

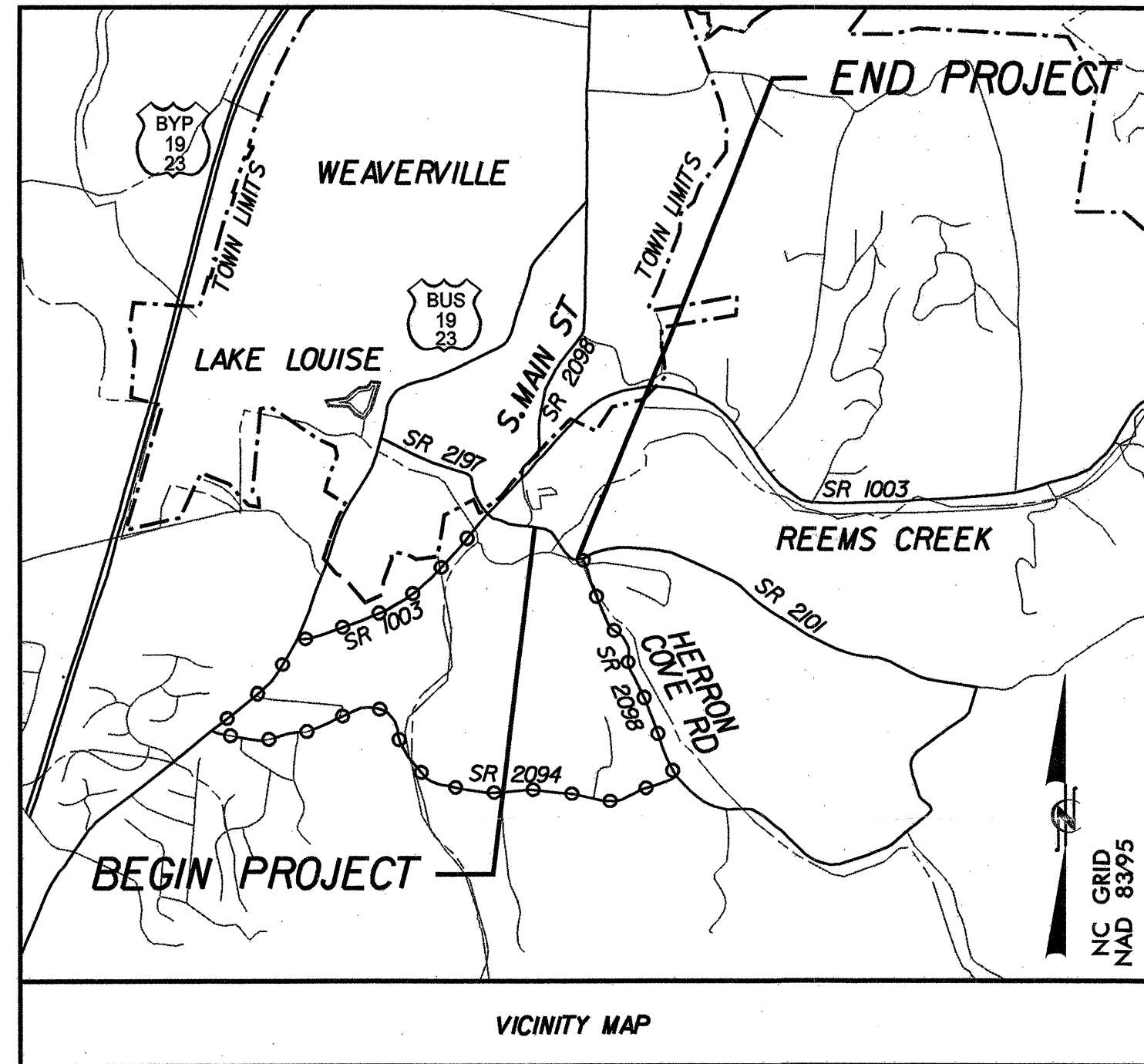
R:\0103619\Facility\Proj\B-4036_dy_1shdgn

3/6/2008

TIP PROJECT: B-4036

CONTRACT: C201850

SEE SHEET 1-A FOR INDEX OF SHEETS
SEE SHEET 1-B FOR CONVENTIONAL PLAN SHEET SYMBOLS



○—○ OFF-SITE DETOUR ROUTE

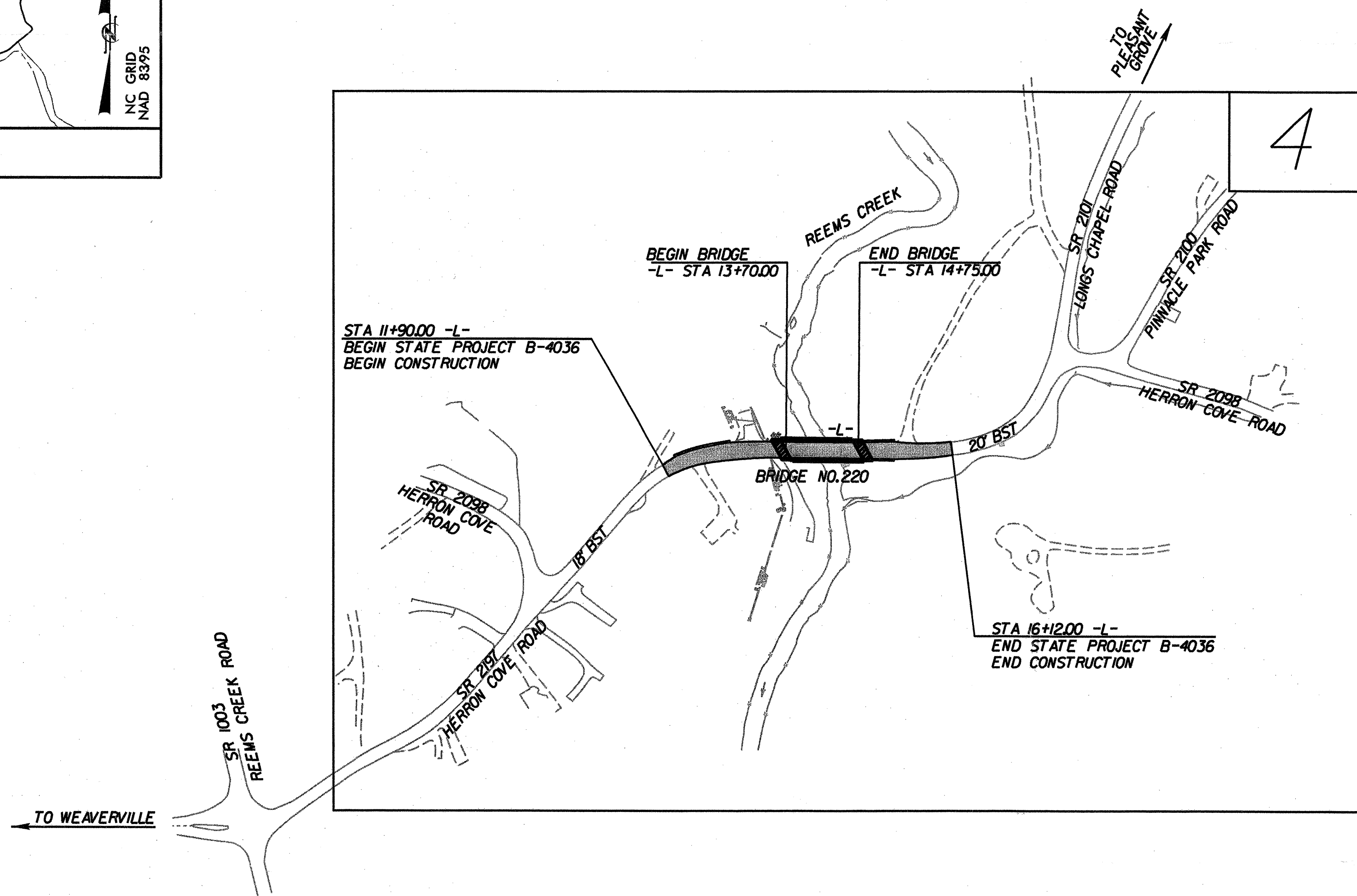
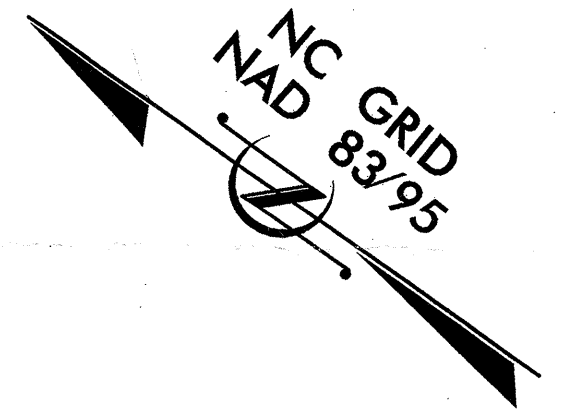
STATE OF NORTH CAROLINA

DIVISION OF HIGHWAYS

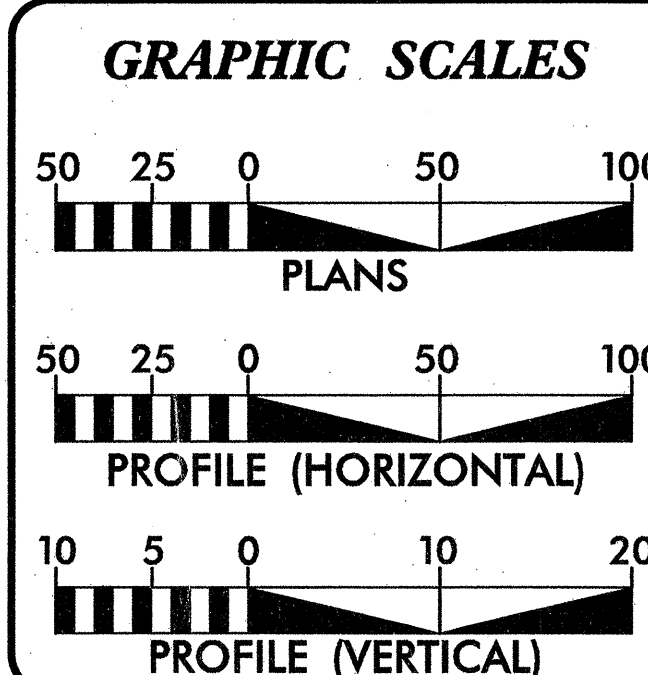
BUNCOMBE COUNTY

LOCATION: BRIDGE NO. 220 OVER REEMS CREEK ON SR 2098
TYPE OF WORK: GRADING, PAVING, DRAINAGE, AND STRUCTURE

| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
|-----------------|-----------------------------|--------------|--------------|
| N.C. | B-4036 | 1 | |
| STATE PROJ. NO. | F.A. PROJ. NO. | DESCRIPTION | |
| 33402.1.1 | BRZ-2098(1) | P.E. | |
| 33402.2.1 | BRZ-2098(1) | RIGHT-OF-WAY | |
| 33402.2.1 | BRZ-2098(1) | UTILITY | |
| 33402.3.1 | BRZ-2098(1) | CONSTRUCTION | |
| | | | |
| | | | |



NCDOT CONTACT: B.D. TAYLOR, P.E.
PROJECT ENGINEER
ROADWAY DESIGN UNIT



DESIGN DATA

| | |
|----------|-------------|
| ADT 2008 | = 1,900 VPD |
| ADT 2030 | = 3,100 VPD |
| DHV | = 9% |
| D | = 55% |
| T | = 4% * |
| V | = 25 mph |

DESIGN EXCEPTION:
DESIGN SPEED

FUNCTIONAL CLASSIFICATION:
LOCAL RURAL

* (TTST 1% + DUAL 3%)

PROJECT LENGTH

| | |
|--|--------------|
| LENGTH OF ROADWAY TIP PROJECT B-4036 | = 0.060 MILE |
| LENGTH OF STRUCTURE TIP PROJECT B-4036 | = 0.020 MILE |
| TOTAL LENGTH OF TIP PROJECT B-4036 | = 0.080 MILE |

PLANS PREPARED FOR THE NCDOT BY:

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JUNE 15, 2007

LETTING DATE:
December 16, 2008

| |
|--|
| Kimley-Horn and Associates, Inc. <small>© 2008 Post Office Box 33068 Raleigh, North Carolina 27665</small> |
| JEFFREY W. MOORE, PE PROJECT ENGINEER |
| J. JASON PACE, PE PROJECT DESIGN ENGINEER |

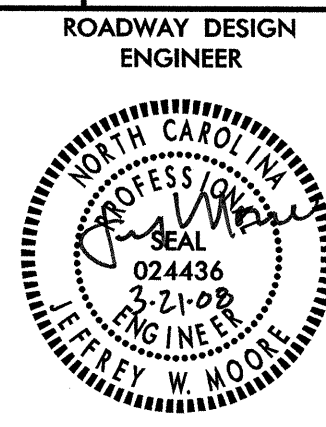
HYDRAULIC ENGINEER

SIGNATURE: *Jeffrey W. Moore* P.E.

ROADWAY DESIGN ENGINEER
 SIGNATURE: *Jeffrey W. Moore* P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER
 SIGNATURE: *Jeffrey W. Moore* P.E.



33402.3.1 (B-4036)
BUNCOMBE COUNTY

INDEX OF SHEETS

| SHEET NUMBER | SHEET |
|--------------------|--|
| 1 | TITLE SHEET |
| 1-A | INDEX OF SHEETS, GENERAL NOTES, LIST OF STANDARD DRAWINGS |
| 1-B | CONVENTIONAL SYMBOLS |
| 1-C | SURVEY CONTROL SHEET |
| 2 THRU 2-A | TYPICAL SECTIONS, PAVEMENT SCHEDULE, AND MISCELLANEOUS DETAILS |
| 2-B | ANCHORAGE FOR FRAMES |
| 3 | SUMMARY OF QUANTITIES |
| 3-A | SUMMARY OF DRAINAGE QUANTITIES |
| 3-B | SUMMARY OF GUARDRAIL, SUMMARY OF PAVEMENT REMOVAL, AND EARTHWORK SUMMARY |
| 4 | PLAN SHEET |
| 5 | PROFILE SHEET |
| TCP-1 THRU TCP-3 | TRAFFIC CONTROL PLANS |
| SD-1 | SPECIAL SIGN DESIGN |
| EC-1 THRU EC-5 | EROSION CONTROL PLANS |
| SIGN-1 THRU SIGN-3 | SIGNING PLANS |
| UC-1 THRU UC-3 | UTILITY CONSTRUCTION PLANS |
| UO-1 | UTILITIES BY OTHERS PLAN |
| X-1A | CROSS SECTION SUMMARY SHEET |
| X-1 THRU X-4 | CROSS SECTIONS |
| S-1 THRU S-21 | 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 II.

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.

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

METROPOLITAN SEWER DISTRICT, PSNC ENERGY, PROGRESS ENERGY,

WEAVERVILLE DEPARTMENT OF PUBLIC WORKS, AND VERIZON

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

RIGHT-OF-WAY MARKERS:

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

2006 ROADWAY STANDARD DRAWINGS

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

| STD. NO. | TITLE |
|----------|---|
| 200.02 | Method of Clearing - Method II |
| 225.02 | Guide for Grading Subgrade - Secondary and Local |
| 225.04 | Method of Obtaining Superelevation - Two Lane Pavement |
| 300.01 | Method of Pipe Installation - Method 'A' |
| 310.10 | Driveway Pipe Construction |
| 422.10 | Reinforced Bridge Approach Fills |
| 560.01 | Method of Shoulder Construction - High Side of Superelevated Curve - Method I |
| 654.01 | Pavement Repairs |
| 806.01 | Concrete Right-of-Way Marker |
| 806.02 | Granite Right-of-Way Marker |
| 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 |
| 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 |
| 876.02 | Guide for Rip Rap at Pipe Outlets |
| 876.04 | Drainage Ditches with Class 'B' Rip Rap |

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

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

| | |
|-------------------------------------|---------|
| State Line | ----- |
| County Line | ----- |
| Township Line | ----- |
| City Line | ----- |
| Reservation Line | ----- |
| Property Line | ----- |
| Existing Iron Pin | ○ |
| Property Corner | ----- |
| Property Monument | □ |
| Parcel/Sequence Number | ①②③ |
| Existing Fence Line | -x-x-x- |
| Proposed Woven Wire Fence | ○ |
| Proposed Chain Link Fence | □ |
| Proposed Barbed Wire Fence | ◇ |
| Existing Wetland Boundary | -W.B- |
| Proposed Wetland Boundary | -W.B- |
| Existing Endangered Animal Boundary | -E.A.B- |
| Existing Endangered Plant Boundary | -E.P.B- |

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 | -BZ 1- |
| Buffer Zone 2 | -BZ 2- |
| Flow Arrow | → |
| Disappearing Stream | → |
| Spring | ○ |
| Swamp Marsh | ⌵ |
| Proposed Lateral, Tail, Head Ditch | ▬ |
| False Sump | ▬ |

RAILROADS:

| | |
|--------------------|-------|
| Standard Gauge | ----- |
| RR Signal Milepost | ○ |
| Switch | □ |
| RR Abandoned | ----- |
| RR Dismantled | ----- |

RIGHT OF WAY:

| | |
|--|---------|
| Baseline Control Point | ◆ |
| Existing Right of Way Marker | △ |
| Existing Right of Way Line | ----- |
| Proposed Right of Way Line | ----- |
| Proposed Right of Way Line with Iron Pin and Cap Marker | ----- |
| Proposed Right of Way Line with Concrete or Granite Marker | ----- |
| Existing Control of Access | ○ |
| Proposed Control of Access | ○ |
| Existing Easement Line | -E- |
| Proposed Temporary Construction Easement | -E- |
| Proposed Temporary Drainage Easement | -T.D.E- |
| Proposed Permanent Drainage Easement | -P.D.E- |
| Proposed Permanent Utility Easement | -P.U.E- |

ROADS AND RELATED FEATURES:

| | |
|--------------------------------------|-------|
| Existing Edge of Pavement | ----- |
| Existing Curb | ----- |
| Proposed Slope Stakes Cut | -C- |
| Proposed Slope Stakes Fill | -F- |
| Proposed Wheel Chair Ramp | ⊕ |
| Curb Cut for Future Wheel Chair Ramp | ⊕ |
| Existing Metal Guardrail | ----- |
| Proposed Guardrail | ----- |
| Existing Cable Guiderail | ----- |
| Proposed Cable Guiderail | ----- |
| Equality Symbol | ⊕ |
| Pavement Removal | ⊗ |

VEGETATION:

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

EXISTING STRUCTURES:

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

UTILITIES:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

SURVEY CONTROL SHEET B-4036

| | |
|-----------------------|-----------|
| PROJECT REFERENCE NO. | SHEET NO. |
| B-4036 | I-C |
| Location and Surveys | |

NCDOT GPS STA. "B4036-1"
 LOCALIZED PROJECT COORDINATES
 N = 724829.2426
 E = 944690.8600

| BL | POINT | DESC. | NORTH | EAST | ELEVATION | L STATION | OFFSET |
|----|-------|-------|-------------|-------------|-----------|------------------------|----------|
| 1 | | BL-1 | 723273.4042 | 941792.0341 | 2048.89 | OUTSIDE PROJECT LIMITS | |
| 2 | | BL-2 | 723157.2270 | 942302.7129 | 2066.74 | OUTSIDE PROJECT LIMITS | |
| 3 | | BL-3 | 722921.6809 | 942776.5440 | 2029.24 | 14+74.98 | 11.58 LT |
| 4 | | BL-4 | 722748.6503 | 942895.3138 | 2028.14 | 16+82.28 | 12.30 RT |
| 5 | | BL-5 | 722712.1763 | 943086.2784 | 2029.44 | 18+51.22 | 56.24 RT |

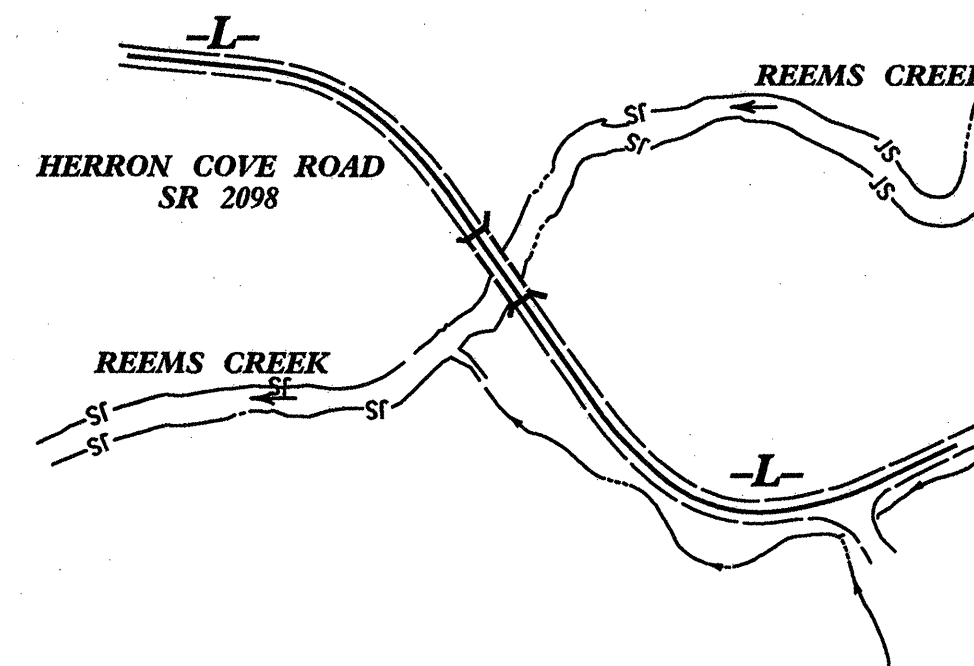
| BY | POINT | DESC. | NORTH | EAST | ELEVATION | L STATION | OFFSET |
|----|-------|-------|-------------|-------------|-----------|------------------------|--------|
| 6 | | BY-6 | 723295.9150 | 942398.5230 | 2075.67 | OUTSIDE PROJECT LIMITS | |
| 22 | | BL-2 | 723157.2270 | 942302.7129 | 2066.74 | OUTSIDE PROJECT LIMITS | |

NCDOT GPS STA. "B4036-2"
 LOCALIZED PROJECT COORDINATES
 N = 724073.6864
 E = 942437.9347

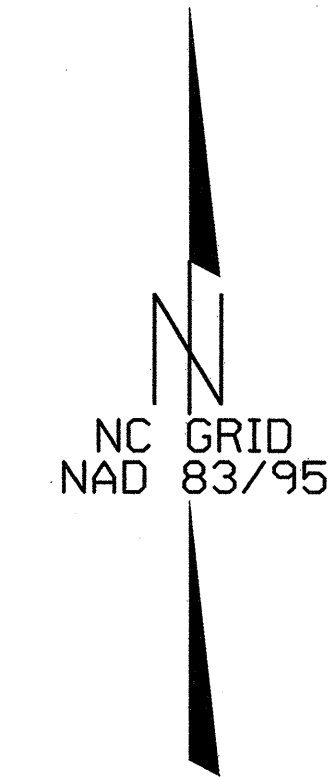
```

*****
BM1      ELEVATION = 2047.93
N 723254      E 941859
L STATION 6+69
N 77° 39' 43.7" W DIST 453.79
SPIKE IN BASE OF 14 IN. SYCAMORE
*****
BM2      ELEVATION = 2035.78
N 722997      E 942652
L STATION 6+02 379 LEFT
CHISELED SQUARE NE CORNER CONC. PAD
*****
BM3      ELEVATION = 2026.66
N 722976      E 942805
L STATION 5+32 517 LEFT
SPIKE IN BASE OF 22 IN. HAWTHORN
*****
BM4      ELEVATION = 2029.21
N 722477      E 943135
L STATION 6+69
S 50° 43' 38.0" E DIST 1075.11
SPIKE IN BASE OF 11 IN. BLACK WALNUT
*****
    
```

-L- STA. 10+00.00 BEGIN STATE PROJECT 33402.11
 LOCALIZED PROJECT COORDINATES
 N = 723157.4154
 E = 942395.1414



-L- STA. 19+43.00 END STATE PROJECT 33402.11
 LOCALIZED PROJECT COORDINATES
 N = 722803.7543
 E = 943146.7529



NOTES:

1. 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:
 B4036_LS_CONTROL_060531.TXT

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

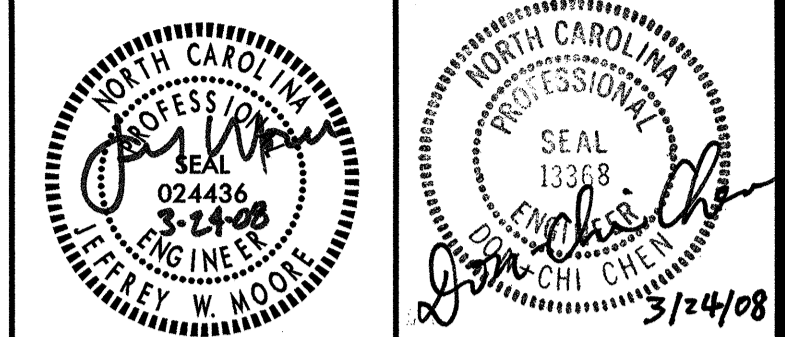
- INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
- PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
- NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING SERVICE (OPUS)

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4036-2" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 724073.6864(FT) EASTING: 942437.9347(FT) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999801728 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4036-2" TO -L- STATION 10+00.00 IS S 2°40'26" W 917.27' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

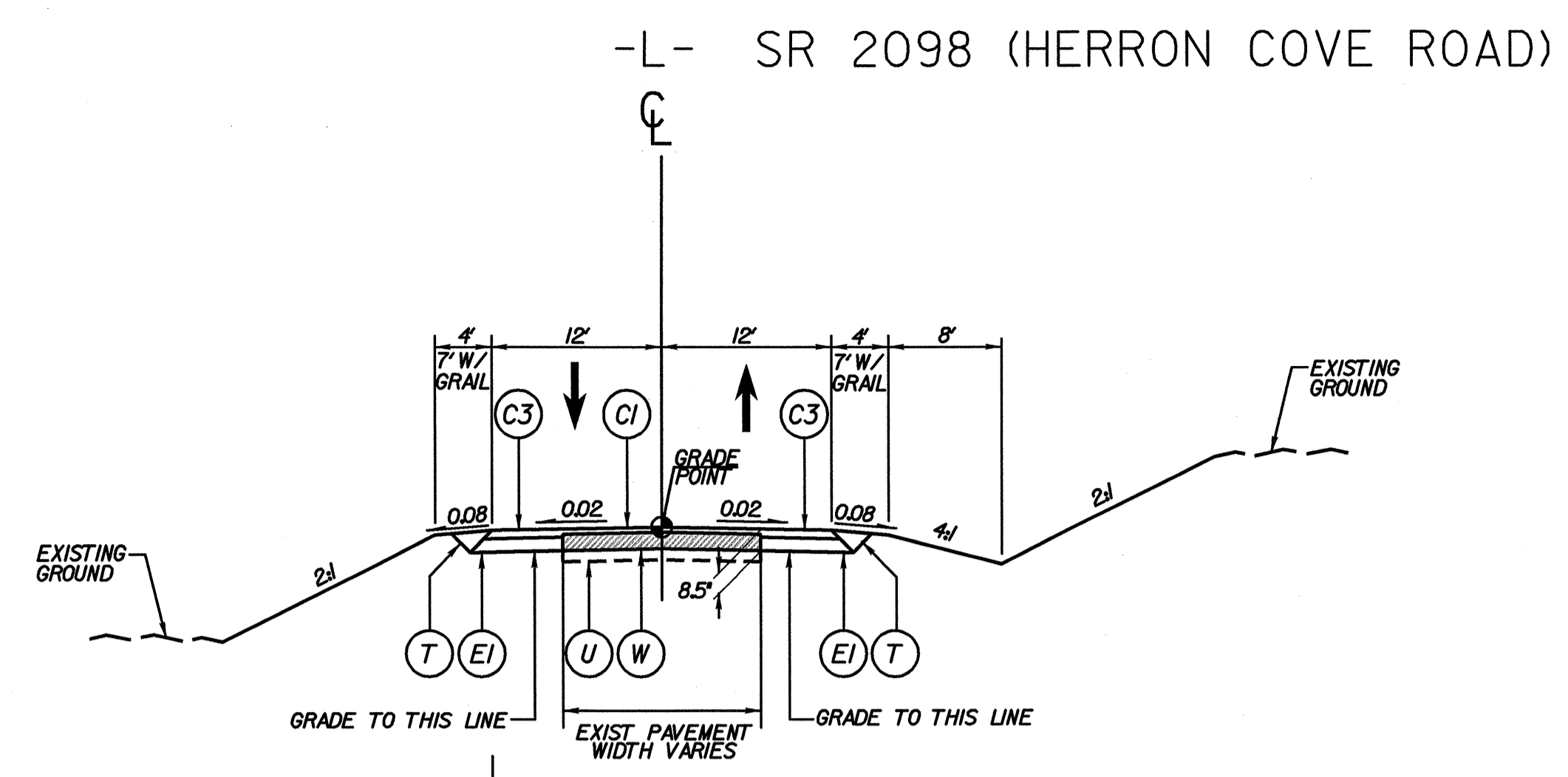
Kimley-Horn and Associates, Inc.
 P.O. BOX 33068
 RALEIGH, N.C. 27636-3068



PAVEMENT SCHEDULE

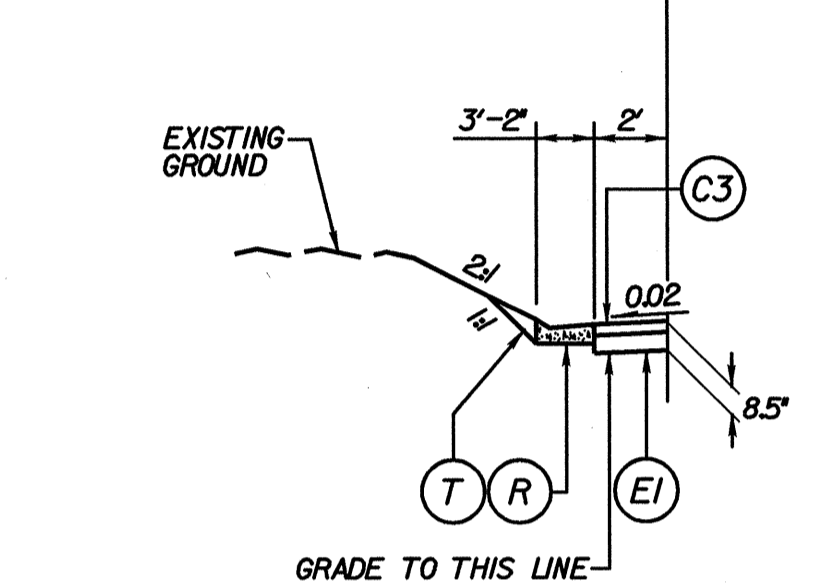
| | |
|-----------|--|
| C1 | PROP. APPROX. 1/2" ASPHALT CONCRETE SURFACE COURSE TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. |
| C2 | PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. IN EACH OF TWO LAYERS. |
| C3 | PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS. |
| C4 | 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 LESS THAN 1" IN DEPTH OR GREATER THAN 1/2" IN DEPTH. |
| E1 | PROP. APPROX. 5/8" ASPHALT CONCRETE BASE COURSE TYPE B25.0B, AT AN AVERAGE RATE OF 627 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" OR GREATER THAN 5/2" DEPTH. |
| J | PROPOSED 6" AGGREGATE BASE COURSE |
| R | PROPOSED SHOULDER BERM GUTTER |
| T | EARTH MATERIAL |
| U | EXISTING PAVEMENT |
| W | VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL WITH THIS SHEET) |

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



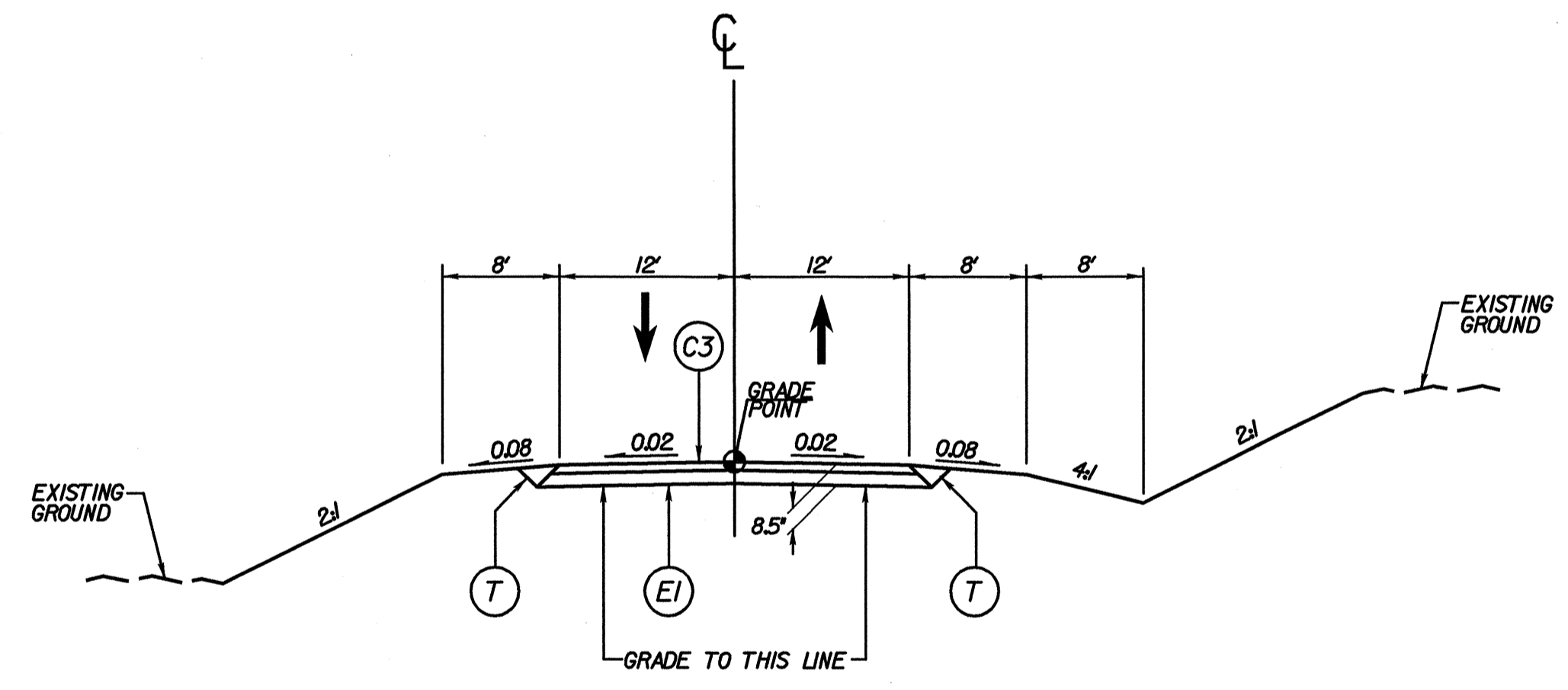
TYPICAL SECTION NO. 1

-L- STA 11+90.00 TO STA 12+80.00
 -L- STA 14+90.00 TO STA 16+12.00



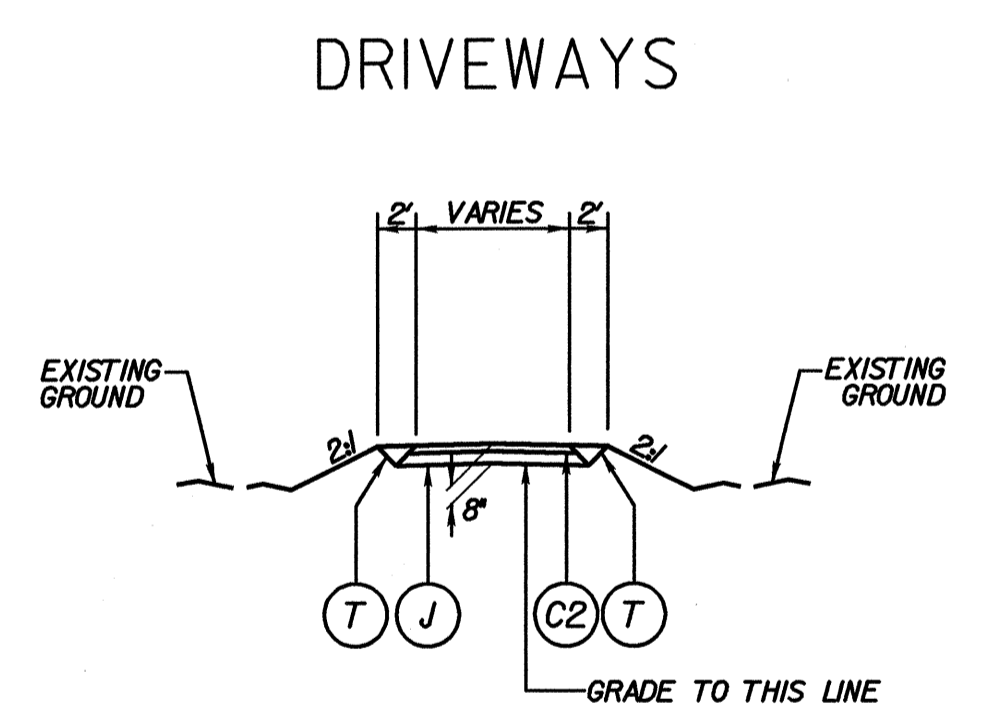
TYPICAL SECTION NO. 1A

-L- STA 12+10.00 TO STA 12+90.00 (LT) -L- SR 2098 (HERRON COVE ROAD)



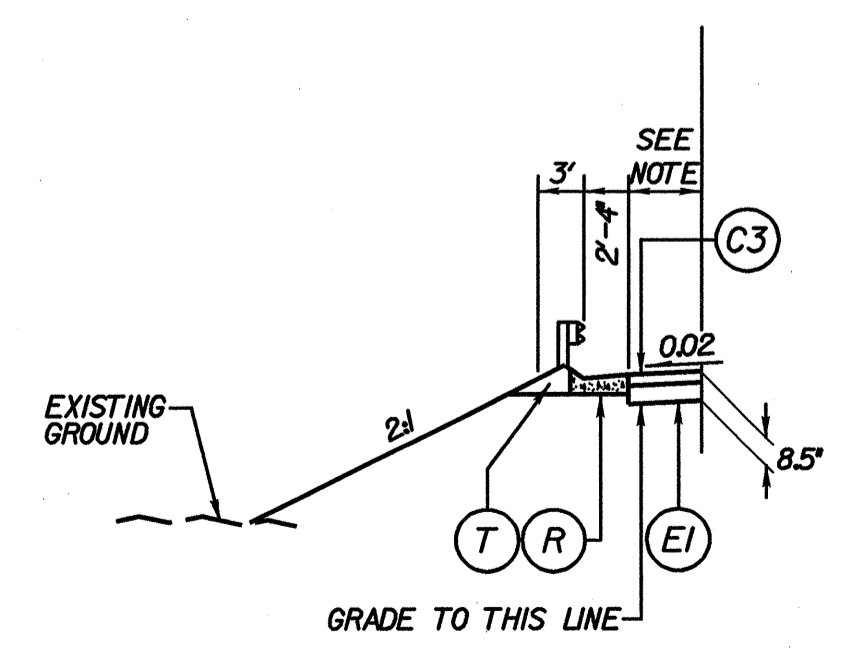
TYPICAL SECTION NO. 2

-L- STA 12+80.00 TO STA 13+70.00 (BEGIN BRIDGE)
 -L- STA 14+75.00 (END BRIDGE) TO STA 14+90.00



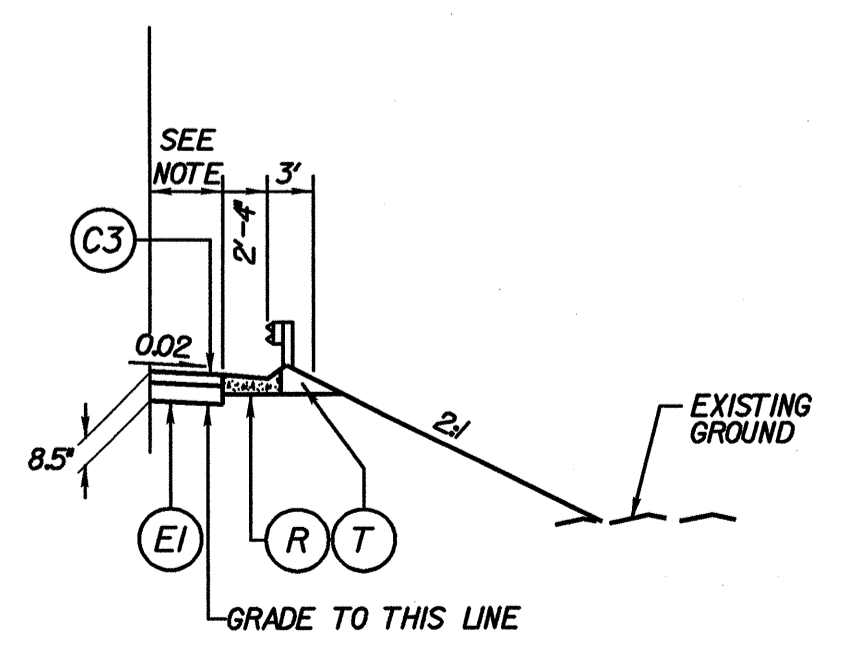
TYPICAL SECTION NO. 3

-L- STA 12+40 (RT)
 -L- STA 13+15 (LT)
 -L- STA 13+15 (RT)



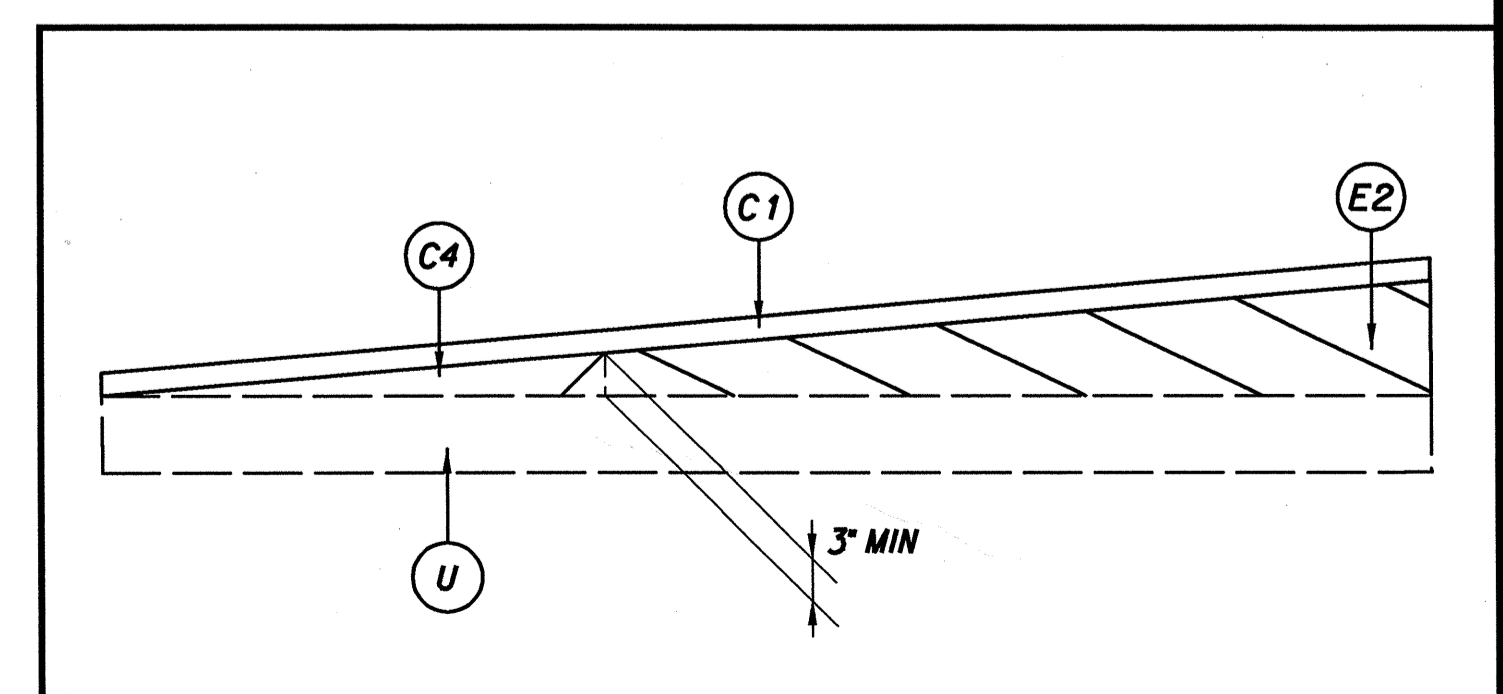
TYPICAL SECTION NO. 2A

-L- STA 14+82.00 TO STA 15+28.00 (LT)
 NOTE: WIDTH VARIES FROM 0' TO 1.8'





TYPICAL SECTION NO. 2B

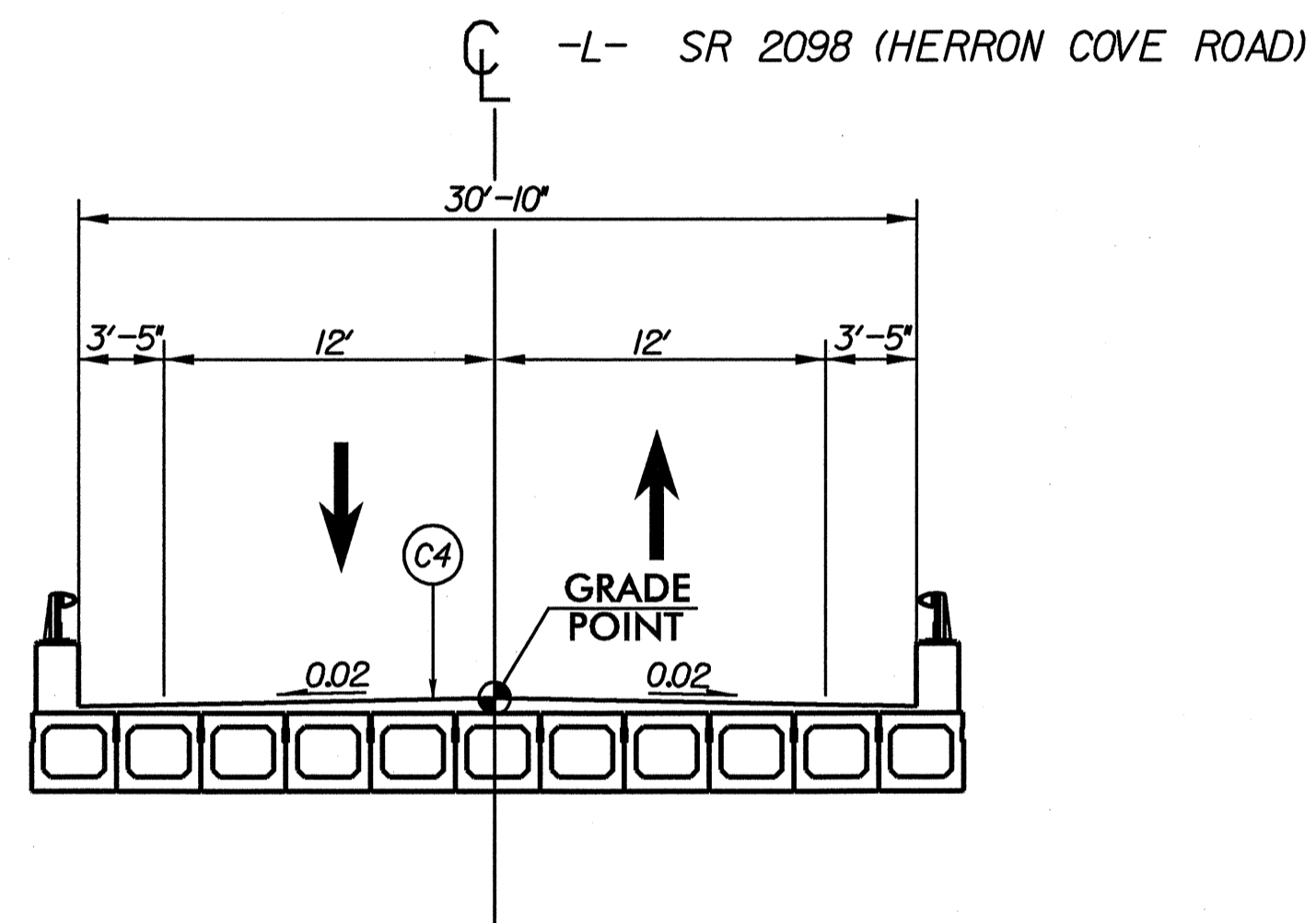
-L- STA 14+96.00 TO STA 15+28.00 (RT)
 NOTE: WIDTH VARIES FROM 0' TO 0.8'



DETAIL W/ SHOWING METHOD OF WEDGING

R:\01036191\Roadway\Proj\B4036_L1.dwg
 3/24/2008

| | | |
|---|---|------------------|
|  Kimley-Horn and Associates, Inc. P.O. BOX 33068 RALEIGH, N.C. 27636-3068 | PROJECT REFERENCE NO. B-4036 | SHEET NO. 2-A |
| |  | |



BRIDGE TYPICAL SECTION NO. 1

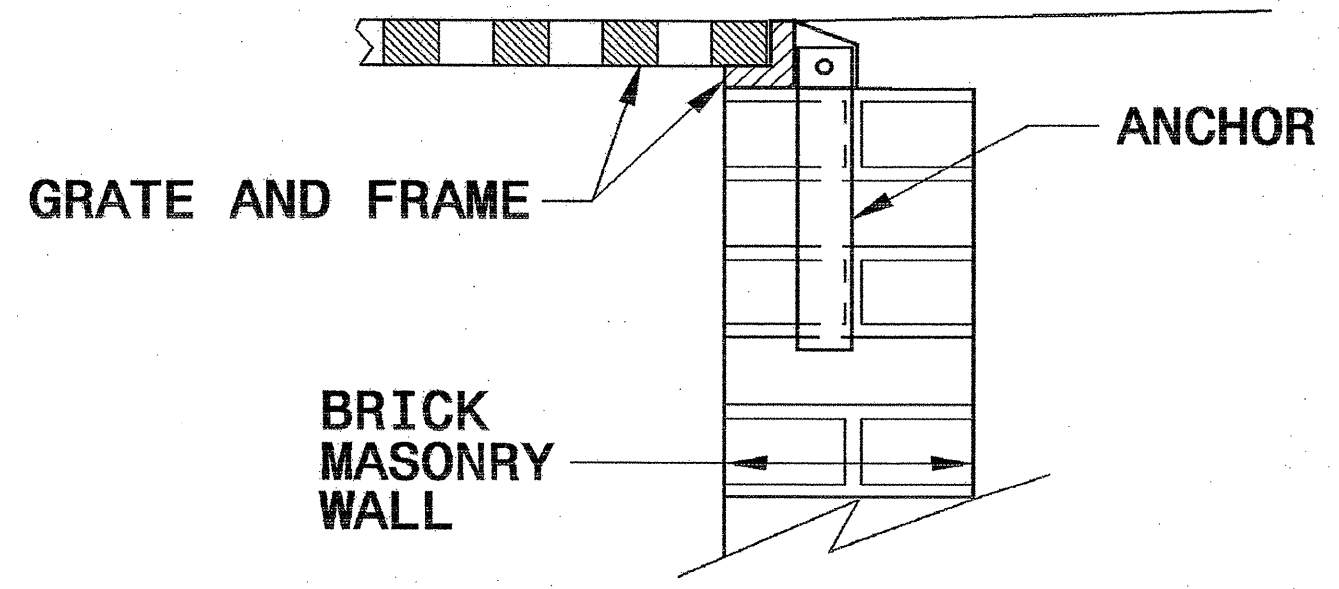
DESIGN DATA

| | | |
|----------|---|-----------|
| ADT 2008 | = | 1,900 VPD |
| ADT 2030 | = | 3,100 VPD |
| DHV | = | 9% |
| D | = | 55% |
| TTST | = | 1% |
| DUAL | = | 3% |
| V | = | 25 mph |

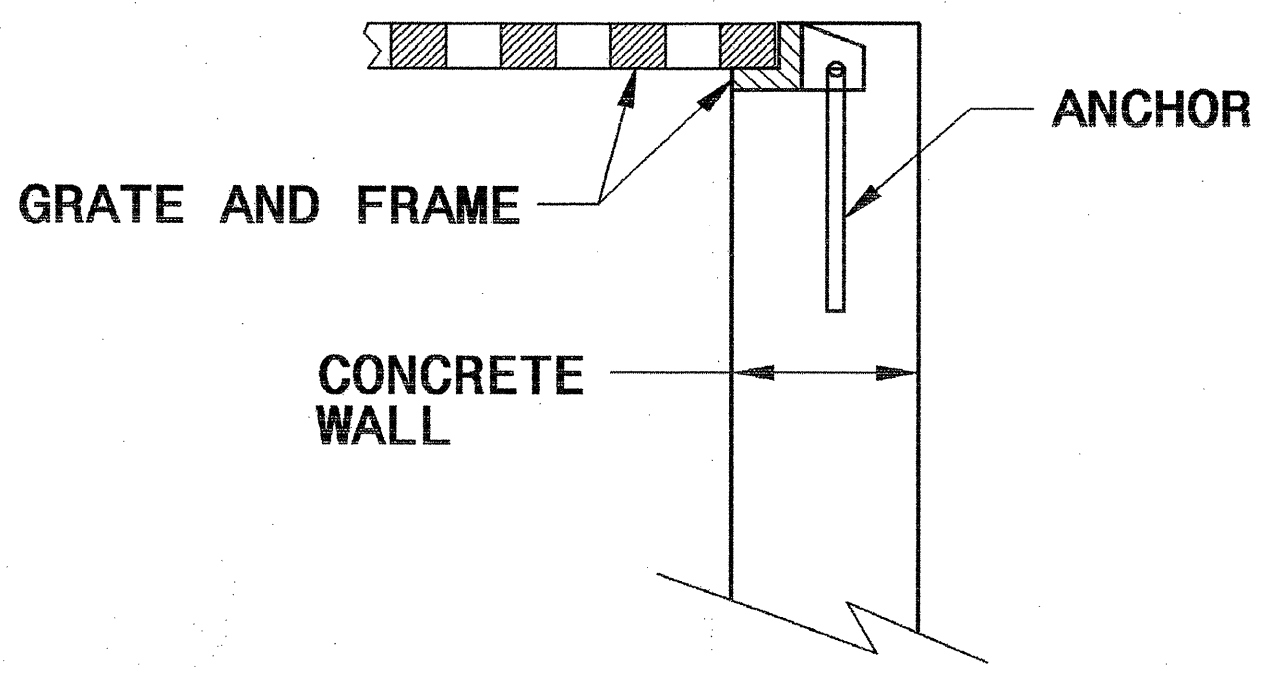
NOTE: SEE STRUCTURE PLANS FOR ASPHALT DEPTH. ASPHALT DEPTH VARIES APPROXIMATELY FROM 6 1/2" TO 6 7/8"

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

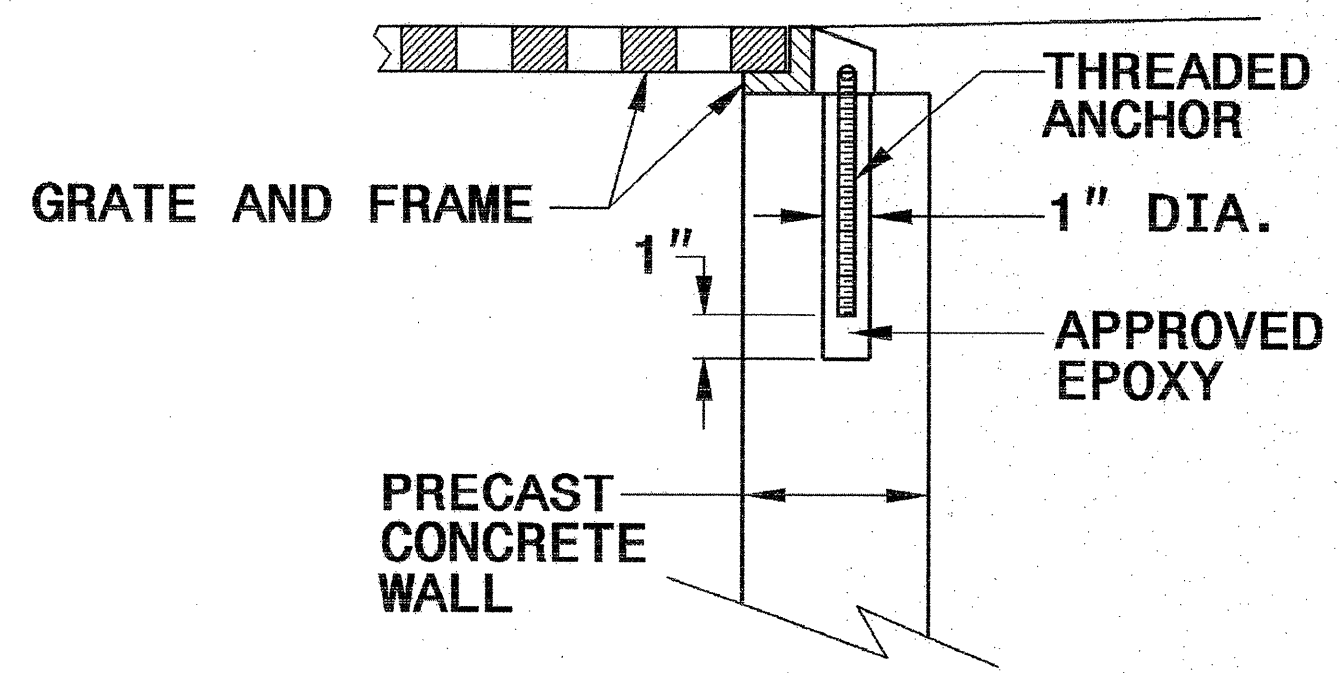
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.



BRICK MASONRY CONSTRUCTION



CONCRETE CONSTRUCTION



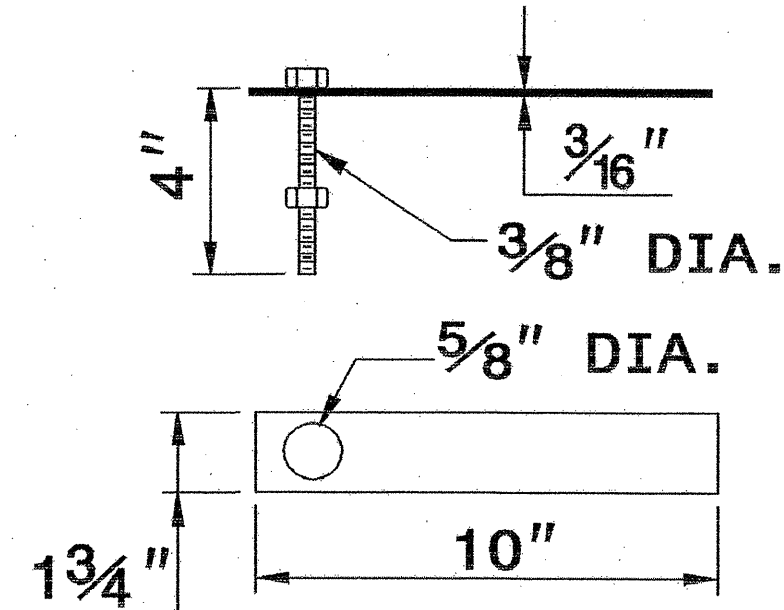
PRECAST CONCRETE CONSTRUCTION

DETAIL SHOWING ANCHORAGE OF FRAME FOR GRATED DROP INLET

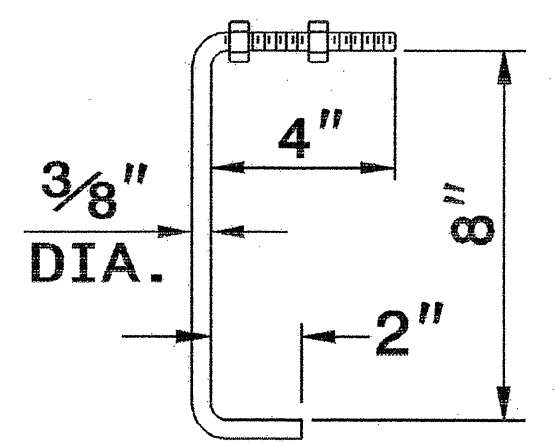
ENGLISH DETAIL DRAWING FOR
ANCHORAGE FOR FRAMES
BRICK/CONCRETE/PRECAST CONCRETE

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

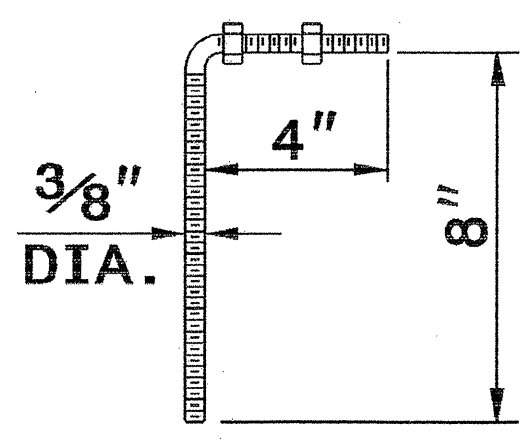
NOTE:
CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



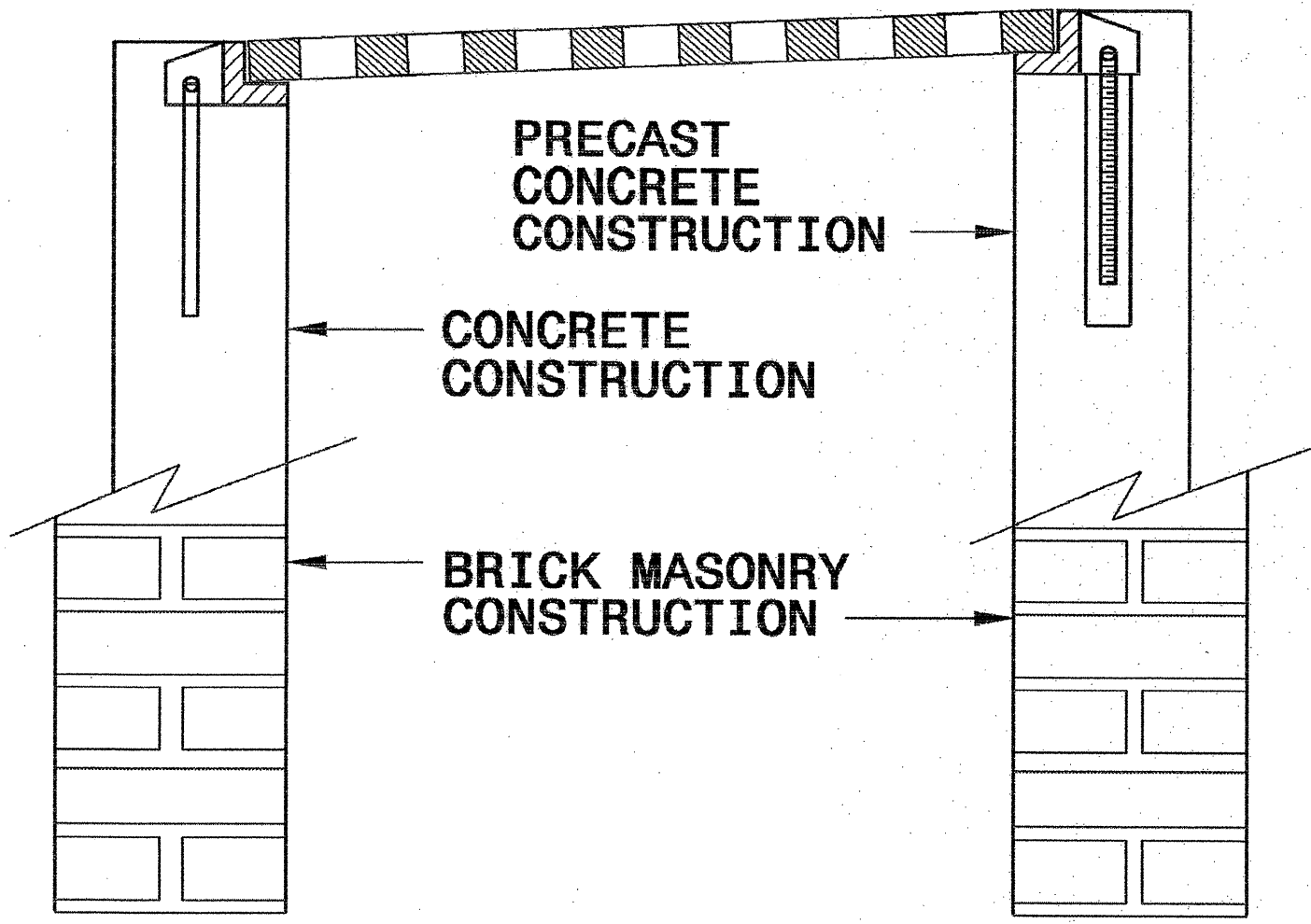
MASONRY ANCHOR
3/8" DIA. BOLT WITH PLATE



CONCRETE ANCHOR
3/8" DIA. BENT BAR

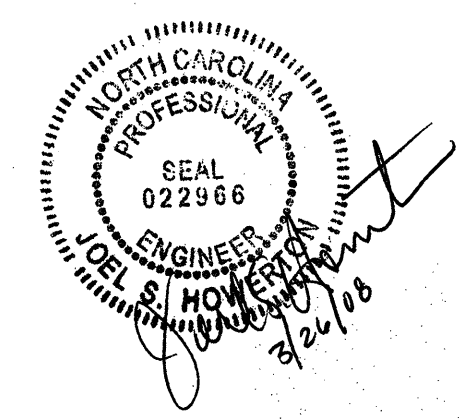


PRECAST CONCRETE ANCHOR
3/8" DIA. BENT BAR



FRAME AND GRATE INSTALLATION FOR NORMAL CROWN AND SUPERELEVATED SECTIONS

27-SEP-2006 08:59
S:\Contractors\Standards\stds\stds\06\Std to Special Details\84025 Anchorage for Frames\0840d25.dgn
Standard - HT PS22293



**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.:

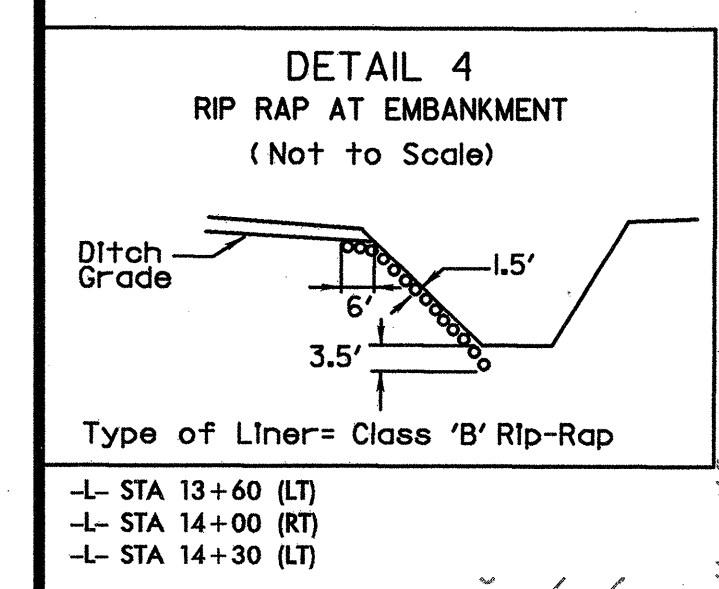
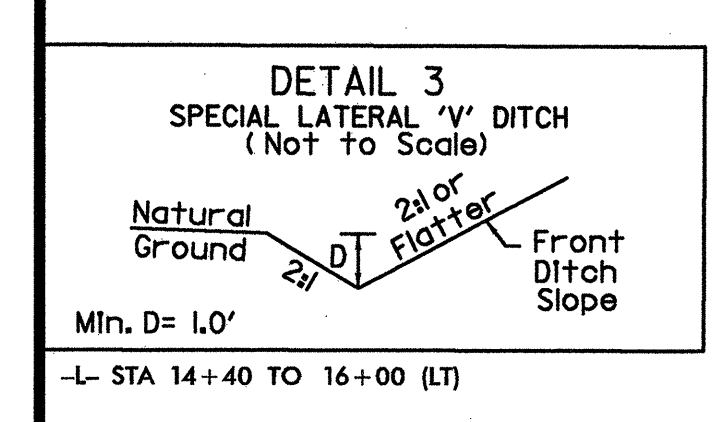
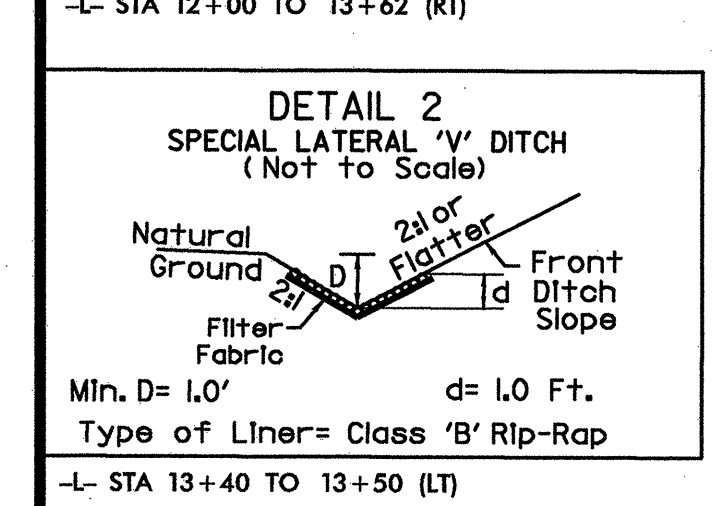
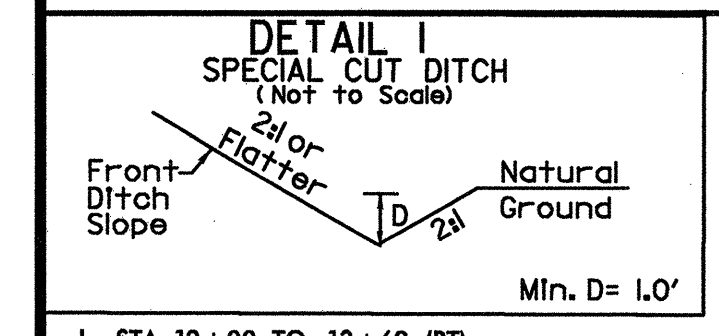
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201850

| ItemNumber | Sec # | Quantity | Unit | Description | ItemNumber | Sec # | Quantity | Unit | Description | ItemNumber | Sec # | Quantity | Unit | Description |
|--------------|-------|----------|------|--|--------------|-------|----------|------|--|--------------|-------|----------|------|---------------------------------------|
| 0000100000-N | 800 | Lump Sum | | MOBILIZATION | 2077000000-E | 815 | 6 | LF | 6" OUTLET PIPE (SUBDRAINS) | 5800000000-E | 1530 | 165 | LF | ABANDON 6" UTILITY PIPE |
| 0029000000-N | SP | Lump Sum | | REINFORCED BRIDGE APPROACH FILL, STATION ***** (14+22.50-L-) | 2286000000-N | 840 | 3 | EA | MASONRY DRAINAGE STRUCTURES | 5804000000-E | 1530 | 72 | LF | ABANDON 12" UTILITY PIPE |
| 0043000000-N | 226 | Lump Sum | | GRADING | 2367000000-N | 840 | 3 | EA | FRAME WITH TWO GRATES, STD 840.29 | 6000000000-E | 1605 | 440 | LF | TEMPORARY SILT FENCE |
| 0050000000-E | 226 | 1 | ACR | SUPPLEMENTARY CLEARING & GRUB- BING | 2556000000-E | 846 | 160 | LF | SHOULDER BERM GUTTER | 6006000000-E | 1610 | 75 | TON | STONE FOR EROSION CONTROL, CLASS A |
| 0057000000-E | 226 | 50 | CY | UNDERCUT EXCAVATION | 3030000000-E | 862 | 125 | LF | STEEL BM GUARDRAIL | 6009000000-E | 1610 | 175 | TON | STONE FOR EROSION CONTROL, CLASS B |
| 0080000000-E | SP | 10 | TON | CLASS IV SUBGRADE STABILIZA- TION | 3045000000-E | 862 | 37.5 | LF | STEEL BM GUARDRAIL, SHOP CURVED | 6012000000-E | 1610 | 65 | TON | SEDIMENT CONTROL STONE |
| 0195000000-E | 265 | 10 | CY | SELECT GRANULAR MATERIAL | 3150000000-N | 862 | 5 | EA | ADDITIONAL GUARDRAIL POSTS | 6015000000-E | 1615 | 0.5 | ACR | TEMPORARY MULCHING |
| 0196000000-E | 270 | 10 | SY | FABRIC FOR SOIL STABILIZATION | 3195000000-N | 862 | 2 | EA | GUARDRAIL ANCHOR UNITS, TYPE AT-1 | 6018000000-E | 1620 | 50 | LB | SEED FOR TEMPORARY SEEDING |
| 0318000000-E | 300 | 33 | TON | FOUNDATION CONDITIONING MATE- RIAL, MINOR STRS | 3215000000-N | 862 | 4 | EA | GUARDRAIL ANCHOR UNITS, TYPE III | 6021000000-E | 1620 | 1.25 | TON | FERTILIZER FOR TEMPORARY SEED- ING |
| 0343000000-E | 310 | 52 | LF | 15" SIDE DRAIN PIPE | 3270000000-N | SP | 2 | EA | GUARDRAIL ANCHOR UNITS, TYPE 350 | 6029000000-E | SP | 250 | LF | SAFETY FENCE |
| 0366000000-E | 310 | 60 | LF | 15" RC PIPE CULVERTS, CLASS III | 3649000000-E | 876 | 70 | TON | RIP RAP, CLASS B | 6030000000-E | 1630 | 430 | CY | SILT EXCAVATION |
| 0372000000-E | 310 | 52 | LF | 18" RC PIPE CULVERTS, CLASS III | 3656000000-E | 876 | 370 | SY | FILTER FABRIC FOR DRAINAGE | 6036000000-E | 1631 | 420 | SY | MATTING FOR EROSION CONTROL |
| 1121000000-E | 520 | 110 | TON | AGGREGATE BASE COURSE | 3659000000-N | SP | 1 | EA | PREFORMED SCOUR HOLES WITH LEVEL SPREADER APRON | 6037000000-E | SP | 10 | SY | COIR FIBER MAT |
| 1220000000-E | 545 | 30 | TON | INCIDENTAL STONE BASE | 4072000000-E | 903 | 44 | LF | SUPPORTS, 3-LB STEEL U-CHANNEL | 6038000000-E | SP | 50 | SY | PERMANENT SOIL REINFORCEMENT MAT |
| 1489000000-E | 610 | 190 | TON | ASPHALT CONC BASE COURSE, TYPE B25.0B | 4102000000-N | 904 | 3 | EA | SIGN ERECTION, TYPE E | 6042000000-E | 1632 | 60 | LF | 1/4" HARDWARE CLOTH |
| 1525000000-E | 610 | 260 | TON | ASPHALT CONC SURFACE COURSE, TYPE SP9.5A | 4155000000-N | 907 | 9 | EA | DISPOSAL OF SIGN SYSTEM, U- CHANNEL | 6071030000-E | SP | 110 | LF | COIR FIBER BAFFLES |
| 1560000000-E | 620 | 30 | TON | ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22 | 4400000000-E | 1110 | 471 | SF | WORK ZONE SIGNS (STATIONARY) | 6071050000-E | SP | 1 | EA | *** SKIMMER (1-1/2") |
| 1693000000-E | 654 | 20 | TON | ASPHALT PLANT MIX, PAVEMENT REPAIR | 4410000000-E | 1110 | 177 | SF | WORK ZONE SIGNS (BARRICADE MOUNTED) | 6084000000-E | 1660 | 1 | ACR | SEEDING & MULCHING |
| 2000000000-N | 806 | 15 | EA | RIGHT OF WAY MARKERS | 4430000000-N | 1130 | 15 | EA | DRUMS | 6087000000-E | 1660 | 0.5 | ACR | MOWING |
| 2022000000-E | 815 | 6 | CY | SUBDRAIN EXCAVATION | 4445000000-E | 1145 | 156 | LF | BARRICADES (TYPE III) | 6090000000-E | 1661 | 50 | LB | SEED FOR REPAIR SEEDING |
| 2033000000-E | 815 | 5 | CY | SUBDRAIN FINE AGGREGATE | 4810000000-E | 1205 | 3,376 | LF | PAINT PAVEMENT MARKING LINES (4") | 6093000000-E | 1661 | 0.25 | TON | FERTILIZER FOR REPAIR SEEDING |
| 2044000000-E | 815 | 25 | LF | 6" PERFORATED SUBDRAIN PIPE | 5326200000-E | 1510 | 255 | LF | 12" WATER LINE | 6096000000-E | 1662 | 50 | LB | SEED FOR SUPPLEMENTAL SEEDING |
| 2055000000-E | 815 | 1 | EA | 6" SUBDRAIN PIPE WYES, TEES, & ELBOWS | 5558000000-E | 1515 | 2 | EA | 12" VALVE | 6108000000-E | 1665 | 0.5 | TON | FERTILIZER TOPDRESSING |
| 2066000000-N | 815 | 1 | EA | CONCRETE PAD FOR SUBDRAIN PIPE OUTLET | 5648000000-N | 1515 | 3 | EA | RELOCATE WATER METER | 6114000000-N | SP | 2 | HR | SPECIALIZED HAND MOWING |
| | | | | | 5672000000-N | 1515 | 1 | EA | RELOCATE FIRE HYDRANT | 6117000000-N | SP | 12 | EA | RESPONSE FOR EROSION CONTROL |

| REVISIONS | |
|-----------|--|
| | |
| | |
| | |

PI Sta 11+88.48
 $\Delta = 38' 45" 28.9" (RT)$
 $D = 28' 38" 52.4"$
 $L = 135.29'$
 $T = 70.35'$
 $R = 200.00'$
 $SE = 0.08$
 $RO = SEE PLANS$
 $DS = 25 MPH$

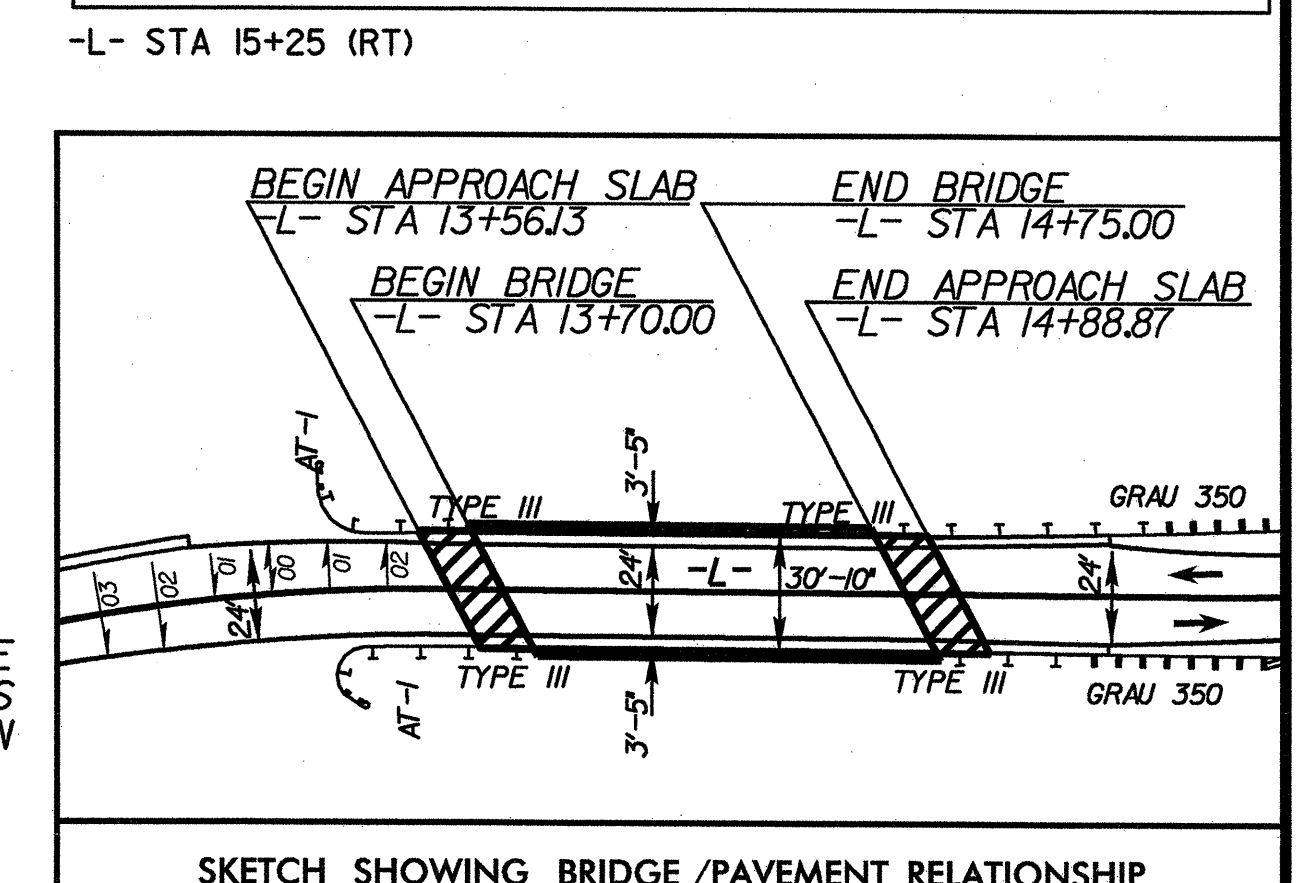
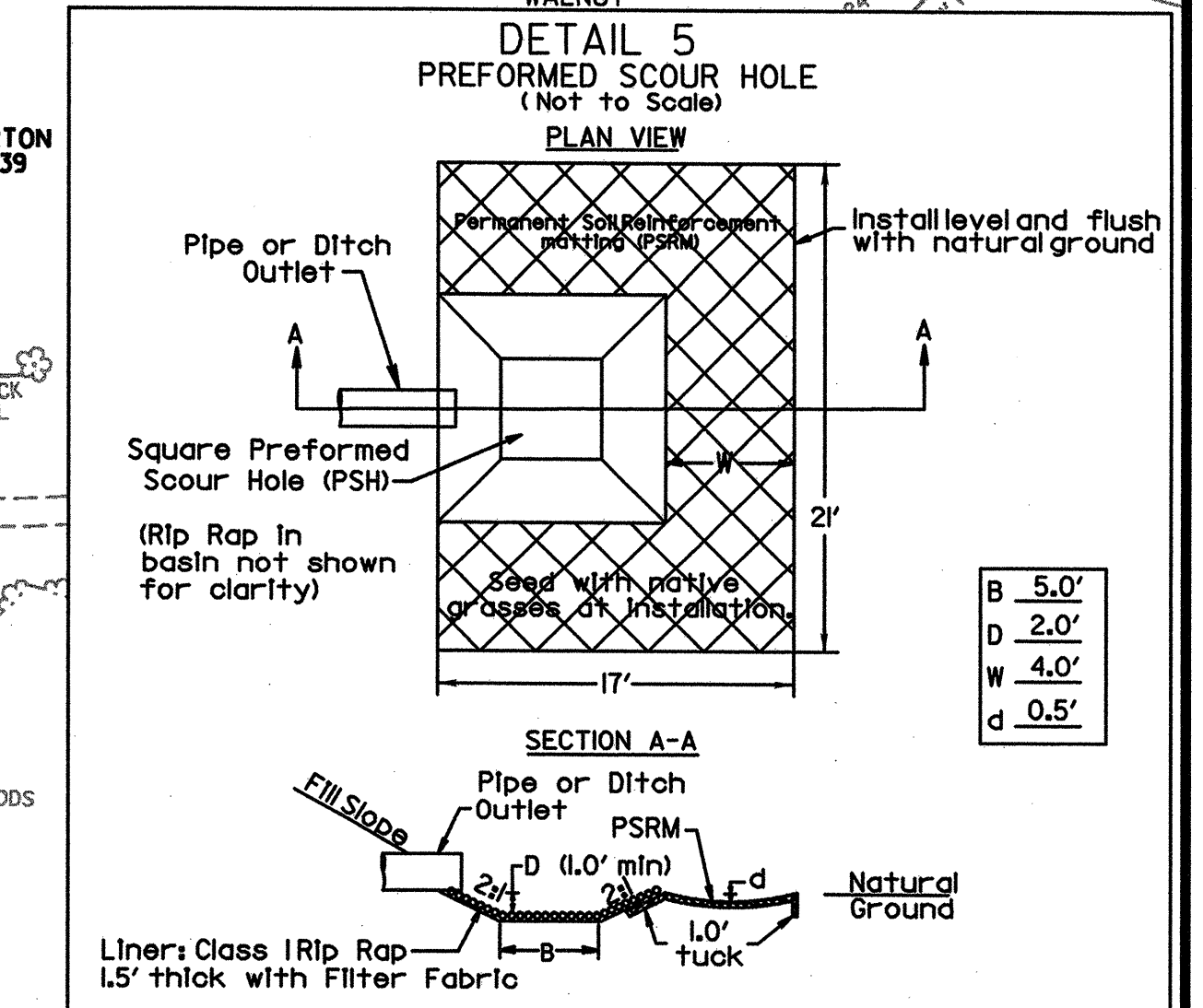
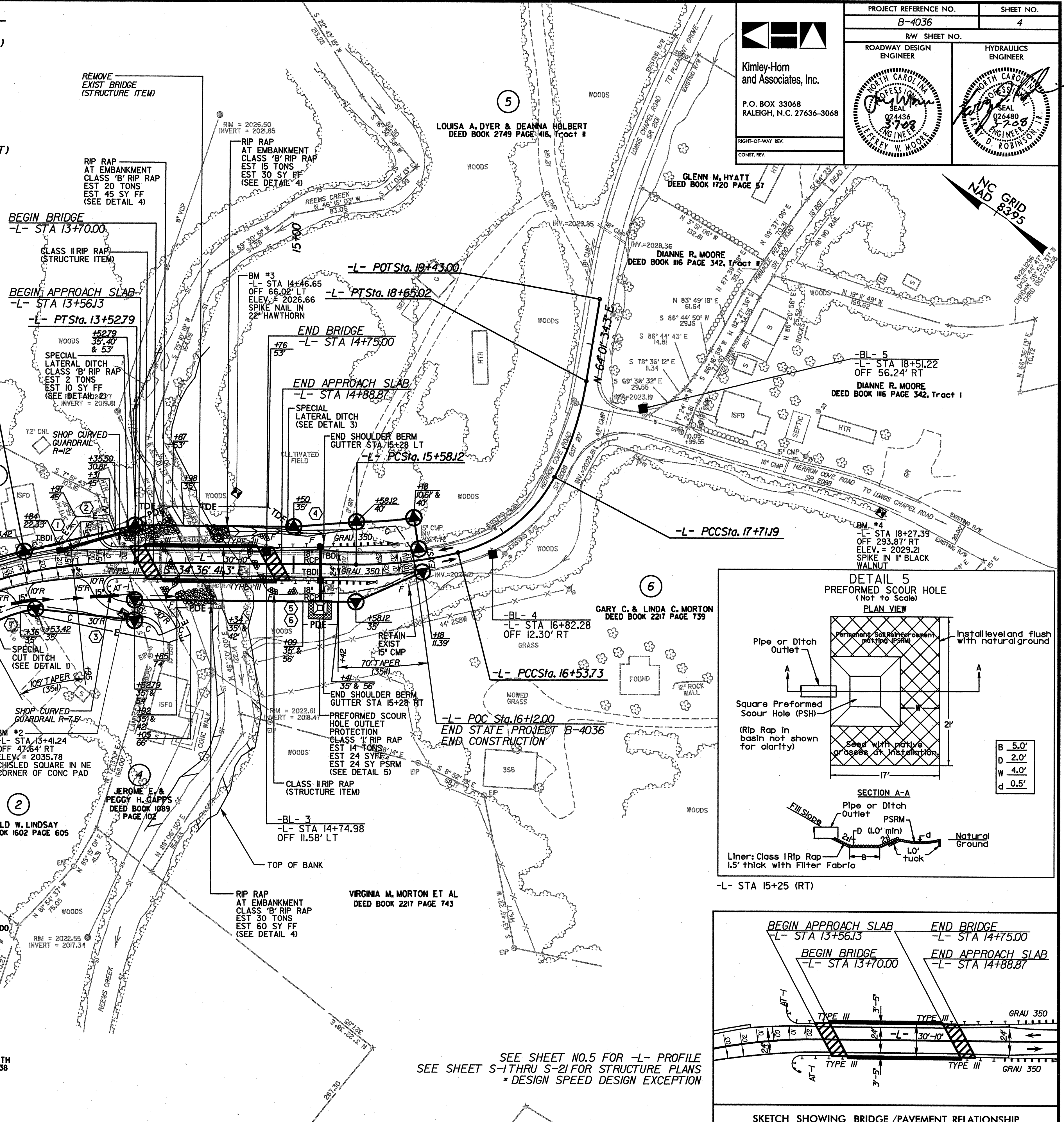
PI Sta 13+03.27
 $\Delta = 11' 23" 14.4" (RT)$
 $D = 11' 27" 33.0"$
 $L = 99.37'$
 $T = 49.85'$
 $R = 500.00'$
 $SE = SEE PLANS$
 $RO = SEE PLANS$
 $DS = 40 MPH$



PI Sta 16+06.19
 $\Delta = 14' 36" 29.2" (LT)$
 $D = 15' 16" 43.9"$
 $L = 95.61'$
 $T = 48.07'$
 $R = 375.00'$
 $SE = SEE PLANS$
 $RO = SEE PLANS$
 $DS = 35 MPH$

PI Sta 17+16.17
 $\Delta = 48' 04" 22.7" (LT)$
 $D = 40' 55" 32.0"$
 $L = 117.46'$
 $T = 62.44'$
 $R = 140.00'$
 $SE = EXISTING$
 $RO = EXISTING$

PI Sta 18+18.53
 $\Delta = 18' 40" 52.5" (LT)$
 $D = 19' 54" 38.5"$
 $L = 93.83'$
 $T = 47.33'$
 $R = 287.76'$
 $SE = EXISTING$
 $RO = EXISTING$



SEE SHEET NO.5 FOR -L- PROFILE
 SEE SHEET S-1 THRU S-21 FOR STRUCTURE PLANS
 * DESIGN SPEED DESIGN EXCEPTION

R:\0103619\Roadway\Pro\B4036_rdy_psh.dgn
3/7/2008

BM#2
CHISEL SQUARE IN NE
CORNER OF CONCRETE PAD
-L- STA 13+41.24 (47.64' RT)
ELEV 2035.78'

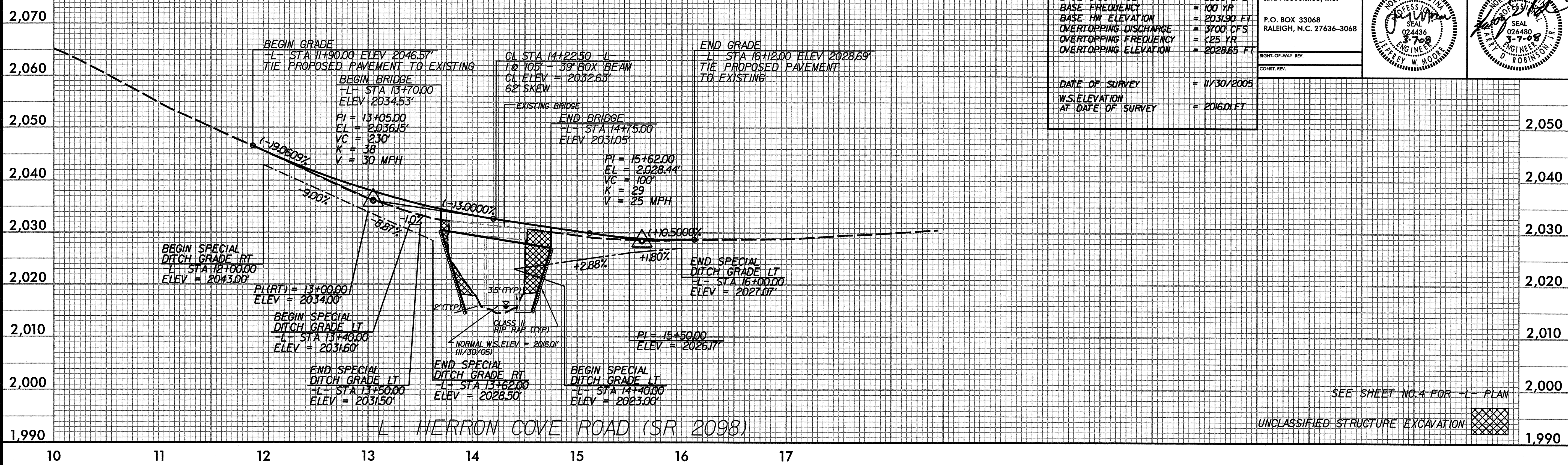
BM#3
SPIKE NAIL IN 22" HAWTHORN
-L- STA 14+46.65 (66.02' LT)
ELEV 2026.66'

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE = 4000 CFS
DESIGN FREQUENCY = 25 YR
DESIGN HW ELEVATION = 2029.20 FT
BASE DISCHARGE = 5800 CFS
BASE FREQUENCY = 100 YR
BASE HW ELEVATION = 2031.90 FT
OVERTOPPING DISCHARGE = 3700 CFS
OVERTOPPING FREQUENCY = <25 YR
OVERTOPPING ELEVATION = 2028.65 FT

Kimley-Horn
and Associates, Inc.
P.O. BOX 33068
RALEIGH, N.C. 27636-3068

| | |
|---------------------------------|---------------------|
| PROJECT REFERENCE NO. B-4036 | SHEET NO. 5 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| | |



R:\0103618\Roadway\Proj\B-4036_dg_dg_pf.dgn

3/7/2008