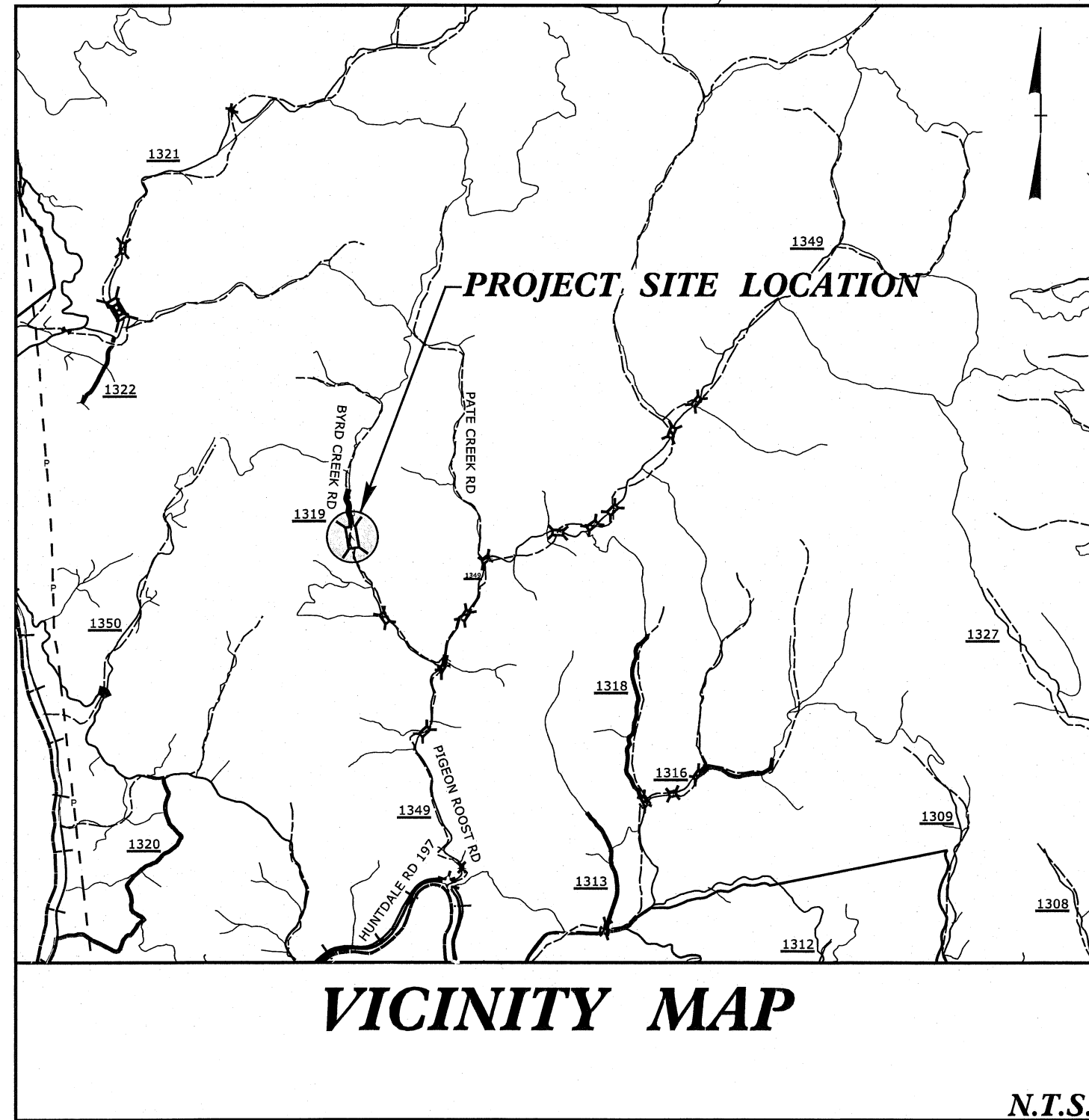


PROJECT: 17BP.13.R.68

CONTRACT:

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols



FINAL PLANS

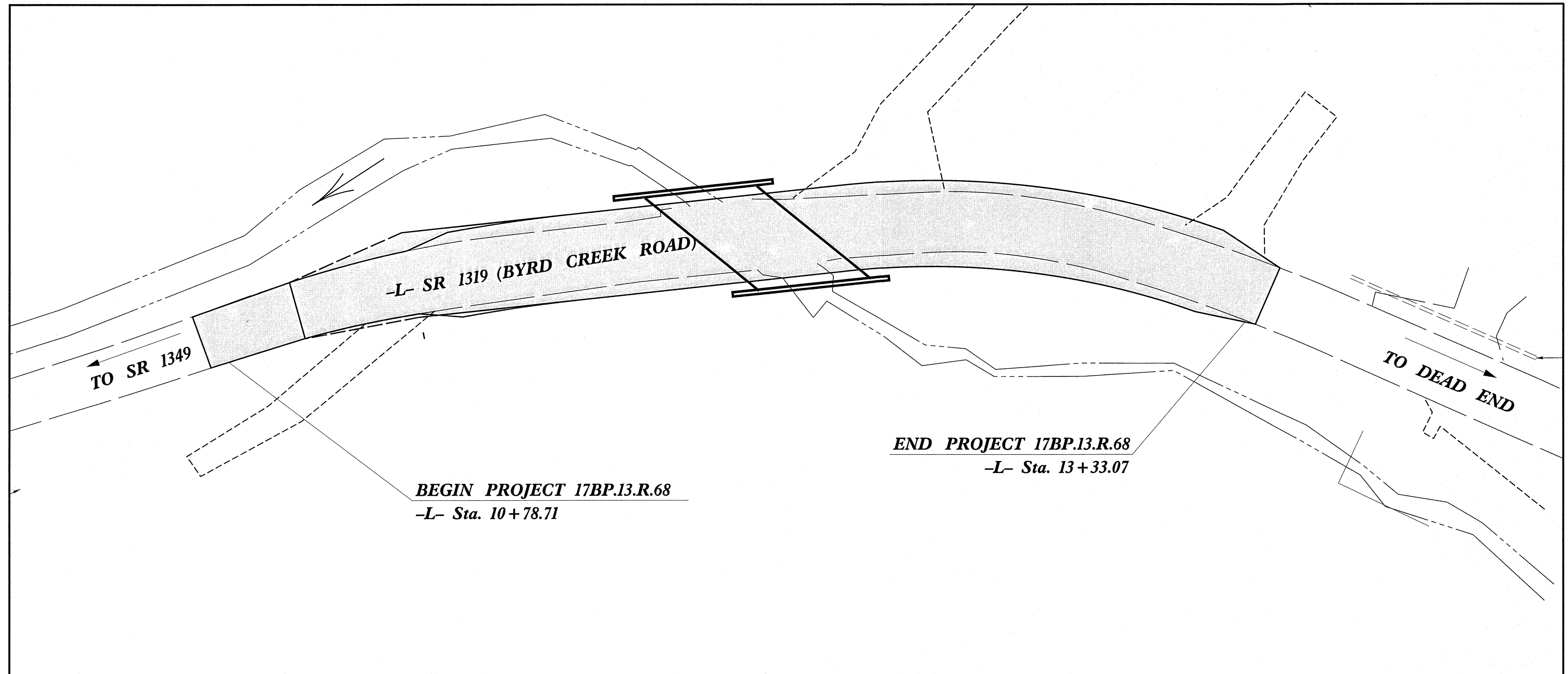
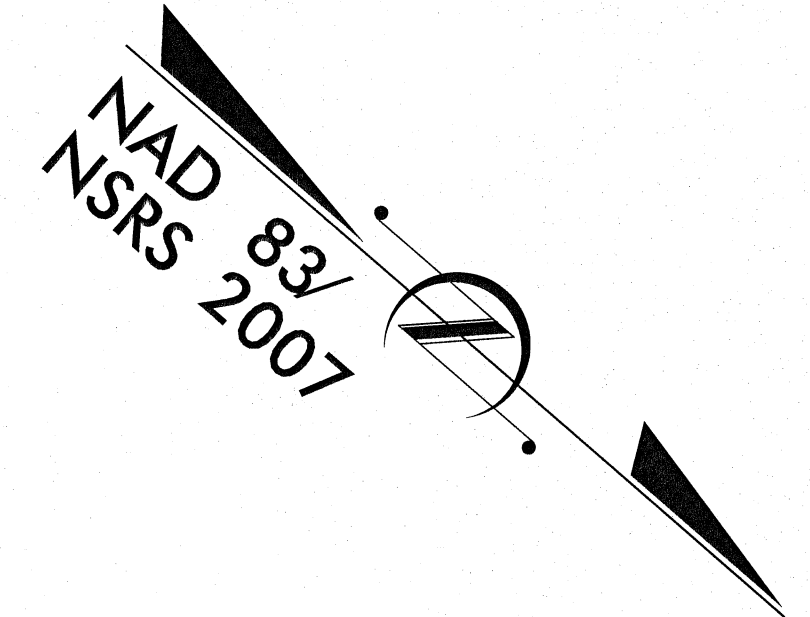
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MITCHELL COUNTY

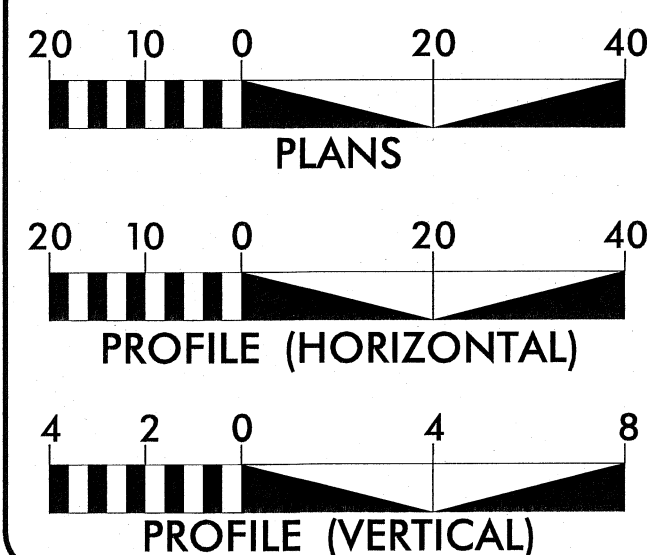
LOCATION: BRIDGE NO. 204 OVER BIRD CREEK ON SR 1319 (BYRD CREEK ROAD)

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURES

| | | | |
|-------------------------|-----------------------------|----------------|--------------|
| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
| N.C. | 17BP.13.R.68 | 1 | |
| MITCHELL COUNTY #600204 | | | |
| STATE PROJ. NO. | F.A. PROJ. NO. | DESCRIPTION | |
| 17BP.13.R.68 | | PE | |
| 17BP.13.R.68 | | RW & UTILITIES | |
| 17BP.13.R.68 | | CONST. | |



GRAPHIC SCALES



DESIGN DATA

ADT 2000 = 380
ADT 2025 = 760
DHV = N/A %
D = N/A %
T = N/A % *
V = 25 MPH

FUNCTIONAL CLASSIFICATION:
RURAL LOCAL

PROJECT LENGTH

LENGTH ROADWAY PROJECT 17BP.13.R.68 = 0.043 mi
LENGTH STRUCTURE PROJECT 17BP.13.R.68 = 0.005 mi
TOTAL LENGTH OF PROJECT 17BP.13.R.68 = 0.048 mi

PLANS PREPARED BY:
CH ENGINEERING
3220 GLEN ROYAL RD. RALEIGH, NC 27617
TELE 919.788.0224 FAX 919.788.0252
NC LICENSE #P-0189

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
6-11-12

LETTING DATE:

PLANS PREPARED FOR:
DIVISION OF HIGHWAYS
20 Old 74
Asheville, NC 28803

THOMAS R. HEPLER, PE, PLS
PROJECT ENGINEER

ERIC M. TWEED, PE
PROJECT DESIGN ENGINEER

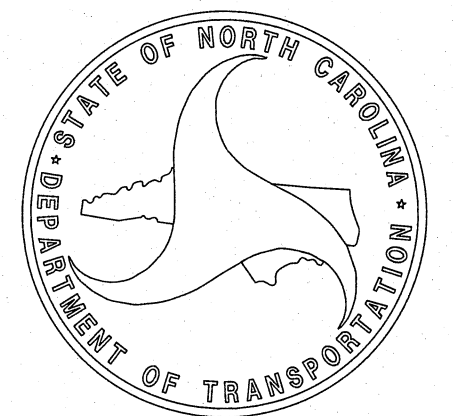
HYDRAULICS ENGINEER

Signature
SIGNATURE: 2-25-14
NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 026480
LARRY D. ROBINSON

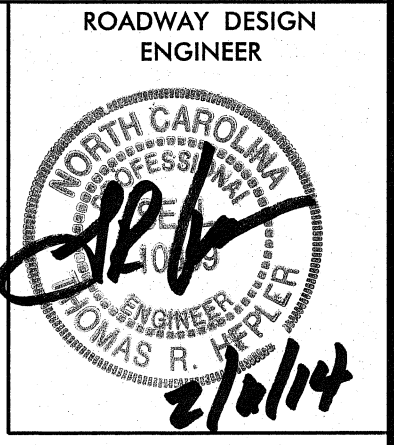
ROADWAY DESIGN ENGINEER

Signature
SIGNATURE: 2/6/12
NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 10359
THOMAS R. HEPLER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA



1/27/2014



INDEX OF SHEETS

| | |
|----------------|---|
| 1 | Title Sheet |
| 1-A | Index of Sheets, Roadway Standards, General Notes |
| 1-B | Conventional Symbols |
| 2 | Typical Sections |
| 3 | Pipe Data Sheet/ Summary of Quantities |
| 4 | -L- Line Plan and Profile Sheets |
| 5 | -DET- Line Plan and Profile Sheet |
| TCP-1 | Traffic Control Plans |
| EC-1 thru EC-4 | Erosion Control Plans |
| RF-1 | Reforestation Detail Sheet |
| X-1 thru X-3 | -L- Line Cross Sections |
| X-4 thru X-7 | -DET- Line Cross Sections |
| C-1 thru C-2 | Structure Plans |

GENERAL NOTES: 2012 SPECIFICATIONS
EFFECTIVE: 01-17-12

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.

STREET TURNOUT:
STREET RETURNS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 848.04 USING THE RADII NOTED ON PLANS.

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 STRUCTURE.

UTILITIES:
UTILITY OWNERS ON THIS PROJECT ARE FRENCH BROAD ELECTRIC MEMBERSHIP CORPORATION - KENT PHILLIPS 1-828-682-6121, FRONTIER COMMUNICATIONS - JOHN REESE 1-828-645-1829, AND COUNTRY CABLEVISION - SCOTT WILSON 828-682-4074
CONTACT THESE PRIOR TO CONSTRUCTION OF ON-SITE DETOUR.

RIGHT-OF-WAY MARKERS:
RIGHT-OF-WAY POINTS INDICATED IN THESE PLANS HAVE BEEN PLACED. AT THE END OF CONSTRUCTION CONTRACTOR IS RESPONSIBLE FOR PLACING CONCRETE MONUMENTS AT POINTS INDICATED ON PLANS. ANY RIGHT-OF-WAY POINTS DESTROYED DURING CONSTRUCTION SHALL BE ACCURATELY RESET BY CONTRACTOR.

2012 ROADWAY STANDARD DRAWINGS EFF. 01-17-12

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated Jan 17, 2012 are applicable to this project and by reference hereby are considered a part of these plans:

| STD. NO. | TITLE |
|---|---|
| DIVISION 2 - EARTHWORK | |
| 200.03 | Method of Clearing - Method II |
| 225.02 | Guide for Grading Subgrade - Secondary and Local |
| 225.04 | Method of Obtaining Superelevation - Two Lane Pavement |
| DIVISION 3 - PIPE CULVERTS | |
| 300.01 | Method of Pipe Installation |
| 310.10 | Driveway Pipe Construction |
| DIVISION 4 - Major Structures | |
| 422.10 | Reinforced Bridge Approach Fills |
| DIVISION 5 - SUBGRADE, BASES AND SHOULDERS | |
| 560.01 | Method of Shoulder Construction - High Side of Superelevated Curve - Method I |
| DIVISION 8 - INCIDENTALS | |
| 806.01 | Concrete Right-of-Way Marker |
| 838.22 | Reinforced Concrete Endwall |
| 862.01 | Guardrail Placement |
| 862.02 | Guardrail Installation |
| 862.03 | Structure Anchor Units |
| 876.01 | Rip Rap in Channels |
| 876.02 | Guide for Rip Rap at Pipe Outlets |
| 876.04 | Drainage Ditches with Class 'B' Rip Rap |
| DIVISION 11 - WORK ZONE TRAFFIC CONTROL | |
| 1101.01 | Work Zone Advanced Warning Signs |
| 1101.02 | Temporary Lane Closures |
| 1101.06 | Warning Signs For Blasting Zones |
| 1101.11 | Traffic Control Design Tables |
| 1110.01 | Stationary Work Zone Signs |
| 1110.02 | Portable Work Zone Signs |
| 1130.01 | Drums |
| 1135.01 | Cones |
| 1145.01 | Barricades - Type III |
| 1180.01 | Skinny-Drum |
| DIVISION 12 - PAVEMENT MARKING, MARKERS AND DELINEATION | |
| 1205.01 | Pavement Markings - Line Types and Offsets |
| 1205.02 | Pavement Markings - Two Lane and Multilane Roadways |

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

Table listing symbols for 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, Existing Fence Line, Proposed Woven Wire Fence, Proposed Chain Link Fence, Proposed Barbed Wire Fence, Existing Wetland Boundary, Proposed Wetland Boundary, Existing High Quality Wetland Boundary, Existing Endangered Animal Boundary, Existing Endangered Plant Boundary.

BUILDINGS AND OTHER CULTURE:

Table listing symbols for 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:

Table listing symbols for hydrology: Stream or Body of Water, Hydro, Pool or Reservoir, River Basin Buffer, Flow Arrow, Disappearing Stream, Spring, Swamp Marsh, Proposed Lateral, Tail, Head Ditch, False Sump.

RAILROADS:

Table listing symbols for railroads: Standard Gauge, RR Signal Milepost, Switch, RR Abandoned, RR Dismantled.

RIGHT OF WAY:

Table listing symbols for 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, Proposed Temporary Construction Easement, Proposed Temporary Drainage Easement, Proposed Permanent Drainage Easement, Proposed Permanent Utility Easement.

ROADS AND RELATED FEATURES:

Table listing symbols for roads and related features: Existing Edge of Pavement, Existing Curb, Proposed Slope Stakes Cut, Proposed Slope Stakes Fill, Proposed Wheel Chair Ramp, Curb Cut for Future Wheel Chair Ramp, Existing Metal Guardrail, Proposed Guardrail, Existing Cable Guiderail, Proposed Cable Guiderail, Equallity Symbol, Pavement Removal.

VEGETATION:

Table listing symbols for vegetation: Single Tree, Single Shrub, Hedge, Woods Line, Orchard, Vineyard.

EXISTING STRUCTURES:

Table listing symbols for 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:

Table listing symbols for 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:

Table listing symbols for 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:

Table listing symbols for 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:

Table listing symbols for 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:

Table listing symbols for gas: Gas Valve, Gas Meter, Recorded U/G Gas Line, Designated U/G Gas Line (S.U.E.*), Above Ground Gas Line.

SANITARY SEWER:

Table listing symbols for 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:

Table listing symbols for 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, End of Information.

1/27/2014

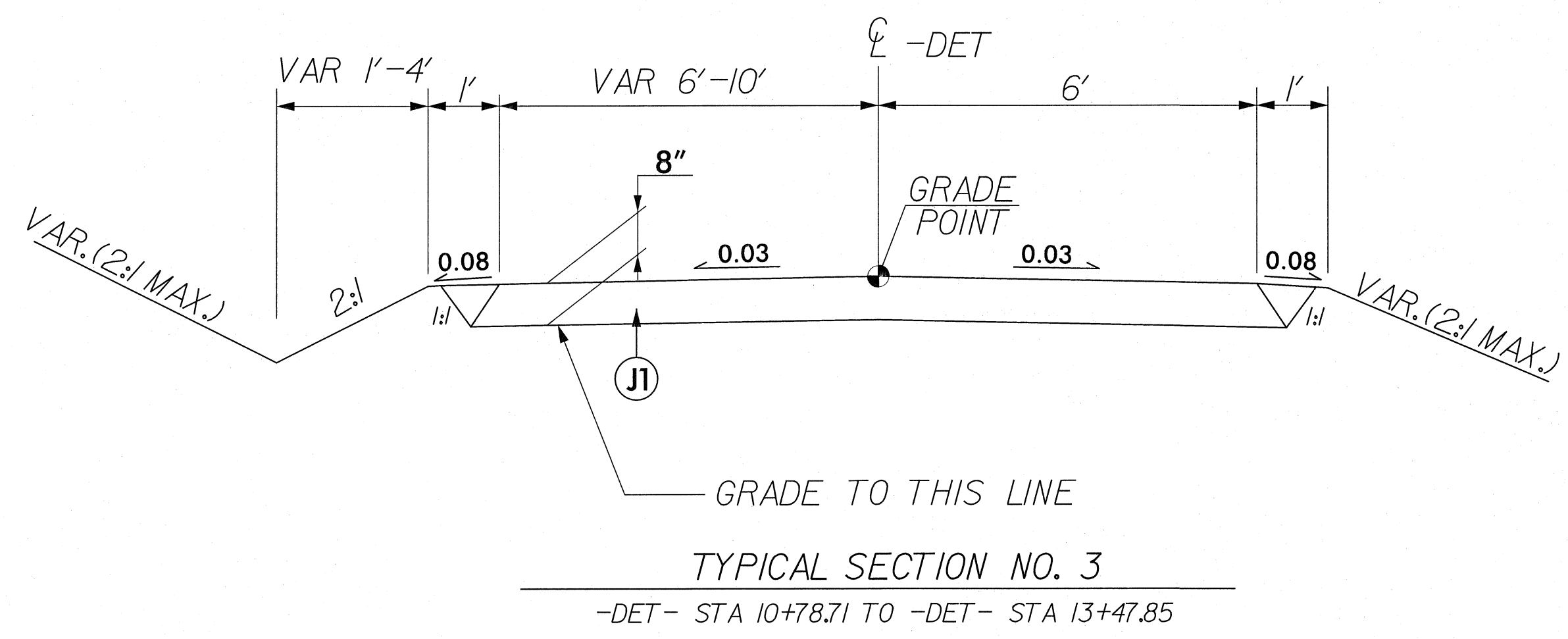
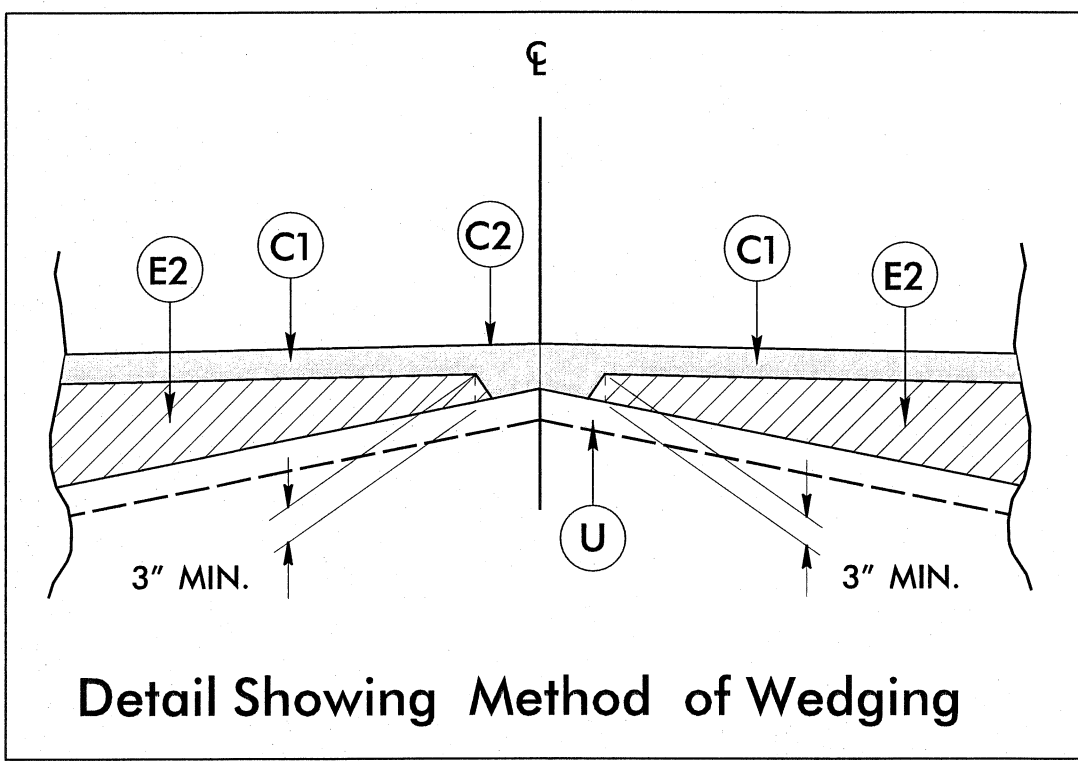
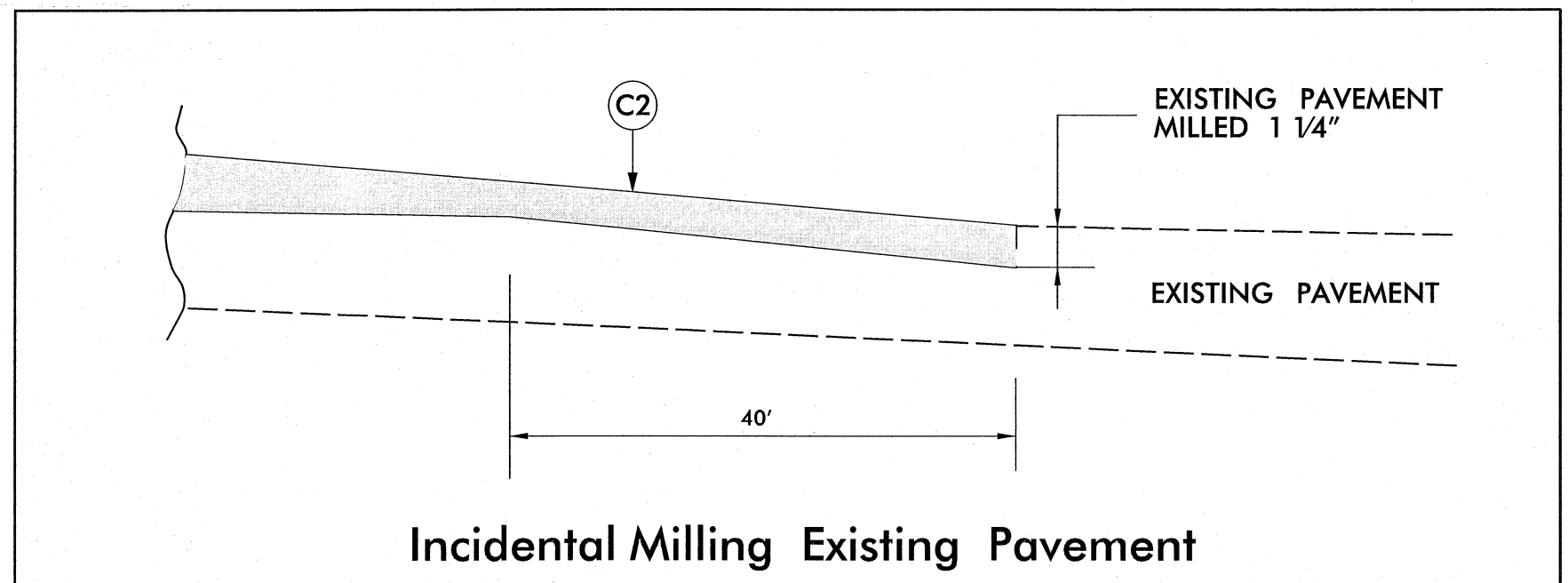
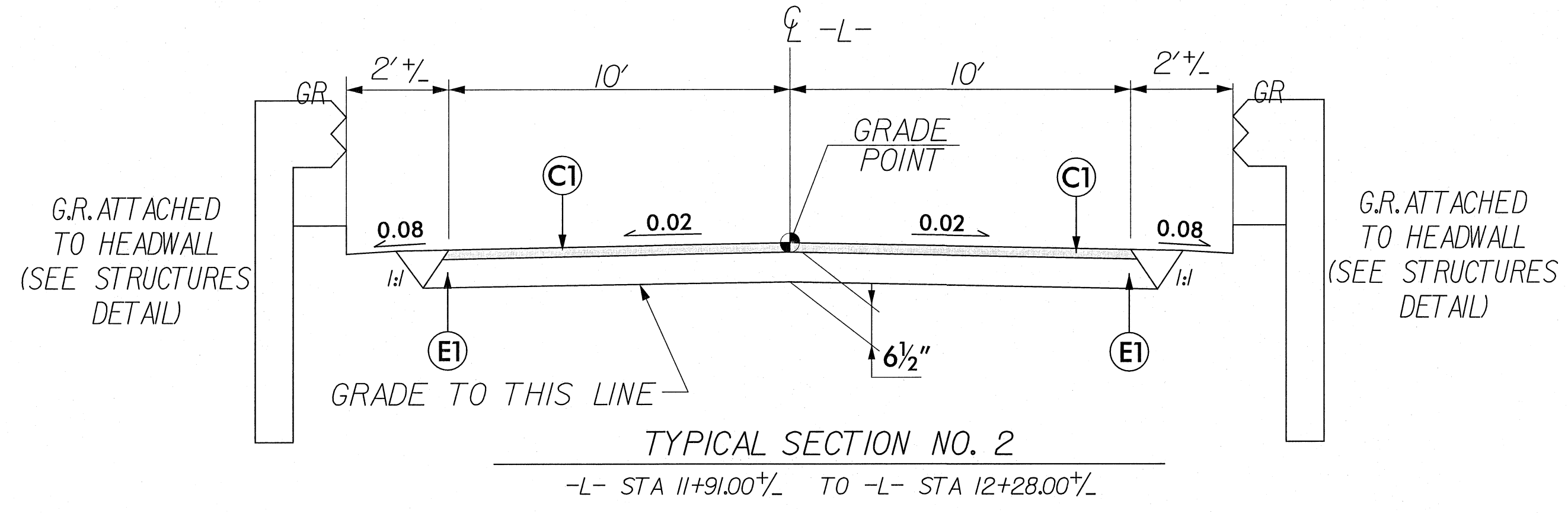
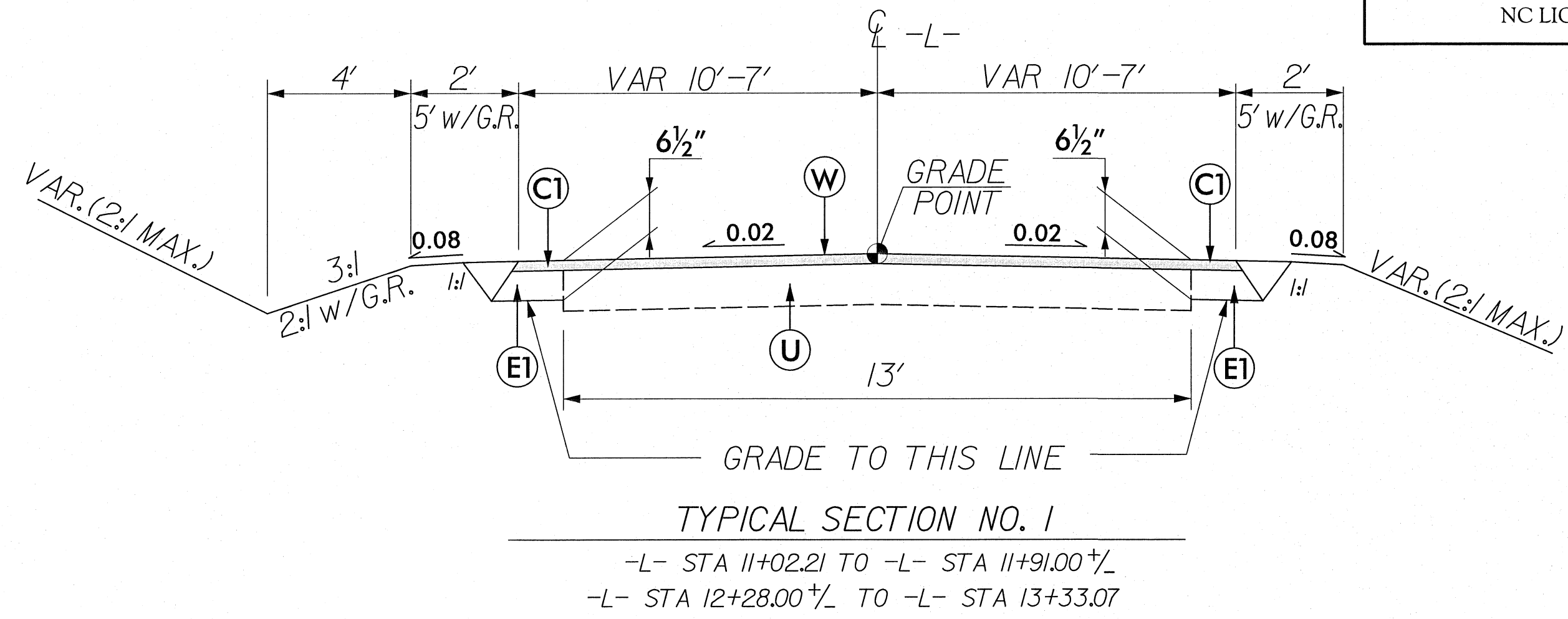
PAVEMENT SCHEDULE

| | |
|----|--|
| C1 | PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS. |
| C2 | PROP. VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1 1/2" OR GREATER THAN 2" IN DEPTH. |
| E1 | PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 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" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH. |
| U | EXISTING PAVEMENT |
| W | VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL, THIS SHEET) |
| J1 | PROP. APPROX. 8" AGGREGATE BASE COURSE |

CH ENGINEERING
 3220 GLEN ROYAL RD. RALEIGH, NC 27617
 TELE 919.788.0224 FAX 919.788.0232
 NC LICENSE #P-0189

| | |
|---------------------------------------|--------------------------|
| PROJECT REFERENCE NO. 17BP.13.R.68 | SHEET NO. 2 |
| MITCHELL COUNTY #600204 | |
| ROADWAY DESIGN ENGINEER | PAVEMENT DESIGN ENGINEER |

Professional Engineer Seal: NORTH CAROLINA PROFESSIONAL ENGINEER, THOMAS R. NEFF, LICENSE #10059, 2/4/14



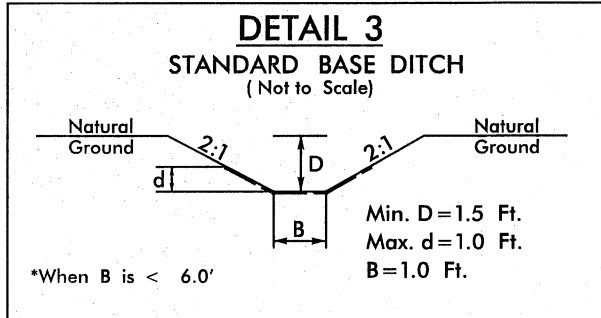
PROJECT NO. 17BP.13.R.68
 COUNTY: MITCHELL
 REPLACES BRIDGE NO. 600204

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

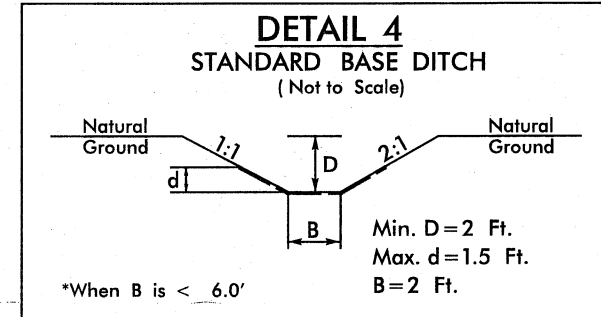
BRIDGE NO. 600204
 ON SR 1319
 OVER BIRD CREEK

CURVE DATA FOR -L-

| | | |
|---|---|--|
| PI Sta 10+37.68 Δ = 4° 18' 56.8" (LT) D = 5° 43' 46.5" L = 75.32' T = 37.68' R = 1,000.00' | PI Sta 11+22.49 Δ = 13° 26' 54.8" (RT) D = 14° 19' 26.2" L = 93.89' T = 47.16' R = 400.00' | PI Sta 12+83.49 Δ = 29° 49' 37.0" (RT) D = 29° 22' 56.8" L = 101.51' T = 51.93' R = 195.00' e = 05 Ls = 30' |
|---|---|--|



FROM STA. 12+74 TO STA. 12+93 -L- (LT) (TRIBUTARY)



FROM STA. 12+20 TO STA. 12+20 -L- (LT)

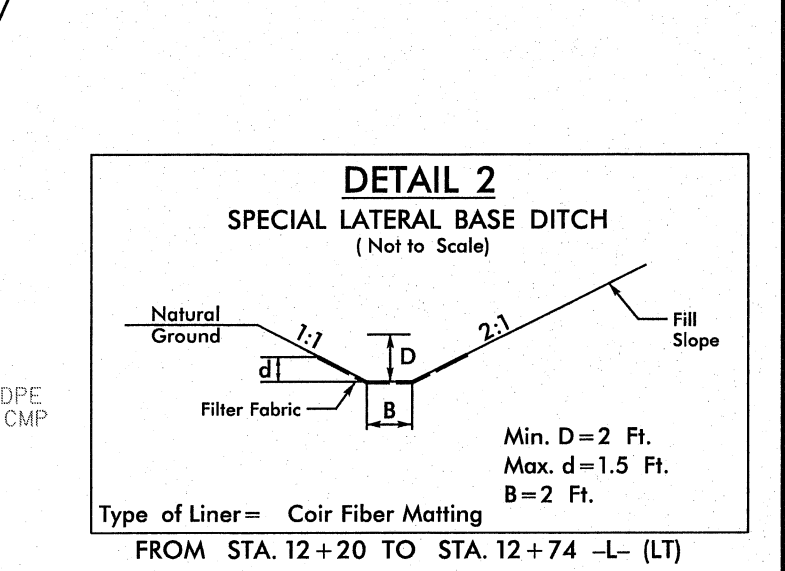
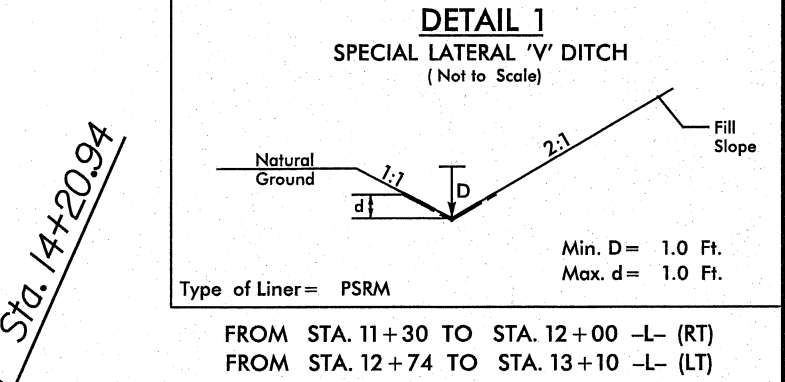
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| 4 | BL-4 | 859287.7674 | 1023010.4735 | 2330.42 | 12+50.00 | 14.82 LT |
| 2 | GPS-2 | 860200.6254 | 1022696.3109 | 2412.11 | OUTSIDE PROJECT LIMITS | |

CH ENGINEERING
 3220 GLEN ROYAL RD. RALEIGH, NC 27617
 TELE 919.788.0224 FAX 919.788.0232
 NC LICENSE #P-0189

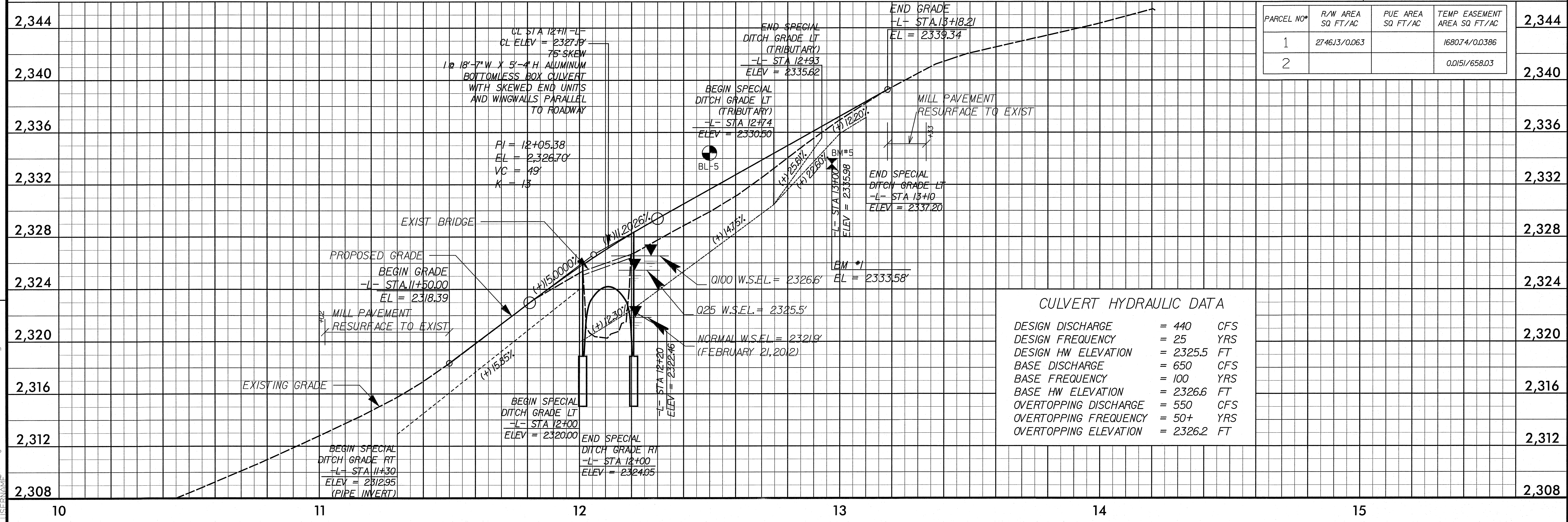
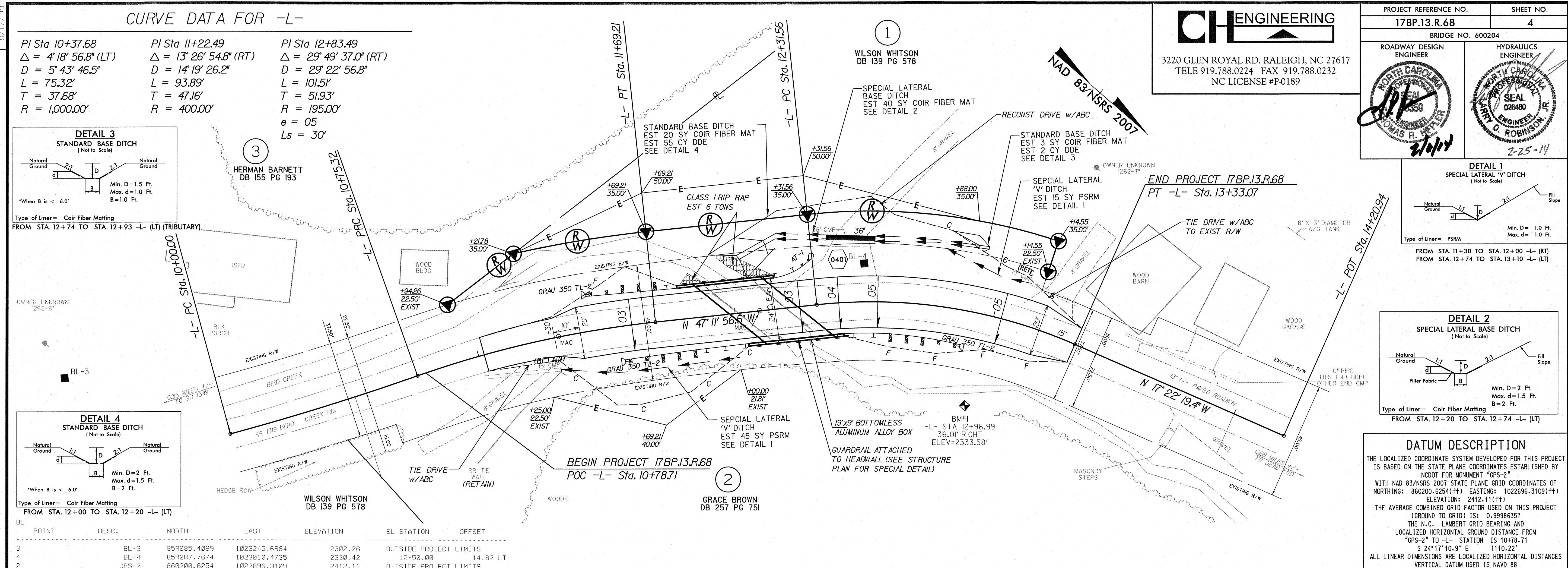
PROJECT REFERENCE NO. 17BP.13.R.68
 SHEET NO. 4
 BRIDGE NO. 600204

ROADWAY DESIGN ENGINEER
 NORTH CAROLINA PROFESSIONAL SEAL
 OMAS R. JEFFER
 2/16/21

HYDRAULICS ENGINEER
 NORTH CAROLINA PROFESSIONAL SEAL
 WENDY D. ROBINSON
 2-25-14



DATUM DESCRIPTION
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "GPS-2" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 860200.6254 (FF) EASTING: 1022696.3109 (FF) ELEVATION: 2412.11 (FF) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99986357 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS-2" TO -L- STATION IS 10+78.71 S 24°17'10.9" E 1110.22' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88



CULVERT HYDRAULIC DATA

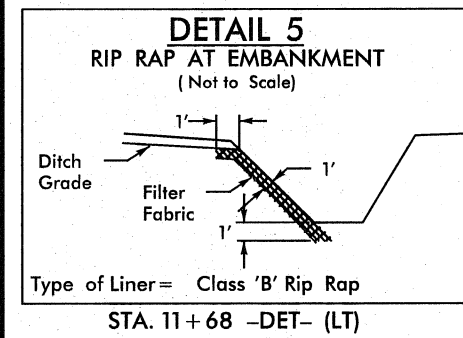
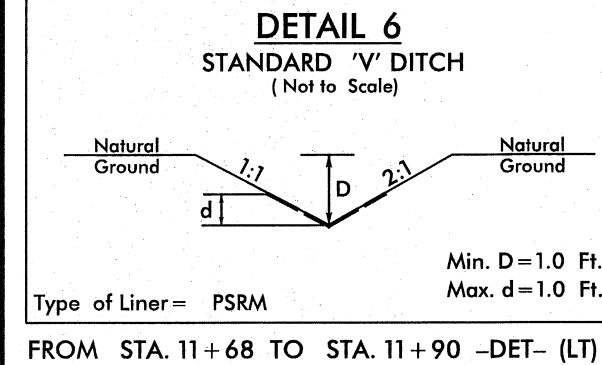
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| DESIGN FREQUENCY | = 25 | YRS |
| DESIGN HW ELEVATION | = 2325.5 | FT |
| BASE DISCHARGE | = 650 | CFS |
| BASE FREQUENCY | = 100 | YRS |
| BASE HW ELEVATION | = 2326.6 | FT |
| OVERTOPPING DISCHARGE | = 550 | CFS |
| OVERTOPPING FREQUENCY | = 50+ | YRS |
| OVERTOPPING ELEVATION | = 2326.2 | FT |

| PARCEL NO* | R/W AREA SQ FT/AC | PUE AREA SQ FT/AC | TEMP EASEMENT AREA SQ FT/AC |
|------------|-------------------|-------------------|-----------------------------|
| 1 | 274613/0.063 | | 168074/0.0386 |
| 2 | | | 0.0151/658.03 |

8/17/99
 REVISIONS
 1/27/2014
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CURVE DATA FOR -DET-

| | | | |
|---|--|---|---|
| PI Sta 10+37.68 Δ = 4° 18' 56.8" (LT) D = 5' 43' 46.5" L = 75.32' T = 37.68' R = 1,000.00' | PI Sta 10+77.02 Δ = 0° 29' 06.2" (RT) D = 14' 19' 26.2" L = 3.39' T = 1.69' R = 400.00' | PI Sta 11+60.04 Δ = 10° 33' 50.3" (LT) D = 38' 11' 49.9" L = 27.66' T = 13.87' R = 150.00' | PI Sta 12+22.28 Δ = 53° 30' 19.7" (RT) D = 57' 17' 44.8" L = 93.38' T = 50.41' R = 100.00' |
|---|--|---|---|



PROJECT REFERENCE NO.
17BP.13.R.68

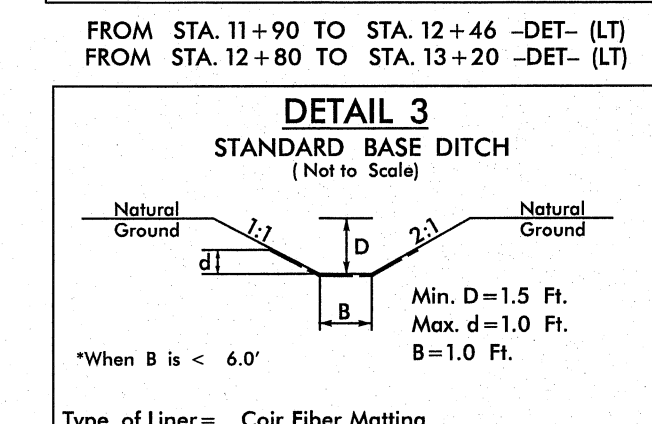
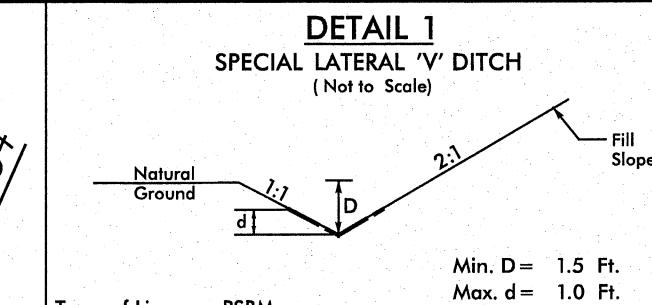
SHEET NO.
5

BRIDGE NO. 600204

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL
026480
D. ROBINSON, JR.
2/6/14

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL
026480
D. ROBINSON, JR.
2-25-14

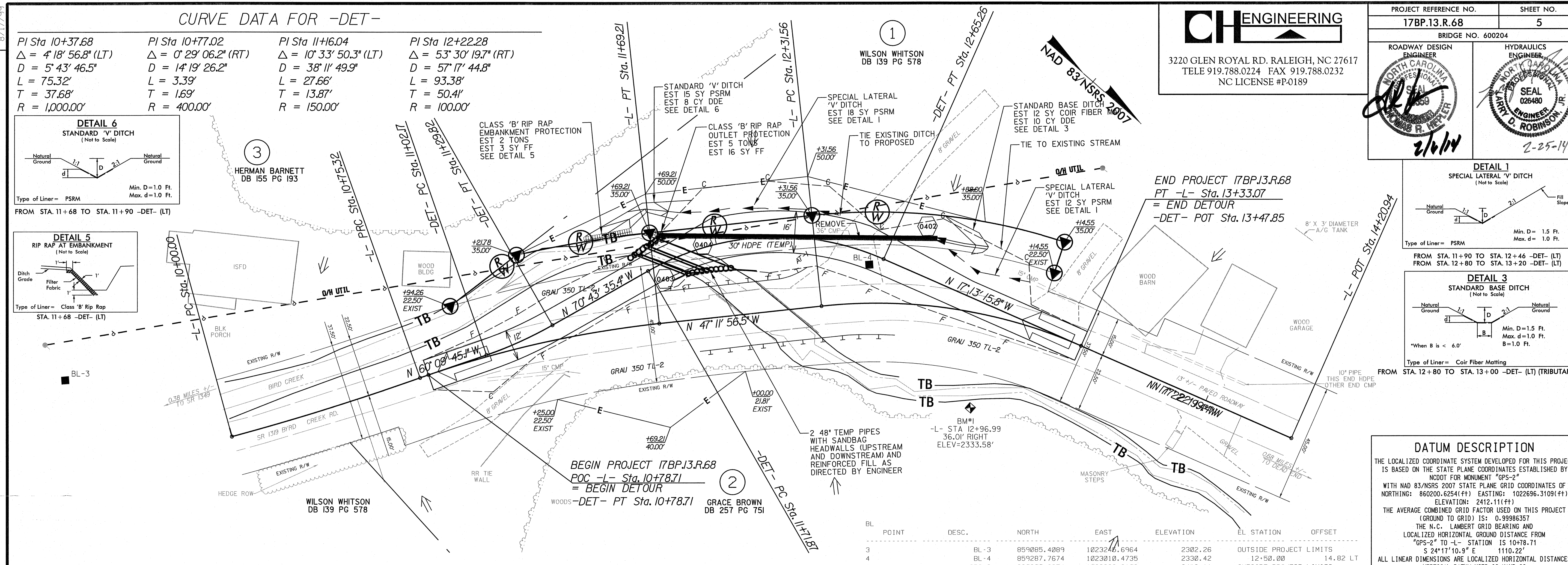
3220 GLEN ROYAL RD. RALEIGH, NC 27617
TELE 919.788.0224 FAX 919.788.0232
NC LICENSE #P-0189



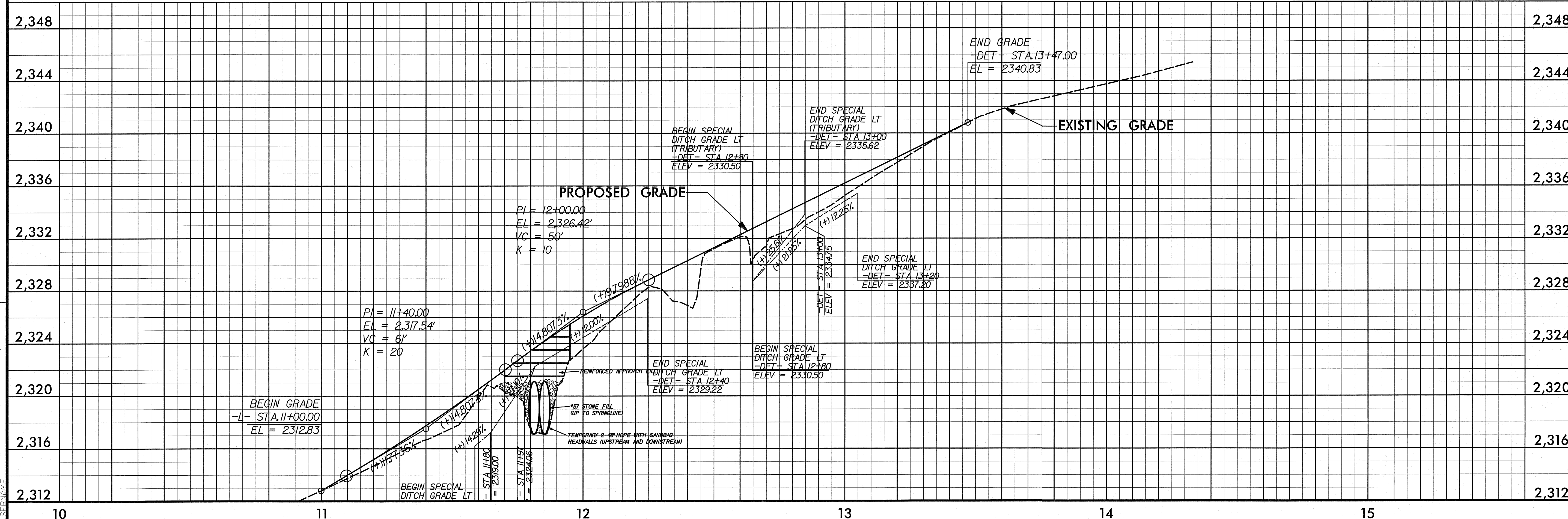
DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "GPS-2" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 860200.6254 (FF) EASTING: 1022696.3109 (FF) ELEVATION: 2412.11 (FF) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99986357 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS-2" TO -L- STATION IS 10+78.71 S 24°17'10.9" E 1110.22'

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



| BL POINT | DESC. | NORTH | EAST | ELEVATION | EL STATION | OFFSET |
|----------|-------|-------------|--------------|-----------|------------------------|----------|
| 3 | BL-3 | 859085.4089 | 1023246.6964 | 2302.26 | OUTSIDE PROJECT LIMITS | |
| 4 | BL-4 | 859287.7674 | 1023010.4735 | 2330.42 | 12+50.00 | 14.82 LT |
| 2 | GPS-2 | 860200.6254 | 1022696.3109 | 2412.11 | OUTSIDE PROJECT LIMITS | |



REVISIONS

K:\27\2014\PROJECTS\17BP.13.R.68\17BP.13.R.68_DET.dwg

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CH ENGINEERING
3220 GLEN ROYAL RD. RALEIGH, NC 27617
TELE 919.788.0224 FAX 919.788.0232
NC LICENSE #P-0189

| | |
|---------------------------------------|--------------------|
| PROJECT REFERENCE NO. 17BP.13.R.68 | SHEET NO. TCP-1 |
| BRIDGE NO. 600204 | |
| ROADWAY DESIGN ENGINEER | |

PLAN FOR PROPOSED MAINTENANCE OF TRAFFIC, MARKING & DELINEATION MITCHELL COUNTY

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

| STD. NO. | TITLE |
|----------|--|
| 1101.01 | WORK ZONE ADVANCED WARNING SIGNS |
| 1101.02 | TEMPORARY ROAD CLOSURES |
| 1101.06 | WARNING SIGNS FOR BLASTING ZONES |
| 1101.11 | TRAFFIC CONTROL DESIGN TABLES |
| 1110.01 | STATIONARY WORK ZONE SIGNS |
| 1110.02 | PORTABLE WORK ZONE SIGNS |
| 1130.01 | DRUMS |
| 1135.01 | CONES |
| 1145.01 | BARRICADES - TYPE III |
| 1180.01 | SKINNY-DRUM |
| 1205.01 | PAVEMENT MARKINGS - LINE TYPES AND OFFSETS |
| 1205.02 | PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAY |

PHASING PLAN

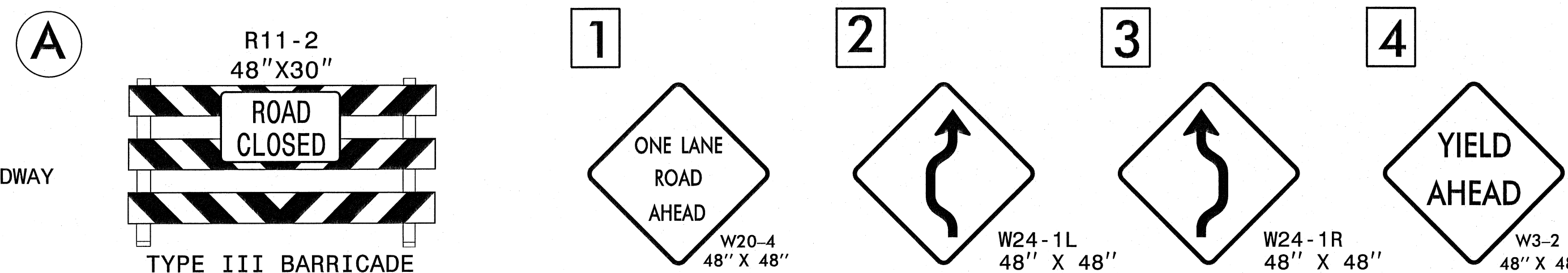
- PHASE I:** MAINTAINING EXISTING TRAFFIC PATTERN INSTALL ADVANCED WARNING SIGNS USING RSD 1101.02 CONSTRUCT TEMPORARY DETOUR INCLUDING TEMP STREAM CROSSING, PROVIDING A ONE-LANE 2-WAY ACCESS ACROSS STREAM.
- PHASE II:** INSTALL TRAFFIC CONTROL AS SHOWN ON TCP-1; SHIFT TRAFFIC ONTO TEMP DETOUR IN A ONE-LANE; TWO WAY OPERATION. REMOVE EXISTING BRIDGE, CONSTRUCT NEW CULVERT AND ROADWAY APPROACHES; INSTALL GUARDRAIL UP TO TEMPORARY DETOUR. INSTALL PAVEMENT MARKINGS PER STD. 1205.02 (SHT 1 OF 2)
- PHASE III:** SHIFT TRAFFIC TO NEW ROADWAY AND CULVERT USING RSD 1101.02 CONSTRUCT TIES AT EACH END OF PROJECT AND COMPLETE -L- LINE CONSTRUCTION. USING RSD 1101.02 REMOVE TEMPORARY DETOUR.

LEGEND

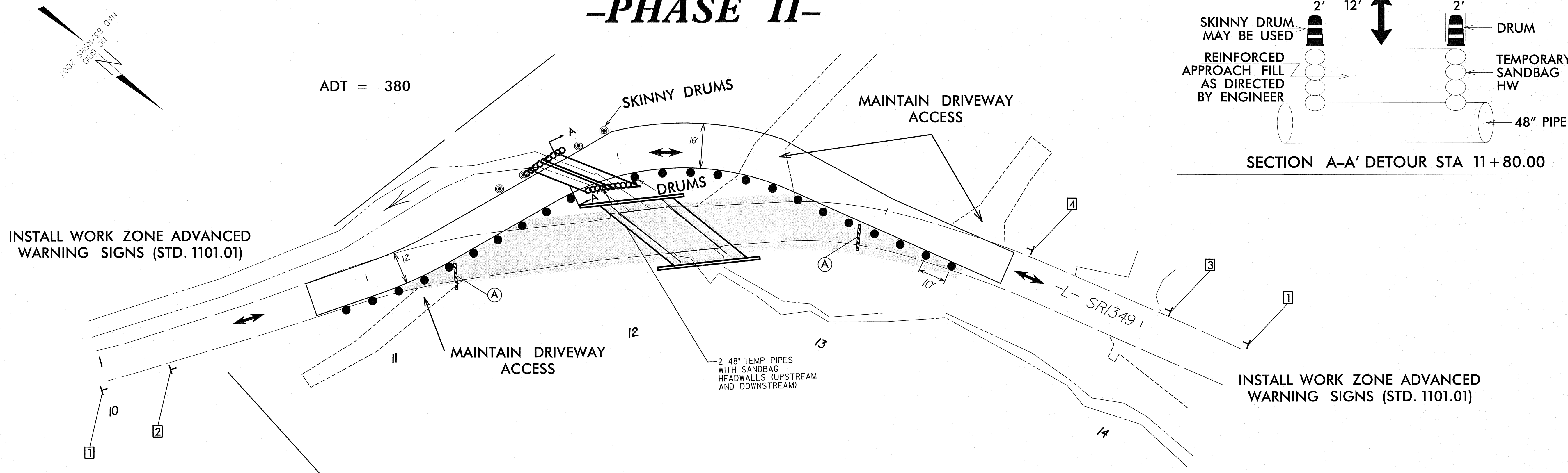
- GENERAL**
- DIRECTION OF TRAFFIC FLOW
 - NORTH ARROW
 - PROPOSED PVMT.
 - EXIST. PVMT.
 - WORK AREA
 - REMOVAL OF EXISTING PAVEMENT

TRAFFIC CONTROL DEVICES

- TYPE III BARRICADE
- DRUM
- SKINNY DRUM
- STATIONARY SIGN



-PHASE II-



17BP.13.R.68

TIP PROJECT:

REV. 8-17-12
R:\TIP\TIP\17BP\13.R\68\CP-1.dgn
1/27/2014
R:\TIP\TIP\17BP\13.R\68\CP-1.dgn
USER:NAME

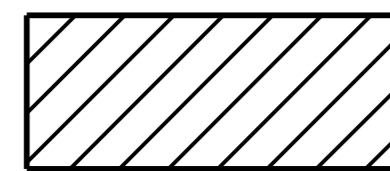
EROSION CONTROL PLAN

| | |
|--|-----------------------------|
| PROJECT REFERENCE NO. 17BP13.R.68 | SHEET NO. E.C.-1/CONST.4 |
| R/W SHEET NO. | HYDRAULICS ENGINEER |
| Kimley-Horn and Associates, Inc. P.O. BOX 33068 RALEIGH, N.C. 27636-3068 | |
| RIGHT-OF-WAY REV. | |
| CONST. REV. | |

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL
REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY
NEED TO BE INSTALLED AS DIRECTED BY THE
ENGINEER.



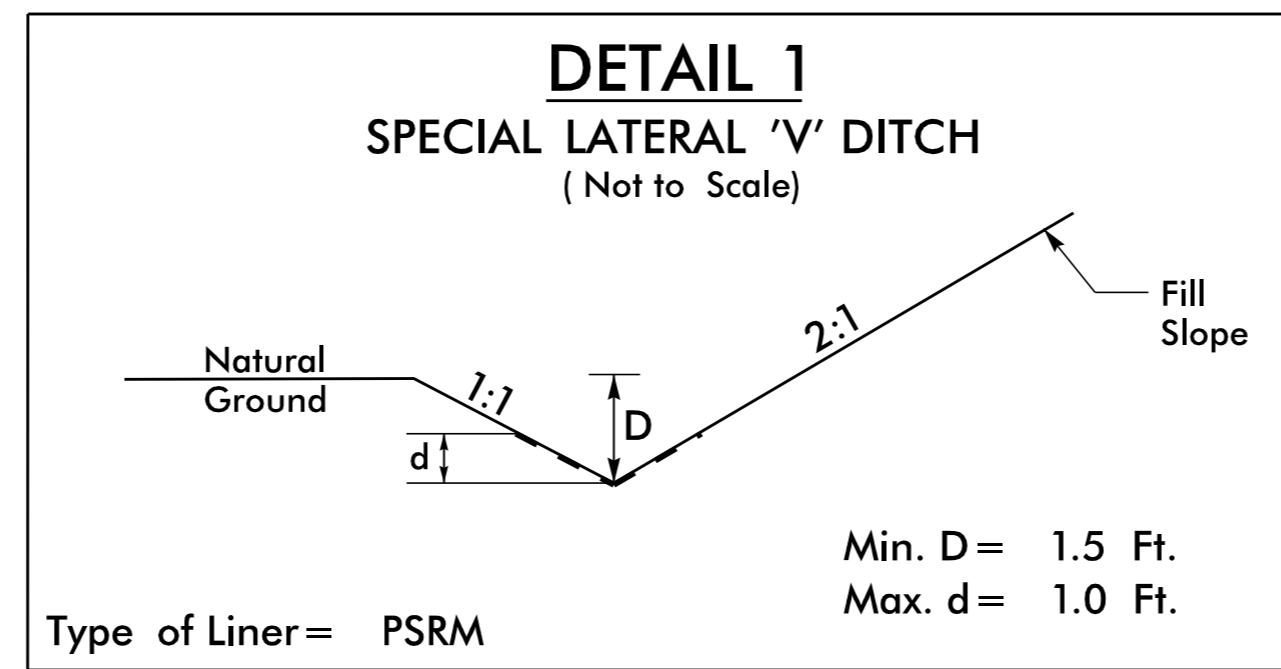
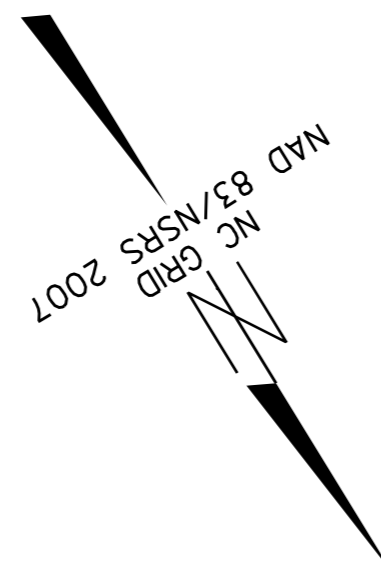
ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

ROADSIDE ENVIRONMENTAL UNIT
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

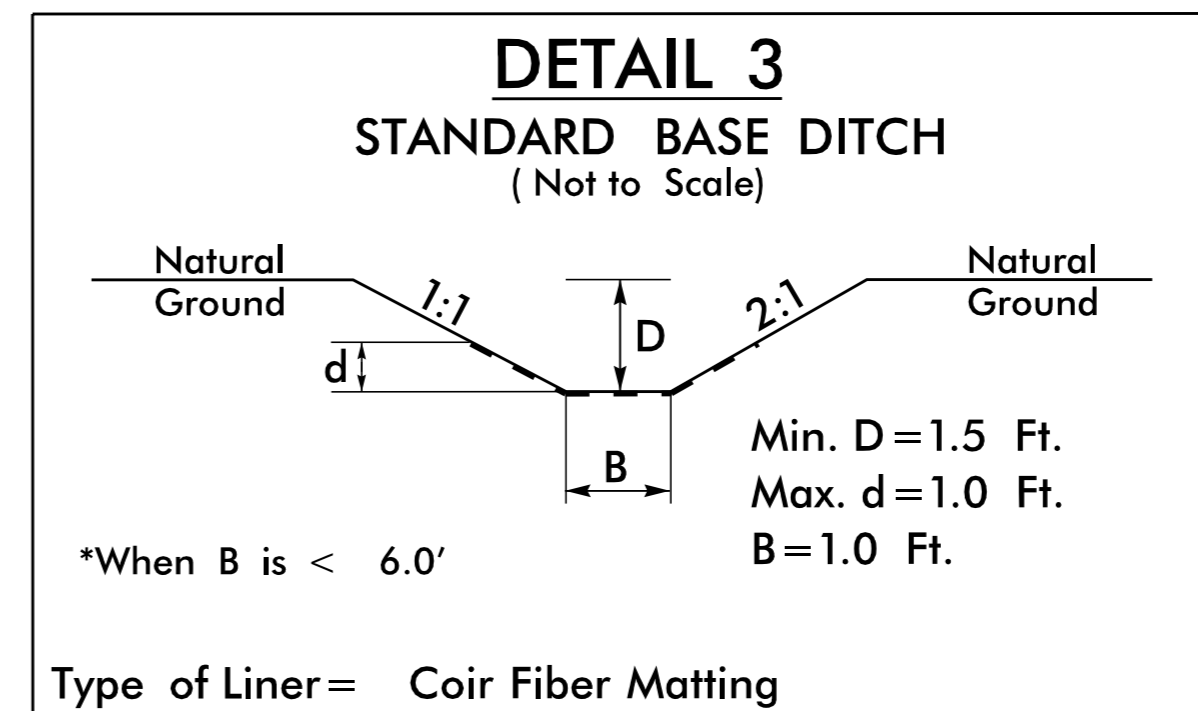
2012 STANDARD SPECIFICATIONS

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY
WITH THE REGULATIONS SET FORTH BY THE
NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011
ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND
NATURAL RESOURCES DIVISION OF WATER QUALITY.

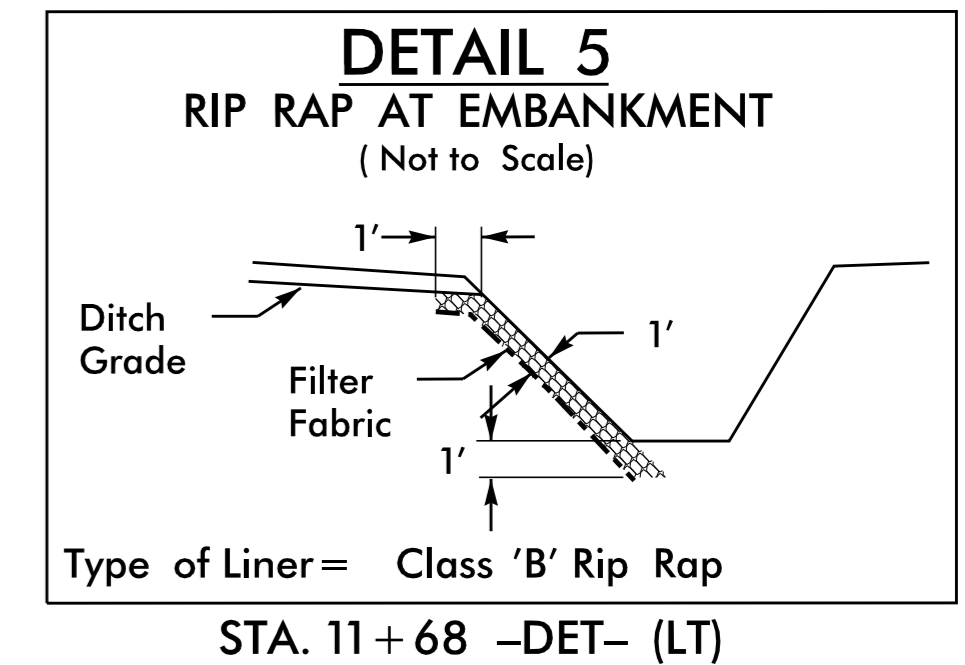
| Std. # | Description | Symbol |
|---------|---|-----------|
| 1605.01 | Temporary Silt Fence | |
| 1606.01 | Special Sediment Control Fence | ▤ ▤ ▤ ▤ ▤ |
| 1622.01 | Temporary Berms and Slope Drains | — TSD — |
| 1630.02 | Silt Basin Type B | ▨ |
| 1630.03 | Temporary Silt Ditch | — TSD — |
| 1630.05 | Temporary Diversion | — TD — |
| 1630.06 | Special Stilling Basin | □ |
| 1632.03 | Rock Inlet Sediment Trap Type C | ▣ |
| 1633.01 | Temporary Rock Silt Check Type-A | ▤ ▤ ▤ ▤ ▤ |
| | Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM) | ▤ ▤ ▤ ▤ ▤ |
| 1633.02 | Temporary Rock Silt Check Type-B | ▤ ▤ ▤ ▤ ▤ |
| | Wattle | ⤴ |
| | Wattle with Polyacrylamide (PAM) | ⤴ |
| 1634.02 | Temporary Rock Sediment Dam Type-B | ▣ |
| 1635.01 | Rock Pipe Inlet Sediment Trap Type-A | ⤴ |



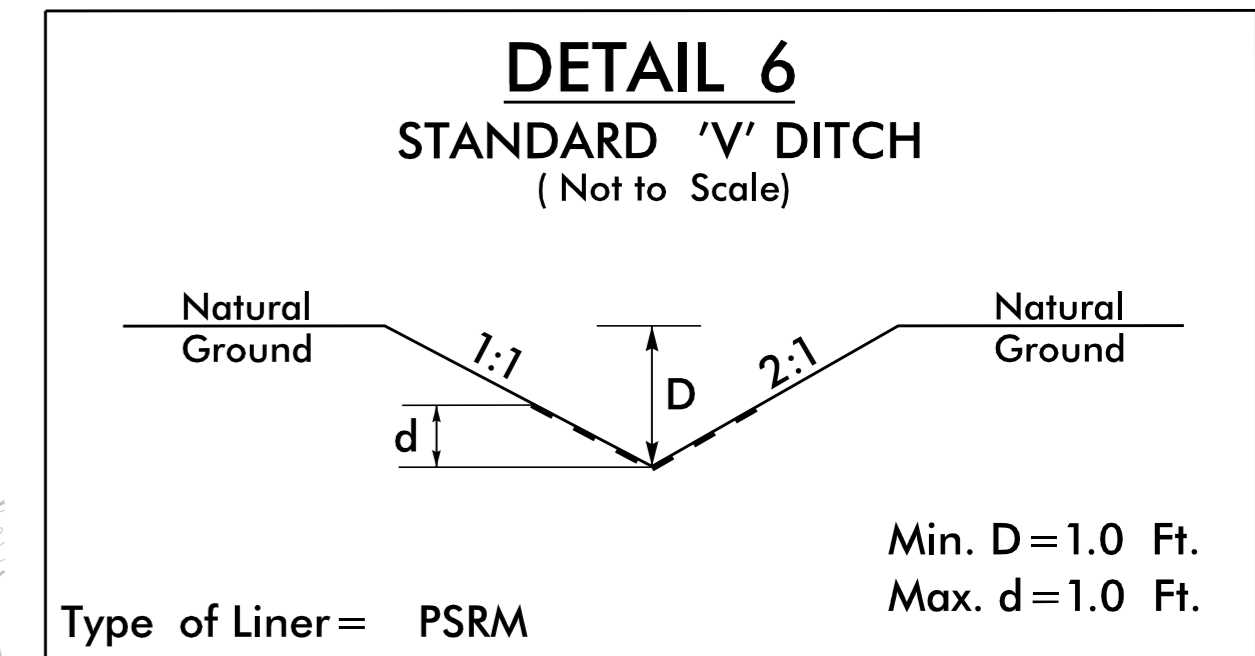
FROM STA. 11+90 TO STA. 12+46 -DET- (LT)
FROM STA. 12+80 TO STA. 13+20 -DET- (LT)



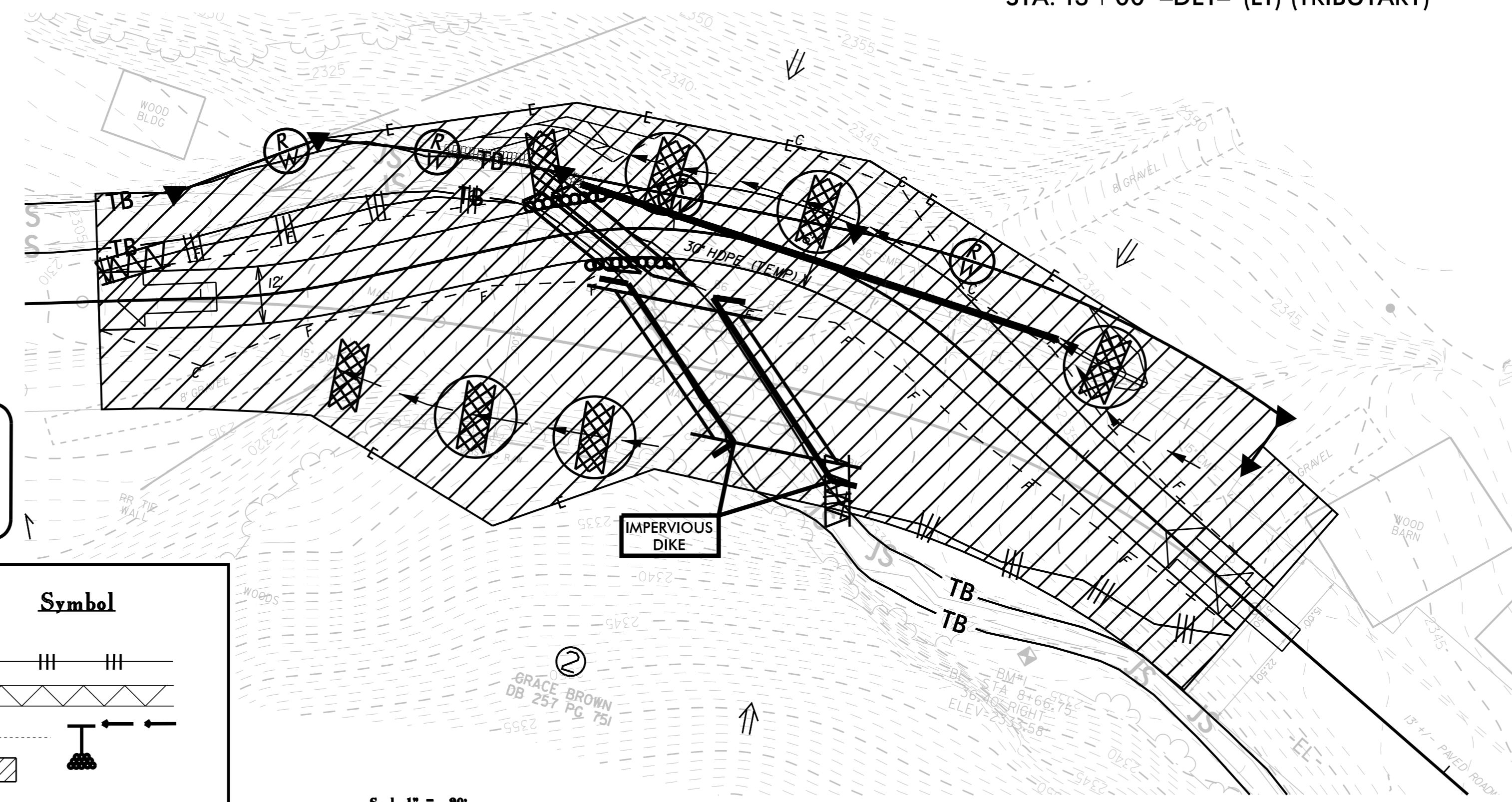
FROM STA. 12+80 TO
STA. 13+00 -DET- (LT) (TRIBUTARY)



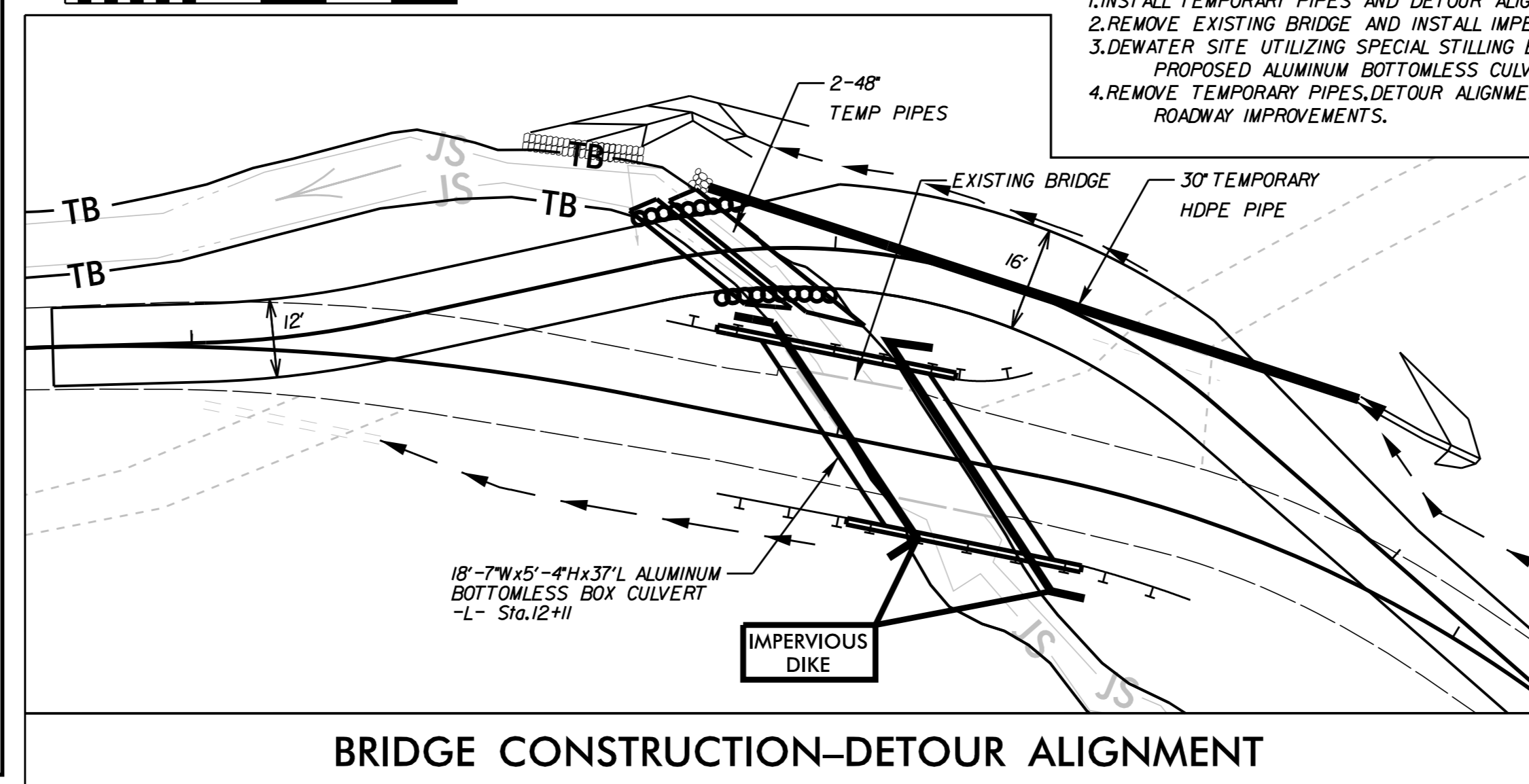
STA. 11+68 -DET- (LT)



FROM STA. 11+68 TO STA. 11+90 -DET- (LT)



Scale 1" = 20'
0 20' 40'




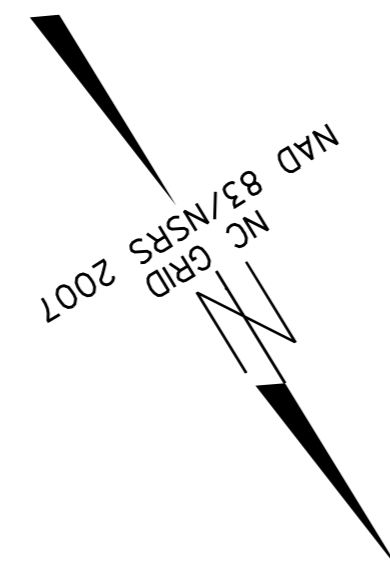
EROSION CONTROL CONSTRUCTION SEQUENCING
1. INSTALL TEMPORARY PIPES AND DETOUR ALIGNMENT.
2. REMOVE EXISTING BRIDGE AND INSTALL IMPERVIOUS DIKES FOR DETOUR ALIGNMENT.
3. DEWATER SITE UTILIZING SPECIAL STILLING BASINS, EXCAVATE, CONSTRUCT CONCRETE HEADWALLS, AND INSTALL PROPOSED ALUMINUM BOTTOMLESS CULVERT.
4. REMOVE TEMPORARY PIPES, DETOUR ALIGNMENT, IMPERVIOUS DIKES, SPECIAL STILLING BASINS, AND COMPLETE ROADWAY IMPROVEMENTS.

2012 STANDARD DRAWINGS

| | | | |
|---------|----------------------------------|---------|--------------------------------------|
| 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 | | |

EROSION CONTROL PLAN

| | |
|---|-----------------------------|
| PROJECT REFERENCE NO. 17BP13.R.68 | SHEET NO. E.C.-2/CONST.4 |
| R/W SHEET NO. | HYDRAULICS ENGINEER |
|  Kimley-Horn and Associates, Inc. P.O. BOX 33068 RALEIGH, N.C. 27636-3068 RIGHT-OF-WAY REV. CONST. REV. | |



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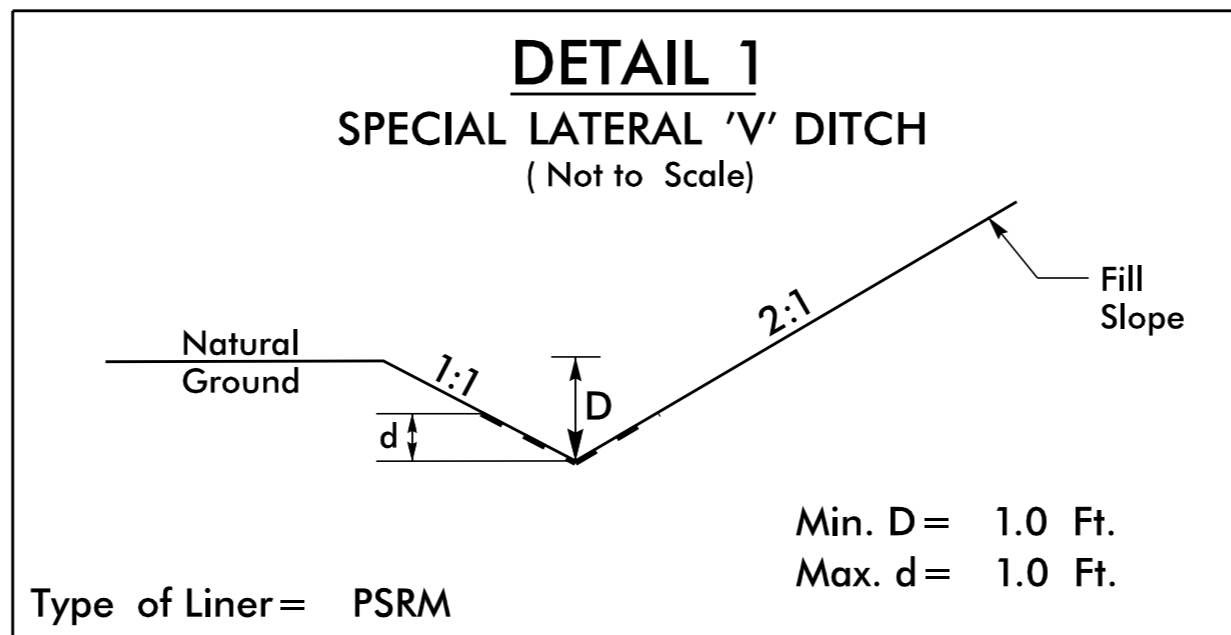
Vance W. Blanton
LEVEL IIIA NAME

707
LEVEL IIIA CERTIFICATION NO.

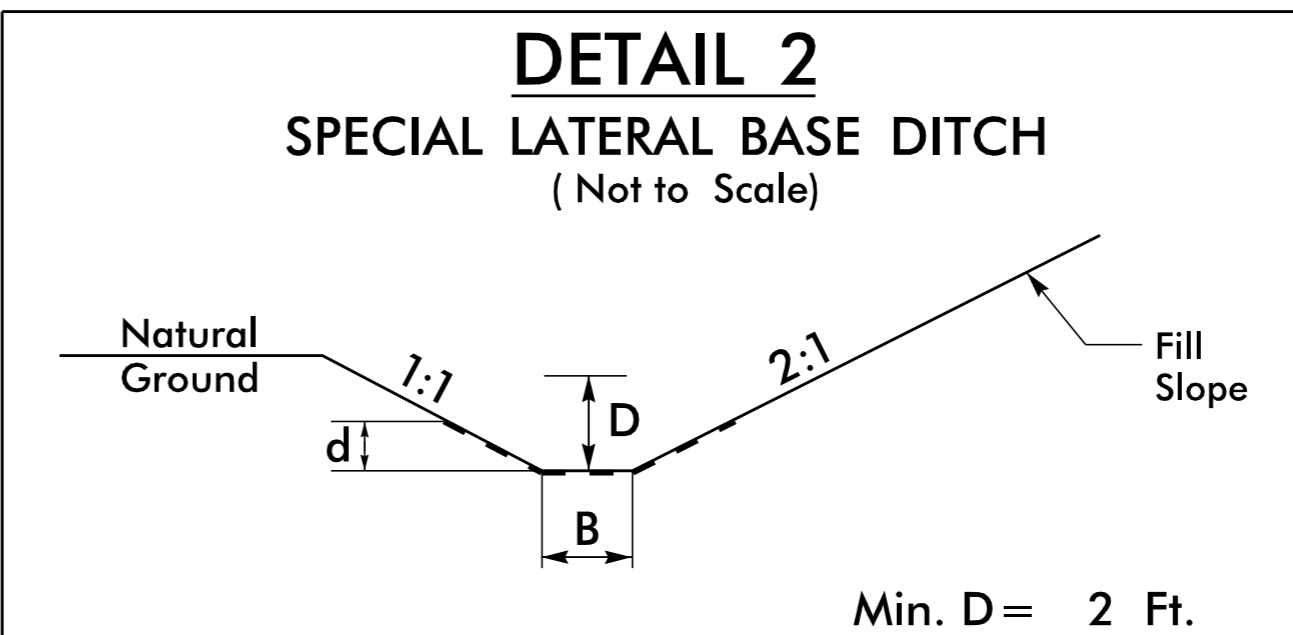
ROADSIDE ENVIRONMENTAL UNIT
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

2012 STANDARD SPECIFICATIONS

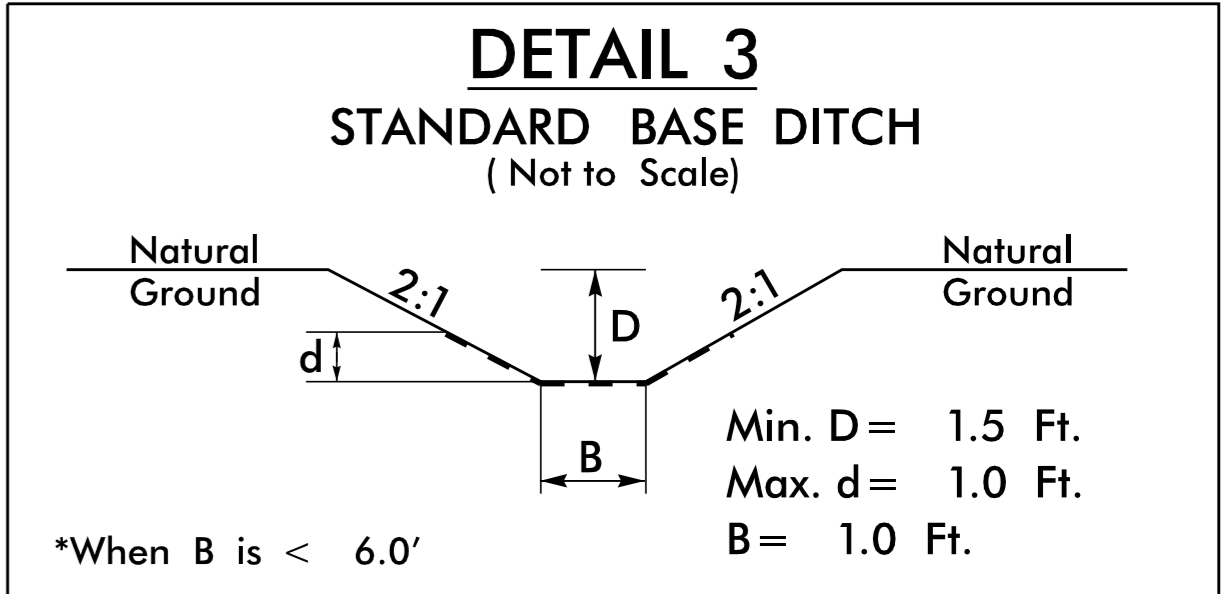
THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.



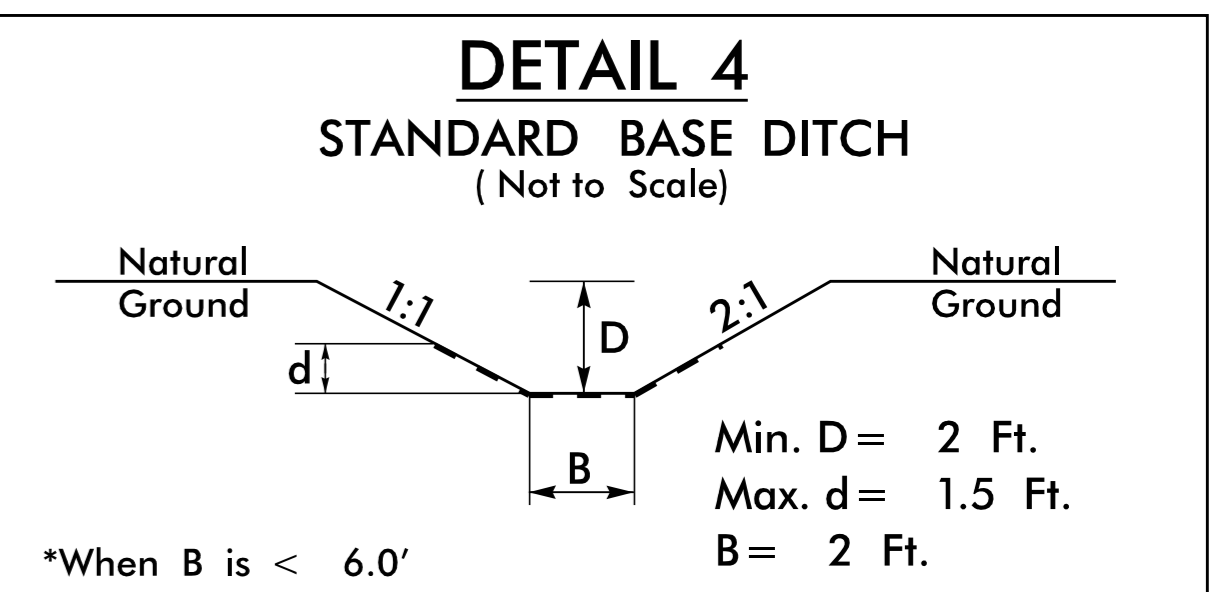
FROM STA. 11+30 TO STA. 12+00 -L- (RT)
FROM STA. 12+74 TO STA. 13+10 -L- (LT)



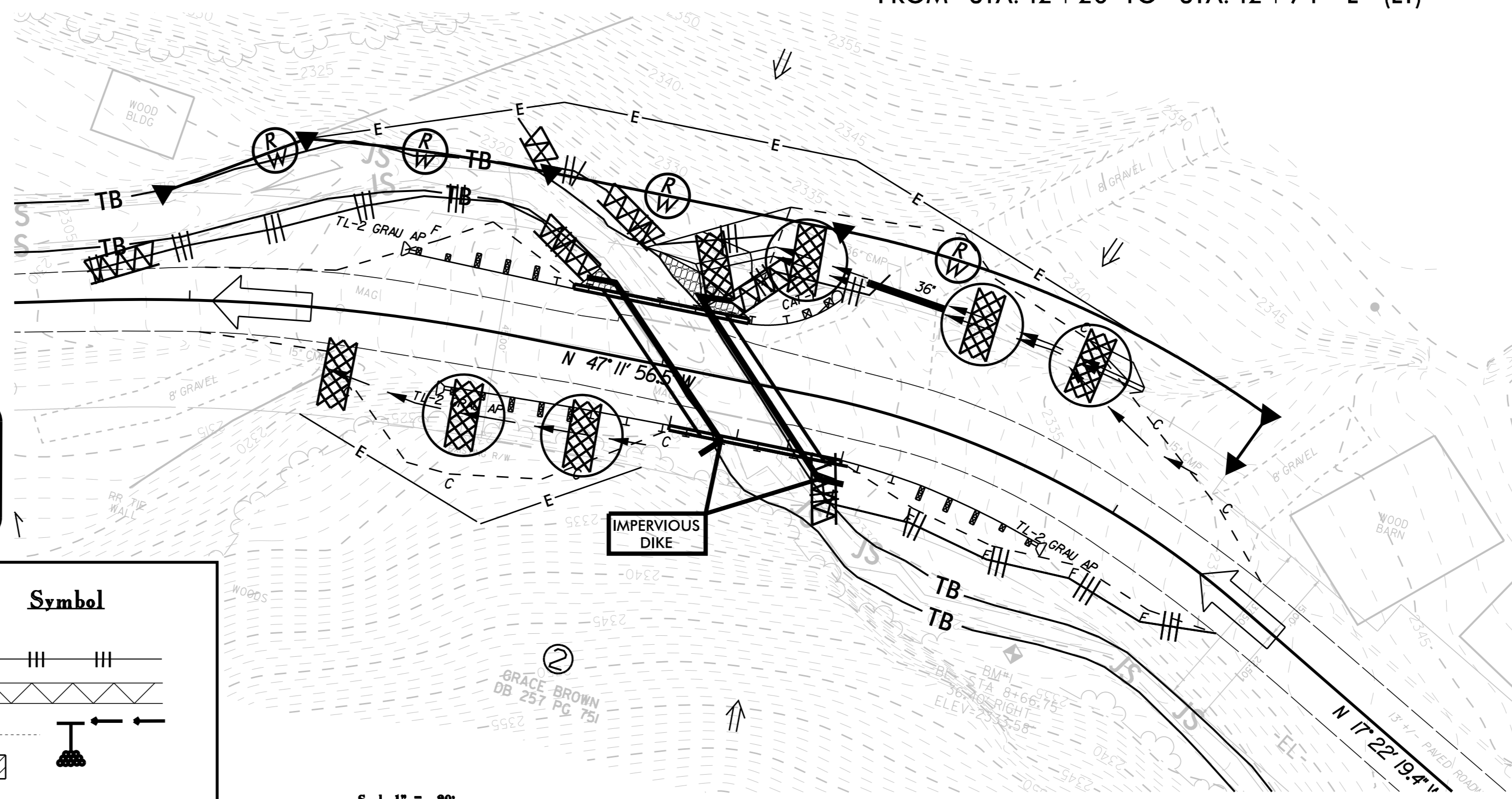
FROM STA. 12+20 TO STA. 12+74 -L- (LT)



FROM STA. 12+74 TO STA. 12+93 -L- (LT) (TRIBUTARY)



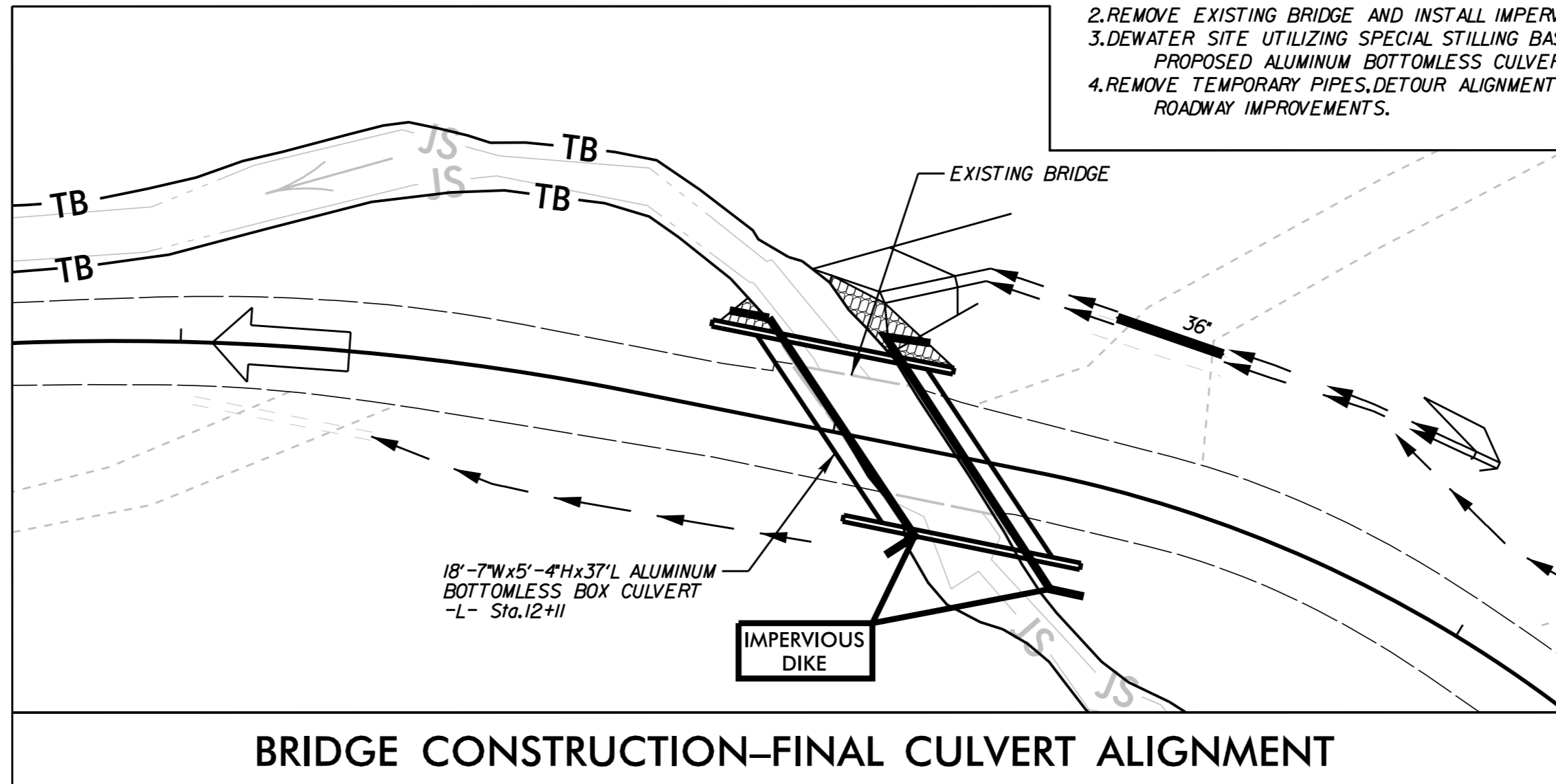
FROM STA. 12+00 TO STA. 12+20 -L- (LT)



Scale 1" = 20'

EROSION CONTROL CONSTRUCTION SEQUENCING

1. INSTALL TEMPORARY PIPES AND DETOUR ALIGNMENT.
2. REMOVE EXISTING BRIDGE AND INSTALL IMPERVIOUS DIKES FOR DETOUR ALIGNMENT.
3. DEWATER SITE UTILIZING SPECIAL STILLING BASINS, EXCAVATE, CONSTRUCT CONCRETE HEADWALLS, AND INSTALL PROPOSED ALUMINUM BOTTOMLESS CULVERT.
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| 1606.01 | Special Sediment Control Fence | |
| 1622.01 | Temporary Berms and Slope Drains | |
| 1630.02 | Silt Basin Type B | |
| 1630.03 | Temporary Silt Ditch | |
| 1630.05 | Temporary Diversion | |
| 1630.06 | Special Stilling Basin | |
| 1632.03 | Rock Inlet Sediment Trap Type C | |
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| 1634.02 | Temporary Rock Sediment Dam Type-B | |
| 1635.01 | Rock Pipe Inlet Sediment Trap Type A | |
| 1635.01 | Rock Pipe Inlet Sediment Trap Type-A | |

2012 STANDARD DRAWINGS

| | | | |
|---------|----------------------------------|---------|--------------------------------------|
| 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 |
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| 1607.01 | Gravel Construction Entrance | 1633.01 | Temporary Rock Silt Check Type A |
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| 1630.01 | Riser Basin | 1634.01 | Temporary Rock Sediment Dam Type A |
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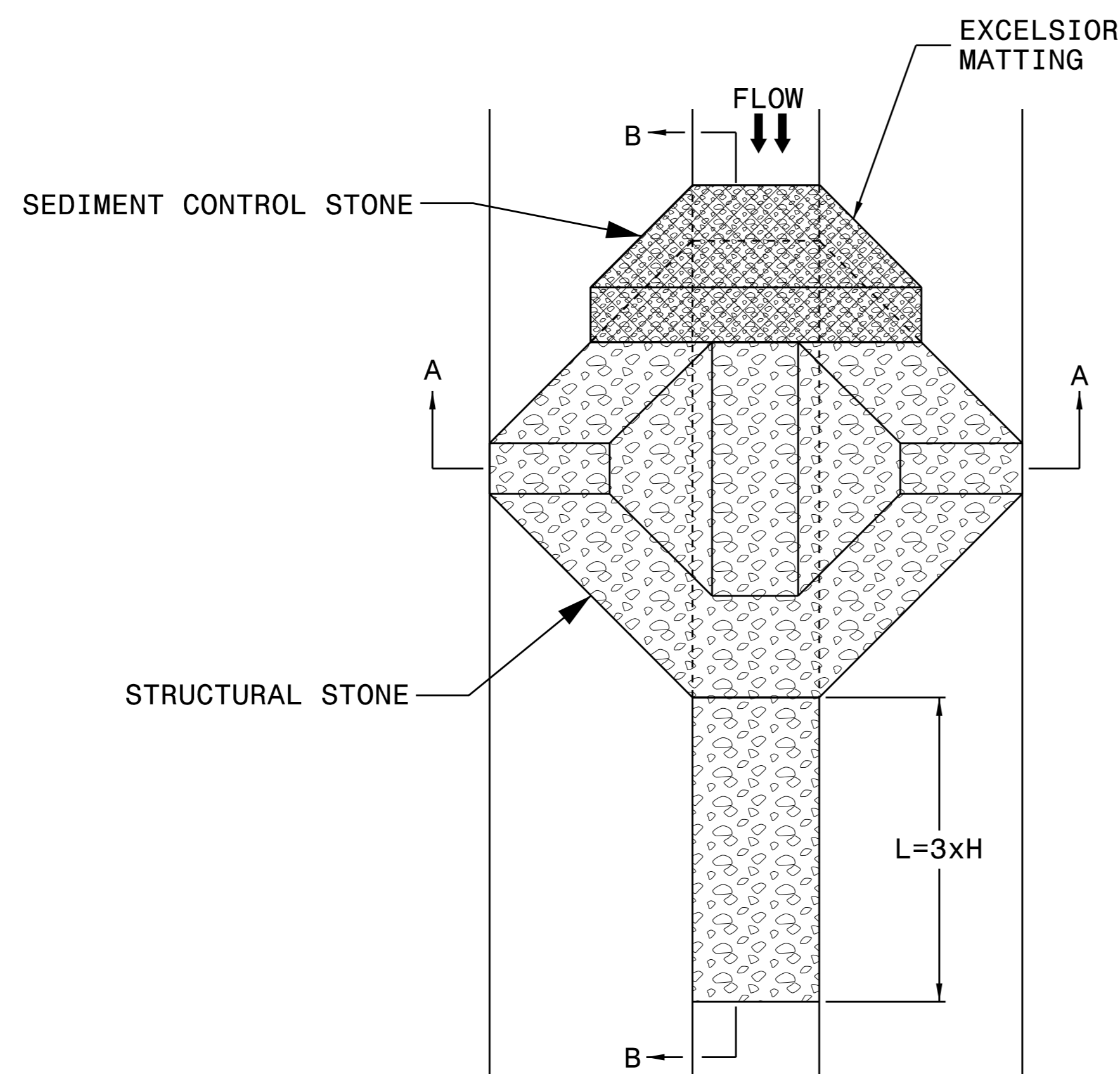
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

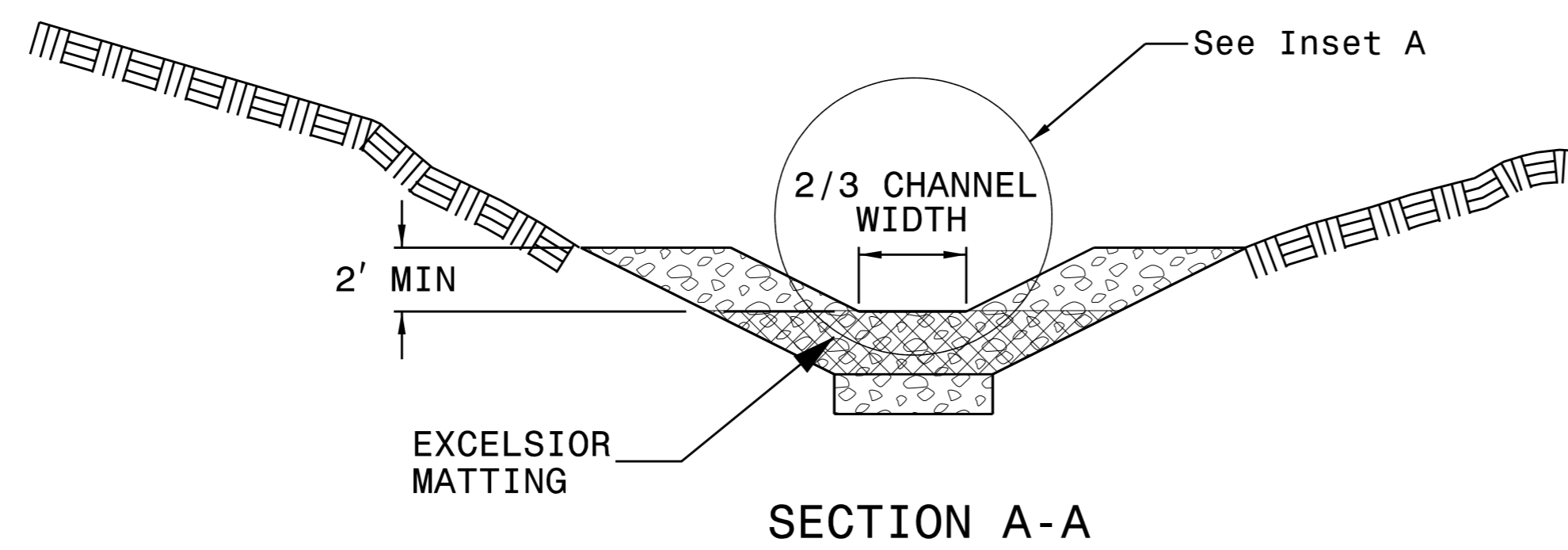
REVISIONS

| <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. |

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



PLAN



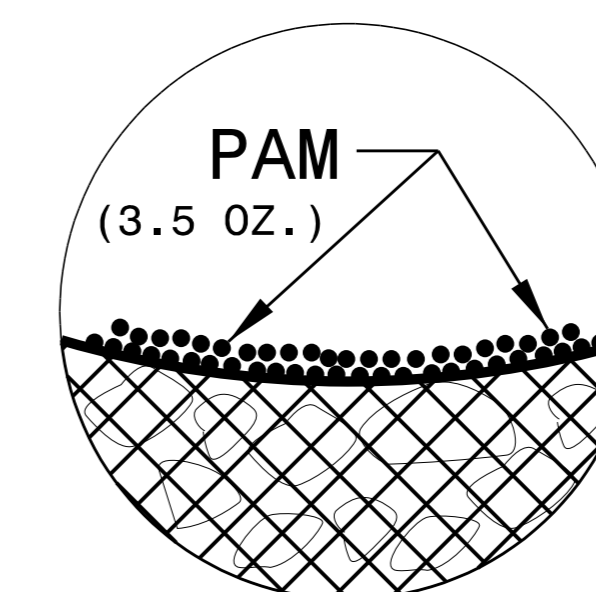
SECTION A-A

NOTES

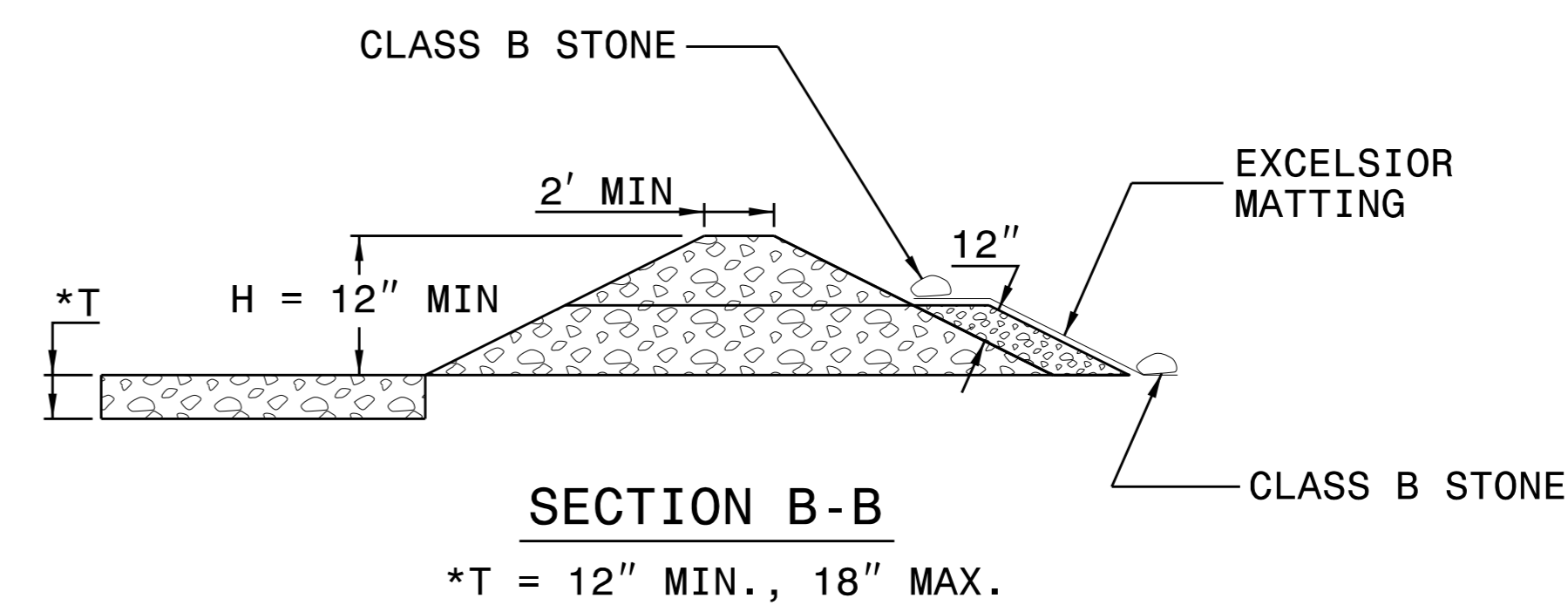
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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



INSET A



SECTION B-B

*T = 12" MIN., 18" MAX.

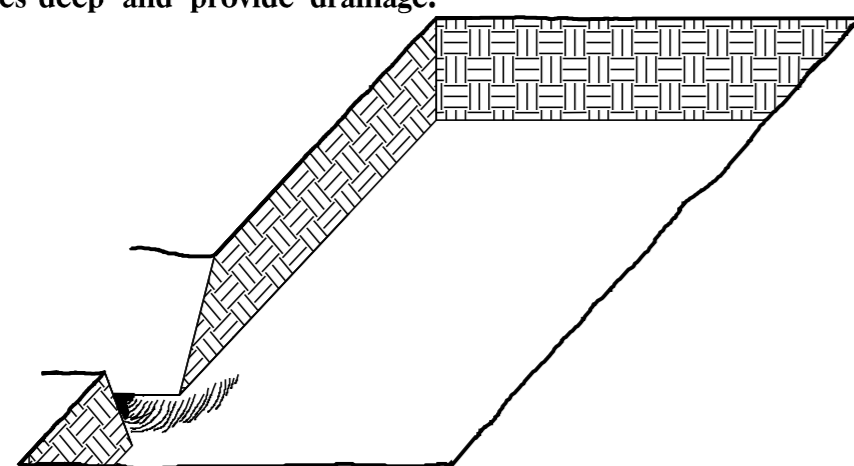
NOT TO SCALE

PLANTING DETAILS

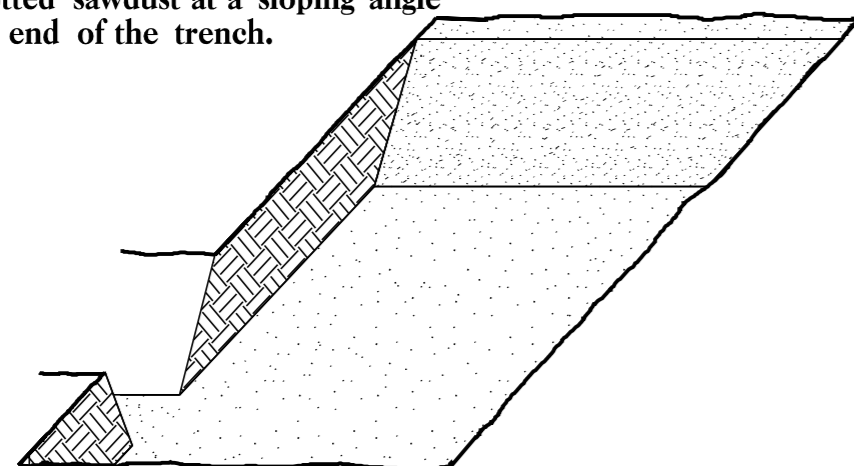
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

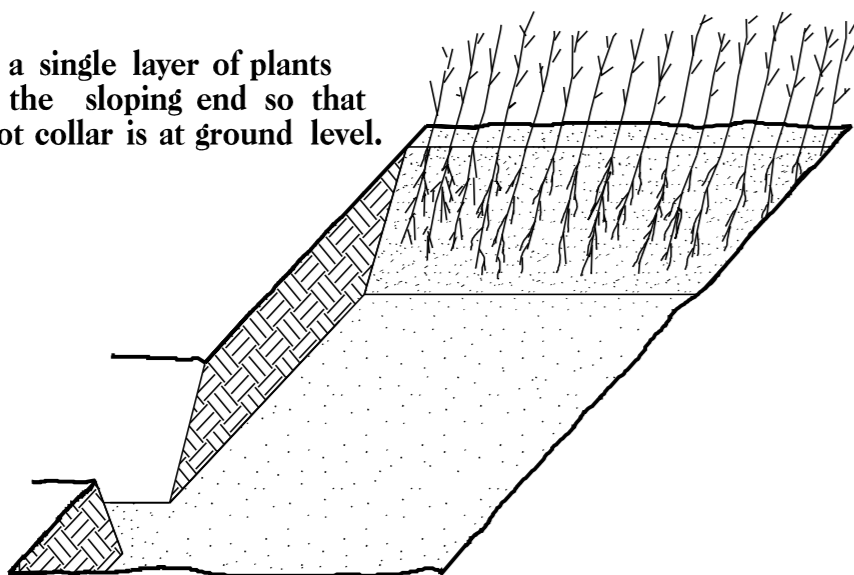
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



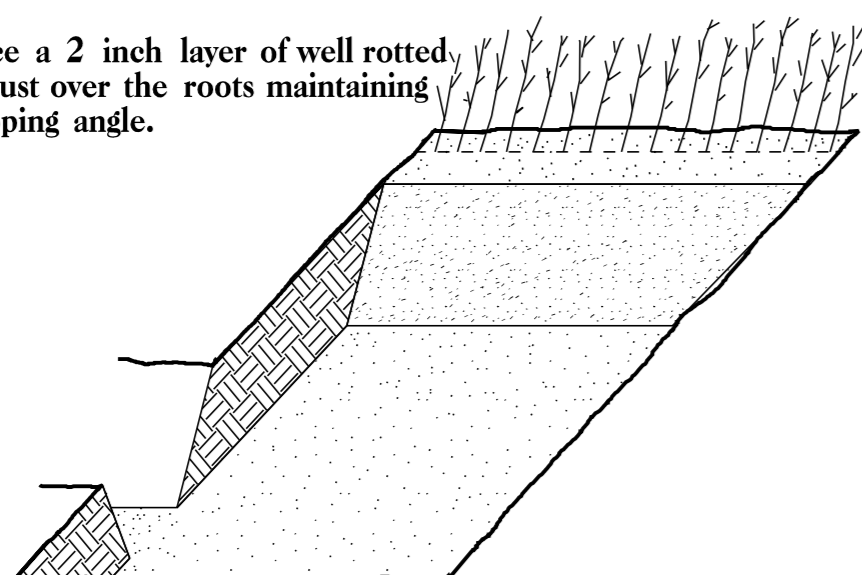
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



4. Place a single layer of plants against the sloping end so that the root collar is at ground level.

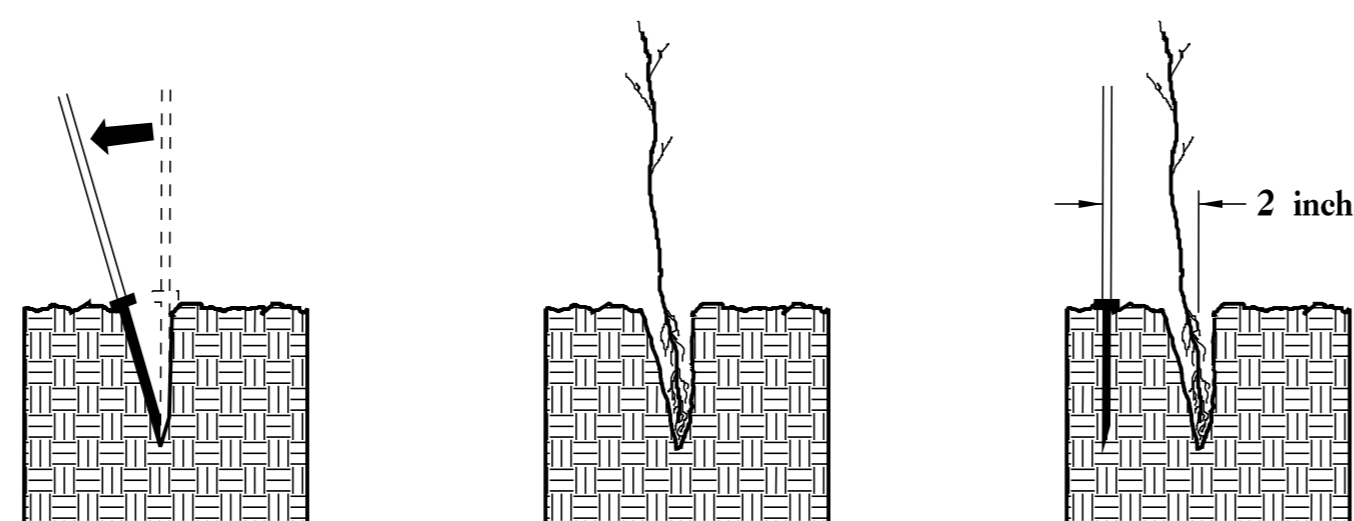


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

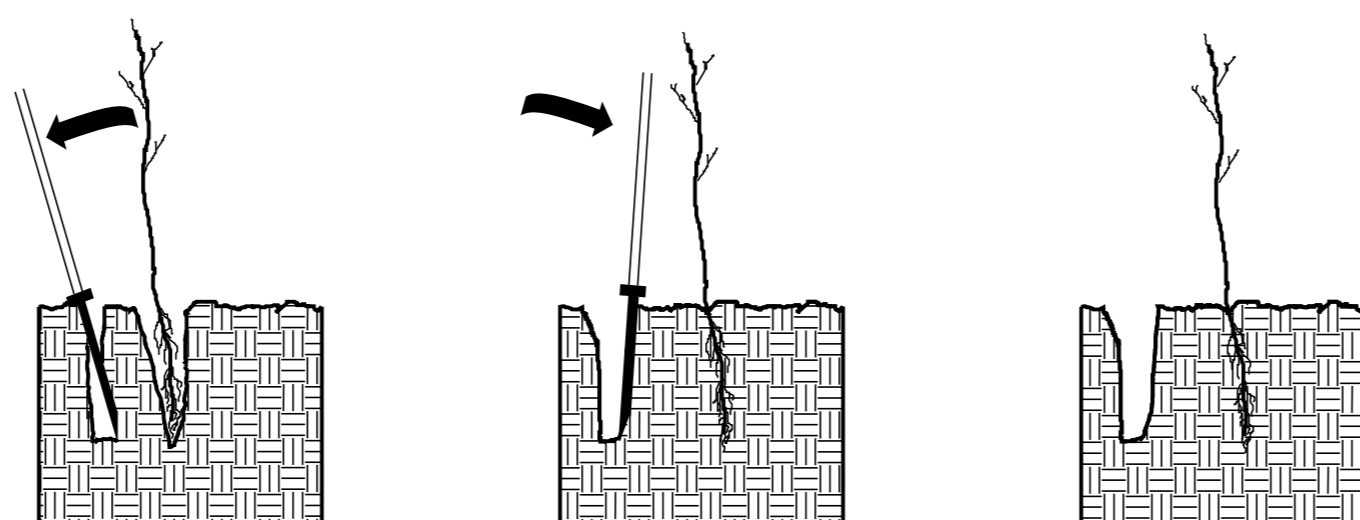


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

DIBBLE PLANTING METHOD USING THE KBC PLANTING BAR



1. Insert planting bar as shown and pull handle toward planter.
2. Remove planting bar and place seedling at correct depth.
3. Insert planting bar 2 inches toward planter from seedling.



4. Pull handle of bar toward planter, firming soil at bottom.
5. Push handle forward firming soil at top.
6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

PLANTING BAG
 During planting, seedlings shall be kept in a moist canvas bag or similar container to prevent the root systems from drying.



KBC PLANTING BAR
 Planting bar shall have a blade with a triangular cross section, and shall be 12 inches long, 4 inches wide and 1 inch thick at center.



ROOT PRUNING
 All seedlings shall be root pruned, if necessary, so that no roots extend more than 10 inches below the root collar.

REFORESTATION

- TREE REFORESTATION SHALL BE PLANTED 6 FT. TO 10 FT. ON CENTER, RANDOM SPACING, AVERAGING 8 FT. ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.

REFORESTATION

MIXTURE, TYPE, SIZE, AND FURNISH SHALL CONFORM TO THE FOLLOWING:

| | | | |
|-----------------------------|--------------|-------------|----|
| 25% LIRIODENDRON TULIPIFERA | TULIP POPLAR | 12in - 18in | BR |
| 25% PLATANUS OCCIDENTALIS | SYCAMORE | 12in - 18in | BR |
| 25% FRAXINUS PENNSYLVANICA | GREEN ASH | 12in - 18in | BR |
| 25% BETULA NIGRA | RIVER BIRCH | 12in - 18in | BR |

REFORESTATION DETAIL SHEET

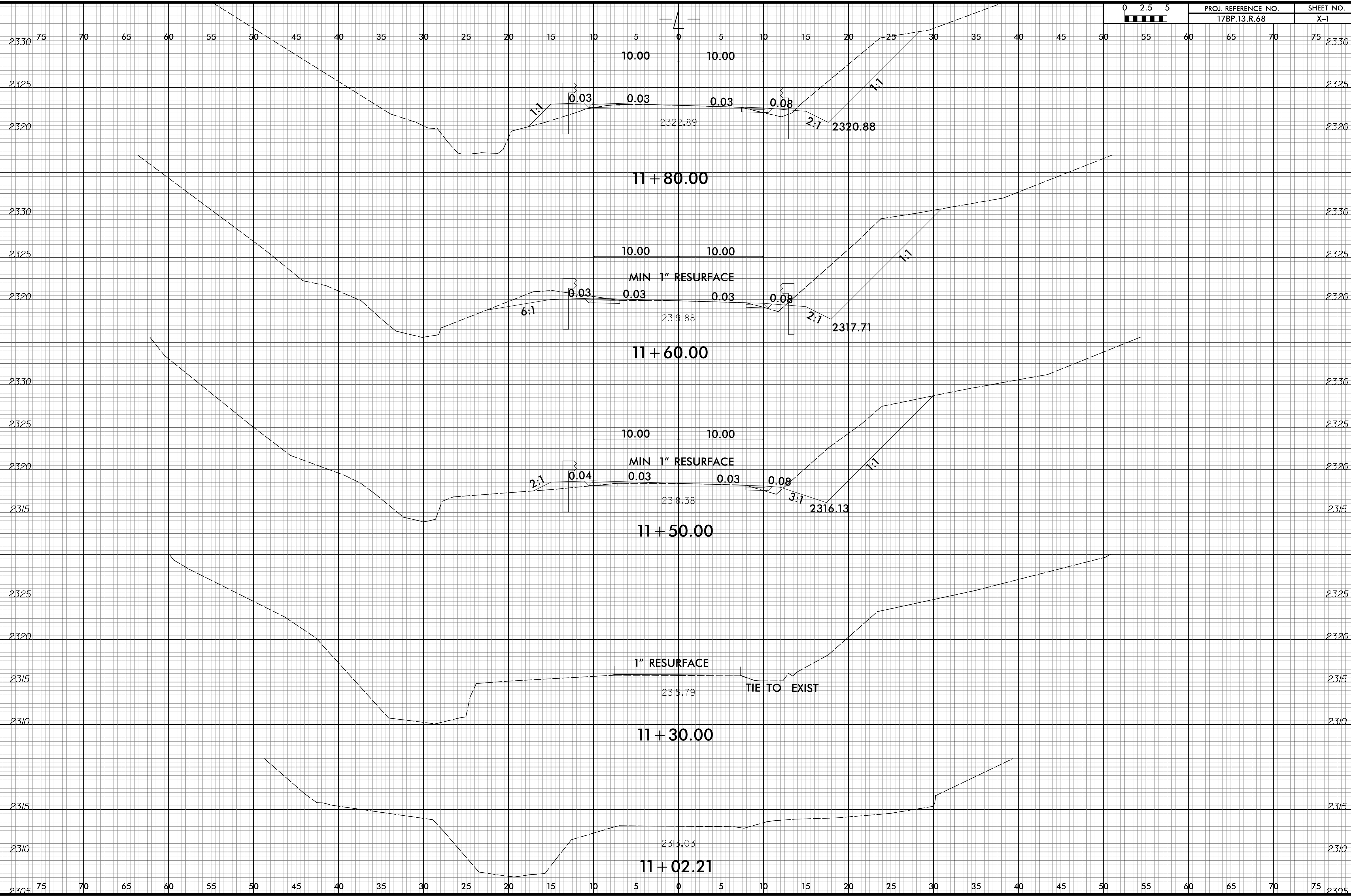
N.C.D.O.T. - ROADSIDE ENVIRONMENTAL UNIT

8/23/99



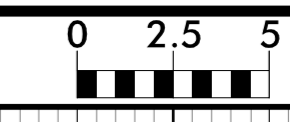
PROJ. REFERENCE NO.
17BP.13.R.68

SHEET NO.
X-1



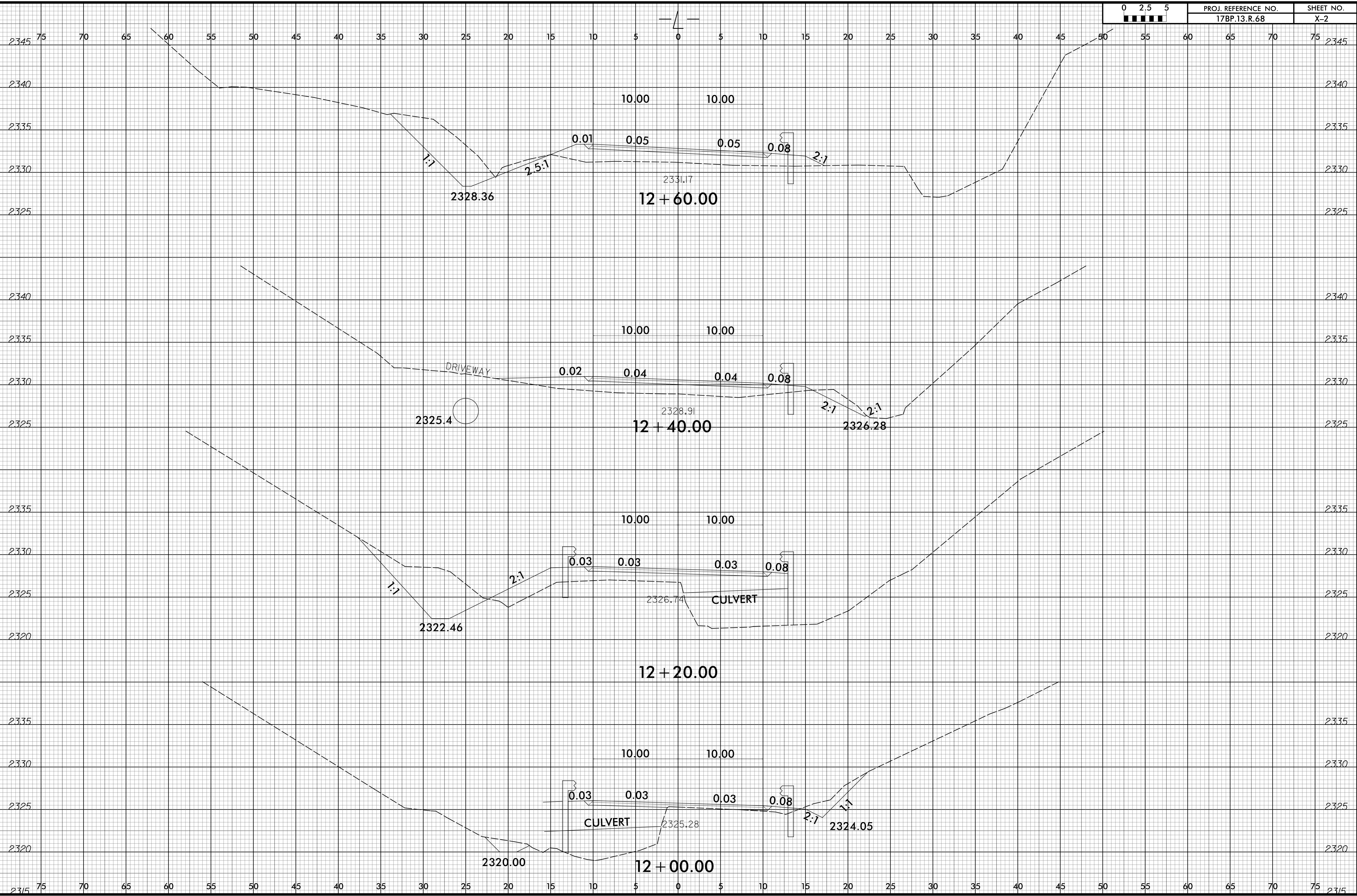
1/27/2014
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 USER:RDM

8/23/99



PROJ. REFERENCE NO.
17BP.13.R.68

SHEET NO.
X-2



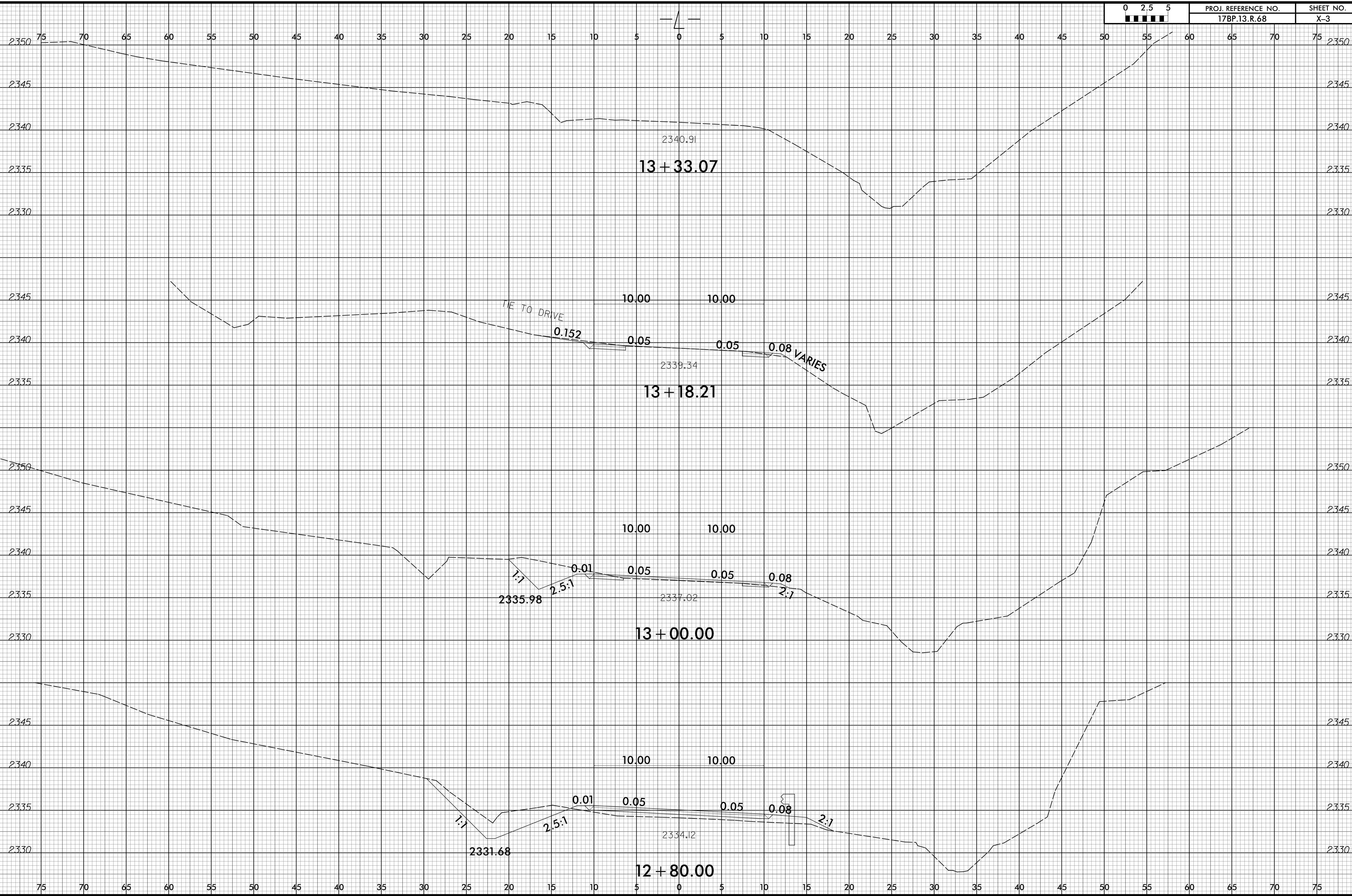
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USER:RDM

8/23/99



PROJ. REFERENCE NO.
17BP.13.R.68

SHEET NO.
X-3



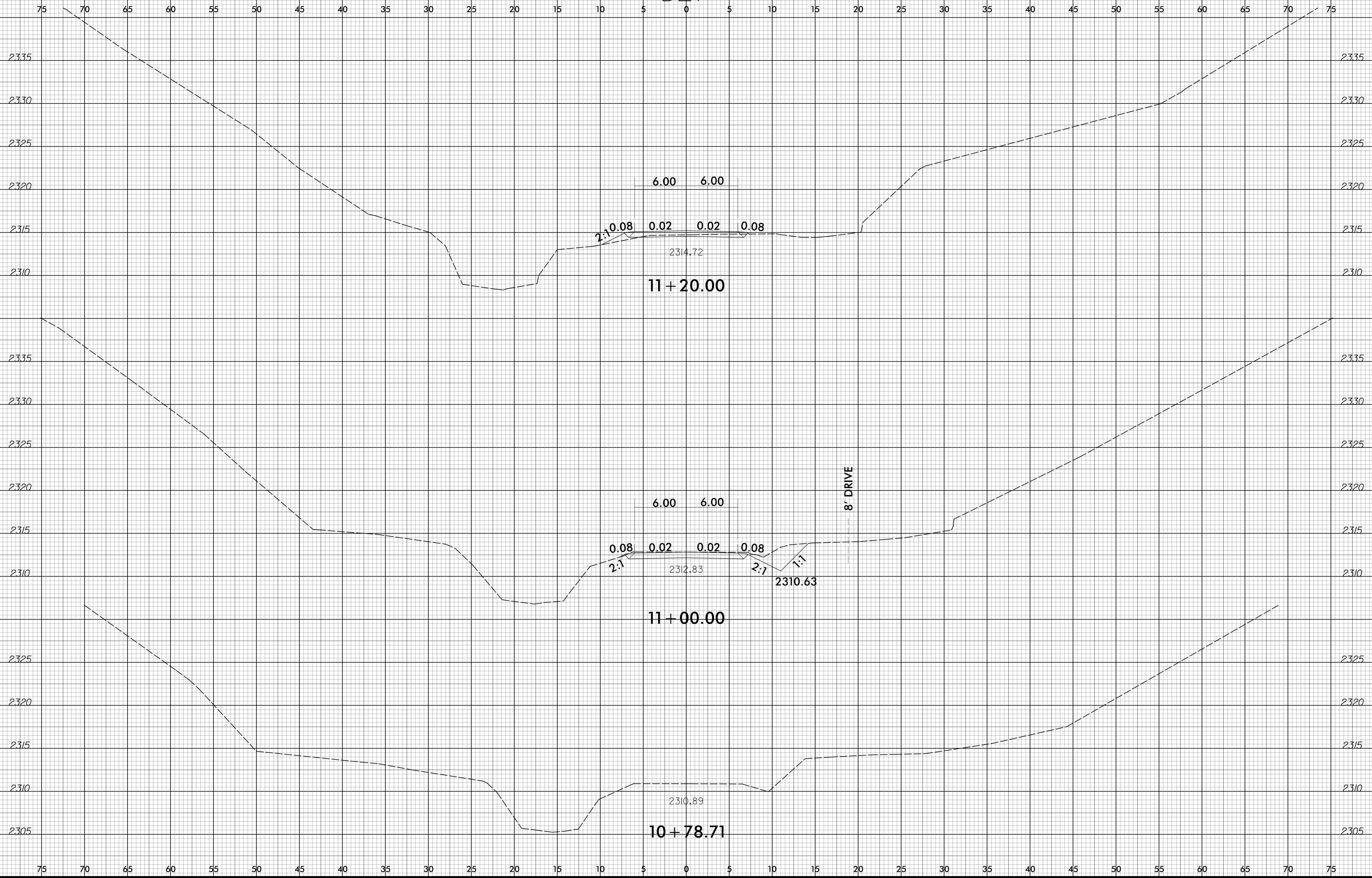
1/27/2014
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8/23/99

-DET-



| | |
|---------------------|-----------|
| PROJ. REFERENCE NO. | SHEET NO. |
| 17BP.13.R.68 | X-4 |



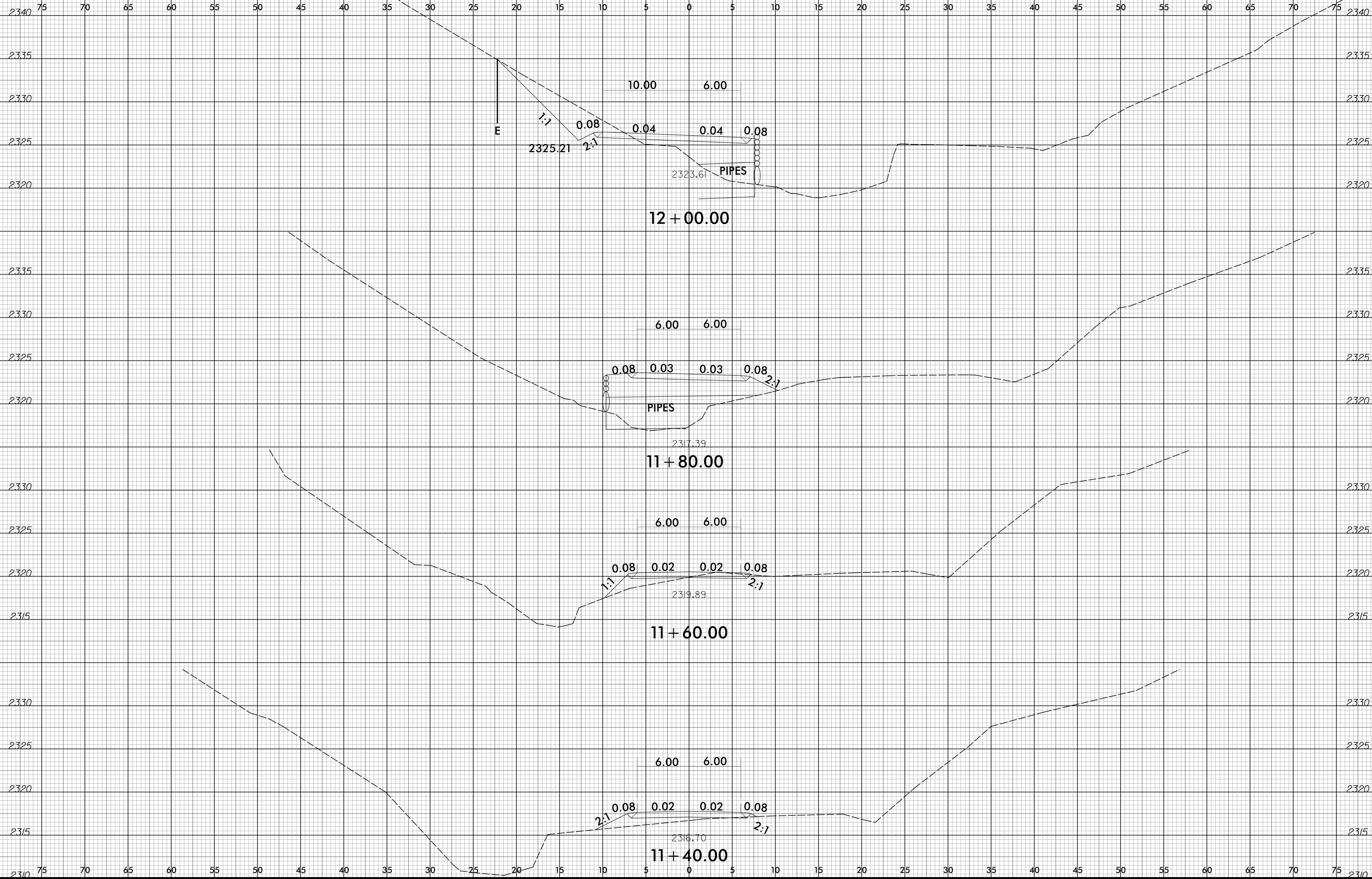
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8/23/99

-DET-



| | |
|---------------------|-----------|
| PROJ. REFERENCE NO. | SHEET NO. |
| 17BP.13.R.68 | X-5 |

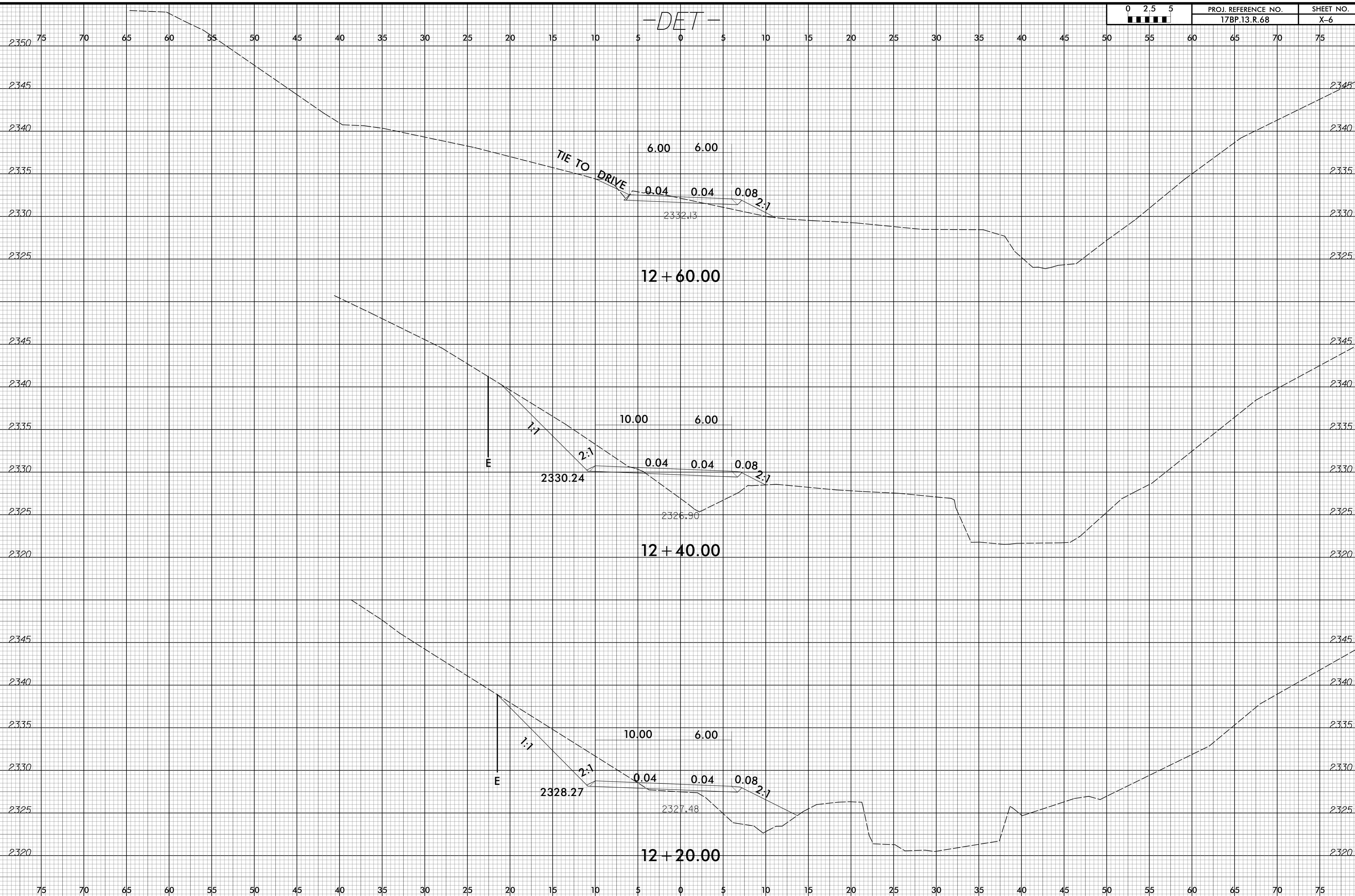


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8/23/99

-DET-

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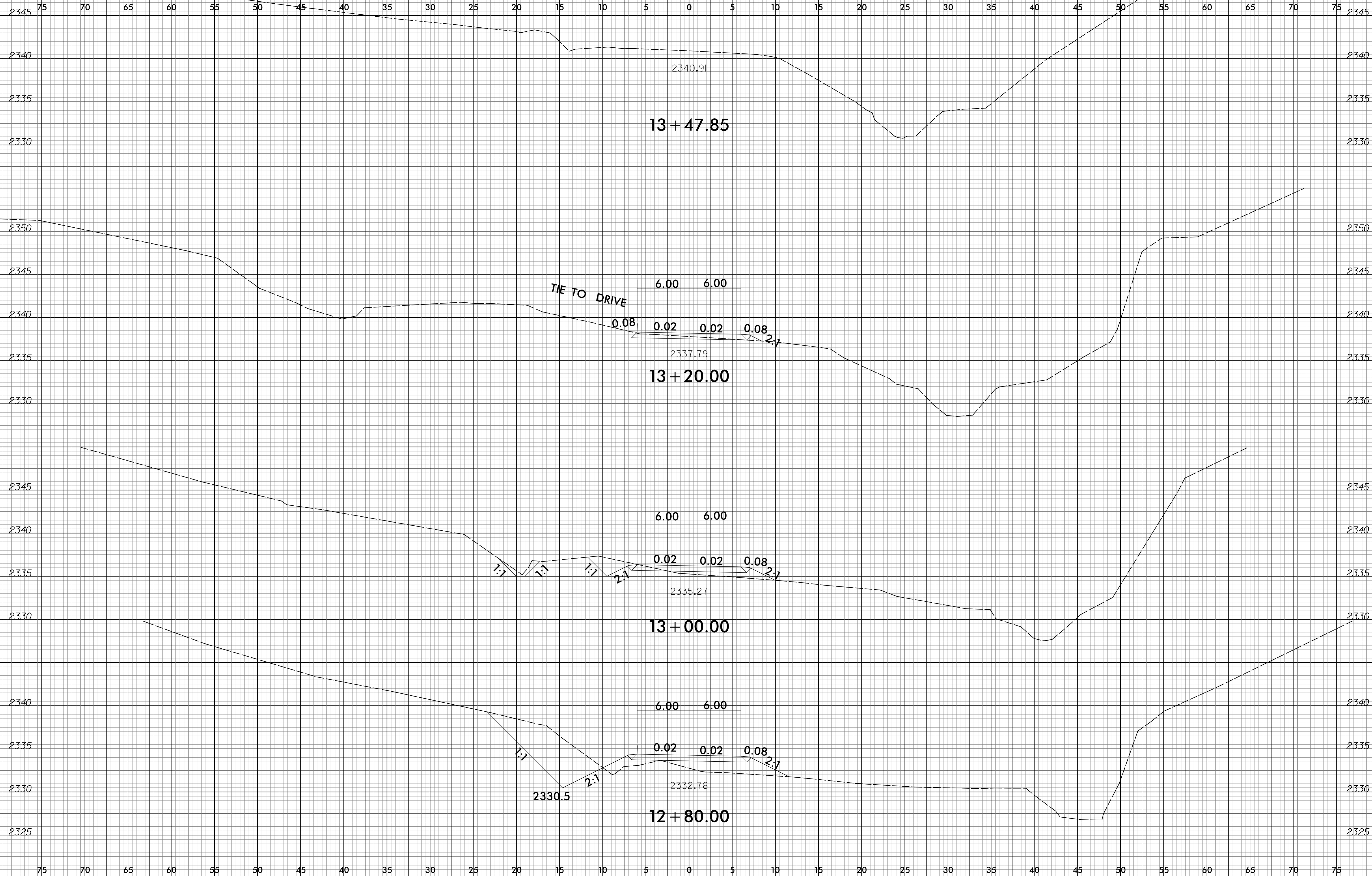
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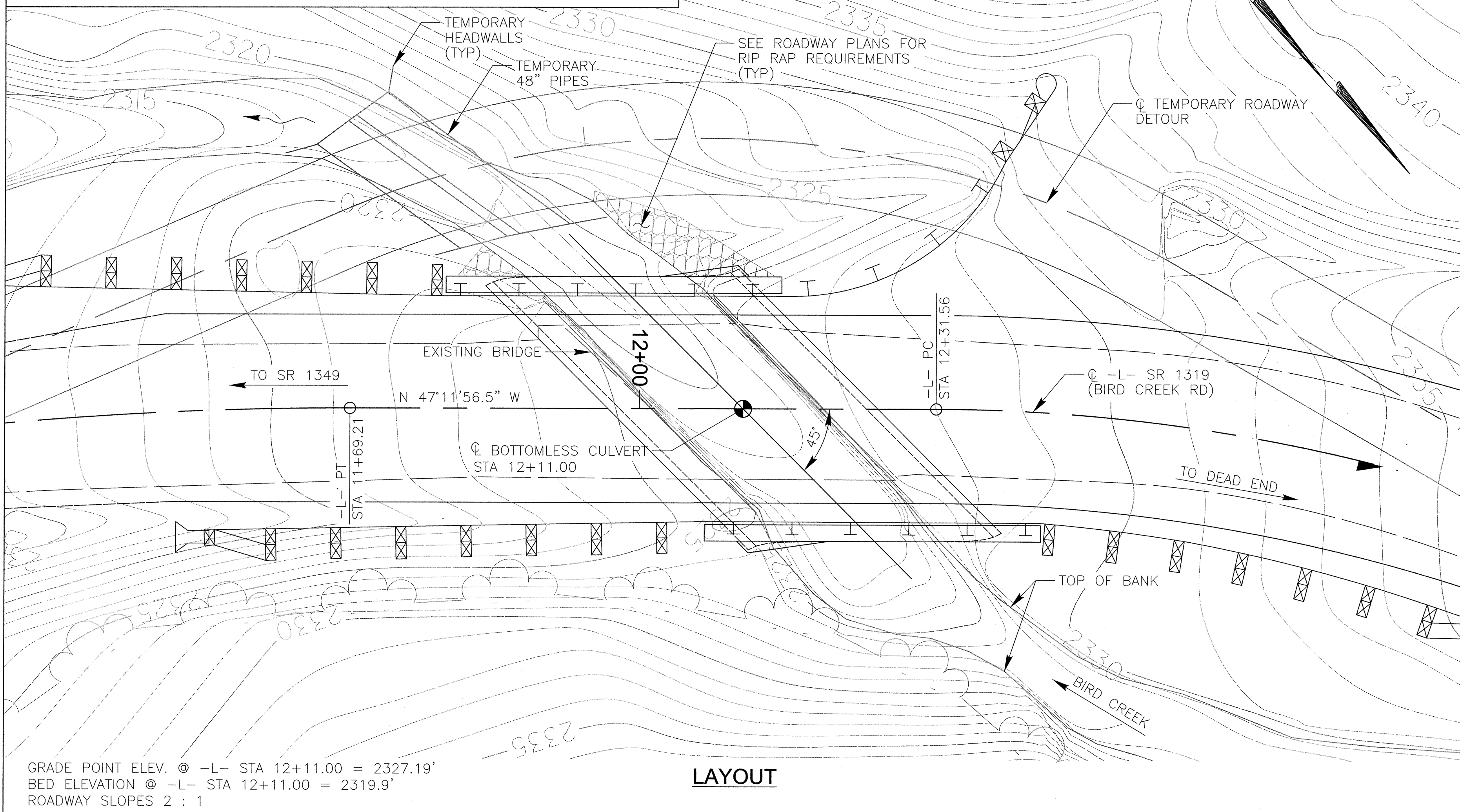
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| PROJ. REFERENCE NO. |
| 17BP.13.R.68 |

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| SHEET NO. |
| X-7 |



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BENCH MARK: -BL- STA 8+66.75, 36.40' RT ELEV. 2333.58'



GRADE POINT ELEV. @ -L- STA 12+11.00 = 2327.19'
 BED ELEVATION @ -L- STA 12+11.00 = 2319.9'
 ROADWAY SLOPES 2 : 1

LAYOUT

NOTES:

- ASSUMED LIVE LOAD ----- HS20-44 OR ALTERNATE LOADING
- DESIGN FILL ----- 5'-0" (MAX), 2'-0" (MIN)
- DESIGN PARAMETERS:
 FACTORED SOIL BEARING PRESSURE = 6,000 PSF
 SOIL DENSITY = 120 PCF
 EFP = 45 PCF
- MINIMUM CONCRETE COMPRESSIVE STRENGTH = 3000 PSI
- ALL REINFORCING STEEL SHALL BE GRADE 60.
- FOR BORING INFORMATION, SEE GEOTECHNICAL REPORT.
- SEE ROADWAY PLANS FOR RIP RAP REQUIREMENTS AT CULVERT ENDS.
- FOR ADDITIONAL INFORMATION REGARDING DRAINAGE, GRADING, AND ROADWAY, SEE ROADWAY PLANS.
- THE DETAILS SHOWN ARE FOR GENERAL LAYOUT ONLY. THE SUPPLIER SHALL PROVIDE DESIGNS AND DETAILS FOR REVIEW AND APPROVAL THAT MEET THE REQUIREMENTS OF AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12, AND ARE SEALED BY A NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER.
- UNLESS OTHERWISE INDICATED, THE SUPPLIER SHALL DESIGN, DETAIL, AND FURNISH ALL STRUCTURAL ELEMENTS AND HARDWARE.
- THE EXISTING STRUCTURE CONSISTING OF (1) 18' SPAN WITH TIMBER DECK AND GIRDERS, SKEWED AT 45°, AND A CLEAR ROADWAY WIDTH OF 16'-6" ON TIMBER VERTICAL ABUTMENTS TO BE REPLACED, IN PLACE, WITH THE PROPOSED STRUCTURE. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE FURTHER DETERIORATE, THIS LOAD LIMITATION MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.
- THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.
- REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.
- CONTRACTOR SHALL INCLUDE DETAILS FOR 3"ø WEEP HOLES AT 10 FT MAX SPACING IN WINGWALLS IN SHOP DRAWINGS. THE WEEP HOLES SHALL BE APPROXIMATELY 6" ABOVE FINISHED GRADE. #78 STONE FILLED POROUS BAGS SHALL BE PLACED IN FRONT OF EACH WEEP HOLE. CONTRACTOR MUST VERIFY INFORMATION PROVIDED.
- FOR ANCHORAGE OF GUARDRAIL TO HEADWALL AND WINGWALL. SEE NCDOT STANDARD SHEET 862.03 (SHEET 7 OF 7). MAXIMUM POST SPACING ON THE HEADWALL AND WINGWALL SHALL BE 6'-3".
- THE CONTRACTOR SHALL STAKE OUT THE LENGTH OF CULVERT FOR ENGINEER REVIEW PRIOR TO ORDERING CULVERT.
- CONTRACTOR WILL MAINTAIN THE ALIGNMENT OF THE ALUMINUM BOTTOMLESS CULVERT SECTIONS DURING BACKFILL.
- SEE SPECIAL PROVISIONS FOR CORRUGATED ALUMINUM PIPE CULVERT AND CAST-IN-PLACE HEADWALLS, WINGWALLS, AND FOOTING.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FRAMEWORK, SEE SPECIAL PROVISIONS.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 IN SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 IN SAMPLES OF EACH SIZE BAR USED. THE BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPLICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLE PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS.

- CULVERT CONSTRUCTION SEQUENCE:
1. BUILD TEMPORARY ROADWAY DETOUR AND SHIFT TRAFFIC.
 2. REMOVE EXISTING BRIDGE INCLUDING SUBSTRUCTURE.
 3. EXCAVATE FOR FOOTINGS, AND POUR FOOTINGS.
 4. ERECT ALUMINUM BOTTOMLESS CULVERT.
 5. FORM AND POUR HEADWALLS AND WINGWALLS.
 6. BACKFILL CULVERT. BRING FILL UP EQUAL ON EACH SIDE.
 7. SHIFT TRAFFIC AND REMOVE TEMPORARY ROADWAY DETOUR.

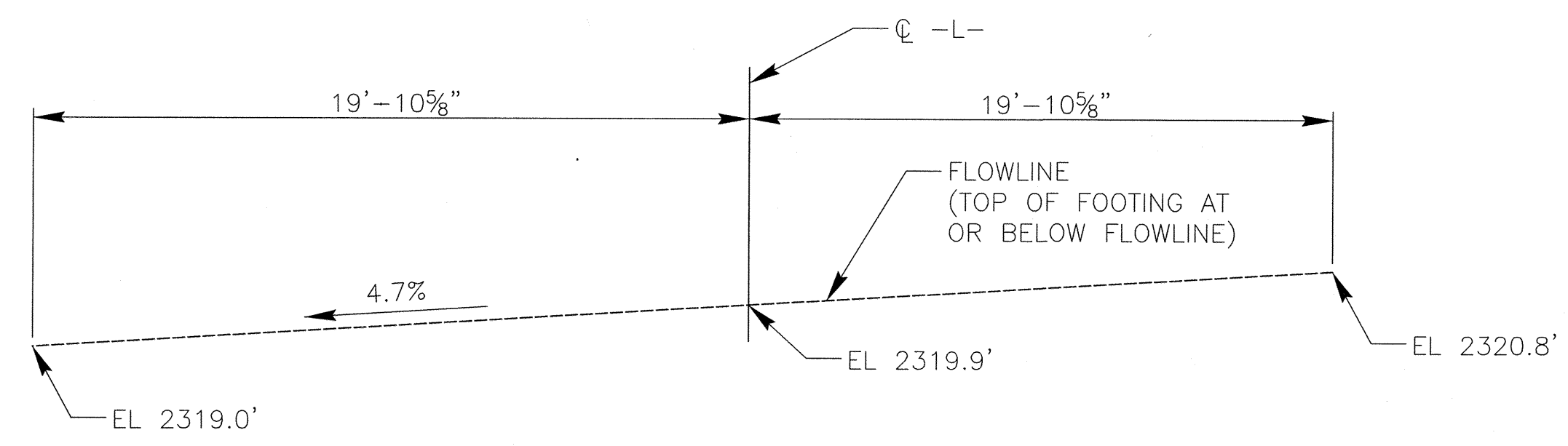
| ESTIMATED QUANTITIES | | |
|---|----------|------|
| ITEM | QUANTITY | UNIT |
| | TOTAL | |
| FOUNDATION EXCAVATION, STA 12+11.00 | - | LS |
| ALUMINUM BOTTOMLESS CULVERT AT STA 12+11.00 | - | LS |

HYDRAULIC DATA

DESIGN DISCHARGE ----- 440 cfs
 FREQUENCY OF DESIGN FLOOD ----- 25-YR
 DESIGN HIGH WATER ----- 2325.5 ft
 DRAINAGE AREA ----- 1.15 sq. mi.
 BASIC DISCHARGE (Q100) ----- 650 cfs
 BASIC HIGH WATER ELEVATION ----- 2326.6 ft

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE ----- 550 cfs
 FREQUENCY OF OVERTOPPING FLOOD ----- 50-YR+
 OVERTOPPING FLOOD ELEVATION ----- 2326.2 ft



PROFILE ALONG CULVERT

PROJECT NO. 17BP.13.R.68
MITCHELL COUNTY
 STATION: 12+11.00 -L-
 REPLACES BRIDGE #600204

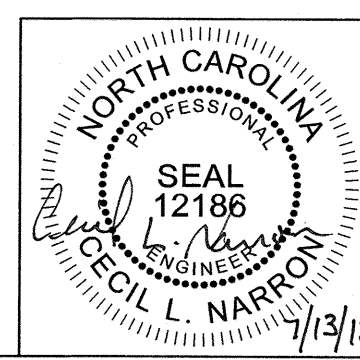
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**CULVERT ON SR 1319
 OVER BIRD CREEK**

CONSTRUCTION PLANS

| REVISIONS | | | | | | SHEET NO. |
|-----------|----|------|-----|----|------|--------------|
| NO. | BY | DATE | NO. | BY | DATE | TOTAL SHEETS |
| 1 | | | 3 | | | |
| 2 | | | 4 | | | |

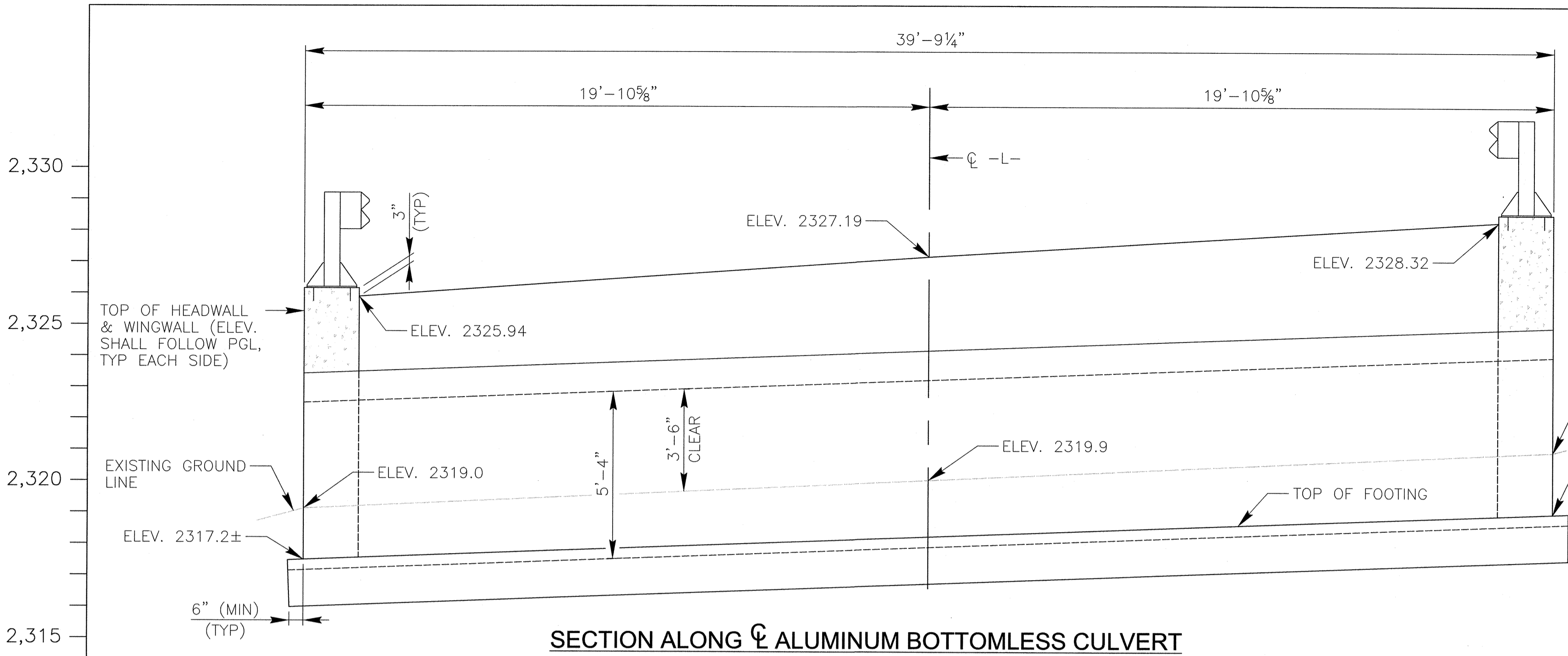
Kimley-Horn and Associates, Inc.
 333 Fayetteville Street, Suite 600
 Raleigh, NC 27601-1772
 Phone (919) 677-2042
 Fax (919) 653-5847
 NC LICENSE # F-0102



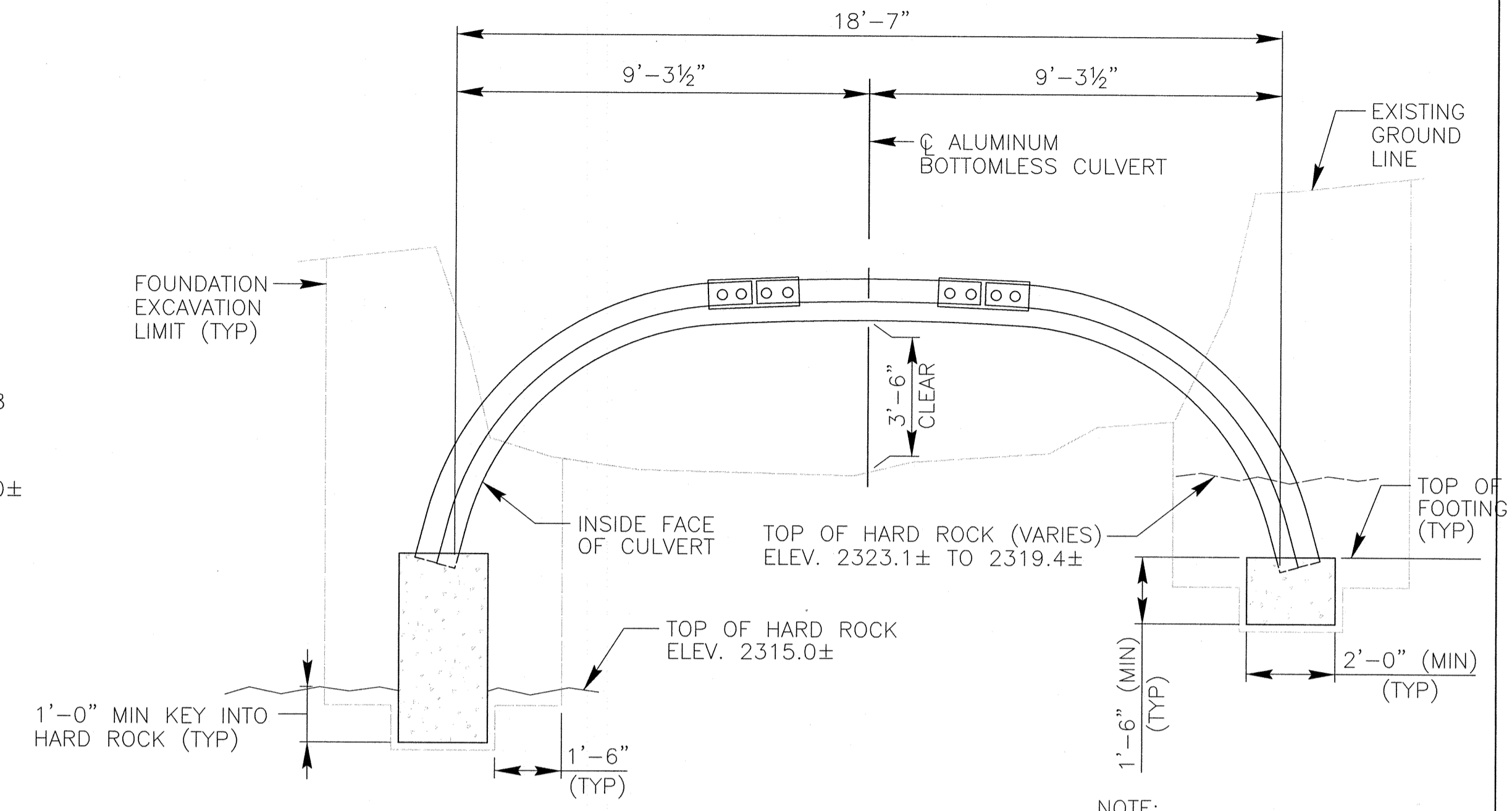
DRAWING C1 OF C2

7/13/2012 K:\DOT_Structures\Culvert\NC\01036207_17BP_Bridges - Group\Code\den\p1.dgn

DRAWN BY: CRA DATE: 7/12
 CHECKED BY: CLN DATE: 7/12

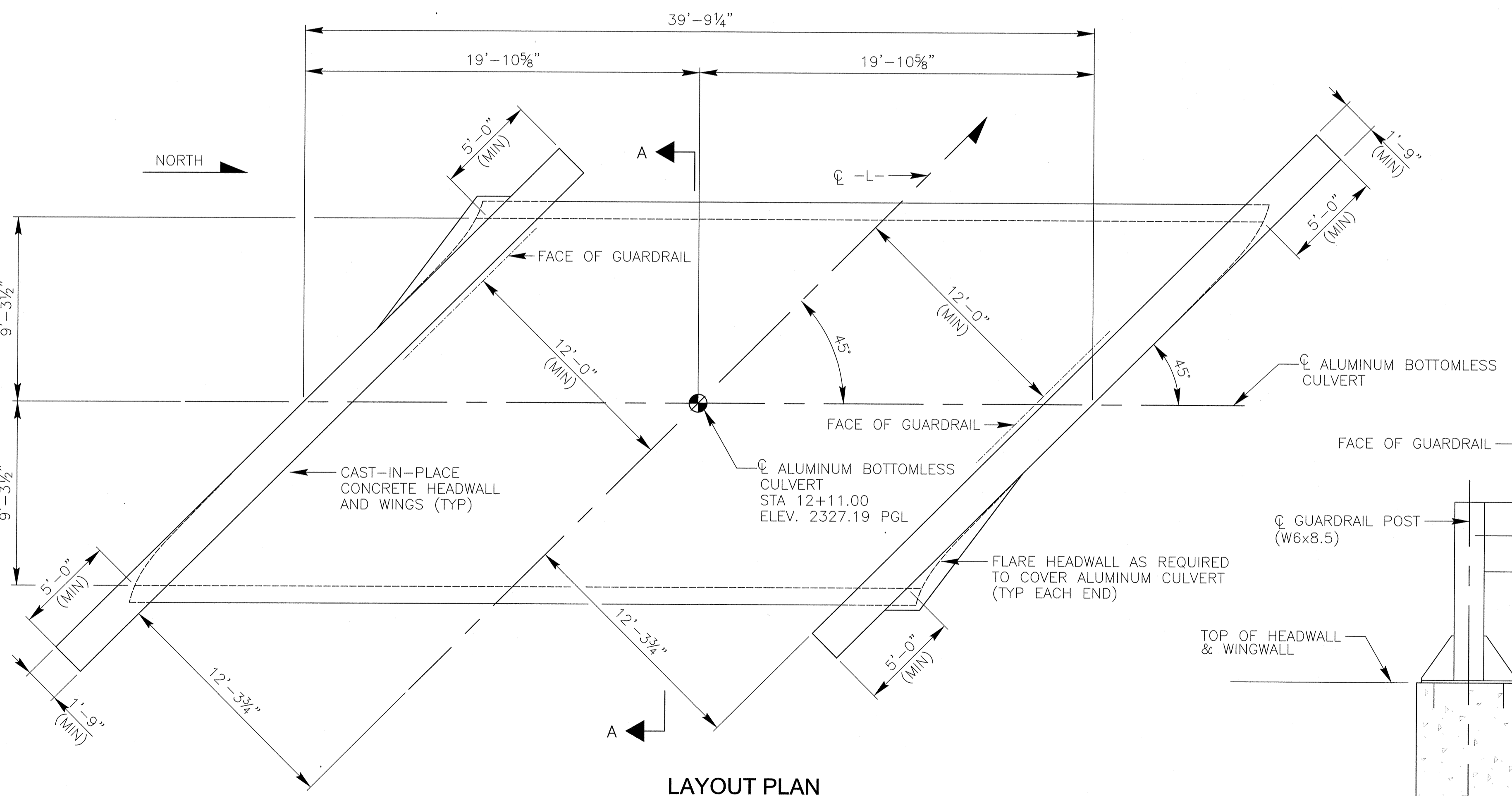


SECTION ALONG CL ALUMINUM BOTTOMLESS CULVERT

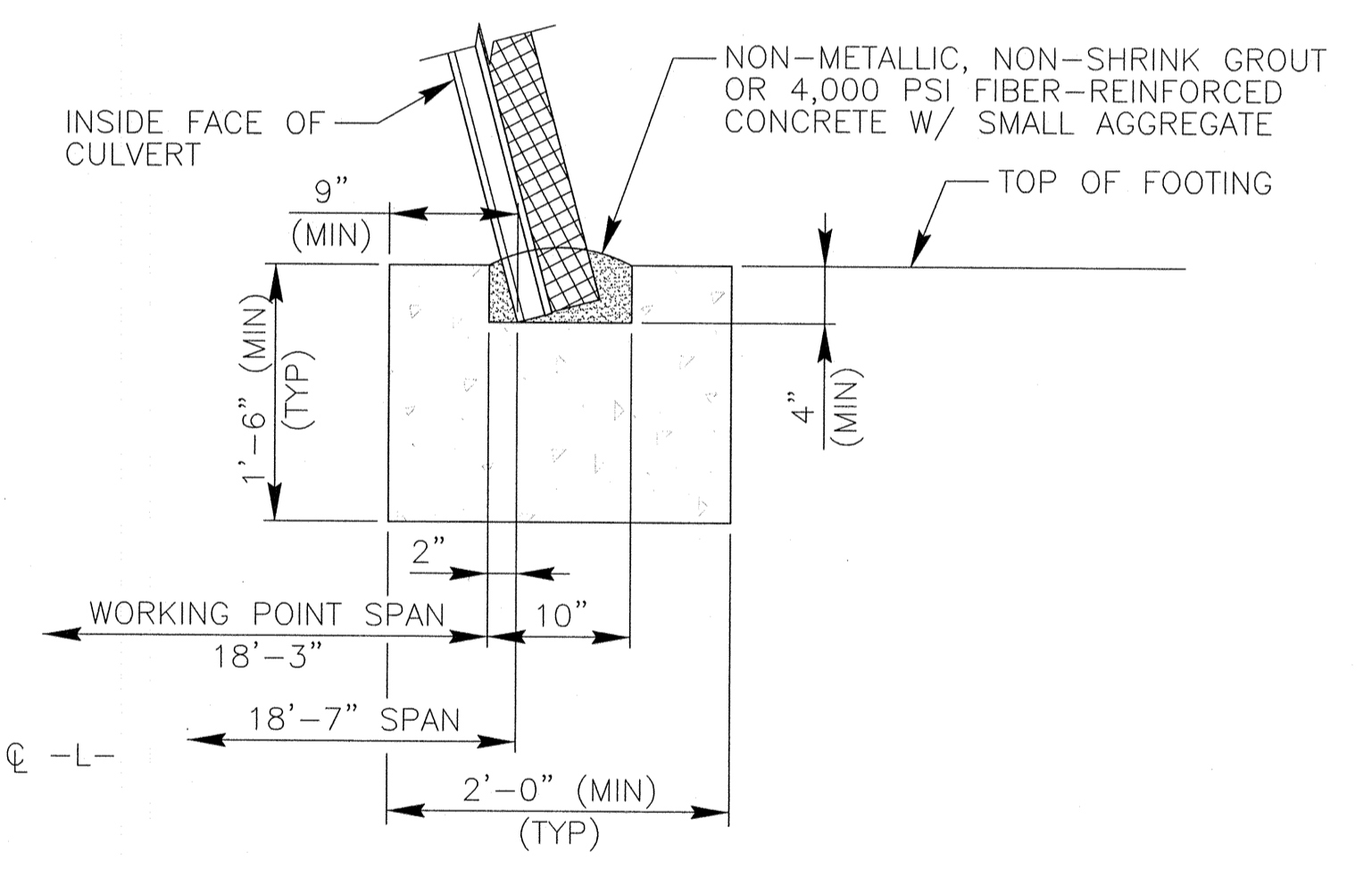


SECTION A - A

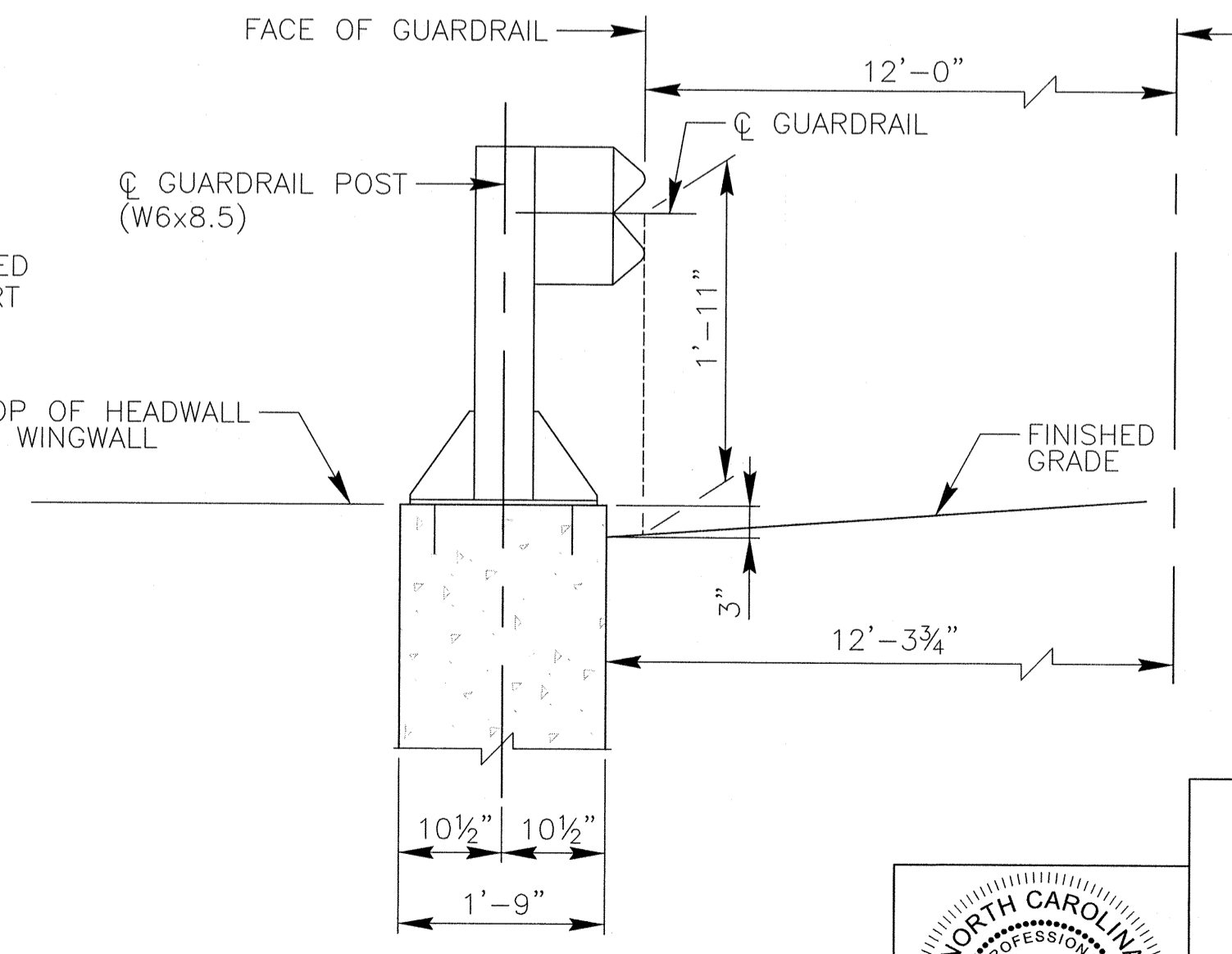
NOTE:
SEE ROADWAY PLAN FOR
FINAL CHANNEL GRADING
AND RIP RAP REQUIREMENTS.



LAYOUT PLAN



FOUNDATION DETAIL



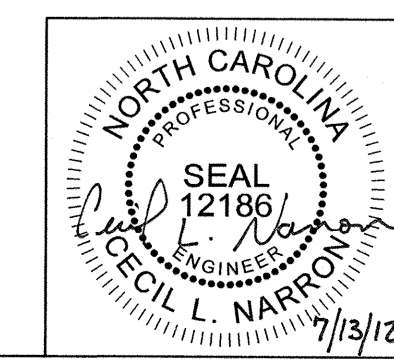
GUARDRAIL DETAIL

PROJECT NO. 17BP.13.R.68
MITCHELL COUNTY
STATION: 12+11.00 -L-
REPLACES BRIDGE #600204

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
CULVERT ON SR 1319
OVER BIRD CREEK
CONSTRUCTION PLANS

| REVISIONS | | | | | | SHEET NO. |
|-----------|----|------|-----|----|------|--------------|
| NO. | BY | DATE | NO. | BY | DATE | TOTAL SHEETS |
| 1 | | | 3 | | | |
| 2 | | | 4 | | | |

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NC LICENSE # F-0102



DRAWING C2 OF C2

DRAWN BY: CRA DATE: 7/12
CHECKED BY: CLN DATE: 7/12

7/13/2012 K:\RDT_Structures\Culvert\11036207_17BP_Bridges - Group\0\cad\dnr\p2.dgn