

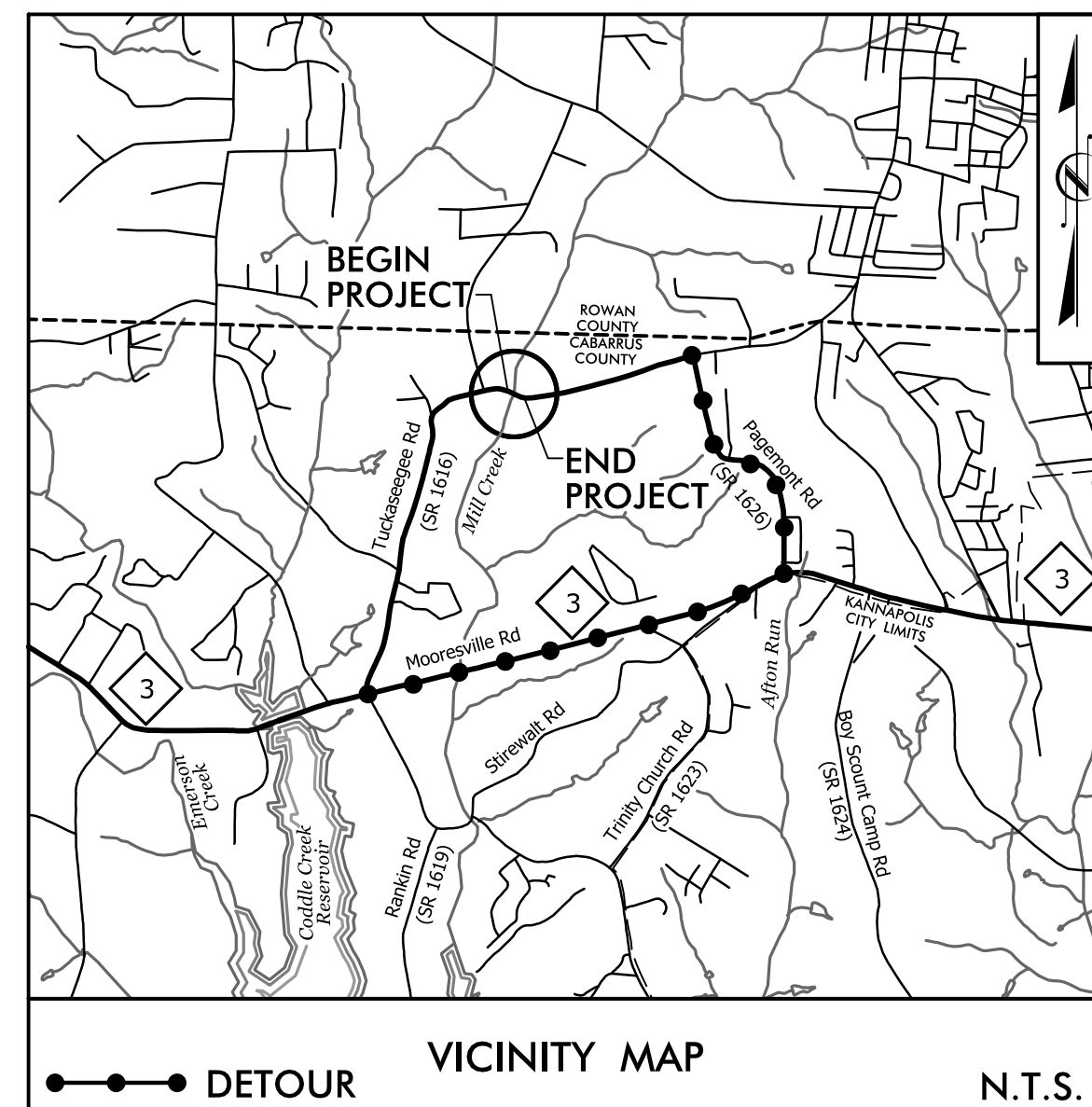
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and sealed by the individuals whose names and license
numbers appear on each page, on the dates appearing
with their signature on that page.**

**This file or an individual page
shall not be considered a certified document.**

PROJECT WBS: 17BP.10.C.4
CONTRACT: DJ00377

See Sheet 1A For Index of Sheets
See Sheet 1B For Standard Symbology Sheet

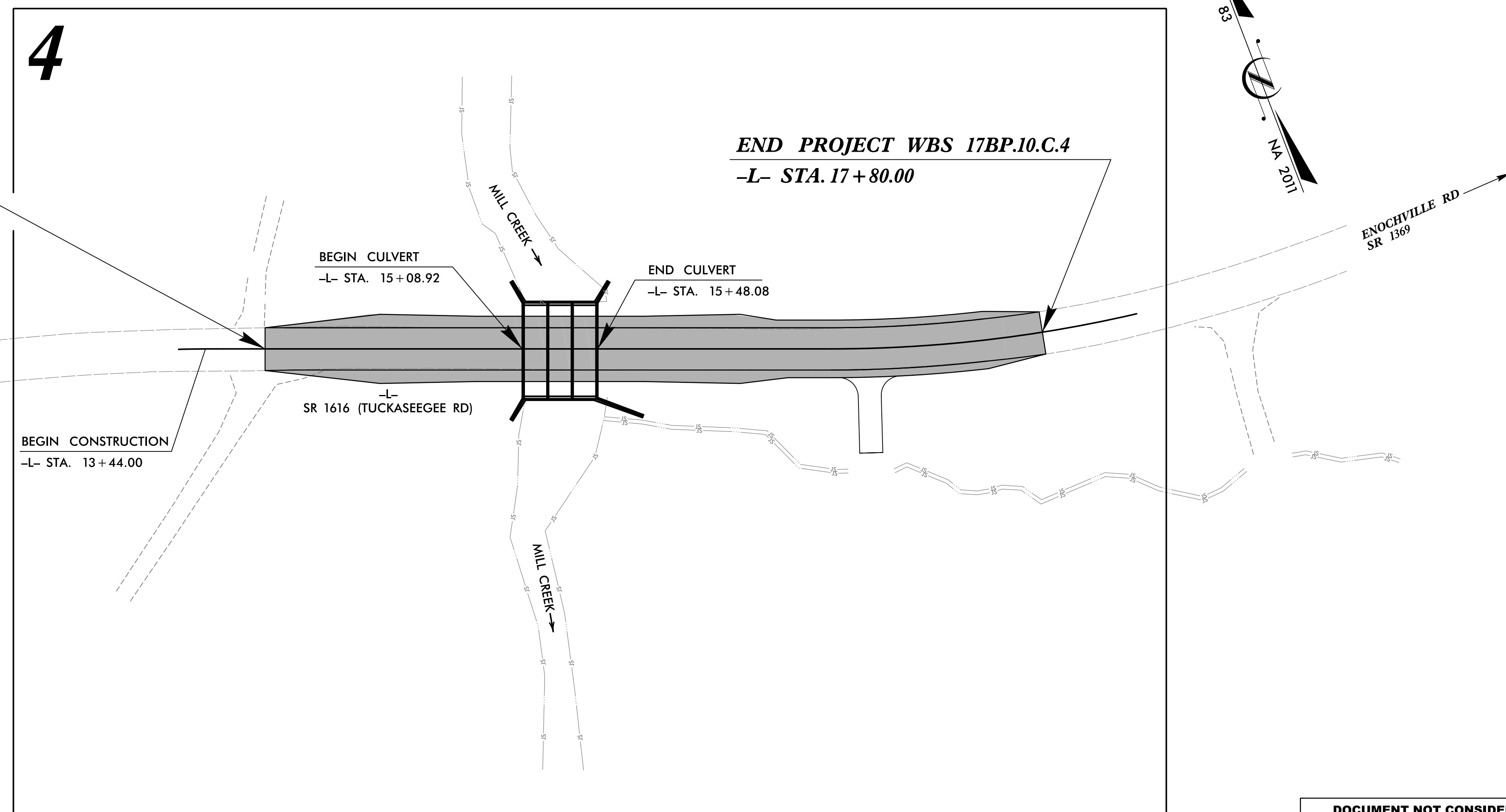
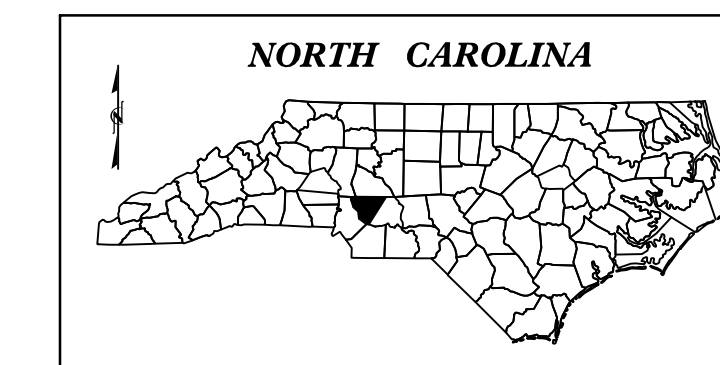


100% PLANS

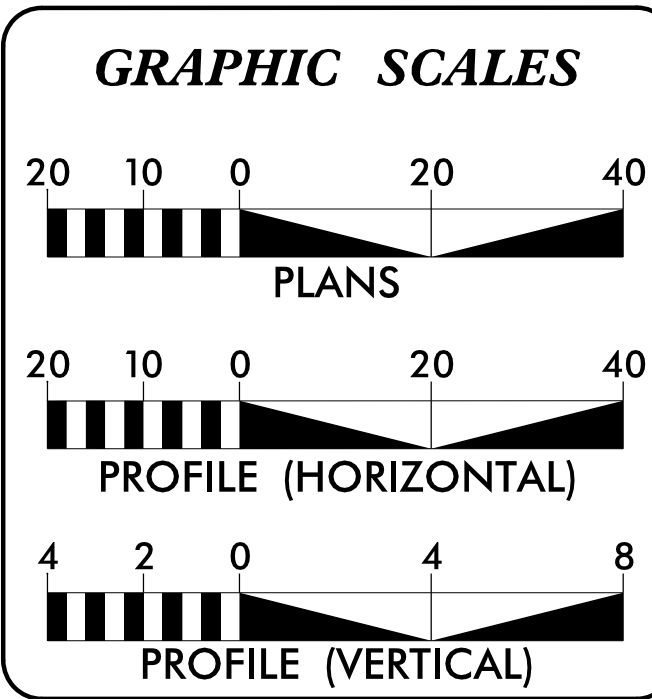
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
CABARRUS COUNTY

LOCATION: CULVERT #15 OVER MILL CREEK ON SR 1616 (TUCKASEEGEE RD)
TYPE OF WORK: GRADING, PAVING, DRAINAGE, & STRUCTURE

| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
|-----------------|-----------------------------|--------------|--------------|
| N.C. | 17BP.10.C.4 | 1 | |
| STATE PROJ. NO. | F.A. PROJ. NO. | DESCRIPTION | |
| 17BP.10.PE.4 | | P.E. | |
| 17BP.10.PE.4 | | ROW & UTIL | |
| 17BP.10.C.4 | | CONSTRUCTION | |



**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



DESIGN DATA

| | |
|-----------------------|--------|
| ADT 2017 = | 3400 |
| ADT 2025 = | N/A |
| DHV = | N/A |
| D = | N/A |
| T = | 6% |
| V = | 50 MPH |
| FUNC. CLASSIFICATION: | LOCAL |
| SUB REGIONAL TIER | |

PROJECT LENGTH

| | |
|--|------------|
| LENGTH OF ROADWAY PROJECT WBS 17BP.10.PE.4 = | .070 MILES |
| LENGTH OF STRUCTURE PROJECT WBS 17BP.10.PE.4 = | .007 MILES |
| TOTAL LENGTH OF PROJECT WBS 17BP.10.PE.4 = | .077 MILES |

NCDOT CONTACT: GARLAND HAYWOOD, PE
Division Bridge Manager

PLANS PREPARED FOR THE NCDOT BY:

STV 100 Years
STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

| | |
|--|---|
| 2018 STANDARD SPECIFICATIONS | |
| RIGHT OF WAY DATE: FEBRUARY 11, 2020 | NIKKI T. HONEYCUTT, PE PROJECT ENGINEER |
| LETTING DATE: JUNE 16, 2021 | CLARK E. GROVES PROJECT DESIGNER |

HYDRAULICS ENGINEER

DocuSigned by:
Edward J. Vance
EDWARD J. VANCE, P.E.
SEAL 029388
05/15/2021

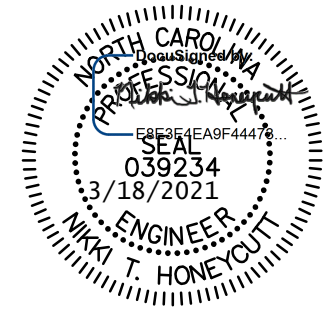
ROADWAY DESIGN ENGINEER

DocuSigned by:
Nikki T. Honeycutt
NIKKI T. HONEYCUTT, P.E.
SEAL 039234
01/16/2021





STV Engineers, Inc.
 800 West Trade St., Suite 715
 Charlotte, NC 28202
 NC License Number F-0991

| | |
|---|------------------------|
| PROJECT REFERENCE NO. <i>17BP10.C.4</i> | SHEET NO. <i>1A</i> |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | |
|  | |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | |

INDEX OF SHEETS

| SHEET NUMBER | SHEET |
|------------------|---|
| 1 | TITLE SHEET |
| 1A | INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS |
| 1B | CONVENTIONAL SYMBOLS |
| 2C-1 | ROADWAY DETAILS |
| 3 | SUMMARIES AND TYPICAL SECTIONS SHEET |
| 4 THRU 5 | PLAN AND PROFILE SHEET |
| TMP-1 THRU TMP-2 | TRANSPORTATION MANAGEMENT PLAN |
| PMP-1 | PAVEMENT MARKING PLANS |
| EC-1 THRU EC-5 | EROSION CONTROL PLANS |
| X-1 THRU X-5 | CROSS-SECTIONS |
| C-1 THRU C-7 | STRUCTURE PLANS |
| SN | STRUCTURE STANDARD NOTES |

GENERAL NOTES

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

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.

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.

RIGHT-OF-WAY MARKERS:

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

STANDARD DRAWINGS

2018 ROADWAY ENGLISH STANDARD DRAWINGS EFF. January, 2018

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 |
| DIVISION 5 - SUBGRADE, BASES AND SHOULDERS | |
| 560.01 | Method of Shoulder Construction - High Side of Superelevated Curve - Method I |
| DIVISION 8 - INCIDENTALS | |
| 848.02 | Driveway Turnout |
| 862.01 | Guardrail Placement |
| 862.02 | Guardrail Installation |
| DIVISION 11 - WORK ZONE TRAFFIC CONTROL | |
| 1101.03 | Temporary Road Closures |
| 1110.01 | Stationary Work Zone Signs - Mounting Height & Lateral Clearance |
| 1145.01 | Barricades - Type III |

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 | ⑩②③ |
| 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 Easment 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 CA 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 | ○ P |
| 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 | ○ T |
| Telephone Pedestal | □ T |
| Telephone Cell Tower | ⊠ T |
| 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 | ○ W |
| Water Meter | ○ |
| Water Valve | ⊗ |
| Water Hydrant | ⊕ |
| U/G Water Line LOS B (S.U.E.*) | ----- |
| U/G Water Line LOS C (S.U.E.*) | ----- |
| U/G Water Line LOS D (S.U.E.*) | ----- |
| Above Ground Water Line | ----- A/G Water |

TV:

| | |
|---------------------------------------|-------------|
| TV Pedestal | □ T |
| 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:

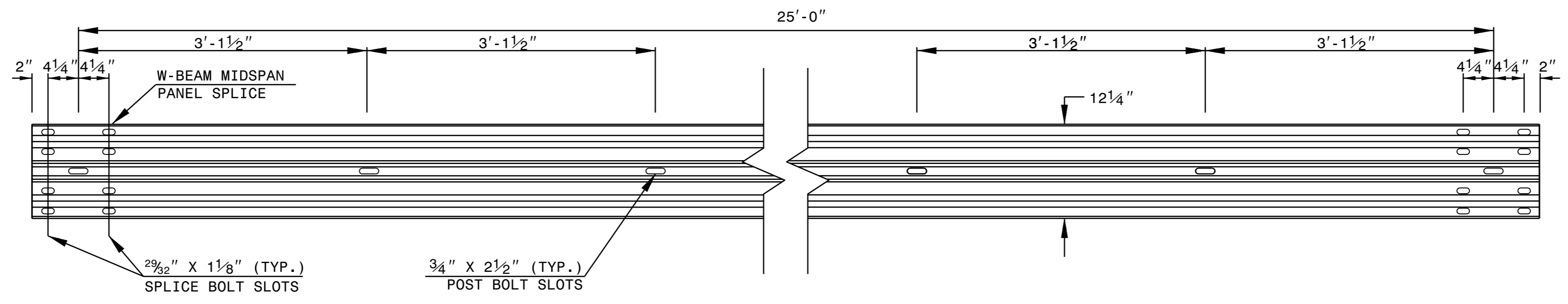
| | |
|--|-----------|
| Utility Pole | ● |
| Utility Pole with Base | □ |
| Utility Located Object | ○ |
| Utility Traffic Signal Box | ⊠ |
| Utility Unknown U/G Line LOS B (S.U.E.*) | ----- TUL |
| U/G Tank; Water, Gas, Oil | ----- |
| Underground Storage Tank, Approx. Loc. | ⊕ |
| A/G Tank; Water, 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. |

12/2/2016
3/15/2021
R:\Roadway\Proj\SH\A-C-4-L-4-1-1.dwg
S:\GIS\SL

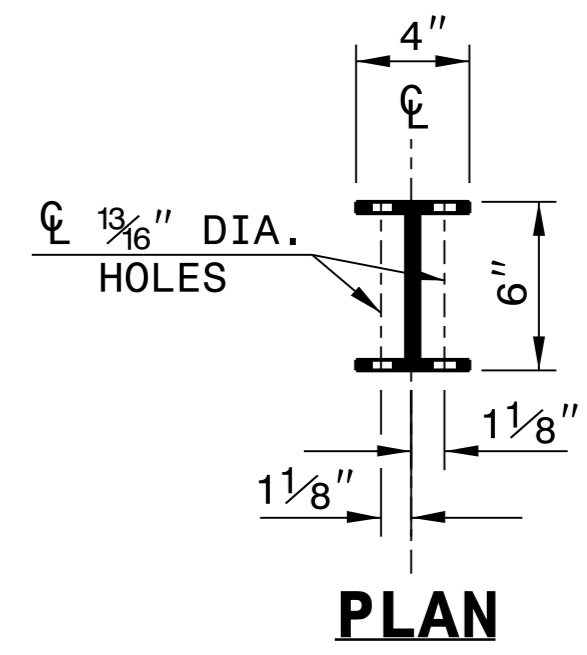
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

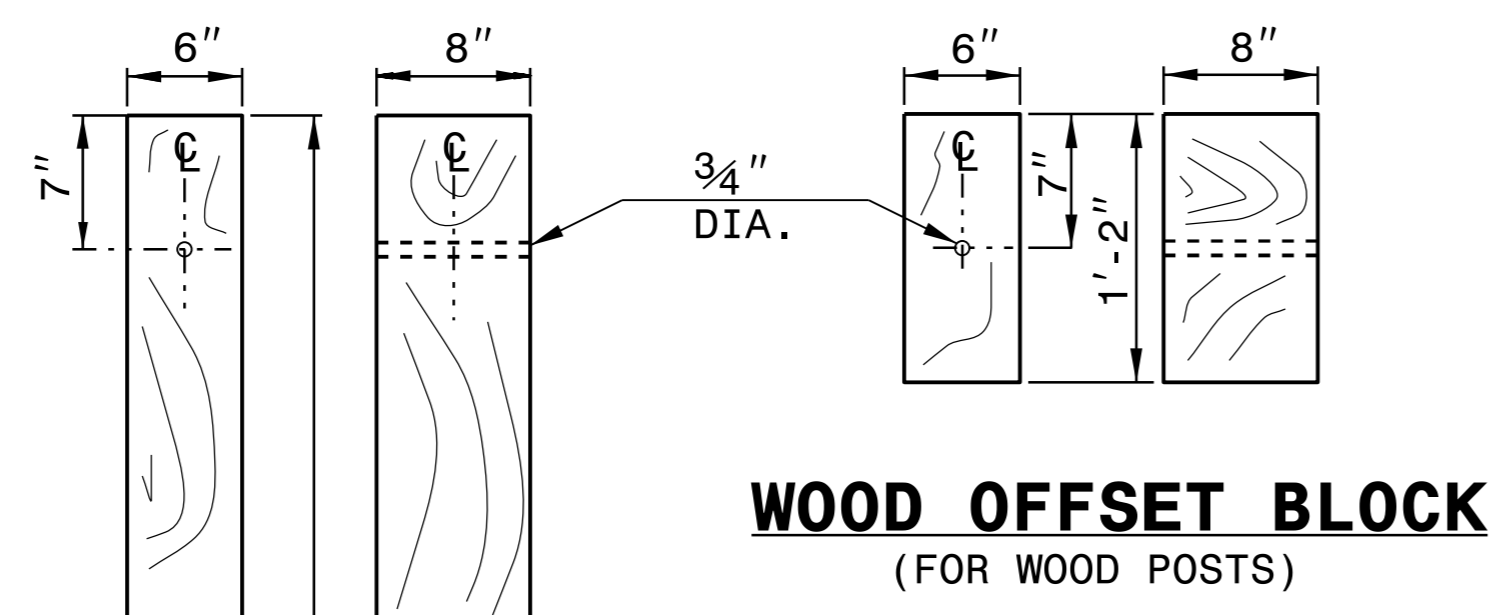
SHEET 6 OF 8
862D02



STANDARD W-BEAM GUARDRAIL



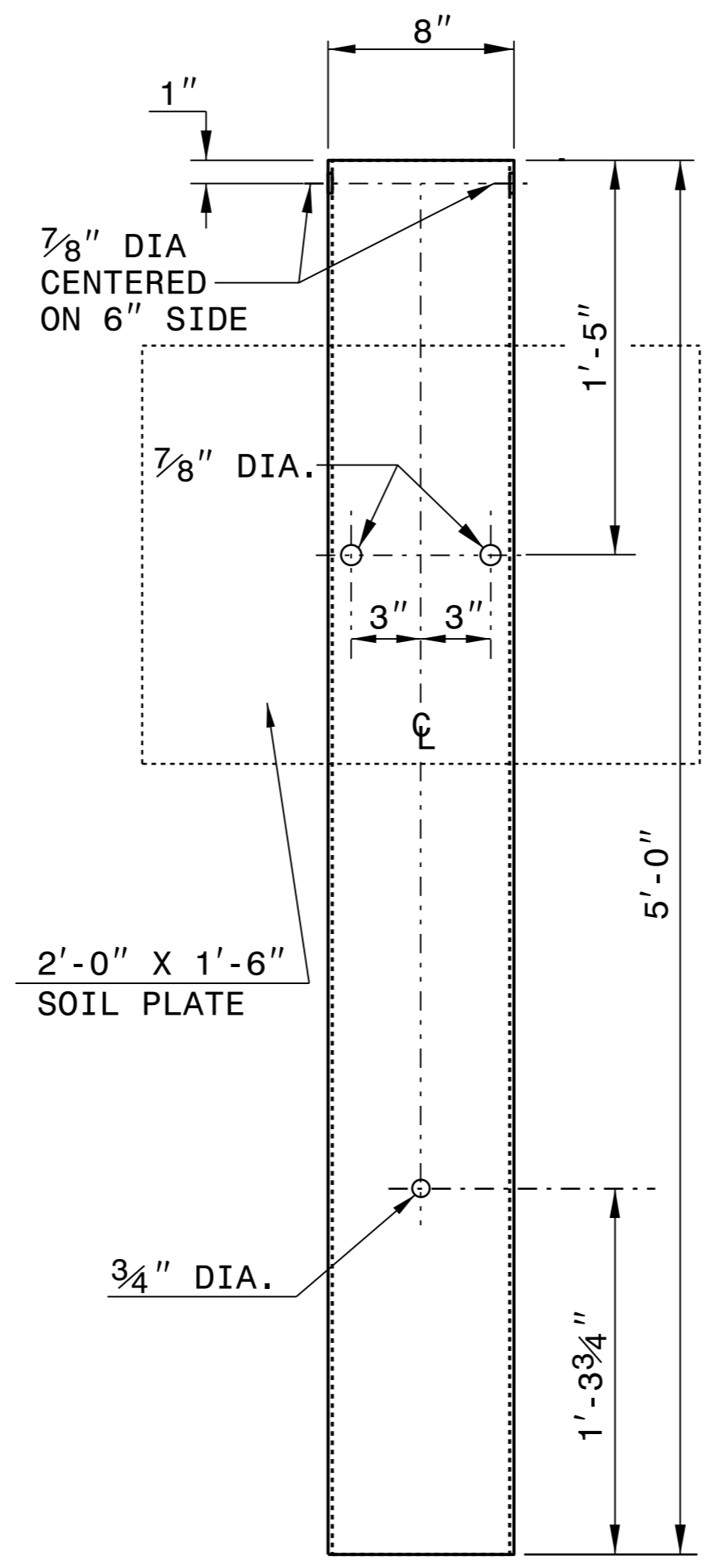
PLAN



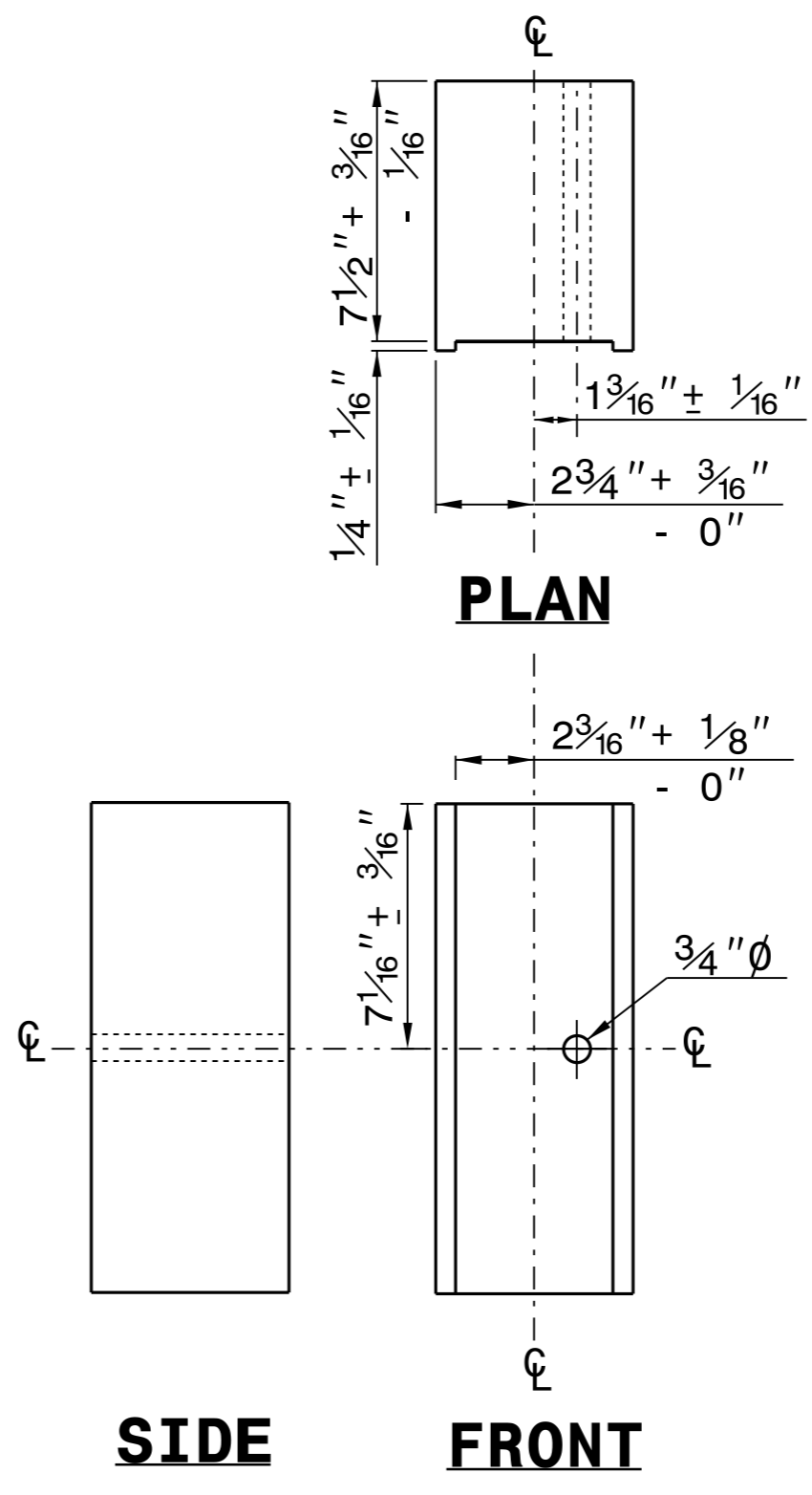
**WOOD OFFSET BLOCK
(FOR WOOD POSTS)**

**STANDARD
LINE POST**

**SHORT WOOD
BREAKAWAY POST**



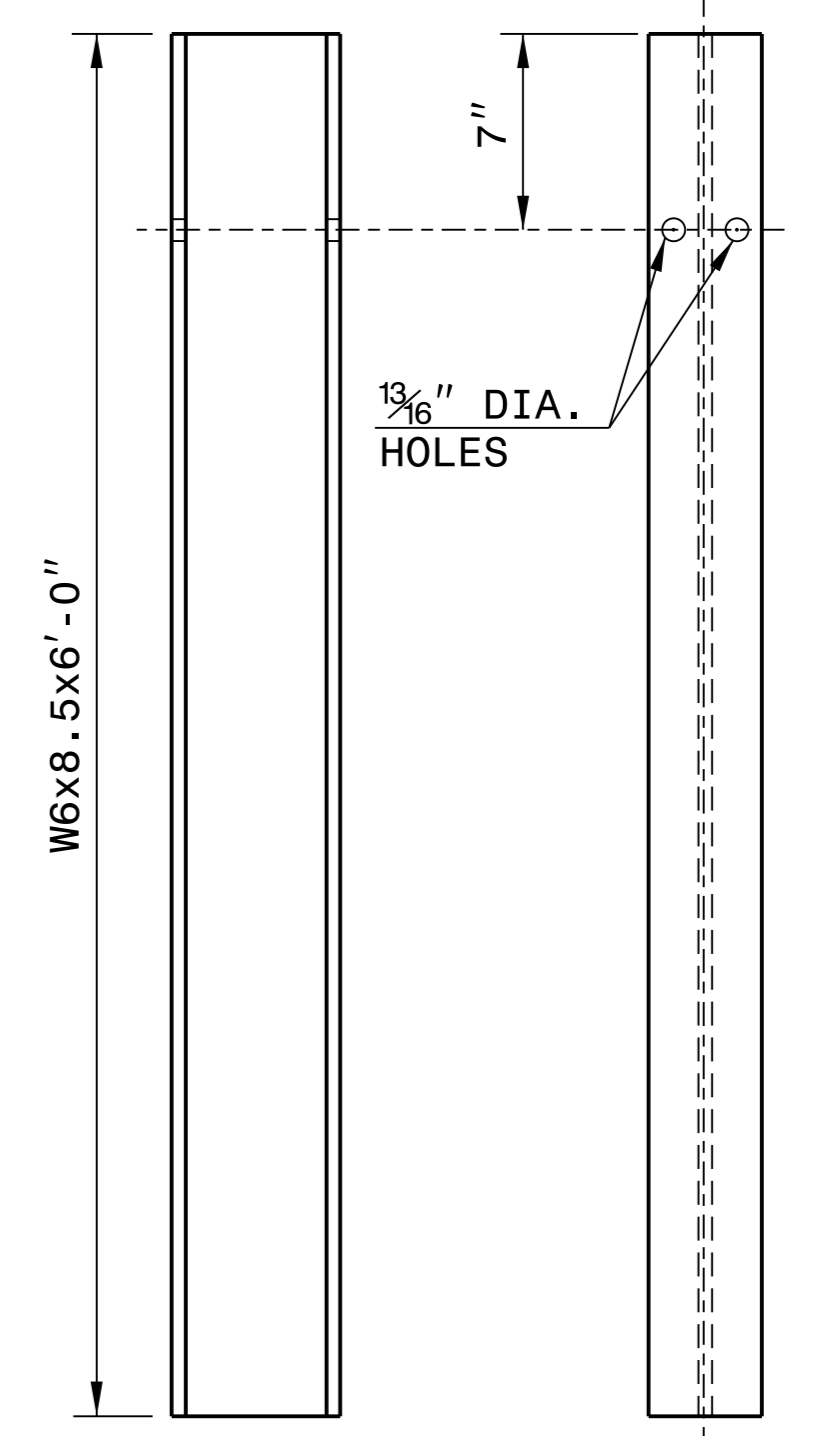
**STEEL TUBE
TS 6"x8"x0.1875"**



SIDE

FRONT

**ROUTED
OFFSET BLOCK**



SIDE

FRONT

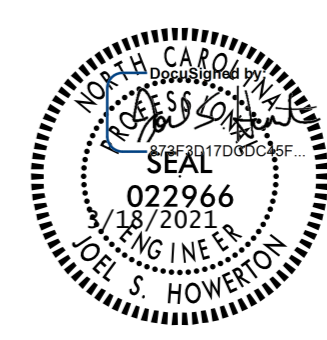
"W6" STEEL POST

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02

SYSTEM PARTS



**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.: _____

8/17/19

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "GPS-101"

WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 641868.8730(FT) EASTING: 1494437.3010(FT) ELEVATION: 707.95(FT)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999853253

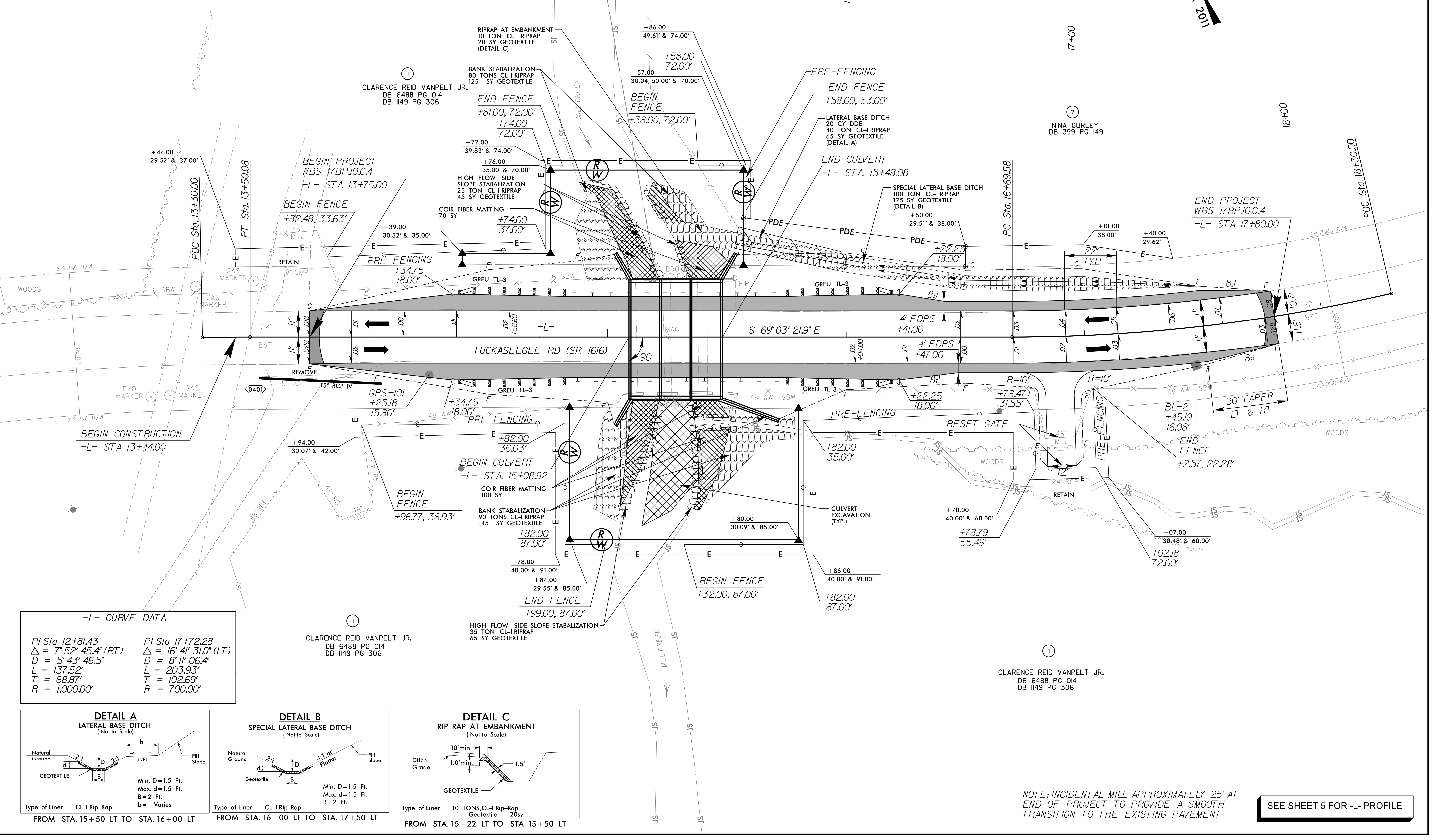
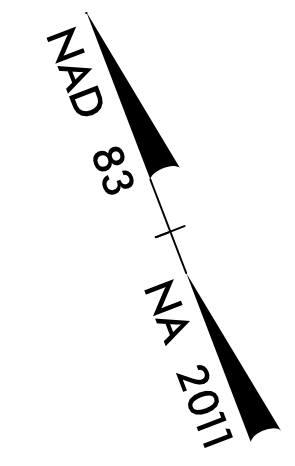
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS-101" TO -L- STATION IS 13+75.00 S 51°34'48.10" E 52.61'(ft)

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

| | | | |
|-----------|---------------|----------------|--------------|
| BM-1 | N 641986 | E 1494239 | ELEV 718.27' |
| BM-2 | N 641696 | E 1495047 | ELEV 724.16' |
| BL-1 | N 641977.4348 | E 1494133.4785 | ELEV 727.13' |
| BL-2 | N 641757.5588 | E 1494739.0343 | ELEV 710.40' |
| BL-3 | N 641736.8795 | E 1495040.4683 | ELEV 724.66' |
| (GPS-101) | N 641868.8730 | E 1494437.3010 | ELEV 707.95' |

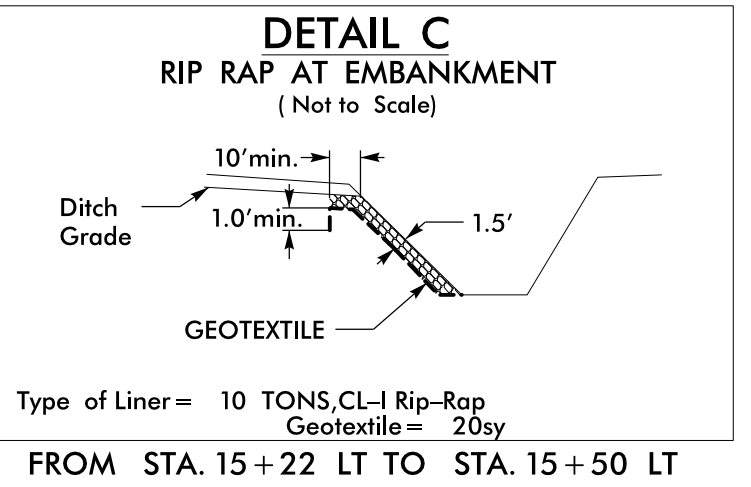
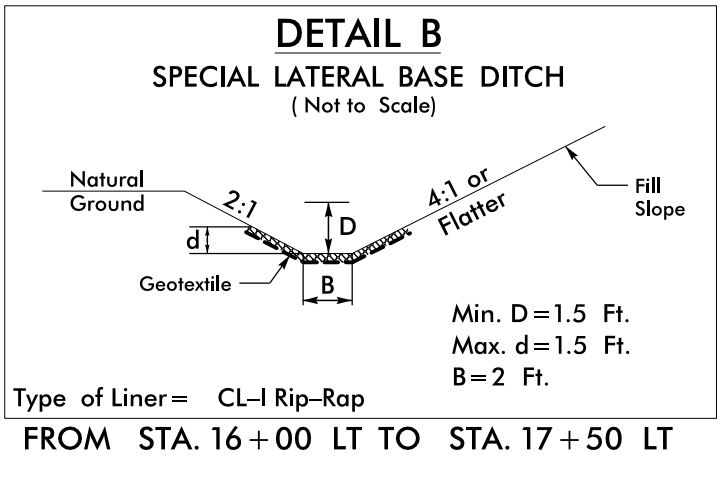
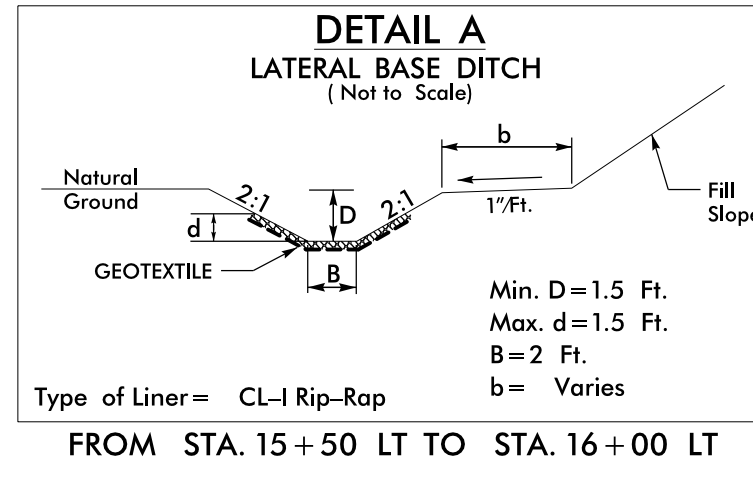
STV 100 Years
STV Engineers, Inc.
 300 West Trade St., Suite 715
 Charlotte, NC 28202
 NC License Number F-0991

| | | |
|--|--|-----------------------|
| PROJECT REFERENCE NO. 17BP10.C.4 | | SHEET NO. 4 |
| RW SHEET NO. | | HYDRAULICS ENGINEER |
| ROADWAY DESIGN ENGINEER | | |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | | |



-L- CURVE DATA

| | |
|------------------------------------|-------------------------------------|
| PI Sta 12+81.43 | PI Sta 17+72.28 |
| $\Delta = 7^\circ 52' 45.4''$ (RT) | $\Delta = 16^\circ 41' 31.0''$ (LT) |
| $D = 5^\circ 43' 46.5''$ | $D = 8^\circ 11' 06.4''$ |
| $L = 137.52'$ | $L = 203.93'$ |
| $T = 68.87'$ | $T = 102.69'$ |
| $R = 1,000.00'$ | $R = 700.00'$ |

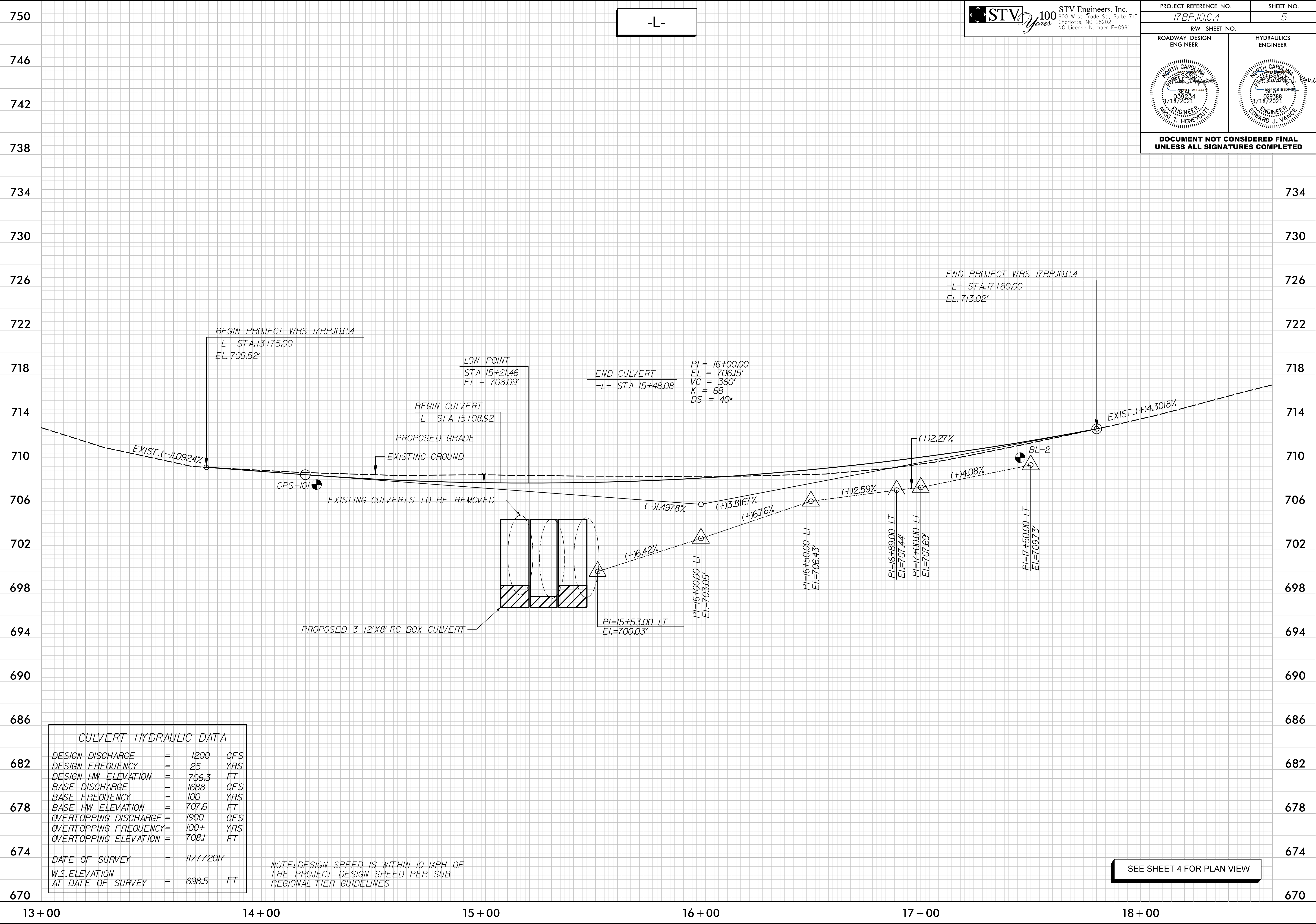


NOTE: INCIDENTAL MILL APPROXIMATELY 25' AT END OF PROJECT TO PROVIDE A SMOOTH TRANSITION TO THE EXISTING PAVEMENT

SEE SHEET 5 FOR -L- PROFILE

8/17/2021 Proj: 17BP10.C.4_rdy_psh04.dgn
 Sources:

8/17/19



-L-

STV 100 Years
 STV Engineers, Inc.
 300 West Trade St., Suite 715
 Charlotte, NC 28202
 NC License Number F-0991

| | |
|---|---|
| PROJECT REFERENCE NO. 17BPJ0.C.4 | SHEET NO. 5 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER <i>[Signature]</i> | HYDRAULICS ENGINEER <i>[Signature]</i> |
| <i>[Stamp]</i> 039234 3/18/2021 ENGINEER T. HONEYCUTT | <i>[Stamp]</i> 029388 3/18/2021 ENGINEER EDWARD J. VAN... |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | |


| CULVERT HYDRAULIC DATA | | |
|----------------------------------|---|-----------|
| DESIGN DISCHARGE | = | 1200 CFS |
| DESIGN FREQUENCY | = | 25 YRS |
| DESIGN HW ELEVATION | = | 706.3 FT |
| BASE DISCHARGE | = | 1688 CFS |
| BASE FREQUENCY | = | 100 YRS |
| BASE HW ELEVATION | = | 707.6 FT |
| OVERTOPPING DISCHARGE | = | 1900 CFS |
| OVERTOPPING FREQUENCY | = | 100+ YRS |
| OVERTOPPING ELEVATION | = | 708.1 FT |
| DATE OF SURVEY | = | 11/7/2017 |
| W.S. ELEVATION AT DATE OF SURVEY | = | 698.5 FT |

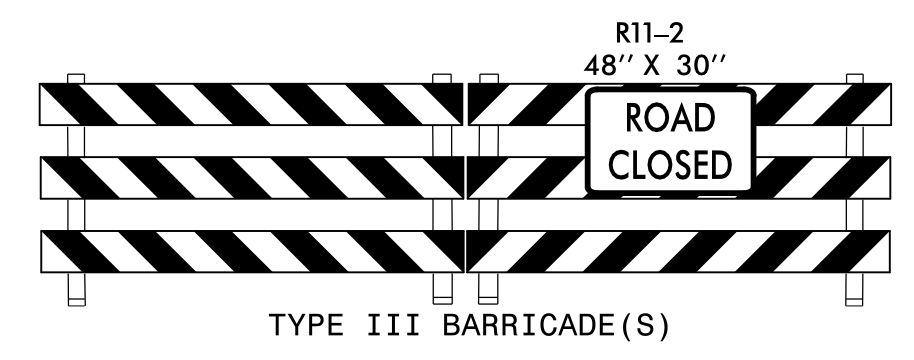
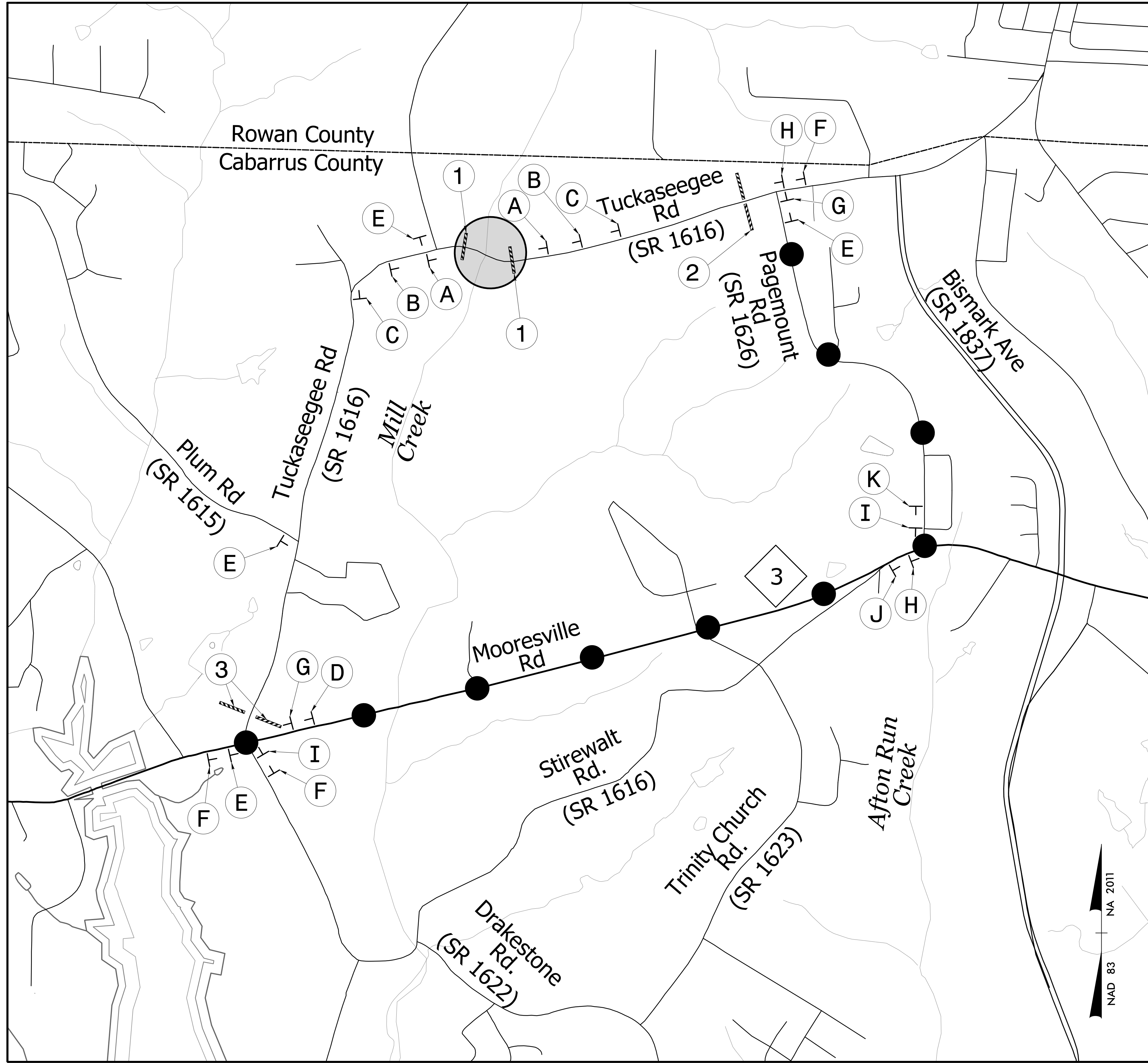
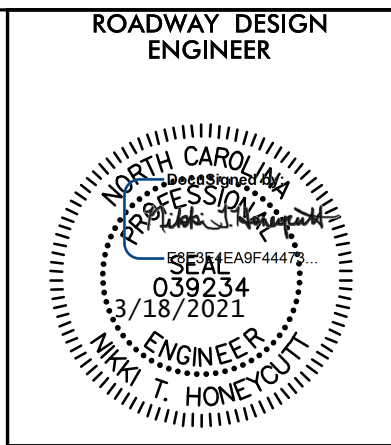
NOTE: DESIGN SPEED IS WITHIN 10 MPH OF THE PROJECT DESIGN SPEED PER SUB REGIONAL TIER GUIDELINES

SEE SHEET 4 FOR PLAN VIEW

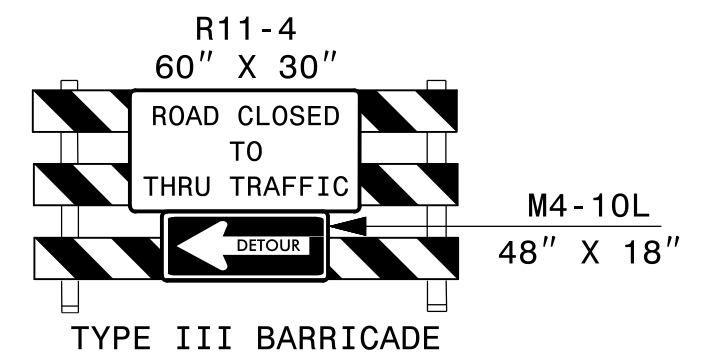
8/15/2021
 C:\Users\psh05\OneDrive\Project\17BPJ0.C.4-rdly-psh05.dgn
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OFF-SITE DETOUR SIGNING AND ROAD CLOSURE SIGNING

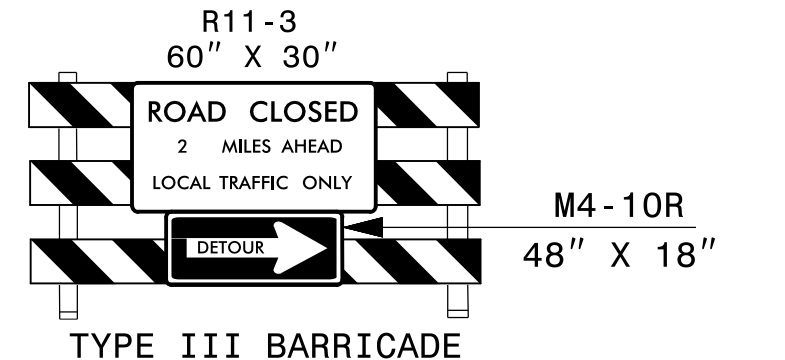
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| PROJECT REFERENCE NO. 17BPJOC.4 | SHEET NO. TMP-1 |
| RW SHEET NO. | |
|  STV Engineers, Inc. 900 West Trade St., Suite 715 Charlotte, NC 28202 NC License Number F-0991 | |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | |



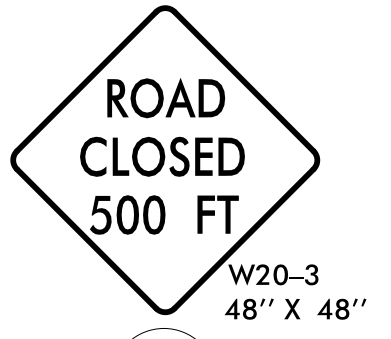
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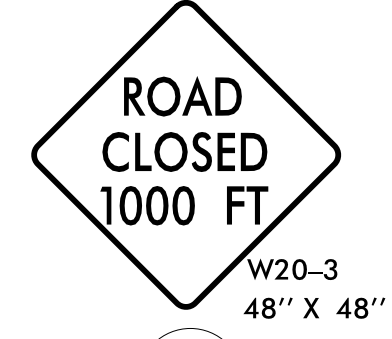
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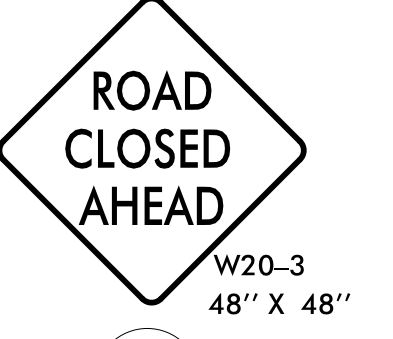
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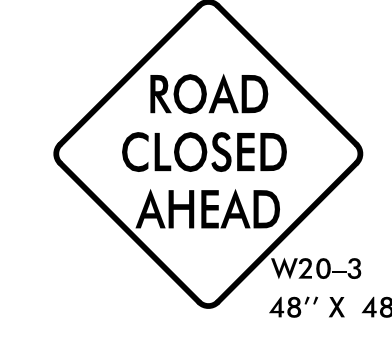
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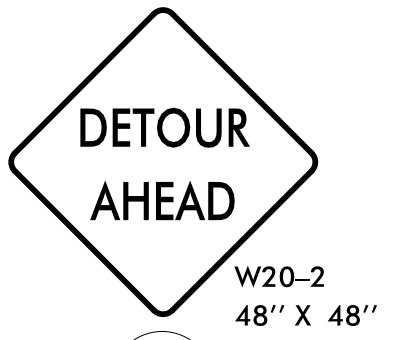
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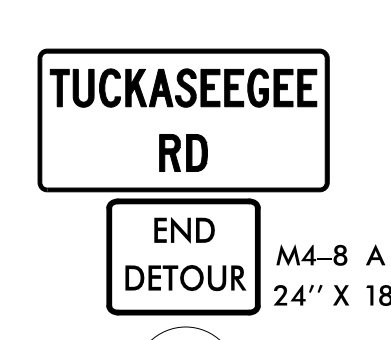
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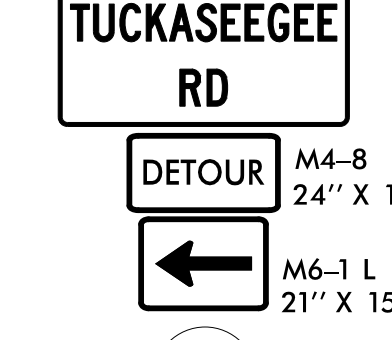
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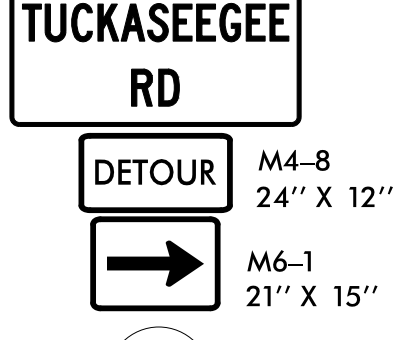
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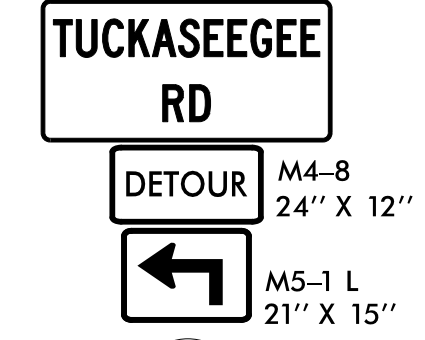
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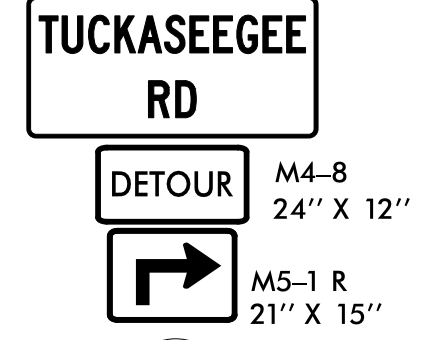
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I

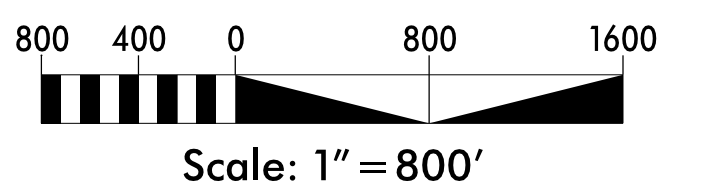


J



K

SEE ROADWAY STD DWG 1101.03, SHEET 1 OF 9 FOR ADVANCE WARNING AND BARRICADE PLACEMENT.

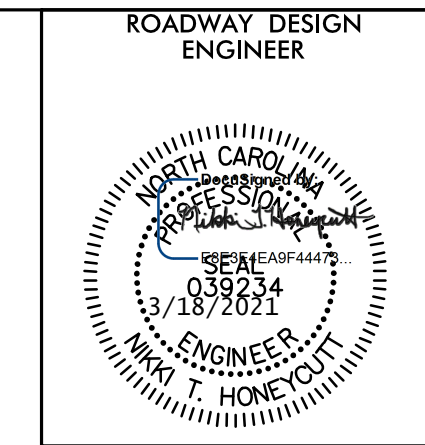


| | |
|-----------------------|-----------|
| PROJECT REFERENCE NO. | SHEET NO. |
| 17BP10C.4 | TMP-2 |
| RW SHEET NO. | |



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BRIDGE *120015

SIGN NUMBER: I-1 **BACKG COLOR: Orange**
TYPE: D **COPY COLOR: Black**
QUANTITY: See Plans

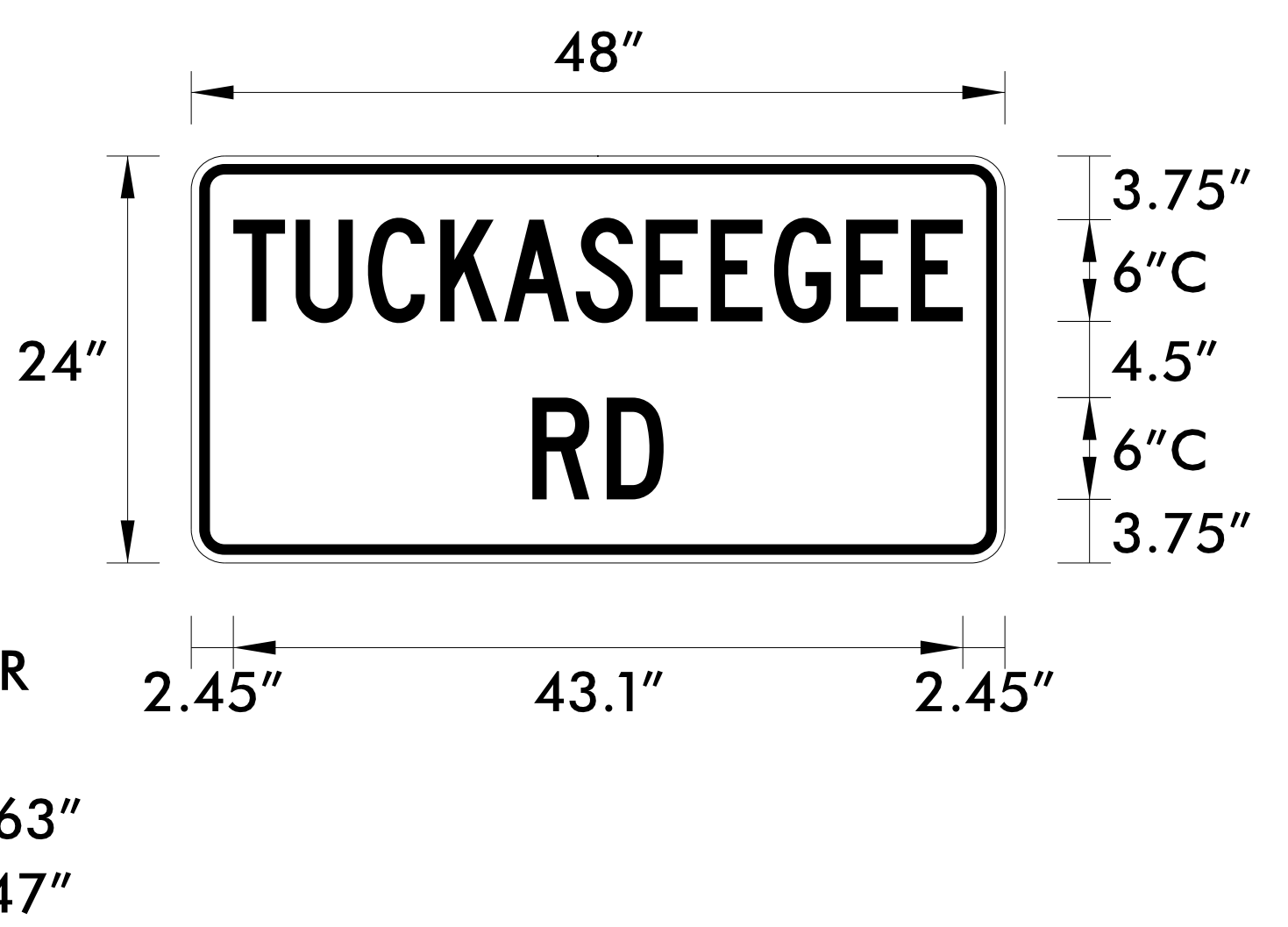
| SYMBOL | X | Y | WID | HT |
|--------|---|---|-----|----|
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| | | | | |

SIGN WIDTH: 48"
HEIGHT: 24"
TOTAL AREA: 8.0 Sq.Ft.

BORDER TYPE: FLUSH
RECESS: 0.47"
WIDTH: 0.63"
RADII: 1.5"

NO. Z BARS: **MAT'L: 0.080" (2.0 mm) ALUMINUM**
LENGTH:

DESIGN BY: JCT **CHECKED BY: GHM**
PROJECT ID: 17BP.10.PE.4 **DIV: 10** **DATE: Aug 15, 2019**



Spacing Factor is 1 unless specified otherwise

USE NOTES: 1,2
1. Legend and border shall be direct applied encapsulated lens reflective sheeting.
2. Background shall be NC Grade B fluorescent.

LETTER POSITIONS

Letter positions are to the lower left corners

| | | | | | | | | | | | | Series/Size | | | | |
|------|------|------|------|------|------|------|------|------|------|------|--|-------------|--|--|--|------------|
| | | | | | | | | | | | | Text Length | | | | |
| T | U | C | K | A | S | E | E | G | E | E | | | | | | C 2000 / 6 |
| 2.5 | 6.2 | 10.4 | 14.7 | 18.5 | 22.7 | 26.8 | 30.6 | 34.4 | 38.6 | 42.5 | | | | | | 43.1 |
| R | D | | | | | | | | | | | | | | | C 2000 / 6 |
| 20.1 | 24.5 | | | | | | | | | | | | | | | 7.7 |
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NORTH CAROLINA D.O.T. SIGN DETAIL

3/15/2021
 R:\TrafficControl\TCP\C.4_RDY_TMP02.dgn
 SoucieSL

PAVEMENT MARKING PLAN

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - 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 |
|----------|--|
| 1205.01 | PAVEMENT MARKINGS - LINE TYPES AND OFFSETS |
| 1205.02 | PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS |
| 1261.01 | GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING |
| 1261.02 | GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING |
| 1262.01 | GUARDRAIL END DELINEATION |

GENERAL NOTES

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.

A) INSTALL PAVEMENT MARKINGS ON THE FINAL SURFACE.

| ROAD NAME | MARKING |
|--------------------------|---------------|
| SR 1616 (TUCKASEEGEE RD) | THERMOPLASTIC |

- B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.
- D) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.
- E) REPLACE ANY PAVEMENT MARKINGS BEYOND THE PROJECT LIMITS DAMAGED BY THE CONTRACTORS' OPERATIONS DURING CONSTRUCTION.

PAVEMENT MARKING SCHEDULE

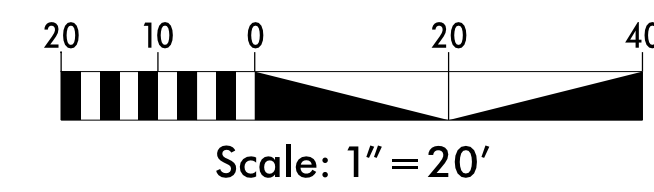
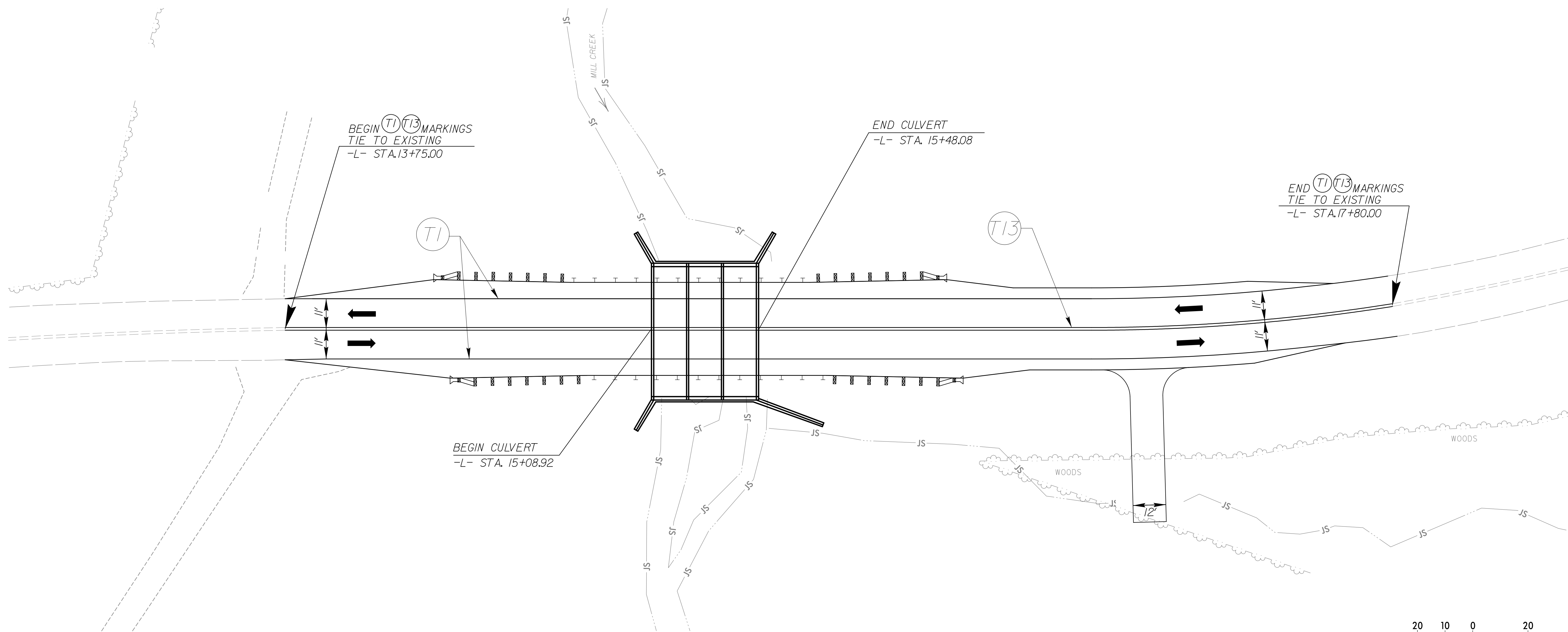
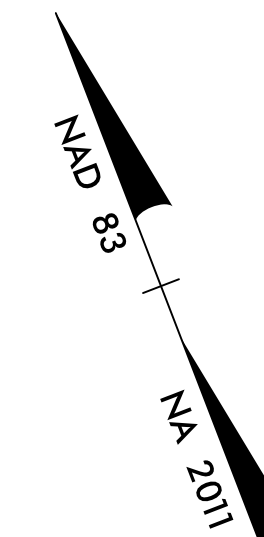
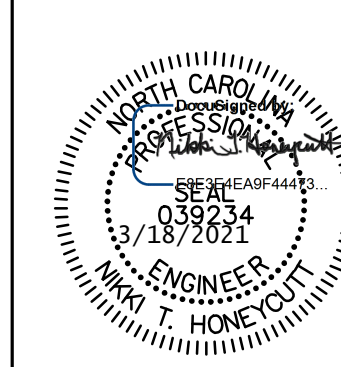
- T1 THERMOPLASTIC WHITE EDGELINE (4", 90MIL)
- T13 THERMOPLASTIC YELLOW DOUBLE CENTER LINE (4", 90MIL)

| | |
|--|---------------------------|
| PROJECT REFERENCE NO. <i>ITBP.JOC.4</i> | SHEET NO. <i>PMP-I</i> |
| RW SHEET NO. | |

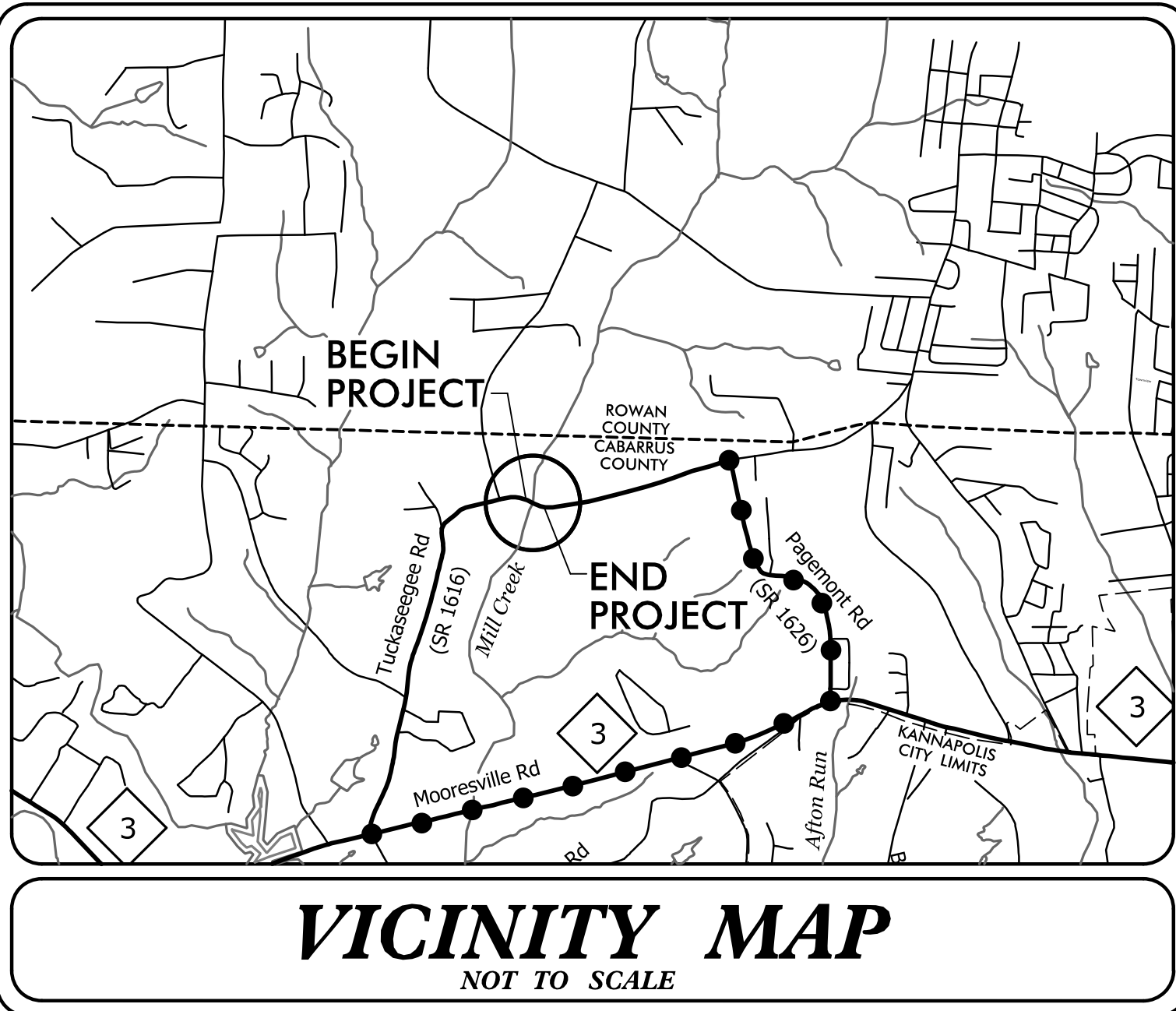
STV 100 Years
STV Engineers, Inc.
800 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

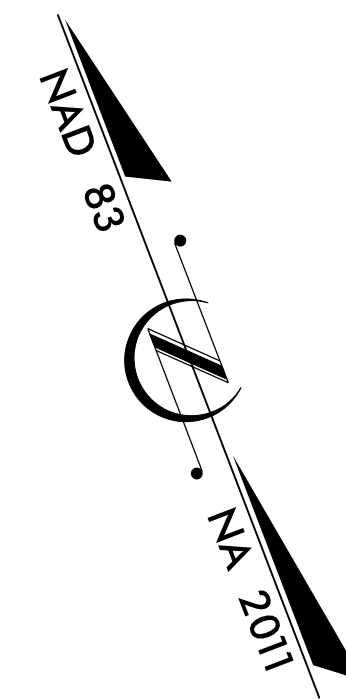
ROADWAY DESIGN
ENGINEER



PROJECT WBS: 17BP.10.C.4



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
**PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL**



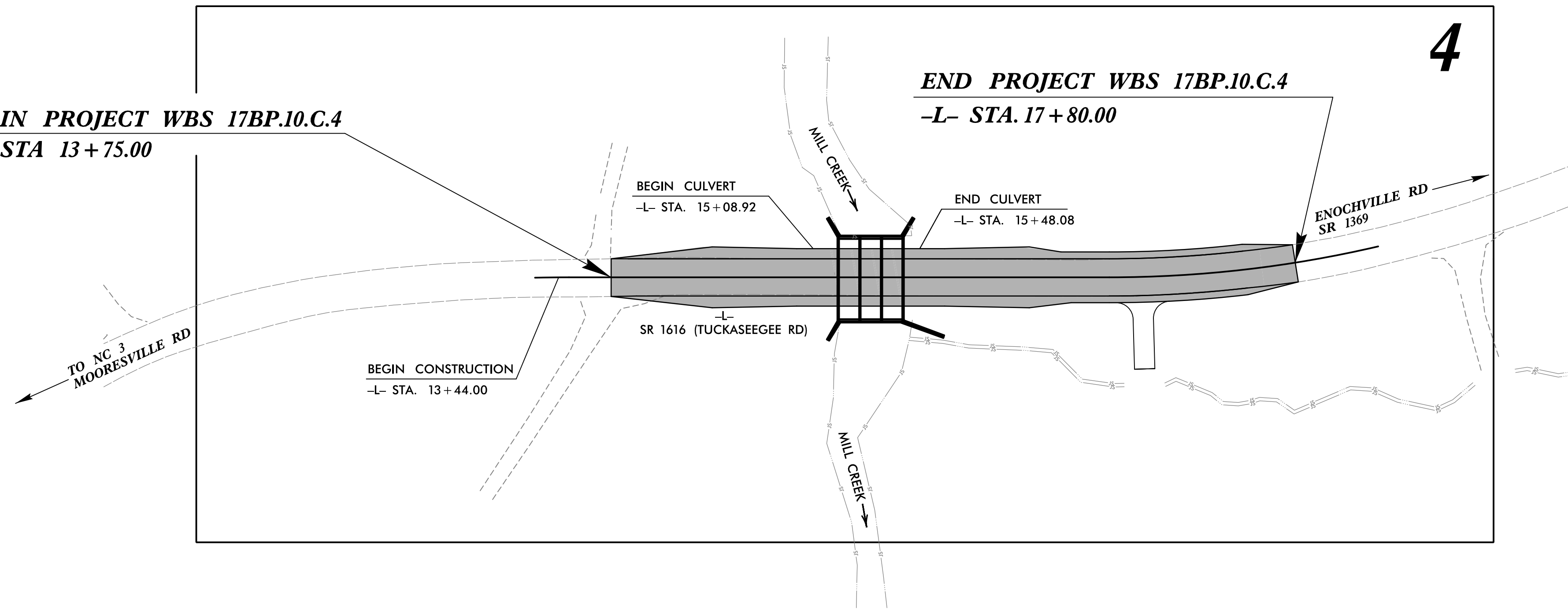
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|-----------------|-----------------------------|--------------|--------------|
| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
| N.C. | 17BP.10.C.4 | EC-1 | 9 |
| STATE PROJ. NO. | F.A. PROJ. NO. | DESCRIPTION | |
| 17BP.10.PE.4 | | P.E. | |
| 17BP.10.PE.4 | | R / W & UTIL | |
| 17BP.10.C.4 | | CONSTRUCTION | |

EROSION AND SEDIMENT CONTROL MEASURES

| Sed. # | Description | Symbol |
|---------|--|------------|
| 1630.05 | Temporary Silt Ditch | TD |
| 1630.05 | Temporary Diversion | TD |
| 1605.01 | Temporary Silt Fence | |
| 1606.01 | Special Sediment Control Fence | ~ ~ ~ |
| 1622.01 | Temporary Berms and Slope Drains | — T — |
| 1630.02 | Silt Basin Type B | [Symbol] |
| 1633.01 | Temporary Rock Silt Check Type-A | [Symbol] |
| | Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM) | [Symbol] |
| 1633.02 | Temporary Rock Silt Check Type-B | [Symbol] |
| | Wattle / Coir Fiber Wattle | [Symbol] |
| | Wattle / Coir Fiber Wattle with Polyacrylamide (PAM) | [Symbol] |
| 1634.01 | Temporary Rock Sediment Dam Type-A | [Symbol] |
| 1634.02 | Temporary Rock Sediment Dam Type-B | [Symbol] |
| 1635.01 | Rock Pipe Inlet Sediment Trap Type-A | [Symbol] |
| 1635.02 | Rock Pipe Inlet Sediment Trap Type-B | [Symbol] |
| 1630.04 | Stilling Basin | [Symbol] |
| 1630.06 | Special Stilling Basin | [Symbol] |
| | Rock Inlet Sediment Trap: | |
| 1632.01 | Type A | A [Symbol] |
| 1632.02 | Type B | B [Symbol] |
| 1632.03 | Type C | C [Symbol] |
| | Skimmer Basin | [Symbol] |
| | Tiered Skimmer Basin | [Symbol] |
| | Infiltration Basin | [Symbol] |

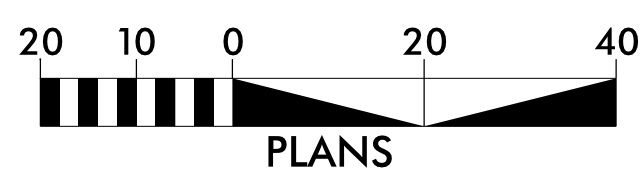
BEGIN PROJECT WBS 17BP.10.C.4
-L- STA 13+75.00

END PROJECT WBS 17BP.10.C.4
-L- STA. 17+80.00



**THIS PROJECT CONTAINS
EROSION CONTROL PLANS
FOR CLEARING AND
GRUBBING PHASE OF
CONSTRUCTION.**

GRAPHIC SCALE



**THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH
THE APPLICABLE REGULATIONS SET FORTH BY THE NCG-010000
GENERAL CONSTRUCTION PERMIT EFFECTIVE APRIL 1, 2019
AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF
ENVIRONMENTAL QUALITY DIVISION OF WATER RESOURCES.**



STV Engineers, Inc.
900 West Trade Street, Suite 715
Charlotte, NC 28202
NC License Number F-0991

Prepared In the Office of:

STV ENGINEERS, INC.
900 WEST TRADE STREET, SUITE 715
CHARLOTTE, NC 28202
NC LICENSE NUMBER F-0991

Designed by:

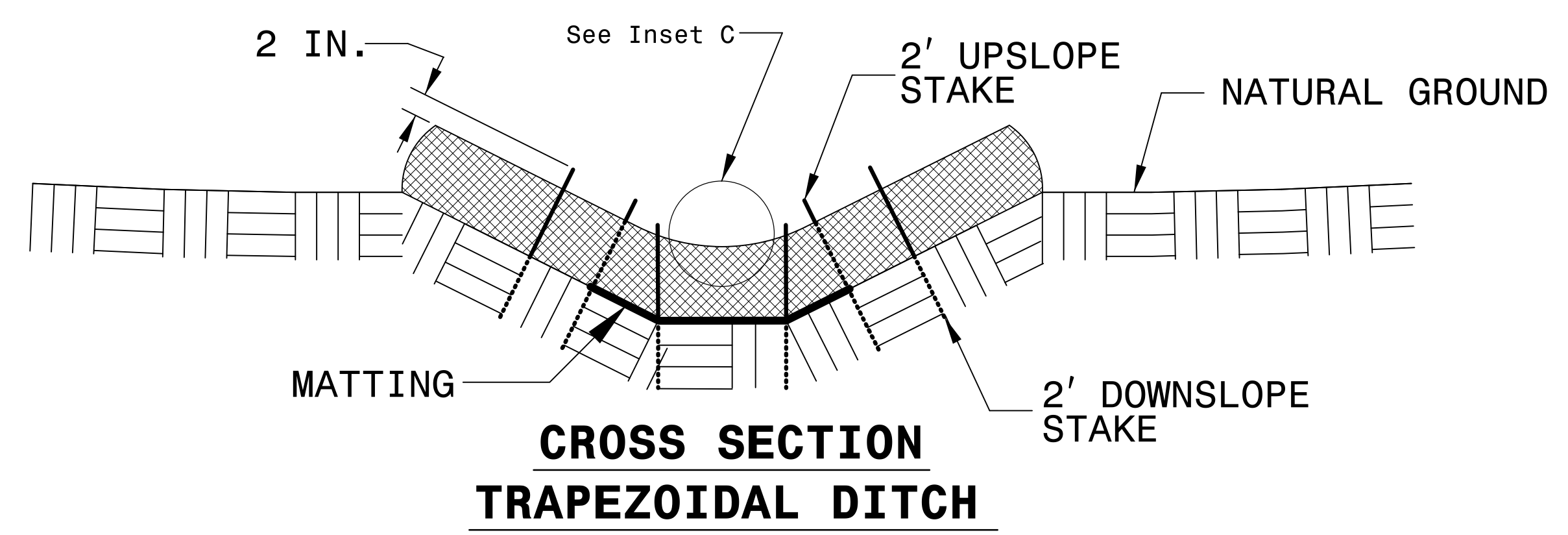
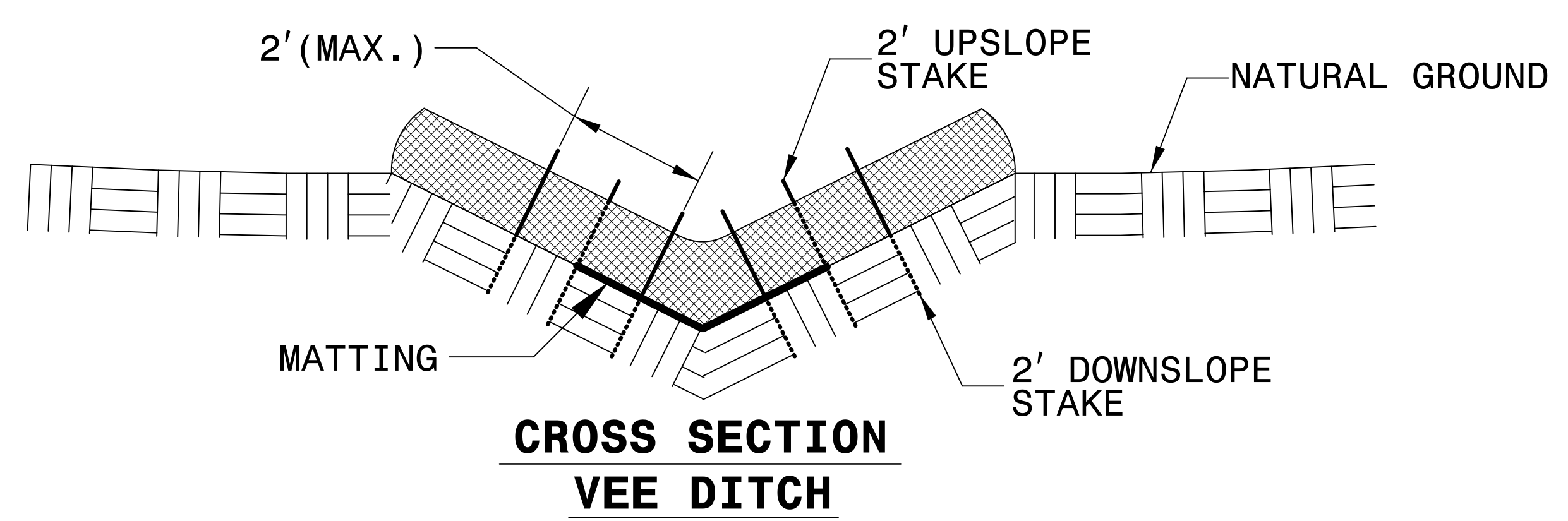
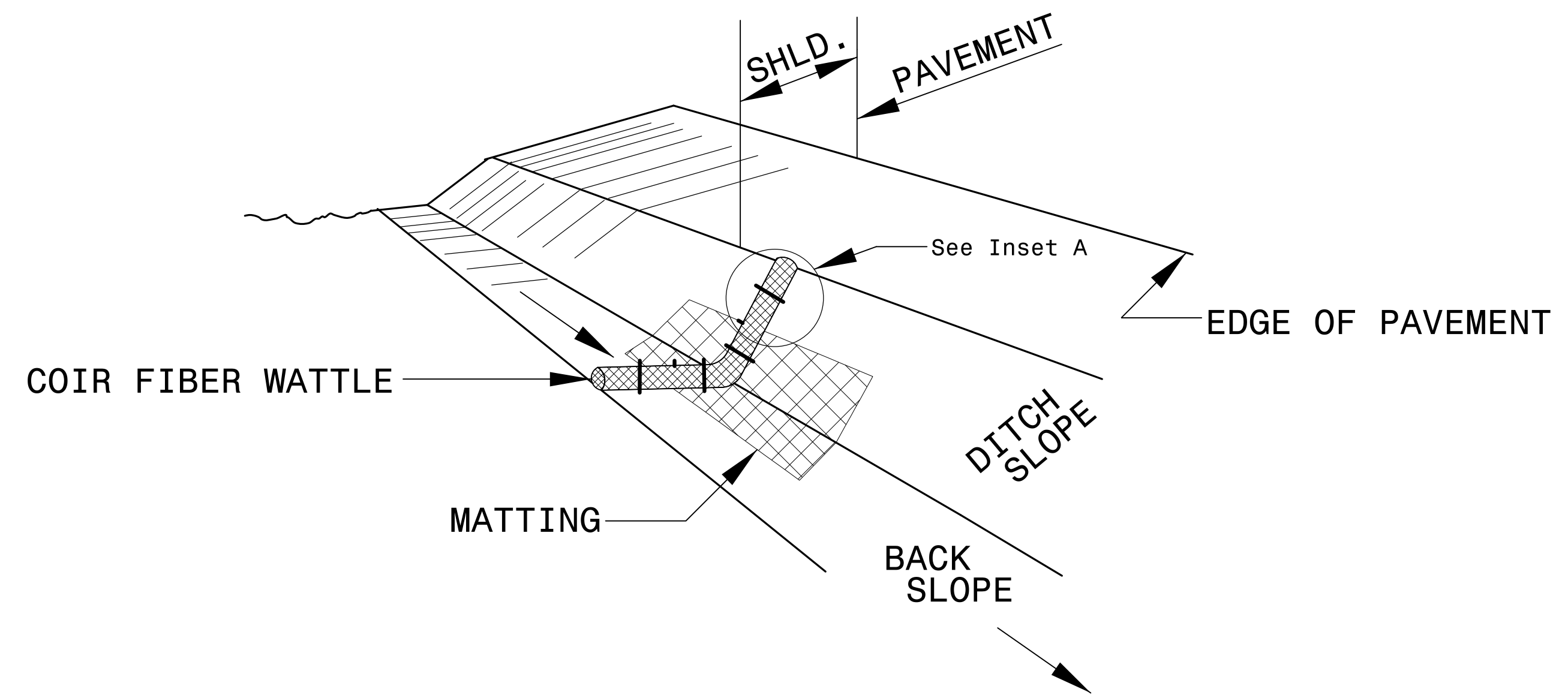
PETER WALDRON **4352**
NAME LEVEL III CERTIFICATION NO.

Roadway Standard Drawings

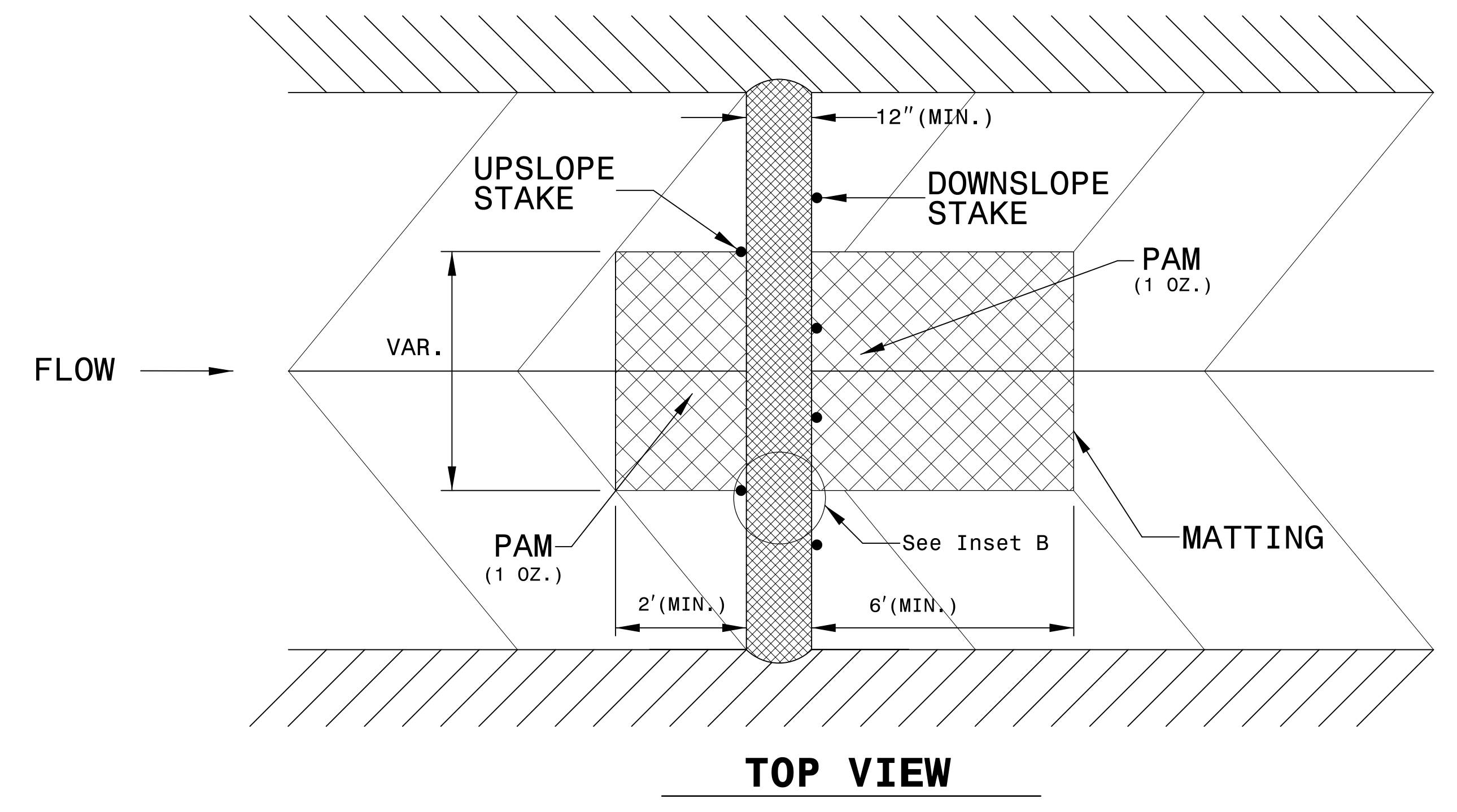
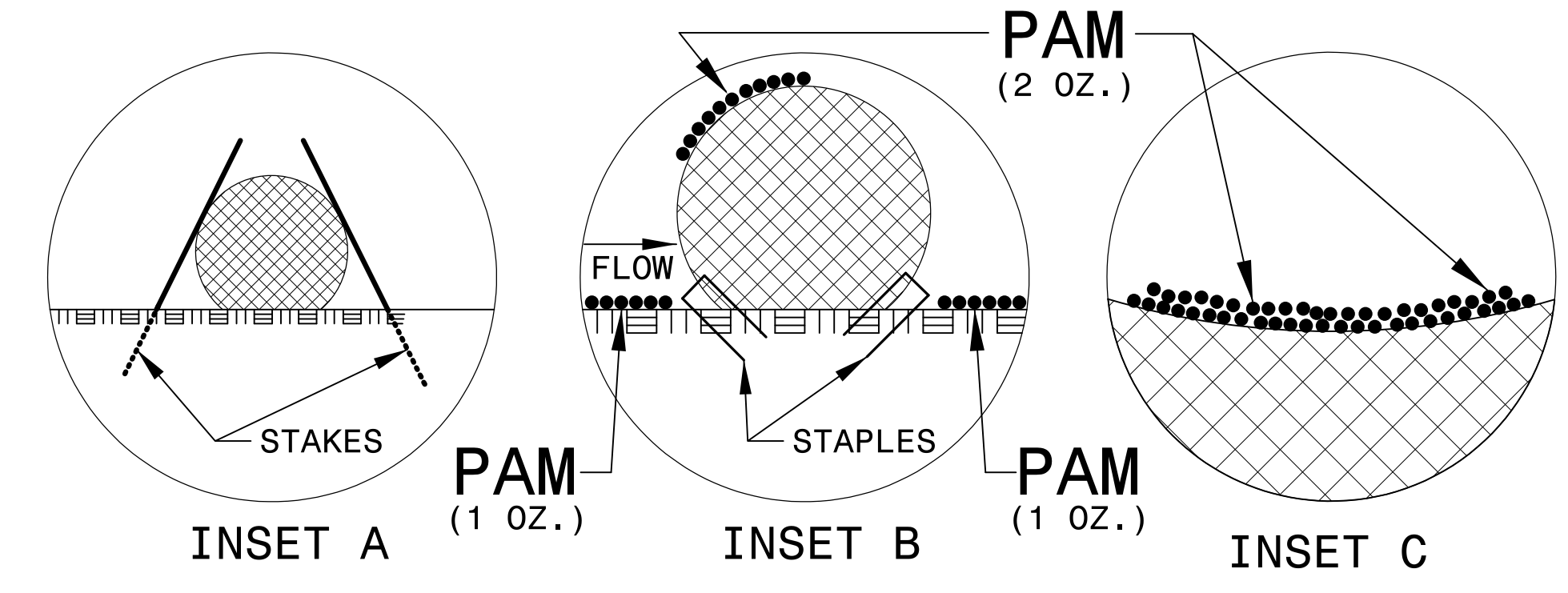
The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2018 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

| | |
|--|--|
| 1604.01 Railroad Erosion Control Detail | 1632.01 Rock Inlet Sediment Trap Type A |
| 1605.01 Temporary Silt Fence | 1632.02 Rock Inlet Sediment Trap Type B |
| 1606.01 Special Sediment Control Fence | 1632.03 Rock Inlet Sediment Trap Type C |
| 1607.01 Gravel Construction Entrance | 1633.01 Temporary Rock Silt Check Type A |
| 1622.01 Temporary Berms and Slope Drains | 1633.02 Temporary Rock Silt Check Type B |
| 1630.01 Riser Basin | 1634.01 Temporary Rock Sediment Dam Type A |
| 1630.02 Silt Basin Type B | 1634.02 Temporary Rock Sediment Dam Type B |
| 1630.03 Temporary Silt Ditch | 1635.01 Rock Pipe Inlet Sediment Trap Type A |
| 1630.04 Stilling Basin | 1635.02 Rock Pipe Inlet Sediment Trap Type B |
| 1630.05 Temporary Diversion | 1640.01 Coir Fiber Baffle |
| 1630.06 Special Stilling Basin | 1645.01 Temporary Stream Crossing |
| 1631.01 Matting Installation | |

COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



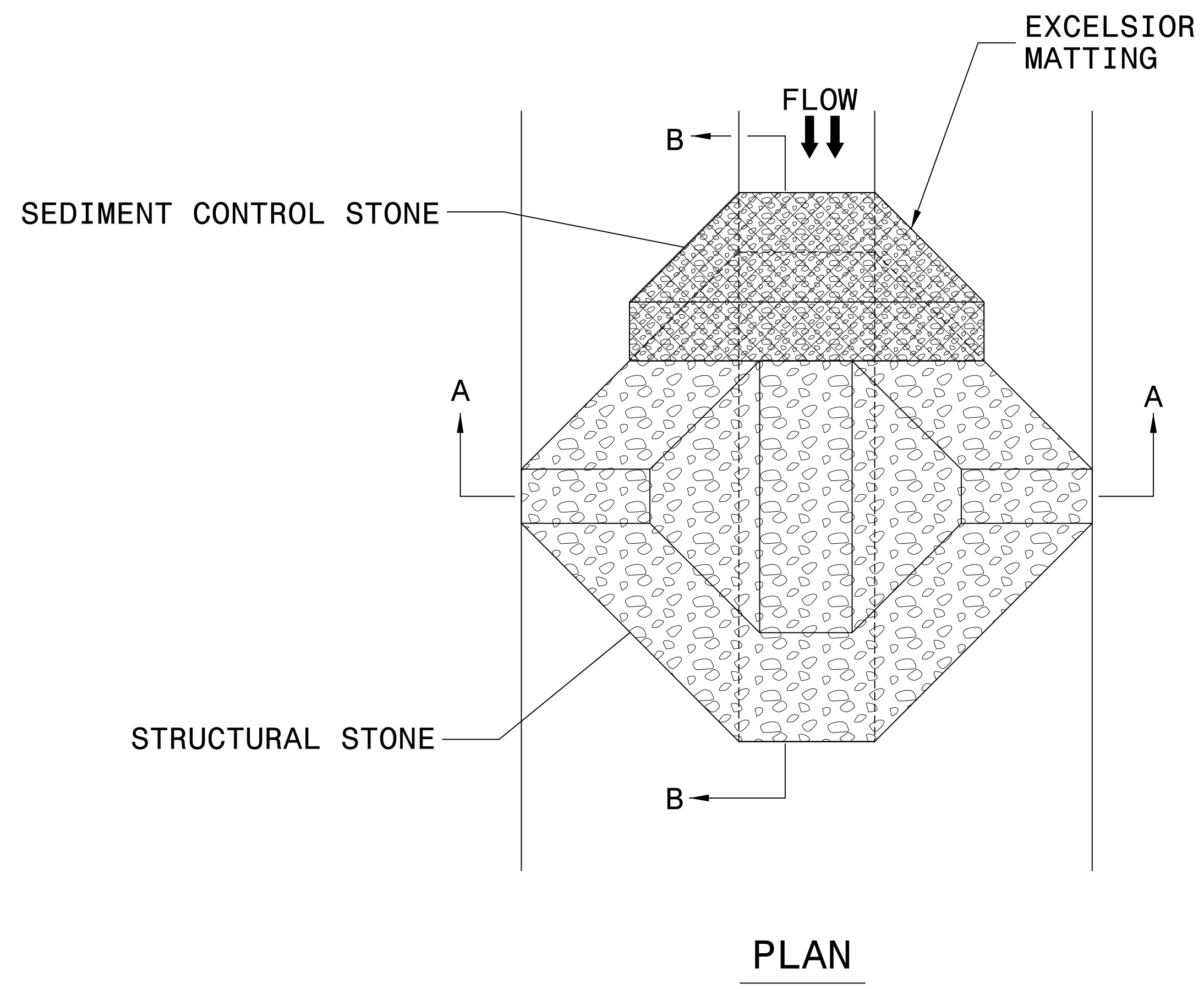
- NOTES:
- USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE.
 - USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
 - ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.
 - INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.
 - PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.
 - INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.
 - INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.
 - PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.
 - INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.



8/17/99

3/15/2021 Environmental\Design\EC_Sheets\C-4-EC_psh02.dgn

TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)



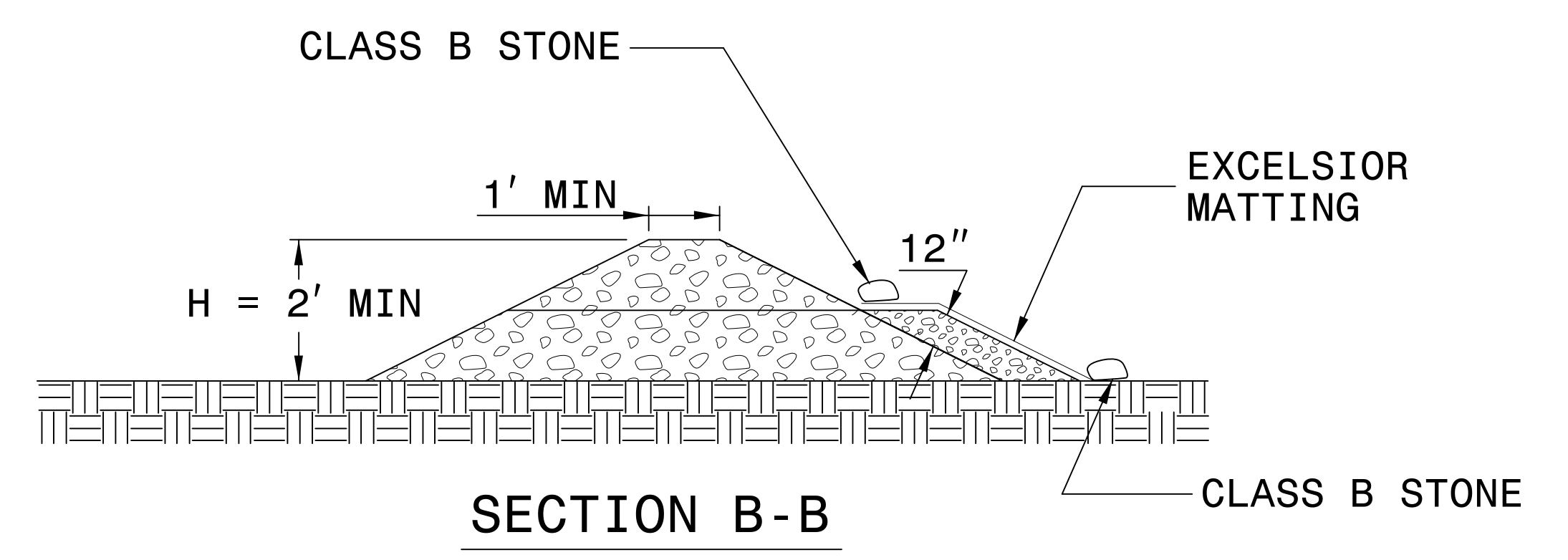
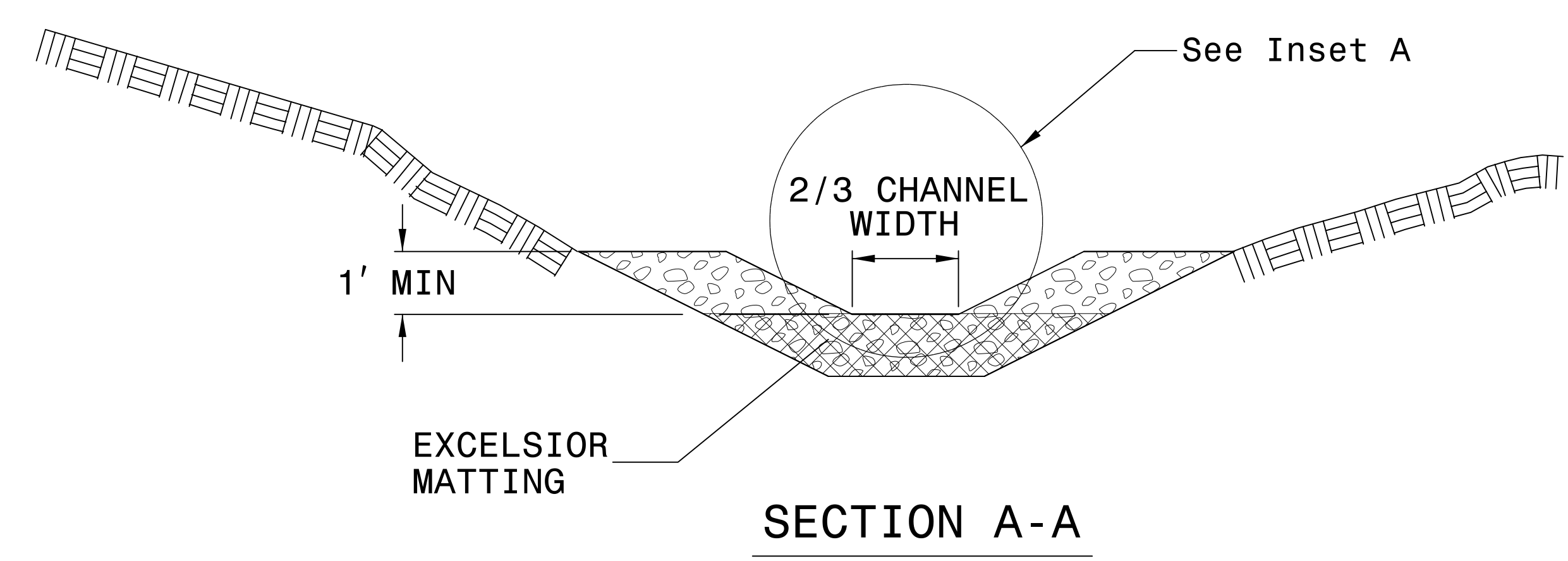
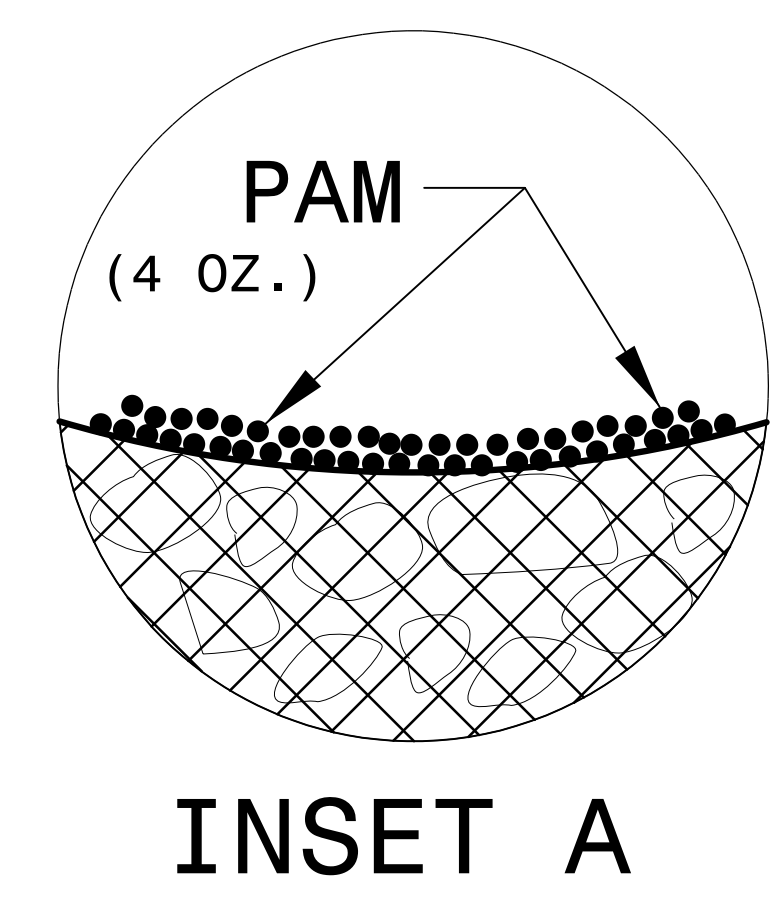
NOTES:

INSTALL TEMPORARY ROCK SILT CHECK TYPE A IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1633.01.

USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH ROCK SILT CHECK.

INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



NOT TO SCALE

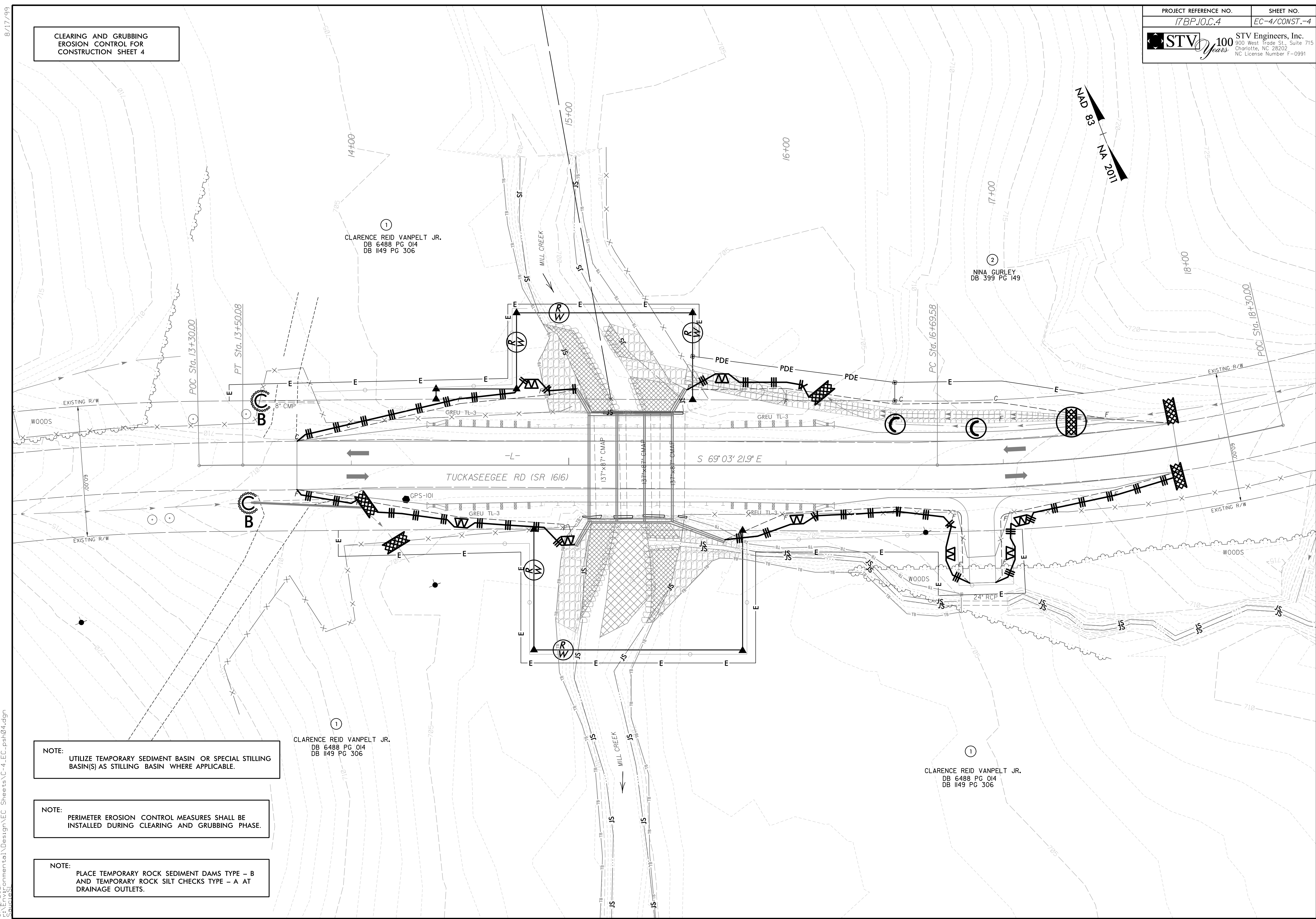
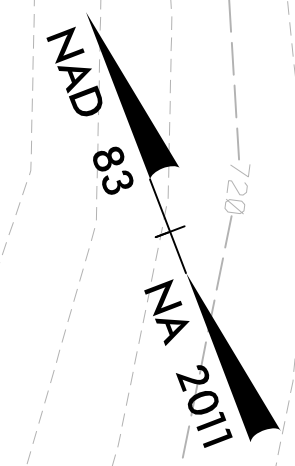
8/17/99
3/15/2021 Environmental\Design\EC_Sheets\C-4-EC_psh02B.dgn

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

| <i>SITE DESCRIPTION</i> | <i>STABILIZATION TIME</i> | <i>TIMEFRAME EXCEPTIONS</i> |
|--|---------------------------|--|
| PERIMETER DIKES, SWALES, DITCHES AND SLOPES | 7 DAYS | NONE |
| HIGH QUALITY WATER (HQW) ZONES | 7 DAYS | NONE |
| SLOPES STEEPER THAN 3:1 | 7 DAYS | IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED. |
| SLOPES 3:1 OR FLATTER | 14 DAYS | 7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH. |
| ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1 | 14 DAYS | NONE, EXCEPT FOR PERIMETERS AND HQW ZONES. |

**CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4**



1
CLARENCE REID VANPELT JR.
DB 6488 PG 014
DB 1149 PG 306

2
NINA GURLEY
DB 399 PG 149

1
CLARENCE REID VANPELT JR.
DB 6488 PG 014
DB 1149 PG 306

1
CLARENCE REID VANPELT JR.
DB 6488 PG 014
DB 1149 PG 306

NOTE:
UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

3/15/2021 Environmental\Design\EC_Sheets\4-EC_psh04.dgn

8/17/99

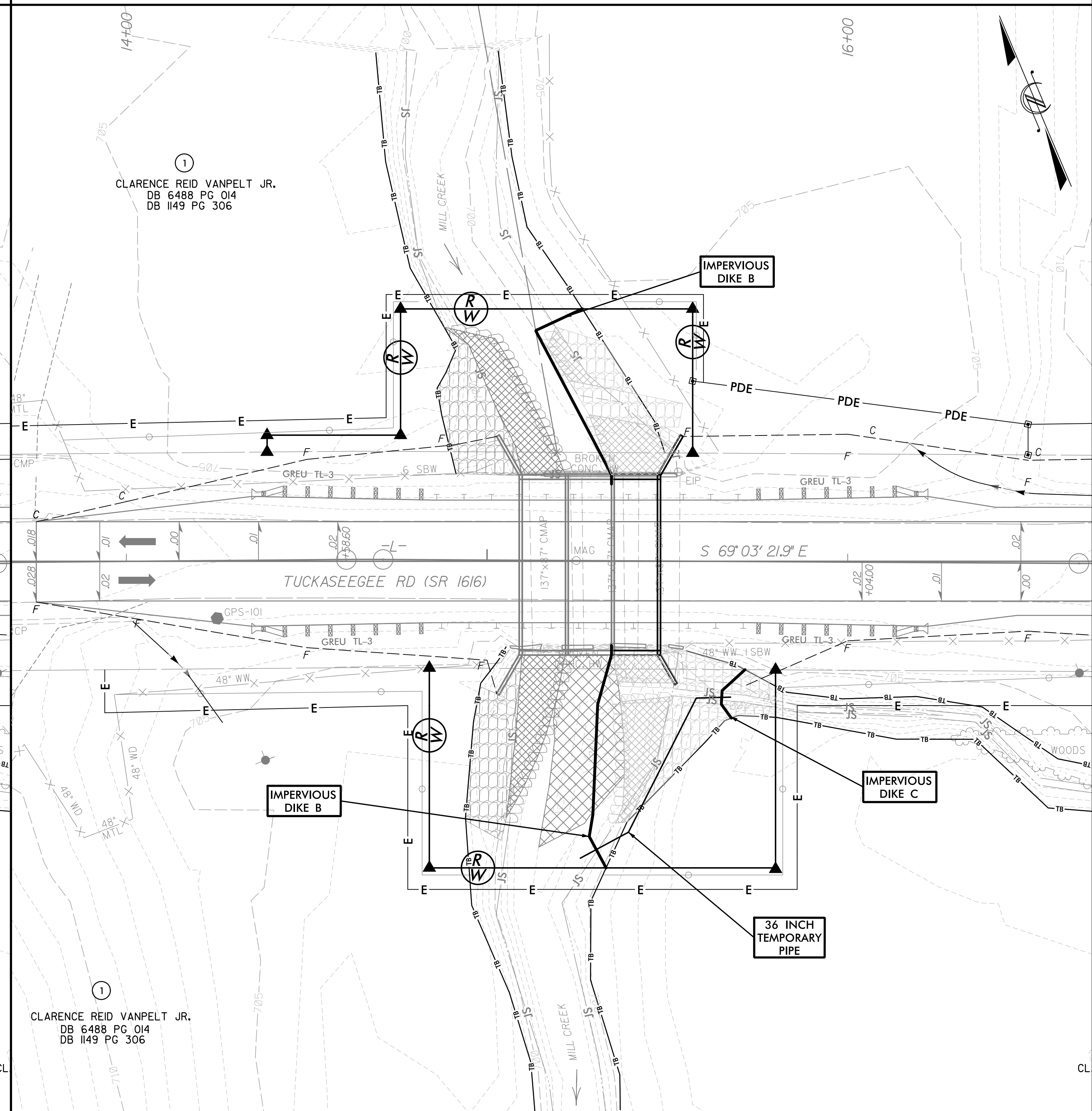
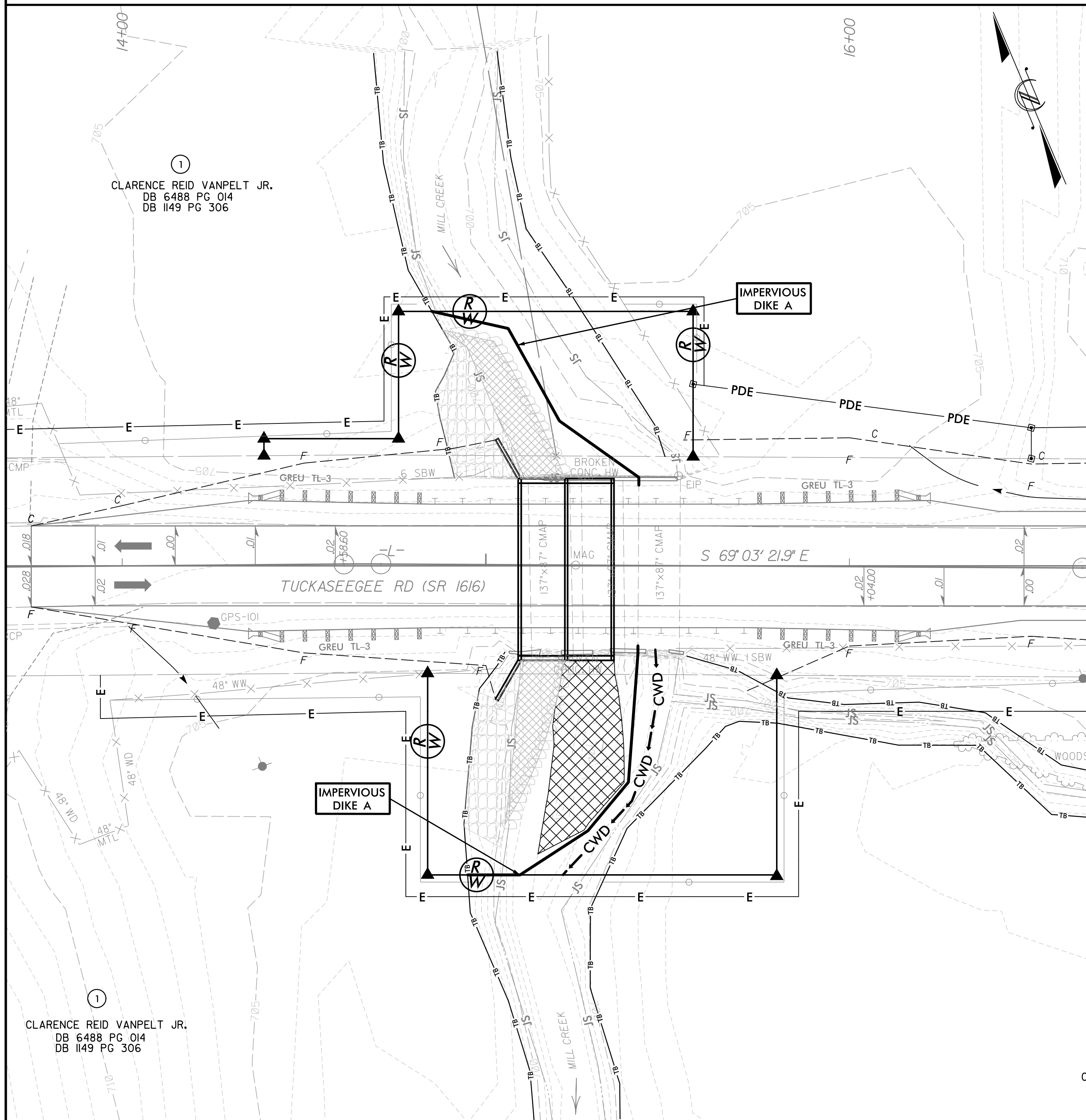
CULVERT CONSTRUCTION SEQUENCE STA. 15+26 -L-

PHASE I

PHASE II

1. INSTALL SPECIAL STILLING BASINS AS DIRECTED.
2. INSTALL IMPERVIOUS DIKE A, DIVERTING FLOW THROUGH THE EASTERN EXISTING 137"x87" CMAP BARREL.
3. INSTALL CLEAN WATER DIVERSION TO DIVERT FLOW AROUND WORK AREA AND CHANNEL EXCAVATION.
4. DEWATER CULVERT CONSTRUCTION AREA AND EXCAVATE ANY ACCUMULATED SILT.
5. CONSTRUCT WESTERN PORTION OF PROPOSED 2-12'X8' RC BOX CULVERT.

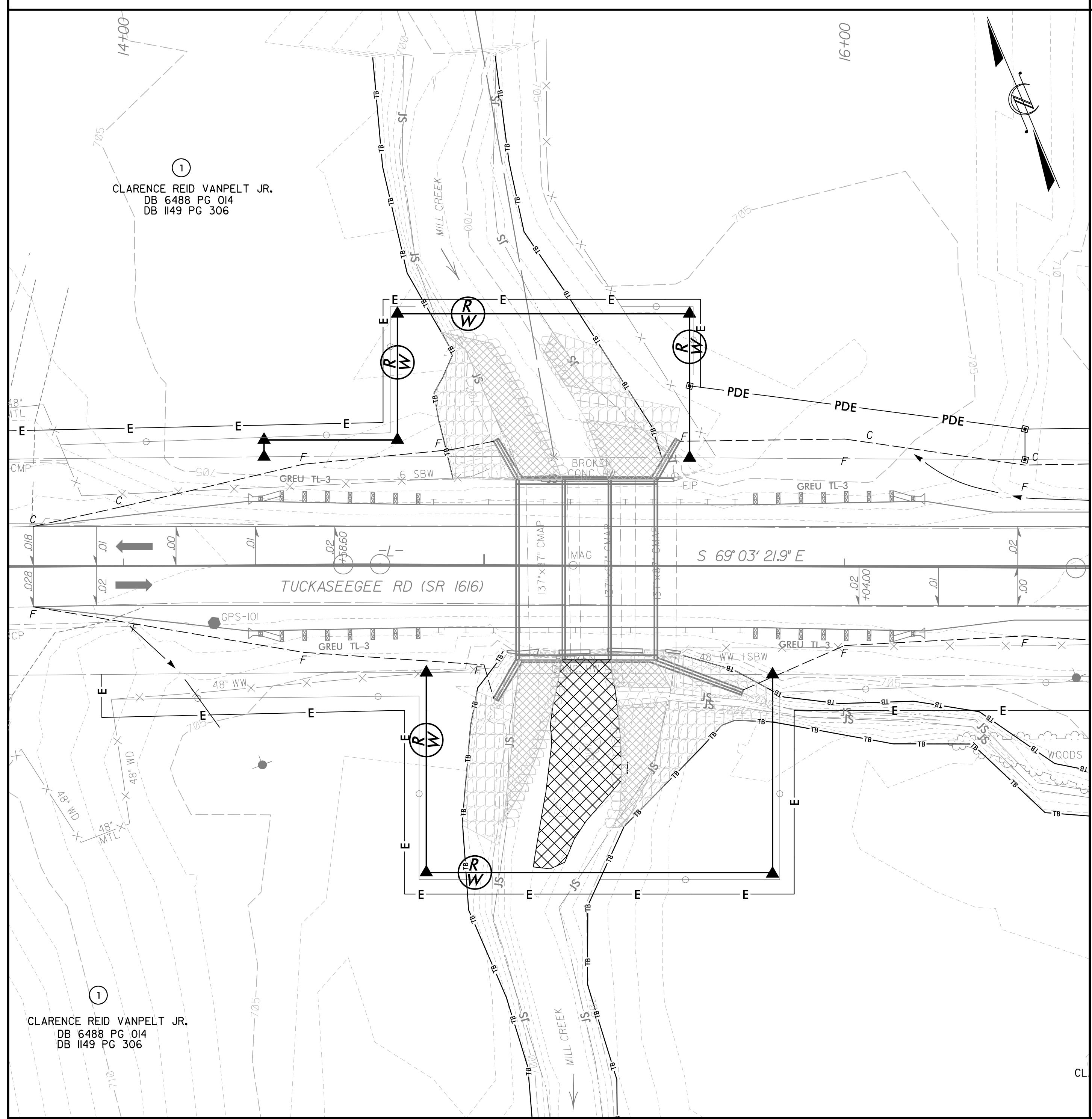
6. EXCAVATE ANY ACCUMULATED SILT AND DEWATER BEFORE REMOVAL OF IMPERVIOUS DIKES A.
7. REMOVE IMPERVIOUS DIKE A.
8. INSTALL IMPERVIOUS DIKES B AND C, DIVERTING FLOW THROUGH PARTIALLY BUILT PROPOSED CULVERT.
9. INSTALL 36 INCH TEMPORARY PIPE TO DIVERT SIDE CHANNEL AROUND CULVERT WORK AREA.
10. CONSTRUCT THE FINAL 12'X8' RC BARREL PROPOSED CULVERT.



CULVERT CONSTRUCTION SEQUENCE STA. 15+26 -L-

PHASE III

11. EXCAVATE ANY ACCUMULATED SILT AND DEWATER BEFORE REMOVAL OF IMPERVIOUS DIKES.
12. REMOVE IMPERVIOUS DIKES B AND C AND TEMPORARY 36 INCH PIPE, DIVERTING FLOW THROUGH PROPOSED CULVERT STEEL PIPE.
13. REMOVE SPECIAL STILLING BASINS, STABILIZE DISTURBED AREA, AND COMPLETE ROADWAY.

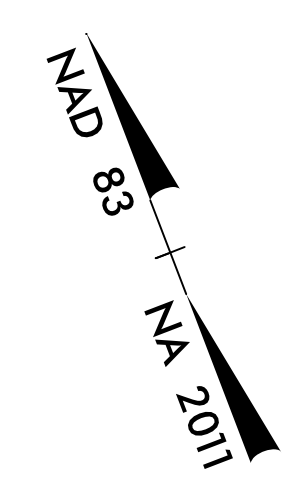


①
CLARENCE REID VANPELT JR.
DB 6488 PG 014
DB 1149 PG 306

①
CLARENCE REID VANPELT JR.
DB 6488 PG 014
DB 1149 PG 306

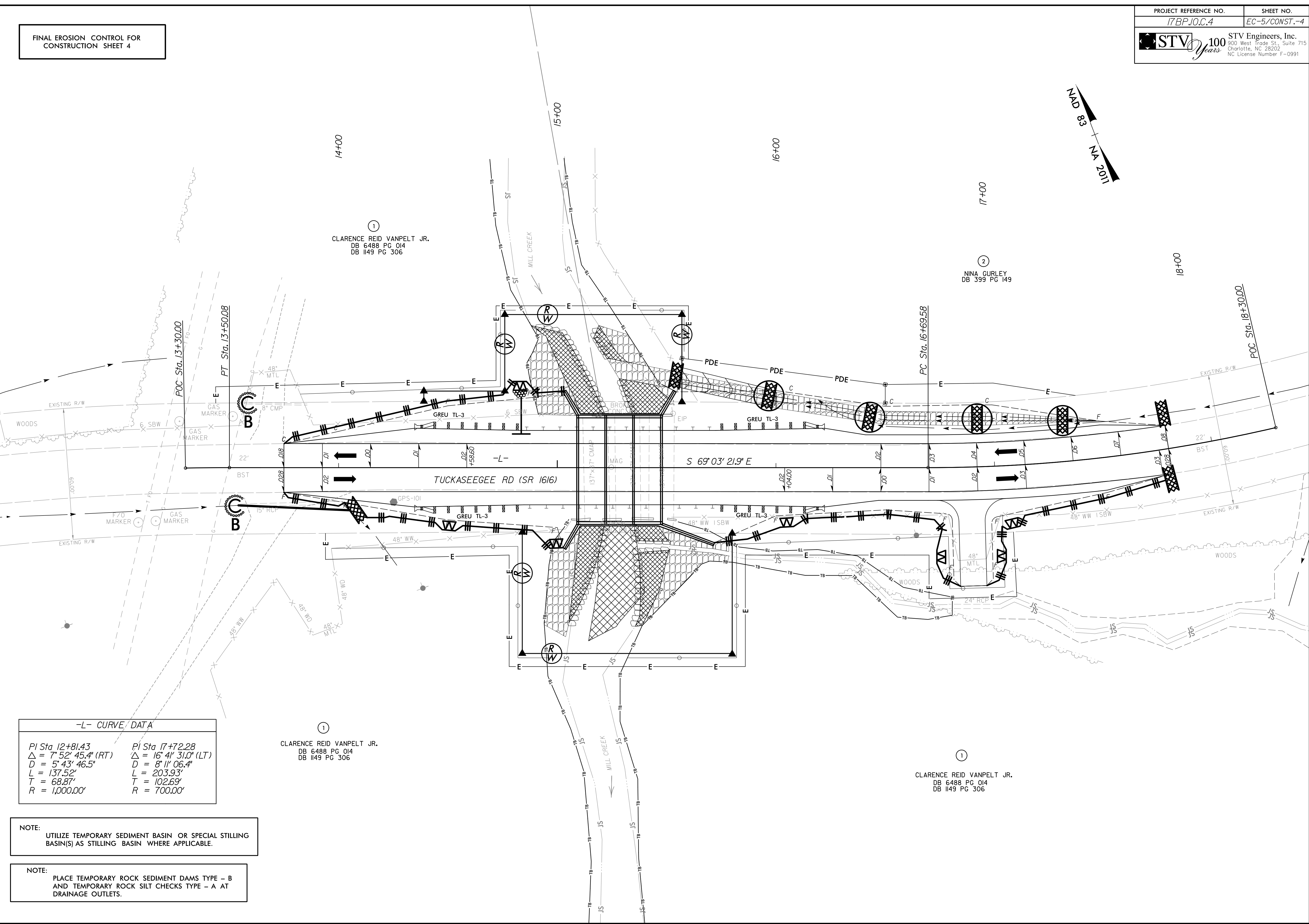
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FINAL EROSION CONTROL FOR CONSTRUCTION SHEET 4



8/17/19

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-L- CURVE DATA

| | |
|--------------------------------------|---------------------------------------|
| PI Sta 12+81.43 | PI Sta 17+72.28 |
| $\Delta = 7^{\circ} 52' 45.4''$ (RT) | $\Delta = 16^{\circ} 41' 31.0''$ (LT) |
| $D = 5^{\circ} 43' 46.5''$ | $D = 8^{\circ} 11' 06.4''$ |
| $L = 137.52'$ | $L = 203.93'$ |
| $T = 68.87'$ | $T = 102.69'$ |
| $R = 1,000.00'$ | $R = 700.00'$ |

NOTE:
UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

①
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DB 6488 PG 014
DB 1149 PG 306

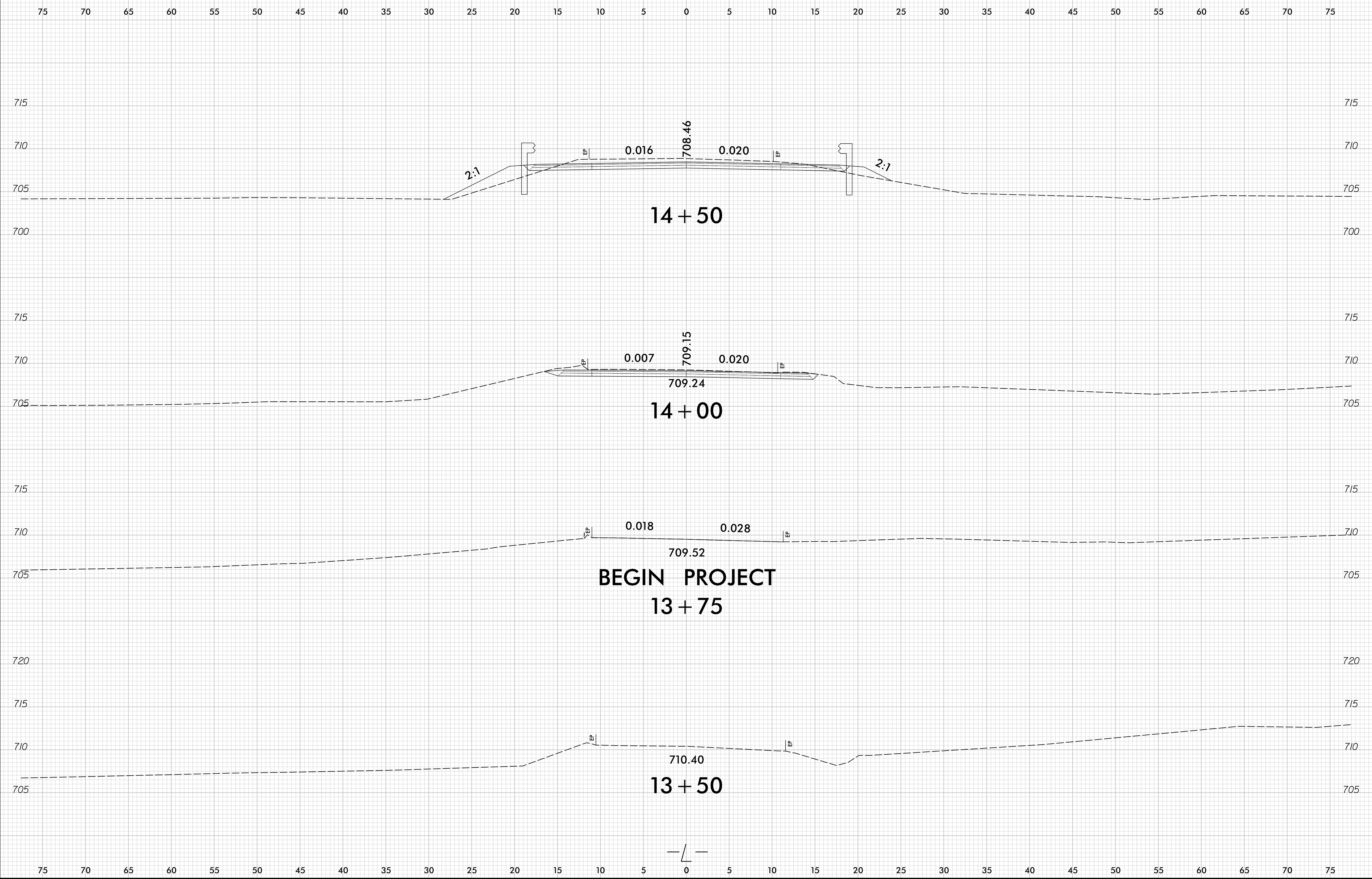
②
NINA GURLEY
DB 399 PG 149

①
CLARENCE REID VANPELT JR.
DB 6488 PG 014
DB 1149 PG 306

①
CLARENCE REID VANPELT JR.
DB 6488 PG 014
DB 1149 PG 306

6/23/16

| | | |
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| 0 2.5 5 | PROJ. REFERENCE NO. 17BP.10.C.4 | SHEET NO. X-1 |
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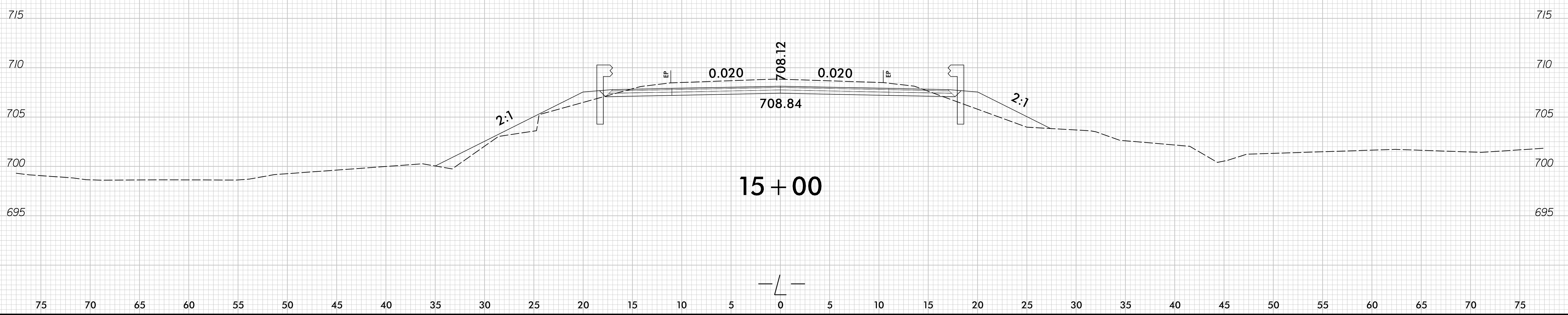
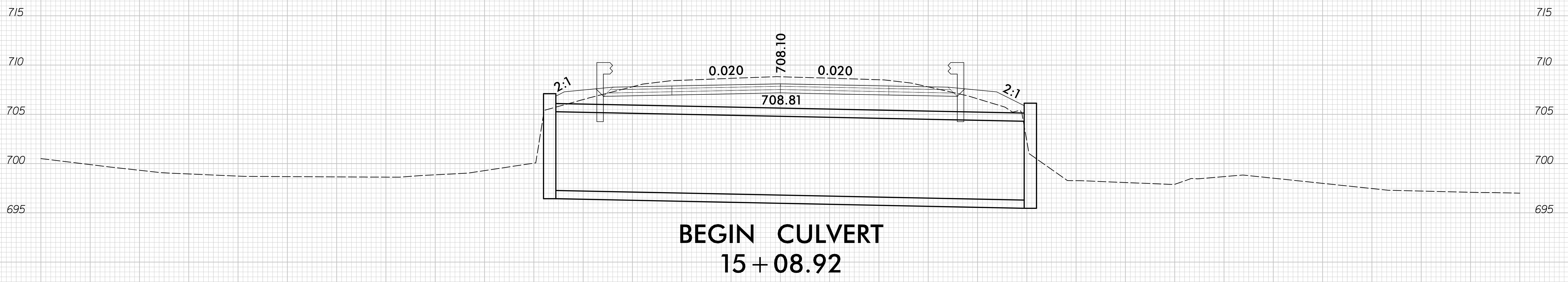
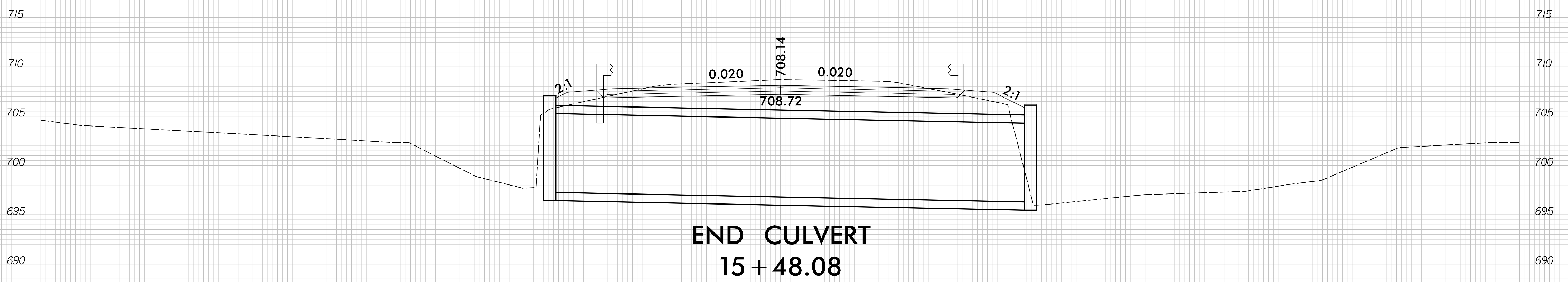


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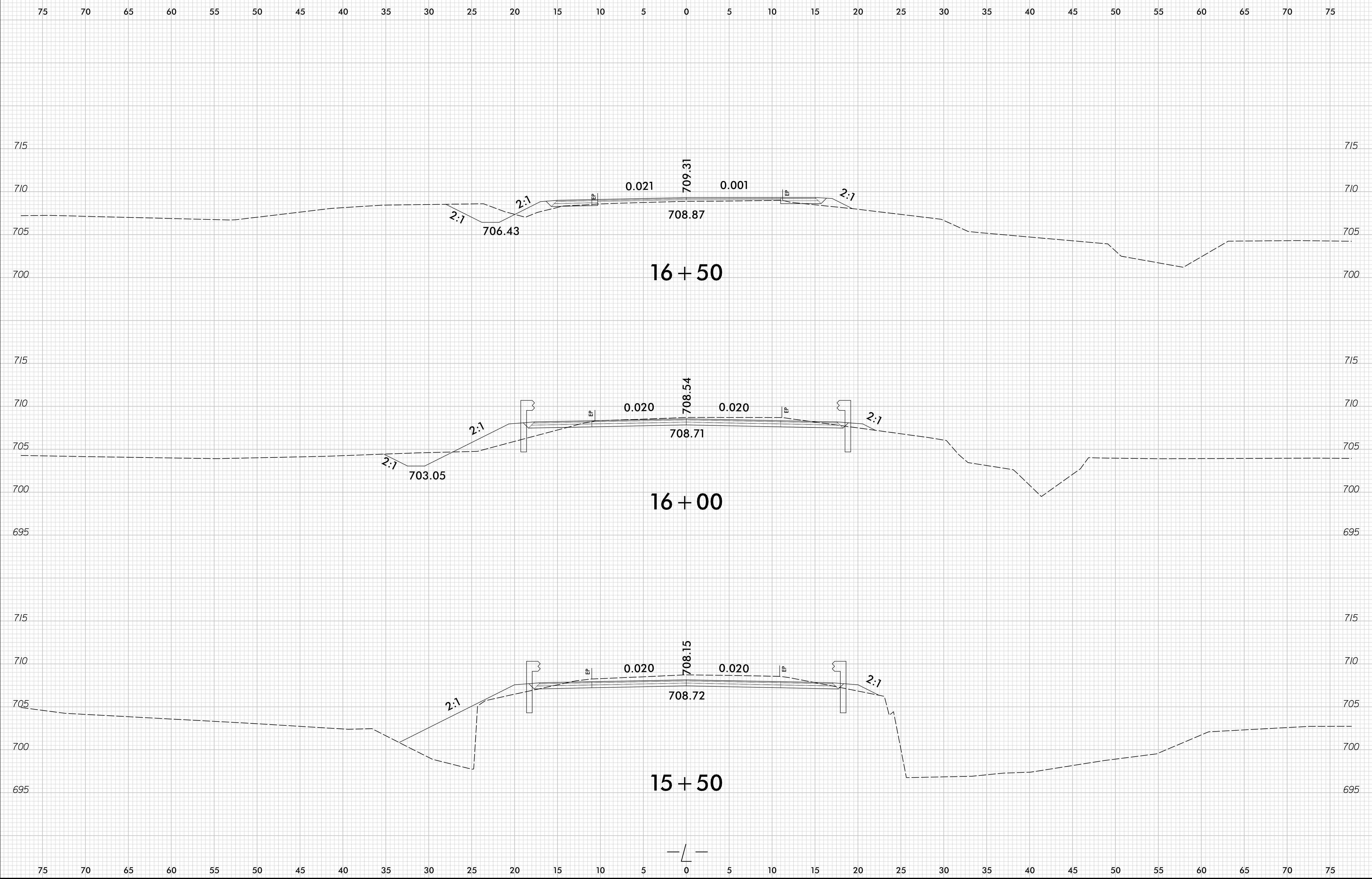
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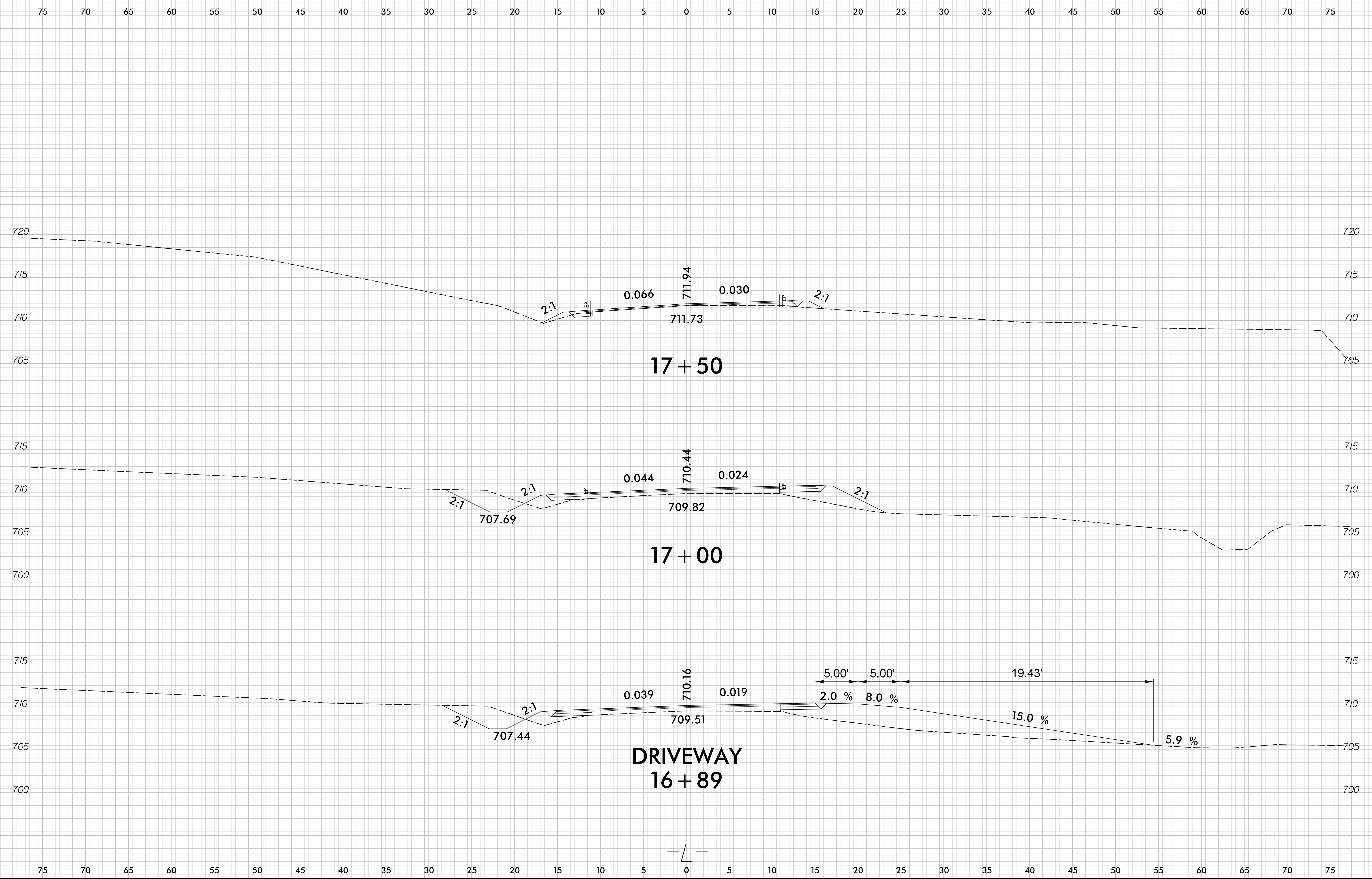
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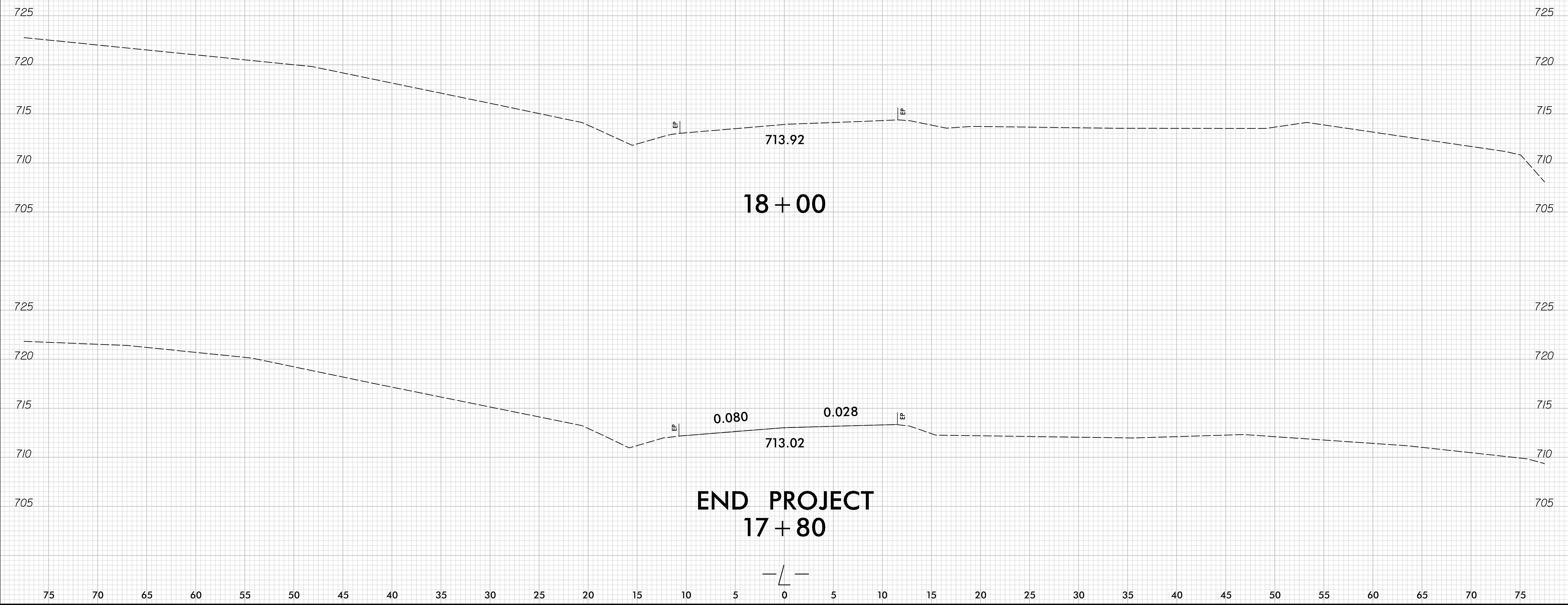


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