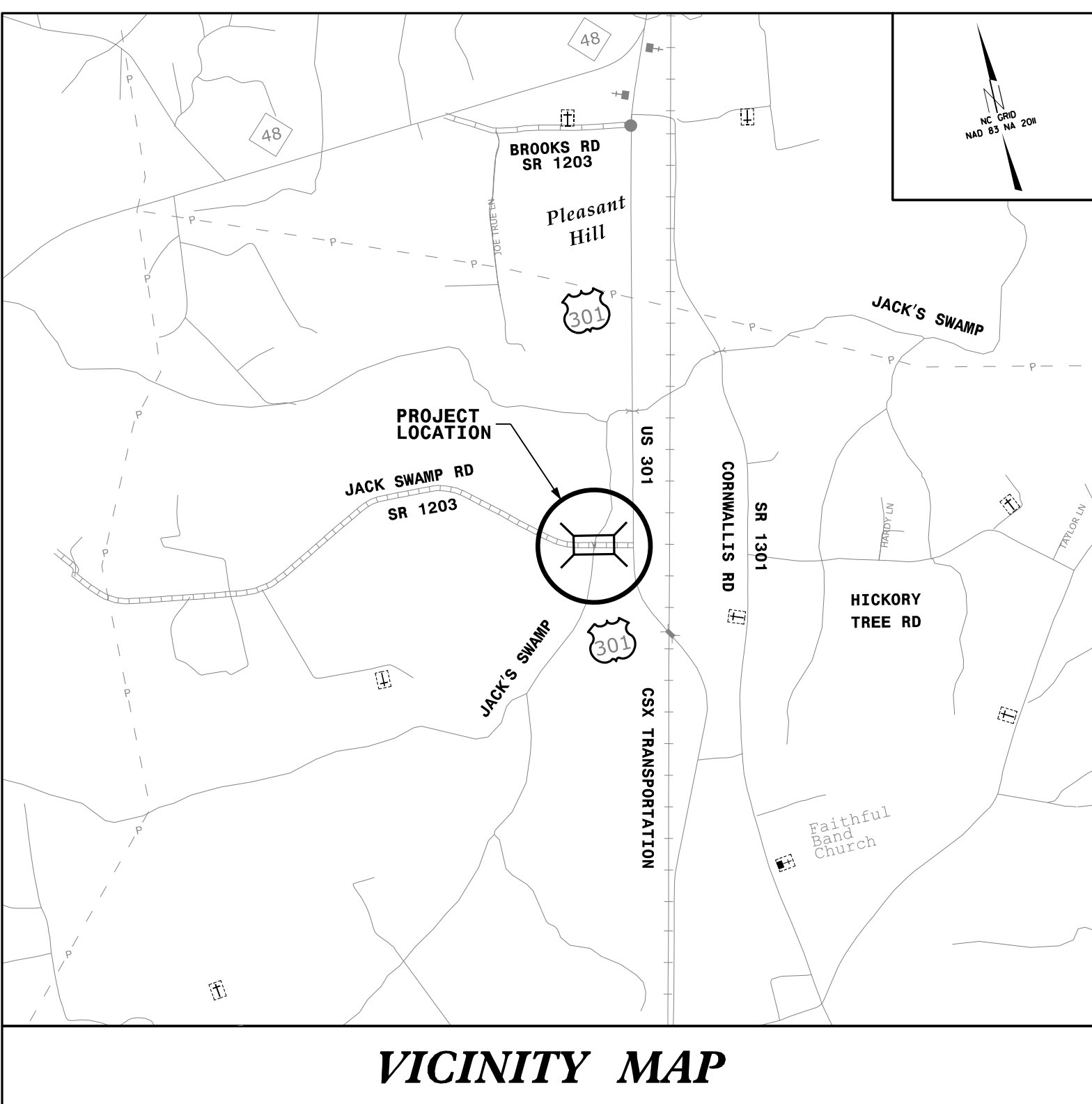


09/08/20

TIP PROJECT: BR-0118

CONTRACT: C204530

See Sheet 1A For Index of Sheets



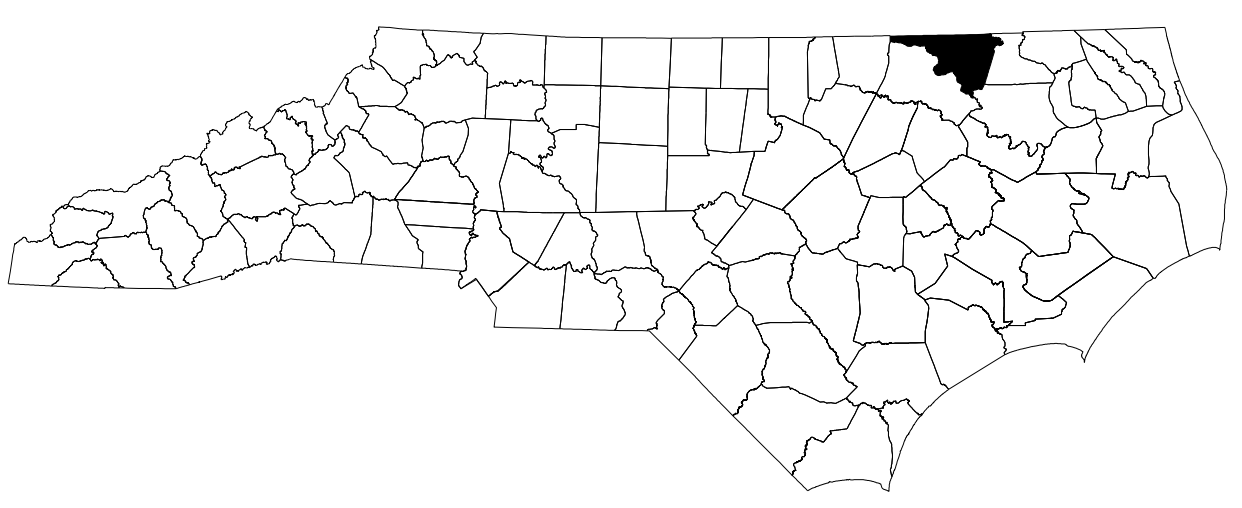
VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

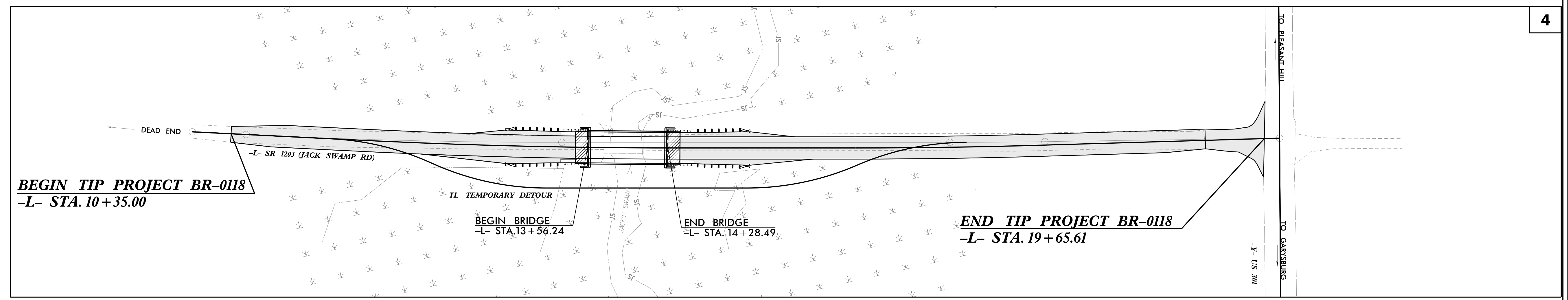
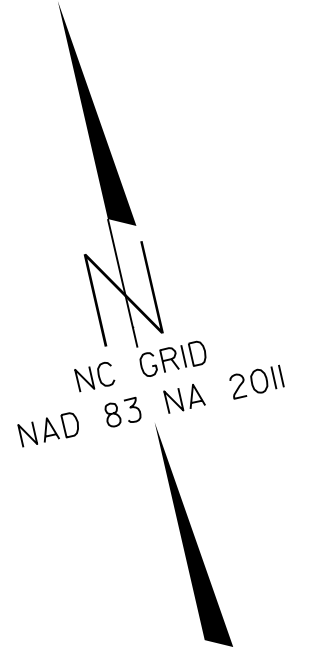
NORTHAMPTON COUNTY

**LOCATION: BRIDGE 65093 ON SR 1203 (JACK SWAMP RD)
OVER JACK'S SWAMP**

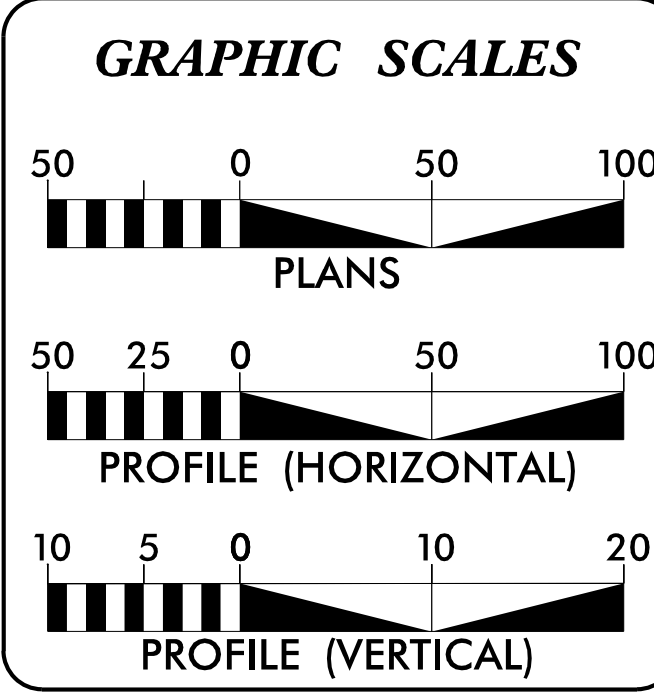
TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE



| | | | |
|-----------------|-----------------------------|----------------|--------------|
| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
| N.C. | BR-0118 | 1 | |
| STATE PROJ. NO. | F.A. PROJ. NO. | DESCRIPTION | |
| 48827.1.1 | N/A | PE | |
| 48827.2.1 | N/A | R/W, UTILITIES | |
| 48827.3.1 | 2020001 | CONSTRUCTION | |



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



DESIGN DATA

| | |
|--------------------|-------------|
| ADT 2020 = | 50 |
| ADT 2040 = | 50 |
| V = | 30 MPH |
| T = | 6% * |
| *TTST 3% + DUAL 3% | |
| FUNC CLASS = | LOCAL RURAL |
| SUB-REGIONAL TIER | |

PROJECT LENGTH

| | | |
|---------------------------------------|---|-------------|
| LENGTH ROADWAY TIP PROJECT BR-0118 | = | 0.162 MILES |
| LENGTH STRUCTURES TIP PROJECT BR-0118 | = | 0.014 MILES |
| TOTAL LENGTH TIP PROJECT BR-0118 | = | 0.176 MILES |

NCDOT CONTACT: DAVID STUTTS, PE
SMU PROJECT MANAGER

KCA
KISINGER CAMPO & ASSOCIATES
2018 STANDARD SPECIFICATIONS

NC FIRM LICENSE No: C-1506
301 Fayetteville St., Suite 1500
Raleigh, NC 27601
(919)882-7839

RIGHT OF WAY DATE: JANUARY 8, 2020

LETTING DATE: DECEMBER 15, 2020

JOHN P. MAZERES, PE
PROJECT ENGINEER

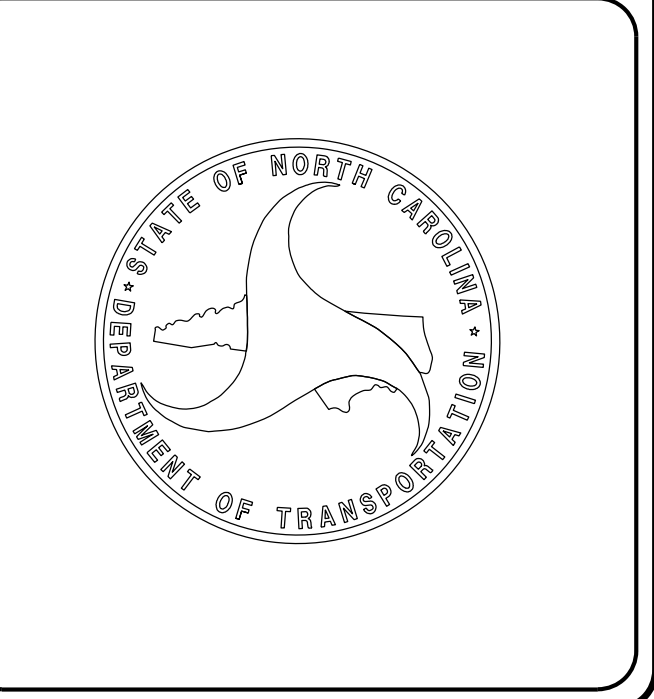
ANDREA B. JENSEN, EI
PROJECT DESIGN ENGINEER



HYDRAULICS ENGINEER

DocuSigned by: Erik Aadland 9/18/2020
ABAD57AF76E4CE
SIGNATURE: _____

ROADWAY DESIGN ENGINEER

DocuSigned by: John P. Mazer 9/18/2020
C8DF155E07946E
SIGNATURE: _____



| | | |
|--|-----------------------|-----------|
| PREPARED IN THE OFFICE OF:  KISINGER CAMPO & ASSOCIATES NC FIRM LICENSE No: C-1506 301 Fayetteville St., Suite 1500 Raleigh, NC 27601 (919) 882-7639 | PROJECT REFERENCE NO. | SHEET NO. |
| | BR-0118 | 1A |
|  | | |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | | |

| INDEX OF SHEETS | |
|------------------|---|
| SHEET NUMBER | SHEET |
| 1 | TITLE SHEET |
| 1A | INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS |
| 1B | CONVENTIONAL SYMBOLS |
| 2A-1 THRU 2A-2 | PAVEMENT SCHEDULE AND ROADWAY TYPICAL SECTIONS |
| 2B-1 | GEOTEXTILE MATTING DETAILS |
| 2C-1 | GUARDRAIL INSTALLATION DETAILS |
| 2C-2 | STRUCTURE ANCHOR UNITS (TYPE III) DETAILS |
| 2C-3 | MODIFIED CONCRETE FLUME DETAIL |
| 3B-1 | ROADWAY SUMMARIES |
| 3D-1 | DRAINAGE SUMMARIES |
| 3G-1 | GEOTECHNICAL SUMMARIES |
| 4 | PLAN AND PROFILE SHEET |
| 4A | PLAN AND PROFILE - RW DETAIL SHEET |
| 5 | PLAN AND PROFILE - TEMPORARY DETOUR |
| RW01 THRU RW04 | SURVEY CONTROL SHEETS |
| TMP-1 THRU TMP-7 | TRAFFIC MANAGEMENT PLANS |
| PMP-1 | PAVEMENT MARKING PLANS |
| EC-1 THRU EC-6 | EROSION CONTROL PLANS |
| RF-1 | REFORESTATION DETAIL SHEET |
| UO-1 THRU UO-2 | UTILITY BY OTHERS PLANS |
| X-1A | CROSS-SECTION SUMMARY SHEET |
| X-1 THRU X-15 | CROSS-SECTIONS |
| S-1 THRU S-13 | STRUCTURE PLANS |

GENERAL NOTES: 2018 SPECIFICATIONS
EFFECTIVE: 01-16-2018

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 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.

SUBSURFACE DRAINS:

SUBSURFACE DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.02 AT LOCATIONS DIRECTED BY THE ENGINEER.

GUARDRAIL:

THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

SUBSURFACE PLANS:

NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

END BENTS:

THE ENGINEER SHALL CHECK THE STRUCTURE END BENT PLANS, DETAILS, AND CROSS-SECTION PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE:

CENTURY LINK

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.

01-16-2018

2018 ROADWAY ENGLISH STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" HIGHWAY DESIGN BRANCH - N. C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N. C., DATED JANUARY, 2018 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 II. |
| 225.02 | GUIDE FOR GRADING SUBGRADE - SECONDARY AND LOCAL |
| 225.04 | METHOD OF OBTAINING SUPERELEVATION - TWO LANE PAVEMENT |
| 275.01 | ROCK PLATING |
| DIVISION 3 - PIPE CULVERTS | |
| 300.01 | METHOD OF PIPE INSTALLATION |
| DIVISION 4 - MAJOR STRUCTURES | |
| 422.02 | BRIDGE APPROACH FILLS - TYPE II MODIFIED APPROACH FILL |
| DIVISION 5 - SUBGRADE, BASES AND SHOULDERS | |
| 560.01 | METHOD OF SHOULDER CONSTRUCTION - HIGH SIDE OF SUPERELEVATED CURVE - METHOD I |
| DIVISION 8 - INCIDENTALS | |
| 815.02 | SUBSURFACE DRAINS |
| 840.00 | CONCRETE BASE PAD FOR DRAINAGE STRUCTURES |
| 840.25 | ANCHORAGE FOR FRAMES |
| 840.29 | FRAMES AND NARROW SLOT FLAT GRATES |
| 840.35 | TRAFFIC BEARING GRATED DROP INLET |
| 840.46 | TRAFFIC BEARING PRECAST DRAINAGE STRUCTURES |
| 840.66 | DRAINAGE STRUCTURE STEPS |
| 846.01 | CONCRETE CURB, GUTTER AND CURB AND GUTTER |
| 846.03 | FUNNEL DRAIN INSTALLATION IN SHOULDER BERM GUTTER |
| 846.04 | DROP INLET INSTALLATION IN SHOULDER BERM GUTTER |
| 862.01 | GUARDRAIL PLACMENT |
| 862.02 | GUARDRAIL INSTALLATION |
| 862.03 | STRUCTURE ANCHOR UNITS |
| 876.02 | GUIDE FOR RIP RAP AT PIPE OUTLETS |

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 | ○ EIP |
| Computed Property Corner | -----x |
| Property Monument | □ ECM |
| Parcel/Sequence Number | ①23 |
| Existing Fence Line | -x-x-x- |
| Proposed Woven Wire Fence | ○ |
| Proposed Chain Link Fence | □ |
| Proposed Barbed Wire Fence | ◇ |
| Existing Wetland Boundary | -----WLB |
| Proposed Wetland Boundary | -----WLB |
| Existing Endangered Animal Boundary | -----EAB |
| Existing Endangered Plant Boundary | -----EPB |
| Existing Historic Property Boundary | -----HPB |
| Known Contamination Area: Soil | ☠-S-☠ |
| Potential Contamination Area: Soil | ☠-S-☠ |
| Known Contamination Area: Water | ☠-W-☠ |
| Potential Contamination Area: Water | ☠-W-☠ |
| Contaminated Site: Known or Potential | ☠? |

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

| | |
|--------------------|---------------|
| Standard Gauge | ----- |
| RR Signal Milepost | ○ MILEPOST 35 |
| Switch | □ SWITCH |
| RR Abandoned | ----- |
| RR Dismantled | ----- |

RIGHT OF WAY & PROJECT CONTROL:

| | |
|---|----------|
| Secondary Horiz and Vert Control Point | ◆ |
| Primary Horiz Control Point | ○ |
| Primary Horiz and Vert Control Point | ◆ |
| Exist Permanent Easement Pin and Cap | ◇ |
| New Permanent Easement Pin and Cap | ◆ |
| Vertical Benchmark | ⊠ |
| Existing Right of Way Marker | △ |
| Existing Right of Way Line | ----- |
| New Right of Way Line | -----R/W |
| New Right of Way Line with Pin and Cap | -----R/W |
| New Right of Way Line with Concrete or Granite R/W Marker | -----R/W |
| New Control of Access Line with Concrete C/A Marker | -----C/A |
| Existing Control of Access | -----C/A |
| New Control of Access | -----C/A |
| Existing Easement Line | -----E |
| New Temporary Construction Easement | -----E |
| New Temporary Drainage Easement | -----TDE |
| New Permanent Drainage Easement | -----PDE |
| New Permanent Drainage / Utility Easement | -----DUE |
| New Permanent Utility Easement | -----PUE |
| New Temporary Utility Easement | -----TUE |
| New Aerial Utility Easement | -----AUE |

ROADS AND RELATED FEATURES:

| | |
|----------------------------|---------|
| Existing Edge of Pavement | ----- |
| Existing Curb | ----- |
| Proposed Slope Stakes Cut | -----C |
| Proposed Slope Stakes Fill | -----F |
| Proposed Curb Ramp | -----CR |
| Existing Metal Guardrail | ----- |
| Proposed Guardrail | ----- |
| Existing Cable Guiderail | ----- |
| Proposed Cable Guiderail | ----- |
| Equality Symbol | ⊕ |
| Pavement Removal | ⊠ |

VEGETATION:

| | |
|--------------|---|
| Single Tree | ○ |
| Single Shrub | ○ |

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

| | |
|------------|---------------|
| 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 | ----- |
| H-Frame Pole | ● |
| U/G Power Line LOS B (S.U.E.*) | -----P |
| U/G Power Line LOS C (S.U.E.*) | -----P |
| U/G Power Line LOS D (S.U.E.*) | -----P |

TELEPHONE:

| | |
|--|-----------|
| Existing Telephone Pole | ● |
| Proposed Telephone Pole | ○ |
| Telephone Manhole | ⊕ |
| Telephone Pedestal | ⊠ |
| Telephone Cell Tower | ⊠ |
| U/G Telephone Cable Hand Hole | ----- |
| U/G Telephone Cable LOS B (S.U.E.*) | -----T |
| U/G Telephone Cable LOS C (S.U.E.*) | -----T |
| U/G Telephone Cable LOS D (S.U.E.*) | -----T |
| U/G Telephone Conduit LOS B (S.U.E.*) | -----TC |
| U/G Telephone Conduit LOS C (S.U.E.*) | -----TC |
| U/G Telephone Conduit LOS D (S.U.E.*) | -----TC |
| U/G Fiber Optics Cable LOS B (S.U.E.*) | -----T FO |
| U/G Fiber Optics Cable LOS C (S.U.E.*) | -----T FO |
| U/G Fiber Optics Cable LOS D (S.U.E.*) | -----T FO |

WATER:

| | |
|--------------------------------|----------------|
| Water Manhole | ⊕ |
| Water Meter | ○ |
| Water Valve | ⊗ |
| Water Hydrant | ⊕ |
| U/G Water Line LOS B (S.U.E.*) | -----W |
| U/G Water Line LOS C (S.U.E.*) | -----W |
| U/G Water Line LOS D (S.U.E.*) | -----W |
| Above Ground Water Line | -----A/G Water |

TV:

| | |
|---------------------------------------|------------|
| TV Pedestal | ⊕ |
| TV Tower | ⊗ |
| U/G TV Cable Hand Hole | ----- |
| U/G TV Cable LOS B (S.U.E.*) | -----TV |
| U/G TV Cable LOS C (S.U.E.*) | -----TV |
| U/G TV Cable LOS D (S.U.E.*) | -----TV |
| U/G Fiber Optic Cable LOS B (S.U.E.*) | -----TV FO |
| U/G Fiber Optic Cable LOS C (S.U.E.*) | -----TV FO |
| U/G Fiber Optic Cable LOS D (S.U.E.*) | -----TV FO |

GAS:

| | |
|------------------------------|--------------|
| Gas Valve | ◇ |
| Gas Meter | ⊕ |
| U/G Gas Line LOS B (S.U.E.*) | -----G |
| U/G Gas Line LOS C (S.U.E.*) | -----G |
| U/G Gas Line LOS D (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 |
| SS Forced Main Line LOS B (S.U.E.*) | -----FSS |
| SS Forced Main Line LOS C (S.U.E.*) | -----FSS |
| SS Forced Main Line LOS D (S.U.E.*) | -----FSS |

MISCELLANEOUS:

| | |
|--|-----------|
| Utility Pole | ● |
| Utility Pole with Base | □ |
| Utility Located Object | ○ |
| Utility Traffic Signal Box | ⊠ |
| Utility Unknown U/G Line LOS B (S.U.E.*) | -----7UTL |
| U/G Tank; Water, Gas, Oil | ----- |
| Underground Storage Tank, Approx. Loc. | ⊕ |
| A/G Tank; Water, Gas, Oil | ----- |
| Geoenvironmental Boring | ⊕ |
| U/G Test Hole LOS A (S.U.E.*) | ⊕ |
| Abandoned According to Utility Records | AATUR |
| End of Information | E.O.I. |

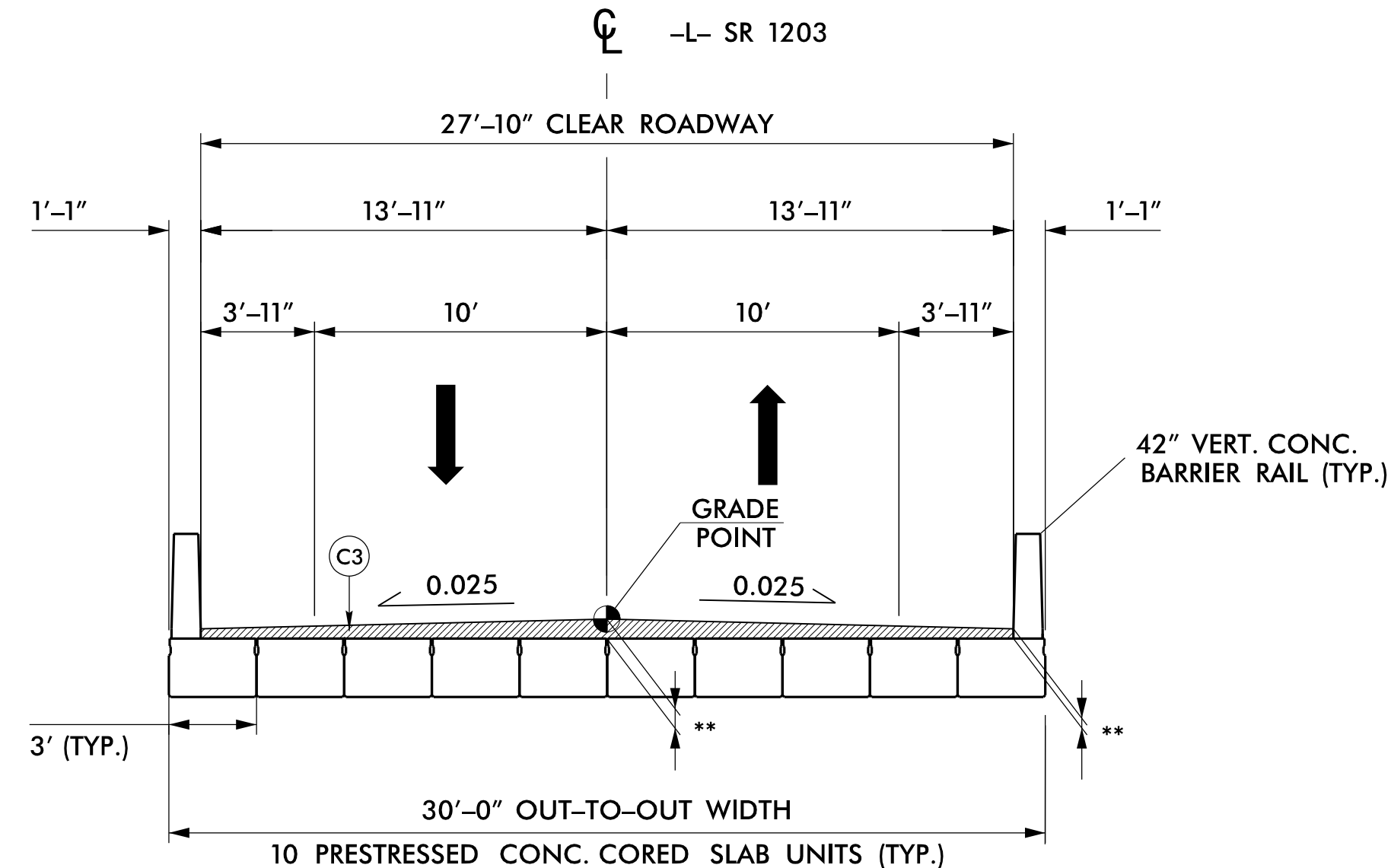
6/2/2019

| PAVEMENT SCHEDULE | |
|-------------------|--|
| C1 | PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. |
| C2 | PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1" OR TO EXCEED 1.5" IN DEPTH. |
| C3 | PROP. VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110.0 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1" OR TO EXCEED 1.5" IN DEPTH. |
| E1 | PROP. APPROX. 4.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS PER SQ. YD. |
| J1 | PROP. APPROX. 8" AGGREGATE BASE COURSE. |
| R1 | SHOULDER BERM GUTTER. |
| T | EARTH MATERIAL. |
| U | EXISTING PAVEMENT. |
| V | MILLING BITUMINOUS PAVEMENT. 1.5" DEPTH. |

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.
 NOTE: FINAL PAVEMENT DESIGN PER PAVEMENT DESIGN MEMO DATED JULY 30, 2019 FROM CLARK S. MORRISON.

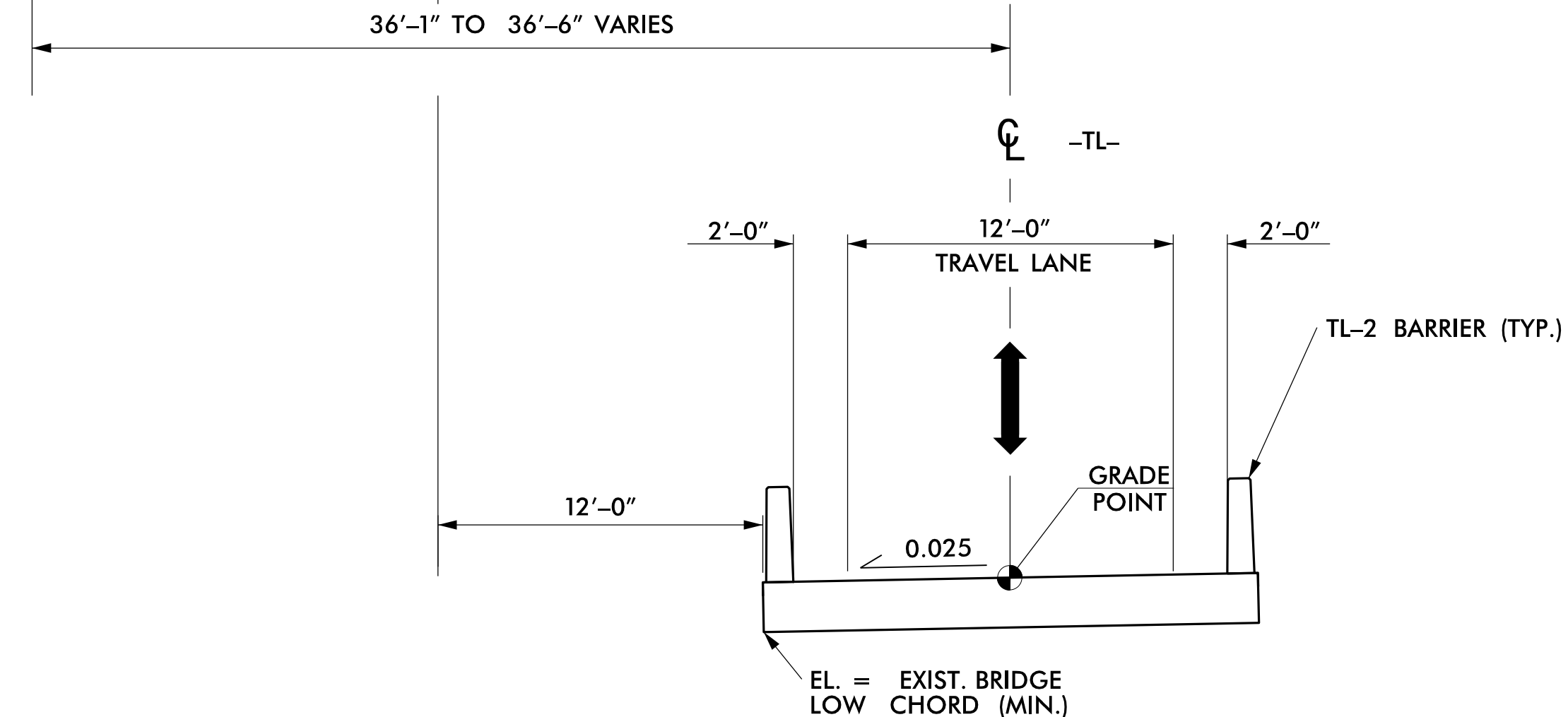
BRIDGE NO. 650093

| | |
|--|---|
| PROJECT REFERENCE NO. <i>BR-0118</i> | SHEET NO. <i>2A-2</i> |
| ROADWAY DESIGN ENGINEER | PAVEMENT DESIGN ENGINEER |
| DocuSigned by: <i>John P. Mazzariello</i> PROFESSIONAL SEAL 043935 ENGINEER JOHN P. MAZZARIELLO | |
| 1/5/2020 | |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | |
| PREPARED IN THE OFFICE OF: KCA KISINGER CAMPO & ASSOCIATES | NC FIRM LICENSE No: C-1506 301 Fayetteville St., Suite 1500 Raleigh, NC 27601 (919)882-7839 |



TYPICAL SECTION NO. 4
 FOR BRIDGE OVER JACK'S SWAMP
USE TYPICAL SECTION NO. 4
 -L- STA. 13+56.24 (BEGIN BRIDGE) TO
 STA. 14+28.49 (END BRIDGE)

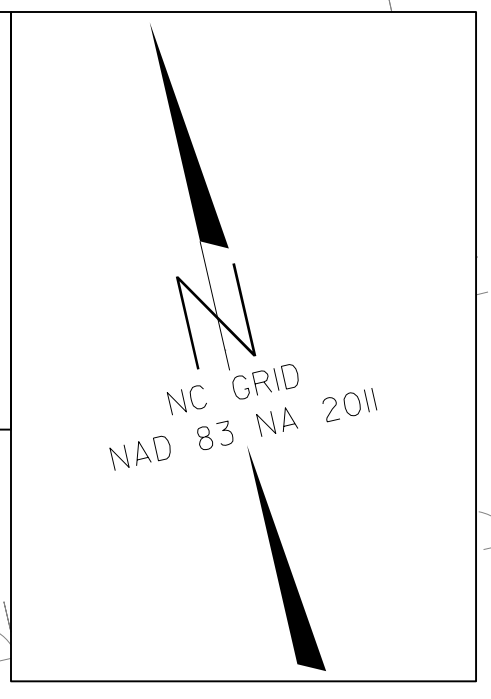
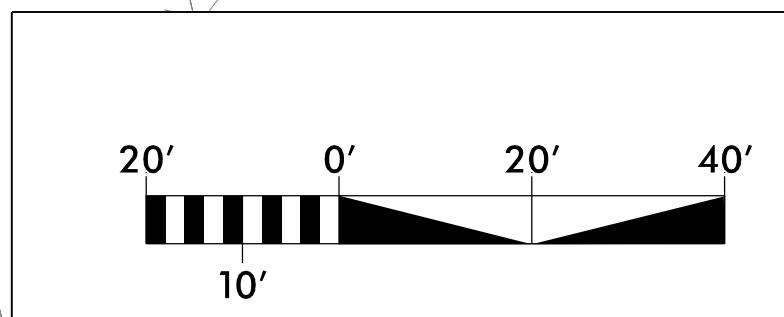
** SEE STRUCTURES PLANS FOR PAVEMENT THICKNESS



TYPICAL SECTION NO. 5
 FOR TEMP. BRIDGE OVER JACK'S SWAMP
USE TYPICAL SECTION NO. 5
 -TL- STA. 13+68.59 (BEGIN TEMPORARY BRIDGE) TO
 STA. 14+28.59 (END TEMPORARY BRIDGE)

05-MAR-2020 10:54
 05-0118-001-01.dwg
 tjp/ogn

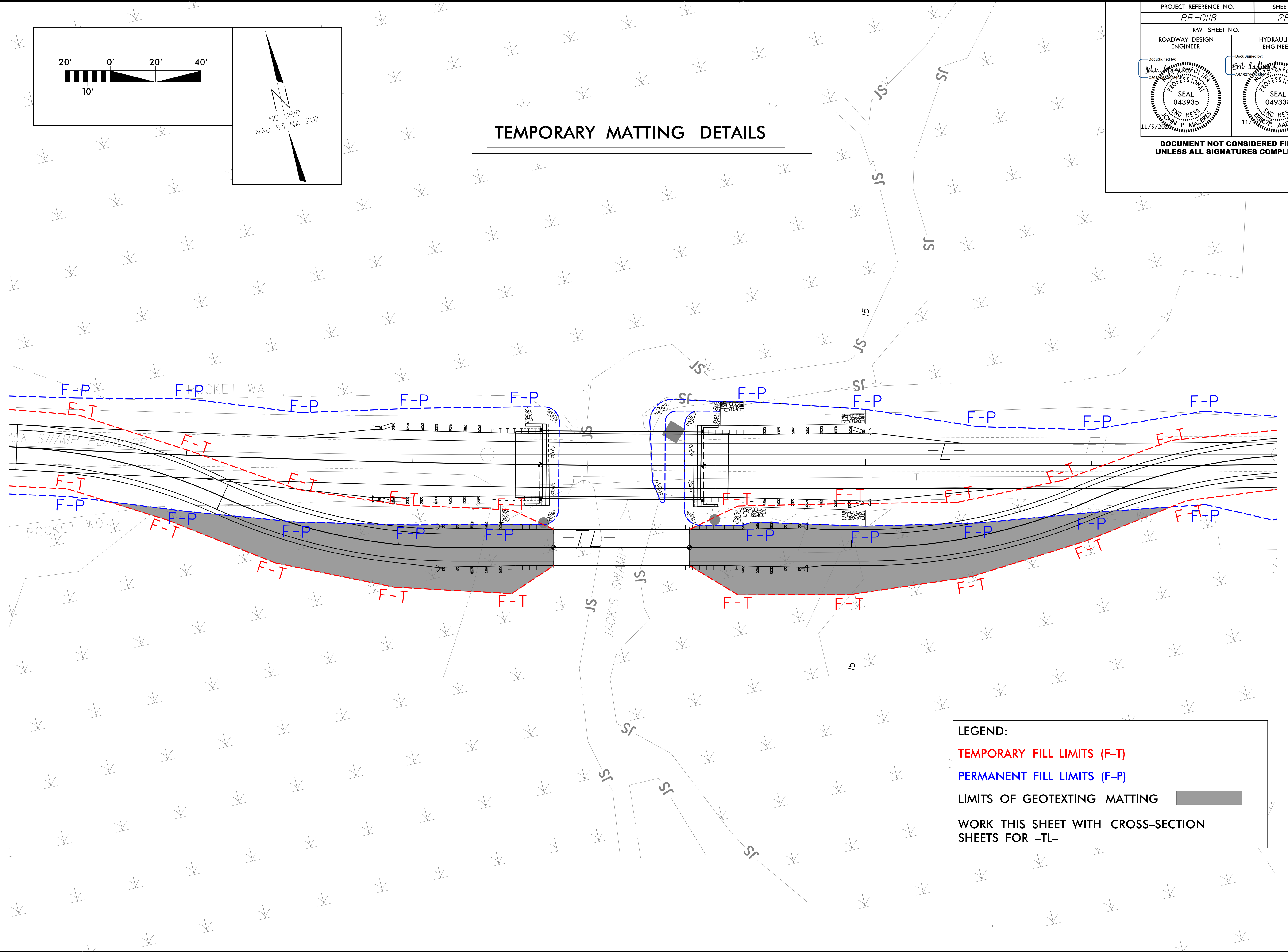
8/17/99



TEMPORARY MATTING DETAILS

| | |
|--|---|
| PROJECT REFERENCE NO. <i>BR-0118</i> | SHEET NO. <i>2B-1</i> |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| DocuSigned by: <i>John P. Maers</i> PROFESSIONAL SEAL 043935 ENGINEER 11/5/2019 | DocuSigned by: <i>Eric A. Adland</i> PROFESSIONAL SEAL 049338 ENGINEER 11/5/2019 |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | |

REVISIONS



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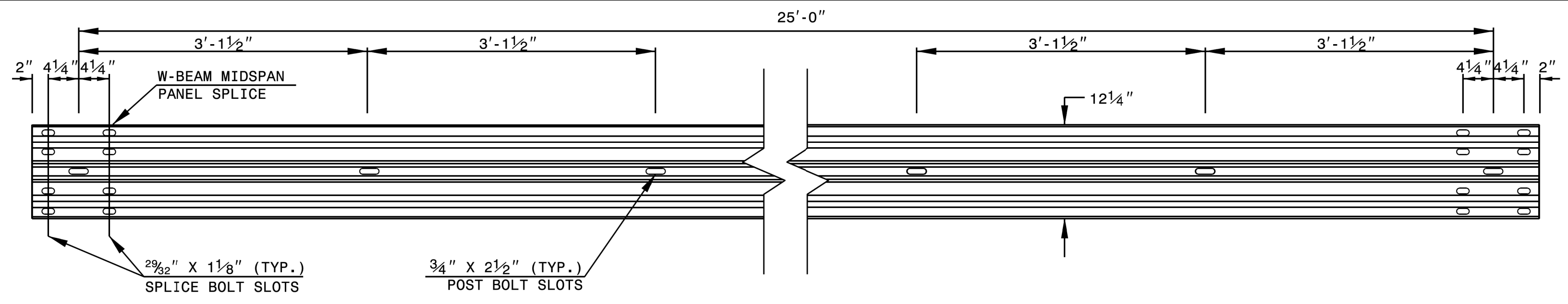
- TEMPORARY FILL LIMITS (F-T)
- PERMANENT FILL LIMITS (F-P)
- LIMITS OF GEOTEXTING MATTING
- WORK THIS SHEET WITH CROSS-SECTION SHEETS FOR -TL-

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iduke

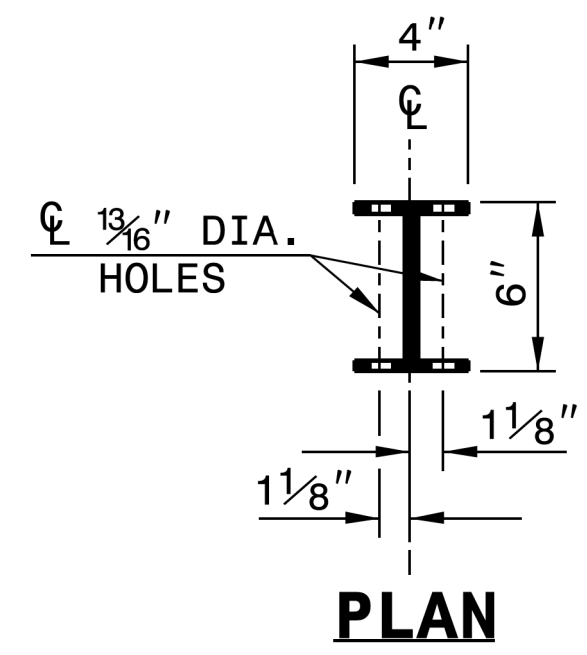
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

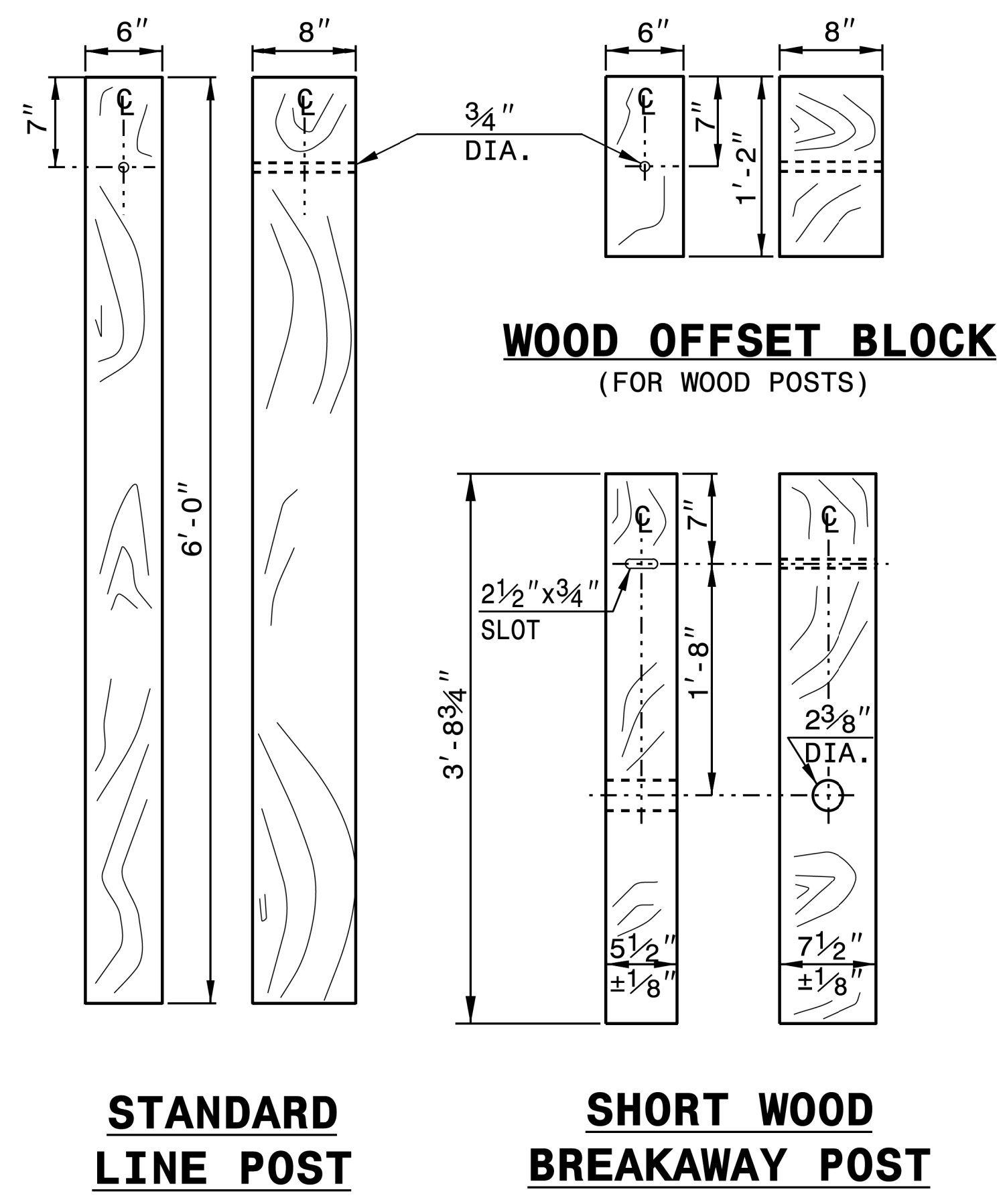
SHEET 6 OF 8
862D02



STANDARD W-BEAM GUARDRAIL

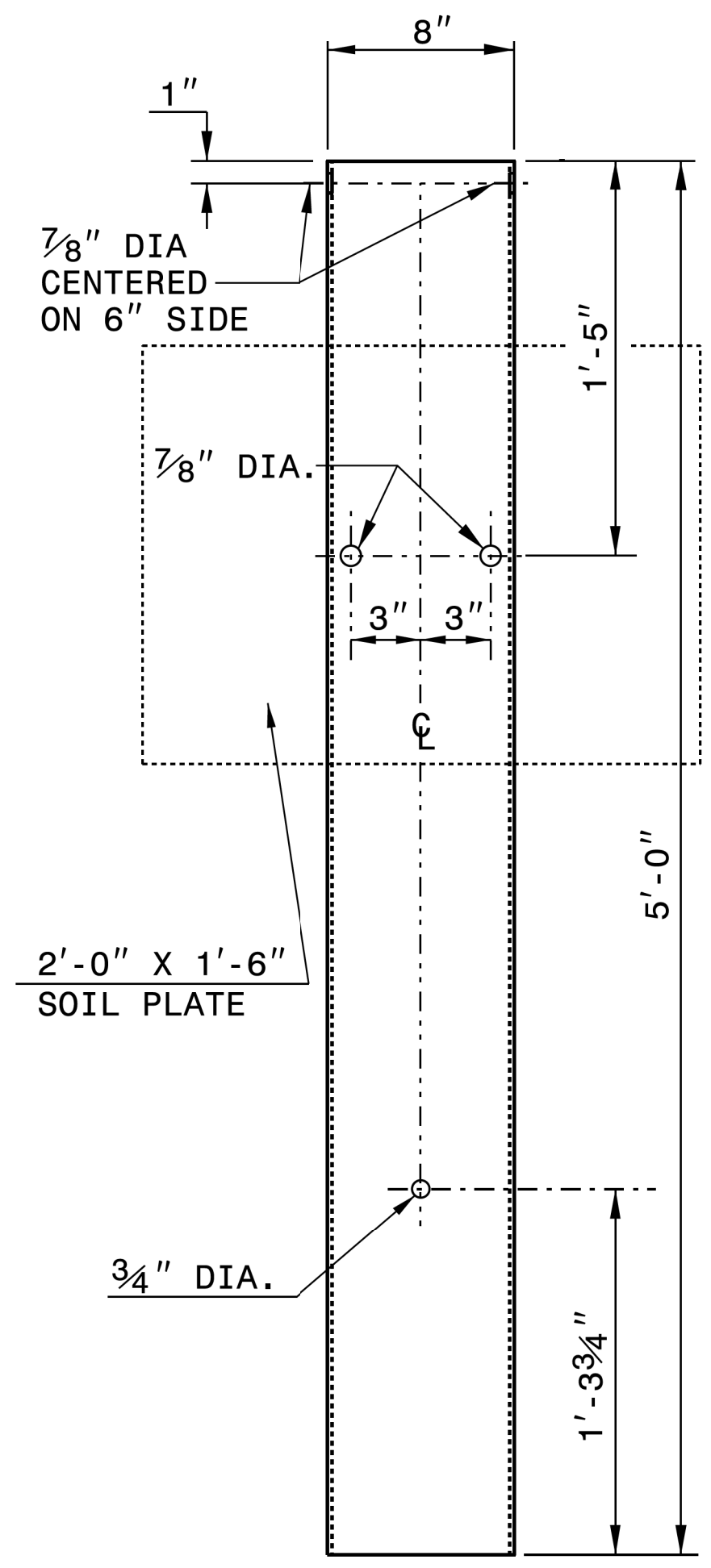


PLAN

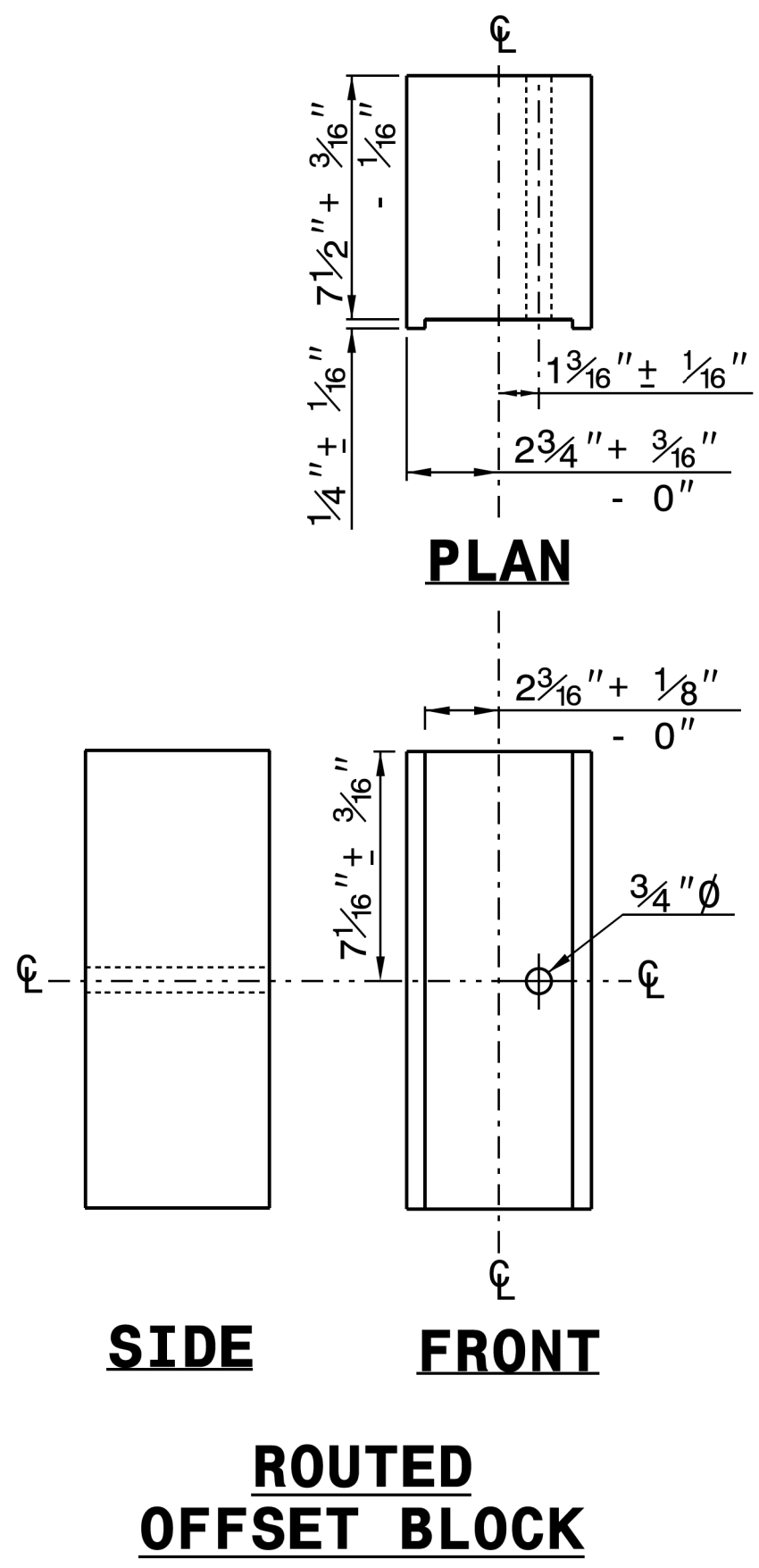


STANDARD LINE POST

SHORT WOOD BREAKAWAY POST



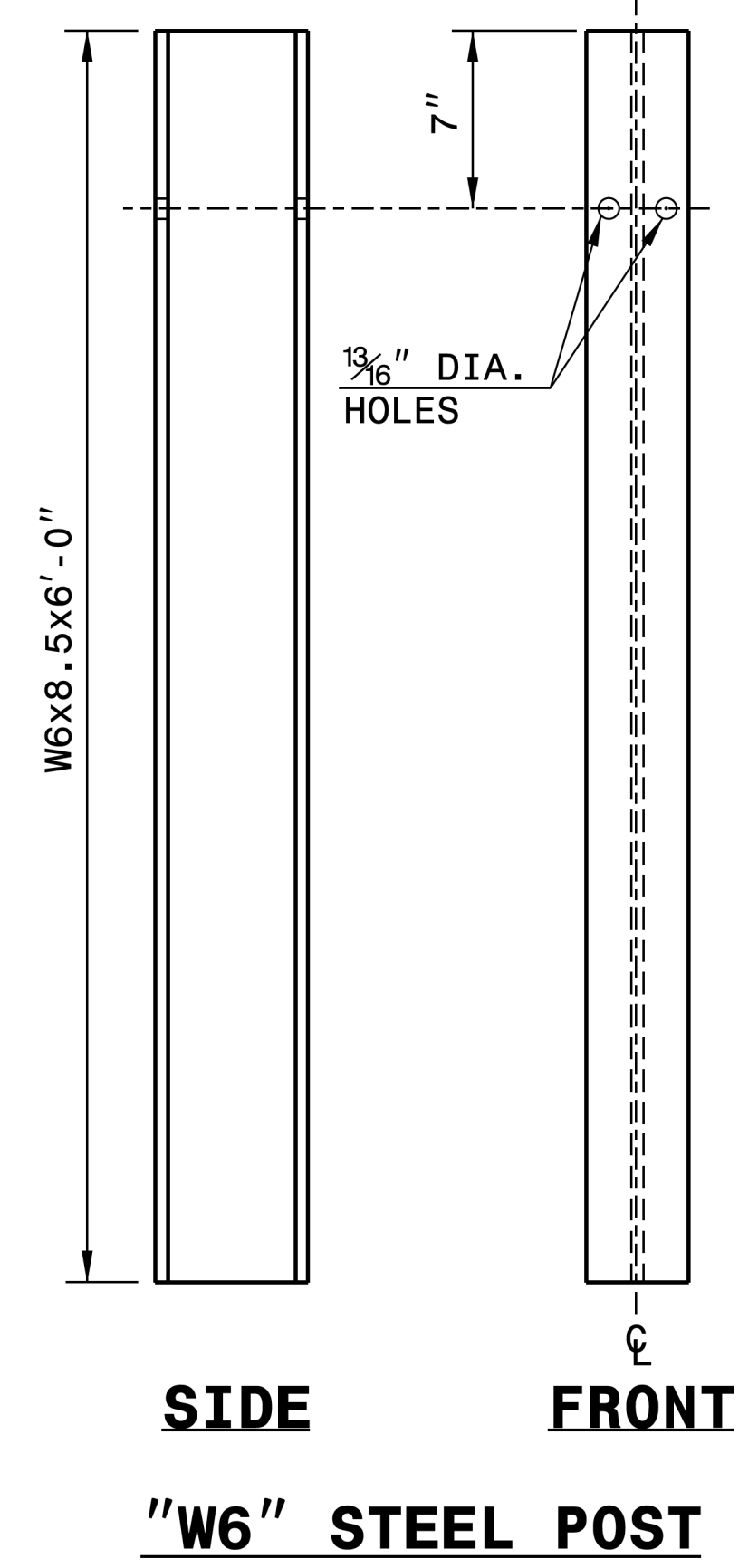
STEEL TUBE
TS 6"x8"x0.1875"



SIDE

FRONT

ROUTED OFFSET BLOCK



SIDE

FRONT

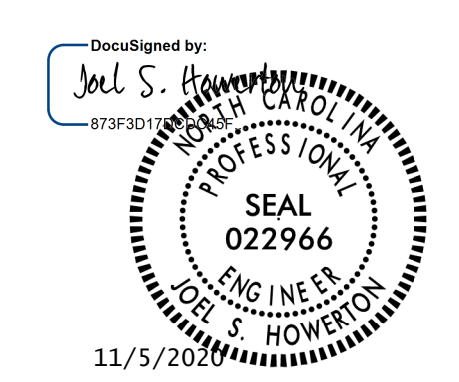
"W6" STEEL POST

SYSTEM PARTS

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02



CONTRACTS STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

ORIGINAL BY: J. HOWERTON DATE: 3-7-2018
MODIFIED BY: DATE: _____
CHECKED BY: DATE: _____
FILE SPEC.: _____

I4-DEC-2017 10:36
 S:\Contracts\Special Details\Standard Drawings\Division 8\0862d0301.dgn
 Jhowerton AT CSU-292895

| | | |
|--|--|-------------------------------|
| STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. | ROADWAY DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE | SHEET 1 OF 7 862D03 |
| | | |
| <p>NOTE:</p> <ul style="list-style-type: none"> **POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER. *THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11½" IF CONCRETE BACKWALL IS NOT PRESENT. -SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB. -MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER). -LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW. -SEE SHEET 3 FOR POST SECTIONS 1 THRU 9. | | |
| | | |
| GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE | | |
| SHEET 1 OF 7 862D03 | | |

| | | |
|--|--|-------------------------------|
| STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. | ROADWAY DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER | SHEET 2 OF 7 862D03 |
| | | |
| <p>NOTE:</p> <ul style="list-style-type: none"> **POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER. *THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11½" IF CONCRETE BACKWALL IS NOT PRESENT. -SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB. -MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER). -LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW. -SEE SHEET 3 FOR POST SECTIONS 1 THRU 9. | | |
| | | |
| GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER | | |
| SHEET 2 OF 7 862D03 | | |

11/5/2020

 DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS
 AND DEVELOPMENT UNIT
 Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

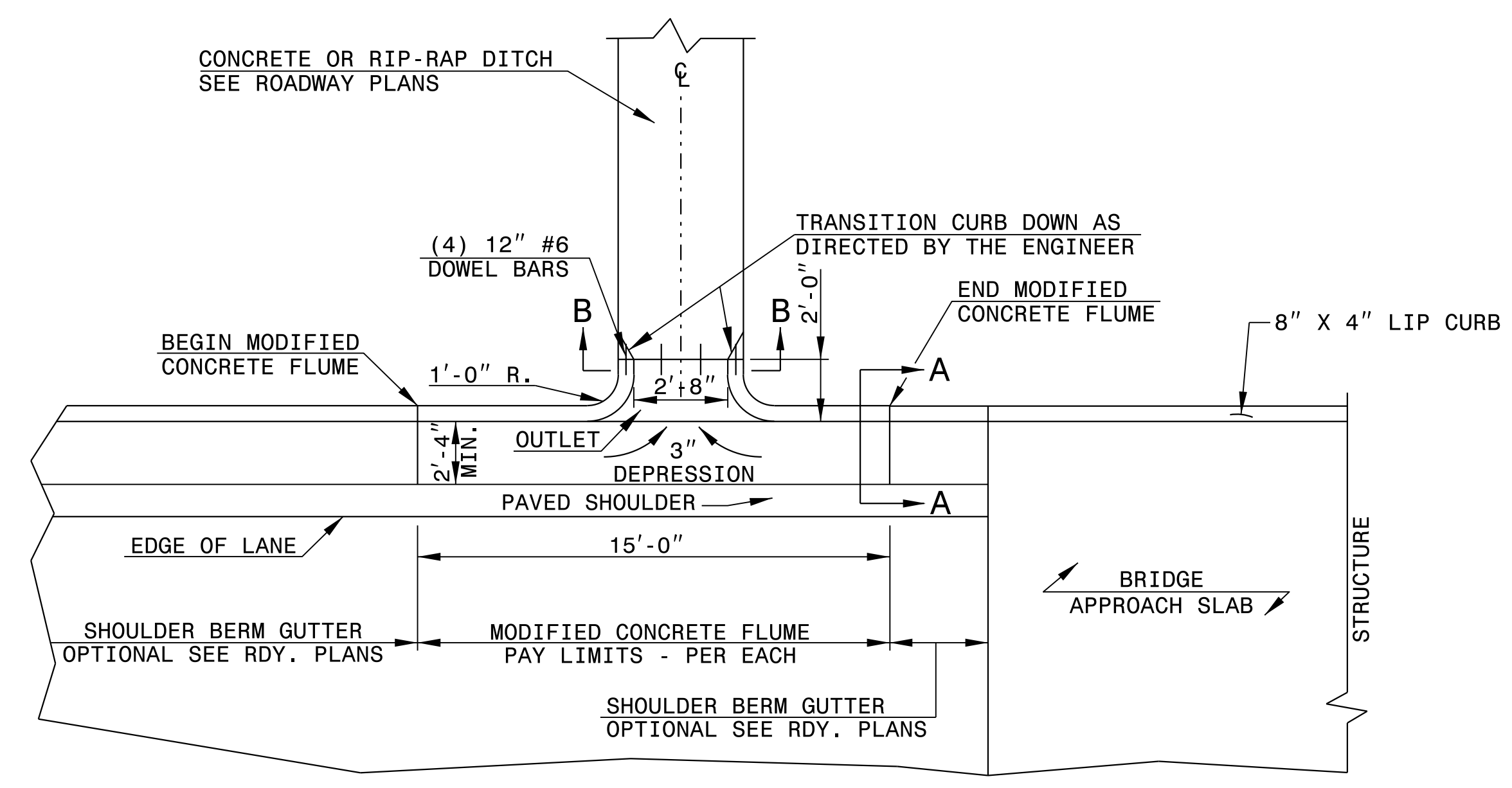
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| ORIGINAL BY: J HOWERTON | DATE: 06-22-12 |
| MODIFIED BY: | DATE: |
| CHECKED BY: | DATE: |
| FILE SPEC.: | |

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

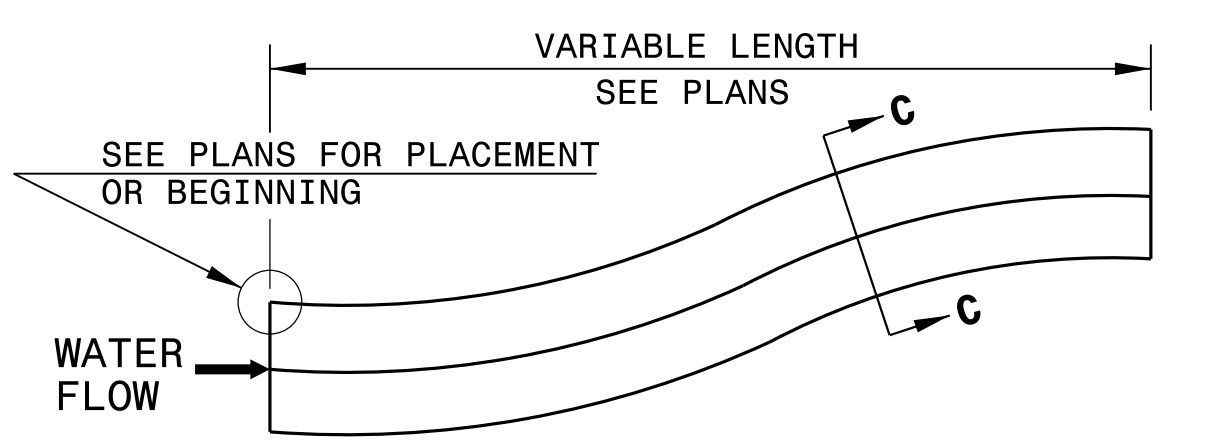
ENGLISH DETAIL DRAWING FOR MODIFIED CONCRETE FLUME WITH CONCRETE OR RIP-RAP DITCH

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

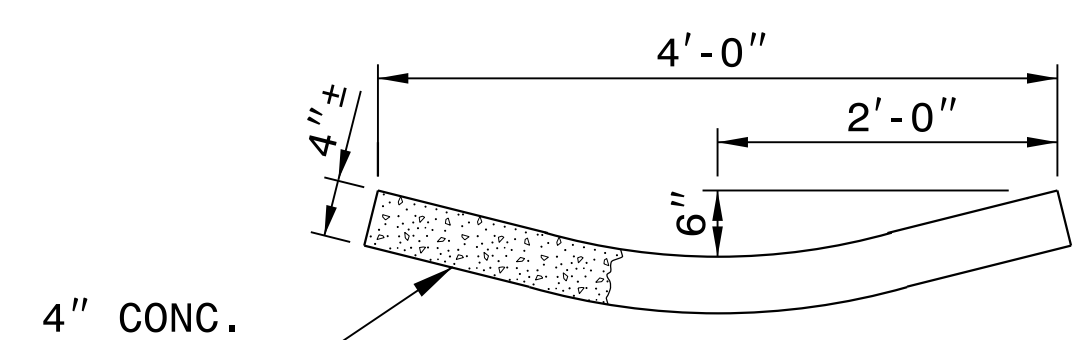
ENGLISH DETAIL DRAWING FOR MODIFIED CONCRETE FLUME WITH CONCRETE OR RIP-RAP DITCH



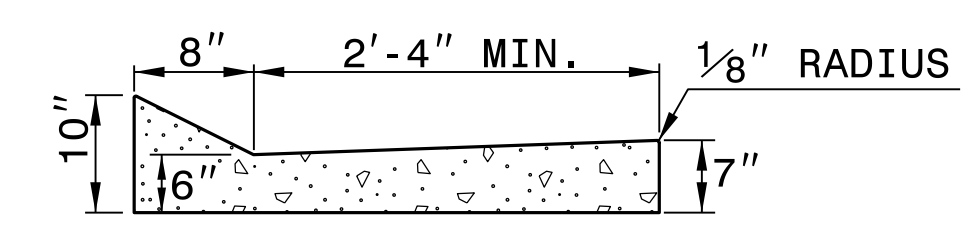
PLAN VIEW



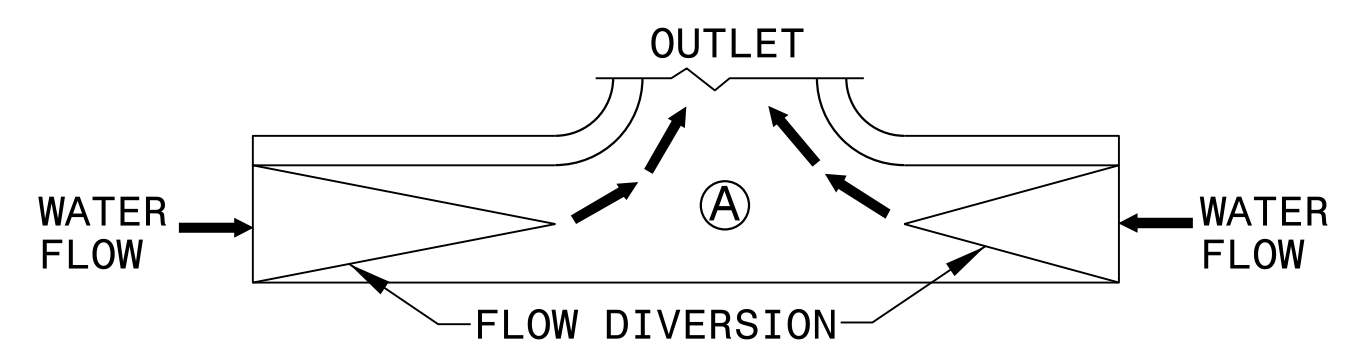
DOWNGRADE OR SAG



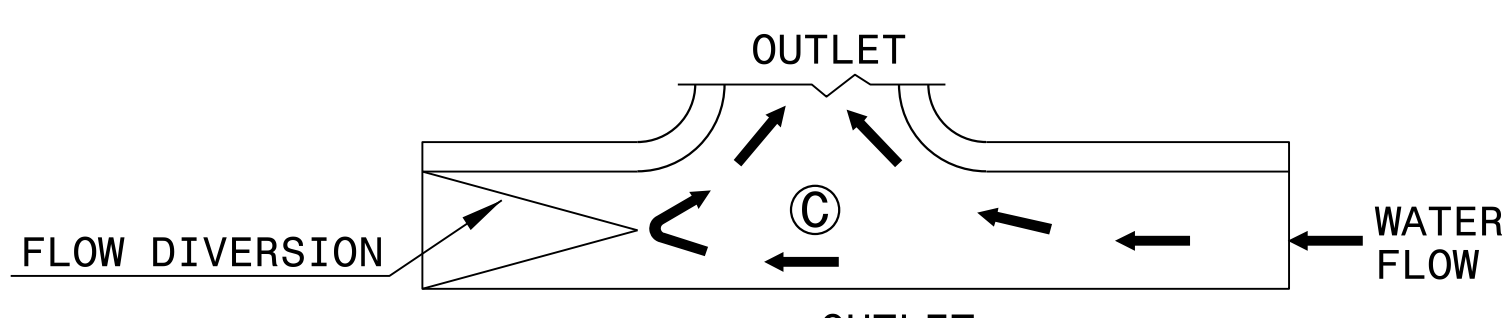
SECTION C-C



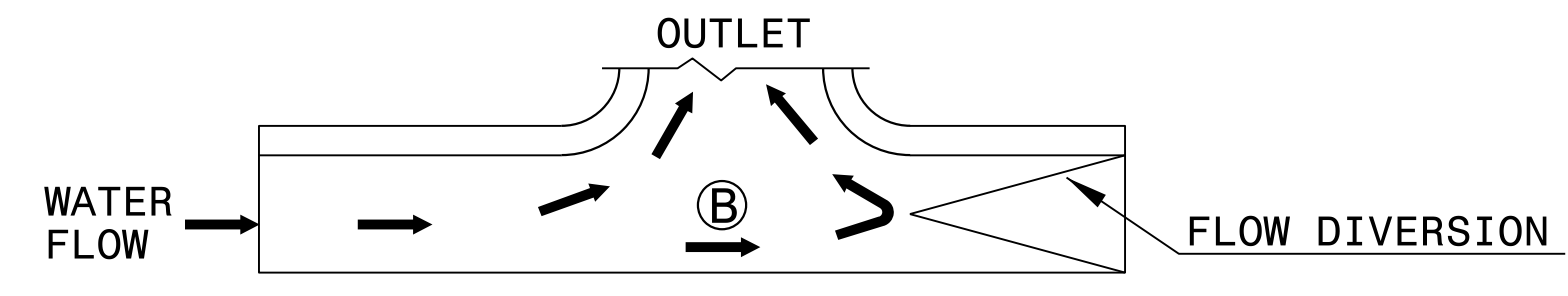
SECTION A-A



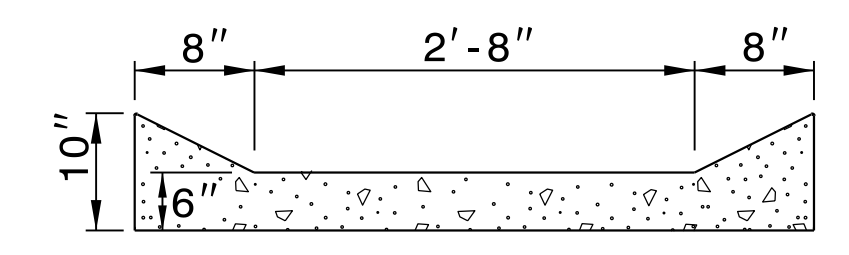
SAG



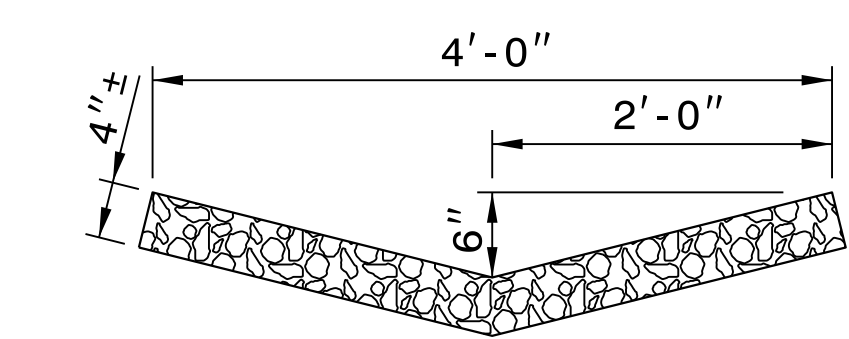
FLOW DIVERSION EXAMPLES



DOWN GRADE



SECTION B-B



RIP-RAP LINED DITCH

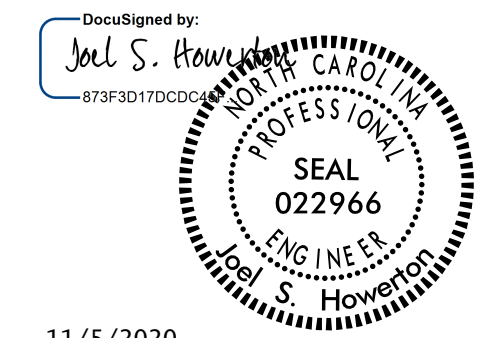
NOTES:

- CONSTRUCT MODIFIED CONCRETE FLUME AND SHOULDER BERM GUTTER IN ACCORDANCE WITH THIS DETAIL.
- CONSTRUCT CONCRETE DITCH IN ACCORDANCE WITH STD. DWG. NO. 850.01.
- CONSTRUCT RIP RAP LINED DITCH IN ACCORDANCE WITH THIS DETAIL, IF CALLED FOR IN PLANS.
- CONCRETE OR RIP RAP LINED DITCH SHALL BE THE TYPE AND LENGTH SPECIFIED BY THE ROADWAY PLANS. THE DITCH SHALL TERMINATE AS SHOWN ON THE PLANS. IF NO TERMINATION IS INDICATED PLACE RIP-RAP AT THE END OF THE DITCH AS INDICATED BY STD. DWG. 876.02 FOR AN 18" PIPE. TRANSITIONS FROM THE DITCH TO TERMINATION SHALL BE AS DIRECTED BY THE ENGINEER.
- MODIFICATIONS SHALL BE AS DICTATED BY SITE CONDITIONS AND DIRECTED BY THE ENGINEER.

SHEET 1 OF 1 MODFLMDTCH

SHEET 1 OF 1 MODFLMDTCH

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



11/5/2020

CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

SEE PLATE FOR TITLE

ORIGINAL BY: E.E. Ward DATE: Apr. 2002
 MODIFIED BY: J.S. Howerton DATE: October 2017
 CHECKED BY: DATE:
 FILE SPEC.: w:\details\stand\modifiedflume.dgn

18-QCT-2017 1417 S:\Contracts\Contract\Stand\Stand\stand\modiflume.dgn J:\howerton A1 CS0-212595

12/06/07

| | |
|-------------------------|-----------------------|
| COMPUTED BY: <u>ABJ</u> | DATE: <u>01/08/20</u> |
| CHECKED BY: <u>JPM</u> | DATE: <u>01/08/20</u> |

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

| | |
|--|--------------------------|
| PROJECT REFERENCE NO. <i>BR-0118</i> | SHEET NO. <i>36-1</i> |
| PREPARED IN THE OFFICE OF: KCA KISINGER CAMPO & ASSOCIATES NC FIRM LICENSE No: C-1506 301 Fayetteville St., Suite 1500 Raleigh, NC 27601 (919) 882-7839 | |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | |

SUMMARY OF SUBSURFACE DRAINAGE

| LINE | Station | Station | Location LT/RT/CL | Drain Type* UD/BD/SD | LF |
|------------------|---------|---------|-------------------|----------------------|-----|
| | | | | | |
| CONTINGENCY | | | | SD | 200 |
| TOTAL LF: | | | | | 200 |

*UD = Underdrain
*BD = Blind Drain
*SD = Subsurface Drain

SUMMARY OF ROCK PLATING


| LINE | Beginning Slope | Approx. Station | Ending Slope | Approx. Station | Location LT/RT | Rock Plating Detail No. 1/2/3/4 | Riprap Class* 1/2/B | SY |
|------------------|-----------------|-----------------|--------------|-----------------|----------------|---------------------------------|---------------------|-----|
| -L- | 1.5:1 | 14+35.95± | 2.5:1 | 15+25.00± | LT | 1 | 2 | 70 |
| -L- | 1.5:1 | 14+45.57± | 2.5:1 | 15+25.00± | RT | 1 | 2 | 80 |
| | | | | | | | | |
| TOTAL SY: | | | | | | | | 150 |

*Use Class 1, 2 or B riprap if riprap class is not shown for rock plating location.

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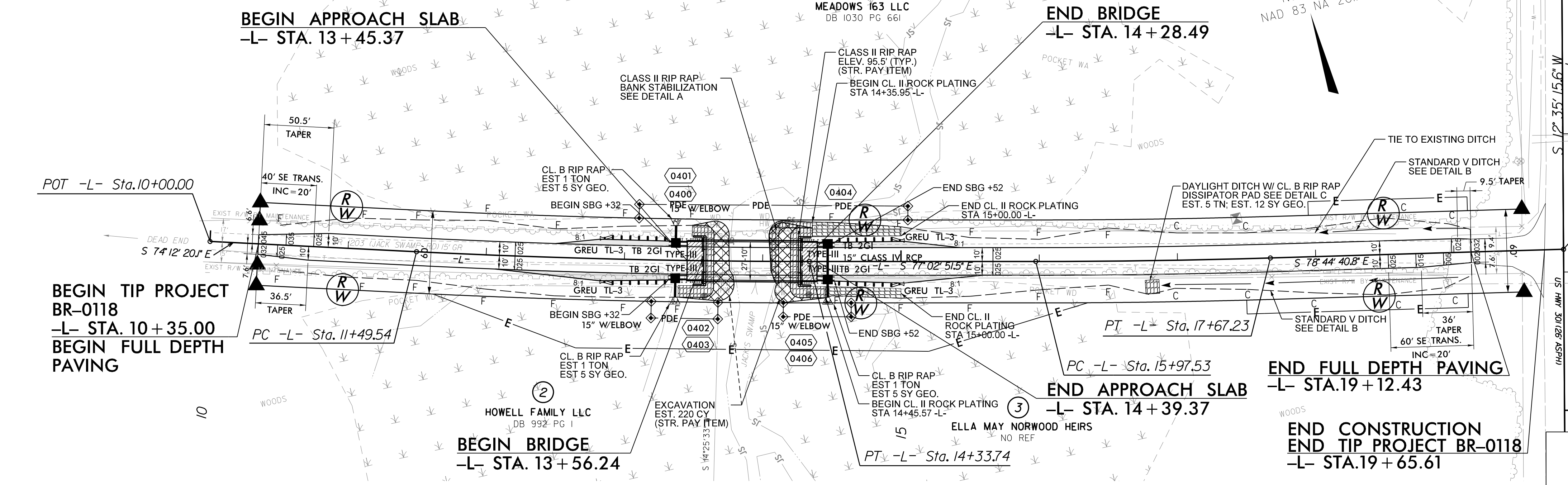
8/17/19

BRIDGE NO. 650093

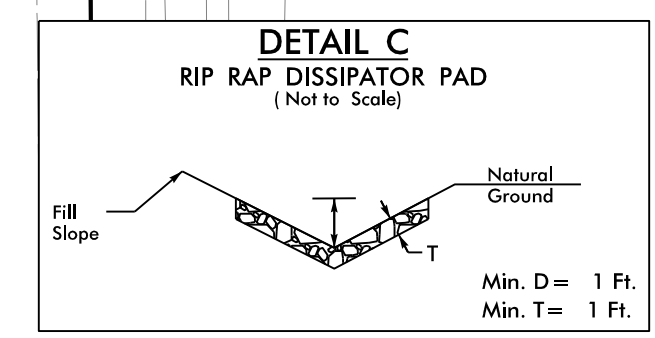
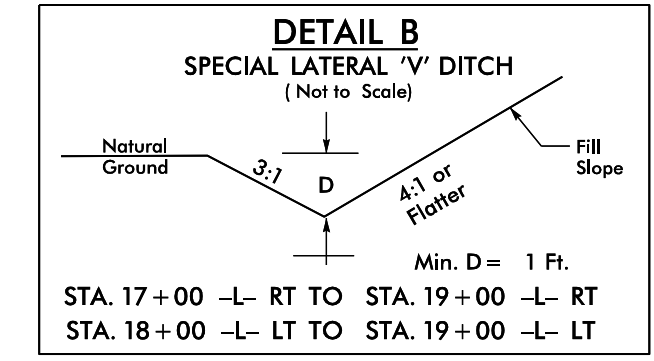
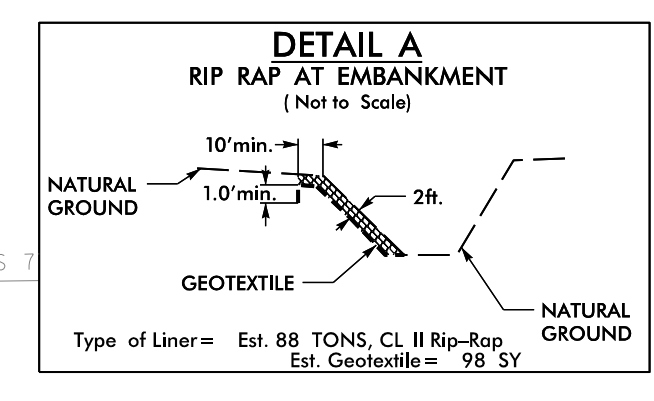
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| PROJECT REFERENCE NO. <i>BR-0118</i> | | SHEET NO. <i>4</i> | |
| RW SHEET NO. | | HYDRAULICS ENGINEER | |
| ROADWAY DESIGN ENGINEER | SEAL 043935 | | SEAL 049338 |
| 11/5/2020 | | 11/5/2020 | |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | | | |
| PREPARED IN THE OFFICE OF: | |  KCA KISINGER CAMPO & ASSOCIATES <small>NC FIRM LICENSE NO. C-1508 301 Fayetteville St., Suite 1500 Raleigh, NC 27601 (919)862-7839</small> | |

-L-

| | |
|-----------------------------------|-----------------------------------|
| PI Sta 12+91.67 | PI Sta 16+82.39 |
| $\Delta = 2^{\circ}50'31.4"$ (LT) | $\Delta = 1^{\circ}41'49.4"$ (LT) |
| D = 1'00'00.0" | D = 1'00'00.0" |
| L = 284.21' | L = 169.71' |
| T = 142.13' | T = 84.86' |
| R = 5,729.58' | R = 5,729.58' |
| e = NC | e = NC |



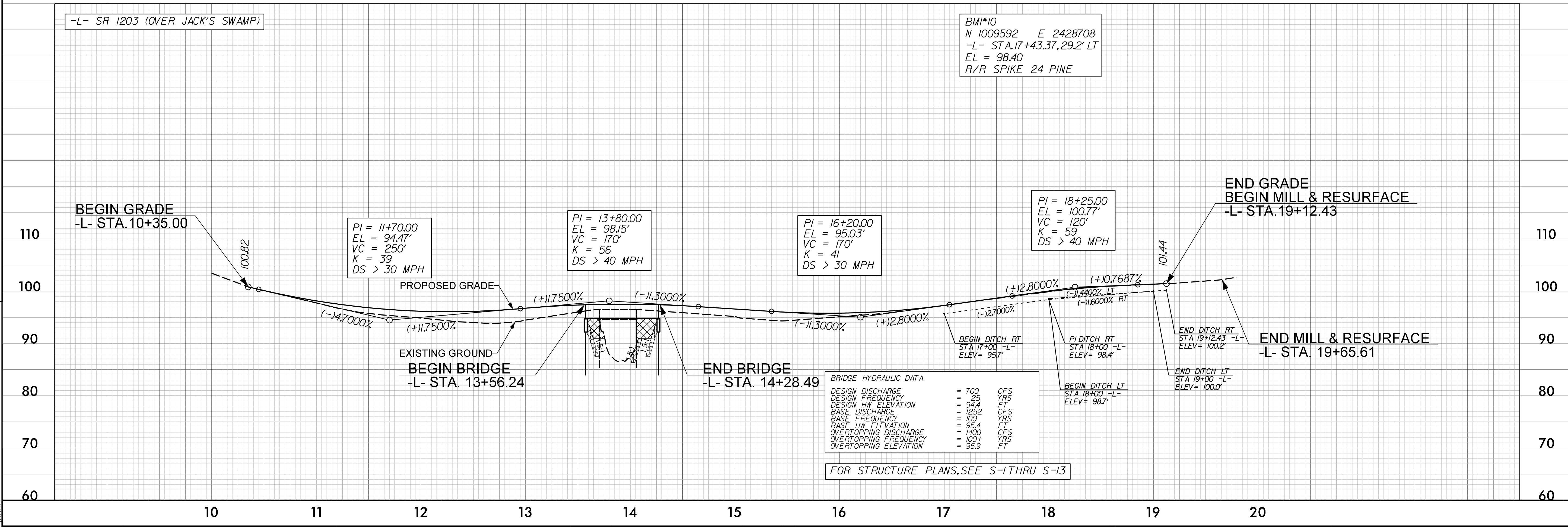
NOTE: CROSS SLOPES AT PROJECT TIE-INS ARE APPROXIMATE.
CONTRACTOR TO ENSURE APPROPRIATE CROSS SLOPE TRANSITIONS TO EXISTING CONDITION



REVISIONS

-L- SR 1203 (OVER JACK'S SWAMP)

BMI#10
N 1009592 E 2428708
-L- STA. 17+43.37, 29.2' LT
EL = 98.40
R/R SPIKE 24 PINE



BRIDGE HYDRAULIC DATA

| | | |
|-----------------------|--------|-----|
| DESIGN DISCHARGE | = 700 | CFS |
| DESIGN FREQUENCY | = 25 | YRS |
| DESIGN HW ELEVATION | = 94.4 | FT |
| BASE DISCHARGE | = 1252 | CFS |
| BASE FREQUENCY | = 100 | YRS |
| BASE HW ELEVATION | = 95.4 | FT |
| OVERTOPPING DISCHARGE | = 1400 | CFS |
| OVERTOPPING FREQUENCY | = 100+ | YRS |
| OVERTOPPING ELEVATION | = 95.9 | FT |

FOR STRUCTURE PLANS, SEE S-1 THRU S-13

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aduke

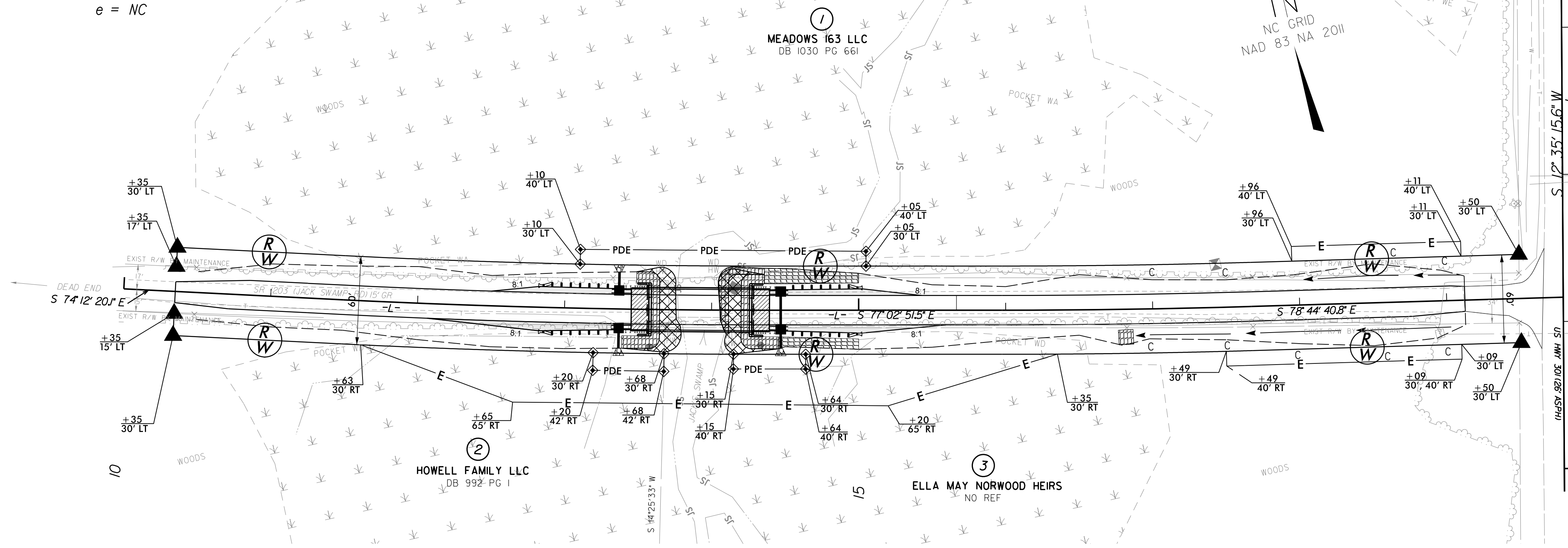
8/17/99

RIGHT OF WAY DETAIL SHEET
**** DETAIL FOR RIGHT OF WAY MONUMENTS AND EASEMENT FLAGS**
DESIGN FOR REFERENCE ONLY
 BRIDGE NO. 650093

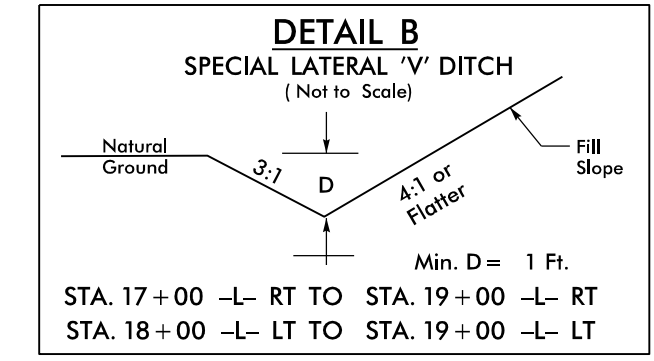
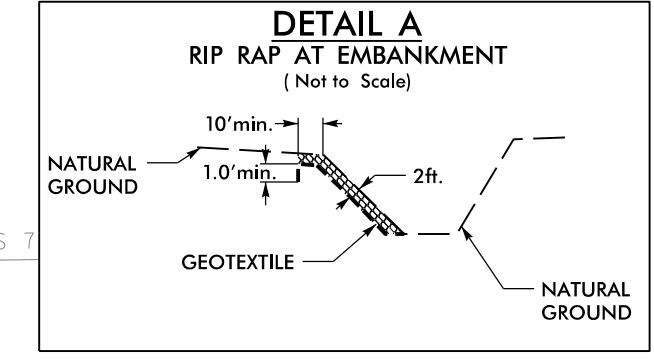
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|---|---|
| PROJECT REFERENCE NO. <i>BR-0118</i> | SHEET NO. <i>4A</i> |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| | |
| <p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p> | |
| PREPARED IN THE OFFICE OF: | NC FIRM LICENSE No. C-1508 301 Fayetteville St., Suite 1500 Raleigh, NC 27601 (919) 862-7839 |

-L-
 PI Sta 12+91.67 PI Sta 16+82.39
 $\Delta = 2^{\circ}50'31.4"$ (LT) $\Delta = 1^{\circ}41'49.4"$ (LT)
 $D = 1^{\circ}00'00.0"$ $D = 1^{\circ}00'00.0"$
 $L = 284.21'$ $L = 169.71'$
 $T = 142.13'$ $T = 84.86'$
 $R = 5,729.58'$ $R = 5,729.58'$
 $e = NC$ $e = NC$

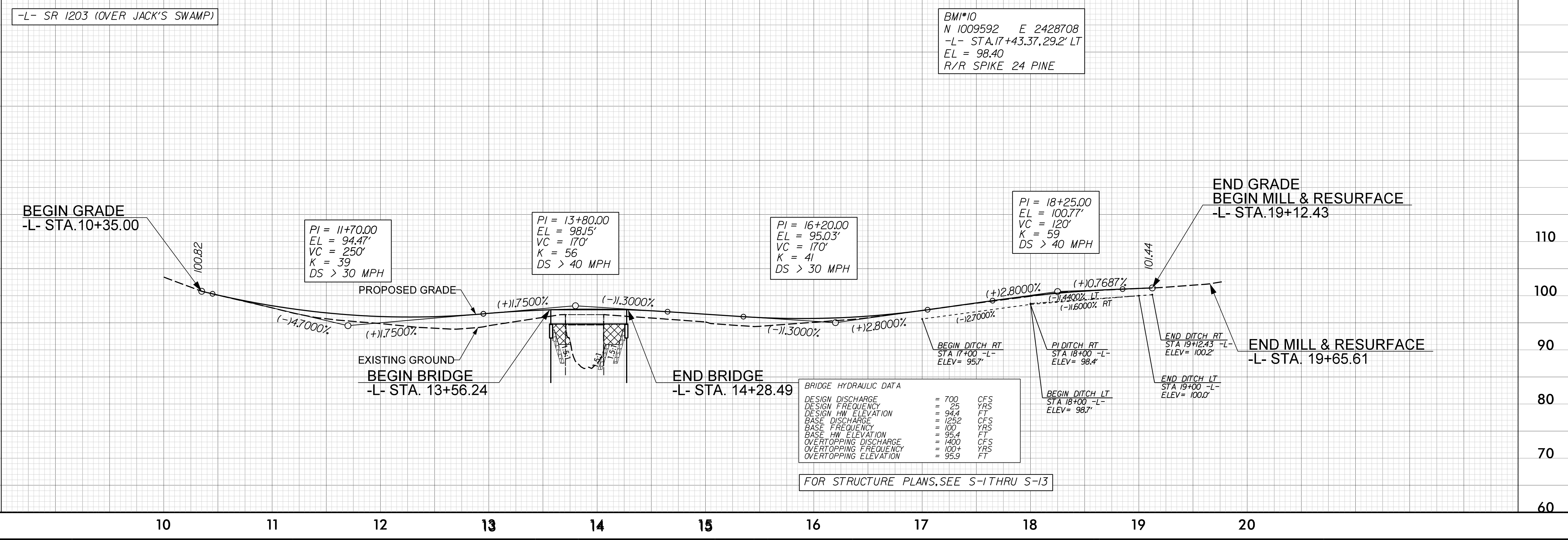
| PARCEL No. | SHEET No. | PROPERTY OWNER NAME | ROW AREA (SF) | ROW AREA (AC) | TCE AREA (SF) | TCE AREA (AC) | PDE AREA (SF) | PDE AREA (AC) |
|------------|-----------|------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 1 | 4 | MEADOWS 163 LLC | 9044 | 0.157 | 1151 | 0.026 | 2017 | 0.046 |
| 2 | 4 | HOWELL FAMILY LLC | 5659 | 0.130 | 4736 | 0.109 | 580 | 0.013 |
| 3 | 4 | ELLA MAY NORWOOD HEIRS | 9746 | 0.224 | 8356 | 0.192 | 491 | 0.011 |



NOTE: CROSS SLOPES AT PROJECT TIE-INS ARE APPROXIMATE.
 CONTRACTOR TO ENSURE APPROPRIATE CROSS SLOPE TRANSITIONS TO EXISTING CONDITION
 NOTE: TEMPORARY DETOUR NOT SHOWN FOR CLARITY.
 NOTE: TL ALIGNMENT TO BE COVERED IN EASEMENT TAKES AS SEEN ON SHT-5.



REVISIONS



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 iduke

FOR STRUCTURE PLANS, SEE S-1 THRU S-13

8/17/99

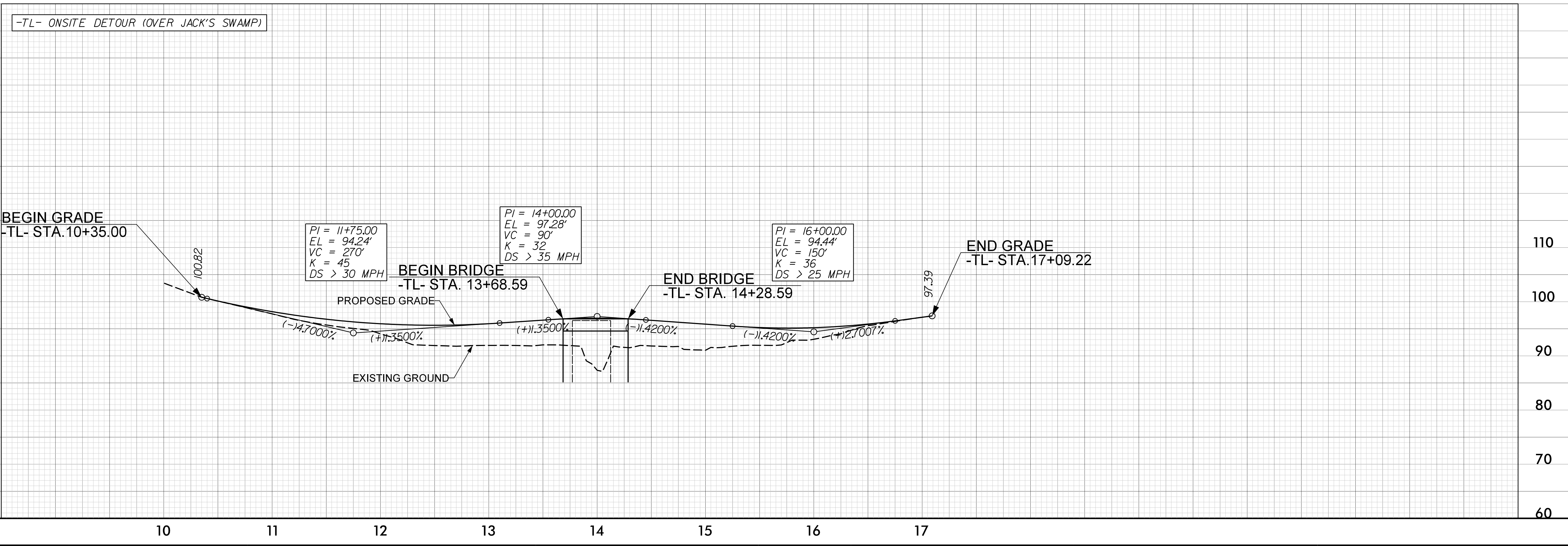
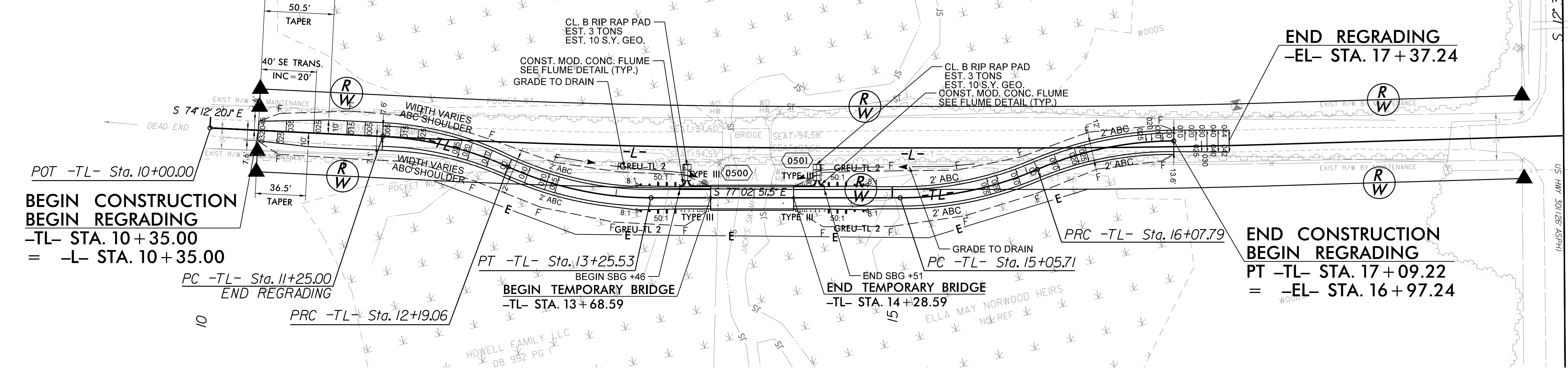
TEMPORARY DETOUR

BRIDGE NO. 650093

| | | | |
|--|--|---|--|
| PROJECT REFERENCE NO. <i>BR-0118</i> | | SHEET NO. 5 | |
| RW SHEET NO. | | HYDRAULICS ENGINEER | |
| ROADWAY DESIGN ENGINEER | | HYDRAULICS ENGINEER | |
| | | | |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | | | |
| PREPARED IN THE OFFICE OF: | | | |
| | | ROLAND L. WILLIAMS DB 616 PG 865 WILLIAM H. NORWOOD MARIE NORWOOD DB 555 PG 465 ELLA MAY NORWOOD HEIRS NO REF | |

-TL-

| | |
|--|--|
| PI Sta 11+72.60 Δ = 21° 33' 25.0" (RT) D = 22° 55' 05.9" L = 94.06' T = 47.59' R = 250.00' e = NC | PI Sta 15+57.47 Δ = 23° 23' 40.3" (LT) D = 22° 55' 05.9" L = 102.08' T = 51.76' R = 250.00' e = RC |
| PI Sta 12+73.11 Δ = 24° 23' 56.4" (LT) D = 22° 55' 05.9" L = 106.46' T = 54.05' R = 250.00' e = RC | PI Sta 16+59.21 Δ = 23° 14' 41.3" (RT) D = 22° 55' 05.9" L = 101.42' T = 51.42' R = 250.00' e = NC |



REVISIONS

05-MAR-2020 10:35 BR-0118_Rdy_psh-temp-bridge.dgn