

INDEX OF SHEETS

| SHEET NUMBER | SHEET |
|--------------------|---|
| 1 | TITLE SHEET |
| 1-A | INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS |
| 1-B | CONVENTIONAL SYMBOLS |
| 1-C | SURVEY CONTROL SHEET |
| 2 | PAVEMENT SCHEDULE, TYPICAL SECTIONS, |
| 3 | SUMMARY OF QUANTITIES |
| 3A | SUMMARY OF DRAINAGE QUANTITIES SUMMARY OF EARTHWORK SUMMARY OF EXISTING ASPHALT PAVEMENT REMOVAL GUARDRAIL SUMMARY |
| 3-B | DRAINAGE SUMMARY |
| 4 | PLAN SHEET |
| 5 | PROFILE SHEET |
| TMP-1 THRU TMP-3 | TRANSPORTATION MANAGEMENT PLANS |
| PMP-1 THRU PMP-2 | PAVEMENT MARKING PLANS |
| EC-1 THRU EC-5 | PLANS FOR HIGHWAY EROSION CONTROL |
| SIGN-1 THRU SIGN-2 | SIGNING PLANS |
| UD-1 THRU UD-2 | UTILITIES BY OTHER PLANS |
| X-A | CROSS-SECTION SUMMARY |
| X-1 THRU X-5 | CROSS-SECTIONS |
| S-1 THRU S-21 | STRUCTURE PLANS |

GENERAL NOTES:

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

2012 ROADWAY ENGLISH STANDARD DRAWINGS

GRADE LINE:
GRADING AND SURFACING:

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

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD 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 Duke Power Company,
Energy United, AT&T, Piedmont Natural Gas, & PSNC Energy
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.

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2012 are applicable to this project and by reference hereby are considered a part of these plans:

| STD.NO. | TITLE |
|--|---|
| DIVISION 2 - EARTHWORK | |
| 200.03 | Method of Clearing - Method III |
| 225.02 | Guide for Grading Subgrade - Secondary and Local |
| 225.04 | Method of Obtaining Superelevation - Two Lane Pavement |
| DIVISION 3 - PIPE CULVERTS | |
| 300.01 | Method of Pipe Installation |
| 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 | |
| 815.03 | Pipe Underdrain and Blind Drain |
| 840.00 | Concrete Base Pad for Drainage Structures |
| 840.29 | Frames and Narrow Slot Flat Grates |
| 840.35 | Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates |
| 840.46 | Traffic Bearing Precast Drainage Structure |
| 846.01 | Concrete Curb, Gutter and Curb & Gutter |
| 846.04 | Drop Inlet Installation in Shoulder Berm Gutter |
| 862.01 | Guardrail Placement |
| 862.02 | Guardrail Installation |
| 862.03 | Structure Anchor Units |

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 | ○ EP |
| Property Corner | ----- |
| Property Monument | □ ECM |
| Parcel/Sequence Number | ②③ |
| Existing Fence Line | ----- |
| Proposed Woven Wire Fence | ----- |
| Proposed Chain Link Fence | ----- |
| Proposed Barbed Wire Fence | ----- |
| Existing Wetland Boundary | ----- WLB |
| Proposed Wetland Boundary | ----- WLB |
| Existing Endangered Animal Boundary | ----- EAB |
| Existing Endangered Plant Boundary | ----- EPB |

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

| | |
|------------------------------------|------------|
| Stream or Body of Water | ----- |
| Hydro, Pool or Reservoir | □ |
| Jurisdictional Stream | ----- JS |
| Buffer Zone 1 | ----- BZ 1 |
| Buffer Zone 2 | ----- BZ 2 |
| Flow Arrow | ← |
| Disappearing Stream | ----- |
| Spring | ○ |
| 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 Utility Easement | ----- PUE |
| Proposed Temporary Utility Easement | ----- TUE |
| 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 Wheel Chair Ramp | ----- WCR |
| Existing Metal Guardrail | ----- |
| Proposed Guardrail | ----- |
| Existing Cable Guiderail | ----- |
| Proposed Cable Guiderail | ----- |
| Equality Symbol | ⊕ |
| Pavement Removal | ----- |

VEGETATION:

| | |
|--------------|-------|
| Single Tree | ○ |
| Single Shrub | ○ |
| Hedge | ----- |
| Woods Line | ----- |
| Orchard | ----- |
| Vineyard | ----- |

EXISTING STRUCTURES:

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

UTILITIES:

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

TELEPHONE:

| | |
|--|------------|
| Existing Telephone Pole | ● |
| Proposed Telephone Pole | ○ |
| Telephone Manhole | ○ |
| Telephone Booth | □ |
| Telephone Pedestal | ⊕ |
| Telephone Cell Tower | ⊕ |
| UG Telephone Cable Hand Hole | ⊕ |
| Recorded UG Telephone Cable | ----- T |
| Designated UG Telephone Cable (S.U.E.*) | ----- T |
| Recorded UG Telephone Conduit | ----- TC |
| Designated UG Telephone Conduit (S.U.E.*) | ----- TC |
| Recorded UG Fiber Optics Cable | ----- T FO |
| Designated UG Fiber Optics Cable (S.U.E.*) | ----- T FO |

WATER:

| | |
|------------------------------------|-----------------|
| Water Manhole | ○ |
| Water Meter | ○ |
| Water Valve | ⊗ |
| Water Hydrant | ⊕ |
| Recorded UG Water Line | ----- W |
| Designated UG Water Line (S.U.E.*) | ----- W |
| Above Ground Water Line | ----- A/G Water |

TV:

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

GAS:

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

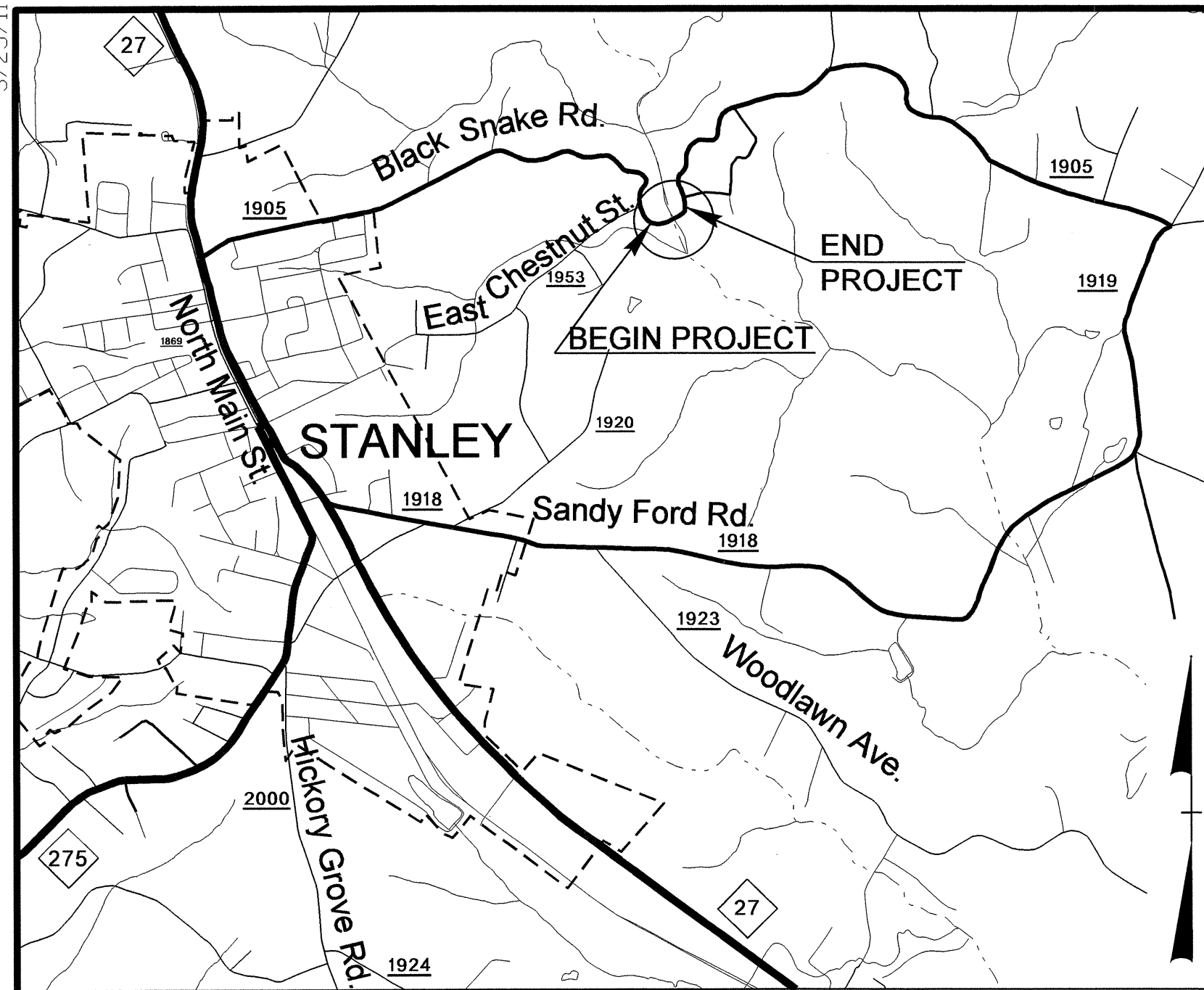
SANITARY SEWER:

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

MISCELLANEOUS:

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

SURVEY CONTROL SHEET



VICINITY MAP SHOWING LOCATION OF PROJECT B-4118

DATUM DESCRIPTION
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4118-1" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 596251.672(±) EASTING: 1381327.244(±) ELEVATION: 677.16(±)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998746
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4118-1" TO -L- STATION 10+00.00 IS S 8°54'42.8" E 813.122
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NAVD 88

| GPS CONTROL POINT | DESC. | NORTH | EAST | ELEVATION | L STATION | OFFSET |
|-------------------|---------|-------------|--------------|-----------|-----------|-----------|
| 1 | B4118-1 | 596251.6720 | 1381327.2440 | 677.16 | 12+69.03 | 802.13 LT |
| 2 | B4118-2 | 594770.5120 | 1381808.5600 | 655.74 | 10+96.75 | 740.30 RT |

| BL POINT | DESC. | NORTH | EAST | ELEVATION | L STATION | OFFSET |
|----------|-------|-------------|--------------|-----------|------------------------|----------|
| 3 | BL-3 | 595511.9450 | 1381263.0910 | 673.40 | OUTSIDE PROJECT LIMITS | |
| 4 | BL-4 | 595437.7990 | 1381525.5930 | 667.25 | 10+68.66 | 17.88 RT |
| 5 | BL-5 | 595615.1650 | 1381849.6980 | 663.12 | 14+30.97 | 13.34 RT |
| 6 | BL-6 | 595829.4730 | 1381880.5770 | 670.58 | OUTSIDE PROJECT LIMITS | |

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:
 B4118_LS_CONTROL.TXT
 B4118_LS_LOCAL.TXT
- SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
- PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM. NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING SERVICE (OPUS)

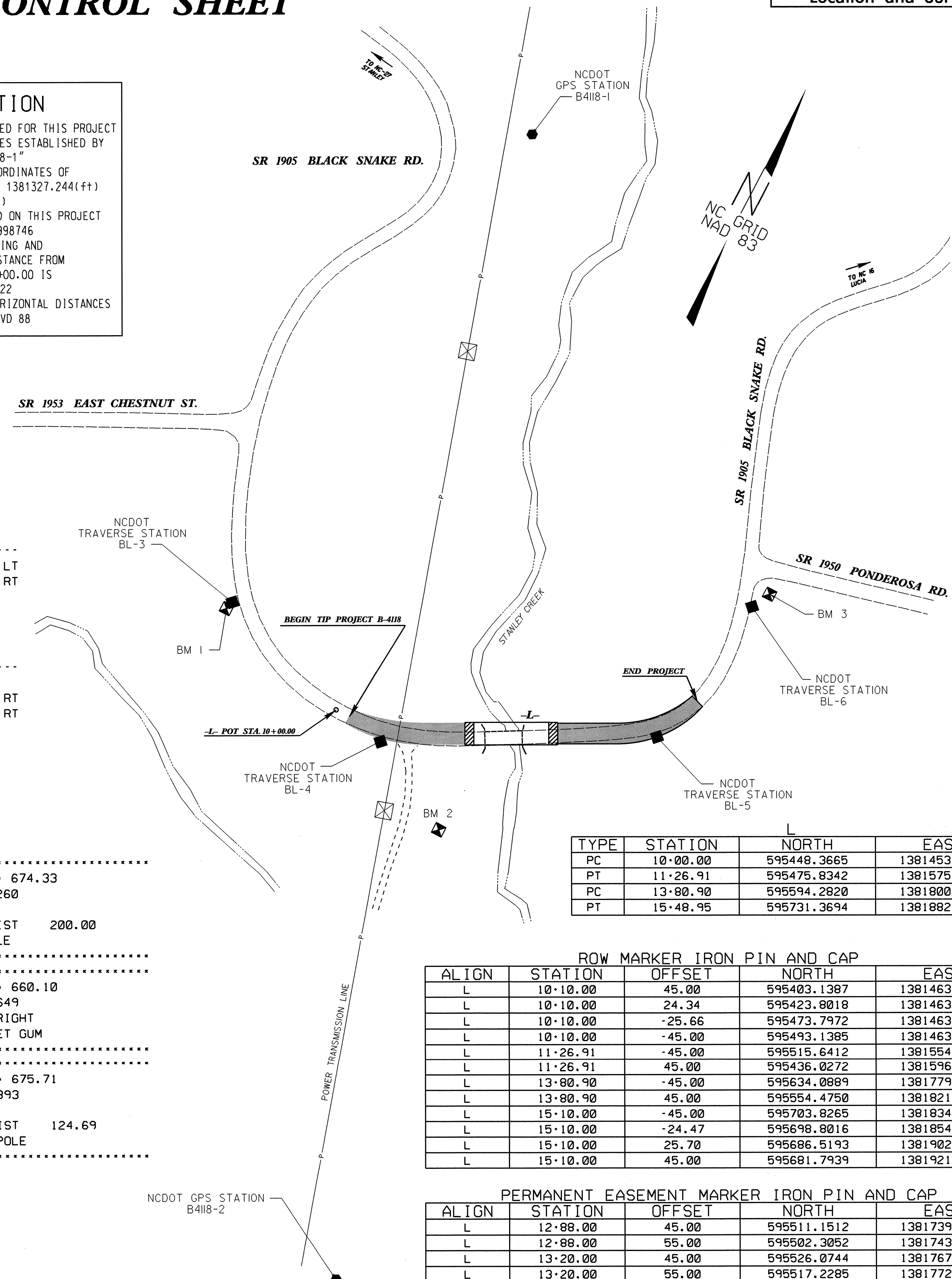
MONUMENTS USED OR SET FOR PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT:

- INDICATES GEODETIC CONTROL MONUMENTS FOR HORIZONTAL CONTROL.
- INDICATES BASELINE MONUMENTS FOR HORIZONTAL CONTROL
- ⊠ INDICATES BENCHMARKS FOR VERTICAL CONTROL

.....
 BM1 ELEVATION = 674.33
 N 595501 E 1381260
 L STATION 10+00
 N 74°50'51.4" W DIST 200.00
 RR SPIKE IN POWER POLE

 BM2 ELEVATION = 660.10
 N 595370 E 1381649
 L STATION 11+43 128 RIGHT
 RR SPIKE 15 INCH SWEET GUM

 BM3 ELEVATION = 675.71
 N 595856 E 1381893
 L STATION 15+49
 N 05°04'01.9" E DIST 124.69
 RR SPIKE IN UTILITY POLE



| TYPE | STATION | NORTH | EAST |
|------|----------|-------------|--------------|
| PC | 10+00.00 | 595448.3665 | 1381453.2090 |
| PT | 11+26.91 | 595475.8342 | 1381575.6023 |
| PC | 13+80.90 | 595594.2820 | 1381800.2804 |
| PT | 15+48.95 | 595731.3694 | 1381882.4599 |

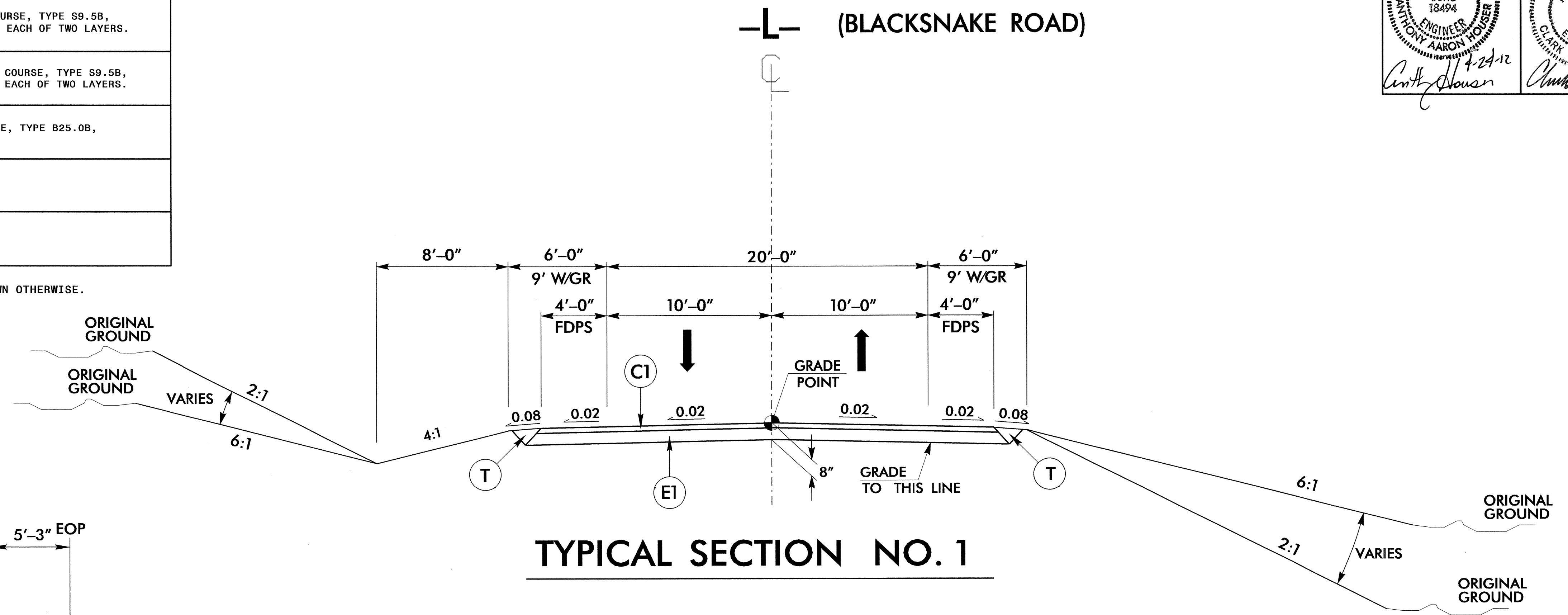
| ROW MARKER IRON PIN AND CAP | | | | |
|-----------------------------|----------|--------|-------------|--------------|
| ALIGN | STATION | OFFSET | NORTH | EAST |
| L | 10+10.00 | 45.00 | 595403.1387 | 1381463.1172 |
| L | 10+10.00 | 24.34 | 595423.8018 | 1381463.1578 |
| L | 10+10.00 | -25.66 | 595473.7972 | 1381463.2562 |
| L | 10+10.00 | -45.00 | 595493.1385 | 1381463.2943 |
| L | 11+26.91 | -45.00 | 595515.6412 | 1381554.6165 |
| L | 11+26.91 | 45.00 | 595436.0272 | 1381596.5881 |
| L | 13+80.90 | -45.00 | 595634.0889 | 1381779.2946 |
| L | 13+80.90 | 45.00 | 595554.4750 | 1381821.2662 |
| L | 15+10.00 | -45.00 | 595703.8265 | 1381834.1456 |
| L | 15+10.00 | -24.47 | 595698.8016 | 1381854.0470 |
| L | 15+10.00 | 25.70 | 595686.5193 | 1381902.6918 |
| L | 15+10.00 | 45.00 | 595681.7939 | 1381921.4071 |

| PERMANENT EASEMENT MARKER IRON PIN AND CAP | | | | |
|--|----------|--------|-------------|--------------|
| ALIGN | STATION | OFFSET | NORTH | EAST |
| L | 12+88.00 | 45.00 | 595511.1512 | 1381739.0873 |
| L | 12+88.00 | 55.00 | 595502.3052 | 1381743.7509 |
| L | 13+20.00 | 45.00 | 595526.0744 | 1381767.3945 |
| L | 13+20.00 | 55.00 | 595517.2285 | 1381772.0580 |

NOTE: DRAWING NOT TO SCALE

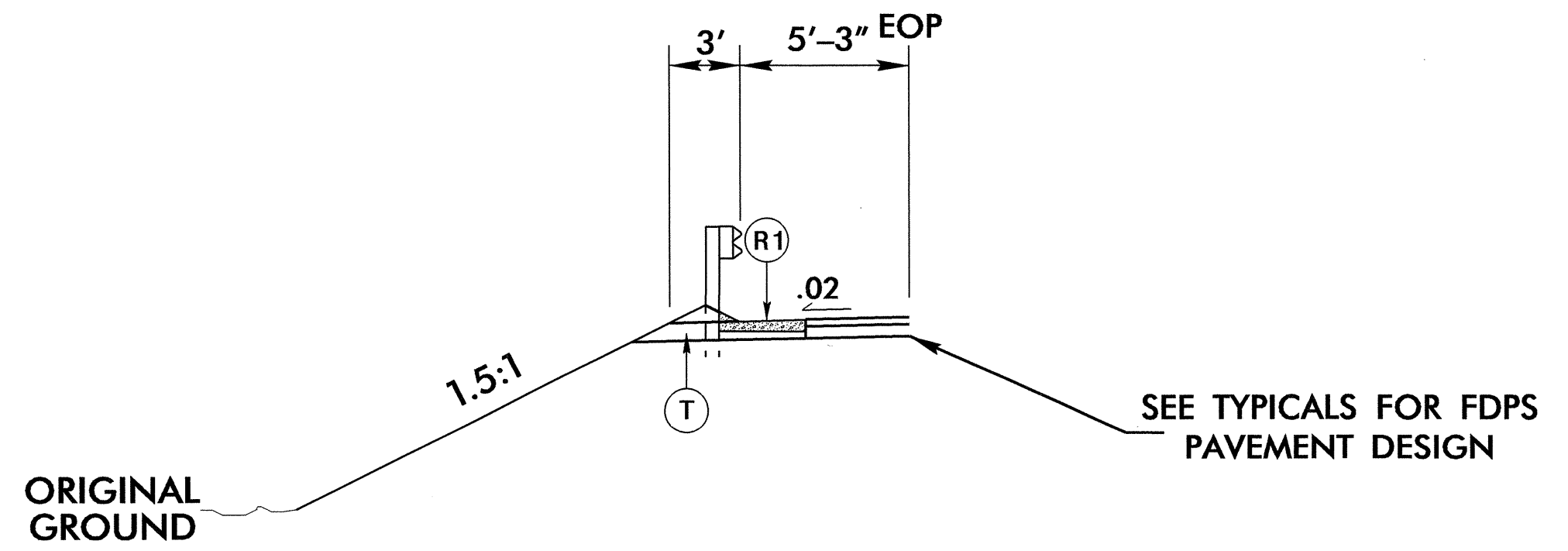
| PAVEMENT SCHEDULE | |
|-------------------|---|
| C1 | PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS PER SQ. YD. IN EACH OF TWO LAYERS. |
| C2 | PROP. APPROX. 3.75" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 210 LBS PER SQ. YD. IN EACH OF TWO LAYERS. |
| E1 | PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS, PER SQ. YD. |
| R1 | SHOULDER BERM GUTTER |
| T | EARTH MATERIAL. |

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



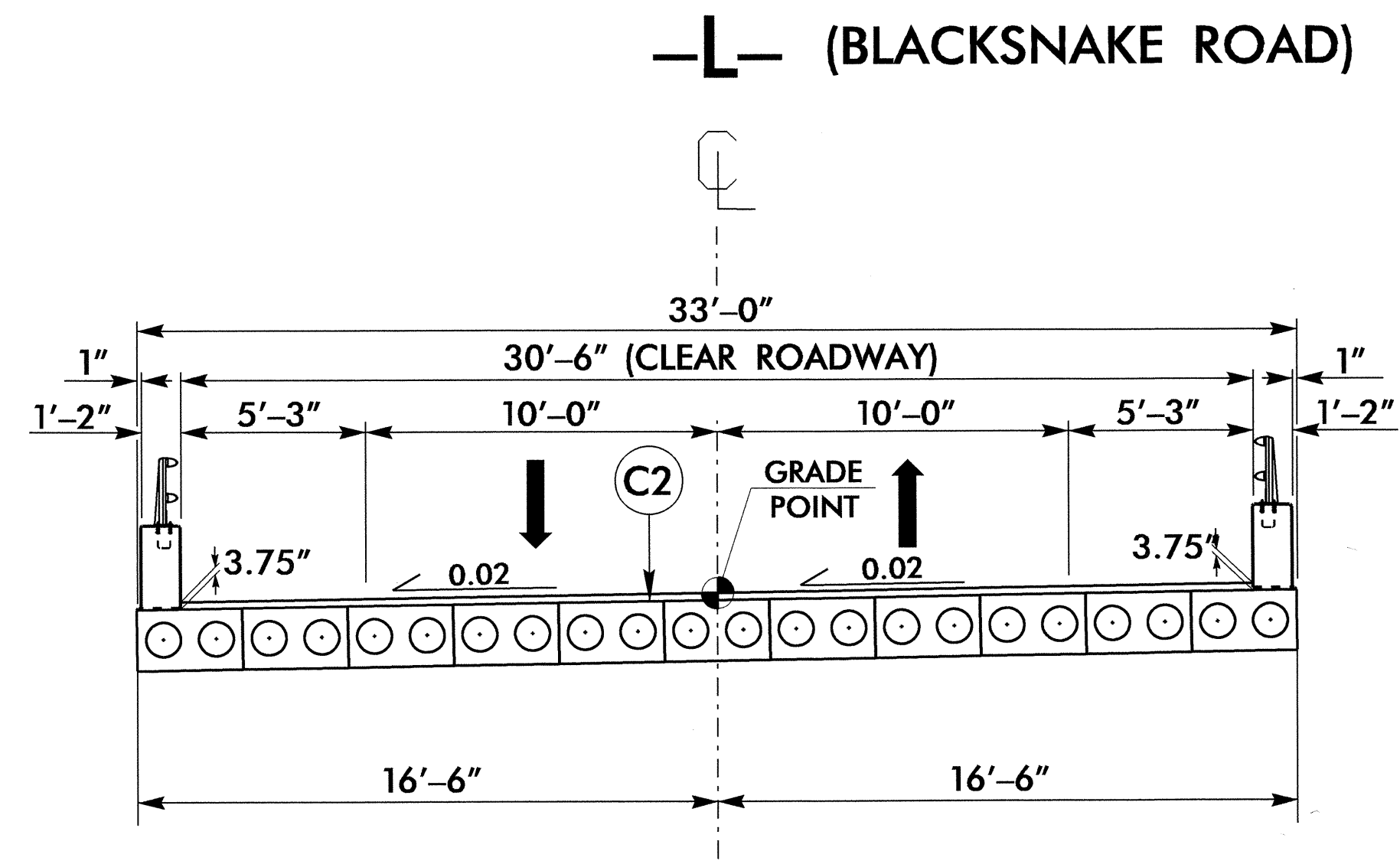
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1:
 -L- STA. 10+20.00 TO STA. 11+83.81 (BEGIN BRIDGE)
 -L- STA. 12+81.19 (END BRIDGE) TO STA. 15+00.00



SHOULDER BERM GUTTER DETAIL

-L- FROM STA. 11+71.31 TO STA. 11+72.81 (BEGIN APPROACH SLAB) LT
 -L- FROM STA. 11+71.31 TO STA. 11+72.81 (BEGIN APPROACH SLAB) RT
 -L- FROM STA. 12+92.19 (END APPROACH SLAB) TO STA. 13+03.00 LT
 -L- FROM STA. 12+92.19 (END APPROACH SLAB) TO STA. 12+93.69 RT



TYPICAL SECTION ON BRIDGE

USE BRIDGE TYPICAL:
 -L- STA. 11+83.81 (BEGIN BRIDGE) TO STA. 12+81.19 (END BRIDGE)

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202841

| ItemNumber | Sec # | Quantity | Unit | Description | ItemNumber | Sec # | Quantity | Unit | Description |
|-------------|-------|----------|------|--|--------------|-------|----------|------|---|
| 000100000-N | 800 | Lump Sum | | MOBILIZATION | 315000000-N | 862 | 2 | EA | ADDITIONAL GUARDRAIL POSTS |
| 003000000-N | SP | Lump Sum | | BRIDGE APPROACH FILL - SUB REGIONAL TIER, STATION ***** (12+32.50) | 316500000-N | SP | 4 | EA | GUARDRAIL ANCHOR UNITS, TYPE ***** (350 TL-2) |
| 004300000-N | 226 | Lump Sum | | GRADING | 321500000-N | 862 | 4 | EA | GUARDRAIL ANCHOR UNITS, TYPE III |
| 005000000-E | 226 | 1 | ACR | SUPPLEMENTARY CLEARING & GRUBBING | 365600000-E | 876 | 860 | SY | GEOTEXTILE FOR DRAINAGE |
| 005700000-E | 226 | 200 | CY | UNDERCUT EXCAVATION | 365900000-N | SP | 1 | EA | PREFORMED SCOUR HOLES WITH LEVEL SPREADER APRON |
| 019600000-E | 270 | 350 | SY | GEOTEXTILE FOR SOIL STABILIZATION | 407200000-E | 903 | 379 | LF | SUPPORTS, 3-LB STEEL U-CHANNEL |
| 022300000-E | 275 | 65 | SY | ROCK PLATING | 410200000-N | 904 | 2 | EA | SIGN ERECTION, TYPE E |
| 031800000-E | 300 | 10 | TON | FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES | 415500000-N | 907 | 8 | EA | DISPOSAL OF SIGN SYSTEM, U-CHANNEL |
| 032000000-E | 300 | 20 | SY | FOUNDATION CONDITIONING GEOTEXTILE | 440000000-E | 1110 | 393 | SF | WORK ZONE SIGNS (STATIONARY) |
| 033520000-E | 305 | 48 | LF | 15" DRAINAGE PIPE | 441000000-E | 1110 | 269 | SF | WORK ZONE SIGNS (BARRICADE MOUNTED) |
| 109950000-E | 505 | 85 | CY | SHALLOW UNDERCUT | 444500000-E | 1145 | 176 | LF | BARRICADES (TYPE III) |
| 109970000-E | 505 | 160 | TON | CLASS IV SUBGRADE STABILIZATION | 481000000-E | 1205 | 3,840 | LF | PAINT PAVEMENT MARKING LINES (4") |
| 122000000-E | 545 | 200 | TON | INCIDENTAL STONE BASE | 600000000-E | 1605 | 1,200 | LF | TEMPORARY SILT FENCE |
| 148900000-E | 610 | 310 | TON | ASPHALT CONC BASE COURSE, TYPE B25.0B | 600600000-E | 1610 | 225 | TON | STONE FOR EROSION CONTROL, CLASS A |
| 151900000-E | 610 | 270 | TON | ASPHALT CONC SURFACE COURSE, TYPE S9.5B | 600900000-E | 1610 | 25 | TON | STONE FOR EROSION CONTROL, CLASS B |
| 157500000-E | 620 | 30 | TON | ASPHALT BINDER FOR PLANT MIX | 601200000-E | 1610 | 160 | TON | SEDIMENT CONTROL STONE |
| 202200000-E | 815 | 44.8 | CY | SUBDRAIN EXCAVATION | 601500000-E | 1615 | 1 | ACR | TEMPORARY MULCHING |
| 203300000-E | 815 | 33.6 | CY | SUBDRAIN FINE AGGREGATE | 601800000-E | 1620 | 50 | LB | SEED FOR TEMPORARY SEEDING |
| 204400000-E | 815 | 200 | LF | 6" PERFORATED SUBDRAIN PIPE | 602100000-E | 1620 | 1.25 | TON | FERTILIZER FOR TEMPORARY SEEDING |
| 207000000-N | 815 | 1 | EA | SUBDRAIN PIPE OUTLET | 602400000-E | 1622 | 200 | LF | TEMPORARY SLOPE DRAINS |
| 207700000-E | 815 | 6 | LF | 6" OUTLET PIPE | 602900000-E | SP | 300 | LF | SAFETY FENCE |
| 228600000-N | 840 | 1 | EA | MASONRY DRAINAGE STRUCTURES | 603000000-E | 1630 | 60 | CY | SILT EXCAVATION |
| 236700000-N | 840 | 1 | EA | FRAME WITH TWO GRATES, STD 840.29 | 603600000-E | 1631 | 2,500 | SY | MATTING FOR EROSION CONTROL |
| 255600000-E | 846 | 16 | LF | SHOULDER BERM GUTTER | 603700000-E | SP | 200 | SY | COIR FIBER MAT |
| 303000000-E | 862 | 25 | LF | STEEL BM GUARDRAIL | 604200000-E | 1632 | 100 | LF | 1/4" HARDWARE CLOTH |
| | | | | | 607000000-N | 1639 | 6 | EA | SPECIAL STILLING BASINS |
| | | | | | 6071010000-E | SP | 50 | LF | WATTLE |
| | | | | | 6071030000-E | 1640 | 70 | LF | COIR FIBER BAFFLE |
| | | | | | 6071050000-E | SP | 2 | 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 | 12 | EA | RESPONSE FOR EROSION CONTROL |

5/28/99

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\$\$\$\$\$USERNAME\$\$\$\$\$

RD225158

COMPUTED BY: C. Harris DATE: 3/12/2010
 CHECKED BY: J. Braxton DATE: 3/4/2011

PROJECT NO. B-4118 SHEET NO. 3-A

**STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS**

**SUMMARY OF EARTHWORK
 IN CUBIC YARDS**

| Station | Station | Uncl. Excav. | Embank. +% | Borrow | Waste |
|--|-------------------------|--------------|------------|--------|-------|
| 10+20.00 | 11+83.81 (Begin Bridge) | 113 | 175 | 62 | |
| 12+81.19 (End Bridge) | 15+00.00 | 149 | 178 | 29 | |
| SUBTOTALS: | | 262 | 353 | 91 | |
| SUBTOTALS: | | | | | |
| TOTAL | | 262 | 353 | 91 | |
| LOSS DUE TO CLEARING & GRUBBING | | -25 | | 25 | |
| UNCLASSIFIED STRUCTURE EXC. IN LIEU OF BORROW | | | -116 | -116 | |
| PROJECT TOTAL | | 237 | 237 | 0 | |
| SAY | | 240 | | 0 | |
| PER GEOTECH, UNDERCUT EXCAVATION | | 200 CY | | | |
| PER GEOTECH, CONTINGENCY SHALLOW UNDERCUT | | 85 CY | | | |
| PER GEOTECH, CLASS IV SUBGRADE STABILIZATION | | 160 TONS | | | |

Note: Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

NOTE: APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, FINE GRADING, CLEARING AND GRUBBING, AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING."

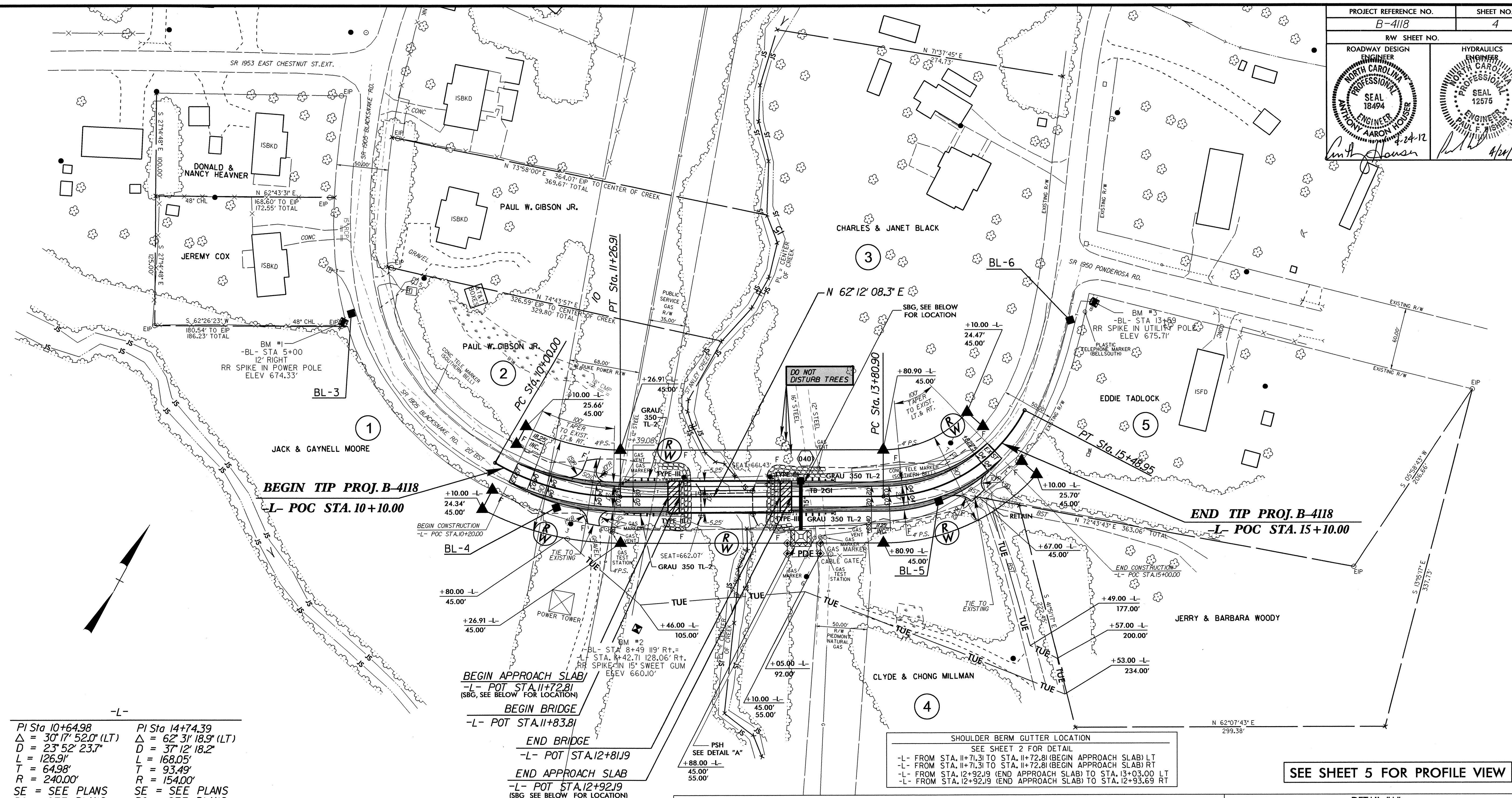
**SUMMARY OF EXISTING ASPHALT
 PAVEMENT REMOVAL**

| LINE | Station | Station | LOC LT/RT/CL | YD ² |
|--------------|----------|----------|-----------------|-----------------|
| -L- | 10+20.00 | 12+04.38 | CL | 409.73 |
| -L- | 12+54.53 | 15+00.00 | CL | 545.49 |
| TOTAL | | | | 955.22 |
| SAY: | | | | 960 |

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL
 TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
 FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
 W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
 G = GATING IMPACT ATTENUATOR TYPE 350
 NG = NON-GATING IMPACT ATTENUATOR TYPE 350

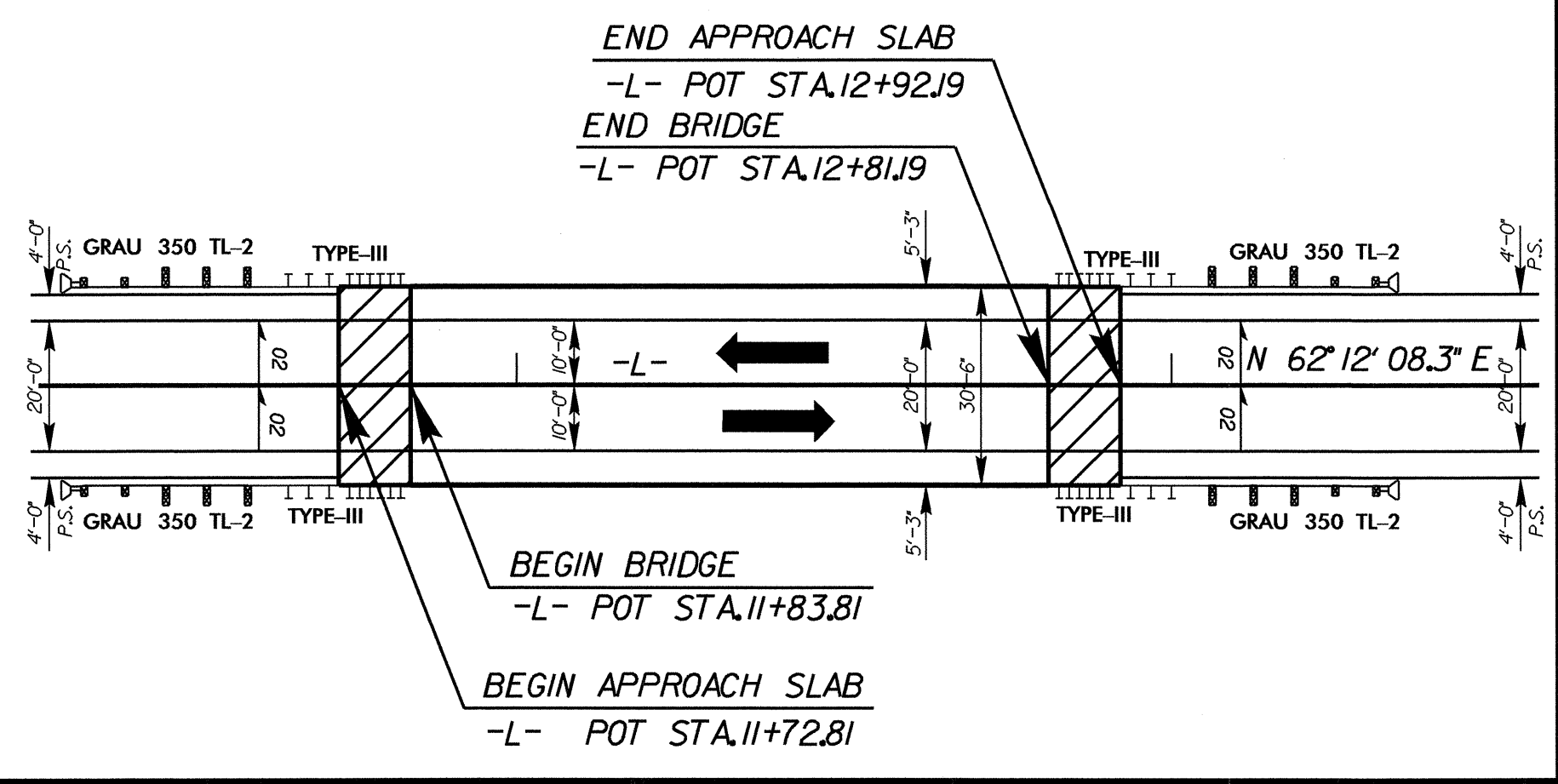
GUARDRAIL SUMMARY

| LINE | BEG. STA. | END STA. | LOC. | LENGTH | | | WARRANT POINT | | "N" DIST FROM E.O.L. | TOTAL SHLDR WIDTH | FLAIR LENGTH | | W | | ANCHORS | | | | IMP. ATTEN. TYPE 350 | | | REMOVE EXISTING GRDRAIL | REMARKS | |
|--------------------------|-----------|----------|------|----------|-------------|--------------|---------------|---------------|----------------------|---------------------------|--------------|------------|-----------|------------|---------------|----------|----|---|----------------------|--|--|-------------------------|---------|--|
| | | | | STRAIGHT | SHOP CURVED | DOUBLE FACED | APPR. END | TRAIL. END | | | APPR. END | TRAIL. END | APPR. END | TRAIL. END | GRAU 350 TL-2 | TYPE III | EA | G | NG | | | | | |
| -L- | 11+33.81 | 11+83.81 | LT | 50 | | | | 11+83.81 (BR) | 5.25 | 9 | | 0 | | 0 | | | 1 | | | | | | | |
| -L- | 12+81.19 | 13+31.19 | LT | 50 | | | | 12+81.19 (BR) | 5.25 | 9 | 0 | | 0 | | | | 1 | | | | | | | |
| -L- | 11+33.81 | 11+83.81 | RT | 50 | | | | 11+83.81 (BR) | 5.25 | 9 | 0 | | 0 | | | | 1 | | | | | | | |
| -L- | 12+81.19 | 13+31.19 | RT | 50 | | | | 12+81.19 (BR) | 5.25 | 9 | | 0 | | 0 | | | 1 | | | | | | | |
| SHEET TOTAL: | | | | 200 | | | | | | | | | | | | | | | | | | | | |
| ANCHOR DEDUCTION: | | | | -175 | | | | | | | | | | | | | | | | | | | | |
| TOTAL: | | | | 25 | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | ANCHOR DEDUCTION: | | | | | | | | | | | | | | |
| | | | | | | | | | | TYPE TL-2 : 4 @ 25' = 100 | | | | } 175 | | | | | | | | | | |
| | | | | | | | | | | TYPE III : 4 @ 18.75 = 75 | | | | | | | | | | | | | | |
| | | | | | | | | | | ADD GUARDRAIL POSTS : 2 | | | | | | | | | | | | | | |



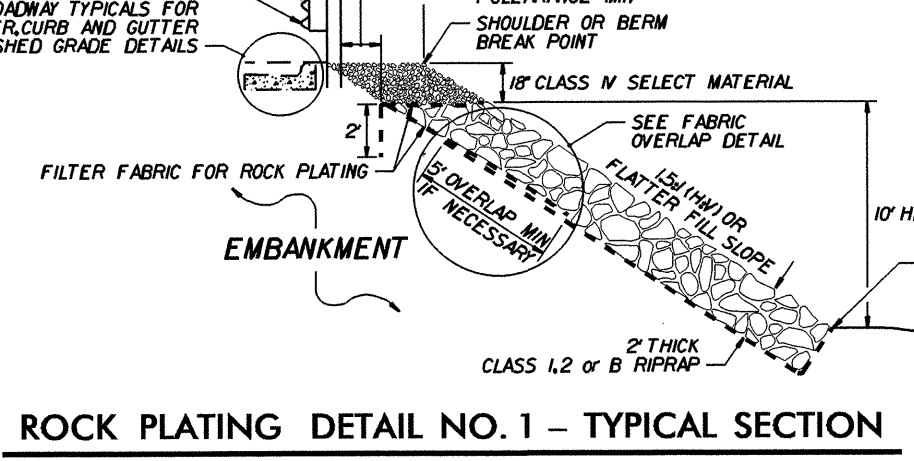
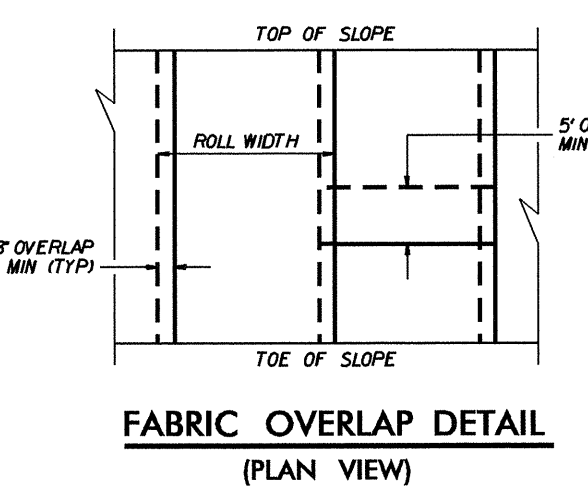
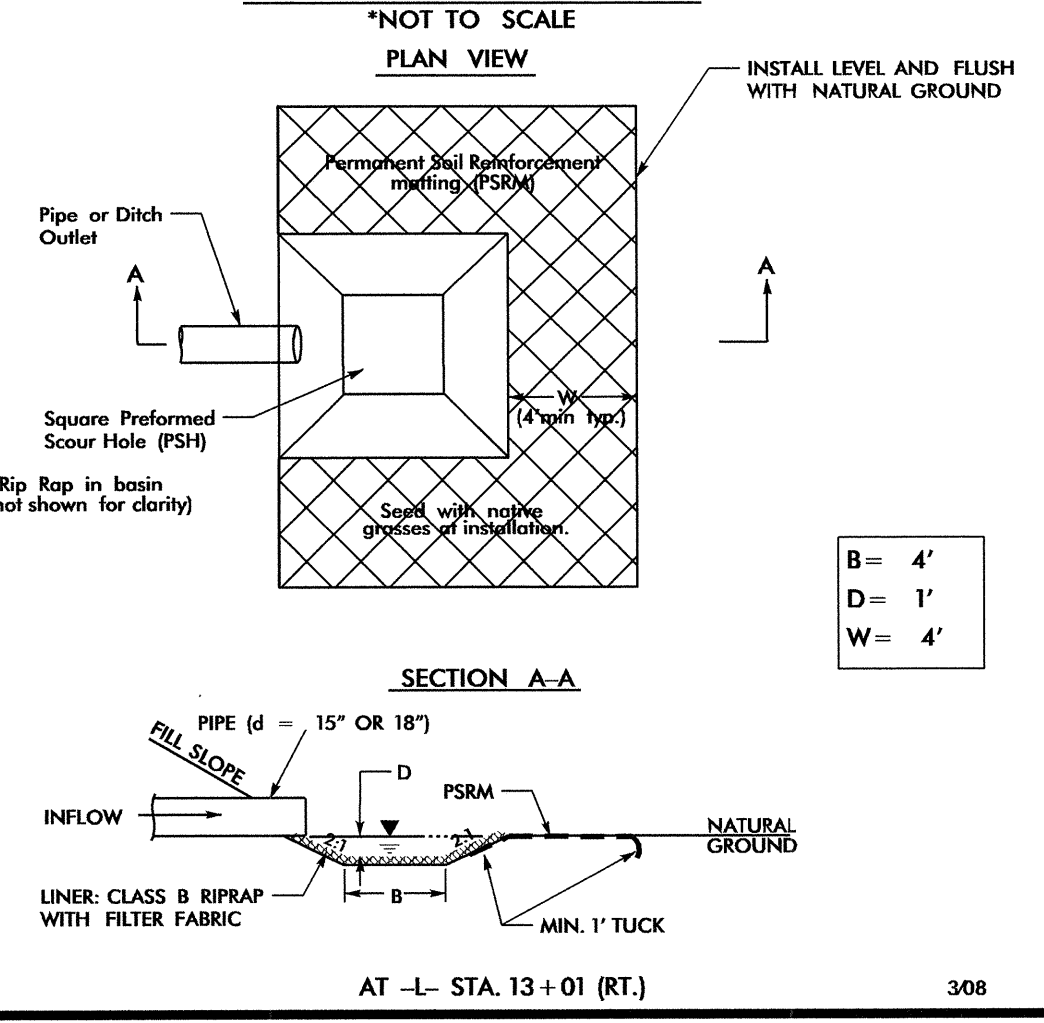
| | |
|------------------------|------------------------|
| -L- | |
| PI Sta 10+64.98 | PI Sta 14+74.39 |
| Δ = 30° 17' 52.0" (LT) | Δ = 62° 31' 18.9" (LT) |
| D = 23° 52' 23.7" | D = 37° 12' 18.2" |
| L = 126.91' | L = 168.05' |
| T = 64.98' | T = 93.49' |
| R = 240.00' | R = 154.00' |
| SE = SEE PLANS | SE = SEE PLANS |
| RO = SEE PLANS | RO = SEE PLANS |

SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP



SEE SHEET 5 FOR PROFILE VIEW

DETAIL "A" PREFORMED SCOUR HOLE
*NOT TO SCALE



USE ROCK PLATING DETAIL NO. 1 AT THE FOLLOWING LOCATIONS:

-L- STA 12+80 ± TO STA 13+25 ±
EXTEND ROCK PLATING LIMITS TO 1.5:1 SLOPES.

ROCK PLATING DETAIL(S) AND LOCATION(S) WERE PROVIDED THROUGH A SEALED DOCUMENT FROM THE GEOTECHNICAL ENGINEERING UNIT. THE DOCUMENT WAS SUBMITTED TO THE ROADWAY DESIGN UNIT ON APRIL 20, 2011 AND SEALED BY PROFESSIONAL ENGINEER, JOHN S. W. FARGHER III, LICENSE #023480. AND PROFESSIONAL ENGINEER CLINTON B. LITTLE, LICENSE #1104

8/17/09 24-APR-2012 12:23 R:\Roadway\Projects\B4118\rdy_psh_4.dgn \$\$\$\$ UNPLANNED ENGINEERING \$\$\$

5/14/99

ROADWAY DESIGN ENGINEER
 NORTH CAROLINA PROFESSIONAL SEAL 18494
 AARON POLSKER 4/24/12

HYDRAULICS ENGINEER
 NORTH CAROLINA PROFESSIONAL SEAL 12675
 PAUL FISHER 4/24/12

-L-

BM*1
 -BL- STA.5+00 12' Rt.
 RR SPIKE IN POWER POLE
 EL = 674.33

BM*2
 -BL- STA.8+49 119' Rt.=
 -L- STA.11+42.71 128.06' Rt.
 RR SPIKE IN 15" SWEET GUM
 EL = 660.10

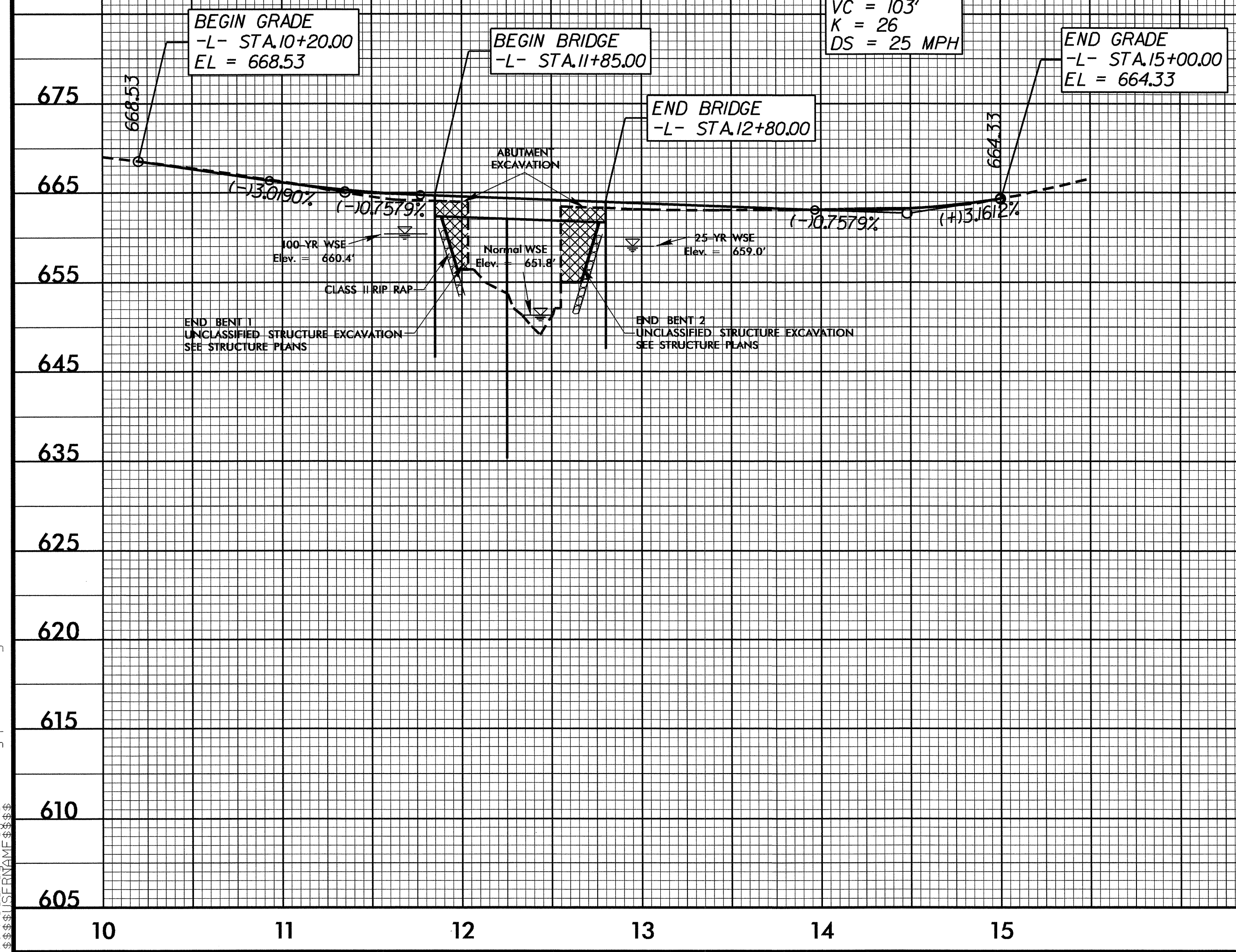
BM*3
 -BL- STA.13+59
 RR SPIKE IN UTILITY POLE
 EL = 675.71

STRUCTURE HYDRAULIC DATA

| | | |
|-----------------------|---------|-----|
| DESIGN DISCHARGE | = 1200 | CFS |
| DESIGN FREQUENCY | = 25 | YRS |
| DESIGN HW ELEVATION | = 659.0 | FT |
| BASE DISCHARGE | = 1800 | CFS |
| BASE FREQUENCY | = 100 | YRS |
| BASE HW ELEVATION | = 660.4 | FT |
| OVERTOPPING DISCHARGE | = 2800+ | CFS |
| OVERTOPPING FREQUENCY | = 500+ | YRS |
| OVERTOPPING ELEVATION | = 662.7 | FT |

PI = 11+35.00
 EL = 665.06'
 VC = 84'
 K = 37
 DS = 30 MPH

PI = 14+48.00
 EL = 662.69'
 VC = 103'
 K = 26
 DS = 25 MPH



SEE SHEET 4 FOR PLAN VIEW

24-APR-2012 11:55 AM \\s1118-rdu-pf\1stht-5.dgn