL BE DEFORMED BARS. WHERE SPLICING OF REINFORCEMENT IS NECESSARY, BARS ARE TO BE LAPPED 45 DIAMETERS. ALL DIMENSIONS RELATIVE TO REINFORCEMENT ARE TO CENTERS OF BARS.
- THE FOOTING, CURTAIN WALL AND 4" OF WALL ARE TO BE POURED IN ONE OPERATION ALLOWING NO TIME FOR INITIAL SET TO TAKE PLACE BETWEEN THEM. THE REMAINING WALL SHALL THEN BE POURED IN ONE OPERATION.
- ALL EXPOSED CORNERS ARE TO BE CHAMFERED 1".
- 3" DIAMETER DRAINS SHALL BE PLACED IN WALL AS SHOWN AND BE 6" ABOVE NORMAL FLOW LINE.
- ALL MATERIAL AND WORKMANSHIP AS PER SPECIFICATIONS OF THE N.C. DEPARTMENT OF TRANSPORTATION.
- THE FOLLOWING EXTRA BARS ARE PROVIDED FOR HOLDING REINFORCING STEEL IN CORRECT POSITION IN WINGS: 2H-1H1-1H3-1H4-2V-1V2-2V3-3T5-3T6.

BILL OF MATERIAL FOR ONE ENDWALL

BAR	SIZE	LENGTH	1 PIPE		2 PIPES		3 PIPES	
			NO.	WEIGHT	NO.	WEIGHT	NO.	WEIGHT
B	#4	6'-6"	8	35	16	69	24	104
G1	#5	13'-6"	4	56	-	-	-	-
G2	#5	14'-3"	-	-	8	119	-	-
G3	#5	20'-4"	-	-	-	-	8	170
H	#4	9'-3"	4	25	4	25	4	25
H1	#4	8'-9"	2	12	2	12	2	12
H2	#4	6'-3"	1	4	1	4	1	4
H3	#4	6'-0"	4	16	4	16	4	16
H4	#4	5'-9"	2	8	2	8	2	8
H5	#4	4'-2"	1	3	1	3	1	3
N	#4	4'-1"	17	46	21	57	25	68
T1	#4	15'-10"	6	63	-	-	-	-
T2	#4	14'-3"	-	-	12	114	-	-
T3	#4	20'-4"	-	-	-	-	12	163
T4	#4	2'-9"	4	7	7	13	10	18
T5	#4	7'-3"	3	15	3	15	3	15
T6	#4	4'-0"	3	8	3	8	3	8
V	#4	3'-0"	6	12	6	12	8	67
V1	#4	3'-9"	2	5	2	5	2	5
V2	#4	4'-5"	3	9	3	9	3	9
V3	#4	5'-0"	5	17	5	17	5	17
V4	#4	5'-10"	6	23	10	39	14	55
Z1	#4	3'-6"	7	16	7	16	7	16
Z2	#4	4'-0"	4	11	4	11	4	11
5/8" Ø x 12" BOLTS NO.			6		12		18	
TOTAL REINF. STEEL (lbs.)			391		572		739	
CLASS "A" CONC. (cu. yds.)			6.6		9.7		12.8	



ELEVATION OF WINGS



BARS TYPES



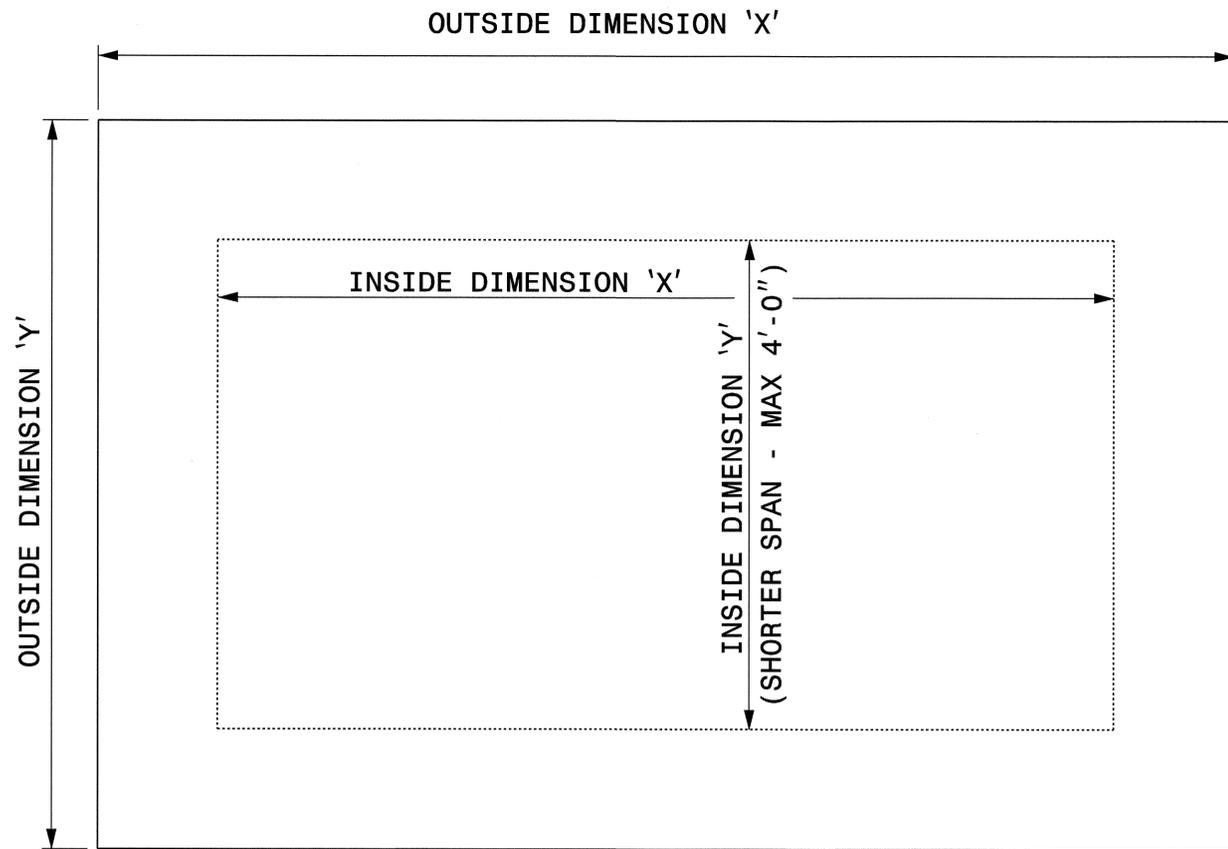
PROJECT SERVICES UNIT
STANDARDS AND SPECIAL DESIGN
 Office 919-250-4128 FAX 919-250-4119

DETAIL OF REINFORCED CONCRETE ENDWALL FOR 87" X 63" PIPE ARCH 105° SKEW

ORIGINAL BY: T.Spell DATE: 10-26-04
 MODIFIED BY: DATE:
 CHECKED BY: DATE: 11/5/04
 FILE SPEC.: w:\details\endwpiparch87x63sk105.dgn

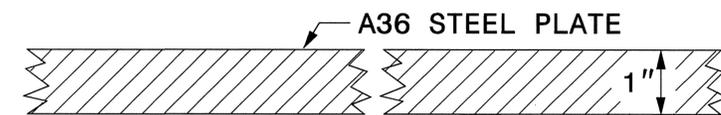
05-NOV-2004 08:41
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SR1419
 ULV. ENDWALL DETAIL



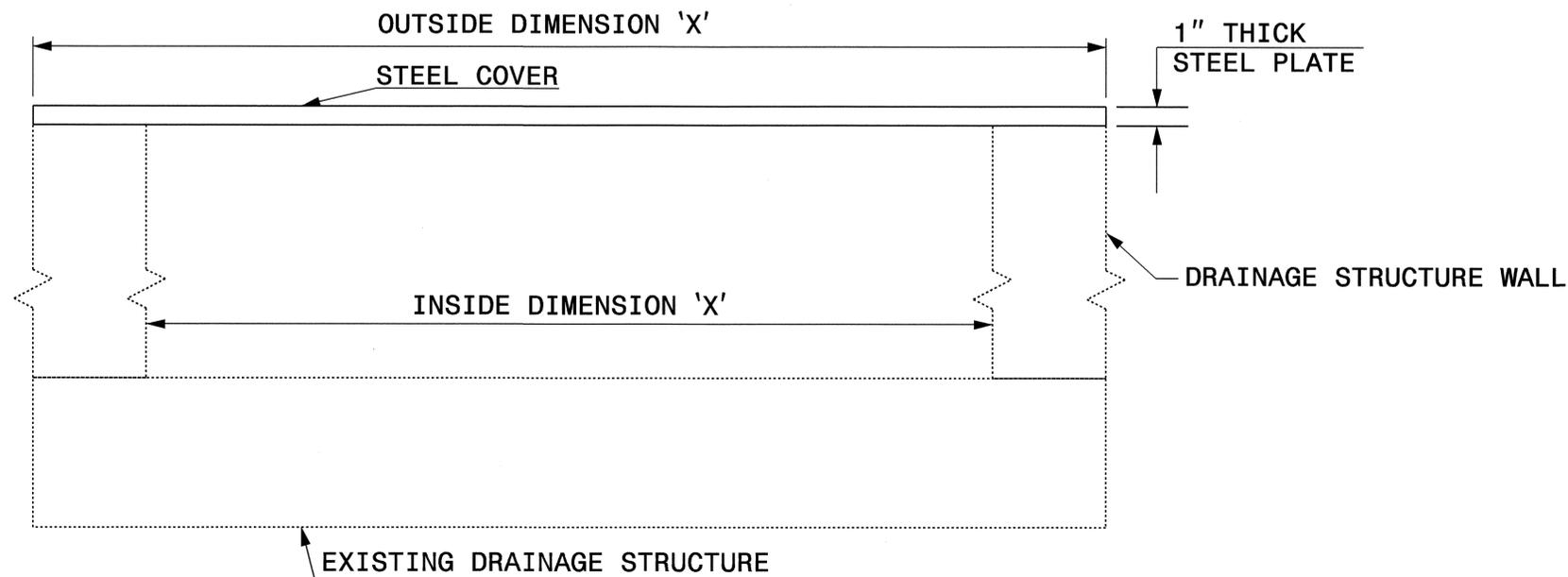
GENERAL NOTES:

- USE GRADE A36 STEEL
- STEEL COVERS ARE FOR TEMPORARY USE DURING PHASE CONSTRUCTION.
- FILL SHALL BE PLACED DIRECTLY OVER THE STEEL PLATES.
- SEE ROADWAY PLANS AND PROVISIONS FOR LOCATIONS
- QUANTITIES TO BE PAID FOR AT THE UNIT PRICE BID PER EACH.



SECTION VIEW OF STEEL TOP PLATE

PLAN VIEWS



ELEVATION VIEWS

PROJECT SERVICES UNIT STANDARDS AND SPECIAL DESIGN	
Office 919-250-4128 FAX 919-250-4119	
DETAIL OF TEMPORARY 1" STEEL COVER OVER DRAINAGE STRUCTURE	
ORIGINAL BY: E.E. WARD	DATE: 2-2-98
MODIFIED BY:	DATE:
CHECKED BY: <i>J. S. Hunt</i>	DATE: 4/17/06
FILE SPEC.: <i>efip:usr/details/metric/stand/st1cvr2.dgn</i>	

I7-APR-2006 14:17
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 J.Overton - R1 P021220

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201628

ItemNumber	Sec #	Quantity	Unit	Description
000100000-N	800	Lump Sum		MOBILIZATION
000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING
000100000-E	200	Lump Sum		CLEARING & GRUBBING . ACRE(S)
000800000-E	200	0.1	ACR	SUPPLEMENTARY CLEARING & GRUBBING
002200000-E	225	1,075	CY	UNCLASSIFIED EXCAVATION
003600000-E	225	3,500	CY	UNDERCUT EXCAVATION
010600000-E	230	11,750	CY	BORROW EXCAVATION
013400000-E	240	675	CY	DRAINAGE DITCH EXCAVATION
015600000-E	250	180	SY	REMOVAL OF EXISTING ASPHALT PAVEMENT
019500000-E	265	1,050	CY	SELECT GRANULAR MATERIAL
019600000-E	270	2,350	SY	FABRIC FOR SOIL STABILIZATION
031800000-E	300	710	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS
052200000-E	310	2	EA	*** X *** X *** RC PIPE TEES, CLASS III (15" X 15" X 15")
090200000-E	310	152	LF	**** X **** BIT COAT CS PIPE ARCH CULVERTS, TYPE A ***** THICK (87" X 63", 0.109")
099500000-E	340	1,400	LF	PIPE REMOVAL
101100000-N	500	Lump Sum		FINE GRADING
122000000-E	545	350	TON	INCIDENTAL STONE BASE
148900000-E	610	4,550	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
149800000-E	610	5,100	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B
151900000-E	610	3,700	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.3B
156000000-E	620	675	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22
169300000-E	654	260	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR
200000000-N	806	25	EA	RIGHT OF WAY MARKERS
202200000-E	815	8	CY	SUBDRAIN EXCAVATION
203300000-E	815	8	CY	SUBDRAIN FINE AGGREGATE
204400000-E	815	200	LF	6" PERFORATED SUBDRAIN PIPE
205500000-E	815	6	EA	6" SUBDRAIN PIPE WYES, TEES, & ELBOWS
206600000-N	815	1	EA	CONCRETE PAD FOR SUBDRAIN PIPE OUTLET
207700000-E	815	6	LF	6" OUTLET PIPE (SUBDRAINS)
219000000-N	828	6	EA	TEMPORARY STEEL PLATE COVERS FOR MASONRY DRAINAGE STRUCTURE
222000000-E	838	19.4	CY	REINFORCED ENDWALLS
227500000-E	SP	30	CY	FLOWABLE FILL
228600000-N	840	55	EA	MASONRY DRAINAGE STRUCTURES
230800000-E	840	0.85	LF	MASONRY DRAINAGE STRUCTURES
236400000-N	840	13	EA	FRAME WITH TWO GRATES, STD 840.16
236600000-N	840	3	EA	FRAME WITH TWO GRATES, STD 840.24
237400000-N	840	1	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (E)
237400000-N	840	15	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (F)
237400000-N	840	17	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (G)
239600000-N	840	3	EA	FRAME WITH COVER, STD 840.54
240700000-N	840	1	EA	STEEL FRAME WITH TWO GRATES, STD 840.37
254900000-E	846	8,800	LF	2'-6" CONCRETE CURB & GUTTER
259100000-E	848	2,550	SY	4" CONCRETE SIDEWALK
260500000-N	848	7	EA	CONCRETE WHEELCHAIR RAMPS
261200000-E	848	360	SY	6" CONCRETE DRIVEWAY
262600000-E	852	4	SY	3" CONCRETE ISLAND COVERS

ItemNumber	Sec #	Quantity	Unit	Description
283000000-N	858	7	EA	ADJUSTMENT OF MANHOLES
284500000-N	858	3	EA	ADJUSTMENT OF METER BOXES OR VALVE BOXES
303000000-E	862	662.5	LF	STEEL BM GUARDRAIL
304500000-E	862	12.5	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
327000000-N	SP	5	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
362800000-E	876	40	TON	RIP RAP, CLASS I
364900000-E	876	410	TON	RIP RAP, CLASS B
365600000-E	876	1,100	SY	FILTER FABRIC FOR DRAINAGE
440000000-E	1110	130	SF	WORK ZONE SIGNS (STATIONARY)
440500000-E	1110	208	SF	WORK ZONE SIGNS (PORTABLE)
443000000-N	1130	149	EA	DRUMS
443500000-N	1135	60	EA	CONES
445000000-N	1150	1,600	HR	FLAGGER
465000000-N	1251	45	EA	TEMPORARY RAISED PAVEMENT MARKERS
468500000-E	1205	850	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)
468600000-E	1205	12,763	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)
469500000-E	1205	55	LF	THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS)
471000000-E	1205	100	LF	THERMOPLASTIC PAVEMENT MARKING LINES (24", 120 MILS)
472500000-E	1205	21	EA	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)
481000000-E	1205	29,740	LF	PAINT PAVEMENT MARKING LINES (4")
490500000-N	1253	217	EA	SNOWBLOWABLE PAVEMENT MARKERS
567200000-N	1515	2	EA	RELOCATE FIRE HYDRANT
600000000-E	1605	2,200	LF	TEMPORARY SILT FENCE
600600000-E	1610	90	TON	STONE FOR EROSION CONTROL, CLASS A
600900000-E	1610	585	TON	STONE FOR EROSION CONTROL, CLASS B
601200000-E	1610	465	TON	SEDIMENT CONTROL STONE
601500000-E	1615	4	ACR	TEMPORARY MULCHING
601800000-E	1620	150	LB	SEED FOR TEMPORARY SEEDING
602100000-E	1620	0.5	TON	FERTILIZER FOR TEMPORARY SEEDING
602400000-E	1622	45	LF	TEMPORARY SLOPE DRAINS
602700000-N	1622	1	EA	INLET PROTECTION AT TEMPORARY SLOPE DRAINS
602900000-E	SP	300	LF	SAFETY FENCE
603000000-E	1630	915	CY	SILT EXCAVATION
603600000-E	1631	3,000	SY	MATting FOR EROSION CONTROL
604200000-E	1632	1,260	LF	1/4" HARDWARE CLOTH
608400000-E	1660	4	ACR	SEEDING & MULCHING
608700000-E	1660	2.5	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	3	TON	FERTILIZER TOPDRESSING
611100000-E	SP	65	LF	IMPERVIOUS DIKE
611400000-N	SP	2	HR	SPECIALIZED HAND MOWING
611700000-N	SP	4	EA	RESPONSE FOR EROSION CONTROL
613200000-N	SP	3	EA	GENERIC EROSION CONTROL ITEM SPECIAL STILLING BASINS

ItemNumber	Sec #	Quantity	Unit	Description
***** BEGIN SCHEDULE AA ***** ***** (3 ALTERNATES) *****				
036600000-E	310	1,184	LF	15" RC PIPE CULVERTS, CLASS III
037200000-E	310	644	LF	18" RC PIPE CULVERTS, CLASS III
037800000-E	310	2,116	LF	24" RC PIPE CULVERTS, CLASS III
038400000-E	310	2,124	LF	30" RC PIPE CULVERTS, CLASS III
*** OR ***				
036600000-E	310	928	LF	15" RC PIPE CULVERTS, CLASS III
037200000-E	310	248	LF	18" RC PIPE CULVERTS, CLASS III
037800000-E	310	2,100	LF	24" RC PIPE CULVERTS, CLASS III
038400000-E	310	1,748	LF	30" RC PIPE CULVERTS, CLASS III
054000000-E	SP	256	LF	**** ALUMINIZED CORRUGATED STEEL PIPE CULVERTS, ***** THICK (15", 0.064")
054000000-E	SP	396	LF	**** ALUMINIZED CORRUGATED STEEL PIPE CULVERTS, ***** THICK (18", 0.064")
054000000-E	SP	16	LF	**** ALUMINIZED CORRUGATED STEEL PIPE CULVERTS, ***** THICK (24", 0.064")
054000000-E	SP	376	LF	**** ALUMINIZED CORRUGATED STEEL PIPE CULVERTS, ***** THICK (30", 0.079")
*** OR ***				
036600000-E	310	928	LF	15" RC PIPE CULVERTS, CLASS III
037200000-E	310	248	LF	18" RC PIPE CULVERTS, CLASS III
037800000-E	310	2,100	LF	24" RC PIPE CULVERTS, CLASS III
038400000-E	310	1,748	LF	30" RC PIPE CULVERTS, CLASS III
053600000-E	SP	256	LF	**** HDPE PIPE CULVERTS (15")
053600000-E	SP	396	LF	**** HDPE PIPE CULVERTS (18")
053600000-E	SP	16	LF	**** HDPE PIPE CULVERTS (24")
053600000-E	SP	376	LF	**** HDPE PIPE CULVERTS (30")
***** END SCHEDULE AA *****				

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STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

RIGHT OF WAY AREA DATA SHEET

PARCEL NO.	PROPERTY OWNERS NAME	TOTAL ACREAGE	AREA TAKEN	AREA REMAINING RIGHT	AREA REMAINING LEFT	CONSTR. EASEMENT	PERMANENT DRAINAGE EASEMENT	TEMPORARY DRAINAGE EASEMENT		PARCEL NO.	PROPERTY OWNERS NAME	TOTAL ACREAGE	AREA TAKEN	AREA REMAINING RIGHT	AREA REMAINING LEFT	CONSTR. EASEMENT	PERMANENT DRAINAGE EASEMENT	TEMPORARY DRAINAGE EASEMENT		
1	JAMES T. HOOD	1.78 ACRES	2,888.14 SQ FT		1.71 ACRES	1,452.74 SQ FT	3,240.08 SQ FT													
2	CRESCENT RESOURCES, LLC	19.88 ACRES	0.17 ACRES	19.71 ACRES		0.16 ACRES	1,180.00 SQ FT													
2A	CRESCENT RESOURCES, LLC	10.33 ACRES	0.34 ACRES		9.99 ACRES	0.19 ACRES	3,089.56 SQ FT													
3	BDF PROPERTIES LLC	13.65 ACRES	832.53 SQ FT		13.63 ACRES		543.95 SQ FT													
4	HUNTING CREEK ASSOCIATES	1.41 ACRES	0.12 ACRES		1.29 ACRES		1,407.53 SQ FT													
5	MCW INV. LLC	166.56 ACRES	0.70 ACRES	165.86 ACRES		0.19 ACRES	0.15 ACRES													
6	CITY OF MORGANTON	6,908.26 SQ FT	71.25 SQ FT		6,837.01 SQ FT	1,021.98 SQ FT	737.92 SQ FT													
7	BURKE COUNTY FAIR INC.	42.25 ACRES	0.36 ACRES		41.89 ACRES	5,516.84 SQ FT	8,998.50 SQ FT													
8	MICHAEL B. GONZALEZ	1.01 ACRES	0.0 ACRES		1.01 ACRES		1,306.50 SQ FT													
9	MARK A. McMAHON AND WIFE NANCY P. McMAHON	39.43 ACRES	0.0 ACRES	39.43 ACRES		0.28 ACRES	476.60 SQ FT	3,234.08 SQ FT												
10	LARRY GENE GRIGG AND WIFE CYNDI H. GRIGG	1.02 ACRES	0.0 ACRES		1.02 ACRES		540.61 SQ FT													
11	RUFUS W. HENSLEY AND WIFE CHRISTY P. HENSLEY	1.58 ACRES	0.0 ACRES		1.58 ACRES	1,095.73 SQ FT	1,033.38 SQ FT													
12	KENNETH R. VOLZ, JR	1.46 ACRES	0.0 ACRES		1.46 ACRES	946.05 SQ FT	240.00 SQ FT													
13	WYATT AIKEN, JR. AND WIFE MARY M. AIKEN	21,359.82 SQ FT	NO CLAIM																	
14	SAMUEL KEVIN CANIPE AND WIFE BEVERLY KAY CANIPE	2.45 ACRES	NO CLAIM																	
15	MICHAEL A. LEHN	32,816.19 SQ FT	NO CLAIM																	
16	JEFFERY M. SWANSON AND WIFE AMY L. SWANSON	33,280.73 SQ FT	NO CLAIM																	
19	CHARLES DOUGLAS SANDERS AND WIFE PATRICIA JAYNES SANDERS	1.87 ACRES	0.0 ACRES		1.87 ACRES	1,785.87 SQ FT														
21	WILMA JUDITH W. KING	6.49 ACRES	NO CLAIM																	

PROJECT REFERENCE NO. 37301		SHEET NO. 4	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

PI Sta 12+49.94 PI Sta 20+61.94
 $\Delta = 4' 35" 57.0" (LT)$ $\Delta = 0' 31" 17.0" (RT)$
 $D = 5' 00" 00.0"$ $D = 0' 30" 00.0"$
 $L = 91.98'$ $L = 104.28'$
 $T = 46.02'$ $T = 52.14'$
 $R = 11,459.156'$ $R = 11,459.156'$
 $SE = 0.033$ $SE = \text{NORMAL CROWN}$
 RUNOFF = AS SHOWN ON PLANS RUNOFF = AS SHOWN ON PLANS

SEE SHEET 9 FOR -L- PROFILE

BDF PROPERTIES, LLC
D.B. 932, PG. 1610



SR 1419 BOST ROAD ADT 2003 3500
ADT 2023 5200

565 840
2935 4360

STA 10+32.00 -L- BEGIN STATE PROJECT 37301
BEGIN CONSTRUCTION

-L- POT 10+00.00 =
-Y- POT 12+36.08
N=740,213.2340
E=1194,107.7100
ELEV.=1,030.79

MATCH LINE 21+50 SEE SHEET 5

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "QUAKER" WITH NAD 1983/795 STATE PLANE GRID COORDINATES OF NORTHING: 755,282.447(11) EASTING: 1,192,031.954(11) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999868750 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "QUAKER" TO -L- STATION 10+00.00 IS S07°47'59.96"E 15,163.6064 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

22-JUN-2006 15:45
P:\PROJECTS\37301\1419_mol\30222\sr1419.ddc.psh_031122_s4.dgn
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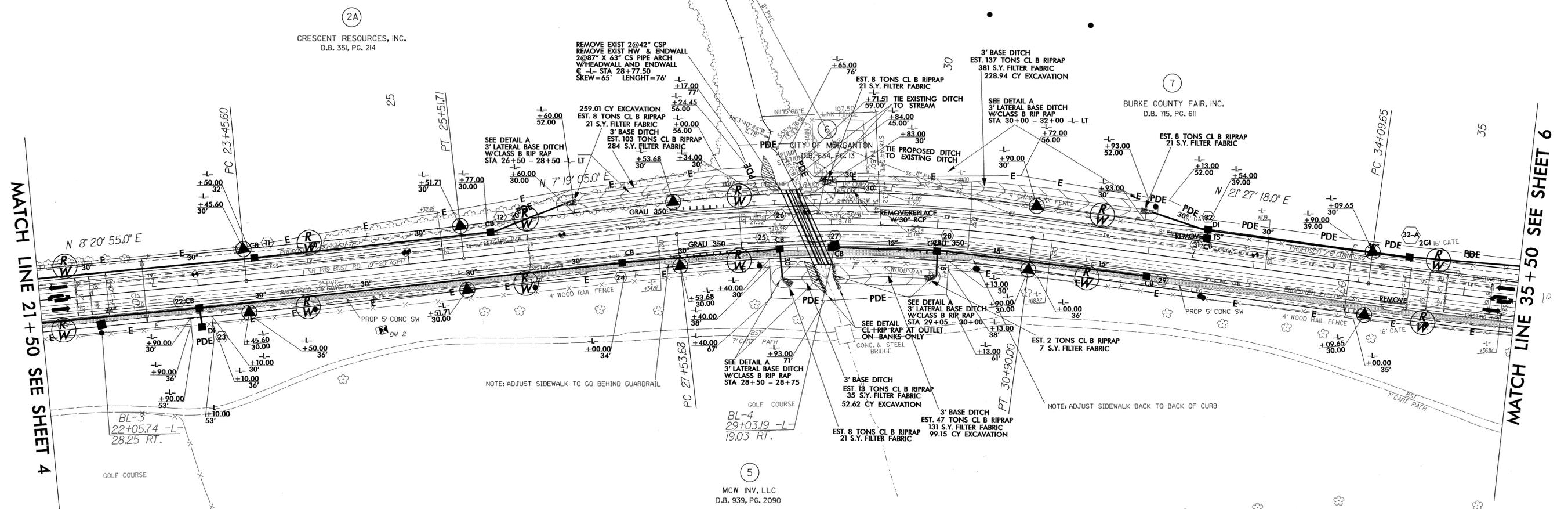
8/17/99

PI Sta 24+48.66 Δ = 1° 01' 50.0" (LT) D = 0' 30' 00.0" L = 206.11' T = 103.06' R = 11,459.1560' SE = NORMAL CROWN RUNOFF = AS SHOWN ON PLANS	PI Sta 29+22.70 Δ = 14° 08' 13.0" (RT) D = 4' 12' 12.0" L = 336.33' T = 169.02' R = 1,363.1034' SE = 0.037 RUNOFF = AS SHOWN ON PLANS
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PROJECT REFERENCE NO. 37301	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	
5-4-06	01/20/06

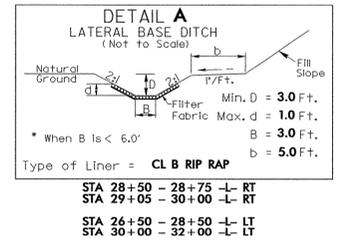
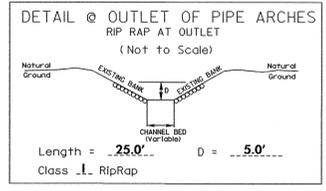


SEE SHEET 9 FOR -L- PROFILE



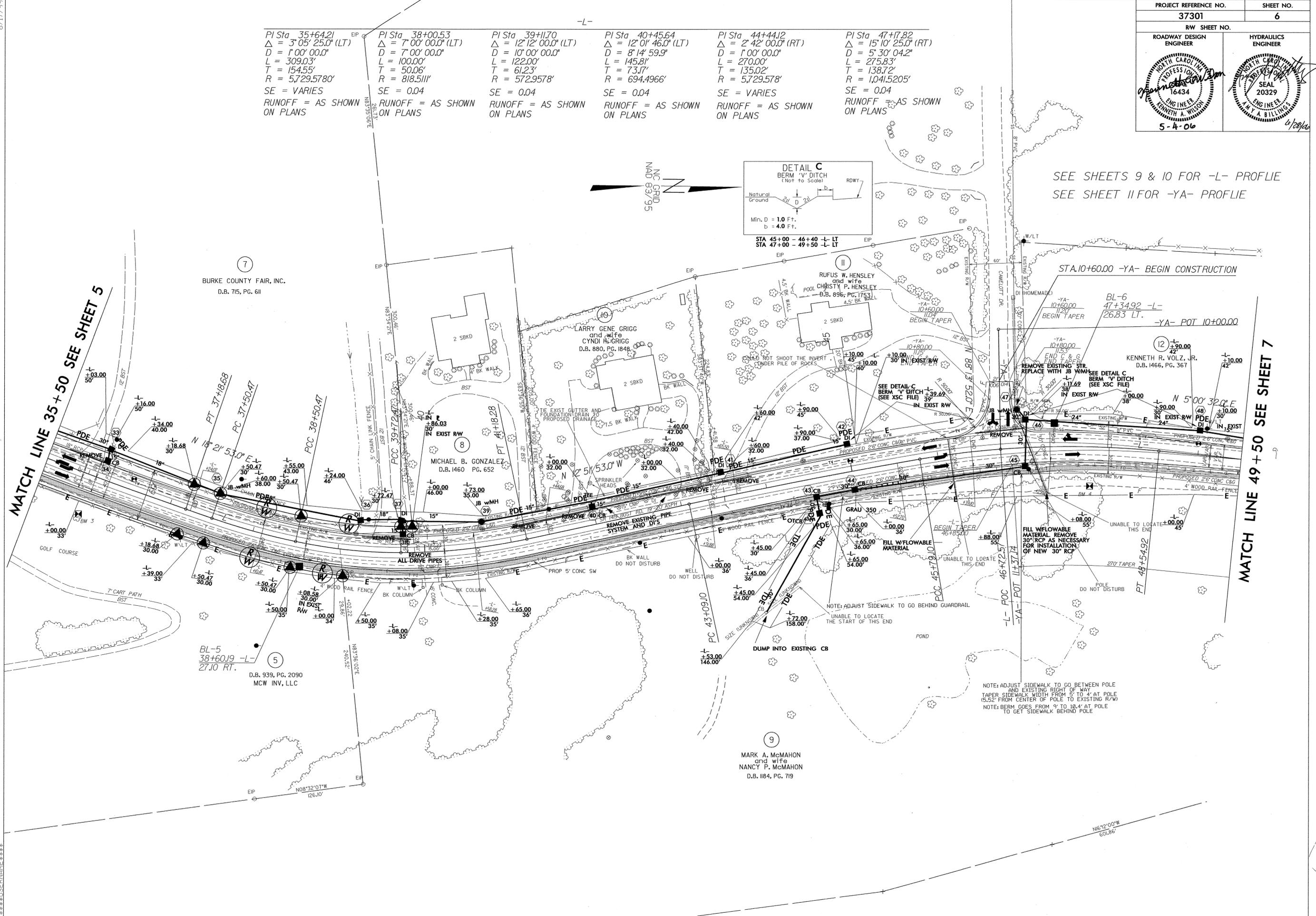
MATCH LINE 21 + 50 SEE SHEET 4

MATCH LINE 35 + 50 SEE SHEET 6



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Station	Delta	L	T	R	SE	Runoff
PI Sta 35+64.21	3° 05' 25.0" (LT)	100.00'	154.55'	5,729.5780'	VARIES	AS SHOWN ON PLANS
PI Sta 38+00.53	7° 00' 00.0" (LT)	100.00'	50.06'	818.5111'	0.04	AS SHOWN ON PLANS
PI Sta 39+11.70	12° 12' 00.0" (LT)	122.00'	61.23'	572.9578'	0.04	AS SHOWN ON PLANS
PI Sta 40+45.64	12° 01' 46.0" (LT)	145.81'	73.17'	694.4966'	0.04	AS SHOWN ON PLANS
PI Sta 44+44.12	2° 42' 00.0" (RT)	270.00'	135.02'	5,729.578'	VARIES	AS SHOWN ON PLANS
PI Sta 47+17.82	15° 10' 25.0" (RT)	275.83'	138.72'	1,041.5205'	0.04	AS SHOWN ON PLANS



SEE SHEETS 9 & 10 FOR -L- PROFILE
 SEE SHEET 11 FOR -YA- PROFILE

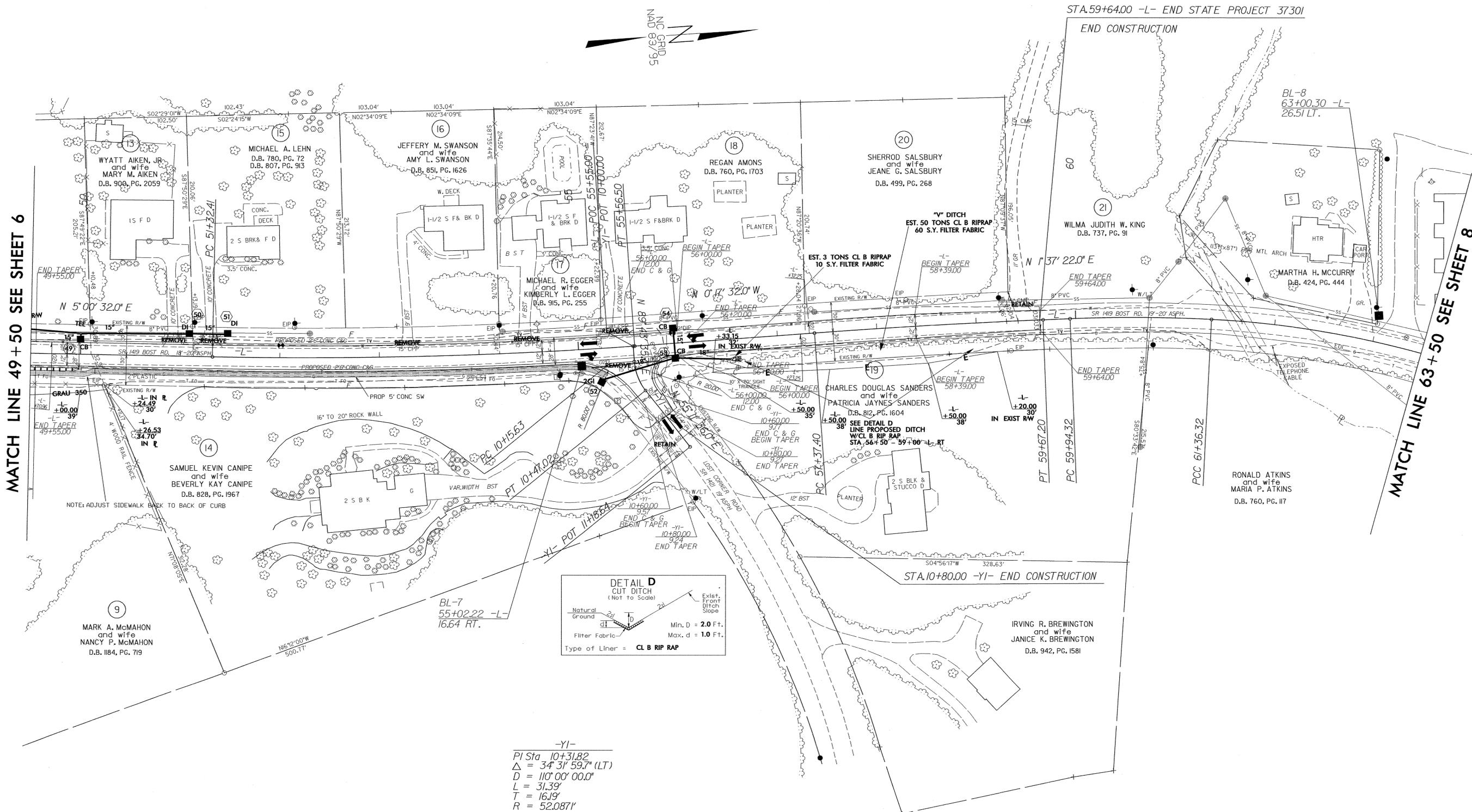
MATCH LINE 35+50 SEE SHEET 5

MATCH LINE 49+50 SEE SHEET 7

8/17/99
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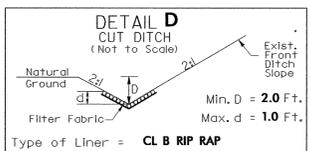
SEE SHEET 10 FOR -L- PROFILE
SEE SHEET 11 FOR -YI- PROFILE

PI Sta 53+44.61 Δ = 5° 18' 04.0" (LT) D = 15' 00.0" L = 424.09' T = 212.20' R = 4,583.6624' SE = 0.021 RUNOFF = AS SHOWN ON PLANS	PI Sta 58+52.31 Δ = 1° 54' 54.0" (RT) D = 0° 50' 00.0" L = 229.80' T = 114.91' R = 6,875.4936' SE = VARIES RUNOFF = AS SHOWN ON PLANS	PI Sta 60+65.37 Δ = 5° 05' 06.0" (RT) D = 3° 34' 51.6" L = 142.00' T = 71.05' R = 1,600.0000'	PI Sta 62+56.45 Δ = 14° 20' 24.0" (RT) D = 6' 00' 00.0" L = 239.00' T = 120.13' R = 954.9297'
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MATCH LINE 49 + 50 SEE SHEET 6

MATCH LINE 63 + 50 SEE SHEET 8



-YI-
PI Sta 10+31.82
Δ = 34° 31' 59.7" (LT)
D = 110' 00' 00.0"
L = 31.39'
T = 16.19'
R = 52.0871'

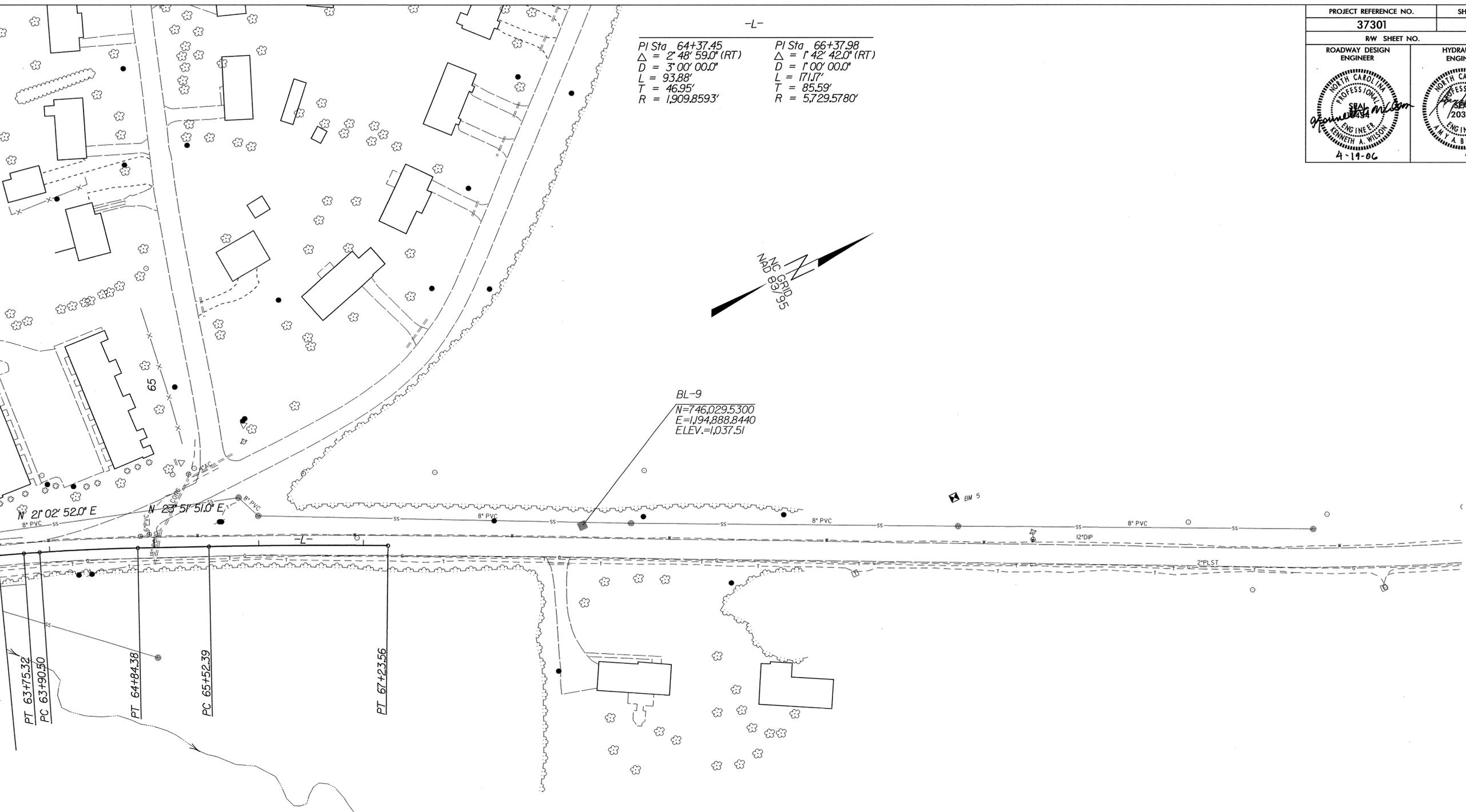
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
37301	8
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

-L-

PI Sta 64+37.45	PI Sta 66+37.98
$\Delta = 2' 48' 59.0''$ (RT)	$\Delta = 1' 42' 42.0''$ (RT)
D = 3' 00' 00.0"	D = 1' 00' 00.0"
L = 93.88'	L = 171.7'
T = 46.95'	T = 85.59'
R = 1,909.8593'	R = 5,729.5780'

MATCH LINE 63+50 SEE SHEET 7



BL-9
 N=746,029.5300
 E=1,194,888.8440
 ELEV.=1,037.51



N 2° 02' 52.0" E
 8" PVC

N 2° 51' 51.0" E
 8" PVC

PT 63+75.32
 PC 63+90.50

PT 64+84.38

PC 65+52.39

PT 67+23.56

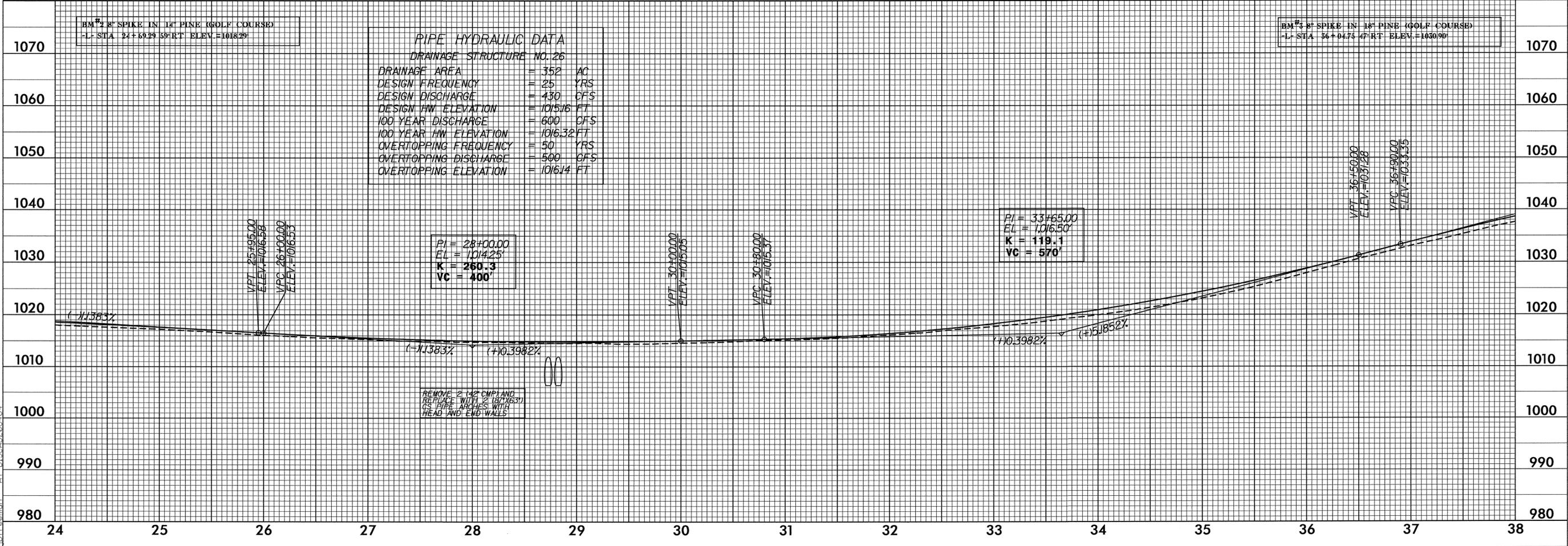
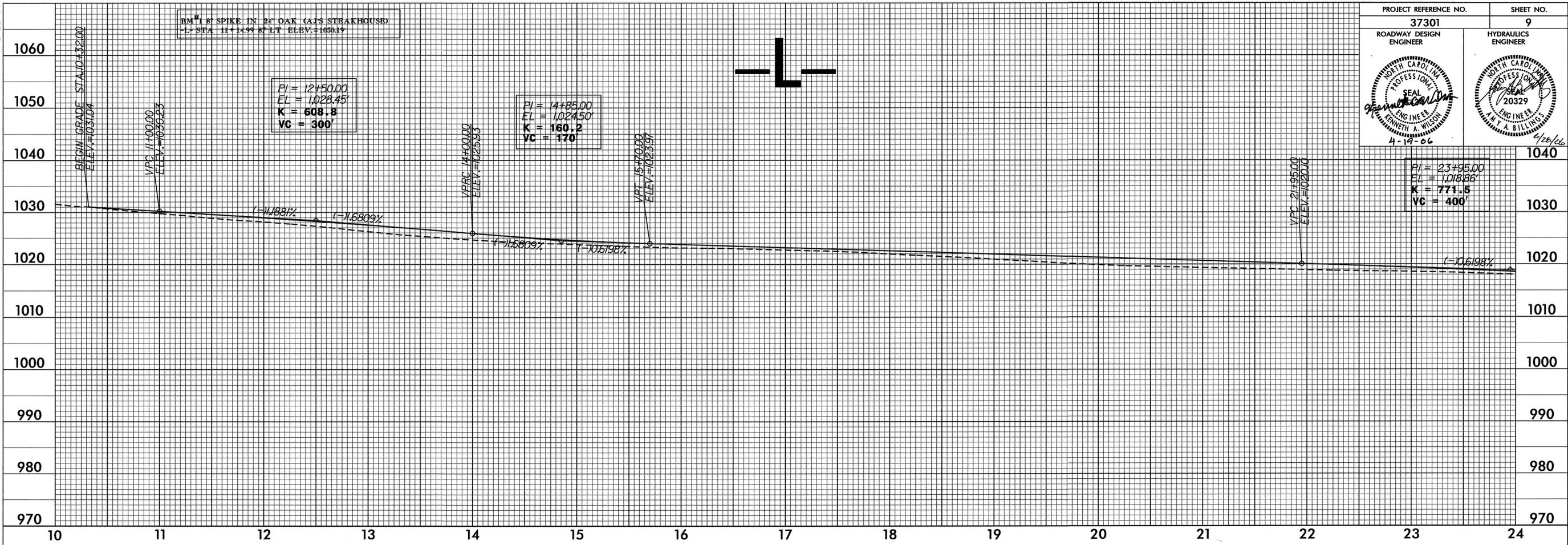
BM 5

12'DIP

2"PLST

5/28/99

PROJECT REFERENCE NO. 37301	SHEET NO. 9
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



BM #2 8" SPIKE IN 14" PINE (GOLF COURSE)
L- STA 24+69.29 59' RT ELEV = 1018.29'

BM #3 8" SPIKE IN 18" PINE (GOLF COURSE)
L- STA 36+04.74 47' RT ELEV = 1030.90'

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 26

DRAINAGE AREA	= 352 AC
DESIGN FREQUENCY	= 25 YRS
DESIGN DISCHARGE	= 430 CFS
DESIGN HW ELEVATION	= 1015.16 FT
100 YEAR DISCHARGE	= 600 CFS
100 YEAR HW ELEVATION	= 1016.32 FT
OVERTOPPING FREQUENCY	= 50 YRS
OVERTOPPING DISCHARGE	= 500 CFS
OVERTOPPING ELEVATION	= 1016.14 FT

PI = 28+00.00
EL = 1014.25'
K = 260.3
VC = 400'

PI = 33+65.00
EL = 1016.50'
K = 119.1
VC = 570'

REMOVE 2 (42" CMP) AND
REPLACE WITH 2 (42" R33)
CS PIPE ARCHES WITH
HEAD AND END WALLS

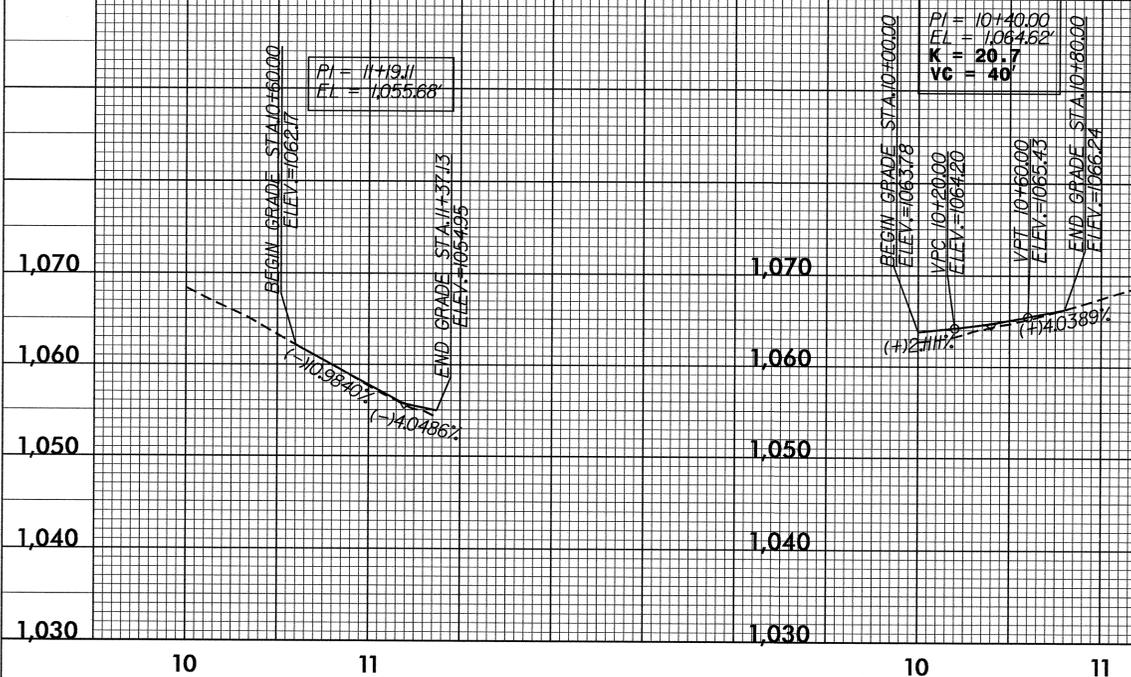
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5/28/99

PROJECT REFERENCE NO. 37301	SHEET NO. 11
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
 KENNETH A. WILSON ENGINEER 20329 NORTH CAROLINA PROFESSIONAL SEAL A-19-06	 M.V. BILLING ENGINEER 20329 NORTH CAROLINA PROFESSIONAL SEAL a/c/p/pe

-YA-

-Y1-



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