Anyone that ordered a set of cross-sections will be sent a new set as soon as available. Until that time, they are available online.

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

September 29, 2022

Addendum No. 1
RE: Contract # C204746
WBS # 34839.3.13
FEDERAL AID # 0074226
Forsyth County (U-2579AA)
FUTURE I-74 (WINSTON-SALEM NORTHERN BELTWAY)
FROM US-311 TO I-40.

October 18, 2022 Letting

To Whom It May Concern:

Reference is made to the plans and proposal form furnished to you on this project.

The following revisions have been made to the Roadway plans.

Sheet No.	Revision
2A-2, 2A-4 thru 2A-7	Revised Typical Sections 1-7, 10, 11. Adjusted the Grade to bottom of the Class IV subgrade stabilization. Revised the Class IV Subgrade Stabilization-Geotextile for Pavement Stabilization with Asphalt Base Detail on sheet 2A-2.
2C-2A, 2C-2B, 2C-2C (New)	New (Special 72" Junction Box with Slab Lid) drainage box detail sheets added.
3B-1 thru 3B-2	Updated Earthwork Summaries.
3D-1	Pipe 406-407 was changed from 15" RCP Class III to 15" RCP Class IV. Invert elevation for Pipe 407 was lowered.
3D-2	Invert elevation for box 515 was lowered.
3D-3	Invert elevation for box 602 was lowered. Extra Depth Box Depth changed increasing Masonry Drainage Structure LIN FT from 0.5' to 0.8'.
3D-11	Quantity Totals from 3D-12 were removed from this sheet to reduce confusion. Totals modified as needed for Pipe changes on 3D-1.
3D-12	Updated Masonry Drainage Structure CY for drainage structures 607, 608 and 610.

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
CONTRACT STANDARDS AND DEVELOPMENT
1591 MAIL SERVICE CENTER
RALEIGH, NC 27699-1591

Telephone: (919) 707-6900
Fax: (919) 250-4127
Customer Service: 1-877-368-4968

Location:
1020 BIRCH RIDGE DR.
RALEIGH, NC 27610

Website: www.ncdot.gov

Sheet No.	Revision
3G-1	Summary of Geotextile for Pavement Stabilization - Removed Class IV subgrade Stabilization for Y2 SBL, Y2 NBL, and added a contingency quantity of 6000 Tons.
3G-2	Added Summary of Aggregate Subgrade/Stabilization to this sheet.

Please void the above listed Sheets in your plans and staple the revised Sheets thereto. Staple New Sheets 2C-2A thru 2C-2C after Sheet 2C-2 in your plans.

The following revisions have been made to the Cross Section plans.

Sheet No.	Revision
X-0, X1-A thru X1-F, X-1 thru X-107, X-133 thru X-346	Cross Section edits to remove shallow undercut for the following alignments: L, Y2, Y2RpB, Y2RpC, Y3RpB, Y3RpC, Y3LpB, Y3LpC, Y2FLYCA and Y2FLYAB.

Please void the above listed Sheets in your plans and staple the revised Sheets thereto.

DIGITAL FILES HAVE BEEN UPDATED ON THE LETTING SITE. DOWLOAD NEW FILES.

The following revisions have been made to the proposal.

Page No.	Revision
Proposal Cover	Note added that reads “Includes Addendum No. 1 Dated 09-29-2022”.
Table of Contents	Revised to add “NOTE TO CONTRACTOR”.
G-48	Project Special Provision entitled “NOTE TO CONTRACTOR” added.
R-17 thru R-23	Project Special Provision entitled “AGGREGATE SUBGRADE” revised.

Please void the above listed existing Pages in your proposal and staple the revised Pages thereto.

On the item sheets the following pay item revision has been made:

Item	Description	Old Quantity	New Quantity
0007-0022000000-E-225	UNCLASSIFIED EXAVATION	387,000 CY	435,000 CY
0019-0106000000-E-230	BORROW EXCAVATION	704,000 CY	640,000 CY

0027-0196000000-E-270	GEOTEXTILE FOR SOIL STABILIZATION	124,700 SY	127,000 SY
0050-0366000000-E-310	15” RC PIPE CULVERTS, CLASS III	1,272 LF	1,136 LF
0059-0448200000-E-310	15” RC PIPE CULVERTS, CLASS IV	1,200 LF	1,336 LF
0095-1099500000-E-505	SHALLOW UNDERCUT	22,400 CY	2,500 CY
0096-1099700000-E-505	CLASS IV SUBGRADE STABILIZATION	98,900 TONS	100,200 TONS
0129-2297000000-E-840	MASONRY DRAINAGE STRUCTURES	40 CY	50 CY
0130-2308000000-E-840	MASONRY DRAINAGE STRUCTURES	176 LF	176.20 LF
0284-600000000-E-1605	TEMPORARY SILT FENCE	52,180 LF	62,925 LF
0286-6009000000-E-1610	STONE FOR EROSION CONTROL, CLASS B	11,000 TONS	13,760 TONS
0287-6012000000-E-1610	SEDIMENT CONTROL STONE	8,120 TONS	9,110 TONS
0288-601500000-E-1615	TEMPORARY MULCHING	413.5 ACR	415.5 ACR
0291-6024000000-E-1622	TEMPORARY SLOPE DRAINS	8,495 LF	9,585 LF
0293-6030000000-E-1630	SILT EXCAVATION	19,800 CY	23,690 CY
0297-6042000000-E-1632	1/4" HARDWARE CLOTH	8,875 LF	9,410 LF
0301-607101200-E-SP	COIR FIBER WATTLE	720 LF	3,480 LF
0308-6084000000-E-1660	SEEDING & MULCHING	303 ACR	333 ACR
0309-6087000000-E-1660	MOWING	249 ACR	270 ACR

0311-6093000000-E-1661	FERTILIZER FOR REPAIR SEEDING	10.5 TONS	11.5 TONS
0312-6096000000-E-1662	SEED FOR SUPPLEMENTAL SEEDING	7,500 LB	8,200 LB
0313-6108000000-E-1665	FERTILIZER TOPDRESSING	225 TONS	246 TONS
0425-8328200000-E-450	PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 43 STEEL PILES	16 EA	DELETED
0426-8328200000-E-450	PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES	56 EA	72 EA

The Contractor's bid must include these pay item revisions.

The electronic bidding file has been updated to reflect these revisions. Please download the Addendum File and follow the instructions for applying the addendum. Bid Express will not accept your bid unless the addendum has been applied.

The contract will be prepared accordingly.

Sincerely,

DocuSigned by:
Ronald Elton Davenport, Jr.
F81B6038A47A442...

Ronald E. Davenport, Jr., PE
State Contract Officer

RED/cms
Attachments

cc: Mr. Boyd Tharrington, PE
Mr. Pat Ivey, PE
Mr. Jon Weathersbee, PE
Mr. Ken Kennedy, PE
Project File (2)
Mr. Forrest Dungan, PE
Ms. Jaci Kincaid
Mr. Kyle Kempf
Ms. Lori Strickland
Mr. Mike Gwyn
Ms. Penny Higgins

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH, N.C.

PROPOSAL

INCLUDES ADDENDUM No.1 DATED 09-29-2022

DATE AND TIME OF BID OPENING: **Oct 18, 2022 AT 02:00 PM**

CONTRACT ID	C204746
WBS	34839.3.13

FEDERAL-AID NO.	0074226
COUNTY	FORSYTH
T.I.P NO.	U-2579AA
MILES	1.536
ROUTE NO.	I-74
LOCATION	FUTURE I-74 (WINSTON-SALEM NORTHERN BELTWAY) FROM US-311 TO I-40.
TYPE OF WORK	GRADING, DRAINAGE, PAVING, AND STRUCTURES.

NOTICE:

ALL BIDDERS SHALL COMPLY WITH ALL APPLICABLE LAWS REGULATING THE PRACTICE OF GENERAL CONTRACTING AS CONTAINED IN CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA WHICH REQUIRES THE BIDDER TO BE LICENSED BY THE N.C. LICENSING BOARD FOR CONTRACTORS WHEN BIDDING ON ANY NON-FEDERAL AID PROJECT WHERE THE BID IS $30,000 OR MORE, EXCEPT FOR CERTAIN SPECIALTY WORK AS DETERMINED BY THE LICENSING BOARD. BIDDERS SHALL ALSO COMPLY WITH ALL OTHER APPLICABLE LAWS REGULATING THE PRACTICES OF ELECTRICAL, PLUMBING, HEATING AND AIR CONDITIONING AND REFRIGERATION CONTRACTING AS CONTAINED IN CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA. NOTWITHSTANDING THESE LIMITATIONS ON BIDDING, THE BIDDER WHO IS AWARDED ANY FEDERAL - AID FUNDED PROJECT SHALL COMPLY WITH CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA FOR LICENSING REQUIREMENTS WITHIN 60 CALENDAR DAYS OF BID OPENING.

BIDS WILL BE RECEIVED AS SHOWN BELOW:

THIS IS A ROADWAY & STRUCTURE PROPOSAL

5% BID BOND OR BID DEPOSIT REQUIRED

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The Engineer will perform independent turbidity tests on a random basis. These results will be maintained in a log within the project records. Records will include, at a minimum, turbidity test results, time, date and name of sampler. Should the Department's test results exceed those of the Contractor's test results, an immediate test shall be performed jointly with the results superseding the previous test results of both the Department and the Contractor.

The Contractor shall use the *NCDOT Turbidity Reduction Options for Borrow Pits Matrix,* available at https://connect.ncdot.gov/resources/roadside/FieldOperationsDocuments/TurbidityReductionOptionSheet.pdf to plan, design, construct, and maintain BMPs to address water quality standards. Tier I Methods include stilling basins which are standard compensatory BMPs. Other Tier I methods are noncompensatory and shall be used when needed to meet the stream turbidity standards. Tier II Methods are also noncompensatory and are options that may be needed for protection of rare or unique resources or where special environmental conditions exist at the site which have led to additional requirements being placed in the DWQ's 401 Certifications and approval letters, Isolated Wetland Permits, Riparian Buffer Authorization or a DOT Reclamation Plan's Environmental Assessment for the specific site. Should the Contractor exhaust all Tier I Methods on a site exclusive of rare or unique resources or special environmental conditions, Tier II Methods may be required by regulators on a case by case basis per supplemental agreement.

The Contractor may use cation exchange capacity (CEC) values from proposed site borings to plan and develop the bid for the project. CEC values exceeding 15 milliequivalents per 100 grams of soil may indicate a high potential for turbidity and should be avoided when dewatering into surface water is proposed.

No additional compensation for monitoring borrow pit discharge will be paid.

NOTE TO CONTRACTOR:

Parcel 54 is owned by NCDOT and may be evaluated for borrow at the contractor's risk. This parcel must be accessed from the project limits. The Department shall not provide any guarantee of availability or acceptance and it is the contractor's responsibility if pursuing borrow at this site to meet all NCDOT and environmental agency requirements. A 50' buffer will be required along any private property adjacent to the limits of the borrow pit top of slope. In addition, a 50' buffer will be required along the top of bank of Swaim Creek.

AGGREGATE SUBGRADE: **(SPECIAL)**

Revise the *2018 Standard Specifications* as follows:

Replace Section 505 with the following:

SECTION 505
AGGREGATE SUBGRADE

505-1 DESCRIPTION

Construct aggregate subgrades in accordance with the contract. Install geotextile for soil stabilization and place Class IV subgrade stabilization at locations shown in the plans and as directed.

Define "subsoil" as the portion of the roadbed below the Class IV subgrade stabilization. For Type 2 aggregate subgrades, undercut subsoils as needed. The types of aggregate subgrade with thickness and compaction requirements for each are as shown below.

Type 1 – When undercut of subsoil is required, a 6- to 24 inch thick aggregate subgrade with Class IV subgrade stabilization compacted to 92% of AASHTO T 180 as modified by the Department or to the highest density that can be reasonably obtained.

Type 2 – A 10 inch thick aggregate subgrade on a proof rolled subsoil with Class IV subgrade stabilization compacted to 97% of AASHTO T 180 as modified by the Department.

505-2 MATERIALS

Refer to Division 10.

Item	Section
Geotextile for Soil Stabilization, Type 4	1056
Select Material, Class IV	1016

Use Class IV select material for Class IV subgrade stabilization.

505-3 CONSTRUCTION METHODS

When shallow undercut is required to construct aggregate subgrades, undercut 6 inches to 24 inches as shown on the plans or as directed. For Type 2 aggregate subgrades, proof roll subsoil in accordance with Section 260 before installing geotextile for soil stabilization. Perform undercut excavation in accordance with Section 225. Install geotextile for soil stabilization in accordance with Article 270-3. Place Class IV subgrade stabilization (standard size no. ABC) by end dumping ABC on geotextiles. Do not operate heavy equipment on geotextiles until geotextiles are covered with Class IV subgrade stabilization. Compact ABC as required for the type of aggregate subgrade constructed.

Maintain Class IV subgrade stabilization in an acceptable condition and minimize the use of heavy

equipment on ABC in order to avoid damaging aggregate subgrades. Provide and maintain drainage ditches and drains as required to prevent entrapping water in aggregate subgrades.

505-4 MEASUREMENT AND PAYMENT

Shallow Undercut for Type 1 aggregate subgrade will be measured and paid in cubic yards. Shallow undercut will be measured in accordance with Article 225-7. The contract unit price for *Shallow Undercut* will be full compensation for excavating, hauling and disposing of materials to construct aggregate subgrades.

Undercut Excavation of natural soil materials from subsoils for Type 2 aggregate subgrades will be measured and paid in accordance with Article 225-7 or 226-3. No measurement will be made for any undercut excavation of fill materials from subsoils.

Class IV Subgrade Stabilization will be measured and paid in tons. Class IV subgrade stabilization will be measured by weighing material in trucks in accordance with Article 106-7. The contract unit price for *Class IV Subgrade Stabilization* will be full compensation for furnishing, hauling, handling, placing, compacting and maintaining ABC.

Geotextile for Soil Stabilization will be measured and paid in accordance with Article 270-4.

Payment will be made under:

Pay Item	**Pay Unit**
Shallow Undercut	Cubic Yard
Class IV Subgrade Stabilization	Ton

PRICE ADJUSTMENT - ASPHALT BINDER FOR PLANT MIX:

(11-21-00) 620 SP6 R25

Price adjustments for asphalt binder for plant mix will be made in accordance with Section 620 of the *2018 Standard Specifications.*

The base price index for asphalt binder for plant mix is **$ 790.00** per ton.

This base price index represents an average of F.O.B. selling prices of asphalt binder at supplier's terminals on **August 1, 2022**.

ASPHALT CONCRETE SURFACE COURSE, TYPE xxx (Leveling Course):

(7-1-95) (Rev. 8-21-12) 610 SP6 R85R

Place a leveling course of *Asphalt Concrete Surface Course, Type* ___ at locations shown on the sketch maps and as directed by the Engineer. The rate of this leveling course is not established but will be determined by allowing the screed to *drag* the high points of the section. It is anticipated that some map numbers will be leveled from beginning to end while others may only require a leveling course for short sections.

The Asphalt Concrete Surface Course, Type __ (Leveling Course) shall meet the requirements of Section 610 of the *2018 Standard Specifications* except payment will be made at the contract unit price per ton for *Asphalt Concrete Surface Course, Type __ (Leveling Course).*

MILLING ASPHALT PAVEMENT:

(1-15-19) 607 SP6 R59

Revise the *2018 Standard Specifications* as follows:

Page 6-5, Article 607-2, EQUIPMENT, lines 14-16, delete the seventh sentence of this Article and replace with the following:

Use either a non-contacting laser or sonar type ski system with a minimum of three referencing stations mounted on the milling machine at a length of at least 24 feet.

ASPHALT CONCRETE PLANT MIX PAVEMENTS:

(2-20-18) (Rev.1-15-19) 610, 1012 SP6 R65

Revise the *2018 Standard Specifications* as follows:

Page 6-14, Table 609-3, LIMITS OF PRECISION FOR TEST RESULTS, replace with the following:

TABLE 609-3
LIMITS OF PRECISION FOR TEST RESULTS

Mix Property	Limits of Precision
25.0 mm sieve (Base Mix)	± 10.0%
19.0 mm sieve (Base Mix)	± 10.0%
12.5 mm sieve (Intermediate & Type P-57)	± 6.0%
9.5 mm sieve (Surface Mix)	± 5.0%
4.75 mm sieve (Surface Mix)	± 5.0%
2.36 mm sieve (All Mixes, except S4.75A)	± 5.0%
1.18 mm sieve (S4.75A)	± 5.0%
0.075 mm sieve (All Mixes)	± 2.0%
Asphalt Binder Content	± 0.5%
Maximum Specific Gravity (G_{mm})	± 0.020
Bulk Specific Gravity (G_{mb})	± 0.030
TSR	± 15.0%
QA retest of prepared QC Gyratory Compacted Volumetric Specimens	± 0.015
Retest of QC Core Sample	± 1.2% (% Compaction)
Comparison QA Core Sample	± 2.0% (% Compaction)
QA Verification Core Sample	± 2.0% (% Compaction)
Density Gauge Comparison of QC Test	± 2.0% (% Compaction)
QA Density Gauge Verification Test	± 2.0% (% Compaction)

Page 6-17, Table 610-1, MIXING TEMPERATURE AT THE ASPHALT PLANT, replace with the following:

TABLE 610-1
MIXING TEMPERATURE AT THE ASPHALT PLANT

Binder Grade	JMF Temperature
PG 58-28; PG 64-22	250 - 290°F
PG 76-22	300 - 325°F

Page 6-17, Subarticle 610-3(C), Job Mix Formula (JMF), lines 38-39, delete the fourth paragraph.

Page 6-18, Subarticle 610-3(C), Job Mix Formula (JMF), line 12, replace "SF9.5A" with "S9.5B".

Page 6-18, Table 610-3, MIX DESIGN CRITERIA, replace with the following:

TABLE 610-3
MIX DESIGN CRITERIA

Mix Type			Compaction Levels	Max. Rut	Volumetric Properties [B]

	Design ESALs millions [A]	Binder PG Grade	G_{mm} @ N_{ini}	G_{mm} @ N_{des}	Depth (mm)	VMA % Min.	VTM %	VFA Min.-Max.	$\%G_{mm}$ @ N_{ini}
S4.75A	< 1	64 - 22	6	50	11.5	16.0	4.0 - 6.0	65 - 80	≤ 91.5
S9.5B	0 - 3	64 - 22	6	50	9.5	16.0	3.0 - 5.0	70 - 80	≤ 91.5
S9.5C	3 - 30	64 - 22	7	65	6.5	15.5	3.0 - 5.0	65 - 78	≤ 90.5
S9.5D	> 30	76 - 22	8	100	4.5	15.5	3.0 - 5.0	65 - 78	≤ 90.0
I19.0C	ALL	64 - 22	7	65	-	13.5	3.0 - 5.0	65 - 78	≤ 90.5
B25.0C	ALL	64 - 22	7	65	-	12.5	3.0 - 5.0	65 - 78	≤ 90.5
	Design Parameter					**Design Criteria**			
All Mix Types	Dust to Binder Ratio ($P_{0.075}$ / P_{be})					0.6 - 1.4 [C]			
	Tensile Strength Ratio (TSR) [D]					85% Min. [E]			

A. Based on 20 year design traffic.
B. Volumetric Properties based on specimens compacted to N_{des} as modified by the Department.
C. Dust to Binder Ratio ($P_{0.075}$ / P_{be}) for Type S4.75A is 1.0 - 2.0.
D. NCDOT-T-283 (No Freeze-Thaw cycle required).
E. TSR for Type S4.75A & B25.0C mixes is 80% minimum.

Page 6-19, Table 610-5, BINDER GRADE REQUIREMENTS (BASED ON RBR%), replace with the following:

TABLE 610-5
BINDER GRADE REQUIREMENTS (BASED ON RBR%)

Mix Type	%RBR ≤ 20%	21% ≤ %RBR ≤ 30%	%RBR ≥ 30%
S4.75A, S9.5B, S9.5C, I19.0C, B25.0C	PG 64-22	PG 64-22[A]	PG-58-28
S9.5D, OGFC	PG 76-22[B]	n/a	n/a

A. If the mix contains any amount of RAS, the virgin binder shall be PG 58-28.
B. Maximum Recycled Binder Replacement (%RBR) is 18% for mixes using PG 76-22 binder.

Page 6-20, Table 610-6, PLACEMENT TEMPERATURES FOR ASPHALT, replace with the following:

TABLE 610-6
PLACEMENT TEMPERATURES FOR ASPHALT

Asphalt Concrete Mix Type	Minimum Surface and Air Temperature
B25.0C	35°F
I19.0C	35°F
S4.75A, S9.5B, S9.5C	40°F [A]
S9.5D	50°F

A. For the final layer of surface mixes containing recycled asphalt shingles (RAS), the minimum surface and air temperature shall be 50°F.

Page 6-21, Article 610-8, SPREADING AND FINISHING, lines 34-35, delete the second sentence and replace with the following:

Use an MTV for all surface mix regardless of binder grade on Interstate, US Routes, and NC Routes (primary routes) that have 4 or more lanes and median divided.

Page 6-21, Article 610-8, SPREADING AND FINISHING, lines 36-38, delete the fourth sentence and replace with the following:

Use MTV for all ramps, loops, Y-line that have 4 or more lanes and are median divided, full width acceleration lanes, full width deceleration lanes, and full width turn lanes that are greater than 1000 feet in length.

Page 6-23, Table 610-7, DENSITY REQUIREMENTS, replace with the following:

TABLE 610-7
DENSITY REQUIREMENTS

Mix Type	Minimum % G_{mm} (Maximum Specific Gravity)
S4.75A	85.0 [A]
S9.5B	90.0
S9.5C, S9.5D, I19.0C, B25.0C	92.0

A. Compaction to the above specified density will be required when the S4.75A mix is applied at a rate of 100 lbs/sy or higher.

Page 6-24, Article 610-13, FINAL SURFACE TESTING, lines 35-36, delete the second sentence and replace with the following:

Final surface testing is not required on ramps, loops and turn lanes.

Page 6-26, Subarticle 610-13(A)(1), Acceptance for New Construction, lines 29-30, delete the second sentence and replace with the following:

Areas excluded from testing by the profiler may be tested using a 10-foot straightedge in accordance with Article 610-12.

Page 6-27, Subarticle 610-13(B), Option 2- North Carolina Hearne Straightedge, lines 41-46, delete the eighth and ninth sentence of this paragraph and replace with the following:

Take profiles over the entire length of the final surface travel lane pavement exclusive of structures, approach slabs, paved shoulders, tapers, or other irregular shaped areas of pavement, unless otherwise approved by the Engineer. Test in accordance with this provision all mainline travel lanes, full width acceleration or deceleration lanes and collector lanes.

Page 6-28, Subarticle 610-13(B), Option 2- North Carolina Hearne Straightedge, lines 1-2, delete these two lines.

Page 6-32, Article 610-16 MEASUREMENT AND PAYMENT, replace with the following:

Pay Item	Pay Unit
Asphalt Concrete Base Course, Type B25.0C	Ton
Asphalt Concrete Intermediate Course, Type I19.0C	Ton
Asphalt Concrete Surface Course, Type S4.75A	Ton
Asphalt Concrete Surface Course, Type S9.5B	Ton
Asphalt Concrete Surface Course, Type S9.5C	Ton
Asphalt Concrete Surface Course, Type S9.5D	Ton

Page 10-30, Table 1012-1, AGGREGATE CONSENSUS PROPERTIES, replace with the following:

TABLE 1012-1
AGGREGATE CONSENSUS PROPERTIES[A]

Mix Type	Coarse Aggregate Angularity[B]	Fine Aggregate Angularity % Minimum	Sand Equivalent % Minimum	Flat and Elongated 5 : 1 Ratio % Maximum
Test Method	*ASTM D5821*	*AASHTO T 304*	*AASHTO T 176*	*ASTM D4791*
S4.75A; S9.5B	75 / -	40	40	-

S9.5C; I19.0C; B25.0C	95 / 90	45	45	10
S9.5D	100 / 100	45	50	10
OGFC	100 / 100	45	45	10
UBWC	100 / 85	45	45	10

A. Requirements apply to the design aggregate blend.
B. 95 / 90 denotes that 95% of the coarse aggregate has one fractured face and 90% has 2 or more fractured faces.

SUPPLEMENTAL SURVEYING:
(4-20-21) 801 SP8 R03

Revise the *2018 Standard Specifications* as follows:

Page 8-7, Article 801-3 MEASUREMENT AND PAYMENT, lines 10-11, replace with the following:

Supplemental Surveying Office Calculations will be paid at the stated price of $85.00 per hour. *Supplemental Field Surveying* will be paid at the stated price of $145.00 per hour. The

GUARDRAIL END UNITS, TYPE - TL-3:
(4-20-04) (Rev. 7-1-17) 862 SP8 R65

Description

Furnish and install guardrail end units in accordance with the details in the plans, the applicable requirements of Section 862 of the *2018 Standard Specifications*, and at locations shown in the plans.

Materials

Furnish guardrail end units listed on the NCDOT Approved Products List at https://apps.dot.state.nc.us/vendor/approvedproducts/ or approved equal.

Prior to installation the Contractor shall submit to the Engineer:

(A) FHWA acceptance letter for each guardrail end unit certifying it meets the requirements of the AASHTO Manual for Assessing Safety Hardware, Test Level 3, in accordance with Article 106-2 of the *2018 Standard Specifications*.

(B) Certified working drawings and assembling instructions from the manufacturer for each guardrail end unit in accordance with Article 105-2 of the *2018 Standard Specifications*.

No modifications shall be made to the guardrail end unit without the express written permission from the manufacturer. Perform installation in accordance with the details in the plans, and details and assembling instructions furnished by the manufacturer.

Construction Methods

Guardrail end delineation is required on all approach and trailing end sections for both temporary and permanent installations. Guardrail end delineation consists of yellow reflective sheeting applied to the entire end section of the guardrail in accordance with Article 1088-3 of the *2018 Standard Specifications* and is incidental to the cost of the guardrail end unit.

Measurement and Payment

Measurement and payment will be made in accordance with Article 862-6 of the *2018 Standard Specifications*.

Payment will be made under:

Pay Item	Pay Unit
Guardrail End Units, Type TL-3	Each

GUARDRAIL ANCHOR UNITS AND TEMPORARY GUARDRAIL ANCHOR UNITS:

(1-16-2018) 862 SP8 R70

Guardrail anchor units will be in accordance with the details in the plans and the applicable requirements of Section 862 of the *2018 Standard Specifications*.

Revise the *2018 Standard Specifications* as follows:

Page 8-42, Article 862-6 MEASUREMENT AND PAYMENT, add the following:

Guardrail Anchor Units, Type ___ and Temporary Guardrail Anchor Units Type ___ will be measured and paid as units of each completed and accepted. No separate measurement will be made of any rail, terminal sections, posts, offset blocks, concrete, hardware or any other components of the completed unit that are within the pay limits shown in the plans for the unit as all such components will be considered to be part of the unit.

Payment will be made under:

Pay Item	Pay Unit
Guardrail Anchor Units, Type ____	Each
Temporary Guardrail Anchor Units, Type ___	Each

FOUNDATIONS AND ANCHOR ROD ASSEMBLIES FOR METAL POLES:

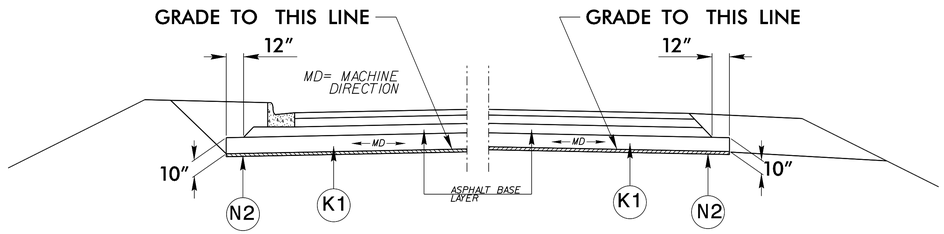
(1-17-12) (Rev. 1-16-18) 9, 14, 17 SP9 R05

Description

Foundations for metal poles include foundations for signals, cameras, overhead and dynamic message signs (DMS) and high mount and light standards supported by metal poles or upright trusses. Foundations consist of footings with pedestals and drilled piers with or without grade beams or wings. Anchor rod assemblies consist of anchor rods (also called anchor bolts) with nuts and washers on the exposed ends of rods and nuts and a plate or washers on the other ends of rods embedded in the foundation.

Construct concrete foundations with the required resistances and dimensions and install anchor rod assemblies in accordance with the contract and accepted submittals. Construct drilled piers consisting of cast-in-place reinforced concrete cylindrical sections in excavated holes. Provide temporary casings or polymer slurry as needed to stabilize drilled pier excavations. Use a prequalified Drilled Pier Contractor to construct drilled piers for metal poles. Define "excavation" and "hole" as a drilled pier excavation and "pier" as a drilled pier.

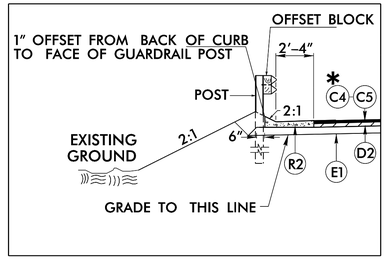
This provision does not apply to foundations for signal pedestals; see Section 1743 of the *2018 Standard Specifications* and 2018 Roadway Standard Drawing No. 1743.01.



CLASS IV SUBGRADE STABILIZATION–GEOTEXTILE FOR PAVEMENT STABILIZATION WITH ASPHALT BASE

–L– LT STA. 10+00.00 TO 13+00.00
–L– LT & RT STA. 13+00.00 TO 16+00.00
–L– LT STA. 16+00.00 TO 16+25.00
–L– RT STA. 31+00.00 TO 32+50.00
–L– LT & RT STA. 32+50.00 TO 41+00.00
–L– LT STA. 41+00.00 TO 45+00.00
–L– RT STA. 53+00.00 TO 54+50.00
–Y1– C/L STA. 20+00.00 TO 22+50.00
–Y1– C/L STA. 24+00.00 TO 28+50.00
–Y1Rev– C/L STA. 35+00.00 TO 39+50.00
–Y2SBL– RT STA. 21+50.00 TO 28+66.00
–Y2NBL– LT STA. 15+03.00 TO 16+01.00
–Y2NBL– LT STA. 16+01.00 TO 19+48.00
–Y2NBL– LT STA. 21+97.00 TO 24+94.00
–Y2FLYAB– C/L STA. 17+83.00 TO 21+00.00
–Y2FLYAB– C/L STA. 30+00.00 TO 30+50.00
–Y2FLYCA– C/L STA. 14+67.00 TO 29+00.00
–Y2FLYCA– C/L STA. 33+50.00 TO 38+00.00
–Y2FLYCA– C/L STA. 49+50.00 TO 53+00.00
–Y2FLYCA– C/L STA. 56+50.00 TO 58+07.00
–Y2RPB– C/L STA. 39+00.00 TO 43+66.00
–Y2RPC– RT STA. 29+74.00 TO 30+73.00
–Y3LPC– C/L STA. 15+50.00 TO 17+75.00
–Y3RPB– LT STA. 10+12.00 TO 13+60.00
–Y3RPB– C/L STA. 13+60.00 TO 16+00.00
–Y3RPB– C/L STA. 22+25.00 TO 23+00.00
–Y3RPC– C/L STA. 15+00.00 TO 25+00.00
–Y4– C/L STA. 11+00.00 TO 14+00.00

Contractor Should Investigate These Areas During Construction to Determine if Stabilization Fabric is Required



SHOULDER BERM GUTTER

–L– STA. 10+00.00 TO STA. 11+23.96 LT.
–L– STA. 31+07.64 TO STA. 45+17.74 LT.
–L– STA. 55+39.08 TO STA. 56+12.00 RT
–Y2FLYAB– STA. 15+99.98 TO STA. 20+50.00 RT.
–Y2FLYAB– STA. 18+74.00 TO STA. 20+50.00 LT.
–Y2FLYAB– STA. 30+03.00 TO STA. 31+00.00 LT.
–Y2FLYCA– STA. 10+00.00 TO STA. 16+32.39 RT.
–Y2FLYCA– STA. 24+70.00 TO STA. 28+46.07 LT.
–Y2FLYCA– STA. 34+84.00 TO STA. 38+15.73 LT.
–Y2FLYCA– STA. 49+20.05 TO STA. 62+26.81 RT.
–Y2FLYCA– STA. 49+20.05 TO STA. 50+18.58 LT.
–Y2NBL– STA. 13+75.32 TO STA. 19+03.38 LT.
–Y2NBL– STA. 21+53.53 TO STA. 25+32.04 LT.
–Y2NBL– STA. 68+40.00 TO STA. 71+84.00 RT.
–Y2NBL– STA. 76+04.38 TO STA. 87+08.11 LT.
–Y2SBL– STA. 28+12.46 TO STA. 29+02.67 RT.
–Y2SBL– STA. 31+41.94 TO STA. 31+97.61 RT.
–Y2SBL– STA. 74+28.44 TO STA. 79+59.75 RT.
–Y2SBL– STA. 95+86.07 TO STA. 96+44.98 RT.
–Y2RPC– STA. 29+30.00 TO STA. 30+49.27 RT.
–Y3RPB– STA. 10+00.00 TO STA. 16+08.14 LT.
–Y3RPC– STA. 10+00.00 TO STA. 24+69.87 RT.
✱–Y1– STA. 19+73.00 TO STA. 22+09.92 RT.
✱–Y1– STA. 20+65.00 TO STA. 22+09.92 LT.
✱–Y1– STA. 23+54.92 TO STA. 28+66.00 LT.
✱–Y1– STA. 23+54.92 TO STA. 28+89.00 RT.
✱–Y1Rev– STA. 35+02.00 TO STA. 35+59.00 LT.
✱–Y1Rev– STA. 35+25.10 TO STA. 35+58.58 RT.

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Atlanta, GA 770·627·3509

PROJECT REFERENCE NO.	SHEET NO.
U-2579AA	2A-2
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 036435 ENGINEER JOHN C. LANSFORD
8/8/2022

PAVEMENT ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024964 ENGINEER ROBERT T. HOLLAND
8/8/2022

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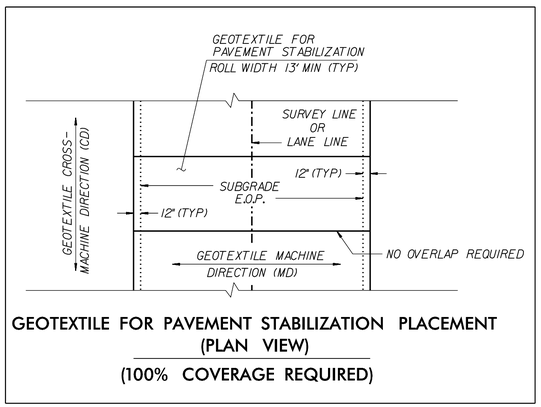
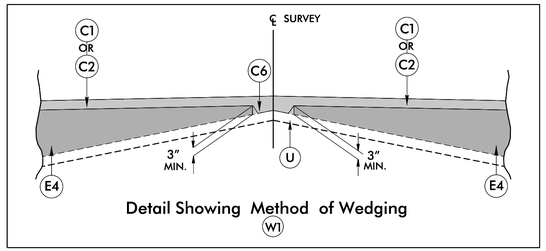
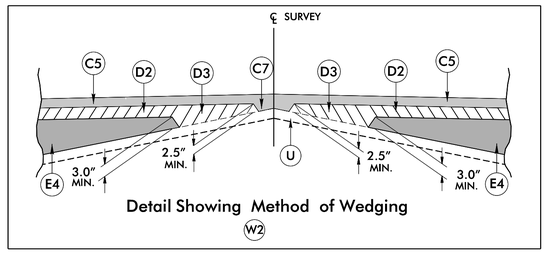


GEOTEXTILE FOR PAVEMENT STABILIZATION PLACEMENT (PLAN VIEW)

(100% COVERAGE REQUIRED)



Detail Showing Method of Wedging



Detail Showing Method of Wedging

PAVEMENT SCHEDULE	
C1	1¼" S9.5B
C2	1½" S9.5B
C3	2½" S9.5B
C4	3" S9.5B
C5	3" S9.5C
C6	VAR. S9.5B
C7	VAR. S9.5C
C8	1½" S9.5C
D1	2 1/2" I19.0C
D2	4" I19.0C
D3	VAR. I19.0C
E1	4" B25.0C
E2	5½" B25.0C
E3	7" B25.0C
E4	VAR. B25.0C
J1	6" ABC
K1	10" CLASS IV SUB. STAB.
N1	SOIL STAB. GEOTEXTILE
N2	PAVE. STAB. GEOTEXTILE
R1	2'-6"CONC. C&G
R2	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING 1½"
V2	MILLING 0" TO 1½"
W1	WEDGING
W2	WEDGING
Y	ASPHALT RUMBLE STRIPS

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User:jpatford

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Atlanta, GA 770·627·3509

PROJECT REFERENCE NO.	SHEET NO.
U-2579AA	2A-4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 025035 JOHN C. LANSFORD 8/8/2022	NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024964 JOSEPH T. HOLLAND 8/8/2022

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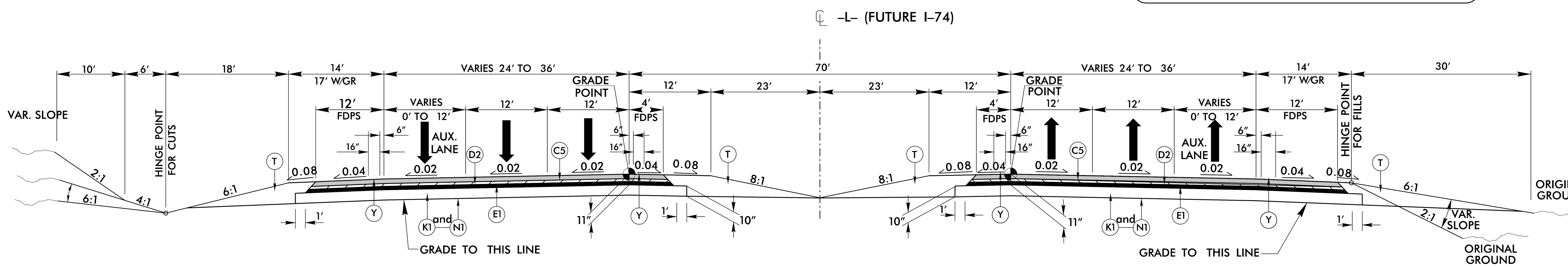
PAVEMENT SCHEDULE	
C1	1¼" S9.5B
C2	1½" S9.5B
C3	2½" S9.5B
C4	3" S9.5B
C5	3" S9.5C
C6	VAR. S9.5B
C7	VAR. S9.5C
C8	1½" S9.5C
D1	2 1/2" I19.0C
D2	4" I19.0C
D3	VAR. I19.0C
E1	4" B25.0C
E2	5½" B25.0C
E3	7" B25.0C
E4	VAR. B25.0C
J1	6" ABC
K1	10" CLASS IV SUB. STAB.
N1	SOIL STAB. GEOTEXTILE
N2	PAVE. STAB. GEOTEXTILE
R1	2'-6" CONC. C&G
R2	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING 1½"
V2	MILLING 0" TO 1½"
W1	WEDGING
W2	WEDGING
Y	ASPHALT RUMBLE STRIPS

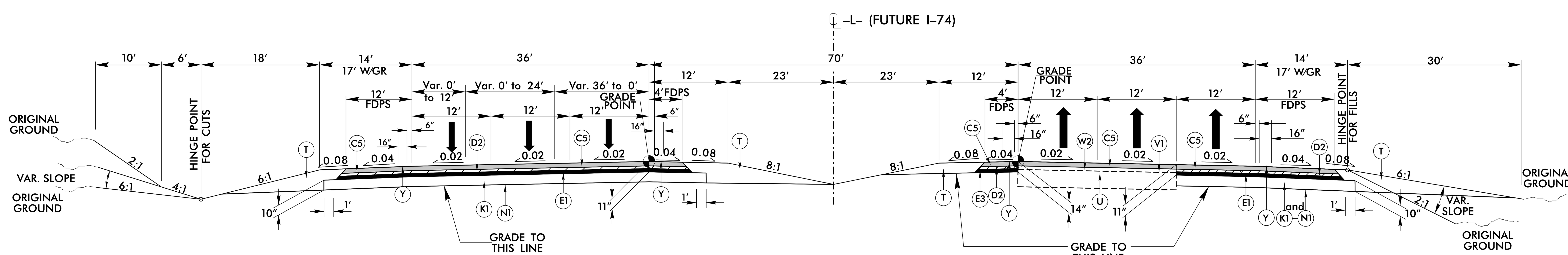


TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

-L- STA. 10+00.00 TO STA. 53+33.50 RT
-L- STA. 10+00.00 TO STA. 72+50.00 LT

SEE SHEET 2A-2 FOR SHOULDER BERM GUTTER DETAIL AND LOCATIONS

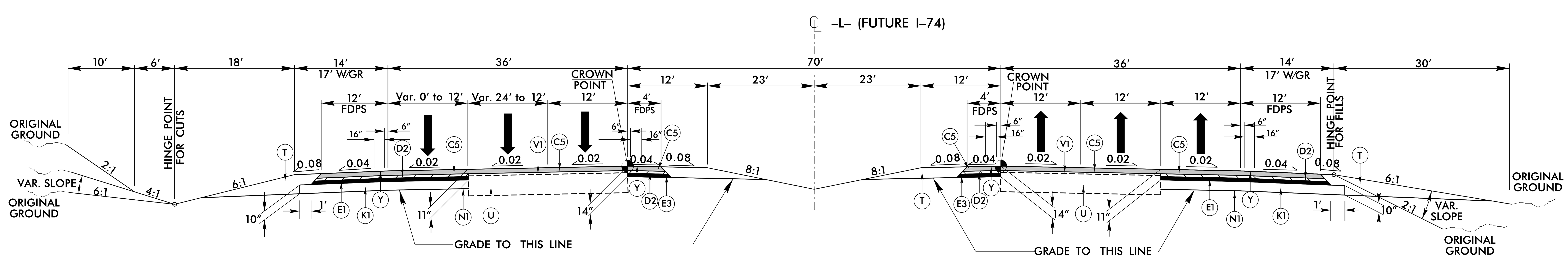


NOTE: SEE PLANS FOR TURN LANES, AUXILLARY LANES AND RAMP LANES.

TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

-L- STA. 53+33.50 TO STA. 80+00.00 RT.
-L- STA. 72+50.00 TO STA. 80+00.00 LT.



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3

-L- STA. 80+00.00 TO STA. 87+25.00 RT.
-L- STA. 80+00.00 TO STA. 91+10.37 LT.

PROJECT REFERENCE NO.	SHEET NO.
U-2579AA	2A-5
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — SEAL 36635, JOHN C. LANSFORD, 8/8/2022

PAVEMENT ENGINEER — SEAL 024764, JOSEPH T. HOLLAND, 8/8/2022

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□ Middlesboro, KY 606·248·6600
□ Atlanta, GA 770·627·3509

NOTE: SEE PLANS FOR TURN LANES, AUXILLARY LANES AND RAMP LANES.

PAVEMENT SCHEDULE	
C1	1¼" S9.5B
C2	1½" S9.5B
C3	2½" S9.5B
C4	3" S9.5B
C5	3" S9.5C
C6	VAR. S9.5B
C7	VAR. S9.5C
C8	1½" S9.5C
D1	2 1/2" I19.0C
D2	4" I19.0C
D3	VAR. I19.0C
E1	4" B25.0C
E2	5½" B25.0C
E3	7" B25.0C
E4	VAR. B25.0C
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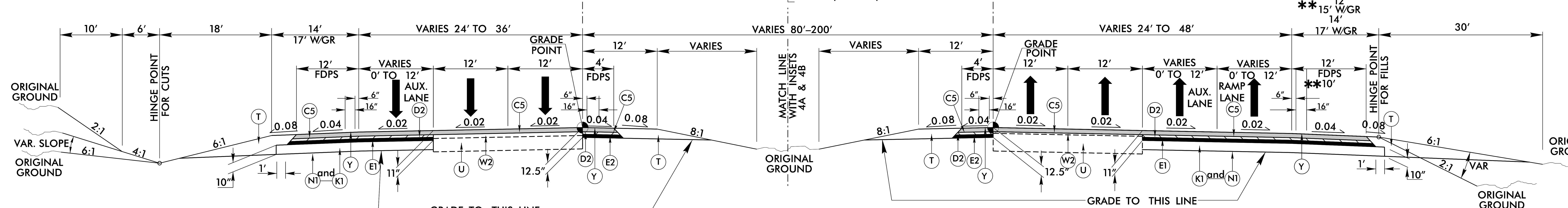
N1	SOIL STAB. GEOTEXTILE
N2	PAVE. STAB. GEOTEXTILE
R1	2'-6" CONC. C&G
R2	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING 1½"
V2	MILLING 0" TO 1½"
W1	WEDGING
W2	WEDGING
Y	ASPHALT RUMBLE STRIPS



TYPICAL SECTION NO. 4

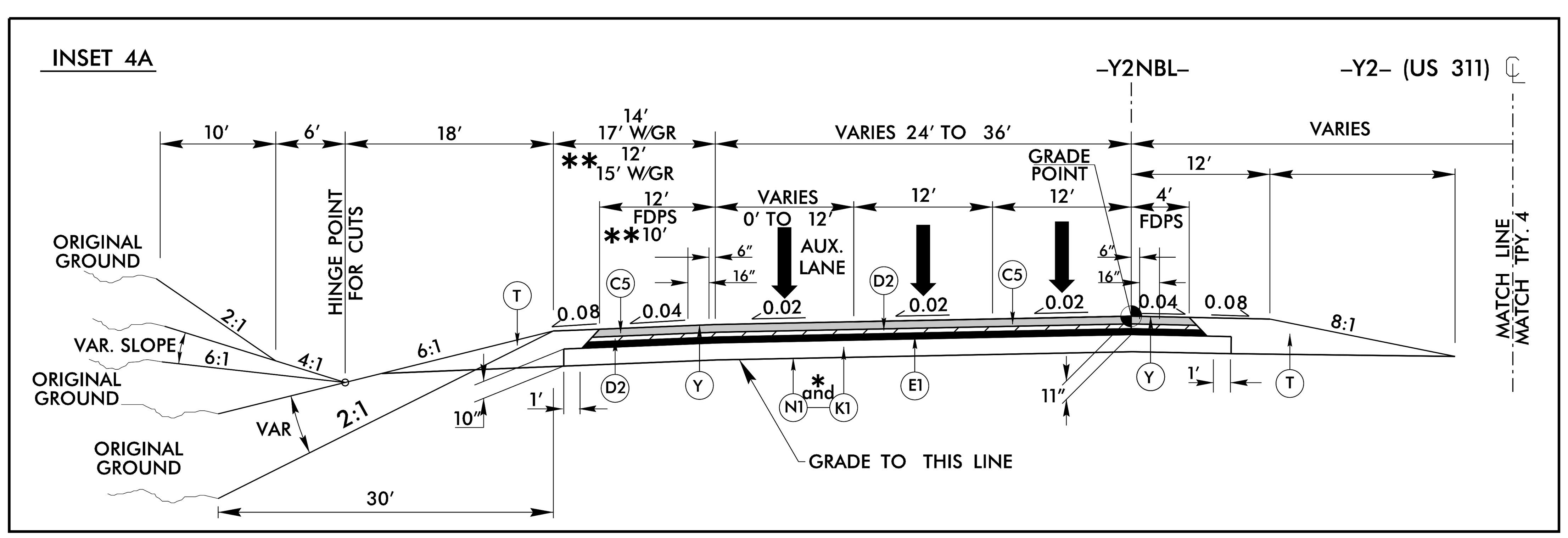
USE TYPICAL SECTION NO. 4

-Y2NBL- STA. 10+00.00 TO STA. 16+51.12
-Y2NBL- End Bridge STA. 21+24.99 TO 49+34.27
-Y2NBL- STA. 58+33.84 TO 90+99.16

USE TYPICAL SECTION NO. 4

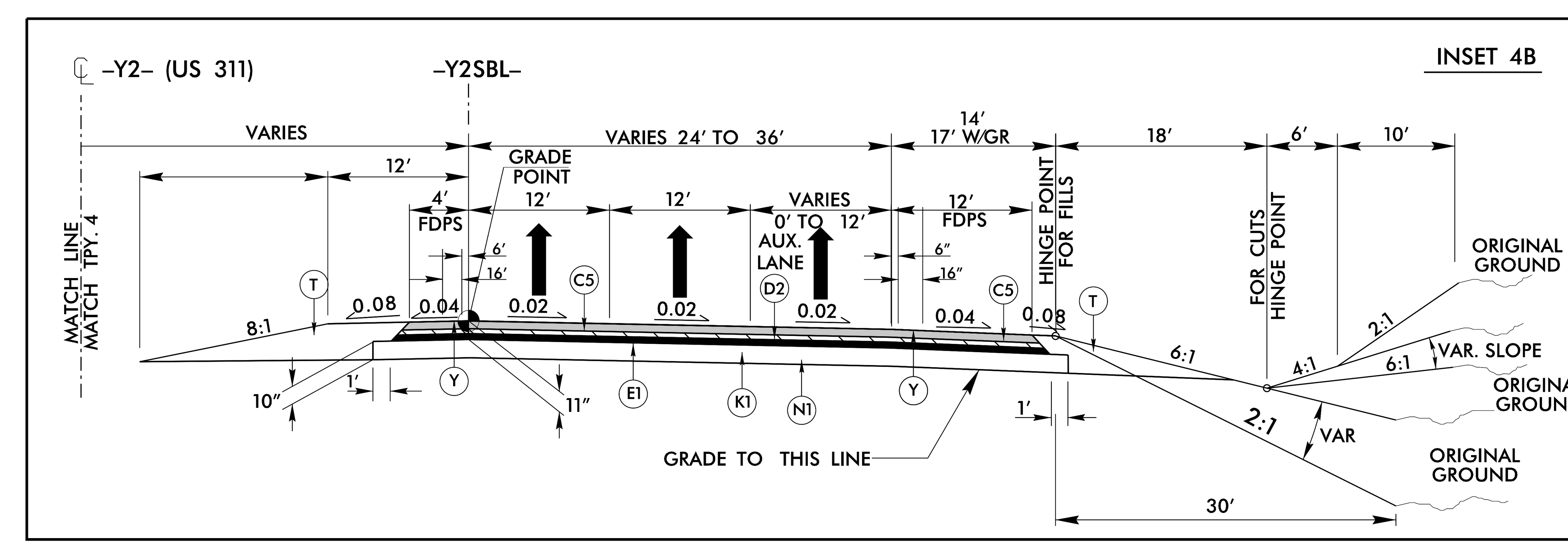
** -Y2SBL- STA. 10+00.00 TO STA. 29+34.61 Begin Bridge
-Y2SBL- End Bridge STA. 31+07.62 TO 32+67.23
-Y2SBL- STA. 34+18.12 TO 38+95.78
-Y2SBL- STA. 44+98.28 TO 47+24.33
-Y2SBL- STA. 54+27.01 TO 98+98.56

SEE SHEET 2A-2 FOR SHOULDER BERM GUTTER DETAIL AND LOCATIONS



USE WITH TYPICAL 4

** -Y2NBL- STA. 16+51.12 TO STA. 19+38.50 Begin Bridge
-Y2NBL- 49+34.27 TO 58+33.84



USE WITH TYPICAL 4

-Y2SBL- STA. 32+67.23 TO STA. 34+18.12
-Y2SBL- STA. 47+24.33 TO STA. 54+27.01

PROJECT REFERENCE NO.	SHEET NO.
U-2579AA	2A-6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT ENGINEER
SEAL 034435 — C. LANSFORD — 8/8/2022	SEAL 024964 — JOSEPH T. HOLLAND — 8/8/2022

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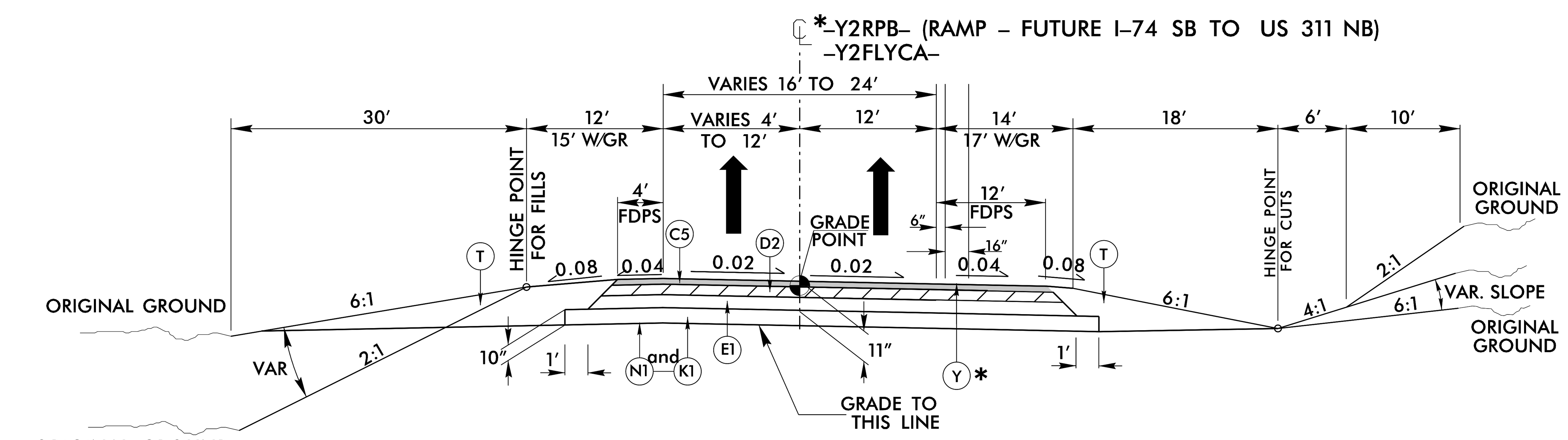
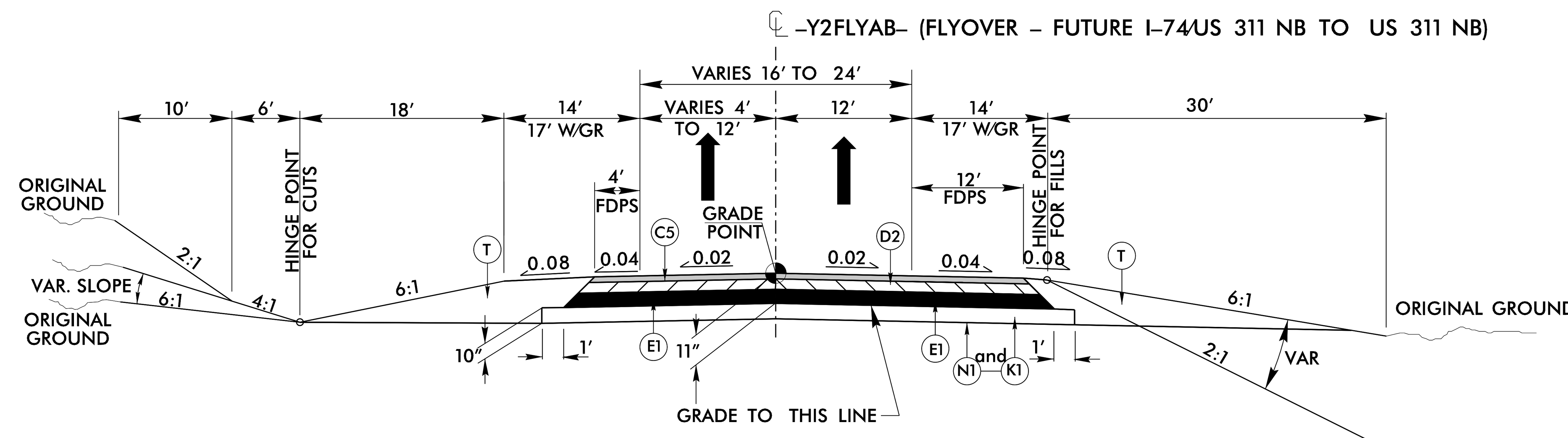


TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5

* -Y2RPB- STA. 15+88.07 to 45+68.05
-Y2FLYCA- STA. 14+37.03 TO STA 28+73.60 Begin Bridge
-Y2FLYCA- STA. 33+46.60 End Bridge TO STA 38+40.00 Begin Bridge
-Y2FLYCA- STA. 48+95.00 End Bridge TO STA 58+38.51

PAVEMENT SCHEDULE	
C1	1¼" S9.5B
C2	1½" S9.5B
C3	2½" S9.5B
C4	3" S9.5B
C5	3" S9.5C
C6	VAR. S9.5B
C7	VAR. S9.5C
C8	1½" S9.5C
D1	2 1/2" I19.0C
D2	4" I19.0C
D3	VAR. I19.0C
E1	4" B25.0C
E2	5½" B25.0C
E3	7" B25.0C
E4	VAR. B25.0C
J1	6" ABC
K1	10" CLASS IV SUB. STAB.
N1	SOIL STAB. GEOTEXTILE
N2	PAVE. STAB. GEOTEXTILE
R1	2'-6" CONC. C&G
R2	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING 1½"
V2	MILLING 0" TO 1½"
W1	WEDGING
W2	WEDGING
Y	ASPHALT RUMBLE STRIPS

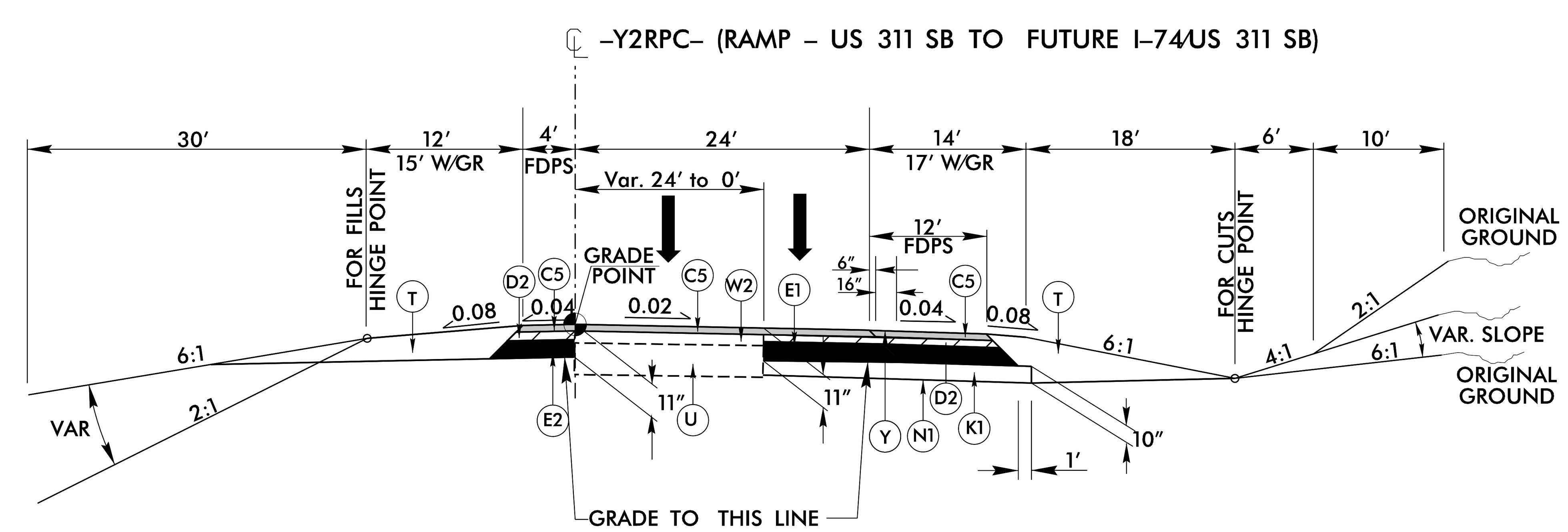


TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6

-Y2FLYAB- STA. 16+26.44 TO STA 20+74.03 Begin Bridge
-Y2FLYAB- STA. 29+76.03 End Bridge TO STA 37+31.77

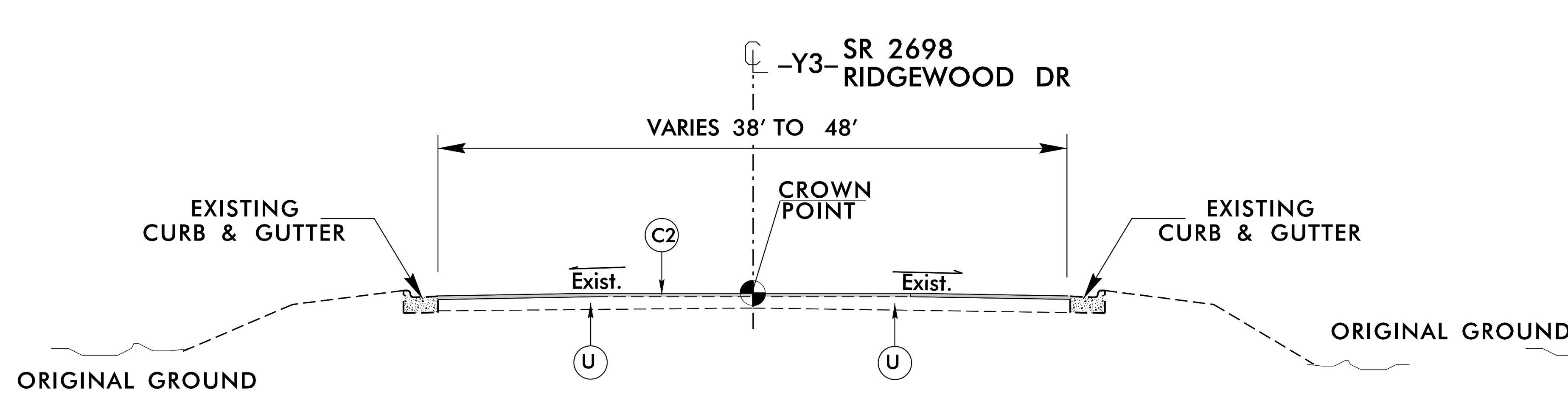
SEE SHEET 2A-2 FOR SHOULDER BERM GUTTER DETAIL AND LOCATIONS



TYPICAL SECTION NO. 7

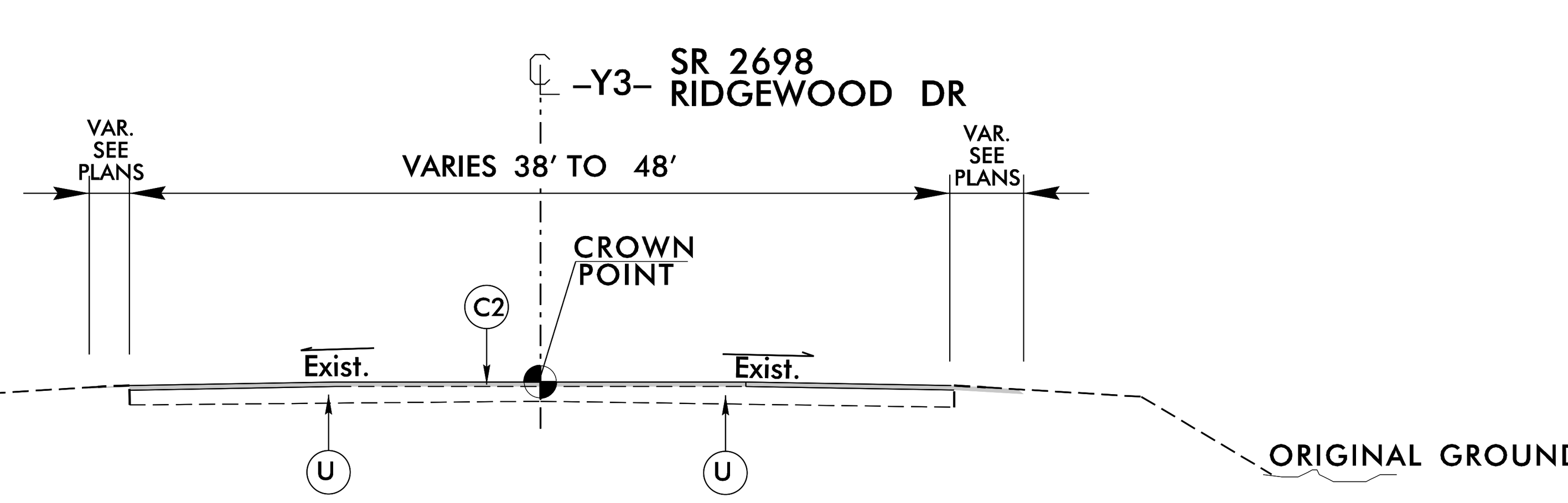
USE TYPICAL SECTION NO. 7

-Y2RPC- STA. 10+50.00 TO STA 25+50.00



TYPICAL SECTION NO. 8

-Y3- STA. 13+70.00 TO STA. 26+00.00



TYPICAL SECTION NO. 9

-Y3- STA. 26+00.00 TO STA. 36+43.00

NOTE: SEE PLANS FOR TURN LANES, AUXILLARY LANES AND RAMP LANES.

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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-2579AA	2A-7
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER	PAVEMENT ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 035435 JOHN C. LANSFORD — 8/8/2022	NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024964 JOSEPH T. HOLLAND — 8/8/2022

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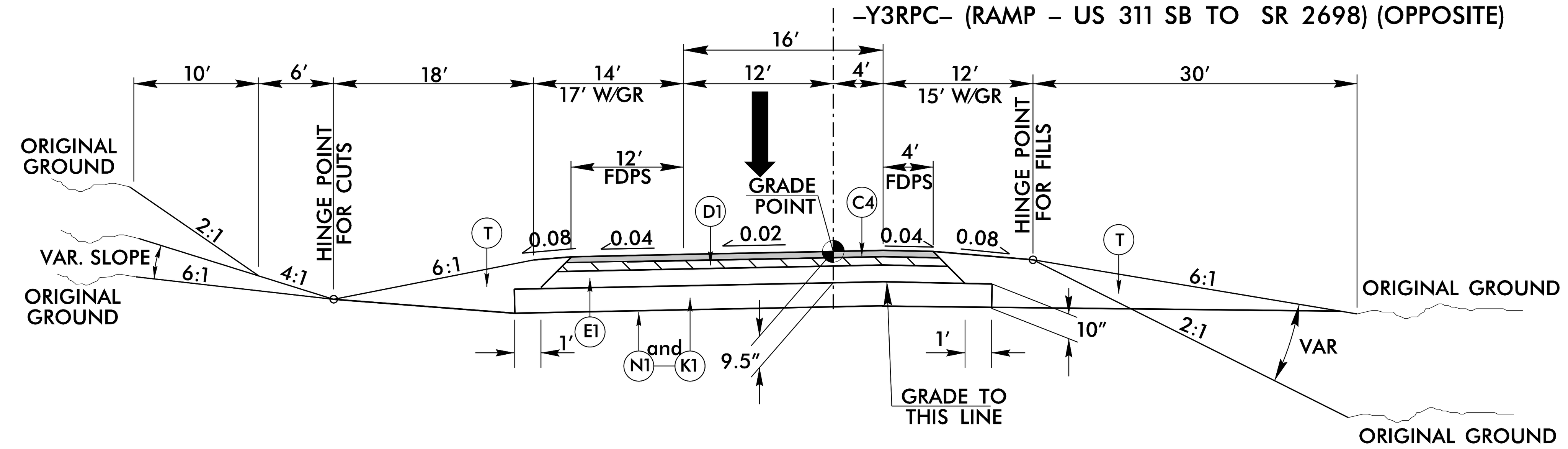
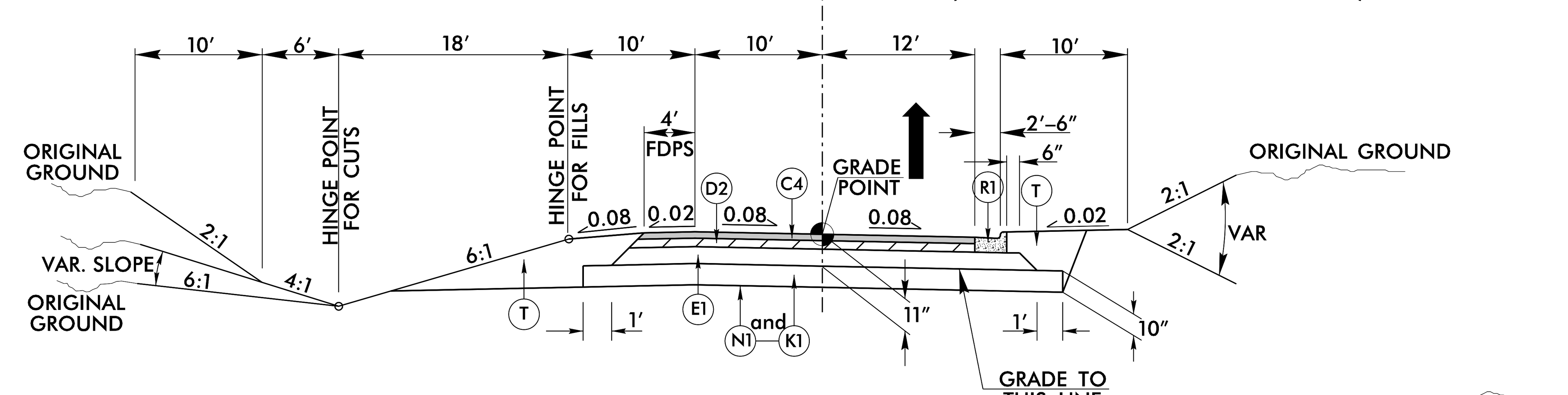
Charleston, SC 843·974·5650
Middlesboro, KY 606·248·6600
Atlanta, GA 770·627·3509

PAVEMENT SCHEDULE	
C1	1¼" S9.5B
C2	1½" S9.5B
C3	2½" S9.5B
C4	3" S9.5B
C5	3" S9.5C
C6	VAR. S9.5B
C7	VAR. S9.5C
C8	1½" S9.5C
D1	2 1/2" I19.0C
D2	4" I19.0C
D3	VAR. I19.0C
E1	4" B25.0C
E2	5½" B25.0C
E3	7" B25.0C
E4	VAR. B25.0C
J1	6" ABC
K1	10" CLASS IV SUB. STAB.
N1	SOIL STAB. GEOTEXTILE
N2	PAVE. STAB. GEOTEXTILE
R1	2'-6" CONC. C&G
R2	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING 1½"
V2	MILLING 0" TO 1½"
W1	WEDGING
W2	WEDGING
Y	ASPHALT RUMBLE STRIPS



TYPICAL SECTION NO. 10

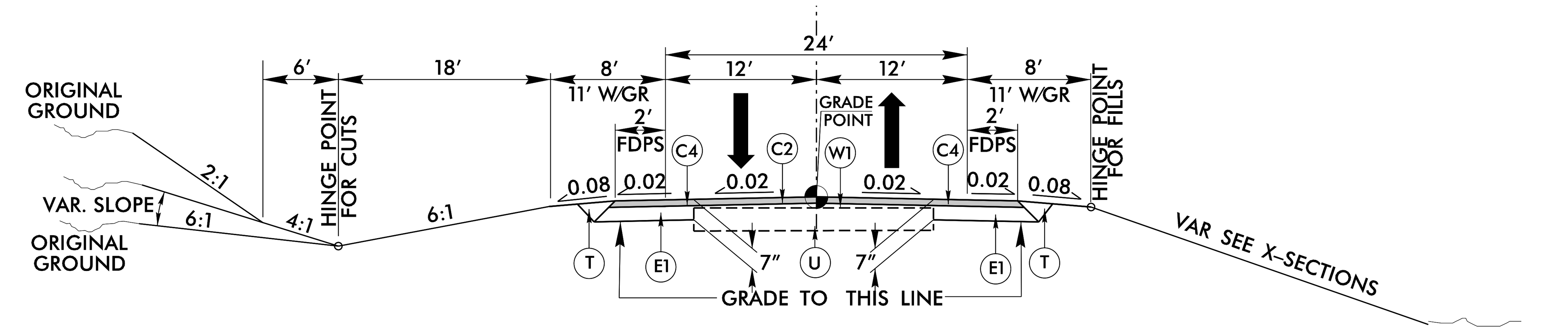
USE TYPICAL SECTION NO. 10
-Y3RPB- STA. 13+91.00 to 32+00.75
-Y3RPC- STA. 13+95.00 to 26+16.25



TYPICAL SECTION NO. 11

ORIGINAL GROUND

USE TYPICAL SECTION NO. 11
-Y3LPB- STA. 12+57.00 to 23+54.77
-Y3LPC- STA. 12+44.00 to 19+41.19

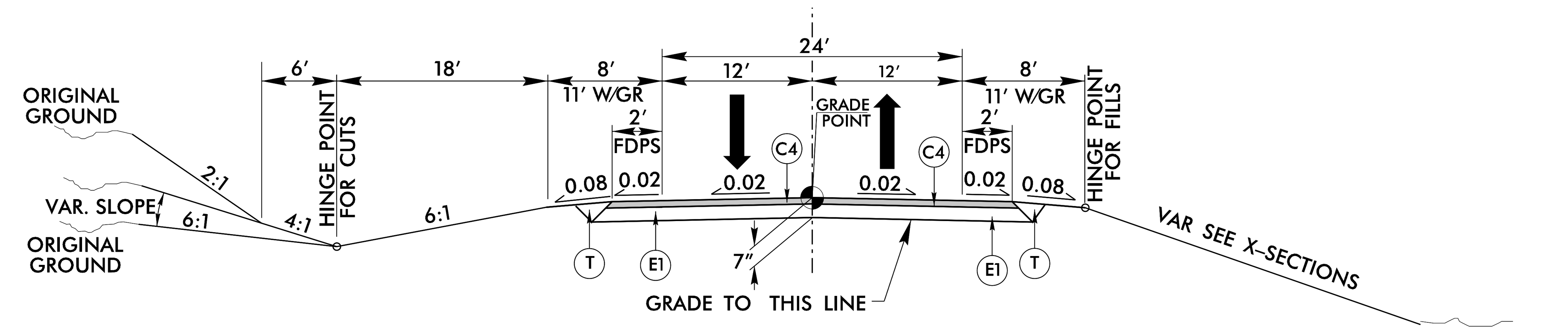


TYPICAL SECTION NO. 12

ORIGINAL GROUND

USE TYPICAL SECTION NO. 12
-Y1- STA. 13+00.00 TO STA 17+00.00
-Y1- STA. 43+00.00 TO STA 46+00.00

SEE SHEET 2A-2 FOR SHOULDER BERM GUTTER DETAIL AND LOCATIONS



TYPICAL SECTION NO. 13

ORIGINAL GROUND

USE TYPICAL SECTION NO. 13
-Y1- STA. 17+00.00 TO STA 22+24.09 Begin Bridge
-Y1- STA. 23+40.76 End Bridge TO STA 28+91.00 Begin Bridge
-Y1REV- STA. 35+00.00 End Bridge TO STA 42+29.04 LB
-Y1- STA. 42+24.01 LA to STA. 43+00.00

NOTE: SEE PLANS FOR TURN LANES, AUXILLARY LANES AND RAMP LANES.

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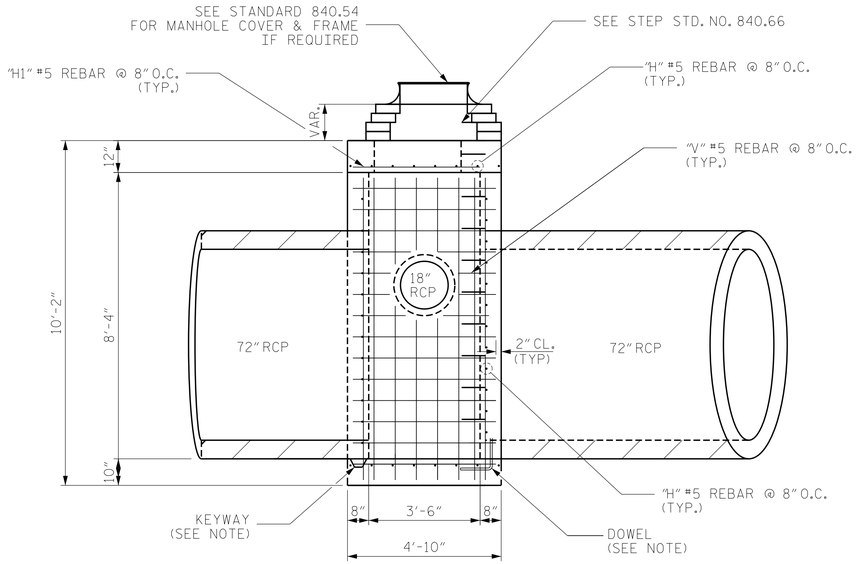


SECTION A-A

GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE ALL JUNCTION BOXES OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.

OPTIONAL CONSTRUCTION-MONOLITHIC POUR, 2" KEYWAY, OR # 4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

INSTALL MANHOLE IN POSITION AS DIRECTED BY THE ENGINEER. CUT AND BEND ALL REBAR CROSSING THIS OPENING TO ALLOW 2" MINIMUM CONCRETE COVERAGE.

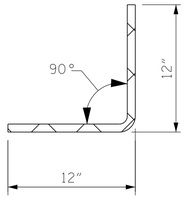
CHAMFER ALL EXPOSED CORNERS 1".

2" MINIMUM CONCRETE COVERAGE ON ALL REBAR.

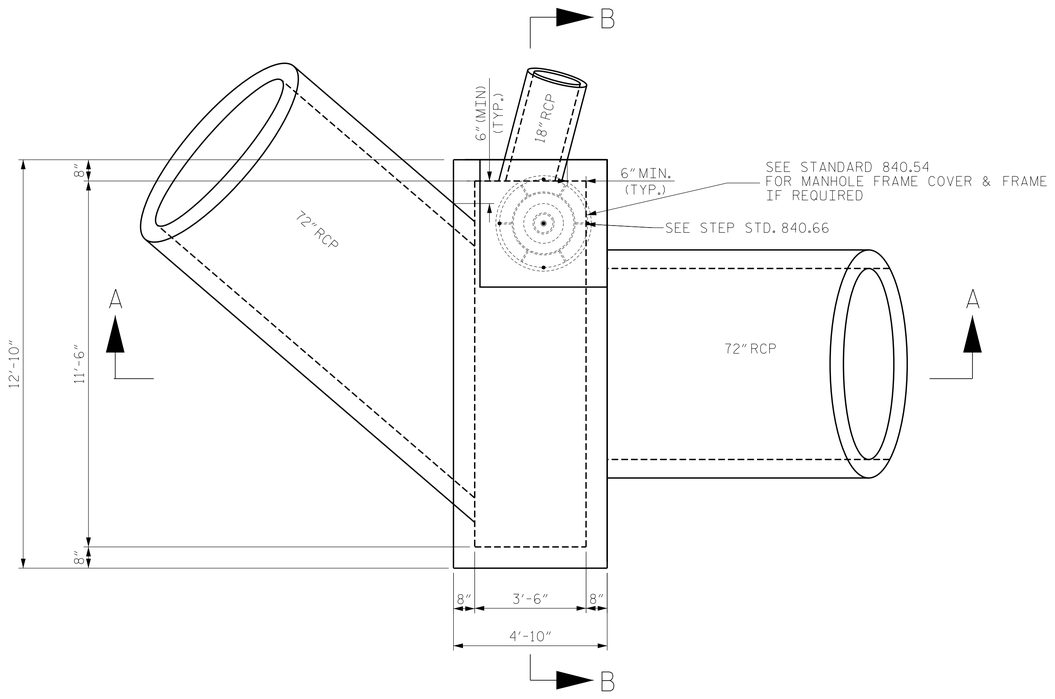
BILL OF MATERIALS
FOR BOX 0610

BAR	NO.	SIZE	LENGTH	WEIGHT
H	42	#5	12'-6"	548
H1	64	#5	4'-6"	300
V	56	#5	8'-10"	516
Z	16	#5	5'-0"	83
TOTAL REINF. STEEL (LBS.)				1447
TOTAL CONC. (CU. YDS.)				* 10.94

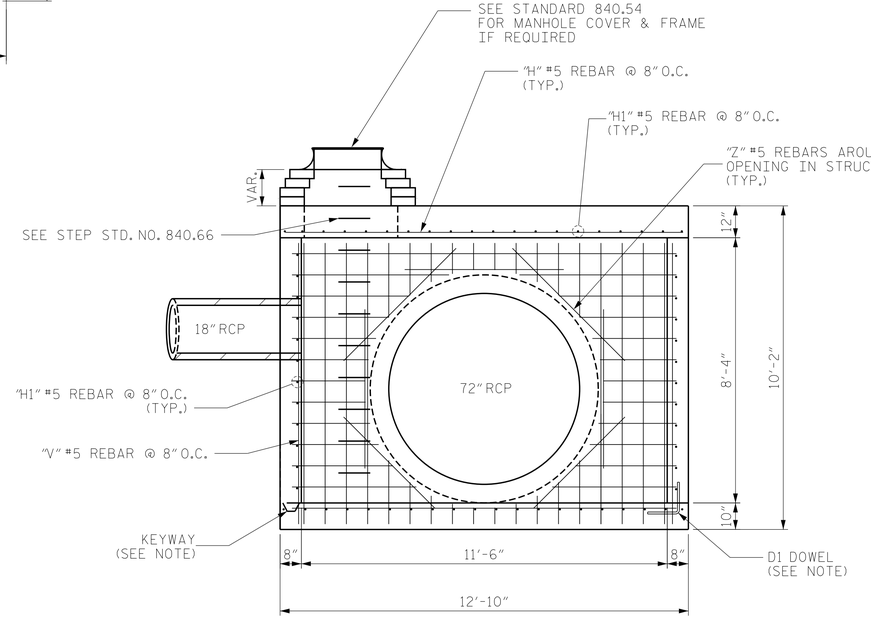
* NO DEDUCTION HAS BEEN MADE FOR PIPES



DOWEL



PLAN VIEW 0610



SECTION B-B

V&M
Vaughn & Melton
Consulting Engineers
Asheville, North Carolina
828-253-2796
Raleigh, NC 919-977-9455
Charlotte, NC 704-357-0488
Boone, NC 828-355-9933
Tri-Cities, TN 423-467-8401
Knoxville, TN 865-546-5800
Spartanburg, SC 864-574-4775
Charleston, SC 843-974-5650
Middlesboro, KY 606-248-6600
Atlanta, GA 770-627-3590

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DWN. BY: AW DATE: 07/2022
CKD. BY: HLW DATE: 07/2022

U-2579AA
FORSYTH COUNTY

SPECIAL 72" JUNCTION BOX
0610 WITH SLAB LID

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	1
						TOTAL SHEETS
						1

w:\Cruncher
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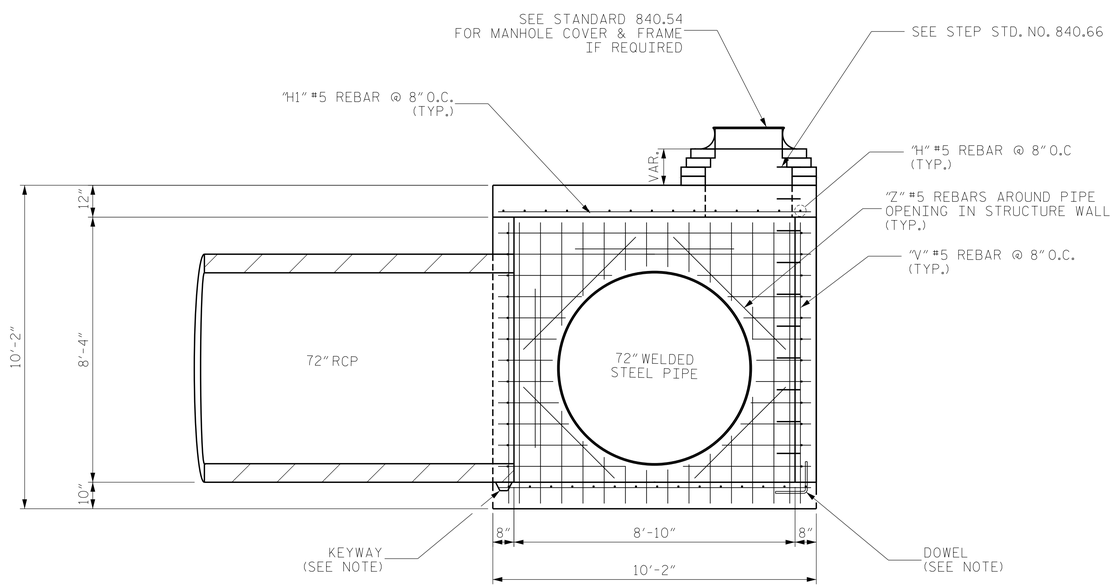


SECTION A-A

GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE ALL JUNCTION BOXES OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.

OPTIONAL CONSTRUCTION-MONOLITHIC POUR, 2" KEYWAY, OR # 4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

INSTALL MANHOLE IN POSITION AS DIRECTED BY THE ENGINEER. CUT AND BEND ALL REBAR CROSSING THIS OPENING TO ALLOW 2" MINIMUM CONCRETE COVERAGE.

CHAMFER ALL EXPOSED CORNERS 1".

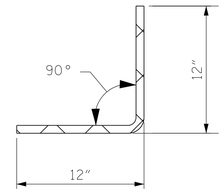
2" MINIMUM CONCRETE COVERAGE ON ALL REBAR.

SHEAR STUDS SHALL BE 3/4" DIAMETER X 4" LONG STEEL STUDS, AND SHALL BE WELDED TO THE OUTSIDE OF THE STEEL PIPE TO PROJECT INTO THE 8" WALL OF THE CONCRETE BOX. STUDS SHALL BE SPACED ON 12-INCH CENTERS CIRCUMFERENTIALLY, AND SHALL BE POSITIONED TO MAINTAIN 2" MINIMUM CLEAR DISTANCE FROM ANY FACE OF THE JUNCTION BOX WALL.

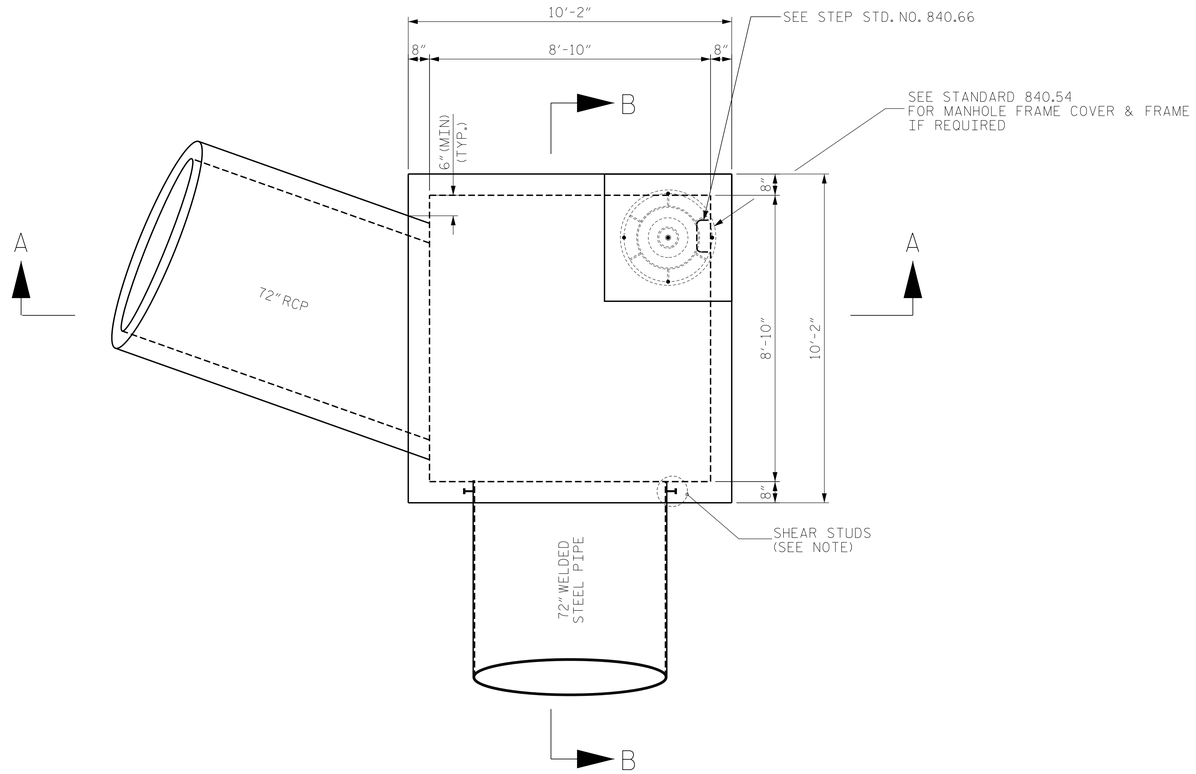
BILL OF MATERIALS
FOR BOX 0608

BAR	NO.	SIZE	LENGTH	WEIGHT
H	54	#5	9'-10"	554
H1	56	#5	9'-10"	574
V	64	#5	8'-10"	590
Z	16	#5	5'-0"	83
TOTAL REINF. STEEL (LBS.)				1801
TOTAL CONC. (CU. YDS.)				* 14.20

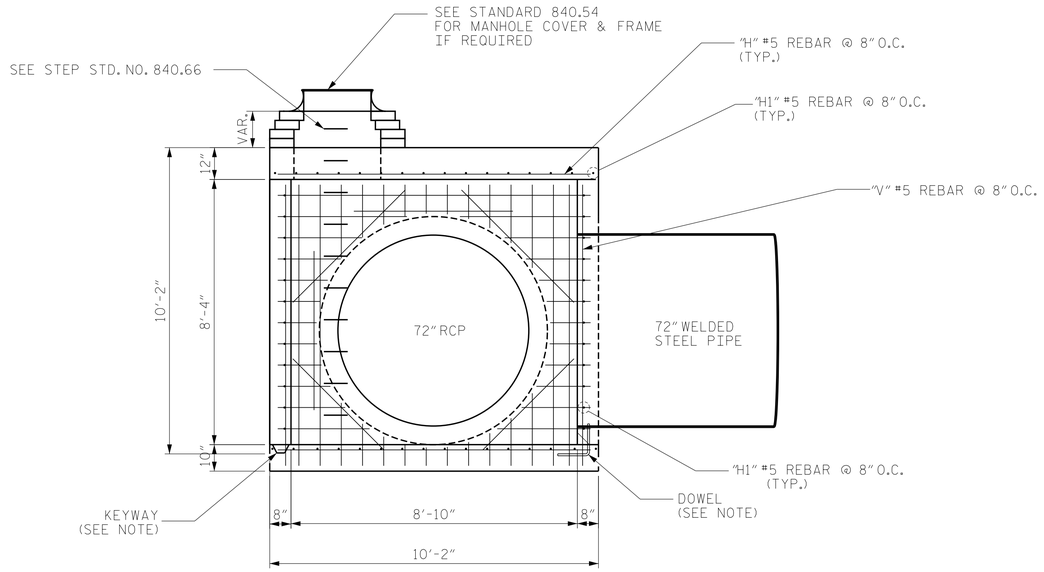
* NO DEDUCTION HAS BEEN MADE FOR PIPES



DOWEL



PLAN VIEW 0608



SECTION B-B

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 20779 HARDY L. WILLIS
Hardy L. Willis
8/16/2022

V&M Vaughn & Melton Consulting Engineers
Asheville, North Carolina 828-253-2796
Boone, NC 828-355-9933
Tri-Cities, TN 423-467-8401
Knoxville, TN 865-546-5800
Spartanburg, SC 864-574-4775
Charleston, SC 843-974-5650
Middlesboro, KY 606-248-6600
Atlanta, GA 770-627-3590
Raleigh, NC 919-977-9455
Charlotte, NC 704-357-0488

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DWN. BY: AW DATE: 07/2022
CKD. BY: HLW DATE: 07/2022

U-2579AA
FORSYTH COUNTY

SPECIAL 72" JUNCTION BOX 0608 WITH SLAB LID

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	1
						TOTAL SHEETS
						1

wdcrutcher
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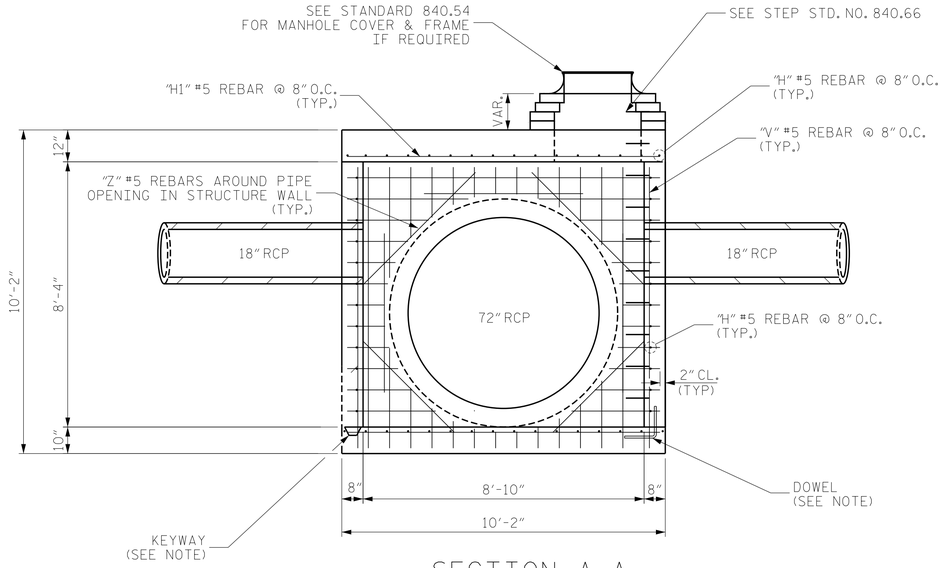


SECTION A-A

GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE ALL JUNCTION BOXES OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.

OPTIONAL CONSTRUCTION-MONOLITHIC POUR, 2" KEYWAY, OR # 4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

INSTALL MANHOLE IN POSITION AS DIRECTED BY THE ENGINEER. CUT AND BEND ALL REBAR CROSSING THIS OPENING TO ALLOW 2" MINIMUM CONCRETE COVERAGE.

CHAMFER ALL EXPOSED CORNERS 1".

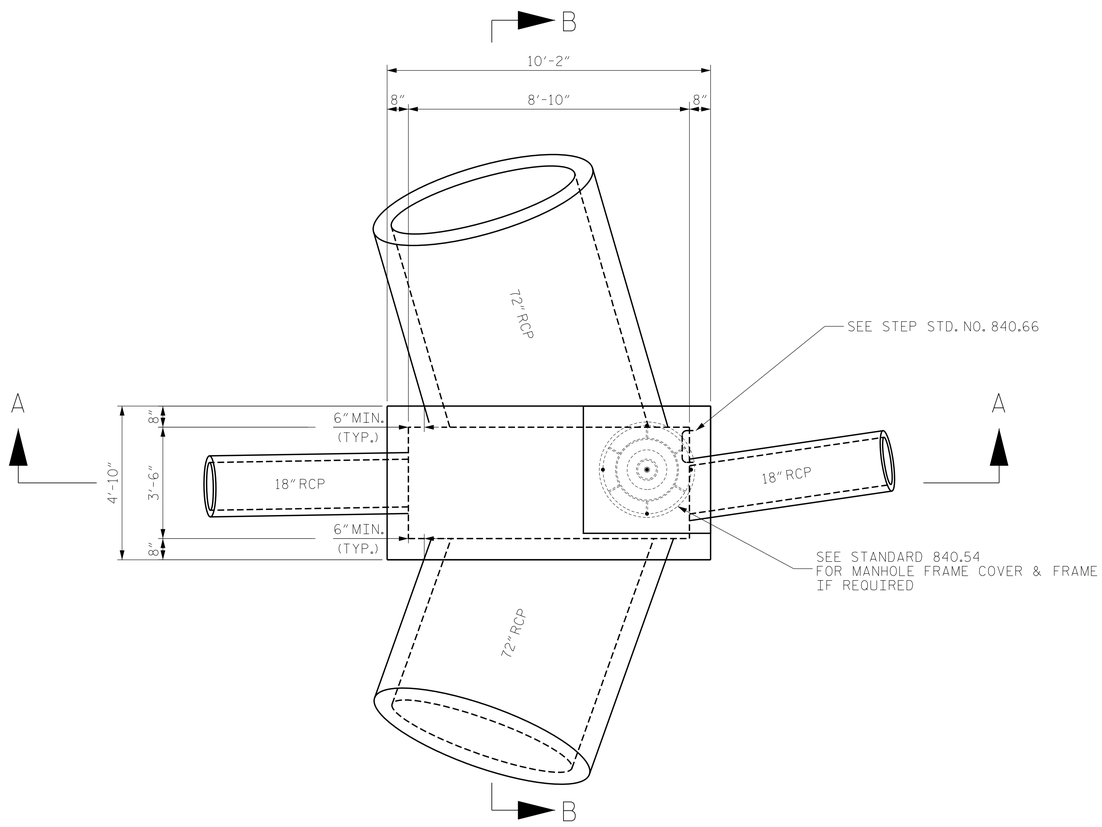
2" MINIMUM CONCRETE COVERAGE ON ALL REBAR.

BILL OF MATERIALS
FOR BOX 0607

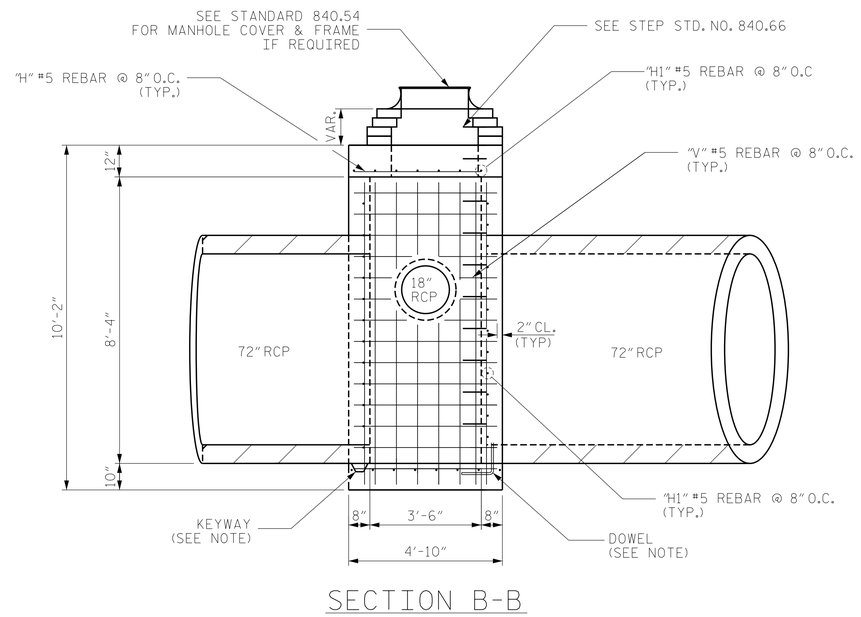
BAR	NO.	SIZE	LENGTH	WEIGHT
H	56	#5	4'-6"	263
H1	38	#5	9'-10"	390
V	48	#5	8'-10"	442
Z	16	#5	5'-0"	83
TOTAL REINF. STEEL (LBS.)				1178
TOTAL CONC. (CU. YDS.)				* 8.96

* NO DEDUCTION HAS BEEN MADE FOR PIPES

DOWEL



PLAN VIEW 0607



SECTION B-B

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 20777 HARDY L. WILLIS
DocuSigned by: Hardy L. Willis
8/16/2022

V&M Vaughn & Melton
Consulting Engineers
Asheville, North Carolina
828-253-2796
Boone, NC 828-355-9933
Tri-Cities, TN 423-467-8401
Knoxville, TN 865-546-5800
Spartanburg, SC 864-574-4775
Charleston, SC 843-974-5650
Middlesboro, KY 606-248-6600
Atlanta, GA 770-627-3590
Raleigh, NC 919-977-9455
Charlotte, NC 704-357-0488

U-2579AA
FORSYTH COUNTY

SPECIAL 72" JUNCTION BOX
0607 WITH SLAB LID

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DWN. BY: AW DATE: 07/2022
CKD. BY: HLW DATE: 07/2022

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	1
						TOTAL SHEETS
						1

wdcrutcher
DGN: V:\NCT\Transportation\03630-07 U2579AA\Structures\special boxes\Special Junction box0607.dgn
TIME: 10:28 AM on Thursday, July 28, 2022

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-2579AA	3B-1

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SUMMARY OF EARTHWORK

IN CUBIC YARDS

STATION	STATION	TOTAL UNCLASS.	UNDERCUT	EMBANK. +%	BORROW	TOTAL WASTE
PHASE 1 AREA 1						
-L- 10+00.00	38+00.00	91,642		174,583	82,941	0
-Y2FLYCA- 14+37.03	28+73.60 (Begin Bridge)	581		141,498	140,917	0
-Y2FLYCA - 33+46.60 (End Bridge)	38+40.00 (Begin Bridge)	0		83,387	83,387	0
-Y2FLYCA- 48+96.00	58+38.51	2,683		38,365	35,682	0
-Y2RPB- 15+88.07	45+67.69	161,158		35,852	0	125,306
	SUBTOTAL	256,064	0	473,685	342,927	125,306
PHASE 1 AREA 2						
-Y1- 18+00.00	22+24.00(Begin Bridge)	79		12,162	12,083	0
-Y1- 23+40.76 (End Bridge)	28+91.00 (Begin Bridge)	4		86,572	86,568	0
-Y1Rev- 35+00 (End Bridge)	42+29.04 LB	122		29,146	29,024	0
Y1 42+24.01 LA RT	46+00.00	83		32	0	51
-Y1DRV1- 10+00.00	13+50.00	10		2,970	2,960	0
	SUBTOTAL	298	0	130,881	130,634	51
PHASE 1 AREA 3						
-Y2- NBL 10+44.79 RT	17+00.00	193		2,548	2,355	0
-Y2- NBL 21+92.06 RT (End Bridge)	53+50.00	844		5,288	4,444	0
-Y2- NBL 53+50.00 RT	83+16.06	14		16,360	16,346	0
-Y2- NBL 83+16.00 RT	91+65.82	90		4,346	4,256	0
-Y2- SBL 2+46.11 LT	20+92 (Begin Bridge)	592		6,481	5,889	0
-Y2- SBL 23+12.76 LT (End Bridge)	25+00.00	62		861	799	0
-Y2- SBL 26+50.00 LT	39+50.00	268		3,834	3,566	0
-Y2- SBL 39+50 LT	46+50.00	728		246	0	482
-Y2-SBL 46+50 LT	91+19.35	498		16,776	16,278	
-Y2RPC- 10+00.00 LT	16+89.00	133		273	140	0
-L- 38+00.00 LT	44+00.00	259		46,466	46,207	0
-L- 38+00.00 RT	42+00.00	630		20,574	19,944	0
-L- 52+50.00 Med	91+10.00	1,525		13,552	12,027	0
-Y2FLYAB- 20+50.00	20+74.03 (Begin Bridge)	0		733	733	0
-Y2FLYAB- 29+76.03(End Bridge)	32+00.00	1,082		5,265	4,183	
-SBL DET1- 10+00.00	43+08.00	11,139		22,742	11,603	
-NBL DET1- 10+00.00	23+81.00	462		13,299	12,837	
-Y3RPB- 15+00.00	31+66.82	57,184	522	6,297	0	51,410
-Y3LPB- 16+00.00	22+03.48	6,099	305	677	0	5,727
-Y3RPC- 15+00.00	25+85.85	133		59,239	59,106	0
-Y3LPC- 15+00.00	17+75.63	286		6,850	6,564	0
-Y4- 10+11.88	22+00.00	1,393		13,362	11,969	0
	SUBTOTAL	83,614	827	266,069	239,246	57,618
PHASE 2 AREA 2						
-Y1- 13+00.00	-Y1- 13+00.00	676		737	61	0
Y1 41+25.00 LT	Y1 41+25.00 LT	489		79	0	410
	SUBTOTAL	1,165	0	816	61	410

NOTE: Earthwork quantities calculated by Vaughn & Melton Consulting Firm. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

8/24/2022 6:22:36 AM
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ldot.tpl

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-2579AA	3B-2

SUMMARY OF EARTHWORK (CONT.)

IN CUBIC YARDS

STATION	STATION	TOTAL UNCLASS.	UNDERCUT	EMBANK. +%	BORROW	TOTAL WASTE
PHASE 2 AREA 3						
-Y2- SBL 2+46.11 RT	21+39.75 (Begin Bridge)	1,379		15,325	13,946	0
-Y2SBL- 23+38.12 RT (End Bridge)	28+00.00	1,688		2,621	933	0
-Y2SBL- 32+50.00 RT	54+00.00	16,075		749	0	15,326
-Y2SBL- 72+00.00 RT	91+19.35	1,920		32,149	30,229	0
-Y2SBL- 25+00.00 LT	26+50.00	31		432	401	0
-Y2RPC- 16+89.00	25+16.00	2,877		1,244	0	1,633
-Y2RPC- 10+00.00 RT	16+89.00	847		97	0	750
-L- 52+00.00 RT	87+25.00	13,259		16,196	2,937	0
-Y2NBL- 10+44.73 LT	19+79.00 (Begin Bridge)	2,067		2,346	279	0
-Y2NBL- 21+84 (END BRIDGE) LT	54+50.00	18,787		6,677	0	12,110
-Y2NBL- 63+50.00 LT	90+99.00	2,267		6,396	4,129	0
-Y2NBL-16+50.00 RT	20+27.88 (Begin Bridge)	199		1,544	1,345	0
-Y2FLYAB- 16+26.44	20+50.00	1,530		6,258	4,728	0
-L- 52+00.00 LT	91+10.00	9,050		27,826	18,776	0
-Y3LPB- 12+57.08	14+00.00	3,811		0	0	3,811
-Y3RPC- 13+97.98	15+00.00	4		2,278	2,274	0
-Y3RPB- 13+91.14	15+00.00	21		2,282	2,261	0
-Y2A- 10+00	17+32.16	94		3,906	3,812	0
	SUBTOTAL	75,906	0	128,327	86,051	33,630
PHASE 3 AREA 3						
-Y2SBL- 28+00.00 RT	32+50.00	927		742	0	185
-Y3LPB- 14+00.00	16+00.00	3,495	195	312	0	3,378
-Y3LPC- 12+43.96	15+00.00	4,552		22	0	4,530
-NBLDET2- 10+00.00	32+10.00	1,672		9,102	7,430	0
-Y2NBL- 54+50.00 LT	63+50.00	991		505	0	486
-Y2SBL- 54+00.00 RT	72+00.00	2,824		4,680	1,856	0
-Y2FLYAB- 32+00.00	37+31.77	3,715		1,636	0	2,079
-L- 44+00.00 LT	52+00.00	8,304		7,007	0	1,297
-L- 42+00.00 RT	52+00.00	15,442		4,454	0	10,988
	SUBTOTAL	41,922	195	28,460	9,286	22,943
TOTAL		458,969	1,022	1,028,237	808,204	239,958
MATERIAL FOR SHOULDER CONSTRUCTION				2,040	2,040	0
LOSS DUE TO CLEARING & GRUBBING		-25,000		0	25,000	0
ADDITIONAL UNDERCUT	(FILLED WITH SEL. GRAN. MAT.)		200	240	240	200
ADDITIONAL UNDERCUT	GRADE POINT		500	600	600	500
SELECT GRANULAR MATERIAL				-1,464	-1,464	0
ROCK WASTE TO REPLACE BORROW					-1,365	-1,365
ADJUST FOR ROCK WASTE				-410	-410	
WASTE IN LIEU OF BORROW		0			-224,356	-224,356
PROJECT TOTAL		433,969	1,722	1,029,243	608,489	14,937
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT					30,424	
GRAND TOTAL		433,969	1,722	1,029,243	638,913	14,937
SAY		435,000	1,750		640,000	

NOTE: Earthwork quantities calculated by Vaughn & Melton Consulting Firm. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

SELECT GRANULAR MATERIAL = 22,450 CY
GEOTEXTILE FOR PAVEMENT STABILIZATION = 47,367 SY
GEOTEXTILE FOR SOIL STABILIZATION = 127,000 SY
CLASS IV SUBGRADE STABILIZATION = 100,200 TONS
EST. DDE = 7,500 CUBIC YARDS
PAVEMENT STRUCTURE VOLUME FOR
-L-, -Y2FLYAB-, -Y3RPB- AND -Y3RPB- = 7,795 CUBIC YARDS
TOTAL SHALLOW UNDERCUT = 2,500 CUBIC YARDS

NOTE : UNCLASSIFIED EXCAVATION NOT TO BE USED IN THE TOP 3' OF EMBANKMENT OR BACK FILL:

-L-	17+25	TO 19+75	11,679 CY
-Y2FLYAB-	31+25	TO 34+75	1,219 CY
-Y2RPB-	17+25	TO 20+25	15,037 CY
-Y2RPB-	28+25	TO 31+75	24,180 CY

QUANTITY OF UNSUITABLE UNCLASSIFIED EXCAVATION TO BE USED AT THE DISCRETION OF THE ENGINEER.

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COMPUTED BY: DJM DATE: 9-2-19
CHECKED BY: KTB DATE: 9-17-19

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
STATEWIDE
LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

NOTE: Invert Elevations are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300–5".

ABBREVIATIONS

C.B.	CATCH BASIN	J.B.	JUNCTION BOX
N.D.I.	NARROW DROP INLET	M.H.	MANHOLE
D.I.	DROP INLET	T.B.D.I.	TRAFFIC BEARING DROP INLET
G.D.I.	GRATED DROP INLET	T.B.J.B.	TRAFFIC BEARING JUNCTION BOX
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)		

PROJECT REFERENCE NO.	SHEET NO.
U-2579AA	3D-1

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SIDE DRAIN PIPE (RCP, CSP, CAAP, HDPE, or PVC) SIZE: 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE
–L– STA. 14+10	RT.	0401	0403		870.5′	845.5′			136′						X		X	
–L– STA. 14+80	RT.	0402	0403		843.8′	843.5′							8′			X	X	X
–L– STA. 14+80	RT.		0403	851.5′	843.5′													
–L– STA. 15+10	C/L	0403	0404		843.5′	832.1′												
–L– STA. 15+60	LT	0404		840.4′	832.1′													
–L– STA. 15+74	LT	0404	0405		832.1′	831.0′							24′			X	X	X
–L– STA. 16+00	RT.	0406		866.7′	864.0′													
–L– STA. 16+00	C/L	0406	0407		864.0′	861.3′												
–Y2FLYCA– 57+53	RT.	0407		866.0′	861.3′													
–Y2FLYCA– 57+50	RT.	0407	0408		861.3′	832.8′			68′						X		X	
–L– STA. 21+00	RT	0409		848.0′	845.3′													
–L– STA. 21+00	C/L	0409	0410		845.3′	842.3′												
–L– STA. 21+00	LT	0410		845.1′	842.1′													
–L– STA. 22+50	LT	0410	0503		842.1′	825.0′				424′							X	
–Y2FLYCA– 52+10	RT	0532		856.9′	854.1′													
–Y2FLYCA– 52+10	C/L	0532	0533		854.1′	849.7												
–Y2FLYCA– 50+10	RT	0530		858.5′	855.8′													
–Y2FLYCA– 50+10	C/L	0530	0531		855.8′	840.8′												
–L– STA. 25+50	LT	0503		829.3′	824.0′													
–L– STA. 25+50	LT	0503	0504		824.0′	823.8′					52′						X	
–L– STA. 29+00	C/L	0506		825.3′	822.6′													
–L– STA. 30+50	C/L	0506	0507		822.6′	819.8′			248′								X	
–L– STA. 31+50	C/L	0507		823.8′	819.5′													
–L– STA. 31+50	LT	0507	0510		819.5′	818.5′												
–L– STA. 31+50	LT	0510		824.0′	818.0′													
–L– STA. 31+30	LT	0510	0511		818.0′	817.7′				36′							X	
–L– STA. 31+10	LT	0511		824.0′	817.7′													
–L– STA. 31+10	LT	0511	0512		817.7′	813.5′				32′					X		X	
–L– STA. 32+50	LT	0510	0559		818.8′	821.9′			164′								X	
–L– STA. 33+25	LT	0559		824.7′	821.9′													
–L– STA. 34+50	LT	0559	0509		821.9′	824.4′			212′								X	
–L– STA. 35+50	LT	0509		827.7′	824.4′													
–L– STA. 35+50	LT	0509	0508		824.4′	824.8′												
–L– STA. 35+50	C/L	0508		827.6′	824.8′													
–L– STA. 36+85	C/L	0513			830.1′	811.4′												
–L– STA. 39+00	LT	0518	0517		818.0′	833.3′				40′					X		X	
–L– STA. 39+00	LT	0517		836.9′	833.3′													
–L– STA. 39+00	C/L	0517	0516		833.3′	833.9′												
–L– STA. 39+00	C/L	0516		836.9′	833.9′													
–L– STA. 40+00	C/L	0516	0515		834.1′	840.0′			188′								X	
SHEET TOTAL								812′	668′	68′	52′		32′					

STATION	C.S. PIPE 15"	18"	24"	48"	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 15"	18"	24"	30"	36"	42"	48"
	.064	.064	.064	.109														
–L– STA. 14+10																		
–L– STA. 14+80																		
–L– STA. 14+80																		
–L– STA. 15+10																		
–L– STA. 15+60																		
–L– STA. 15+74																		
–L– STA. 16+00																		
–L– STA. 16+00													136′					
–Y2FLYCA– 57+53																		
–Y2FLYCA– 57+50																		
–L– STA. 21+00																		
–L– STA. 21+00					96′													
–L– STA. 21+00																		
–L– STA. 22+50																		
–Y2FLYCA– 52+10																		
–Y2FLYCA– 52+10	80′																	
–Y2FLYCA– 50+10																		
–Y2FLYCA– 50+10	56′																	
–L– STA. 25+50																		
–L– STA. 25+50																		
–L– STA. 29+00																		
–L– STA. 30+50																		
–L– STA. 31+50																		
–L– STA. 31+50												76′						
–L– STA. 31+50																		
–L– STA. 31+30																		
–L– STA. 31+10																		
–L– STA. 31+10																		
–L– STA. 32+50																		
–L– STA. 33+25																		
–L– STA. 34+50																		
–L– STA. 35+50																		
–L– STA. 35+50												76′						
–L– STA. 35+50																		
–L– STA. 36+85			144′															
–L– STA. 39+00																		
–L– STA. 39+00																		
–L– STA. 39+00												76′						
–L– STA. 39+00																		
–L– STA. 40+00																		
SHEET TOTAL	136		144′		96′							136′						

STATION	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. "A" + (1.3 X COL. B') LIN. FT. PER EACH (0' THRU 5.0')	5.0' THRU 10.0' A	10.0' AND ABOVE B	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH GRATE STD. 840.22	G.D.I. FRAME WITH TWO GRATES STD. 840.20	G.D.I. FRAME WITH TWO GRATES STD. 840.22	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	SIDE DRAIN PIPE ELBOWS	T.B.D.I. STD. 840.35	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD. 840.72	BERM DITCH OUTLET STD. 850.10 PER EACH	BERM DITCH OUTLET STD. 850.11 PER EACH	CONCRETE TRANSITIONAL SECTIONS	G.D.I. FRAME WITH TWO GRATES STD. 840.29	T.B.D.I. STD. 840.36	STEEL GRATES AND FRAME STD. 840.37	PIPE REMOVAL LIN.FT.	T.B.J.B. STD. 840.34	FLOWABLE FILL C.Y.	REMARKS
–L– STA. 14+10																	2–18″												
–L– STA. 14+80	4.5														1	1	1												
–L– STA. 14+80			1	3.0′																									
–L– STA. 15+10																													PIPE NOT BURIED
–L– STA. 15+60			1	3.3′												1	1												
–L– STA. 15+74																													
–L– STA. 16+00			1										1																
–L– STA. 16+00																													
–Y2FLYCA– 57+53			1										1																
–Y2FLYCA– 57+50																	2–18″												
–L– STA. 21+00			1										1																
–L– STA. 21+00																													
–L– STA. 21+00			1										1																
–L– STA. 22+50																													
–Y2FLYCA– 52+10			1										1																
–Y2FLYCA– 52+10																	2–15″												
–Y2FLYCA– 50+10			1										1																
–Y2FLYCA– 50+10																	2–15″												
–L– STA. 25+50			1	0.3′									1																
–L– STA. 25+50																													
–L– STA. 29+00			1										1																
–L– STA. 30+50																													
–L– STA. 31+50			1										1																
–L– STA. 31+50																													
–L– STA. 31+50			1	0.9′									1																
–L– STA. 31+30																													
–L– STA. 31+10			1	1.3′									1																
–L– STA. 31+10																	2–24″												
–L– STA. 32+50																													
–L– STA. 33+25			1										1																
–L– STA. 34+50																													
–L– STA. 35+50			1										1																
–L– STA. 35+50																													
–L– STA. 35+50			1										1																
–L– STA. 36+85																	2–24″												
–L– STA. 39+00																	2–18″												
–L– STA. 39+00			1										1																
–L– STA. 39+00																													
–L– STA. 39+00			1										1																
–L– STA. 40+00																													
SHEET TOTAL	4.5		18	8.8′	0′								4	12	1	8	8	2	2	2–24″ 6–18″	4–15″ 2–24″								

4/04/06

COMPUTED BY: DJM DATE: 9-2-19
CHECKED BY: KTB DATE: 9-17-19

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
U-2579AA	3D-2

NOTE: Invert Elevations are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300–5".

STATEWIDE

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

ABBREVIATIONS

C.B.	CATCH BASIN	J.B.	JUNCTION BOX
N.D.I.	NARROW DROP INLET	M.H.	MANHOLE
D.I.	DROP INLET	T.B.D.I.	TRAFFIC BEARING DROP INLET
G.D.I.	GRATED DROP INLET	T.B.J.B.	TRAFFIC BEARING JUNCTION BOX
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)		

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SIDE DRAIN PIPE (RCP, CSP, CAAP, HDPE, or PVC) SIZE	12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE
							THICKNESS OR GAUGE												
–L– STA. 40+90	C/L	0515		843.4′	840.0′														
–L– STA. 40+90	RT	0515	0514		840.0′	843.1′													
–L– STA. 41+00	RT	0514		845.9′	843.1′														
–L– STA. 44+00	RT	0519		853.7′	849.0′														
–Y2RPC– 21+00	LT	0519	0543		849.7′	862.4′			76′							X		X	
–Y2RPC– 21+00	LT	0543		865.5′	862.4′														
–L– STA. 44+13	C/L	0519	0520		849.0′	830.5′													
–Y2RPC– 24+13	RT	0521		868.2′	865.5′														
–Y2RPC– 23+60	RT	0521	0523		865.5′	850.6′			100′							X		X	
–Y2RPC– 23+15	RT	0523	0522		848.8′	850.5′							36′					X	
–Y2RPC– 23+15	RT	0523		859.5′	848.8′														
–Y2RPC– 22+85	RT	0523	0555		850.3′	858.5′				56′						X		X	
–L– STA. 46+00	LT	0524		860.8′	858.1′														
–L– STA. 46+00	LT	0524	0525		858.1′	853.9′													
–L– STA. 46+00	LT	0525		857.9′	853.1′														
–L– STA. 45+50	LT	0525	0526		853.1′	828.0′					96′					X		X	
–L– STA. 45+03	LT	0526		832.2′	827.0′														
–L– STA. 45+60	C/L	0523	0526		848.8′	827.0′													
–L– STA. 45+60	LT	0526	0527		827.0′	826.0′							24′					X	
–Y2FLYCA– 36+62	LT	0528		889.0′	883.4′														
–Y2FLYCA– 36+62	LT	0528	0529		883.4′	863.5′			56′							X		X	
–Y2RPC– 10+50	LT	0534		853.0′	850.3′														
–Y2RPC– 10+50	C/L	0534	0535		850.3′	847.9′													
–Y2RPC– 10+50	RT	0535		850.6′	847.6′														
–Y2SBL– 98+80	RT	0535	1451		847.6′	847.0′				64′								X	
–Y2RPC– 15+03	RT	0536	0537		878.6′	853.9′					52′							X	
–Y2RPC– 15+03	RT	0537		858.3′	853.9′														
–Y2RPC– 15+03	RT	0537	0538		853.9′	853.6′													
–Y2FLYAB– 33+69	RT	0539	0540		845.6′	844.9′													
–Y2FLYAB– 33+69	RT	0540		853.3′	844.9′														
–Y2FLYAB– 34+36	RT	0540	0557		844.9′	844.5′							128′					X	
–Y2FLYAB– 35+03	RT	0557		852.1′	844.5′														
–Y2FLYAB– 35+63	RT	0557	0558		844.5′	844.2′													
–Y2FLYAB– 36+23	RT	0558		850.3′	844.2′														
–Y2FLYAB– 37+04	RT	0558	0542		844.2′	839.2′													
–Y2FLYAB– 37+30	RT	0541	0542		839.4′	839.2′													
–Y2FLYAB– 37+30	RT	0542		845.1′	839.2′														
–Y2FLYAB– 37+30	RT	0542	1450		839.2′	837.0′													
–Y2FLYAB– 35+50	RT																		
SHEET TOTAL									232′	120′	148′	128′	60′						

STATION	C.S. PIPE 15"	18"	24"	48"	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 15"	18"	24"	30"	36"	42"	48"	15" R.C. PIPE CLASS V	18" R.C. PIPE CLASS V	42" R.C. PIPE CLASS V
	.064	.064	.064	.109																	
–L– STA. 40+90																					
–L– STA. 40+90					84′																
–L– STA. 41+00																					
–L– STA. 44+00																					
–Y2RPC– 21+00																					
–Y2RPC– 21+00																					
–L– STA. 44+13																					
–Y2RPC– 24+13																					
–Y2RPC– 23+60																					
–Y2RPC– 23+15																					
–Y2RPC– 23+15																					
–Y2RPC– 22+85																					
–L– STA. 46+00																					
–L– STA. 46+00					96′																
–L– STA. 46+00																					
–L– STA. 45+50																					
–L– STA. 45+03																					
–L– STA. 45+60																					
–L– STA. 45+60																					
–Y2FLYCA– 36+62																					
–Y2FLYCA– 36+62																					
–Y2RPC– 10+50																					
–Y2RPC– 10+50					100′																
–Y2RPC– 10+50																					
–Y2SBL– 98+80																					
–Y2RPC– 15+03																					
–Y2RPC– 15+03																					
–Y2RPC– 15+03						8′															
–Y2FLYAB– 33+69								36′													
–Y2FLYAB– 33+69																					
–Y2FLYAB– 34+36																					
–Y2FLYAB– 35+03																					
–Y2FLYAB– 35+63													116′								
–Y2FLYAB– 36+23																					
–Y2FLYAB– 37+04													160′								
–Y2FLYAB– 37+30					8′																
–Y2FLYAB– 37+30																					
–Y2FLYAB– 37+30								84′													
–Y2FLYAB– 35+50																					
SHEET TOTAL					288′	8′	36′	84′					276′						124′	124′	

STATION	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	CU. YDS. C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. "A" + (1.3 X COL. "B") LIN. FT. PER EACH (0' THRU 5.0')	LIN. FT. 5.0' THRU 10.0' A	LIN. FT. 10.0' AND ABOVE B	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH GRATE STD. 840.22	G.D.I. FRAME WITH TWO GRATES STD. 840.20	G.D.I. FRAME WITH TWO GRATES STD. 840.22	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	SIDE DRAIN PIPE ELBOWS	T.B.D.I. STD. 840.35	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD. 840.72	BERM DITCH OUTLET STD. 850.10 PER EACH	BERM DITCH OUTLET STD. 850.11 PER EACH	CONCRETE TRANSITIONAL SECTIONS	G.D.I. FRAME WITH TWO GRATES STD. 840.29	T.B.D.I. STD. 840.36	STEEL GRATES AND FRAME STD. 840.37	PIPE REMOVAL LIN.FT.	T.B.J.B. STD. 840.34	FLOWABLE FILL C.Y.	REMARKS
–L– STA. 40+90			1																													
–L– STA. 40+90													1																			
–L– STA. 41+00			1										1																			
–L– STA. 44+00			1									1					1															
–Y2RPC– 21+00																			2–15"													
–Y2RPC– 21+00			1										1																			
–L– STA. 44+13																															13.8	TRENCHLESS INSTALLATION
–Y2RPC– 24+13			1										1																			
–Y2RPC– 23+60																			2–15"													
–Y2RPC– 23+15	3.4																															
–Y2RPC– 23+15			1	5.0′	0.7′										1	1																
–Y2RPC– 22+85																			2–18"													
–L– STA. 46+00			1										1																			
–L– STA. 46+00																																
–L– STA. 46+00			1										1																			
–L– STA. 45+50																			2–24"													
–L– STA. 45+03			1	0.2′												1	1															
–L– STA. 45+60																															99.6	TRENCHLESS INSTALL. (NOT BURIED)
–L– STA. 45+60																																
–Y2FLYCA– 36+62			1	0.6′									1		1																	
–Y2FLYCA– 36+62																			2–15"													
–Y2RPC– 10+50			1										1																			
–Y2RPC– 10+50																															3.7	
–Y2RPC– 10+50			1										1																	64′		REMOVE DI, FES
–Y2SBL– 98+80																																
–Y2RPC– 15+03																			2–24"			1								54′		REMOVE DI, 24" CMP
–Y2RPC– 15+03			1										1																			
–Y2RPC– 15+03																												0.5526				
–Y2FLYAB– 33+69																												0.6560				REMOVE DI
–Y2FLYAB– 33+69			1	3.4′									1																			
–Y2FLYAB– 34+36																																
–Y2FLYAB– 35+03			1	2.6′									1																			
–Y2FLYAB– 35+63																																
–Y2FLYAB– 36+23			1	1.2′									1																			
–Y2FLYAB– 37+04																																
–Y2FLYAB– 37+30																												0.3990				REMOVE DI
–Y2FLYAB– 37+30			1	0.9′									1																			
–Y2FLYAB– 37+30																																
–Y2FLYAB– 35+50																														406′		
SHEET TOTAL	3.4		15	13.9′	0.7′								6	9	1	3	12	2	2	6–15" 2–18" 4–24"		1.6076	1						470′		117.1	

9/9/2022
U-2579AA_rdy_drainage_sum.dgn
USER:kblack

4/04/06

COMPUTED BY: DJM DATE: 9-2-19
CHECKED BY: KTB DATE: 9-17-19

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
STATEWIDE
LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

PROJECT REFERENCE NO.	SHEET NO.
U-2579AA	3D-3

NOTE: Invert Elevations are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300–5".

ABBREVIATIONS

C.B.	CATCH BASIN	J.B.	JUNCTION BOX
N.D.I.	NARROW DROP INLET	M.H.	MANHOLE
D.I.	DROP INLET	T.B.D.I.	TRAFFIC BEARING DROP INLET
G.D.I.	GRATED DROP INLET	T.B.J.B.	TRAFFIC BEARING JUNCTION BOX
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)		

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SIDE DRAIN PIPE (RCP, CSP, CAAP, HDPE, or PVC) SIZE	12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE
							THICKNESS OR GAUGE												
–Y1– STA. 37+13	C/L	0545			818.0'	816.9'							132'						
–Y2FLYAB– 30+11	LT	0546		870.2'	867.5'														
–Y2FLYAB– 30+11	LT	0546	0547		867.5'	865.3'			76'									X	
–Y2FLYAB– 30+90	LT	0547		868.0'	865.0'														
–Y2FLYAB– 30+90	LT	0547	0548		865.0'	856.8'				52'						X		X	
–Y1– STA. 45+50	LT	0549	0550		823.6'	819.2'						104'						X	
–Y1– STA. 45+05	LT	0550		824.9'	819.2'														
–Y1– STA. 45+05	C/L	0550	0551		819.2'	818.6'							72'						
–Y1– STA. 45+25	LT	0552	0553		825.3'	820.2'					36'					X		X	
–Y1– STA. 45+10	LT	0553		824.9'	819.2'														
–Y1– STA. 45+10	C/L	0553	0554		819.2'	818.6'							64'						
–Y1– STA. 42+35	LT	0556							48'									X	
–L– STA. 25+50	RT	0501		834.4'	831.7'														
–L– STA. 25+50	RT	0501	0502		831.7'	829.5'													
–L– STA. 25+50	CL	0502		832.2'	829.2'														
–L– STA. 25+50	LT	0502	0503		829.2'	825.0'													
–Y1– STA. 28+52	LT	0561		863.0'	859.5'														
–Y1– STA. 27+71	LT	0561	0562		859.5'	859.1'													
–Y1– STA. 26+90	LT	0562		865.1'	859.1'														
–Y1– STA. 26+90	LT	0562	0563		859.1'	822.1'			100'							X		X	
–Y1– STA. 35+19	LT	0564		843.5'	840.8'														
–Y1– STA. 33+21	CL	0564	0565		840.8'	839.0'													
–Y1– STA. 35+55	LT	0565		849.8'	839.0'														
–Y1– STA. 35+55	CL	0565	0566		839.0'	838.9'													
–Y1– STA. 35+55	RT	0566		843.5'	838.9'														
–Y1– STA. 35+50	RT	0566	0567		838.9'	813.5'			68'										
–Y1– STA. 38+62	LT	0572		831.8'	829.1'														
–Y1– STA. 38+62	LT	0572	0573		829.1'	820.6'			32'										
–Y1– STA. 27+68	RT	0574		864.4'	861.6'														
–Y1– STA. 27+68	RT	0574	0575		861.6'	819.0'			96'										
–Y2FLYCA– 38+10	LT	0571		886.6'	883.9'														
–Y2FLYCA– 37+36	LT	0571	0528		883.9'	883.4'			144'									X	
–L– STA. 52+00	C/L	0601		876.0'	873.3'														
–L– STA. 52+06	RT	0601	0602		873.3'	872.5'													
–L– STA. 52+11	RT	0602		878.3'	872.5'														
–L– STA. 52+13	RT	0602	0603		872.5'	871.3'			20'									X	
–L– STA. 52+14	RT	0603		874.9'	871.3'														
–L– STA. 52+72	RT	0603	0627		871.3'	848.7			116'							X		X	
SHEET TOTAL									624'	52'	36'		104'						

C.S. PIPE (CLASS III) SIZE	15"	18"	24"	48"
THICKNESS OR GAUGE	.064	.064	.064	.109

4/04/06

COMPUTED BY: DJM DATE: 9-2-19
CHECKED BY: KTB DATE: 9-17-19

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
STATEWIDE
LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

NOTE: Invert Elevations are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300–5".

ABBREVIATIONS

C.B.	CATCH BASIN	J.B.	JUNCTION BOX
N.D.I.	NARROW DROP INLET	M.H.	MANHOLE
D.I.	DROP INLET	T.B.D.I.	TRAFFIC BEARING DROP INLET
G.D.I.	GRATED DROP INLET	T.B.J.B.	TRAFFIC BEARING JUNCTION BOX
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)		

PROJECT REFERENCE NO.	SHEET NO.
U-2579AA	3D-11

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SIDE DRAIN PIPE (RCP, CSP, CAAP, HDPE, or PVC) SIZE												C.S. PIPE SIZE				R.C. PIPE (CLASS III) SIZE							R.C. PIPE (CLASS IV) SIZE						
							12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	15"	18"	24"	48"	15"	18"	24"	30"	36"	42"	48"	15"	18"	24"	30"	36"	42"	48"
																			THICKNESS OR GAUGE																
–Y1– STA. 17+26	LT	1621		858.8′	848.8′																														
–Y1– STA. 17+26	LT	1621	1614		848.8′	848.8′					8′					X																				
–Y4– STA. 12+66	LT	1701		863.6′	854.2′																														
–Y4– STA. 12+70	LT	1701	1702		854.2′	853.2′				32′						X	X	X																		
–Y4– STA. 12+85	LT	1703			853.0′	842.5′																				148′									
–Y4– STA. 16+00	RT	1704			855.7′	852.3′																		64′											
–Y2RPB– STA. 48+85	LT	1460		840.1′	837.4′																														
–Y2RPB– STA. 48+85	LT	1460	1461		837.4′	836.4′		68′								X	X	X																		
–Y2RPB– STA. 48+85	LT	1461		839.1′	836.4′																														
–Y2RPB– STA. 48+85	LT	1461	1462		836.4′	827.0′		32′							X		X																			
–Y1REV– STA. 20+65	LT	1622		861.9′	859.2′																														
–Y1REV– STA. 20+65	LT	1622	1623		859.2′	853.0′		24′							X		X																			
–Y1REV– STA. 19+75	RT	1624		861.2′	858.4′																														
–Y1REV– STA. 19+75	RT	1624	1625		858.4′	853.0′		32′							X		X																			
–Y1REV– STA. 23+70	LT	1626		864.5′	861.8′																														
–Y1REV– STA. 23+70	LT	1626	1627		861.8′	852.8′		28′							X		X																			
–Y1REV– STA. 23+70	RT	1628		864.5′	861.8′																														
–Y1REV– STA. 23+70	RT	1628	1629		861.8′	843.6′		44′							X		X																			
SHEET TOTAL								228′	32′		8′													64′		148′										
SHEET 3D–1 TOTAL								812′	668′	68′	52′		32′						136′		144′		96′							136′							
SHEET 3D–2 TOTAL								232′	120′	148′	128′	60′											288′		8′	36′	84′					276′				
SHEET 3D–3 TOTAL								624′	52′	36′		104′											180′	96′		132′	136′			192′							
SHEET 3D–4 TOTAL								168′	320′	140′	672′								20′				344′		212′	28′										
SHEET 3D–5 TOTAL								540′	52′	108′	136′	92′											56′	24′												
SHEET 3D–6 TOTAL								320′	176′	76′		728′	148′											60′	24′	128′	100′				64′					
SHEET 3D–7 TOTAL								392′		52′									148′	40′			144′	56′		136′				480′	264′	72′		172′			
SHEET 3D–8 TOTAL								248′	96′	112′	236′											88′	64′						20′		92′					
SHEET 3D–9 TOTAL								356′	184′	192′	20′	52′		336′									88′		188′		312′							236′	56′	
SHEET 3D–10 TOTAL								1004′	300′		128′			192′									84′					96′	112′	36′	168′		352′		248′		36′
SHEET 3D–11 TOTAL								228′	32′		8′													64′		148′										
FROM TEMP PIPE SUMMARY								100′											368′						152′		124′				80′					
PROJECT TOTAL								5024′	2000′	932′	1380′	1036′	180′	528′					672′	40′	144′	88′	1136′	388′	584′	608′	632′	220′	132′	1336′	604′	136′	628′	172′	248′	236′	172′
SAY																																				

STATION	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	ENDWALLS CU. YDS. C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. "A" + (1.3 X COL. "B") LIN. FT. PER EACH (0′ THRU 5.0′)	LIN. FT. 5.0′ THRU 10.0′ A	LIN. FT. 10.0′ AND ABOVE B	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH GRATE STD. 840.22	G.D.I. FRAME WITH TWO GRATES STD. 840.20	G.D.I. FRAME WITH TWO GRATES STD. 840.22	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	SIDE DRAIN PIPE ELBOWS	T.B.D.I. STD. 840.35	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	BERM DITCH OUTLET STD. 850.10 PER EACH	BERM DITCH OUTLET STD. 850.11 PER EACH	CONCRETE TRANSITIONAL SECTIONS	G.D.I. FRAME WITH TWO GRATES STD. 840.29	T.B.D.I. STD. 840.36	STEEL GRATES AND FRAME STD. 840.37	PIPE REMOVAL LIN.FT.	T.B.J.B. STD. 840.34	FLOWABLE FILL C.Y.	REMARKS
–Y1– STA. 17+26			1	5.0′						1																								
–Y1– STA. 17+26																1																		
–Y4– STA. 12+66			1	4.4′											1																			
–Y4– STA. 12+70																																		
–Y4– STA. 12+85																																	15′	
–Y4– STA. 16+00																																		
–Y2RPB– STA. 48+85			1								1					1																		
–Y2RPB– STA. 48+85																																		
–Y2RPB– STA. 48+85			1								1					1																		
–Y1REV– STA. 20+65			1																															
–Y1REV– STA. 20+65																																		
–Y1REV– STA. 19+75			1													1																		
–Y1REV– STA. 19+75																																		
–Y1REV– STA. 23+70			1													1																		
–Y1REV– STA. 23+70																																		
–Y1REV– STA. 23+70			1													1																		
–Y1REV– STA. 23+70																																		
SHEET TOTAL			8	9.4′						1	2					6	1	1		10@15″	4										15′		
SHEET 3D–1 TOTAL			18	8.8′						4	12		1	8	8	2	2	2–24″ 6–18″		4–15″ 2–24″														
SHEET 3D–2 TOTAL			15	13.9′	0.7′					6	9		1	3	12	2	2	6–15″ 2–18″ 4–24″			1.6076	1								470′		117.1	
SHEET 3D–3 TOTAL			17	3.4′						2	7	1		11	6	1	1	10–15″ 2–18″	7												348′		
SHEET 3D–4 TOTAL			19	38.2′	0.6					5	12			5	13	1	1	2–15″ 6–18″ 4–24″	1		2.3138		2							984′		55.4	
SHEET 3D–5 TOTAL			17	3.5′						1	14	1		7	9			10–15″ 2–24″ 2–36″			1.5490		1				1	1		604′		168.9	
SHEET 3D–6 TOTAL			19	11.7′	1.2′	1			1	5	12			4	13	1	1	6–15″ 4–18″						1							1087′		245.6	
SHEET 3D–7 TOTAL			16	0.5′		12	2	4	6		3			1	2		1	8–15″		2–15″		2		12						557′	1		
SHEET 3D–8 TOTAL			20	34.3′	2.6′					4	10		1	2	12	6	4	2–30″		2–48″	1.5960		1							631′		154.9	
SHEET 3D–9 TOTAL			17	15.3′						3	7		1	4	6	7	7	6–15″ 4–18″ 2–24″ 2–48″					1									25.0	
SHEET 3D–10 TOTAL			15	15.7′	8.5′					1	8	1		7	5	3	3	4–15″ 6–18″	2			1									187′		74.6	
SHEET 3D–11 TOTAL			8	9.4′						1	2			6	1	1		10@15″	4												15′		
FROM TEMP PIPE SUMMARY			2	3.8						1	1				2																824′		
PROJECT TOTAL			183	158.5′	13.6′	13	2	4	7	33	97	3	4	58	89	24	22	59–15″ 32–18″ 14–24″ 2–30″ 2–36″ 2–48″	14	6–15″ 2–24″ 3–48″	7.0664	4	5	13	9	1	1	5707′	1	841.5	
SAY			70		176′																8.0									842			

9/7/2022
U:\2579AA_rdy_drainage_sum.dgn
USER:kbaird

COMPUTED BY: DJM DATE: 9-2-19
CHECKED BY: KTB DATE: 9-17-19

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
U-2579AA	3D-12

NOTE: Invert Elevations are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 54" & OVER)

STATION / SIZE / THICKNESS OR GAUGE	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL
-L- STA. 28+90	C/L	0505			821.9'	813.7'	
-Y2FLYAB- 17+88		0611	0610		826.5'	827.3'	
-Y2FLYAB- 17+97		0610	0608		827.3'	832.0'	
-Y2FLYAB- 16+32		0608		843.0'	832.0'		
-L- STA. 53+92	LT	0608	0607		832.0'	833.8'	
-L- STA. 54+38	RT	0607	0606		833.8'	835.3'	
-Y2FLYAB- 17+62	RT	0610		838.0'	827.3'		
-Y2- STA. 70+06	LT	1406	1407		821.0'	820.0'	
-Y2- STA. 70+04	LT	1407		832.9'	820.0'		
-Y2- STA. 70+41	RT	1407	1408		820.0'	813.0'	
-Y2- STA. 70+79	RT	1408		826.0'	813.0'		
-Y2- STA. 71+15	RT	1408	1409		813.0'	812.2'	
-L- STA. 54+45	RT	0607		858.0'	833.8'		
-Y2RPB- 40+67	LT	1444			810.1'	804.3'	
-Y2RPB- 26+82	RT	1610	1611		838.0'	823.4'	
-Y2RPB- 26+84	RT	1611		830.7'	823.4'		
-Y2RPB- 26+84	RT	1611	1612		823.4'	823.0'	
-Y2A- STA. 15+10	CL	1464			817.5'	817.3'	
SHEET TOTAL							
SAY							

STATION	SIDE DRAIN PIPE (RCP, CSP, CAAP, HDPE, or PVC) 54"	60"	66"	72"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	60" WELDED STEEL PIPE, IN SOIL	60" WELDED STEEL PIPE, OUT OF SOIL	72" WELDED STEEL PIPE, IN SOIL	72" WELDED STEEL PIPE, OUT OF SOIL	CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE) 54"	60"	66"	72"	78"
-L- STA. 28+90													384'				
-Y2FLYAB- 17+88				52'		X	X	X									
-Y2FLYAB- 17+97				124'		X	X	X									
-Y2FLYAB- 16+32																	
-L- STA. 53+92											192'	192'					
-L- STA. 54+38				36'		X	X	X									
-Y2FLYAB- 17+62																	
-Y2- STA. 70+06		28'				X	X	X									
-Y2- STA. 70+04																	
-Y2- STA. 70+41																	
-Y2- STA. 70+79																	
-Y2- STA. 71+15		80'				X	X	X									
-L- STA. 54+45																	
-Y2RPB- 40+67													188'				
-Y2RPB- 26+82	48'				X												
-Y2RPB- 26+84																	
-Y2RPB- 26+84													112'				
-Y2A- STA. 15+10													64'				
SHEET TOTAL	48'	108'		212'					148'	148'	192'	192'	748'				
SAY																	

STATION	C.S. PIPE 54" .109	54" .138	54" .168	54" SHOP ELONGATED .138	54" SHOP ELONGATED .168	60" .138	60" .168	STRUCTURAL PLATE PIPE 60" 12	60" 10	60"	66" 12	66" 10	66"	72" 12	72" 10
-L- STA. 28+90															
-Y2FLYAB- 17+88															
-Y2FLYAB- 17+97															
-Y2FLYAB- 16+32															
-L- STA. 53+92															
-L- STA. 54+38															
-Y2FLYAB- 17+62															
-Y2- STA. 70+06															
-Y2- STA. 70+04															
-Y2- STA. 70+41															
-Y2- STA. 70+79															
-Y2- STA. 71+15															
-L- STA. 54+45															
-Y2RPB- 40+67															
-Y2RPB- 26+82															
-Y2RPB- 26+84															
-Y2RPB- 26+84															
-Y2A- STA. 15+10															
SHEET TOTAL															
SAY															

STATION	REINFORCED ENDWALLS WITH R.C. - C.Y.	WITH C.S. - C.Y.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	LIN. *FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02		MASONRY DRAINAGE STRUCTURES CUBIC YARDS	J.B. STD. 840.31 OR 840.32	M.H. FRAME & COVER STD. 840.54	SIDE DRAIN PIPE ELBOWS	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. FRAME WITH TWO GRATES STD. 840.22				FLOWABLE FILL C.Y.	REINF. CONC. ELBOWS NO. & SIZE	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	PIPE REMOVAL LIN.FT.	REMARKS
-L- STA. 28+90	5.0																					
-Y2FLYAB- 17+88																	279.3					
-Y2FLYAB- 17+97																						
-Y2FLYAB- 16+32								12.8														SEE SHT. 2C-2B FOR SPECIAL DETAIL
-L- STA. 53+92																						TRENCHLESS INSTALLATION (NOT BURIED)
-L- STA. 54+38	7.5																					
-Y2FLYAB- 17+62								9.5														SEE SHT. 2C-2A FOR SPECIAL DETAIL
-Y2- STA. 70+06	5.9																136.7				16'	REMOVE HW & 16'-42" CMP
-Y2- STA. 70+04								7.6	1	1												
-Y2- STA. 70+41																						TRENCHLESS INSTALLATION (NOT BURIED)
-Y2- STA. 70+79								7.6	1	1												
-Y2- STA. 71+15																						
-L- STA. 54+45								7.5														SEE SHT. 2C-2C FOR SPECIAL DETAIL
-Y2RPB- 40+67	5.0																					NOT BURIED
-Y2RPB- 26+82	5.2										2-54"											
-Y2RPB- 26+84								4.4				1	1									
-Y2RPB- 26+84																					95'	
-Y2A- STA. 15+10	5.2																					
SHEET TOTAL	33.8							49.4	2	2	2-54"	1	1				416				111'	
SAY	34							50														

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

COMPUTED BY: J.R. Swartley DATE: 2/12/18
CHECKED BY: S.S. Laney DATE: 2/12/18
REVISED BY S Clark DATE: 6-8-2022

(2-12-18)

PROJECT NO.	SHEET NO.
U-2579AA	3G-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
CONTINGENCY				SD	4000
				TOTAL LF:	4000

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

SUMMARY OF EMBANKMENT STABILIZATION

LINE	Station	Station	Location LT/RT/CL	Geotextile Type V (sq yds)	Select Granular Material (Cu. Yds.)
-Y1-	25+00	29+28	RT	15400	8800
-Y1REV-	34+66	36+00	RT	3240	2250
-Y2-	74+75	76+25	RT	2250	1250
-Y2FLYCA-	14+00	17+75	RT	8500	5850

SUMMARY OF GEOTEXTILE FOR PAVEMENT STABILIZATION

LINE	Station	Station	Geotextile for Pavement Stabilization SY	Class IV Subgrade Stabilization TONS	Offset
-L-	10+00	13+00	1,833		LT
-L-	13+00	16+00	1,000		LT, RT
-L-	16+00	16+25	125		LT
-L-	31+00	32+50	767		RT
-L-	32+50	41+00	8,028		LT, RT
-L-	41+00	45+00	2,000		LT
-L-	53+00	54+50	583		RT
-Y1-	20+00	22+50	1,111		CL
-Y1-	24+00	28+50	2,150		CL
-Y1Rev-	33+50	39+50	2,667		CL
-Y2 SBL-	21+50	28+66	2,148		SBL(O)
-Y2 NBL-	15+03	16+01	163		NBL(O)
-Y2 NBL-	16+01	19+48	771		NBL(O)
-Y2 NBL-	21+97	24+94	561		NBL(O)
-Y2FLYAB-	17+83	21+00	1,585		RT/CL
-Y2FLYAB-	30+00	30+50	250		CL
-Y2FLYCA-	14+67	29+00	7,324		CL
-Y2FLYCA-	33+50	38+00	2,200		CL
-Y2FLYCA-	49+50	53+00	1,400		CL
-Y2FLYCA-	56+50	58+07	663		CL
-Y2RPB-	39+00	43+66	1,864		CL
-Y2RPC-	29+74	30+73	440		RT
-Y3LPC-	15+50	17+75	800		CL
-Y3RPB-	10+12	13+60	619		LT
-Y3RPB-	13+60	16+00	960		CL
-Y3RPB-	22+25	23+00	300		CL
-Y3RPC-	15+00	25+00	4,222		CL
-Y4-	11+00	14+00	833		CL
CONTINGENCY				6000	
TOTALS			47,367	6000	

SUMMARY OF BRIDGE WAITING PERIODS

Bridge Description	End Bent/ Bent No.	MONTHS
Bridge #729 over Winston Salem Northern Beltway (Futue I-74)on Flyover -Y2FLYCA-	EB #2	2
Bridge #730 on -Y2FLYCA- over US 311	EB #1	2
	EB#2	2
Bridge #732 over future I-74 on -Y1REV- (High Point Road)	EB #1	2
	EB#2	2

SUMMARY OF SETTLEMENT GAUGES

Gauge No.	Bridge Number	Line and Station	Offset Distance FT	Offset Direction LT/RT	Roadway (R) / Structure (S)	Estimated Settlement IN	Waiting Period MON
1	732	-Y1- 28+81	18	LT	S	14.9	2
2	732	-Y1- 28+81	18	RT	S	14.9	2
3	732	-Y1REV- 35+25	24	LT	S	16.8	2
4	732	-Y1REV- 35+25	20	RT	S	16.8	2
5	729	-Y2FLYCA- 49+05	22	LT	S	7.6	2
6	729	-Y2FLYCA- 49+05	14	RT	S	7.6	2
7	730	-Y2FLYCA- 28+60	22	LT	S	15.3	2
8	730	-Y2FLYCA- 28+60	14	RT	S	15.3	2
9	730	-Y2FLYCA- 33+80	22	LT	S	16.1	2
10	730	-Y2FLYCA- 33+80	14	RT	S	16.1	2

COMPUTED BY: J.R. Swartley DATE: 2/12/18
CHECKED BY: S.S. Laney DATE: 2/12/18

(2-12-18)

PROJECT NO.	SHEET NO.
U-2579AA	3G-2

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF ROCK PLATING

LINE	Beginning Slope (H:V)	Approx. Station	Ending Slope (H:V)	Approx. Station	Location LT/RT	Rock Plating Detail No. 1/2/3/4	Riprap Class* 1/2/B	Rock Plating SY
-Y2-	2:1	17+65	2:1	19+00	LT	275.01	1	1060
-Y2-	2:1	17+50	2:1	19+35	RT	275.01	1	1452
							TOTAL SY:	2512

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

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

LINE	Station	Station	Aggregate Type* ASU/AST	Aggregate Thickness INCHES	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Soil Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
L	10+00	88+48	ASU	10		40910	58399		
Y2FLYAB	16+38	74+29 (Y2NBL)	ASU	10		4378	5949		
Y2FLYCA	10+00	58+32	ASU	10		8768	4004		
Y2SBL	11+50	25+49 (Y2RPC)	ASU	10		16984	16680		
Y2NBL	10+50	39+80	ASU	10		15215	23678		
Y2RPB	15+88	45+62	ASU	10		7915	12208		
CONTINGENCY			ASU	10	2500				
CONTINGENCY			AST	3				500	
			TOTAL CY/TONS/SY:		2500	94170**	120918**	500	0

*ASU = Aggregate Subgrade
*AST = Aggregate Stabilization
**Total tons of "Class IV Subgrade Stabilization" and total square yards of "Geotextile for Soil Stabilization" are only the estimated quantities for ASU/AST and may only represent a portion of the subgrade stabilization and geotextile quantities shown in the Item Sheets of the Proposal.

NOTE: Y2NBL and SBL calculations include Y3LPB, Y3LPC, Y3RPB, Y3RPC and Y2RPC

NOTE: Replace Geotextile for Soil Stabilization with Geotextile for Pavement Stabilization at locations specified in the Geotextile for Pavement Stabilization table. See Geotextile for Pavement Stabilization table for specific locations.