

SHEET NUMBER	SHEET
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1-B	CONVENTIONAL SYMBOLS
1-C THRU 1-D	SURVEY CONTROL SHEETS
2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
3	SUMMARY OF QUANTITIES
3-A	LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)
3-B	PARCEL INDEX SHEET
3-C	SUMMARY OF EARTHWORK, SUMMARY OF ASPHALT PAVEMENT REMOVAL, AND GUARDRAIL SUMMARY
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GENERAL NOTES: 2012 SPECIFICATIONS
EFFECTIVE: 01-17-12
REVISED: 08/31/11

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 CENTURY LINK, PITT & GREENE EMC, AND BELL ARTHUR WATER.
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

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

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
225.04	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
840.29	Frames and Narrow Slot Flat Grates
840.34	Traffic Bearing Junction Box - for Use with Pipes 42" and Under
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.46	Traffic Bearing Precast Drainage Structure
840.54	Manhole Frame and Cover
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

04/16/11

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
Property Corner	-----
Property Monument	□ ECM
Parcel/Sequence Number	⑫③
Existing Fence Line	-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-
Known Soil Contamination: Area or Site	☠ ☠
Potential Soil Contamination: Area or Site	☠ ? ☠

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

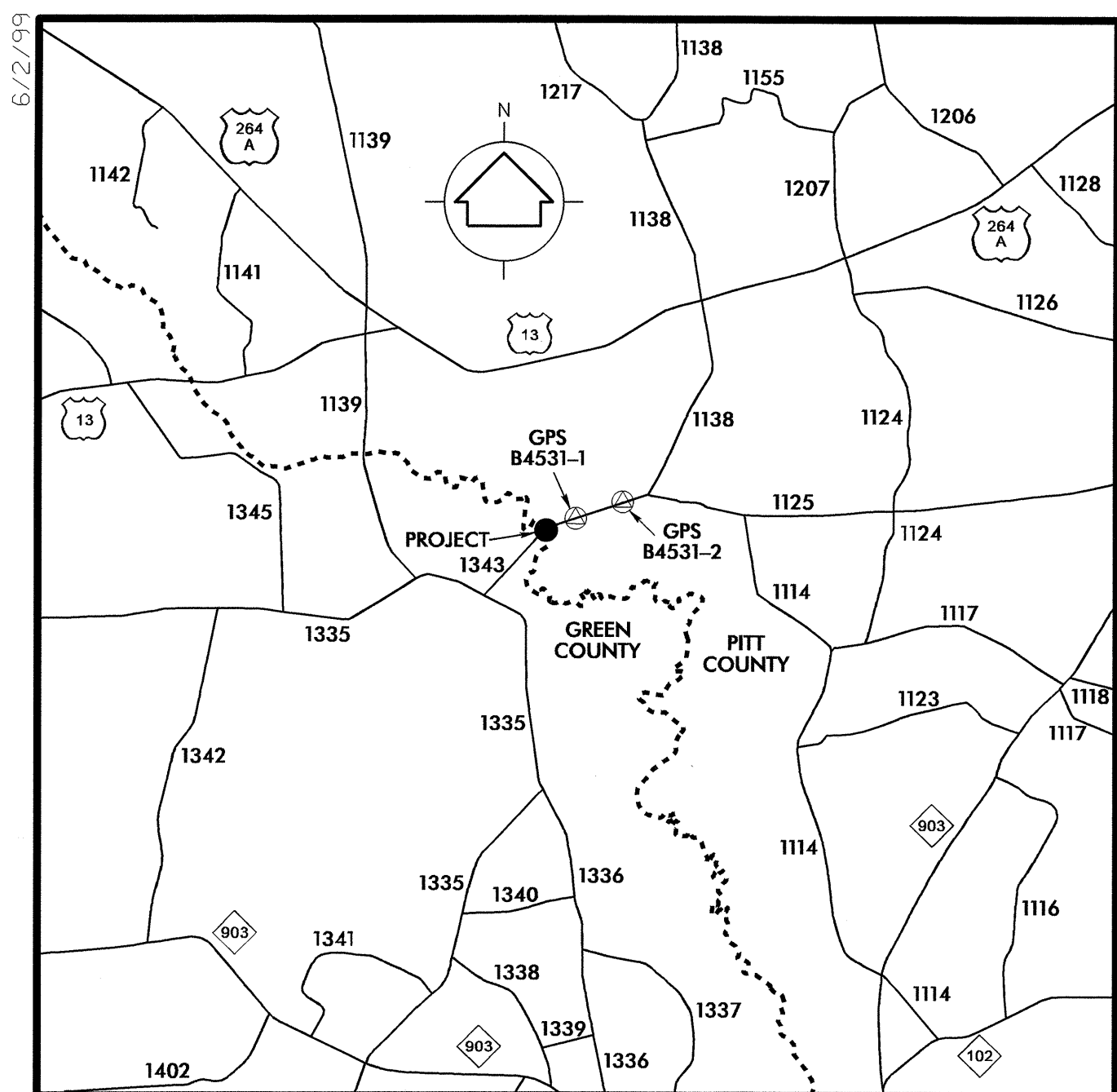
SANITARY SEWER:

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	□
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.

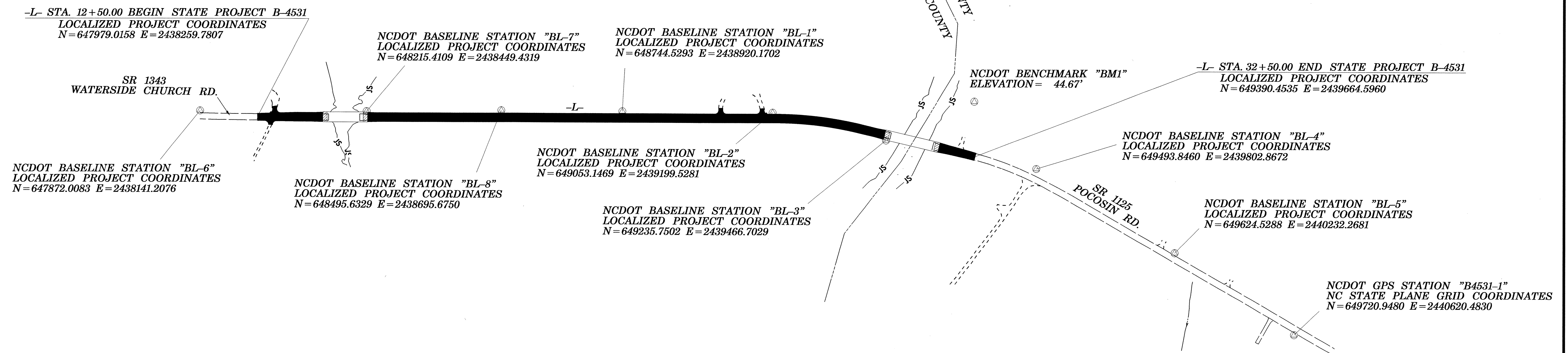
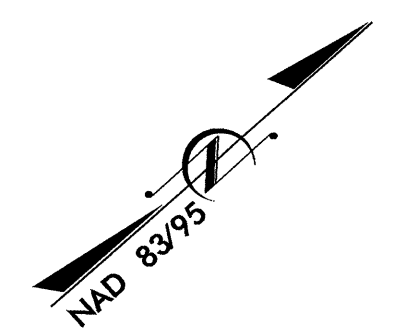
SURVEY CONTROL SHEET B-4531



VICINITY MAP

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
6	BL-6	647872.0083	2438141.2076	41.79	10+90.87	15.61 LT
7	BL-7	648215.4109	2438449.4319	42.40	15+52.63	16.35 LT
8	BL-8	648495.6329	2438695.6750	40.70	19+25.65	19.75 LT
1	BL-1	648744.5293	2438920.1702	41.14	22+60.83	18.48 LT
2	BL-2	649053.1469	2439199.5281	41.72	26+77.10	16.15 LT
3	BL-3	649235.7502	2439466.7029	41.60	29+99.21	15.03 RT
4	BL-4	649493.8460	2439802.8672	42.07	34+18.41	27.35 LT
5	BL-5	649624.5288	2440232.2681	38.77	OUTSIDE PROJECT LIMITS	

.....
 BM1 ELEVATION = 44.67
 N 649490 E 2439549
 L STATION 32+12 147 LEFT
 RR SPIKE IN 18" HARDWOOD



-L- STA. 12+50.00 BEGIN STATE PROJECT B-4531
 LOCALIZED PROJECT COORDINATES
 N=647979.0158 E=2438259.7807

NCDOT BASELINE STATION "BL-7"
 LOCALIZED PROJECT COORDINATES
 N=648215.4109 E=2438449.4319

NCDOT BASELINE STATION "BL-1"
 LOCALIZED PROJECT COORDINATES
 N=648744.5293 E=2438920.1702

-L- STA. 32+50.00 END STATE PROJECT B-4531
 LOCALIZED PROJECT COORDINATES
 N=649390.4535 E=2439664.5960

NCDOT BASELINE STATION "BL-6"
 LOCALIZED PROJECT COORDINATES
 N=647872.0083 E=2438141.2076

NCDOT BASELINE STATION "BL-8"
 LOCALIZED PROJECT COORDINATES
 N=648495.6329 E=2438695.6750

NCDOT BASELINE STATION "BL-2"
 LOCALIZED PROJECT COORDINATES
 N=649053.1469 E=2439199.5281

NCDOT BENCHMARK "BM1"
 ELEVATION = 44.67'

NCDOT BASELINE STATION "BL-4"
 LOCALIZED PROJECT COORDINATES
 N=649493.8460 E=2439802.8672

NCDOT BASELINE STATION "BL-3"
 LOCALIZED PROJECT COORDINATES
 N=649235.7502 E=2439466.7029

NCDOT BASELINE STATION "BL-5"
 LOCALIZED PROJECT COORDINATES
 N=649624.5288 E=2440232.2681

NCDOT GPS STATION "B4531-1"
 NC STATE PLANE GRID COORDINATES
 N=649720.9480 E=2440620.4830

NOTES:

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.ncdot.org/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/)

THE FILES TO BE FOUND ARE AS FOLLOWS:
 b4531_ls_control_090204.txt

SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

⊙ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
 PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
 NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING SERVICE (OPUS)

DATUM DESCRIPTION
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "GPS B4531-1" WITH NAD 83/95 STATE PLANE GRID COORDINATES OF
 NORTHING: 649720.948(ft) EASTING: 2440620.483(ft)
 ELEVATION: 39.15(ft)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999887750
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS B4531-1" TO -L- STATION 12+50.00 IS
 S 53°34'36.7" W 2933.810(ft)
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

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SURVEY CONTROL SHEET B-4531

PROJECT REFERENCE NO. B-4531	SHEET NO. 1-D
Location and Surveys	

PRELIMINARY R/W MONUMENT OFFSETS AND COORDINATES

ALIGN	STATION	OFFSET	NORTH	EAST
L	12+50.00	60.00	647939.0000	2438304.4878
L	12+50.00	30.00	647959.0079	2438282.1342
L	12+50.00	-30.00	647999.0238	2438237.4271
L	12+50.00	-60.00	648019.0317	2438215.0735
L	17+00.00	-60.00	648354.3353	2438515.1927
L	17+00.00	-30.00	648334.3274	2438537.5462
L	17+00.00	30.00	648294.3115	2438582.2534
L	17+00.00	60.00	648274.3036	2438604.6069
L	27+50.00	-30.15	649116.6490	2439240.9142
L	27+50.00	-40.00	649123.7045	2439234.0480
L	28+00.00	-70.00	649181.5153	2439252.3152
L	28+50.00	-70.00	649215.8624	2439293.2373
L	29+00.00	29.89	649167.1370	2439394.2199
L	29+00.00	50.00	649150.8290	2439405.9793
L	29+18.23	50.00	649160.8401	2439420.1275
L	29+50.00	-50.00	649261.1048	2439389.1985
L	32+09.63	50.00	649327.0281	2439659.4993
L	32+09.63	-50.00	649409.1719	2439602.4695
L	33+00.00	50.00	649372.7941	2439732.1527
L	33+00.00	30.32	649389.9011	2439722.4169
L	33+00.00	-29.68	649442.0481	2439692.7397
L	33+00.00	-50.00	649459.7052	2439682.6909

-L- CENTERLINE COORDINATES

TYPE	STATION	NORTH	EAST
PC	10+00.00	647795.2729	2438090.2748
PT	12+30.45	647964.4486	2438246.7420
PC	26+79.70	649044.3152	2439213.2948
PT	29+18.23	649201.9120	2439391.6127
PC	32+09.63	649368.1000	2439630.9844
PT	35+04.36	649498.7333	2439894.0134
POT	38+63.41	649609.9952	2440235.3965

-D1- CENTERLINE COORDINATES

TYPE	STATION	NORTH	EAST
POT	10+00.00	649442.1398	2439580.3686
PC	10+18.00	649426.5973	2439589.4472
PT	10+47.35	649418.4672	2439614.9704
PC	10+82.98	649433.1687	2439647.4204
PT	11+12.06	649425.2707	2439672.8059
POT	11+37.33	649403.6166	2439685.8493

DATUM DESCRIPTION

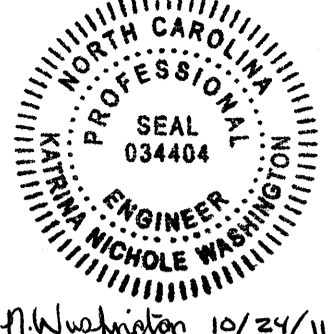
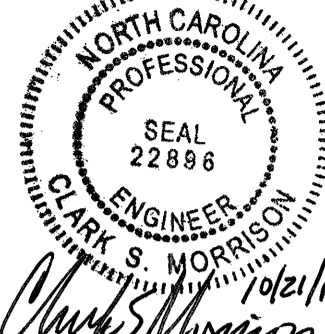
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NOTE: DRAWING NOT TO SCALE

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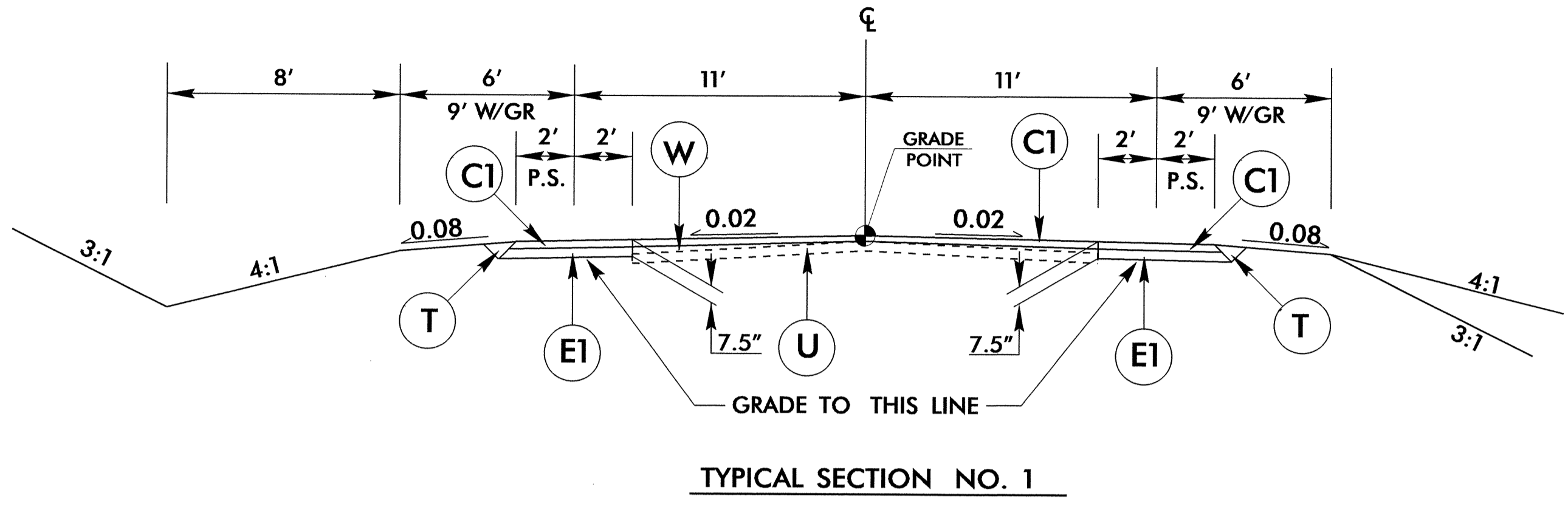
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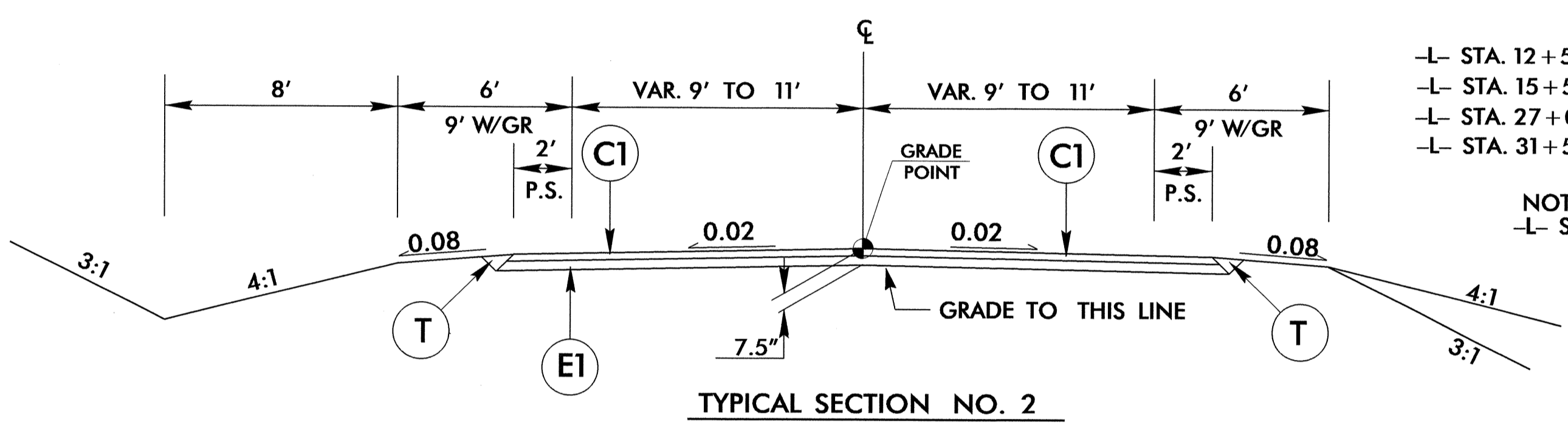
PROJECT REFERENCE NO. B-4531	SHEET NO. 2
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER 

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1.5" IN DEPTH.
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 5.5" IN DEPTH.
J	PROP. 6" AGGREGATE BASE COURSE
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET No. 2)

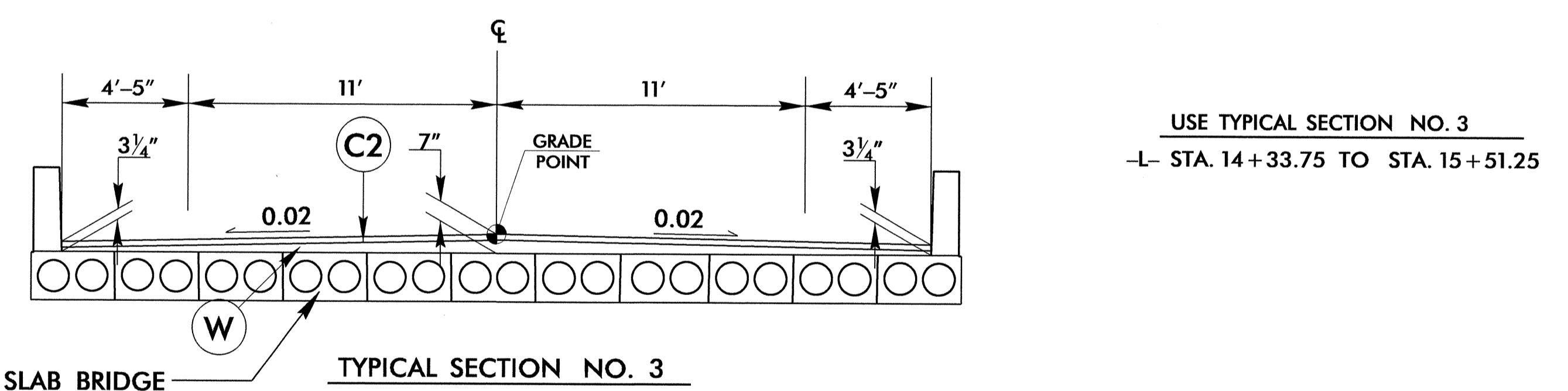
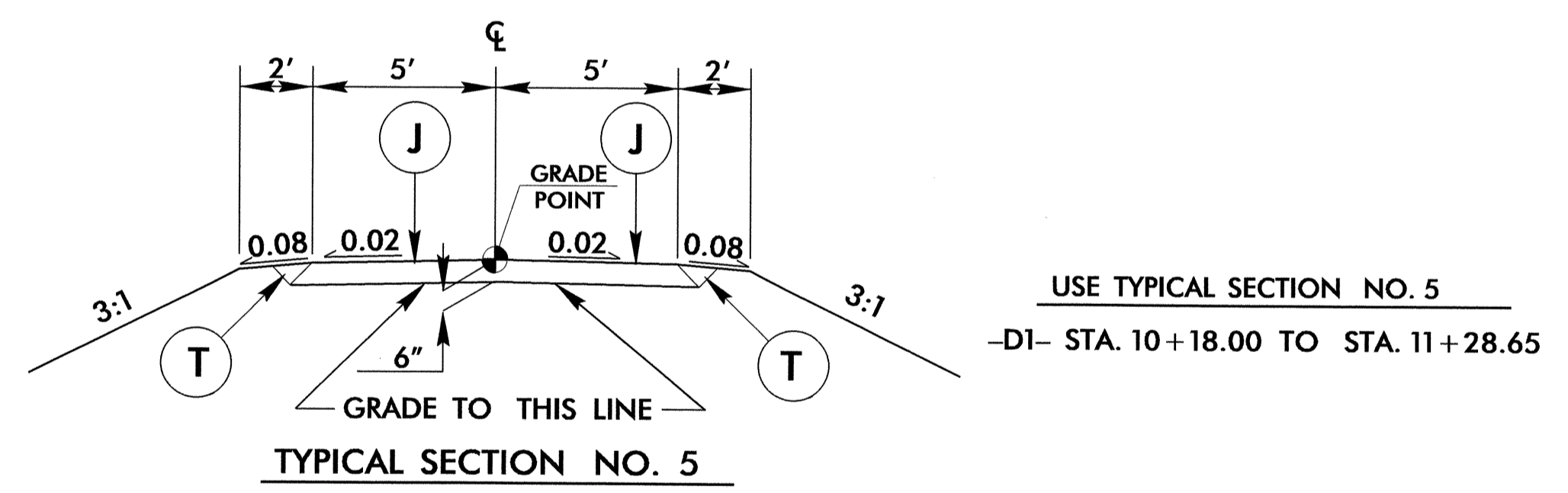
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



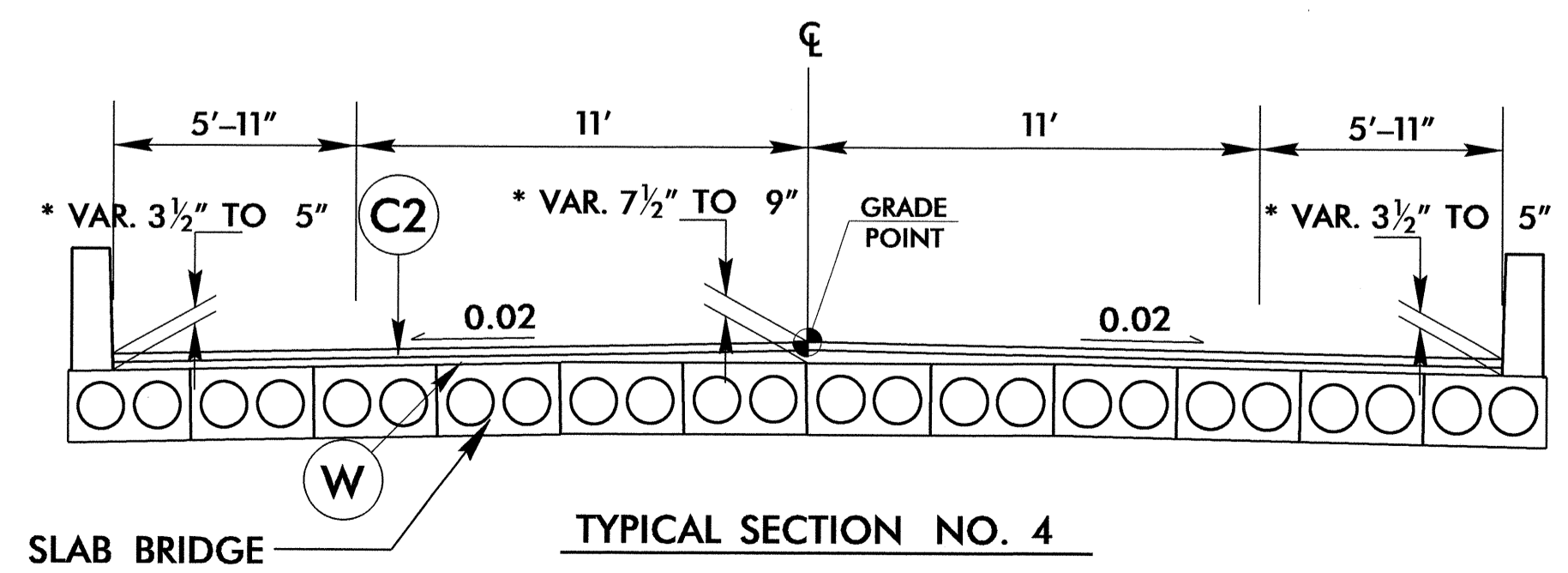
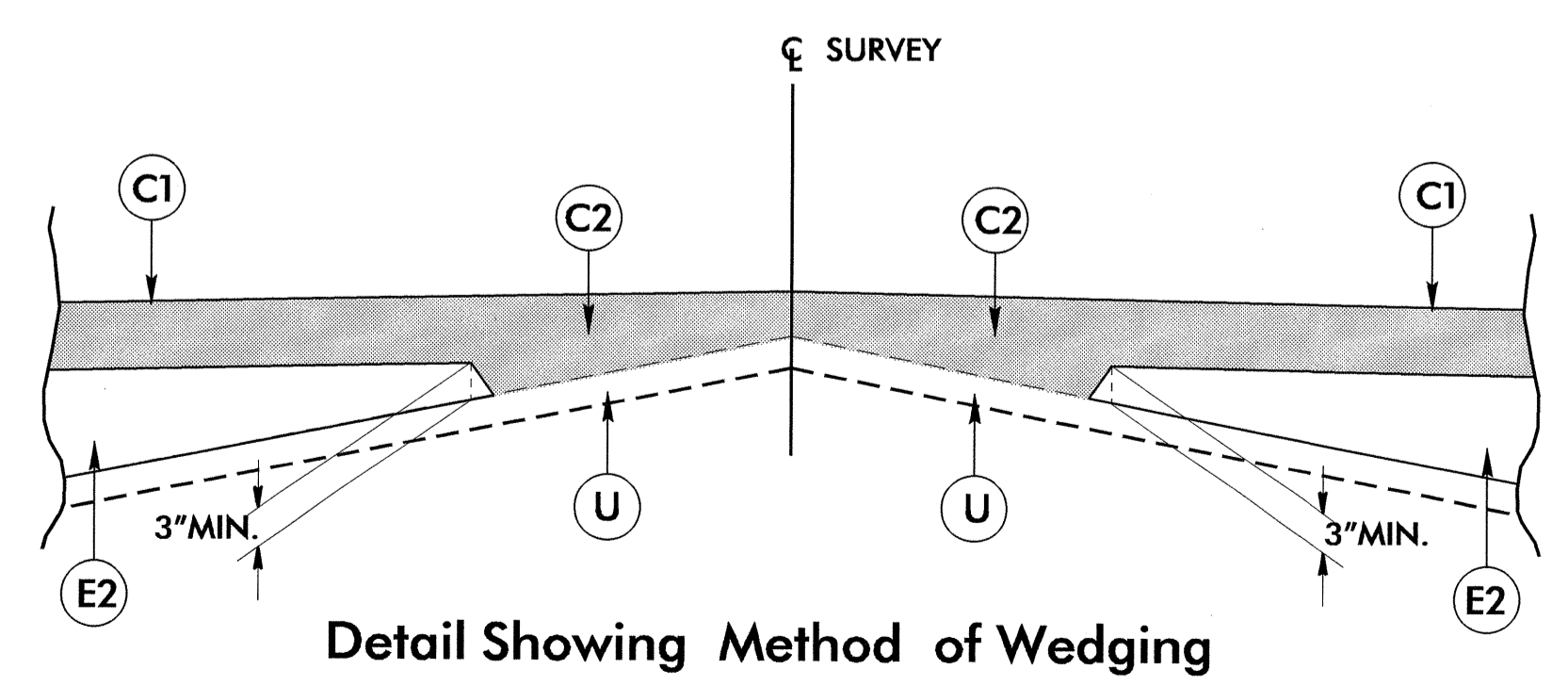
USE TYPICAL SECTION NO. 1
 -L- STA. 18+50.00 TO STA. 27+00.00



USE TYPICAL SECTION NO. 2
 -L- STA. 12+50.00 TO STA. 14+33.75 (BEGIN BRIDGE)
 -L- STA. 15+51.25 (END BRIDGE) TO STA. 18+50.00
 -L- STA. 27+00.00 TO STA. 29+83.75 (BEGIN BRIDGE)
 -L- STA. 31+56.25 (END BRIDGE) TO STA. 32+50.00
 NOTE: RESURFACING ONLY FROM
 -L- STA. 32+50.00 TO STA. 33+00.00



USE TYPICAL SECTION NO. 3
 -L- STA. 14+33.75 TO STA. 15+51.25



USE TYPICAL SECTION NO. 4
 -L- STA. 29+83.75 TO STA. 31+56.25

* SEE STRUCTURE PLANS

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS
 ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202748

ItemNumber	Sec #	Quantity	Unit	Description
000010000-N	800	Lump Sum		MOBILIZATION
000040000-N	801	Lump Sum		CONSTRUCTION SURVEYING
002900000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ***** (14+92.50)
002900000-N	SP	Lump Sum		REINFORCED BRIDGE APPROACH FILL, STATION ***** (30+70.00)
004300000-N	226	Lump Sum		GRADING
005000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB- BING
005700000-E	226	300	CY	UNDERCUT EXCAVATION
019500000-E	265	300	CY	SELECT GRANULAR MATERIAL
019600000-E	270	400	SY	GEOTEXTILE FOR SOIL STABILIZA- TION
031800000-E	300	20	TON	FOUNDATION CONDITIONING MATE- RIAL, MINOR STRUCTURES
032000000-E	300	70	SY	FOUNDATION CONDITIONING GEO- TEXTILE
033520000-E	305	68	LF	15" DRAINAGE PIPE
034300000-E	310	24	LF	15" SIDE DRAIN PIPE
036600000-E	310	92	LF	15" RC PIPE CULVERTS, CLASS III
112100000-E	520	50	TON	AGGREGATE BASE COURSE
122000000-E	545	100	TON	INCIDENTAL STONE BASE
148900000-E	610	1,260	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
152500000-E	610	1,030	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A
157500000-E	620	125	TON	ASPHALT BINDER FOR PLANT MIX
169300000-E	654	100	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
207700000-E	815	6	LF	6" OUTLET PIPE
228600000-N	840	5	EA	MASONRY DRAINAGE STRUCTURES
235500000-N	840	4	EA	FRAME WITH GRATE, STD 840.29
239600000-N	840	1	EA	FRAME WITH COVER, STD 840.54
255600000-E	846	70	LF	SHOULDER BERM GUTTER
284500000-N	858	1	EA	ADJUSTMENT OF METER BOXES OR VALVE BOXES
303000000-E	862	162.5	LF	STEEL BM GUARDRAIL
315000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
321500000-N	862	8	EA	GUARDRAIL ANCHOR UNITS, TYPE III
327000000-N	SP	8	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
336000000-E	863	414	LF	REMOVE EXISTING GUARDRAIL
364900000-E	876	2.2	TON	RIP RAP, CLASS B
365600000-E	876	517	SY	GEOTEXTILE FOR DRAINAGE
440000000-E	1110	411	SF	WORK ZONE SIGNS (STATIONARY)
440500000-E	1110	48	SF	WORK ZONE SIGNS (PORTABLE)
441000000-E	1110	94	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
443500000-N	1135	10	EA	CONES
444500000-E	1145	64	LF	BARRICADES (TYPE III)
445000000-N	1150	80	HR	FLAGGER
600000000-E	1605	4,200	LF	TEMPORARY SILT FENCE
600600000-E	1610	225	TON	STONE FOR EROSION CONTROL, CLASS A
600900000-E	1610	265	TON	STONE FOR EROSION CONTROL, CLASS B
601200000-E	1610	310	TON	SEDIMENT CONTROL STONE
601500000-E	1615	5	ACR	TEMPORARY MULCHING
601800000-E	1620	200	LB	SEED FOR TEMPORARY SEEDING
602100000-E	1620	1.75	TON	FERTILIZER FOR TEMPORARY SEED- ING

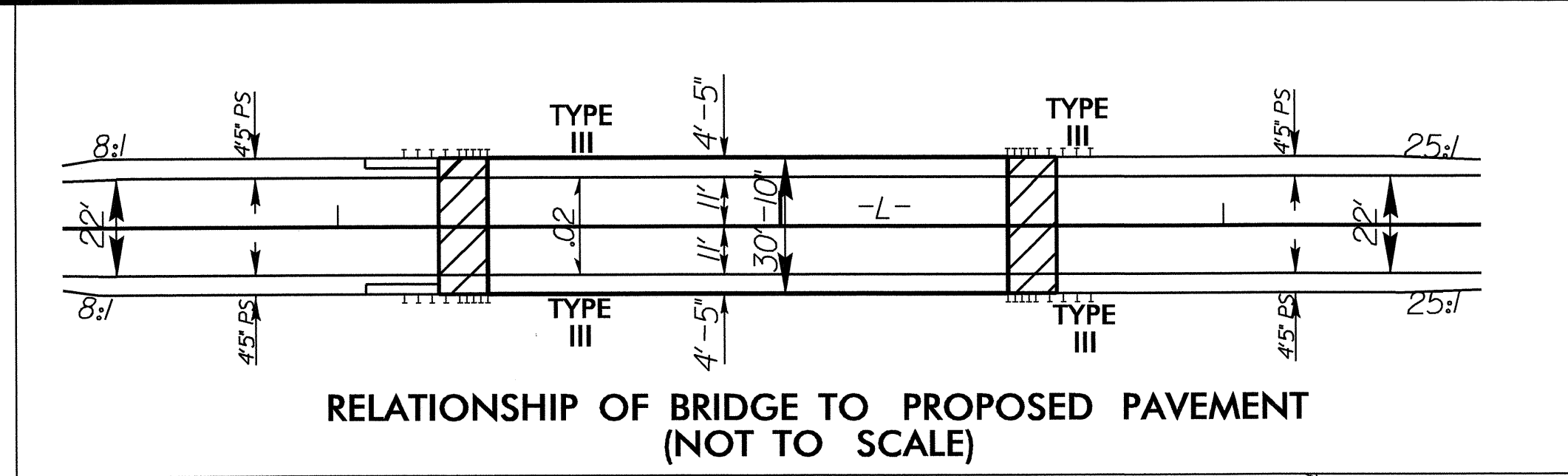
ItemNumber	Sec #	Quantity	Unit	Description
602400000-E	1622	200	LF	TEMPORARY SLOPE DRAINS
602900000-E	SP	500	LF	SAFETY FENCE
603000000-E	1630	280	CY	SILT EXCAVATION
603600000-E	1631	1,800	SY	MATTING FOR EROSION CONTROL
603700000-E	SP	10	SY	COIR FIBER MAT
603800000-E	SP	285	SY	PERMANENT SOIL REINFORCEMENT MAT
604200000-E	1632	1,125	LF	1/4" HARDWARE CLOTH
607101000-E	SP	360	LF	WATTLE
607102000-E	SP	115	LB	POLYACRYLAMIDE (PAM)
607103000-E	1640	115	LF	COIR FIBER BAFFLE
607105000-E	SP	1	EA	*** SKIMMER (1-1/2")
608400000-E	1660	6	ACR	SEEDING & MULCHING
608700000-E	1660	3	ACR	MOWING
609000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
609300000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
609600000-E	1662	125	LB	SEED FOR SUPPLEMENTAL SEEDING
610800000-E	1665	3.25	TON	FERTILIZER TOPDRESSING
611450000-N	1667	10	MHR	SPECIALIZED HAND MOWING
611700000-N	SP	18	EA	RESPONSE FOR EROSION CONTROL
612300000-E	1670	0.1	ACR	REFORESTATION

8/17/99

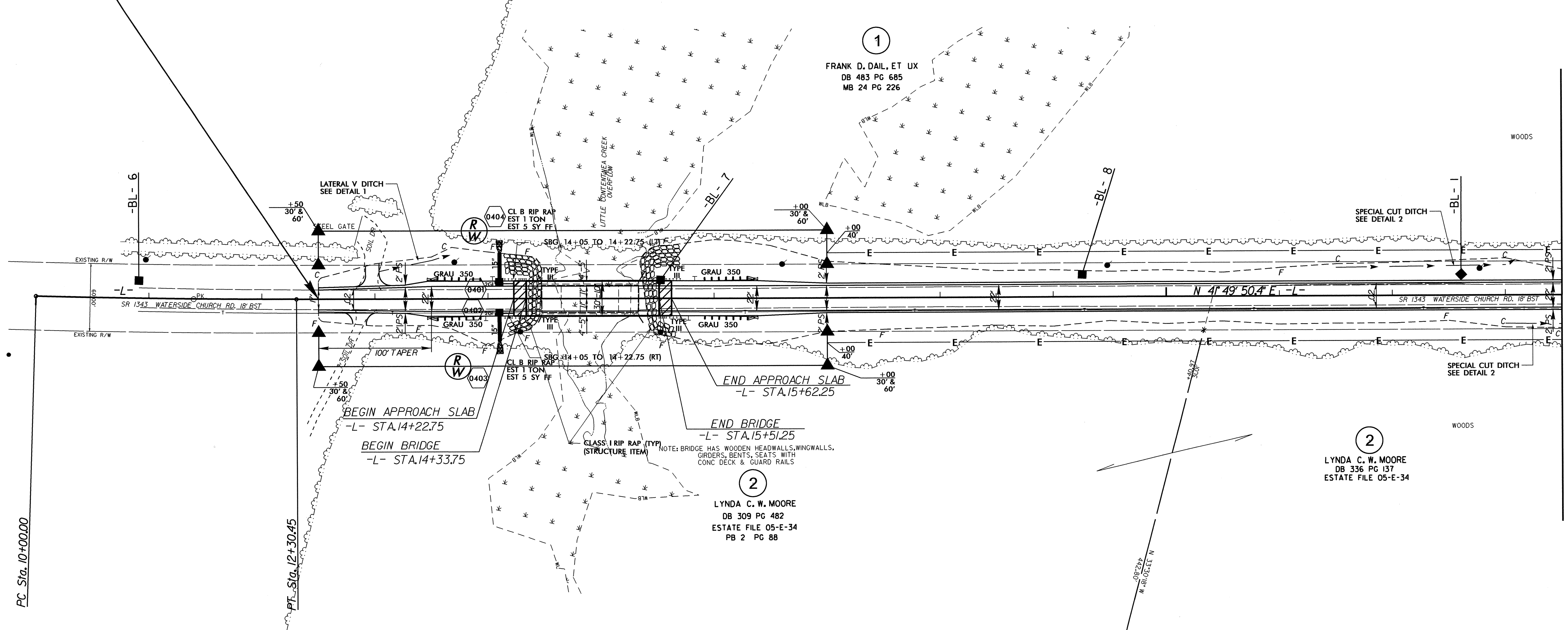
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PROJECT REFERENCE NO. B-4531	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 034404 MICHAEL F. FISHER 10/24/2011	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 14576 MICHAEL F. FISHER 10/24/2011

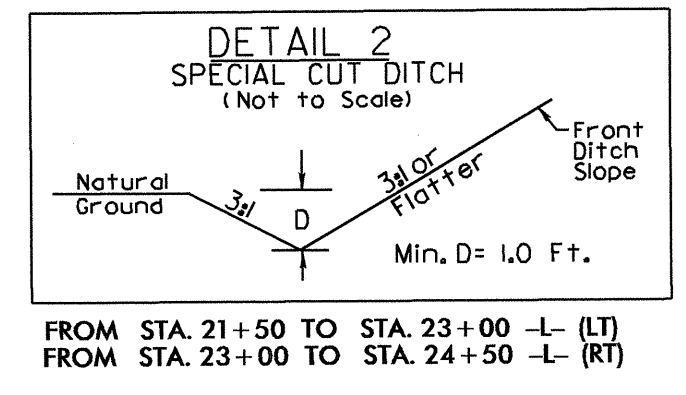
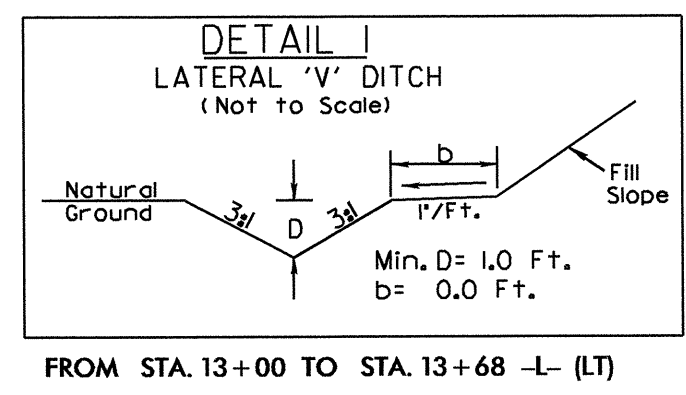
FOR -L- PROFILE SEE SHEET 6
 SBG = SHOULDER BERM GUTTER
 FOR STRUCTURE PLANS SEE SHEETS S-1 THRU S-42



-L- STA. 12+50.00 BEGIN TIP PROJECT B-4531



-L-
 PI Sta. 11+15.24
 $\Delta = 1^{\circ}52'08.0''$ (LT)
 $D = 0^{\circ}48'39.5''$
 $L = 230.45'$
 $T = 115.24'$
 $R = 7,065.00'$



FROM STA. 13+00 TO STA. 13+68 -L- (LT)

FROM STA. 21+50 TO STA. 23+00 -L- (LT)
 FROM STA. 23+00 TO STA. 24+50 -L- (RT)

MATCHLINE -L- STA. 23 + 50 SEE SHEET 5

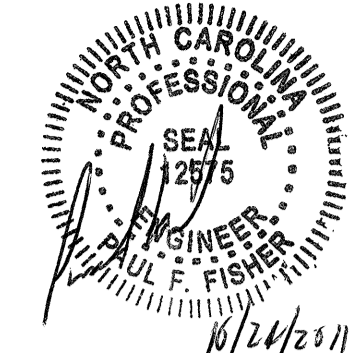
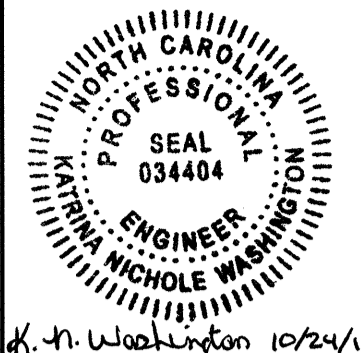
5/28/99

BM 1 ELEVATION = 44.67'
N 649490 E 2439549
+ STA 32+13.147' LEFT
RR SPIKE IN 18" HARDWOOD

PROJECT REFERENCE NO. B-4531
SHEET NO. 6

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

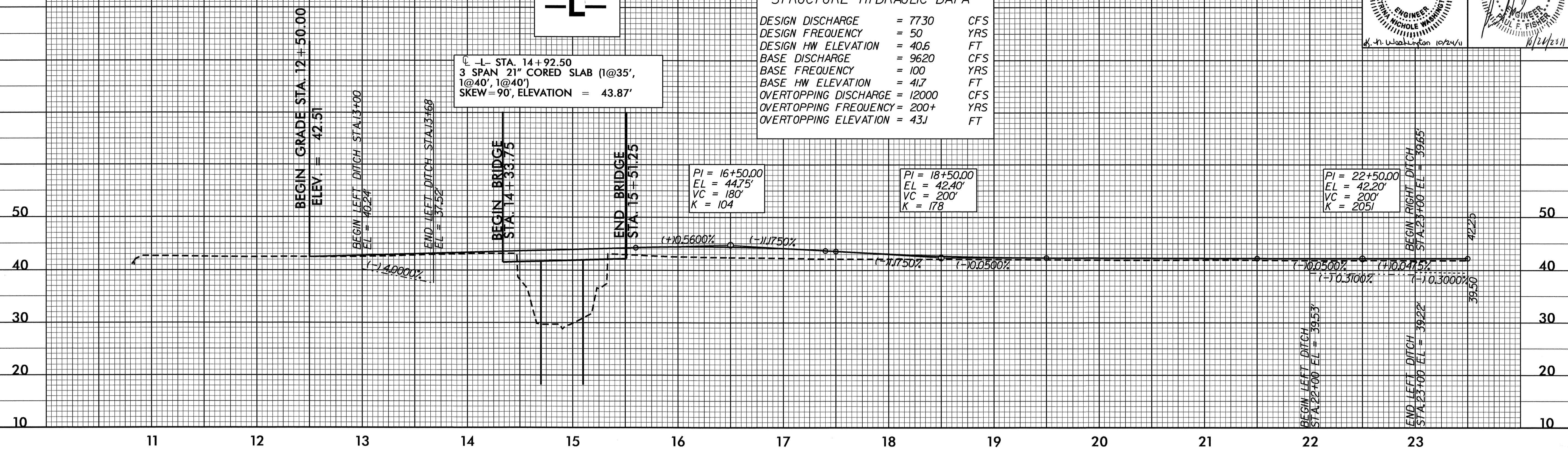


8/24/2011

STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE	= 7730	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 40.6	FT
BASE DISCHARGE	= 9620	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 41.7	FT
OVERTOPPING DISCHARGE	= 12000	CFS
OVERTOPPING FREQUENCY	= 200+	YRS
OVERTOPPING ELEVATION	= 43.1	FT

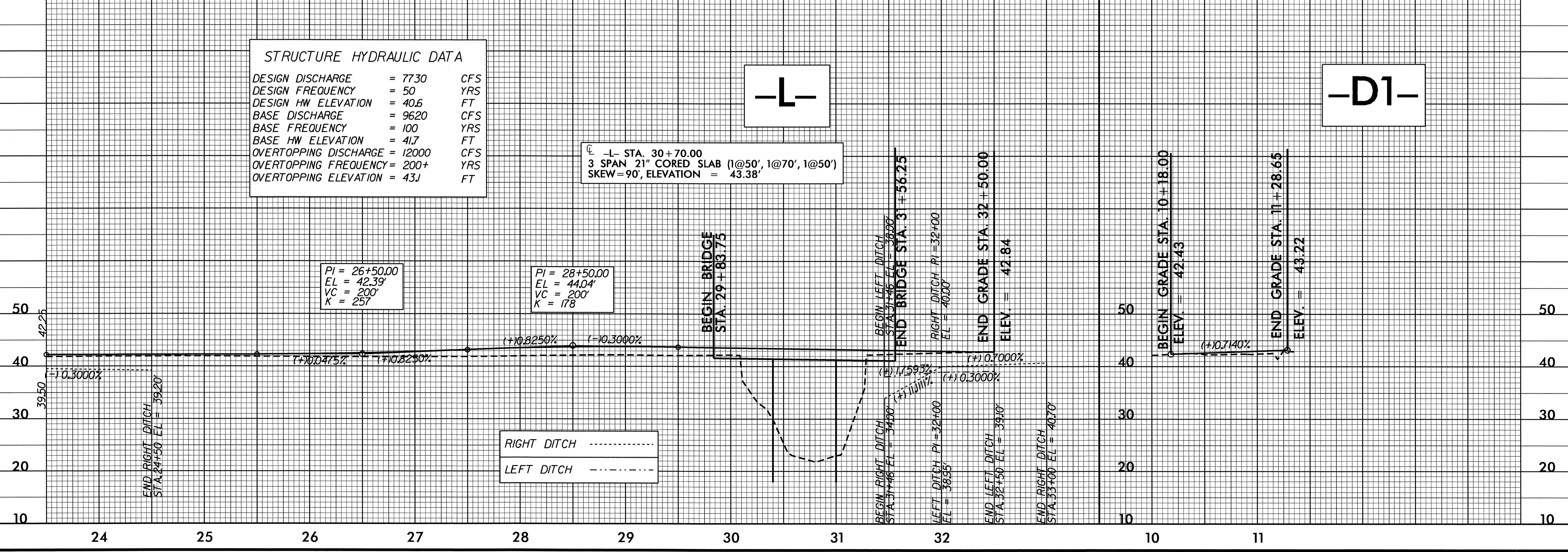
—L—
 —L— STA. 14+92.50
 3 SPAN 21" CORED SLAB (1@35',
 1@40', 1@40')
 SKEW = 90°, ELEVATION = 43.87'



STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE	= 7730	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 40.6	FT
BASE DISCHARGE	= 9620	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 41.7	FT
OVERTOPPING DISCHARGE	= 12000	CFS
OVERTOPPING FREQUENCY	= 200+	YRS
OVERTOPPING ELEVATION	= 43.1	FT

—L—
 —L— STA. 30+70.00
 3 SPAN 21" CORED SLAB (1@50', 1@70', 1@50')
 SKEW = 90°, ELEVATION = 43.38'



RIGHT DITCH
 LEFT DITCH - - - - -

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