

09/08/07

See Sheet 1-A For Index of Sheets

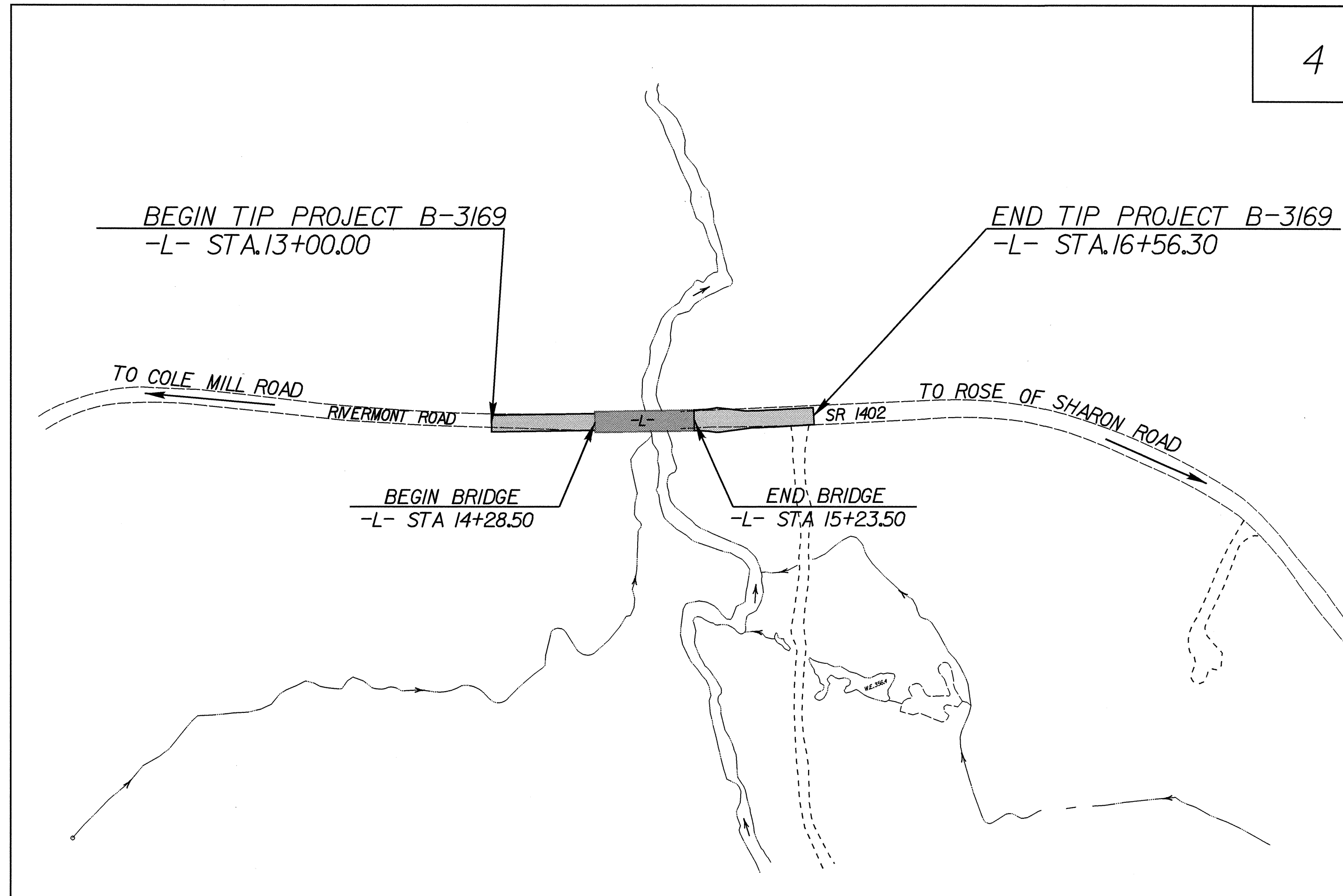
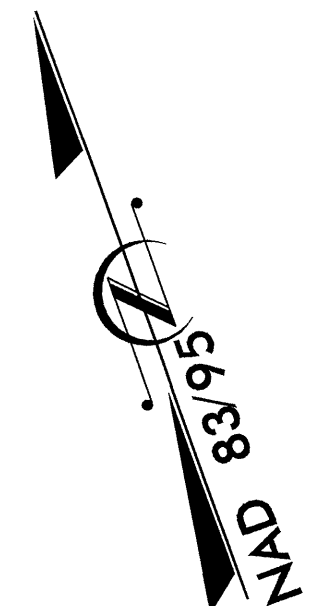
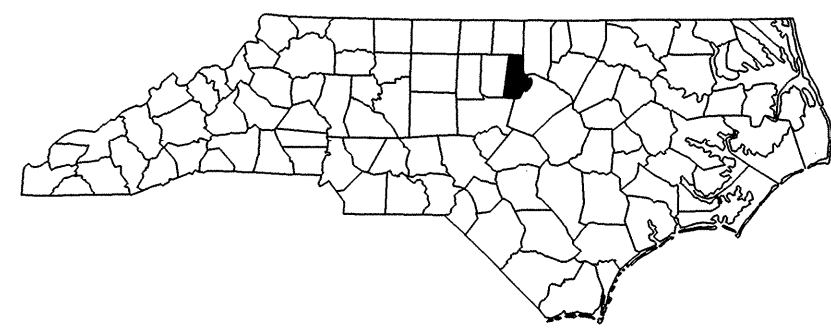
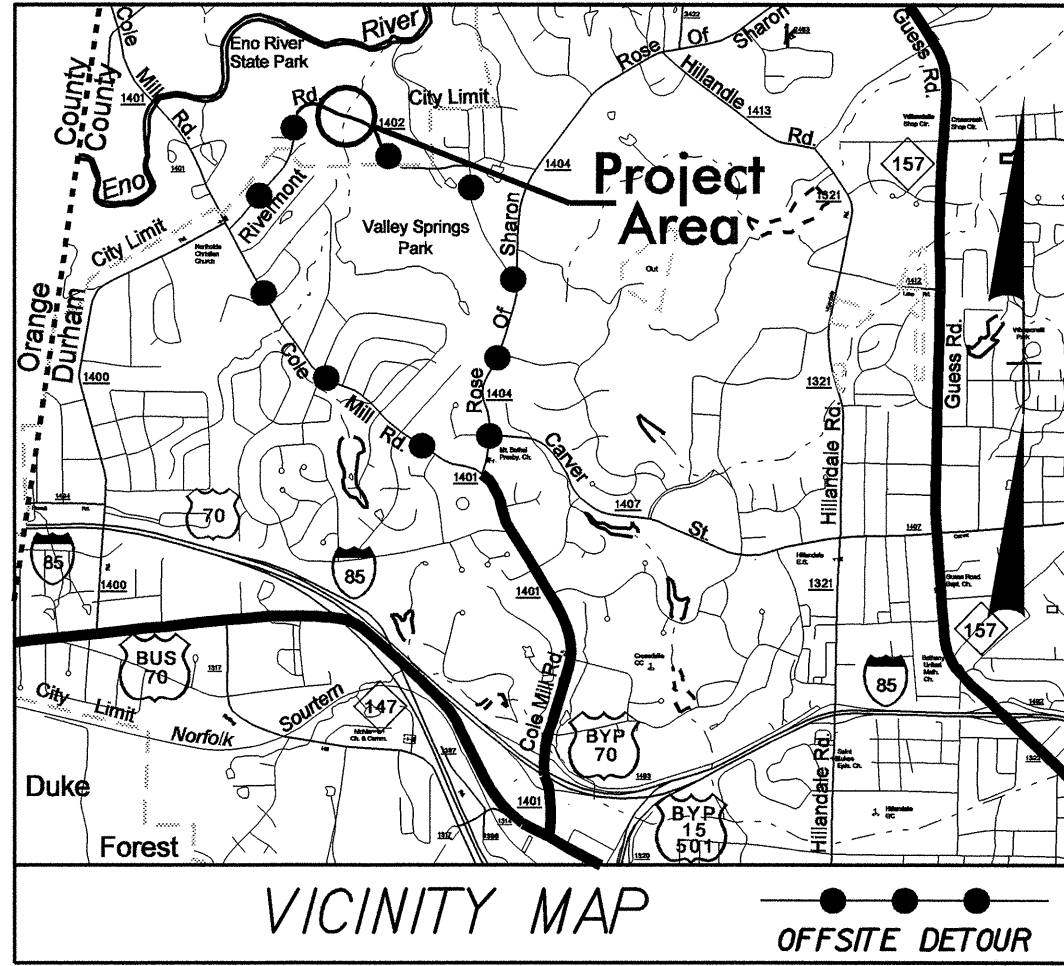
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

DURHAM COUNTY

LOCATION: BRIDGE #158 OVER A CREEK ON SR 1402

TYPE OF WORK: GRADING, DRAINAGE, PAVING,
AND STRUCTURES

| | | | |
|-----------------|-----------------------------|-------------|--------------|
| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
| N.C. | B-3169 | 1 | |
| STATE PROJ. NO. | F.A. PROJ. NO. | DESCRIPTION | |
| 32906.1.1 | BRZ-1402(7) | P. E. | |
| 32906.3.1 | BRZ-1402(7) | R/W, UTIL | |
| 32906.2.3 | BRZ-1402(7) | CONST. | |

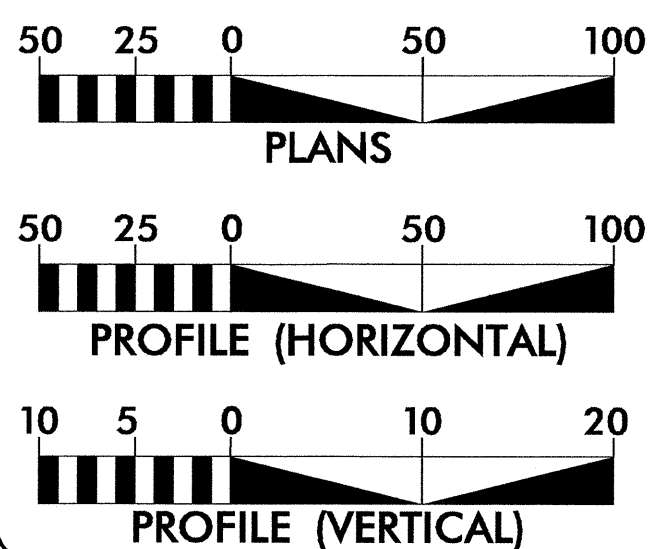


** DESIGN SPEED EXCEPTION WAS REQUIRED:
DESIGNED USING 2001 AASHTO GUIDELINES
FOR GEOMETRIC DESIGN OF VERY
LOW-VOLUME LOCAL ROADS (ADT < 400).

TIP PROJECT: B-3169

CONTRACT: C201788

GRAPHIC SCALES



DESIGN DATA

ADT 2007 = 115
ADT 2030 = 200
DHV = 22 %
D = 65 %
T = 3 % *
V = 25 MPH**
FUNC. CLASS = LOCAL
* TTST 1 DUAL 2

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-3169 = 0.049 mile
LENGTH STRUCTURE TIP PROJECT B-3169 = 0.018 mile
TOTAL LENGTH OF TIP PROJECT B-3169 = 0.067 mile

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

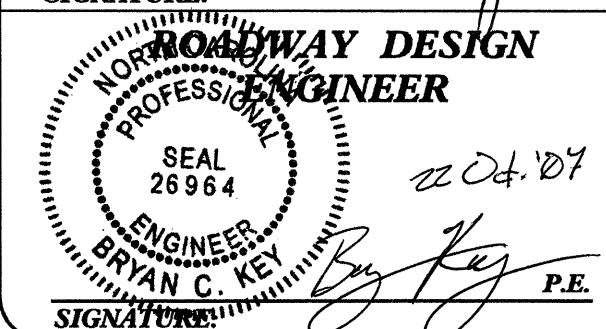
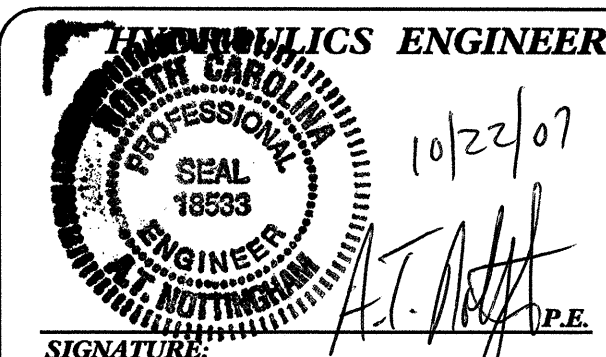
2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
AUGUST 18, 2006

LETTING DATE:
JANUARY 15, 2008

JASON MOORE, PE
PROJECT ENGINEER

BRYAN KEY, PE
PROJECT DESIGN ENGINEER



DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

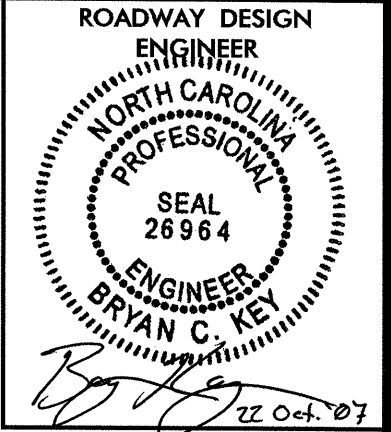
art millan
STATE DESIGN ENGINEER P.E.

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR DATE

22-OCT-2007 11:03
\\s0169_rdy_tsh.dgn
USER:NAME

8/17/09



| 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 AND TYPICAL SECTIONS |
| 2A | DETAIL OF ANCHORAGE FOR FRAMES |
| 3 | SUMMARY OF QUANTITIES |
| 3A | SUMMARY OF DRAINAGE QUANTITIES SUMMARY OF GUARDRAIL, AND EARTHWORK SUMMARY |
| 4 | PLAN SHEET |
| 5 | PROFILE SHEET |
| TCP-01 THRU TCP-03 | TRAFFIC CONTROL PLANS |
| EC-1 THRU EC-4 | EROSION CONTROL PLANS |
| RF-1 | REFORESTATION DETAIL |
| RF-1 | REFORESTATION PLANS |
| UO-1 THRU UO-2 | UTILITY CONFLICT PLANS (UTILITIES BY OTHERS) |
| X-1 | CROSS-SECTION SUMMARY SHEET |
| X-2 THRU X-4 | CROSS-SECTIONS |
| S-1 THRU S- 26 | STRUCTURE PLANS |

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

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

CLEARING:
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD 11.

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.

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 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.

2006 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 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 11 |
| 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' |
| 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 Super-elevated Curve - Method 1 |
| DIVISION 8 - INCIDENTALS | |
| 816.04 | Markers for Drainage Structure and Concrete Pad |
| 840.00 | Concrete Base Pad for Drainage Structures |
| 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 |
| 840.66 | Drainage Structure Steps |
| 846.01 | Concrete Curb, Gutter and Curb & Gutter |
| 846.04 | Drainage Installation in Shoulder Berm Gutter |
| 862.01 | Guardrail Placement |
| 862.02 | Guardrail Installation |
| 862.03 | Structure Anchor Units |
| 862.04 | Anchoring End of Guardrail - B-77 and B-83 Anchor Units |
| 876.02 | Guide for Rip Rap at Pipe Outlets |

EFF. 07-18-06
REV. 01-02-07

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F:\roadwork\estimate\final\b3169_rdy_1apsh.dgn
\$\$\$\$\$USFRAME\$\$\$\$\$

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 | ----- WLS |
| Proposed Wetland Boundary | ----- WLS |
| Existing High Quality Wetland Boundary | ----- HO WLS |
| Existing Endangered Animal Boundary | ----- EAB |
| Existing Endangered Plant Boundary | ----- EPB |

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 | ----- |
| River Basin Buffer | ----- RBB |
| Flow Arrow | ← |
| Disappearing Stream | ----- |
| Spring | ○ |
| Swamp Marsh | ----- |
| Proposed Lateral, Tail, Head Ditch | ----- |
| False Sump | ----- |

RAILROADS:

| | |
|--------------------|---------------|
| Standard Gauge | ----- |
| RR Signal Milepost | ○ MILEPOST 35 |
| Switch | □ 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 | ○ CA |
| Proposed Control of Access | ○ CA |
| Existing Easement Line | ----- E |
| Proposed Temporary Construction Easement | ----- E |
| Proposed Temporary Drainage Easement | ----- TDE |
| Proposed Permanent Drainage Easement | ----- PDE |
| Proposed Permanent Utility Easement | ----- PUE |

ROADS AND RELATED FEATURES:

| | |
|--------------------------------------|---------|
| Existing Edge of Pavement | ----- |
| Existing Curb | ----- |
| Proposed Slope Stakes Cut | ----- C |
| Proposed Slope Stakes Fill | ----- F |
| Proposed Wheel Chair Ramp | ○ WCR |
| Curb Cut for Future Wheel Chair Ramp | ○ CCFR |
| 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 | ----- 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 | ○ S |
| 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 | ⊠ |
| U/G Power Cable Hand Hole | □ PH |
| H-Frame Pole | ● |
| Recorded U/G Power Line | ----- P |
| Designated U/G Power Line (S.U.E.*) | ----- P |

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

| | |
|--|--------------------------|
| Sanitary Sewer Manhole | ⊕ |
| Sanitary Sewer Cleanout | ⊕ |
| U/G 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 |

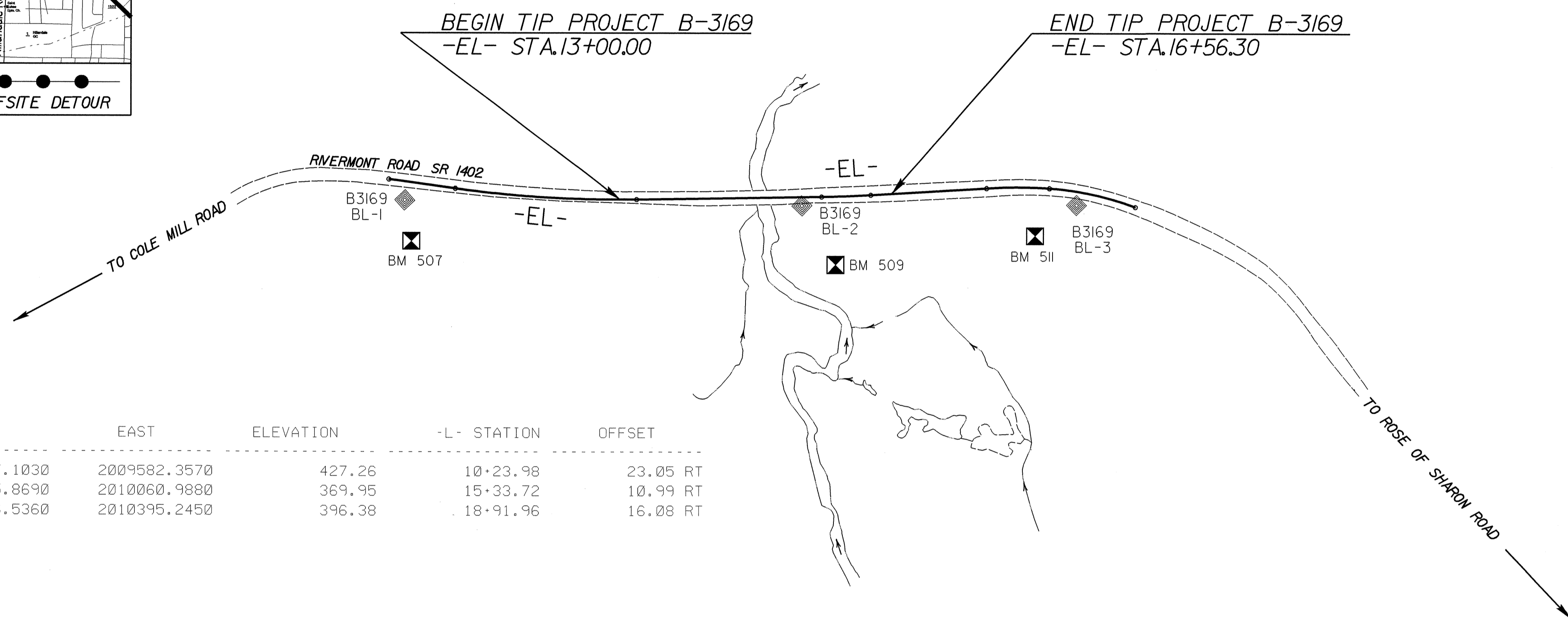
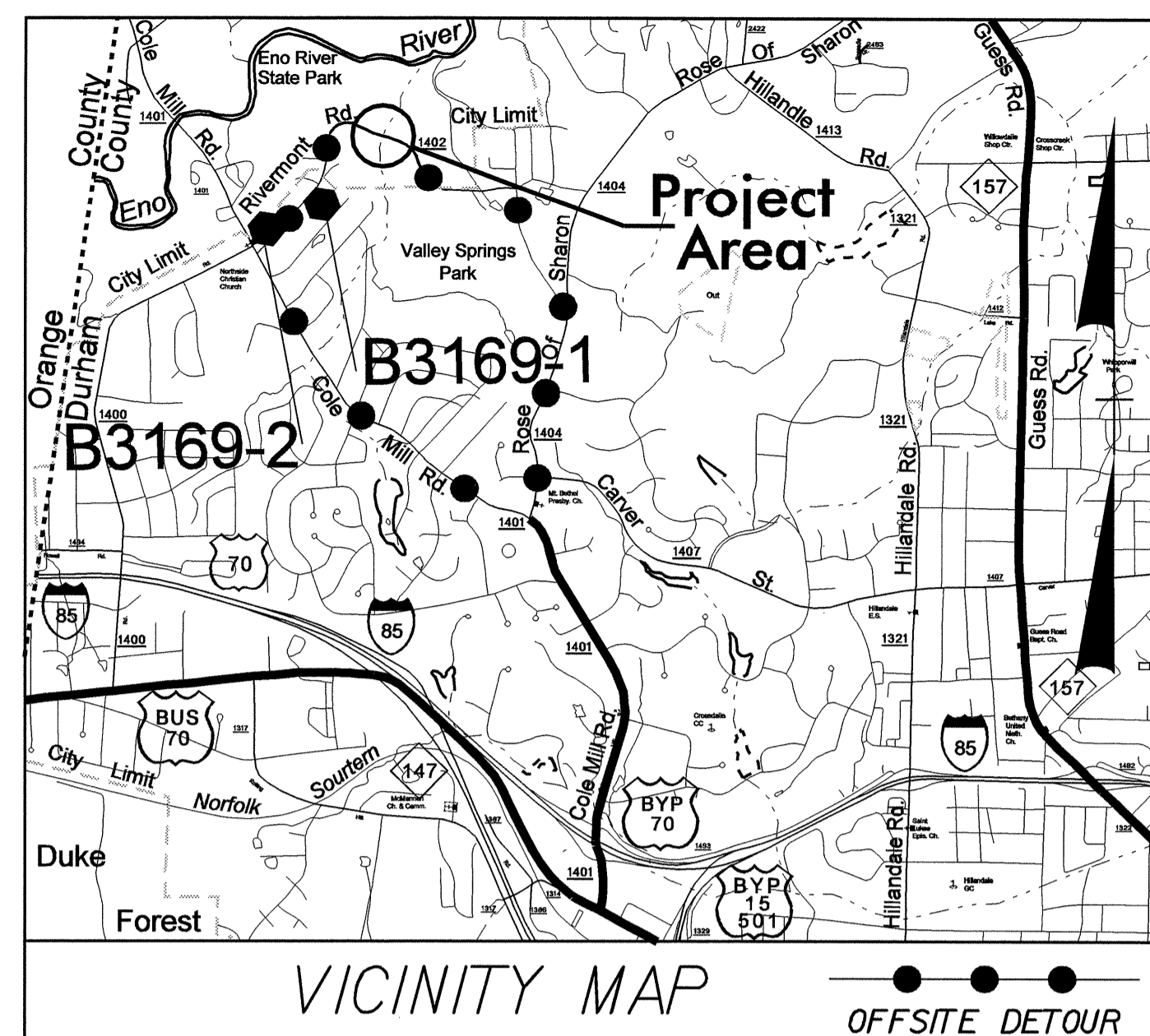
MISCELLANEOUS:

| | |
|--|------------|
| Utility Pole | ● |
| Utility Pole with Base | □ |
| Utility Located Object | ○ |
| Utility Traffic Signal Box | ⊕ |
| Utility Unknown U/G Line | ----- ?UTL |
| 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. |

SURVEY CONTROL SHEET B-3169

DURHAM COUNTY

LOCATION: BRIDGE 158 OVER A CREEK ON RIVERMONT ROAD (SR 1402)



| BL | POINT | DESC. | NORTH | EAST | ELEVATION | -L- STATION | OFFSET |
|----|-------|-------|-------------|--------------|-----------|-------------|----------|
| 1 | BL-1 | | 840397.1030 | 2009582.3570 | 427.26 | 10+23.98 | 23.05 RT |
| 2 | BL-2 | | 840215.8690 | 2010060.9880 | 369.95 | 15+33.72 | 10.99 RT |
| 3 | BL-3 | | 840096.5360 | 2010395.2450 | 396.38 | 18+91.96 | 16.08 RT |

.....
 BM507 ELEVATION = 424.04
 N 840345 E 2009572
 -L- STATION 10+39 74 RIGHT

.....
 BM509 ELEVATION = 360.93
 N 840129 E 2010076
 -L- STATION 15+76 88 RIGHT

.....
 BM511 ELEVATION = 390.50
 N 840077 E 2010331
 -L- STATION 18+38 62 RIGHT

NCDOT GPS STATION B3169-1
 LOCALIZED PROJECT COORDINATES
 N=839850.5906
 E=2009074.7809

NCDOT GPS STATION B3169-2
 LOCALIZED PROJECT COORDINATES
 N=839376.4839
 E=2008881.6513

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B3169-1" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 839850.5906(ft) EASTING: 2009074.7809(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99995490 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B3169-1" TO -L- STATION 10+00 IS N 40° 41' 11.2" E 762.29'

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

- NOTES:**
- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/)
 THE FILES TO BE FOUND ARE AS FOLLOWS:
 B3169_LS_CONTROL_060504.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)
 SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

NOTE: DRAWING NOT TO SCALE

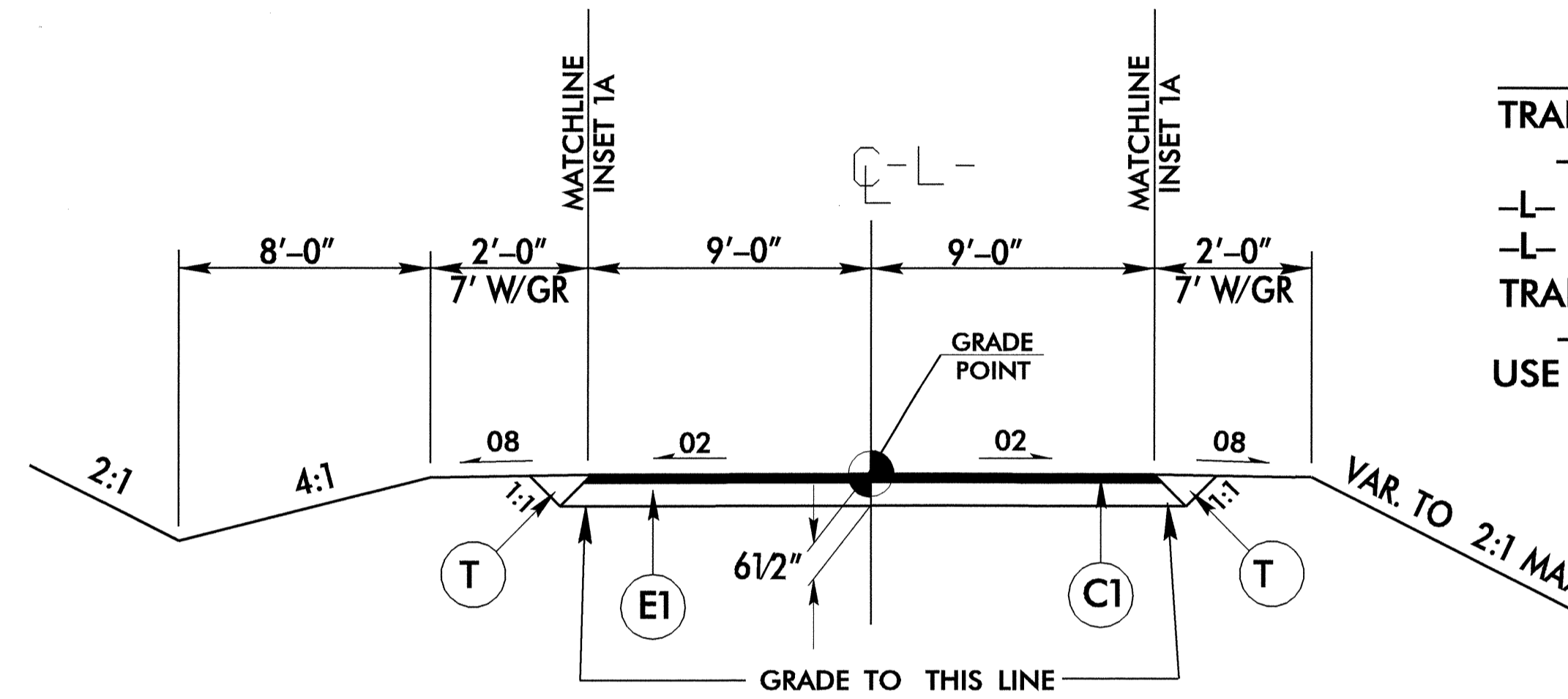
6/2/09

PAVEMENT SCHEDULE

| | | | |
|-----------|--|----------|----------------------|
| C1 | PROP. APPROX. 2½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF 2 LAYERS | T | EARTH MATERIAL. |
| E1 | PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD. | R | SHOULDER BERM GUTTER |

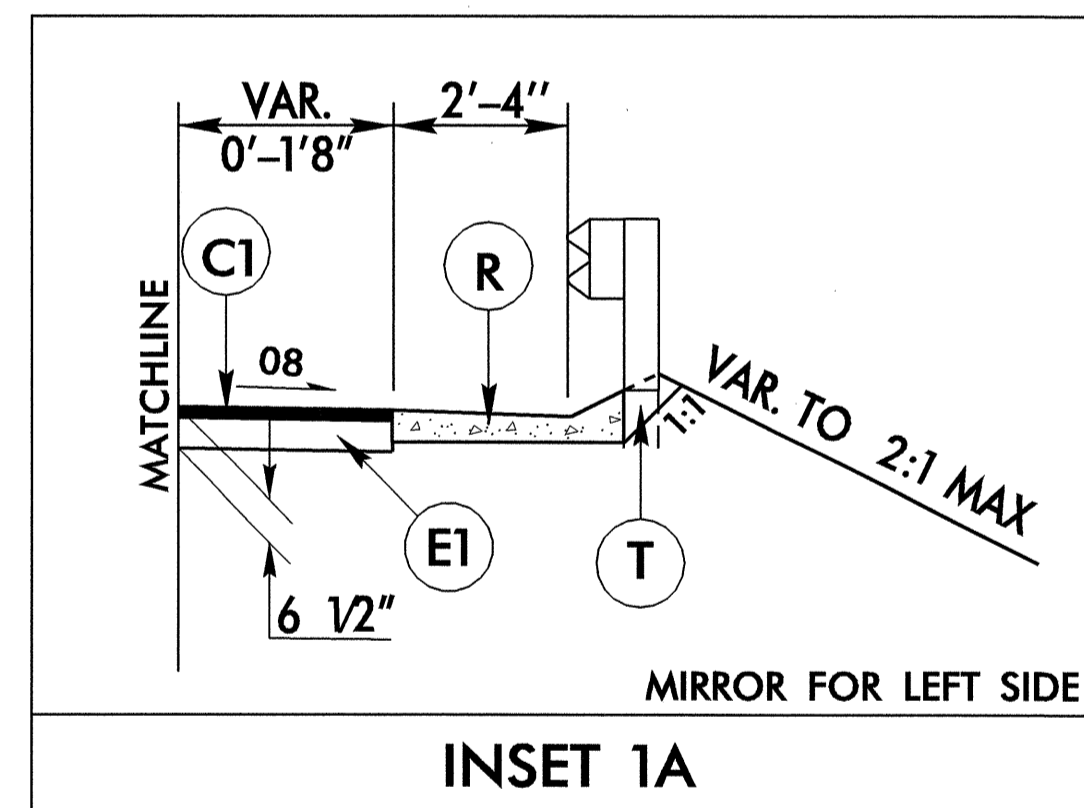
| | |
|---|---|
| PROJECT REFERENCE NO. B-3169 | SHEET NO. 2 |
| ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 26964 BRYAN C. KEY | PAVEMENT DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 22896 CLARK S. MORRISON |

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

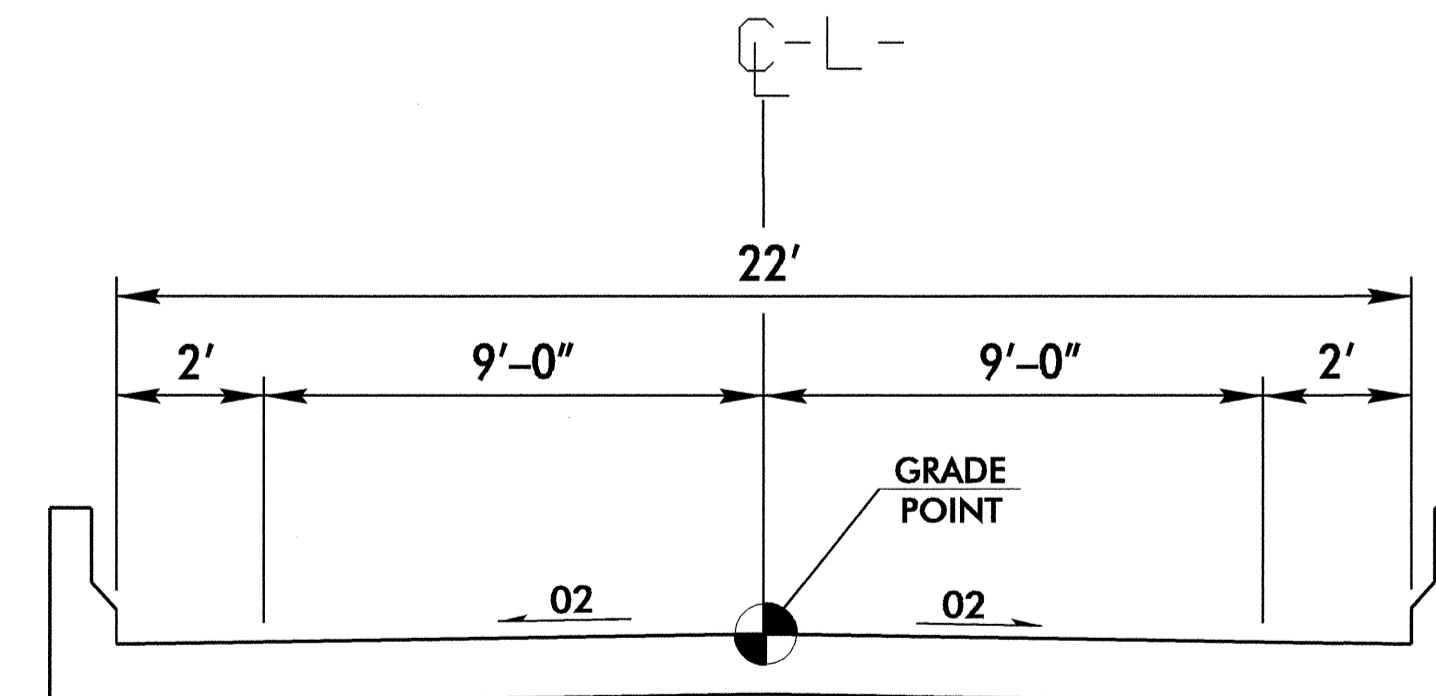


USE TYPICAL SECTION NO.1
TRANSITION FROM EXISTING
 -L- STA 13+00.00 TO -L- STA 14+12.17
 -L- STA 14+12.17 TO -L- STA 14+28.50(BEGIN BRIDGE)
 -L- STA 15+23.50(END BRIDGE) TO -L- STA 15+56.30
TRANSITION TO EXISTING
 -L- STA 15+56.30 TO -L- STA 16+56.30
USE INSET 1A IN SHOULDER BERM GUTTER LOCATIONS

TYPICAL SECTION NO. 1



INSET 1A



TYPICAL SECTION ON STRUCTURE

-L- STA 14+28.50 (BEGIN BRIDGE) TO STA. 15+23.50 (END BRIDGE)

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STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

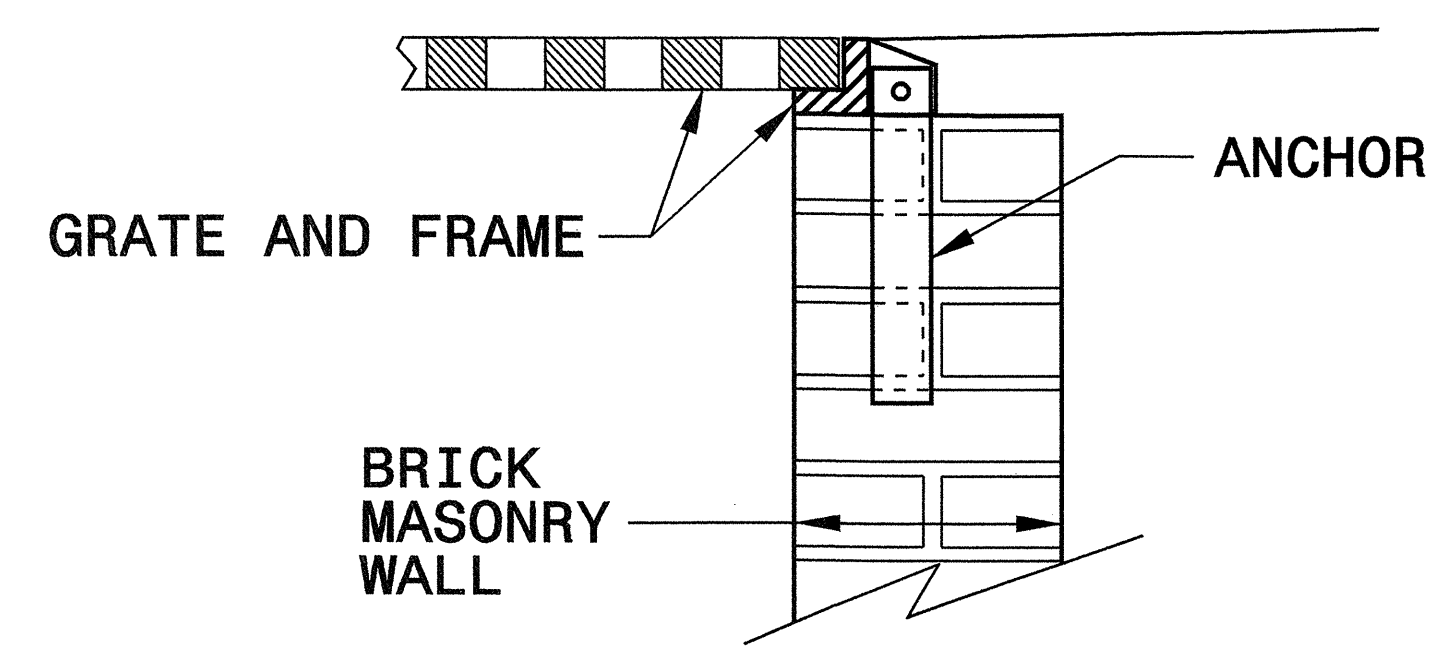
ENGLISH DETAIL DRAWING FOR
ANCHORAGE FOR FRAMES
BRICK/CONCRETE/PRECAST CONCRETE

SHEET 1 OF 1
840D25

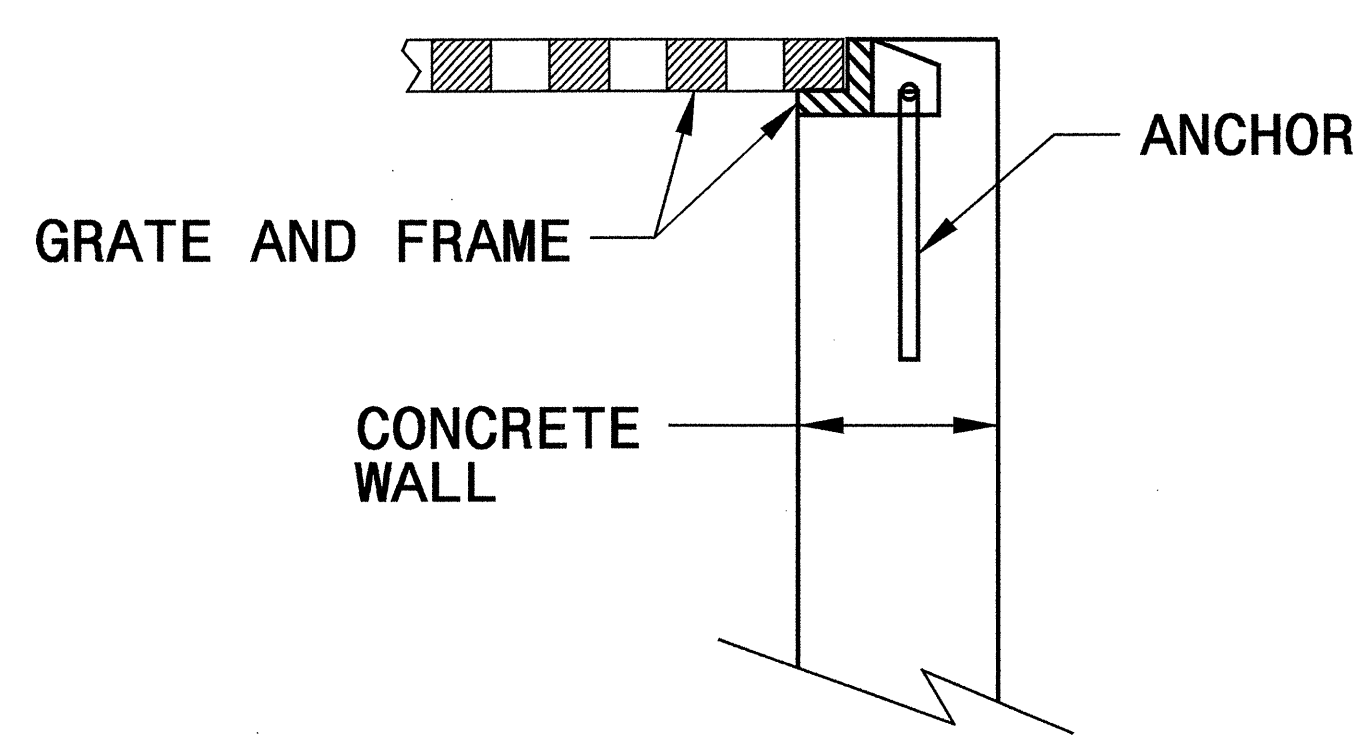
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
ANCHORAGE FOR FRAMES
BRICK/CONCRETE/PRECAST CONCRETE

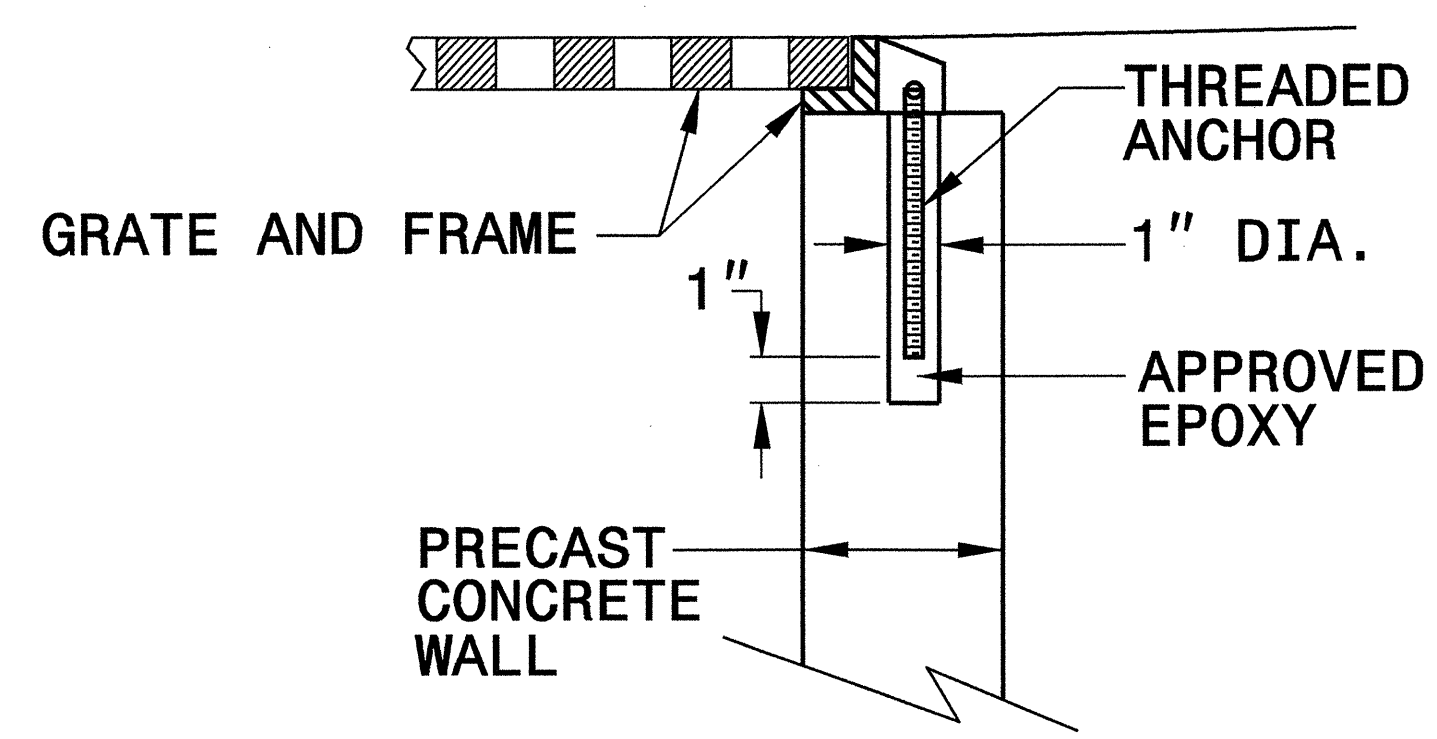
SHEET 1 OF 1
840D25



BRICK MASONRY CONSTRUCTION



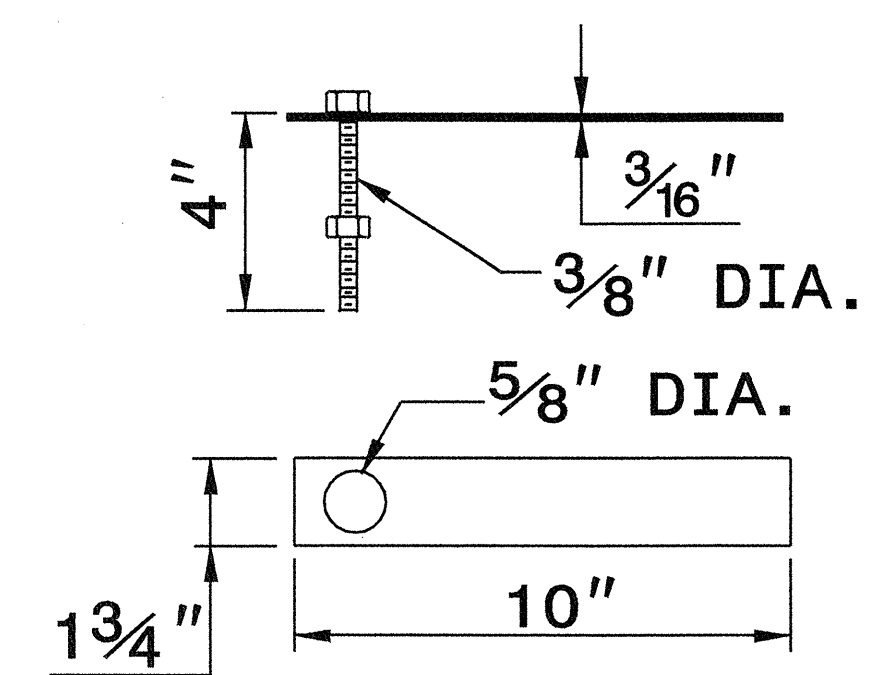
CONCRETE CONSTRUCTION



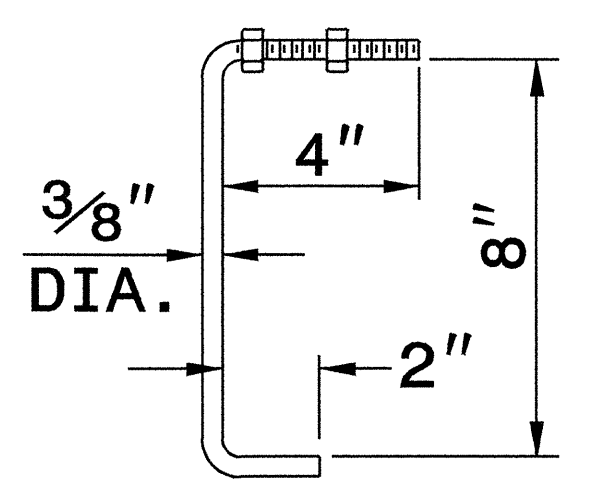
PRECAST CONCRETE CONSTRUCTION

DETAIL SHOWING ANCHORAGE OF FRAME FOR GRATED DROP INLET

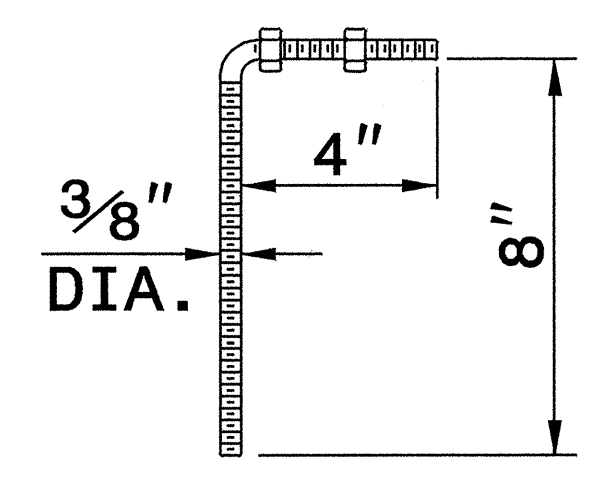
NOTE:
CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



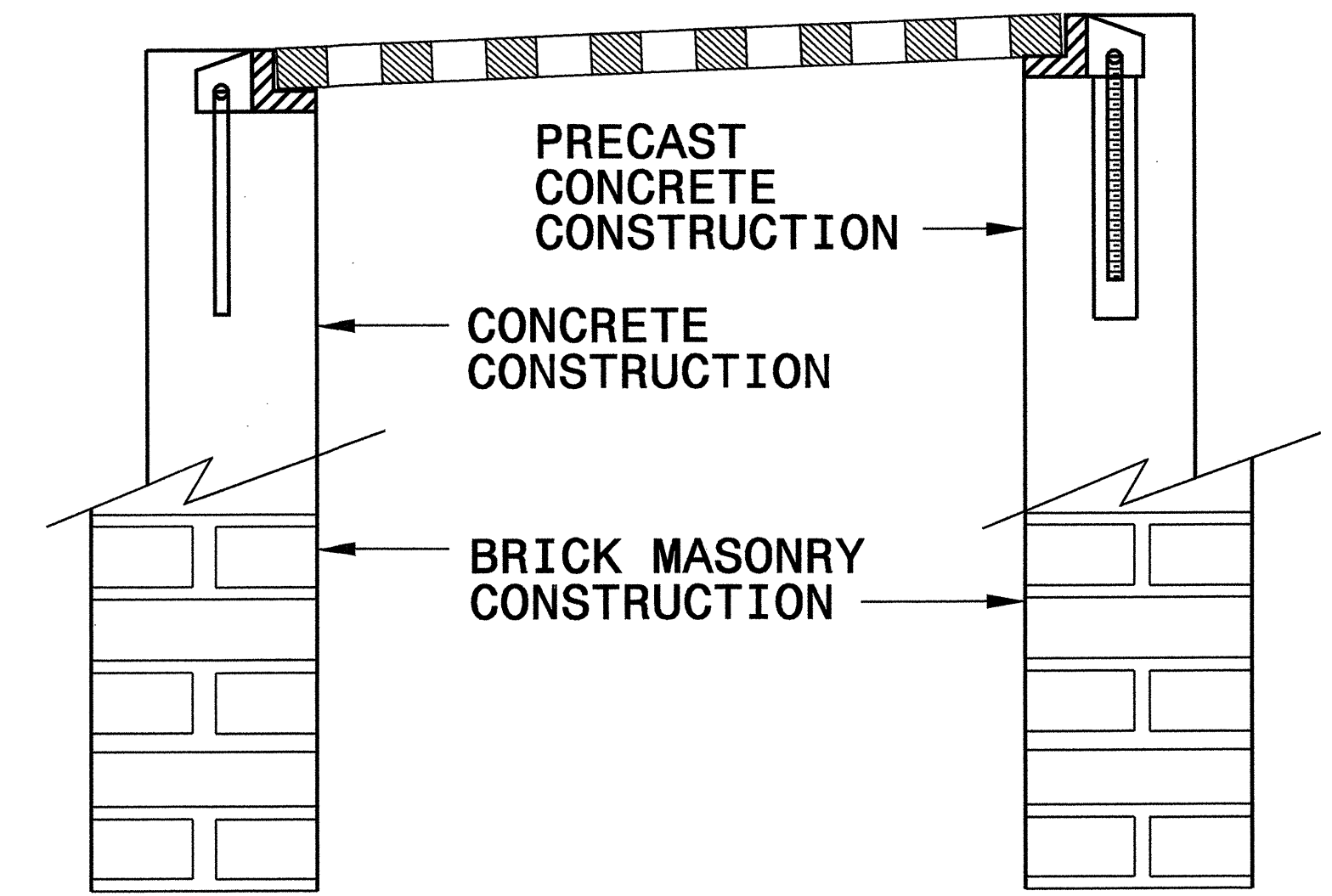
MASONRY ANCHOR
3/8" DIA. BOLT WITH PLATE



CONCRETE ANCHOR
3/8" DIA. BENT BAR

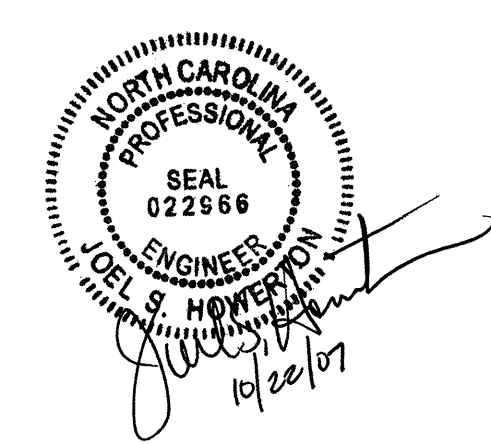


PRECAST CONCRETE ANCHOR
3/8" DIA. BENT BAR



FRAME AND GRATE INSTALLATION FOR NORMAL CROWN AND SUPERELEVATED SECTIONS

01-MAR-2007 09:04 s:\contracts\contract\stds\stds\stds to special\details\840d25 anchorage for frames\0840d25.dgn jhower-ton AT PS212260



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

SEE PLATE FOR TITLE

ORIGINAL BY: 2006 STD 840.25 DATE: 07/18/06
MODIFIED BY: E.E. WARD DATE: 9/25/06
CHECKED BY: DATE:
FILE SPEC.:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF QUANTITIES

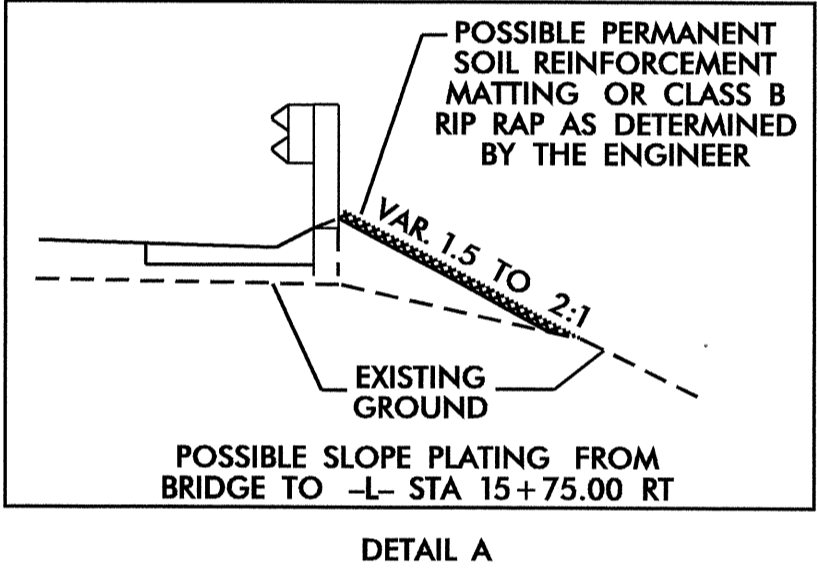
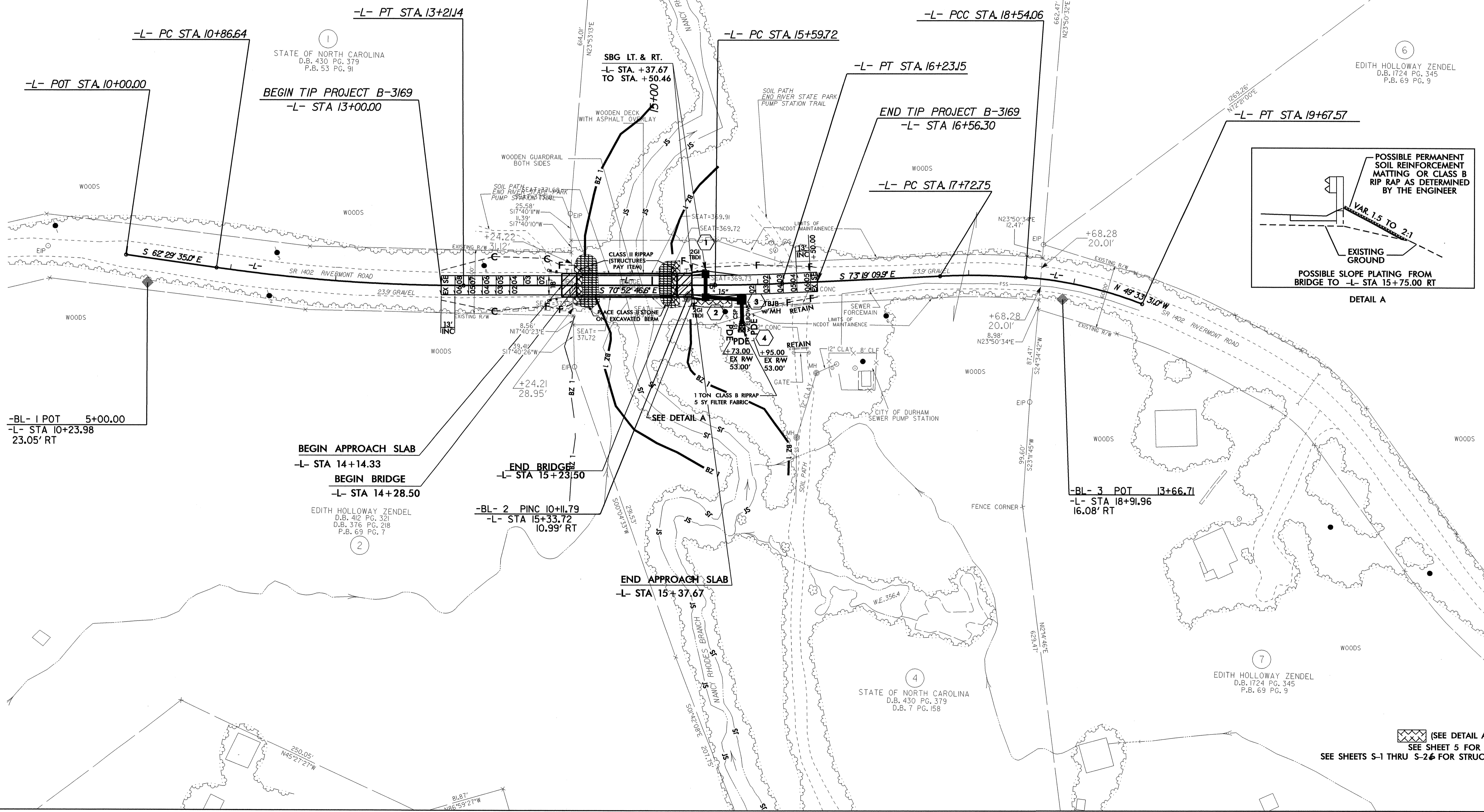
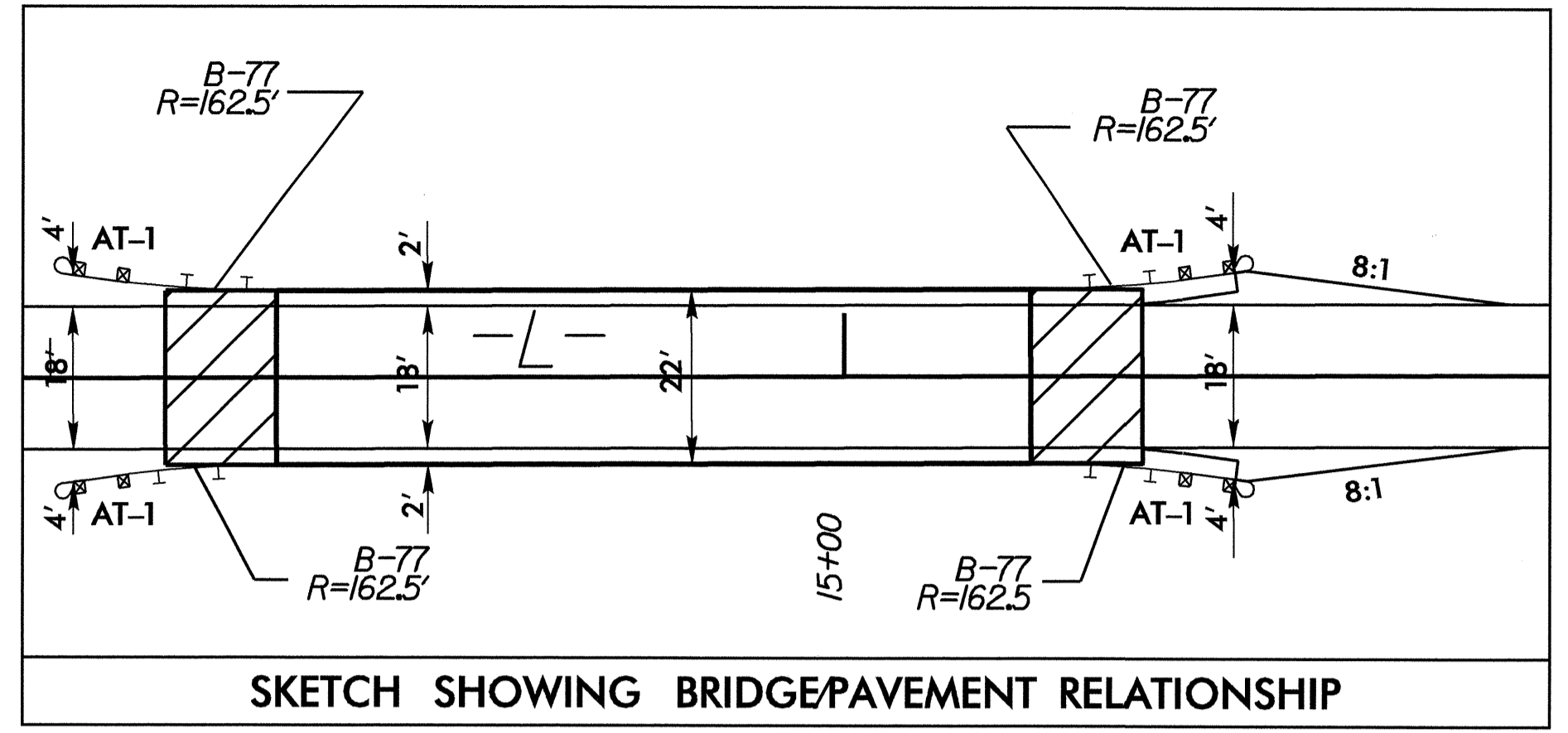
| STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201788 | | | | | | | | | |
|---|-------|----------|------|--|-------------|-------|----------|------|-------------------------------------|
| ItemNumber | Sec # | Quantity | Unit | Description | ItemNumber | Sec # | Quantity | Unit | Description |
| 0000100000-N | 800 | Lump Sum | | MOBILIZATION | 441000000-E | 1110 | 57 | SF | WORK ZONE SIGNS (BARRICADE MOUNTED) |
| 0029000000-N | SP | Lump Sum | | REINFORCED BRIDGE APPROACH FILL, STATION ***** (14+76.00-L-) | 444500000-E | 1145 | 64 | LF | BARRICADES (TYPE III) |
| 0043000000-N | 226 | Lump Sum | | GRADING | 481000000-E | 1205 | 2,880 | LF | PAINT PAVEMENT MARKING LINES (4') |
| 0050000000-E | 226 | 1 | ACR | SUPPLEMENTARY CLEARING & GRUB-BING | 600000000-E | 1605 | 510 | LF | TEMPORARY SILT FENCE |
| 0057000000-E | 226 | 200 | CY | UNDERCUT EXCAVATION | 600600000-E | 1610 | 75 | TON | STONE FOR EROSION CONTROL, CLASS A |
| 0195000000-E | 265 | 200 | CY | SELECT GRANULAR MATERIAL | 600900000-E | 1610 | 100 | TON | STONE FOR EROSION CONTROL, CLASS B |
| 0196000000-E | 270 | 200 | SY | FABRIC FOR SOIL STABILIZATION | 601200000-E | 1610 | 40 | TON | SEDIMENT CONTROL STONE |
| 0318000000-E | 300 | 10 | TON | FOUNDATION CONDITIONING MATERIAL, MINOR STRS | 601500000-E | 1615 | 0.5 | ACR | TEMPORARY MULCHING |
| 0366000000-E | 310 | 52 | LF | 15" RC PIPE CULVERTS, CLASS III | 601800000-E | 1620 | 50 | LB | SEED FOR TEMPORARY SEEDING |
| 0708000000-E | 310 | 24 | LF | 15" BIT COAT CS PIPE CULVERTS, TYPE B 0.064" THICK | 602100000-E | 1620 | 0.25 | TON | FERTILIZER FOR TEMPORARY SEEDING |
| 0806000000-E | 310 | 2 | EA | 15" BIT COAT CS PIPE ELBOWS, TYPE B 0.064" THICK | 602900000-E | SP | 165 | LF | SAFETY FENCE |
| 1489000000-E | 610 | 120 | TON | ASPHALT CONC BASE COURSE, TYPE B25.0B | 603000000-E | 1630 | 145 | CY | SILT EXCAVATION |
| 1525000000-E | 610 | 70 | TON | ASPHALT CONC SURFACE COURSE, TYPE SF9.5A | 603600000-E | 1631 | 205 | SY | MATting FOR EROSION CONTROL |
| 1560000000-E | 620 | 10 | TON | ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22 | 603800000-E | SP | 77 | SY | PERMANENT SOIL REINFORCEMENT MAT |
| 2286000000-N | 840 | 3 | EA | MASONRY DRAINAGE STRUCTURES | 604200000-E | 1632 | 40 | LF | 1/4" HARDWARE CLOTH |
| 2367000000-N | 840 | 2 | EA | FRAME WITH TWO GRATES, STD 840.29 | 608400000-E | 1660 | 0.5 | ACR | SEEDING & MULCHING |
| 2396000000-N | 840 | 1 | EA | FRAME WITH COVER, STD 840.54 | 608700000-E | 1660 | 0.5 | ACR | MOWING |
| 2556000000-E | 846 | 30 | LF | SHOULDER BERM GUTTER | 609000000-E | 1661 | 50 | LB | SEED FOR REPAIR SEEDING |
| 3195000000-N | 862 | 4 | EA | GUARDRAIL ANCHOR UNITS, TYPE AT-1 | 609300000-E | 1661 | 0.25 | TON | FERTILIZER FOR REPAIR SEEDING |
| 3317000000-N | 862 | 4 | EA | GUARDRAIL ANCHOR UNITS, TYPE B-77 | 609600000-E | 1662 | 50 | LB | SEED FOR SUPPLEMENTAL SEEDING |
| 3649000000-E | 876 | 19 | TON | RIP RAP, CLASS B | 610800000-E | 1665 | 0.25 | TON | FERTILIZER TOPDRESSING |
| 3656000000-E | 876 | 155 | SY | FILTER FABRIC FOR DRAINAGE | 611400000-N | SP | 2 | HR | SPECIALIZED HAND MOWING |
| 4400000000-E | 1110 | 269 | SF | WORK ZONE SIGNS (STATIONARY) | 611700000-N | SP | 12 | EA | RESPONSE FOR EROSION CONTROL |
| | | | | | 612300000-E | 1670 | 0.1 | ACR | REFORESTATION |

5/28/99

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-L- CURVE DATA

| | | | |
|---|---|---|--|
| PI Sta 12+04.10 Δ = 8° 23' 11.8" (LT) D = 3' 34' 35.1" L = 234.50' T = 117.46' R = 1,602.05' SE = EXIST. VD = EXIST. | PI Sta 15+91.44 Δ = 2° 26' 23.3" (LT) D = 3' 50' 46.2" L = 63.43' T = 31.72' R = 1,489.68' SE = EXIST. VD = EXIST. | PI Sta 18+13.45 Δ = 6° 49' 45.2" (RT) D = 8' 23' 57.3" L = 81.31' T = 40.70' R = 682.15' SE = EXIST. VD = EXIST. | PI Sta 19+11.23 Δ = 16° 55' 54.4" (RT) D = 14' 55' 00.1" L = 113.51' T = 57.17' R = 384.10' SE = EXIST. VD = EXIST. |
|---|---|---|--|



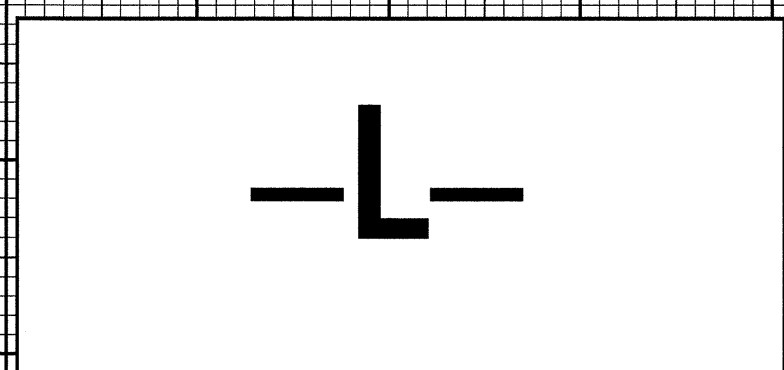
8/17/99

REVISIONS

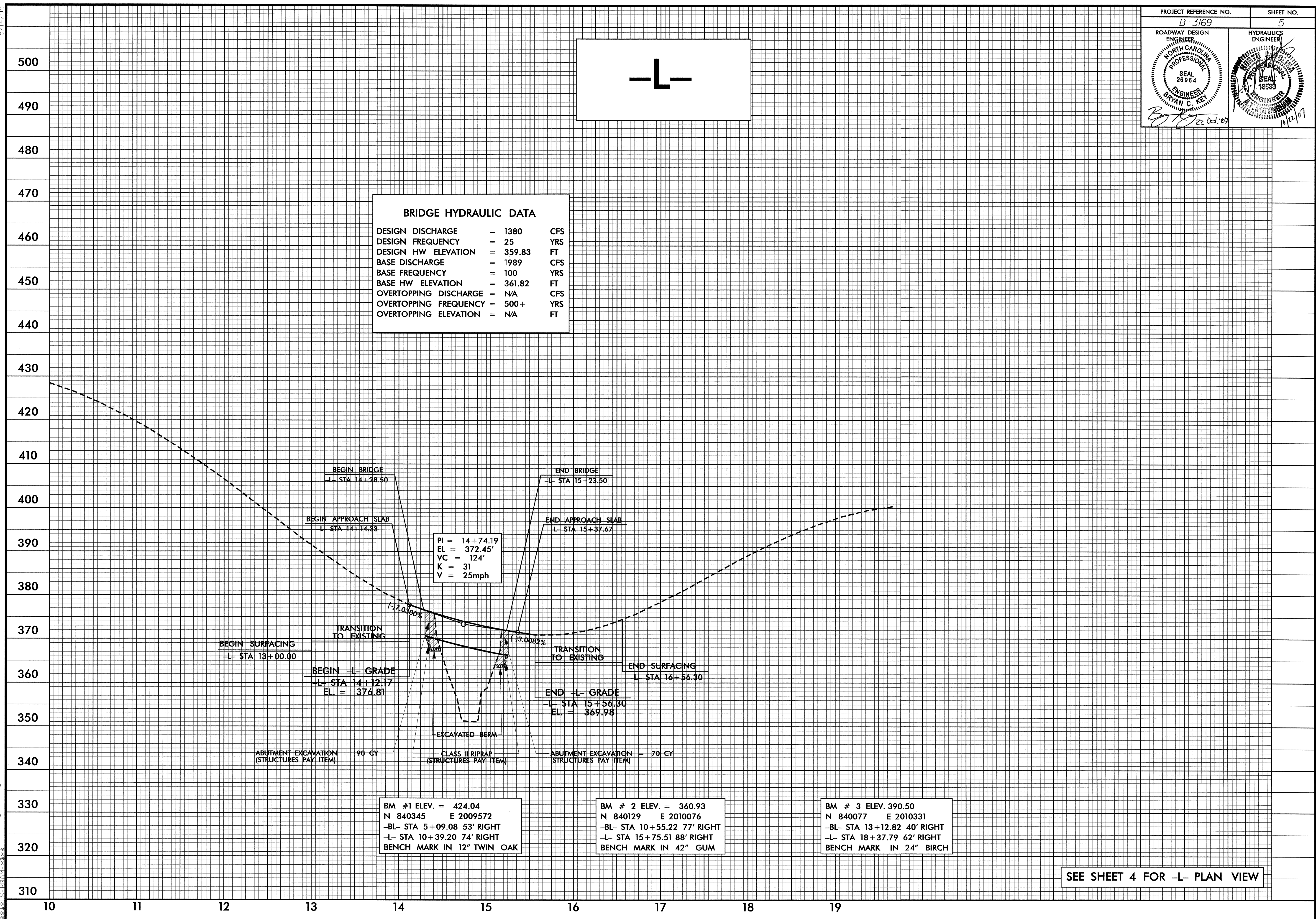
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B3169.DWG

5/14/09

| | |
|---|---|
| PROJECT REFERENCE NO. B-3169 | SHEET NO. 5 |
| ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 26964 ENGINEER BRYAN C. KEY | HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 18533 ENGINEER |
| <i>Bryan C. Key</i> 22 Oct 07 | <i>[Signature]</i> 11/22/07 |



| BRIDGE HYDRAULIC DATA | | |
|-----------------------|---|-----------|
| DESIGN DISCHARGE | = | 1380 CFS |
| DESIGN FREQUENCY | = | 25 YRS |
| DESIGN HW ELEVATION | = | 359.83 FT |
| BASE DISCHARGE | = | 1989 CFS |
| BASE FREQUENCY | = | 100 YRS |
| BASE HW ELEVATION | = | 361.82 FT |
| OVERTOPPING DISCHARGE | = | N/A CFS |
| OVERTOPPING FREQUENCY | = | 500+ YRS |
| OVERTOPPING ELEVATION | = | N/A FT |



BM #1 ELEV. = 424.04
 N 840345 E 2009572
 -BL- STA 5+09.08 53' RIGHT
 -L- STA 10+39.20 74' RIGHT
 BENCH MARK IN 12" TWIN OAK

BM # 2 ELEV. = 360.93
 N 840129 E 2010076
 -BL- STA 10+55.22 77' RIGHT
 -L- STA 15+75.51 88' RIGHT
 BENCH MARK IN 42" GUM

BM # 3 ELEV. 390.50
 N 840077 E 2010331
 -BL- STA 13+12.82 40' RIGHT
 -L- STA 18+37.79 62' RIGHT
 BENCH MARK IN 24" BIRCH

SEE SHEET 4 FOR -L- PLAN VIEW

22-OCT-2007 11:03
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 BRYAN C. KEY