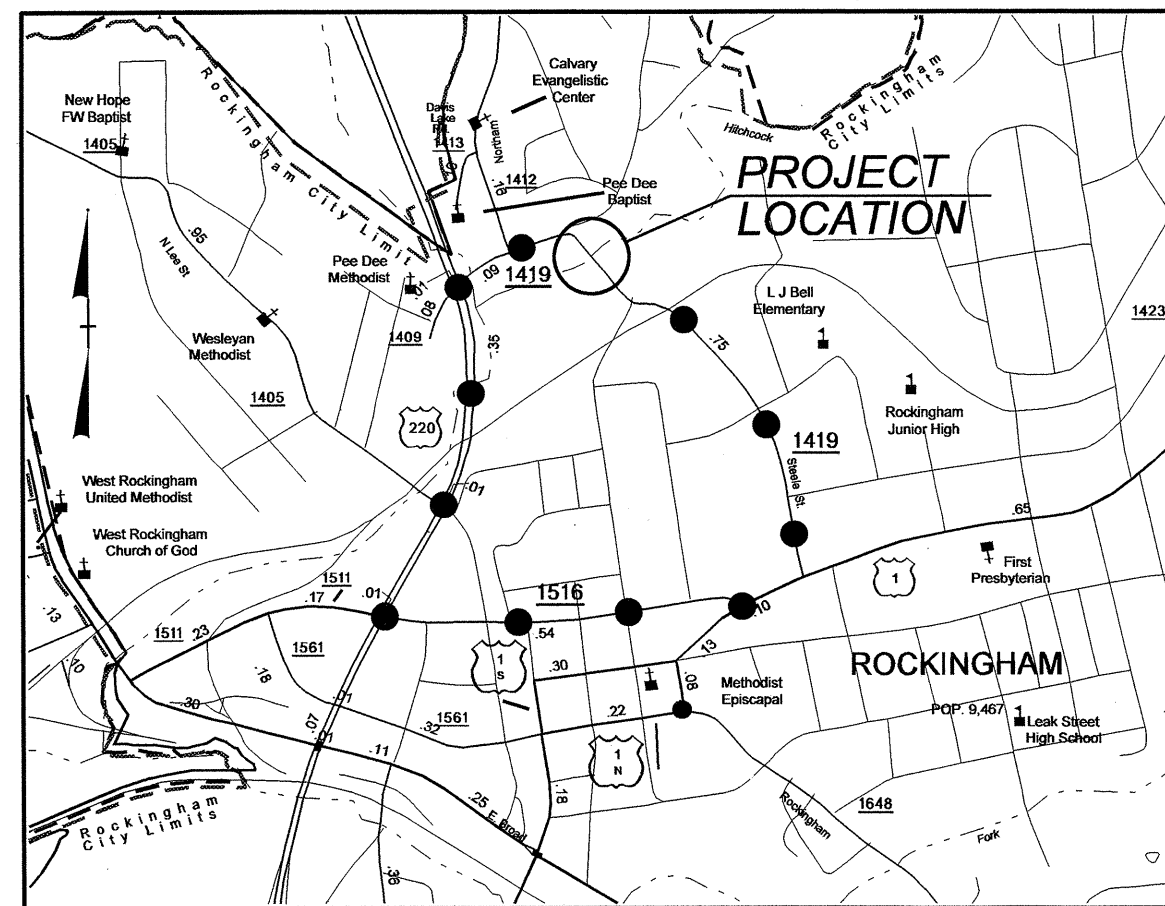


09/08/99

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



VICINITY MAP

●●●●● OFFSITE DETOUR

DETOUR SIGNING BY CONTRACTOR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

RICHMOND COUNTY

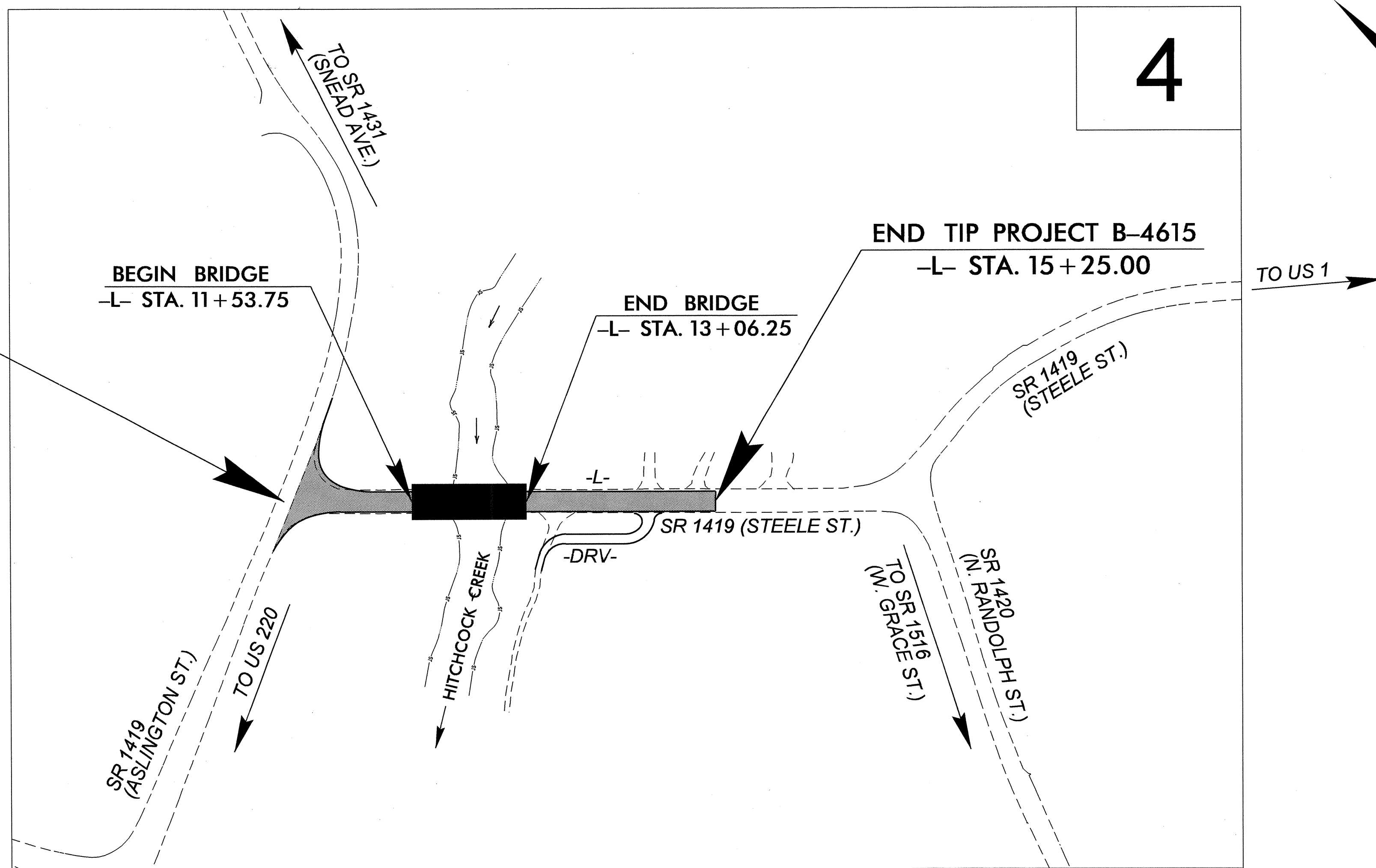
**LOCATION: BRIDGE NO. 46 OVER HITCHCOCK CREEK
ON SR 1419 (STEELE STREET) IN ROCKINGHAM**

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

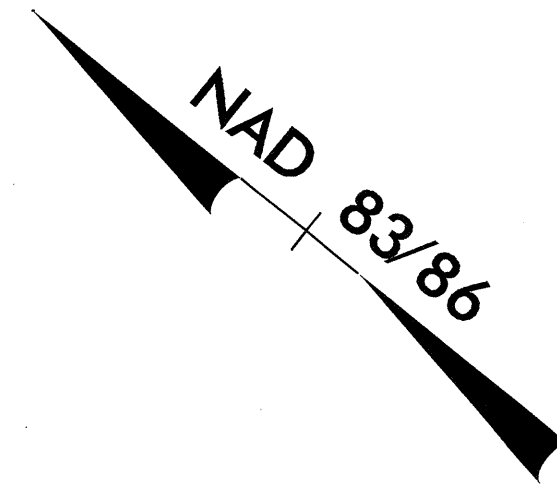
| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
|-----------------|-----------------------------|-------------|--------------|
| N.C. | B-4615 | 1 | |
| STATE PROJ. NO. | F.A. PROJ. NO. | DESCRIPTION | |
| 38436.1.1 | BRSTP-1419(3) | P.E. | |
| 38436.2.1 | BRSTP-1419(3) | RW/UTIL | |
| 38436.3.1 | BRSTP-1419(3) | CONST. | |

TIP PROJECT: B-4615

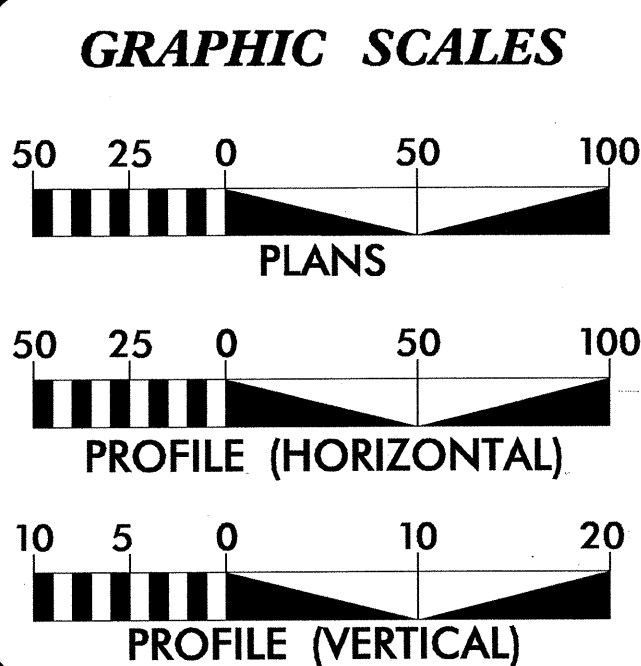
CONTRACT: C203037



4



DESIGN EXCEPTION REQUIRED FOR SAG VERTICAL CURVE K-FACTOR AND NIGHTTIME SSD. (20 MPH)



DESIGN DATA

| | |
|---------------|------------------------|
| ADT 2013 = | 1820 VPD |
| ADT 2030 = | 2500 VPD |
| DHV = | 60 % |
| D = | 10 % |
| T = | 3 % * |
| V = | 40 MPH |
| * TTST 1 % | DUAL 2 % |
| FUNC. CLASS = | LOCAL SUBREGIONAL TIER |

PROJECT LENGTH

| | | |
|-------------------------------------|---|-----------|
| LENGTH ROADWAY TIP PROJECT B-4615 | = | 0.070 MI. |
| LENGTH STRUCTURE TIP PROJECT B-4615 | = | 0.029 MI. |
| TOTAL LENGTH OF TIP PROJECT B-4615 | = | 0.099 MI. |

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JANUARY 18, 2012

LETTING DATE:
FEBRUARY 19, 2013

JAMES A. SPEER, PE
PROJECT ENGINEER

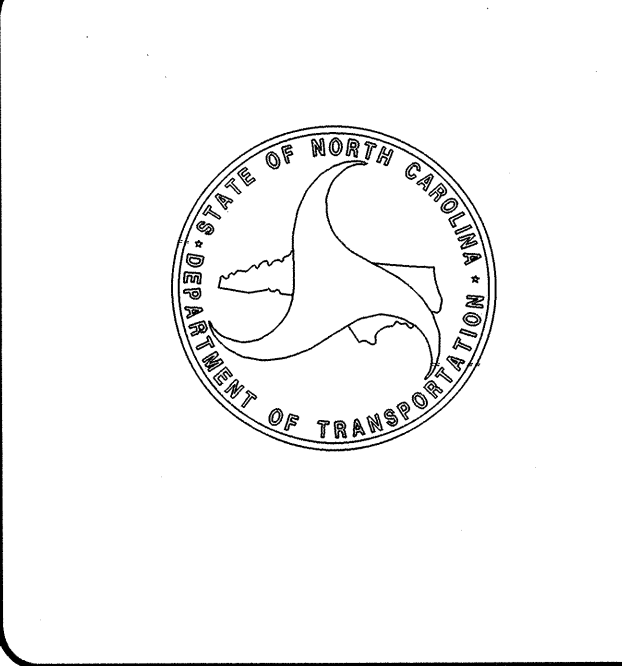
ALLISON K. WHITE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: *James A. Speer* 1/20/12 P.E.

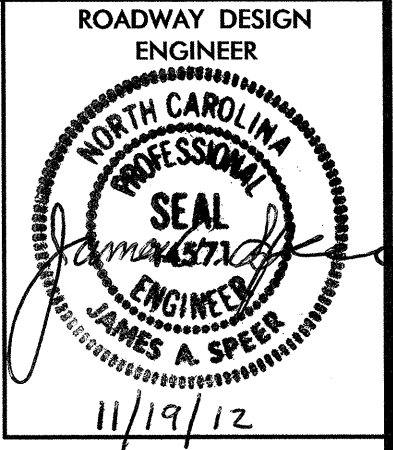
PROJECT DESIGN ENGINEER

SIGNATURE: *Allison K. White* 1/19/12 P.E.



15-NOV-2012 09:08
R:\Roadway\Proj\B4615_rdy_tsh.dgn
\$\$\$\$\$USERNAME\$\$\$\$\$

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
INDEX OF SHEETS



| SHEET NUMBER | INDEX OF SHEETS | SHEET |
|--------------------|-----------------|---|
| 1 | | TITLE SHEET |
| 1-A | | INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS |
| 1-B | | CONVENTIONAL SYMBOLS |
| 1-C | | LOCATION AND SURVEYS |
| 1-D | | LOCATION AND SURVEYS |
| 2 | | TYPICAL SECTIONS, PAVEMENT SCHEDULE, AND MISCELLANEOUS DETAILS |
| 3 | | SUMMARY OF QUANTITIES |
| 3-A | | SUMMARY OF DRAINAGE QUANTITIES, SUMMARY OF GUARDRAIL, EARTHWORK SUMMARY, AND ASPHALT PAVEMENT REMOVAL SUMMARY |
| 4 | | PLAN SHEET |
| 5 | | PROFILE SHEET |
| TMP-1 THRU TMP-2 | | TRANSPORTATION MANAGEMENT PLANS |
| PMP-1 | | PAVEMENT MARKING PLANS |
| SD-1 | | WORK ZONE SIGNING |
| EC-1 THRU EC-5 | | EROSION CONTROL PLANS |
| SIGN-1 THRU SIGN-2 | | SIGNING PLANS |
| UO-1 THRU UO-2 | | UTILITIES BY OTHERS |
| X-1A | | CROSS-SECTION SUMMARY |
| X-1 THRU X-5 | | CROSS-SECTIONS |
| S-1 THRU S-26 | | STRUCTURE PLANS |

GENERAL NOTES:

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

2012 ROADWAY ENGLISH STANDARD DRAWINGS

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.

UNDERDRAINS:
UNDERDRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.03 AT LOCATIONS DIRECTED BY THE ENGINEER.

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.

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.

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 Progress Energy, DukeNet Comm. AT&T, Time Warner Cable, City of Rockingham
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.

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 |
| 225.06 | Method of Grading Sight Distance at Intersections |
| DIVISION 3 - PIPE CULVERTS | |
| 300.01 | Method of Pipe Installation |
| 310.10 | Driveway Pipe Construction |
| DIVISION 4 - MAJOR STRUCTURES | |
| 422.11 | Reinforced Bridge Approach Fills - Sub Regional Tier |
| DIVISION 5 - SUBGRADE, BASES AND SHOULDERS | |
| 560.01 | Method of Shoulder Construction - High Side of Superelevated Curve - Method I |
| DIVISION 8 - INCIDENTALS | |
| 806.01 | Concrete Right-of-Way Marker |
| 806.02 | Granite Right-of-Way Marker |
| 815.03 | Pipe Underdrain and Blind Drain |
| 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 |
| 840.66 | Drainage Structure Steps |
| 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 |
| 876.01 | Rip Rap in Channels |
| 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 | □ EDM |
| 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 | -w-l-b- |
| Proposed Wetland Boundary | -w-l-b- |
| Existing Endangered Animal Boundary | -e-a-b- |
| Existing Endangered Plant Boundary | -e-p-b- |
| 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 | ○ |
| Small Mine | ✕ |
| Foundation | □ |
| Area Outline | □ |
| Cemetery | ⊕ |
| Building | □ |
| School | □ |
| Church | ⊕ |
| Dam | ▬ |

HYDROLOGY:

| | |
|------------------------------------|---------|
| Stream or Body of Water | ----- |
| Hydro, Pool or Reservoir | □ |
| Jurisdictional Stream | -j-s- |
| Buffer Zone 1 | -b-z-1- |
| Buffer Zone 2 | -b-z-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 | ----- |
| Proposed Permanent Drainage Easement | ----- |
| Proposed Permanent Drainage / Utility Easement | ----- |
| Proposed Permanent Utility Easement | ----- |
| Proposed Temporary Utility Easement | ----- |
| Proposed Aerial Utility Easement | ----- |
| Proposed Permanent Easement with Iron Pin and Cap Marker | ----- |

ROADS AND RELATED FEATURES:

| | |
|----------------------------|-------|
| Existing Edge of Pavement | ----- |
| Existing Curb | ----- |
| Proposed Slope Stakes Cut | ----- |
| Proposed Slope Stakes Fill | ----- |
| Proposed Curb Ramp | ----- |
| Existing Metal Guardrail | ----- |
| Proposed Guardrail | ----- |
| Existing Cable Guiderail | ----- |
| Proposed Cable Guiderail | ----- |
| Equality Symbol | ⊕ |
| Pavement Removal | ▨ |
| Single Tree | ⊕ |
| Single Shrub | ⊕ |
| Hedge | ----- |
| Woods Line | ----- |

VEGETATION:

| | |
|----------|-------|
| 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 | A/G Water |

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 | A/G Gas |

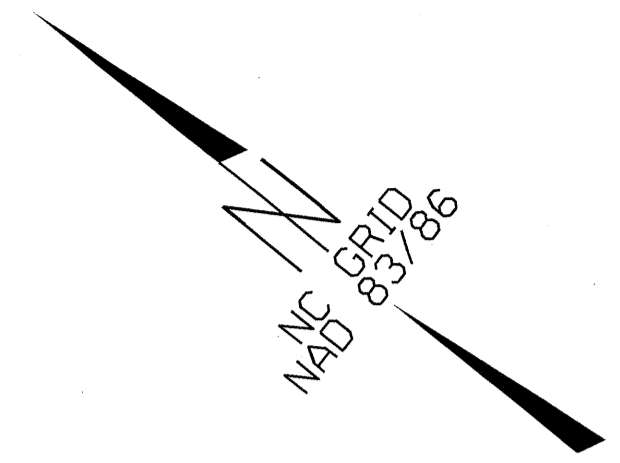
SANITARY SEWER:

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

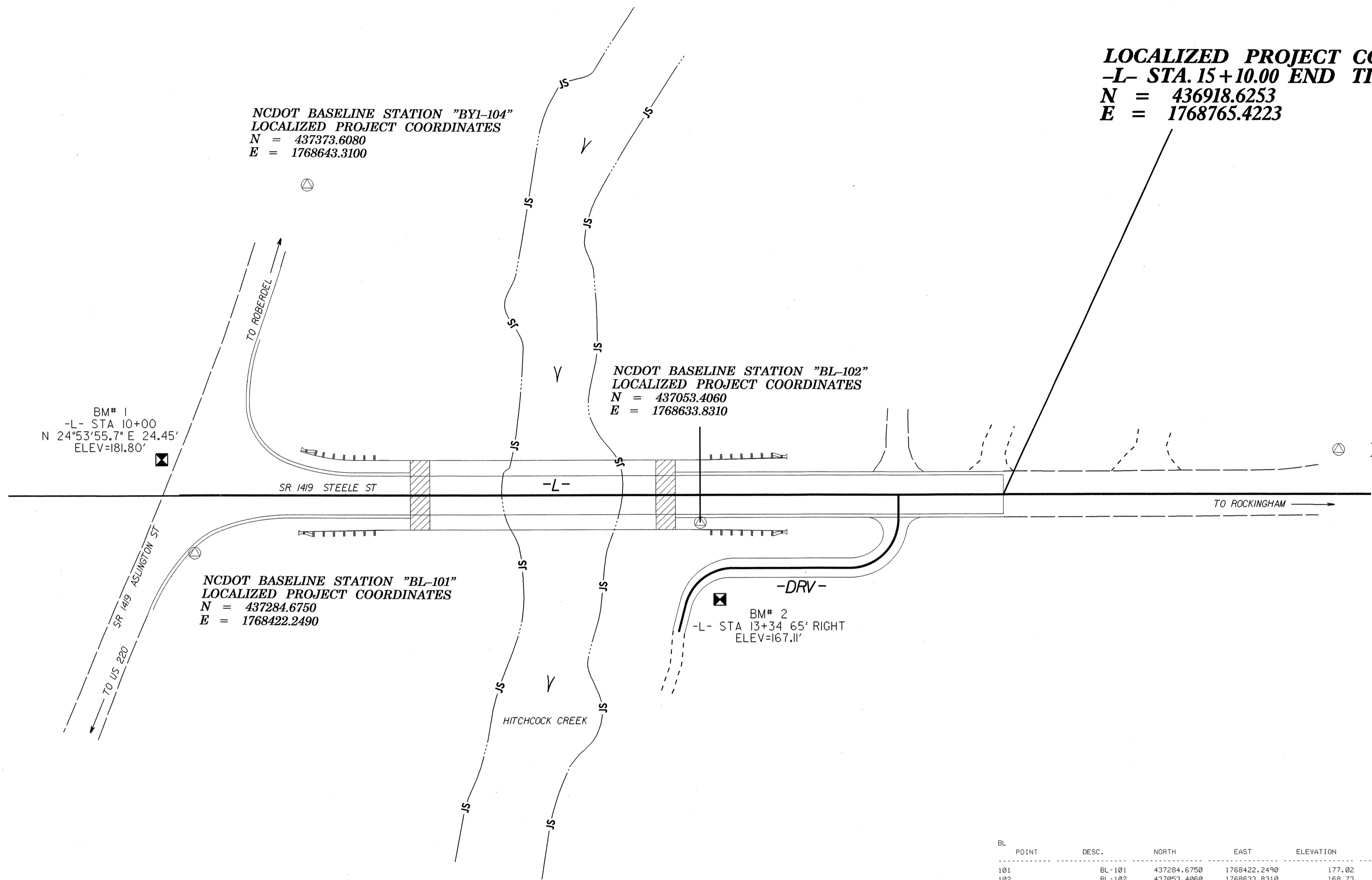
MISCELLANEOUS:

| | |
|--|--------|
| 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-4615



LOCALIZED PROJECT COORDINATES
-L- STA. 10+00.00 BEGIN TIP PROJECT B-4615
N = 437314.4135
E = 1768443.7832



LOCALIZED PROJECT COORDINATES
-L- STA. 15+10.00 END TIP PROJECT B-4615
N = 436918.6253
E = 1768765.4223

NCDOT BASELINE STATION "BY1-104"
 LOCALIZED PROJECT COORDINATES
 N = 437373.6080
 E = 1768643.3100

NCDOT BASELINE STATION "BL-102"
 LOCALIZED PROJECT COORDINATES
 N = 437053.4060
 E = 1768633.8310

NCDOT BASELINE STATION "BL-103"
 LOCALIZED PROJECT COORDINATES
 N = 436774.6690
 E = 1768917.3580

BM# 1
 -L- STA 10+00
 N 24°53'55.7" E 24.45'
 ELEV=181.80'

NCDOT BASELINE STATION "BL-101"
 LOCALIZED PROJECT COORDINATES
 N = 437284.6750
 E = 1768422.2490

BM# 2
 -L- STA 13+34.65' RIGHT
 ELEV=167.11'

NCDOT BASELINE STATION "BY1-105"
 LOCALIZED PROJECT COORDINATES
 N = 437197.2740
 E = 1768132.3280

| BL POINT | DESC. | NORTH | EAST | ELEVATION | L STATION | OFFSET |
|----------|--------|-------------|--------------|-----------|-----------|----------|
| 101 | BL-101 | 437284.6750 | 1768422.2490 | 177.02 | 10+09.50 | 35.47 RT |
| 102 | BL-102 | 437053.4060 | 1768633.8310 | 168.73 | 12+22.41 | 17.12 RT |
| 103 | BL-103 | 436774.6690 | 1768917.3580 | 170.49 | 17+17.54 | 27.12 LT |

| BY1 POINT | DESC. | NORTH | EAST | ELEVATION | L STATION | OFFSET |
|-----------|---------|-------------|--------------|-----------|-----------|------------------------|
| 104 | BY1-104 | 437373.6080 | 1768643.3100 | 180.68 | 10+79.90 | 192.18 LT |
| 101 | BL-101 | 437284.6750 | 1768422.2490 | 177.02 | 10+09.50 | 35.47 RT |
| 105 | BY1-105 | 437197.2740 | 1768132.3280 | 180.40 | | OUTSIDE PROJECT LIMITS |

.....
 BM1 ELEVATION = 181.80
 N 437337 E 1768454
 L STATION 10+00.00
 N 24°53'55.71" E DIST 24.45
 RR STRIKE IN PP

 BM2 ELEVATION = 167.11
 N 437014 E 1768605
 L STATION 13+34.65 RIGHT
 RR STRIKE IN BASE OF 12IN GUM TREE

DATUM DESCRIPTION
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "PEE DEE BAPT" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 437097.332(±ft) EASTING: 1767514.841(±ft) ELEVATION: 173.163(±ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999883362 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "PEE DEE BAPT" TO -L- STATION 10+00.00 IS N 76°50'48.4" E 953.970' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NGVD 29

NOTES:

- 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:
 B4615_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.

NOTE: DRAWING NOT TO SCALE

30-OCT-2012 11:59 R:\Roadway\Projects\B4615_1s_1c.dgn

 6/2/99

SURVEY CONTROL SHEET B-4615

ROW MARKER

| ALIGN | STATION | OFFSET | NORTH | EAST |
|-------|----------|--------|-------------|--------------|
| L | 11+23.00 | -45.00 | 437247.3386 | 1768556.2774 |
| L | 15+25.00 | -45.00 | 436935.3644 | 1768809.8047 |
| L | 15+25.00 | -20.00 | 436919.5978 | 1768790.4034 |
| L | 15+10.00 | 20.00 | 436906.0120 | 1768749.9012 |
| L | 15+10.00 | 30.00 | 436899.7054 | 1768742.1406 |
| L | 13+33.33 | 30.00 | 437036.8085 | 1768630.7232 |
| L | 13+00.00 | 55.00 | 437046.9103 | 1768590.2996 |
| L | 10+09.52 | 55.00 | 437272.3371 | 1768407.1055 |
| L | 10+57.24 | -62.00 | 437309.0955 | 1768527.9961 |

PERMANENT DRAINAGE EASEMENT

| ALIGN | STATION | OFFSET | NORTH | EAST |
|-------|----------|--------|-------------|--------------|
| L | 14+77.00 | -55.00 | 436978.9217 | 1768787.2934 |
| L | 14+02.00 | -58.00 | 437039.0178 | 1768742.3217 |
| L | 13+77.00 | -65.00 | 437062.8339 | 1768731.9874 |
| L | 13+00.00 | -70.00 | 437125.7435 | 1768687.3065 |
| L | 12+00.00 | -65.00 | 437200.1957 | 1768620.3598 |
| L | 12+00.00 | -45.00 | 437187.5824 | 1768604.8386 |

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "PEE DEE BAPT" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 437097.3321(±) EASTING: 1767514.841(±) ELEVATION: 173.163(±) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999883362 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "PEE DEE BAPT" TO -L- STATION 10+00.00 IS N 76°50'48.4" E 953.970'

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NGVD 29

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:
 B4615_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.

NOTE: DRAWING NOT TO SCALE

6/2/98

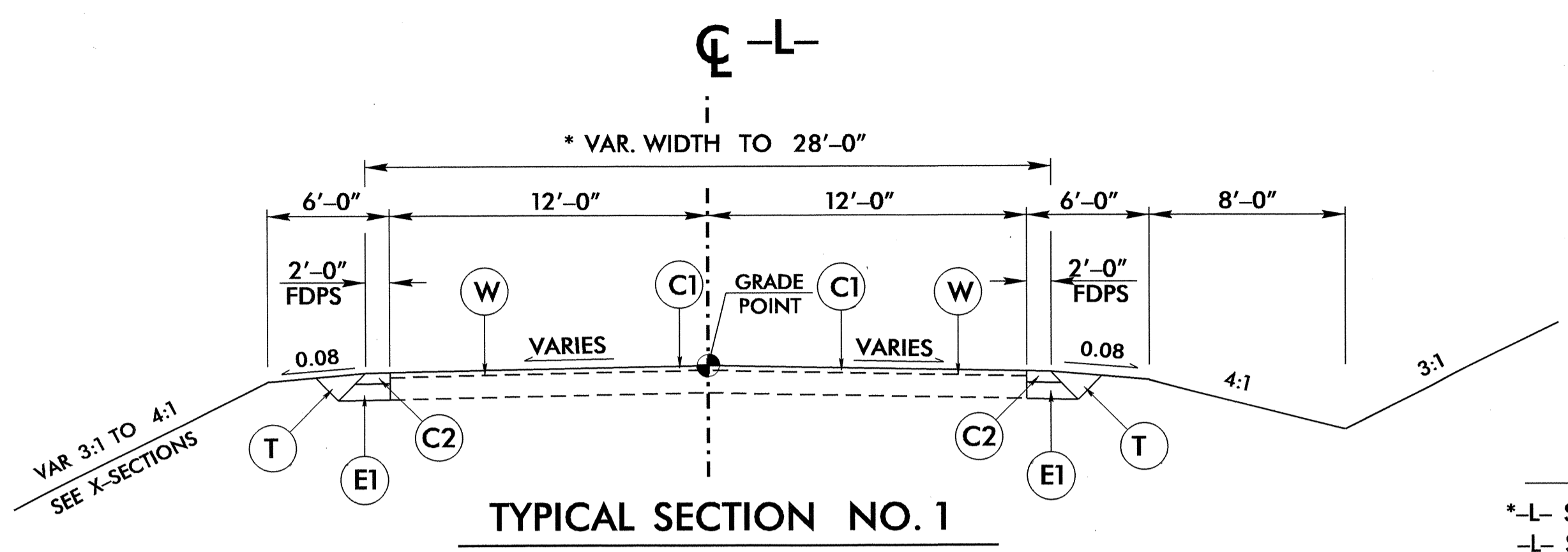
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6/2/99

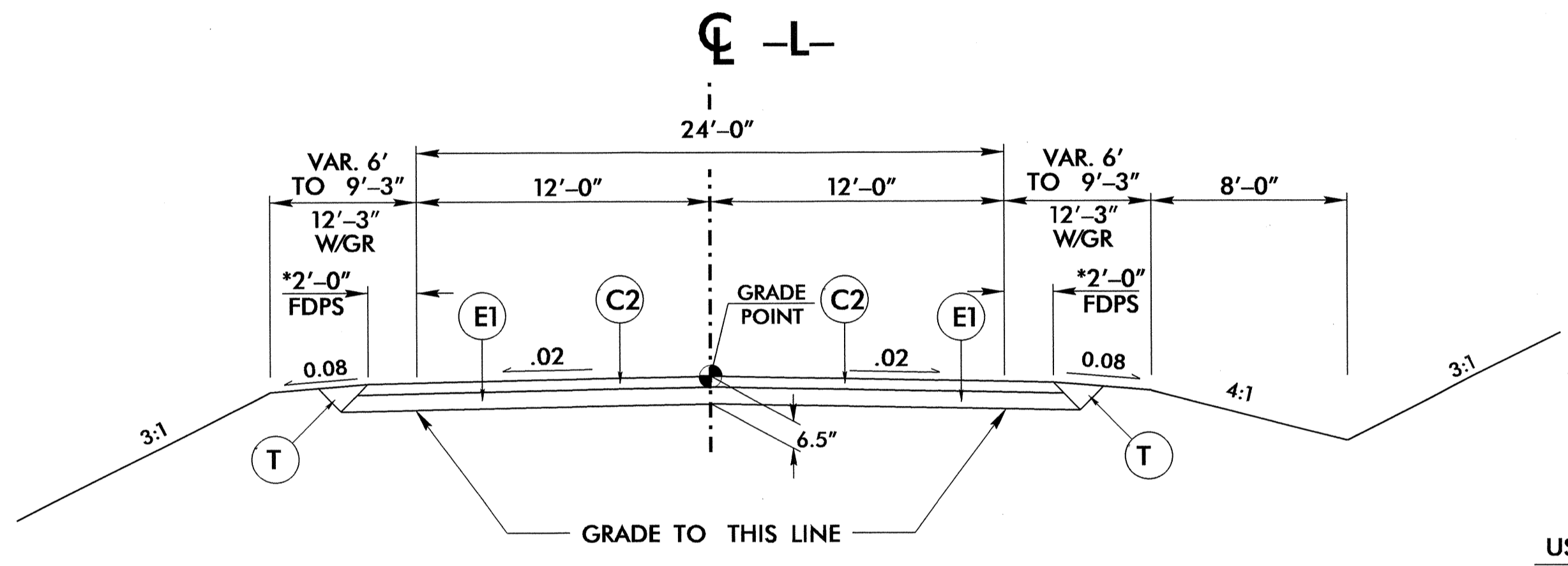
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|--|--|
| PROJECT REFERENCE NO. B-4615 | SHEET NO. 2 |
| ROADWAY DESIGN ENGINEER JAMES A. SPEER 11/19/12 | PAVEMENT DESIGN ENGINEER CLARK S. MORRISON 11/21/12 |

| PAVEMENT SCHEDULE | |
|-------------------|--|
| C1 | PROP. APPROX. 1.25" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. |
| C2 | 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. |
| C3 | 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. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD. |
| E2 | PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH. |
| J | PROP. 6" AGGREGATE BASE COURSE. |
| T | EARTH MATERIAL. |
| U | EXISTING PAVEMENT. |
| W | VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL NO. 1) |

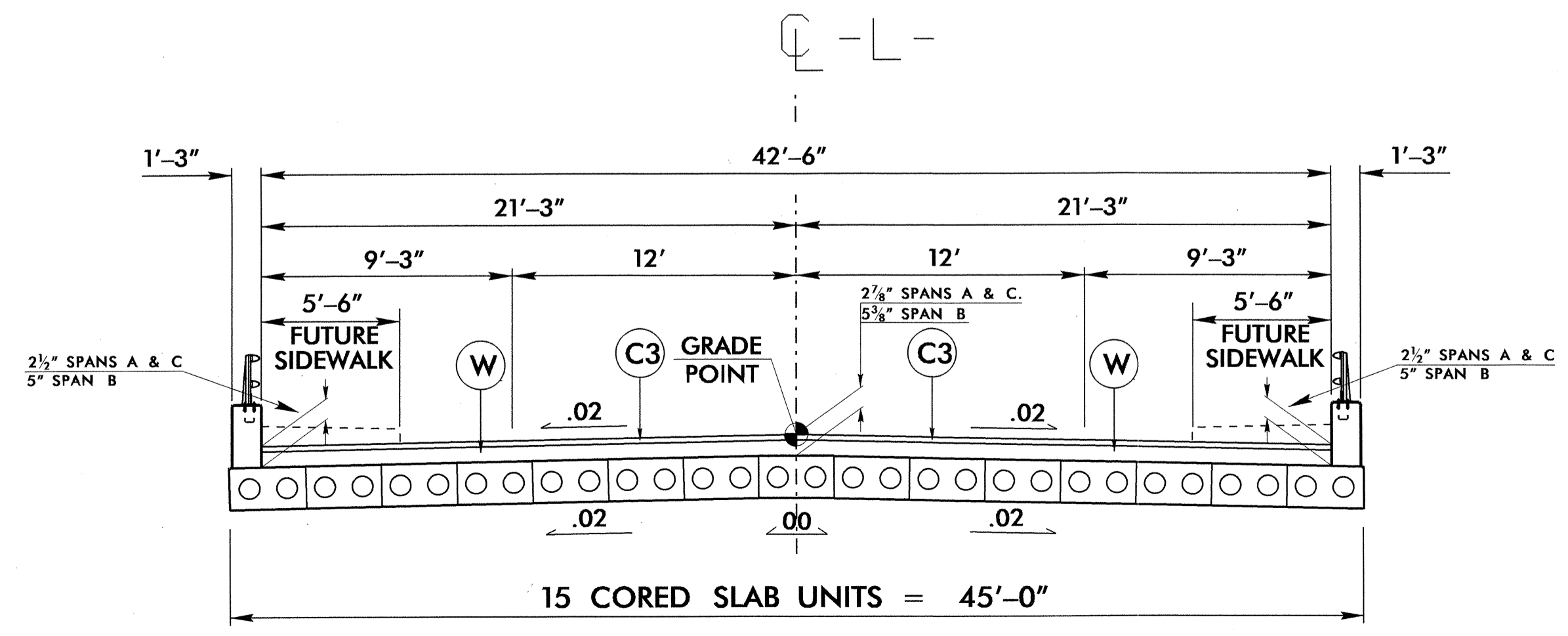
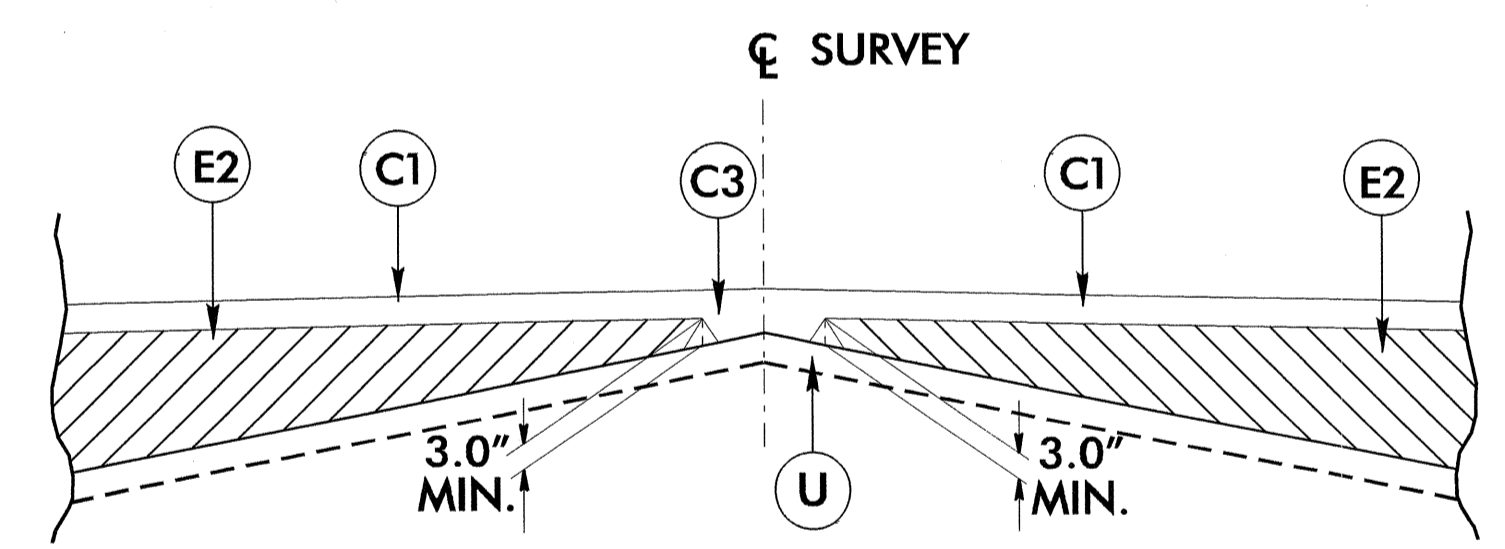
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE



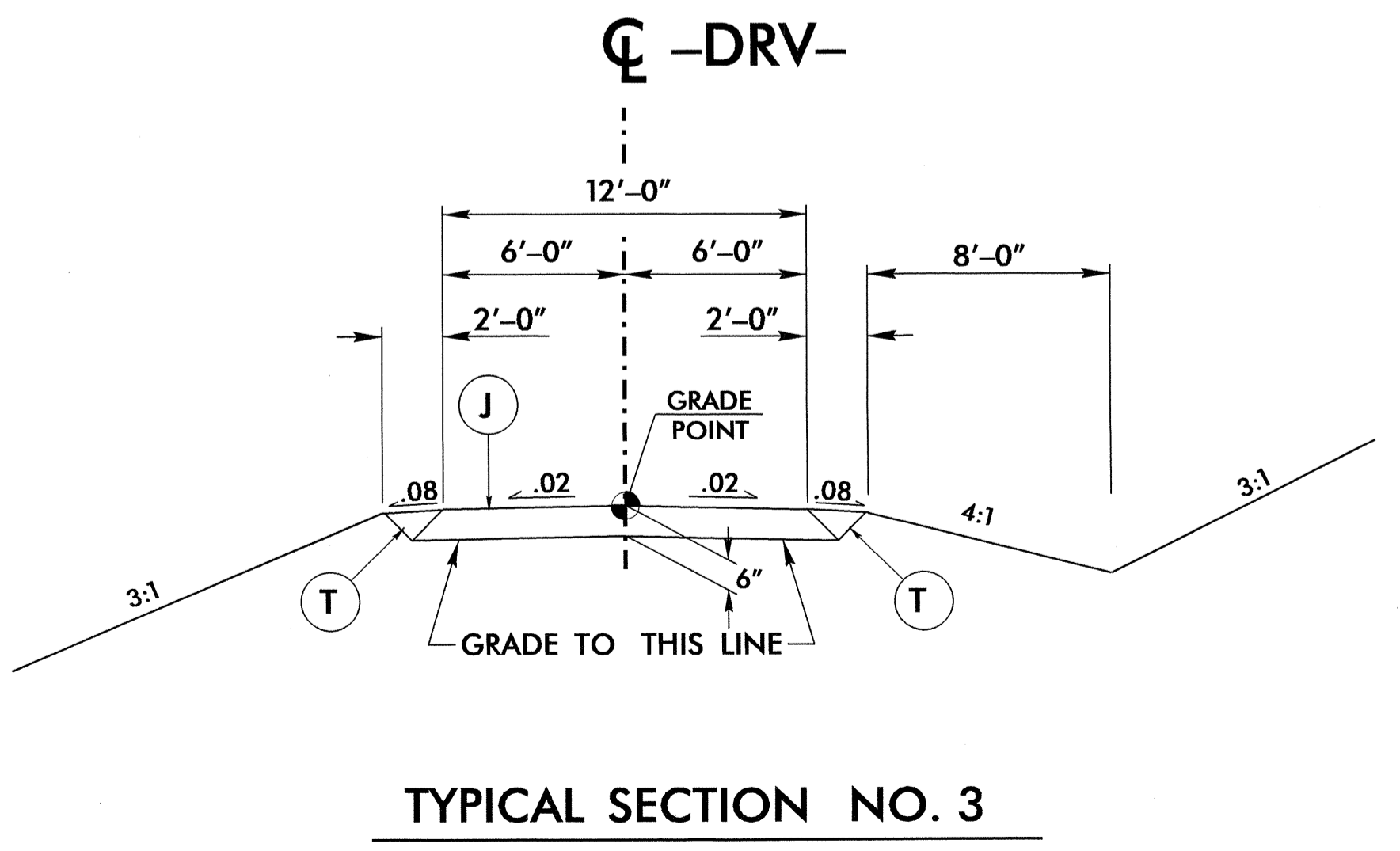
USE TYPICAL SECTION NO. 1
 *-L- STA. 10+10.00 TO -L- STA. 10+50.00
 -L- STA. 13+75.00 TO -L- STA. 15+10.00
 * SEE STREET TURNOUT PLAN SHEET 4



USE TYPICAL SECTION NO. 2
 -L- STA. 10+50.00 TO -L- STA. 11+53.75 (BEGIN BRIDGE)
 -L- STA. 13+06.25 (END BRIDGE) TO -L- STA. 13+75.00
 *PS VARIES FROM 2' TO 9.25', SEE PSH4 BRIDGE SKETCH
 *-L- STA. 10+83.09 TO -L- STA. 11+42.75
 *-L- STA. 13+17.25 TO -L- STA. 13+77.25



BEGIN BRIDGE -L- STA. 11+53.75 TO END BRIDGE -L- STA. 13+06.25



USE TYPICAL SECTION NO. 3
 -DRV- STA. 10+14.00 TO 11+74.17

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C203037

| ItemNumber | Sec # | Quantity | Unit | Description |
|-------------|-------|----------|------|--|
| 000100000-N | 800 | Lump Sum | | MOBILIZATION |
| 000400000-N | 801 | Lump Sum | | CONSTRUCTION SURVEYING |
| 003000000-N | SP | Lump Sum | | BRIDGE APPROACH FILL - SUB REGIONAL TIER, STATION ***** (12+30.00 -L-) |
| 004300000-N | 226 | Lump Sum | | GRADING |
| 005000000-E | 226 | 1 | ACR | SUPPLEMENTARY CLEARING & GRUB-BING |
| 005700000-E | 226 | 200 | CY | UNDERCUT EXCAVATION |
| 013400000-E | 240 | 270 | CY | DRAINAGE DITCH EXCAVATION |
| 019500000-E | 265 | 200 | CY | SELECT GRANULAR MATERIAL |
| 019600000-E | 270 | 300 | SY | GEOTEXTILE FOR SOIL STABILIZATION |
| 031800000-E | 300 | 20 | TON | FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES |
| 032000000-E | 300 | 50 | SY | FOUNDATION CONDITIONING GEOTEXTILE |
| 033520000-E | 305 | 20 | LF | 15" DRAINAGE PIPE |
| 033585000-E | 305 | 2 | EA | *** DRAINAGE PIPE ELBOWS (15") |
| 034300000-E | 310 | 76 | LF | 15" SIDE DRAIN PIPE |
| 036600000-E | 310 | 40 | LF | 15" RC PIPE CULVERTS, CLASS III |
| 099500000-E | 340 | 62 | LF | PIPE REMOVAL |
| 112100000-E | 520 | 84 | TON | AGGREGATE BASE COURSE |
| 122000000-E | 545 | 30 | TON | INCIDENTAL STONE BASE |
| 133000000-E | 607 | 260 | SY | INCIDENTAL MILLING |
| 148900000-E | 610 | 440 | TON | ASPHALT CONC BASE COURSE, TYPE B25.0B |
| 152500000-E | 610 | 380 | TON | ASPHALT CONC SURFACE COURSE, TYPE SF9.5A |
| 157500000-E | 620 | 45 | TON | ASPHALT BINDER FOR PLANT MIX |
| 200000000-N | 806 | 9 | EA | RIGHT OF WAY MARKERS |
| 202200000-E | 815 | 67.2 | CY | SUBDRAIN EXCAVATION |
| 203300000-E | 815 | 50.4 | CY | SUBDRAIN FINE AGGREGATE |

SUMMARY OF QUANTITIES - B-4615

| ItemNumber | Sec # | Quantity | Unit | Description |
|-------------|-------|----------|------|--|
| 204400000-E | 815 | 300 | LF | 6" PERFORATED SUBDRAIN PIPE |
| 207000000-N | 815 | 1 | EA | SUBDRAIN PIPE OUTLET |
| 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 | 25 | LF | SHOULDER BERM GUTTER |
| 283000000-N | 858 | 3 | EA | ADJUSTMENT OF MANHOLES |
| 303000000-E | 862 | 50 | LF | STEEL BM GUARDRAIL |
| 315000000-N | 862 | 5 | EA | ADDITIONAL GUARDRAIL POSTS |
| 316500000-N | SP | 4 | EA | GUARDRAIL ANCHOR UNITS, TYPE ***** (350, TL-2) |
| 321500000-N | 862 | 4 | EA | GUARDRAIL ANCHOR UNITS, TYPE III |
| 362800000-E | 876 | 10 | TON | RIP RAP, CLASS 1 |
| 364900000-E | 876 | 2 | TON | RIP RAP, CLASS B |
| 365600000-E | 876 | 1,390 | SY | GEOTEXTILE FOR DRAINAGE |
| 407200000-E | 903 | 71 | LF | SUPPORTS, 3-LB STEEL U-CHANNEL |
| 409600000-N | 904 | 2 | EA | SIGN ERECTION, TYPE D |
| 410200000-N | 904 | 1 | EA | SIGN ERECTION, TYPE E |
| 415500000-N | 907 | 6 | EA | DISPOSAL OF SIGN SYSTEM, U-CHANNEL |
| 440000000-E | 1110 | 435 | SF | WORK ZONE SIGNS (STATIONARY) |
| 441000000-E | 1110 | 63 | SF | WORK ZONE SIGNS (BARRICADE MOUNTED) |
| 444500000-E | 1145 | 64 | LF | BARRICADES (TYPE III) |
| 481000000-E | 1205 | 2,050 | LF | PAINT PAVEMENT MARKING LINES (4") |
| 483500000-E | 1205 | 35 | LF | PAINT PAVEMENT MARKING LINES (24") |
| 600000000-E | 1605 | 610 | LF | TEMPORARY SILT FENCE |
| 600600000-E | 1610 | 285 | TON | STONE FOR EROSION CONTROL, CLASS A |

| ItemNumber | Sec # | Quantity | Unit | Description |
|--------------|-------|----------|------|------------------------------------|
| 600900000-E | 1610 | 85 | TON | STONE FOR EROSION CONTROL, CLASS B |
| 601200000-E | 1610 | 305 | TON | SEDIMENT CONTROL STONE |
| 601500000-E | 1615 | 1 | ACR | TEMPORARY MULCHING |
| 601800000-E | 1620 | 50 | LB | SEED FOR TEMPORARY SEEDING |
| 602100000-E | 1620 | 1.25 | TON | FERTILIZER FOR TEMPORARY SEEDING |
| 602400000-E | 1622 | 200 | LF | TEMPORARY SLOPE DRAINS |
| 602900000-E | SP | 100 | LF | SAFETY FENCE |
| 603000000-E | 1630 | 260 | CY | SILT EXCAVATION |
| 603600000-E | 1631 | 2,300 | SY | MATTING FOR EROSION CONTROL |
| 603700000-E | SP | 835 | SY | COIR FIBER MAT |
| 604200000-E | 1632 | 85 | LF | 1/4" HARDWARE CLOTH |
| 604800000-E | SP | 55 | SY | FLOATING TURBIDITY CURTAIN |
| 607000000-N | 1639 | 12 | EA | SPECIAL STILLING BASINS |
| 6071012000-E | SP | 240 | LF | COIR FIBER WATTLE |
| 6071030000-E | 1640 | 150 | LF | COIR FIBER BAFFLE |
| 6071050000-E | SP | 4 | EA | *** SKIMMER (1-1/2") |
| 608400000-E | 1660 | 1 | ACR | SEEDING & MULCHING |
| 608700000-E | 1660 | 0.5 | ACR | MOWING |
| 609000000-E | 1661 | 50 | LB | SEED FOR REPAIR SEEDING |
| 609300000-E | 1661 | 0.25 | TON | FERTILIZER FOR REPAIR SEEDING |
| 609600000-E | 1662 | 50 | LB | SEED FOR SUPPLEMENTAL SEEDING |
| 610800000-E | 1665 | 0.75 | TON | FERTILIZER TOPDRESSING |
| 611450000-N | 1667 | 10 | MHR | SPECIALIZED HAND MOWING |
| 611700000-N | SP | 18 | EA | RESPONSE FOR EROSION CONTROL |

5/14/99

BM#1 RR SPIKE IN PP
N 437337 E 1768454 ELEV. = 181.80'

-L-

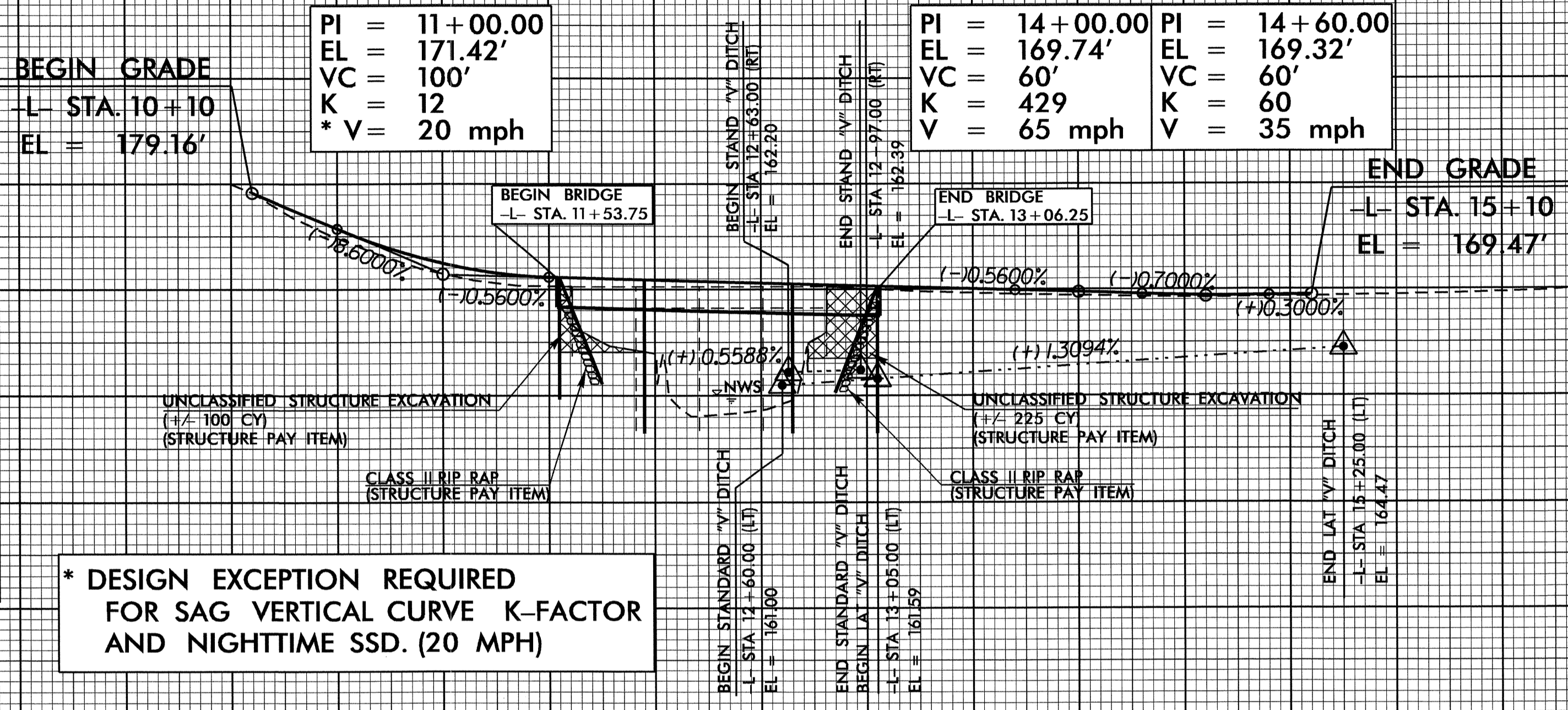
BM#2 RR SPIKE IN BASE OF 12" GUM TREE
N 437014 E 1768605 ELEV. = 167.11'

| | |
|--|---|
| PROJECT REFERENCE NO. B-4615 | SHEET NO. 5 |
| ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 14371 JAMES A. SPEER 11/19/12 | HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 022009 W. GALEN CUMMINS 11/20/12 |

BRIDGE -L- STA. 12+30.00
ELEV. = 170.69
SKEW 90°-00'-00"
PROPOSED @ 4'-2 1/4", @ 7'-1 1/2", @ 4'-2 1/4"
21' & 24' CORED SLABS
TOTAL LENGTH = 152.5'

BRIDGE HYDRAULIC DATA

| | | |
|----------------------------------|----------|-----|
| DESIGN DISCHARGE | = 2300 | CFS |
| DESIGN FREQUENCY | = 25 | YRS |
| DESIGN HW ELEVATION | = 166.70 | FT |
| BASE DISCHARGE | = 3100 | CFS |
| BASE FREQUENCY | = 100 | YRS |
| BASE HW ELEVATION | = 167.60 | FT |
| OVERTOPPING DISCHARGE | = 4300 | CFS |
| OVERTOPPING FREQUENCY | = 500 ± | YRS |
| OVERTOPPING ELEVATION | = 169.30 | FT |
| NORMAL WATER SURFACE | = 160.00 | FT |
| DATE OF SURVEY | = 8/2011 | |
| W.S. ELEVATION AT DATE OF SURVEY | = 160.00 | FT |

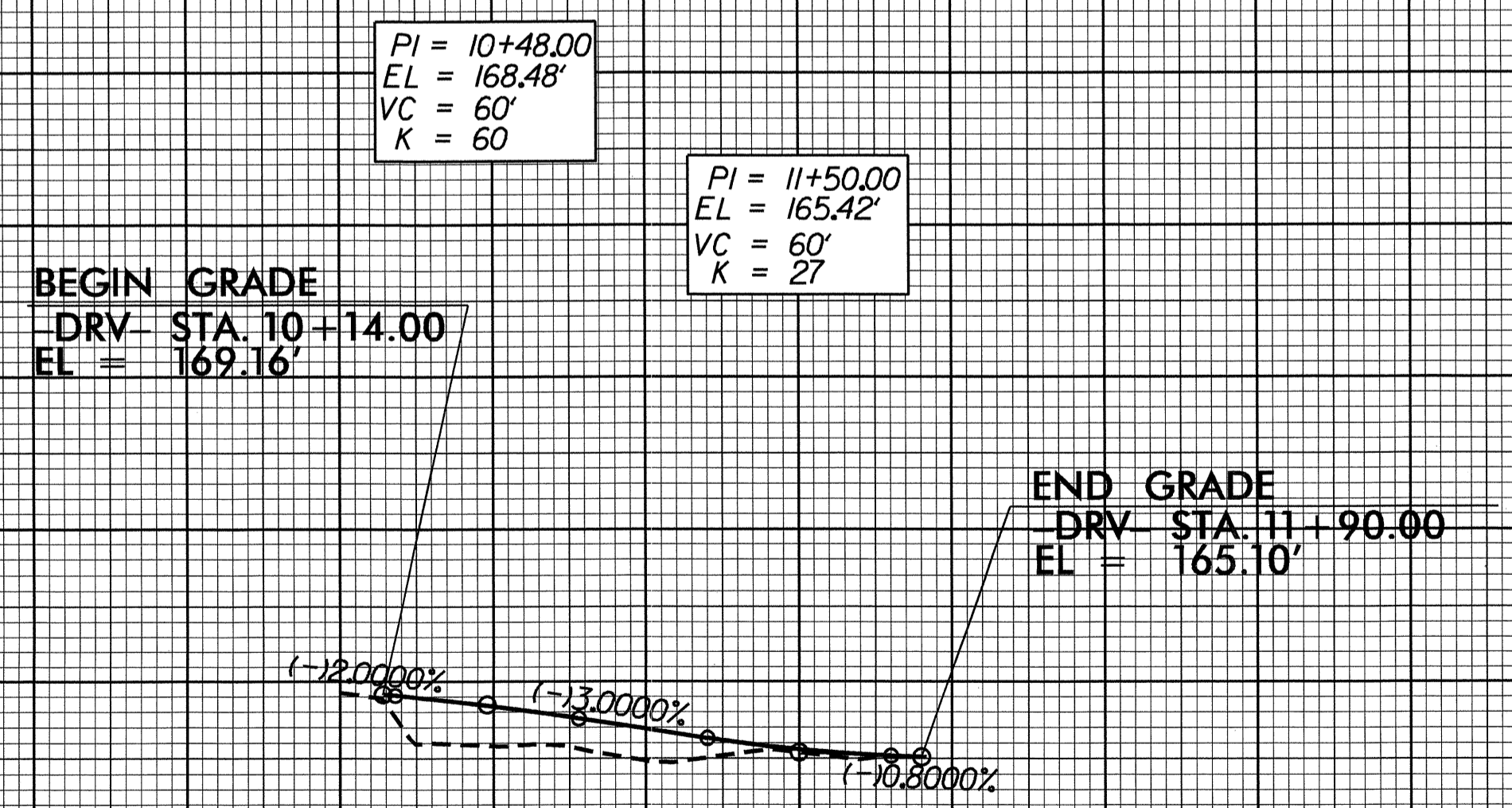


* DESIGN EXCEPTION REQUIRED FOR SAG VERTICAL CURVE K-FACTOR AND NIGHTTIME SSD. (20 MPH)

DITCH LEGEND
LEFT DITCH - - - - -

SEE SHEET 4 FOR -L- DESIGN.

-DRV-



SEE SHEET 4 FOR -DRV- DESIGN.

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