

09/08/2021

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

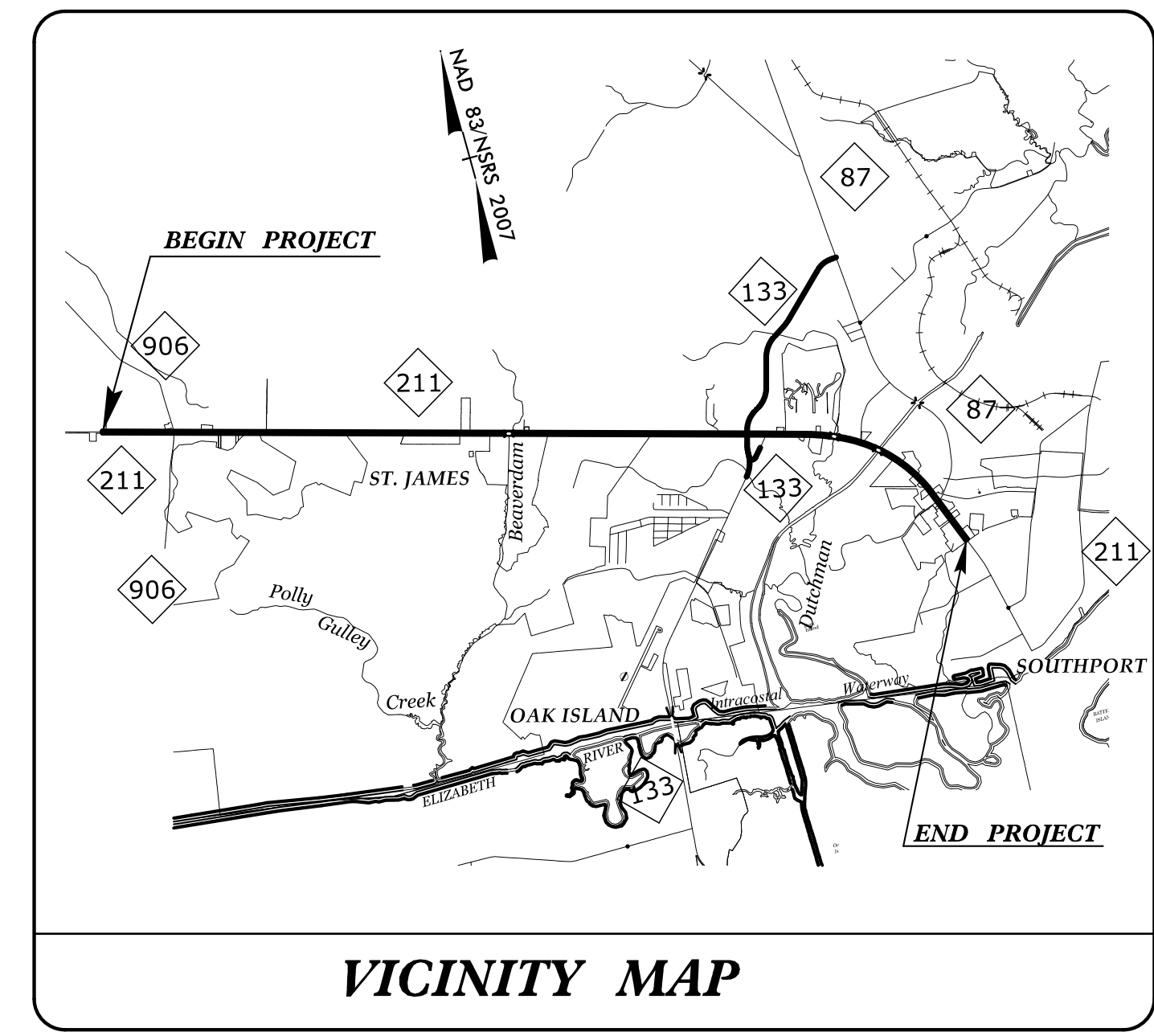
# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

## BRUNSWICK COUNTY

**LOCATION: NC 211 FROM WEST OF NC 906 (MIDWAY ROAD)  
TO EAST OF NC 87**

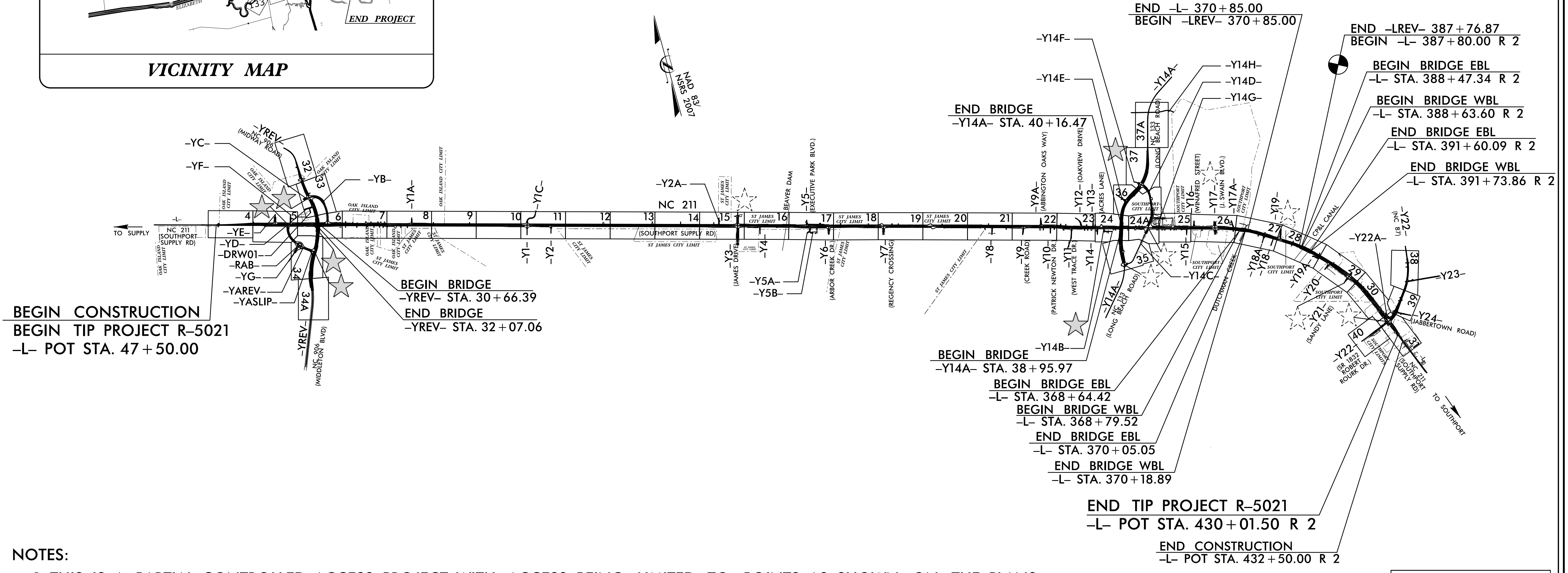
**TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURES,  
CULVERTS, SIGNALS, AND RETAINING WALLS**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5021	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
41582.1.1	STP-0211(021)	PE	
41582.2.2	STP-0211(021)	UTILITIES	
41582.2.3	STP-0211(021)	RW	
41582.3.1	STP-0211(021)	CONSTRUCTION	



**TIP PROJECT: R-5021**

**CONTRACT: C204123**



**BEGIN CONSTRUCTION**  
**BEGIN TIP PROJECT R-5021**  
 -L- POT STA. 47 + 50.00

**BEGIN BRIDGE**  
 -YREV- STA. 30 + 66.39  
**END BRIDGE**  
 -YREV- STA. 32 + 07.06

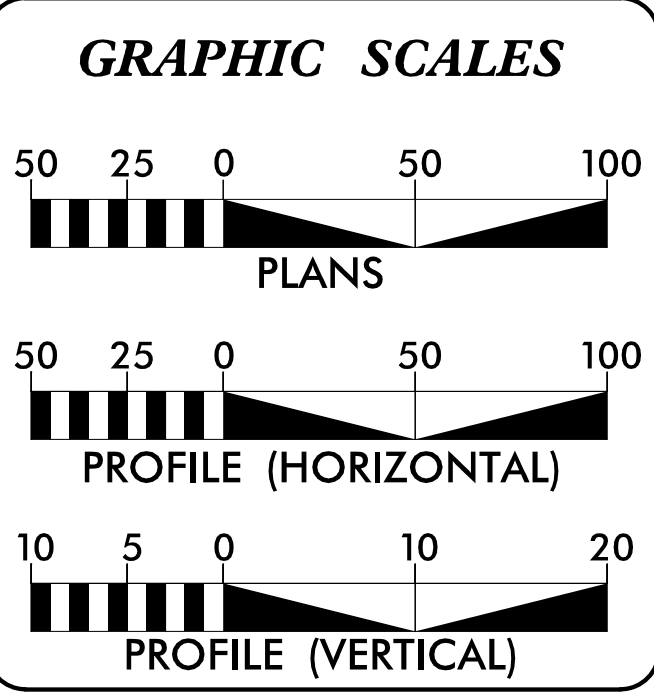
**BEGIN BRIDGE**  
 -Y14A- STA. 38 + 95.97  
**BEGIN BRIDGE EBL**  
 -L- STA. 368 + 64.42  
**BEGIN BRIDGE WBL**  
 -L- STA. 368 + 79.52  
**END BRIDGE EBL**  
 -L- STA. 370 + 05.05  
**END BRIDGE WBL**  
 -L- STA. 370 + 18.89

**END TIP PROJECT R-5021**  
 -L- POT STA. 430 + 01.50 R 2

**END CONSTRUCTION**  
 -L- POT STA. 432 + 50.00 R 2

**NOTES:**  
 1. THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



**DESIGN DATA**

ADT 2019 =	28,000
ADT 2039 =	44,000
K =	8 %
D =	55 %
T =	6 % *
V =	40-60 MPH
* (TTST 2% + DUAL 4%)	
FUNC CLASS =	RURAL MAJOR COLLECTOR REGIONAL TIER

**PROJECT LENGTH**

LENGTH OF ROADWAY T.I.P. PROJECT R-5021 =	7.158 MILES
LENGTH OF STRUCTURES T.I.P. PROJECT R-5021 =	0.086 MILES
TOTAL LENGTH OF T.I.P. PROJECT R-5021 =	7.244 MILES
ALL LENGTH BASED ON -L- CENTERLINE	
STRUCTURES LENGTH BASED ON EBL	

Prepared in the Office of:  
**HNTB**  
 HNTB NORTH CAROLINA, P.C.  
 343 E. Six Forks Road, Suite 200  
 Raleigh, North Carolina 27609  
 NC License No: C-1554

2018 STANDARD SPECIFICATIONS

**DOUGLAS M. WHEATLEY, PE**  
PROJECT ENGINEER

**ANDREW HALL, PE**  
PROJECT DESIGN ENGINEER

**MICHAEL BASS**  
NCDOT CONTACT

**RIGHT OF WAY DATE:**  
JANUARY 28, 2016

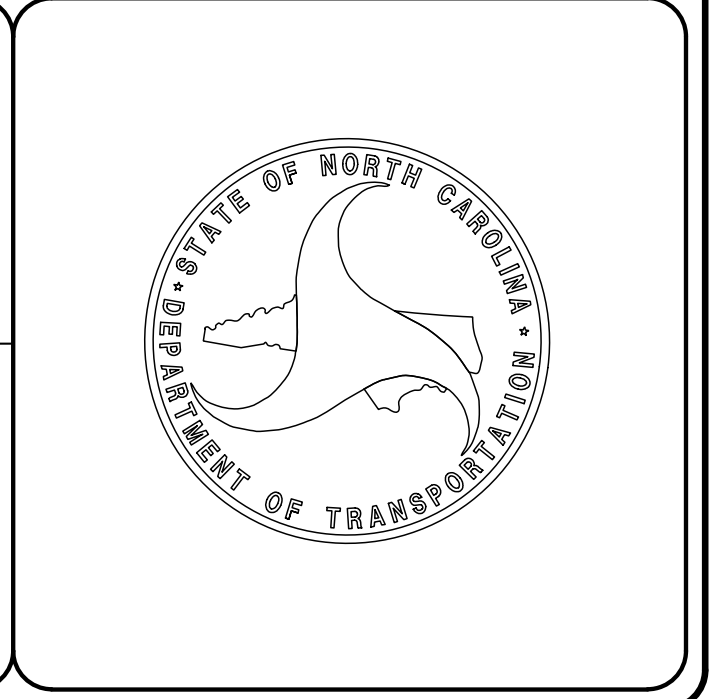
**LETTING DATE:**  
DECEMBER 7, 2021

**HYDRAULICS ENGINEER**

DocuSigned by:  
**James Byrd**  
 23592959E54F47C  
 SIGNATURE: 11/8/2021

**ROADWAY DESIGN ENGINEER**

DocuSigned by:  
**Douglas M. Wheatley**  
 AB7893E9DB424DA  
 SIGNATURE: 11/8/2021



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INDEX OF SHEETS

SHEET NUMBER	SHEET NAME
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
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2B-1 THRU 2B-4	INTERSECTION DETAIL SHEETS
2B-5 THRU 2B-6	BRIDGE SKETCHES
2B-7	INTERCHANGE OVERVIEW AT -L- & -YREV-
2B-8	INTERCHANGE OVERVIEW AT -L- & -Y14A-
2B-9	DETAIL OF TEMPORARY PAVEMENT
2B-10	DETAIL OF EMERGENCY CROSSOVER
2B-11	DETAIL OF ROUNDABOUT
2C-1	DETAIL OF 2'-9" CURB & GUTTER TO FRAME & GRATE
2C-2	DETAIL OF 2'-9" CURB & GUTTER
2C-3	DETAIL OF 8' GUARDRAIL POST
2C-4	DETAIL OF TYPE III ANCHOR UNITS
2C-5	DETAIL OF W-BEAM GUARDRAIL INSTALLATION
2C-6	DETAIL OF AT-1 GUARDRAIL END UNIT
2C-7	DETAIL OF SHOULDER BERM GUTTER TO 2'-6" CURB & GUTTER TRANSITION SECTION
2C-8	DETAIL OF TYPE III REINFORCED APPROACH FILL
2C-9	DETAIL OF MODIFIED METHOD III CLEARING
2C-10	DETAIL OF TEMPORARY 1" STEEL COVER OVER DRAINAGE STRUCTURE
2C-11	DETAIL OF CONCRETE DROP INLET TYPE "A"
2C-12	DETAIL OF EMERGENCY VEHICLE ACCESS FOR CONCRETE ISLAND
2C-13	DETAIL OF CONVERT T.B.D.I. TO T.B.J.B.
2C-14	DETAIL OF IMPACT ATTENUATOR INSTALLATION
2C-15	DETAIL OF MINIMUM DEPTH CONCRETE CATCH BASIN
2C-16	DETAIL OF 1'-6" CURB & GUTTER
2C-17	DETAIL OF GRATED DROP INLET W/ 60"x38" HERCP
2C-18	DETAIL OF 2'-6" CURB & GUTTER TO EXPRESSWAY GUTTER TRANSITION SECTION DETAIL
2C-19	COAL COMBUSTION DETAIL
2C-20	DETAIL OF 1'-6" CURB AND GUTTER TO 2'-9" CURB AND GUTTER TRANSITION SECTION
2D-1 THRU 2D-4	DRAINAGE DETAILS
2G-1 THRU 2G-3	GEOTECHNICAL DETAILS
3B-1 THRU 3B-9	ROADWAY SUMMARIES (GUARDRAIL, TEMPORARY GUARDRAIL, EARTHWORK, PAVEMENT REMOVAL, PAVEMENT BREAKING, TEMPORARY SHORING, SHOULDER BERM GUTTER, EXPRESSWAY GUTTER, SUMMARY OF HYDRAULIC RIP RAP & DDE QUANTITIES)
3D-1 THRU 3D-23	DRAINAGE SUMMARIES
3G-1	GEOTECHNICAL SUMMARIES
3P-1 THRU 3P-2	PARCEL INDEX SHEETS
4 THRU 40	PLAN SHEETS
41 THRU 71	PROFILE SHEETS
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RW02D-1 THRU RW02D-3	PROPOSED ALIGNMENT CONTROL SHEETS
RW03E-1 THRU RW03E-5	RIGHT OF WAY CONTROL SHEETS
RW-04 THRU RW-40	RIGHT OF WAY SHEETS
TMP-1 THRU TMP-166	TRANSPORTATION MANAGEMENT PLANS
PMP-1 THRU PMP-39	PAVEMENT MARKING PLANS
EC-1 THRU EC-79	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
SIGN-1 THRU SIGN-32	SIGNING PLANS
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UC-P1 THRU UC-P16	UTILITY CONSTRUCTION PUMP STATION PLANS
UO-1 THRU UO-30	UTILITIES BY OTHERS PLANS
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X-1A THRU X-1L	CROSS SECTION SUMMARIES
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S2-1 THRU S2-38	STRUCTURE PLANS - S2
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S4-1 THRU S4-24	STRUCTURE PLANS - S4
S5-1 THRU S5-39	STRUCTURE PLANS - S5
S6-1 THRU S6-39	STRUCTURE PLANS - S6
C1-1 THRU C1-4	CULVERT PLANS - C1
C2-1 THRU C2-5	CULVERT PLANS - C2
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C4-1 THRU C4-5	CULVERT PLANS - C4
W-1 THRU W-2	RETAINING WALL 1-2 PLANS
W-3 THRU W-7	RETAINING WALL 3-6 PLANS
W-8 THRU W-11	RETAINING WALL 7 PLANS
W-12 THRU W-17	RETAINING WALL 8-11 PLANS
W-18 THRU W-22	RETAINING WALL 12-13 PLANS

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

GRADING AND SURFACING OR RESURFACING AND WIDENING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY MODIFIED METHOD III.

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 OR STD. NO. 225.05 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.

SUBSURFACE DRAINS:

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

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 USING 3 FOOT RADIUS OR RADIUS AS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

STREET TURNOUT:

STREET RETURNS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 848.04 USING THE RADIUS 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 NOT SHOWN ON THE PLANS WILL BE PAID FOR AT THE CONTRACT PRICE FOR "TEMPORARY SHORING".

END BENTS:

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

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE WATER & SEWER - CITY OF SOUTHPORT, NEW BRUNSWICK COUNTY  
POWER - DUKE ENERGY, BRUNSWICK EMC, CITY OF SOUTHPORT

TELECOMM & FIBER - AT&T, ATMC, TIME WARNER

GAS - PIEDMONT NATURAL GAS

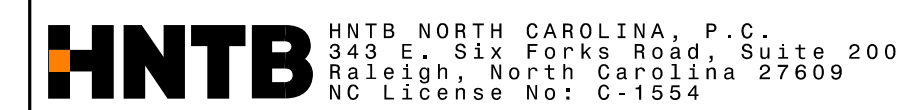
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

RIGHT-OF-WAY MARKERS:

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

CURB RAMPS

CURB RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS. CONSTRUCT ALL CURB RAMPS ACCORDANCE WITH STD 848.05 and/or 848.06.



PROJECT REFERENCE NO. <b>R-5021</b>	SHEET NO. <b>1A</b>
ROADWAY DESIGN ENGINEER	

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

2018 ROADWAY ENGLISH STANDARD DRAWINGS  
EFF. 01-16-2018  
REV.

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2018 are applicable to this project and by reference hereby are considered a part of these plans:

- STD. NO. TITLE
- DIVISION 2 - EARTHWORK
  - 225.02 Guide for Grading Subgrade - Secondary and Local
  - 225.04 Method of Obtaining Superelevation - Two Lane Pavement
  - 225.05 Method of Obtaining Superelevation - Divided Highways
  - DIVISION 3 - PIPE CULVERTS
  - 300.01 Method of Pipe Installation
  - 310.10 Driveway Pipe Construction
  - DIVISION 4 - MAJOR STRUCTURES
  - 422.01 Bridge Approach Fills - Type I Standard Approach Fill
  - 422.03 Reinforced Bridge Approach Fills - Type A Alternate Approach Fill for Integral Abutment
  - DIVISION 5 - SUBGRADE, BASES AND SHOULDERS
  - 560.01 Method of Shoulder Construction - High Side of Superelevated Curve - Method I
  - DIVISION 6 - ASPHALT BASES AND PAVEMENTS
  - 610.01 Guide for Paving Shoulders Under Bridges - Method I
  - 654.01 Pavement Repairs
  - DIVISION 8 - INCIDENTALS
  - 815.02 Subsurface Drain
  - 838.01 Concrete Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
  - 838.11 Brick Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
  - 838.21 Reinforced Concrete Endwall - for Single 54" Pipe 90 Skew
  - 838.45 Notes for Reinforced Concrete Endwall - Std. Dwg 838.21 thru 838.40
  - 838.51 Reinforced Brick Endwall - for Single 54" Pipe 90 Skew
  - 838.80 Precast Endwalls - 12" thru 72" Pipe 90 Skew
  - 840.00 Concrete Base Pad for Drainage Structures
  - 840.01 Brick Catch Basin - 12" thru 54" Pipe
  - 840.02 Concrete Catch Basin - 12" thru 54" Pipe
  - 840.03 Frames, Grates and Hood - for Use on Standard Catch Basin
  - 840.14 Concrete Drop Inlet - 12" thru 30" Pipe
  - 840.15 Brick Drop Inlet - 12" thru 30" Pipe
  - 840.16 Drop Inlet Frame and Grates - for use with Std. Dwg 840.14 and 840.15
  - 840.17 Concrete Grated Drop Inlet Type 'A' - 12" thru 72" Pipe
  - 840.18 Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
  - 840.19 Concrete Grated Drop Inlet Type 'D' - 12" thru 36" Pipe
  - 840.20 Frames and Wide Slot Flat Grates
  - 840.22 Frames and Wide Slot Sag Grates
  - 840.24 Frames and Narrow Slot Sag Grates
  - 840.25 Anchorage for Frames - Brick or Concrete or Precast
  - 840.26 Brick Grated Drop Inlet Type 'A' - 12" thru 72" Pipe
  - 840.27 Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
  - 840.28 Brick Grated Drop Inlet Type 'D' - 12" thru 36" Pipe
  - 840.29 Frames and Narrow Slot Flat Grates
  - 840.31 Concrete Junction Box - 12" thru 66" Pipe
  - 840.32 Brick Junction Box - 12" thru 66" Pipe
  - 840.34 Traffic Bearing Junction Box - for Use with Pipes 42" and Under
  - 840.35 Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
  - 840.36 Traffic Bearing Grated Drop Inlet - for Steel (840.37) Double Frame and Grates
  - 840.37 Steel Grate and Frame
  - 840.45 Precast Drainage Structure
  - 840.46 Traffic Bearing Precast Drainage Structure
  - 840.54 Manhole Frame and Cover
  - 840.66 Drainage Structure Steps
  - 840.72 Pipe Collar
  - 846.01 Concrete Curb, Gutter and Curb & Gutter
  - 846.02 Drop Inlet Installation in Expressway Gutter
  - 846.04 Drop Inlet Installation in Shoulder Berm Gutter
  - 848.01 Concrete Sidewalk
  - 848.02 Driveway Turnout - Radius Type
  - 848.04 Street Turnout
  - 848.05 Curb Ramp - Proposed Curb & Gutter
  - 850.01 Concrete Paved Ditches
  - 850.10 Guide for Berm Drainage Outlet - 15" and 18" Pipe
  - 850.11 Guide for Berm Drainage Outlet - 24" and 30" Pipe
  - 852.01 Concrete Islands
  - 852.02 Concrete Mountable Median - for Use with Rigid or Flexible Pavement
  - 852.04 Method for Placement of Drop Inlets in Grassed Median - Using 1'-6" Curb and Gutter
  - 852.05 Median Curb for Catch Basin - for Use with 1'-6" Curb and Gutter
  - 852.06 Method for Placement of Drop Inlets in Concrete Islands
  - 857.01 Precast Reinforced Concrete Barrier - 41" Single Faced
  - 862.01 Guardrail Placement
  - 862.02 Guardrail Installation
  - 862.03 Structure Anchor Units
  - 862.04 Anchoring End of Guardrail - B-77 and B-83 Anchor Units
  - 866.02 Woven Wire Fence - with Wood Post
  - 866.03 Woven Wire Fence - with Steel Post
  - 876.01 Rip Rap in Channels
  - 876.02 Guide for Rip Rap at Pipe Outlets
  - 876.04 Drainage Ditches with Class 'B' Rip Rap

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# STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

## CONVENTIONAL PLAN SHEET SYMBOLS

### BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
Computed Property Corner	----->
Property Monument	□ EDM
Parcel/Sequence Number	⑩②③
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	----- WLB
Proposed Wetland Boundary	----- WLB
Existing Endangered Animal Boundary	----- EAB
Existing Endangered Plant Boundary	----- EPB
Existing Historic Property Boundary	----- HPB
Known Contamination Area: Soil	☠ -S- ☠
Potential Contamination Area: Soil	?? -S- ??
Known Contamination Area: Water	☠ -W- ☠
Potential Contamination Area: Water	?? -W- ??
Contaminated Site: Known or Potential	☠ ??

### BUILDINGS AND OTHER CULTURE:

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

### HYDROLOGY:

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

### RAILROADS:

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

### RIGHT OF WAY & PROJECT CONTROL:

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

### ROADS AND RELATED FEATURES:

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

### VEGETATION:

Single Tree	☼
Single Shrub	☼

Note: Not to Scale

\*S.U.E. = Subsurface Utility Engineering

Hedge	-----
Woods Line	-----
Orchard	-----
Vineyard	----- Vineyard

### EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	----- CONC
Bridge Wing Wall, Head Wall and End Wall	----- CONC WW
MINOR:	
Head and End Wall	----- CONC HW
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	□ CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	⊕
Storm Sewer	----- S

### UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊕
Power Line Tower	⊠
Power Transformer	⊠
H-Frame Pole	●
U/G Power Cable Hand Hole	□
U/G Power Line LOS B (S.U.E.*)	----- P
U/G Power Line LOS C (S.U.E.*)	----- P
U/G Power Line LOS D (S.U.E.*)	----- P

### TELEPHONE:

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

### WATER:

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

### TV:

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

### GAS:

Gas Valve	◇
Gas Meter	⊕
U/G Gas Line LOS B (S.U.E.*)	----- G
U/G Gas Line LOS C (S.U.E.*)	----- G
U/G Gas Line LOS D (S.U.E.*)	----- G
Above Ground Gas Line	----- A/G Gas

### SANITARY SEWER:

Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	----- SS
Above Ground Sanitary Sewer	----- A/G Sanitary Sewer
SS Forced Main Line LOS B (S.U.E.*)	----- FSS
SS Forced Main Line LOS C (S.U.E.*)	----- FSS
SS Forced Main Line LOS D (S.U.E.*)	----- FSS

### MISCELLANEOUS:

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

12/2/2016 22-JUL-2021 09:54 \\p01\p01\proj\5021\_rdy\_sym.dgn

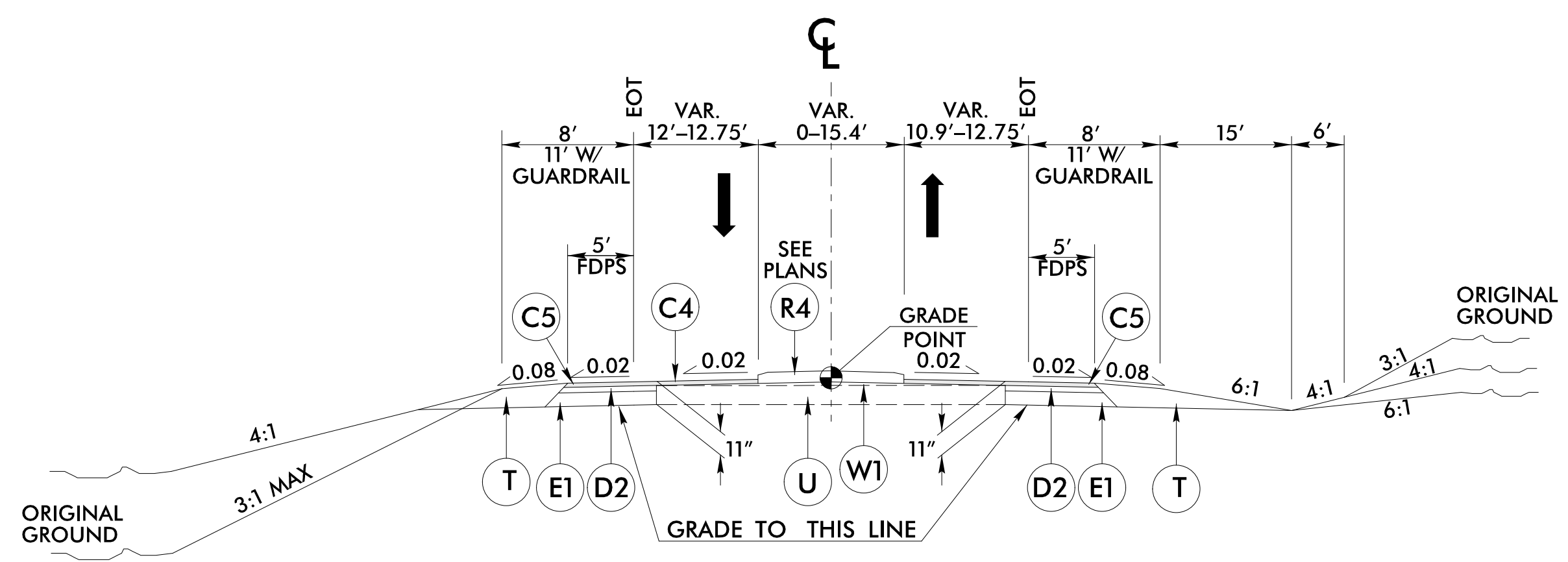
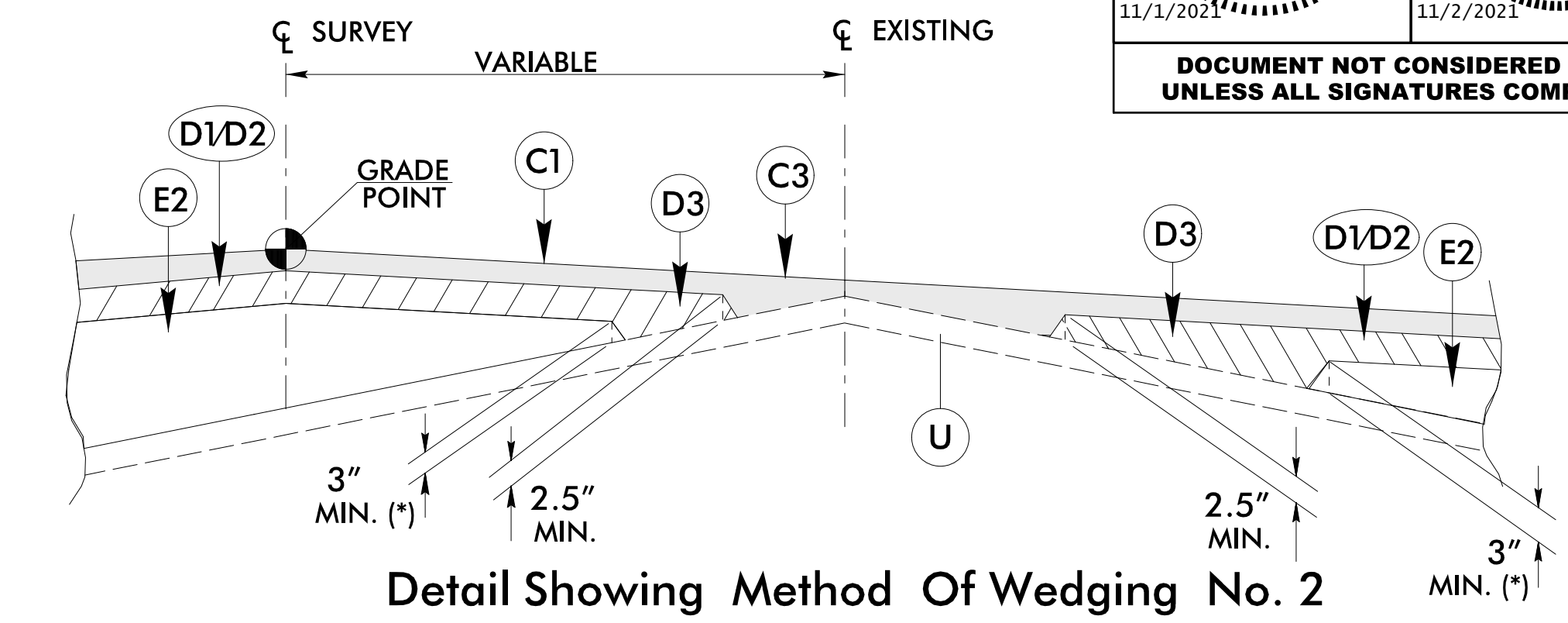
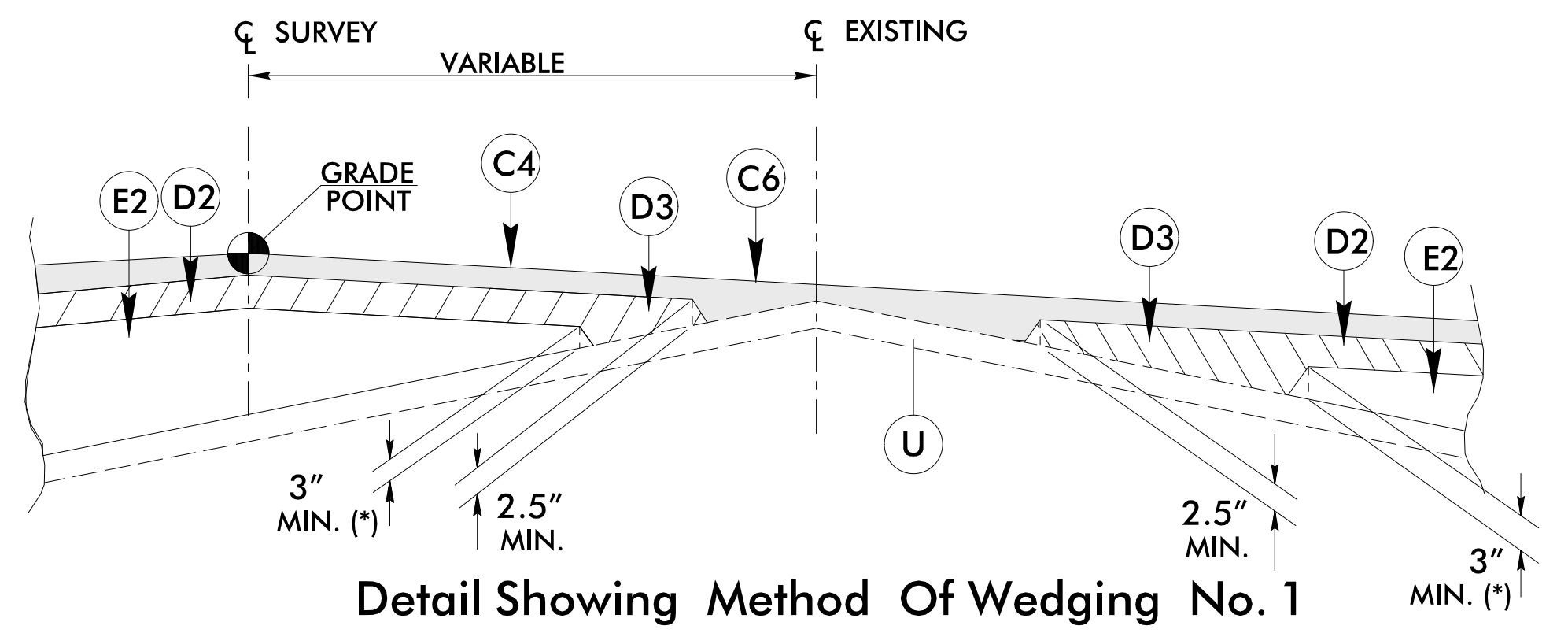
6/2/2021

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1" IN DEPTH OR GREATER THAN 1.5" IN DEPTH.
C4	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C5	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C6	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1.5" IN DEPTH OR GREATER THAN 2" IN DEPTH.
D1	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D3	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, 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 5.5" IN DEPTH. (*)NOTE: FOR B25.0C PLACED ON UNSTABILIZED SUBGRADE, MINIMUM LIFT THICKNESS IS 4".
J1	PROP. 6" AGGREGATE BASE COURSE
J2	PROP. 8" AGGREGATE BASE COURSE
J3	VARIABLE DEPTH ABC
K	PROP. 5" CLASS IV AGGREGATE STABILIZATION
P	PRIME COAT, 0.35 GAL/SY
R1	2'-6" CONCRETE CURB AND GUTTER.
R2	2'-9" CONCRETE CURB AND GUTTER.
R3	1'-6" CONCRETE CURB AND GUTTER. (STD MOUNTABLE)
R4	5" MONOLITHIC CONCRETE ISLAND
R5	SHOULDER BERM GUTTER
R6	EXPRESSWAY GUTTER
R7	8"x18" CURB
R8	1'-6" CONCRETE CURB AND GUTTER. (SP 1'PAN-6"GUTTER)
R9	7" JOINTED CONCRETE (WITHOUT DOWELS REINFORCED WITH A W3.5 X W3.5 OR W5 X W5 WIRE MESH)
R10	9"x18" CONCRETE CURB
S1	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W1	VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL SHOWING METHOD OF WEDGING No. 1)
W2	VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL SHOWING METHOD OF WEDGING No. 2)

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

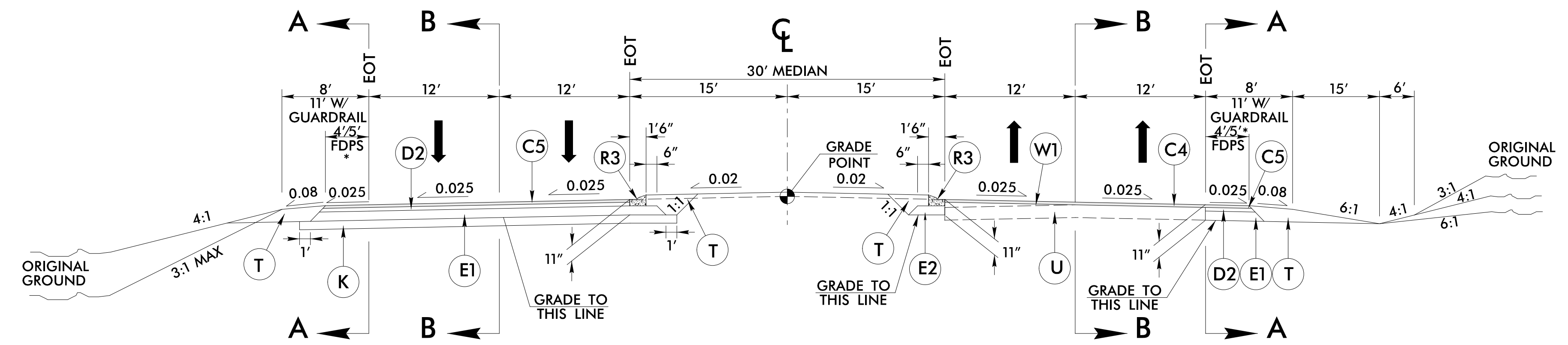


PROJECT REFERENCE NO. <b>R-5021</b>	SHEET NO. <b>2A-1</b>
ROADWAY DESIGN ENGINEER <i>Carl S. Morrison</i> 11/1/2021	PAVEMENT DESIGN ENGINEER <i>Carl S. Morrison</i> 11/2/2021
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



TYPICAL SECTION NO. 1  
-L- STA. 47+50.00 TO STA. 53+00.00

TRANSITION TYPICAL SECTION NO. 1 TO TYPICAL SECTION NO. 3  
-L- STA. 53+00.00 TO STA. 59+00.00



TYPICAL SECTION NO. 2  
-L- STA. 53+00.00 TO STA. 54+50.00  
-L- STA. 76+00.00 TO STA. 83+05.00  
-L- STA. 208+00.00 TO STA. 214+00.00  
-L- STA. 229+00.00 TO STA. 243+00.00  
-L- STA. 290+00.00 TO STA. 307+10.00  
-L- STA. 312+89.00 TO STA. 316+10.00  
-L- STA. 317+95.00 TO STA. 368+72.00  
-L- STA. 370+12.00 TO STA. 387+76.87  
-L- STA. 387+80.00 R 2 TO STA. 388+55.50 R 2  
-L- STA. 391+67.00 R 2 TO STA. 425+74.65 R 2

\*NOTE: USE 5' FULL DEPTH PAVED SHOULDERS FROM -L- STA 47+50.00 TO STA 300+54.32

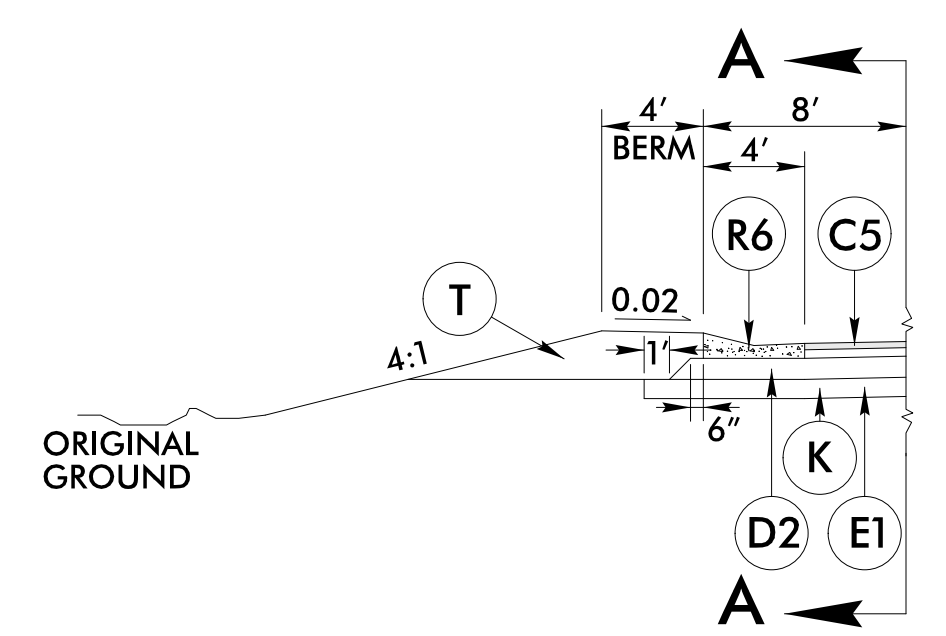
NOTE: SEE PLANS FOR SUPERELEVATIONS, TURN LANES, AUXILIARY LANES, MONOLITHIC ISLANDS, CURB & GUTTER, AND LANE TAPER LOCATIONS.

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HNTB

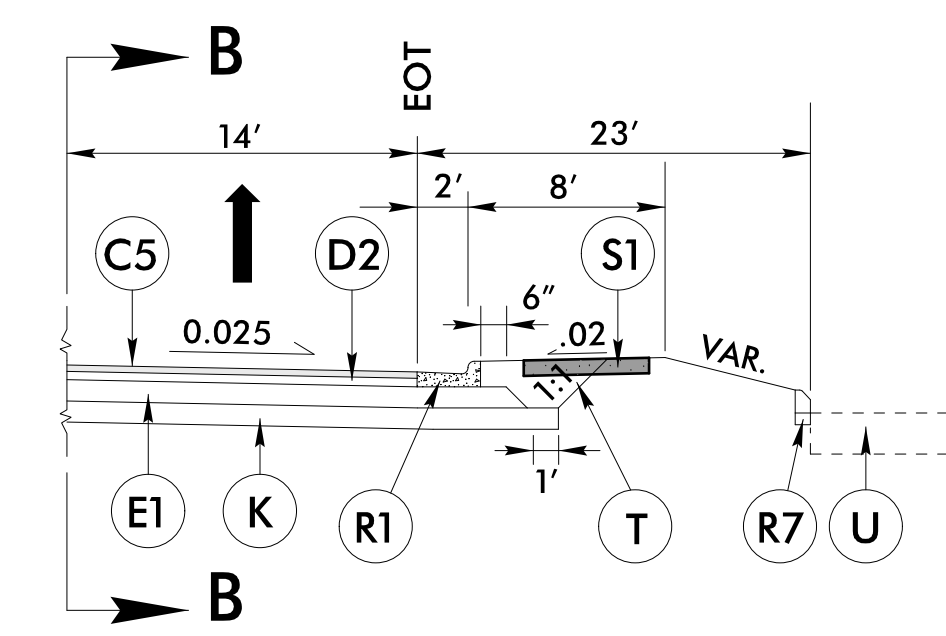
6/2/99

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	PROP. APPROX. 1.5" ACSC, TYPE S9.5B
C2	PROP. APPROX. 3" ACSC, TYPE S9.5B
C3	PROP. VAR. DEPTH ACSC, TYPE S9.5B
C4	PROP. APPROX. 1.5" ACSC, TYPE S9.5C
C5	PROP. APPROX. 3" ACSC, TYPE S9.5C
C6	PROP. VAR. DEPTH ACSC, TYPE S9.5C
D1	PROP. APPROX. 2.5" ACIC, TYPE I19.0C
D2	PROP. APPROX. 4" ACIC, TYPE I19.0C
D3	PROP. VAR. DEPTH ACIC, TYPE I19.0C
E1	PROP. APPROX. 4" ACBC, TYPE B25.0C
E2	PROP. VAR. DEPTH ACBC, TYPE B25.0C
J1	PROP. 6" ABC
J2	PROP. 8" ABC
J3	VARIABLE DEPTH ABC
K	PROP. 5" CLASS IV AGGREGATE STABILIZATION
P	PRIME COAT
R1	2'-6" CONCRETE CURB AND GUTTER.
R2	2'-9" CONCRETE CURB AND GUTTER.
R3	1'-6" CONCRETE CURB AND GUTTER. (STD MOUNTABLE)
R4	5" MONOLITHIC CONCRETE ISLAND
R5	SHOULDER BERM GUTTER
R6	EXPRESSWAY GUTTER
R7	8"x18" CURB
R8	1'-6" CONCRETE CURB AND GUTTER. (SP 1'PAN-6" GUTTER)
R9	7" JOINTED CONCRETE (WITHOUT DOWELS REINFORCED WITH A W3.5 x W3.5 OR W5 x W5 WIRE MESH)
R10	9"x18" CONCRETE CURB
S1	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT.
W1	WEDGING METHOD NO. 1 - SEE SHEET 2A-1
W2	WEDGING METHOD NO. 2 - SEE SHEET 2A-1

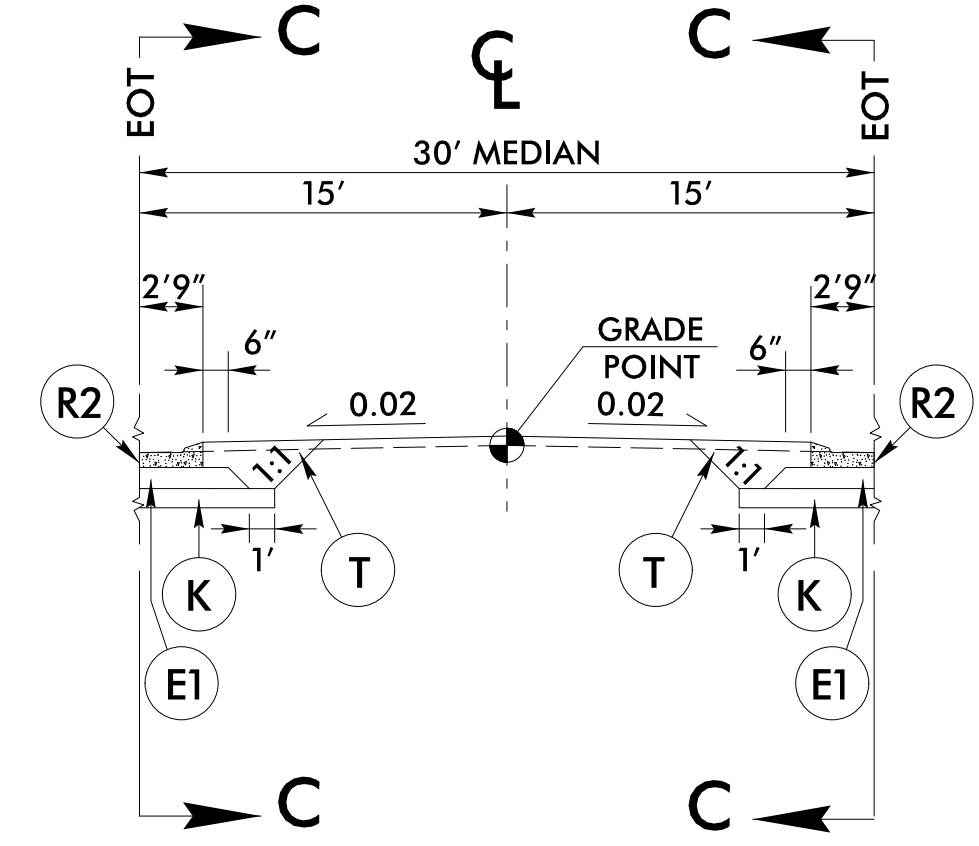
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



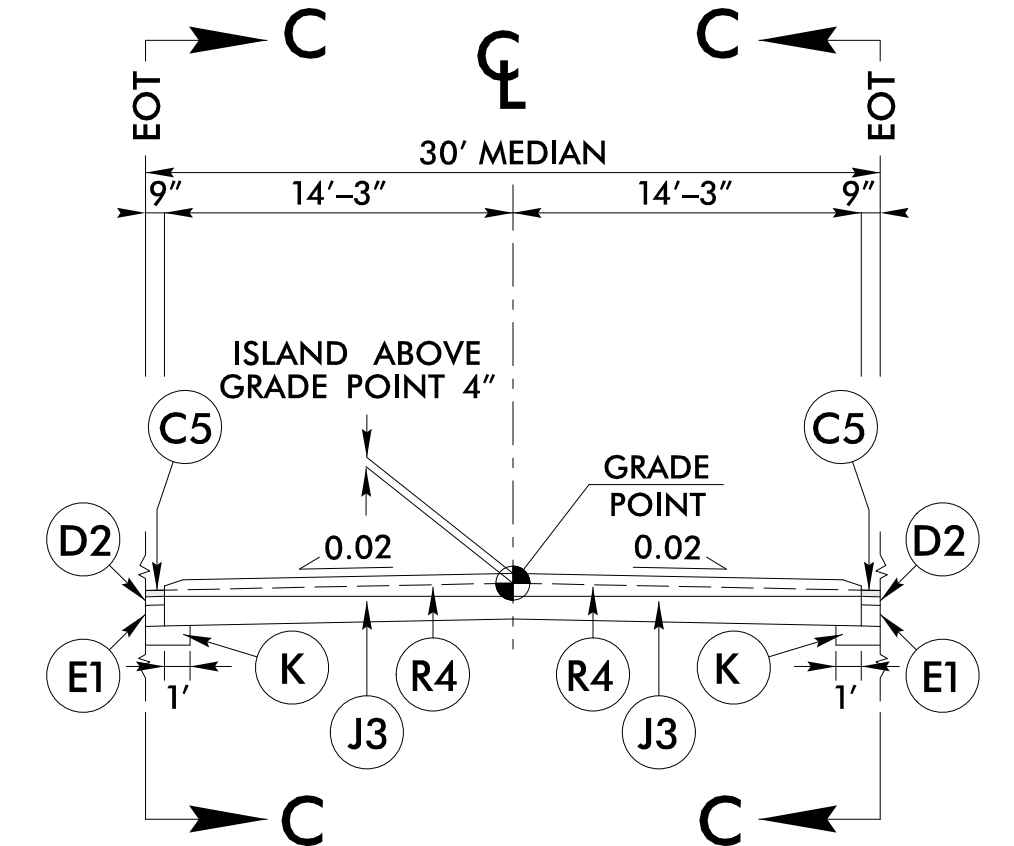
**TYPICAL SECTION NO. 3E**  
EXPRESSWAY GUTTER LOCATIONS  
USE TYPICAL SECTION NO. 3E IN CONJUNCTION WITH TYPICAL SECTION NO. 2 & 3  
-L- STA. 90+55.53 TO STA. 94+05.63



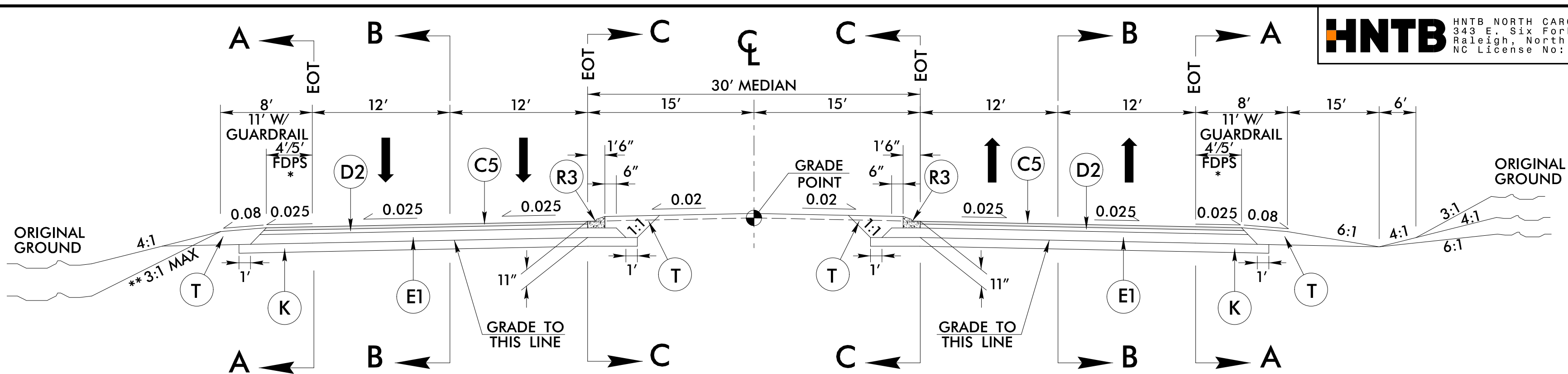
**TYPICAL SECTION NO. 3F**  
CHANNELIZATION WITH 8"x18" CURB  
USE TYPICAL SECTION NO. 3F IN CONJUNCTION WITH TYPICAL SECTION NO. 2 & 3  
SEE PLANS FOR LOCATIONS



**TYPICAL SECTION NO. 3G**  
2'-9" CONCRETE MEDIAN CURBING  
USE TYPICAL SECTION NO. 3G IN CONJUNCTION WITH TYPICAL SECTION NO. 2, 3 & 4

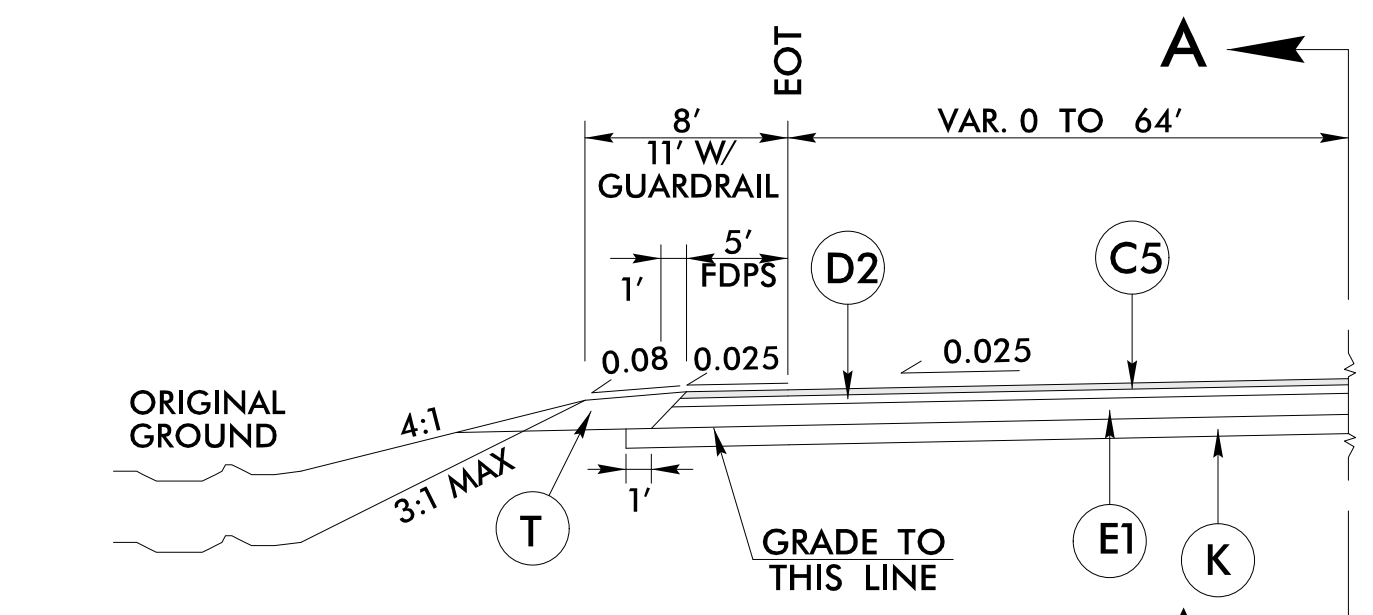


**TYPICAL SECTION NO. 3H**  
CONCRETE MEDIAN UNDERNEATH MIDWAY BRIDGE  
USE TYPICAL SECTION NO. 3H IN CONJUNCTION WITH TYPICAL SECTION NO. 3  
-L- STA. 78+82.50 TO STA. 79+82.50

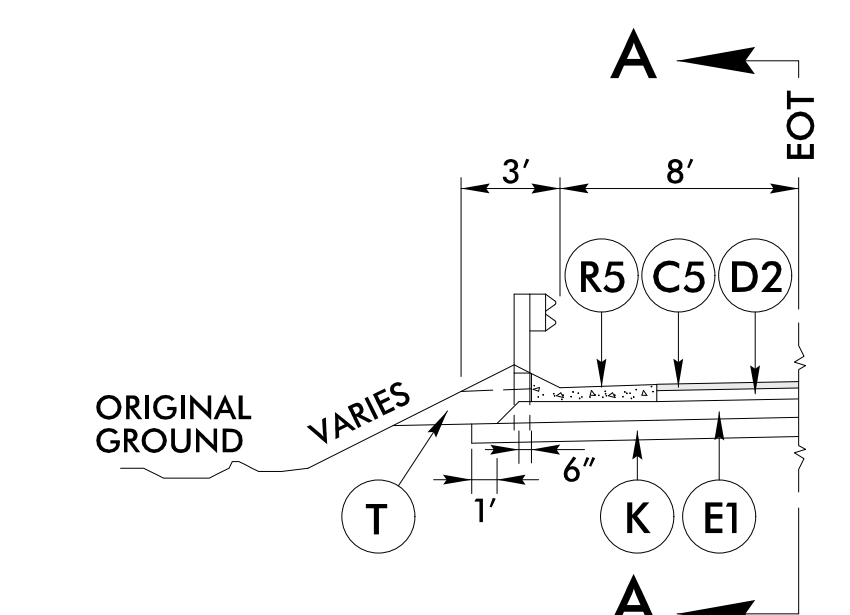


**TYPICAL SECTION NO. 3**  
-L- STA. 54+50.00 TO STA. 76+00.00  
-L- STA. 83+05.00 TO STA. 208+00.00  
-L- STA. 214+00.00 TO STA. 229+00.00  
-L- STA. 243+00.00 TO STA. 290+00.00  
-L- STA. 307+10.00 TO STA. 312+89.00  
-L- STA. 316+10.00 TO STA. 317+95.00

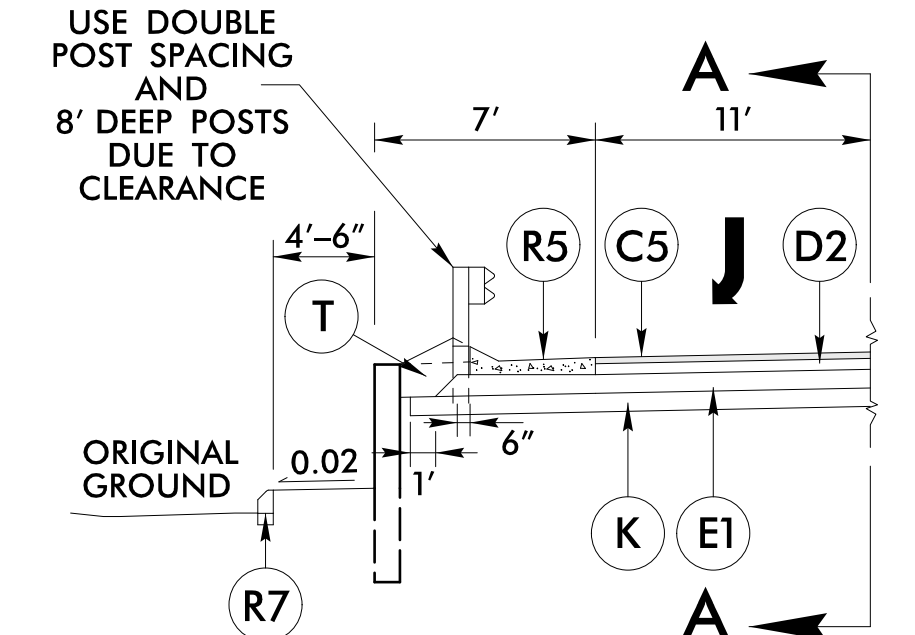
TRANSITION 5' FULL DEPTH PAVED SHOULDERS TO 4' FULL DEPTH PAVED SHOULDERS FROM  
-L- STA. 300+54.32 TO STA. 300+94.32.  
CONTINUE 4' FULL DEPTH PAVED SHOULDERS FROM  
-L- STA. 300+94.32 TO -L- STA. 370+85.00  
-LREV- STA. 370+85.00 TO STA. 387+76.87  
-L- STA. 387+80.00 R 2 TO -L- STA. 399+33.24 R 2



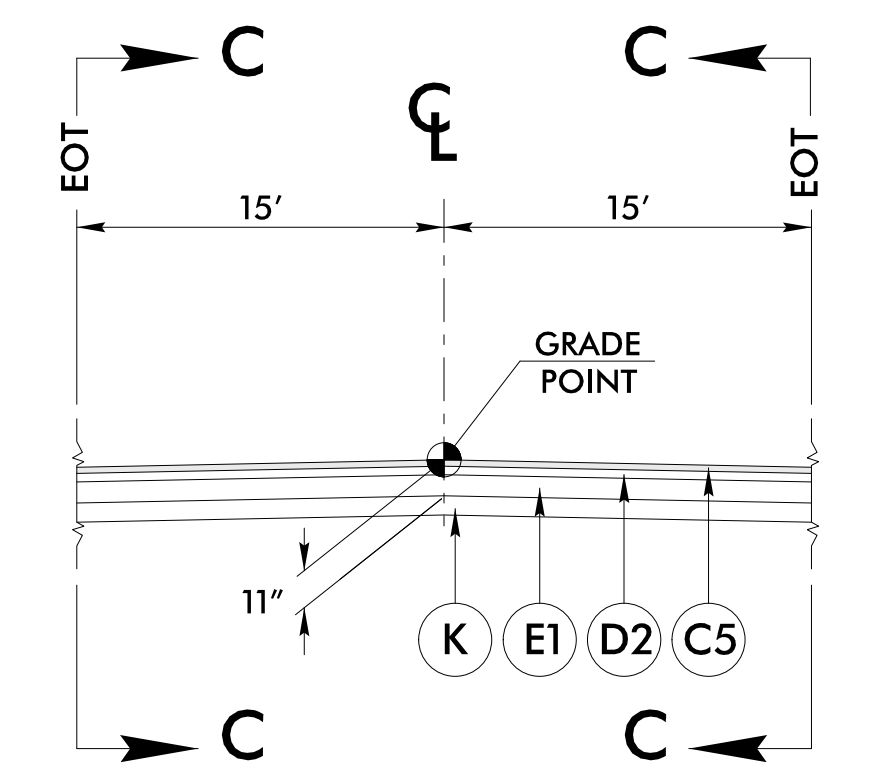
**TYPICAL SECTION NO. 3A**  
U-TURN BULB LOCATIONS  
USE TYPICAL SECTION NO. 3A IN CONJUNCTION WITH TYPICAL SECTION NO. 2 & 3  
SEE PLANS FOR LOCATIONS



**TYPICAL SECTION NO. 3B**  
SHOULDER BERM GUTTER LOCATIONS  
USE TYPICAL SECTION NO. 3B IN CONJUNCTION WITH TYPICAL SECTION NO. 2 & 3  
SEE PLANS FOR LOCATIONS

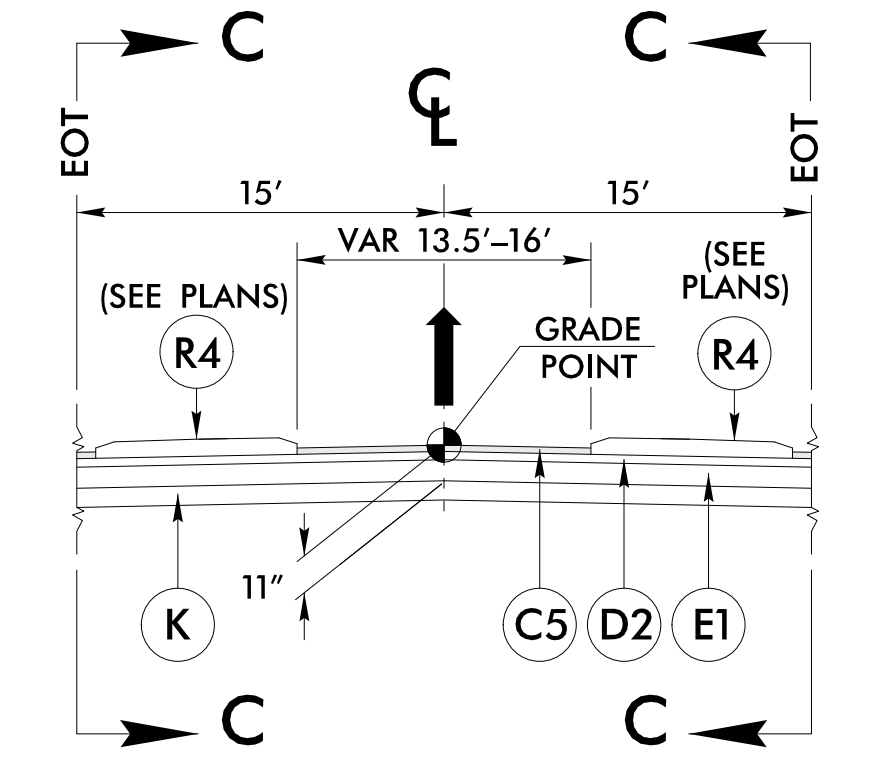


**TYPICAL SECTION NO. 3C**  
RETAINING WALL LOCATION 1 & 2  
USE TYPICAL SECTION NO. 3C IN CONJUNCTION WITH TYPICAL SECTION NO. 3  
-L- STA. 232+85.84 TO STA. 236+48.52  
-L- STA. 237+02.93 TO STA. 237+90.00



**TYPICAL SECTION NO. 3D**  
UNDIVIDED MEDIAN LOCATIONS

USE TYPICAL SECTION NO. 3D IN CONJUNCTION WITH TYPICAL SECTION NO. 2, 3 & 4  
-L- STA. 144+10.68 TO STA. 145+59.48  
-L- STA. 210+13.64 TO STA. 211+59.10  
-L- STA. 338+30.00 TO STA. 340+85.00  
-L- STA. 359+60.70 TO STA. 361+42.69  
-LREV- STA. 380+96.94 TO STA. 381+89.54  
-L- STA. 405+24.79 R 2 TO STA. 406+70.21 R 2  
-L- STA. 424+22.24 R 2 TO STA. 425+74.65 R 2



**TYPICAL SECTION NO. 3i**  
MONOLITHIC ISLAND LOCATIONS

USE TYPICAL SECTION NO. 3i IN CONJUNCTION WITH TYPICAL SECTION NO. 2, 3 & 4  
-L- STA. 63+86.05 TO STA. 68+55.00  
-L- STA. 71+75.00 TO STA. 72+32.00  
-L- STA. 78+82.50 TO STA. 79+82.50  
-L- STA. 100+84.25 TO STA. 109+15.00  
-L- STA. 143+10.70 TO STA. 144+10.68  
-L- STA. 145+59.48 TO STA. 146+79.35  
-L- STA. 209+13.67 TO STA. 210+13.64  
-L- STA. 211+59.10 TO STA. 217+15.00  
-L- STA. 230+21.56 TO STA. 235+93.06  
-L- STA. 239+05.00 TO STA. 241+51.50  
-L- STA. 254+14.00 TO STA. 258+69.00  
-L- STA. 269+47.04 TO STA. 274+02.09  
-L- STA. 300+19.32 TO STA. 302+84.32  
-L- STA. 322+85.00 TO STA. 338+30.00  
-L- STA. 340+85.00 TO STA. 349+83.39  
-L- STA. 358+58.75 TO STA. 359+60.70  
-L- STA. 361+42.69 TO STA. 362+48.21  
-LREV- STA. 379+96.97 TO STA. 380+96.94  
-L- STA. 403+83.44 R 2 TO STA. 405+24.79 R 2  
-L- STA. 406+70.21 R 2 TO STA. 407+89.93 R 2  
-L- STA. 416+87.50 R 2 TO STA. 424+22.24 R 2  
-L- STA. 425+74.65 R 2 TO STA. 428+37.02 R 2

NOTE: SEE PLANS FOR SUPERELEVATIONS, TURN LANES, AUXILIARY LANES, MONOLITHIC ISLANDS, CURB & GUTTER, AND LANE TAPER LOCATIONS.

**HNTB**  
HNTB NORTH CAROLINA, P.C.  
343 E. Six Forks Road, Suite 200  
Raleigh, North Carolina 27609  
NC License No: C-1524

PROJECT REFERENCE NO. <b>R-5021</b>	SHEET NO. <b>2A-2</b>
ROADWAY DESIGN ENGINEER <i>[Signature]</i> 11/1/2021	PAVEMENT DESIGN ENGINEER <i>[Signature]</i> 11/2/2021
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	

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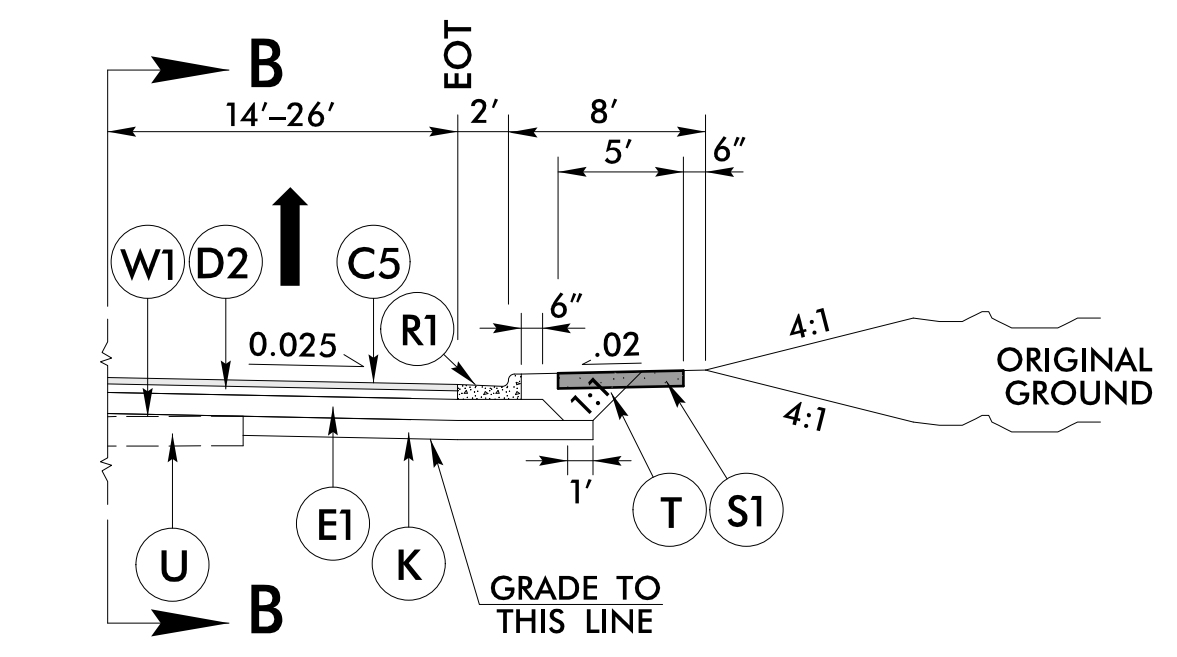
### PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)

C1	PROP. APPROX. 1.5" ACSC, TYPE S9.5B
C2	PROP. APPROX. 3" ACSC, TYPE S9.5B
C3	PROP. VAR. DEPTH ACSC, TYPE S9.5B
C4	PROP. APPROX. 1.5" ACSC, TYPE S9.5C
C5	PROP. APPROX. 3" ACSC, TYPE S9.5C
C6	PROP. VAR. DEPTH ACSC, TYPE S9.5C
D1	PROP. APPROX. 2.5" ACIC, TYPE I19.0C
D2	PROP. APPROX. 4" ACIC, TYPE I19.0C
D3	PROP. VAR. DEPTH ACIC, TYPE I19.0C
E1	PROP. APPROX. 4" ACBC, TYPE B25.0C
E2	PROP. VAR. DEPTH ACBC, TYPE B25.0C
J1	PROP. 6" ABC
J2	PROP. 8" ABC
J3	VARIABLE DEPTH ABC
K	PROP. 5" CLASS IV AGGREGATE STABILIZATION
P	PRIME COAT
R1	2'-6" CONCRETE CURB AND GUTTER.
R2	2'-9" CONCRETE CURB AND GUTTER.
R3	1'-6" CONCRETE CURB AND GUTTER. (STD MOUNTABLE)
R4	5" MONOLITHIC CONCRETE ISLAND
R5	SHOULDER BERM GUTTER
R6	EXPRESSWAY GUTTER
R7	8"x18" CURB
R8	1'-6" CONCRETE CURB AND GUTTER. (SP 1'PAN-6"GUTTER)
R9	7" JOINTED CONCRETE (WITHOUT DOWELS REINFORCED WITH A W3.5 x W3.5 OR W5 x W5 WIRE MESH)
R10	9"x18" CONCRETE CURB
S1	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT.
W1	WEDGING METHOD NO. 1 - SEE SHEET 2A-1
W2	WEDGING METHOD NO. 2 - SEE SHEET 2A-1

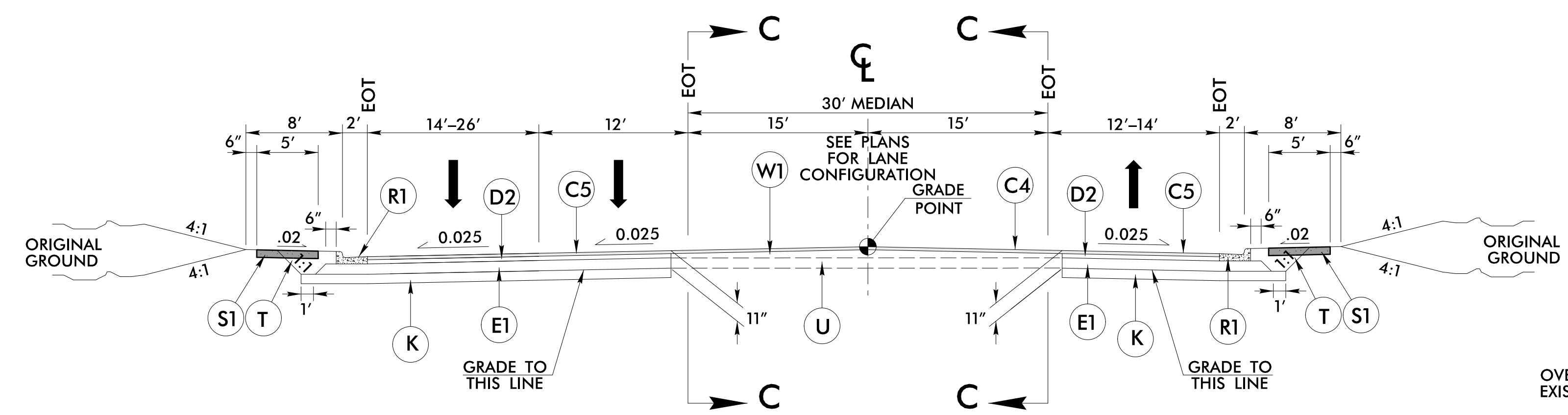
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

**HNTB** HNTB NORTH CAROLINA, P.C.  
343 E. Six Forks Road, Suite 200  
Raleigh, North Carolina 27609  
NC License No: C-1524

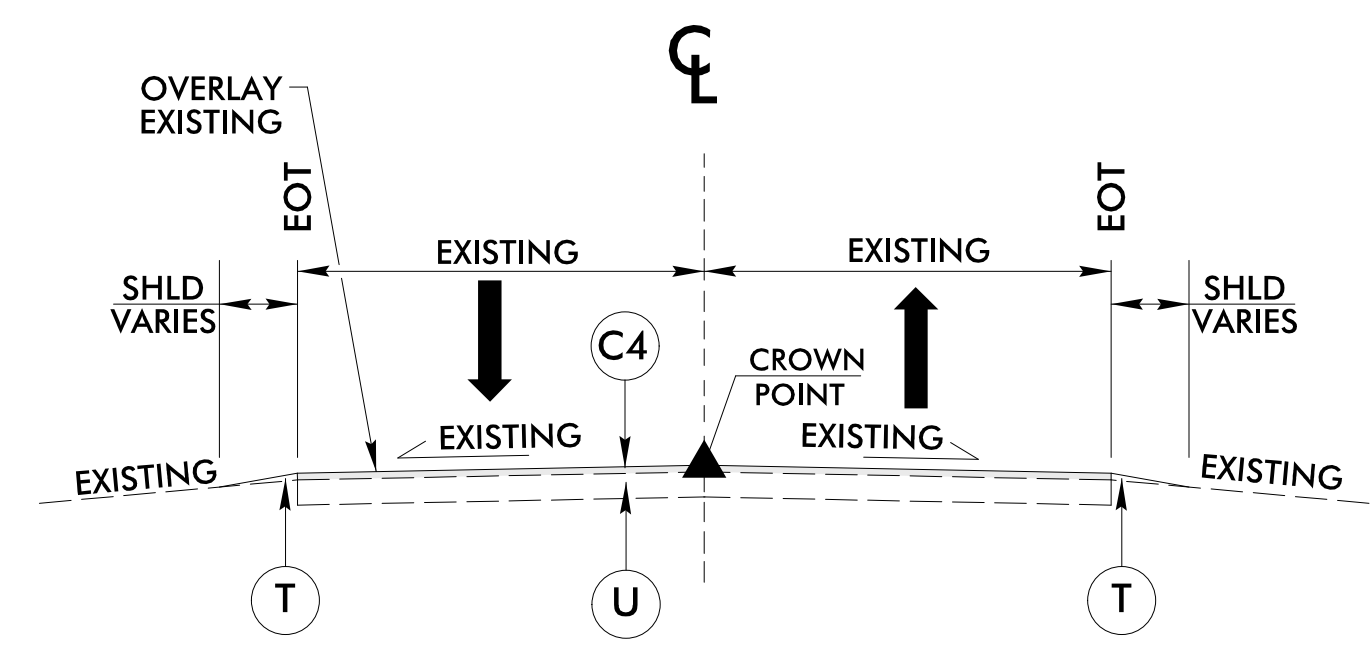
PROJECT REFERENCE NO. <b>R-5021</b>	SHEET NO. <b>2A-3</b>
ROADWAY DESIGN ENGINEER <i>Douglas M. Whitley</i> 11/1/2021	PAVEMENT DESIGN ENGINEER <i>Carl S. Morrison</i> 11/2/2021
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



**TYPICAL SECTION NO. 3J**  
2'-6" CURB AND GUTTER LOCATIONS  
USE TYPICAL SECTION NO. 3J IN CONJUNCTION WITH TYPICAL SECTION NO. 2 & 3  
SEE PLANS FOR LOCATIONS

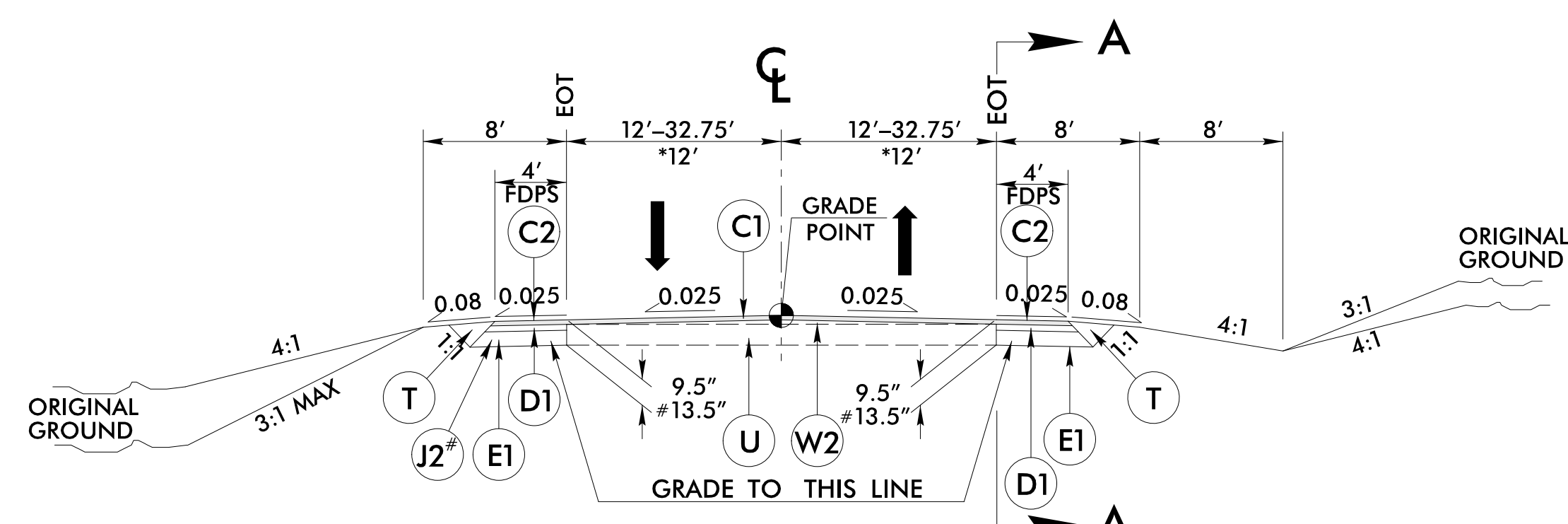


**TYPICAL SECTION NO. 4**  
-L- STA. 425+74.65 R 2 TO STA. 430+97.42 R 2



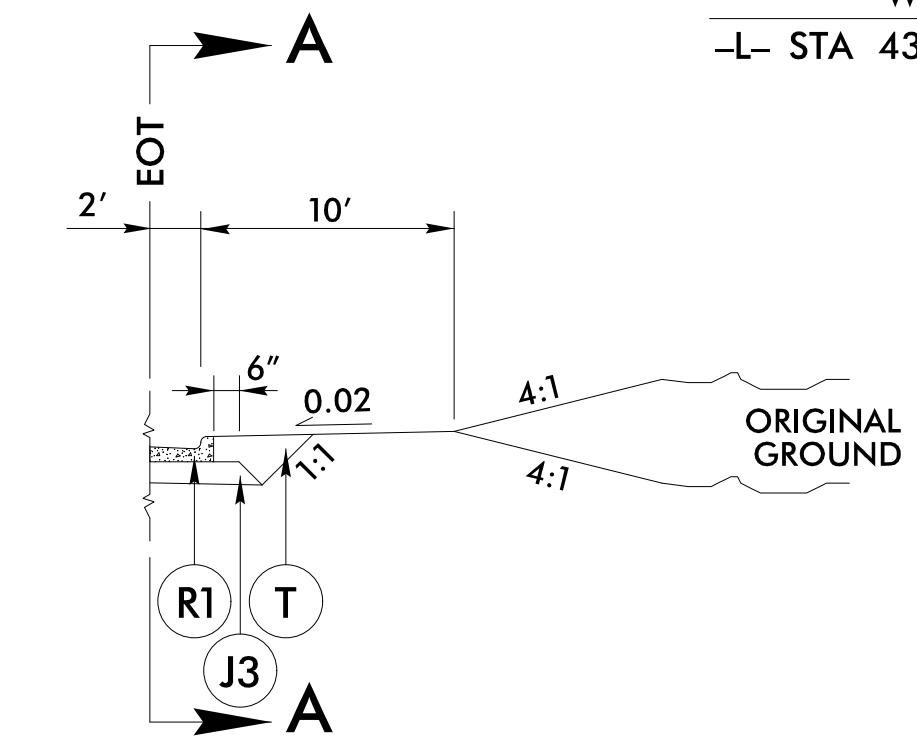
**TYPICAL SECTION NO. 4A**  
OVERLAY EXISTING

USE TYPICAL SECTION NO. 4A IN CONJUNCTION WITH TYPICAL SECTION NO. 4  
-L- STA 430+97.42 R 2 TO STA 432+50.00 R 2



**TYPICAL SECTION NO. 5**

USE TYPICAL SECTION NO. 5  
-YREV- STA. 10+70.00 (EXISTING) TO STA. 11+60.00  
# -YREV- STA. 11+60.00 TO STA. 15+70.00  
\* -Y23- STA. 10+24.74 TO STA. 12+25.00



**TYPICAL SECTION NO. 5A**  
2'-6" CURB AND GUTTER LOCATIONS

USE TYPICAL SECTION NO. 5A IN CONJUNCTION WITH TYPICAL SECTION NO. 5 & 6  
-YREV- STA. 14+67.55 TO STA. 18+53.55 RT

NOTE: SEE PLANS FOR SUPERELEVATIONS, TURN LANES, AUXILIARY LANES, MONOLITHIC ISLANDS, CURB & GUTTER, AND LANE TAPER LOCATIONS.

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HNTB

6/2/2021

### PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)

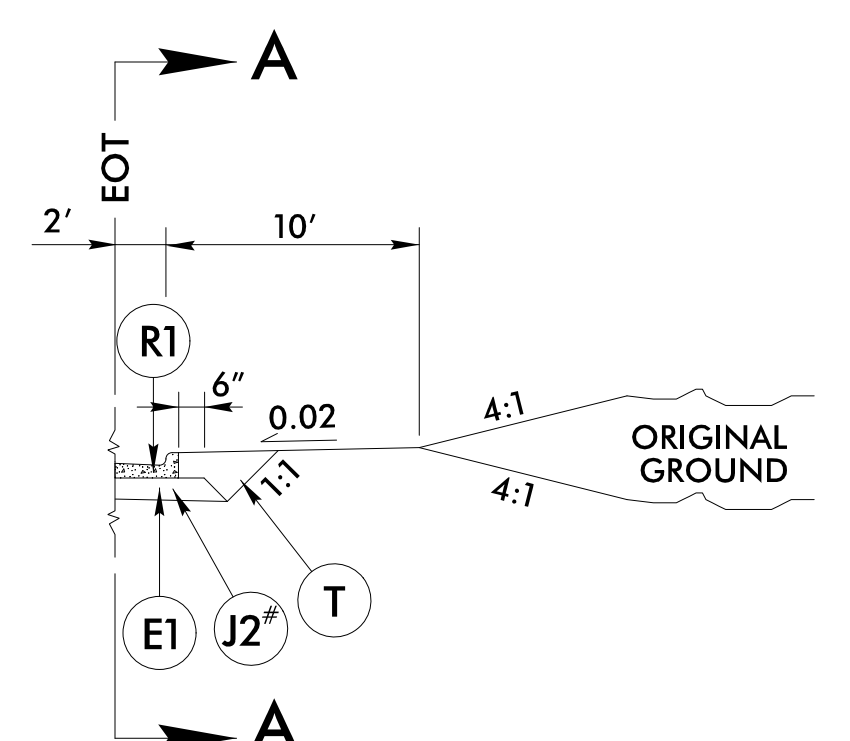
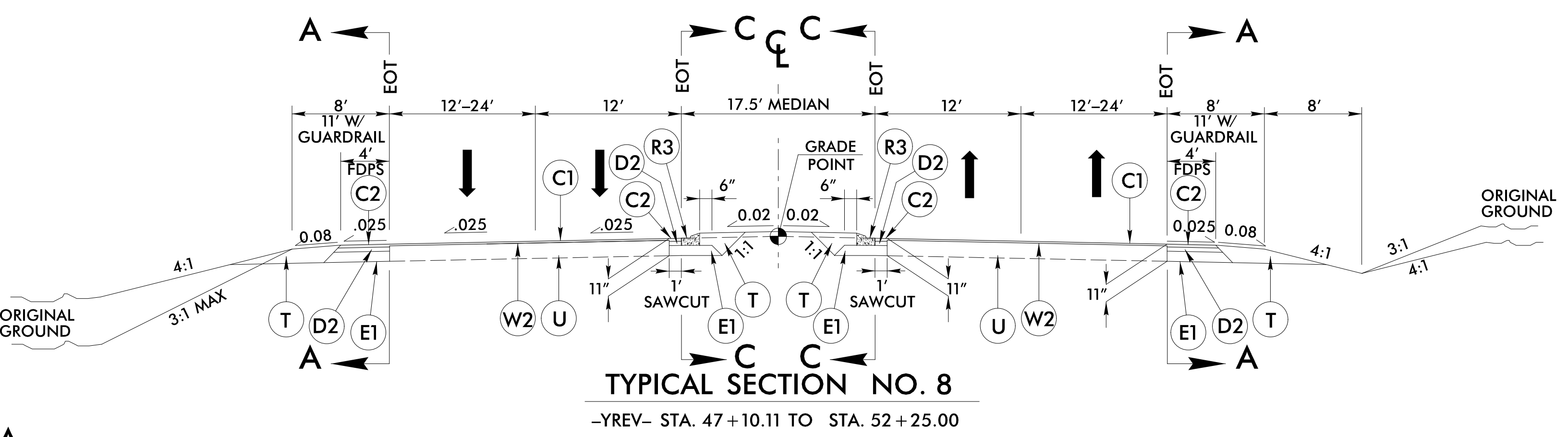
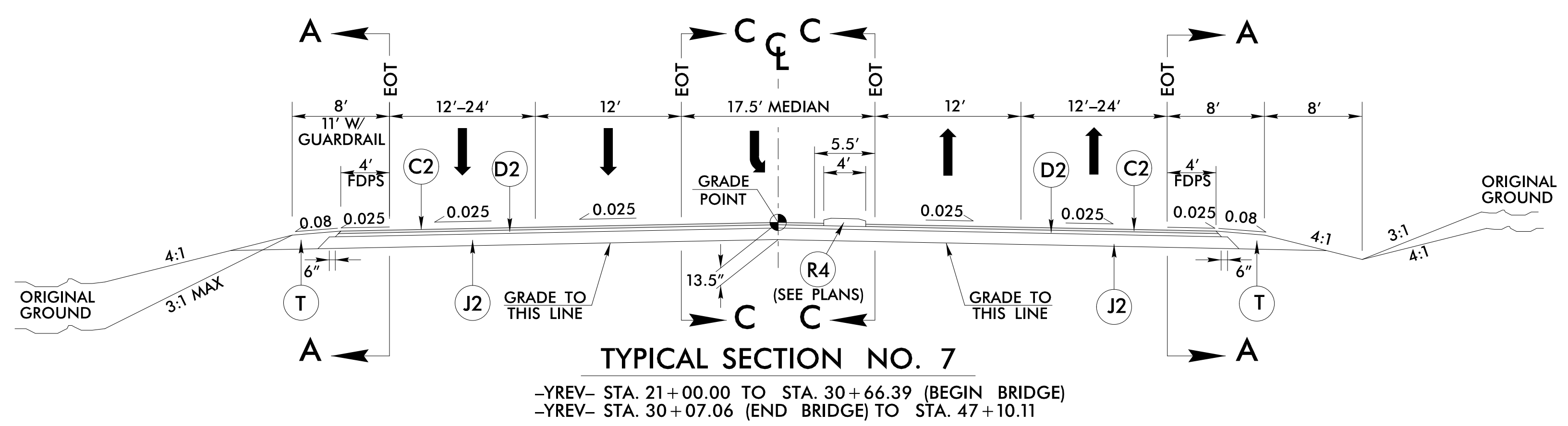
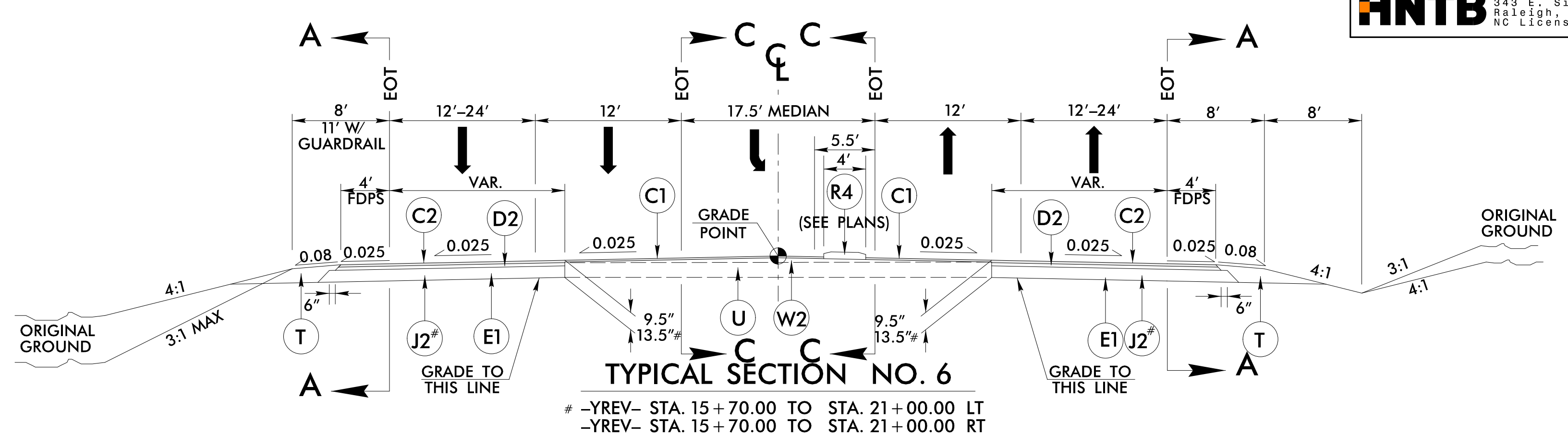
C1	PROP. APPROX. 1.5" ACSC, TYPE S9.5B
C2	PROP. APPROX. 3" ACSC, TYPE S9.5B
C3	PROP. VAR. DEPTH ACSC, TYPE S9.5B
C4	PROP. APPROX. 1.5" ACSC, TYPE S9.5C
C5	PROP. APPROX. 3" ACSC, TYPE S9.5C
C6	PROP. VAR. DEPTH ACSC, TYPE S9.5C
D1	PROP. APPROX. 2.5" ACIC, TYPE I19.0C
D2	PROP. APPROX. 4" ACIC, TYPE I19.0C
D3	PROP. VAR. DEPTH ACIC, TYPE I19.0C
E1	PROP. APPROX. 4" ACBC, TYPE B25.0C
E2	PROP. VAR. DEPTH ACBC, TYPE B25.0C
J1	PROP. 6" ABC
J2	PROP. 8" ABC
J3	VARIABLE DEPTH ABC
K	PROP. 5" CLASS IV AGGREGATE STABILIZATION
P	PRIME COAT
R1	2'-6" CONCRETE CURB AND GUTTER.
R2	2'-9" CONCRETE CURB AND GUTTER.
R3	1'-6" CONCRETE CURB AND GUTTER. (STD MOUNTABLE)
R4	5" MONOLITHIC CONCRETE ISLAND
R5	SHOULDER BERM GUTTER
R6	EXPRESSWAY GUTTER
R7	8"x18" CURB
R8	1'-6" CONCRETE CURB AND GUTTER. (SP 1'PAN-6"GUTTER)
R9	7" JOINTED CONCRETE (WITHOUT DOWELS REINFORCED WITH A W3.5 x W3.5 OR W5 x W5 WIRE MESH)
R10	9"x18" CONCRETE CURB
S1	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT.
W1	WEDGING METHOD NO. 1 - SEE SHEET 2A-1
W2	WEDGING METHOD NO. 2 - SEE SHEET 2A-1

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

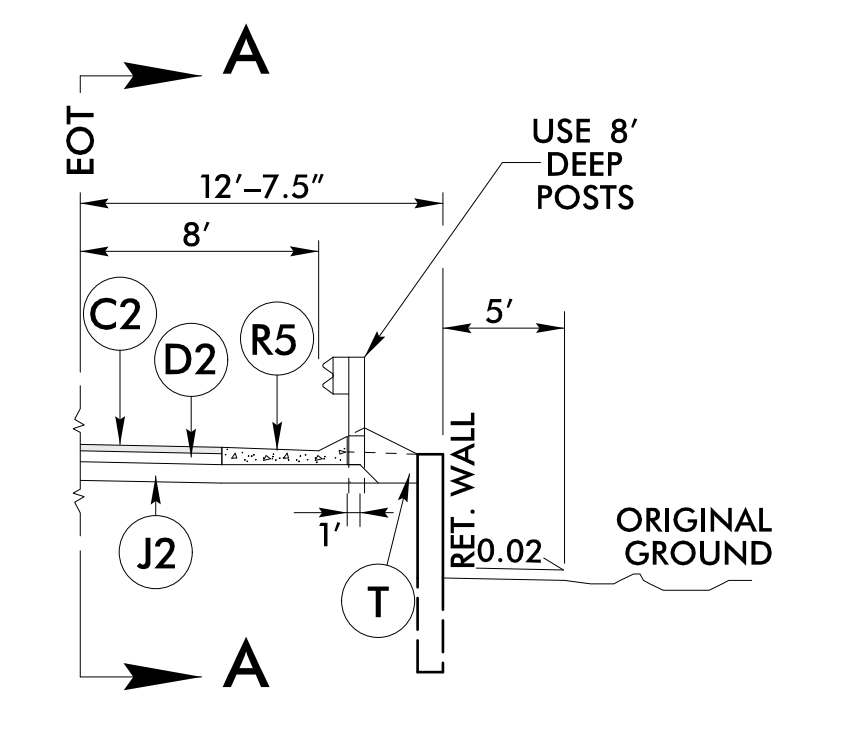
**HNTB** HNTB NORTH CAROLINA, P.C.  
343 E. Six Forks Road, Suite 200  
Raleigh, North Carolina 27609  
NC License No: C-1524

PROJECT REFERENCE NO. <b>R-5021</b>	SHEET NO. <b>2A-4</b>
ROADWAY DESIGN ENGINEER <i>Seal Wigney</i> 36786	PAVEMENT DESIGN ENGINEER <i>Carl S. Morrison</i> 022896
11/1/2021	11/2/2021

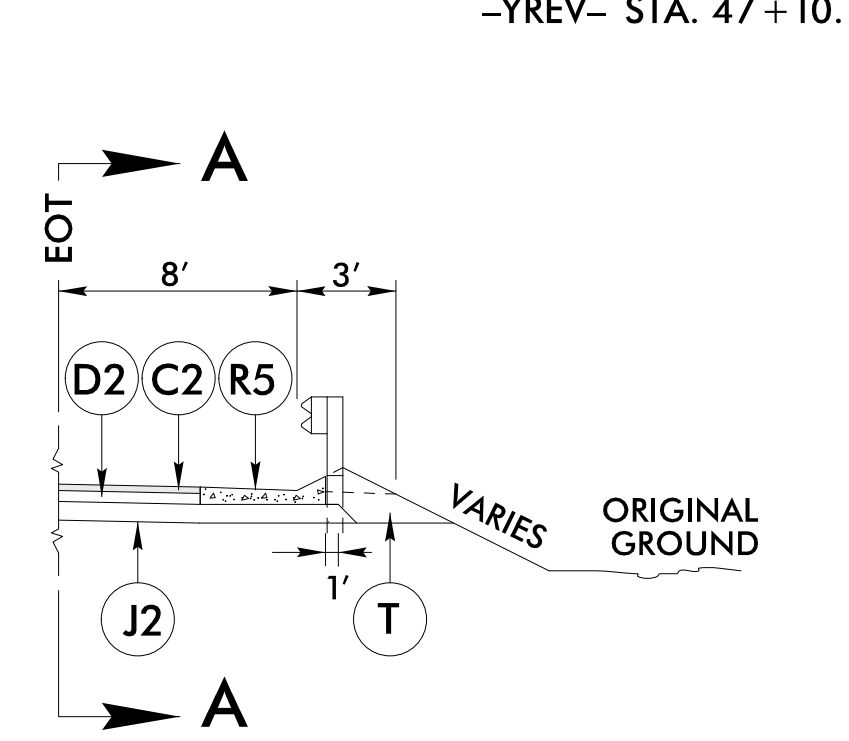
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UNLESS ALL SIGNATURES COMPLETED**



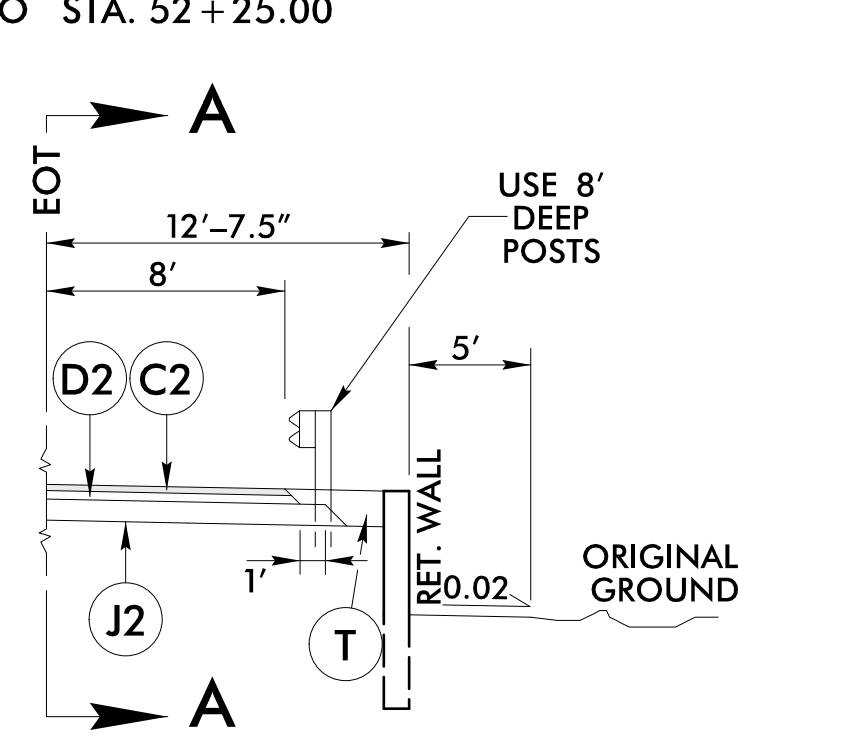
USE TYPICAL NO. 6A IN CONJUNCTION WITH TYPICAL SECTION NO. 6 & 7  
-YREV- STA. 18+53.55 TO STA. 25+50.00 RT



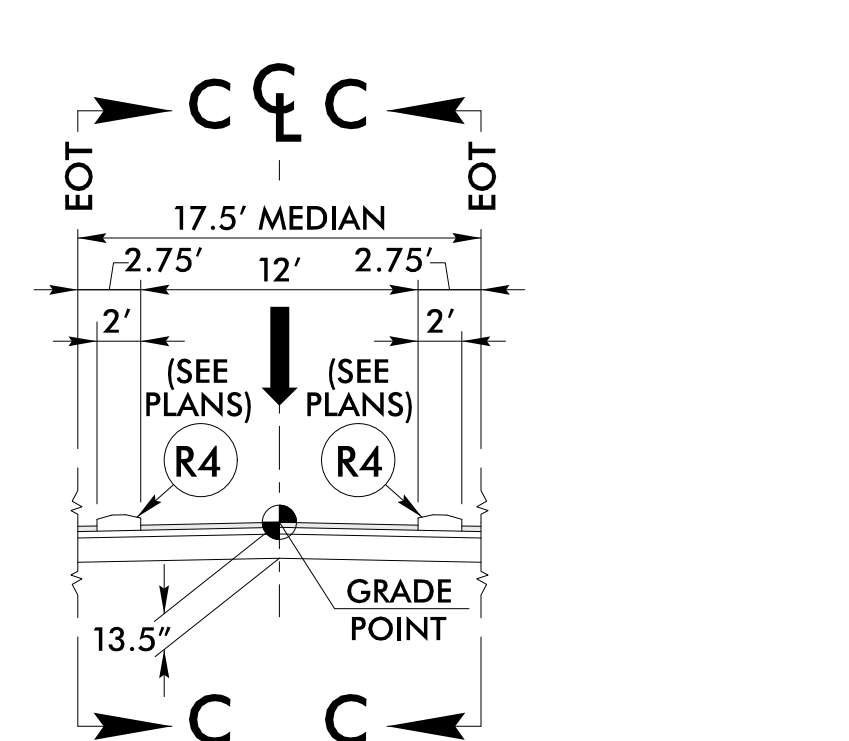
USE TYPICAL NO. 7A IN CONJUNCTION WITH TYPICAL SECTION NO. 7 & 8  
-YREV- STA. 29+65.69 TO STA. 30+36.44 RT  
-YREV- STA. 32+29.25 TO STA. 33+50.33 RT  
-YREV- STA. 37+95.00 TO STA. 47+66.75 LT



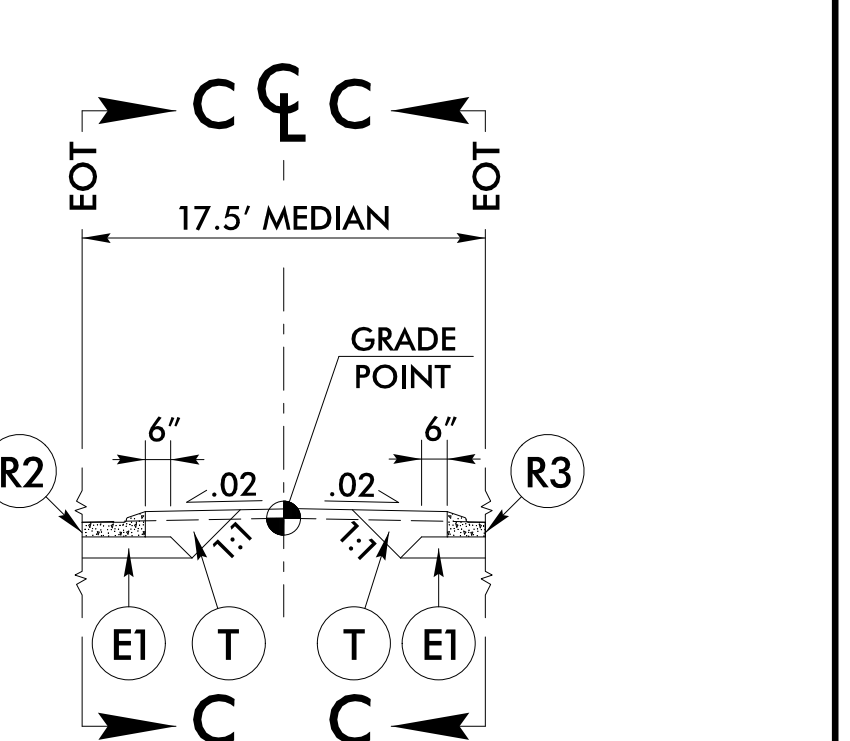
USE TYPICAL NO. 7B IN CONJUNCTION WITH TYPICAL SECTION NO. 7 & 8  
-YREV- STA. 25+50.00 TO STA. 29+65.90 RT  
-YREV- STA. 32+29.25 TO STA. 36+50.00 RT



USE TYPICAL NO. 7C IN CONJUNCTION WITH TYPICAL SECTION NO. 7 & 8  
-YREV- STA. 29+51.83 TO STA. 30+47.72 LT  
-YREV- STA. 32+33.10 TO STA. 33+44.60 LT



USE TYPICAL NO. 7D IN CONJUNCTION WITH TYPICAL SECTION NO. 7  
-YREV- STA. 38+42.67 TO STA. 41+41.48



USE TYPICAL NO. 8A IN CONJUNCTION WITH TYPICAL SECTION NO. 8  
-YREV- STA. 50+00.30 TO STA. 52+25.00

NOTE: SEE PLANS FOR SUPERELEVATIONS, TURN LANES, AUXILIARY LANES, MONOLITHIC ISLANDS, CURB & GUTTER, AND LANE TAPER LOCATIONS.

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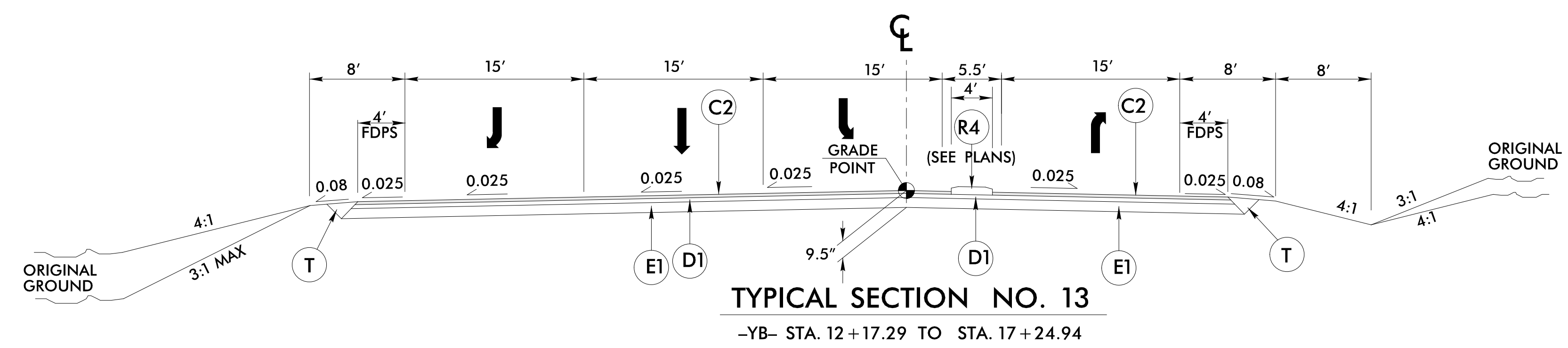
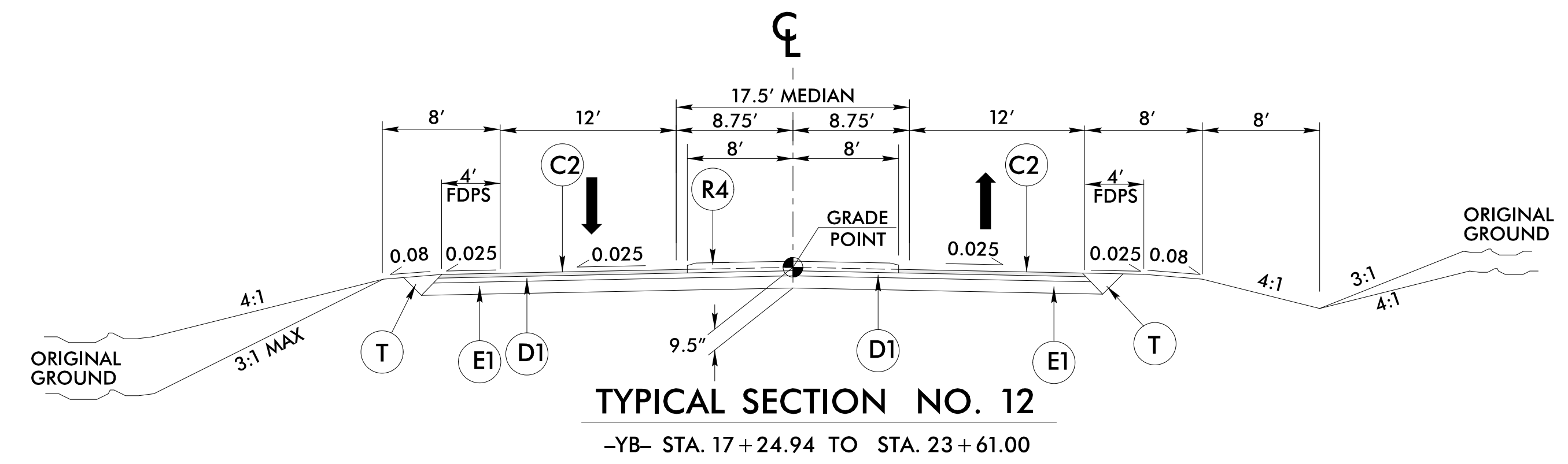
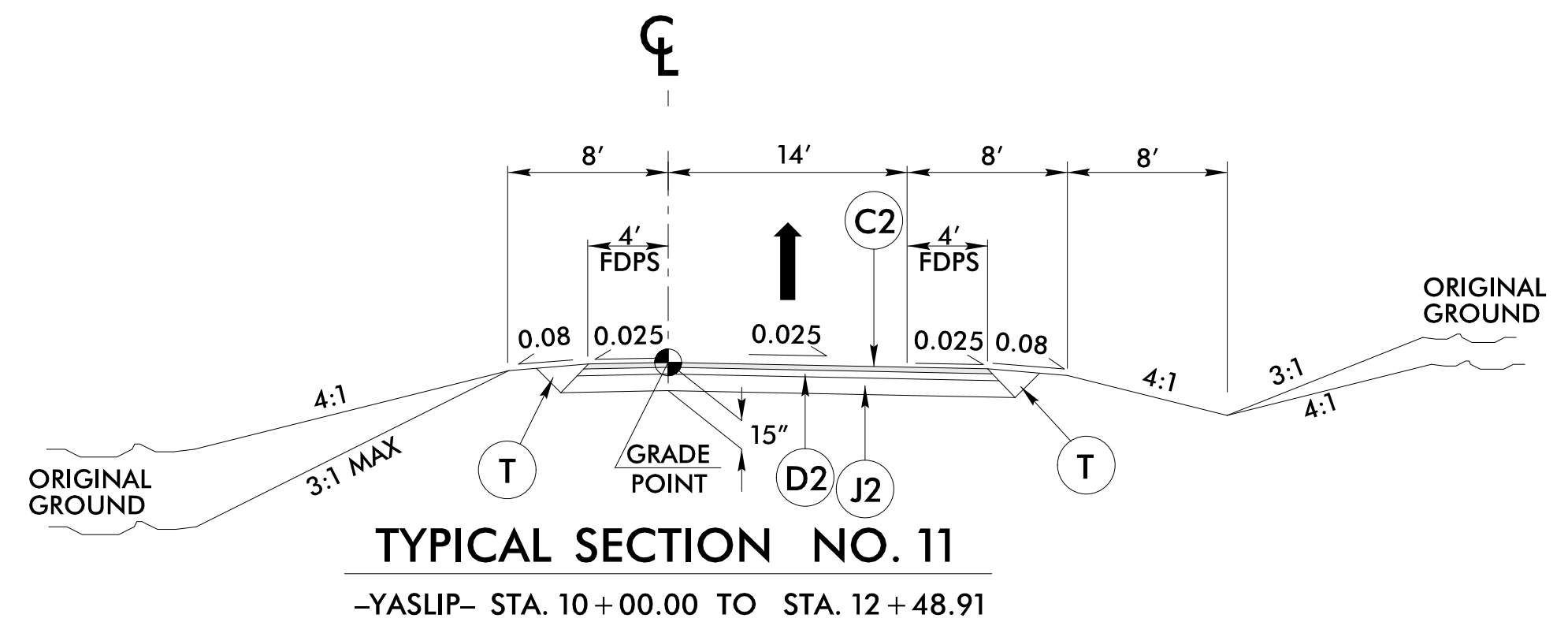
PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	PROP. APPROX. 1.5" ACSC, TYPE S9.5B
C2	PROP. APPROX. 3" ACSC, TYPE S9.5B
C3	PROP. VAR. DEPTH ACSC, TYPE S9.5B
C4	PROP. APPROX. 1.5" ACSC, TYPE S9.5C
C5	PROP. APPROX. 3" ACSC, TYPE S9.5C
C6	PROP. VAR. DEPTH ACSC, TYPE S9.5C
D1	PROP. APPROX. 2.5" ACIC, TYPE I19.0C
D2	PROP. APPROX. 4" ACIC, TYPE I19.0C
D3	PROP. VAR. DEPTH ACIC, TYPE I19.0C
E1	PROP. APPROX. 4" ACBC, TYPE B25.0C
E2	PROP. VAR. DEPTH ACBC, TYPE B25.0C
J1	PROP. 6" ABC
J2	PROP. 8" ABC
J3	VARIABLE DEPTH ABC
K	PROP. 5" CLASS IV AGGREGATE STABILIZATION
P	PRIME COAT
R1	2'-6" CONCRETE CURB AND GUTTER.
R2	2'-9" CONCRETE CURB AND GUTTER.
R3	1'-6" CONCRETE CURB AND GUTTER. (STD MOUNTABLE)
R4	5" MONOLITHIC CONCRETE ISLAND
R5	SHOULDER BERM GUTTER
R6	EXPRESSWAY GUTTER
R7	8"x18" CURB
R8	1'-6" CONCRETE CURB AND GUTTER. (SP 1'PAN-6" GUTTER)
R9	7" JOINTED CONCRETE (WITHOUT DOWELS REINFORCED WITH A W3.5 x W3.5 OR W5 x W5 WIRE MESH)
R10	9"x18" CONCRETE CURB
S1	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT.
W1	WEDGING METHOD NO. 1 - SEE SHEET 2A-1
W2	WEDGING METHOD NO. 2 - SEE SHEET 2A-1

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

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Raleigh, North Carolina 27609  
NC License No: C-1524

PROJECT REFERENCE NO. <b>R-5021</b>	SHEET NO. <b>2A-5</b>
ROADWAY DESIGN ENGINEER <i>Douglas M. Whitley</i> 11/1/2024	PAVEMENT DESIGN ENGINEER <i>Carl S. Morrison</i> 11/2/2024

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



NOTE: SEE PLANS FOR SUPERELEVATIONS, TURN LANES, AUXILIARY LANES, MONOLITHIC ISLANDS, CURB & GUTTER, AND LANE TAPER LOCATIONS.

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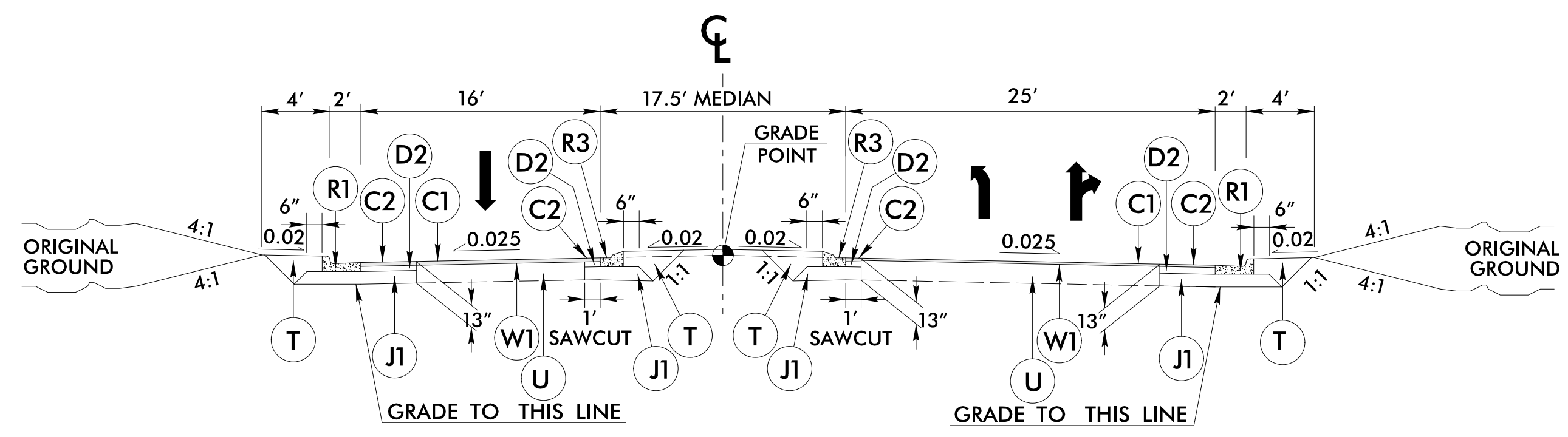
### PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)

C1	PROP. APPROX. 1.5" ACSC, TYPE S9.5B
C2	PROP. APPROX. 3" ACSC, TYPE S9.5B
C3	PROP. VAR. DEPTH ACSC, TYPE S9.5B
C4	PROP. APPROX. 1.5" ACSC, TYPE S9.5C
C5	PROP. APPROX. 3" ACSC, TYPE S9.5C
C6	PROP. VAR. DEPTH ACSC, TYPE S9.5C
D1	PROP. APPROX. 2.5" ACIC, TYPE I19.0C
D2	PROP. APPROX. 4" ACIC, TYPE I19.0C
D3	PROP. VAR. DEPTH ACIC, TYPE I19.0C
E1	PROP. APPROX. 4" ACBC, TYPE B25.0C
E2	PROP. VAR. DEPTH ACBC, TYPE B25.0C
J1	PROP. 6" ABC
J2	PROP. 8" ABC
J3	VARIABLE DEPTH ABC
K	PROP. 5" CLASS IV AGGREGATE STABILIZATION
P	PRIME COAT
R1	2'-6" CONCRETE CURB AND GUTTER.
R2	2'-9" CONCRETE CURB AND GUTTER.
R3	1'-6" CONCRETE CURB AND GUTTER. (STD MOUNTABLE)
R4	5" MONOLITHIC CONCRETE ISLAND
R5	SHOULDER BERM GUTTER
R6	EXPRESSWAY GUTTER
R7	8"x18" CURB
R8	1'-6" CONCRETE CURB AND GUTTER. (SP 1'PAN-6" GUTTER)
R9	7" JOINTED CONCRETE (WITHOUT DOWELS REINFORCED WITH A W3.5 X W3.5 OR W5 X W5 WIRE MESH)
R10	9"x18" CONCRETE CURB
S1	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT.
W1	WEDGING METHOD NO. 1 - SEE SHEET 2A-1
W2	WEDGING METHOD NO. 2 - SEE SHEET 2A-1

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

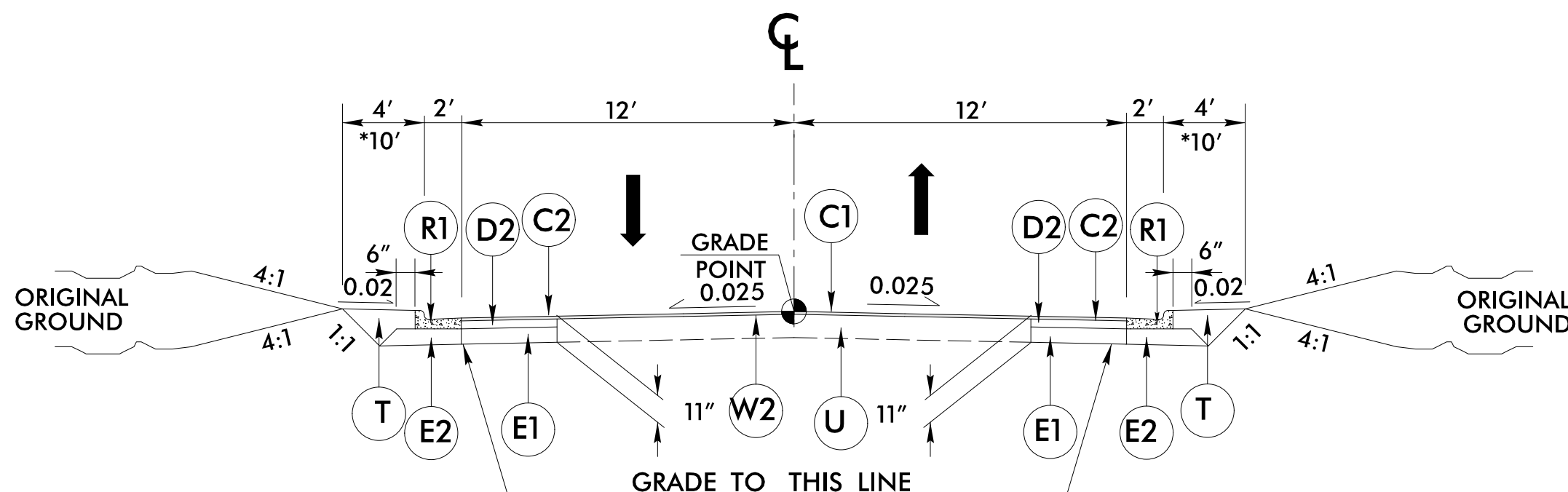


PROJECT REFERENCE NO. <b>R-5021</b>	SHEET NO. <b>2A-6</b>
ROADWAY DESIGN ENGINEER <i>David S. Wilentz</i> 11/1/2021	PAVEMENT DESIGN ENGINEER <i>Carl S. Sturman</i> 11/2/2021
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



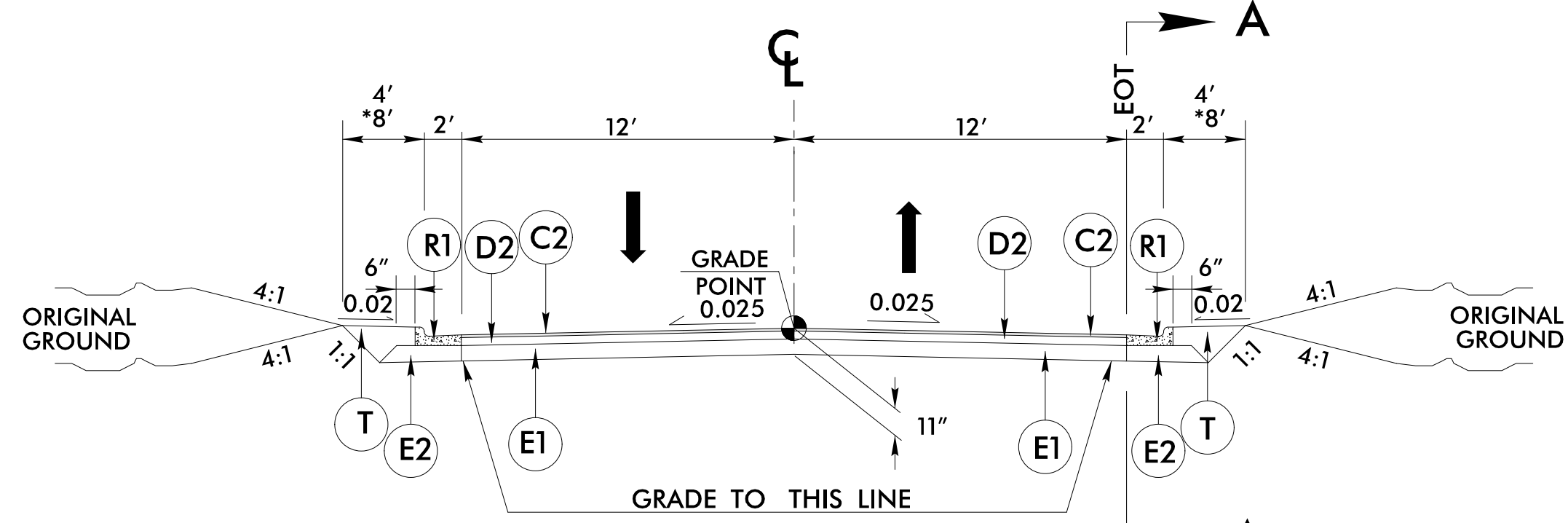
#### TYPICAL SECTION NO. 14

-YC- STA. 10+25.00 TO STA. 11+66.44



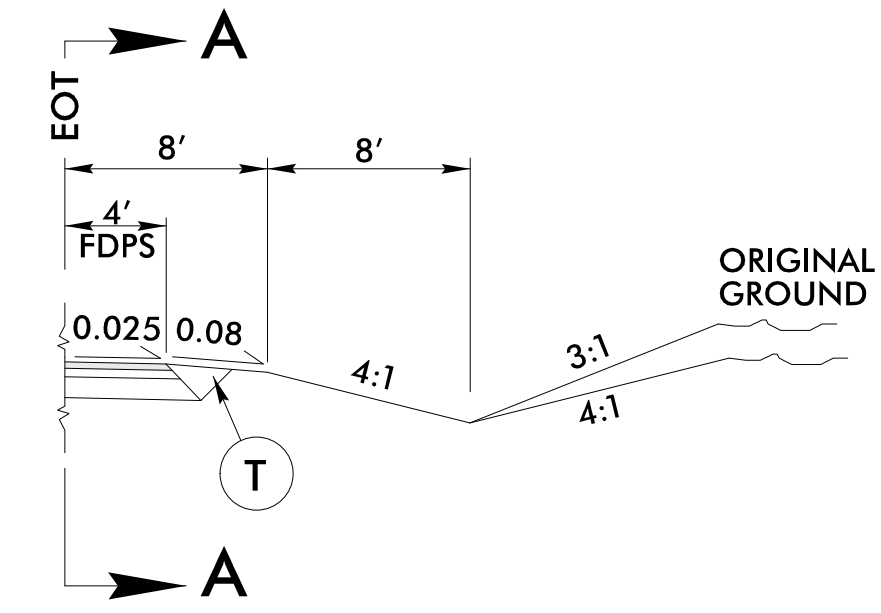
#### TYPICAL SECTION NO. 15

-YD- STA. 10+25.00 TO STA. 10+95.00  
\*Y14B- STA. 10+39.40 TO STA. 12+39.27  
-Y14G- STA. 10+31.98 TO STA. 12+00.00



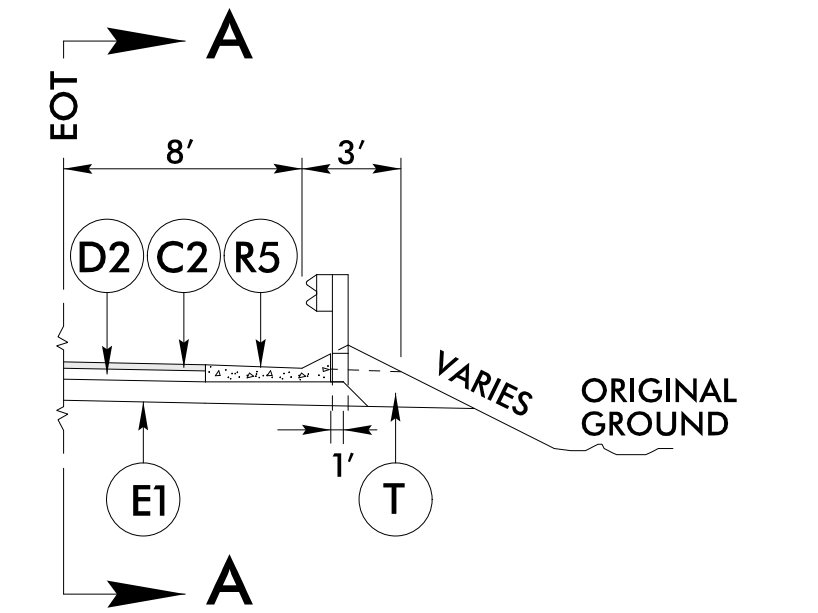
#### TYPICAL SECTION NO. 16

-Y1A- STA. 10+00.00 TO STA. 11+63.00  
-Y2A- STA. 10+65.00 TO STA. 12+00.00  
-YD- STA. 10+95.00 TO STA. 12+67.17  
-Y14F- STA. 11+38.00 TO STA. 12+00.00  
-Y14G- STA. 12+00.00 TO STA. 13+50.00



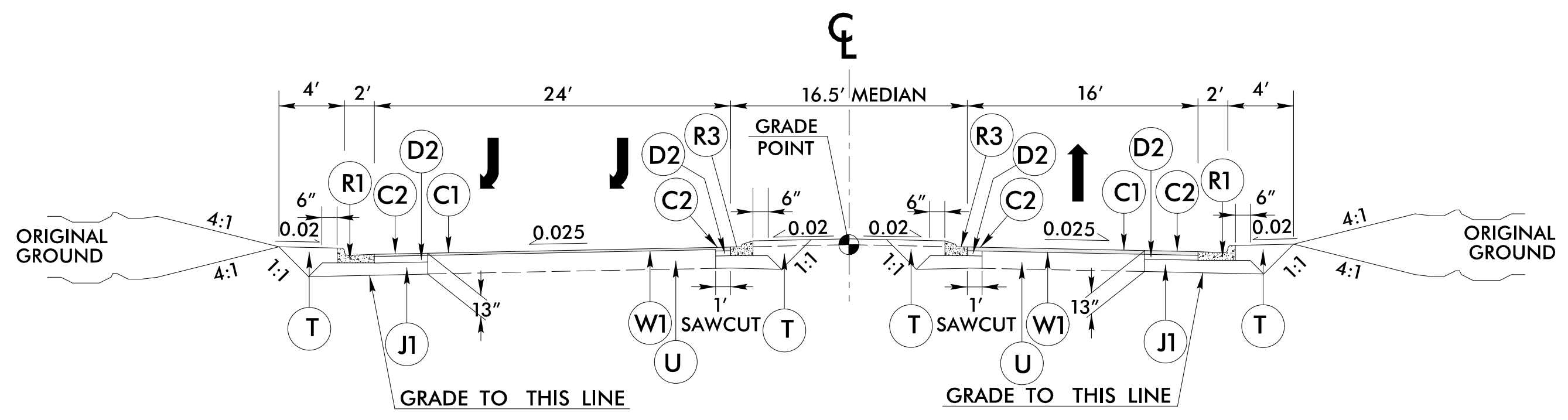
#### TYPICAL SECTION NO. 16A 8' SHOULDER LOCATION

USE TYPICAL SECTION NO. 16A IN CONJUNCTION WITH TYPICAL SECTION NO. 16  
-YD- STA. 11+75.00 TO STA. 12+20.66 RT



#### TYPICAL SECTION NO. 16B SHOULDER BERM GUTTER LOCATIONS

USE TYPICAL SECTION NO. 16B IN CONJUNCTION WITH TYPICAL SECTION NO. 16  
-YD- STA. 12+20.66 TO STA. 12+67.17 RT



#### TYPICAL SECTION NO. 17

-YE- STA. 10+75.00 TO STA. 12+50.00

NOTE: SEE PLANS FOR SUPERELEVATIONS, TURN LANES, AUXILIARY LANES, MONOLITHIC ISLANDS, CURB & GUTTER, AND LANE TAPER LOCATIONS.

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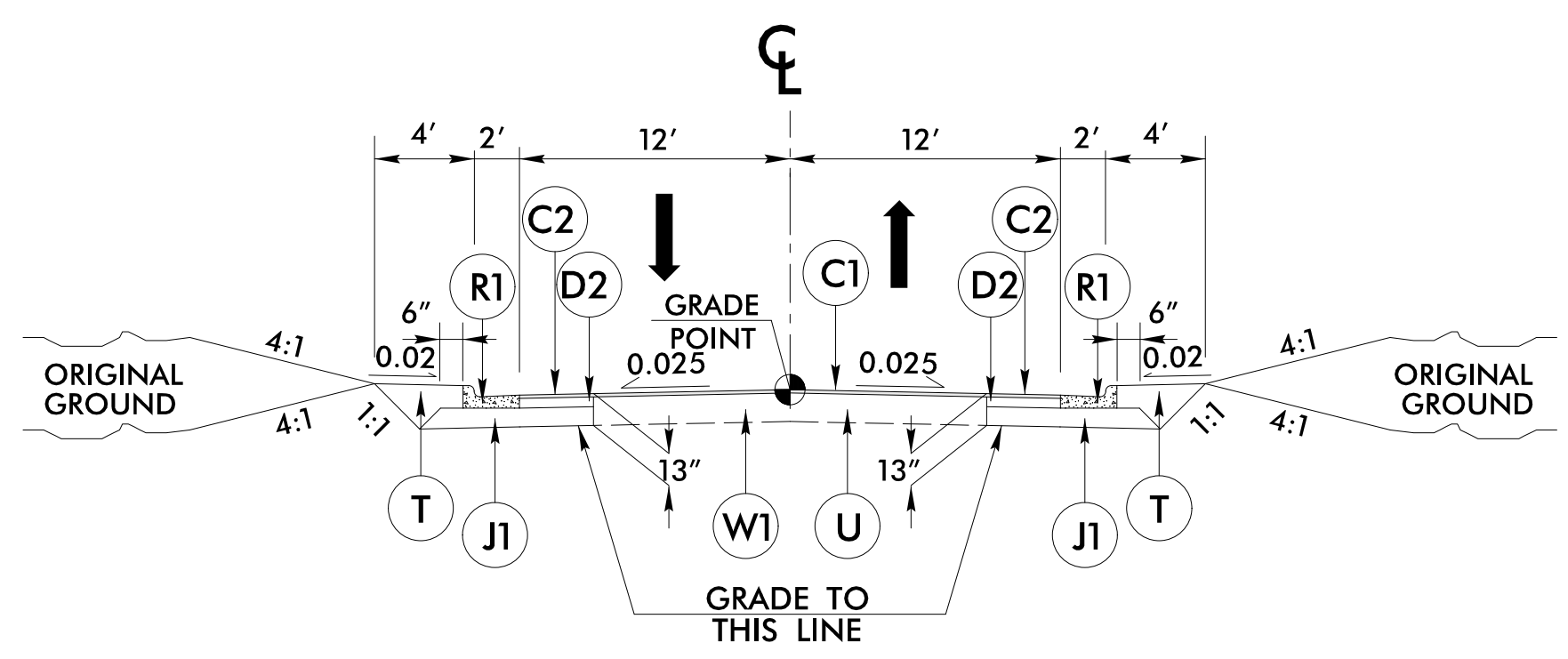
PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	PROP. APPROX. 1.5" ACSC, TYPE S9.5B
C2	PROP. APPROX. 3" ACSC, TYPE S9.5B
C3	PROP. VAR. DEPTH ACSC, TYPE S9.5B
C4	PROP. APPROX. 1.5" ACSC, TYPE S9.5C
C5	PROP. APPROX. 3" ACSC, TYPE S9.5C
C6	PROP. VAR. DEPTH ACSC, TYPE S9.5C
D1	PROP. APPROX. 2.5" ACIC, TYPE I19.0C
D2	PROP. APPROX. 4" ACIC, TYPE I19.0C
D3	PROP. VAR. DEPTH ACIC, TYPE I19.0C
E1	PROP. APPROX. 4" ACBC, TYPE B25.0C
E2	PROP. VAR. DEPTH ACBC, TYPE B25.0C
J1	PROP. 6" ABC
J2	PROP. 8" ABC
J3	VARIABLE DEPTH ABC
K	PROP. 5" CLASS IV AGGREGATE STABILIZATION
P	PRIME COAT
R1	2'-6" CONCRETE CURB AND GUTTER.
R2	2'-9" CONCRETE CURB AND GUTTER.
R3	1'-6" CONCRETE CURB AND GUTTER. (STD MOUNTABLE)
R4	5" MONOLITHIC CONCRETE ISLAND
R5	SHOULDER BERM GUTTER
R6	EXPRESSWAY GUTTER
R7	8"x18" CURB
R8	1'-6" CONCRETE CURB AND GUTTER. (SP 1'PAN-6" GUTTER)
R9	7" JOINTED CONCRETE (WITHOUT DOWELS REINFORCED WITH A W3.5 x W3.5 OR W5 x W5 WIRE MESH)
R10	9"x18" CONCRETE CURB
S1	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT.
W1	WEDGING METHOD NO. 1 - SEE SHEET 2A-1
W2	WEDGING METHOD NO. 2 - SEE SHEET 2A-1

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

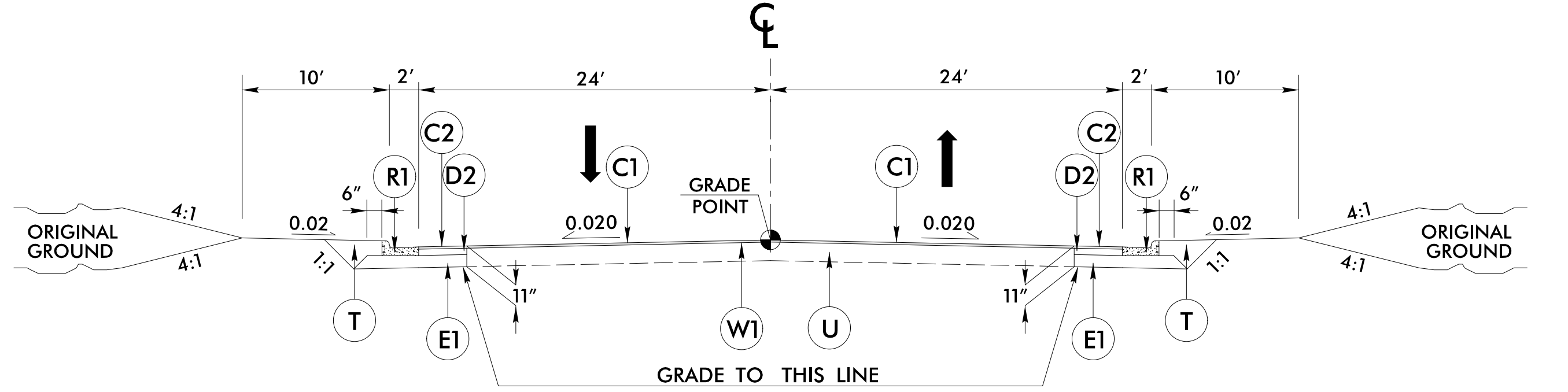
**HNTB** HNTB NORTH CAROLINA, P.C.  
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Raleigh, North Carolina 27609  
NC License No: C-1524

PROJECT REFERENCE NO. <b>R-5021</b>	SHEET NO. <b>2A-7</b>
ROADWAY DESIGN ENGINEER <i>David S. Wilkerson</i> 022886	PAVEMENT DESIGN ENGINEER <i>Carl S. Morrison</i> 022896
11/1/2021	11/2/2021

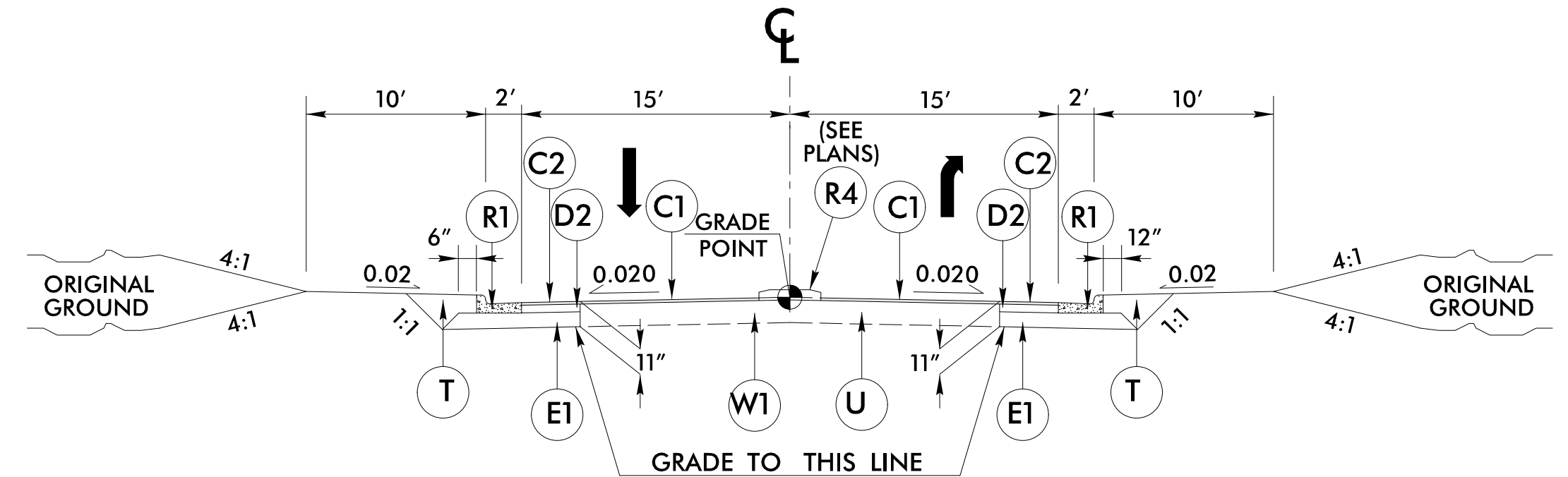
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UNLESS ALL SIGNATURES COMPLETED**



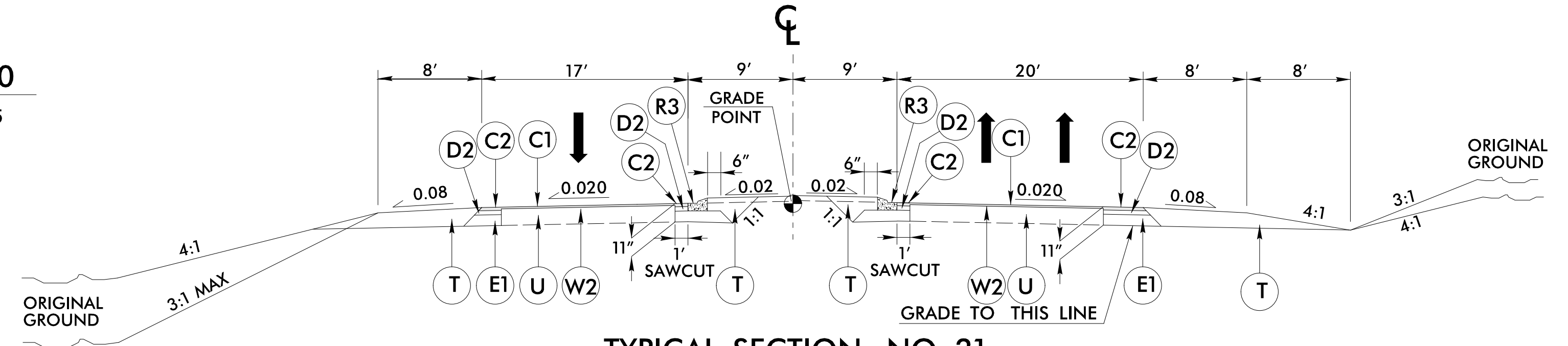
**TYPICAL SECTION NO. 18**  
-YF- STA. 10+75.00 TO STA. 12+50.00



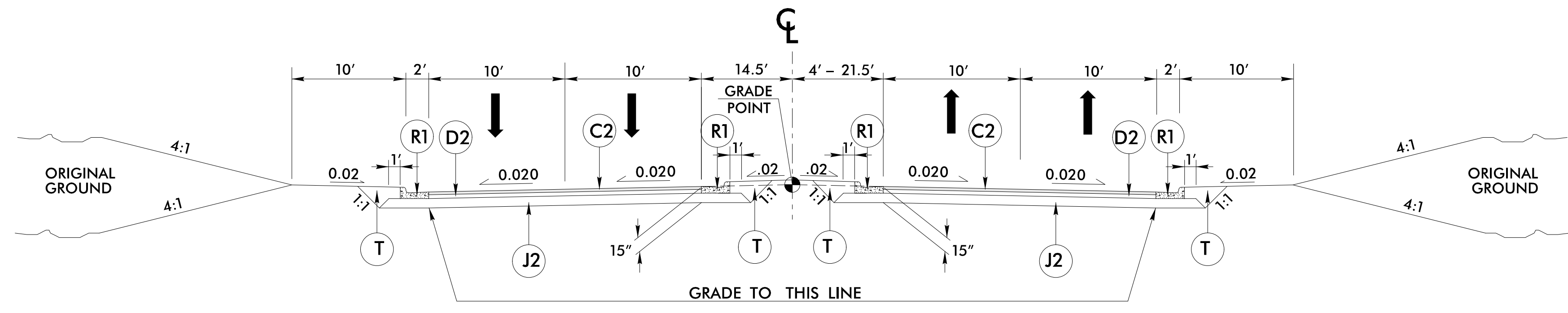
**TYPICAL SECTION NO. 19**  
-Y1- STA. 10+51.00 TO STA. 11+01.00



**TYPICAL SECTION NO. 20**  
-Y2- STA. 10+51.00 TO STA. 11+01.65



**TYPICAL SECTION NO. 21**  
-Y3- STA. 10+00.00 TO STA. 12+87.60



**TYPICAL SECTION NO. 22**  
-Y3- STA. 13+78.00 TO STA. 16+30.23

NOTE: SEE PLANS FOR SUPERELEVATIONS, TURN LANES, AUXILIARY LANES, MONOLITHIC ISLANDS, CURB & GUTTER, AND LANE TAPER LOCATIONS.

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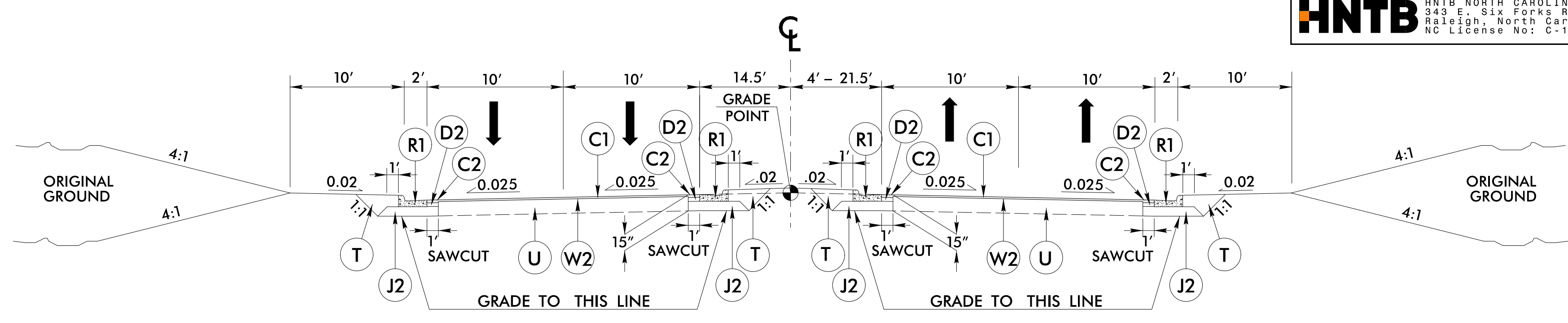
6/2/2021

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	PROP. APPROX. 1.5" ACSC, TYPE S9.5B
C2	PROP. APPROX. 3" ACSC, TYPE S9.5B
C3	PROP. VAR. DEPTH ACSC, TYPE S9.5B
C4	PROP. APPROX. 1.5" ACSC, TYPE S9.5C
C5	PROP. APPROX. 3" ACSC, TYPE S9.5C
C6	PROP. VAR. DEPTH ACSC, TYPE S9.5C
D1	PROP. APPROX. 2.5" ACIC, TYPE I19.0C
D2	PROP. APPROX. 4" ACIC, TYPE I19.0C
D3	PROP. VAR. DEPTH ACIC, TYPE I19.0C
E1	PROP. APPROX. 4" ACBC, TYPE B25.0C
E2	PROP. VAR. DEPTH ACBC, TYPE B25.0C
J1	PROP. 6" ABC
J2	PROP. 8" ABC
J3	VARIABLE DEPTH ABC
K	PROP. 5" CLASS IV AGGREGATE STABILIZATION
P	PRIME COAT
R1	2'-6" CONCRETE CURB AND GUTTER.
R2	2'-9" CONCRETE CURB AND GUTTER.
R3	1'-6" CONCRETE CURB AND GUTTER. (STD MOUNTABLE)
R4	5" MONOLITHIC CONCRETE ISLAND
R5	SHOULDER BERM GUTTER
R6	EXPRESSWAY GUTTER
R7	8"x18" CURB
R8	1'-6" CONCRETE CURB AND GUTTER. (SP 1'PAN-6"GUTTER)
R9	7" JOINTED CONCRETE (WITHOUT DOWELS REINFORCED WITH A W3.5 x W3.5 OR W5 x W5 WIRE MESH)
R10	9"x18" CONCRETE CURB
S1	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT.
W1	WEDGING METHOD NO. 1 - SEE SHEET 2A-1
W2	WEDGING METHOD NO. 2 - SEE SHEET 2A-1

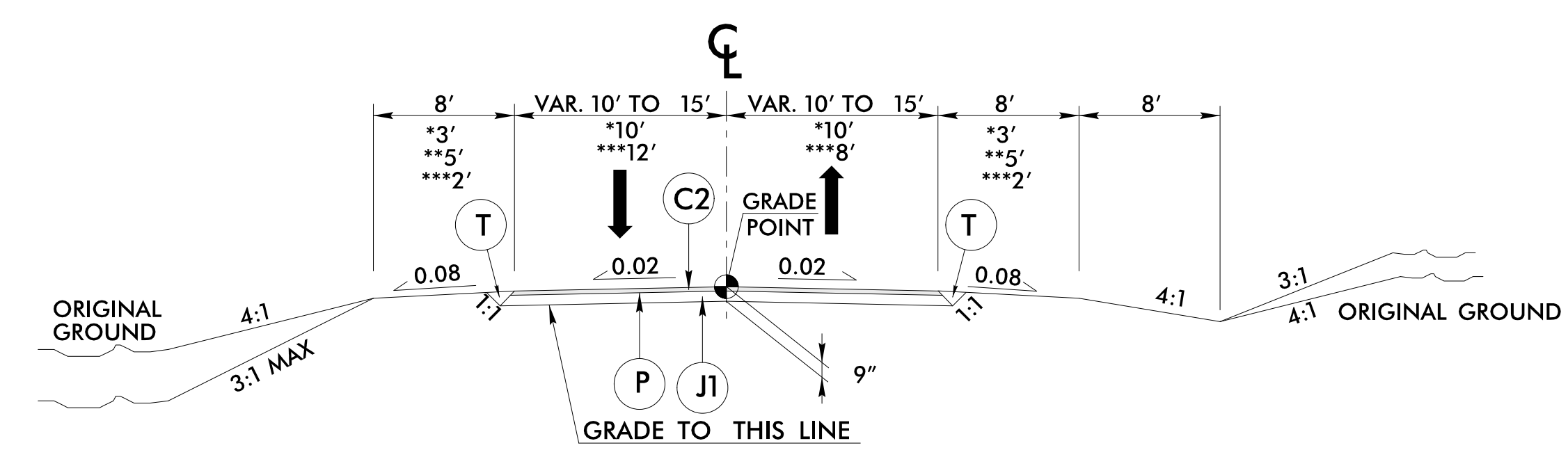
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

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NC License No: C-1524

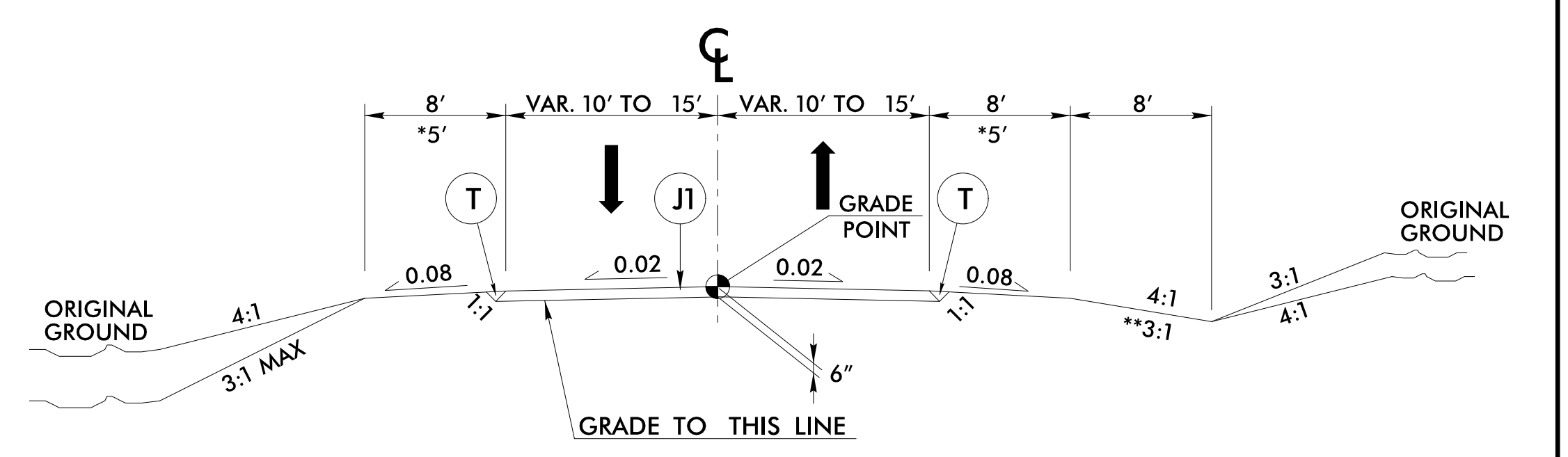
PROJECT REFERENCE NO. <b>R-5021</b>	SHEET NO. <b>2A-8</b>
ROADWAY DESIGN ENGINEER <i>Eng. G. M. Willey</i> 36786 11/1/2021	PAVEMENT DESIGN ENGINEER <i>Eng. S. Morrison</i> 02884 11/2/2021
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



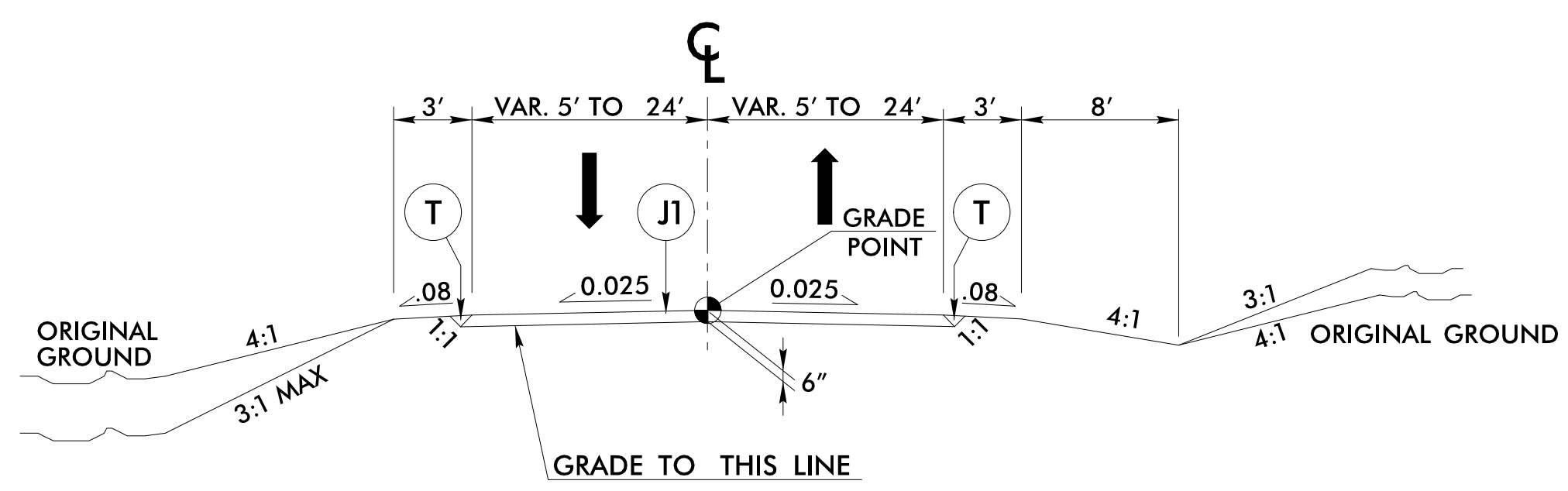
**TYPICAL SECTION NO. 23**  
-Y3- STA. 16+30.23 TO STA. 17+15.00



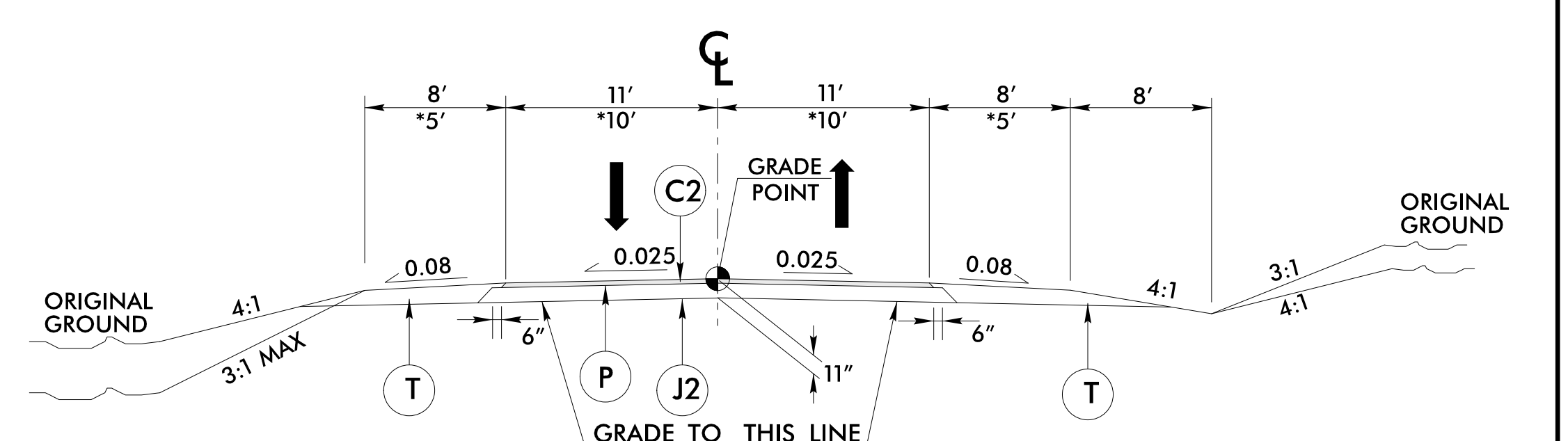
**TYPICAL SECTION NO. 24**  
\*-Y4- STA. 10+51.01 TO STA. 11+25.00  
-Y10- STA. 10+39.00 TO STA. 10+75.00  
\*\*-Y13- STA. 11+35.00 TO STA. 11+71.05  
-Y14- STA. 10+37.10 TO STA. 10+75.00  
-Y15- STA. 10+51.00 TO STA. 10+85.00  
\*\*\*-Y17A- STA. 11+21.54 TO STA. 12+20.86



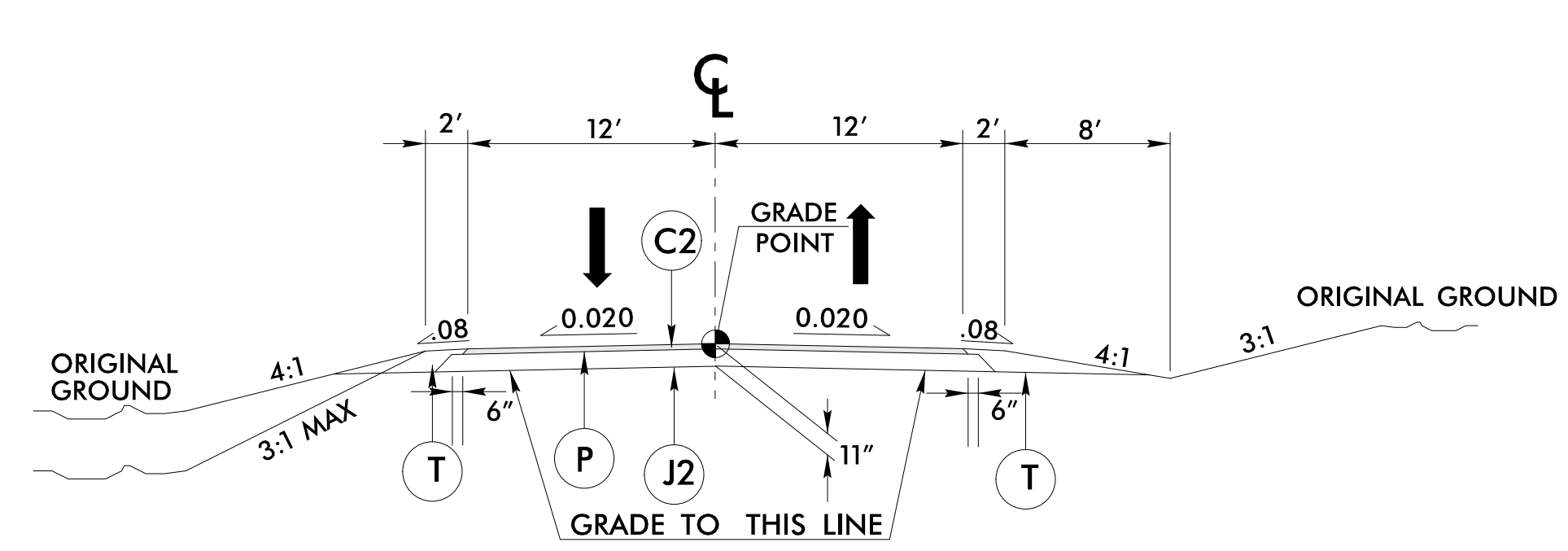
**TYPICAL SECTION NO. 25**  
\*\*-Y9- STA. 10+51.62 TO STA. 12+00.00  
-Y9- STA. 11+75.00 TO STA. 12+00.00  
-Y10- STA. 10+75.00 TO STA. 11+80.00  
\*-Y13- STA. 10+80.00 TO STA. 11+35.00  
-Y14- STA. 10+75.00 TO STA. 11+50.00  
-Y15- STA. 10+85.00 TO STA. 11+50.00  
-Y18REV- STA. 10+75.00 TO STA. 11+50.00



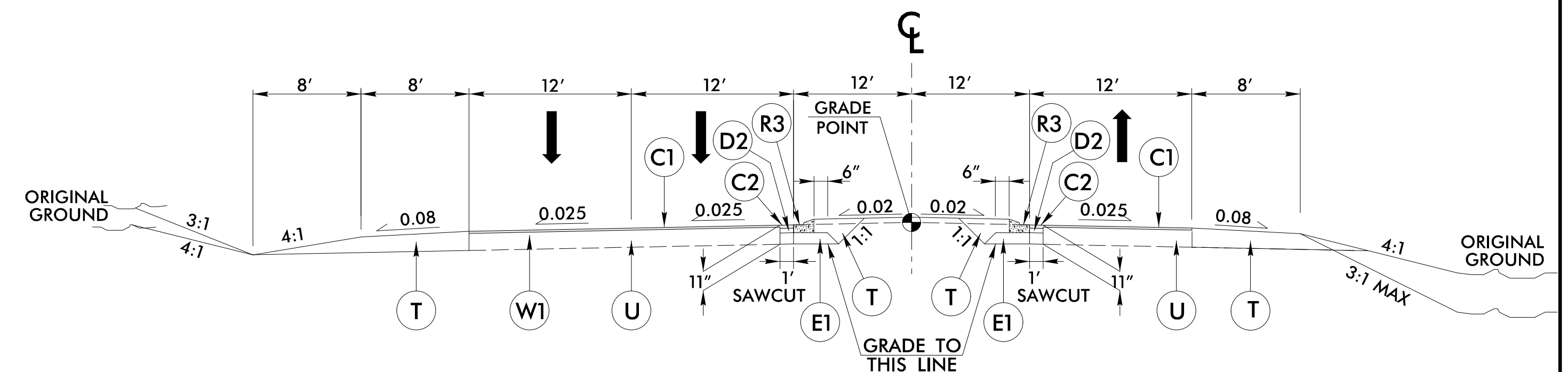
**TYPICAL SECTION NO. 26**  
-Y1C- STA. 10+00.00 TO STA. 14+50.00



**TYPICAL SECTION NO. 27**  
-Y5- STA. 10+50.00 TO STA. 11+36.66  
\*-Y11- STA. 10+51.00 TO STA. 13+25.00



**TYPICAL SECTION NO. 28**  
-Y5A- STA. 10+51.00 TO STA. 11+35.00  
-Y5B- STA. 10+34.08 TO STA. 11+17.17



**TYPICAL SECTION NO. 29**  
-Y6- STA. 10+51.00 TO STA. 11+40.00

NOTE: SEE PLANS FOR SUPERELEVATIONS, TURN LANES, AUXILIARY LANES, MONOLITHIC ISLANDS, CURB & GUTTER, AND LANE TAPER LOCATIONS.

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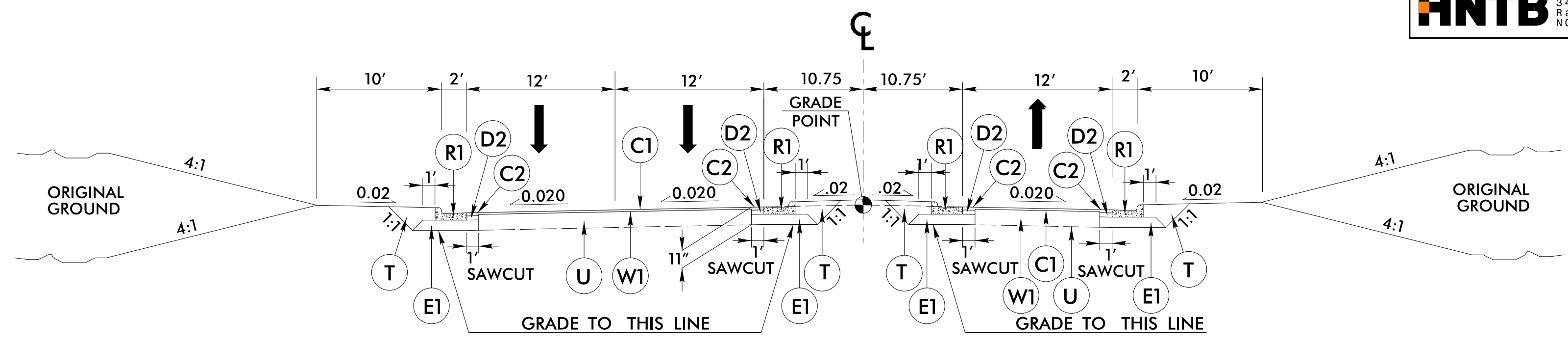
6/2/99

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	PROP. APPROX. 1.5" ACSC, TYPE S9.5B
C2	PROP. APPROX. 3" ACSC, TYPE S9.5B
C3	PROP. VAR. DEPTH ACSC, TYPE S9.5B
C4	PROP. APPROX. 1.5" ACSC, TYPE S9.5C
C5	PROP. APPROX. 3" ACSC, TYPE S9.5C
C6	PROP. VAR. DEPTH ACSC, TYPE S9.5C
D1	PROP. APPROX. 2.5" ACIC, TYPE I19.0C
D2	PROP. APPROX. 4" ACIC, TYPE I19.0C
D3	PROP. VAR. DEPTH ACIC, TYPE I19.0C
E1	PROP. APPROX. 4" ACBC, TYPE B25.0C
E2	PROP. VAR. DEPTH ACBC, TYPE B25.0C
J1	PROP. 6" ABC
J2	PROP. 8" ABC
J3	VARIABLE DEPTH ABC
K	PROP. 5" CLASS IV AGGREGATE STABILIZATION
P	PRIME COAT
R1	2'-6" CONCRETE CURB AND GUTTER.
R2	2'-9" CONCRETE CURB AND GUTTER.
R3	1'-6" CONCRETE CURB AND GUTTER. (STD MOUNTABLE)
R4	5" MONOLITHIC CONCRETE ISLAND
R5	SHOULDER BERM GUTTER
R6	EXPRESSWAY GUTTER
R7	8"x18" CURB
R8	1'-6" CONCRETE CURB AND GUTTER. (SP 1'PAN-6"GUTTER)
R9	7" JOINTED CONCRETE (WITHOUT DOWELS REINFORCED WITH A W3.5 X W3.5 OR W5 X W5 WIRE MESH)
R10	9"x18" CONCRETE CURB
S1	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT.
W1	WEDGING METHOD NO. 1 - SEE SHEET 2A-1
W2	WEDGING METHOD NO. 2 - SEE SHEET 2A-1

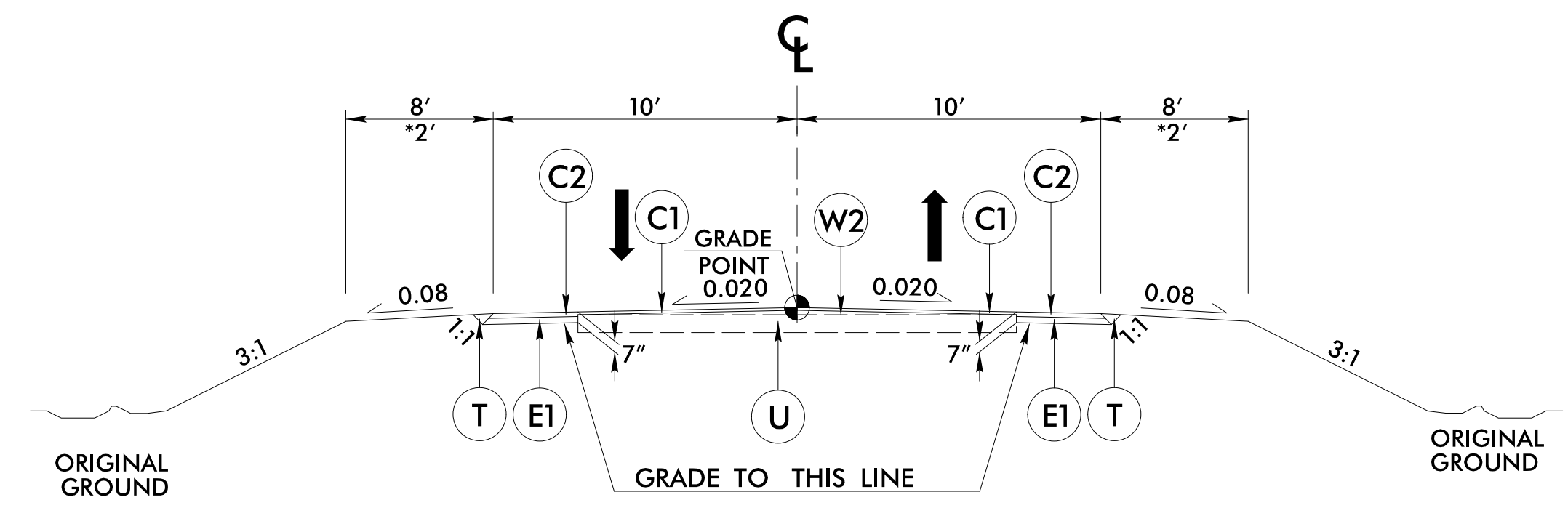
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

**HNTB**  
 HNTB NORTH CAROLINA, P.C.  
 343 E. Six Forks Road, Suite 200  
 Raleigh, North Carolina 27609  
 NC License No: C-1524

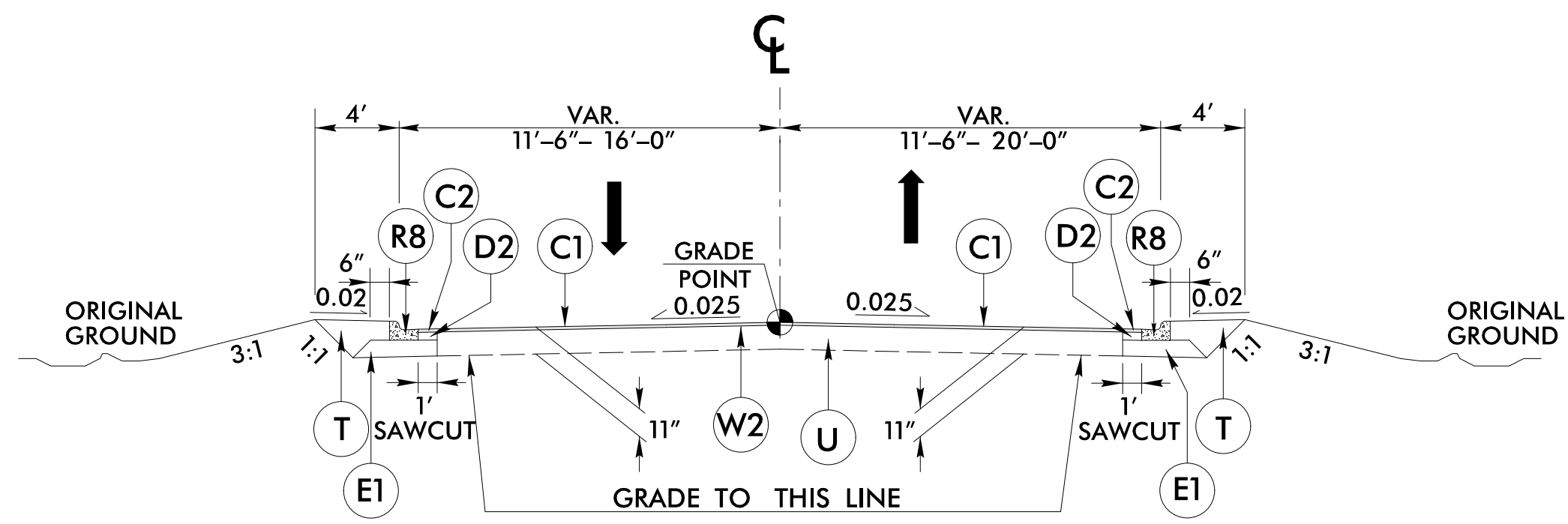
PROJECT REFERENCE NO. <b>R-5021</b>	SHEET NO. <b>2A-9</b>
ROADWAY DESIGN ENGINEER <i>Douglas M. Whentley</i> 11/1/2021	PAVEMENT DESIGN ENGINEER <i>Carl S. Morrison</i> 11/2/2021
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



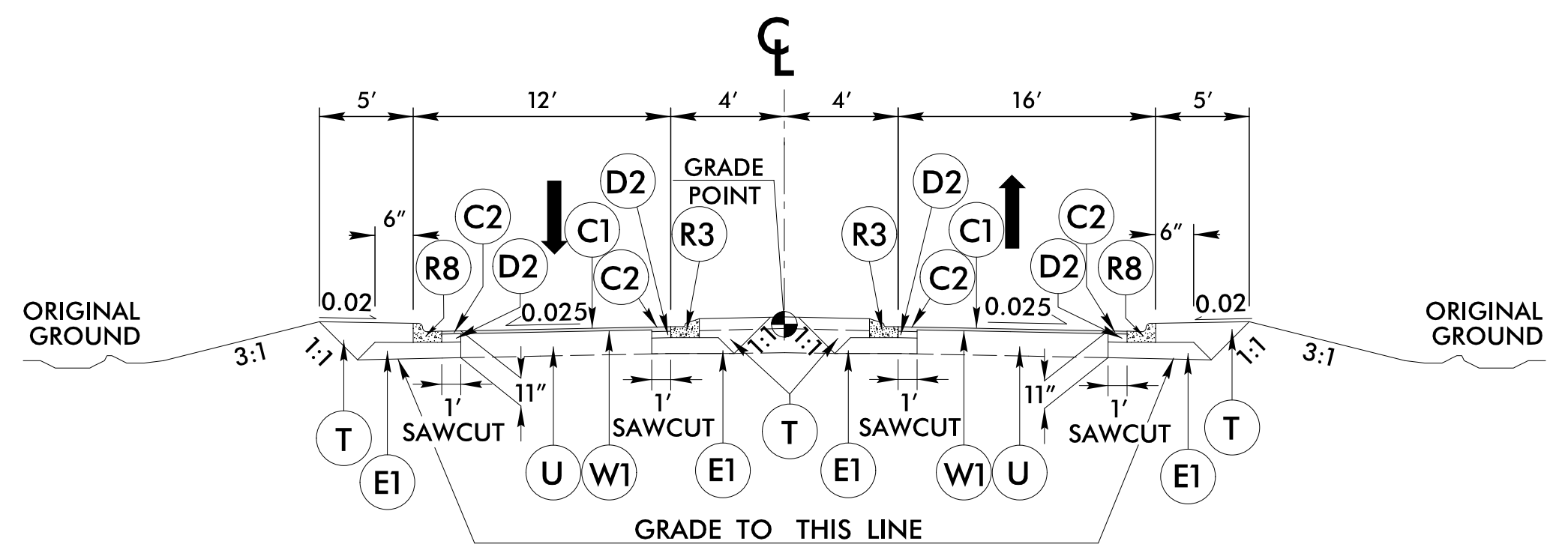
**TYPICAL SECTION NO. 30**  
 -Y7- STA. 10+51.00 TO STA. 11+75.00



**TYPICAL SECTION NO. 31**  
 -Y8- STA. 10+39.03 TO STA. 11+80.00  
 TRANSITION SHOULDER FROM 8' TO \*2'  
 -Y8- STA. 10+70.00 TO STA. 11+20.00



**TYPICAL SECTION NO. 32**  
 -Y9A- STA. 10+50.00 TO STA. 11+50.00



**TYPICAL SECTION NO. 33**  
 -Y9A- STA. 11+50.00 TO 12+18.00

NOTE: SEE PLANS FOR SUPERELEVATIONS, TURN LANES, AUXILIARY LANES, MONOLITHIC ISLANDS, CURB & GUTTER, AND LANE TAPER LOCATIONS.

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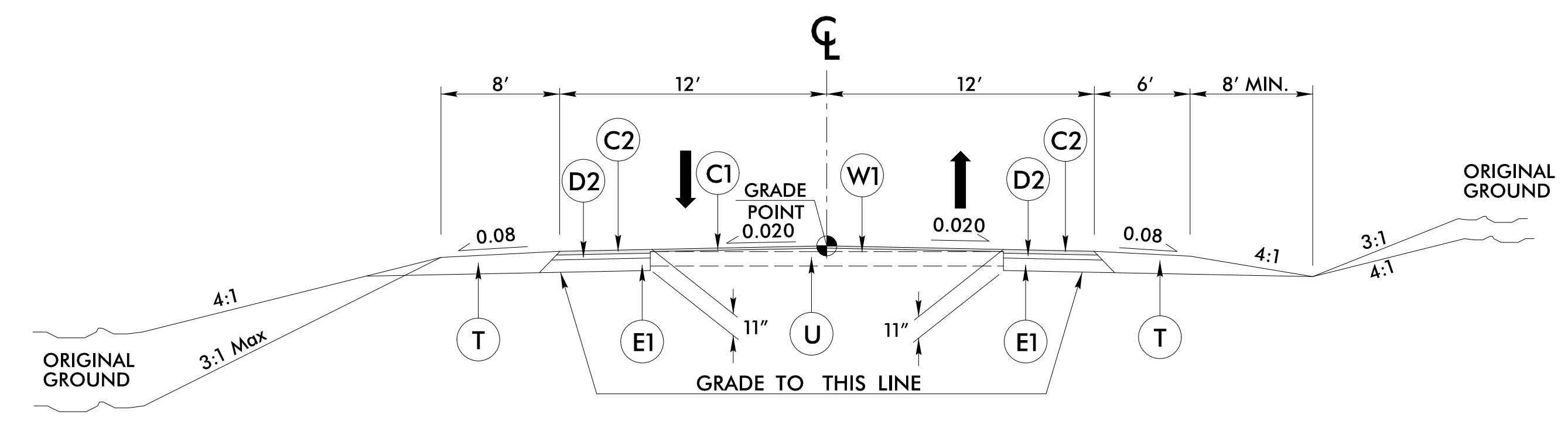
6/2/2021

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	PROP. APPROX. 1.5" ACSC, TYPE S9.5B
C2	PROP. APPROX. 3" ACSC, TYPE S9.5B
C3	PROP. VAR. DEPTH ACSC, TYPE S9.5B
C4	PROP. APPROX. 1.5" ACSC, TYPE S9.5C
C5	PROP. APPROX. 3" ACSC, TYPE S9.5C
C6	PROP. VAR. DEPTH ACSC, TYPE S9.5C
D1	PROP. APPROX. 2.5" ACIC, TYPE I19.0C
D2	PROP. APPROX. 4" ACIC, TYPE I19.0C
D3	PROP. VAR. DEPTH ACIC, TYPE I19.0C
E1	PROP. APPROX. 4" ACBC, TYPE B25.0C
E2	PROP. VAR. DEPTH ACBC, TYPE B25.0C
J1	PROP. 6" ABC
J2	PROP. 8" ABC
J3	VARIABLE DEPTH ABC
K	PROP. 5" CLASS IV AGGREGATE STABILIZATION
P	PRIME COAT
R1	2'-6" CONCRETE CURB AND GUTTER.
R2	2'-9" CONCRETE CURB AND GUTTER.
R3	1'-6" CONCRETE CURB AND GUTTER. (STD MOUNTABLE)
R4	5" MONOLITHIC CONCRETE ISLAND
R5	SHOULDER BERM GUTTER
R6	EXPRESSWAY GUTTER
R7	8"x18" CURB
R8	1'-6" CONCRETE CURB AND GUTTER. (SP 1'PAN-6"GUTTER)
R9	7" JOINTED CONCRETE (WITHOUT DOWELS REINFORCED WITH A W3.5 X W3.5 OR W5 X W5 WIRE MESH)
R10	9"x18" CONCRETE CURB
S1	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT.
W1	WEDGING METHOD NO. 1 - SEE SHEET 2A-1
W2	WEDGING METHOD NO. 2 - SEE SHEET 2A-1

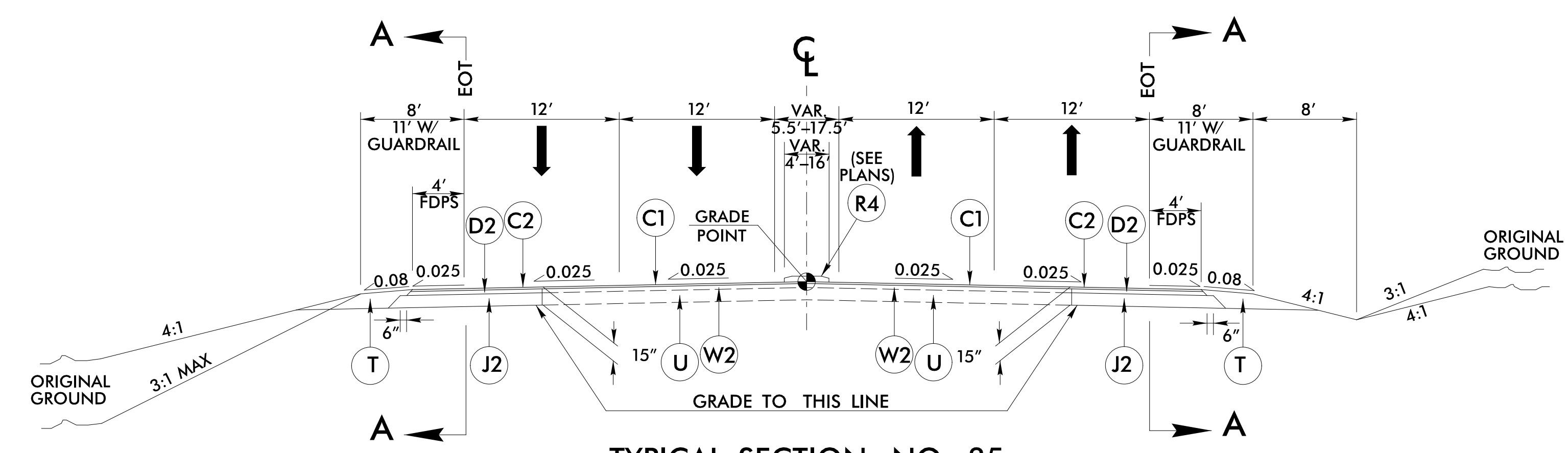
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

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NC License No: C-1524

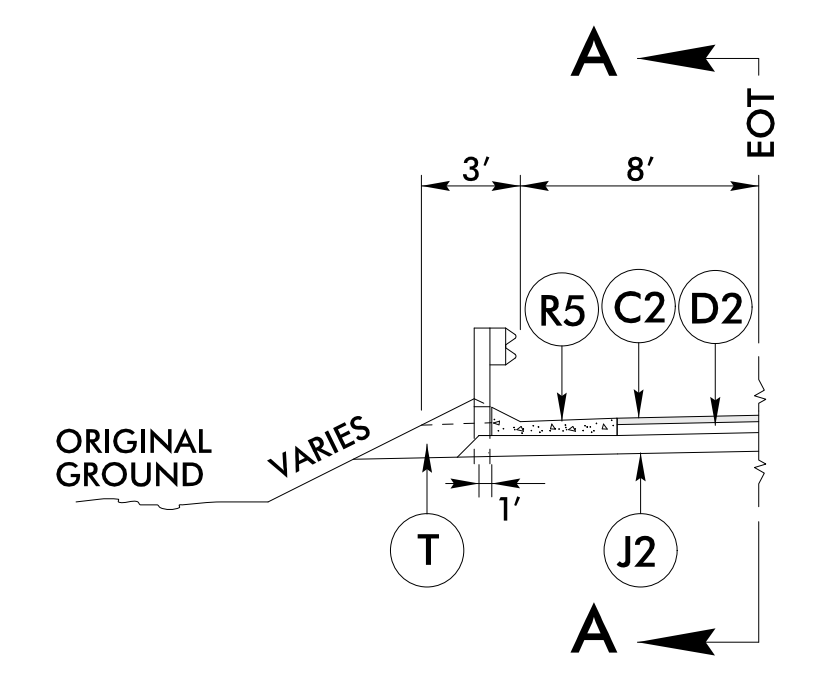
PROJECT REFERENCE NO. <b>R-5021</b>	SHEET NO. <b>2A-10</b>
ROADWAY DESIGN ENGINEER <i>David S. Wipfler</i> 36786 11/1/2021	PAVEMENT DESIGN ENGINEER <i>Carl S. Morrison</i> 022896 11/2/2021
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



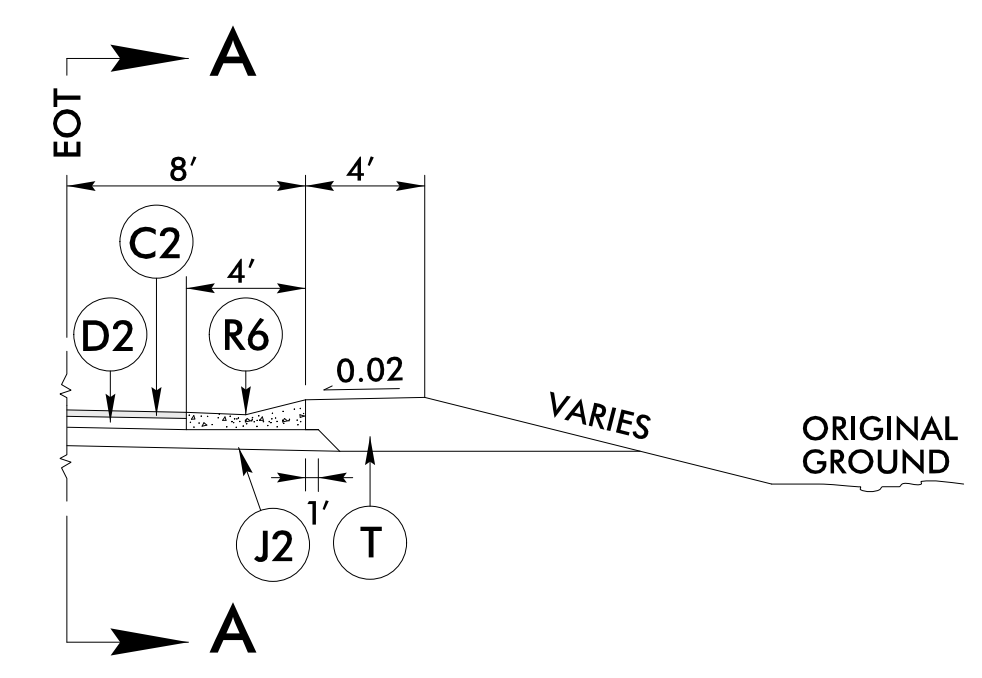
**TYPICAL SECTION NO. 34**  
-Y12- STA. 11+55.00 TO STA. 13+21.07



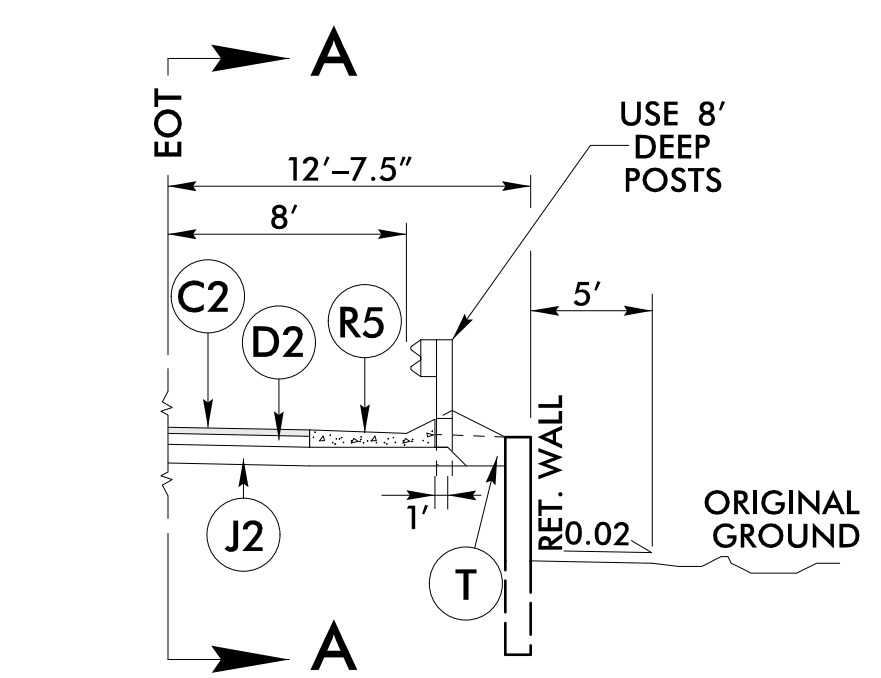
**TYPICAL SECTION NO. 35**  
-Y14A- STA. 27+20.00 TO STA. 38+95.97 (BEG. BRIDGE)  
-Y14A- STA. 40+16.47 (END BRIDGE) TO STA. 61+60.00



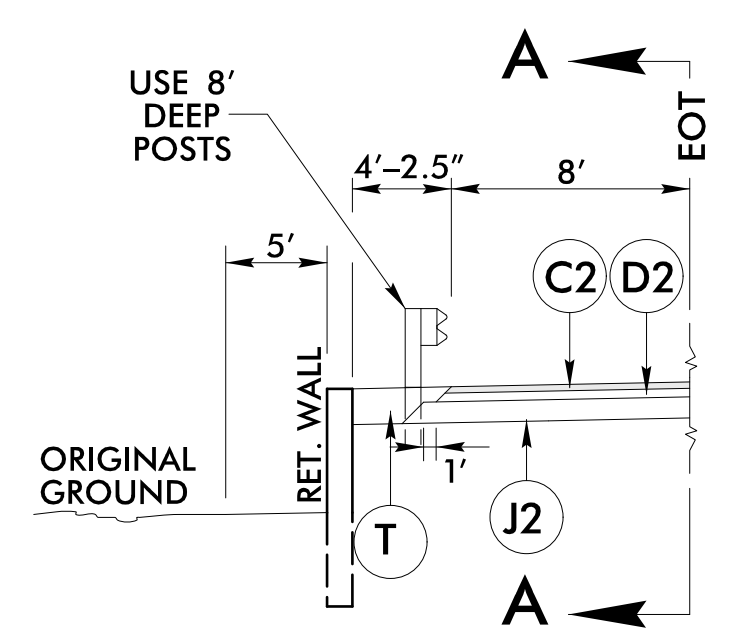
**TYPICAL SECTION NO. 35A**  
SHOULDER BERM GUTTER LOCATIONS  
USE TYPICAL SECTION NO. 35A IN CONJUNCTION WITH TYPICAL SECTION NO. 35  
-Y14A- STA. 41+11.17 TO STA. 45+00.00 RT  
-Y14A- STA. 29+50.00 TO STA. 30+80.42 LT



**TYPICAL SECTION NO. 35B**  
EXPRESSWAY GUTTER LOCATIONS  
USE TYPICAL SECTION NO. 35B IN CONJUNCTION WITH TYPICAL SECTION NO. 35  
-Y14A- STA. 30+75.05 TO STA. 31+50.02 RT



**TYPICAL SECTION NO. 35C**  
RETAINING WALL WITH SHOULDER BERM GUTTER LOCATIONS  
USE TYPICAL SECTION NO. 35C IN CONJUNCTION WITH TYPICAL SECTION NO. 35  
-Y14A- STA. 32+44.38 RT TO STA. 38+95.97 (BEG. BRIDGE)  
-Y14A- STA. 40+16.47 (END BRIDGE) TO STA. 41+12.43 RT  
-Y14A- STA. 36+92.57 LT TO STA. 38+95.97 (BEG. BRIDGE)  
-Y14A- STA. 40+16.47 (END BRIDGE) TO STA. 41+45.72 LT  
-Y14A- STA. 48+11.39 TO STA. 48+50.47 LT



**TYPICAL SECTION NO. 35D**  
RETAINING WALL LOCATIONS  
USE TYPICAL SECTION NO. 35D IN CONJUNCTION WITH TYPICAL SECTION NO. 35  
-Y14A- STA. 34+44.58 TO STA. 36+92.57 LT  
-Y14A- STA. 41+45.72 TO STA. 47+78.35 LT  
-Y14A- STA. 48+50.47 TO STA. 54+55.39 LT

NOTE: SEE PLANS FOR SUPERELEVATIONS, TURN LANES, AUXILIARY LANES, MONOLITHIC ISLANDS, CURB & GUTTER, AND LANE TAPER LOCATIONS.

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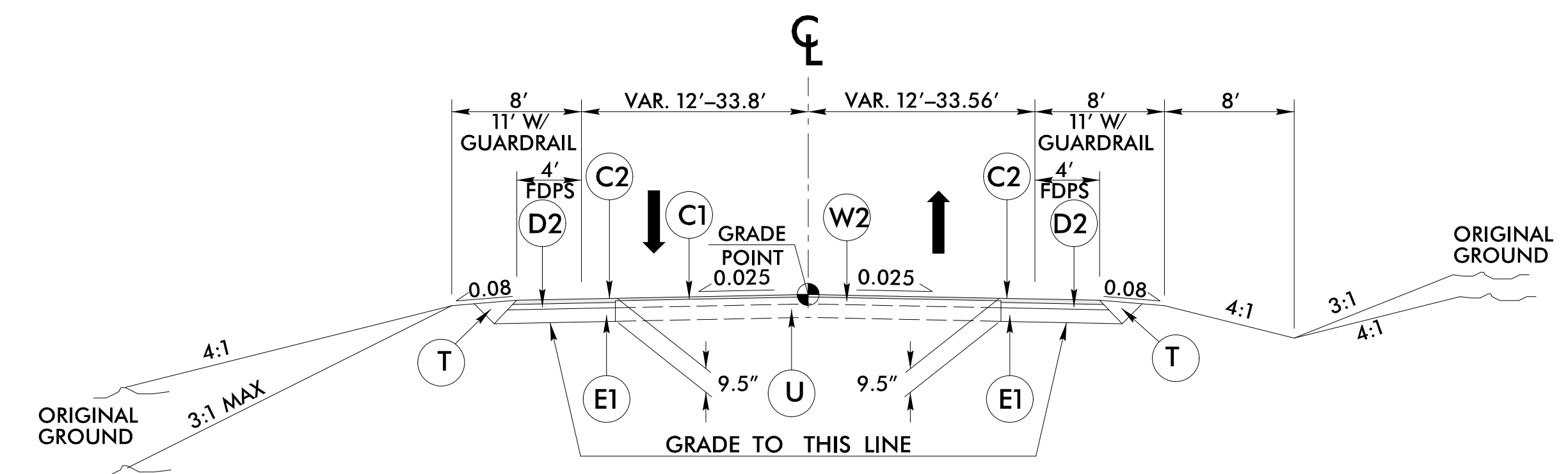
**PAVEMENT SCHEDULE**  
(FINAL PAVEMENT DESIGN)

C1	PROP. APPROX. 1.5" ACSC, TYPE S9.5B
C2	PROP. APPROX. 3" ACSC, TYPE S9.5B
C3	PROP. VAR. DEPTH ACSC, TYPE S9.5B
C4	PROP. APPROX. 1.5" ACSC, TYPE S9.5C
C5	PROP. APPROX. 3" ACSC, TYPE S9.5C
C6	PROP. VAR. DEPTH ACSC, TYPE S9.5C
D1	PROP. APPROX. 2.5" ACIC, TYPE I19.0C
D2	PROP. APPROX. 4" ACIC, TYPE I19.0C
D3	PROP. VAR. DEPTH ACIC, TYPE I19.0C
E1	PROP. APPROX. 4" ACBC, TYPE B25.0C
E2	PROP. VAR. DEPTH ACBC, TYPE B25.0C
J1	PROP. 6" ABC
J2	PROP. 8" ABC
J3	VARIABLE DEPTH ABC
K	PROP. 5" CLASS IV AGGREGATE STABILIZATION
P	PRIME COAT
R1	2'-6" CONCRETE CURB AND GUTTER.
R2	2'-9" CONCRETE CURB AND GUTTER.
R3	1'-6" CONCRETE CURB AND GUTTER. (STD MOUNTABLE)
R4	5" MONOLITHIC CONCRETE ISLAND
R5	SHOULDER BERM GUTTER
R6	EXPRESSWAY GUTTER
R7	8"x18" CURB
R8	1'-6" CONCRETE CURB AND GUTTER. (SP 1'PAN-6"GUTTER)
R9	7" JOINTED CONCRETE (WITHOUT DOWELS REINFORCED WITH A W3.5 X W3.5 OR W5 X W5 WIRE MESH)
R10	9"x18" CONCRETE CURB
S1	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT.
W1	WEDGING METHOD NO. 1 - SEE SHEET 2A-1
W2	WEDGING METHOD NO. 2 - SEE SHEET 2A-1

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

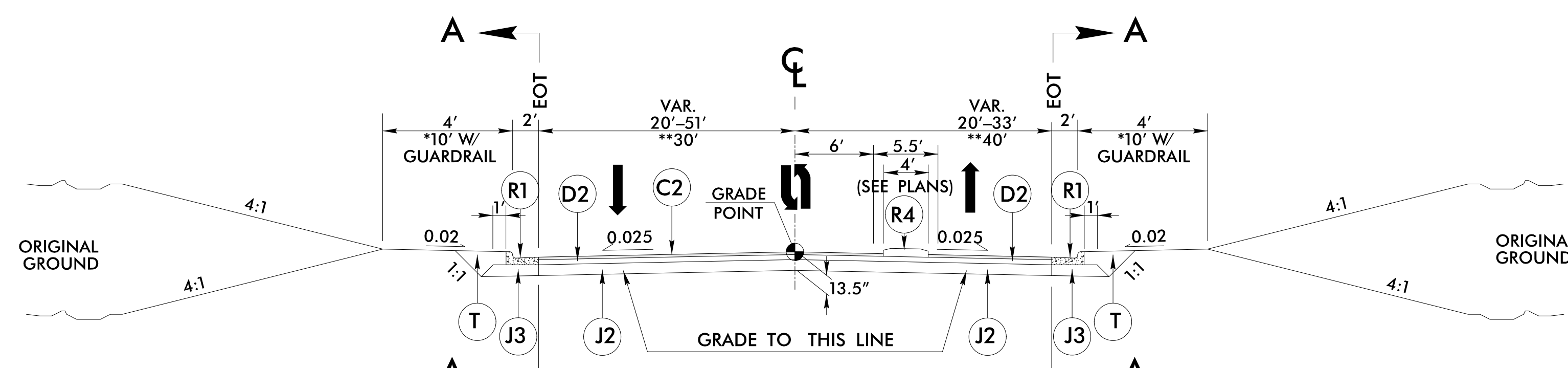
**HNTB** HNTB NORTH CAROLINA, P.C.  
343 E. Six Forks Road, Suite 200  
Raleigh, North Carolina 27609  
NC License No: C-1554

PROJECT REFERENCE NO. <b>R-5021</b>	SHEET NO. <b>2A-11</b>
ROADWAY DESIGN ENGINEER <i>Carla S. Morrison</i> 36786 11/1/2021	PAVEMENT DESIGN ENGINEER <i>Carla S. Morrison</i> 022896 11/2/2021
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



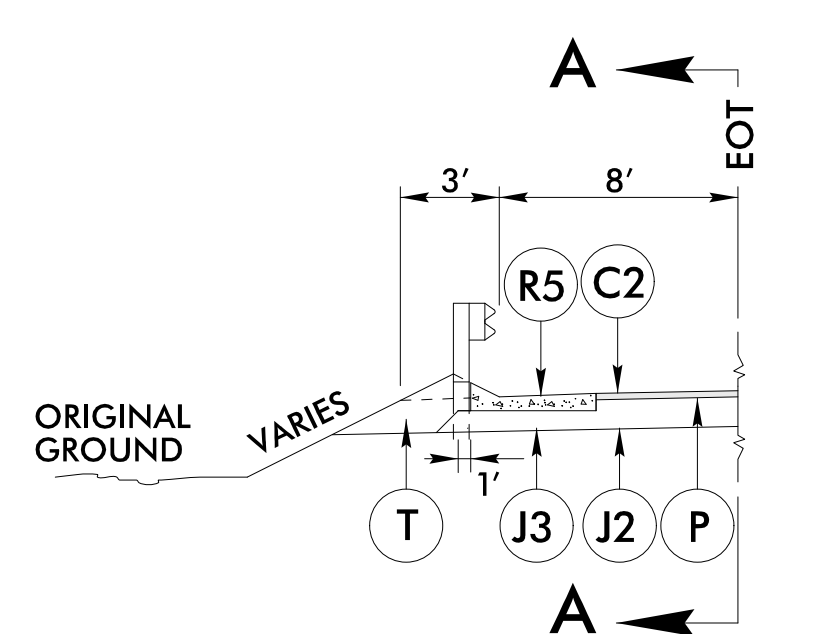
**TYPICAL SECTION NO. 36**

-Y14A- STA. 61+60.00 TO STA. 66+50.00



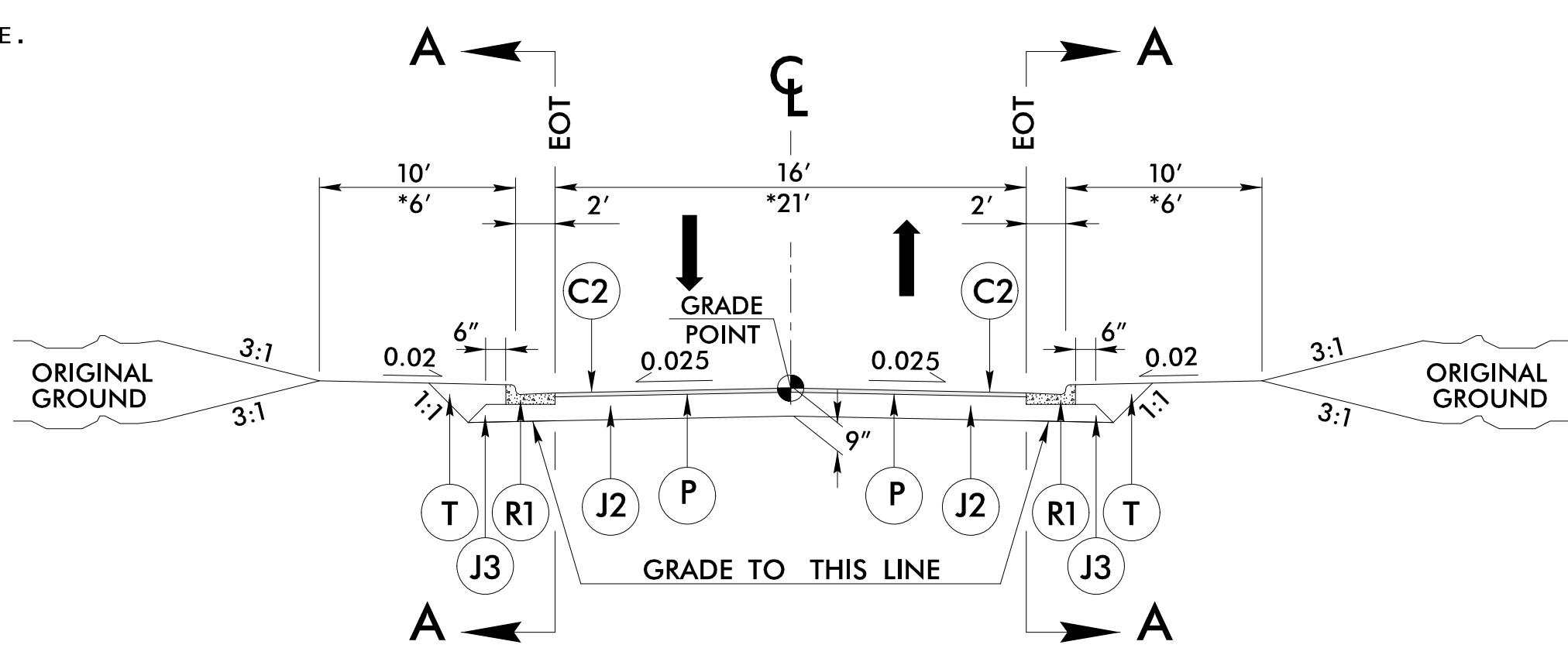
**TYPICAL SECTION NO. 37**

-Y14D- STA. 10+32.00 TO STA. 21+52.57 RT  
\*-Y14D- STA. 21+52.57 TO STA. 24+42.63 RT  
-Y14D- STA. 10+32.00 TO STA. 13+62.69 LT  
\*-Y14D- STA. 13+62.69 TO STA. 16+12.75 LT  
-Y14D- STA. 16+12.75 TO STA. 22+43.36 LT  
\*-Y14D- STA. 22+43.36 TO STA. 24+42.63 LT  
\*\*-Y14C- STA. 23+38.64 TO STA. 24+73.85



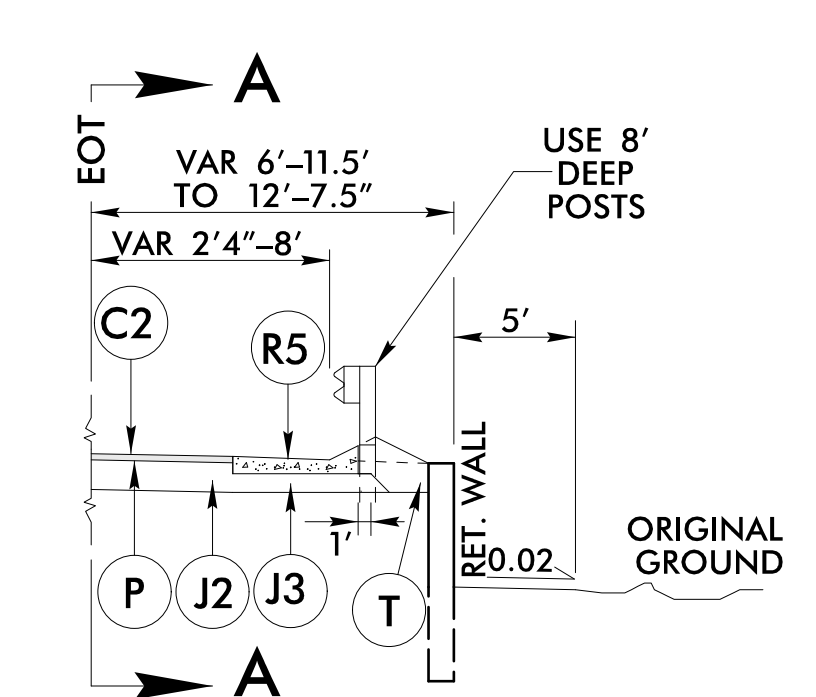
**TYPICAL SECTION NO. 38A**

SHOULDER BERM GUTTER LOCATIONS  
USE TYPICAL SECTION NO. 38A IN  
CONJUNCTION WITH TYPICAL SECTION NO. 38  
-Y14E- STA. 10+81.10 TO STA. 11+50.00 LT



**TYPICAL SECTION NO. 38**

-DRW01- STA. 10+12.00 TO STA. 11+40.00  
\*-Y14E- STA. 10+03.10 TO STA. 10+97.97 RT  
\*-Y14E- STA. 10+03.10 TO STA. 10+81.10 LT



**TYPICAL SECTION NO. 38B**

RETAINING WALL WITH SHOULDER BERM  
GUTTER LOCATIONS  
USE TYPICAL SECTION NO. 38B IN CONJUNCTION  
WITH TYPICAL SECTION NO. 38  
-Y14E- STA. 11+04.64 TO STA. 11+42.63 LT  
-Y14E- STA. 11+14.02 TO STA. 11+42.63 RT

NOTE: SEE PLANS FOR SUPERELEVATIONS, TURN LANES, AUXILIARY LANES, MONOLITHIC ISLANDS, CURB & GUTTER, AND LANE TAPER LOCATIONS.

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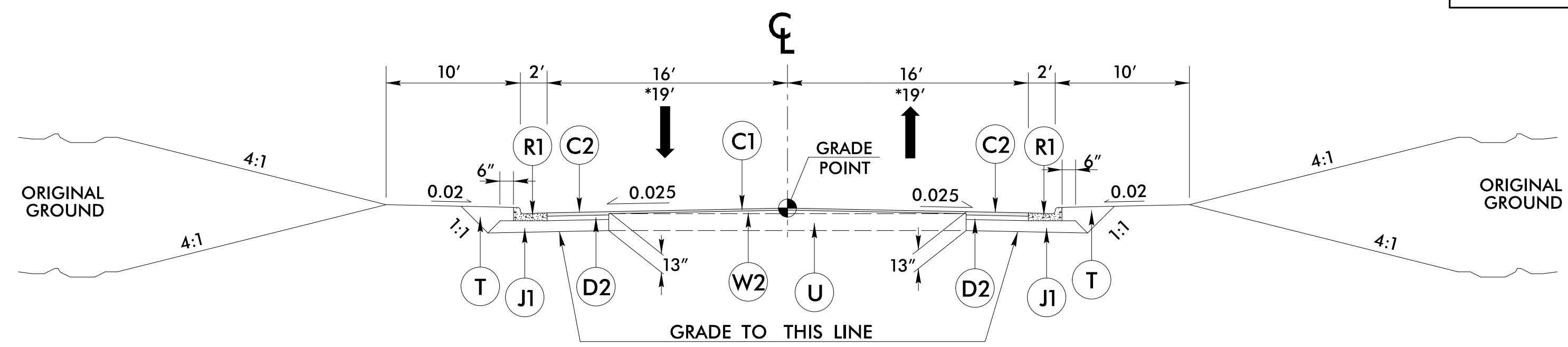
6/22/99

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	PROP. APPROX. 1.5" ACSC, TYPE S9.5B
C2	PROP. APPROX. 3" ACSC, TYPE S9.5B
C3	PROP. VAR. DEPTH ACSC, TYPE S9.5B
C4	PROP. APPROX. 1.5" ACSC, TYPE S9.5C
C5	PROP. APPROX. 3" ACSC, TYPE S9.5C
C6	PROP. VAR. DEPTH ACSC, TYPE S9.5C
D1	PROP. APPROX. 2.5" ACIC, TYPE I19.0C
D2	PROP. APPROX. 4" ACIC, TYPE I19.0C
D3	PROP. VAR. DEPTH ACIC, TYPE I19.0C
E1	PROP. APPROX. 4" ACBC, TYPE B25.0C
E2	PROP. VAR. DEPTH ACBC, TYPE B25.0C
J1	PROP. 6" ABC
J2	PROP. 8" ABC
J3	VARIABLE DEPTH ABC
K	PROP. 5" CLASS IV AGGREGATE STABILIZATION
P	PRIME COAT
R1	2'-6" CONCRETE CURB AND GUTTER.
R2	2'-9" CONCRETE CURB AND GUTTER.
R3	1'-6" CONCRETE CURB AND GUTTER. (STD MOUNTABLE)
R4	5" MONOLITHIC CONCRETE ISLAND
R5	SHOULDER BERM GUTTER
R6	EXPRESSWAY GUTTER
R7	8"x18" CURB
R8	1'-6" CONCRETE CURB AND GUTTER. (SP 1'PAN-6"GUTTER)
R9	7" JOINTED CONCRETE (WITHOUT DOWELS REINFORCED WITH A W3.5 X W3.5 OR W5 X W5 WIRE MESH)
R10	9"x18" CONCRETE CURB
S1	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT.
W1	WEDGING METHOD NO. 1 - SEE SHEET 2A-1
W2	WEDGING METHOD NO. 2 - SEE SHEET 2A-1

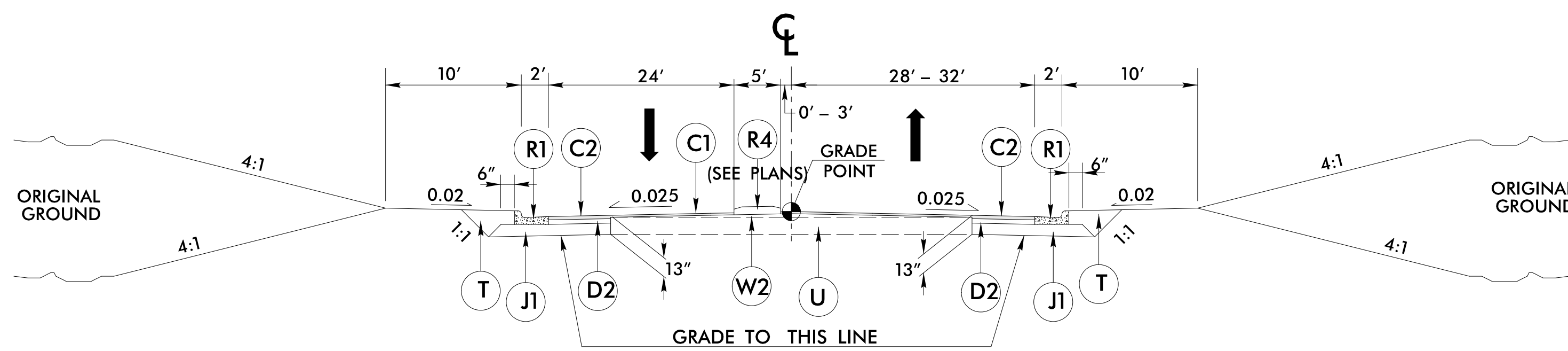
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

**HNTB** HNTB NORTH CAROLINA, P.C.  
343 E. Six Forks Road, Suite 200  
Raleigh, North Carolina 27609  
NC License No: C-1524

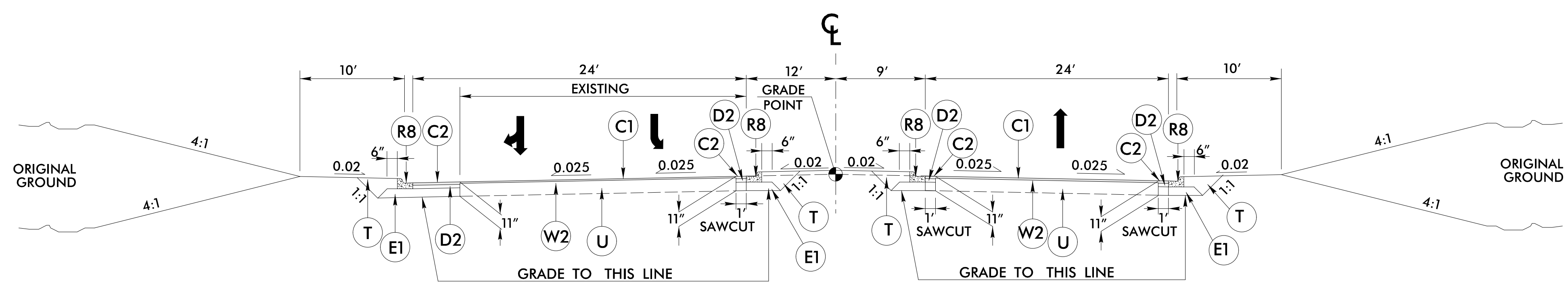
PROJECT REFERENCE NO. <b>R-5021</b>	SHEET NO. <b>2A-12</b>
ROADWAY DESIGN ENGINEER <i>David S. W. [Signature]</i> 36786	PAVEMENT DESIGN ENGINEER <i>Carl S. Morrison [Signature]</i> 022896
11/1/2021	11/2/2021
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



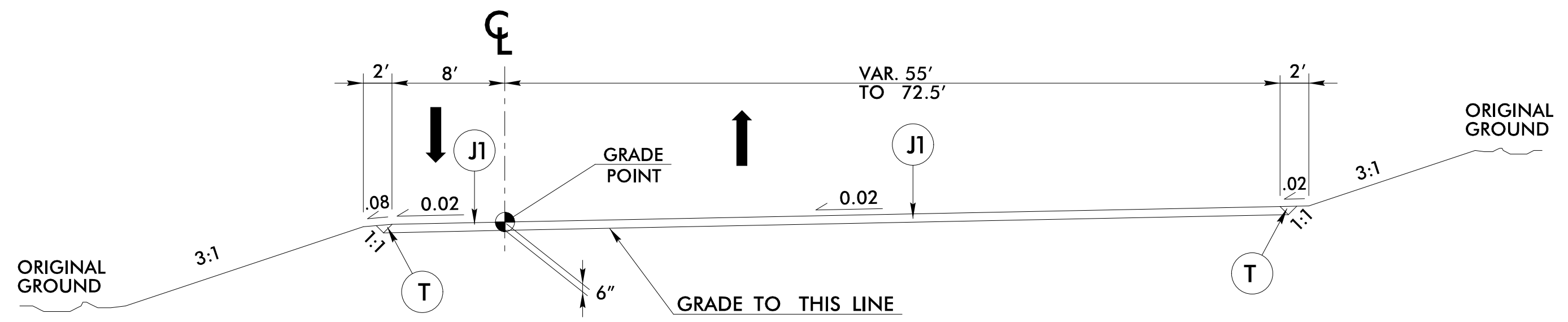
**TYPICAL SECTION NO. 39**  
-Y16- STA. 11+00.00 TO STA. 11+71.81  
\*-Y20- STA. 10+51.41 TO STA. 11+60.00



**TYPICAL SECTION NO. 40**  
-Y17- STA. 10+25.00 TO STA. 11+44.61



**TYPICAL SECTION NO. 41**  
-Y17- STA. 12+41.57 TO STA. 13+25.00



**TYPICAL SECTION NO. 42**  
-Y17A- STA. 10+39.00 TO STA. 11+20.00

NOTE: SEE PLANS FOR SUPERELEVATIONS, TURN LANES, AUXILIARY LANES, MONOLITHIC ISLANDS, CURB & GUTTER, AND LANE TAPER LOCATIONS.

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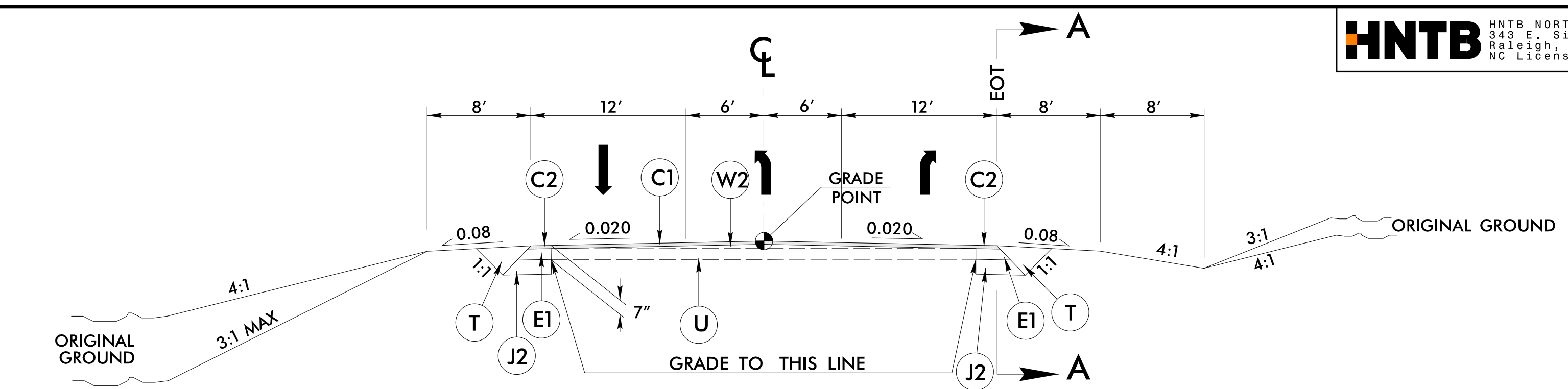
6/2/2021

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	PROP. APPROX. 1.5" ACSC, TYPE S9.5B
C2	PROP. APPROX. 3" ACSC, TYPE S9.5B
C3	PROP. VAR. DEPTH ACSC, TYPE S9.5B
C4	PROP. APPROX. 1.5" ACSC, TYPE S9.5C
C5	PROP. APPROX. 3" ACSC, TYPE S9.5C
C6	PROP. VAR. DEPTH ACSC, TYPE S9.5C
D1	PROP. APPROX. 2.5" ACIC, TYPE I19.0C
D2	PROP. APPROX. 4" ACIC, TYPE I19.0C
D3	PROP. VAR. DEPTH ACIC, TYPE I19.0C
E1	PROP. APPROX. 4" ACBC, TYPE B25.0C
E2	PROP. VAR. DEPTH ACBC, TYPE B25.0C
J1	PROP. 6" ABC
J2	PROP. 8" ABC
J3	VARIABLE DEPTH ABC
K	PROP. 5" CLASS IV AGGREGATE STABILIZATION
P	PRIME COAT
R1	2'-6" CONCRETE CURB AND GUTTER.
R2	2'-9" CONCRETE CURB AND GUTTER.
R3	1'-6" CONCRETE CURB AND GUTTER. (STD MOUNTABLE)
R4	5" MONOLITHIC CONCRETE ISLAND
R5	SHOULDER BERM GUTTER
R6	EXPRESSWAY GUTTER
R7	8"x18" CURB
R8	1'-6" CONCRETE CURB AND GUTTER. (SP 1'PAN-6" GUTTER)
R9	7" JOINTED CONCRETE (WITHOUT DOWELS REINFORCED WITH A W3.5 X W3.5 OR W5 X W5 WIRE MESH)
R10	9"x18" CONCRETE CURB
S1	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT.
W1	WEDGING METHOD NO. 1 - SEE SHEET 2A-1
W2	WEDGING METHOD NO. 2 - SEE SHEET 2A-1

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

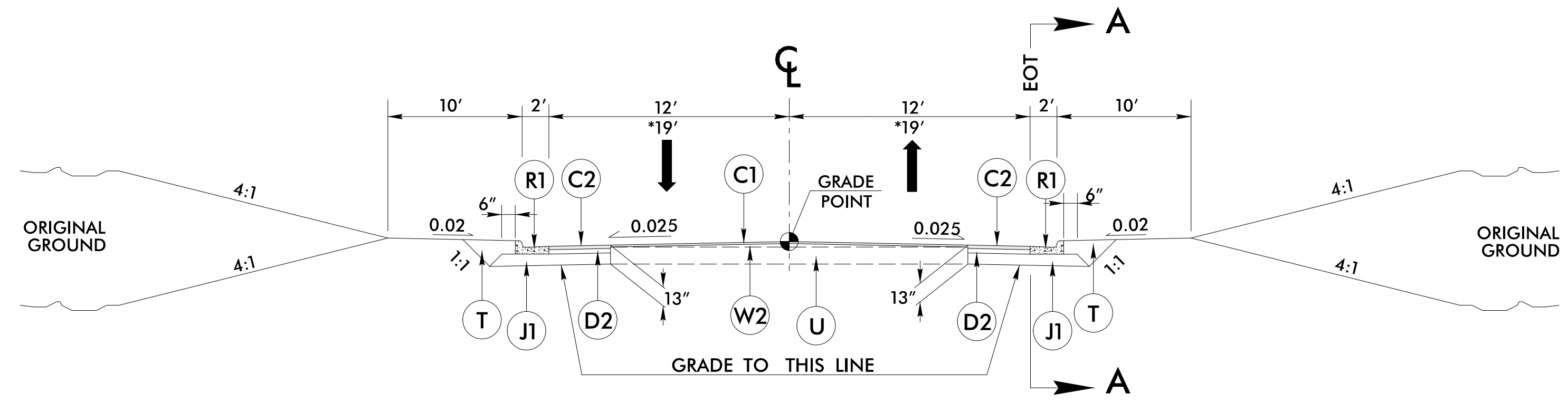


PROJECT REFERENCE NO. <b>R-5021</b>	SHEET NO. <b>2A-13</b>
ROADWAY DESIGN ENGINEER <i>[Signature]</i> 11/1/2021	PAVEMENT DESIGN ENGINEER <i>[Signature]</i> 11/2/2021
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



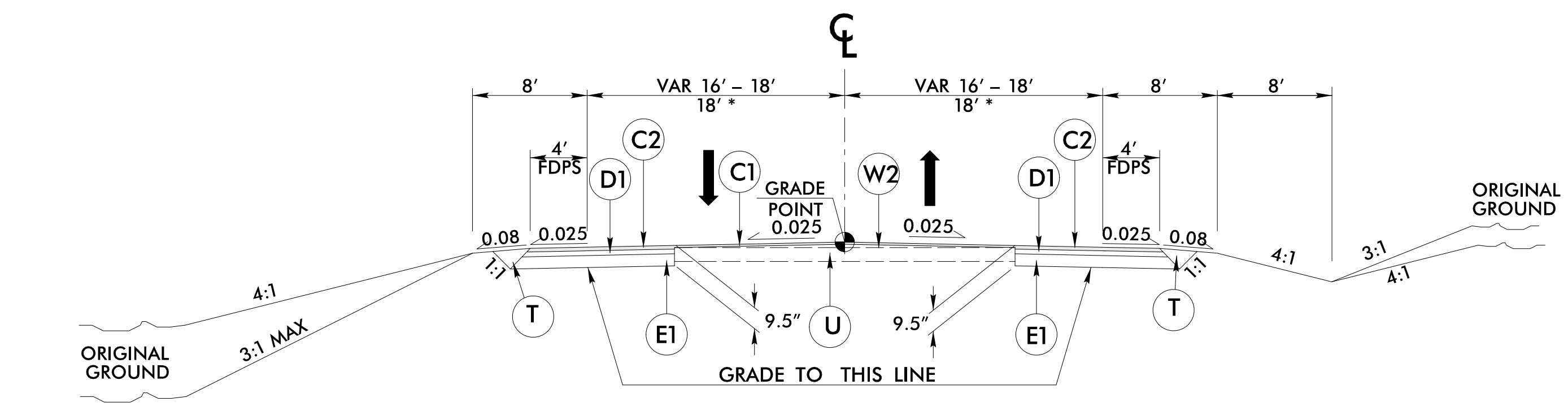
**TYPICAL SECTION NO. 43**

-Y19REV- STA. 11+75.00 TO STA. 13+00.00



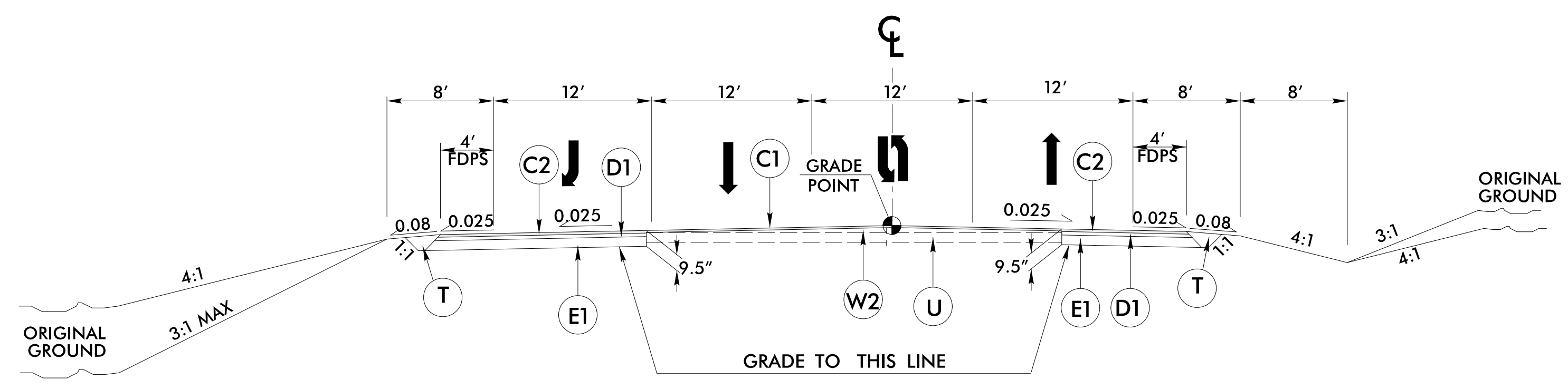
**TYPICAL SECTION NO. 44**

-Y21- STA. 10+25.00 TO STA. 10+93.75  
\*Y21- STA. 11+83.76 TO STA. 12+40.00



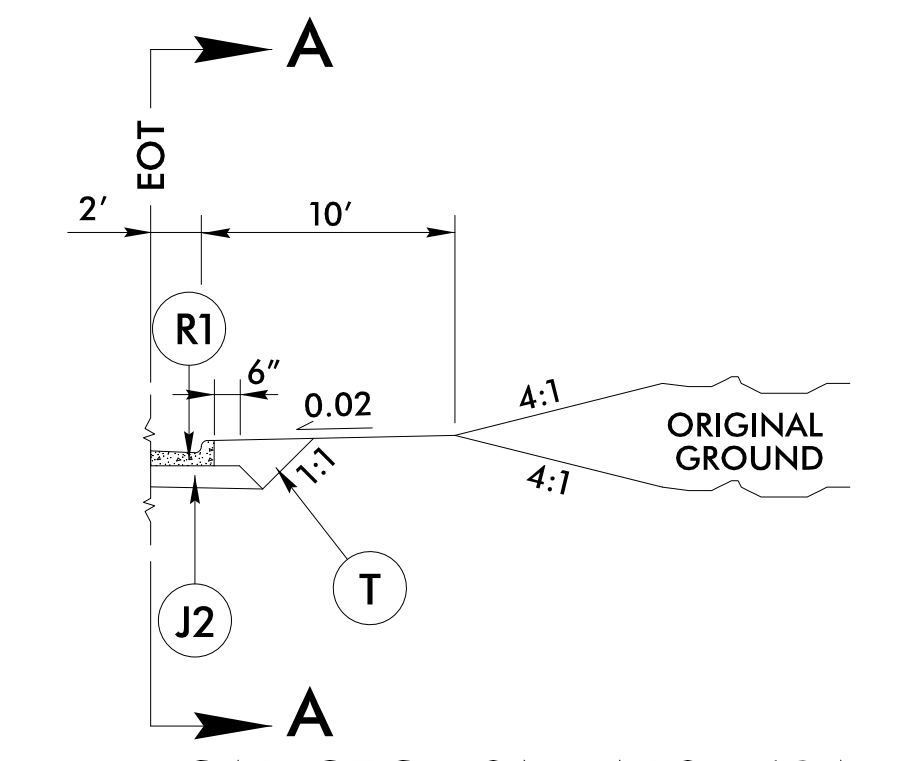
**TYPICAL SECTION NO. 45**

-Y22- STA. 14+00.00 (EXISTING) TO STA. 17+00.00  
\*Y22- STA. 17+00.00 TO STA. 21+50.00



**TYPICAL SECTION NO. 46**

-Y22- STA. 21+50.00 TO STA. 26+30.00



**TYPICAL SECTION NO. 43A**

2'-6" CURB AND GUTTER LOCATIONS  
USE TYPICAL NO. 43A IN CONJUNCTION WITH TYPICAL SECTION NO. 43

-Y19REV- STA. 12+09.00 TO STA. 13+00.00 RT

TRANSITION FROM TYPICAL SECTION NO. 46 TO TYPICAL SECTION NO. 47

-Y22- STA. 26+30.00 TO STA. 30+10.00

NOTE: SEE PLANS FOR SUPERELEVATIONS, TURN LANES, AUXILIARY LANES, MONOLITHIC ISLANDS, CURB & GUTTER, AND LANE TAPER LOCATIONS.

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6/2/2021

**PAVEMENT SCHEDULE**  
(FINAL PAVEMENT DESIGN)

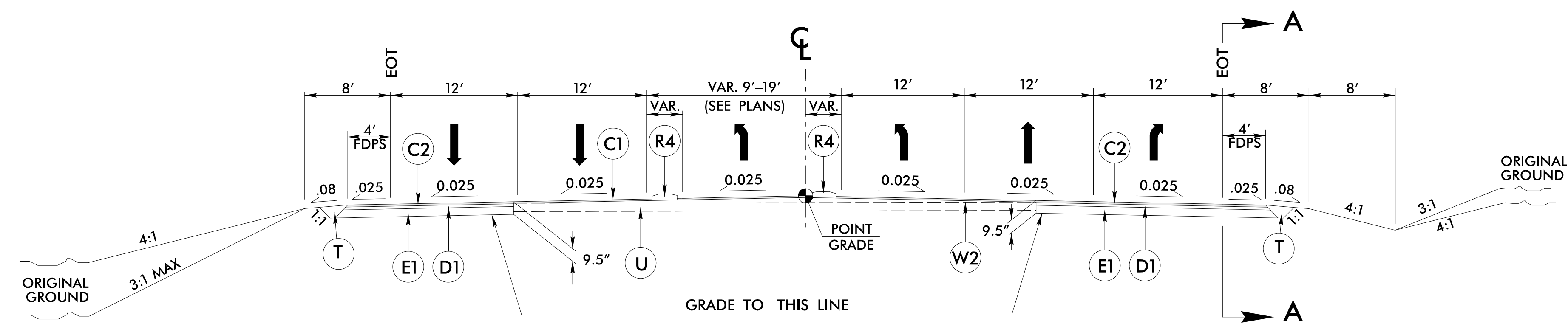
C1	PROP. APPROX. 1.5" ACSC, TYPE S9.5B
C2	PROP. APPROX. 3" ACSC, TYPE S9.5B
C3	PROP. VAR. DEPTH ACSC, TYPE S9.5B
C4	PROP. APPROX. 1.5" ACSC, TYPE S9.5C
C5	PROP. APPROX. 3" ACSC, TYPE S9.5C
C6	PROP. VAR. DEPTH ACSC, TYPE S9.5C
D1	PROP. APPROX. 2.5" ACIC, TYPE I19.0C
D2	PROP. APPROX. 4" ACIC, TYPE I19.0C
D3	PROP. VAR. DEPTH ACIC, TYPE I19.0C
E1	PROP. APPROX. 4" ACBC, TYPE B25.0C
E2	PROP. VAR. DEPTH ACBC, TYPE B25.0C
J1	PROP. 6" ABC
J2	PROP. 8" ABC
J3	VARIABLE DEPTH ABC
K	PROP. 5" CLASS IV AGGREGATE STABILIZATION
P	PRIME COAT
R1	2'-6" CONCRETE CURB AND GUTTER.
R2	2'-9" CONCRETE CURB AND GUTTER.
R3	1'-6" CONCRETE CURB AND GUTTER. (STD MOUNTABLE)
R4	5" MONOLITHIC CONCRETE ISLAND
R5	SHOULDER BERM GUTTER
R6	EXPRESSWAY GUTTER
R7	8"x18" CURB
R8	1'-6" CONCRETE CURB AND GUTTER. (SP 1'PAN-6"GUTTER)
R9	7" JOINTED CONCRETE (WITHOUT DOWELS REINFORCED WITH A W3.5 x W3.5 OR W5 x W5 WIRE MESH)
R10	9"x18" CONCRETE CURB
S1	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT.
W1	WEDGING METHOD NO. 1 - SEE SHEET 2A-1
W2	WEDGING METHOD NO. 2 - SEE SHEET 2A-1

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

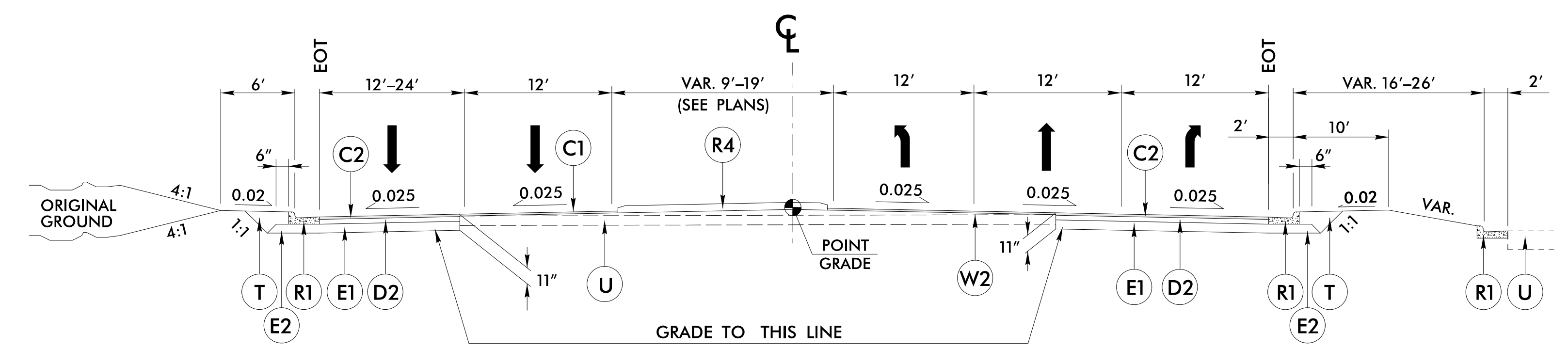


PROJECT REFERENCE NO. <b>R-5021</b>	SHEET NO. <b>2A-14</b>
ROADWAY DESIGN ENGINEER <i>David S. Beal</i> 11/1/2021	PAVEMENT DESIGN ENGINEER <i>Carl S. Morrison</i> 11/2/2021

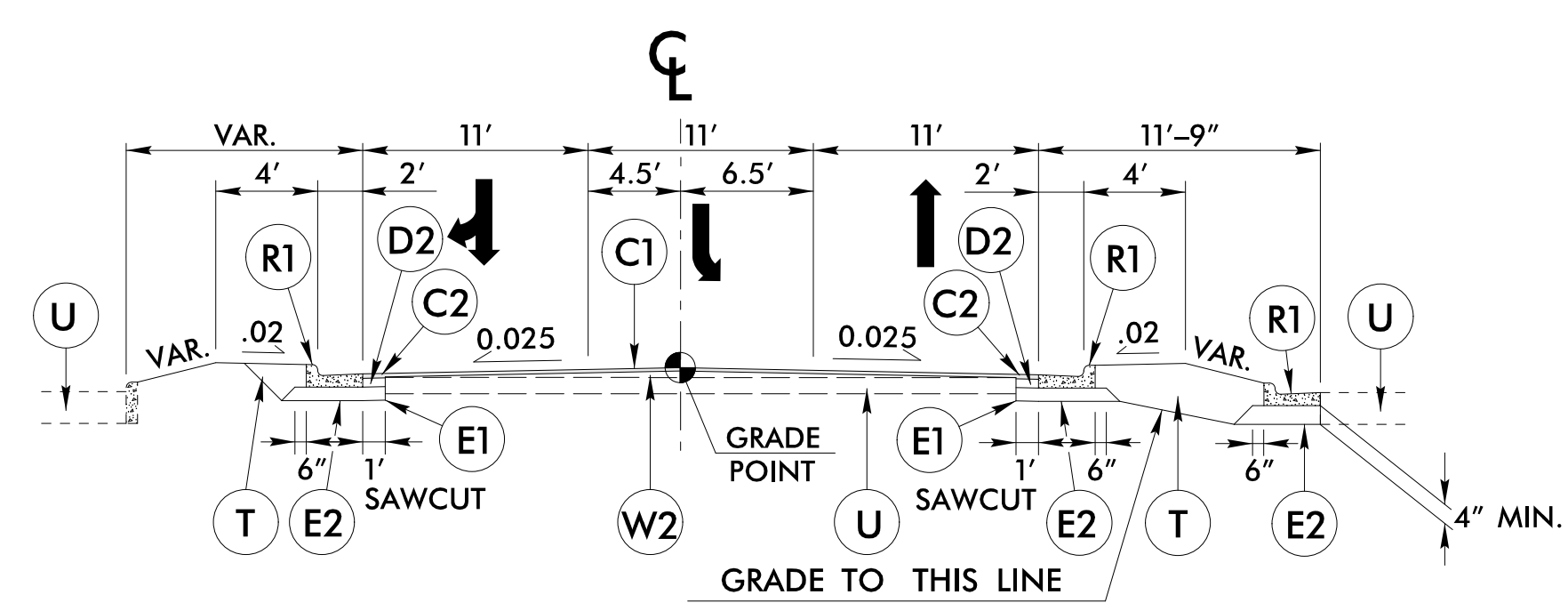
**DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED**



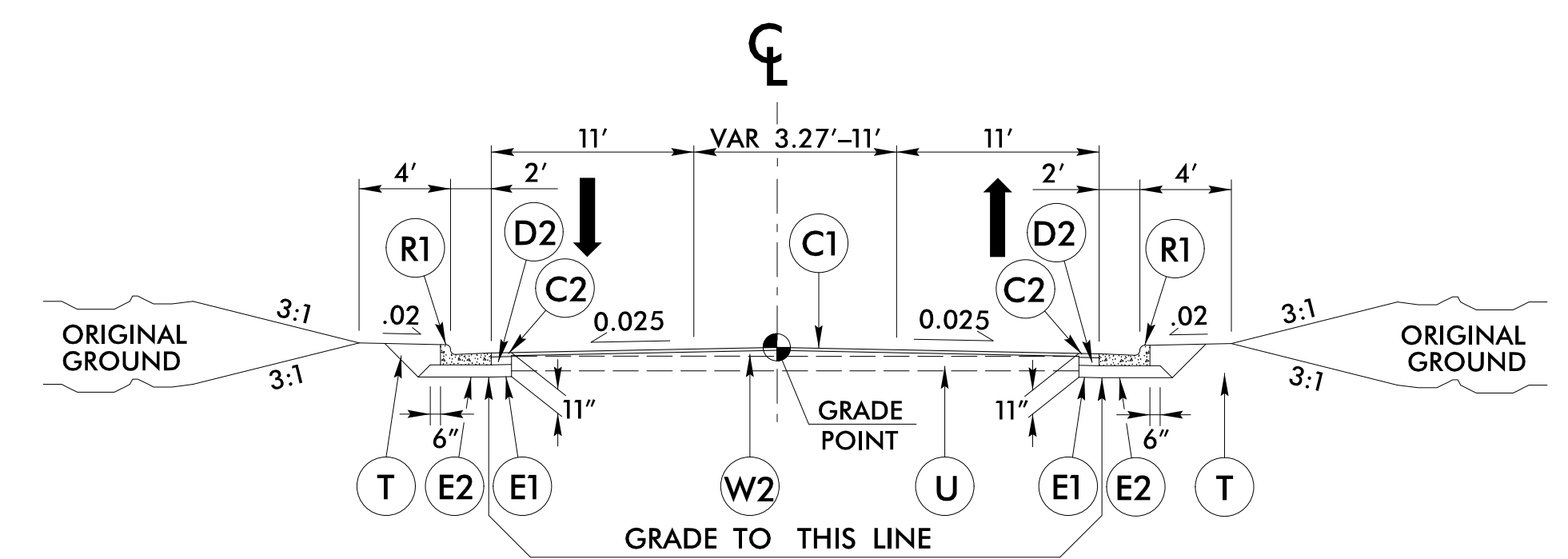
**TYPICAL SECTION NO. 47**  
-Y22- STA. 30+10.00 TO STA. 31+45.14



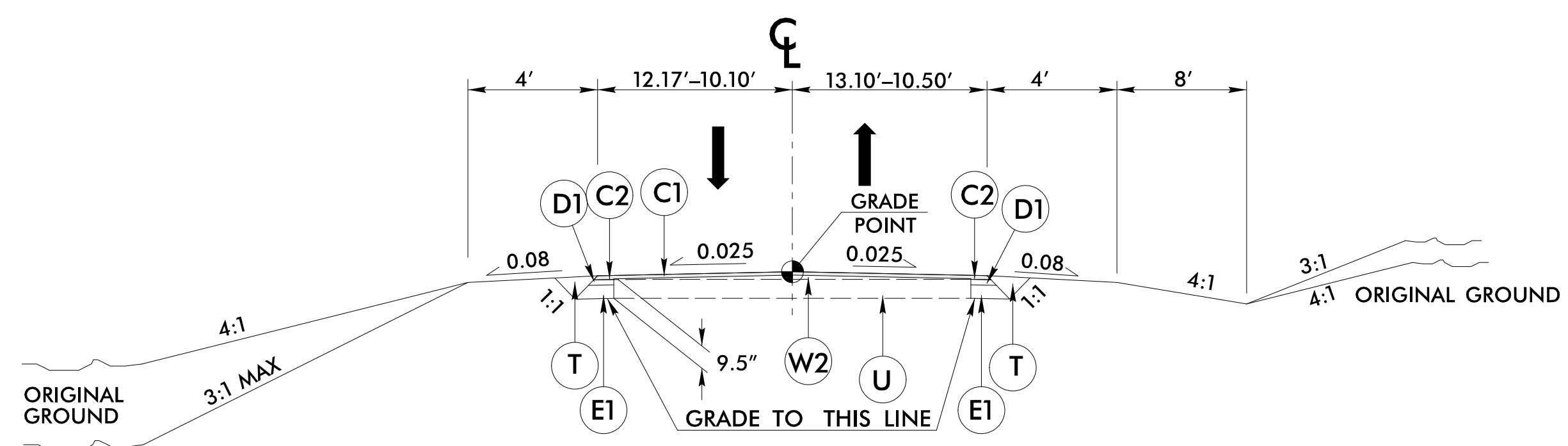
**TYPICAL SECTION NO. 48**  
-Y22- STA. 31+45.14 TO STA. 34+71.27



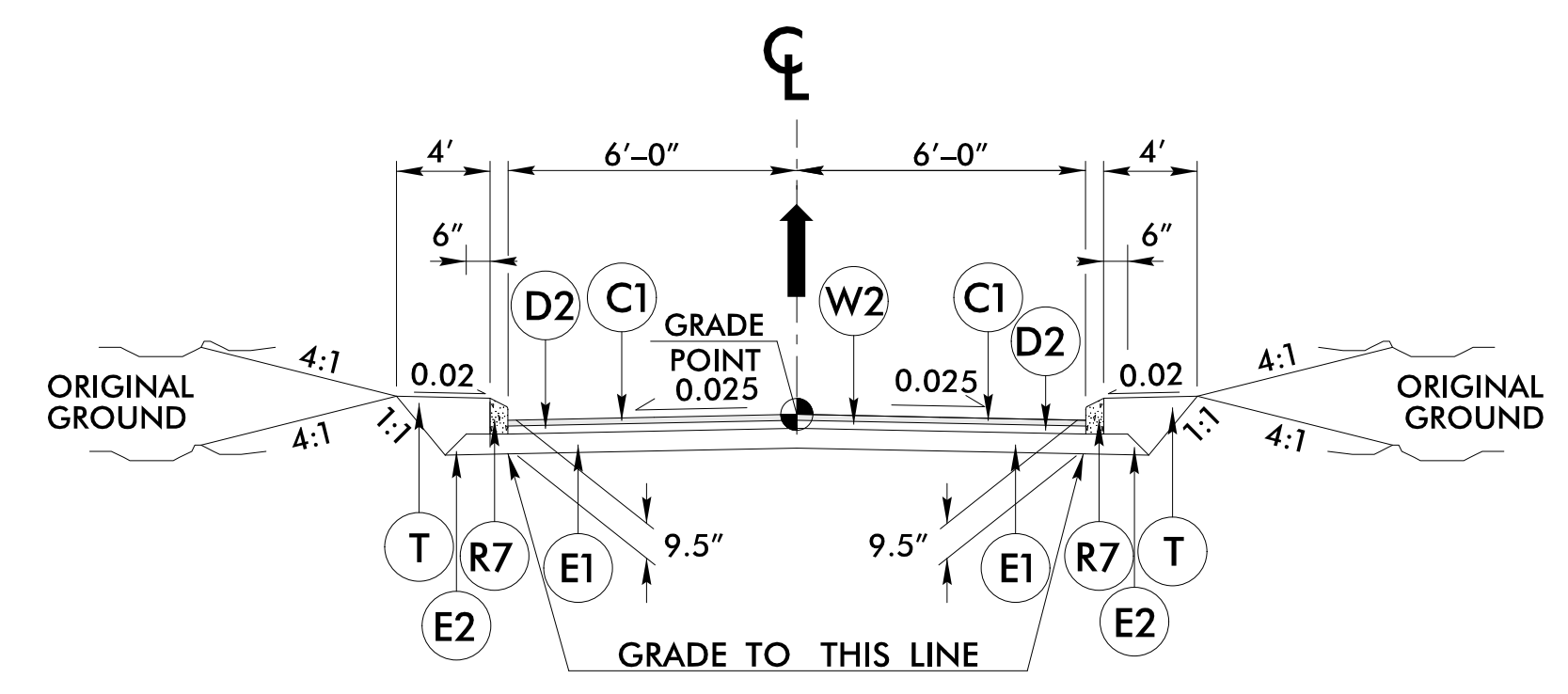
**TYPICAL SECTION NO. 49**  
-Y22- STA. 35+60.28 TO STA. 39+00.00



**TYPICAL SECTION NO. 50**  
-Y22- STA. 39+00.00 TO STA. 41+66.00



**TYPICAL SECTION NO. 51**  
-Y22- STA. 41+66.00 TO STA. 42+50.00



**TYPICAL SECTION NO. 52**  
-Y22A- STA. 10+25.00 TO STA. 12+01.92

NOTE: SEE PLANS FOR SUPERELEVATIONS, TURN LANES, AUXILIARY LANES, MONOLITHIC ISLANDS, CURB & GUTTER, AND LANE TAPER LOCATIONS.

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HNTB

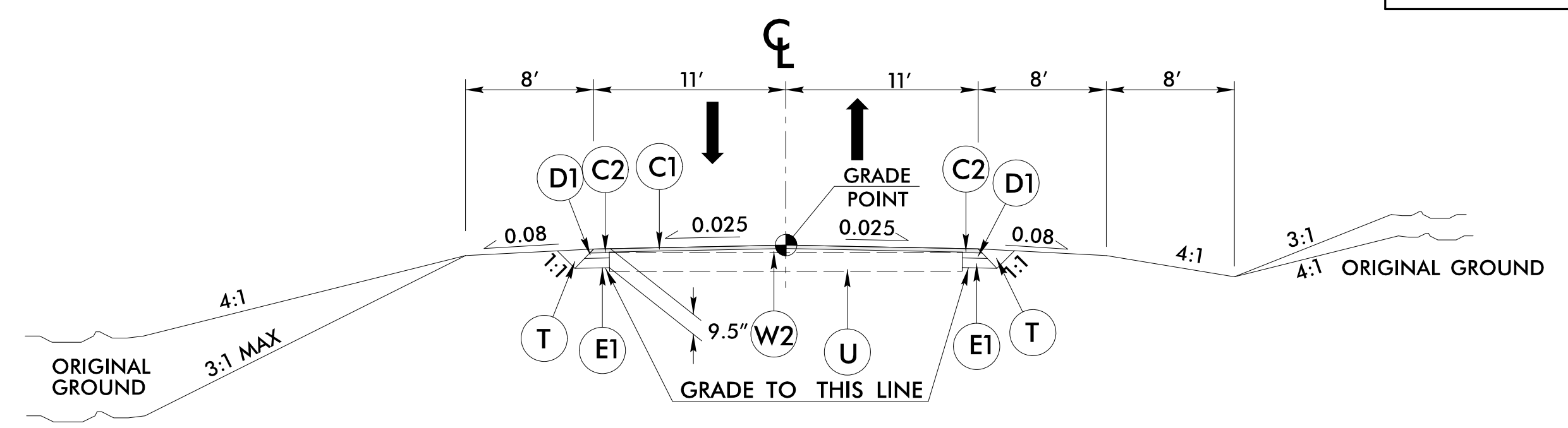
6/22/99

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	PROP. APPROX. 1.5" ACSC, TYPE S9.5B
C2	PROP. APPROX. 3" ACSC, TYPE S9.5B
C3	PROP. VAR. DEPTH ACSC, TYPE S9.5B
C4	PROP. APPROX. 1.5" ACSC, TYPE S9.5C
C5	PROP. APPROX. 3" ACSC, TYPE S9.5C
C6	PROP. VAR. DEPTH ACSC, TYPE S9.5C
D1	PROP. APPROX. 2.5" ACIC, TYPE I19.0C
D2	PROP. APPROX. 4" ACIC, TYPE I19.0C
D3	PROP. VAR. DEPTH ACIC, TYPE I19.0C
E1	PROP. APPROX. 4" ACBC, TYPE B25.0C
E2	PROP. VAR. DEPTH ACBC, TYPE B25.0C
J1	PROP. 6" ABC
J2	PROP. 8" ABC
J3	VARIABLE DEPTH ABC
K	PROP. 5" CLASS IV AGGREGATE STABILIZATION
P	PRIME COAT
R1	2'-6" CONCRETE CURB AND GUTTER.
R2	2'-9" CONCRETE CURB AND GUTTER.
R3	1'-6" CONCRETE CURB AND GUTTER. (STD MOUNTABLE)
R4	5" MONOLITHIC CONCRETE ISLAND
R5	SHOULDER BERM GUTTER
R6	EXPRESSWAY GUTTER
R7	8"x18" CURB
R8	1'-6" CONCRETE CURB AND GUTTER. (SP 1'PAN-6" GUTTER)
R9	7" JOINTED CONCRETE (WITHOUT DOWELS REINFORCED WITH A W3.5 x W3.5 OR W5 x W5 WIRE MESH)
R10	9"x18" CONCRETE CURB
S1	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT.
W1	WEDGING METHOD NO. 1 - SEE SHEET 2A-1
W2	WEDGING METHOD NO. 2 - SEE SHEET 2A-1

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

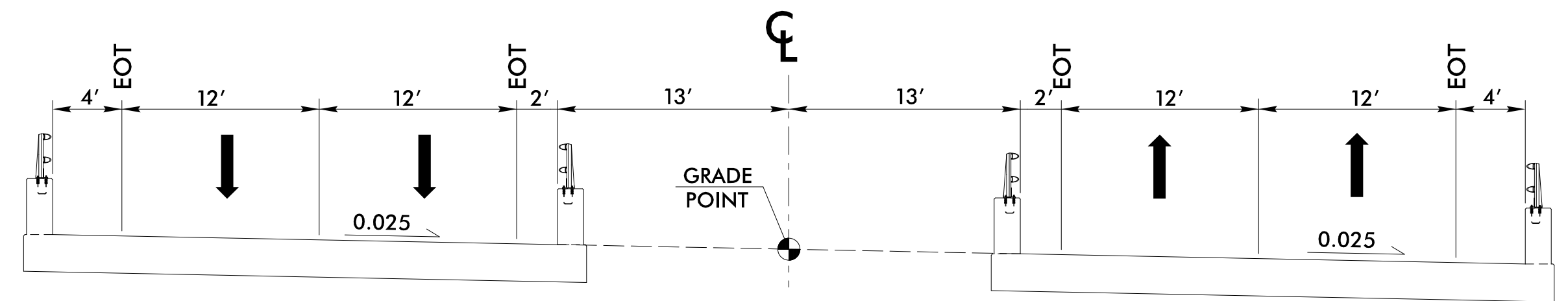
**HNTB** HNTB NORTH CAROLINA, P.C.  
343 E. Six Forks Road, Suite 200  
Raleigh, North Carolina 27609  
NC License No: C-1524

PROJECT REFERENCE NO. <b>R-5021</b>	SHEET NO. <b>2A-15</b>
ROADWAY DESIGN ENGINEER <i>David S. Harrison</i> 36786 11/1/2021	PAVEMENT DESIGN ENGINEER <i>Carl S. Harrison</i> 022896 11/2/2021
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	

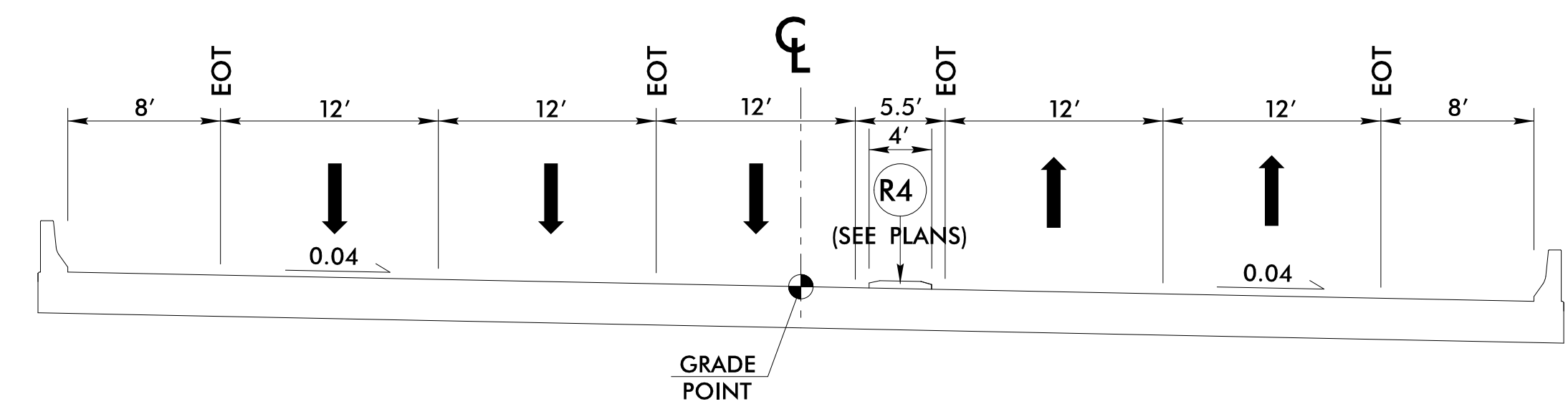


**TYPICAL SECTION NO. 53**  
-Y24- STA. 10+35.43 TO STA. 12+81.87

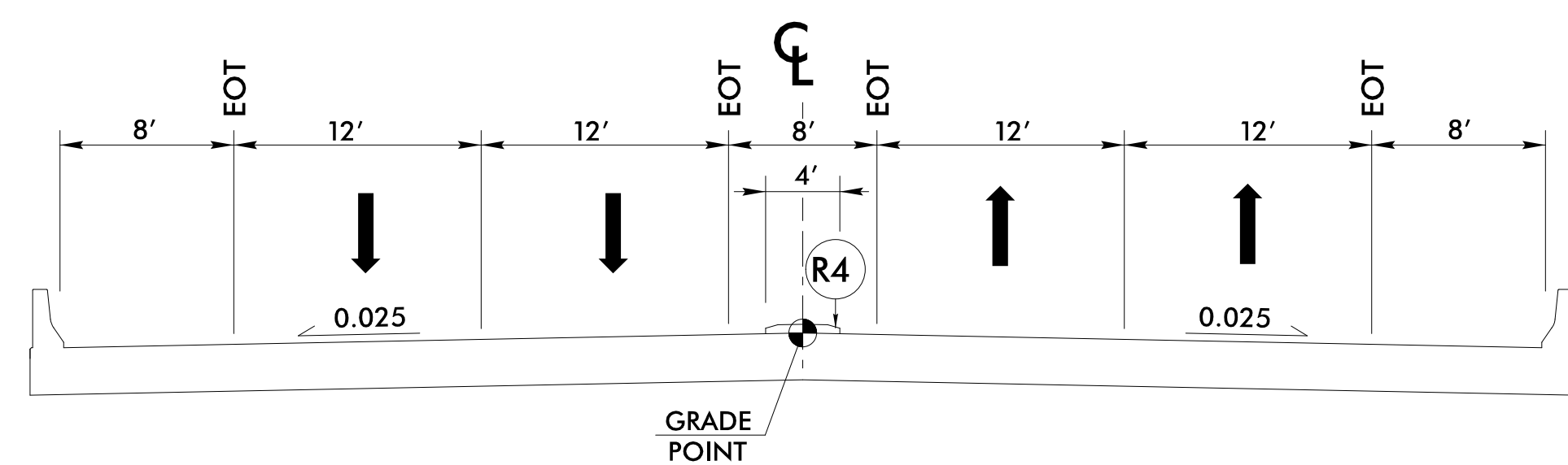
**BRIDGE TYPICALS**



**BRIDGE TYPICAL NO. 1**  
-L- STA. 368+64.42 TO STA. 370+05.05 (EBL)  
-L- STA. 368+55.48 TO STA. 370+18.89 (WBL)  
-L- STA. 388+47.34 TO STA. 391+60.09 (EBL)  
-L- STA. 388+63.60 TO STA. 391+73.86 (WBL)



**BRIDGE TYPICAL NO. 2**  
-YREV- STA. 30+66.39 TO STA. 32+07.06



**BRIDGE TYPICAL NO. 3**  
-Y14A- STA. 38+95.97 TO STA. 40+16.47

NOTE: SEE PLANS FOR SUPERELEVATIONS, TURN LANES, AUXILIARY LANES, MONOLITHIC ISLANDS, CURB & GUTTER, AND LANE TAPER LOCATIONS.

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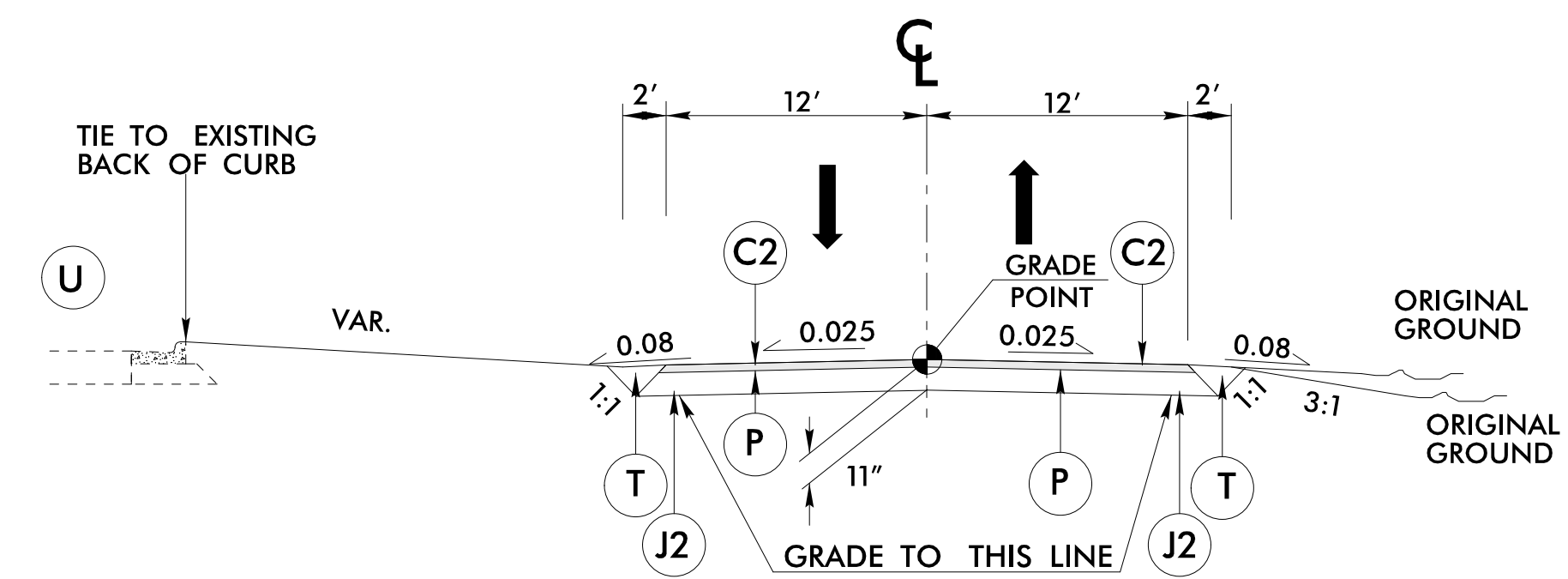
6/22/99

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	PROP. APPROX. 1.5" ACSC, TYPE S9.5B
C2	PROP. APPROX. 3" ACSC, TYPE S9.5B
C3	PROP. VAR. DEPTH ACSC, TYPE S9.5B
C4	PROP. APPROX. 1.5" ACSC, TYPE S9.5C
C5	PROP. APPROX. 3" ACSC, TYPE S9.5C
C6	PROP. VAR. DEPTH ACSC, TYPE S9.5C
D1	PROP. APPROX. 2.5" ACIC, TYPE I19.0C
D2	PROP. APPROX. 4" ACIC, TYPE I19.0C
D3	PROP. VAR. DEPTH ACIC, TYPE I19.0C
E1	PROP. APPROX. 4" ACBC, TYPE B25.0C
E2	PROP. VAR. DEPTH ACBC, TYPE B25.0C
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J3	VARIABLE DEPTH ABC
K	PROP. 5" CLASS IV AGGREGATE STABILIZATION
P	PRIME COAT
R1	2'-6" CONCRETE CURB AND GUTTER.
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R4	5" MONOLITHIC CONCRETE ISLAND
R5	SHOULDER BERM GUTTER
R6	EXPRESSWAY GUTTER
R7	8"x18" CURB
R8	1'-6" CONCRETE CURB AND GUTTER. (SP 1'PAN-6"GUTTER)
R9	7" JOINTED CONCRETE (WITHOUT DOWELS REINFORCED WITH A W3.5 X W3.5 OR W5 X W5 WIRE MESH)
R10	9"x18" CONCRETE CURB
S1	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT.
W1	WEDGING METHOD NO. 1 - SEE SHEET 2A-1
W2	WEDGING METHOD NO. 2 - SEE SHEET 2A-1

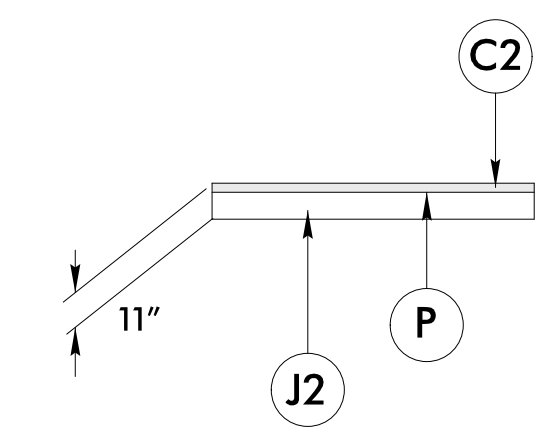
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

**HNTB** HNTB NORTH CAROLINA, P.C.  
343 E. Six Forks Road, Suite 200  
Raleigh, North Carolina 27609  
NC License No: C-1524

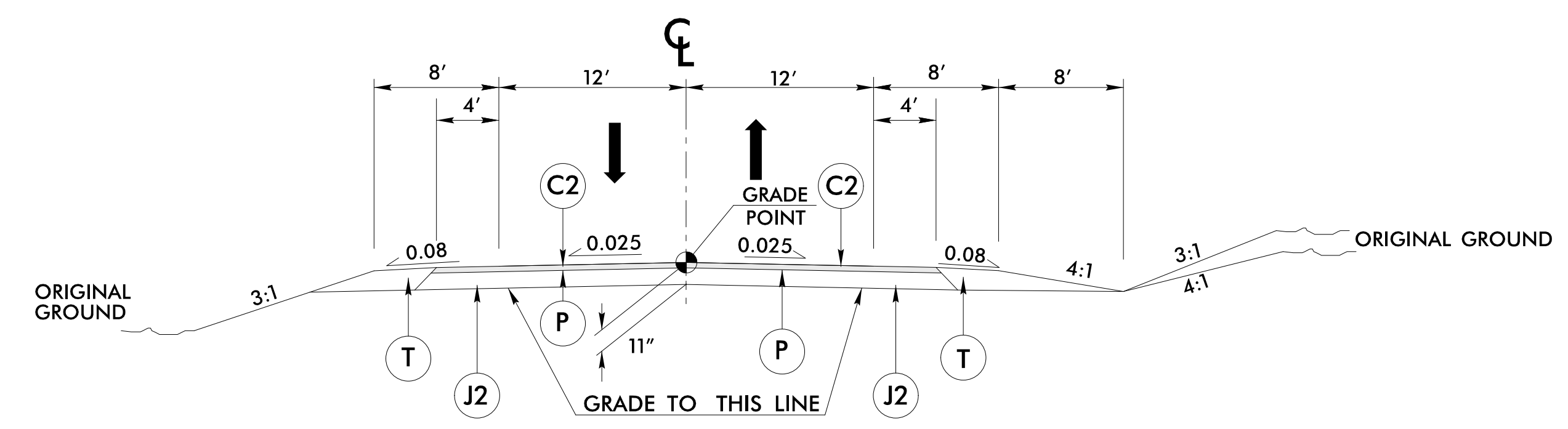
PROJECT REFERENCE NO. <b>R-5021</b>	SHEET NO. <b>2A-16</b>
ROADWAY DESIGN ENGINEER <i>David S. Real</i> 36786 11/1/2021	PAVEMENT DESIGN ENGINEER <i>Carl S. Morrison</i> 022896 11/2/2021
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



**TYPICAL SECTION NO. 54**  
-YREVTCP1- STA. 10+00.00 TO STA. 17+50.00



**TYPICAL SECTION NO. 55**  
TEMPORARY PAVEMENT DESIGN FOR USE WITH TMP PLANS



**TYPICAL SECTION NO. 56**  
-YATCP1- STA. 10+51.02 TO STA. 19+06.40

NOTE: SEE PLANS FOR SUPERELEVATIONS, TURN LANES, AUXILIARY LANES, MONOLITHIC ISLANDS, CURB & GUTTER, AND LANE TAPER LOCATIONS.

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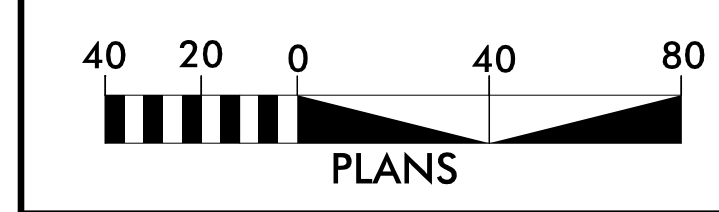
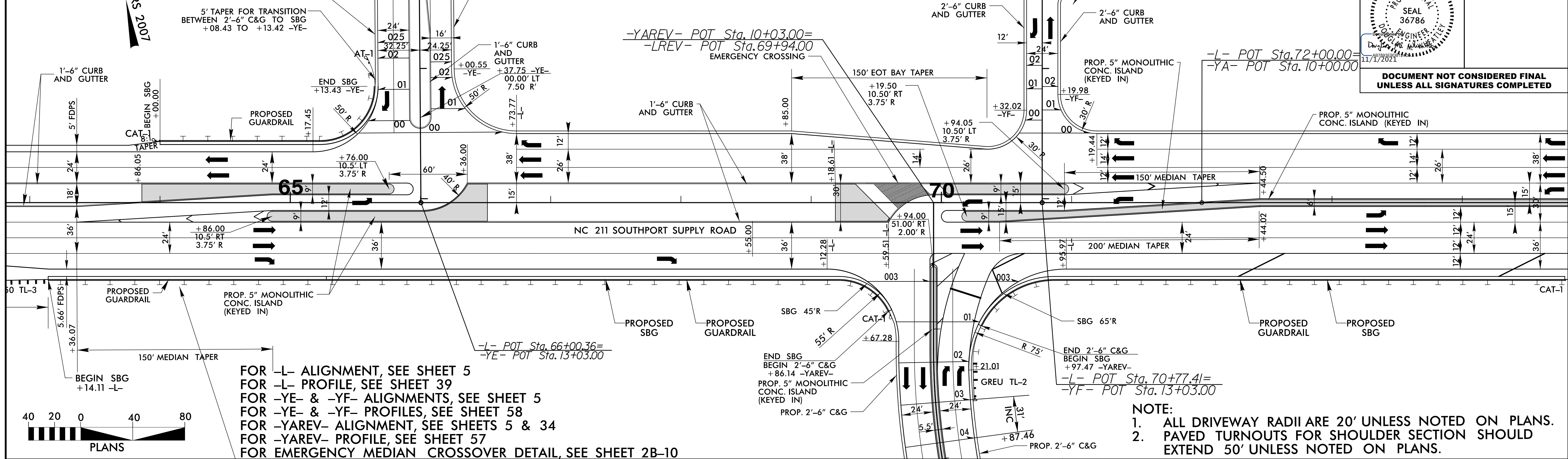


5/14/2007

# INTERSECTION DETAIL AND DIRECTIONAL CROSSOVER INTO MDI MANAGEMENT, INC -L- STA 66+00.00

**HNTB** HNTB NORTH CAROLINA, P.C.  
343 E. Six Forks Road, Suite 200  
Raleigh, North Carolina 27609  
NC License No: C-1554

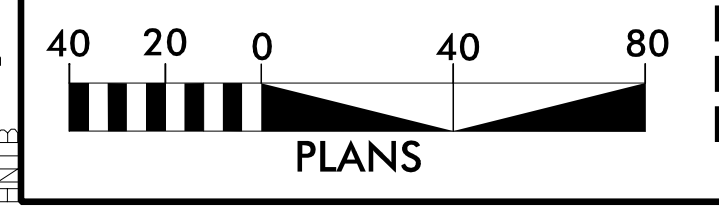
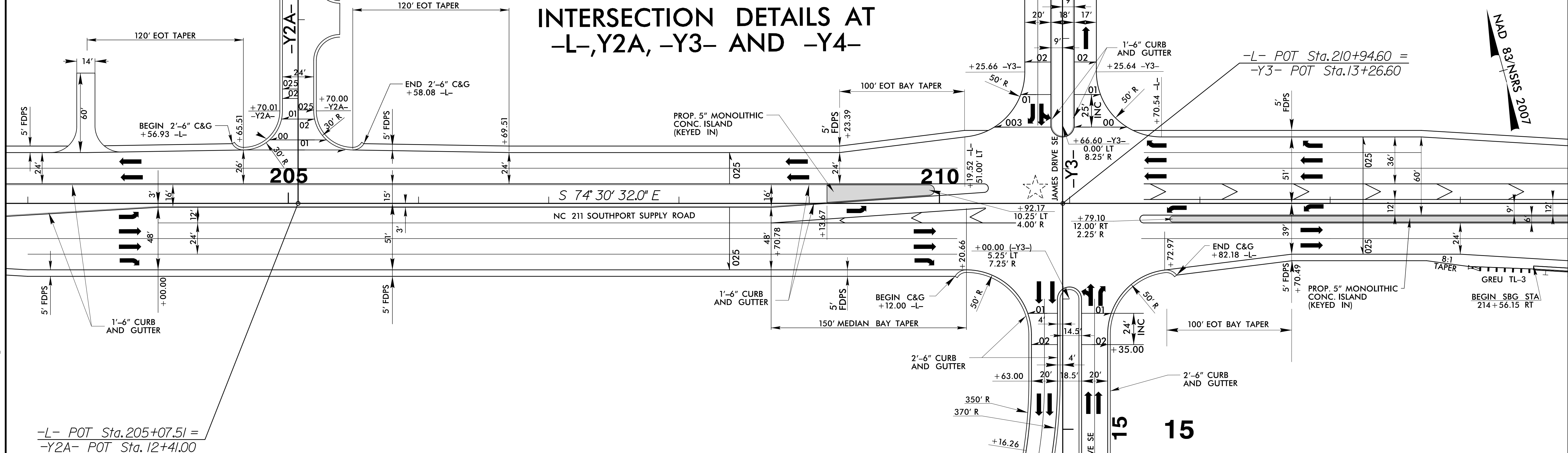
PROJECT REFERENCE NO. R-5021	SHEET NO. 2B-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



FOR -L- ALIGNMENT, SEE SHEET 5  
 FOR -L- PROFILE, SEE SHEET 39  
 FOR -YE- & -YF- ALIGNMENTS, SEE SHEET 5  
 FOR -YE- & -YF- PROFILES, SEE SHEET 58  
 FOR -YAREV- ALIGNMENT, SEE SHEETS 5 & 34  
 FOR -YAREV- PROFILE, SEE SHEET 57  
 FOR EMERGENCY MEDIAN CROSSOVER DETAIL, SEE SHEET 2B-10

NOTE:  
 1. ALL DRIVEWAY RADII ARE 20' UNLESS NOTED ON PLANS.  
 2. PAVED TURNOUTS FOR SHOULDER SECTION SHOULD EXTEND 50' UNLESS NOTED ON PLANS.

# INTERSECTION DETAILS AT -L-, Y2A, -Y3- AND -Y4-



FOR -L- ALIGNMENT, SEE SHEET 15 & 16  
 FOR -L- PROFILE, SEE SHEET 44 & 45  
 FOR -Y2A- & -Y3- ALIGNMENT, SEE SHEET 15  
 FOR -Y4- ALIGNMENT, SEE SHEET 16  
 FOR -Y2A-, -Y3-, & -Y4- PROFILES, SEE SHEET 60

NOTE:  
 1. ALL DRIVEWAY RADII ARE 20' UNLESS NOTED ON PLANS.  
 2. PAVED TURNOUTS FOR SHOULDER SECTION SHOULD EXTEND 50' UNLESS NOTED ON PLANS.



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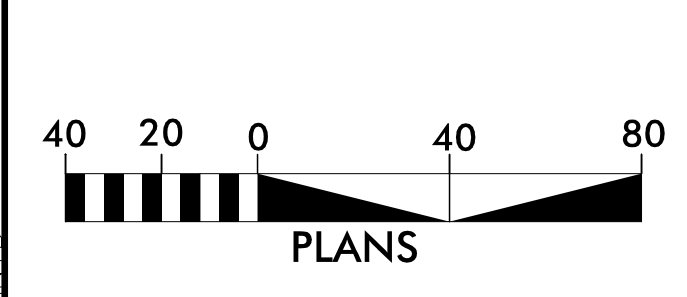
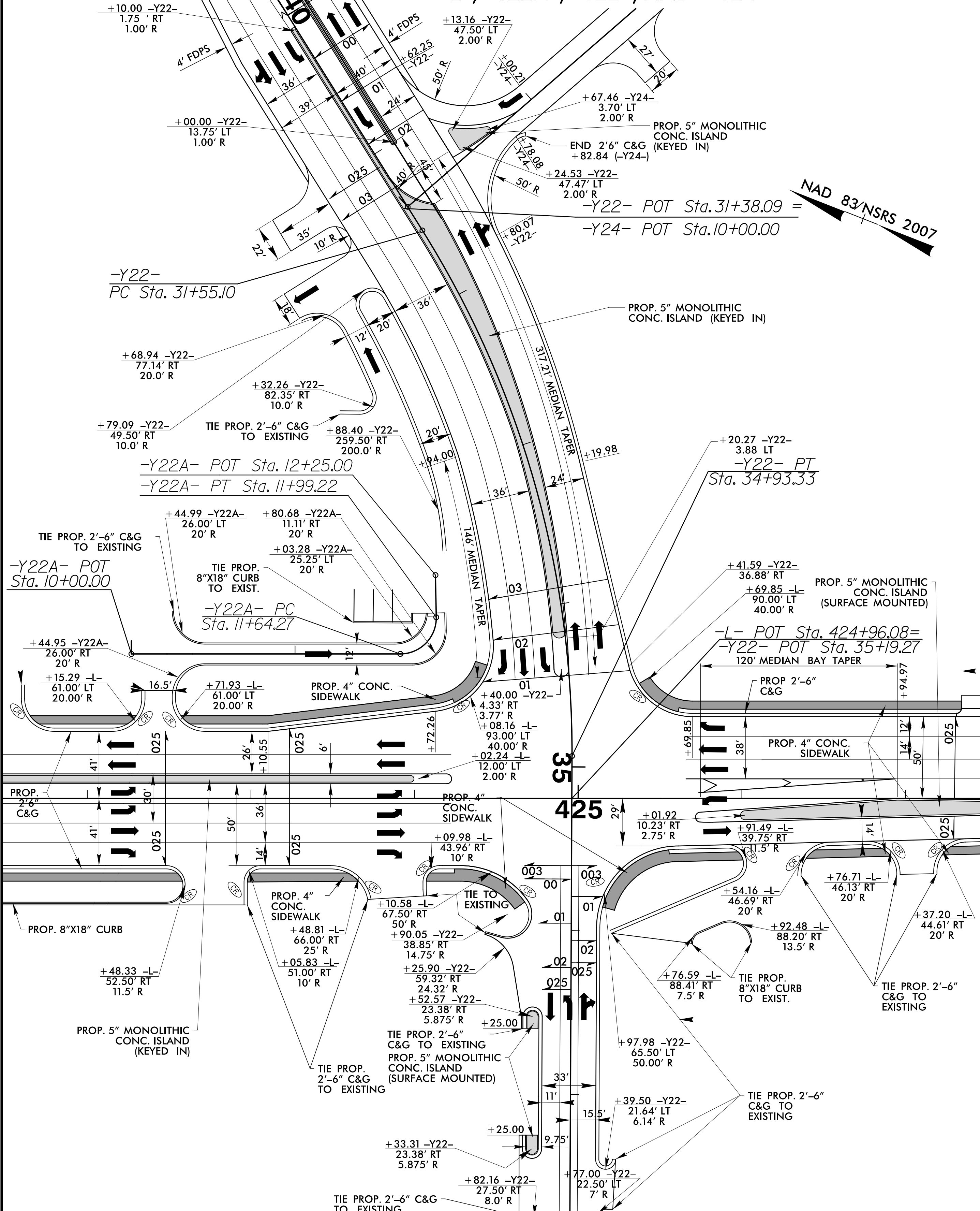




5/14/2021

PROJECT REFERENCE NO.	SHEET NO.
R-5021	2B-4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

### INTERSECTION DETAIL AT -L-, -Y22A-, -Y22-, AND -Y24-



**NOTE:**

1. ALL DRIVEWAY RADII ARE 20' UNLESS NOTED ON PLANS.
2. PAVED TURNOUTS FOR SHOULDER SECTION SHOULD EXTEND 50' UNLESS NOTED ON PLANS.

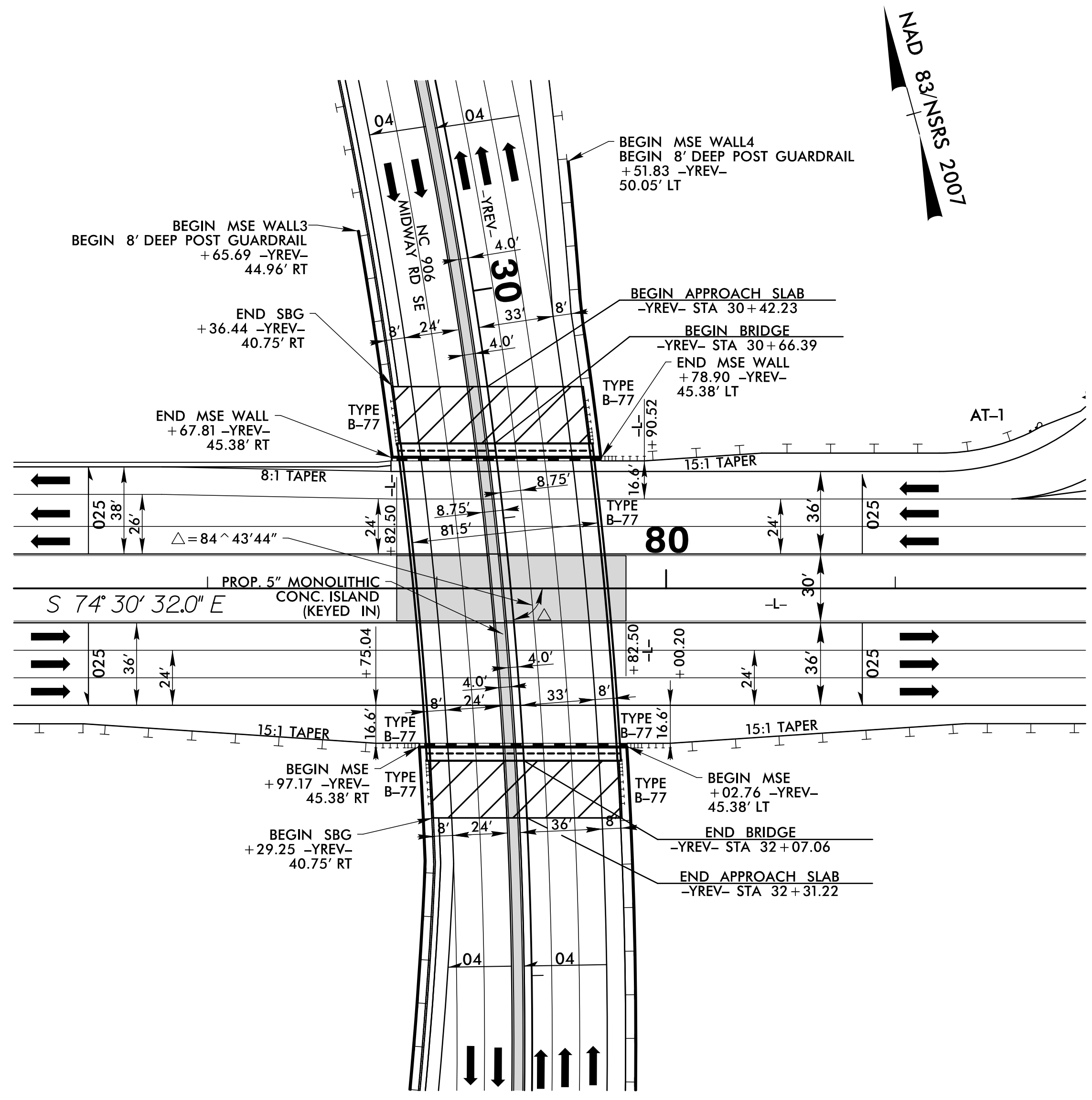
FOR -L- AND -Y22- ALIGNMENTS, SEE SHEET 31  
 FOR -Y22A- ALIGNMENT, SEE SHEETS 30 & 31  
 FOR -Y24- ALIGNMENT, SEE SHEET 39  
 FOR -L- PROFILE, SEE SHEET 54  
 FOR -Y22A- PROFILE, SEE SHEET 69  
 FOR -Y22- PROFILE, SEE SHEET 68 & 69  
 FOR -Y24- PROFILE, SEE SHEET 70

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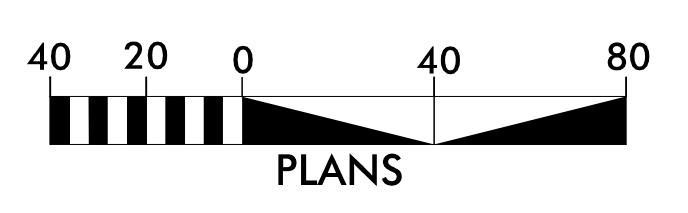


5/14/20

### BRIDGE DETAIL AT INTERSECTION OF -L- AND -YREV-



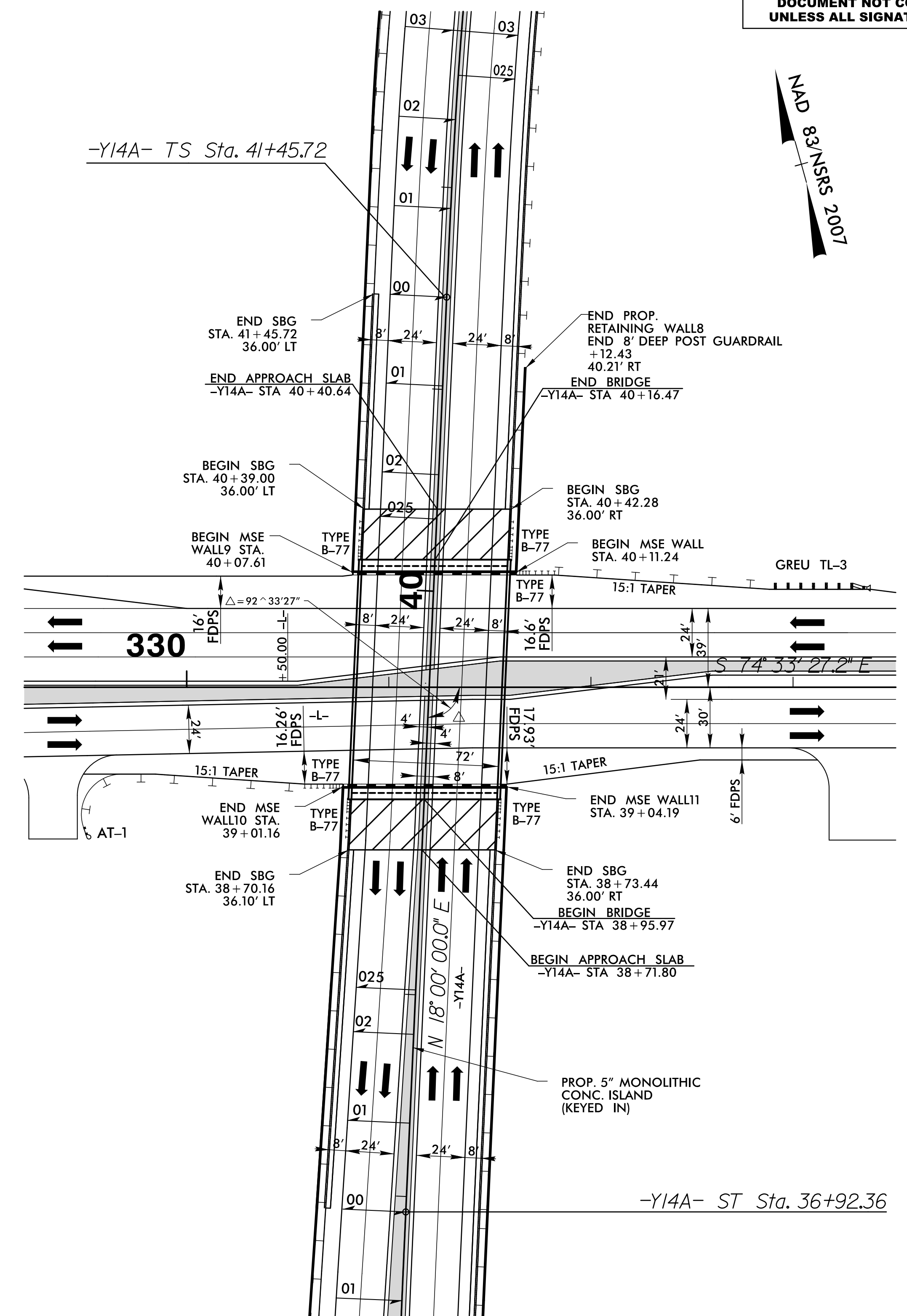
NAD 83/NSRS 2007



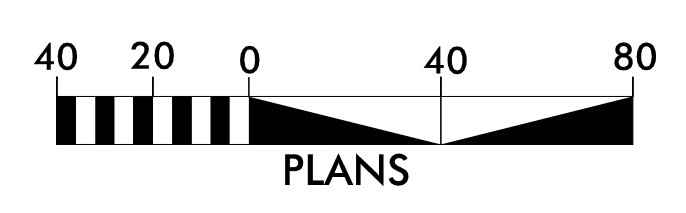
FOR -L- AND -YREV- ALIGNMENTS, SEE SHEET 6  
 FOR -L- PROFILE, SEE SHEET 42  
 FOR -YREV- PROFILE, SEE SHEET 55 AND 56  
 FOR STRUCTURE PLANS, SEE SHEET S3-1 THRU S3-25  
 FOR RETAINING WALL PLANS, SEE SHEETS W-3 THRU W-7

PROJECT REFERENCE NO.	SHEET NO.
R-5021	2B-5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

### BRIDGE DETAIL AT INTERSECTION OF -L- AND -Y14A-



NAD 83/NSRS 2007



FOR -L- AND -Y14A- ALIGNMENTS, SEE SHEET 24  
 FOR -L- PROFILE, SEE SHEET 51  
 FOR -Y14A- PROFILE, SEE SHEETS 63 AND 64  
 FOR STRUCTURE PLANS, SEE SHEET S4-1 THRU S4-24  
 FOR RETAINING WALL PLANS, SEE SHEETS W-8 THRU W-17

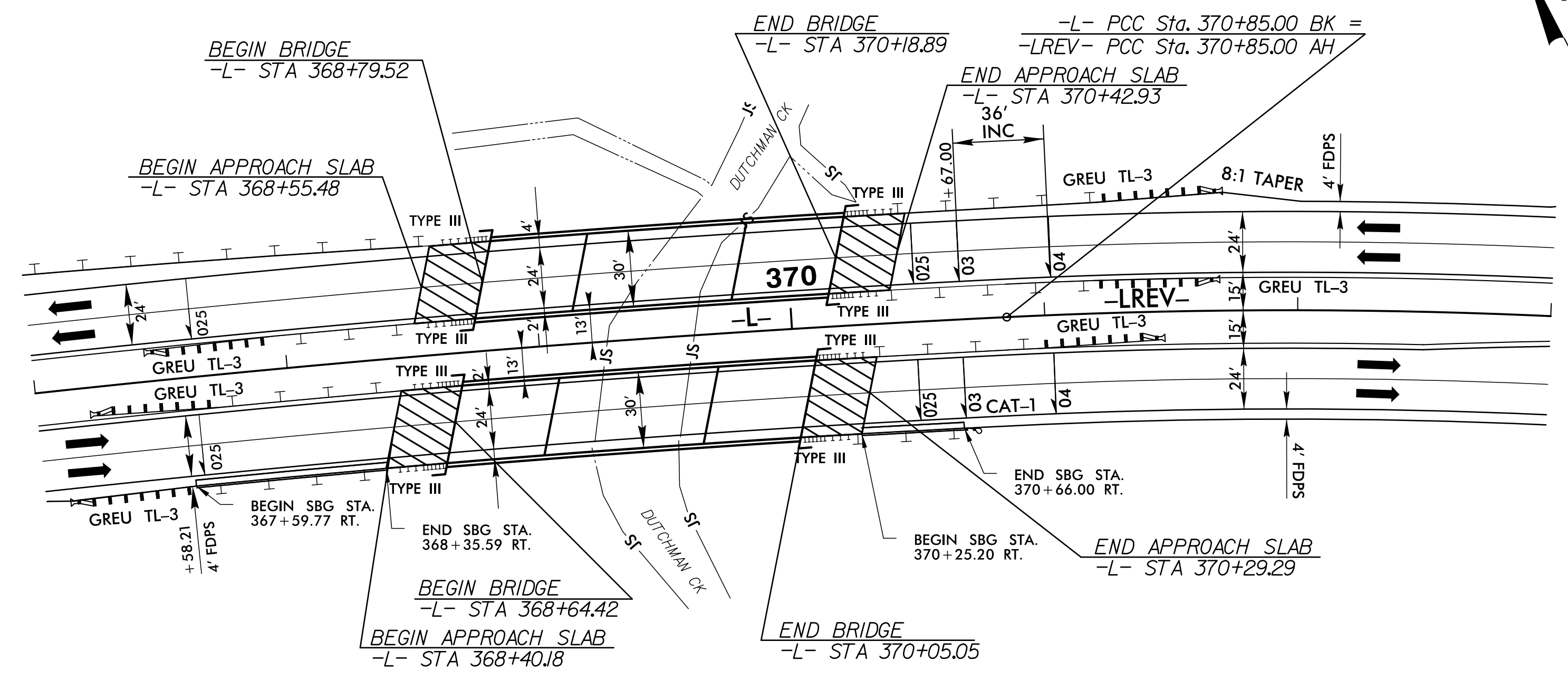
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5/14/2021

### BRIDGE DETAIL AT -L- AND DUTCHMAN CREEK

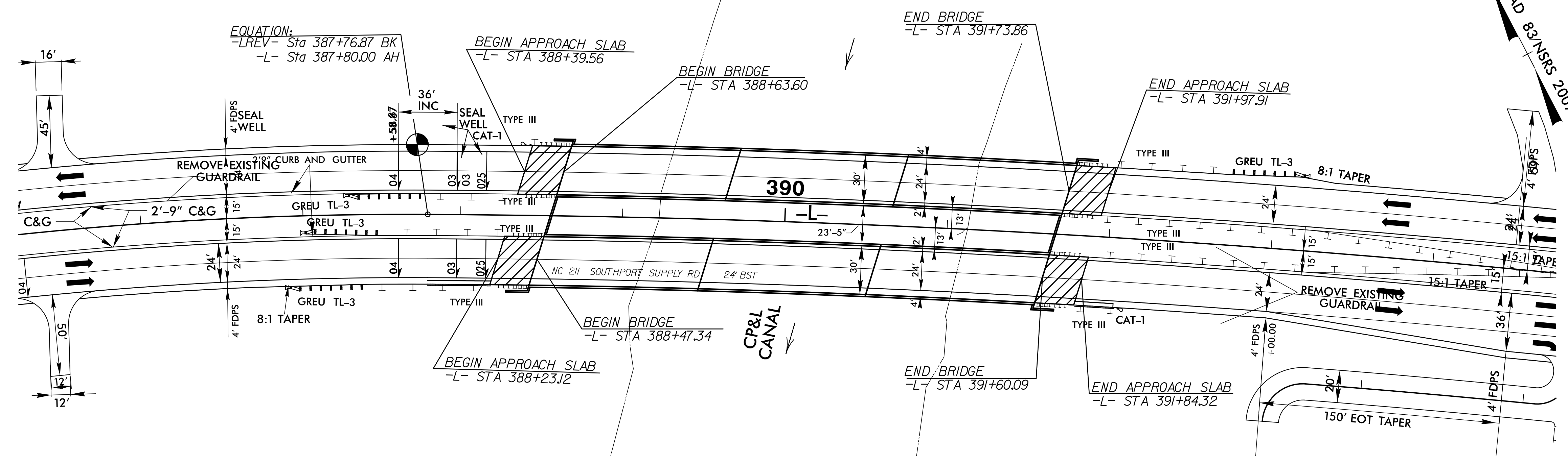
**HNTB** HNTB NORTH CAROLINA, P.C.  
 343 E. Six Forks Road, Suite 200  
 Raleigh, North Carolina 27609  
 NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
R-5021	2B-6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



FOR -L- ALIGNMENT, SEE SHEET 27  
 FOR -L- PROFILE, SEE SHEET 52  
 FOR STRUCTURE PLANS, SEE SHEET S1-1 THRU S1-38  
 FOR STRUCTURE PLANS, SEE SHEET S2-1 THRU S2-38

### BRIDGE DETAIL AT -L- AND CP&L CANAL



NOTE:  
 1. ALL DRIVEWAY RADII ARE 20' UNLESS NOTED ON PLANS.  
 2. PAVED TURNOUTS FOR SHOULDER SECTION SHOULD EXTEND 50' UNLESS NOTED ON PLANS.

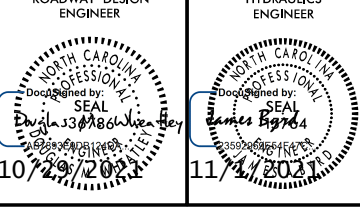
FOR -L- ALIGNMENT, SEE SHEET 28  
 FOR -L- PROFILE, SEE SHEET 53  
 FOR STRUCTURE PLANS, SEE SHEET S5-1 THRU S5-39  
 FOR STRUCTURE PLANS, SEE SHEET S6-1 THRU S6-39

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 JML

# MIDWAY RD./MIDDLETON BLVD. INTERCHANGE OVERVIEW SHEET



PROJECT REFERENCE NO. 2-5021  
SHEET NO. 2B-7



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

★ PROPOSED TRAFFIC SIGNAL

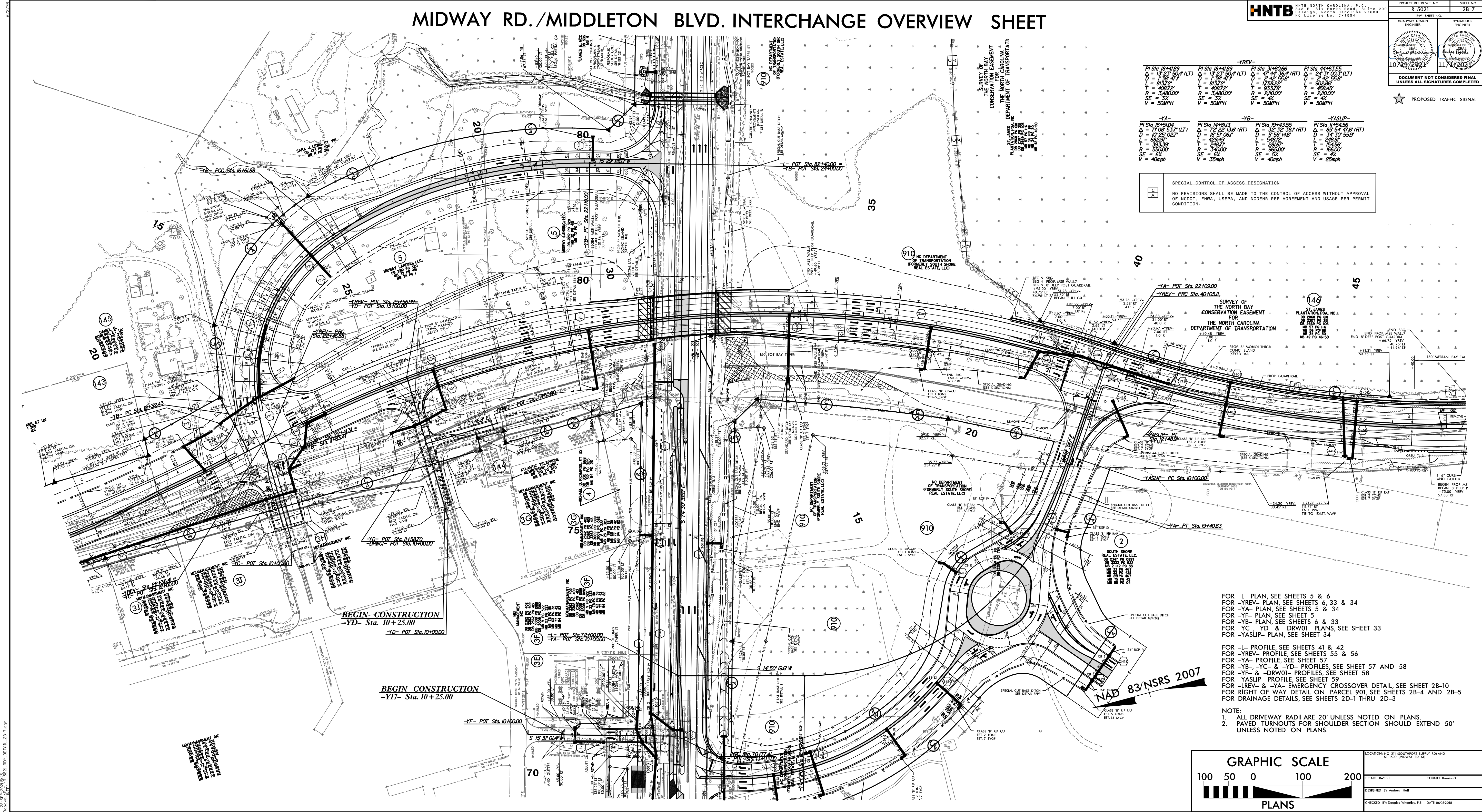
-YREV-			
PI Sta 18+41.89	PI Sta 18+41.89	PI Sta 31+90.66	PI Sta 44+63.55
$\Delta = 13^{\circ} 23' 50.4" (LT)$	$\Delta = 13^{\circ} 23' 50.4" (LT)$	$\Delta = 47^{\circ} 44' 36.4" (RT)$	$\Delta = 85^{\circ} 54' 41.2" (RT)$
D = 7.38' 47.4"	D = 7.38' 47.4"	D = 24.42' 53.6"	D = 50.28'
L = 81.37'	L = 81.37'	L = 173.92'	L = 458.49'
T = 408.59'	T = 408.59'	T = 333.9'	T = 458.49'
R = 348.00'	R = 348.00'	R = 210.00'	R = 210.00'
SE = 3%	SE = 3%	SE = 4%	SE = 4%
V = 50MPH	V = 50MPH	V = 50MPH	V = 50MPH

-YA-		-YB-		-YASLIP-	
PI Sta 16+51.04	PI Sta 16+51.04	PI Sta 19+43.55	PI Sta 19+43.55	PI Sta 11+54.56	PI Sta 11+54.56
$\Delta = 10^{\circ} 25' 02.7" (LT)$	$\Delta = 10^{\circ} 25' 02.7" (LT)$	$\Delta = 16^{\circ} 5' 06.1" (RT)$	$\Delta = 5^{\circ} 58' 14.6" (RT)$	$\Delta = 34^{\circ} 30' 55.5" (RT)$	$\Delta = 34^{\circ} 30' 55.5" (RT)$
D = 408.59'	D = 408.59'	D = 548.00'	D = 548.00'	D = 548.00'	D = 548.00'
L = 408.59'	L = 408.59'	L = 281.7'	L = 281.7'	L = 154.56'	L = 154.56'
T = 393.39'	T = 393.39'	T = 340.00'	T = 340.00'	T = 168.00'	T = 168.00'
R = 350.00'	R = 350.00'	R = 365.00'	R = 365.00'	R = 42'	R = 42'
SE = 2%	SE = 2%	SE = 3%	SE = 3%	SE = 4%	SE = 4%
V = 40mph	V = 40mph	V = 35mph	V = 35mph	V = 40mph	V = 40mph

**SPECIAL CONTROL OF ACCESS DESIGNATION**

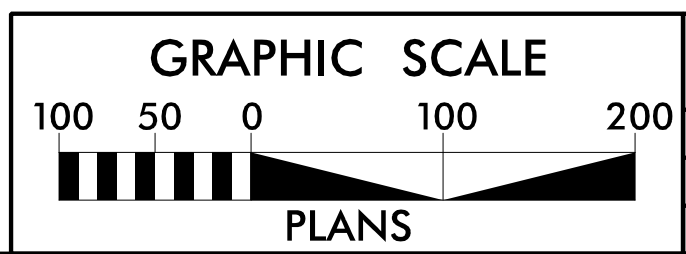
NO REVISIONS SHALL BE MADE TO THE CONTROL OF ACCESS WITHOUT APPROVAL OF NCDOT, FEMA, USEPA, AND NCEM PER AGREEMENT AND USAGE PER PERMIT CONDITION.



FOR -L- PLAN, SEE SHEETS 5 & 6  
 FOR -YREV- PLAN, SEE SHEETS 6, 33 & 34  
 FOR -YA- PLAN, SEE SHEETS 5 & 34  
 FOR -YF- PLAN, SEE SHEET 5  
 FOR -YB- PLAN, SEE SHEETS 6 & 33  
 FOR -YC-, -YD-, & -DRW01- PLANS, SEE SHEET 33  
 FOR -YASLIP- PLAN, SEE SHEET 34

FOR -L- PROFILE, SEE SHEETS 41 & 42  
 FOR -YREV- PROFILE, SEE SHEETS 55 & 56  
 FOR -YA- PROFILE, SEE SHEET 57  
 FOR -YB-, -YC-, & -YD- PROFILES, SEE SHEET 57 AND 58  
 FOR -YF- & -DRW01- PROFILES, SEE SHEET 58  
 FOR -YASLIP- PROFILE, SEE SHEET 59  
 FOR -LREV- & -YA- EMERGENCY CROSSOVER DETAIL, SEE SHEET 2B-10  
 FOR RIGHT OF WAY DETAIL ON PARCEL 901, SEE SHEETS 2B-4 AND 2B-5  
 FOR DRAINAGE DETAILS, SEE SHEETS 2D-1 THRU 2D-3

NOTE:  
 1. ALL DRIVEWAY RADI ARE 20' UNLESS NOTED ON PLANS.  
 2. PAVED TURNOUTS FOR SHOULDER SECTION SHOULD EXTEND 50' UNLESS NOTED ON PLANS.



LOCATION: NC 211 (SOUTHPOPE SURVEY RD) AND 30 100 (MIDDLETON BLVD)

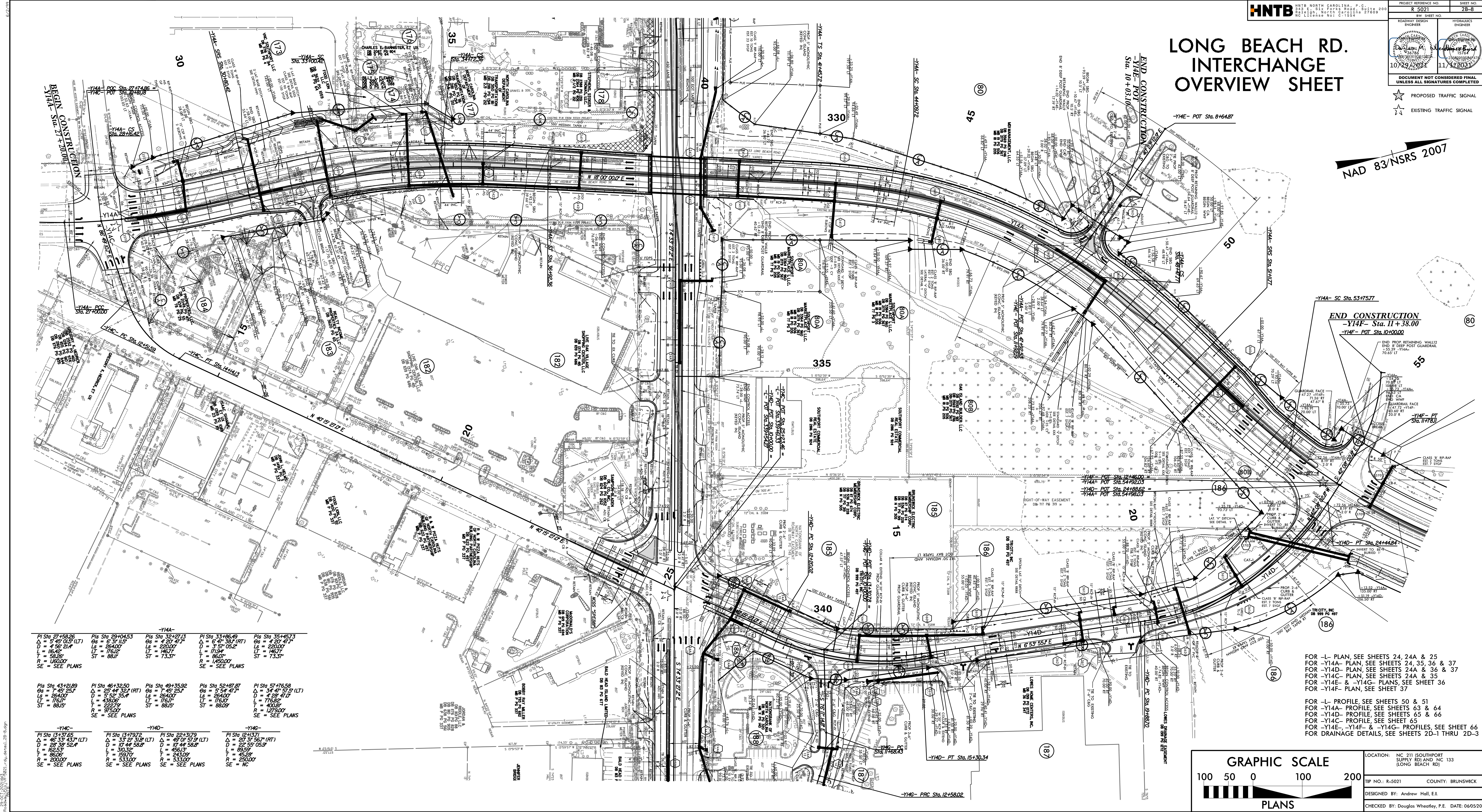
SP NO. R-5021 COUNTY: BUNNELL

DESIGNED BY: Andrew Hurl

CHECKED BY: Douglas Wheeler, P.E. DATE: 06/22/18

# LONG BEACH RD. INTERCHANGE OVERVIEW SHEET

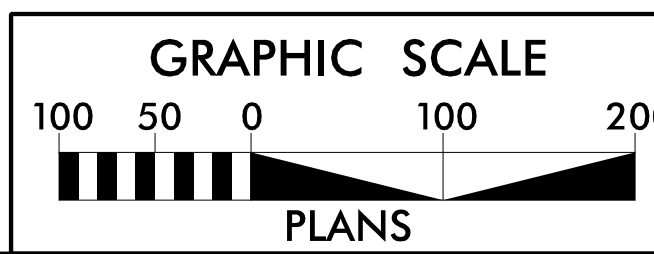
NAD 83/NSRS 2007



<p>-Y14A-</p> <p>PI Sta. 27+58.26 Δ = 5° 49' 01.5" (LT) D = 459' 01.4" L = 16.42' T = 58.26' R = 1450.00' SE = SEE PLANS</p>	<p>-Y14A-</p> <p>PI Sta. 29+04.53 Δ = 6° 31' 11.5" D = 284.00' L = 176.12' T = 88.17' R = 1450.00' SE = SEE PLANS</p>	<p>-Y14A-</p> <p>PI Sta. 32+27.13 Δ = 4° 20' 47.7" D = 571' 05.2" L = 146.71' T = 73.31' R = 1450.00' SE = SEE PLANS</p>	<p>-Y14A-</p> <p>PI Sta. 33+96.49 Δ = 6° 41' 38.1" (RT) D = 371' 05.2" L = 171.81' T = 88.17' R = 1450.00' SE = SEE PLANS</p>	<p>-Y14A-</p> <p>PI Sta. 35+46.73 Δ = 4° 20' 47.7" D = 571' 05.2" L = 146.71' T = 73.31' R = 1450.00' SE = SEE PLANS</p>
<p>-Y14A-</p> <p>PI Sta. 43+10.89 Δ = 7° 40' 25.7" D = 264.00' L = 176.12' T = 88.17' R = 1450.00' SE = SEE PLANS</p>	<p>-Y14A-</p> <p>PI Sta. 46+32.50 Δ = 2° 44' 32.4" (RT) D = 552' 30.4" L = 438.92' T = 227.72' R = 975.00' SE = SEE PLANS</p>	<p>-Y14A-</p> <p>PI Sta. 49+35.92 Δ = 7° 40' 25.7" D = 264.00' L = 176.12' T = 88.17' R = 1450.00' SE = SEE PLANS</p>	<p>-Y14A-</p> <p>PI Sta. 52+10.81 Δ = 5° 54' 41.7" D = 264.00' L = 176.12' T = 88.17' R = 1450.00' SE = SEE PLANS</p>	<p>-Y14A-</p> <p>PI Sta. 57+76.58 Δ = 3° 41' 51.2" (LT) D = 344' 41.7" L = 176.12' T = 88.17' R = 1279.00' SE = SEE PLANS</p>
<p>-Y14C-</p> <p>PI Sta. 13+71.25 Δ = 48° 13' 43.7" (LT) D = 228' 39' 52.4" L = 82.31' T = 186.09' R = 2000.00' SE = SEE PLANS</p>	<p>-Y14D-</p> <p>PI Sta. 13+79.72 Δ = 33° 29' 31.8" (LT) D = 10' 44' 58.8" L = 30.12' T = 159.70' R = 533.00' SE = SEE PLANS</p>	<p>-Y14E-</p> <p>PI Sta. 22+13.79 Δ = 45° 01' 51.2" (LT) D = 10' 44' 58.8" L = 48.13' T = 243.00' R = 533.00' SE = SEE PLANS</p>	<p>-Y14G-</p> <p>PI Sta. 12+43.37 Δ = 31° 31' 56.7" (RT) D = 222' 55' 05.5" L = 88.59' T = 45.28' R = 250.00' SE = NC</p>	

FOR -L- PLAN, SEE SHEETS 24, 24A & 25  
FOR -Y14A- PLAN, SEE SHEETS 24, 35, 36 & 37  
FOR -Y14D- PLAN, SEE SHEETS 24A & 36 & 37  
FOR -Y14C- PLAN, SEE SHEETS 24A & 35  
FOR -Y14E- & -Y14G- PLANS, SEE SHEET 36  
FOR -Y14F- PLAN, SEE SHEET 37

FOR -L- PROFILE, SEE SHEETS 50 & 51  
FOR -Y14A- PROFILE, SEE SHEETS 63 & 64  
FOR -Y14D- PROFILE, SEE SHEETS 65 & 66  
FOR -Y14C- PROFILE, SEE SHEET 65  
FOR -Y14E-, -Y14F- & -Y14G- PROFILES, SEE SHEET 66  
FOR DRAINAGE DETAILS, SEE SHEETS 2D-1 THRU 2D-3



LOCATION: NC 211 (SOUTHPORT SUPPLY RD) AND NC 133 (LONG BEACH RD)  
TIP NO.: R-5021 COUNTY: BRUNSWICK  
DESIGNED BY: Andrew Hall, E.I.  
CHECKED BY: Douglas Wheatley, P.E. DATE: 06/05/2018

8/17/99

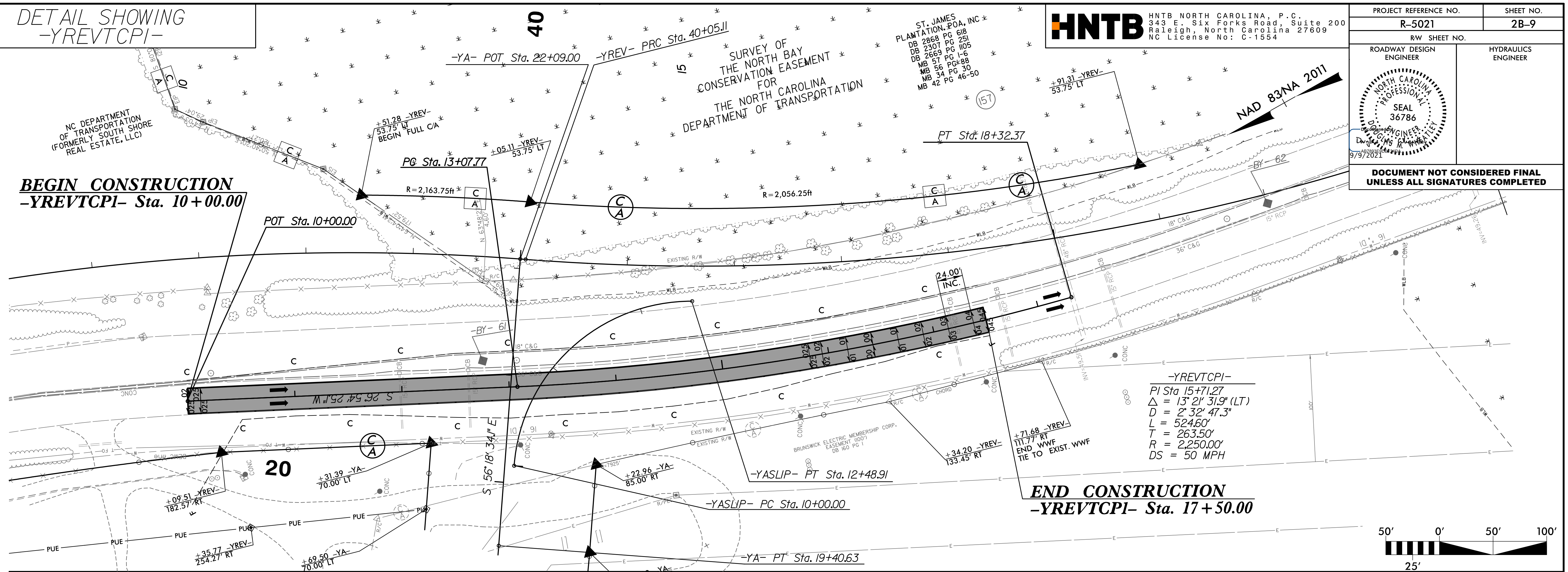
DETAIL SHOWING  
-YREVTCP1-

**HNTB** HNTB NORTH CAROLINA, P.C.  
343 E. Six Forks Road, Suite 200  
Raleigh, North Carolina 27609  
NC License No: C-1554

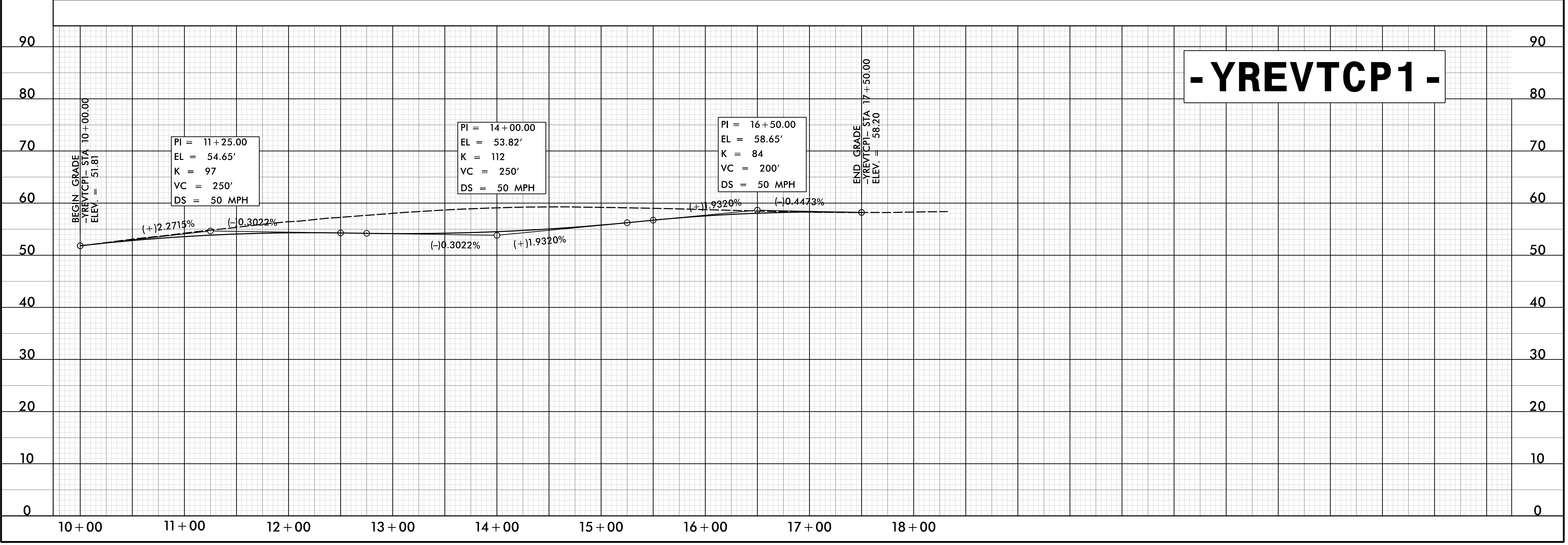
PROJECT REFERENCE NO. <b>R-5021</b>	SHEET NO. <b>2B-9</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

**BEGIN CONSTRUCTION  
-YREVTCP1- Sta. 10+00.00**



**-YREVTCP1-**  
PI Sta 15+71.27  
 $\Delta = 13^\circ 21' 31.9''$  (LT)  
D = 2' 32" 47.3"  
L = 524.60'  
T = 263.50'  
R = 2,250.00'  
DS = 50 MPH



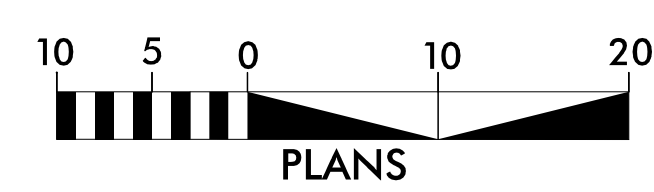
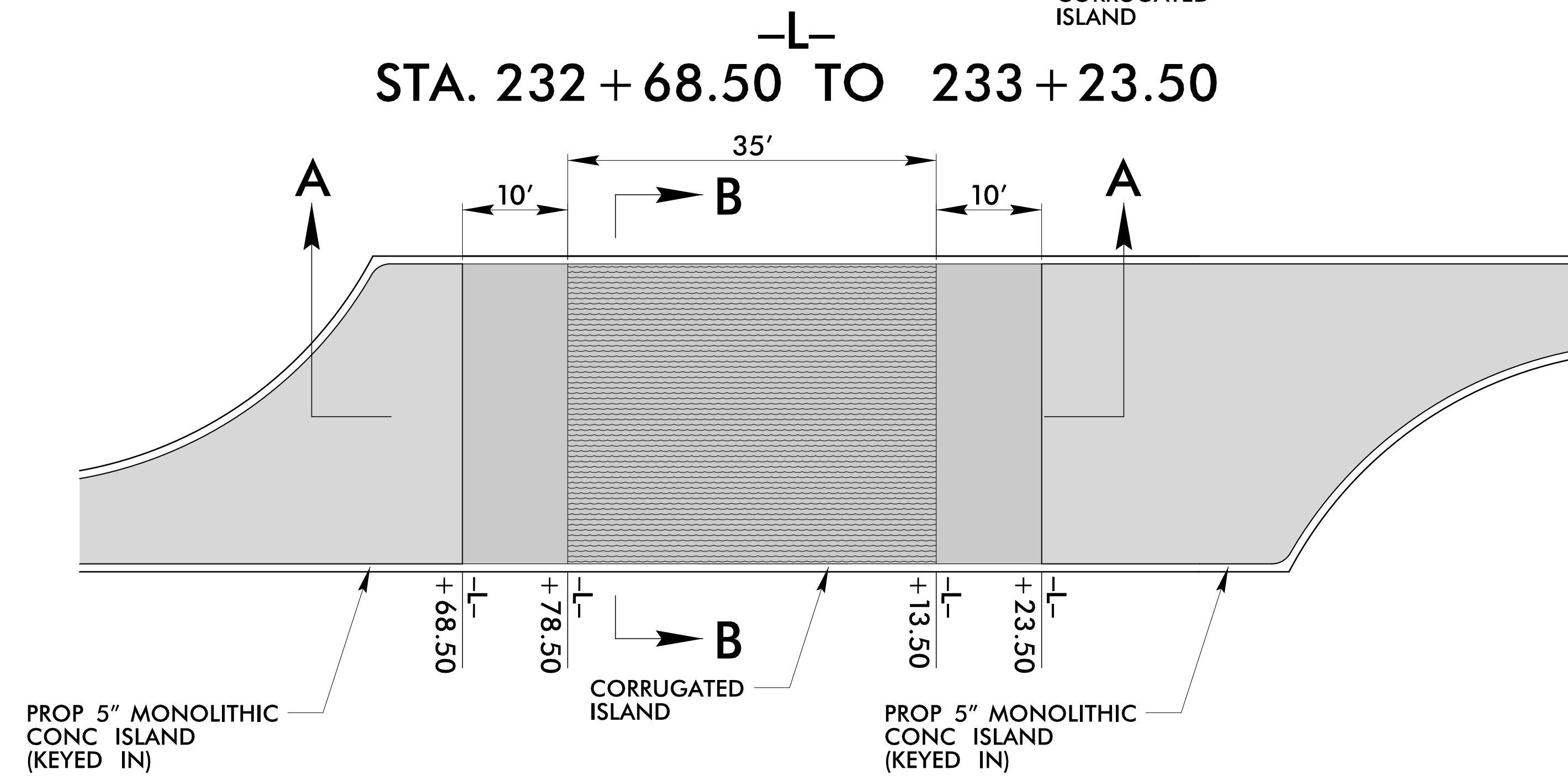
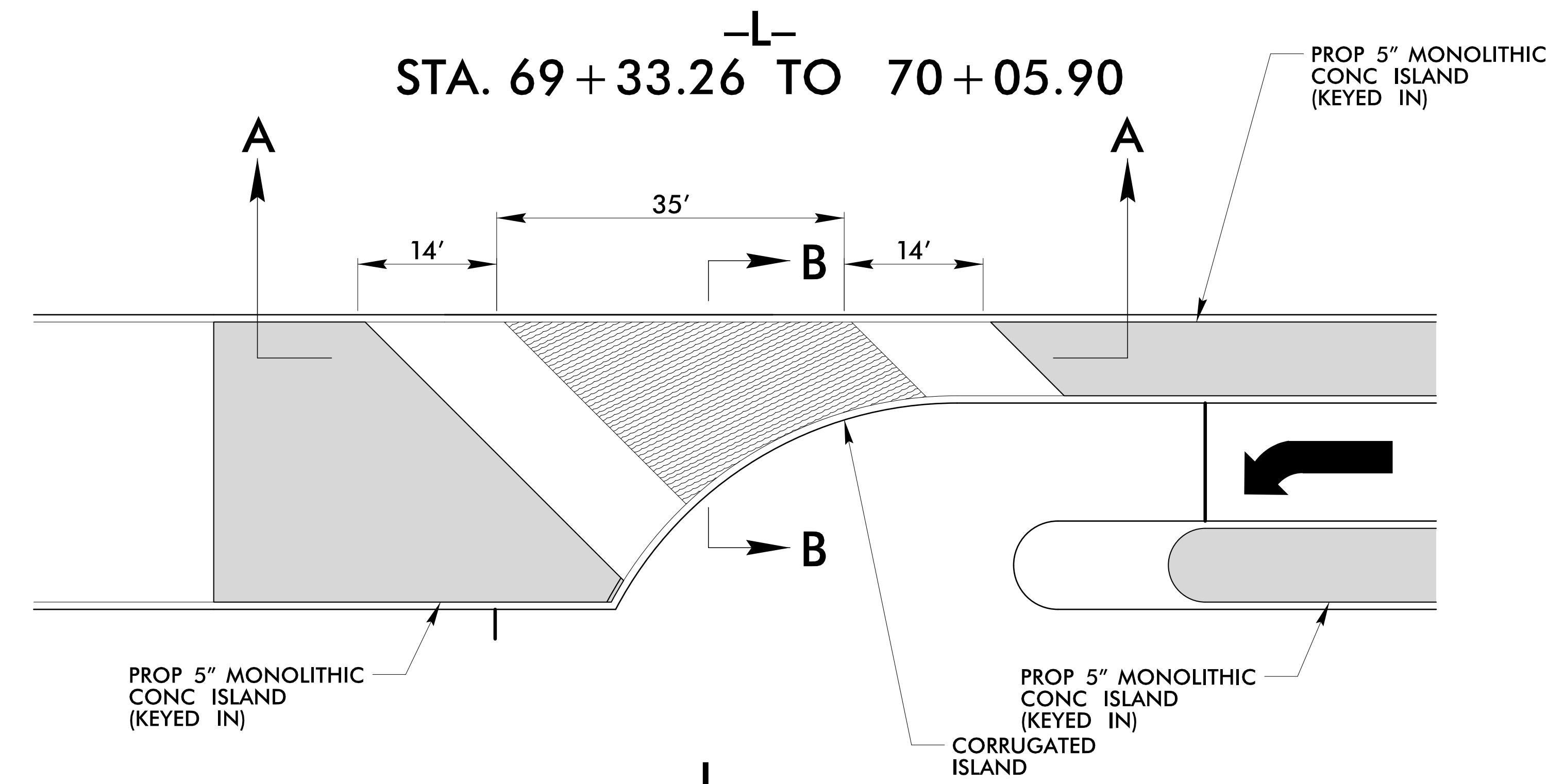
**- YREVTCP1 -**

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HNTB

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-5021	2B-10
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

# EMERGENCY VEHICLE ACCESS DETAILS LOCATED ON -L-



FOR EMERGENCY VEHICLE ACCESS LOCATIONS, SEE PLAN SHEETS 5, 17 & 34  
FOR SECTION VIEWS OF THE EMERGENCY VEHICLE ACCESS FOR CONCRETE ISLAND DETAIL, SEE SHEET 2C-12

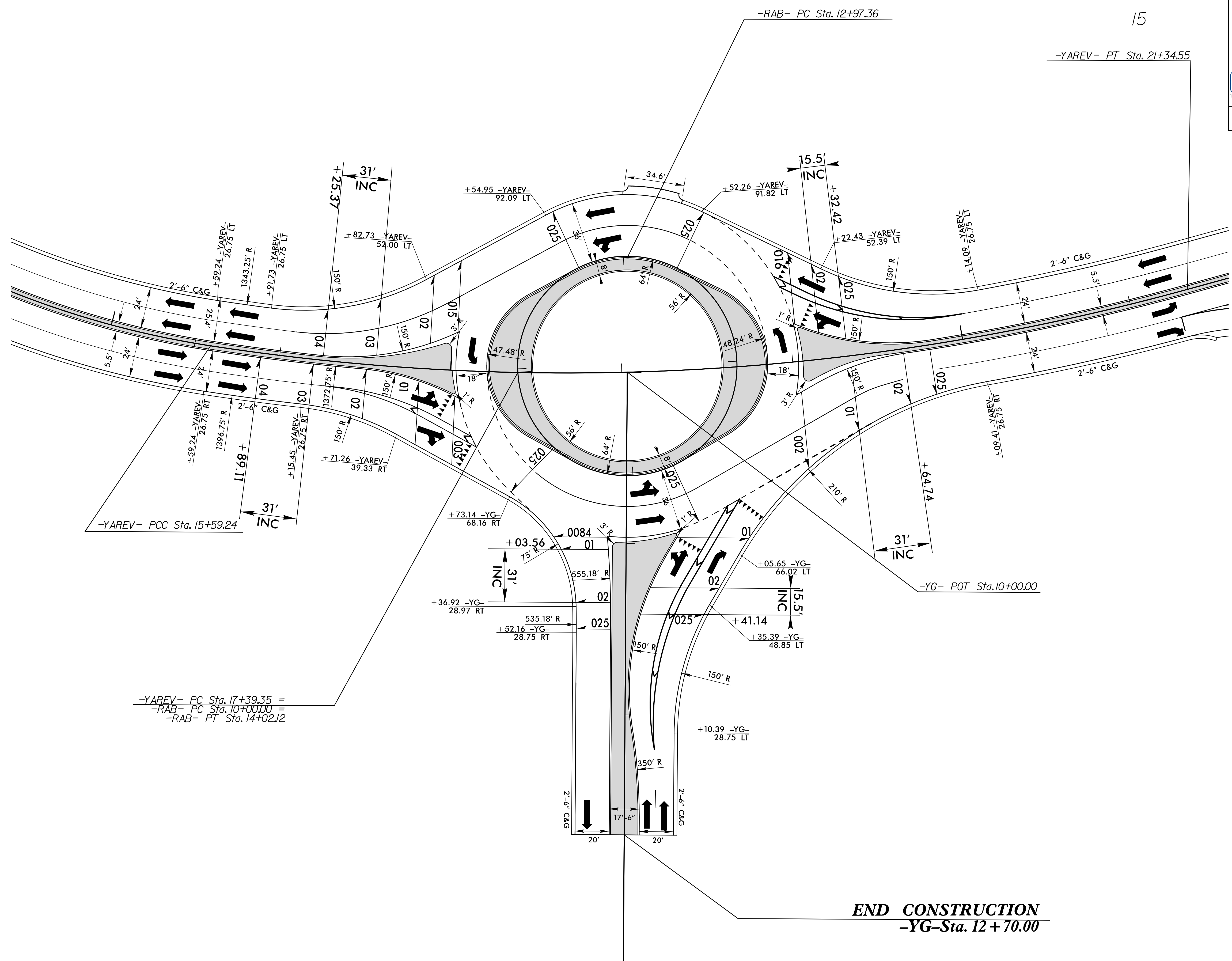
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5/14/09

# RAB DETAIL

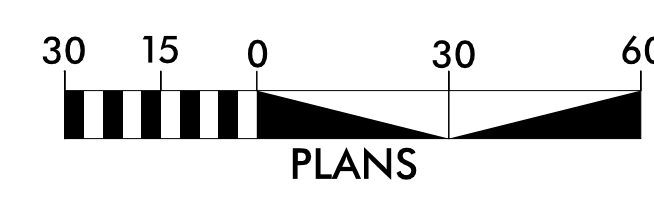
**HNTB** HNTB NORTH CAROLINA, P.C.  
 343 E. Six Forks Road, Suite 200  
 Raleigh, North Carolina 27609  
 NC License No: C-1554

PROJECT REFERENCE NO. <b>R-5021</b>	SHEET NO. <b>2B-11</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



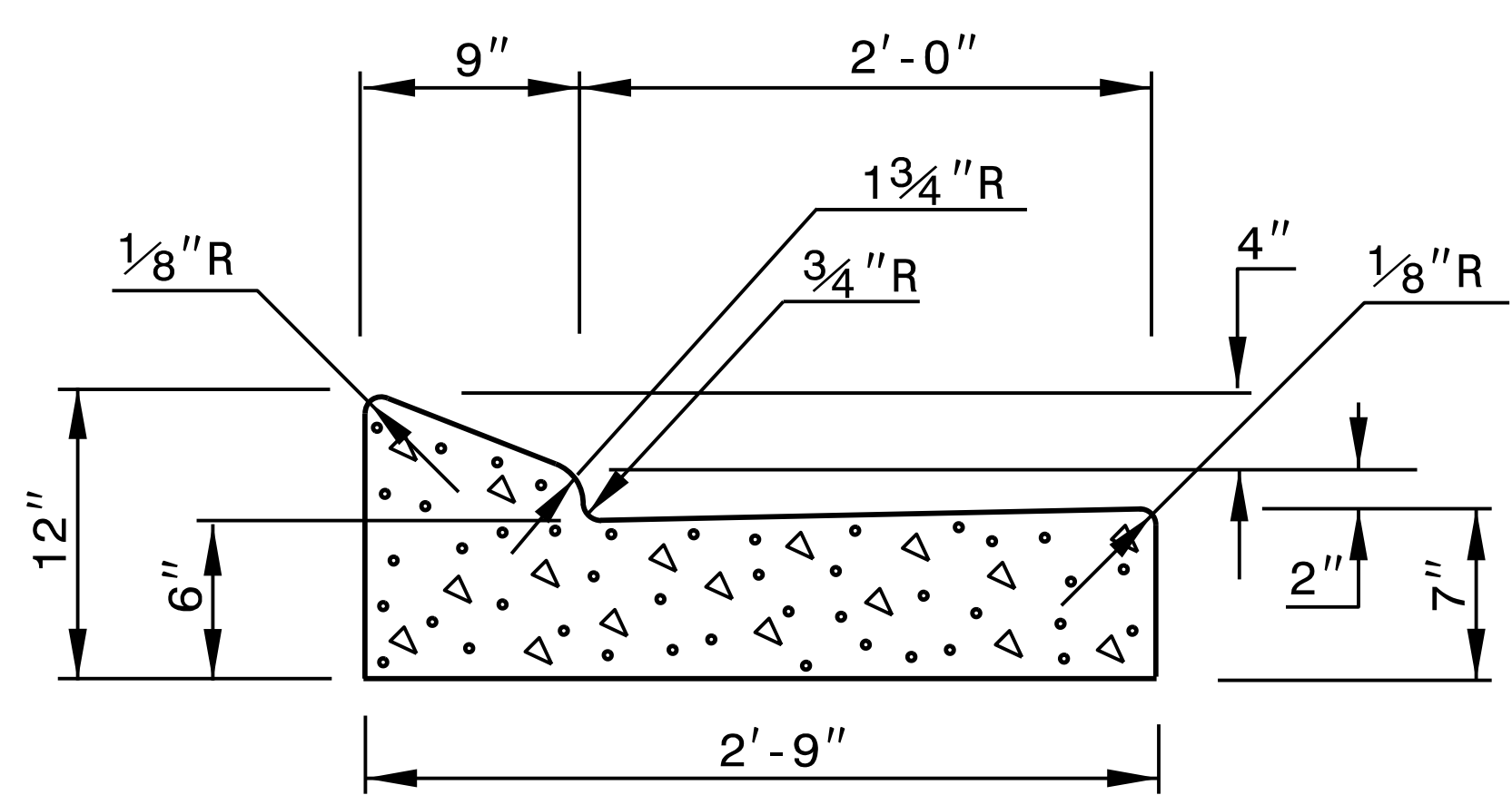
NAD  
 83 NSRS 2007

**END CONSTRUCTION**  
 -YG- Sta. 12 + 70.00

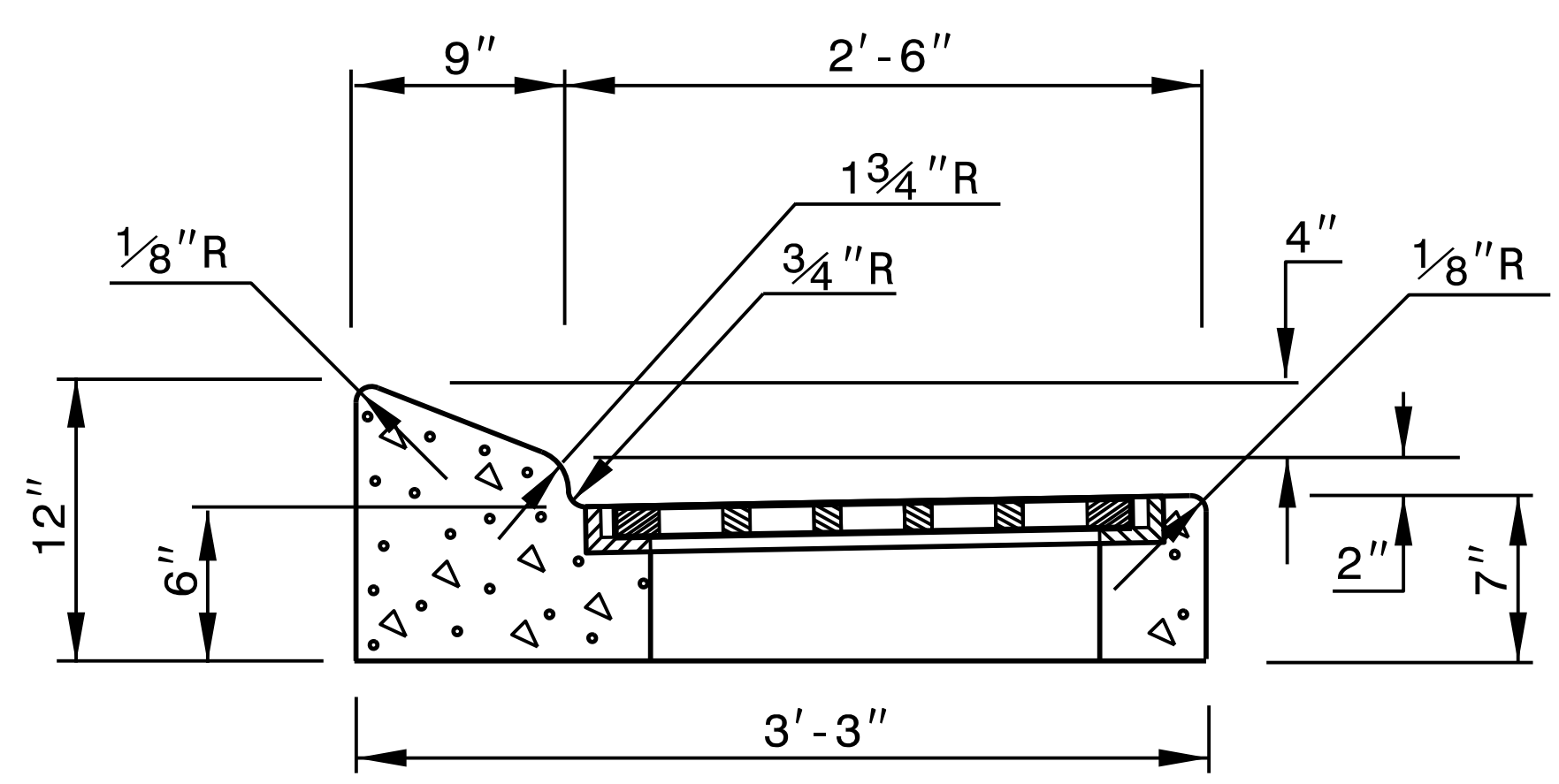


- NOTE:**
1. ALL DRIVEWAY RADII ARE 20' UNLESS NOTED ON PLANS.
  2. PAVED TURNOUTS FOR SHOULDER SECTION SHOULD EXTEND 50' UNLESS NOTED ON PLANS.

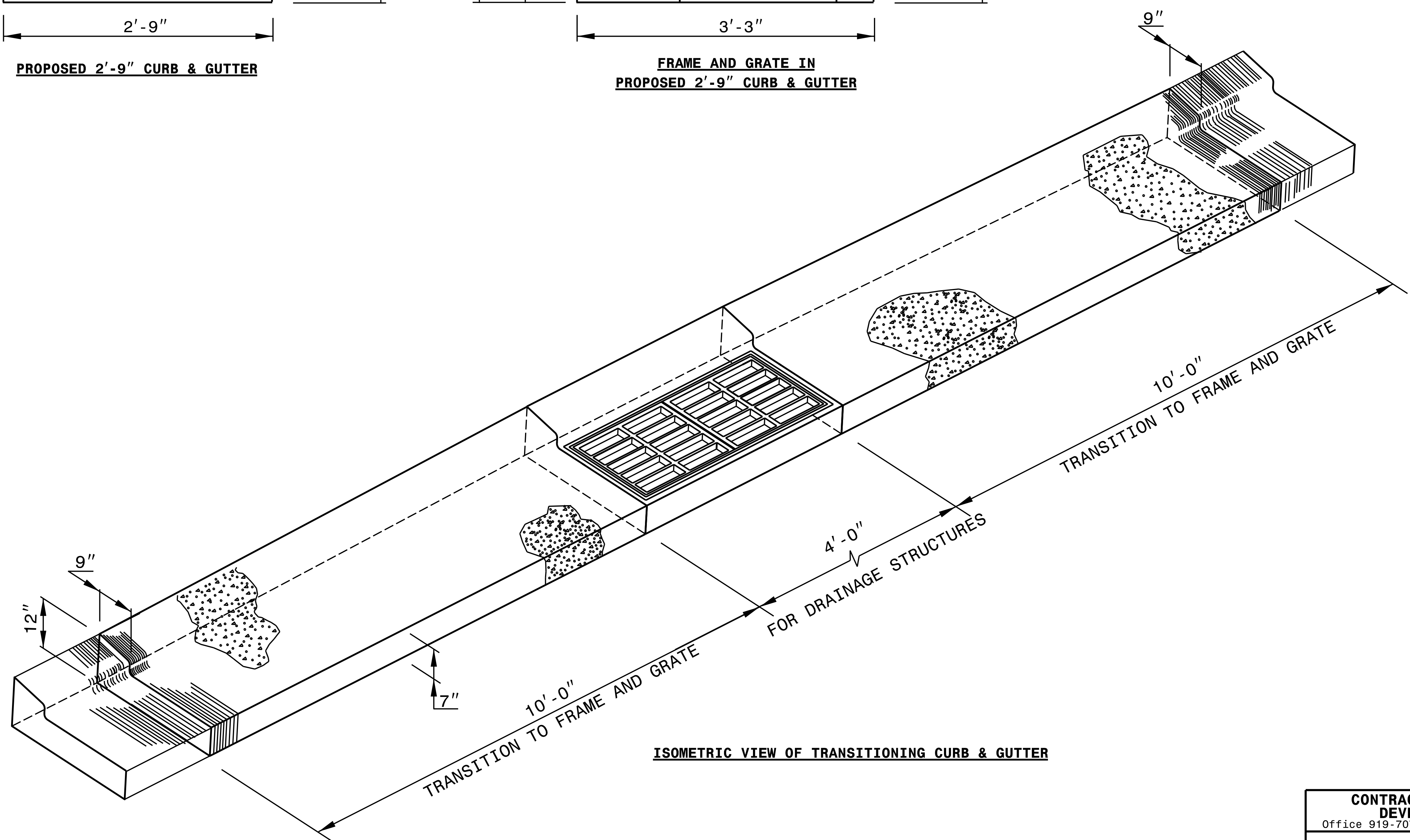
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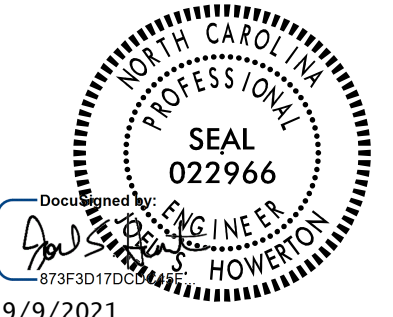
**PROPOSED 2'-9" CURB & GUTTER**



**FRAME AND GRATE IN PROPOSED 2'-9" CURB & GUTTER**



**ISOMETRIC VIEW OF TRANSITIONING CURB & GUTTER**



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

**DETAIL OF 2'-9" TO FRAME AND GRATE**

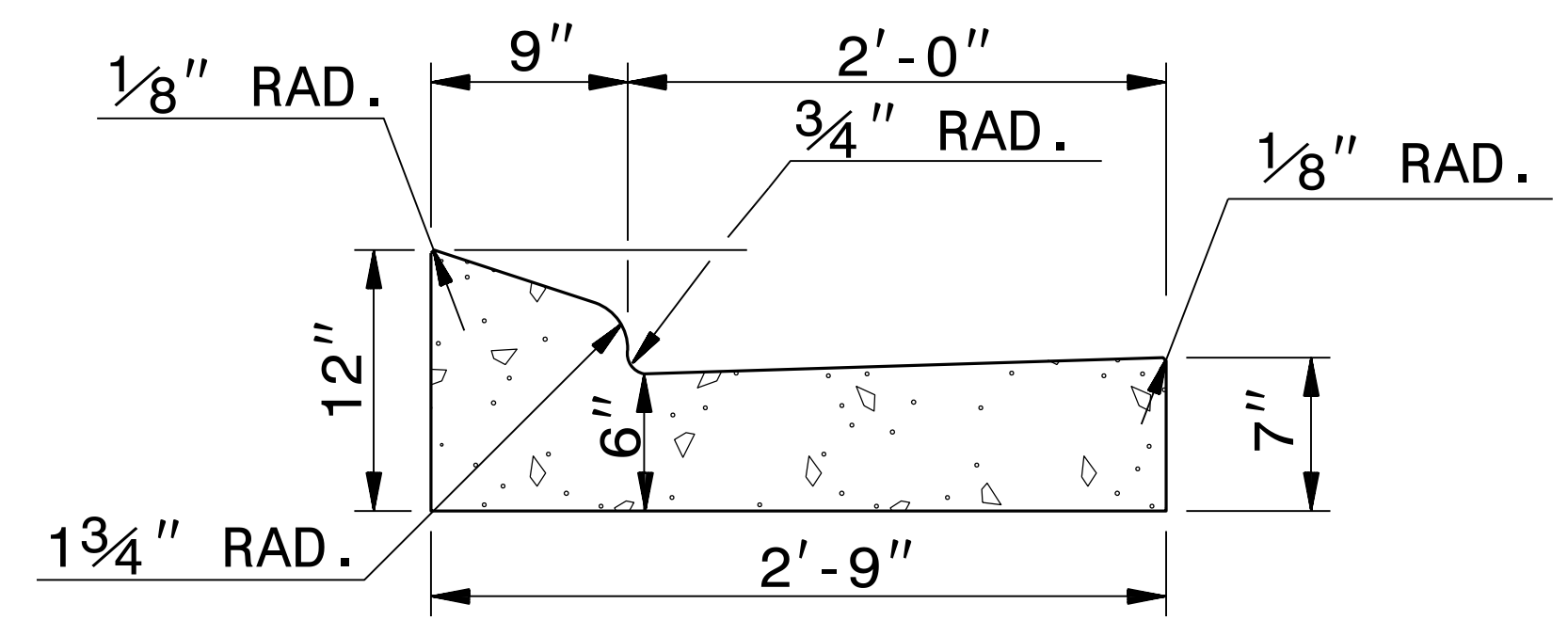
ORIGINAL BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
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 CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 FILE SPEC.: kkempf/english/curb\_gutter\_transition.dgn



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

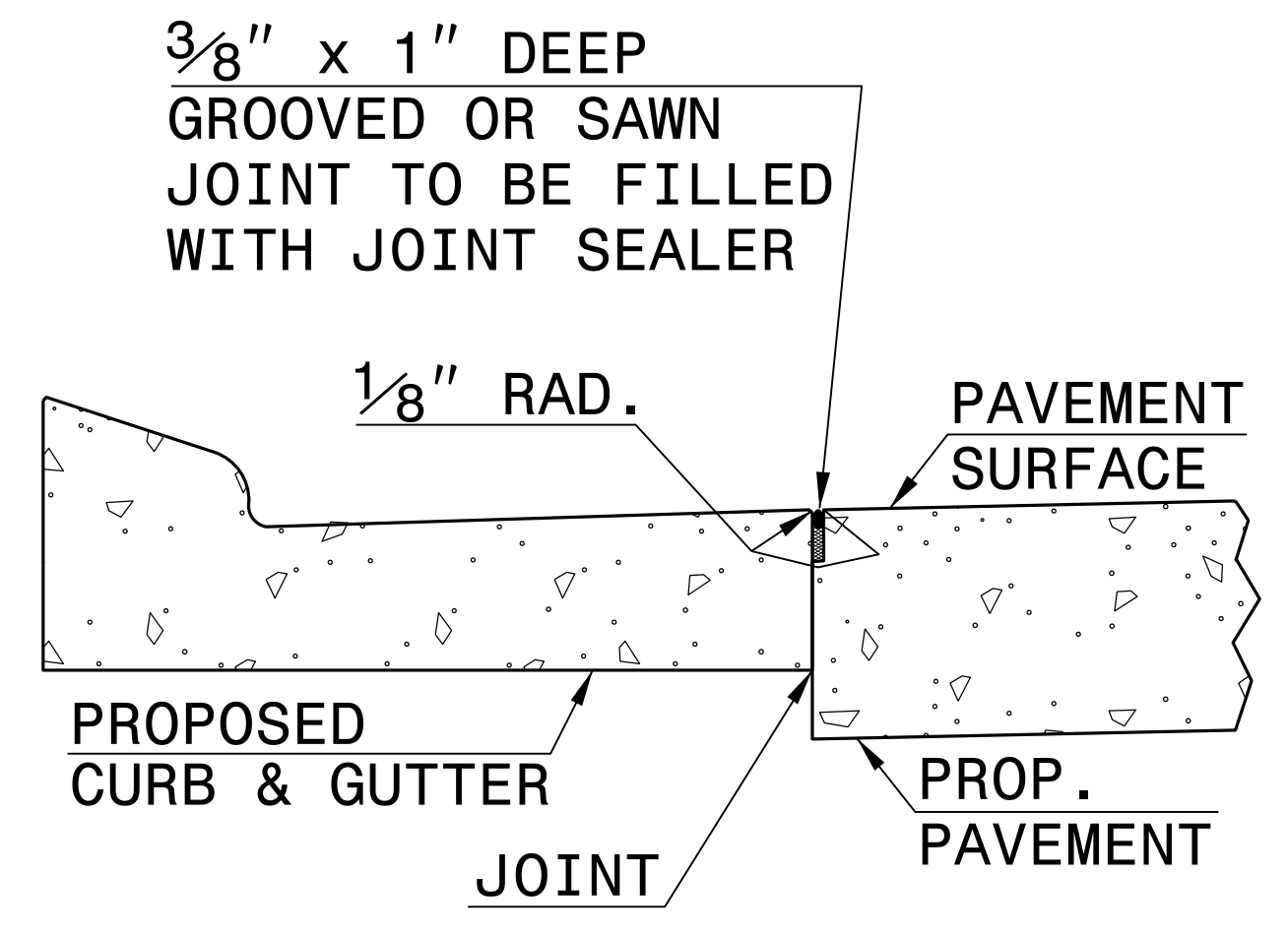
ENGLISH DETAIL DRAWING FOR  
**2'-9" CONCRETE CURB & GUTTER**

- GENERAL NOTES:**
- PLACE CONTRACTION JOINTS AT 10' INTERVALS, EXCEPT THAT A 15' SPACING MAY BE USED WHEN A MACHINE IS USED OR WHEN SATISFACTORY SUPPORT FOR THE FACE FORM CAN BE OBTAINED WITHOUT THE USE OF TEMPLATES AT 10' INTERVALS.
  - JOINT SPACING MAY BE ALTERED IF REQUIRED BY THE ENGINEER.
  - CONTRACTION JOINTS MAY BE INSTALLED WITH THE USE OF TEMPLATES OR FORMED BY OTHER APPROVED METHODS. MAKE NON-TEMPLATE FORMED JOINTS A MIN. OF 1½" DEEP.
  - FILL ALL CONSTRUCTION JOINTS WITH JOINT FILLER AND SEALER.
  - SPACE EXPANSION JOINTS AT 90' INTERVALS AND ADJACENT TO ALL RIGID OBJECTS.
  - SEE RDWY. STD. DWG. NO. 846.01, SHEET 2 OF 3 FOR PLACEMENT IN SUPERELEVATIONS. (USE 2'-6" CURB AND GUTTER RATES)

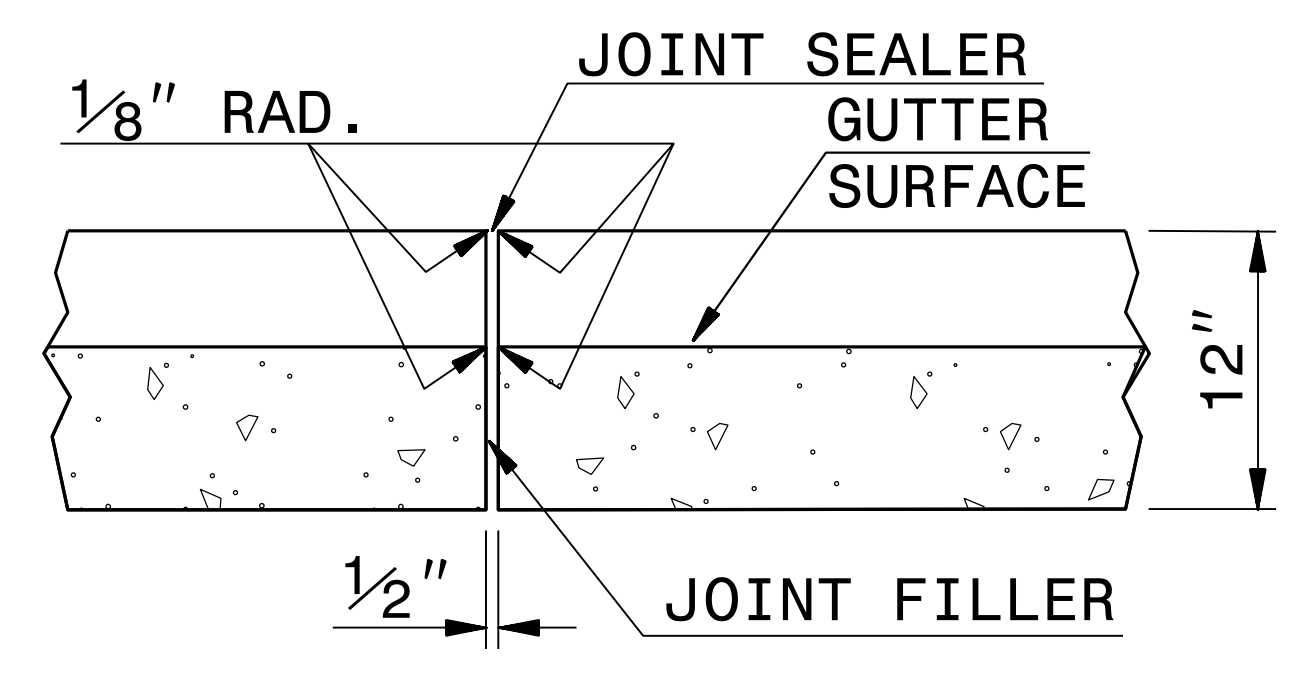


**2'-9" CURB AND GUTTER**

**SECTION VIEW OF CURB AND GUTTER**



**LONGITUDINAL JOINT**



**TRANSVERSE EXPANSION JOINT IN CURB AND GUTTER**

**SECTION VIEW OF JOINTS**

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

ENGLISH DETAIL DRAWING FOR  
**2'-9" CONCRETE CURB & GUTTER**

SHEET 1 OF 1  
**846D01**

SHEET 1 OF 1  
**846D01**

10-AUG-2017 11:46  
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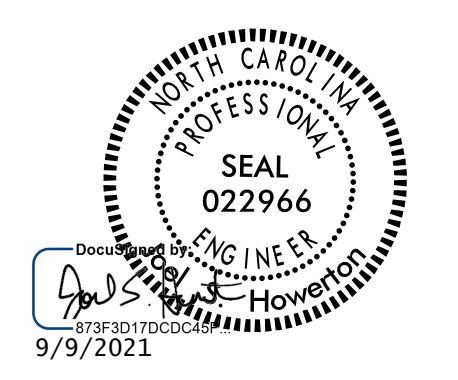
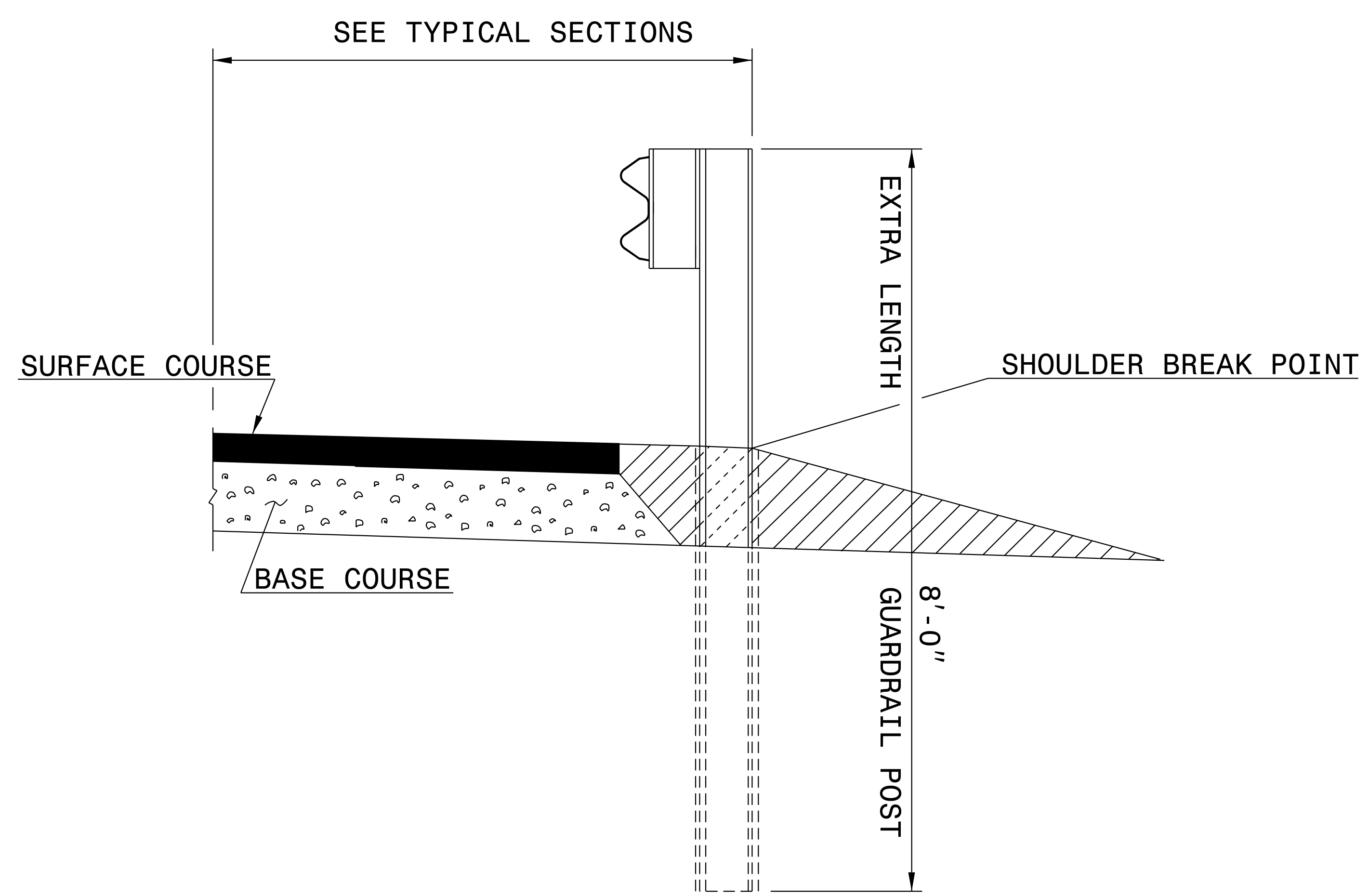


**CONTRACT STANDARDS AND DEVELOPMENT UNIT**  
 Office 919-707-6950 FAX 919-250-4119

**SEE PLATE FOR TITLE**

ORIGINAL BY: STD. 846.01 DATE: \_\_\_\_\_  
 MODIFIED BY: E.E. WARD DATE: 8-15-00  
 CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 FILE SPEC.: /usr/details/stand/c&g2'-9.dgn

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

<b>CONTRACT STANDARDS AND DEVELOPMENT UNIT</b>	
Office 919-707-6950	FAX 919-250-4119
<b>8' GUARDRAIL POST</b>	
ORIGINAL BY: L. Robinson	DATE: 1995
MODIFIED BY: L. Robinson	DATE: Feb, 1996
CHECKED BY:	DATE:
FILE SPEC.: s:7'postguardrail.dgn	

09-MAY-2018 14:21  
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hoverton AT CSD-232595

I4-DEC-2017 10:36 S:\Contracts\Projects\Special Details\Standard Drawings\Division 8\0862d0301.dgn Jhowerton AT:USD-292595

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

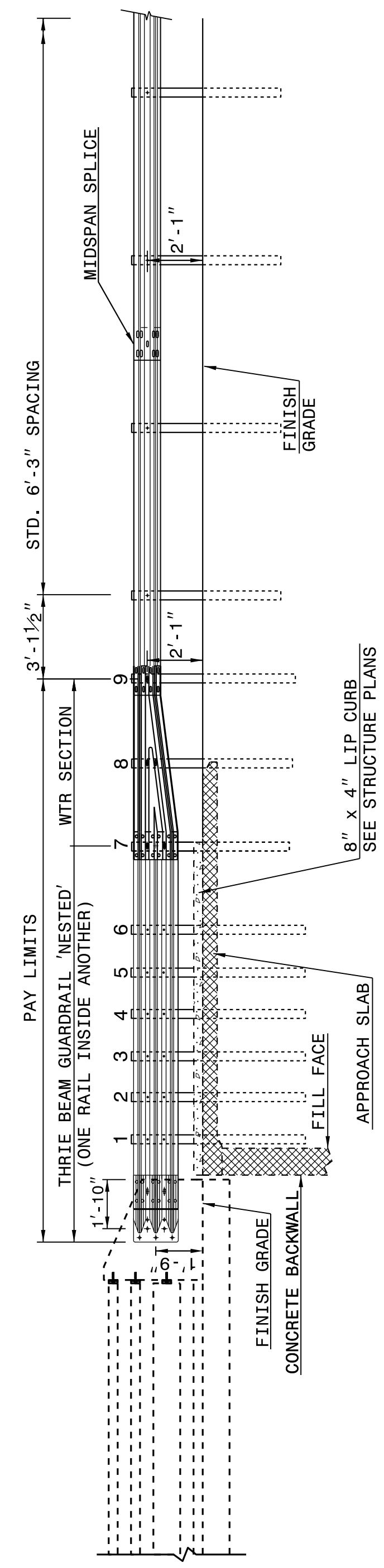
ROADWAY DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE

SHEET 1 OF 7 862D03

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

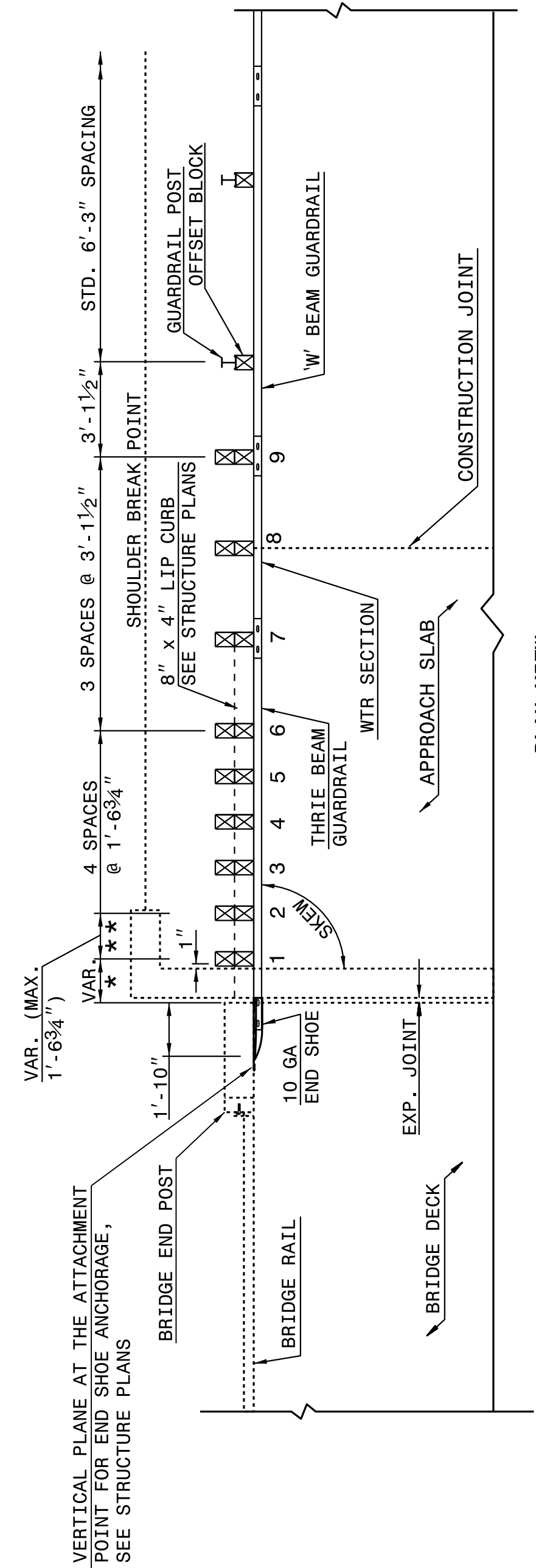
ROADWAY DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE

SHEET 1 OF 7 862D03



ELEVATION

NOTE: \*\*POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER. \*THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11 1/2" IF CONCRETE BACKWALL IS NOT PRESENT. -SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" X 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB. -MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER). -LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW. -SEE SHEET 3 FOR POST SECTIONS 1 THRU 9.



PLAN VIEW

GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE

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

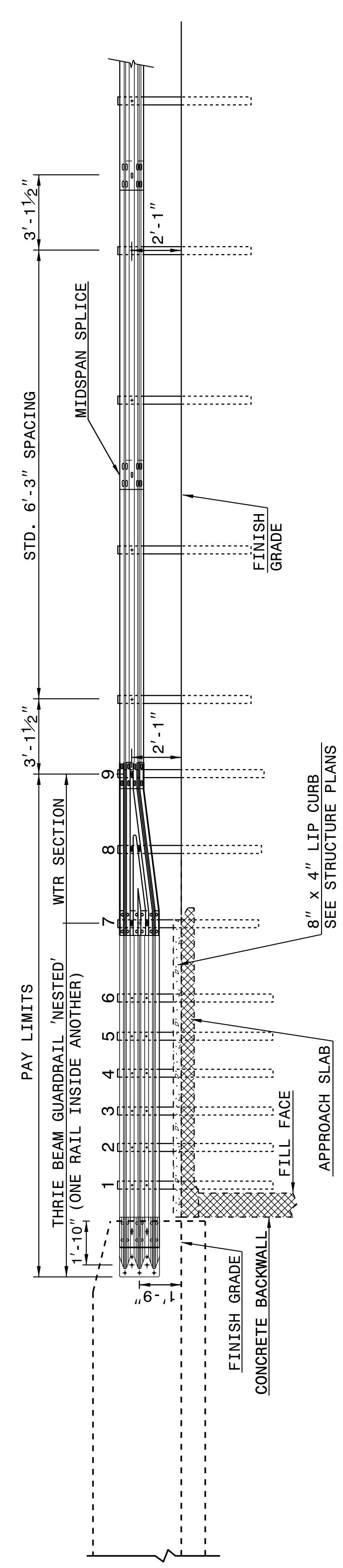
ROADWAY DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7 862D03

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

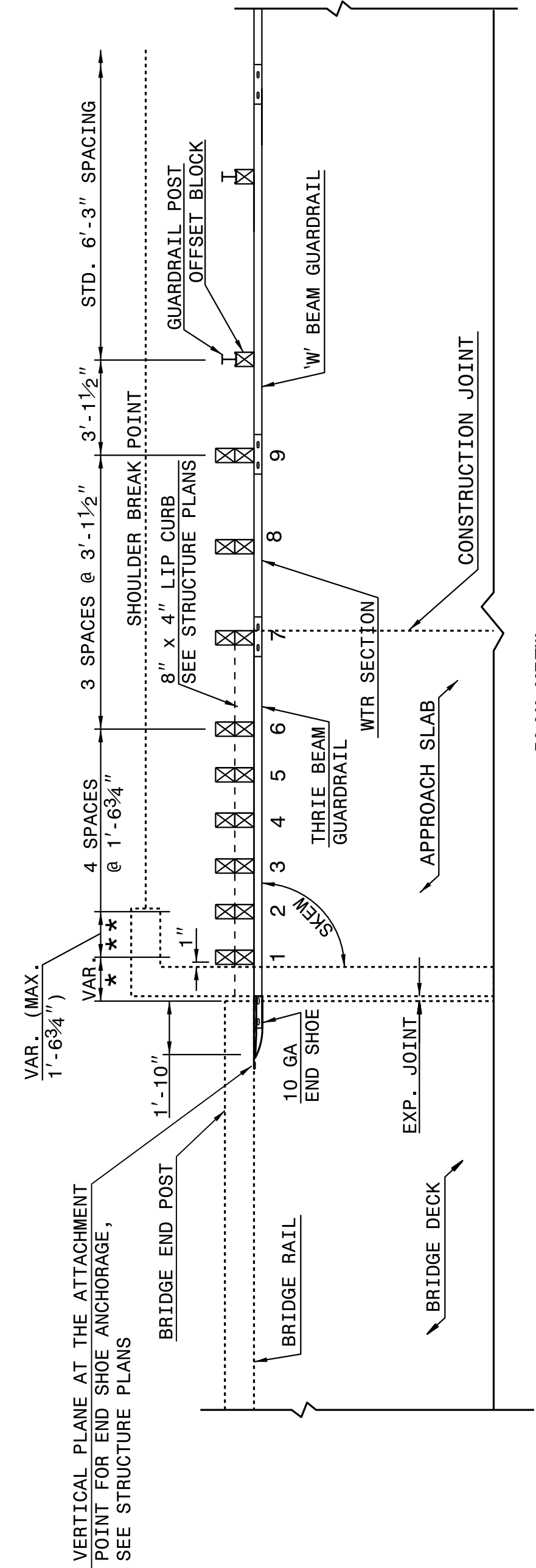
ROADWAY DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7 862D03



ELEVATION

NOTE: \*\*POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER. \*THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11 1/2" IF CONCRETE BACKWALL IS NOT PRESENT. -SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" X 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB. -MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER). -LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW. -SEE SHEET 3 FOR POST SECTIONS 1 THRU 9.



PLAN VIEW

GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER

CONTRACT STANDARDS AND DEVELOPMENT UNIT Office 919-707-6950 FAX 919-250-4119 SEE TITLE BLOCK ORIGINAL BY: J HOWERTON DATE: 06-22-12 MODIFIED BY: DATE: CHECKED BY: DATE: FILE SPEC.: DATE:

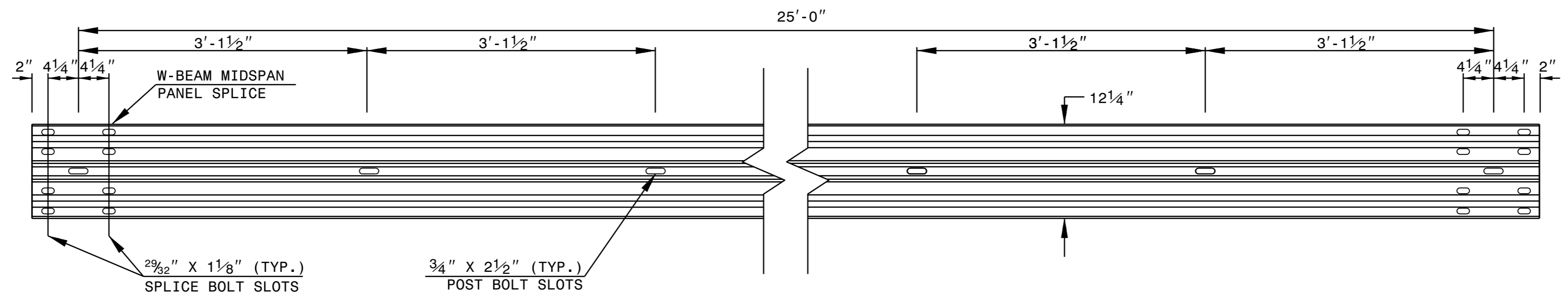


DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

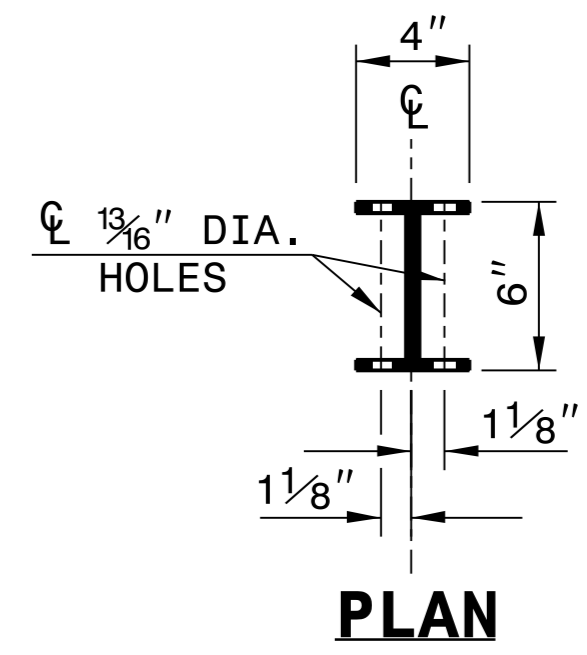
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR  
**GUARDRAIL INSTALLATION**

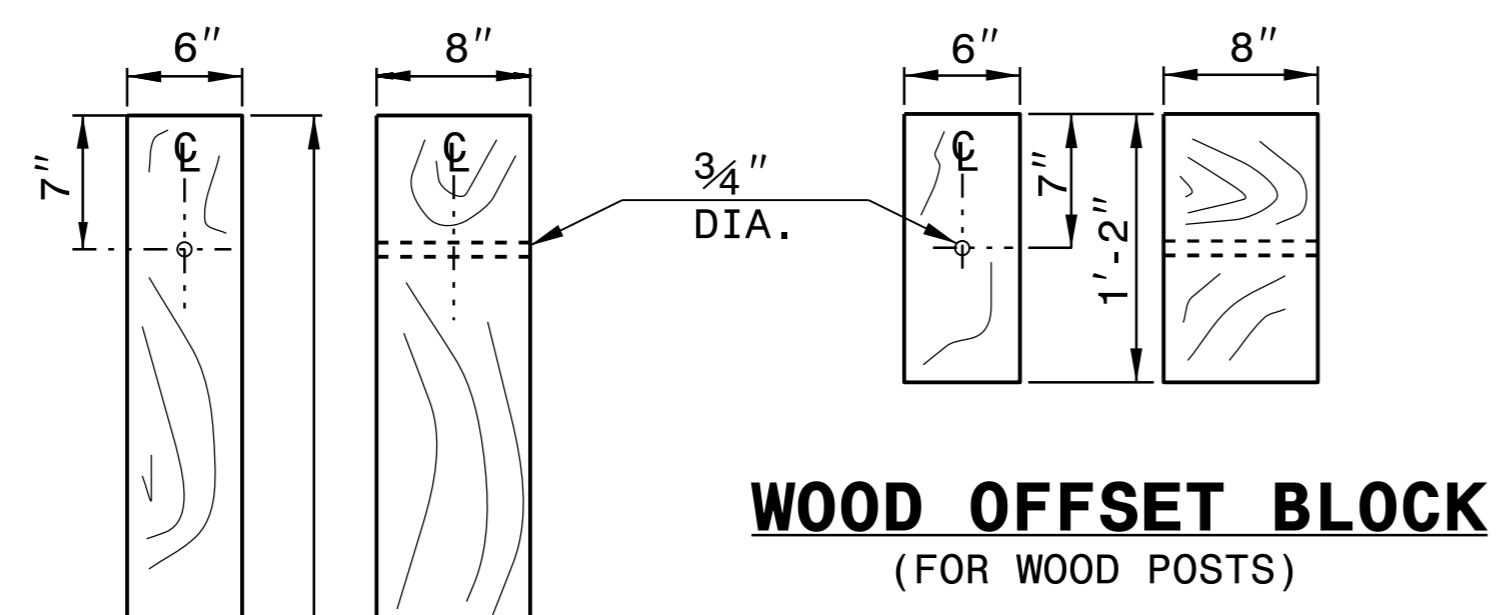
SHEET 6 OF 8  
**862D02**



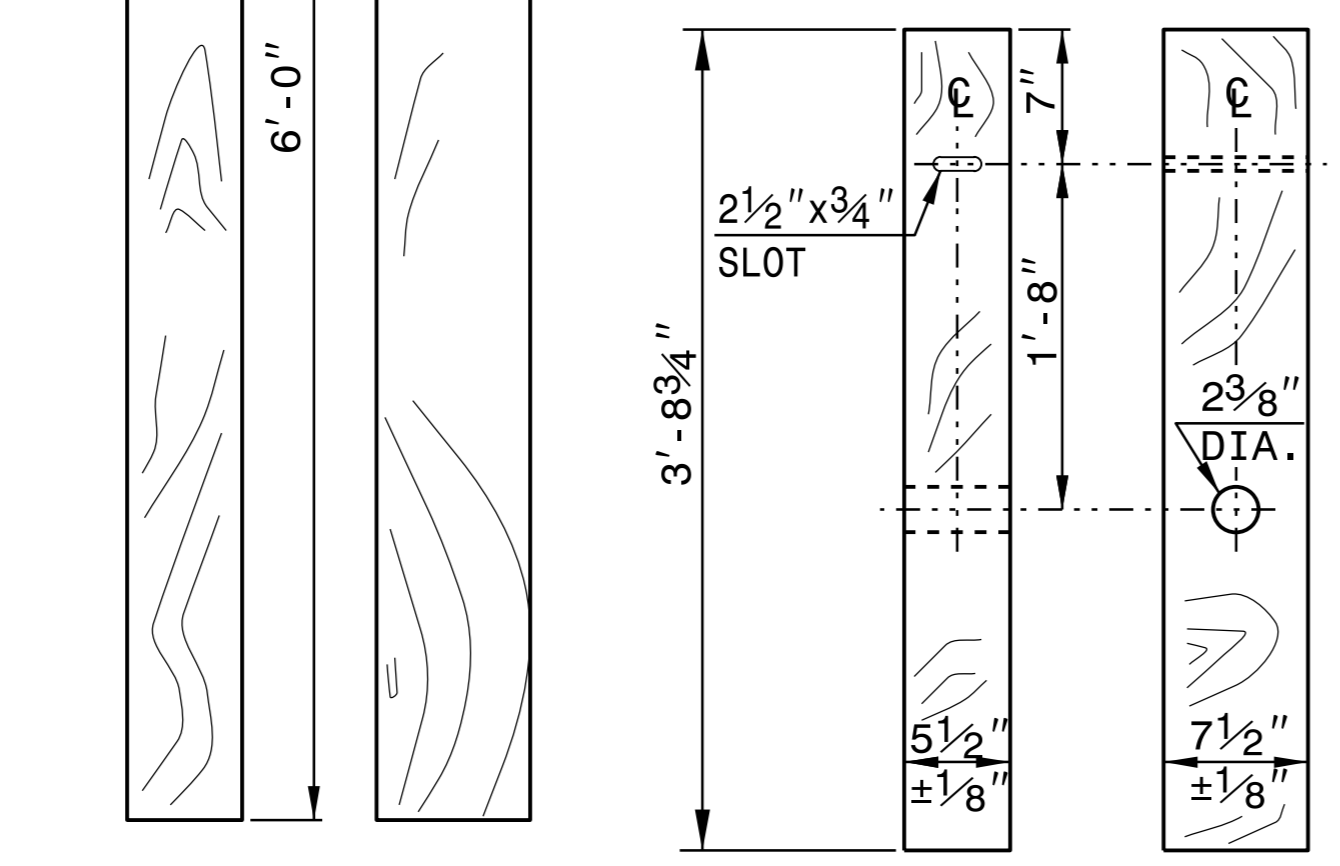
**STANDARD W-BEAM GUARDRAIL**



**PLAN**

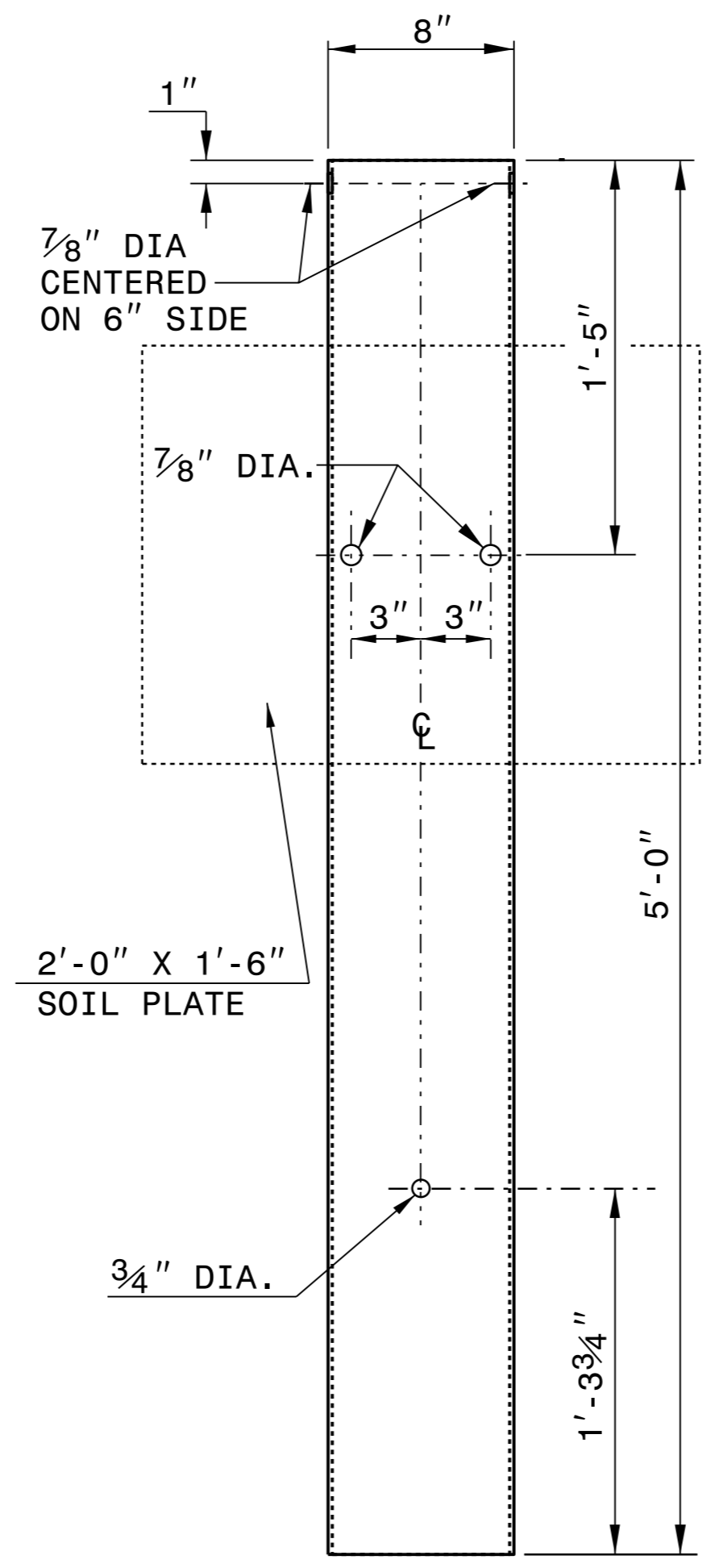


**WOOD OFFSET BLOCK  
(FOR WOOD POSTS)**

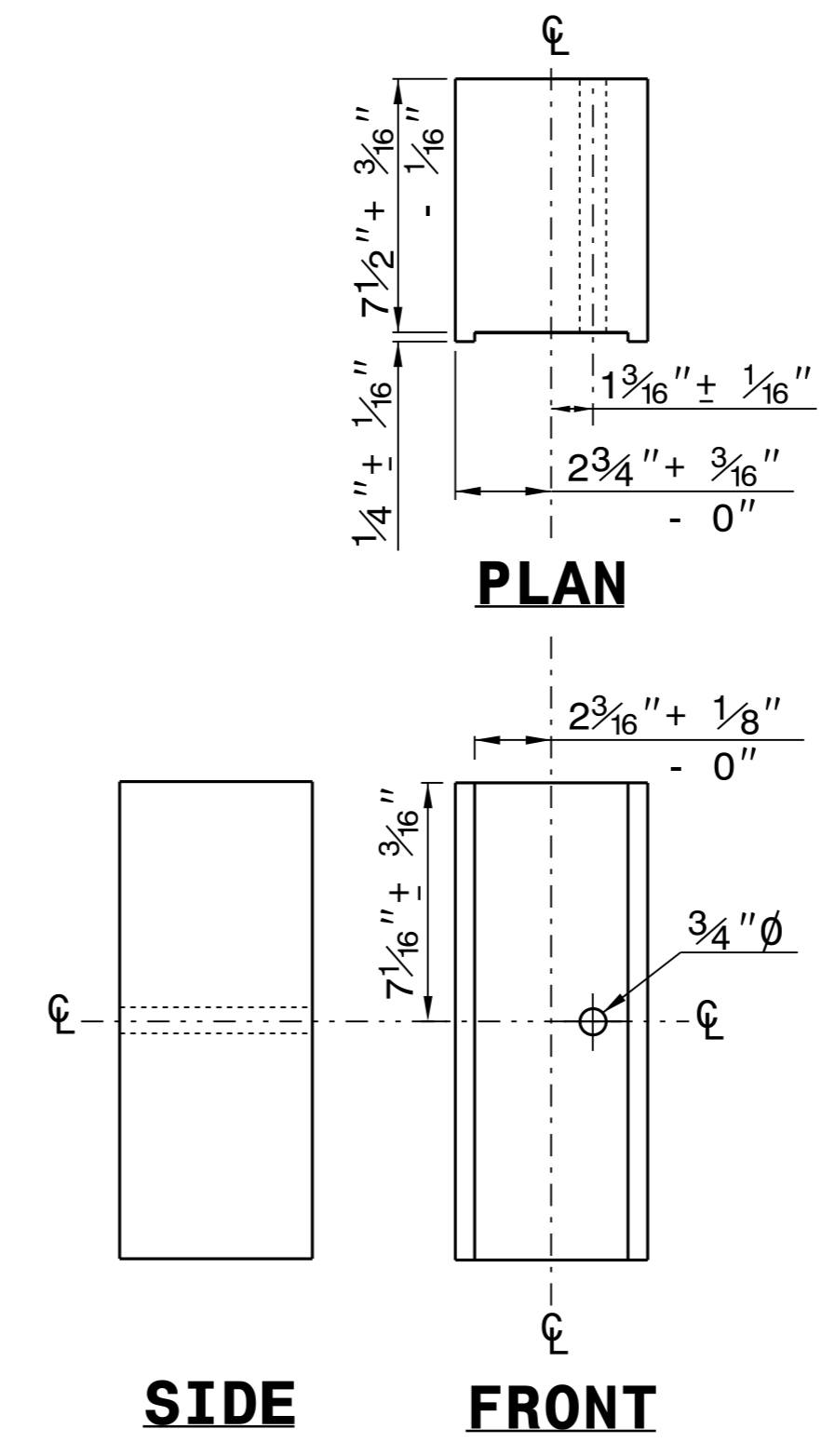


**STANDARD  
LINE POST**

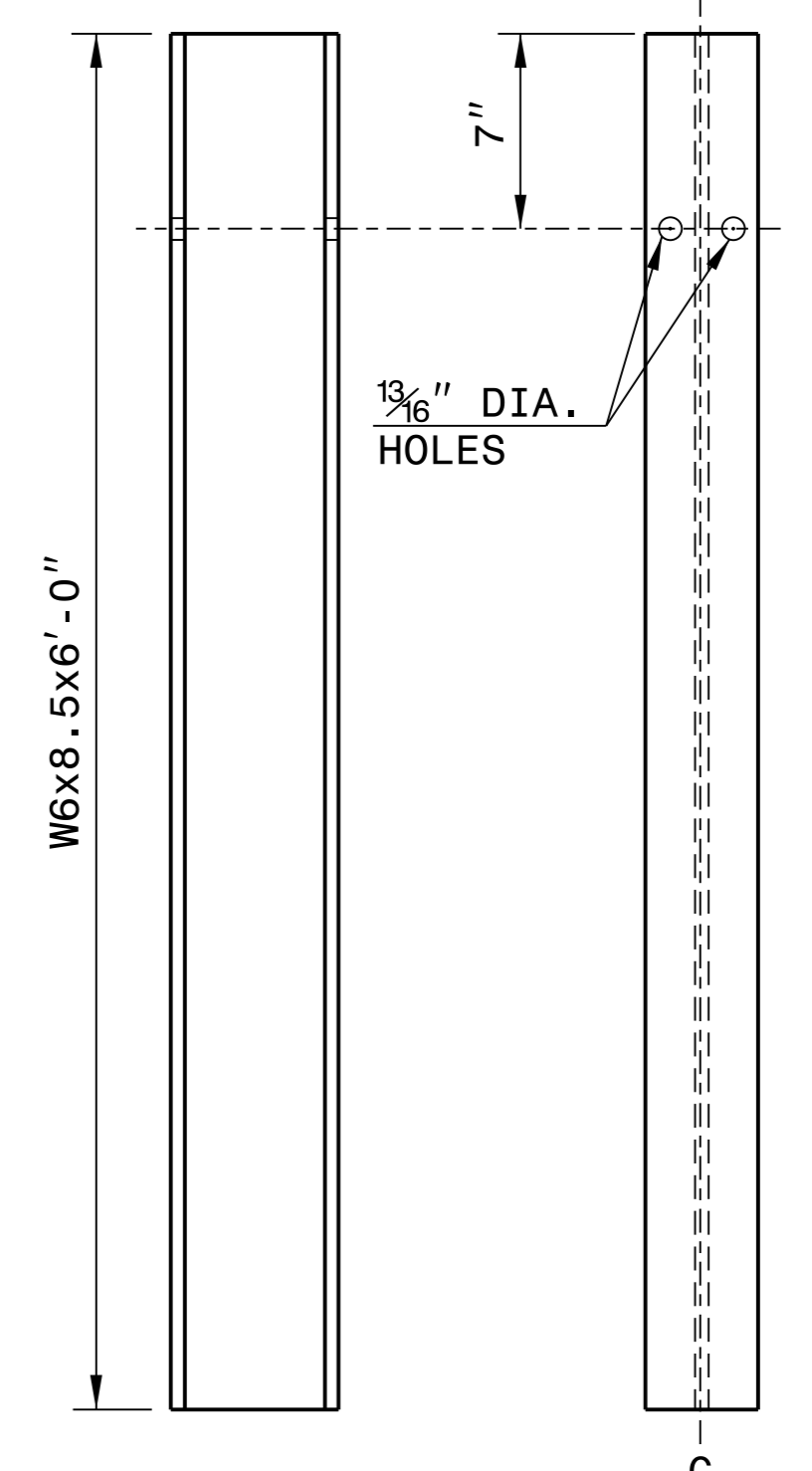
**SHORT WOOD  
BREAKAWAY POST**



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



**ROUTED  
OFFSET BLOCK**



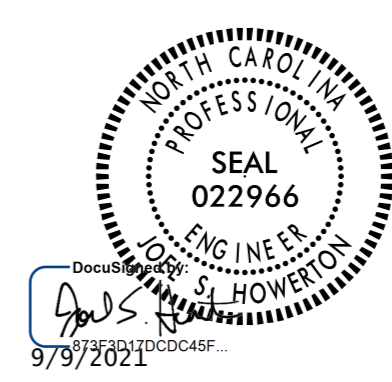
**"W6" STEEL POST**

**SYSTEM PARTS**

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

ROADWAY DETAIL DRAWING FOR  
**GUARDRAIL INSTALLATION**

SHEET 6 OF 8  
**862D02**



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

**SEE TITLE BLOCK**

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

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

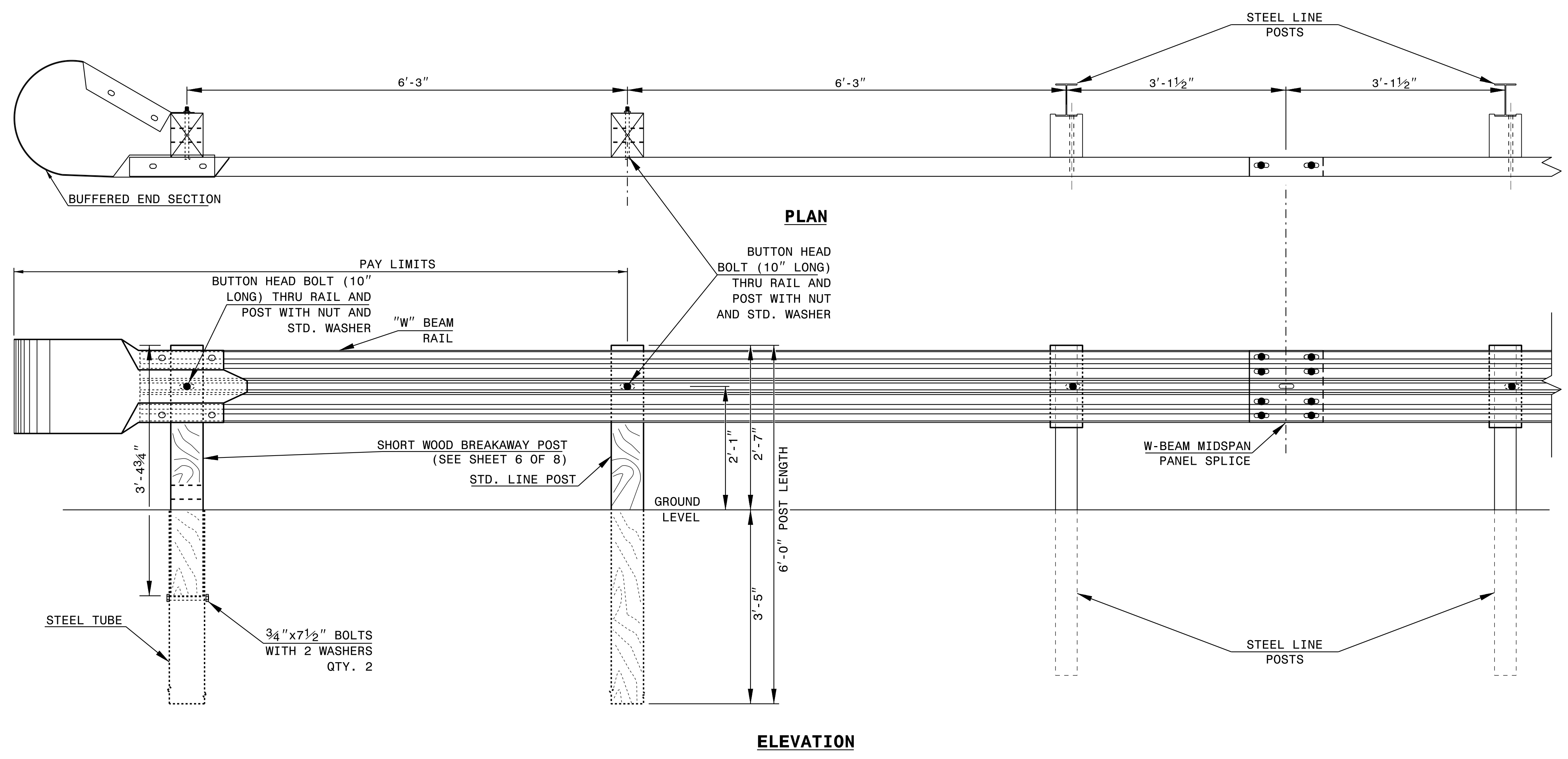
ROADWAY DETAIL DRAWING FOR  
**GUARDRAIL INSTALLATION**

SHEET OF

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

ROADWAY DETAIL DRAWING FOR  
**GUARDRAIL INSTALLATION**

SHEET OF

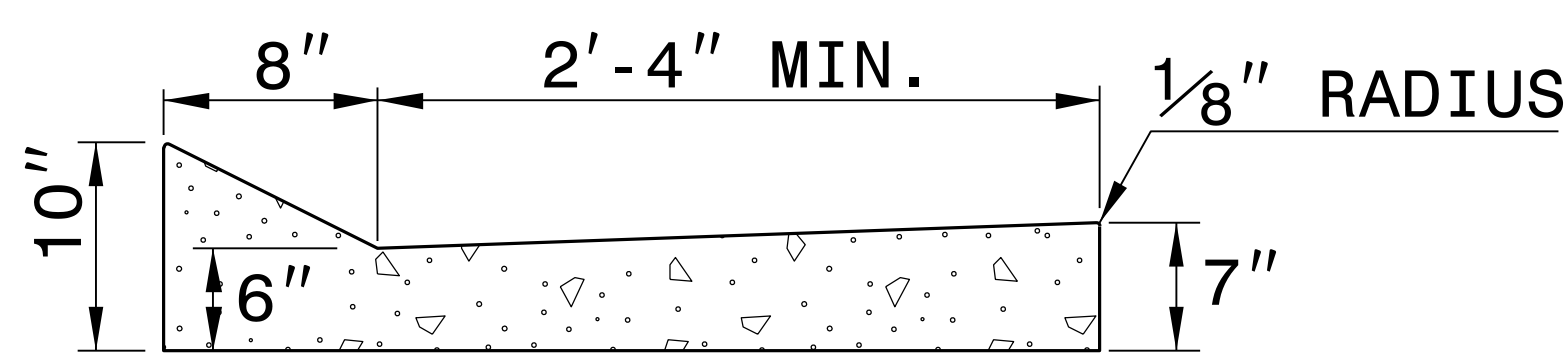


**TRAILING END UNIT ASSEMBLY**  
**A.T. - 1 SYSTEM**

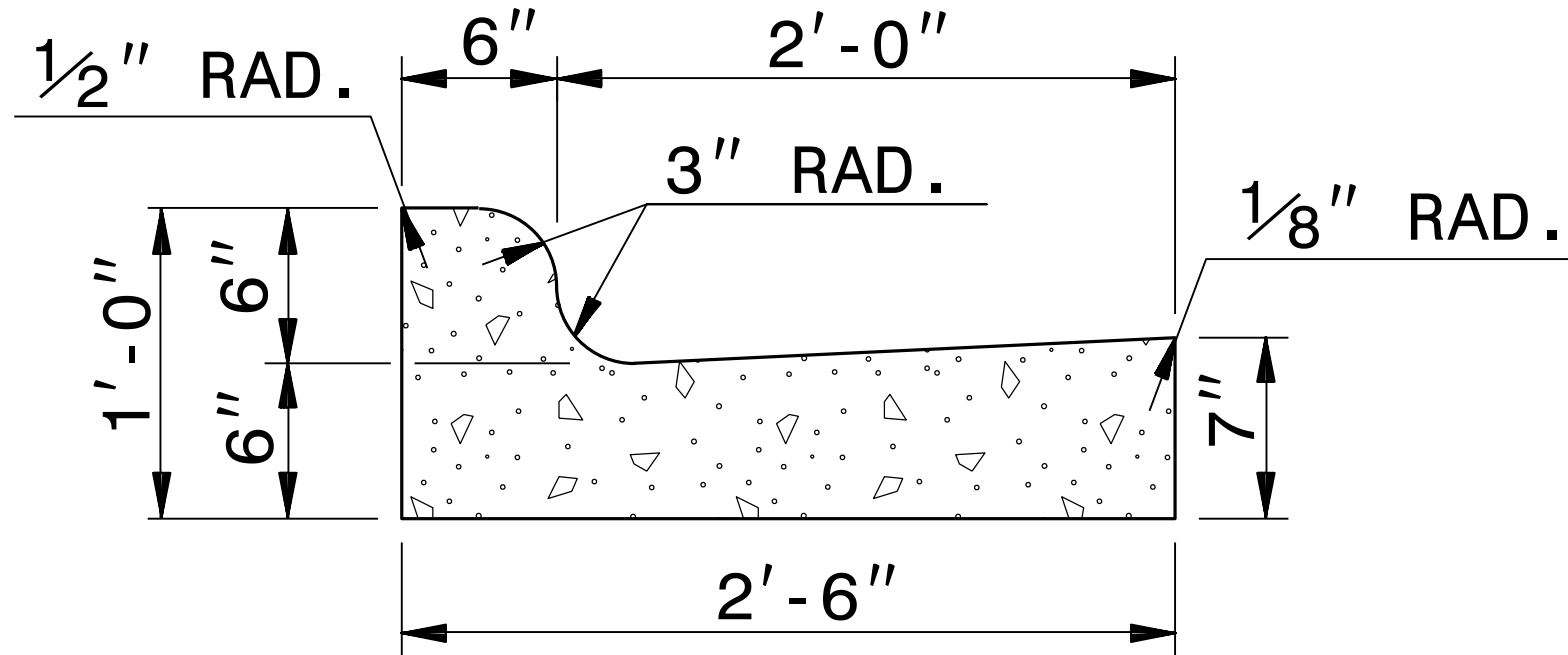


DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

<b>CONTRACTS STANDARDS AND DEVELOPMENT UNIT</b>	
Office 919-707-6950 FAX 919-250-4119	
<b>A.T. - 1 SYSTEM</b>	
ORIGINAL BY: _____	DATE: _____
MODIFIED BY: _____	DATE: _____
CHECKED BY: _____	DATE: _____
FILE SPEC.: _____	

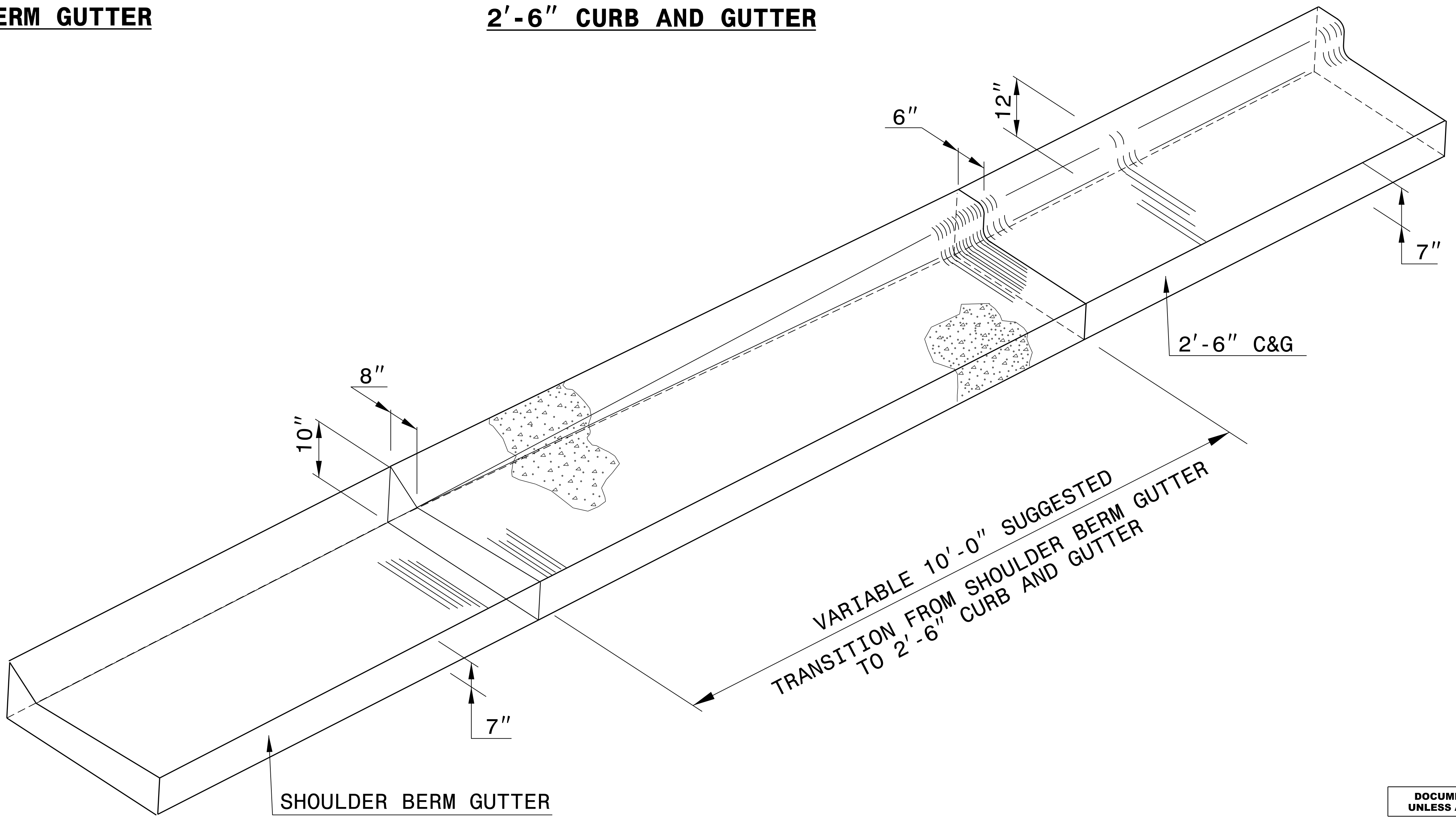


**SHOULDER BERM GUTTER**



**2'-6" CURB AND GUTTER**

\*NOTE: SEE STD. DWG. 846.01 FOR GENERAL NOTES



**ISOMETRIC VIEW OF TRANSITION**



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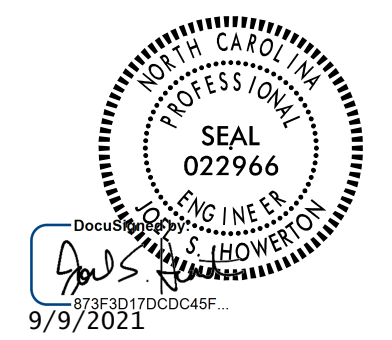
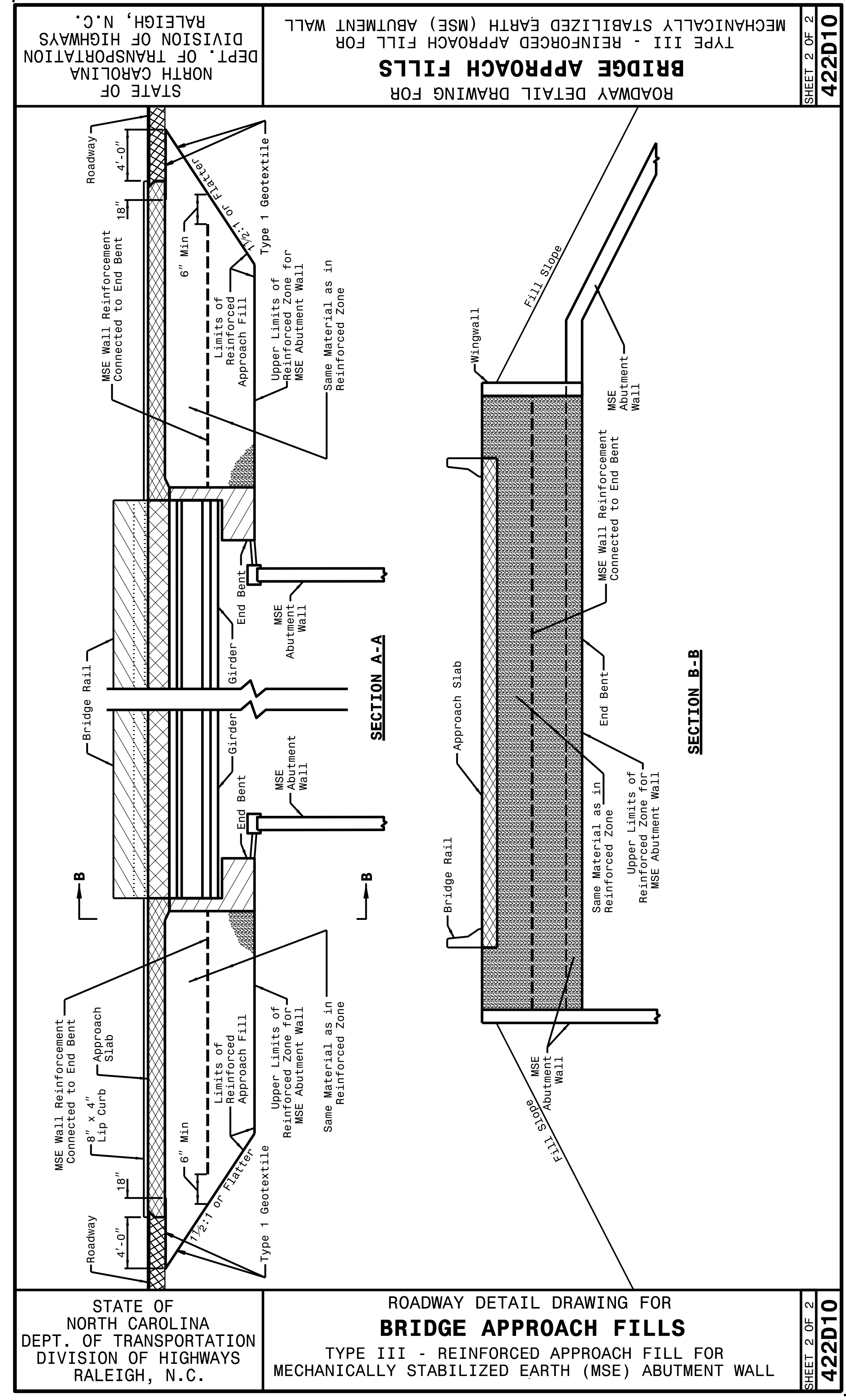
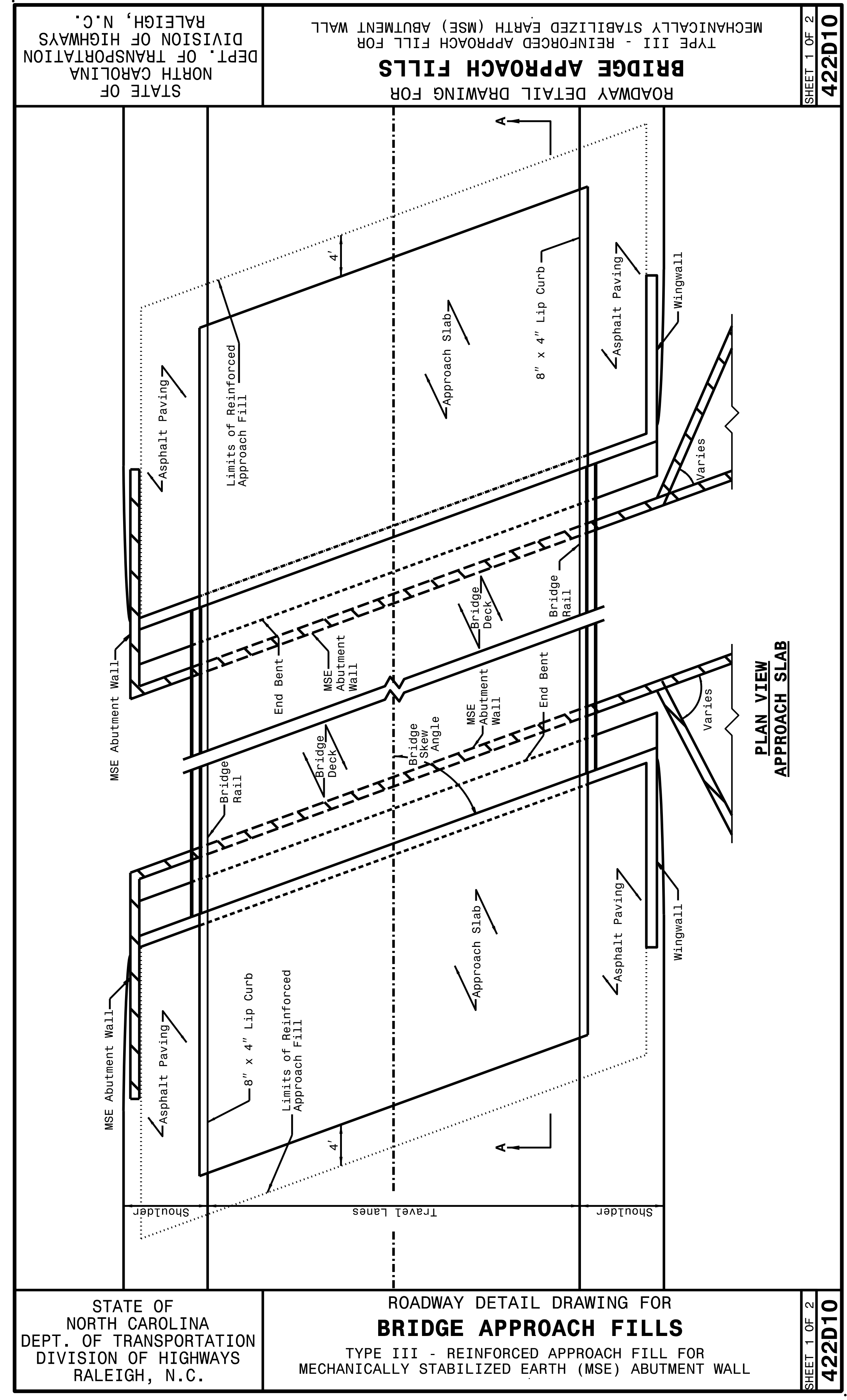
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**DETAIL OF SHOULDER BERM GUTTER TO 2'-6" CURB & GUTTER TRANSITION SECTION**

ORIGINAL BY: E.E. WARD	DATE: 5-29-02
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC.: /usr/details/stand/cgtransit.dgn	

20-OCT-2017 09:40 S:\Contracts\ContractDetails\stand\c&g transition sections.dgn JHowerton AT USD-292595

5/14/99



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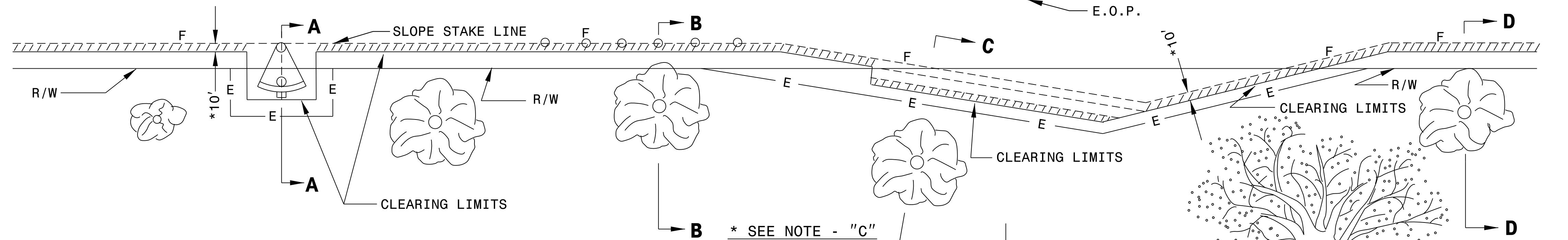
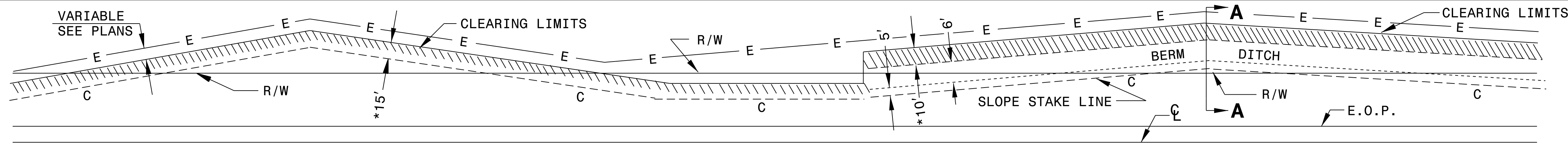
**TYPE III  
REINFORCED  
APPROACH FILLS**

ORIGINAL BY: K. A. KEMPF      DATE: JULY 2017  
 MODIFIED BY:                      DATE:                        
 CHECKED BY:                      DATE:                        
 FILE SPEC.: 2018 standard drawings\division 422d10.dgn

STATE OF NORTH CAROLINA  
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RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR  
**METHOD OF CLEARING**  
MODIFIED METHOD - III

SHEET 1 OF 1  
**200D03**



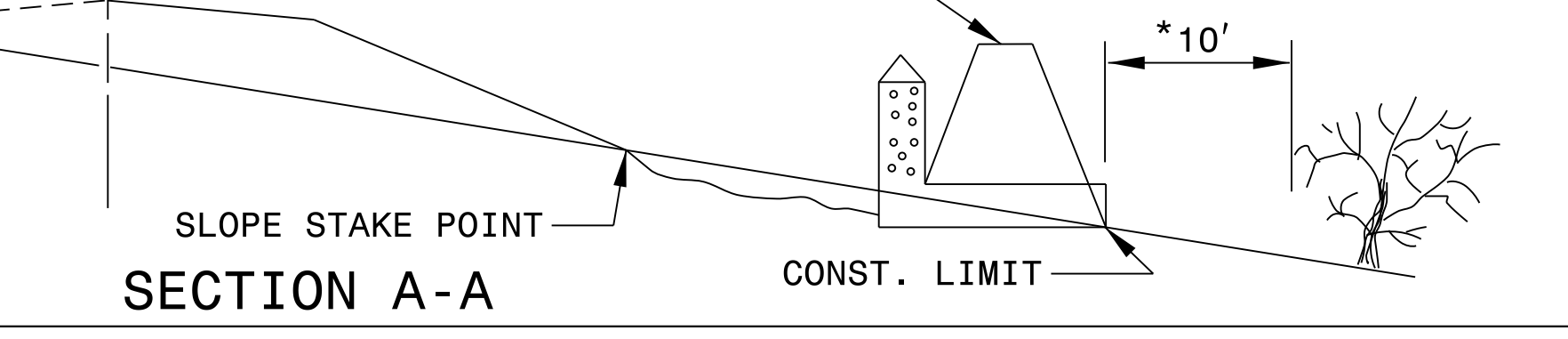
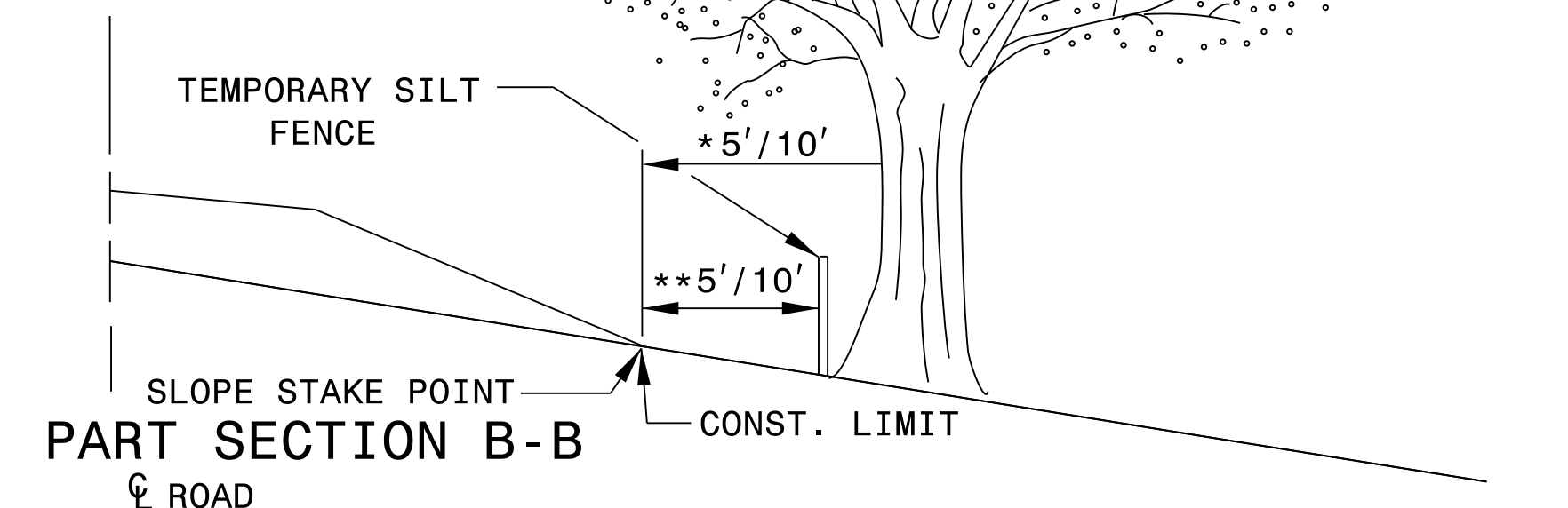
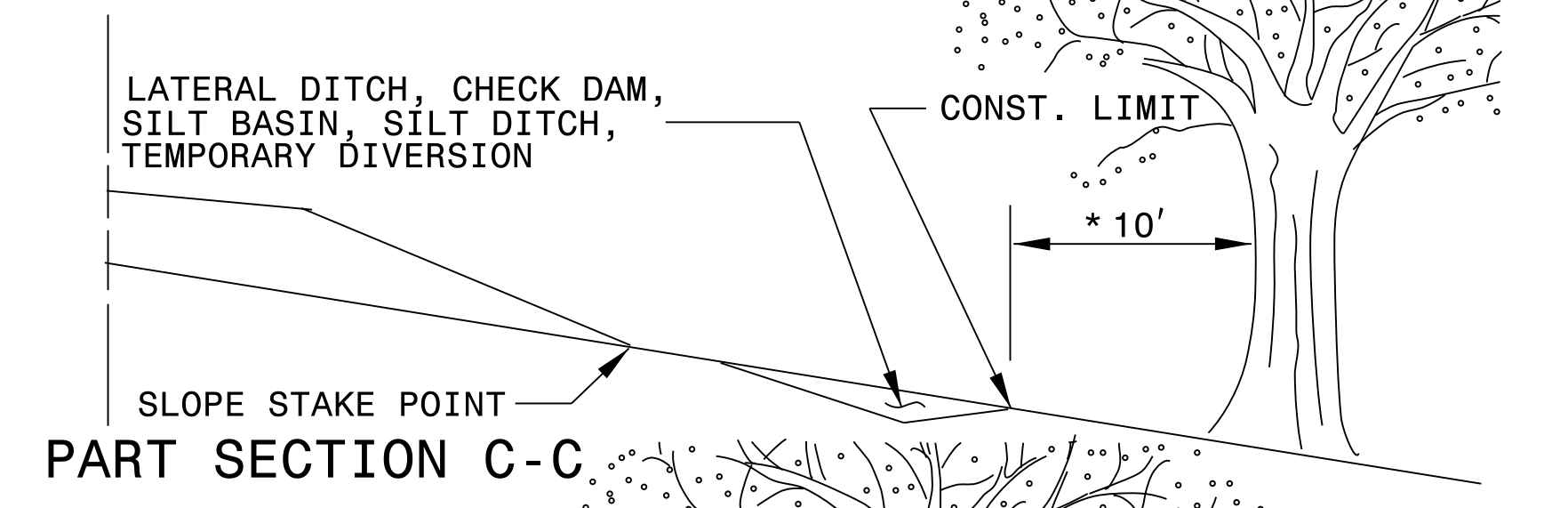
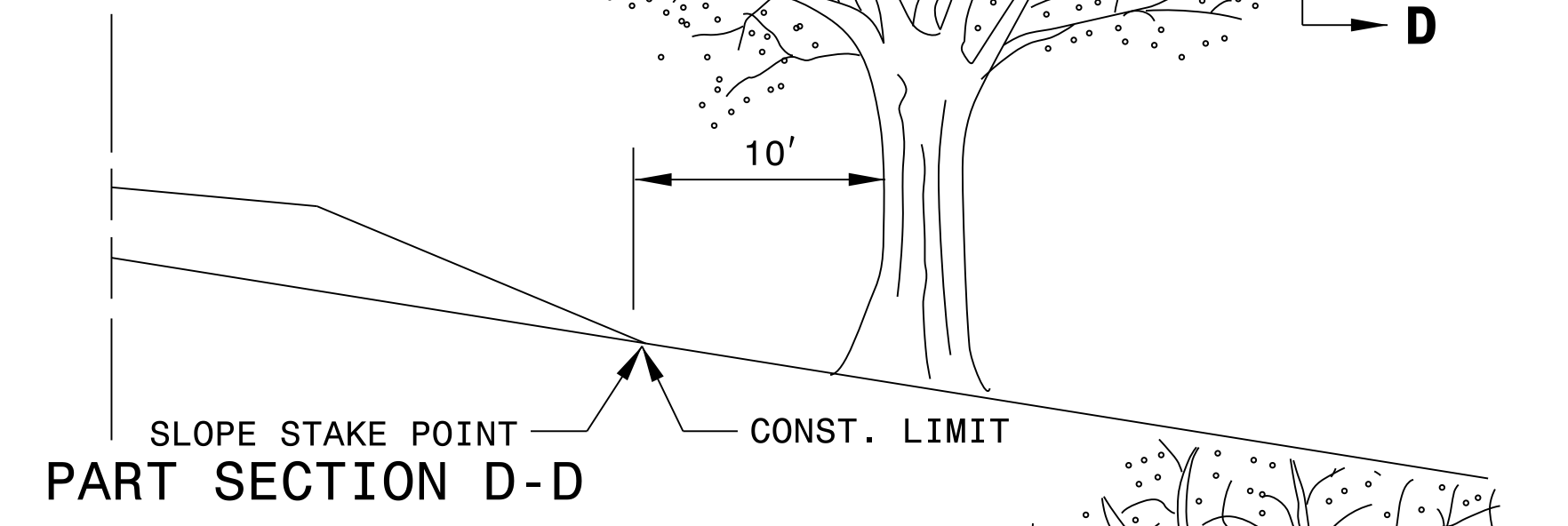
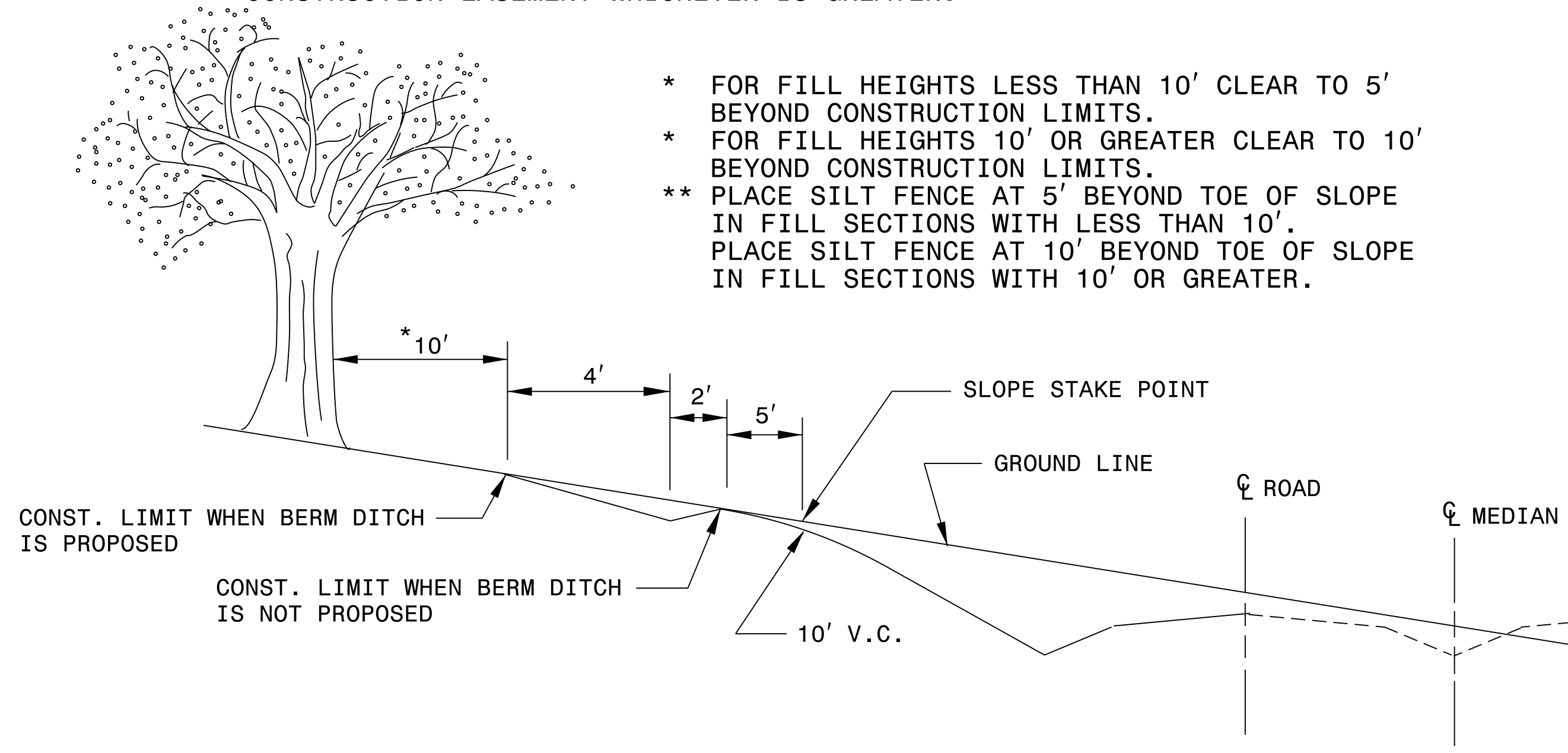
**GENERAL NOTES:**

1. REMOVE TREES OUTSIDE THE CLEARING LIMIT WHEN, IN THE OPINION OF THE ENGINEER, THE UTILITY OF A TREE WILL BE DESTROYED BY THE CONSTRUCTION OR THE CLEARING OPERATION.
2. CLEAR IN ACCORDANCE WITH THIS STANDARD EXCEPT WHERE ADDITIONAL CLEARING IS REQUIRED FOR SAFETY AS SHOWN ON THE PLANS.

**METHOD III CLEARING LIMITS**

- (A) CUTS -- CLEAR TO CONSTRUCTION LIMITS.
- (B) FILLS - CLEAR TO 5'/10' \* BEYOND CONSTRUCTION LIMITS, UNLESS SPECIFIED OTHERWISE BY WETLAND PERMIT.
- (C) CUTS AND FILLS - WHEN THE CLEARING LIMITS (A AND B) EXCEED THE PROPOSED R/W OR PROPOSED CONSTRUCTION EASEMENTS, THEN CLEAR ONLY TO THE R/W OR CONSTRUCTION EASEMENT WHICHEVER IS GREATER.

- \* FOR FILL HEIGHTS LESS THAN 10' CLEAR TO 5' BEYOND CONSTRUCTION LIMITS.
- \* FOR FILL HEIGHTS 10' OR GREATER CLEAR TO 10' BEYOND CONSTRUCTION LIMITS.
- \*\* PLACE SILT FENCE AT 5' BEYOND TOE OF SLOPE IN FILL SECTIONS WITH LESS THAN 10'. PLACE SILT FENCE AT 10' BEYOND TOE OF SLOPE IN FILL SECTIONS WITH 10' OR GREATER.



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ENGLISH DETAIL DRAWING FOR  
**METHOD OF CLEARING**  
MODIFIED METHOD - III

SHEET 1 OF 1  
**200D03**

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Jhowerton AT CSD-292595



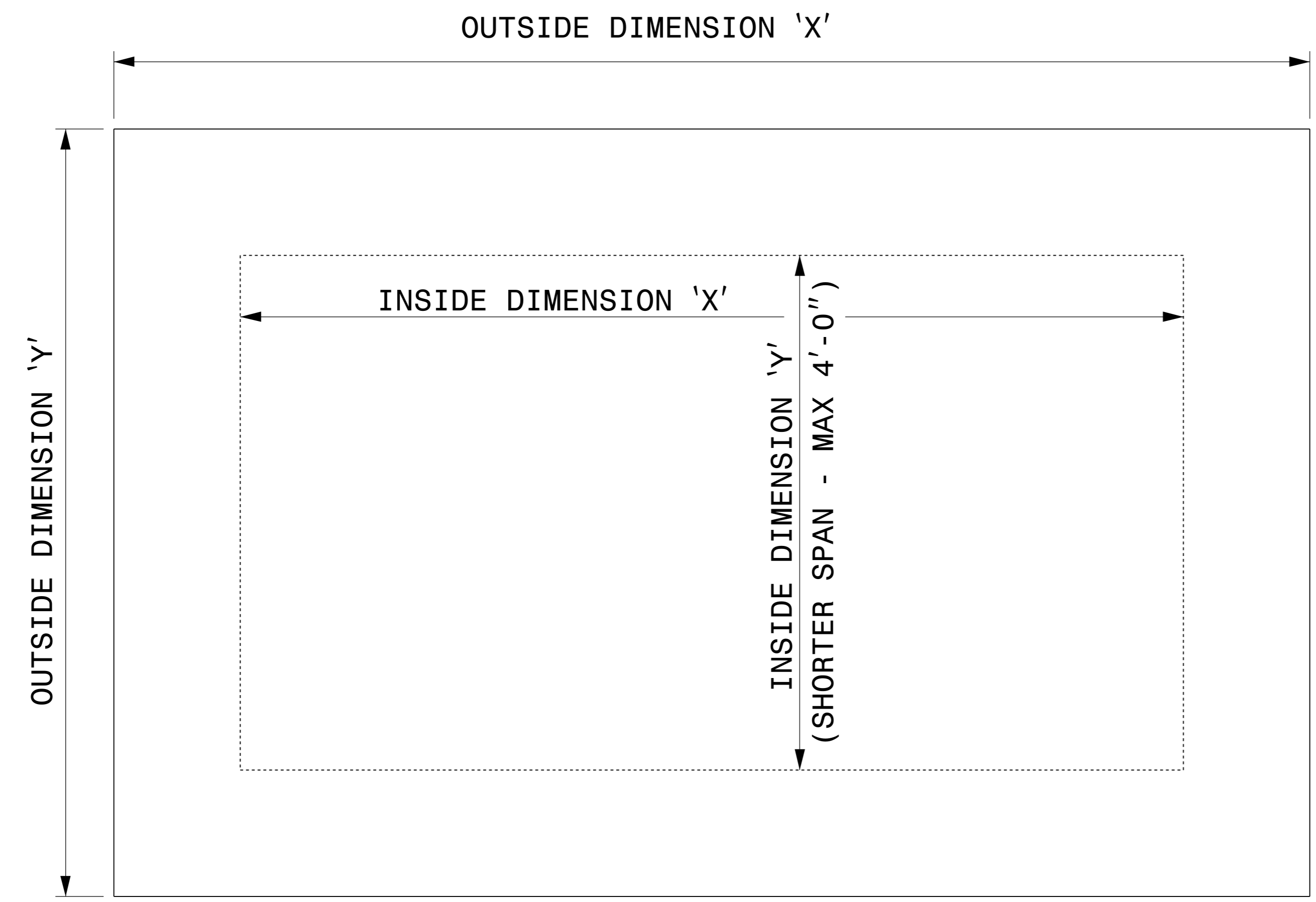
**CONTRACT STANDARDS AND DEVELOPMENT UNIT**  
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**SEE TITLE BLOCK**

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MODIFIED BY:	K.A.K.	DATE:	AUG. 2016
CHECKED BY:		DATE:	
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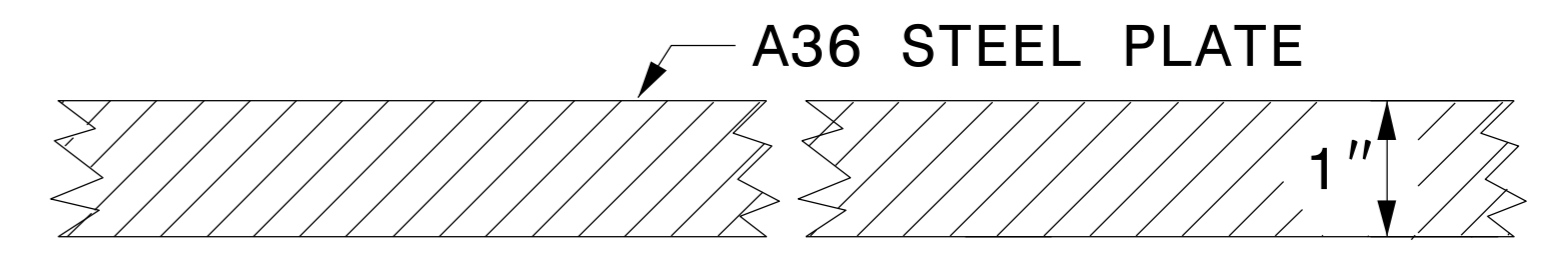
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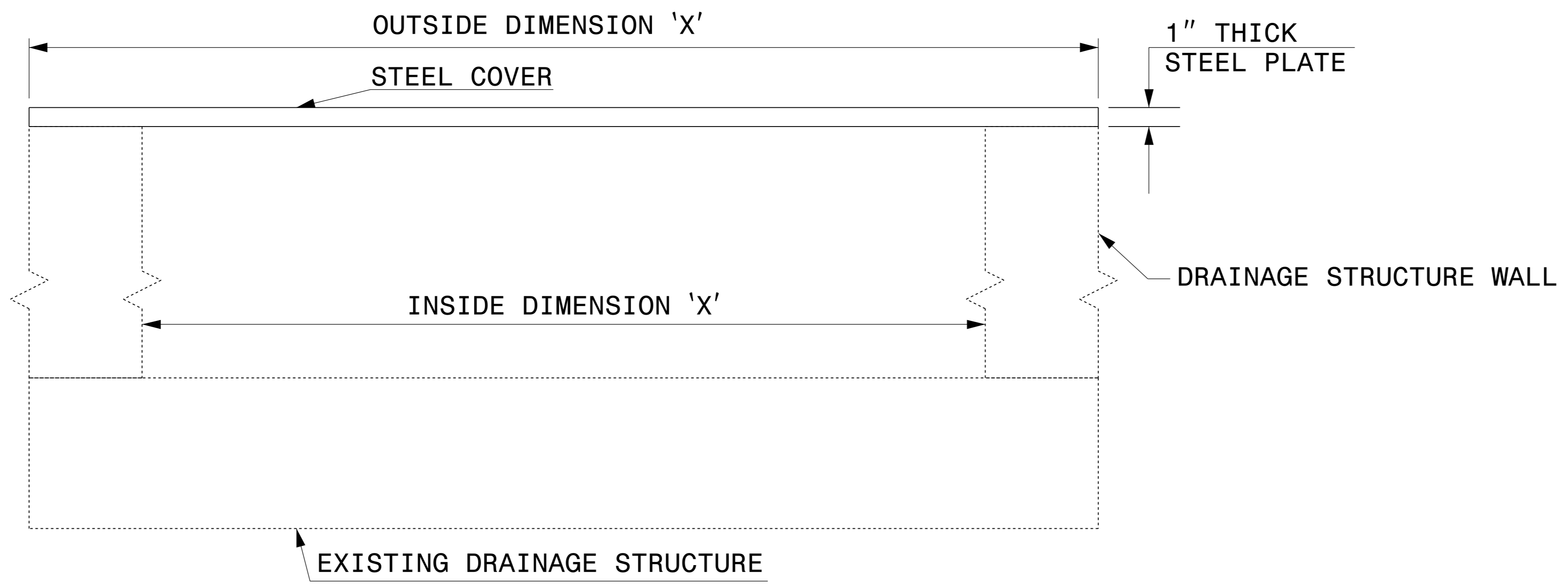
GENERAL NOTES:

- USE GRADE A36 STEEL
- STEEL COVERS ARE FOR TEMPORARY USE DURING PHASE CONSTRUCTION.
- FILL SHALL BE PLACED DIRECTLY OVER THE STEEL PLATES.
- SEE ROADWAY PLANS AND PROVISIONS FOR LOCATIONS
- QUANTITIES TO BE PAID FOR AT THE UNIT PRICE BID PER EACH.

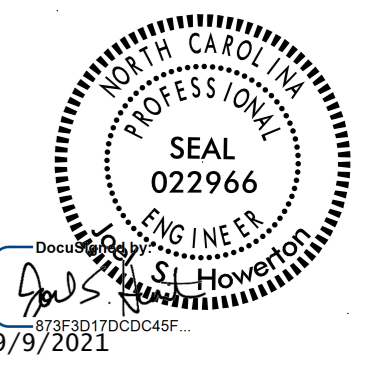


SECTION VIEW OF STEEL TOP PLATE

PLAN VIEWS



ELEVATION VIEWS



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**DETAIL OF TEMPORARY 1" STEEL COVER OVER DRAINAGE STRUCTURE**

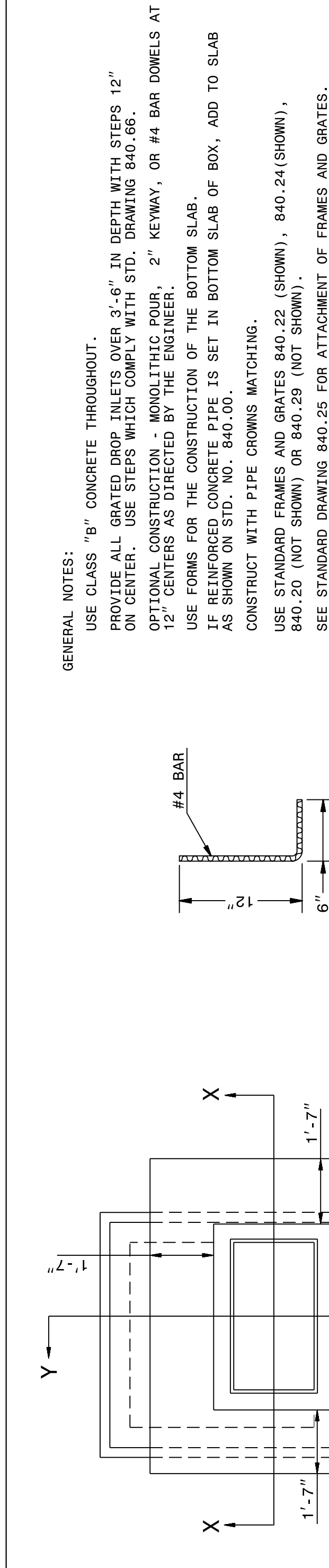
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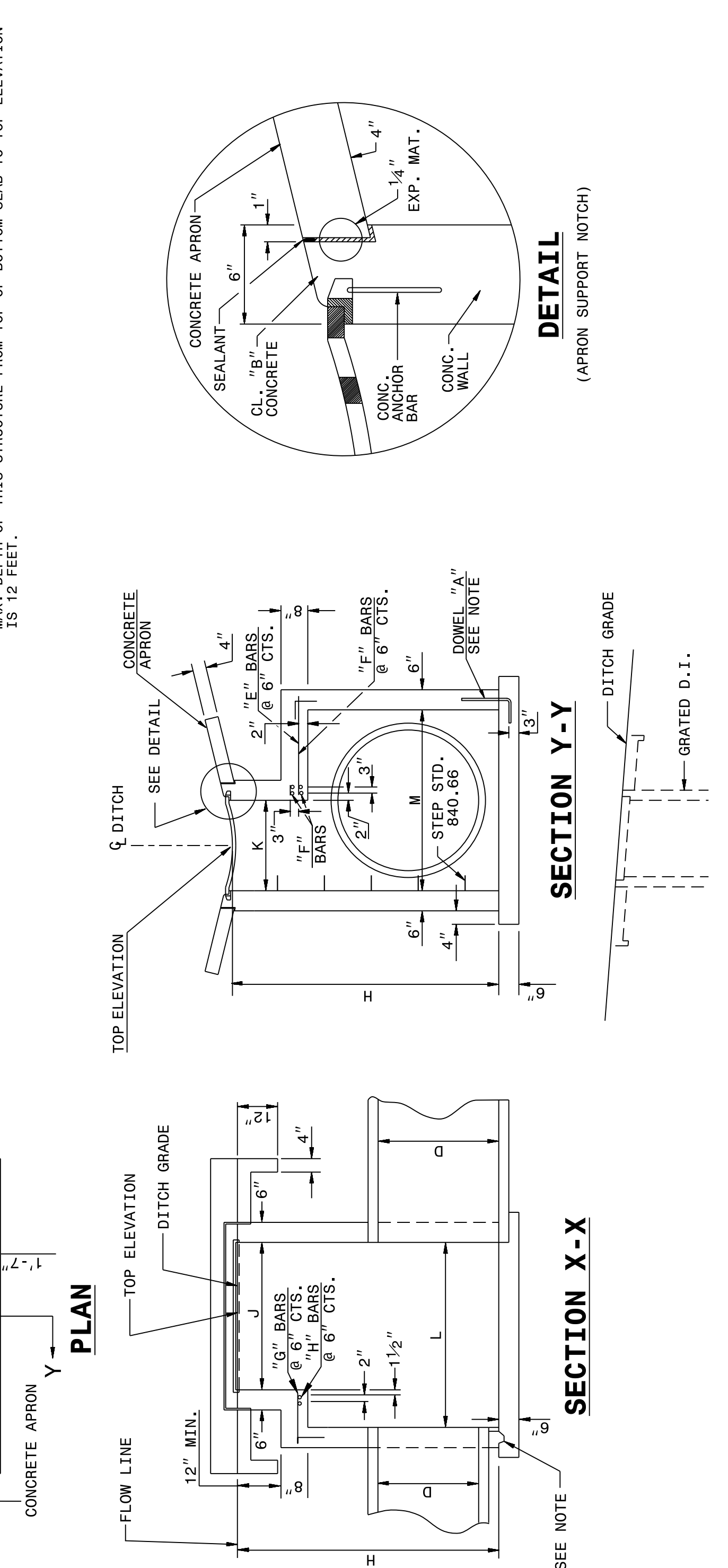
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DIVISION OF HIGHWAYS  
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR  
**CONCRETE GRATED DROP INLET TYPE 'A'**  
MINIMUM DEPTH  
12" THRU 72" PIPE

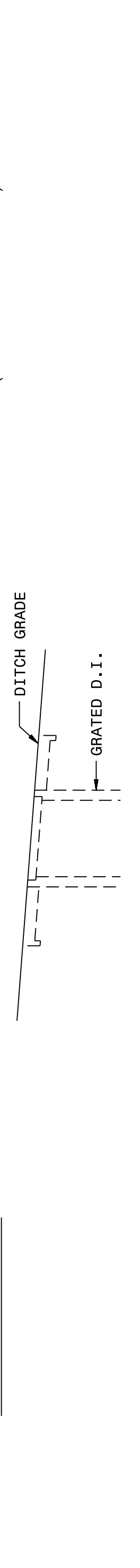
SHEET 1 OF 2  
**840d17**



**SECTION X-X**



**SECTION Y-Y**



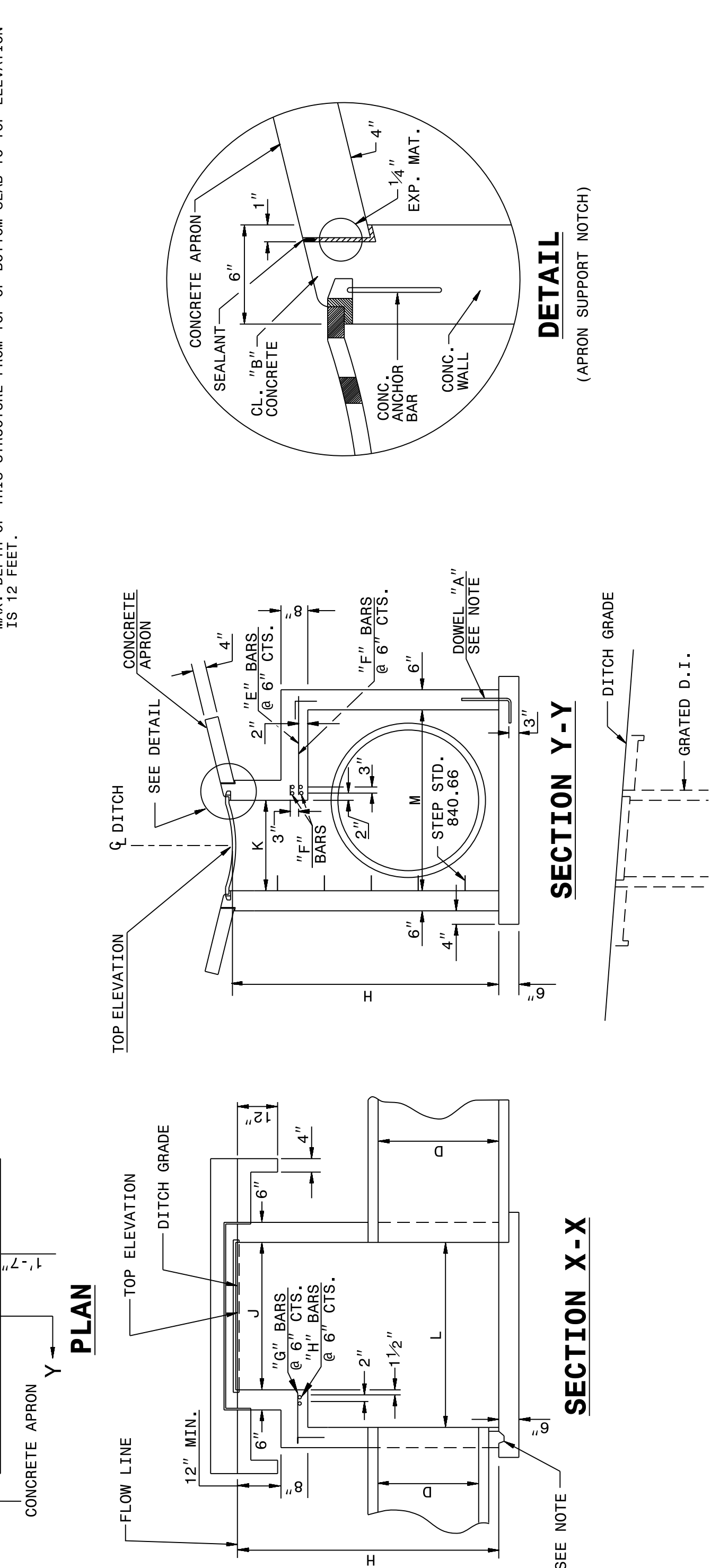
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ENGLISH DETAIL DRAWING FOR  
**CONCRETE GRATED DROP INLET TYPE 'A'**  
MINIMUM DEPTH  
12" THRU 72" PIPE

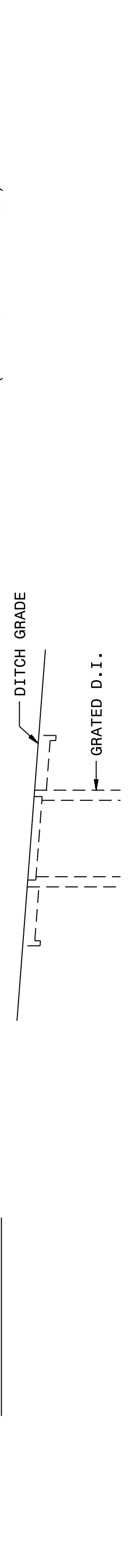
SHEET 1 OF 2  
**840d17**

GENERAL NOTES:  
USE CLASS "B" CONCRETE THROUGHOUT.  
PROVIDE ALL GRATED DROP INLETS 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.  
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.  
CONSTRUCT WITH PIPE CROWNS MATCHING.  
USE STANDARD FRAMES AND GRATES 840.22 (SHOWN), 840.24 (SHOWN), 840.20 (NOT SHOWN) OR 840.29 (NOT SHOWN).  
SEE STANDARD DRAWING 840.25 FOR ATTACHMENT OF FRAMES AND GRATES.  
CHAMFER ALL EXPOSED CORNERS 1".  
DRAWING NOT TO SCALE.  
MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 12 FEET.

**DOWEL - A**



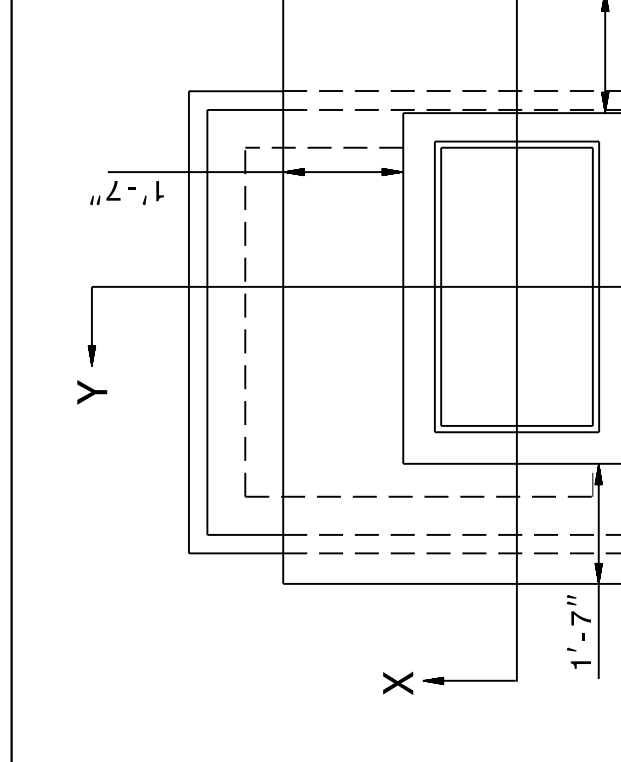
**DETAIL**  
(APRON SUPPORT NOTCH)



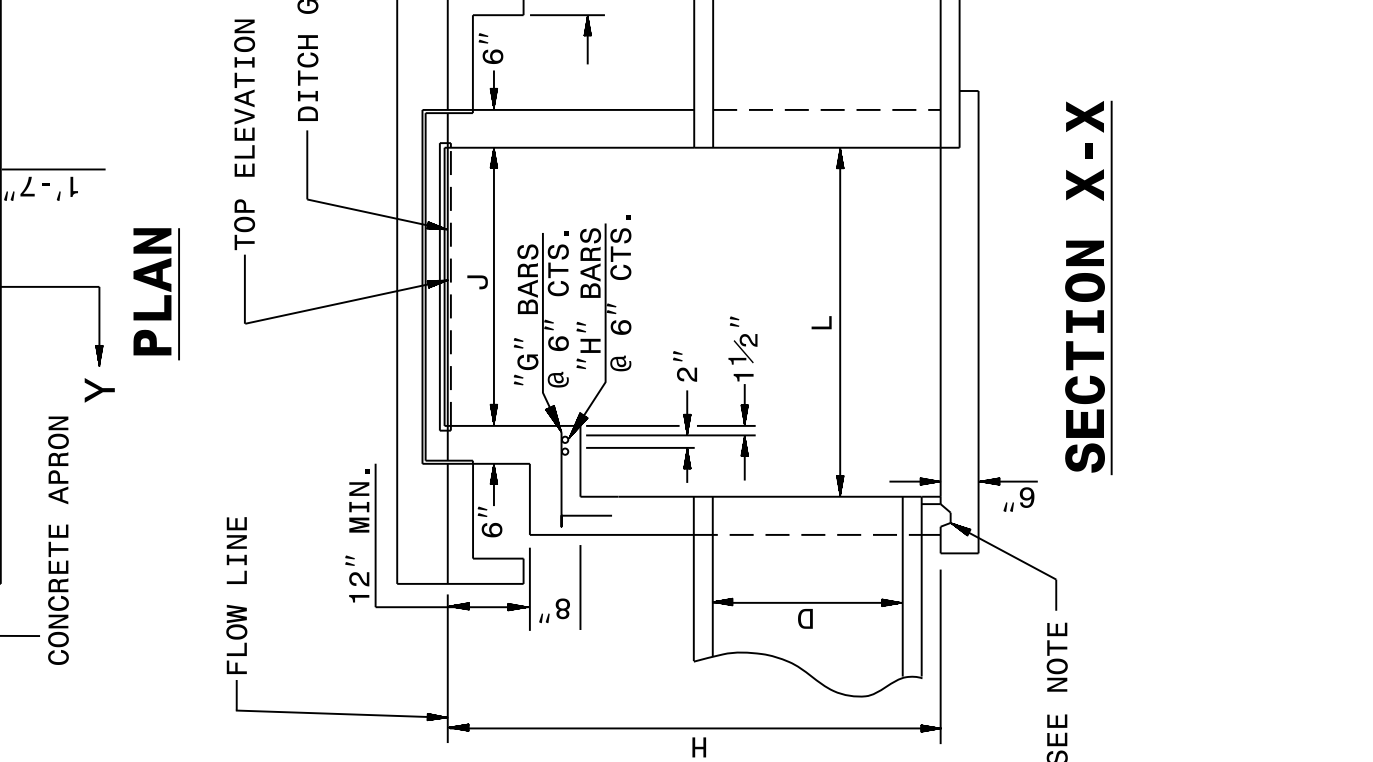
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ENGLISH DETAIL DRAWING FOR  
**CONCRETE GRATED DROP INLET TYPE 'A'**  
MINIMUM DEPTH  
12" THRU 72" PIPE

SHEET 2 OF 2  
**840d17**



**DOWEL - B-1**  
FOR 15" THRU 36" INLET



**DOWEL - B-2**  
FOR 42" INLET



**DOWEL - B-3**

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ENGLISH DETAIL DRAWING FOR  
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MINIMUM DEPTH  
12" THRU 72" PIPE

SHEET 2 OF 2  
**840d17**

QUANTITY TO BE ADDED FOR EACH 2' INCREMENT INLET OPENING

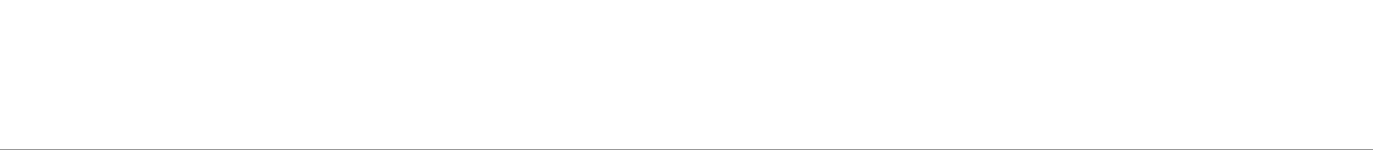
ADDITIONAL INLETS	2'-0"	4'-0"	6'-0"	8'-0"	10'-0"	12'-0"
CONCRETE CU. YDS.	0.191	0.417	0.665	0.897	1.145	1.380
CONCRETE APRON CU. YDS.	0.074	0.148	0.222	0.296	0.370	0.444

**MIN. DIMENSIONS AND QUANTITIES FOR CONCRETE GRATED DROP INLET (BASED ON MIN. HEIGHT, H)**

PIPE DIMENSIONS	REINFORCING STEEL - NO. 4 BARS				CU YDS CONC. IN BOX		DEDUCTIONS FOR ONE PIPE					
	SPAN	WIDTH	HEIGHT	NO.	LENGTH	APRON	TOTAL	C.S.	R.C.			
12"	3'-8"	2'-0"	2'-3"	—	—	0.362	0.926	0.247	0.395	1.683	0.015	0.024
15"	3'-8"	2'-0"	2'-5"	—	—	0.362	0.988	0.247	0.395	1.745	0.023	0.036
18"	—	2'-0"	2'-8"	8	1'-5"	0.362	1.050	0.247	2.201	1.807	0.033	0.049
24"	—	2'-10"	3'-3"	8	1'-5"	0.444	1.362	0.278	2.201	0.059	0.085	—
30"	3'-8"	3'-5"	3'-10"	8	2'-0"	0.502	1.644	0.288	2.541	0.082	0.127	—
36"	4'-0"	4'-0"	4'-4"	8	2'-5"	0.560	1.931	0.321	2.920	0.132	0.178	—
42"	4'-0"	4'-10"	5'-0"	10	3'-1"	0.704	2.500	0.370	3.677	0.180	0.243	—
48"	5'-4"	5'-4"	5'-6"	11	3'-7"	0.823	3.013	0.407	4.315	0.235	0.317	—
54"	6'-0"	6'-0"	6'-7"	12	4'-1"	0.951	3.589	0.444	5.072	0.287	0.401	—
60"	6'-6"	6'-6"	6'-7"	13	4'-9"	1.077	4.172	0.484	6.170	0.367	0.495	—
66"	7'-2"	7'-2"	7'-1"	14	5'-4"	1.136	5.061	0.537	6.901	0.444	0.599	—
72"	3'-8"	7'-8"	7'-8"	15	5'-11"	1.500	5.860	0.580	0.395	7.868	0.528	0.713

SEE DETAIL OF APRON SUPPORT NOTCH SEE STD. 840.17 SHEET 1

**SECTION V-V**  
DOWEL B<sup>1</sup>, B<sup>2</sup> OR B<sup>3</sup>



**SECTION U-U**



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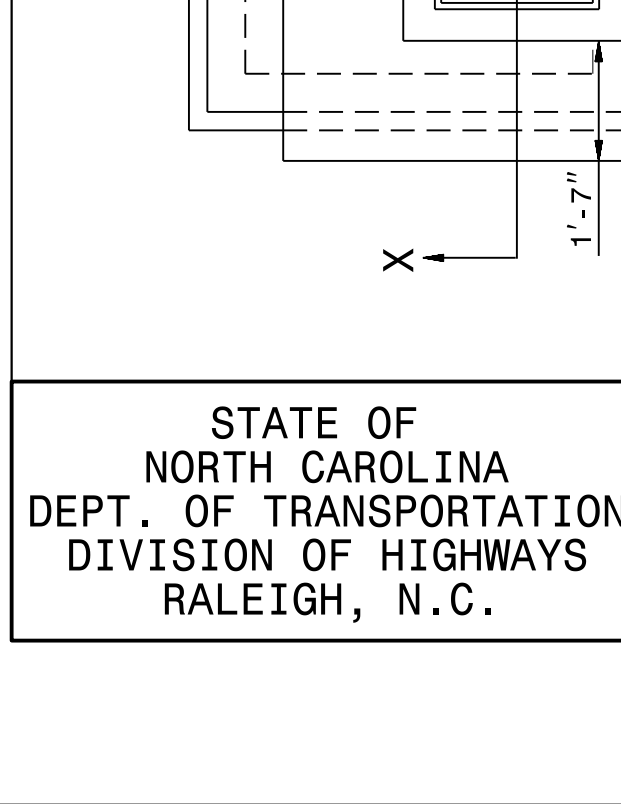
ENGLISH DETAIL DRAWING FOR  
**CONCRETE GRATED DROP INLET TYPE 'A'**  
MINIMUM DEPTH  
12" THRU 72" PIPE

SHEET 2 OF 2  
**840d17**

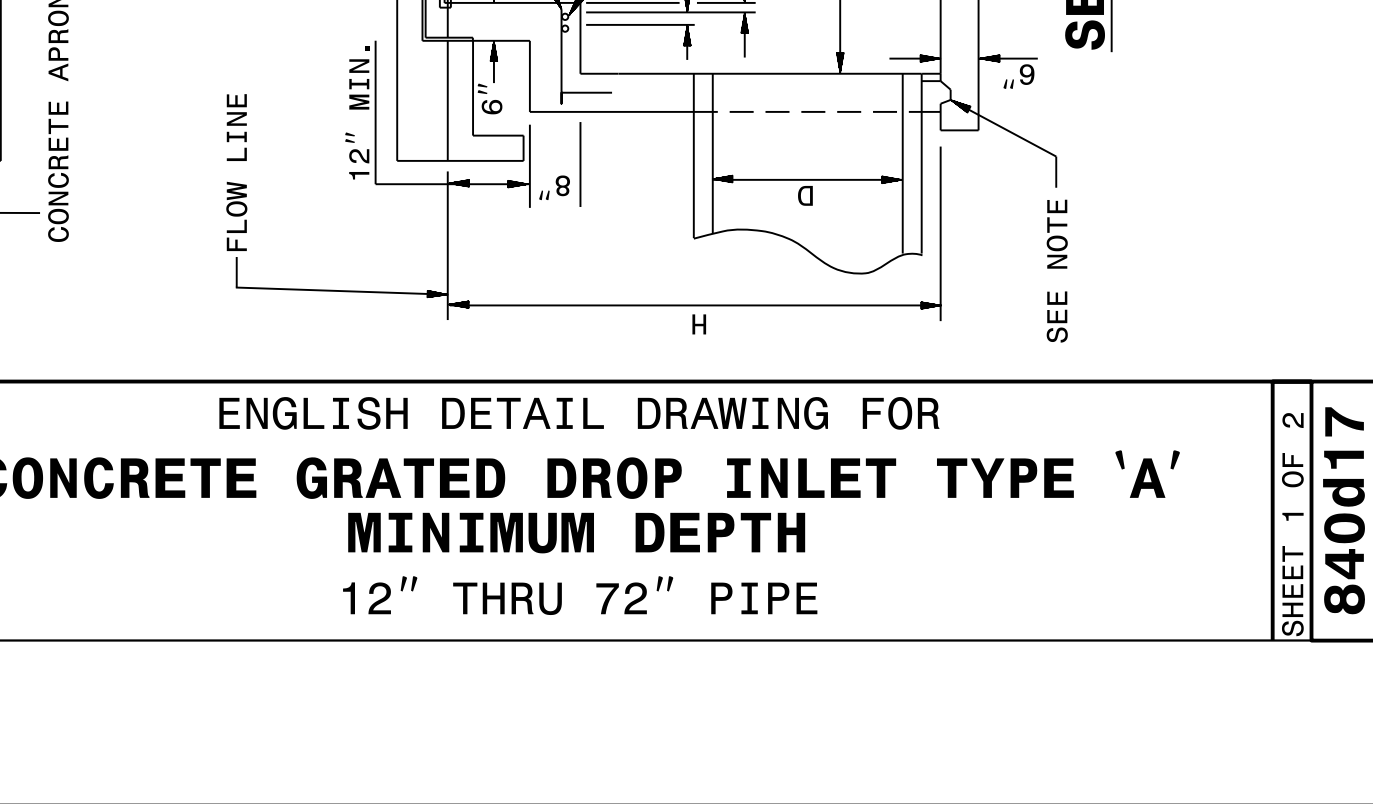
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ENGLISH DETAIL DRAWING FOR  
**CONCRETE GRATED DROP INLET TYPE 'A'**  
MINIMUM DEPTH  
12" THRU 72" PIPE

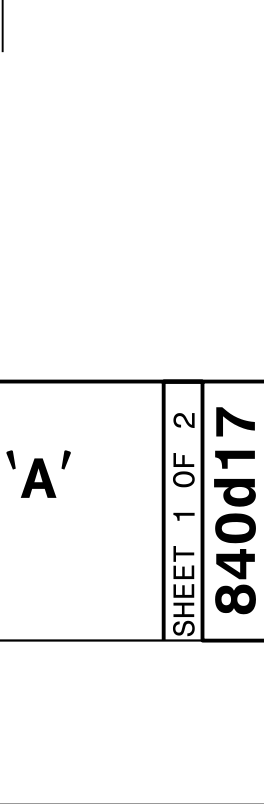
SHEET 2 OF 2  
**840d17**



**SECTION U-U**



**SECTION V-V**  
DOWEL B<sup>1</sup>, B<sup>2</sup> OR B<sup>3</sup>



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ENGLISH DETAIL DRAWING FOR  
**CONCRETE GRATED DROP INLET TYPE 'A'**  
MINIMUM DEPTH  
12" THRU 72" PIPE

SHEET 2 OF 2  
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ORIGINAL BY: J. Howerton DATE: 1/22/14  
MODIFIED BY: DATE:  
CHECKED BY: DATE:  
FILE SPEC.: jhowerton\minimum depth type A.dgn



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jhowerton At CSD 2/25/2015