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09\_08/2019

See Sheet 1A For Index of Sheets

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5705B	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
46377.1.3		PE	
46377.2.2		ROW	
46377.2.6		UTILITIES	
46377.3.2		CONST.	

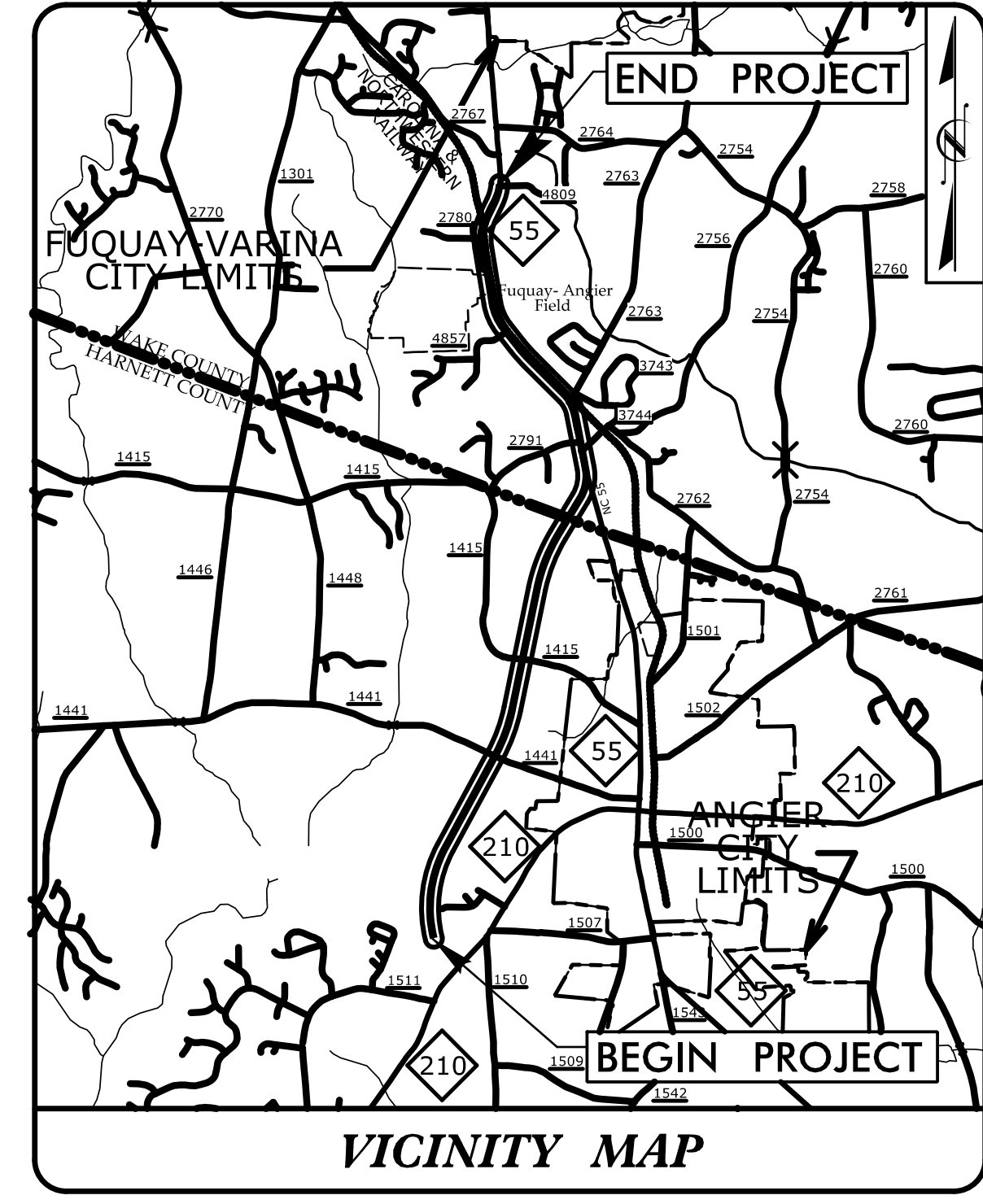
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# HARNETT & WAKE COUNTIES

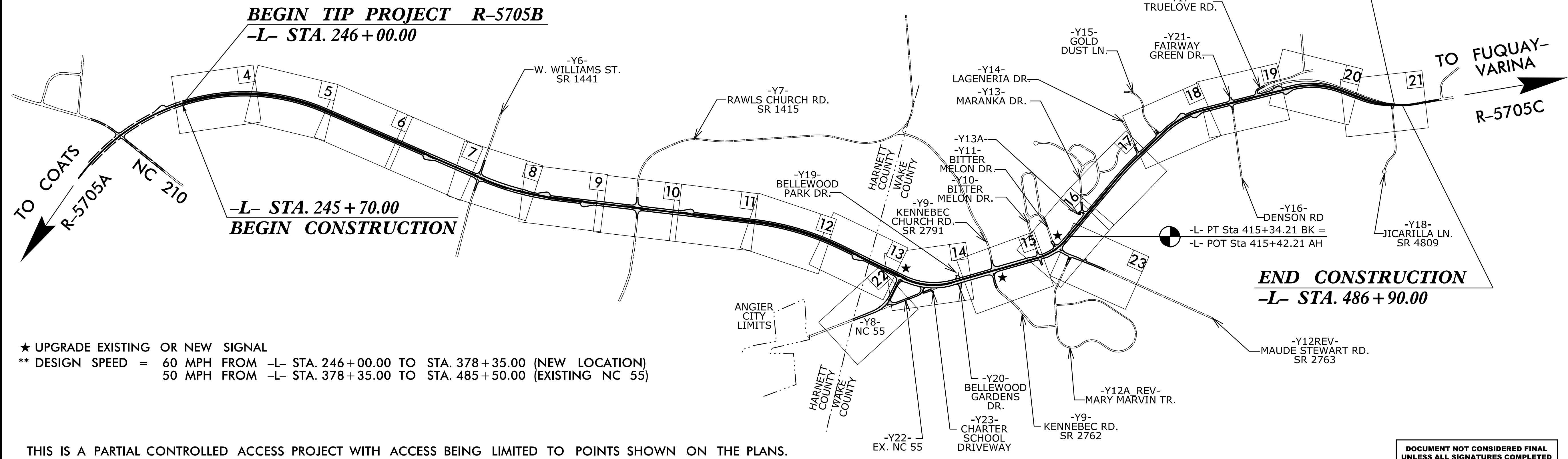
LOCATION: NC 55 FROM NC 210 TO SR 4809 (JICARILLA LANE)

TYPE OF WORK: PAVING, GRADING, DRAINAGE, SIGNALS & CULVERT

TIP PROJECT: R-5705B



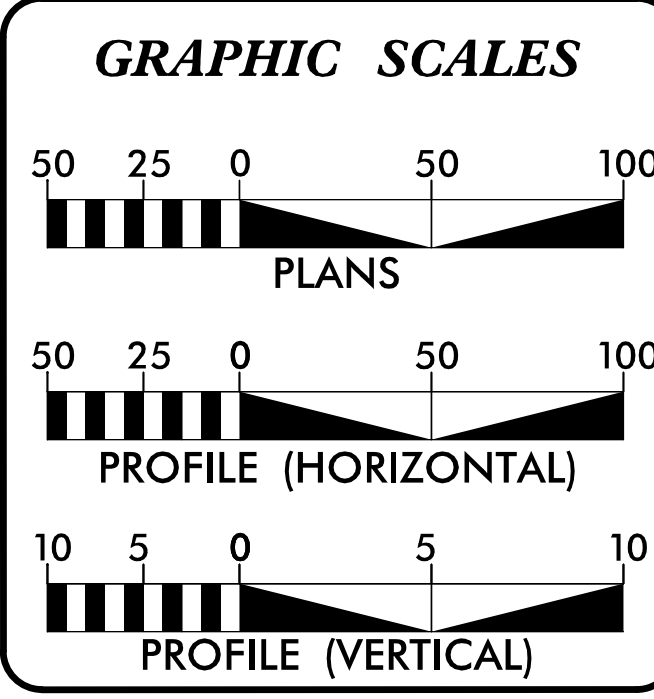
CONTRACT: C204745



- ★ UPGRADE EXISTING OR NEW SIGNAL
- \*\* DESIGN SPEED = 60 MPH FROM -L- STA. 246+00.00 TO STA. 378+35.00 (NEW LOCATION)
- 50 MPH FROM -L- STA. 378+35.00 TO STA. 485+50.00 (EXISTING NC 55)

THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS SHOWN ON THE PLANS.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



**DESIGN DATA**

ADT 2022 =	30,200
ADT 2045 =	44,200
K =	9 %
D =	60 %
T =	4 % *
**V =	50 & 60 MPH
* TTST =	1% DUAL 3%
FUNC CLASS =	MINOR ARTERIAL
REGIONAL TIER	

**PROJECT LENGTH**

LENGTH ROADWAY PROJECT R-5705B	=	4.536	MILES
TOTAL LENGTH PROJECT	=	4.536	MILES

Prepared For:  
**DIVISION OF HIGHWAYS**  
1000 Birch Ridge Dr., Raleigh NC, 27610

By:  
TGS ENGINEERS  
706 HILLSBOROUGH ST  
SUITE 200  
RALEIGH, NC 27603

PH (919) 773-8887  
CORP. LICENSE NO.: C-0275

2018 STANDARD SPECIFICATIONS

**RIGHT OF WAY DATE:**  
MARCH 3, 2021

**LETTING DATE:**  
OCTOBER 18, 2022

**TOMMY REGISTER, P.E.**  
PROJECT ENGINEER

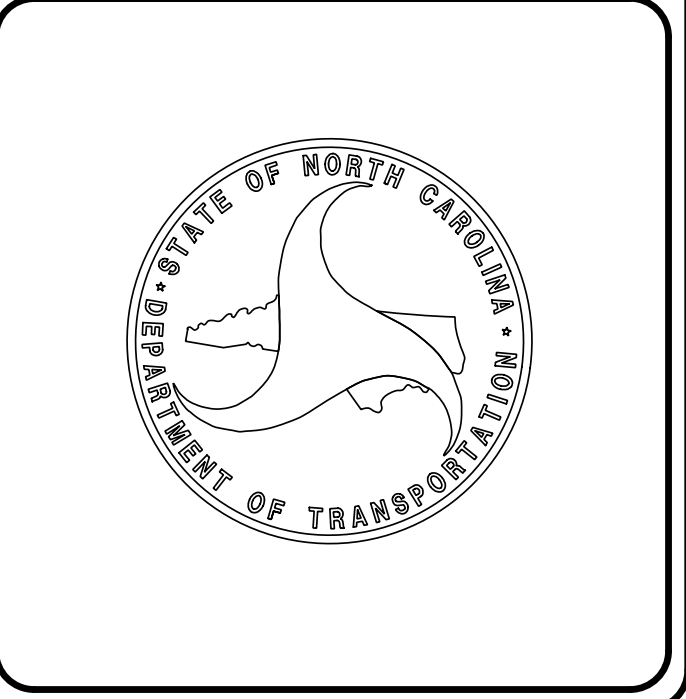
**KIM L. GILLESPIE, PE**  
NCDOT CONTACT

**HYDRAULICS ENGINEER**

DocuSigned by:  
Randy Hinegar  
9/1/2022 7:41 AM PDT

**ROADWAY DESIGN ENGINEER**

DocuSigned by:  
Tommy Register  
9/1/2022 8:56 AM EDT





# INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
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2B-1 THRU 2B-2	TEMPORARY PAVEMENT LOCATIONS
2C-1	DETAIL OF 2'-9" CONCRETE CURB & GUTTER
2C-2	DETAIL OF 1'-6" TO 2'-9" CURB & GUTTER TRANSITION SECTION
2C-3	DETAIL OF 1'-6" TO 2'-6" CURB & GUTTER TRANSITION SECTION
2C-4	DETAIL OF 2'-9" TO FRAME AND GRATE
2C-5	DETAIL OF METHOD FOR PLACEMENT OF DROP INLETS IN CONCRETE ISLANDS
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2C-7	DETAIL OF GUARDRAIL INSTALLATION - A.T.-1 SYSTEM
2C-8	DETAIL OF ROCK PLATING
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2C-10	DETAIL TO CONVERT DROP INLET OR JB TO CATCH BASIN
2C-11	PROPOSED PEDESTRIAN SAFETY RAIL
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2C-15	DETAIL OF METHOD FOR PLACEMENT OF TRAFFIC BEARING 2GI IN GRASSED MEDIAN
2G-1	DETAIL OF STANDARD TEMPORARY SHORING
3B-1	SUMMARY OF EARTHWORK
3B-2	SUMMARIES OF WOVEN WIRE FENCE, 47" FABRIC; SHOULDER BERM GUTTER; ASPHALT PAVEMENT REMOVAL; & GUARDRAIL
3D-1 THRU 3D-16	LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)
3D-17	LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 54 INCHES & OVER)
3G-1	SUMMARIES OF SUBSURFACE DRAINAGE; AGGREGATE SUBGRADE STABILIZATION; SUMMARY OF ROCK PLATING; SUMMARY OF EMBANKMENT WAITING PERIODS; SUMMARY OF SETTLEMENT GAUGES
3P-1	PARCEL INDEX SHEETS
04 THRU 23	PLAN SHEETS
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TMP-1 THRU TMP-6.27	TRANSPORTATION MANAGEMENT PLANS
PMP-1 THRU PMP-22	PAVEMENT MARKING PLANS
EC-01 THRU EC-45	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-19	SIGNING PLANS
SIG-1.0 THRU SIG-9.3 SIG.M1 THRU SIG.M8 SCP-1 THRU SCP-7	SIGNAL PLANS
UC-1 THRU UC-25	UTILITY CONSTRUCTION PLANS
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X-0A THRU X-0D	CROSS SECTION EARTHWORK VOLUME SUMMARIES
X-1 THRU X-127	CROSS SECTIONS
C-1 THRU C-5	STRUCTURE PLANS — CULVERT
W-1 THRU W-3	STRUCTURE PLANS — WALLS

# GENERAL NOTES

GENERAL NOTES: 2018 SPECIFICATIONS EFFECTIVE: 01-16  
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 METHOD II.

**SUPERELEVATION:**

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

**SHOULDER CONSTRUCTION:**

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01

**SIDE ROADS:**

THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

**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 AT LOCATIONS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER.

**STREET TURNOUT:**

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

**GUARDRAIL:**

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

**TEMPORARY SHORING:**

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC NOT SHOWN ON THE PLANS WILL BE PAID FOR AT THE CONTRACT PRICE FOR "TEMPORARY SHORING".

**UTILITIES:**

UTILITY OWNERS ON THIS PROJECT ARE DUKE ENERGY; HOTWIRE COMMUNICATIONS; SEGRA; CHARTER/SPECTRUM; CENTURYLINK; HARNETT REGIONAL WATER; TOWN OF ANGIER WATERSEWER; DOMINION ENERGY; DUKE TRANSMISSION

**RIGHT-OF-WAY MARKERS:**

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

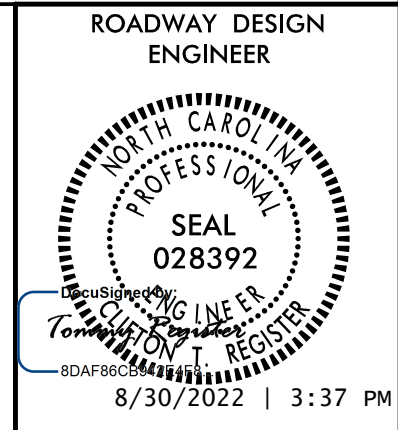
**RIGHT-OF-WAY MARKERS:**

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY OTHERS AND BY CONTRACT IN ACCORDANCE WITH DESIGNATED SYMBOLS.

**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.	SHEET NO.
R-5705B	1A
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



# STANDARD DRAWINGS

EFF. 01-16-2018  
REV.

2018 ROADWAY ENGLISH STANDARD DRAWINGS

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

STD.NO.	TITLE
<b>DIVISION 2 - EARTHWORK</b>	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
225.06	Method of Grading Sight Distance at Intersections
<b>DIVISION 3 - PIPE CULVERTS</b>	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
<b>DIVISION 5 - SUBGRADE, BASES AND SHOULDERS</b>	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
<b>DIVISION 6 - ASPHALT BASES AND PAVEMENTS</b>	
654.01	Pavement Repairs
<b>DIVISION 8 - INCIDENTALS</b>	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
806.03	Concrete Control of Access Marker
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
838.27	Reinforced Concrete Endwall - for Single 60" Pipe 90 Skew
838.33	Reinforced Concrete Endwall - for Single 66" 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
838.57	Reinforced Brick Endwall - for Single 60" Pipe 90 Skew
838.63	Reinforced Brick Endwall - for Single 66" Pipe 90 Skew
838.75	Notes for Reinforced Brick Endwall - Std. Dwg 838.51 thru 838.70
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	Frame, Gates 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
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
840.71	Concrete and Brick Pipe Plug
846.01	Concrete Curb, Gutter and Curb & Gutter
848.01	Concrete Sidewalk
848.02	Driveway Turnout - Radius Type
848.03	Driveway Turnout - Drop Curb Type
848.04	Street Turnout
848.05	Curb Ramp - Proposed Curb & Gutter
852.01	Concrete Islands
852.04	Method for Placement of Drop Inlets in Grassed Median - Using 1'-6" Curb and Gutter
852.06	Method for Placement of Drop Inlets in Concrete Islands
862.01	Guardrail Placement
862.02	Guardrail Installation
866.02	Woven Wire Fence - with Wood 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

# STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

### BOUNDARIES AND PROPERTY:

State Line	_____
County Line	_____
Township Line	_____
City Line	_____
Reservation Line	_____
Property Line	_____
Existing Iron Pin (EIP)	○
Computed Property Corner	×
Existing Concrete Monument (ECM)	□
Parcel/Sequence Number	①23
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	-WLB-
Proposed Wetland Boundary	-WLB-
Existing Endangered Animal Boundary	-EAB-
Existing Endangered Plant Boundary	-EPB-
Existing Historic Property Boundary	-HPB-
Known Contamination Area: Soil	-S-S-
Potential Contamination Area: Soil	-S-S-
Known Contamination Area: Water	-W-W-
Potential Contamination Area: Water	-W-W-
Contaminated Site: Known or Potential	☠ ?

### BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○
Well	○
Small Mine	×
Foundation	□
Area Outline	□
Cemetery	□
Building	□
School	□
Church	□
Dam	_____

### HYDROLOGY:

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	○
Switch	□
RR Abandoned	_____
RR Dismantled	_____

### RIGHT OF WAY & PROJECT CONTROL:

Primary Horiz Control Point	○
Primary Horiz and Vert Control Point	●
Secondary Horiz and Vert Control Point	◆
Vertical Benchmark	⊠
Existing Right of Way Monument	△
Proposed Right of Way Monument (Rebar and Cap)	▲
Proposed Right of Way Monument (Concrete)	⊙
Existing Permanent Easement Monument	◇
Proposed Permanent Easement Monument (Rebar and Cap)	◆
Existing C/A Monument	△
Proposed C/A Monument (Rebar and Cap)	▲
Proposed C/A Monument (Concrete)	⊙
Existing Right of Way Line	_____
Proposed Right of Way Line	_____
Existing Control of Access Line	_____
Proposed Control of Access Line	_____
Proposed ROW and CA Line	_____
Existing Easement Line	_____
Proposed Temporary Construction Easement	_____
Proposed Temporary Drainage Easement	_____
Proposed Permanent Drainage Easement	_____
Proposed Permanent Drainage/Utility Easement	_____
Proposed Permanent Utility Easement	_____
Proposed Temporary Utility Easement	_____
Proposed Aerial Utility Easement	_____

### ROADS AND RELATED FEATURES:

Existing Edge of Pavement	_____
Existing Curb	_____
Proposed Slope Stakes Cut	_____
Proposed Slope Stakes Fill	_____
Proposed Curb Ramp	_____
Existing Metal Guardrail	_____
Proposed Guardrail	_____
Existing Cable Guiderail	_____
Proposed Cable Guiderail	_____
Equality Symbol	⊕
Pavement Removal	_____
VEGETATION:	
Single Tree	○
Single Shrub	○
Hedge	_____

Woods Line	_____
Orchard	_____
Vineyard	_____

### EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	_____
Bridge Wing Wall, Head Wall and End Wall	_____
MINOR:	
Head and End Wall	_____
Pipe Culvert	_____
Footbridge	_____
Drainage Box: Catch Basin, DI or JB	_____
Paved Ditch Gutter	_____
Storm Sewer Manhole	_____
Storm Sewer	_____

### UTILITIES:

\* SUE - Subsurface Utility Engineering  
LOS - Level of Service - A,B,C or D (Accuracy)

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊙
Power Line Tower	⊠
Power Transformer	⊠
U/G Power Cable Hand Hole	⊠
H-Frame Pole	●
U/G Power Line Test Hole (SUE - LOS A)*	⊙
U/G Power Line (SUE - LOS B)*	_____
U/G Power Line (SUE - LOS C)*	_____
U/G Power Line (SUE - LOS D)*	_____
TELEPHONE:	
Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊙
Telephone Pedestal	⊠
Telephone Cell Tower	⊠
U/G Telephone Cable Hand Hole	⊠
U/G Telephone Test Hole (SUE - LOS A)*	⊙
U/G Telephone Cable (SUE - LOS B)*	_____
U/G Telephone Cable (SUE - LOS C)*	_____
U/G Telephone Cable (SUE - LOS D)*	_____
U/G Telephone Conduit (SUE - LOS B)*	_____
U/G Telephone Conduit (SUE - LOS C)*	_____
U/G Telephone Conduit (SUE - LOS D)*	_____
U/G Fiber Optics Cable (SUE - LOS B)*	_____
U/G Fiber Optics Cable (SUE - LOS C)*	_____
U/G Fiber Optics Cable (SUE - LOS D)*	_____

### WATER:

Water Manhole	⊙
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
U/G Water Line Test Hole (SUE - LOS A)*	⊙
U/G Water Line (SUE - LOS B)*	_____
U/G Water Line (SUE - LOS C)*	_____
U/G Water Line (SUE - LOS D)*	_____
Above Ground Water Line	_____

### TV:

TV Pedestal	⊠
TV Tower	⊗
U/G TV Cable Hand Hole	⊠
U/G TV Test Hole (SUE - LOS A)*	⊙
U/G TV Cable (SUE - LOS B)*	_____
U/G TV Cable (SUE - LOS C)*	_____
U/G TV Cable (SUE - LOS D)*	_____
U/G Fiber Optic Cable (SUE - LOS B)*	_____
U/G Fiber Optic Cable (SUE - LOS C)*	_____
U/G Fiber Optic Cable (SUE - LOS D)*	_____

### GAS:

Gas Valve	◇
Gas Meter	⊕
U/G Gas Line Test Hole (SUE - LOS A)*	⊙
U/G Gas Line (SUE - LOS B)*	_____
U/G Gas Line (SUE - LOS C)*	_____
U/G Gas Line (SUE - LOS D)*	_____
Above Ground Gas Line	_____

### SANITARY SEWER:

Sanitary Sewer Manhole	⊙
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	_____
Above Ground Sanitary Sewer	_____
SS Force Main Line Test Hole (SUE - LOS A)*	⊙
SS Force Main Line (SUE - LOS B)*	_____
SS Force Main Line (SUE - LOS C)*	_____
SS Force Main Line (SUE - LOS D)*	_____

### MISCELLANEOUS:

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

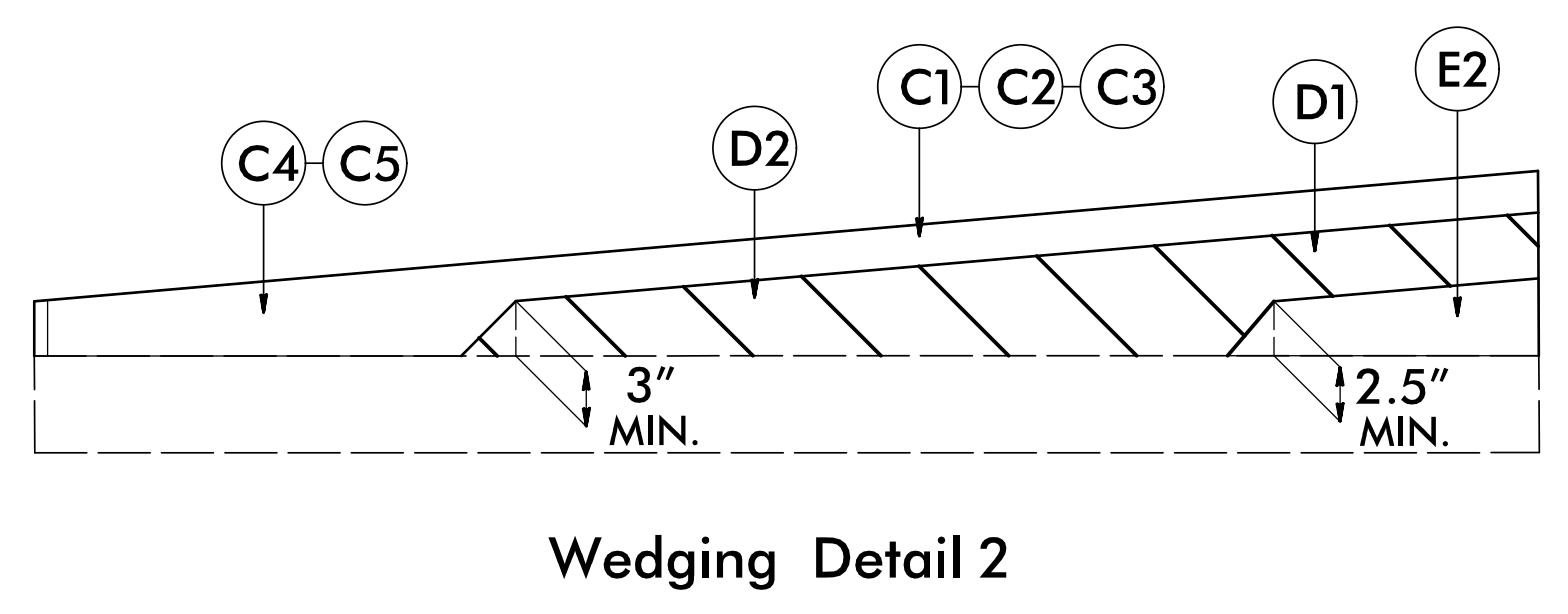
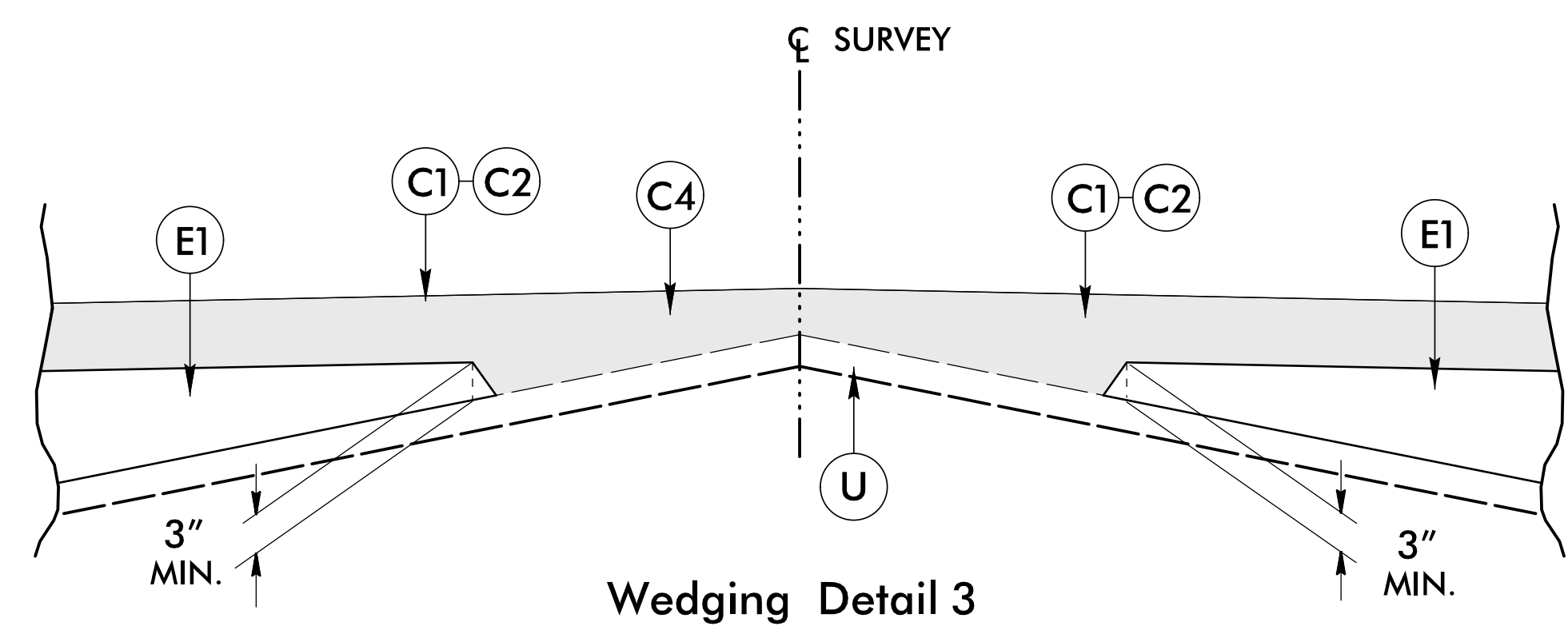
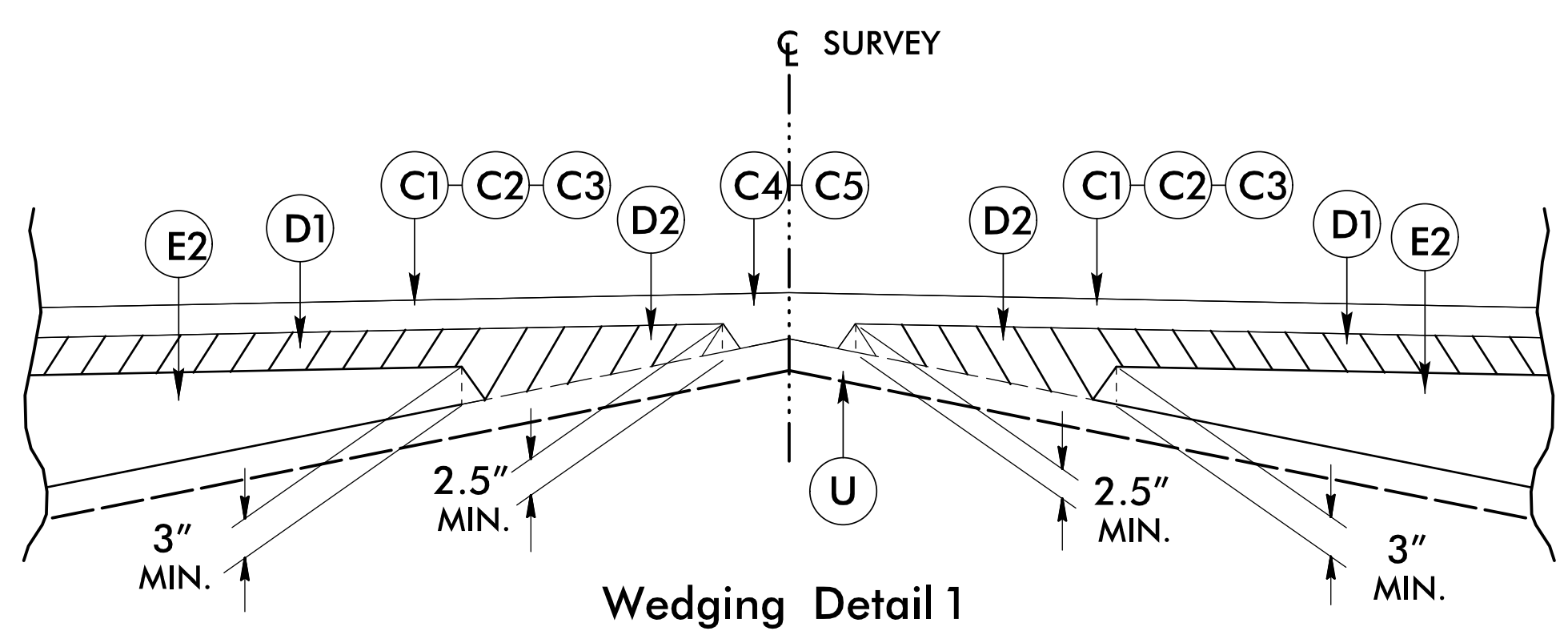
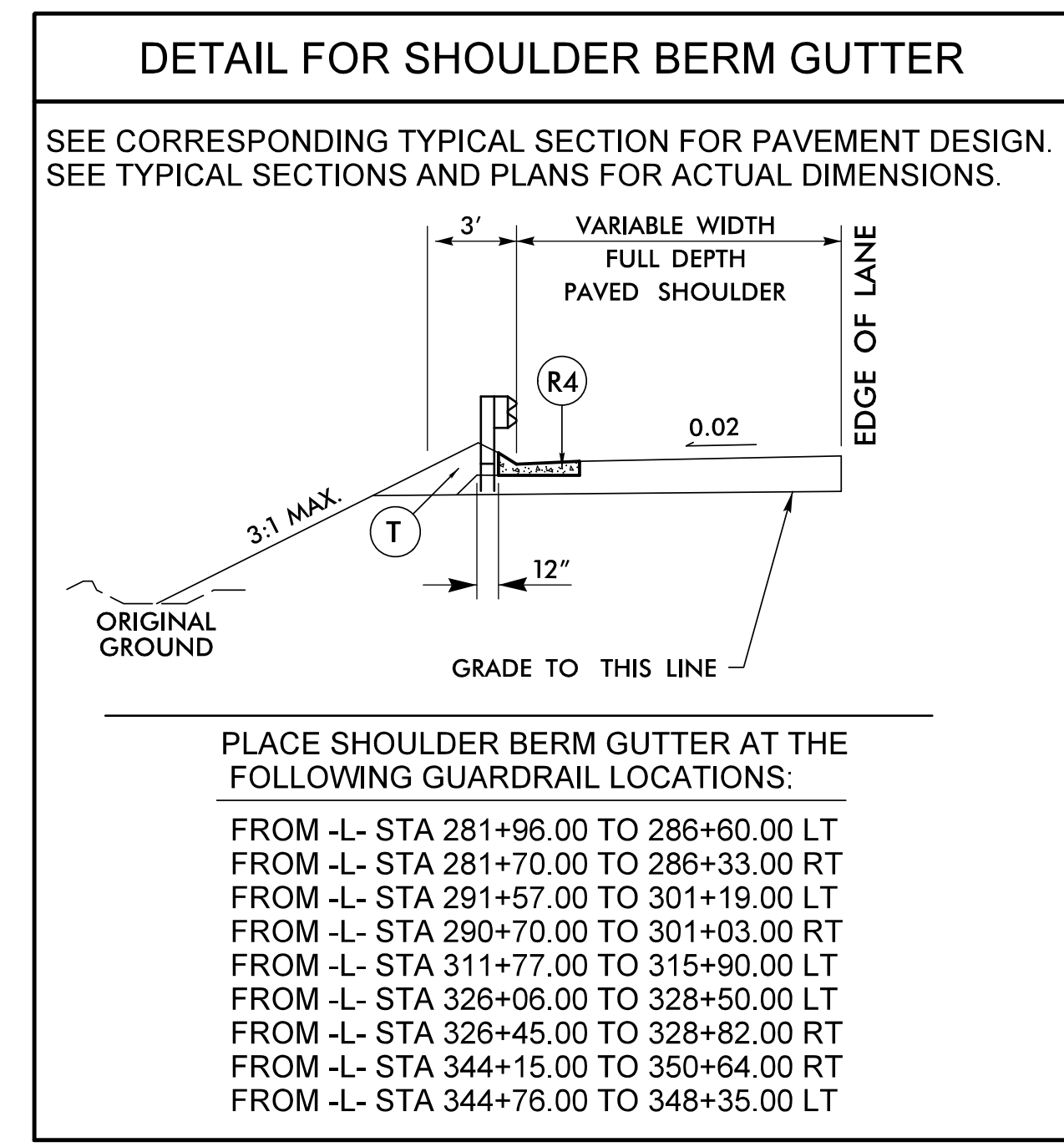


6/22/2022

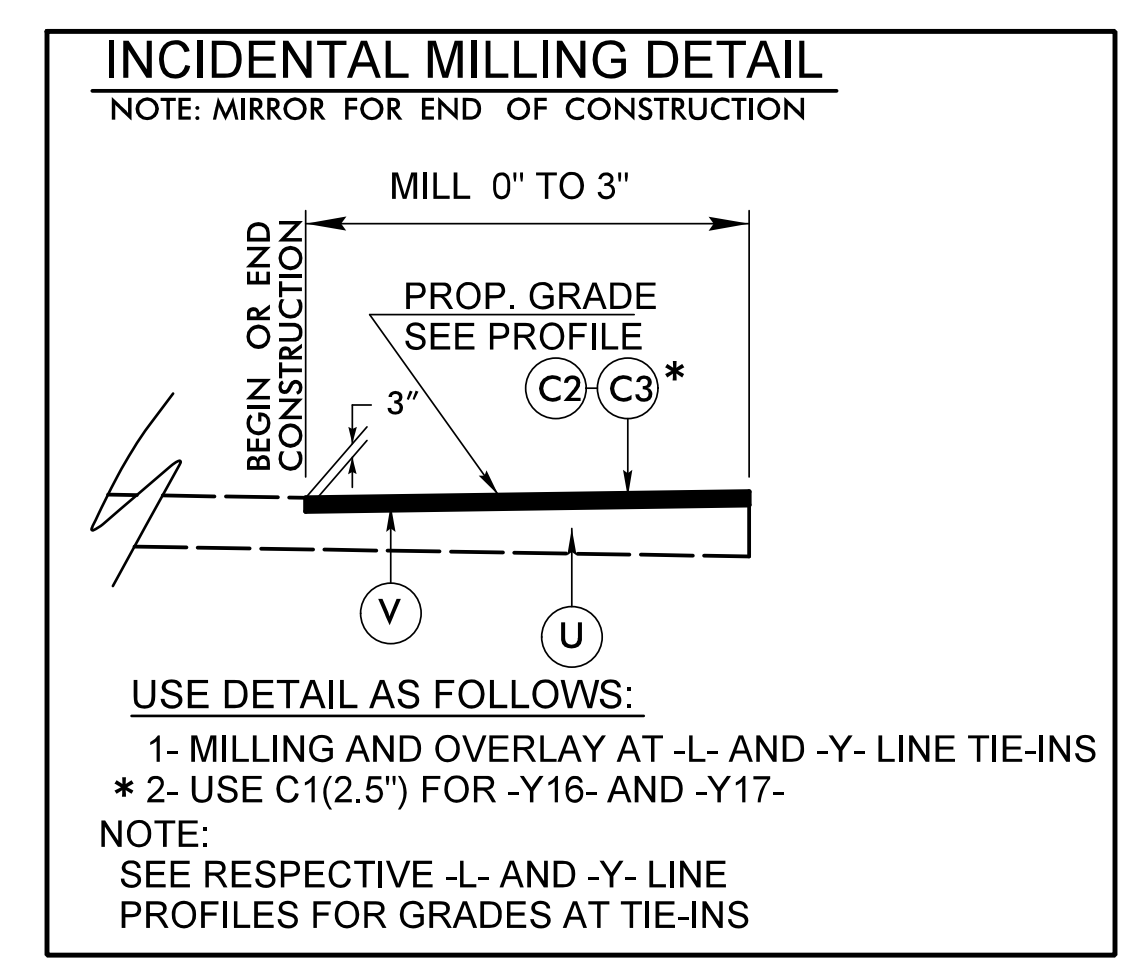
**TGS ENGINEERS**  
 706 HILLSBOROUGH ST. SUITE 200  
 RALEIGH, NC 27603  
 PH (919) 773-8887  
 CORP. LICENSE NO.: C-0275

PROJECT REFERENCE NO. <b>R-5705B</b>	SHEET NO. <b>2A-1</b>
ROADWAY DESIGN ENGINEER <i>[Signature]</i>	PAVEMENT DESIGN ENGINEER <i>[Signature]</i>
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	

PAVEMENT SCHEDULE <i>(FINAL PAVEMENT DESIGN DATED JULY 12, 2022)</i>		
C1	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YARD. IN EACH OF TWO LAYERS	N GEOTEXTILE FOR SOIL STABILIZATION
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YARD. IN EACH OF TWO LAYERS	P PRIME COAT AT THE RATE OF .35 GAL. PER SQ. YD.
C3	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YARD. IN EACH OF TWO LAYERS	R1 2'-6" CONCRETE CURB & GUTTER
C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1" OR GREATER THAN 1.5" IN DEPTH	R2 1'-6" CONCRETE CURB & GUTTER
C5	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1.5" OR GREATER THAN 2" IN DEPTH	R3 5" MONOLITHIC CONCRETE ISLAND (KEYED IN)
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD	R4 CONCRETE SHOULDER BERM GUTTER
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH	S 4" CONCRETE SIDEWALK
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD	T EARTH MATERIAL
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH	U EXISTING PAVEMENT
J1	8" AGGREGATE BASE COURSE	W WEDGING (VARIABLE DEPTH ASPHALT PAVEMENT, SEE DETAIL ON THIS SHEET)
J2	6" AGGREGATE BASE COURSE	PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.
K	PROP. 12" CLASS IV SUBGRADE STABILIZATION	



**PRIVATE DRIVEWAY PAVEMENT DESIGNS**  
 USE C1 OR C2 AND J2 FOR PRIVATE DRIVEWAYS

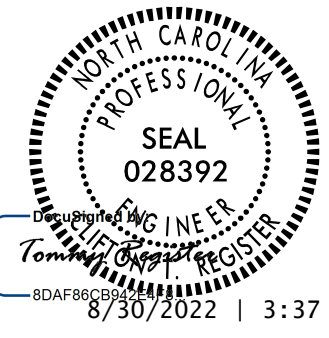
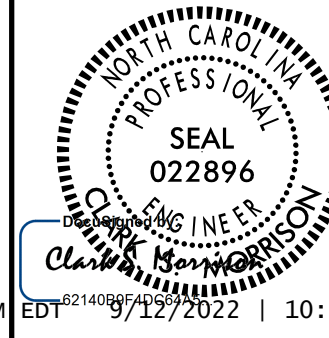


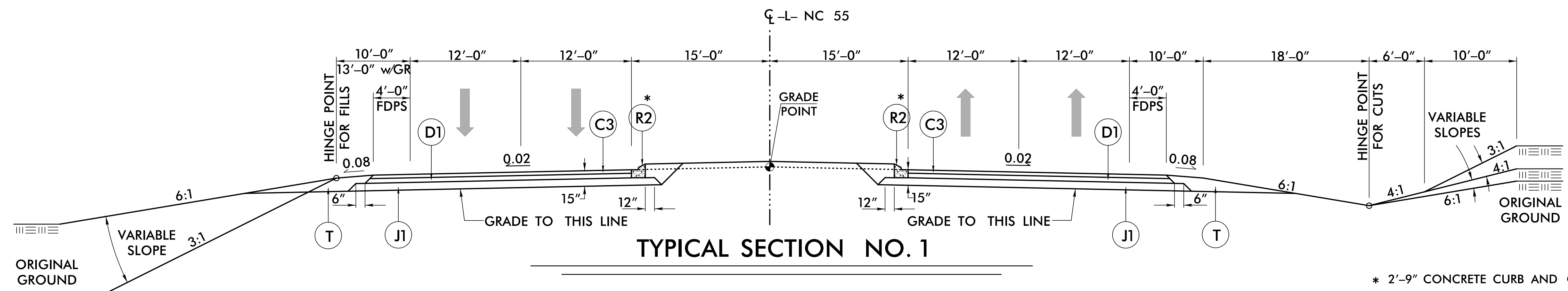
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6/22/22

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN DATED JULY 12, 2022)			
C1	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YARD, IN EACH OF TWO LAYERS	E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YARD, IN EACH OF TWO LAYERS	E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH
C3	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YARD, IN EACH OF TWO LAYERS	J1	8" AGGREGATE BASE COURSE
C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1" OR GREATER THAN 1.5" IN DEPTH	J2	6" AGGREGATE BASE COURSE
C5	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1.5" OR GREATER THAN 2" IN DEPTH	K	PROP. 12" CLASS IV SUBGRADE STABILIZATION
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD	N	GEOTEXTILE FOR SOIL STABILIZATION
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH	P	PRIME COAT AT THE RATE OF .35 GAL. PER SQ. YD.
		R1	2'-6" CONCRETE CURB & GUTTER
		R2	1'-6" CONCRETE CURB & GUTTER
		R3	5" MONOLITHIC CONCRETE ISLAND (KEYED IN)
		R4	CONCRETE SHOULDER BERM GUTTER
		S	4" CONCRETE SIDEWALK
		T	EARTH MATERIAL
		U	EXISTING PAVEMENT
		W	WEDGING (VARIABLE DEPTH ASPHALT PAVEMENT, SEE DETAIL ON SHEET 2A-1)

PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

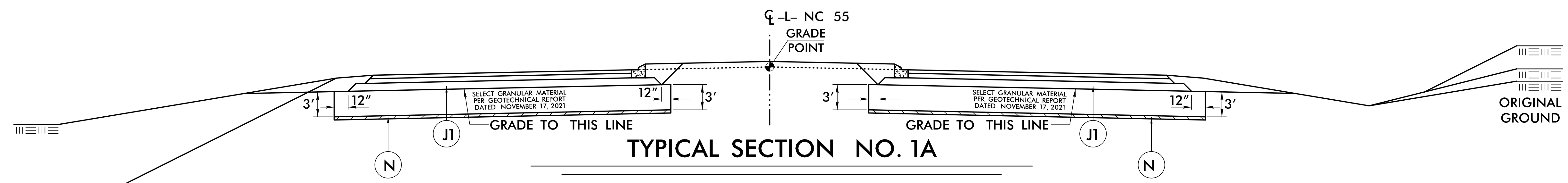
PROJECT REFERENCE NO. <b>R-5705B</b>	SHEET NO. <b>2A-2</b>
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER 
<p><b>DOCUMENT NOT CONSIDERED FINAL</b> <b>UNLESS ALL SIGNATURES COMPLETED</b></p>	
<p>TGS ENGINEERS 706 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275</p>	



**TYPICAL SECTION NO. 1**

USE TYPICAL SECTION NO. 1 AS FOLLOWS:  
FROM -L- STA 246+00.00 TO 378+88.94

\* 2'-9" CONCRETE CURB AND GUTTER LOCATIONS:  
FROM -L- STA 246+00.00 TO 274+15.93 LT  
FROM -L- STA 303+30.73 TO 308+37.22 RT  
FROM -L- STA 310+42.48 TO 315+50.07 RT  
FROM -L- STA 316+38.98 TO 319+54.22 RT  
FROM -L- STA 351+97.90 TO 373+00.00 LT



**TYPICAL SECTION NO. 1A**

USE TYPICAL SECTION NO. 1A IN CONJUNCTION WITH TYPICAL SECTION NO. 1 AS FOLLOWS:  
FROM -L- STA 256+25.00 TO 263+25.00  
FROM -L- STA 265+75.00 TO 281+25.00  
FROM -L- STA 329+25.00 TO 337+75.00  
FROM -L- STA 338+75.00 TO 343+75.00  
FROM -L- STA 350+75.00 TO 361+75.00  
FROM -L- STA 365+75.00 TO 370+75.00


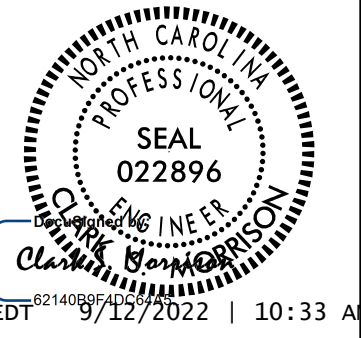
8/1/2022  
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User: jbevans

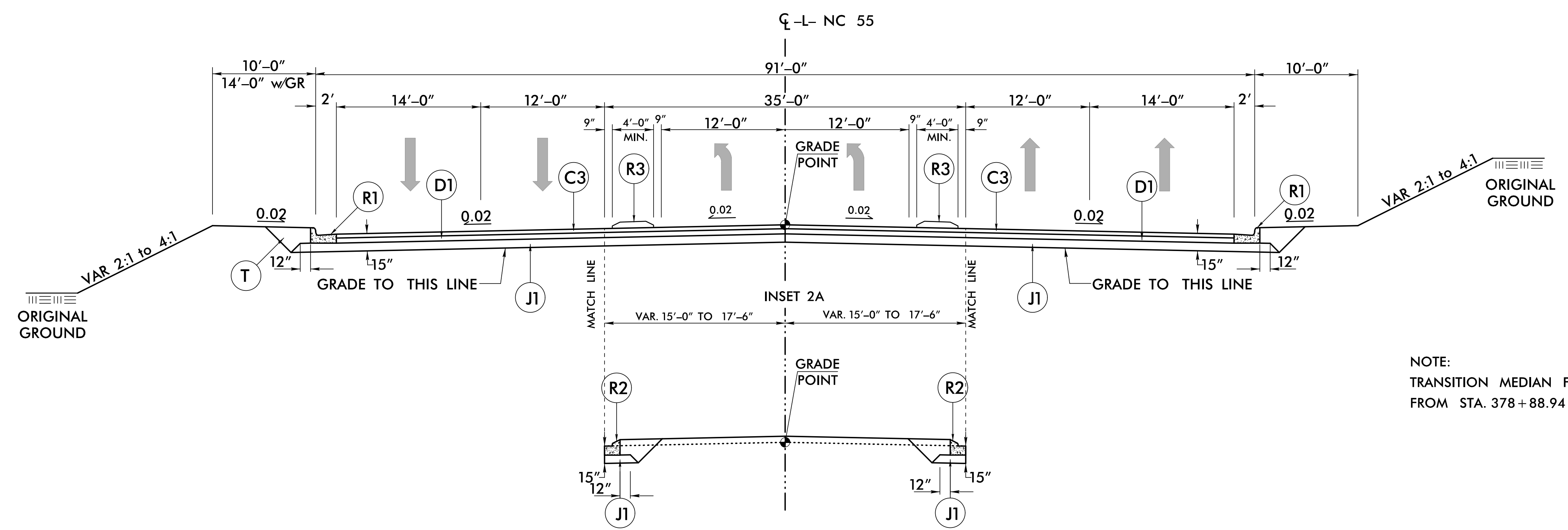


6/2/2023

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN DATED JULY 12, 2022)			
C1	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YARD. IN EACH OF TWO LAYERS	E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YARD. IN EACH OF TWO LAYERS	E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH
C3	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YARD. IN EACH OF TWO LAYERS	J1	8" AGGREGATE BASE COURSE
C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1" OR GREATER THAN 1.5" IN DEPTH	J2	6" AGGREGATE BASE COURSE
C5	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1.5" OR GREATER THAN 2" IN DEPTH	K	PROP. 12" CLASS IV SUBGRADE STABILIZATION
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD	N	GEOTEXTILE FOR SOIL STABILIZATION
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH	P	PRIME COAT AT THE RATE OF .35 GAL. PER SQ. YD.
		R1	2'-6" CONCRETE CURB & GUTTER
		R2	1'-6" CONCRETE CURB & GUTTER
		R3	5" MONOLITHIC CONCRETE ISLAND (KEYED IN)
		R4	CONCRETE SHOULDER BERM GUTTER
		S	4" CONCRETE SIDEWALK
		T	EARTH MATERIAL
		U	EXISTING PAVEMENT
		W	WEDGING (VARIABLE DEPTH ASPHALT PAVEMENT, SEE DETAIL ON SHEET 2A-1)

PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

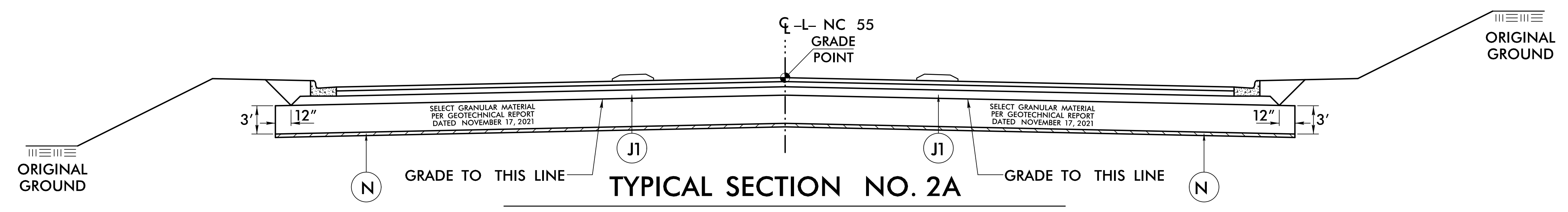
PROJECT REFERENCE NO. <b>R-5705B</b>	SHEET NO. <b>2A-3</b>
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER 
<p><b>DOCUMENT NOT CONSIDERED FINAL</b> <b>UNLESS ALL SIGNATURES COMPLETED</b></p>	
<p>TGS ENGINEERS 706 HILLSBOROUGH ST. SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275</p>	



NOTE:  
TRANSITION MEDIAN FROM 30'-0" TO 35'-0"  
FROM STA. 378+88.94 TO 380+38.94

### TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2 AS FOLLOWS:  
FROM -L- STA 378+88.94 TO 390+70.00  
USE INSET 2A AS FOLLOWS:  
FROM -L- STA 378+88.94 TO 382+11.54



### TYPICAL SECTION NO. 2A

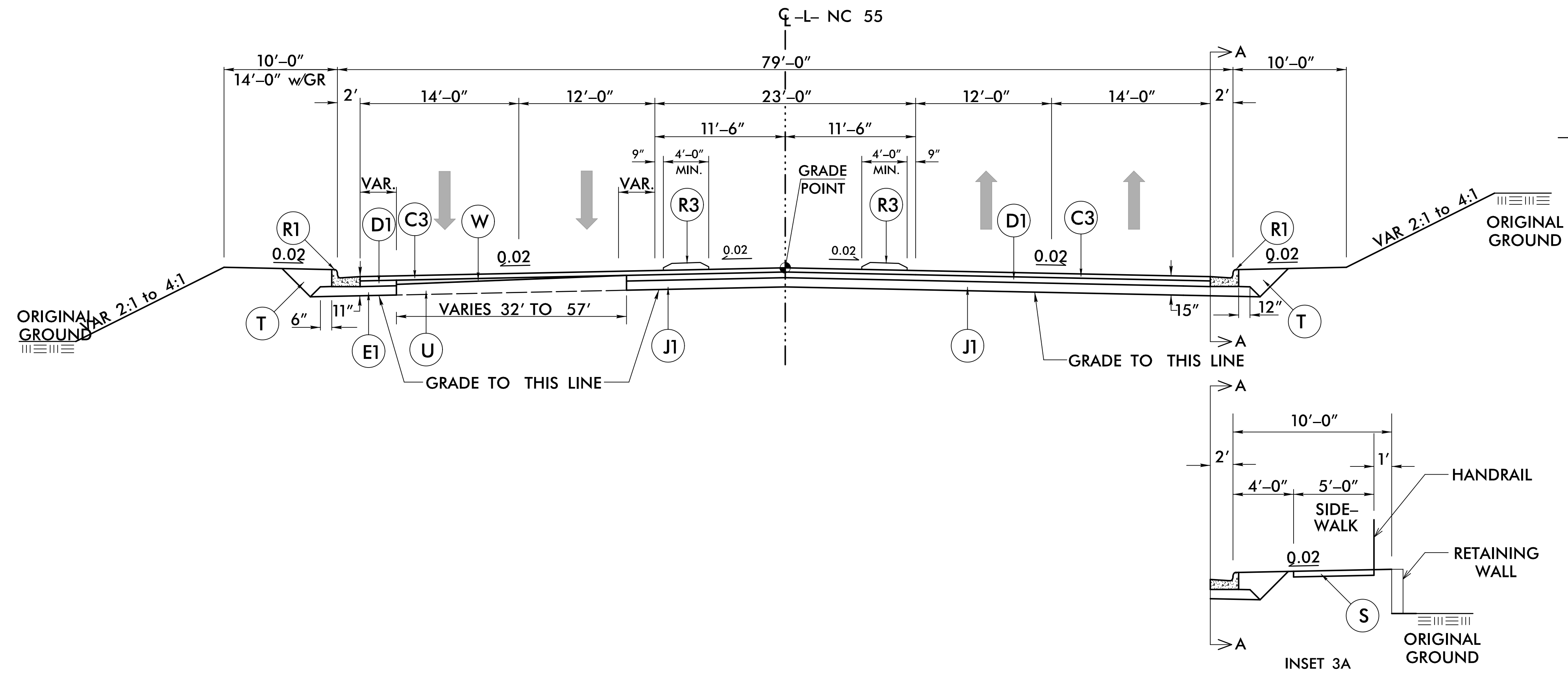
USE TYPICAL SECTION NO. 2A IN CONJUNCTION  
WITH TYPICAL SECTION NO. 2 AS FOLLOWS:  
FROM -L- STA 380+75.00 TO 390+70.00

6/1/2023  
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User: jstevens

6/2/2023

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN DATED JULY 12, 2022)			
C1	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YARD, IN EACH OF TWO LAYERS	E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YARD, IN EACH OF TWO LAYERS	E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH
C3	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YARD, IN EACH OF TWO LAYERS	J1	8" AGGREGATE BASE COURSE
C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1" OR GREATER THAN 1.5" IN DEPTH	J2	6" AGGREGATE BASE COURSE
C5	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1.5" OR GREATER THAN 2" IN DEPTH	K	PROP. 12" CLASS IV SUBGRADE STABILIZATION
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD	N	GEOTEXTILE FOR SOIL STABILIZATION
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH	P	PRIME COAT AT THE RATE OF .35 GAL. PER SQ. YD.
		R1	2'-6" CONCRETE CURB & GUTTER
		R2	1'-6" CONCRETE CURB & GUTTER
		R3	5" MONOLITHIC CONCRETE ISLAND (KEYED IN)
		R4	CONCRETE SHOULDER BERM GUTTER
		S	4" CONCRETE SIDEWALK
		T	EARTH MATERIAL
		U	EXISTING PAVEMENT
		W	WEDGING (VARIABLE DEPTH ASPHALT PAVEMENT, SEE DETAIL ON SHEET 2A-1)

PROJECT REFERENCE NO. <b>R-5705B</b>	SHEET NO. <b>2A-4</b>
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER 
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	
 TGS ENGINEERS 706 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275	

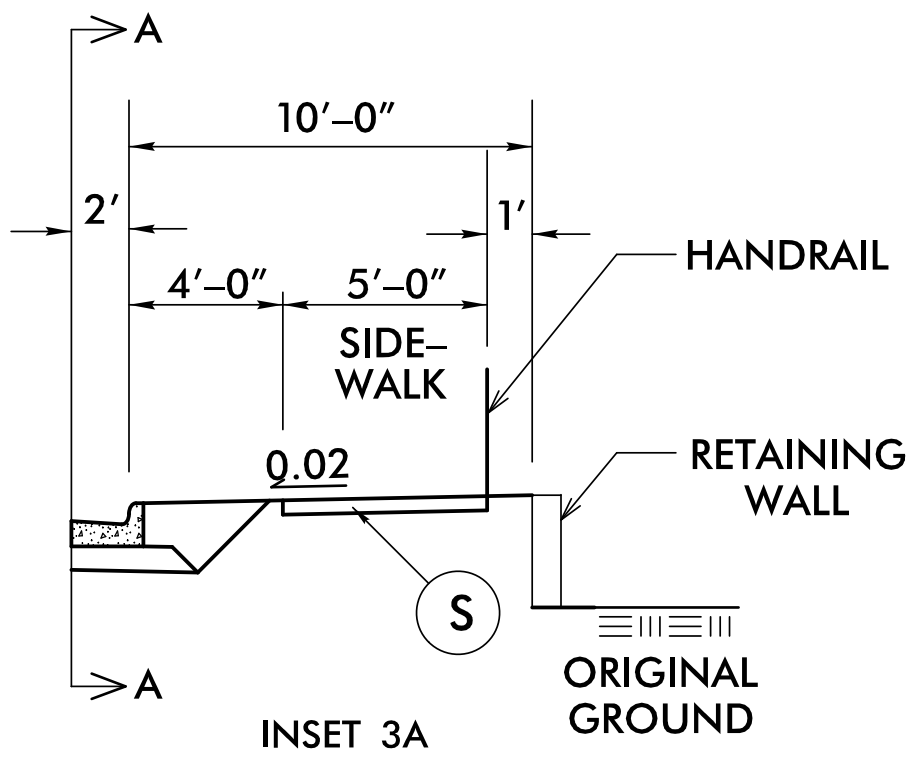


### TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3 AS FOLLOWS:  
 FROM -L- STA. 390+70.00 TO 414+36.29  
 FROM -L- STA. 459+30.79 TO 460+15.00

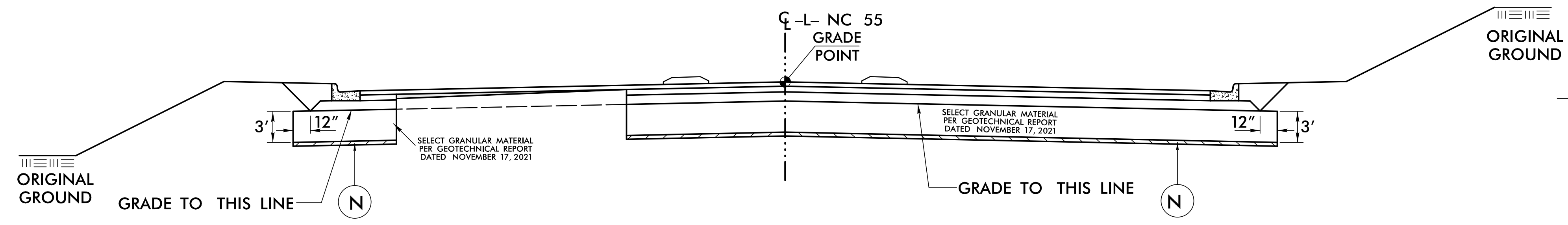
NOTE: USE 11" ALL ASPHALT PAVEMENT DESIGN FOR NARROW WIDENING AREAS LESS THAN 6' IN WIDTH.

EXISTING PAVEMENT LOCATION VARIES WITHIN THE TYPICAL SECTION FROM THE LEFT TO RIGHT SIDE OF THE PROPOSED TYPICAL SECTION, SEE PLANS FOR LOCATIONS.



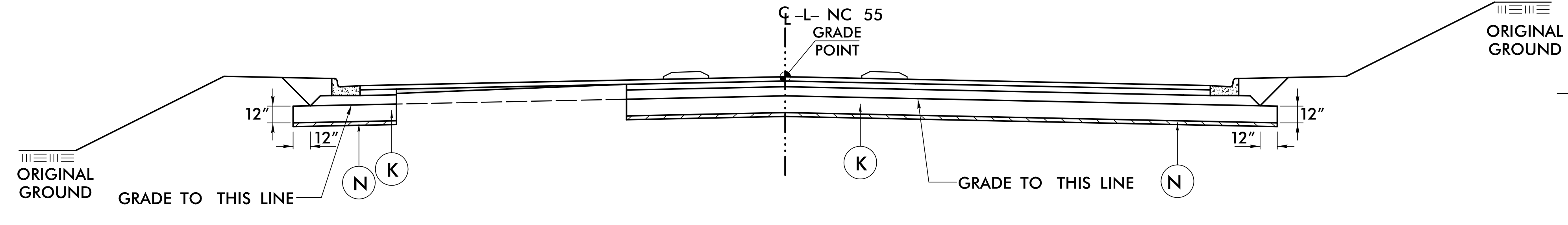
USE INSET 3A AS FOLLOWS:  
 FROM -L- STA. 406+25.00 TO 409+00.00 RT

NOTE:  
 TRANSITION MEDIAN FROM 35'-0" TO 23'-0"  
 FROM STA. 390+70.00 TO 393+70.00



### TYPICAL SECTION NO. 3B

USE TYPICAL SECTION NO. 3B IN CONJUNCTION WITH TYPICAL SECTION NO. 3 AS FOLLOWS:  
 FROM -L- STA 390+70.00 TO 390+75.00



### TYPICAL SECTION NO. 3C

USE TYPICAL SECTION NO. 3C IN CONJUNCTION WITH TYPICAL SECTION NO. 3 AS FOLLOWS:  
 FROM -L- STA 405+75.00 TO 414+36.29  
 FROM -L- STA 459+30.79 TO 460+15.00

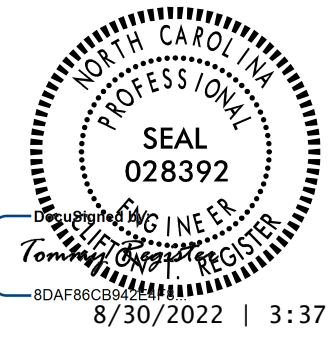
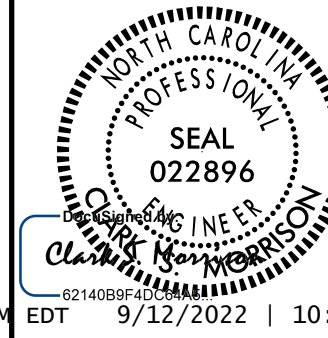
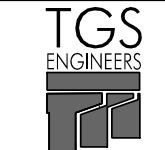
8/1/2023  
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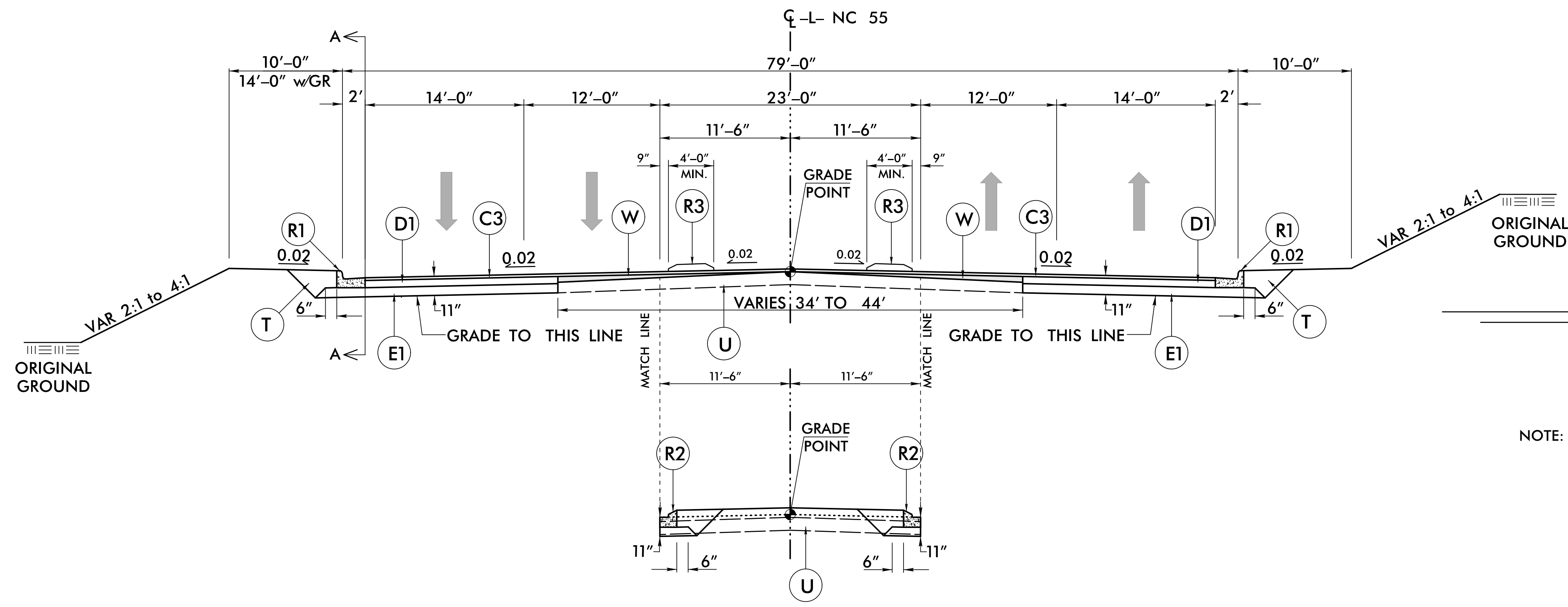


6/2/2023

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN DATED JULY 12, 2022)			
C1	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YARD, IN EACH OF TWO LAYERS	E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YARD, IN EACH OF TWO LAYERS	E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH
C3	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YARD, IN EACH OF TWO LAYERS	J1	8" AGGREGATE BASE COURSE
C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1" OR GREATER THAN 1.5" IN DEPTH	J2	6" AGGREGATE BASE COURSE
C5	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1.5" OR GREATER THAN 2" IN DEPTH	K	PROP. 12" CLASS IV SUBGRADE STABILIZATION
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD	N	GEOTEXTILE FOR SOIL STABILIZATION
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH	P	PRIME COAT AT THE RATE OF .35 GAL. PER SQ. YD.
		R1	2'-6" CONCRETE CURB & GUTTER
		R2	1'-6" CONCRETE CURB & GUTTER
		R3	5" MONOLITHIC CONCRETE ISLAND (KEYED IN)
		R4	CONCRETE SHOULDER BERM GUTTER
		S	4" CONCRETE SIDEWALK
		T	EARTH MATERIAL
		U	EXISTING PAVEMENT
		W	WEDGING (VARIABLE DEPTH ASPHALT PAVEMENT, SEE DETAIL ON SHEET 2A-1)

PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

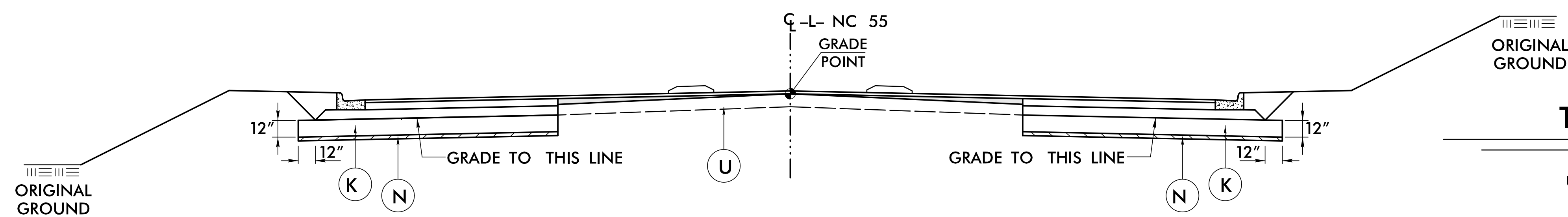
PROJECT REFERENCE NO. <b>R-5705B</b>	SHEET NO. <b>2A-5</b>
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER 
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	
 <b>TGS ENGINEERS</b> 706 HILLSBOROUGH ST. SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275	



### TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4 AS FOLLOWS:  
 FROM -L- STA. 414+36.29 TO 415+34.21 BK  
 FROM -L- STA. 415+42.21 AH TO 424+40.00  
 FROM -L- STA. 435+70.00 TO 447+04.09

NOTE: REMOVE AND REPLACE THE EXISTING PAVEMENT WITHIN THE EXISTING LEFT (SOUTHBOUND) LANE FROM -L- STA 414+59.00 TO STA 416+59.00  
 REMOVE AND REPLACE THE EXISTING PAVEMENT WITHIN THE EXISTING CENTER LANE FROM -L- STA 441+01.00 TO STA 443+01.00



### TYPICAL SECTION NO. 4A

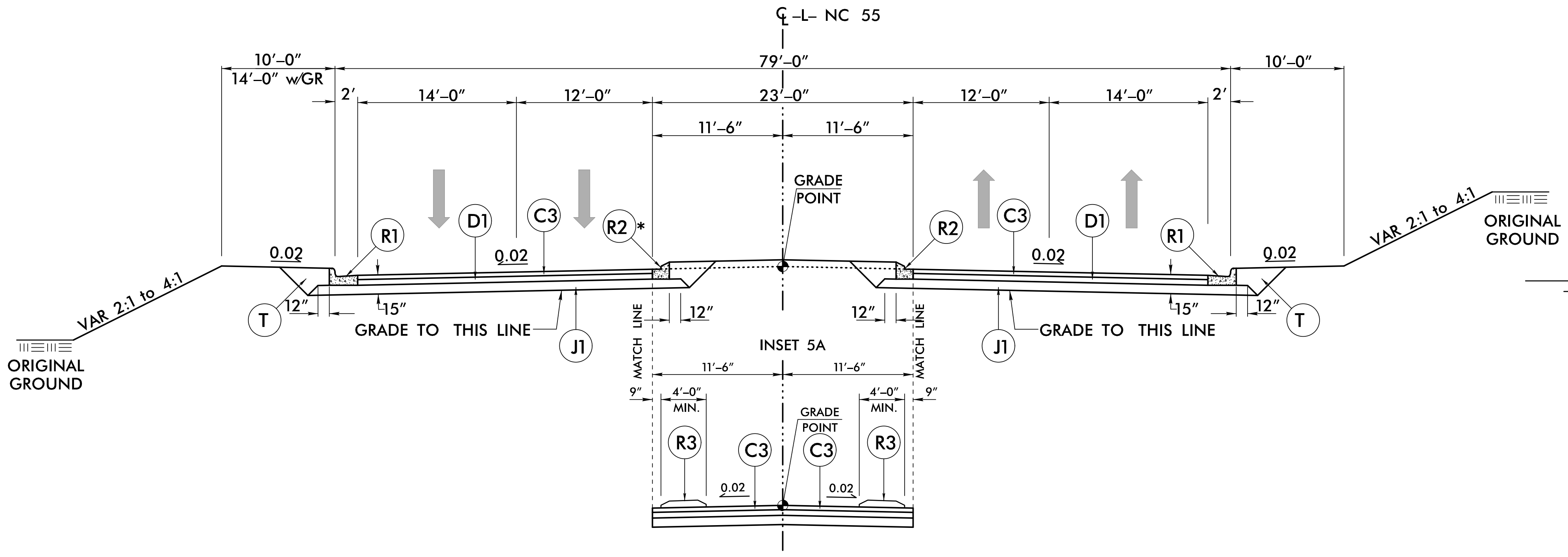
USE TYPICAL SECTION NO. 4A IN CONJUNCTION WITH TYPICAL SECTION NO. 4 AS FOLLOWS:  
 FROM -L- STA 414+36.29 TO 415+34.21 BK  
 FROM -L- STA 415+42.21 AH TO 424+40.00  
 FROM -L- STA 435+75.00 TO 441+75.00

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6/2/2023

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN DATED JULY 12, 2022)			
C1	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YARD. IN EACH OF TWO LAYERS	E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YARD. IN EACH OF TWO LAYERS	E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH
C3	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YARD. IN EACH OF TWO LAYERS	J1	8" AGGREGATE BASE COURSE
C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1" OR GREATER THAN 1.5" IN DEPTH	J2	6" AGGREGATE BASE COURSE
C5	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1.5" OR GREATER THAN 2" IN DEPTH	K	PROP. 12" CLASS IV SUBGRADE STABILIZATION
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD	N	GEOTEXTILE FOR SOIL STABILIZATION
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH	P	PRIME COAT AT THE RATE OF .35 GAL. PER SQ. YD.
		R1	2'-6" CONCRETE CURB & GUTTER
		R2	1'-6" CONCRETE CURB & GUTTER
		R3	5" MONOLITHIC CONCRETE ISLAND (KEYED IN)
		R4	CONCRETE SHOULDER BERM GUTTER
		S	4" CONCRETE SIDEWALK
		T	EARTH MATERIAL
		U	EXISTING PAVEMENT
		W	WEDGING (VARIABLE DEPTH ASPHALT PAVEMENT, SEE DETAIL ON SHEET 2A-1)

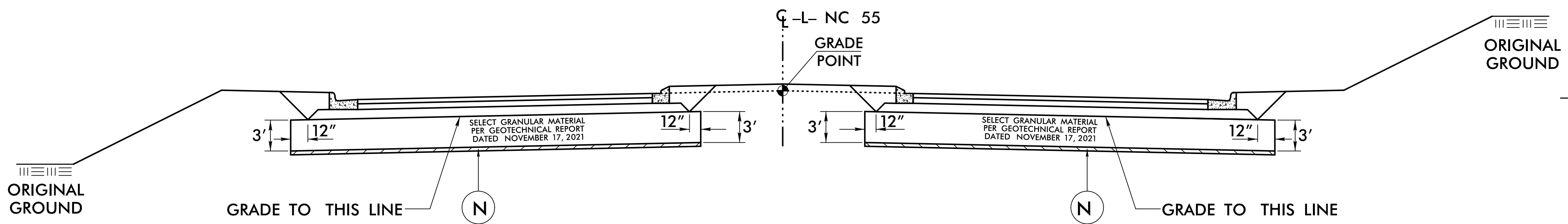
PROJECT REFERENCE NO. <b>R-5705B</b>	SHEET NO. <b>2A-6</b>
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER 
<p><b>DOCUMENT NOT CONSIDERED FINAL</b> <b>UNLESS ALL SIGNATURES COMPLETED</b></p>	
<p>TGS ENGINEERS 706 HILLSBOROUGH ST. SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275</p>	



### TYPICAL SECTION NO. 5

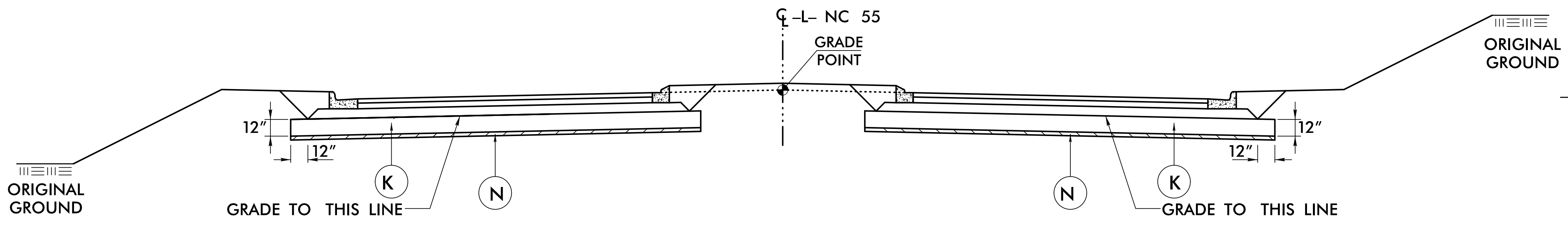
USE TYPICAL SECTION NO. 5 AS FOLLOWS:  
 FROM -L- STA 424+40.00 TO 435+70.00  
 FROM -L- STA 460+15.00 TO 479+39.87

\* 2'-9" CONCRETE CURB AND GUTTER LOCATIONS:  
 FROM -L- STA 469+62.70 TO 476+56.95  
 USE INSET 5A AS FOLLOWS:  
 FROM -L- STA 424+40.00 TO 426+90.68



### TYPICAL SECTION NO. 5B

USE TYPICAL SECTION NO. 5B IN CONJUNCTION WITH TYPICAL SECTION NO. 5 AS FOLLOWS:  
 FROM -L- STA 468+25.00 TO 471+75.00



### TYPICAL SECTION NO. 5C

USE TYPICAL SECTION NO. 5C IN CONJUNCTION WITH TYPICAL SECTION NO. 5 AS FOLLOWS:  
 FROM -L- STA 424+40.00 TO 431+75.00  
 FROM -L- STA 460+15.00 TO 461+25.00

6/1/2023  
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 User: tjeans







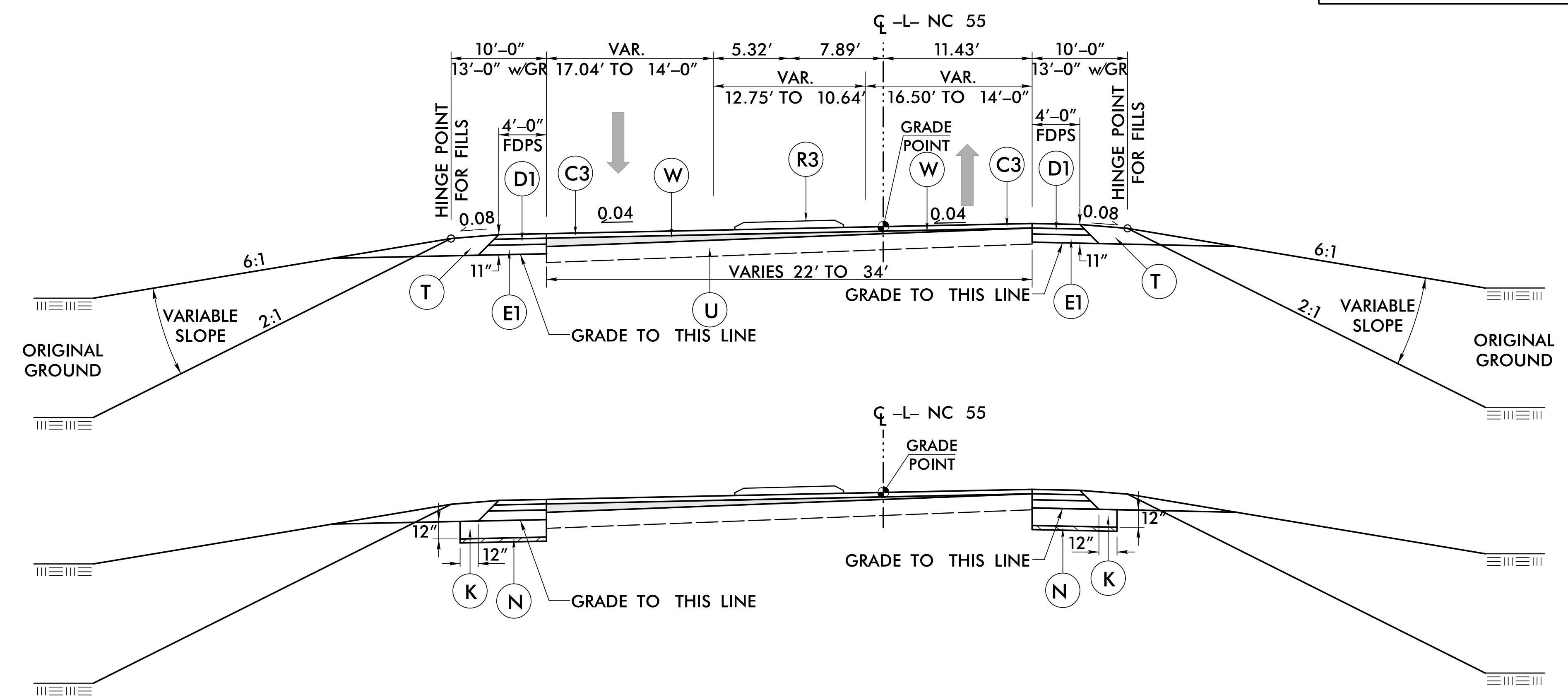


6/2/2022

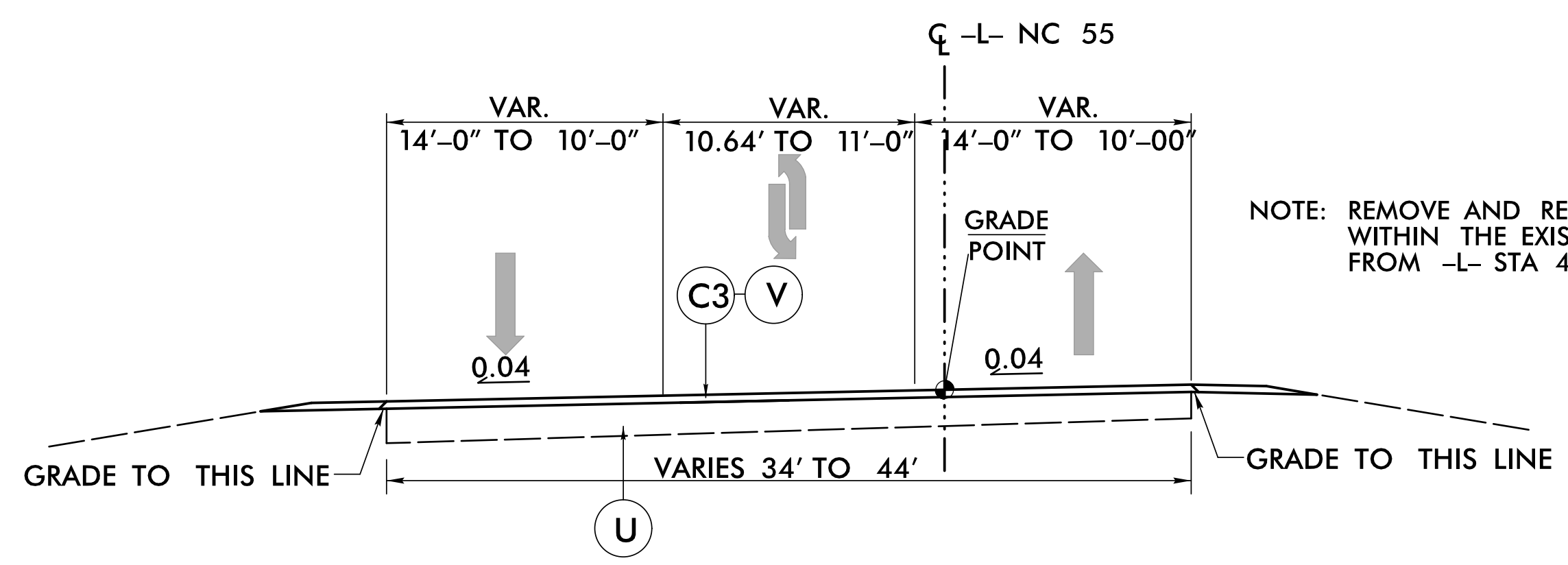
PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN DATED JULY 12, 2022)			
C1	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YARD. IN EACH OF TWO LAYERS	E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YARD. IN EACH OF TWO LAYERS	E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH
C3	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YARD. IN EACH OF TWO LAYERS	J1	8" AGGREGATE BASE COURSE
C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1" OR GREATER THAN 1.5" IN DEPTH	J2	6" AGGREGATE BASE COURSE
C5	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1.5" OR GREATER THAN 2" IN DEPTH	K	PROP. 12" CLASS IV SUBGRADE STABILIZATION
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD	N	GEOTEXTILE FOR SOIL STABILIZATION
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH	P	PRIME COAT AT THE RATE OF .35 GAL. PER SQ. YD.
		R1	2'-6" CONCRETE CURB & GUTTER
		R2	1'-6" CONCRETE CURB & GUTTER
		R3	5" MONOLITHIC CONCRETE ISLAND (KEYED IN)
		R4	CONCRETE SHOULDER BERM GUTTER
		S	4" CONCRETE SIDEWALK
		T	EARTH MATERIAL
		U	EXISTING PAVEMENT
		W	WEDGING (VARIABLE DEPTH ASPHALT PAVEMENT, SEE DETAIL ON SHEET 2A-1)

PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

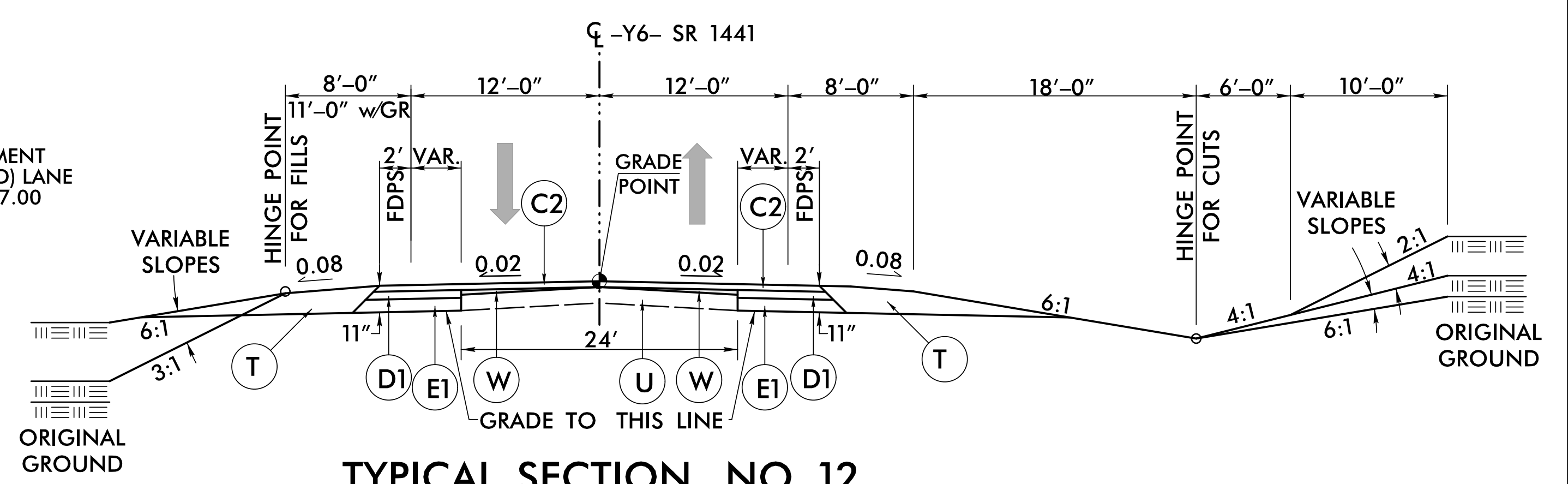
PROJECT REFERENCE NO. <b>R-5705B</b>	SHEET NO. <b>2A-9</b>
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER 
<p><b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b></p>	
<p>TGS ENGINEERS 706 HILLSBOROUGH ST. SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275</p>	



NOTE: REMOVE THE EXISTING PAVEMENT AND REPLACE WITH FULL DEPTH PAVEMENT FROM -L- STA 483+51.76 TO STA 483+69.00  
REMOVE AND REPLACE THE EXISTING PAVEMENT WITHIN THE EXISTING RIGHT (NORTHBOUND) LANE FROM -L- STA 483+69.00 TO STA 484+50.00



NOTE: REMOVE AND REPLACE THE EXISTING PAVEMENT WITHIN THE EXISTING RIGHT (NORTHBOUND) LANE FROM -L- STA 484+50.00 TO STA 485+57.00

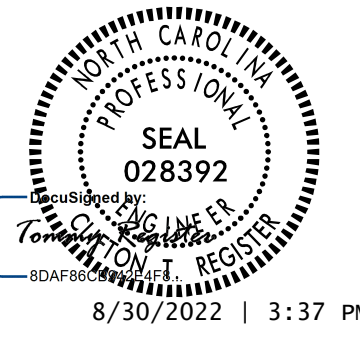
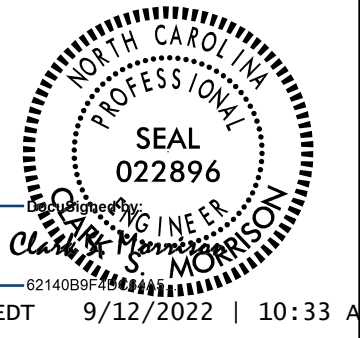


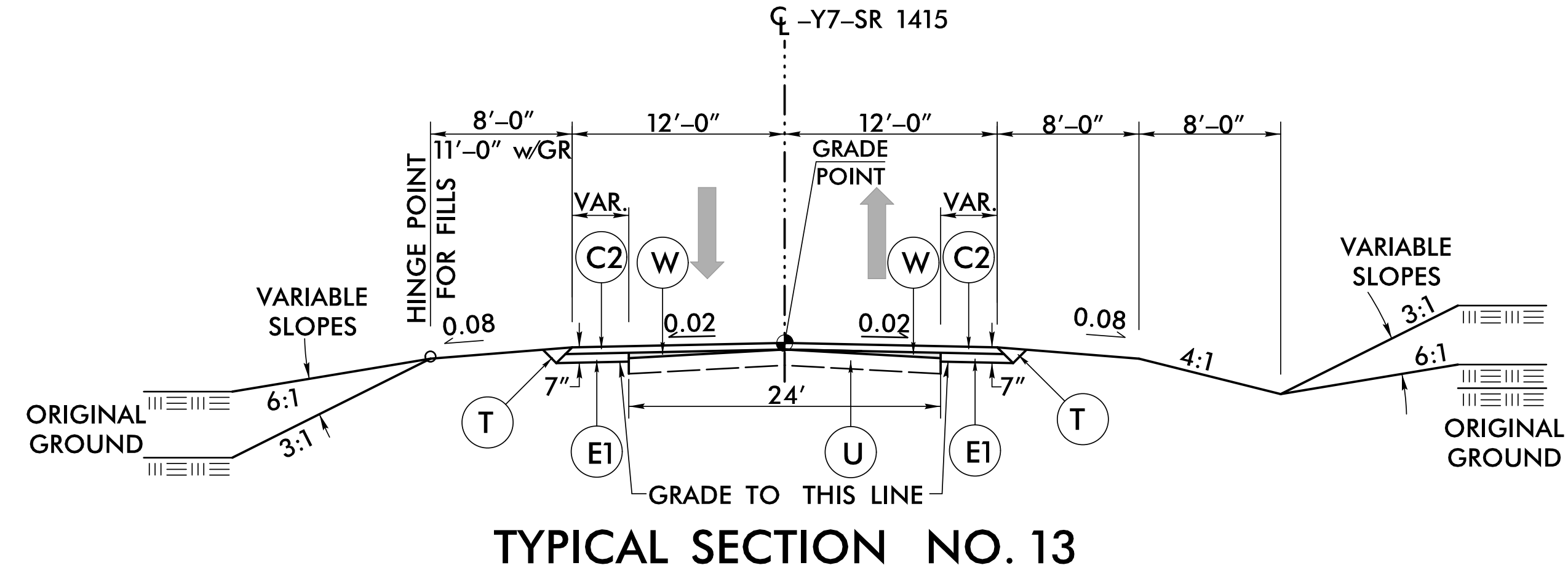
USE TYPICAL SECTION NO. 12 AS FOLLOWS:  
FROM -Y6- STA 12+25.00 TO STA 14+94.81  
FROM -Y6- STA 15+85.18 TO STA 18+00.00

6/1/2022  
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User:rs5705b

6/22/22

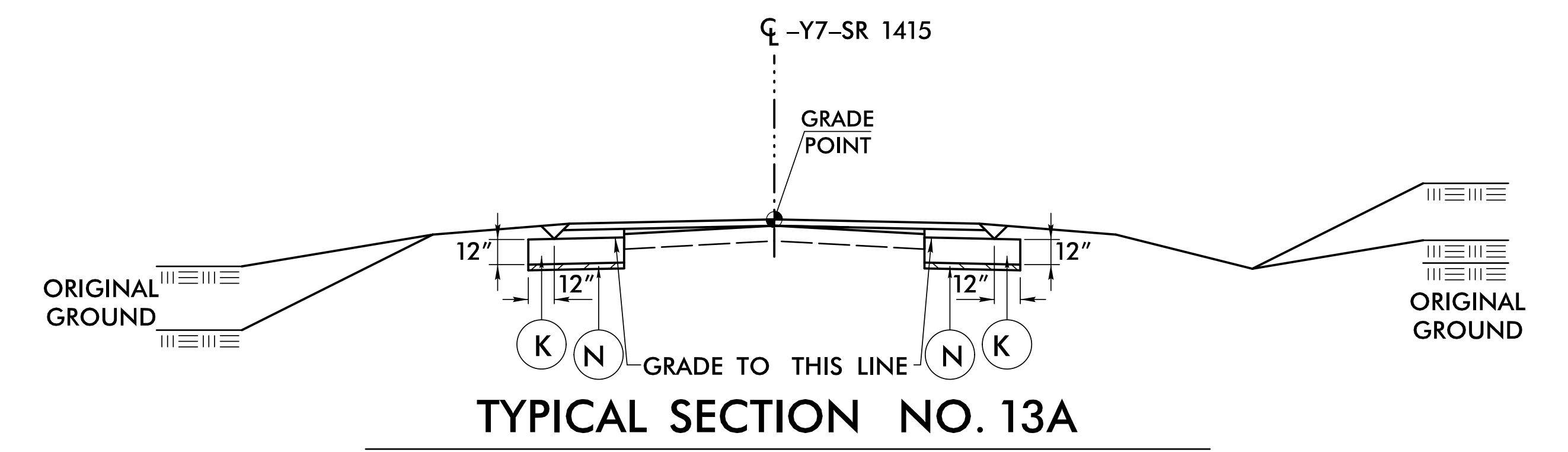
PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN DATED JULY 12, 2022)			
C1	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YARD. IN EACH OF TWO LAYERS	E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YARD. IN EACH OF TWO LAYERS	E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH
C3	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YARD. IN EACH OF TWO LAYERS	J1	8" AGGREGATE BASE COURSE
C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1" OR GREATER THAN 1.5" IN DEPTH	J2	6" AGGREGATE BASE COURSE
C5	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1.5" OR GREATER THAN 2" IN DEPTH	K	PROP. 12" CLASS IV SUBGRADE STABILIZATION
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD	N	GEOTEXTILE FOR SOIL STABILIZATION
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH	T	EARTH MATERIAL
		U	EXISTING PAVEMENT
		W	WEDGING (VARIABLE DEPTH ASPHALT PAVEMENT, SEE DETAIL ON SHEET 2A-1)

PROJECT REFERENCE NO. <b>R-5705B</b>	SHEET NO. <b>2A-10</b>
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER 
<p><b>DOCUMENT NOT CONSIDERED FINAL</b> <b>UNLESS ALL SIGNATURES COMPLETED</b></p>	
<p>TGS ENGINEERS 706 HILLSBOROUGH ST. SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275</p>	



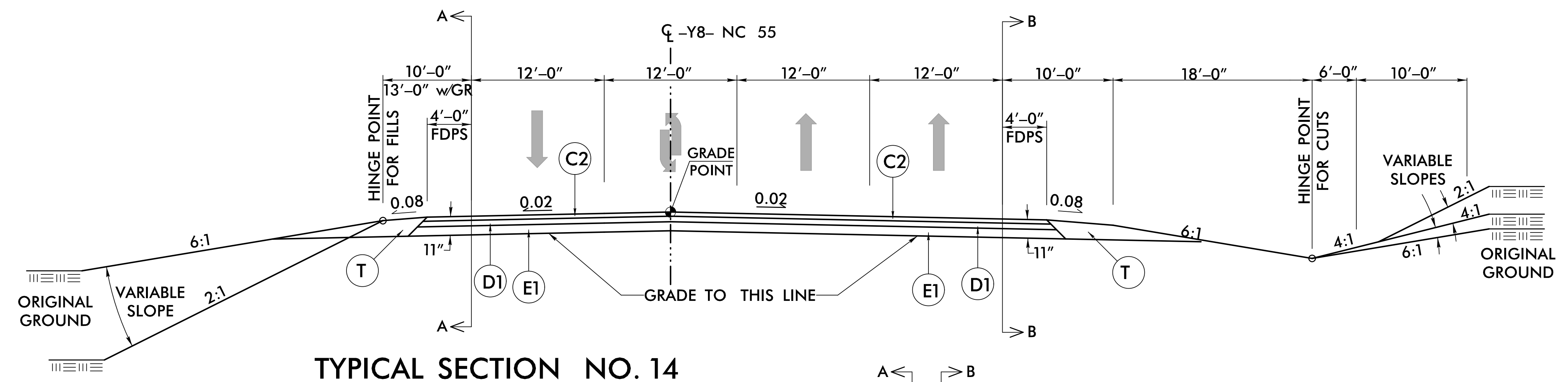
**TYPICAL SECTION NO. 13**

USE TYPICAL SECTION NO. 13 AS FOLLOWS:  
FROM -Y7- STA 11+25.00 TO STA 12+76.80  
FROM -Y7- STA 13+55.18 TO STA 15+00.00



**TYPICAL SECTION NO. 13A**

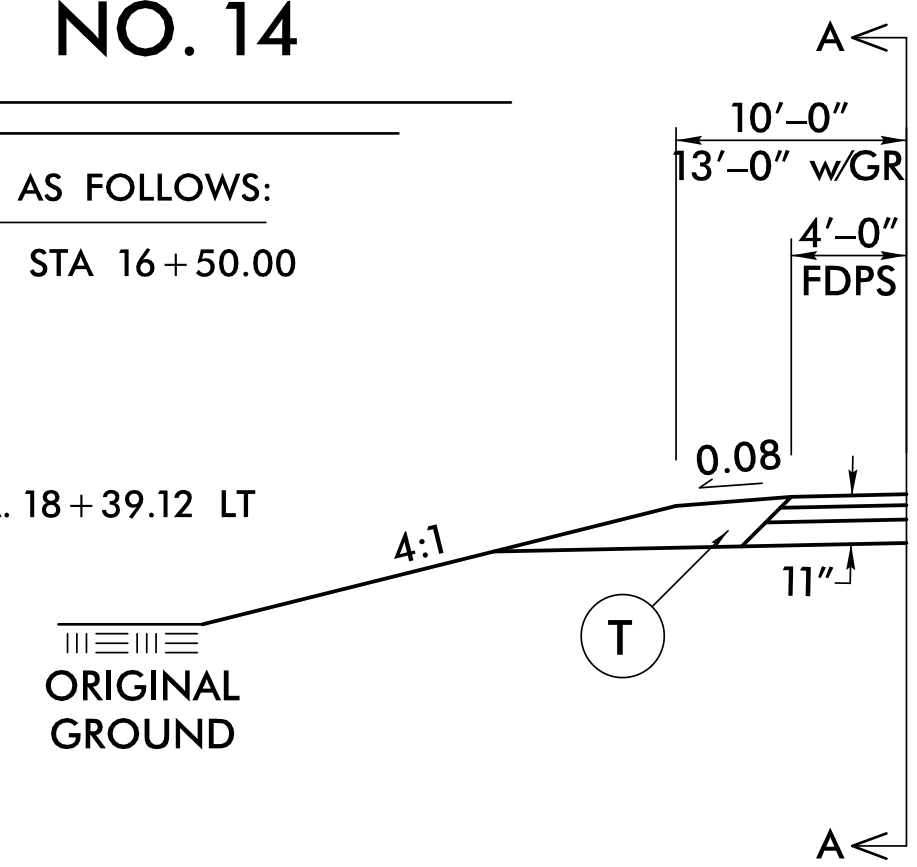
USE TYPICAL SECTION NO. 13A IN CONJUNCTION WITH TYPICAL SECTION NO. 13 AS FOLLOWS:  
FROM -Y7- STA. 13+60.00 TO 15+00.00



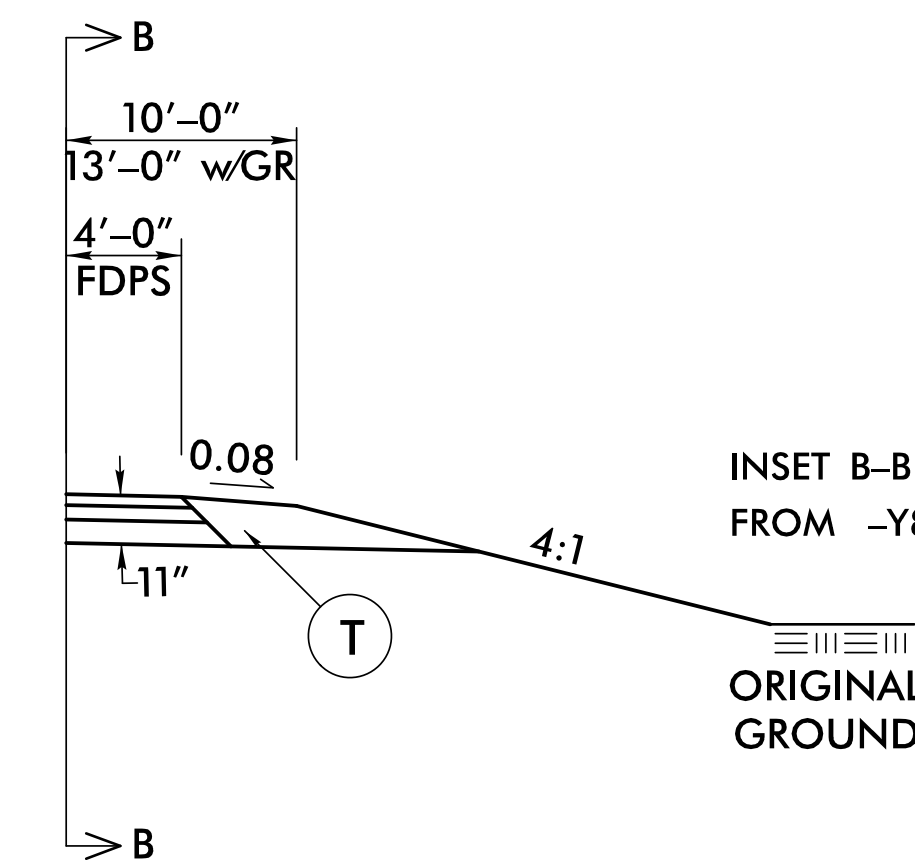
**TYPICAL SECTION NO. 14**

USE TYPICAL SECTION NO. 14 AS FOLLOWS:  
FROM -Y8- STA 10+43.50 TO STA 16+50.00

INSET A-A  
FROM -Y8- STA. 16+00 TO STA. 18+39.12 LT



INSET B-B  
FROM -Y8- STA. 13+00 TO STA. 18+00.00 RT



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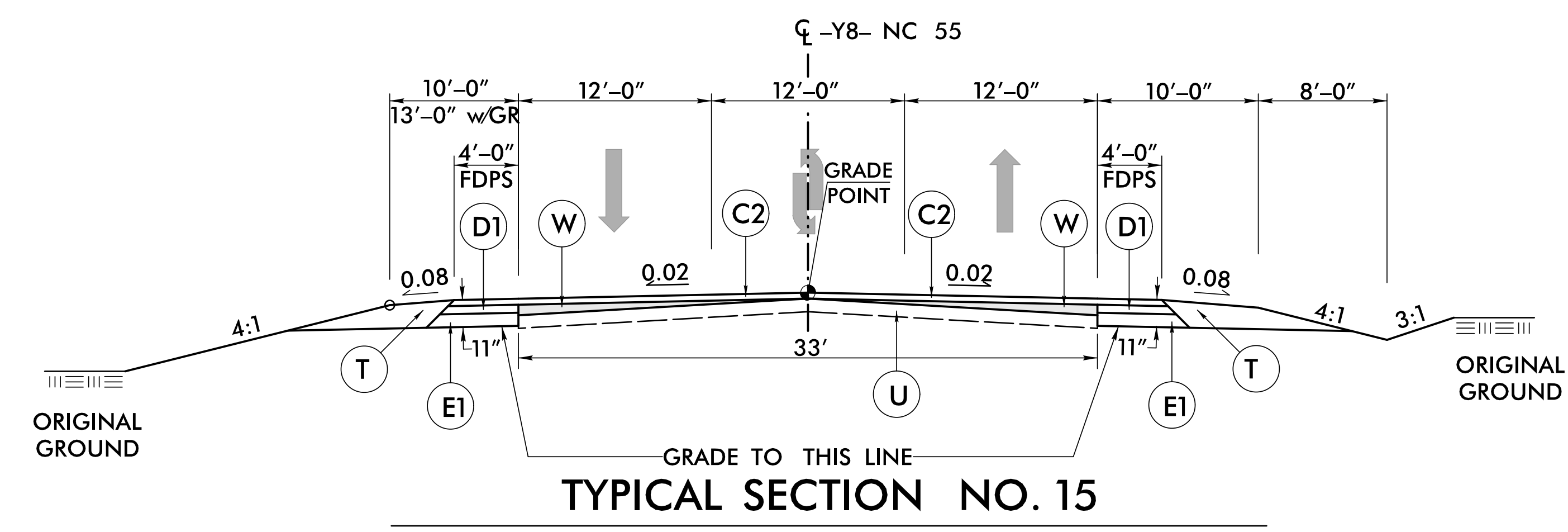


6/2/2023

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN DATED JULY 12, 2022)			
C1	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YARD. IN EACH OF TWO LAYERS	E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YARD. IN EACH OF TWO LAYERS	E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH
C3	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YARD. IN EACH OF TWO LAYERS	J1	8" AGGREGATE BASE COURSE
C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1" OR GREATER THAN 1.5" IN DEPTH	J2	6" AGGREGATE BASE COURSE
C5	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1.5" OR GREATER THAN 2" IN DEPTH	K	PROP. 12" CLASS IV SUBGRADE STABILIZATION
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD	N	GEOTEXTILE FOR SOIL STABILIZATION
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH	P	PRIME COAT AT THE RATE OF .35 GAL. PER SQ. YD.
		R1	2'-6" CONCRETE CURB & GUTTER
		R2	1'-6" CONCRETE CURB & GUTTER
		R3	5" MONOLITHIC CONCRETE ISLAND (KEYED IN)
		R4	CONCRETE SHOULDER BERM GUTTER
		S	4" CONCRETE SIDEWALK
		T	EARTH MATERIAL
		U	EXISTING PAVEMENT
		W	WEDGING (VARIABLE DEPTH ASPHALT PAVEMENT, SEE DETAIL ON SHEET 2A-1)

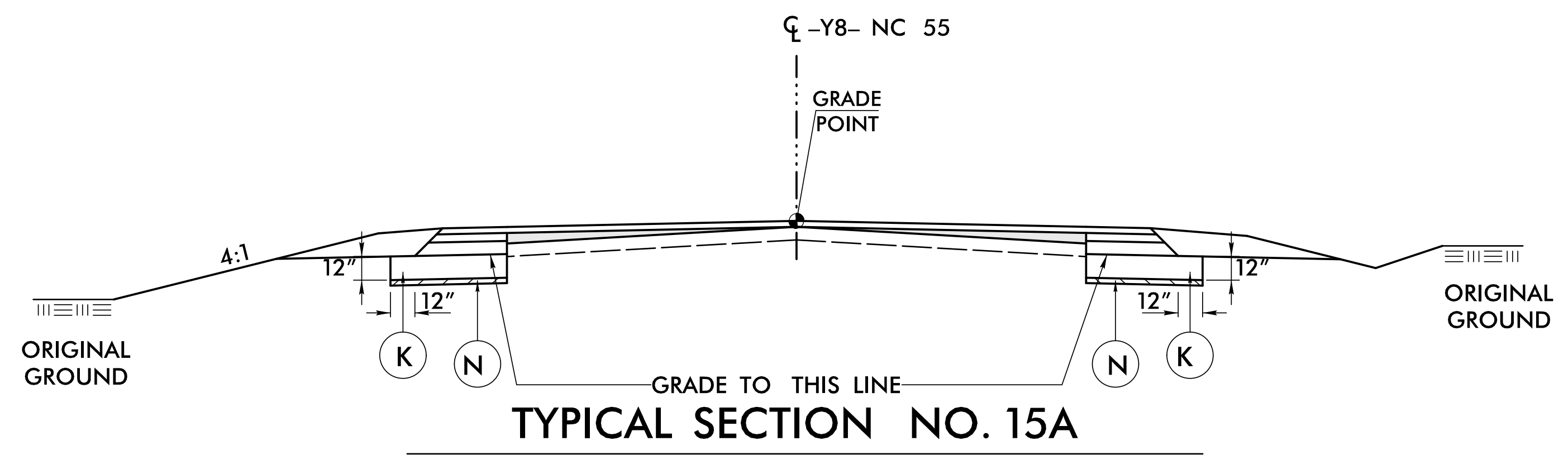
PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

PROJECT REFERENCE NO. <b>R-5705B</b>	SHEET NO. <b>2A-11</b>
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER 
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	
 TGS ENGINEERS 706 HILLSBOROUGH ST. SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275	



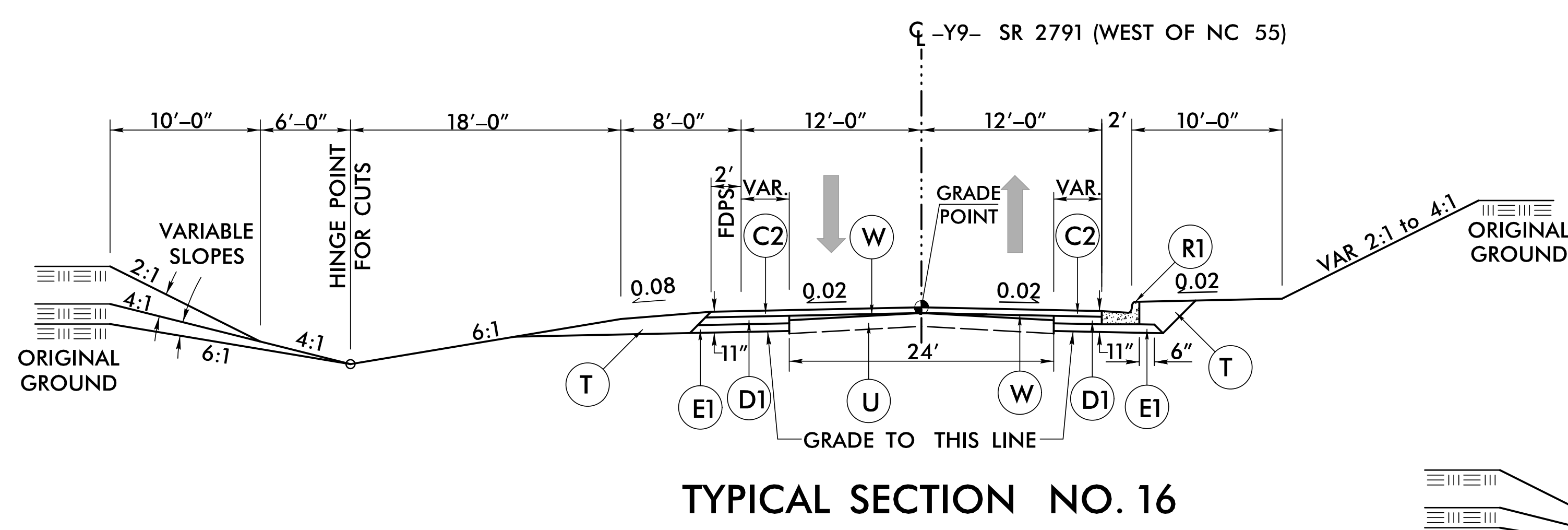
**TYPICAL SECTION NO. 15**

USE TYPICAL SECTION NO. 15 AS FOLLOWS:  
FROM -Y8- STA 16+50.00 TO STA 22+38.00



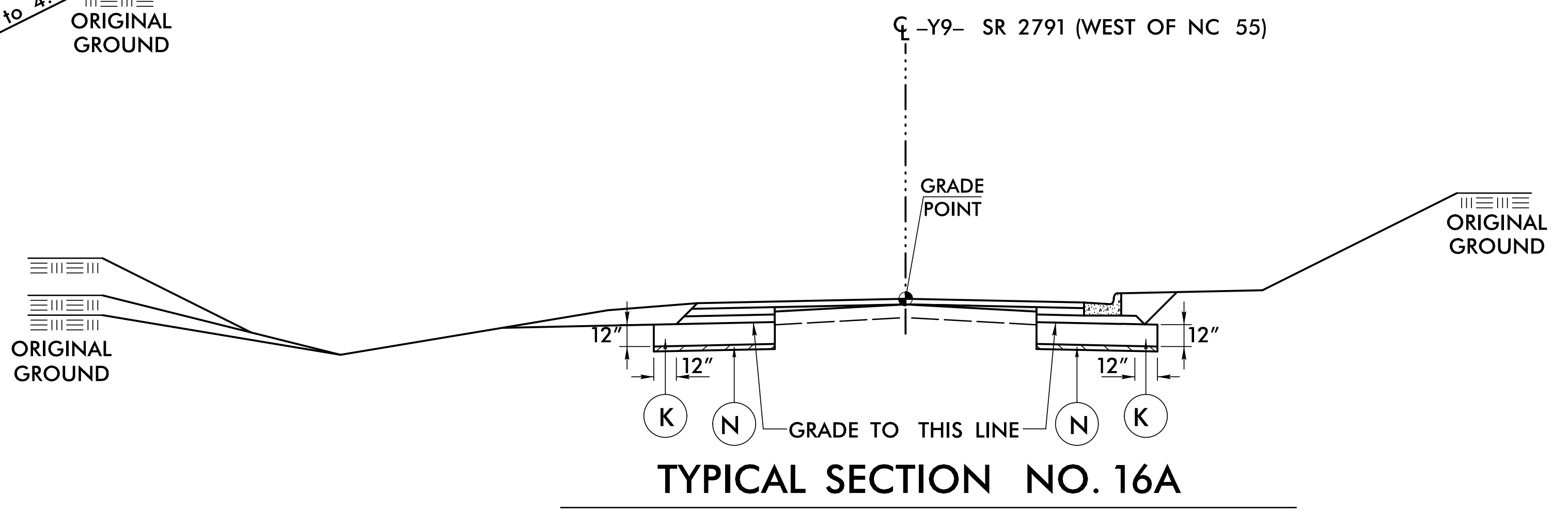
**TYPICAL SECTION NO. 15A**

USE TYPICAL SECTION NO. 15A IN CONJUNCTION WITH TYPICAL SECTION NO. 15 AS FOLLOWS:  
FROM -Y8- STA. 17+25.00 TO 22+25.00



**TYPICAL SECTION NO. 16**

USE TYPICAL SECTION NO. 16 AS FOLLOWS:  
FROM -Y9- STA 10+20.00 TO STA 11+77.58



**TYPICAL SECTION NO. 16A**

USE TYPICAL SECTION NO. 16A IN CONJUNCTION WITH TYPICAL SECTION NO. 16 AS FOLLOWS:  
FROM -Y9- STA. 10+25.00 TO 11+60.00

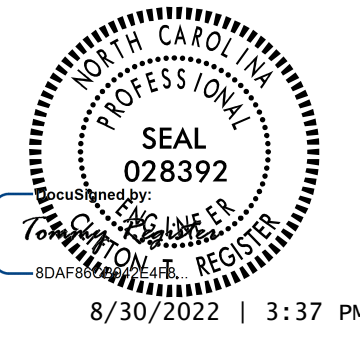
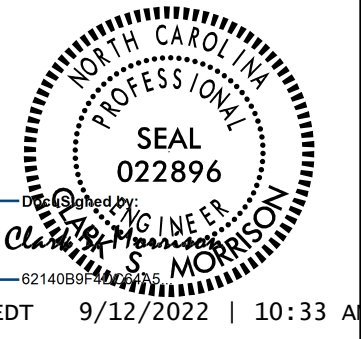
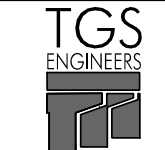
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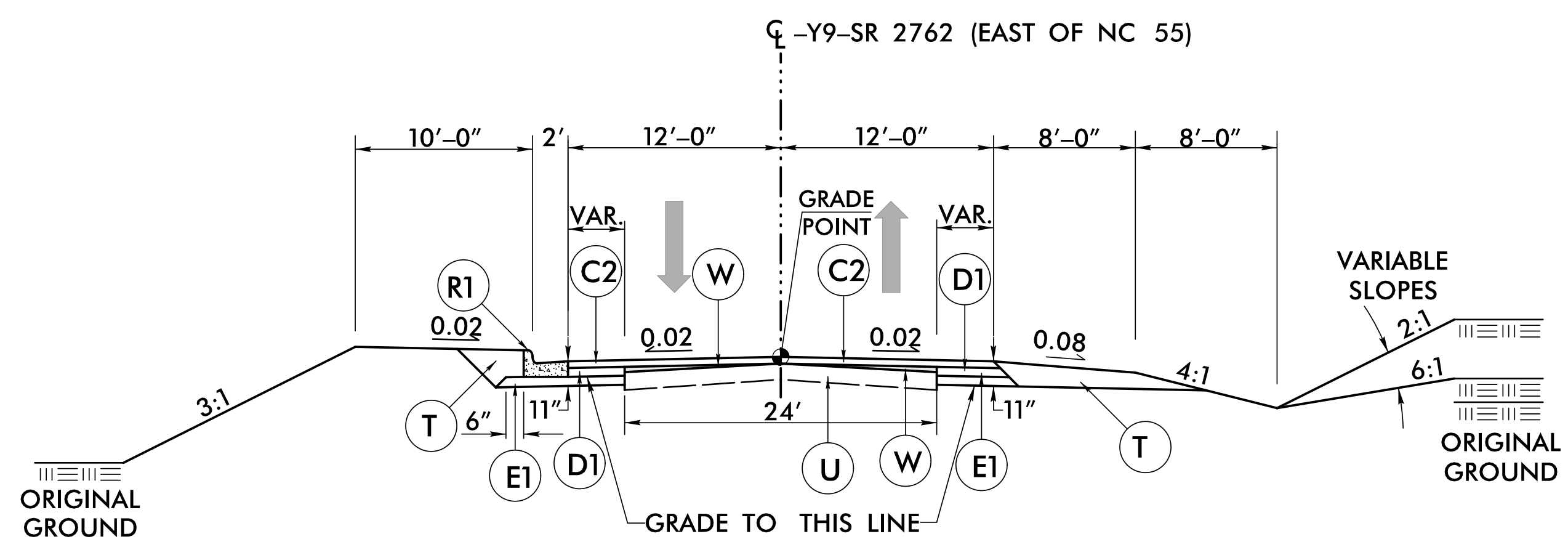
6/2/2023

8/1/2023  
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 User: tjeans

PAVEMENT SCHEDULE <small>(FINAL PAVEMENT DESIGN DATED JULY 12, 2022)</small>			
C1	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YARD, IN EACH OF TWO LAYERS	E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YARD, IN EACH OF TWO LAYERS	E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH
C3	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YARD, IN EACH OF TWO LAYERS	J1	8" AGGREGATE BASE COURSE
C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1" OR GREATER THAN 1.5" IN DEPTH	J2	6" AGGREGATE BASE COURSE
C5	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1.5" OR GREATER THAN 2" IN DEPTH	K	PROP. 12" CLASS IV SUBGRADE STABILIZATION
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD	N	GEOTEXTILE FOR SOIL STABILIZATION
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH	P	PRIME COAT AT THE RATE OF .35 GAL. PER SQ. YD.
		R1	2'-6" CONCRETE CURB & GUTTER
		R2	1'-6" CONCRETE CURB & GUTTER
		R3	5" MONOLITHIC CONCRETE ISLAND (KEYED IN)
		R4	CONCRETE SHOULDER BERM GUTTER
		S	4" CONCRETE SIDEWALK
		T	EARTH MATERIAL
		U	EXISTING PAVEMENT
		W	WEDGING (VARIABLE DEPTH ASPHALT PAVEMENT, SEE DETAIL ON SHEET 2A-1)

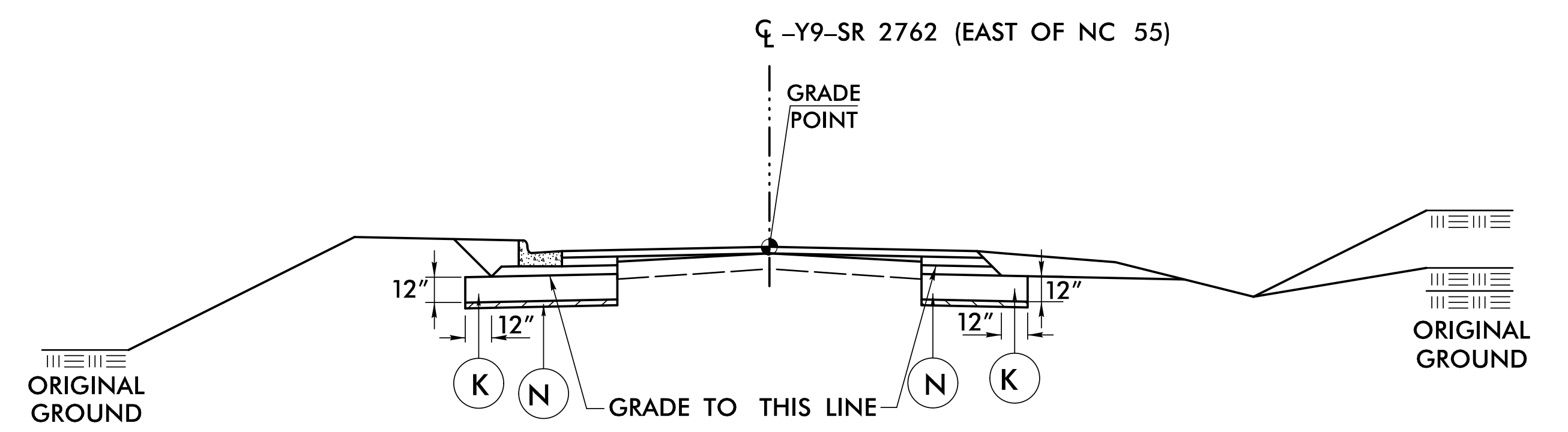
PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

PROJECT REFERENCE NO. <b>R-5705B</b>	SHEET NO. <b>2A-12</b>
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER 
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	
 <b>TGS ENGINEERS</b> 706 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275	



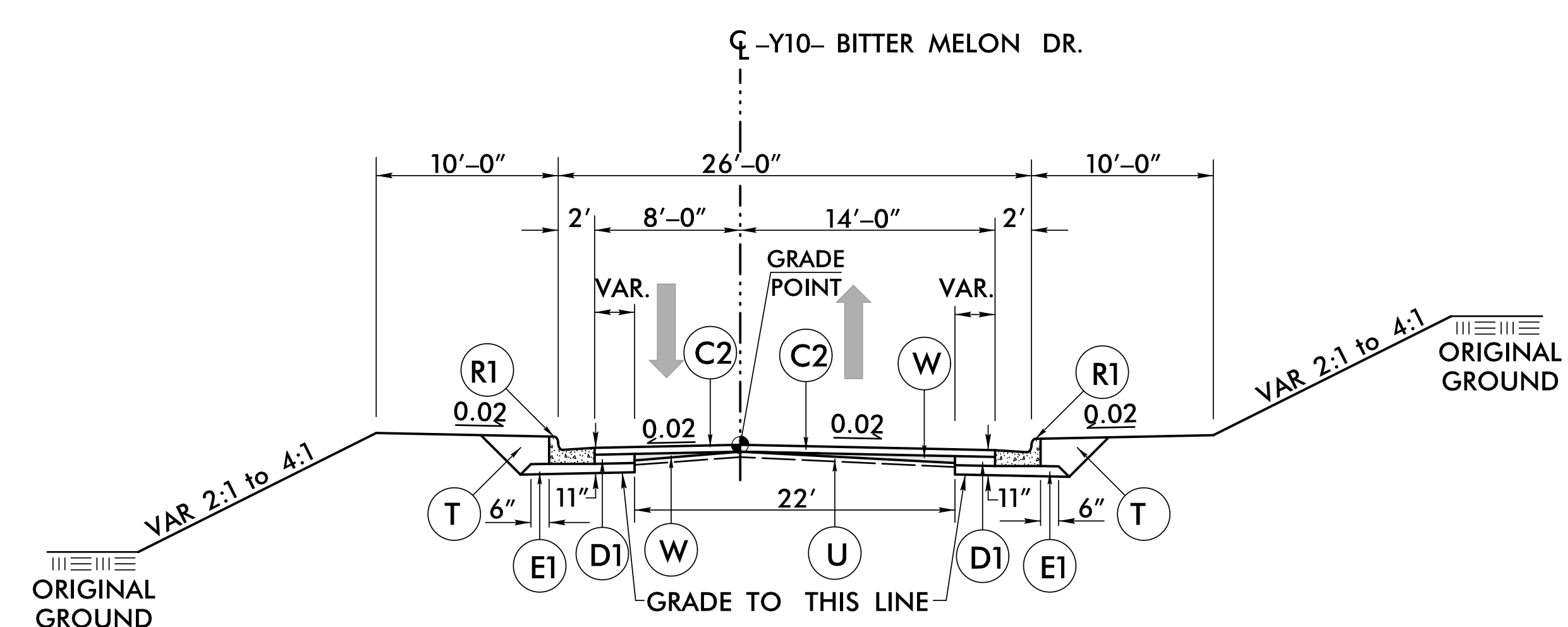
**TYPICAL SECTION NO. 17**

USE TYPICAL SECTION NO. 17 AS FOLLOWS:  
 FROM -Y9- STA 12+53.44 TO STA 15+25.00



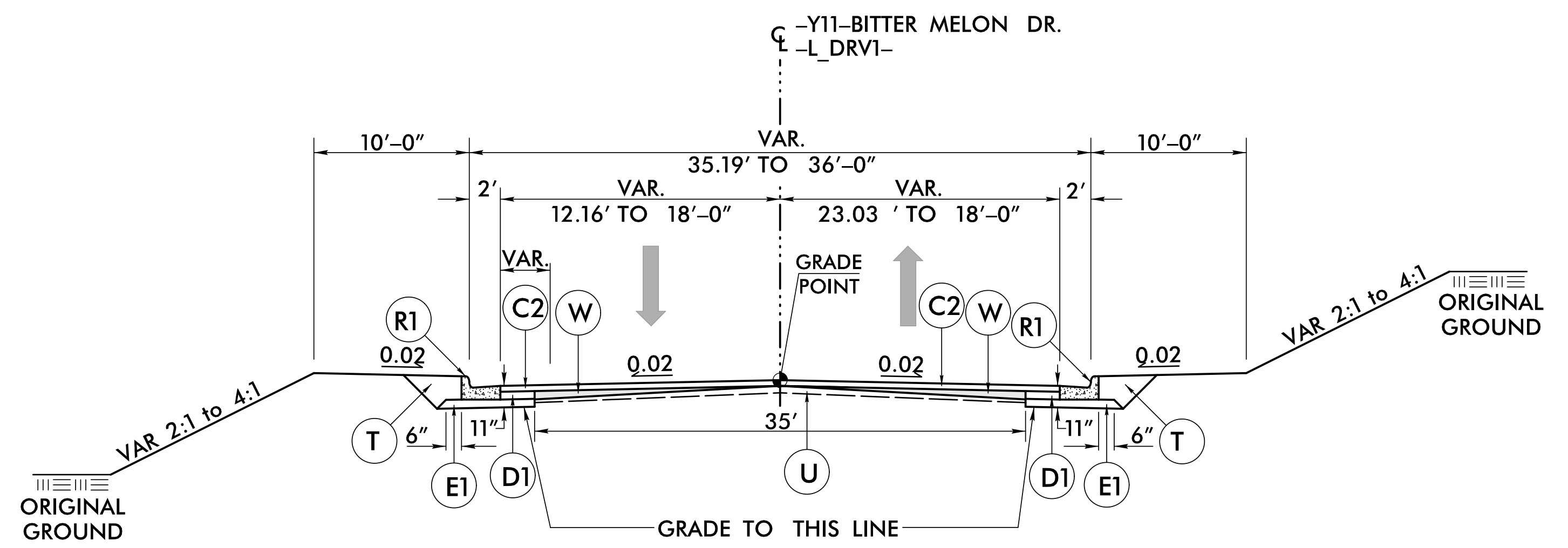
**TYPICAL SECTION NO. 17A**

USE TYPICAL SECTION NO. 17A IN CONJUNCTION  
 WITH TYPICAL SECTION NO. 17 AS FOLLOWS:  
 FROM -Y9- STA. 12+75.00 TO 15+25.00



**TYPICAL SECTION NO. 18**

USE TYPICAL SECTION NO. 18 AS FOLLOWS:  
 FROM -Y10- STA 14+50.00 TO STA 15+02.10



**TYPICAL SECTION NO. 19**

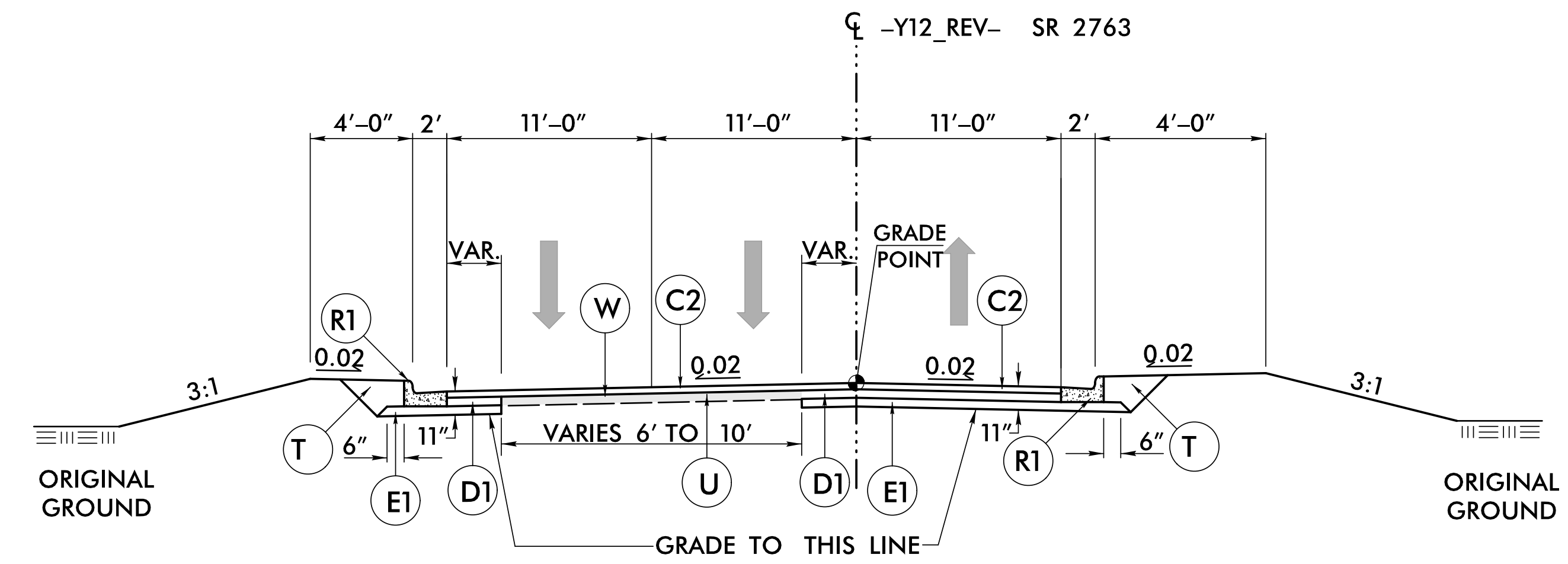
USE TYPICAL SECTION NO. 19 AS FOLLOWS:  
 FROM -Y11- STA 13+50.00 TO STA 14+50.59  
 FROM -L\_DRV1- STA 10+32.94 TO STA 10+75.00  
 NOTE: LT BERM WIDTH AND SLOPE TO VARY AND TIE TO EXISTING C&G IN PARKING LOT.



6/2/2022

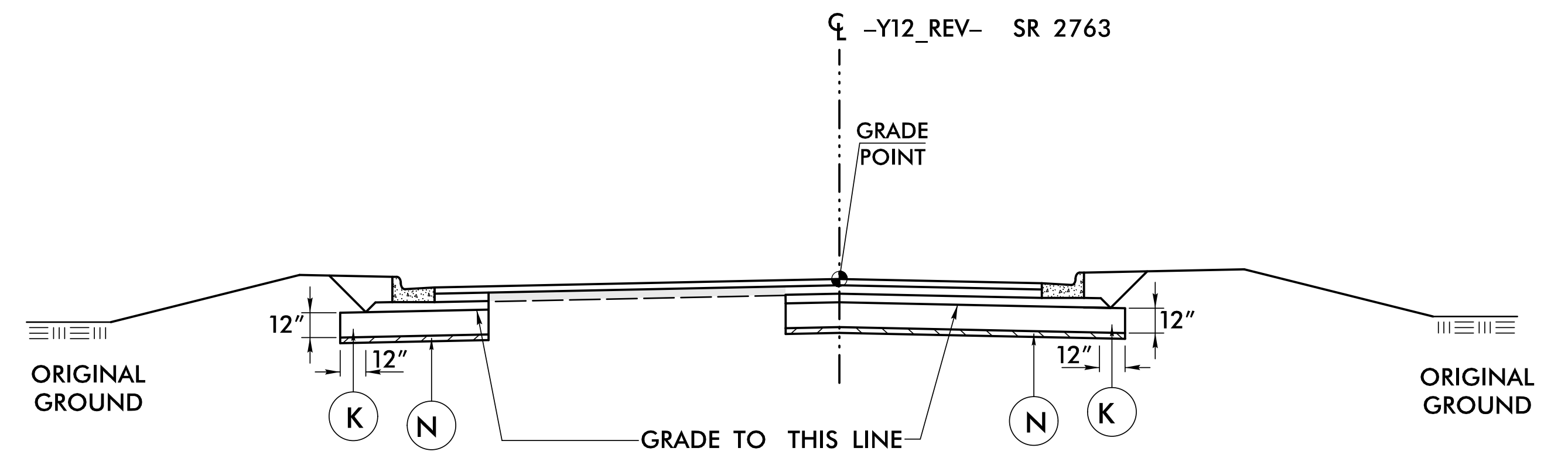
PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN DATED JULY 12, 2022)			
C1	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YARD, IN EACH OF TWO LAYERS	E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YARD, IN EACH OF TWO LAYERS	E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH
C3	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YARD, IN EACH OF TWO LAYERS	J1	8" AGGREGATE BASE COURSE
C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1" OR GREATER THAN 1.5" IN DEPTH	J2	6" AGGREGATE BASE COURSE
C5	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1.5" OR GREATER THAN 2" IN DEPTH	K	PROP. 12" CLASS IV SUBGRADE STABILIZATION
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD	N	GEOTEXTILE FOR SOIL STABILIZATION
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH	P	PRIME COAT AT THE RATE OF .35 GAL. PER SQ. YD.
		R1	2'-6" CONCRETE CURB & GUTTER
		R2	1'-6" CONCRETE CURB & GUTTER
		R3	5" MONOLITHIC CONCRETE ISLAND (KEYED IN)
		R4	CONCRETE SHOULDER BERM GUTTER
		S	4" CONCRETE SIDEWALK
		T	EARTH MATERIAL
		U	EXISTING PAVEMENT
		W	WEDGING (VARIABLE DEPTH ASPHALT PAVEMENT, SEE DETAIL ON SHEET 2A-1)

PROJECT REFERENCE NO. <b>R-5705B</b>	SHEET NO. <b>2A-13</b>
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER 
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	
 TGS ENGINEERS 706 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275	



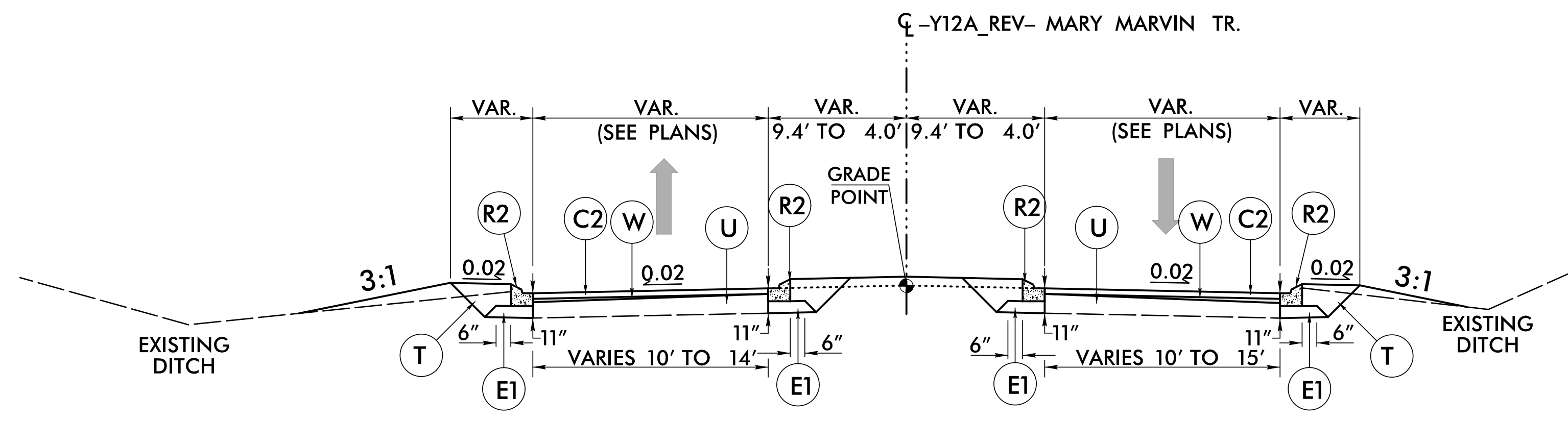
**TYPICAL SECTION NO. 20**

USE TYPICAL SECTION NO. 20 AS FOLLOWS:  
FROM -Y12\_REV- STA 10+49.63 TO STA 19+47.60



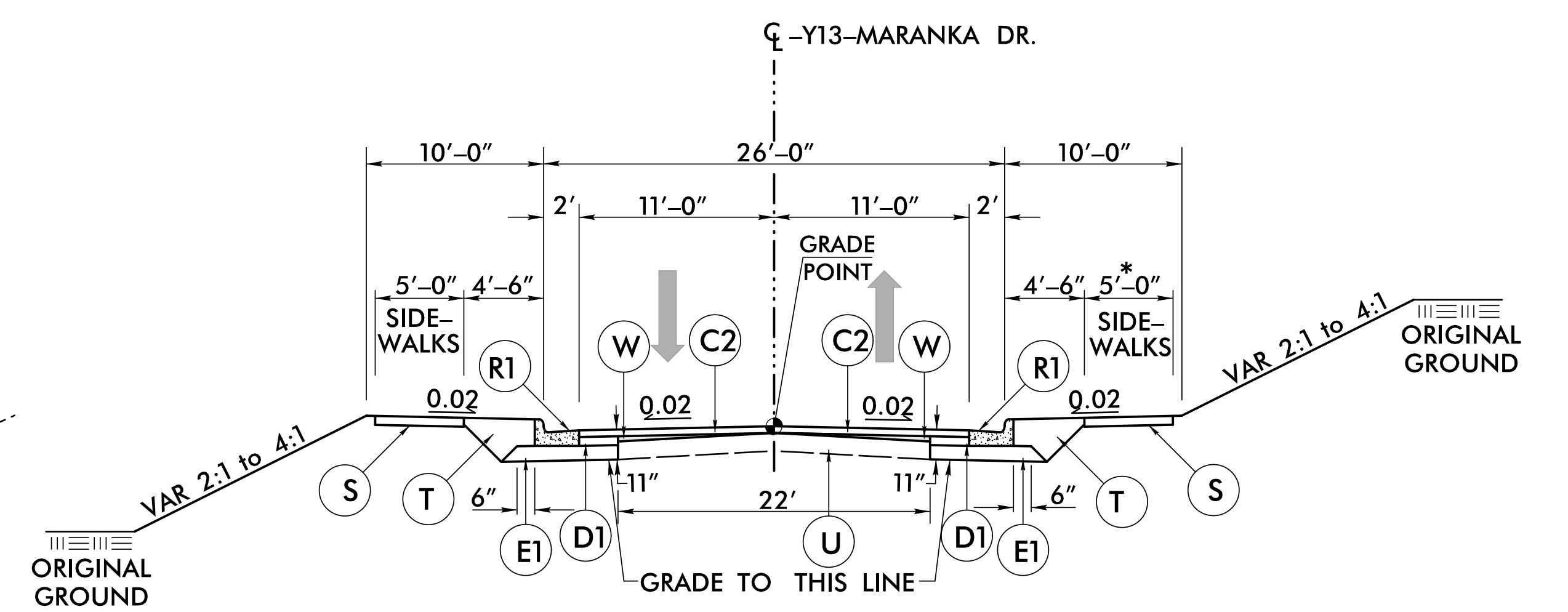
**TYPICAL SECTION NO. 20A**

USE TYPICAL SECTION NO. 20A IN CONJUNCTION WITH TYPICAL SECTION NO. 20 AS FOLLOWS:  
FROM -Y12\_REV- STA. 10+75.00 TO 16+75.00



**TYPICAL SECTION NO. 21**

USE TYPICAL SECTION NO. 21 AS FOLLOWS:  
FROM -Y12A\_REV- STA 10+11.00 TO 11+88.00



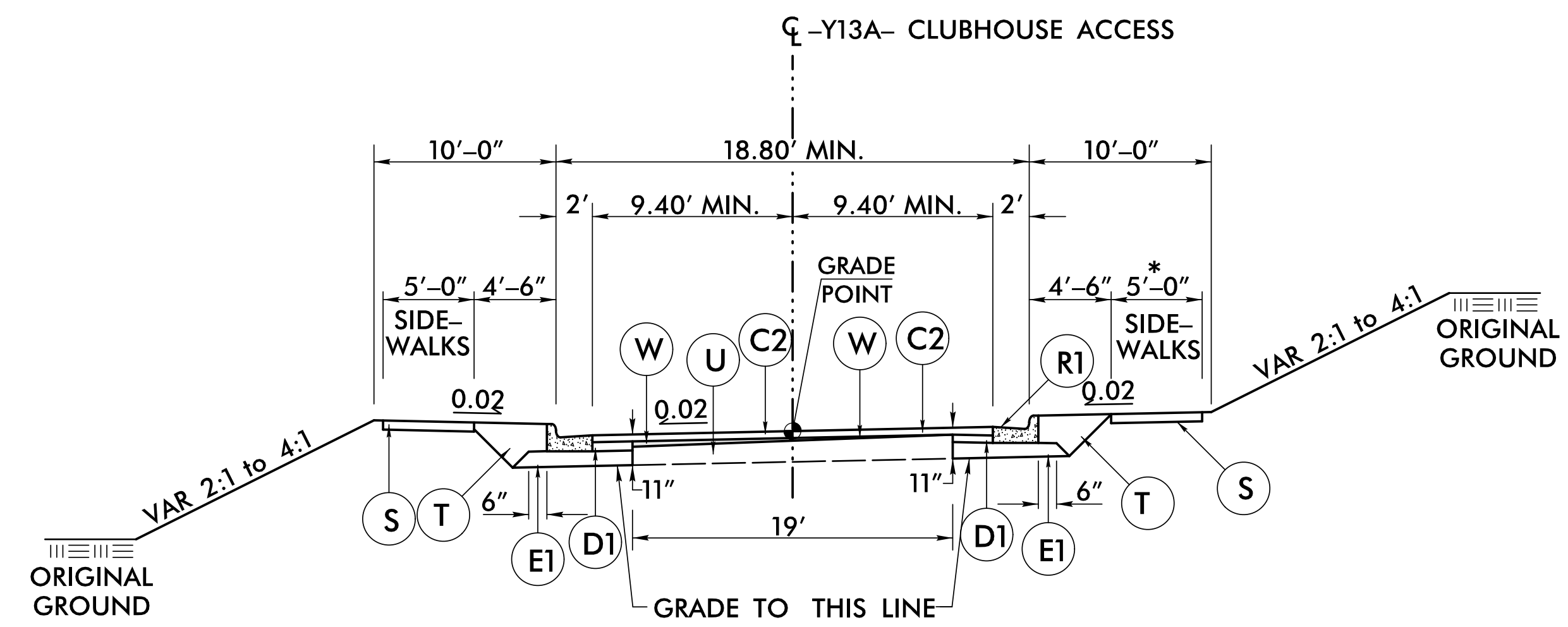
**TYPICAL SECTION NO. 22**

USE TYPICAL SECTION NO. 22 AS FOLLOWS:  
FROM -Y13- STA 10+40.00 TO STA 12+72.43  
PLACE SIDEWALK FROM -Y13- STA 10+40.00 TO STA 12+31.00 LT  
FROM -Y13- STA 10+40.00 TO STA 13+90.00 RT

6/1/2022  
 S:\nc001\15705b\roadway\pco\15705B\_Rdy\_tjip.dgn  
 User: rsmorrison

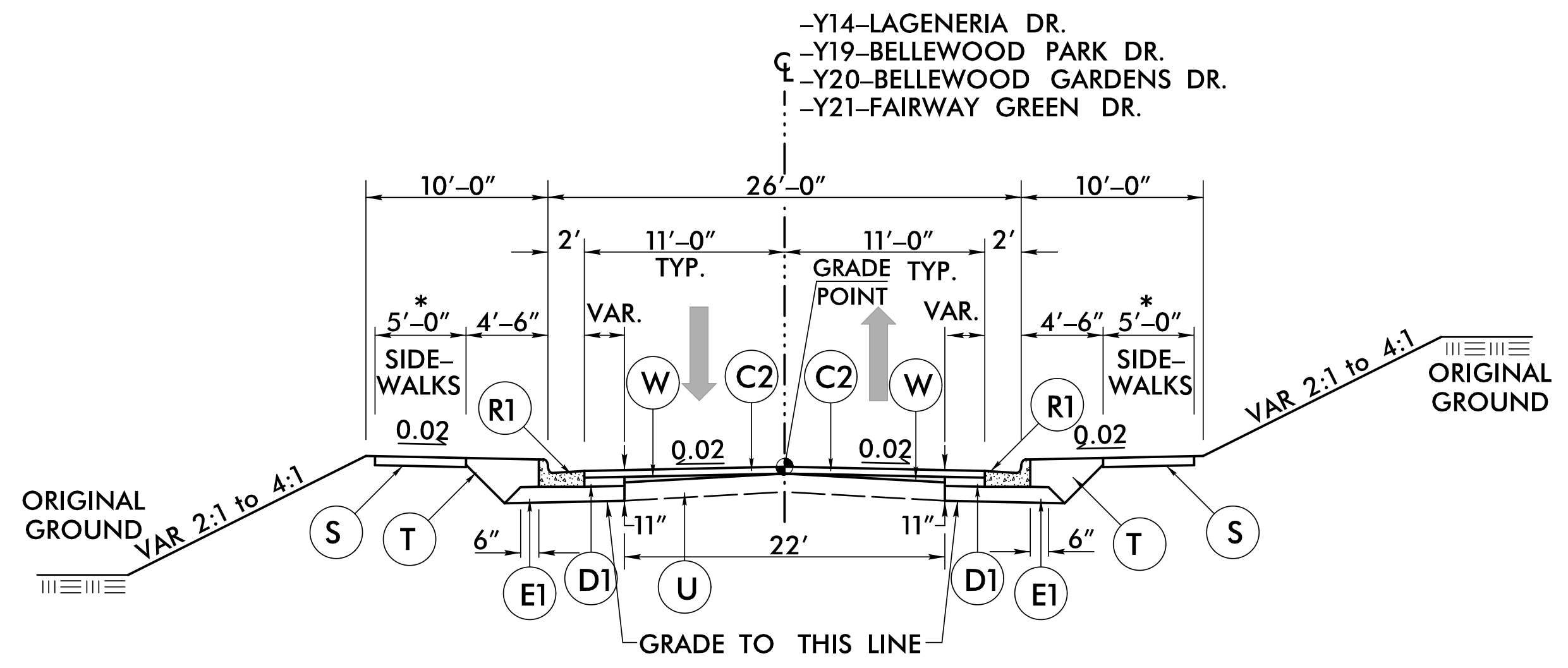
6/2/2023

PROJECT REFERENCE NO. <b>R-5705B</b>	SHEET NO. <b>2A-14</b>
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
8/30/2022   3:37 PM EDT	9/12/2022   10:33 AM EDT
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	
TGS ENGINEERS 706 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275	



### TYPICAL SECTION NO. 23

USE TYPICAL SECTION NO. 23 AS FOLLOWS:  
 FROM -Y13A- STA 10+10.98 TO STA 11+00.00  
 \*PLACE SIDEWALK FROM -Y13A- STA 10+18.12 TO STA 11+17.00



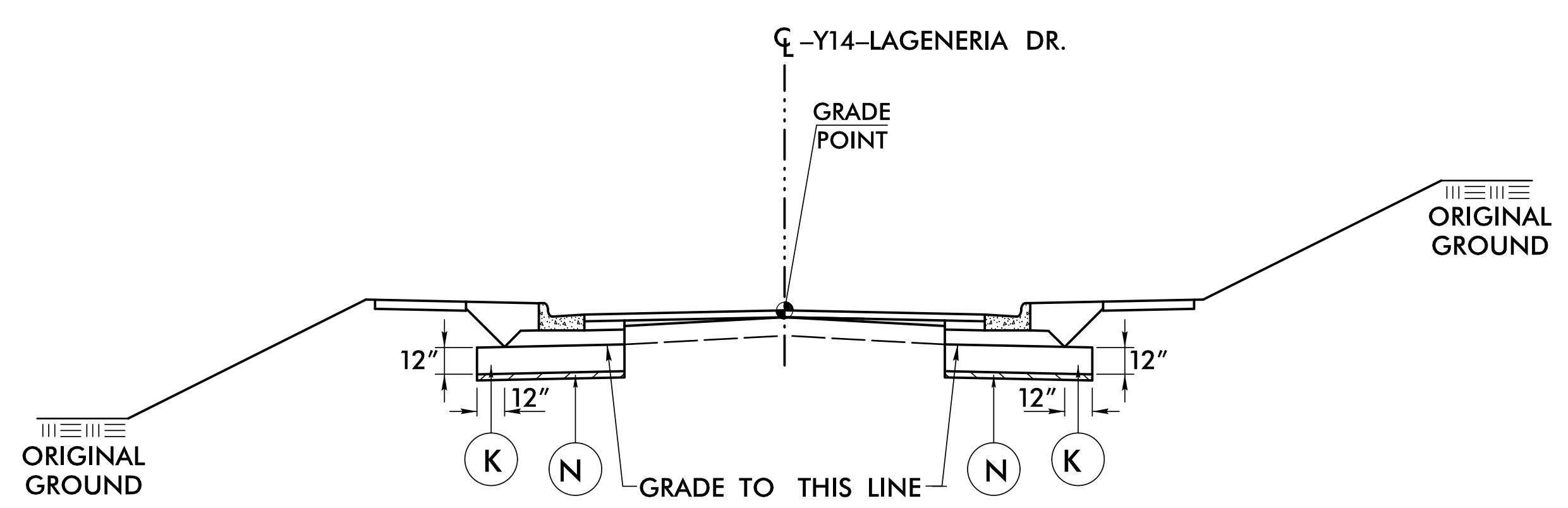
### TYPICAL SECTION NO. 24

USE TYPICAL SECTION NO. 24 AS FOLLOWS:  
 FROM -Y14- STA 11+25.00 TO STA 12+32.84  
 FROM -Y19- STA 11+00.00 TO STA 11+62.11  
 FROM -Y20- STA 10+50.76 TO STA 11+48.00  
 FROM -Y21- STA 10+05.00 TO STA 10+62.50

\*PLACE SIDEWALK FROM -Y14- STA. 11+25.00 TO STA. 12+32.84 RT ONLY

PAVEMENT SCHEDULE <small>(FINAL PAVEMENT DESIGN DATED JULY 12, 2022)</small>	
C1	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YARD, IN EACH OF TWO LAYERS
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YARD, IN EACH OF TWO LAYERS
C3	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YARD, IN EACH OF TWO LAYERS
C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1" OR GREATER THAN 1.5" IN DEPTH
C5	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1.5" OR GREATER THAN 2" IN DEPTH
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD 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. YARD
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH
J1	8" AGGREGATE BASE COURSE
J2	6" AGGREGATE BASE COURSE
K	PROP. 12" CLASS IV SUBGRADE STABILIZATION
N	GEOTEXTILE FOR SOIL STABILIZATION
P	PRIME COAT AT THE RATE OF .35 GAL. PER SQ. YD.
R1	2'-6" CONCRETE CURB & GUTTER
R2	1'-6" CONCRETE CURB & GUTTER
R3	5" MONOLITHIC CONCRETE ISLAND (KEYED IN)
R4	CONCRETE SHOULDER BERM GUTTER
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING (VARIABLE DEPTH ASPHALT PAVEMENT, SEE DETAIL ON SHEET 2A-1)

PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



### TYPICAL SECTION NO. 24A

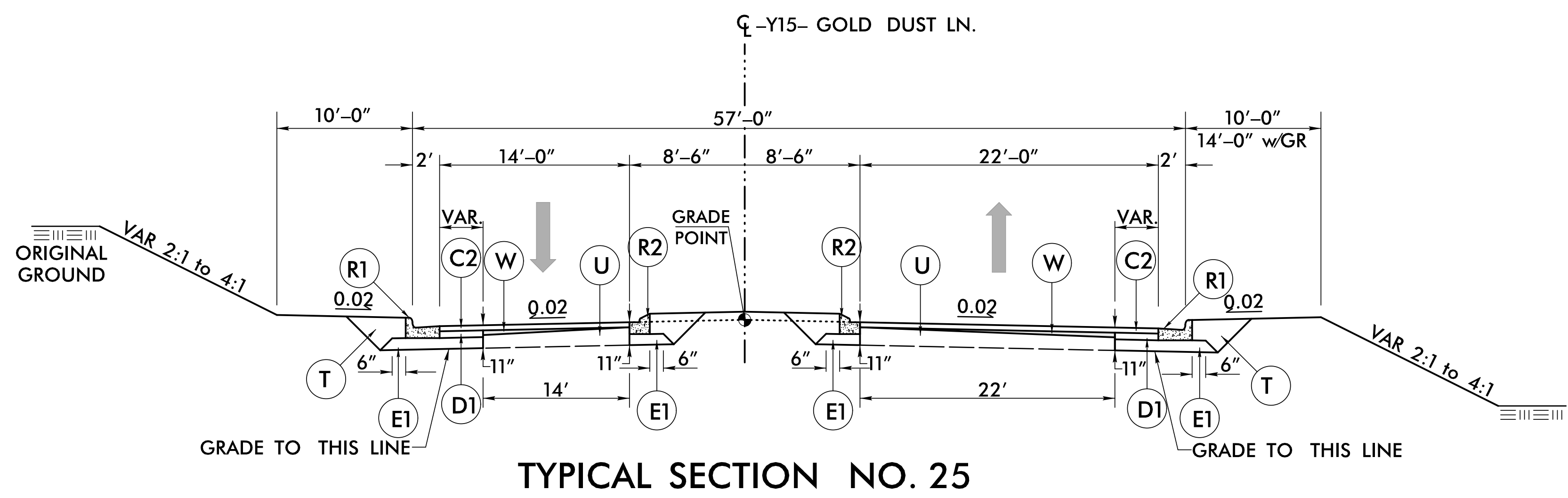
USE TYPICAL SECTION NO. 24A IN CONJUNCTION WITH TYPICAL SECTION NO. 24 AS FOLLOWS:  
 FROM -Y14- STA. 11+25.00 TO 12+25.00

6/1/2023  
 S:\Projects\5705b\roadway\pco\15705B\_Rdy\_tjip.dgn  
 User: jwans



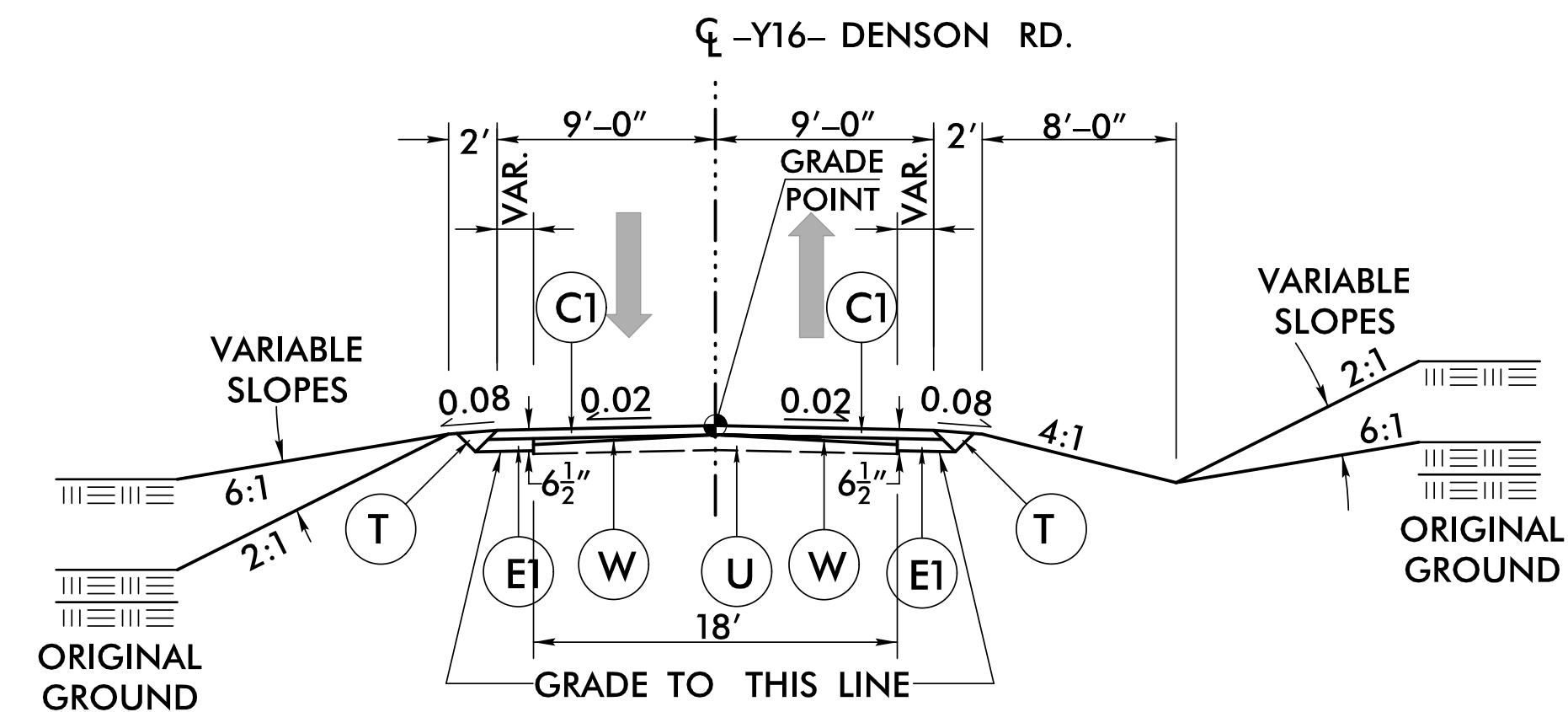
6/2/2022

PROJECT REFERENCE NO. <b>R-5705B</b>	SHEET NO. <b>2A-15</b>
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER 
<p><b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b></p> <p>TGS ENGINEERS 706 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275</p>	



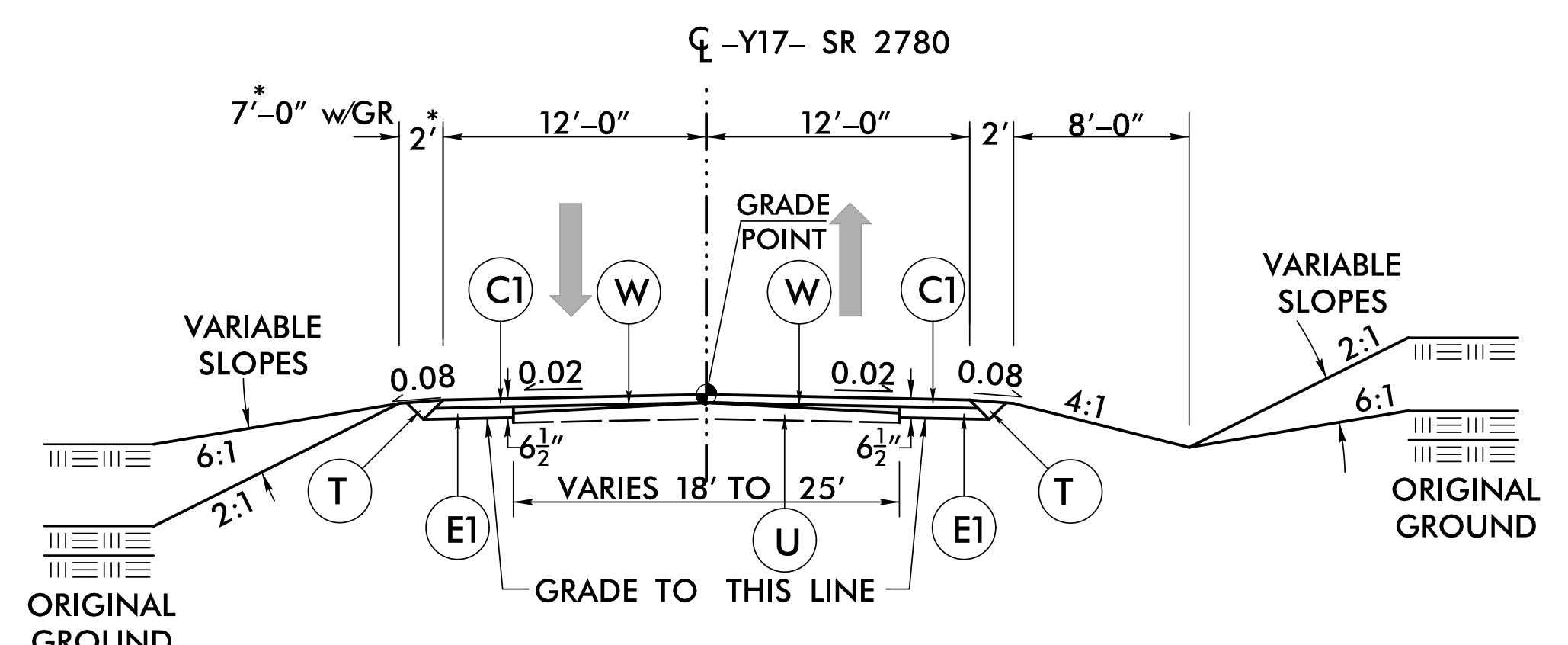
**TYPICAL SECTION NO. 25**

USE TYPICAL SECTION NO. 25 AS FOLLOWS:  
FROM -Y15- STA 11+50.00 TO STA 12+37.50



**TYPICAL SECTION NO. 26**

USE TYPICAL SECTION NO. 26 AS FOLLOWS:  
FROM -Y16- STA 10+37.71 TO STA 11+25.00



**TYPICAL SECTION NO. 27**

USE TYPICAL SECTION NO. 27 AS FOLLOWS:  
FROM -Y17- STA 10+75.00 TO STA 13+06.60

PAVEMENT SCHEDULE <small>(FINAL PAVEMENT DESIGN DATED JULY 12, 2022)</small>	
C1	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YARD, IN EACH OF TWO LAYERS
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YARD, IN EACH OF TWO LAYERS
C3	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YARD, IN EACH OF TWO LAYERS
C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1" OR GREATER THAN 1.5" IN DEPTH
C5	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1.5" OR GREATER THAN 2" IN DEPTH
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD 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. YARD
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH
J1	8" AGGREGATE BASE COURSE
J2	6" AGGREGATE BASE COURSE
K	PROP. 12" CLASS IV SUBGRADE STABILIZATION
N	GEOTEXTILE FOR SOIL STABILIZATION
P	PRIME COAT AT THE RATE OF .35 GAL. PER SQ. YD.
R1	2'-6" CONCRETE CURB & GUTTER
R2	1'-6" CONCRETE CURB & GUTTER
R3	5" MONOLITHIC CONCRETE ISLAND (KEYED IN)
R4	CONCRETE SHOULDER BERM GUTTER
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING (VARIABLE DEPTH ASPHALT PAVEMENT, SEE DETAIL ON SHEET 2A-1)

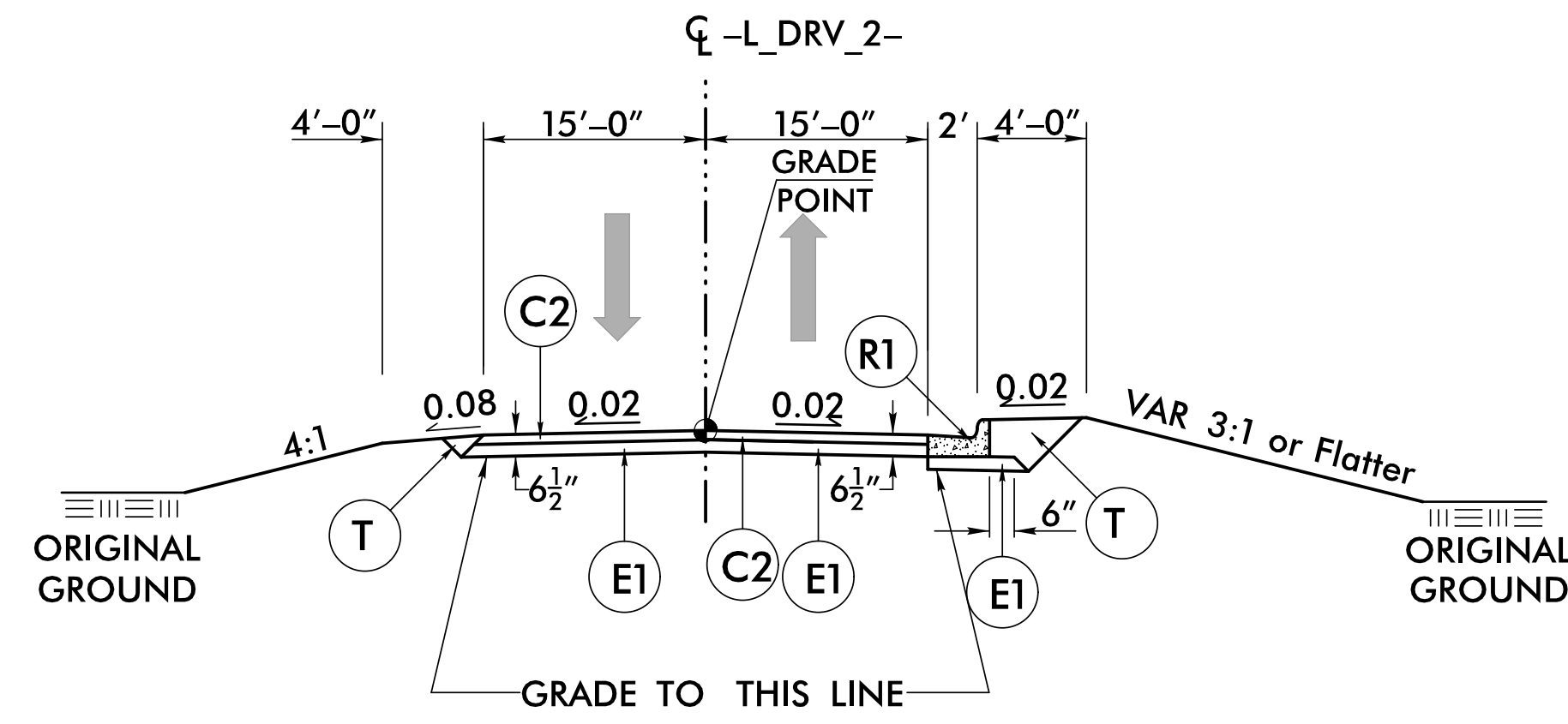
PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

6/1/2022  
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 User: jmorris

6/2/2023

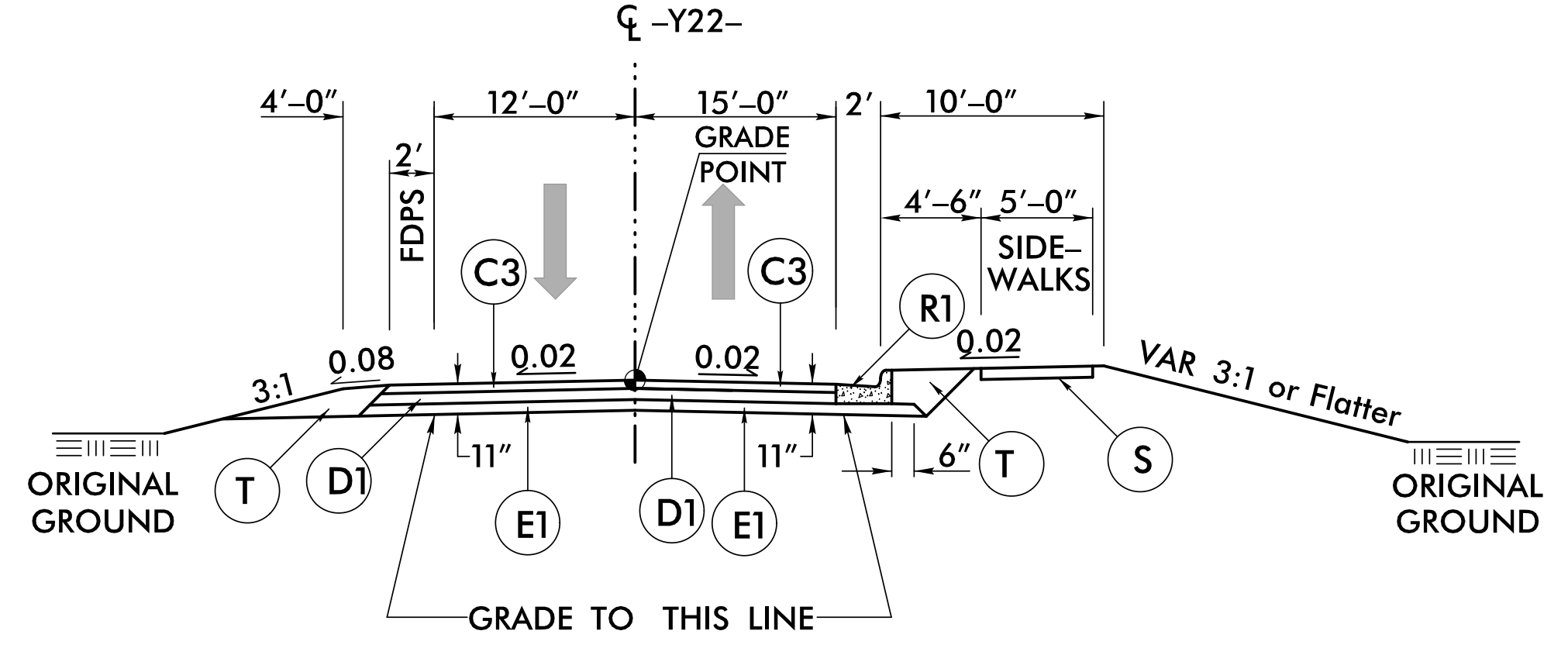
6/1/2023  
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 User: j

PROJECT REFERENCE NO. <b>R-5705B</b>	SHEET NO. <b>2A-16</b>
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER 
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	
 TGS ENGINEERS 706 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275	



**TYPICAL SECTION NO. 28**

USE TYPICAL SECTION NO. 28 AS FOLLOWS:  
 FROM -L\_DRV\_2- STA 10+37.50 TO STA 12+17.98

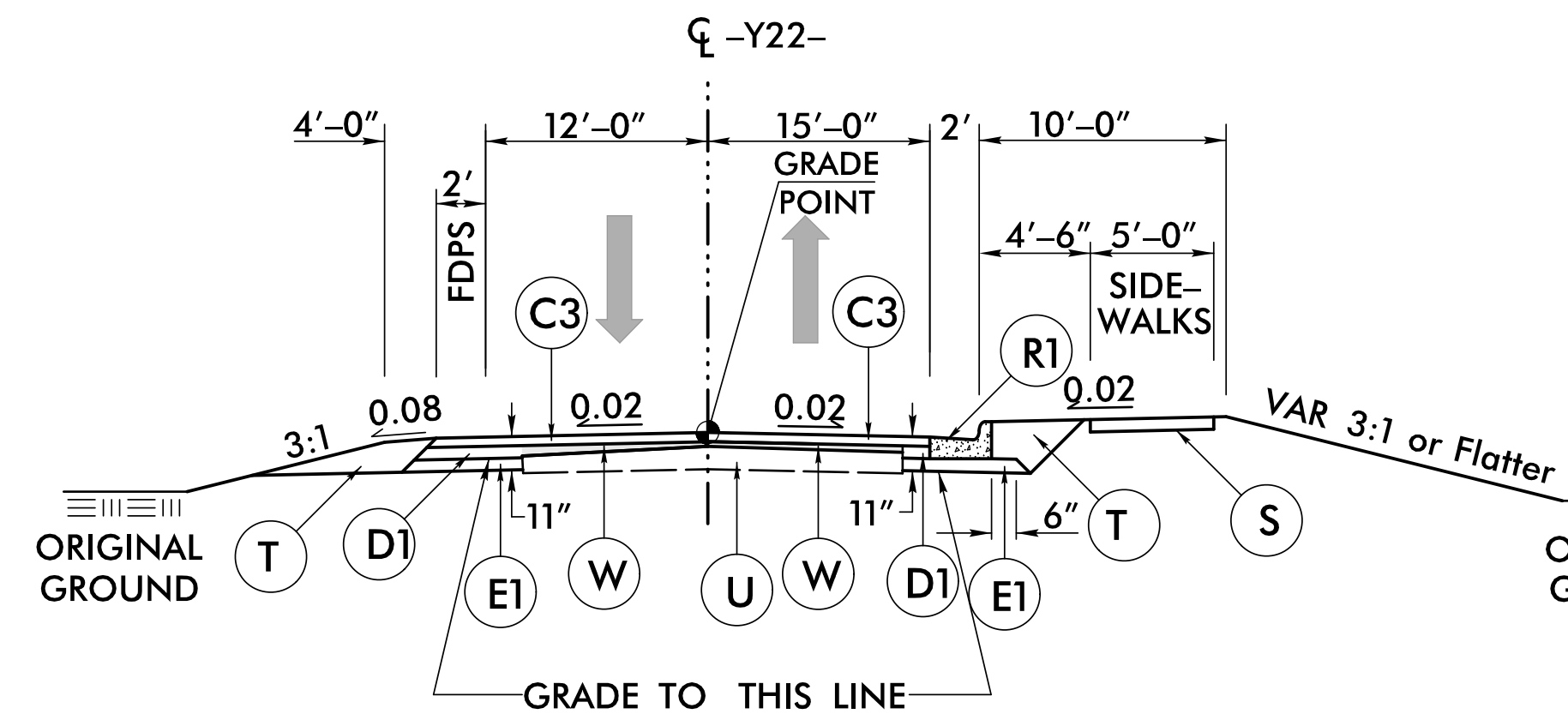


**TYPICAL SECTION NO. 29**

USE TYPICAL SECTION NO. 29 AS FOLLOWS:  
 FROM -Y22- STA 10+20.75 TO STA 10+75.00  
 FROM -Y22- STA 15+75.00 TO STA 17+74.03

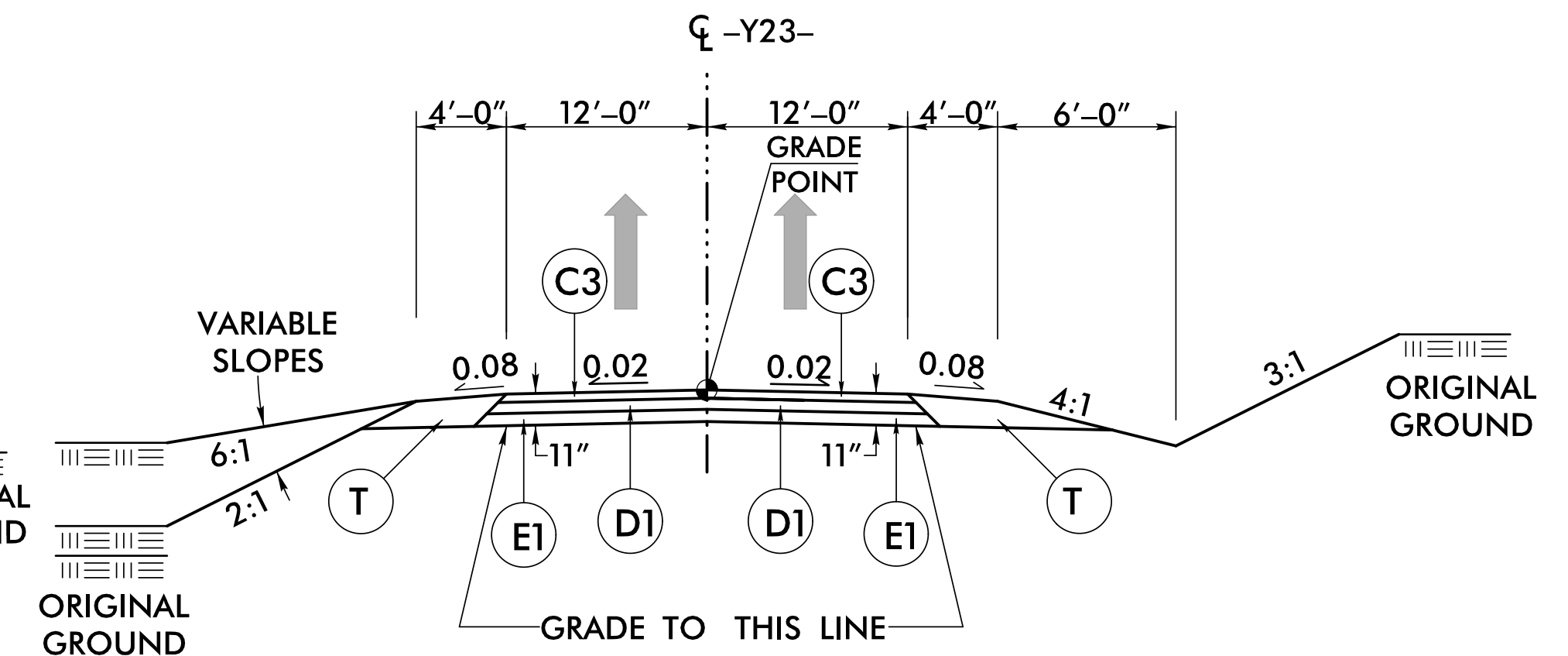
PAVEMENT SCHEDULE <small>(FINAL PAVEMENT DESIGN DATED JULY 12, 2022)</small>	
C1	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YARD, IN EACH OF TWO LAYERS
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YARD, IN EACH OF TWO LAYERS
C3	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YARD, IN EACH OF TWO LAYERS
C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1" OR GREATER THAN 1.5" IN DEPTH
C5	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1.5" OR GREATER THAN 2" IN DEPTH
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD 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. YARD
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH
J1	8" AGGREGATE BASE COURSE
J2	6" AGGREGATE BASE COURSE
K	PROP. 12" CLASS IV SUBGRADE STABILIZATION
N	GEOTEXTILE FOR SOIL STABILIZATION
P	PRIME COAT AT THE RATE OF .35 GAL. PER SQ. YD.
R1	2'-6" CONCRETE CURB & GUTTER
R2	1'-6" CONCRETE CURB & GUTTER
R3	5" MONOLITHIC CONCRETE ISLAND (KEYED IN)
R4	CONCRETE SHOULDER BERM GUTTER
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING (VARIABLE DEPTH ASPHALT PAVEMENT, SEE DETAIL ON SHEET 2A-1)

PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



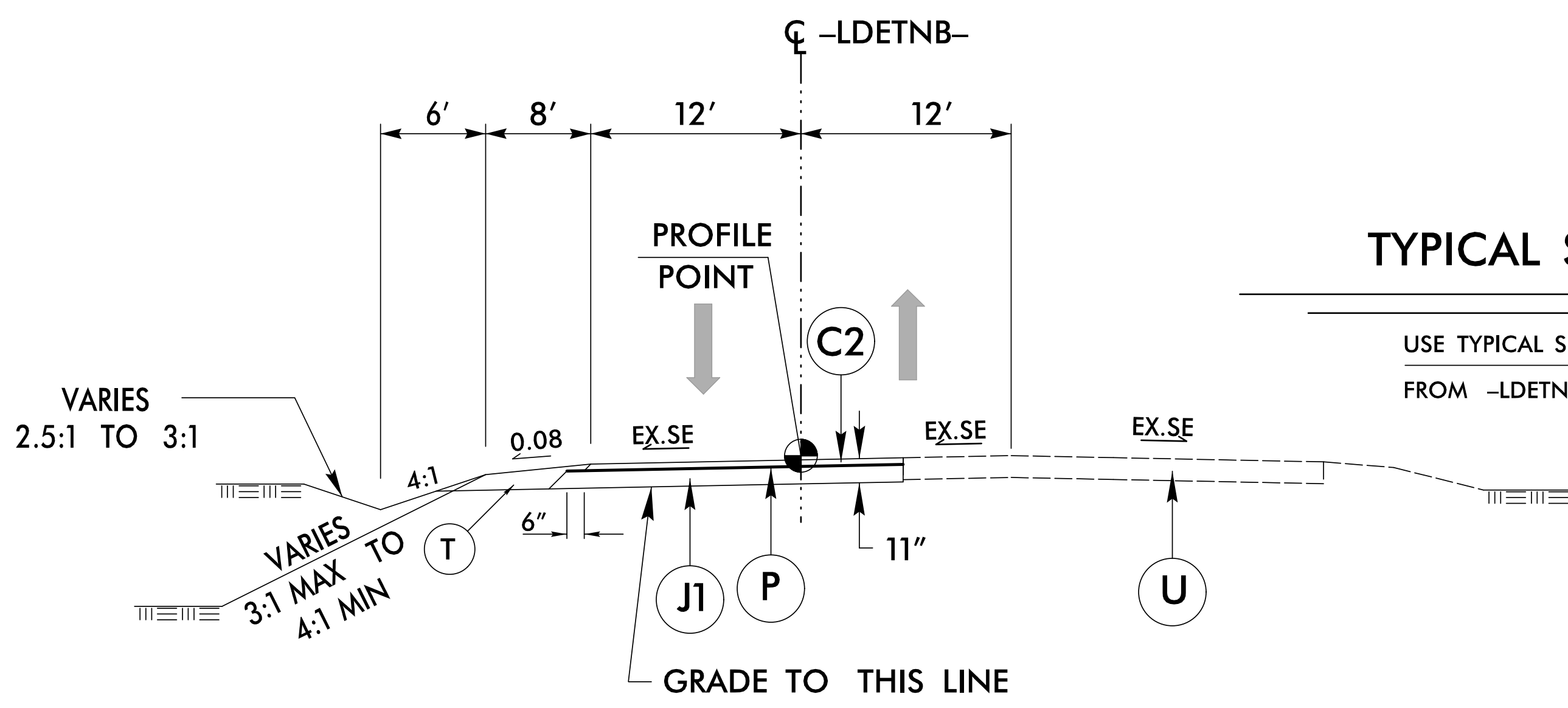
**TYPICAL SECTION NO. 30**

USE TYPICAL SECTION NO. 30 AS FOLLOWS:  
 FROM -Y22- STA 10+75.00 TO STA 15+75.00



**TYPICAL SECTION NO. 31**

USE TYPICAL SECTION NO. 31 AS FOLLOWS:  
 FROM -Y23- STA 10+15.00 TO STA 12+33.87

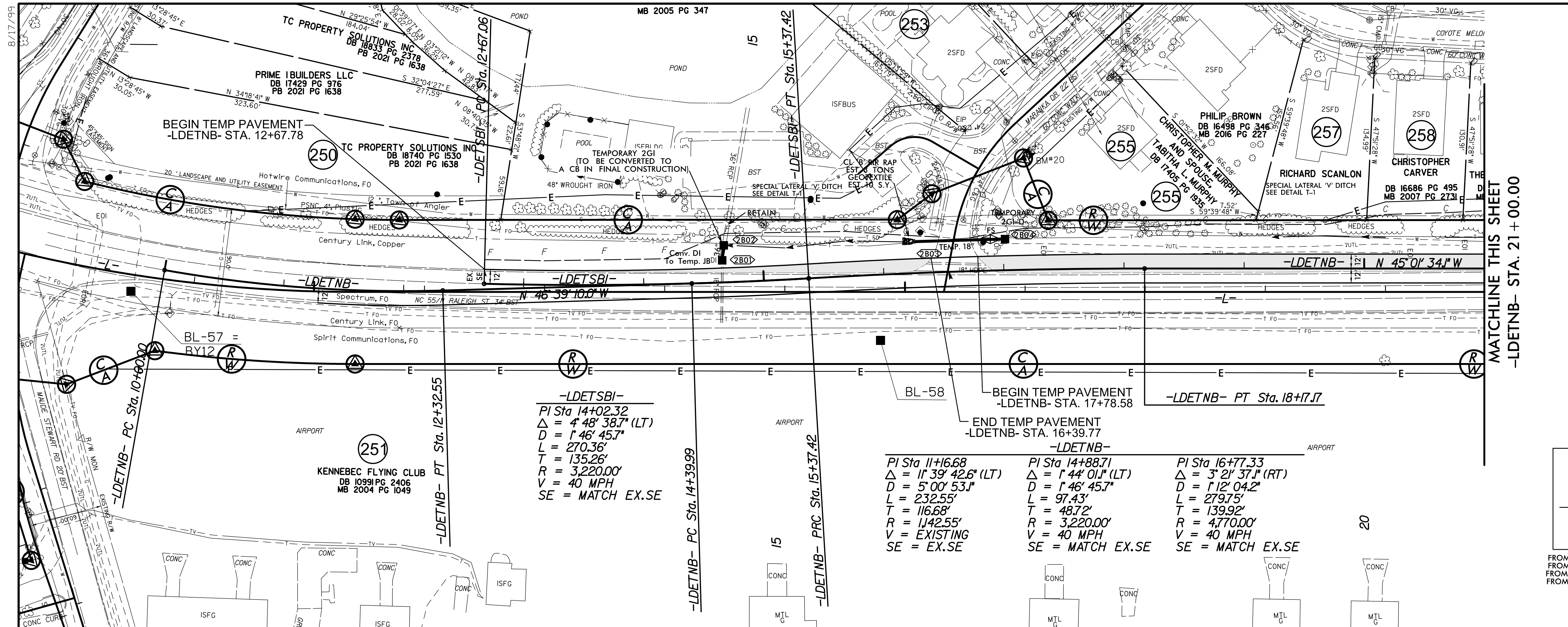


**TYPICAL SECTION NO. 32**

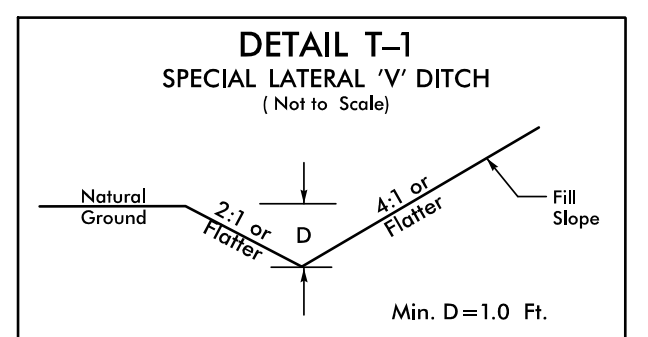
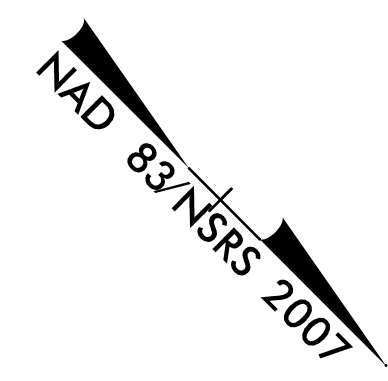
USE TYPICAL SECTION NO. 32 AS FOLLOWS:  
 FROM -LDETNB- STA 12+67.78 TO STA 37+33.51



PROJECT REFERENCE NO. <b>R-5705B</b>	SHEET NO. <b>2B-01</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL</b> <b>UNLESS ALL SIGNATURES COMPLETED</b>	
TGS ENGINEERS 706 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275	



MATCHLINE THIS SHEET  
-LDETNB- STA. 21+00.00



FROM STA.14+67 TO STA.16+18 LT. (-LDETNB-)  
 FROM STA.19+18 TO STA.20+18 LT. (-LDETNB-)  
 FROM STA.20+68 TO STA.25+06 LT. (-LDETNB-)  
 FROM STA.31+70 TO STA.32+20 LT. (-LDETNB-)

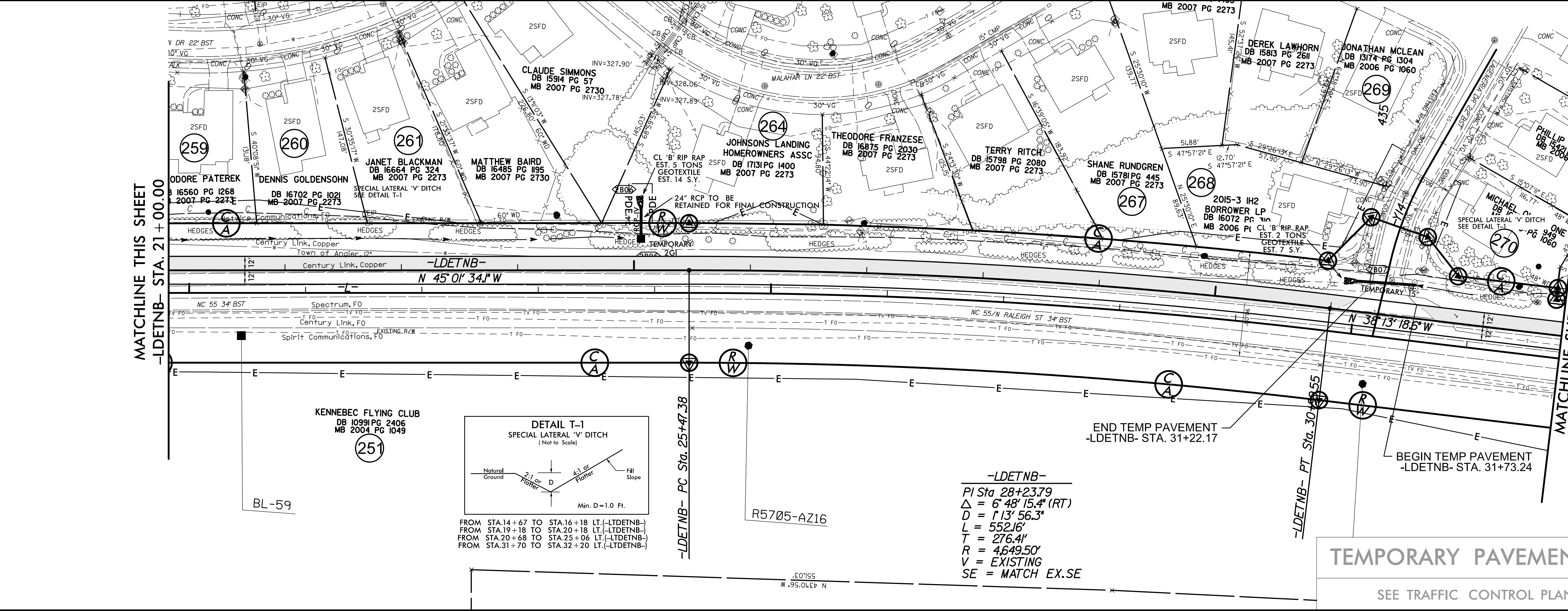
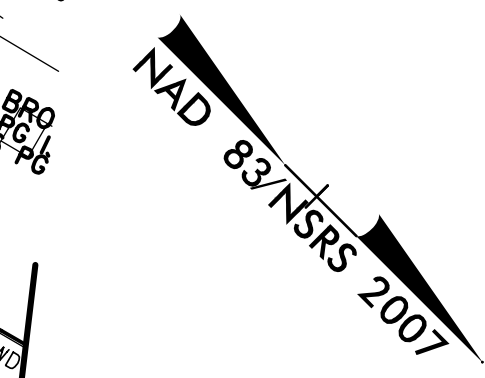
**-LDETSBI-**  
 PI Sta 14+02.32  
 $\Delta = 4' 48' 38.7''$  (LT)  
 $D = 1' 46' 45.7''$   
 $L = 270.36'$   
 $T = 135.26'$   
 $R = 3,220.00'$   
 $V = 40$  MPH  
 SE = MATCH EX.SE

**-LDETNB-**  
 PI Sta 11+16.68  
 $\Delta = 1' 39' 42.6''$  (LT)  
 $D = 5' 00' 53.1''$   
 $L = 232.55'$   
 $T = 116.68'$   
 $R = 1,142.55'$   
 $V = EXISTING$   
 SE = EX.SE

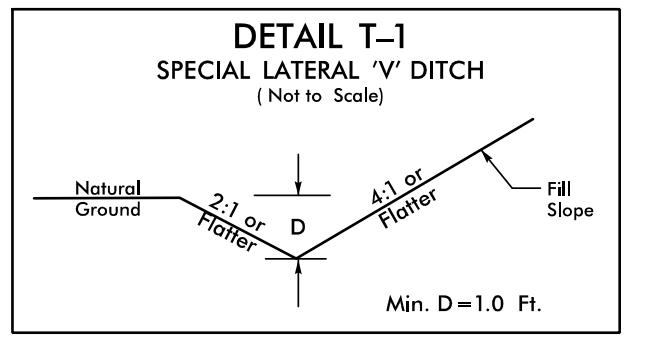
**-LDETNB-**  
 PI Sta 14+88.71  
 $\Delta = 1' 44' 01.1''$  (LT)  
 $D = 1' 46' 45.7''$   
 $L = 97.43'$   
 $T = 48.72'$   
 $R = 3,220.00'$   
 $V = 40$  MPH  
 SE = MATCH EX.SE

**-LDETNB-**  
 PI Sta 16+77.33  
 $\Delta = 3' 21' 37.1''$  (RT)  
 $D = 1' 12' 04.2''$   
 $L = 279.75'$   
 $T = 139.92'$   
 $R = 4,770.00'$   
 $V = 40$  MPH  
 SE = MATCH EX.SE

MATCHLINE THIS SHEET  
-LDETNB- STA. 21+00.00



MATCHLINE SHEET 2B-02  
-LDETNB- STA. 33+00.00



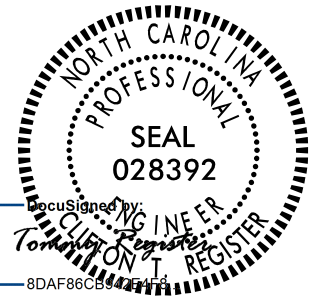
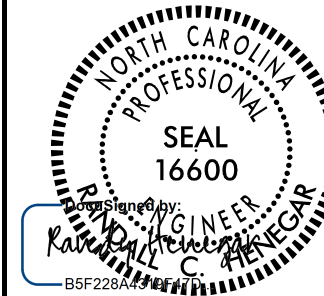

FROM STA.14+67 TO STA.16+18 LT. (-LDETNB-)  
 FROM STA.19+18 TO STA.20+18 LT. (-LDETNB-)  
 FROM STA.20+68 TO STA.25+06 LT. (-LDETNB-)  
 FROM STA.31+70 TO STA.32+20 LT. (-LDETNB-)

**-LDETNB-**  
 PI Sta 28+23.79  
 $\Delta = 6' 48' 15.4''$  (RT)  
 $D = 1' 13' 56.3''$   
 $L = 552.16'$   
 $T = 276.41'$   
 $R = 4,649.50'$   
 $V = EXISTING$   
 SE = MATCH EX.SE

### TEMPORARY PAVEMENT LOCATIONS

SEE TRAFFIC CONTROL PLANS FOR PHASING



PROJECT REFERENCE NO. <b>R-5705B</b>		SHEET NO. <b>2B-02</b>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
 T. G. S. ENGINEERS TOWN OF T. RESISTOR		 K. M. S. ENGINEERS K. M. S. ENGINEERS	
8/30/2022   3:37 PM EDT		8/30/2022   12:41 PM EDT	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>			
 <b>TGS ENGINEERS</b> 706 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275			

-LDETSB2-		
PI Sta 36+07.03	PI Sta 39+57.82	PI Sta 41+69.04
$\Delta = 4' 50' 57.7''$ (RT)	$\Delta = 4' 58' 55.0''$ (RT)	$\Delta = 12' 09' 42.8''$ (RT)
D = 0' 57' 58.3"	D = 2' 29' 34.5"	D = 5' 28' 51.5"
L = 501.90'	L = 199.84'	L = 221.89'
T = 251.10'	T = 99.98'	T = 111.37'
R = 5,930.00'	R = 2,298.33'	R = 1,045.36'
V = 45 MPH	V = EXISTING	V = EXISTING
SE = MATCH EX.SE	SE = EX.SE	SE = EX.SE

BEGIN TEMP PAVEMENT  
-LDETNB- STA. 37+00.20

END TEMP PAVEMENT  
-LDETNB- STA. 37+33.51

END TEMP PAVEMENT  
-LDETNB- STA. 35+90.35

-LDETNB-	
PI Sta 37+07.27	PI Sta 41+66.62
$\Delta = 9' 51' 07.9''$ (RT)	$\Delta = 12' 08' 27.6''$ (RT)
D = 1' 24' 19.9"	D = 5' 33' 09.6"
L = 700.96'	L = 218.65'
T = 351.35'	T = 109.74'
R = 4,076.46'	R = 1,031.86'
V = EXISTING	V = EXISTING
SE = EX.SE	SE = EX.SE

MATCHLINE SHEET 2B-01  
-LDETNB- STA. 33+00.00

-LDETNB- PC Sta. 33+55.93

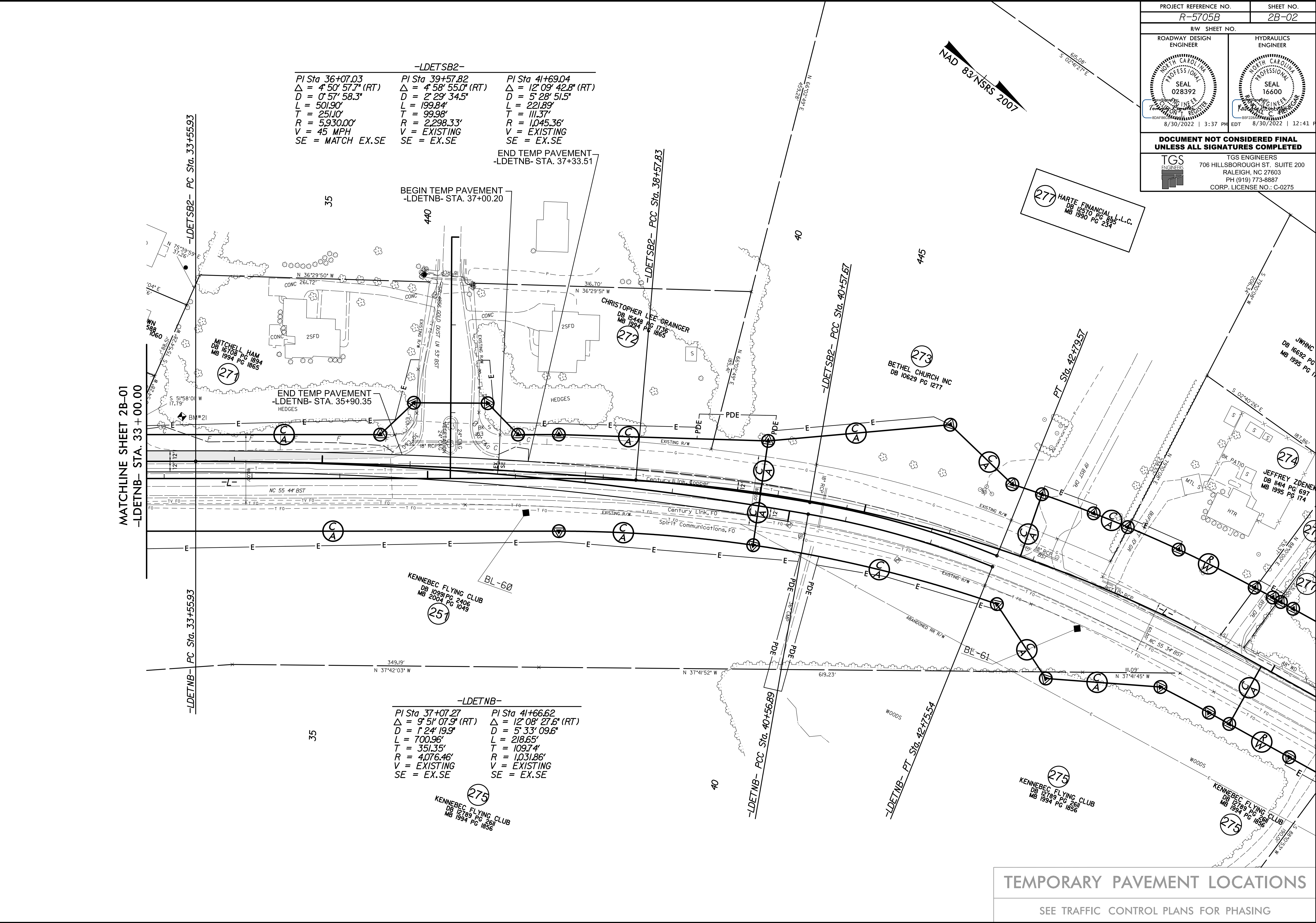
-LDETSB2- PC Sta. 33+55.93

-LDETNB- PCC Sta. 40+56.89

-LDETSB2- PCC Sta. 40+57.87

-LDETNB- PT Sta. 42+75.54

PT Sta. 42+79.57



**TEMPORARY PAVEMENT LOCATIONS**  
SEE TRAFFIC CONTROL PLANS FOR PHASING

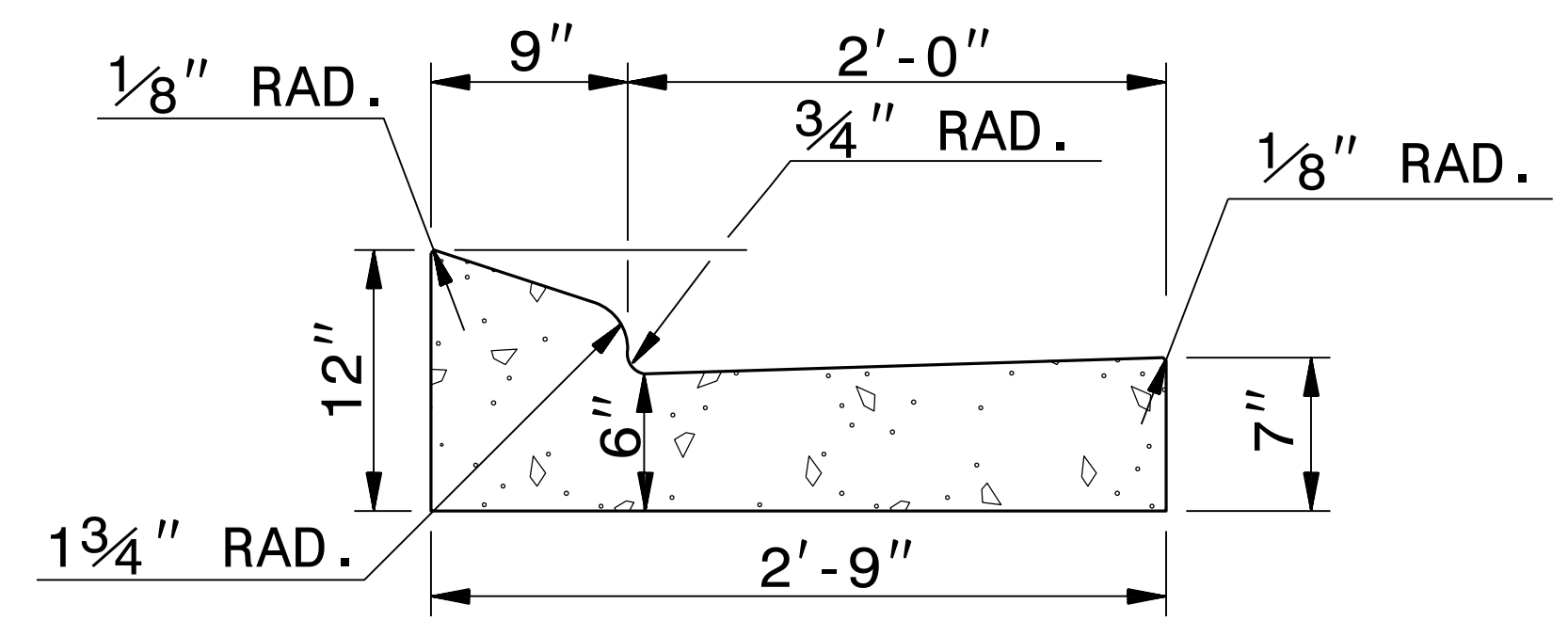


STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

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

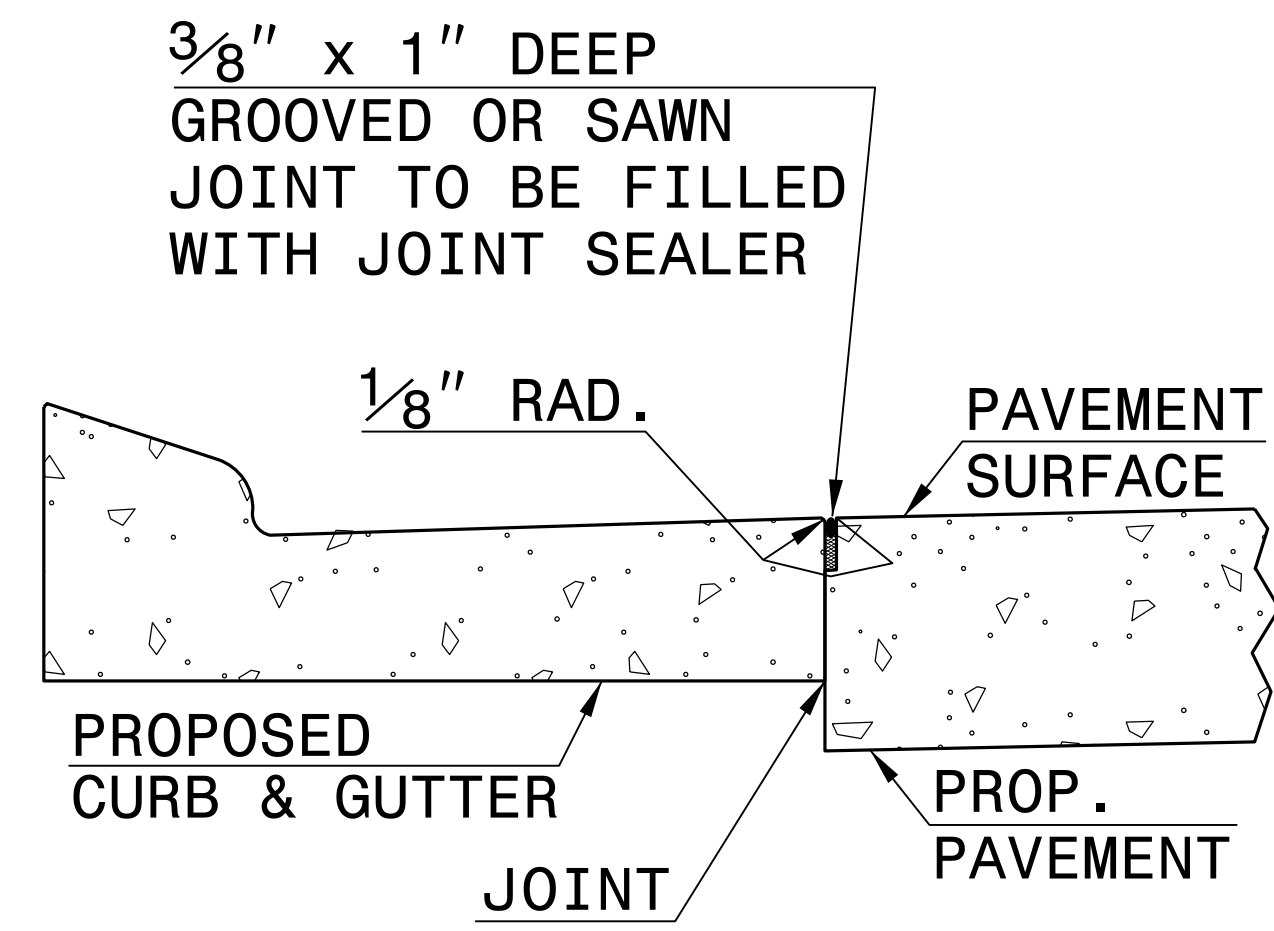
SHEET 1 OF 1  
**846D01**

- 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)

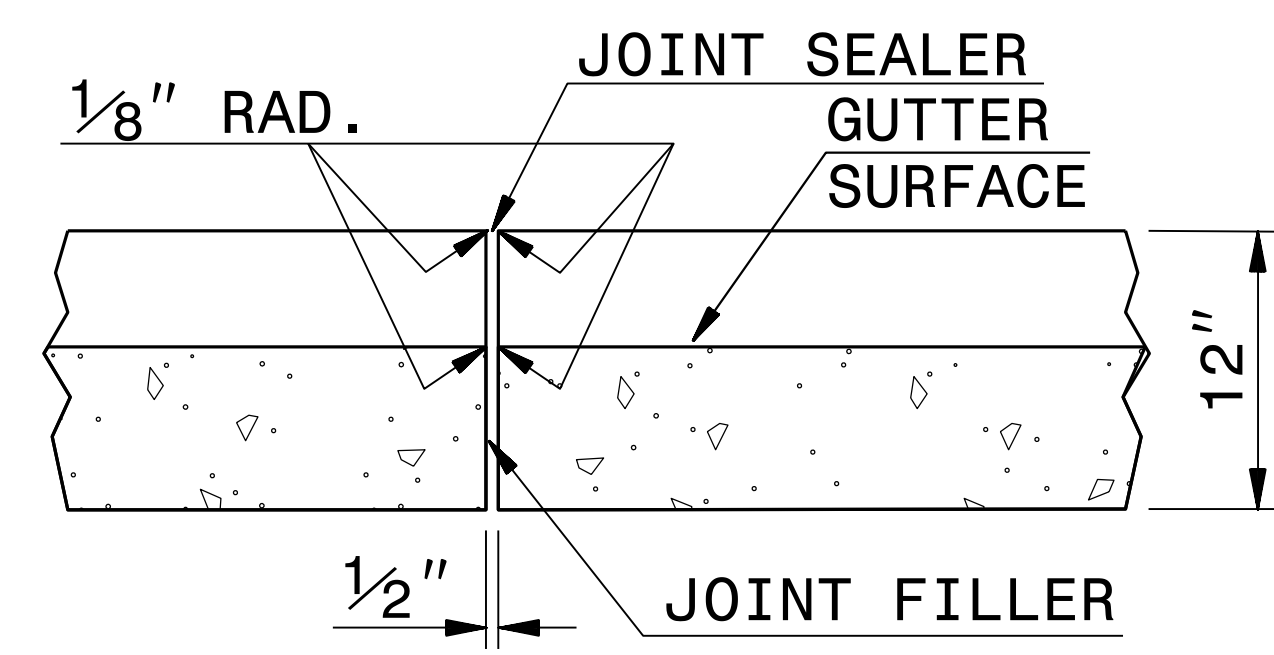


**2'-9" CURB AND GUTTER**

**SECTION VIEW OF CURB AND GUTTER**



**LONGITUDINAL JOINT**



**TRANSVERSE EXPANSION JOINT IN CURB AND GUTTER**

**SECTION VIEW OF JOINTS**

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DIVISION OF HIGHWAYS  
RALEIGH, N.C.

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

SHEET 1 OF 1  
**846D01**

10-AUG-2017 11:46  
S:\Contracts\Contractors\Special Details\vertical\usr\details\stand\c&g2'-9.dgn  
J:\overton AT\_CSD-232595

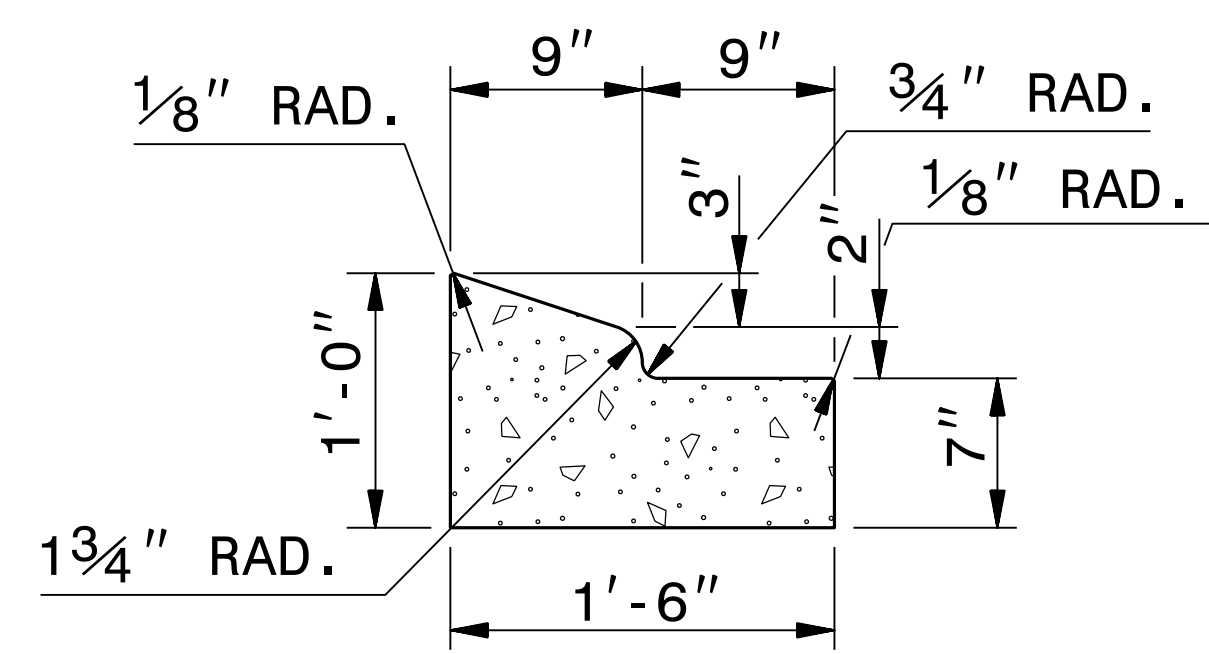


**CONTRACT STANDARDS AND DEVELOPMENT UNIT**  
Office 919-707-6950 FAX 919-250-4119

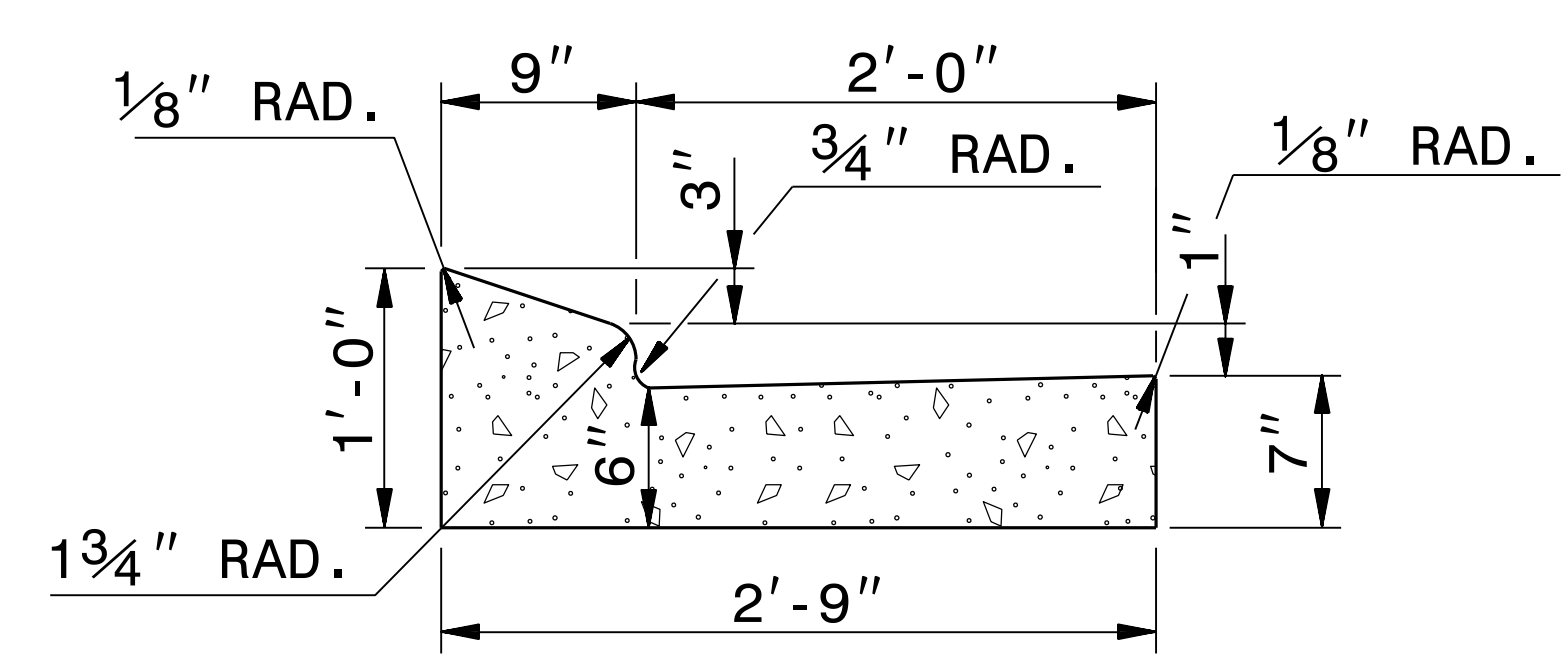
**SEE PLATE FOR TITLE**

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



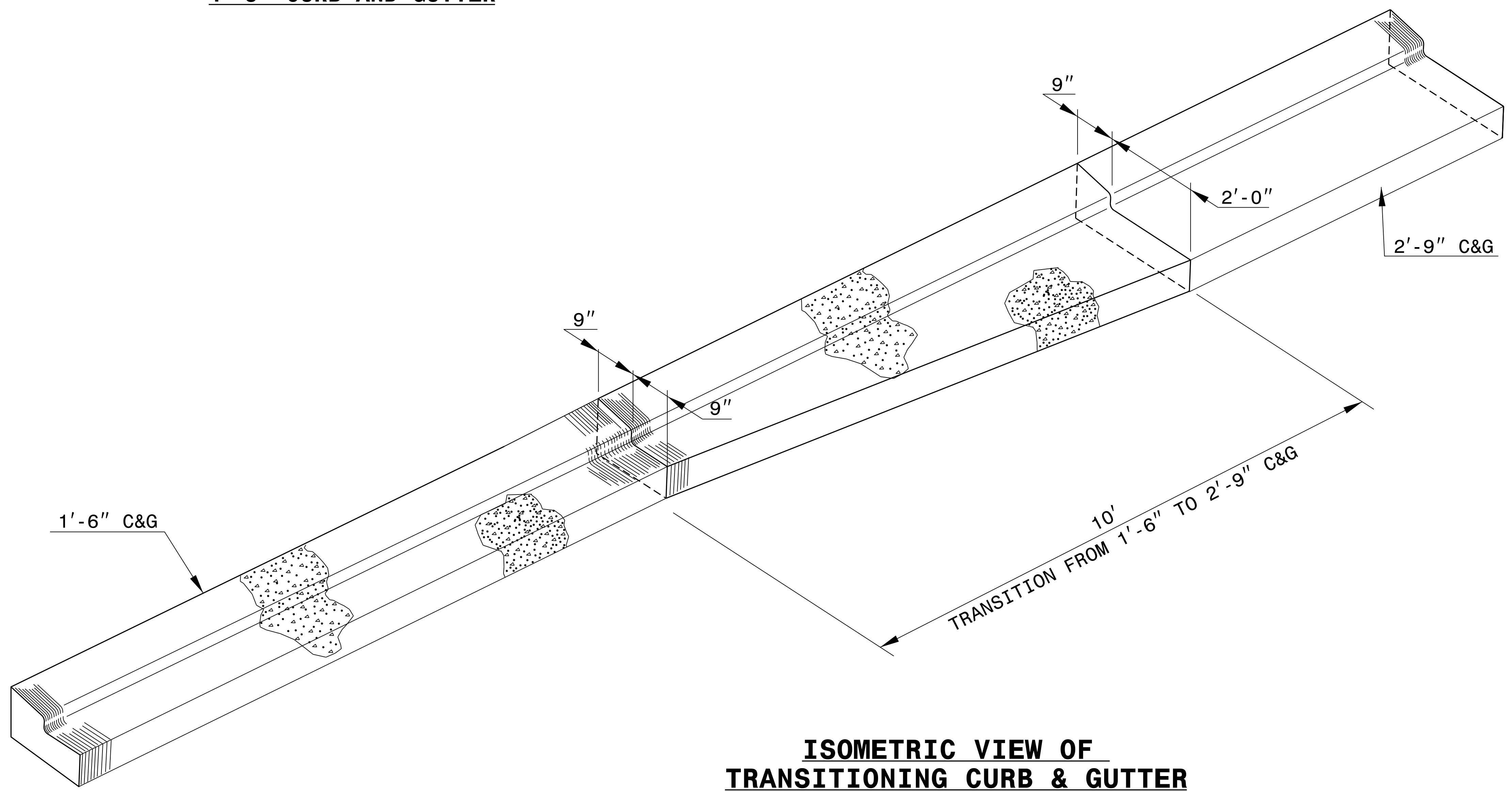
**1'-6" CURB AND GUTTER**



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

NOTE: SEE STD. DWG. 846.01 FOR ADDITIONAL CURB AND GUTTER INFORMATION.

SEE ROADWAY PLANS FOR LOCATION OF CURB TRANSITION.



**ISOMETRIC VIEW OF  
TRANSITIONING CURB & GUTTER**



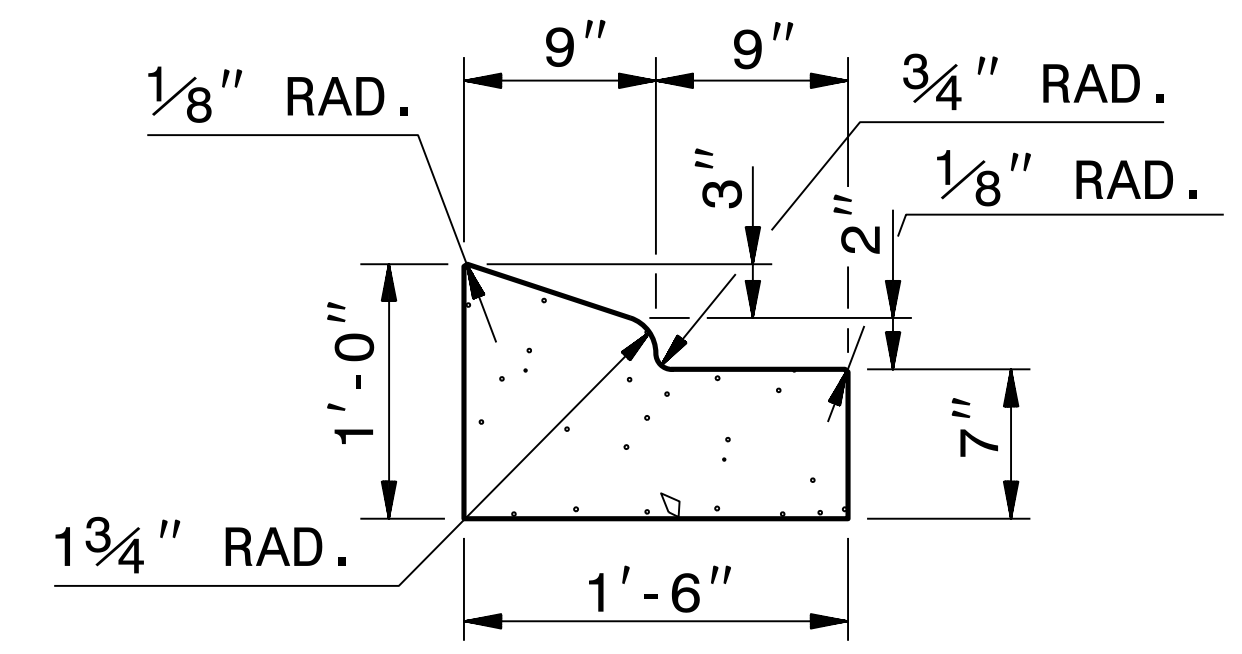
DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

**CONTRACT STANDARDS  
AND DEVELOPMENT UNIT**  
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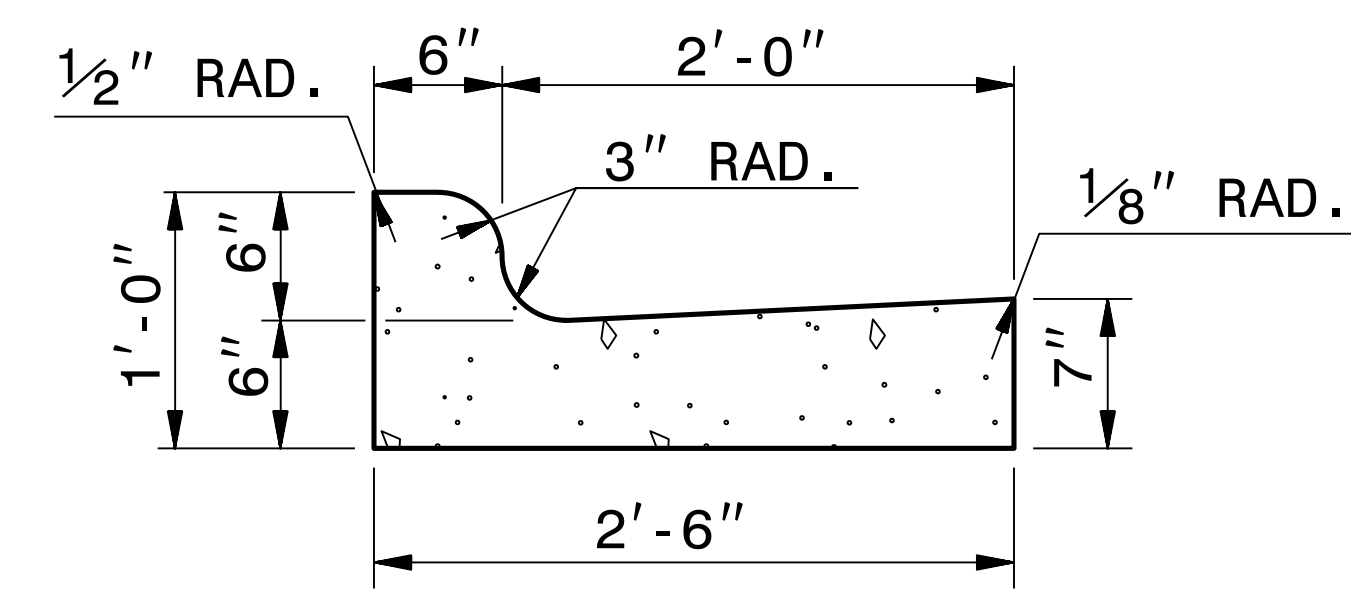
**DETAIL OF 1'-6"  
TO 2'-9" CURB & GUTTER  
TRANSITION SECTION**

ORIGINAL BY: T.S.SPELL DATE: NOV. 26, 2001  
 MODIFIED BY: T.S.SPELL DATE: JAN. 23, 2007  
 CHECKED BY: DATE:  
 FILE SPEC.: DS174:/usr/details/stand/cqtransit.dgn





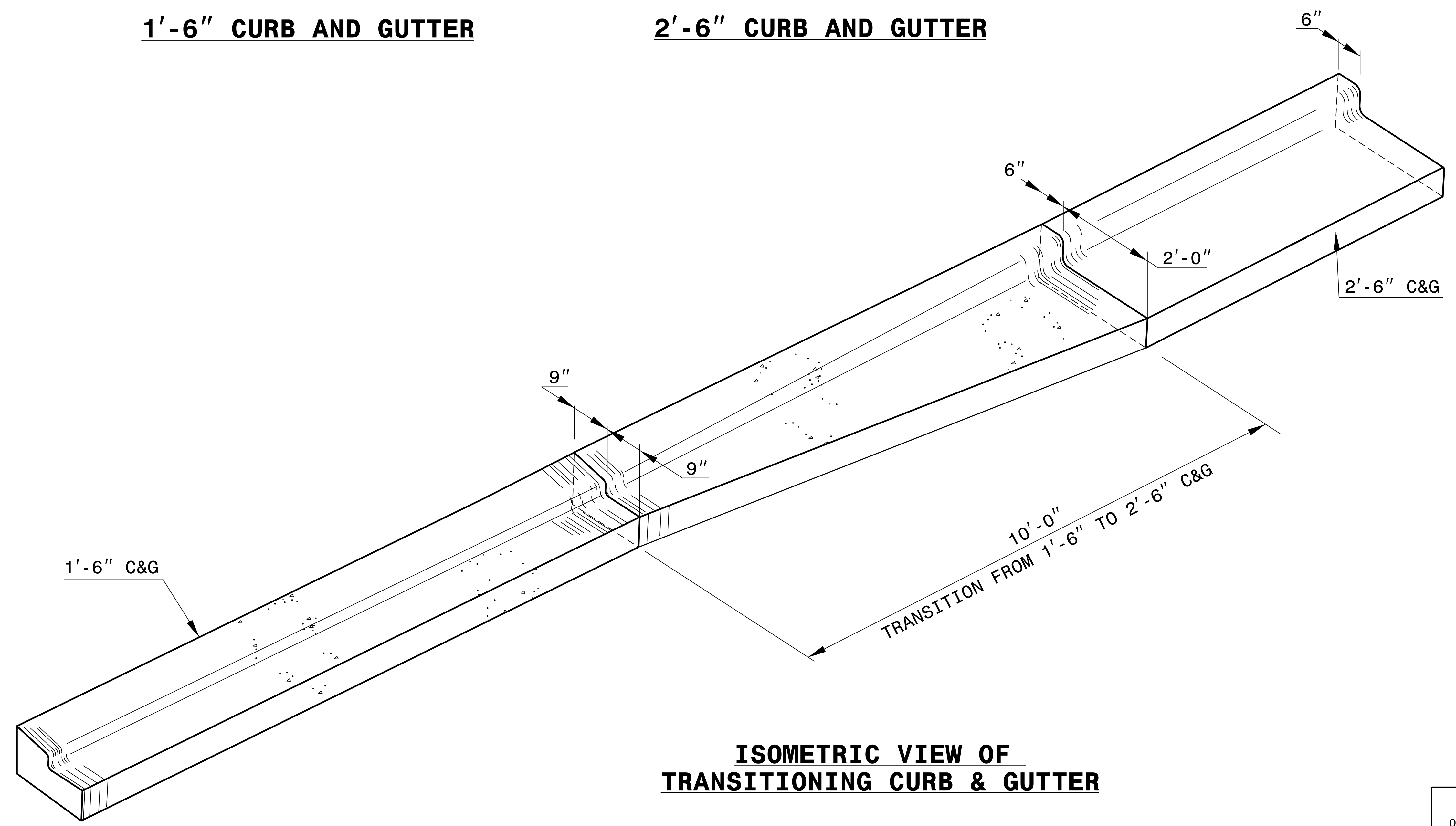
**1'-6" CURB AND GUTTER**



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

NOTE: SEE STD. DWG. 846.01 FOR ADDITIONAL CURB AND GUTTER INFORMATION.

SEE ROADWAY PLANS FOR LOCATION OF CURB TRANSITION.



**ISOMETRIC VIEW OF  
TRANSITIONING CURB & GUTTER**



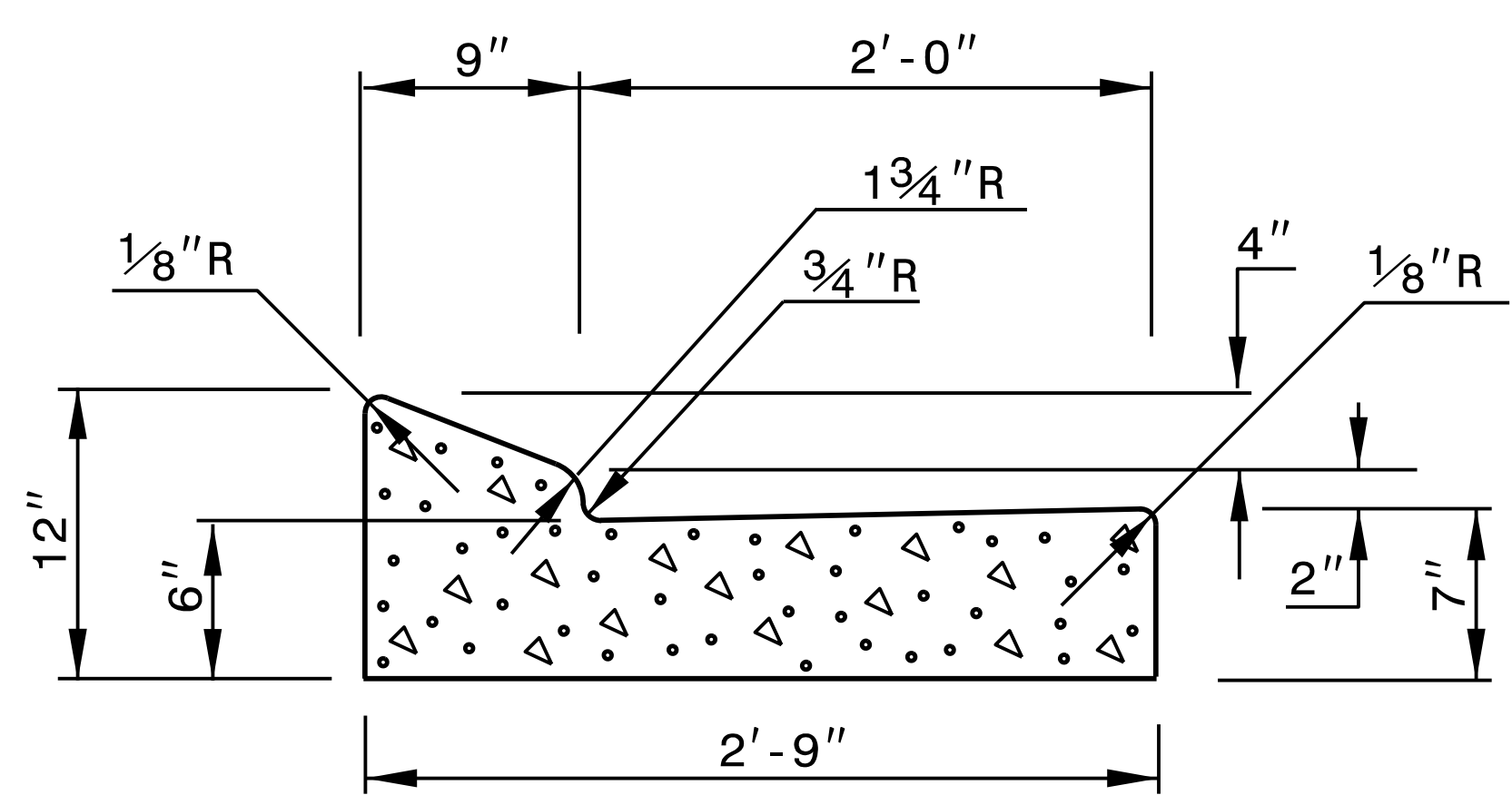
7/8/2000 10:16 AM EDT

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

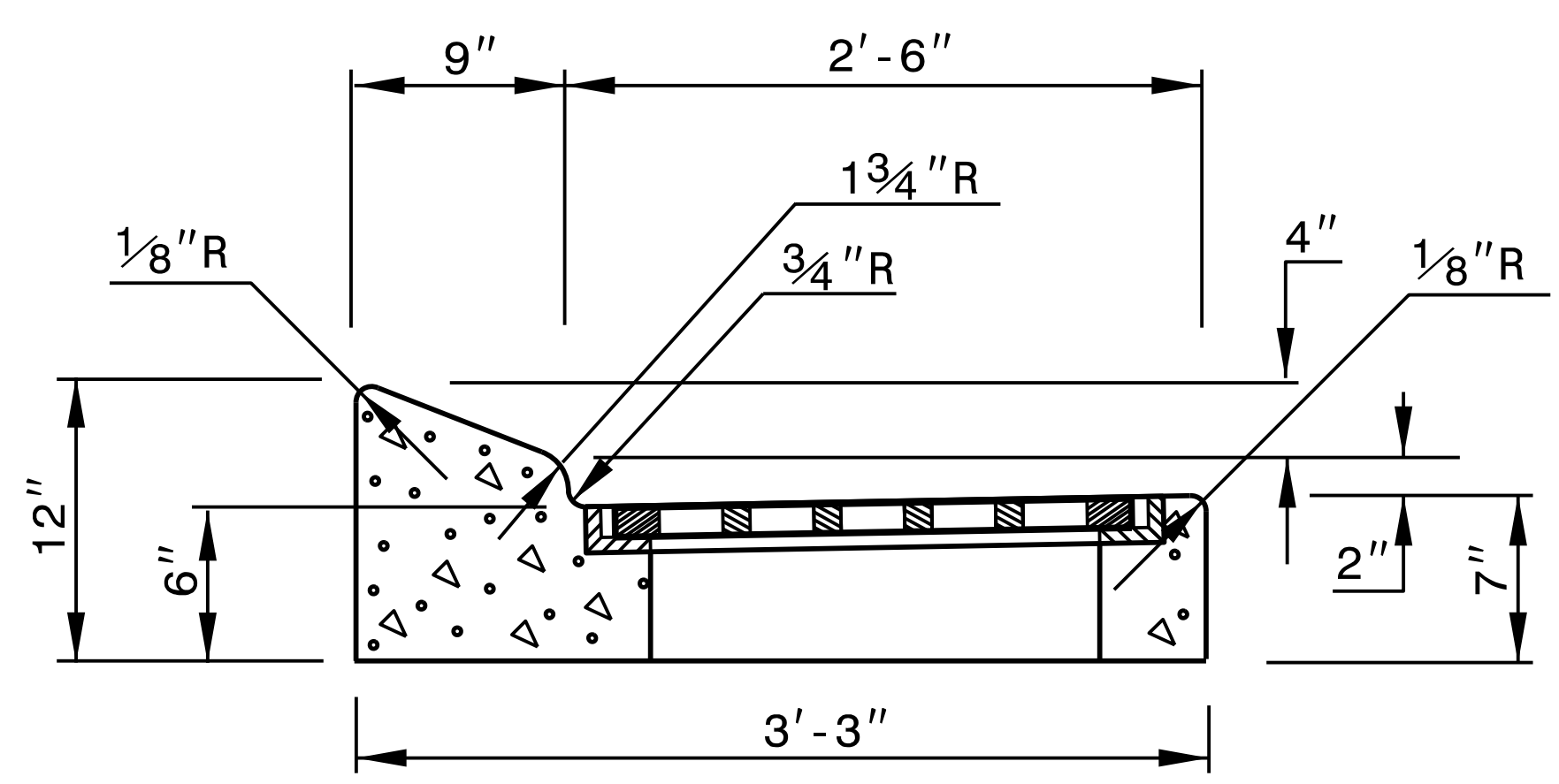
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DEVELOPMENT UNIT**  
Office 919-707-6950 FAX 919-250-4119

**DETAIL OF 1'-6"  
TO 2'-6" CURB & GUTTER  
TRANSITION SECTION**

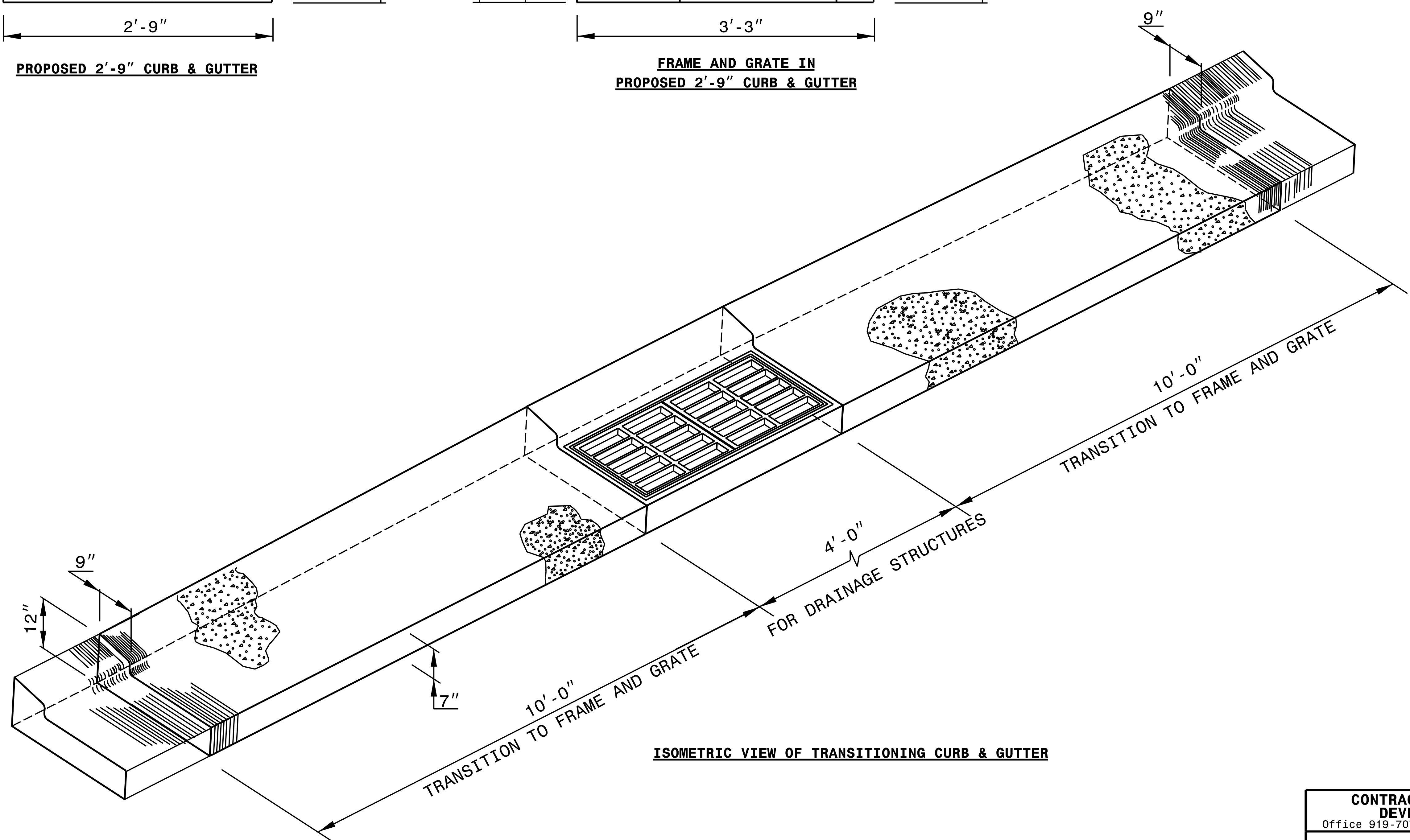
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 FILE SPEC.: \_DS174:/usr/details/stand/cgtransit.dgn



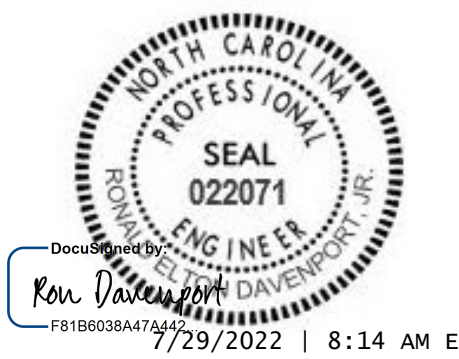
**PROPOSED 2'-9" CURB & GUTTER**



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



**ISOMETRIC VIEW OF TRANSITIONING CURB & GUTTER**



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

<b>CONTRACT STANDARDS AND DEVELOPMENT UNIT</b>	
Office 919-707-6950	FAX 919-250-4119
<b>DETAIL OF 2'-9" TO FRAME AND GRATE</b>	
ORIGINAL BY: _____	DATE: _____
MODIFIED BY: _____	DATE: _____
CHECKED BY: _____	DATE: _____
FILE SPEC.: kkempf/english/curb_gutter_transition.dgn	



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

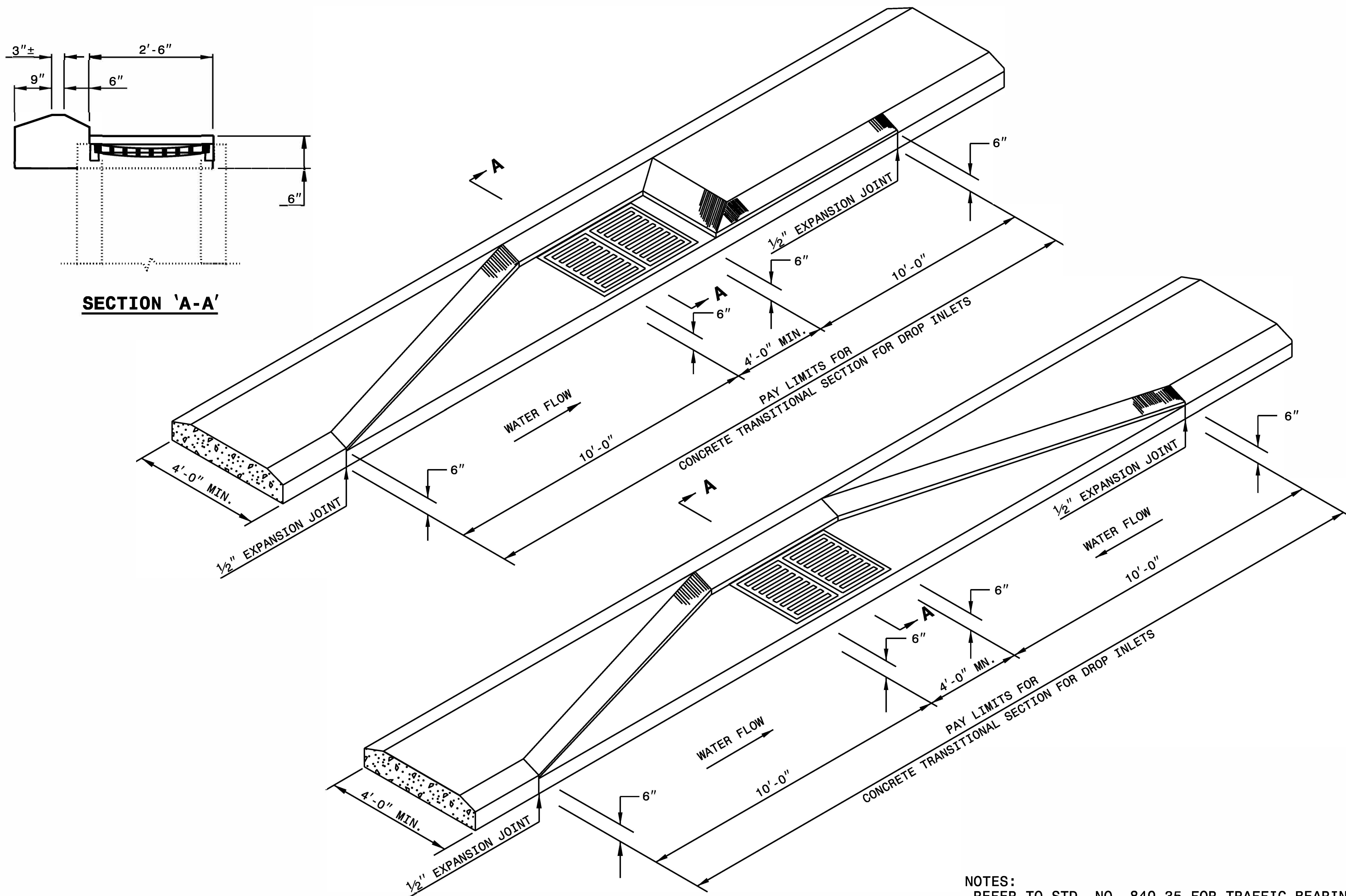
ENGLISH DETAIL DRAWING FOR  
**METHOD FOR PLACEMENT OF  
DROP INLETS IN CONCRETE ISLANDS**

SHEET 1 OF 1  
**852D06**

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

ENGLISH DETAIL DRAWING FOR  
**METHOD FOR PLACEMENT OF  
DROP INLETS IN CONCRETE ISLANDS**

SHEET 1 OF 1  
**852D06**



NOTES:  
 -REFER TO STD. NO. 840.35 FOR TRAFFIC BEARING DRAINAGE STRUCTURE.  
 -REFER TO STD. NO. 840.20 or 840.29 FOR GRATE AND FRAME.

\$\$\$\$\$SYTIME\$\$\$\$\$  
\$\$\$\$\$USERNAME\$\$\$\$\$



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

**SEE TITLE PLATE**

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

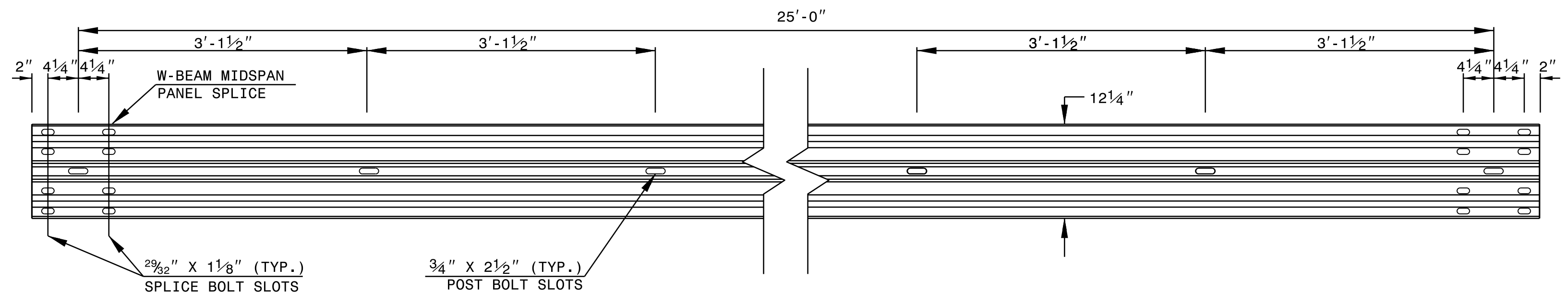
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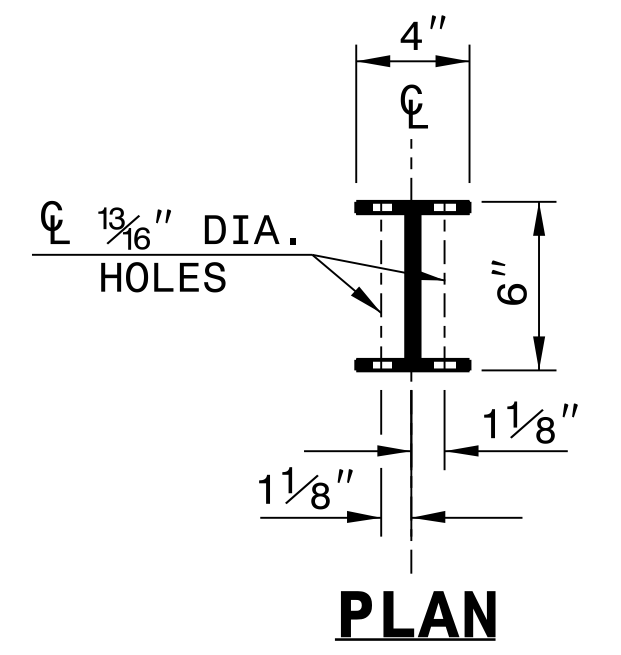
STATE OF NORTH CAROLINA  
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RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR  
**GUARDRAIL INSTALLATION**

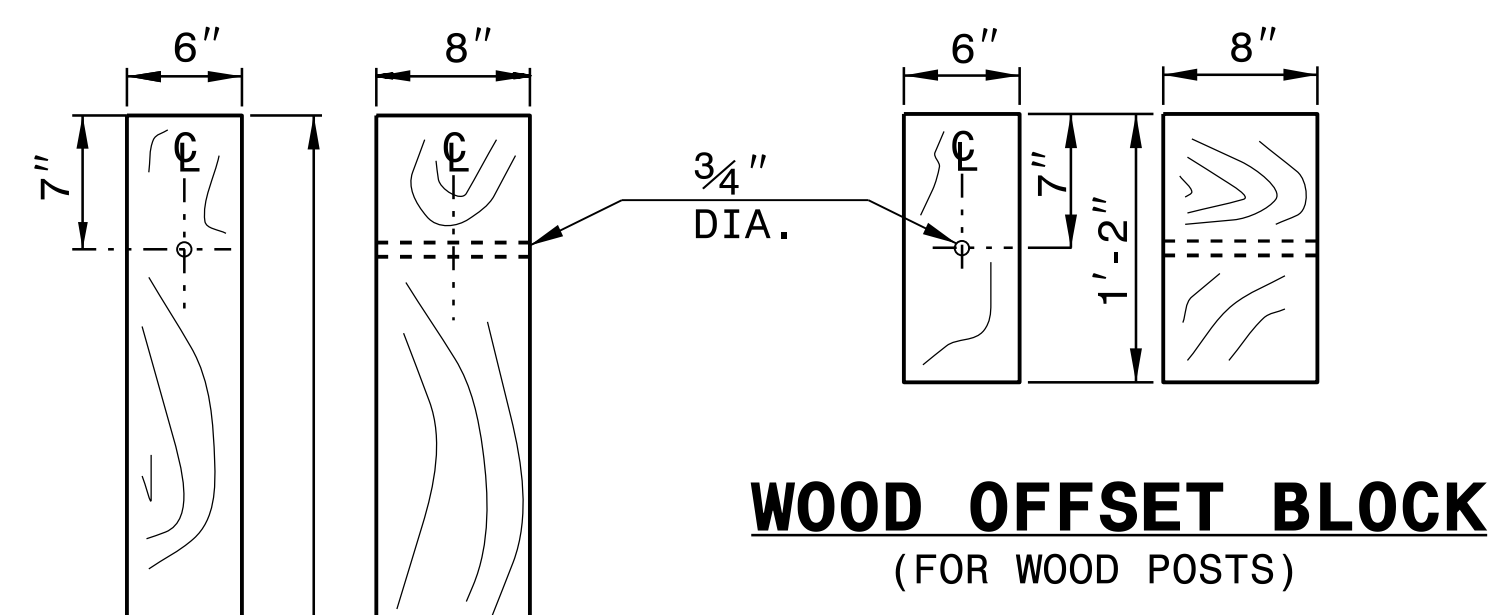
SHEET 6 OF 8  
**862D02**



**STANDARD W-BEAM GUARDRAIL**



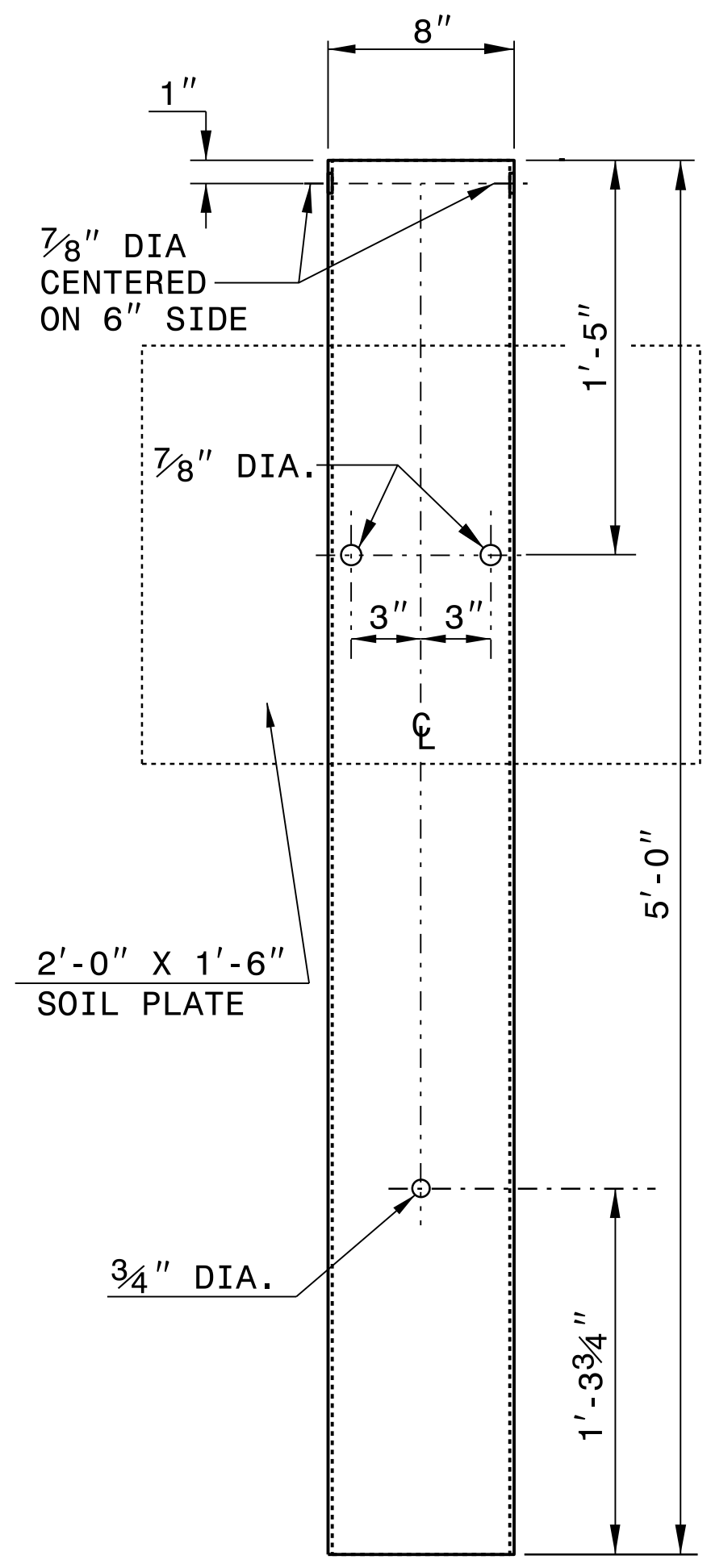
**PLAN**



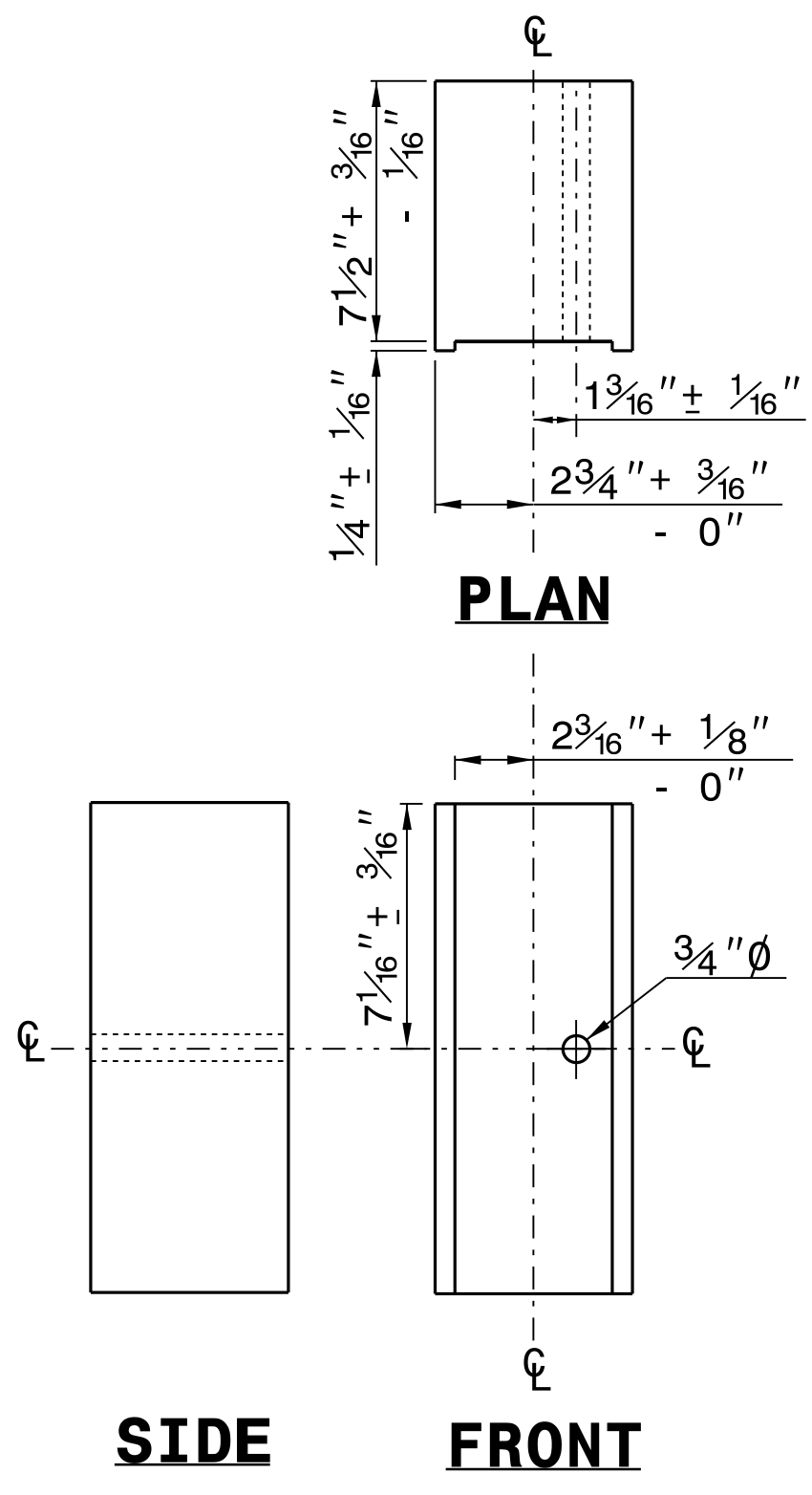
**WOOD OFFSET BLOCK  
(FOR WOOD POSTS)**

**STANDARD  
LINE POST**

**SHORT WOOD  
BREAKAWAY POST**



**STEEL TUBE  
TS 6" x 8" x 0.1875"**

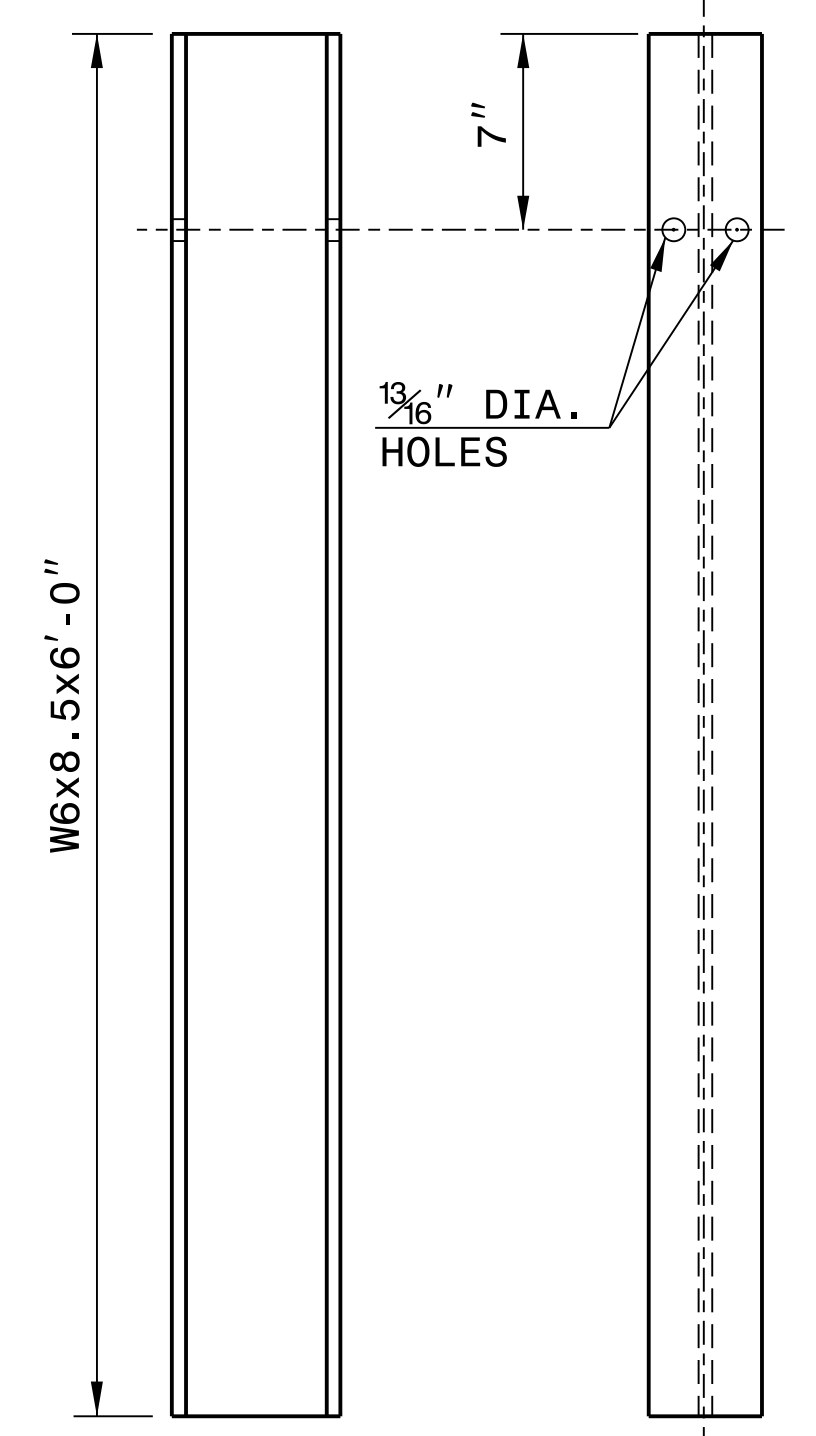


**PLAN**

**SIDE**

**FRONT**

**ROUTED  
OFFSET BLOCK**



**SIDE**

**FRONT**

**"W6" STEEL POST**

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

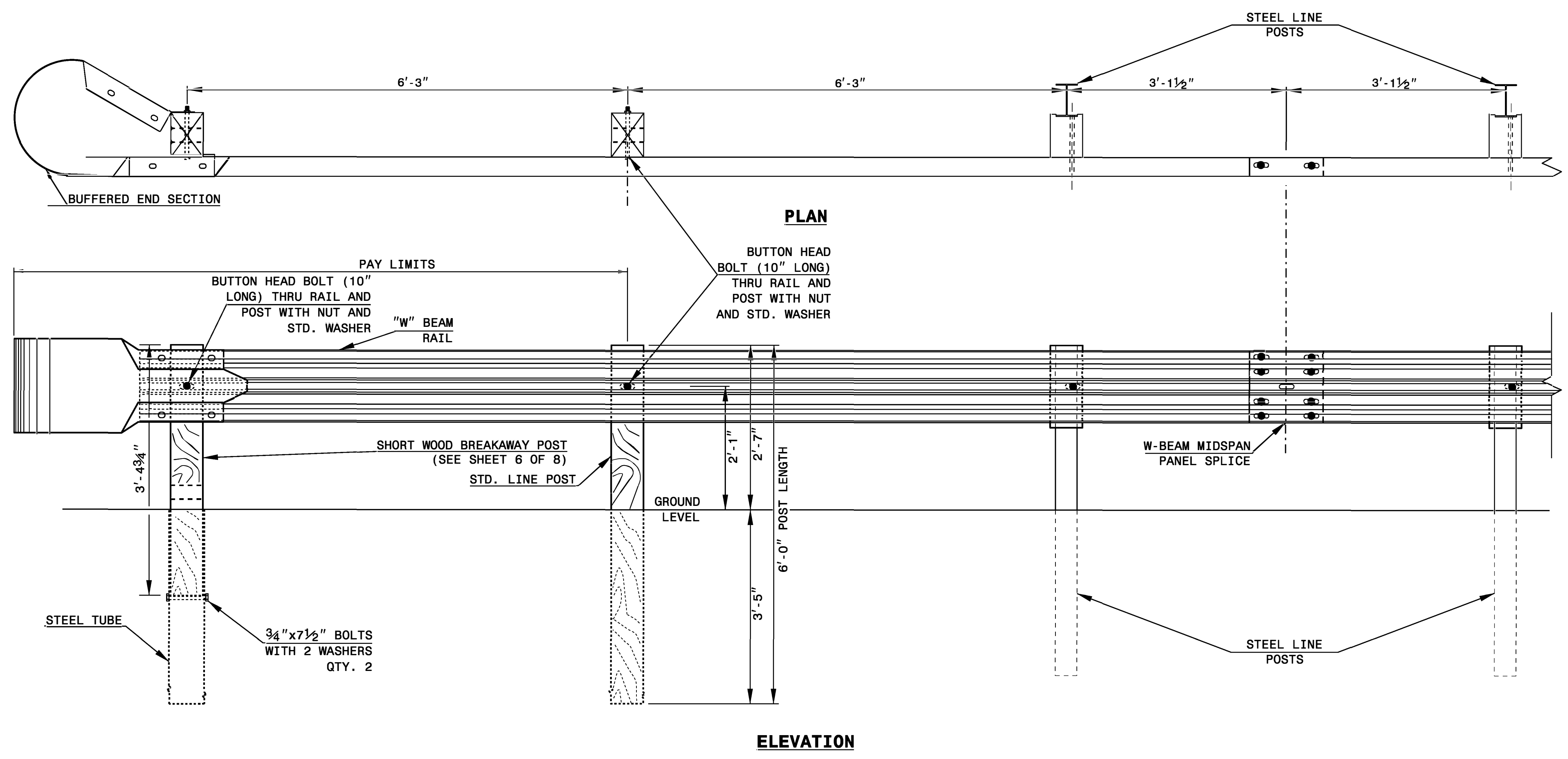
ROADWAY DETAIL DRAWING FOR  
**GUARDRAIL INSTALLATION**

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**



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

**A.T. - 1 SYSTEM**

ORIGINAL BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
MODIFIED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
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FILE SPEC.: \_\_\_\_\_

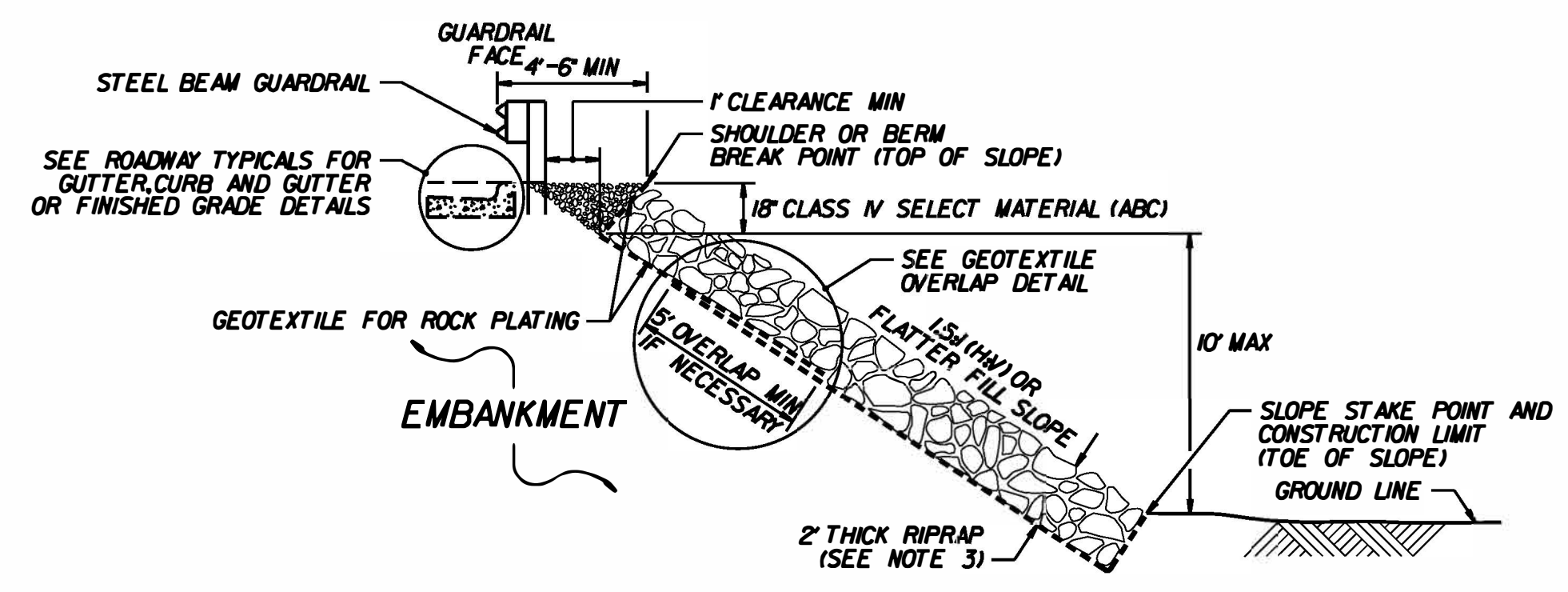
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UNLESS ALL SIGNATURES COMPLETED



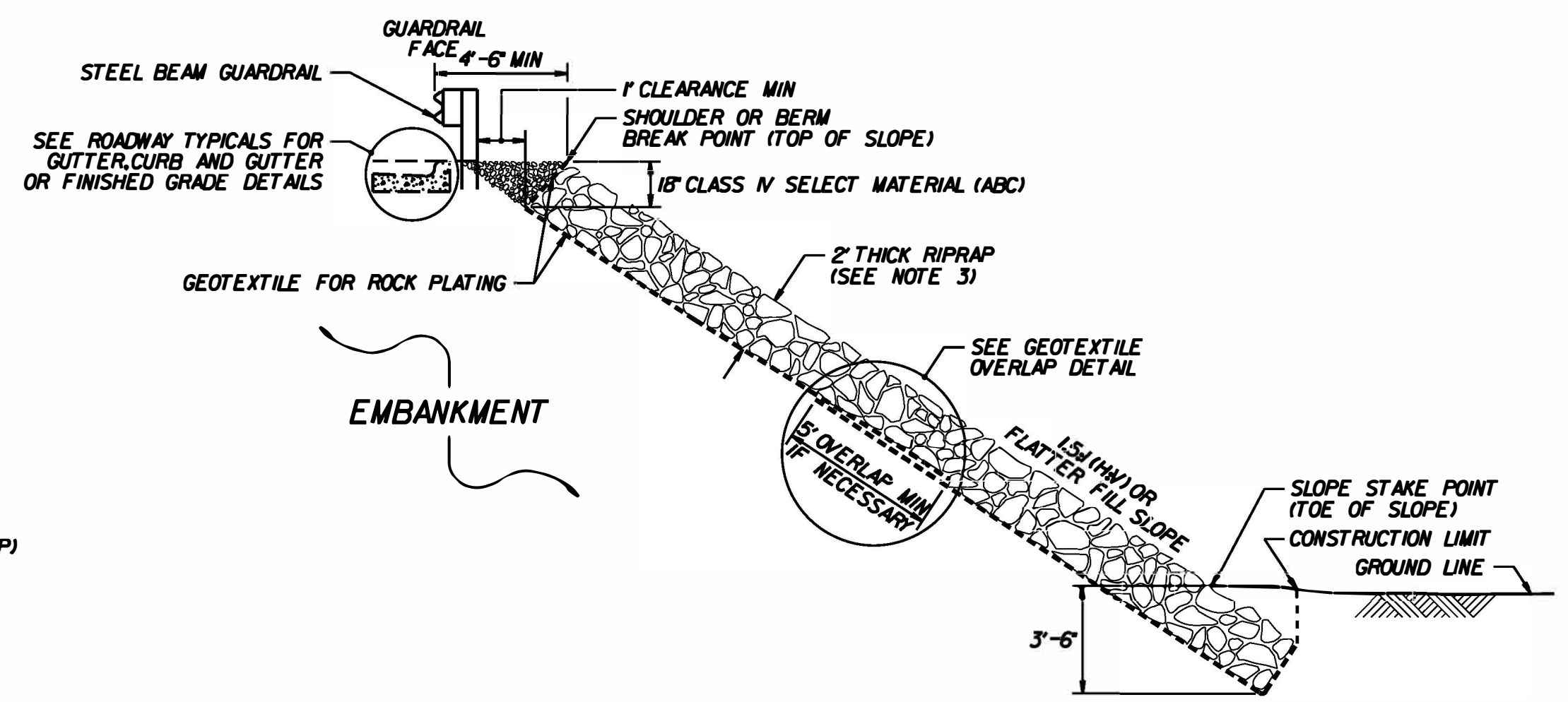
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR  
**ROCK PLATING**

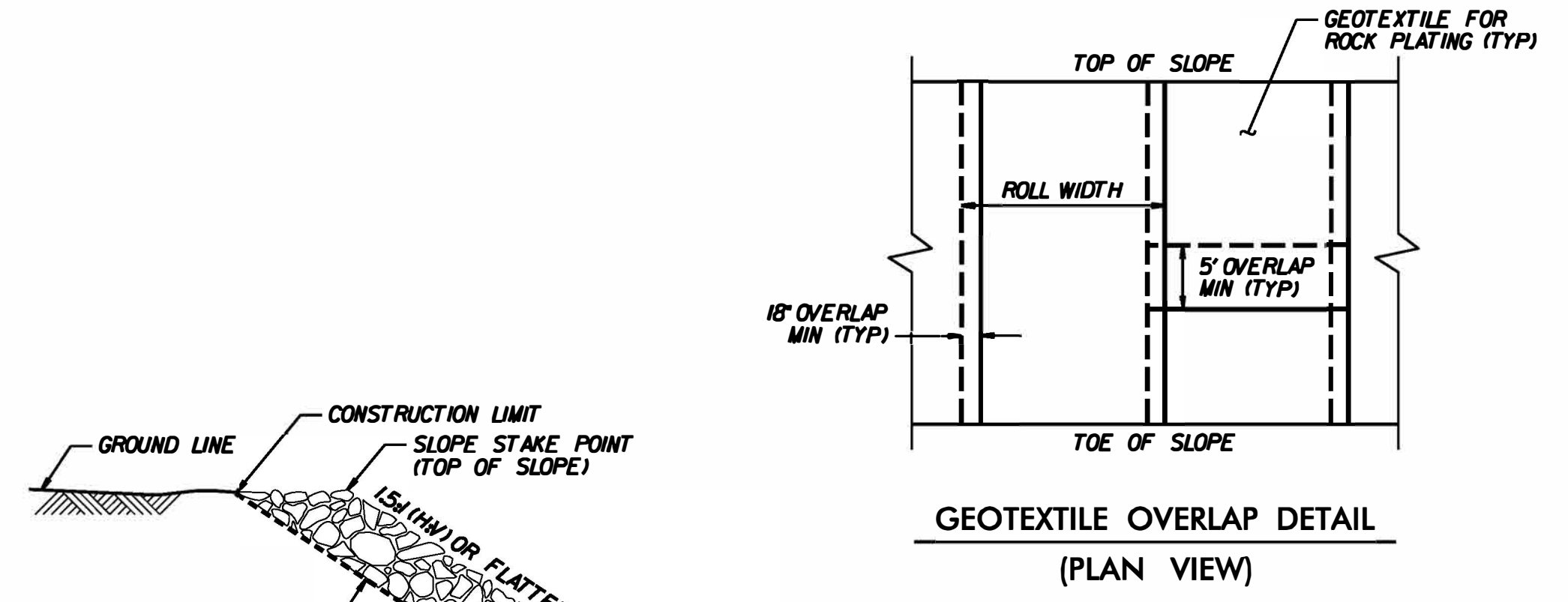
SHEET 1 OF 1  
**275D01**



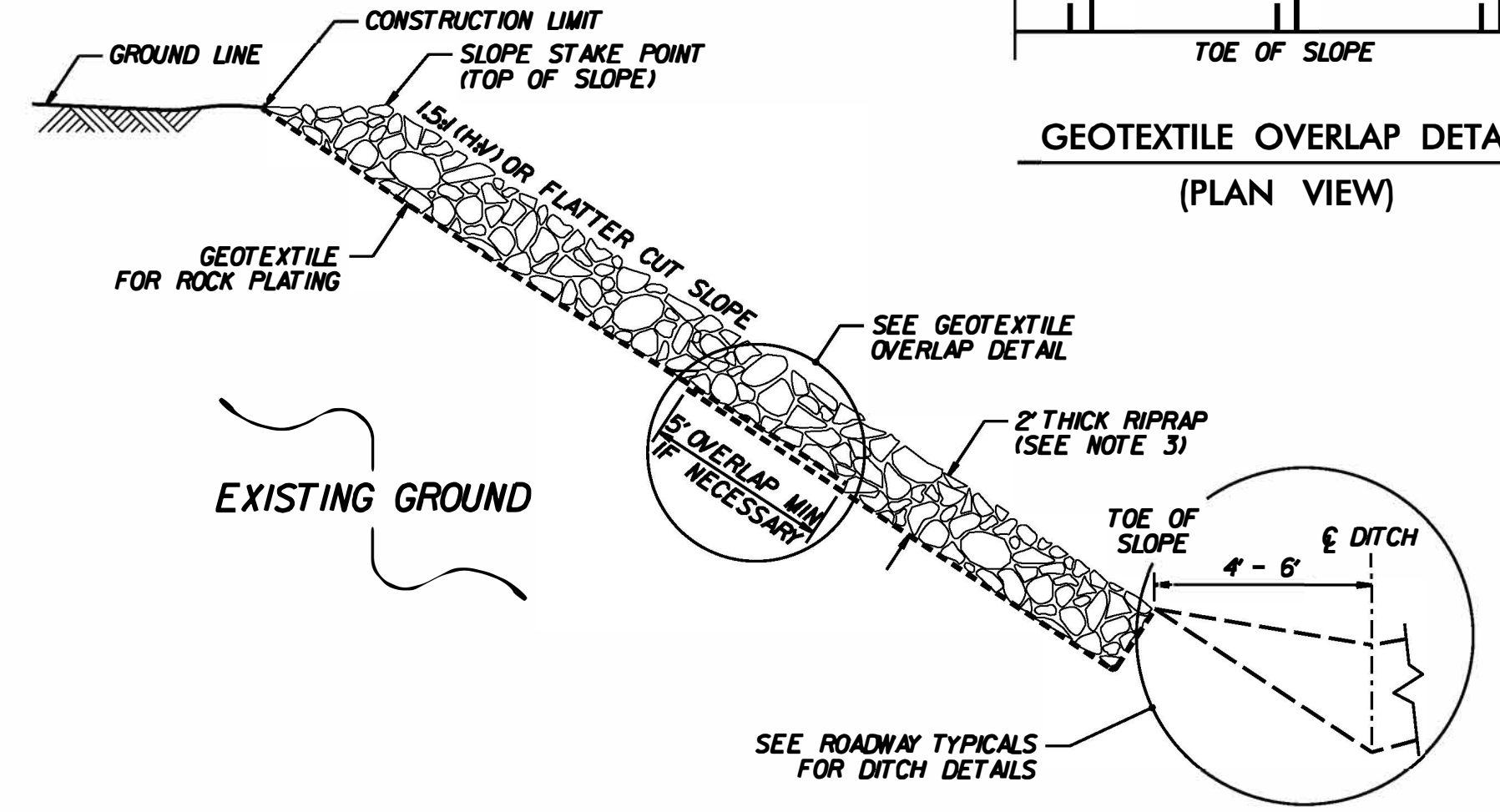
**ROCK PLATING DETAIL NO. 1 - TYPICAL SECTION**



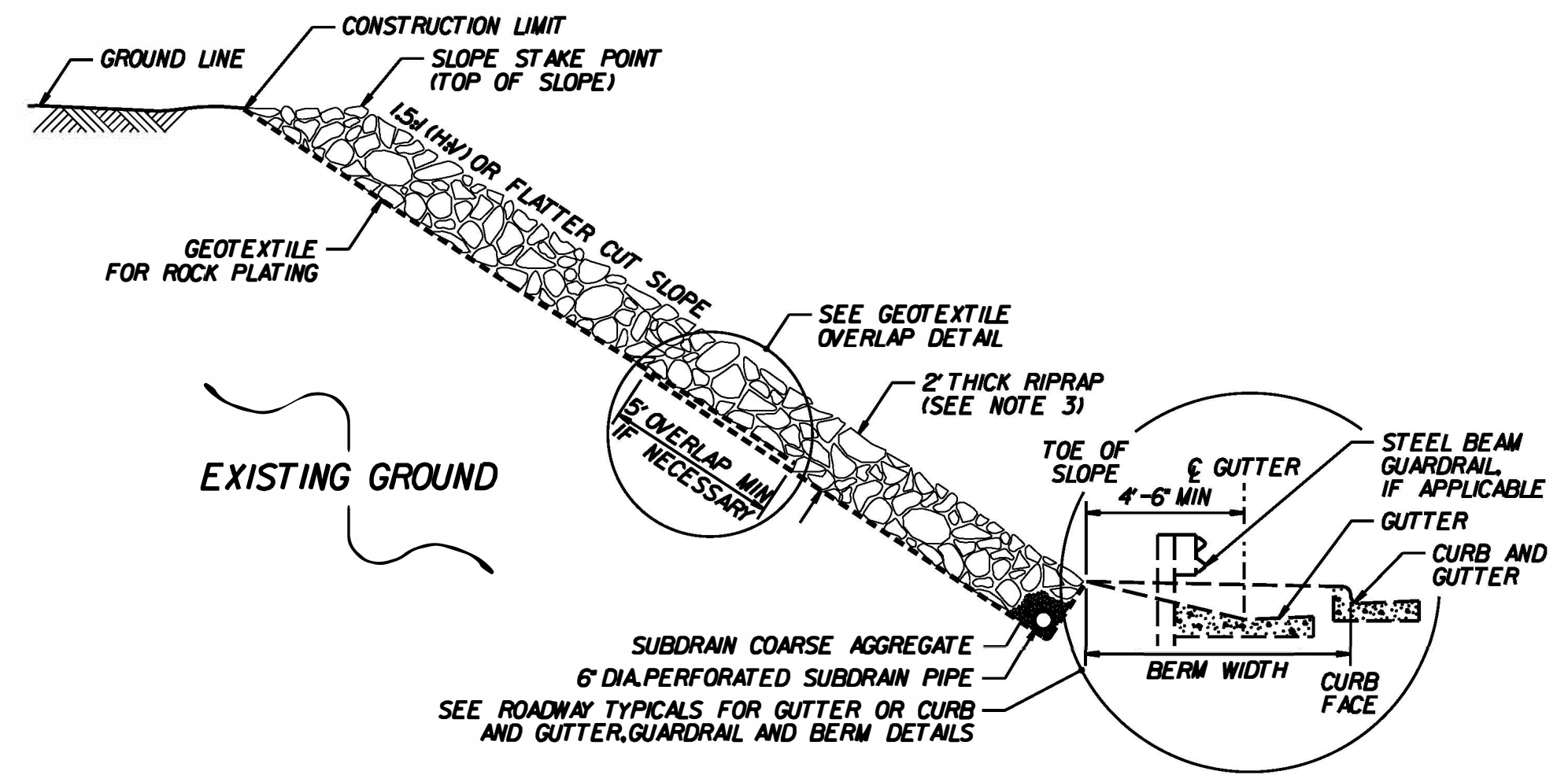
**ROCK PLATING DETAIL NO. 2 - TYPICAL SECTION**



**GEOTEXTILE OVERLAP DETAIL (PLAN VIEW)**



**ROCK PLATING DETAIL NO. 3 - TYPICAL SECTION**



**ROCK PLATING DETAIL NO. 4 - TYPICAL SECTION**

- NOTES:**
- SEE ROADWAY PLANS AND SUMMARY SHEETS FOR ROCK PLATING LOCATIONS.
  - FOR ROCK PLATING, SEE SECTION 275 OF THE STANDARD SPECIFICATIONS.
  - USE CLASS I, 2 OR B RIPRAP UNLESS REQUIRED OTHERWISE IN THE ROADWAY SUMMARY SHEETS.

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

ROADWAY DETAIL DRAWING FOR  
**ROCK PLATING**

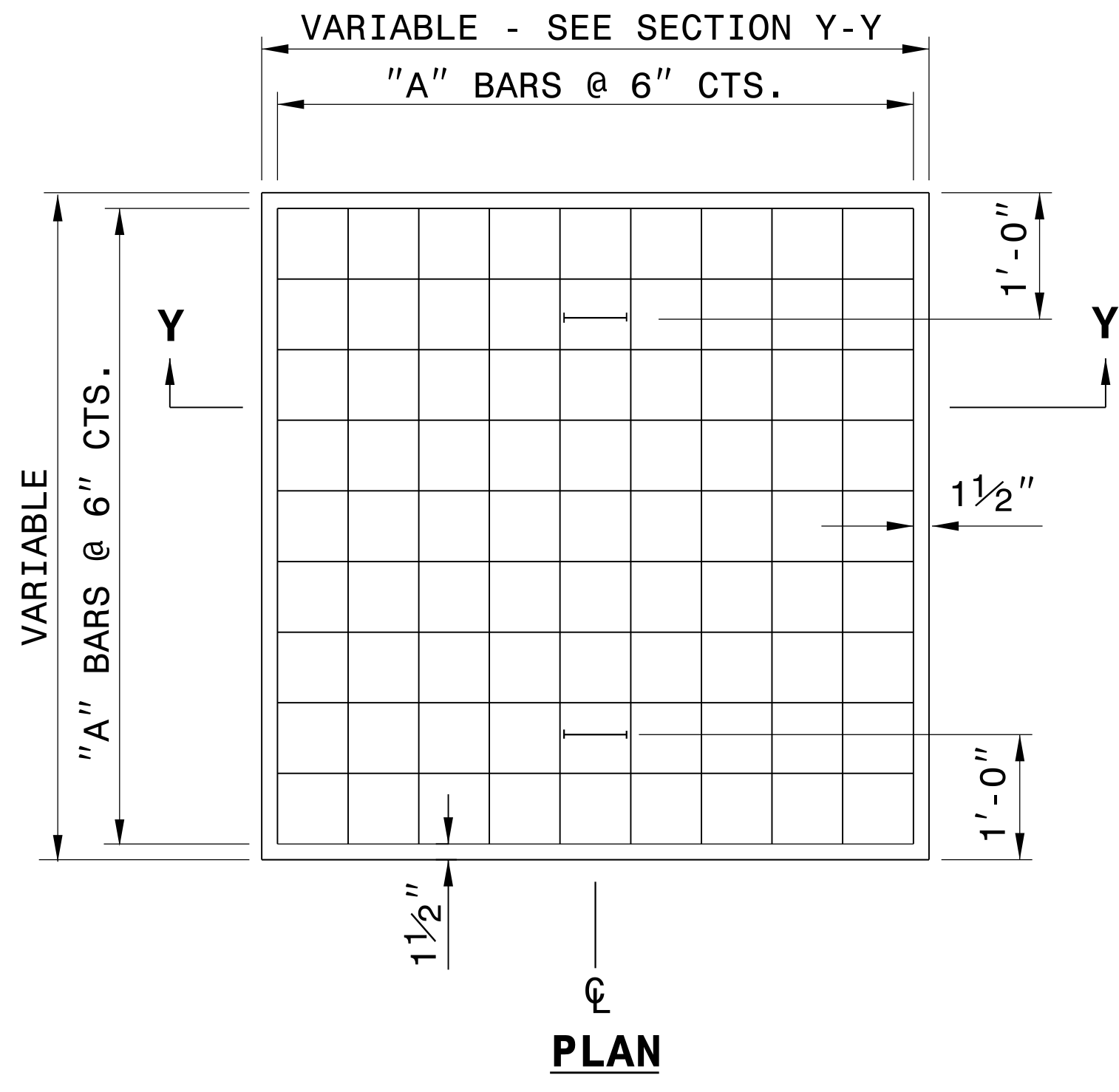
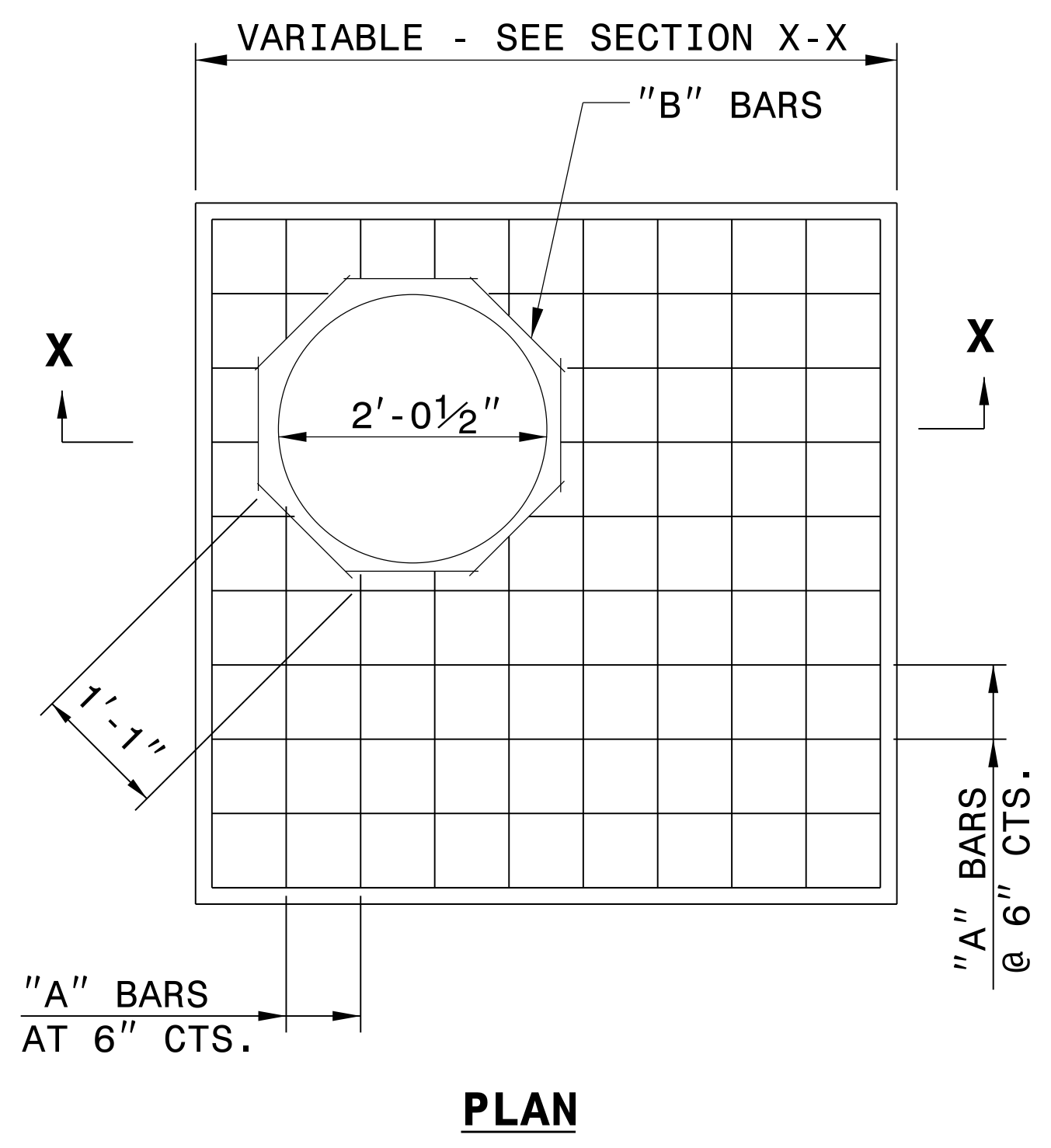
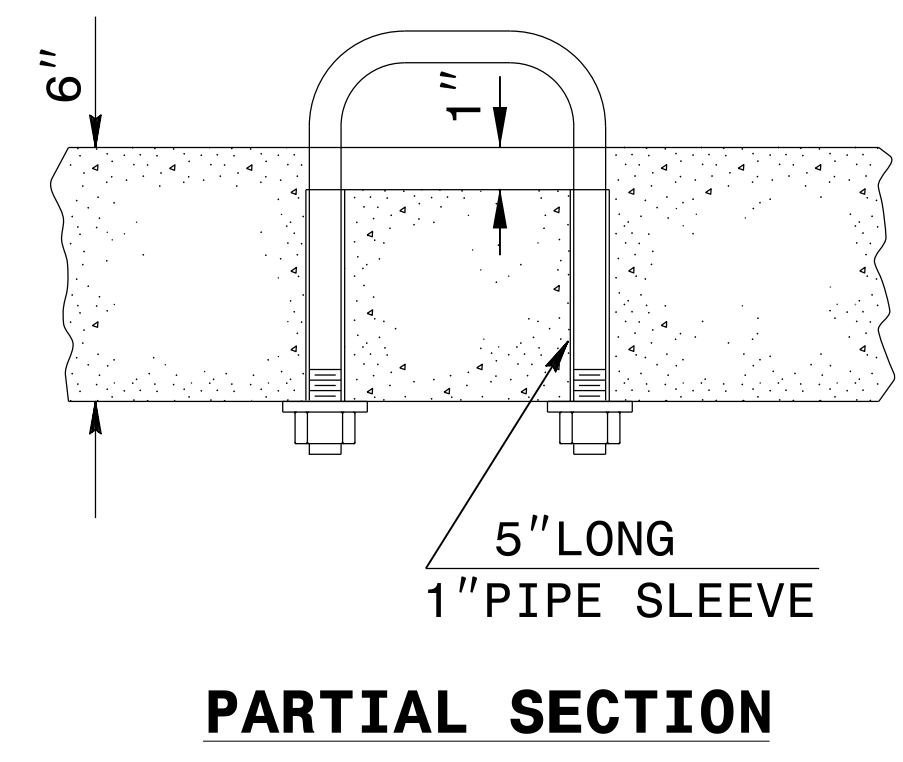
SHEET 1 OF 1  
**275D01**



CONTRACT STANDARDS AND DEVELOPMENT UNIT Office 919-707-6900 FAX 919-250-4119	
<b>SEE TITLE BLOCK</b>	
ORIGINAL BY: S. HIDDEN	DATE: 03-11-22
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC.:	

SYSTEM GENERATED USER NAME  
 7/23/2022 8:14 AM EDT





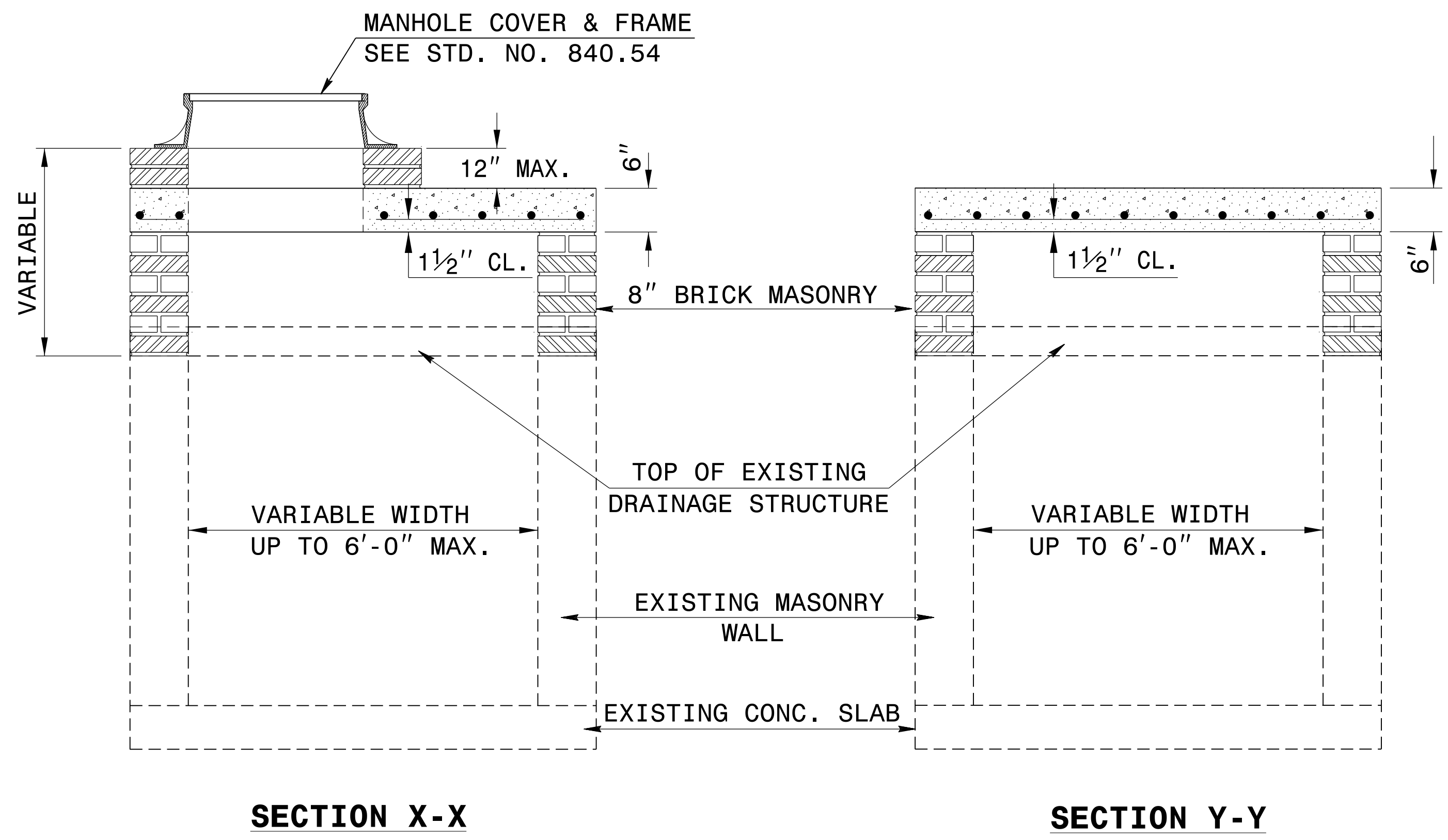
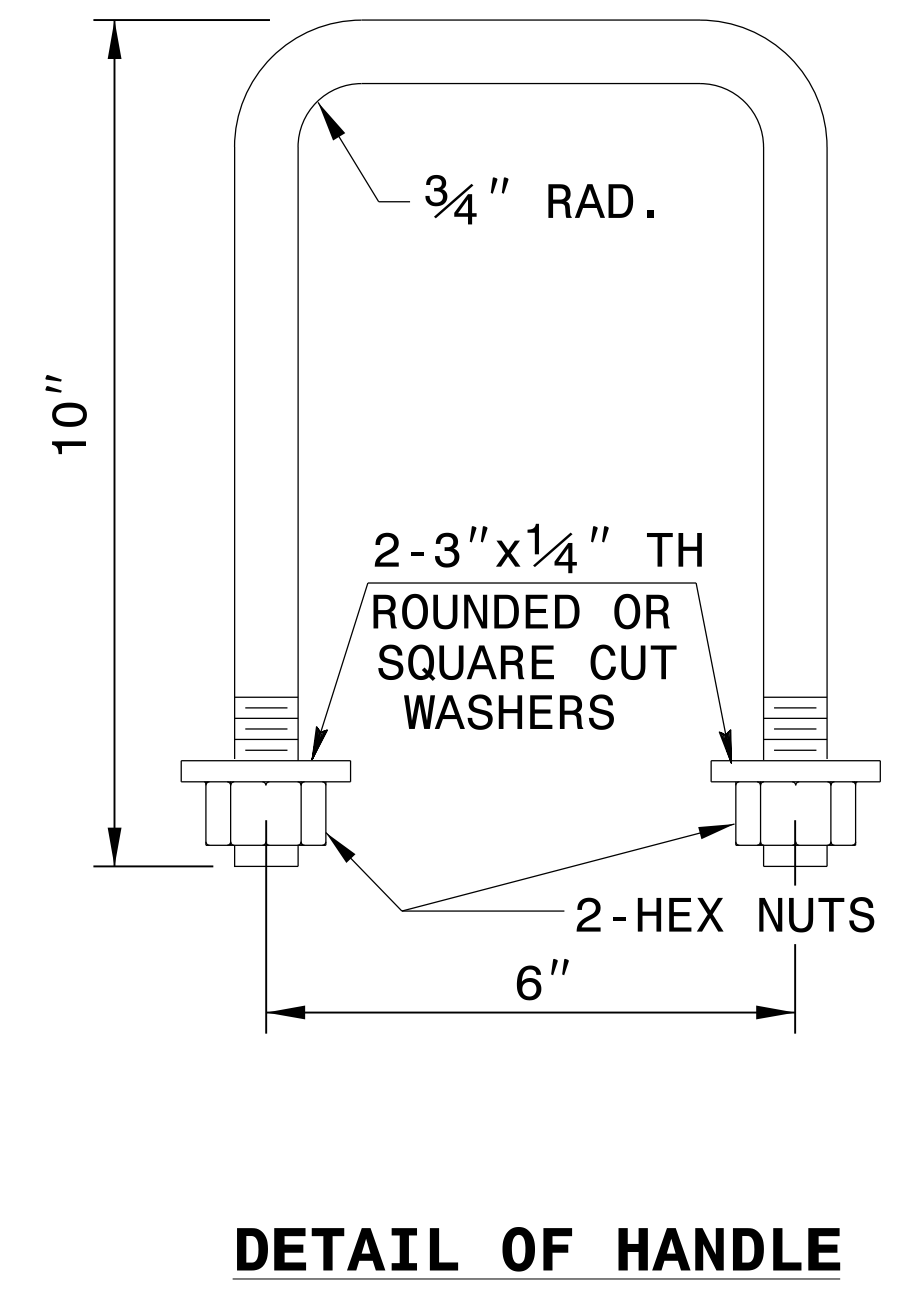
**GENERAL NOTES:**

CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.

THE DIMENSIONS FOR THE EXISTING BOXES ARE APPROXIMATE AND MAY VARY SLIGHTLY.

DETAIL INTENDED FOR NON-TRAFFIC BEARING DRAINAGE STRUCTURES.

<b>BILL OF MATERIALS</b>				
<b>REINFORCING STEEL</b>				
CODE	SIZE	QTY.	LENGTH	REINF. STEEL LBS.
A	#4	20	4'-6"	60.12
B	#4	8	1'-1"	5.79
<b>TOTAL</b>				<b>65.91 *</b>
<b>MASONRY</b>				<b>CU YDS</b>
TOP SLAB CONCRETE CLASS "B"				.4326 *
BRICK MASONRY PER FT HT (MIN)				.4111



**\* NOTE:**  
QUANTITIES BASED ON 3'-6" X 3'-6" DRAINAGE STRUCTURE. ADJUST QUANTITIES FOR LARGER STRUCTURES AND MANHOLE CONSTRUCTION.

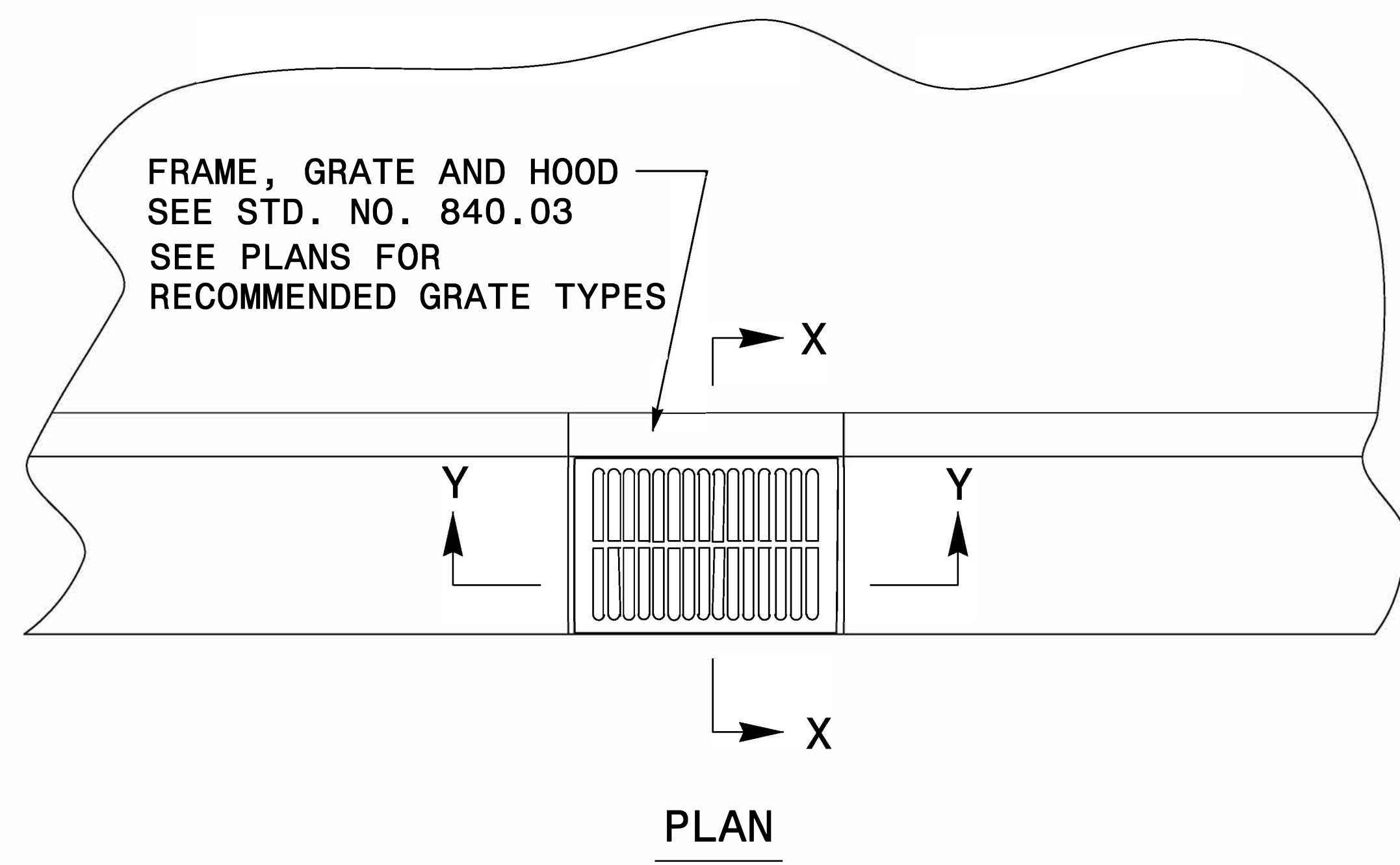


DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

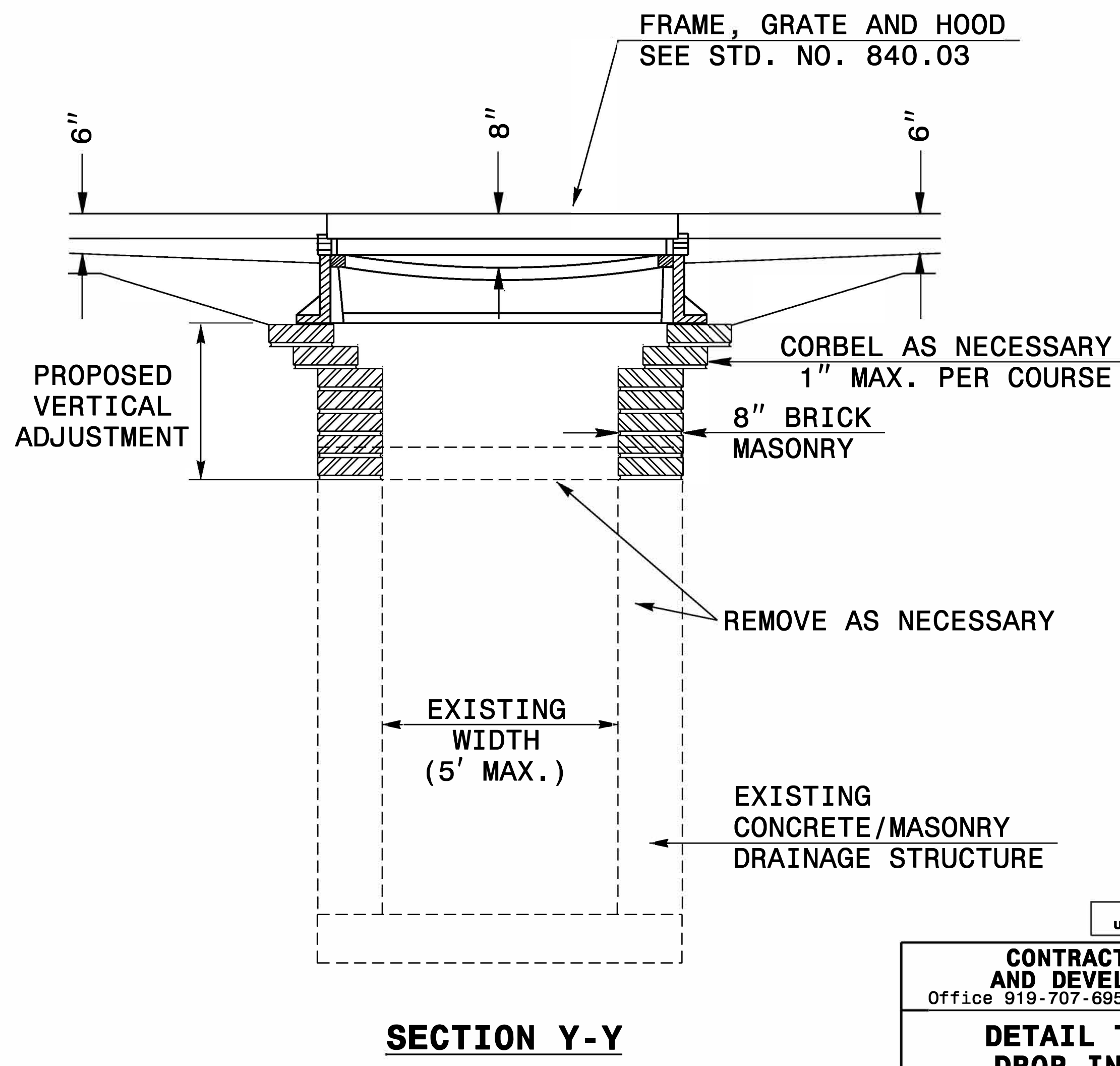
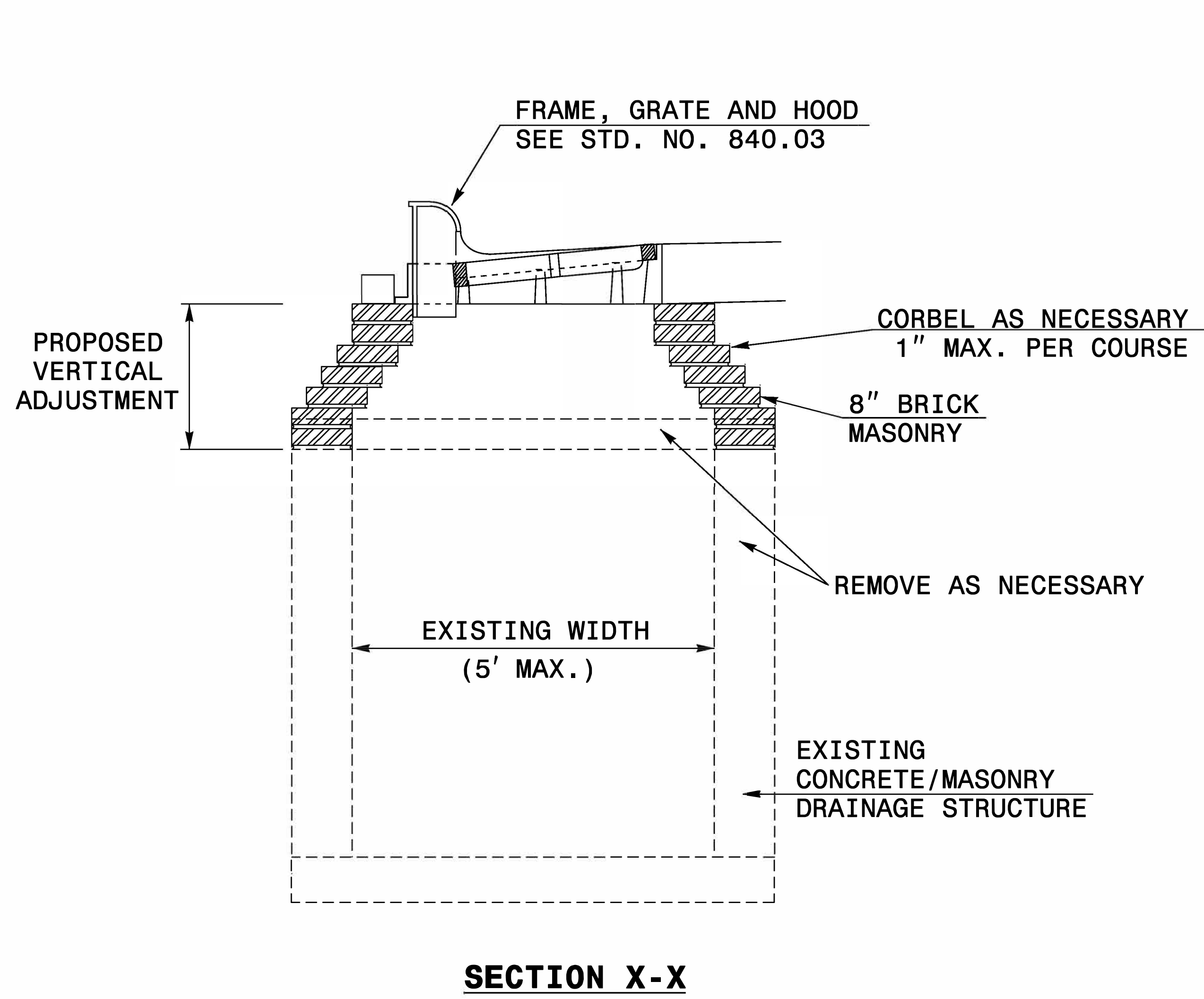
**DETAIL TO CONVERT EXISTING DI, CB, OTCB or GI TO JUNCTION BOX (MANHOLE OPTIONAL)**

ORIGINAL BY: T.S.S. DATE: NOV. 1997  
 MODIFIED BY: T.S.S. DATE: FEB. 2000  
 CHECKED BY: DATE:  
 FILE SPEC.: ds174:/usr/details/stand/boxtojbe.dgn



**GENERAL NOTES:**

- THE ROADWAY PLANS INDICATE STRUCTURES TO BE CONVERTED.
- AFTER REMOVAL, STORE GRATES AND FRAMES AS DIRECTED BY THE ENGINEER.
- 4" SOLID CLAY BRICK, JUMBO BRICK, CONCRETE, OR 4" SOLID CONCRETE BLOCK MAY BE USED FOR VERTICAL ADJUSTMENT OF THE STRUCTURE.
- CONVERT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

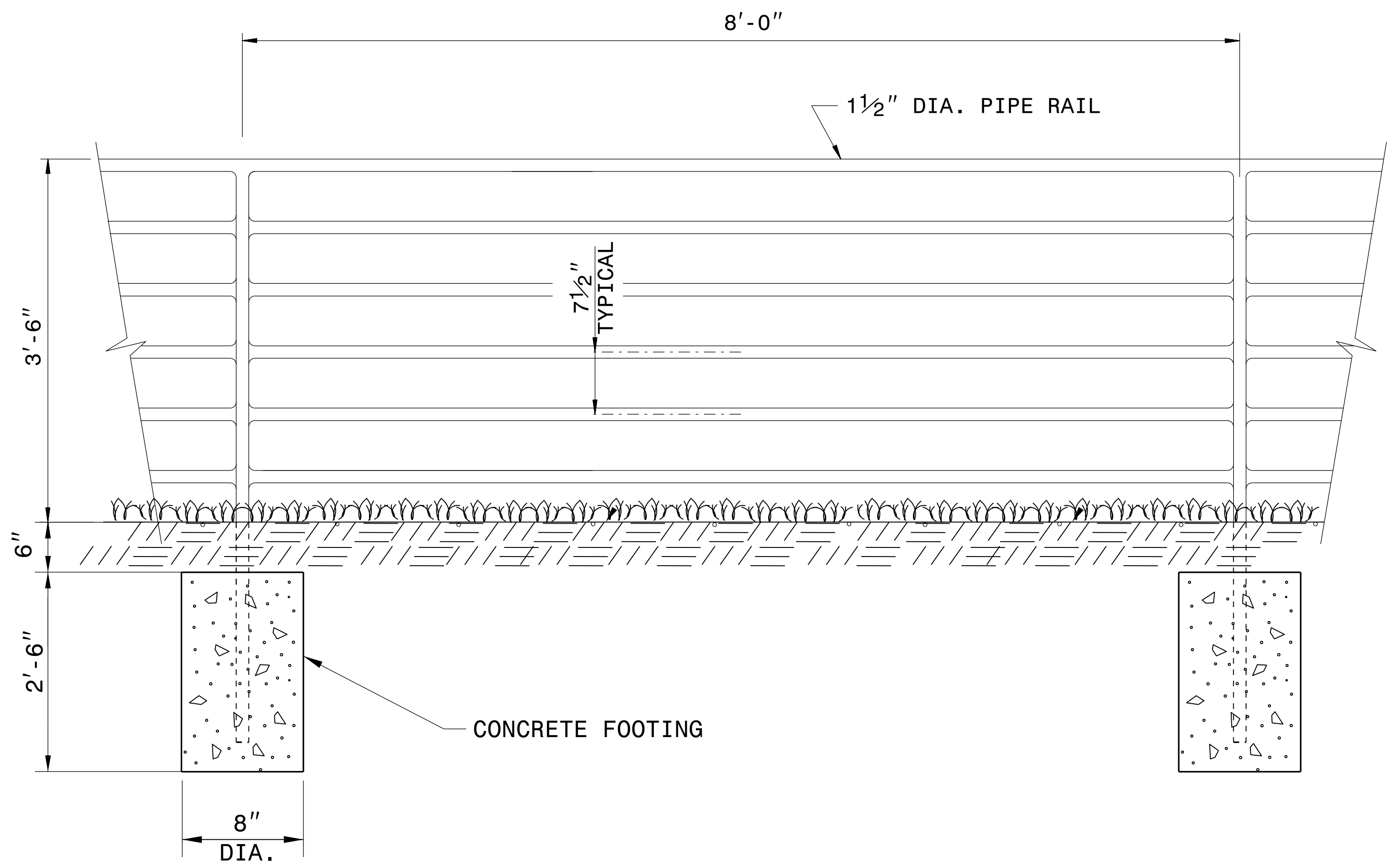
**CONTRACT STANDARDS AND DEVELOPMENT UNIT**  
Office 919-707-6950 FAX 919-250-4119

**DETAIL TO CONVERT DROP INLET OR JB TO CATCH BASIN**

ORIGINAL BY: E.E. WARD DATE: 11-97  
 MODIFIED BY: DATE:  
 CHECKED BY: DATE:  
 FILE SPEC.: DS37:usr\details\stand\jbtocb.dgn

26-JUN-2017 10:42 S:\Contracts\Special Details\howerton\convert DI or JB to CB.dgn .howerton AT USD-292595





### ELEVATION OF HANDRAIL

**NOTES:**

CONSTRUCT PROPOSED STEEL PIPE RAIL OF 1 1/2" DIAMETER SCHEDULE 40 PLAIN END GALVANIZED STEEL PIPE MEETING THE REQUIREMENTS OF ASTM A53.

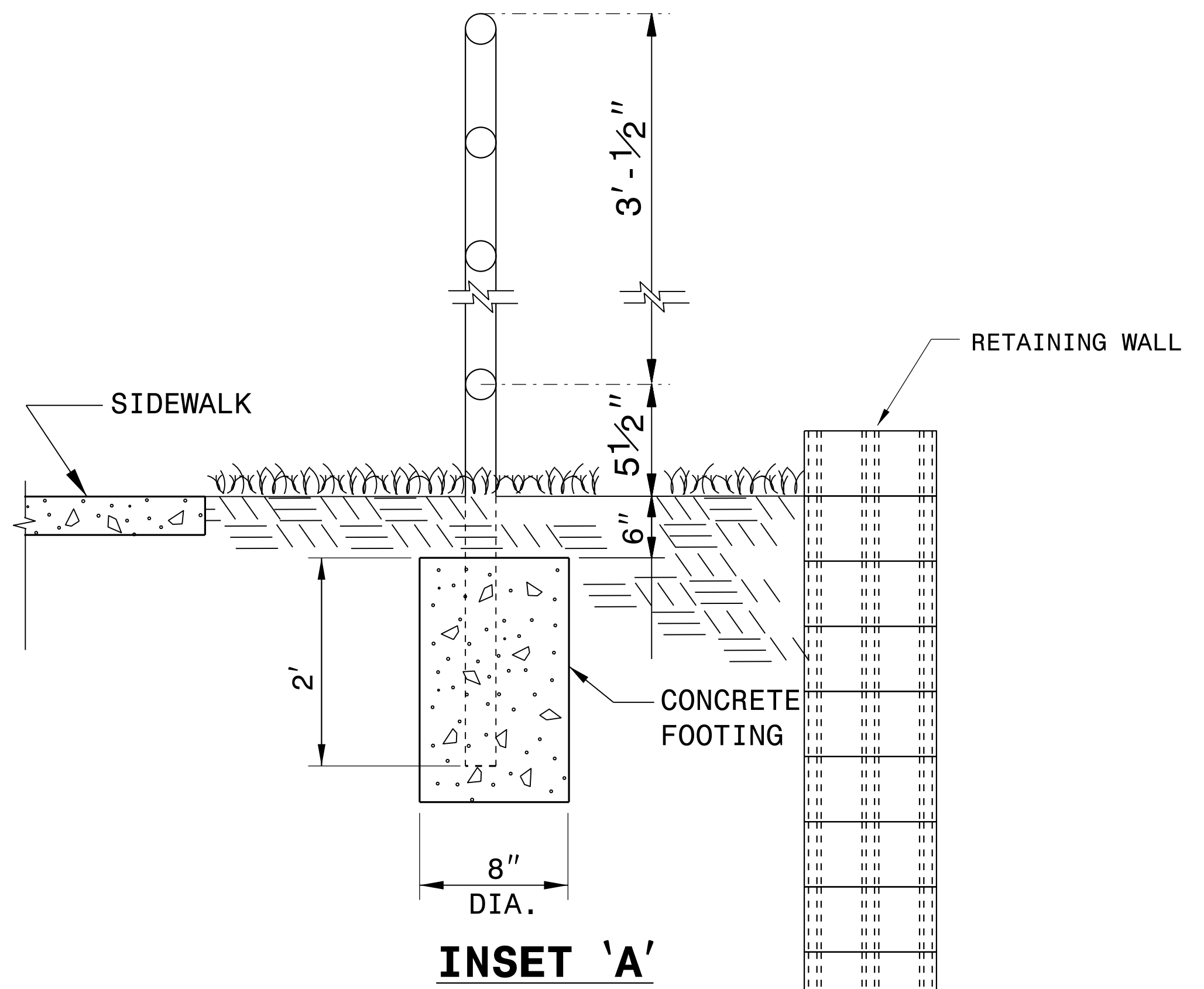
REPAIR GALVANIZING IN ACCORDANCE WITH SECTION 1076 OF THE NCDOT STANDARD SPECIFICATIONS.

PAINT, IF REQUIRED BY THE ENGINEER, IN ACCORDANCE WITH SECTION 1080 OF THE STANDARD SPECIFICATIONS.

WELD IN ACCORDANCE WITH ARTICLE 1072-18 OF THE STANDARD SPECIFICATIONS.

USE CLASS 'B' CONCRETE FOR HANDRAIL FOOTINGS.

PLACEMENT OF HANDRAIL IN RELATION TO RETAINING WALL AND SIDEWALK MAY BE MODIFIED AS DIRECTED BY THE ENGINEER.



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

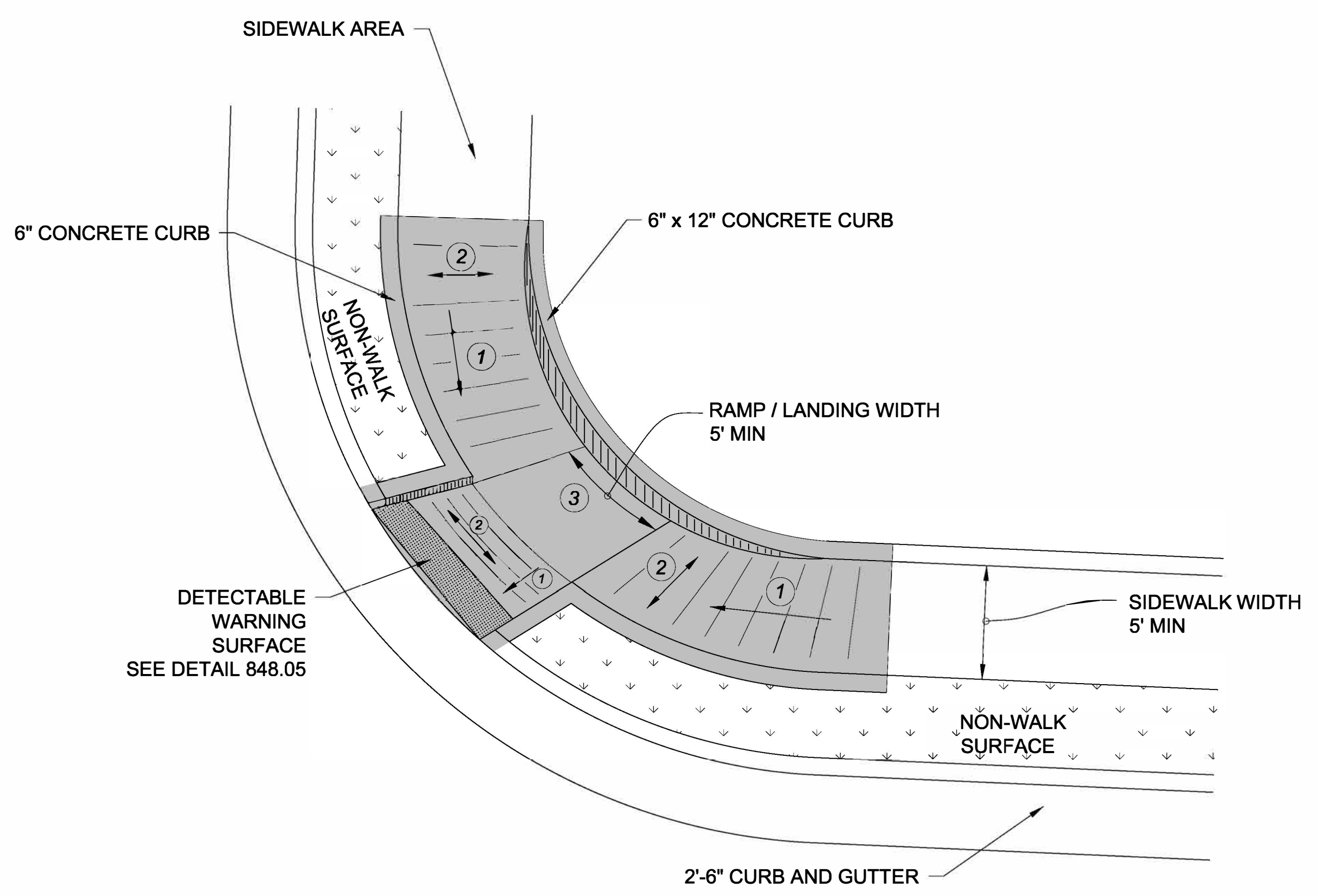
**CONTRACT STANDARDS AND DEVELOPMENT UNIT**  
 Office 919-707-6950 FAX 919-250-4119

## PROPOSED PEDESTRIAN SAFETY RAIL

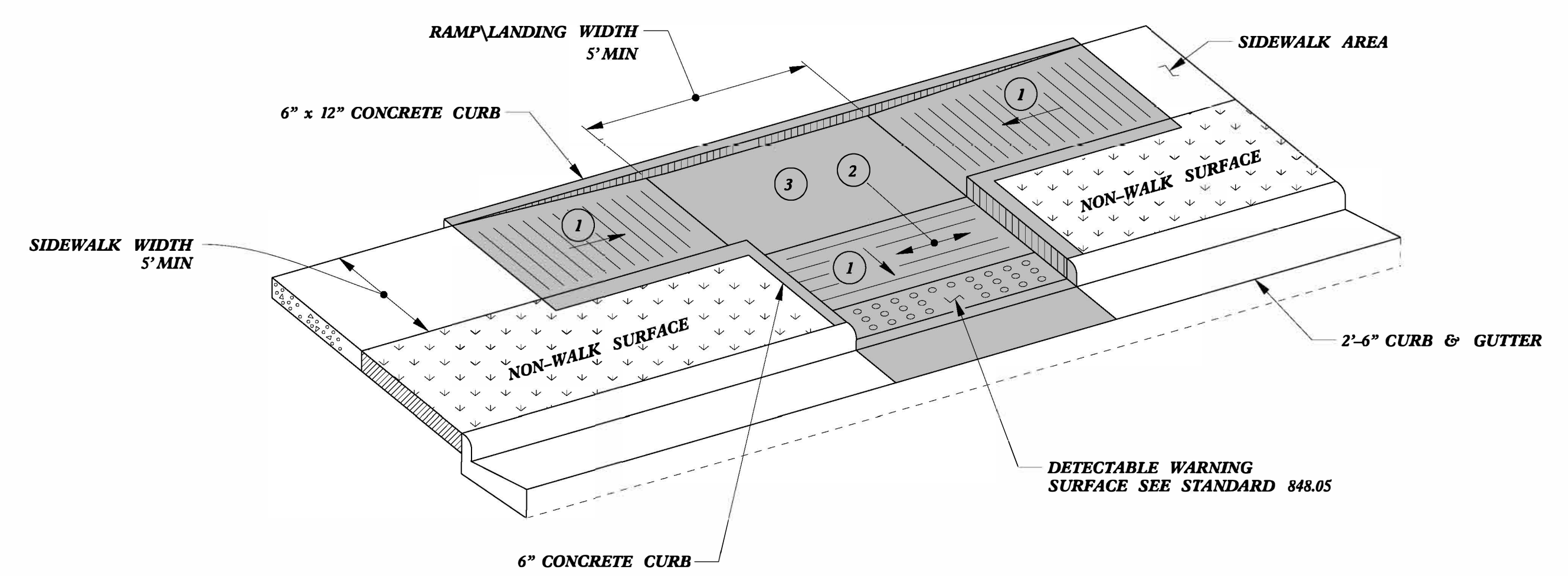
ORIGINAL BY: E.E. WARD DATE: 12-99  
 MODIFIED BY: DATE:  
 CHECKED BY: DATE:  
 FILE SPEC.: jhowerton/handrail adjacent to sidewalk.dgn

I3-AUG-2018 07:40 S:\Contracts\Special Details\Howerton\Handrail Adjacent to Sidewalk.dgn jhowerton AT USD-292595

PAY LIMITS FOR 1 CURB RAMP

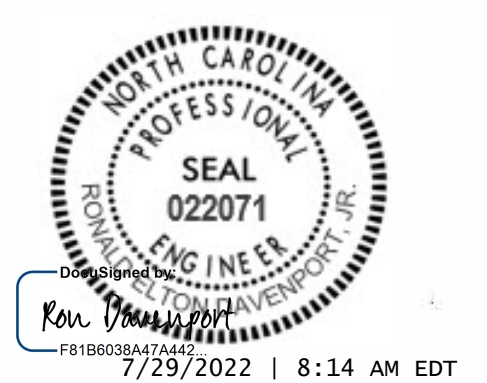


TYPE 3 MODIFIED  
INSTALLATION IN A RADIUS



TYPE 3

- 1 8.33% (12:1) MAX RAMP SLOPE
- 2 CROSS SLOPE: 2.00%
- 3 CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.



DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

<b>CONTRACT STANDARDS AND DEVELOPMENT UNIT</b>	
Office 919-707-6950	FAX 919-250-4119
<b>CURB RAMPS</b>	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC. stds/2012CurbRamp/CurbRampDetails.dgn	

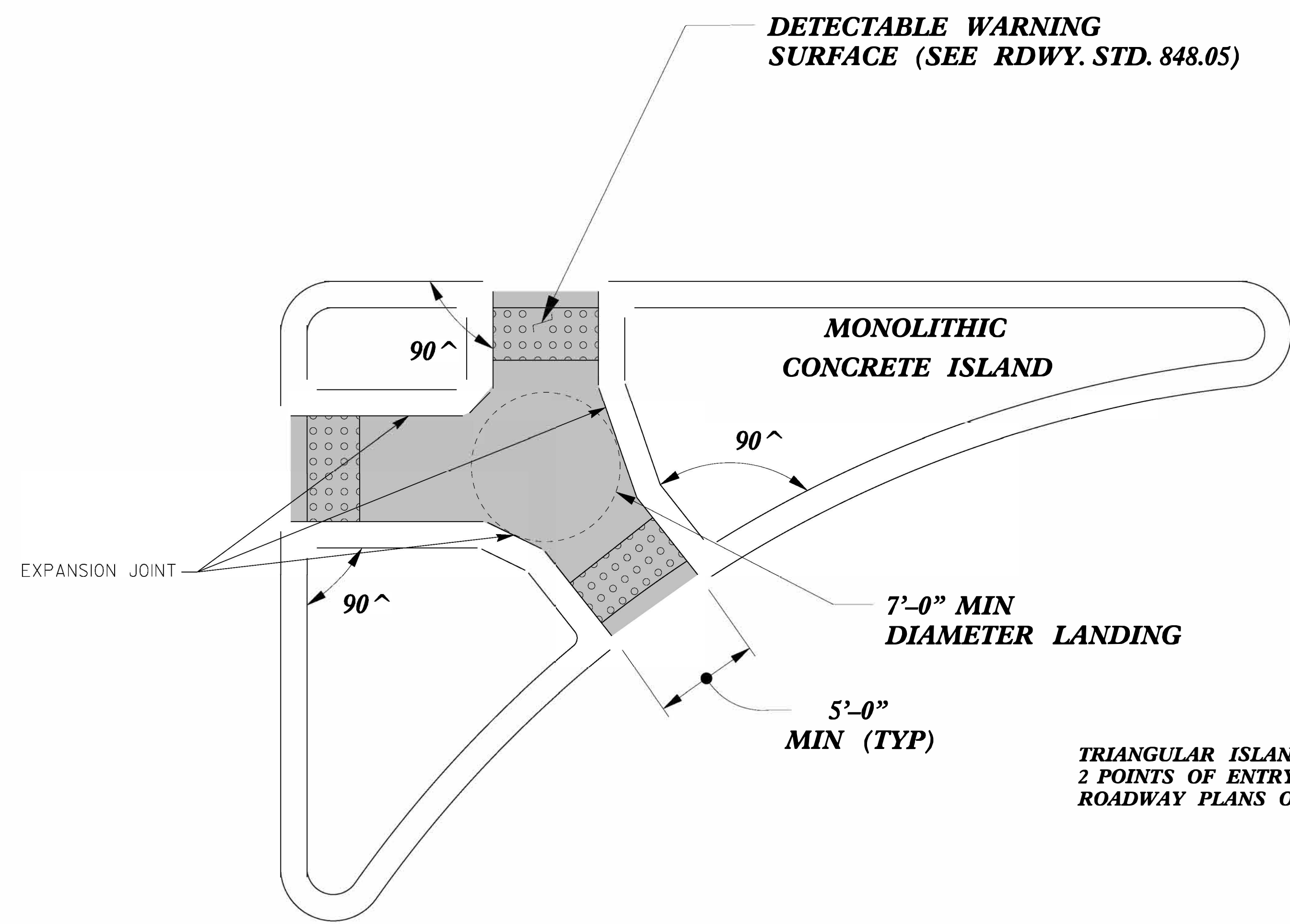
5/14/99  
C:\P\2012\STDS\2012CurbRamp\CurbRampDetails.dgn



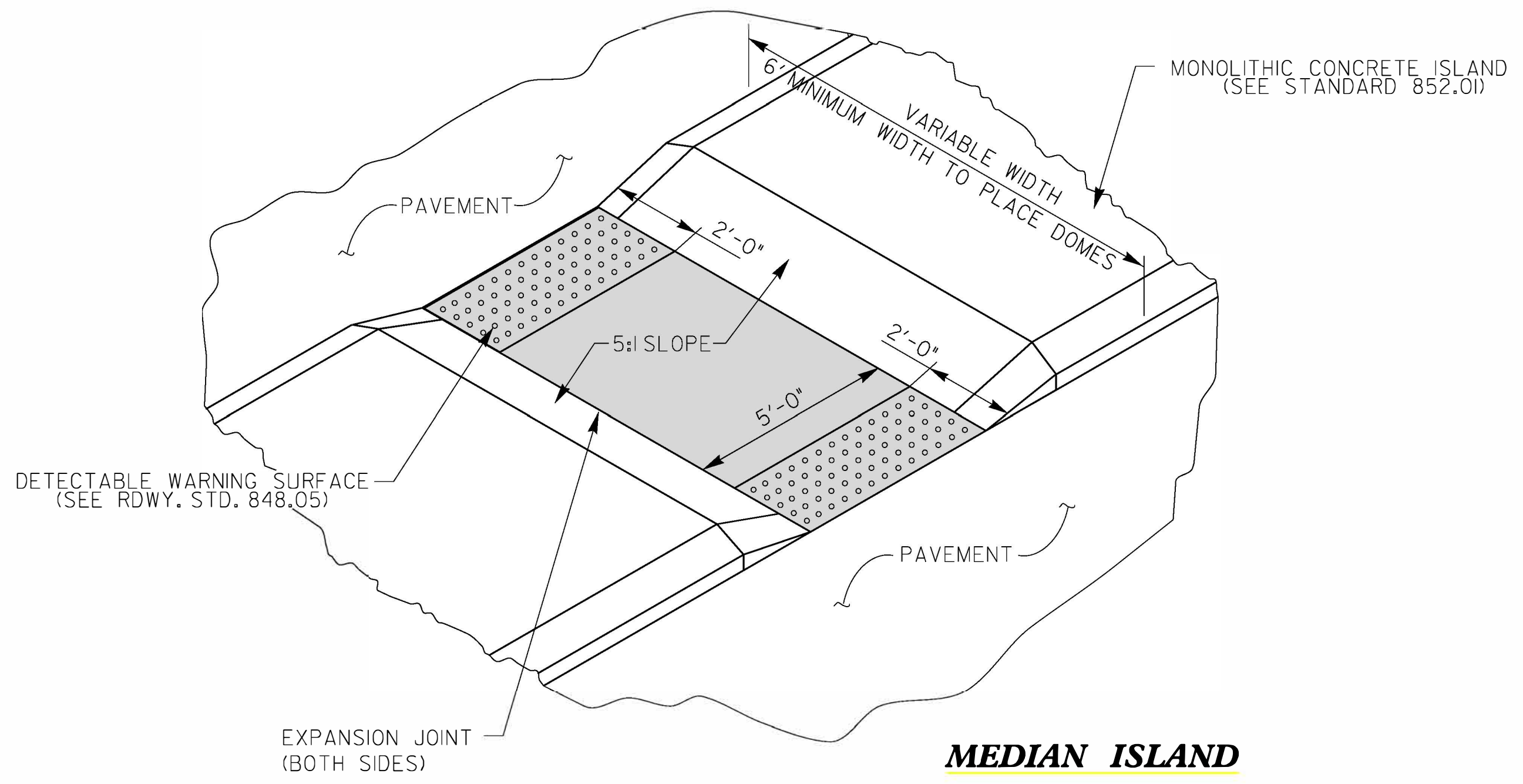




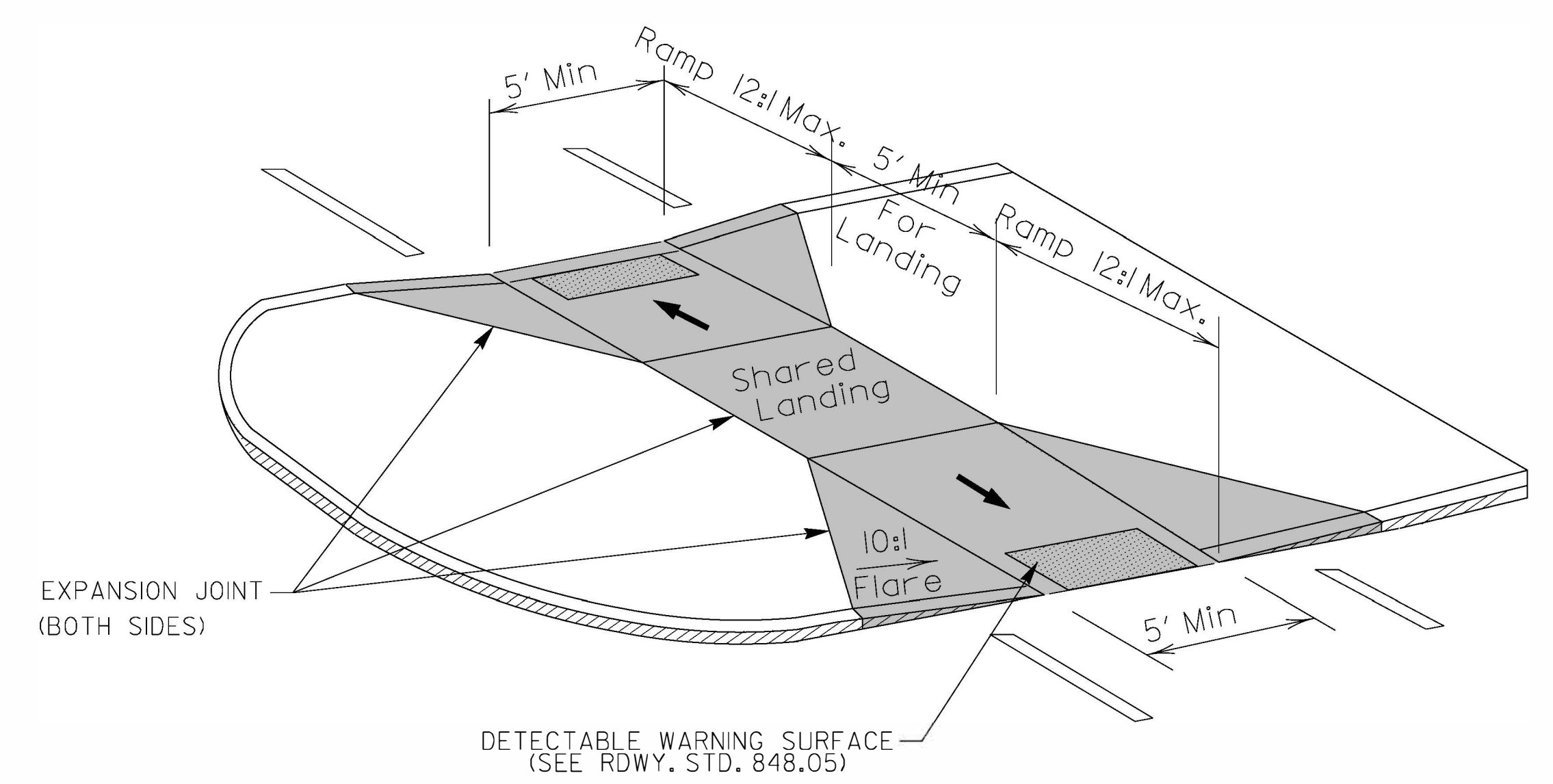
**PAY LIMITS FOR 2 OR 3 CURB RAMPS  
(CALCULATE BASED ON NUMBER OF  
SETS OF TRUNCATED DOMES)**



**TRIANGULAR ISLAND  
WITH CUT THROUGH  
TYPE 6**



**MEDIAN ISLAND  
WITH CUT THROUGH  
TYPE 7**



**MEDIAN ISLAND  
CURB RAMPS  
TYPE 8**

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

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

**CURB RAMPS**  
Median or Turn Lane Islands

ORIGINAL BY: J.S. HOWERTON DATE: 7/7/11  
MODIFIED BY: DATE:  
CHECKED BY: DATE:  
FILE SPEC: stds/2012CurbRamp/CurbRampDetails.dgn



5/14/99  
CYCLING  
CONSTRUCTION  
SUGGESTION



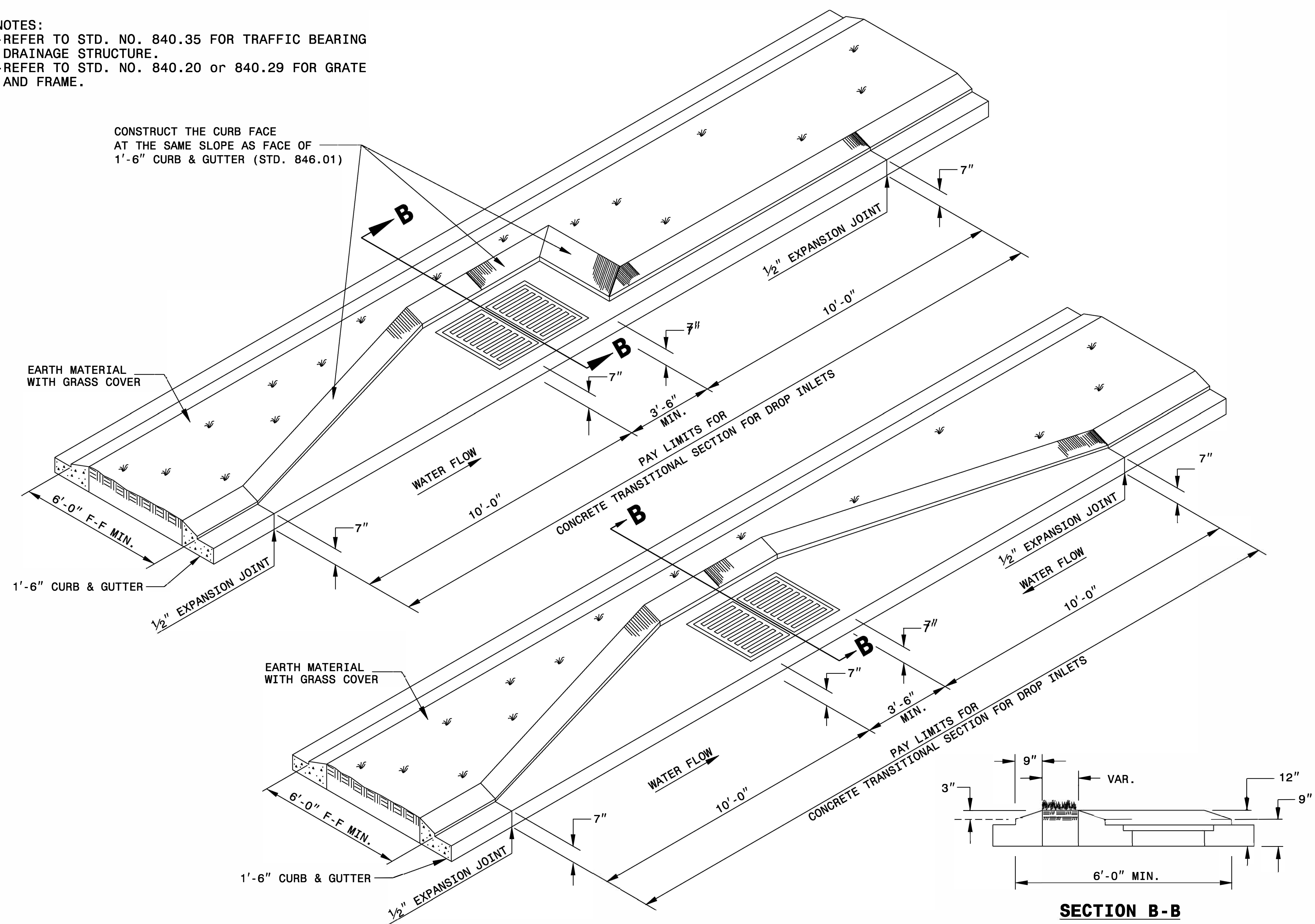
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR  
**METHOD FOR PLACEMENT OF TRAFFIC BEARING 2GI IN GRASSED MEDIAN**  
(USING 1'-6" CURB & GUTTER)

SHEET 1 OF 1  
**852D04**

NOTES:  
-REFER TO STD. NO. 840.35 FOR TRAFFIC BEARING DRAINAGE STRUCTURE.  
-REFER TO STD. NO. 840.20 or 840.29 FOR GRATE AND FRAME.

CONSTRUCT THE CURB FACE AT THE SAME SLOPE AS FACE OF 1'-6" CURB & GUTTER (STD. 846.01)



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

ENGLISH DETAIL DRAWING FOR  
**METHOD FOR PLACEMENT OF TRAFFIC BEARING 2GI IN GRASSED MEDIAN**  
(USING 1'-6" CURB & GUTTER)

SHEET 1 OF 1  
**852D04**

24-APR-2018 14:52 S:\Contracts\Contractors\Special\Details\howerton\852d04 Traffic Bearing DI in Island.dgn  
howerton AT CSU-292595



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

**SEE TITLE PLATE**

ORIGINAL BY: KKEMPF DATE: 8/2/10  
 MODIFIED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 FILE SPEC.: howerton\852d04 Traffic Bearing DI in Island.dgn

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



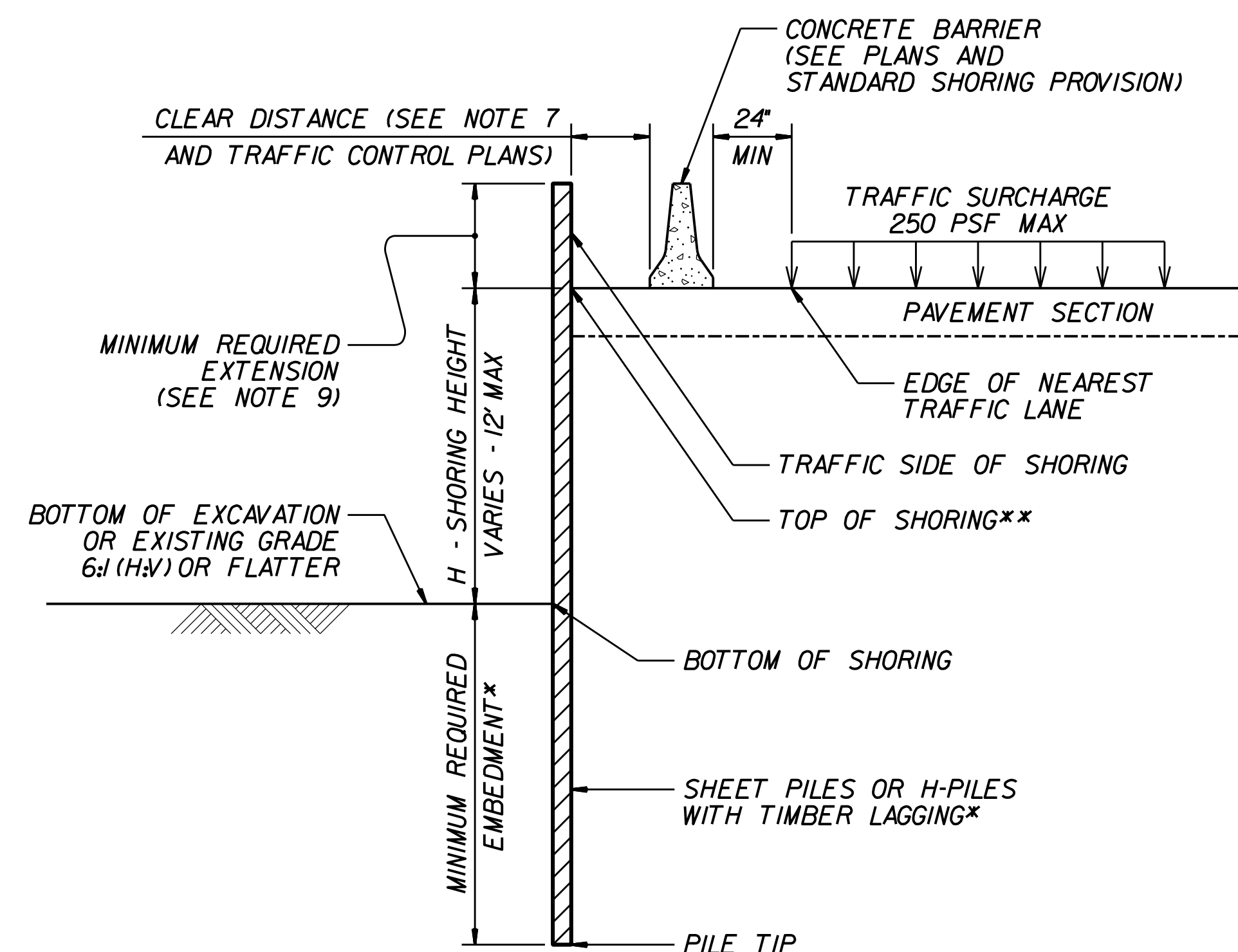
GROUNDWATER CONDITION (SEE NOTE 6)	H SHORING HEIGHT (FT)	SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT					SURCHARGE CASE WITH TRAFFIC IMPACT				
		SHEET PILES		H-PILES WITH TIMBER LAGGING			SHEET PILES		H-PILES WITH TIMBER LAGGING		
		MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS (IN <sup>3</sup> /FT)	MINIMUM REQUIRED EMBEDMENT* (FT) (SEE NOTE 10)			MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS (IN <sup>3</sup> /FT)	MINIMUM REQUIRED EMBEDMENT* (FT) (SEE NOTE 10)		
		HP 10x42	HP 12x53	HP 14x73			HP 10x42	HP 12x53	HP 14x73		
GROUNDWATER ELEVATION BETWEEN BOTTOM OF SHORING AND PILE TIP	< 6	11.5	4.5	11.5	11.5	11.5	16.0	12.0	13.0	13.0	13.0
	7	13.0	7.0	13.0	13.0	13.0	17.0	14.5	14.5	14.5	14.5
	8	15.0	10.0	--	15.0	15.0	18.0	17.0	--	15.5	15.5
	9	17.0	14.0	--	17.0	17.0	19.0	20.0	--	17.0	17.0
	10	18.5	19.5	--	--	18.5	20.0	23.5	--	--	18.5
	11	20.5	26.0	--	--	--	21.0	28.0	--	--	20.0
GROUNDWATER ELEVATION BELOW PILE TIP	< 6	7.5	3.0	8.0	8.0	8.0	11.0	10.0	9.5	9.5	9.5
	7	8.5	4.5	9.5	9.5	9.5	12.0	12.0	10.5	10.5	10.5
	8	10.0	6.5	10.5	10.5	10.5	12.5	14.0	11.5	11.5	11.5
	9	11.0	9.5	--	12.0	12.0	13.5	16.5	--	12.5	12.5
	10	12.5	13.0	--	--	13.5	14.0	19.5	--	13.5	13.5
	11	13.5	17.0	--	--	14.5	15.0	22.5	--	--	14.5
12	15.0	21.5	--	--	16.0	16.0	25.5	--	--	15.5	

**NOTES:**

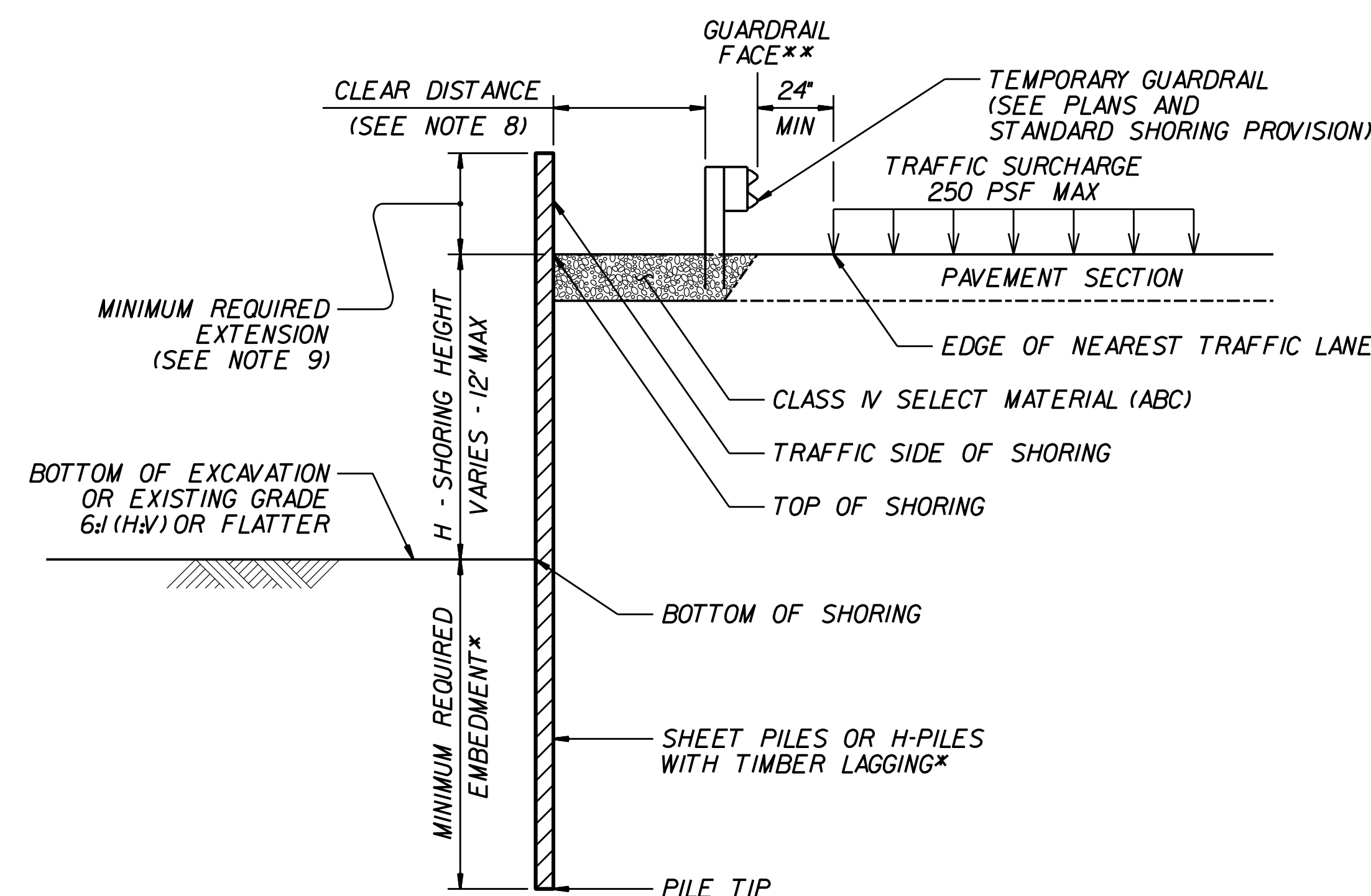
- AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING AS NOTED IN THE PLANS.
- FOR STANDARD TEMPORARY SHORING, SEE STANDARD SHORING PROVISION.
- STANDARD TEMPORARY SHORING IS BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:  
UNIT WEIGHT,  $\gamma = 120$  PCF  
FRICTION ANGLE,  $\phi = 30$  DEGREES  
COHESION,  $c = 0$  PSF
- DO NOT USE STANDARD TEMPORARY SHORING IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE.
- DO NOT USE STANDARD TEMPORARY SHORING WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS WITHIN THE EMBEDMENT DEPTH.
- USE GROUNDWATER ELEVATION NOTED IN THE PLANS. IF NO GROUNDWATER ELEVATION IS SHOWN IN THE PLANS, USE "GROUNDWATER ELEVATION BETWEEN BOTTOM OF SHORING AND PILE TIP" FOR GROUNDWATER CONDITION. DO NOT USE STANDARD TEMPORARY SHORING IF GROUNDWATER IS ABOVE BOTTOM OF SHORING.
- AT THE CONTRACTOR'S OPTION OR IF AVAILABLE CLEAR DISTANCE IS LESS THAN THE MINIMUM REQUIRED FOR CONCRETE BARRIER, SET BARRIER NEXT TO AND UP AGAINST TRAFFIC SIDE OF PILES AND USE "SURCHARGE CASE WITH TRAFFIC IMPACT".
- AT THE CONTRACTOR'S OPTION OR IF AVAILABLE CLEAR DISTANCE IS LESS THAN 4' FOR TEMPORARY GUARDRAIL, ATTACH GUARDRAIL TO TRAFFIC SIDE OF PILES AS SHOWN IN THE PLANS AND USE "SURCHARGE CASE WITH TRAFFIC IMPACT".
- MINIMUM REQUIRED EXTENSION IS 6' FOR "SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT" AND 32' FOR "SURCHARGE CASE WITH TRAFFIC IMPACT".
- MINIMUM REQUIRED EMBEDMENT FOR H-PILES WITH TIMBER LAGGING IS BASED ON DRIVEN H-PILES AT MAXIMUM 6' SPACING. AT THE CONTRACTOR'S OPTION, EMBEDMENT DEPTHS MAY BE REDUCED BY 25% FOR DRILLED-IN H-PILES.
- SUBMIT A "STANDARD TEMPORARY SHORING SELECTION FORM" AT LEAST 7 DAYS BEFORE STARTING TEMPORARY SHORING CONSTRUCTION. UP TO 3 SHORING LOCATIONS MAY BE INCLUDED ON EACH FORM. STANDARD SHORING SELECTION FORMS ARE AVAILABLE FROM:  
[connect.ncdot.gov/resources/Geological/Pages/Geotech\\_Forms\\_Details.aspx](http://connect.ncdot.gov/resources/Geological/Pages/Geotech_Forms_Details.aspx)
- CONTACT THE ENGINEER IF PILES DO NOT ATTAIN THE MINIMUM REQUIRED EMBEDMENT.

**MINIMUM REQUIRED EMBEDMENT AND SECTION MODULUS**

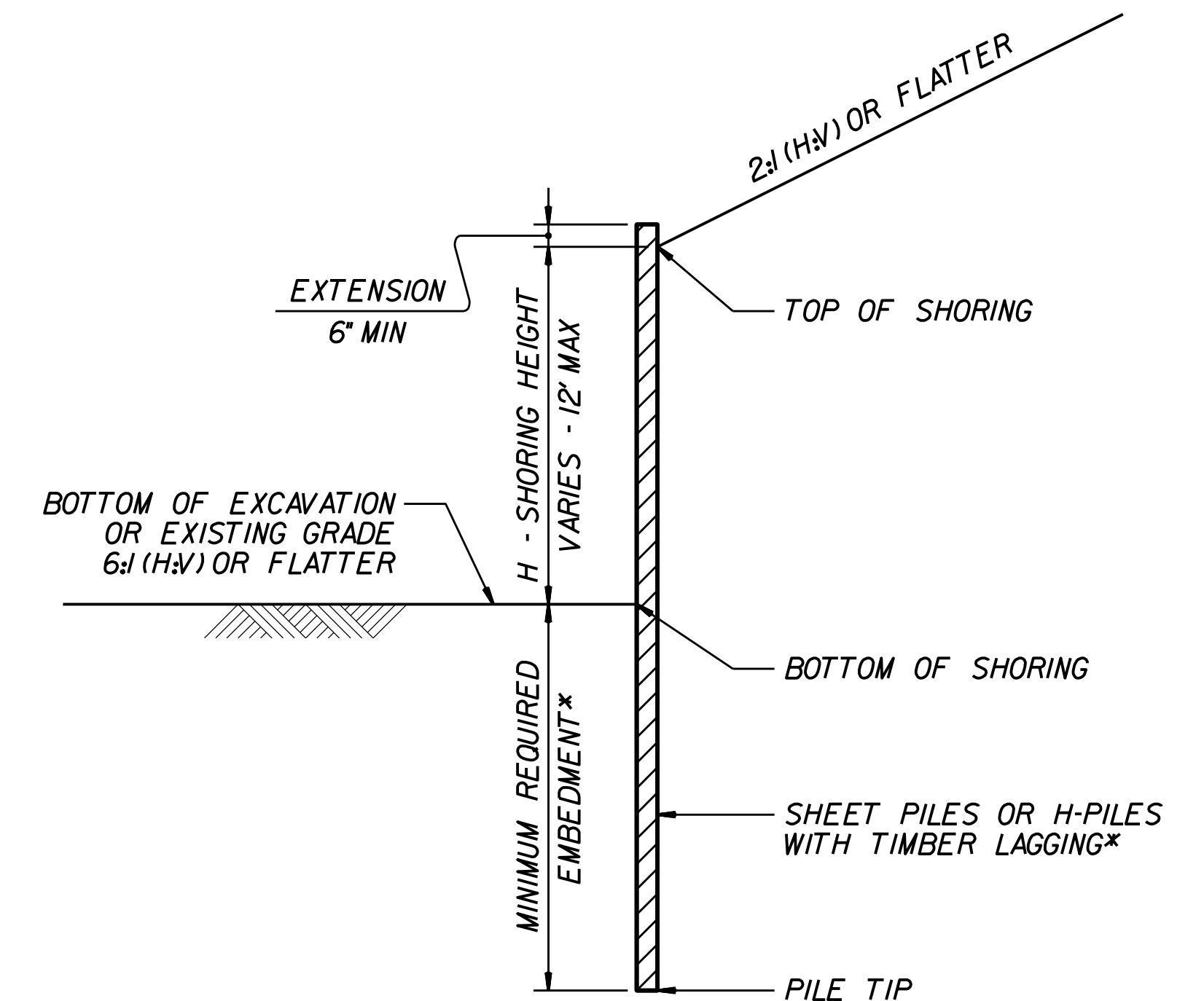
\*DO NOT USE H-PILES WITH TIMBER LAGGING FOR GROUNDWATER CONDITION, SHORING HEIGHT AND H-PILE SIZE SHOWN IF MINIMUM REQUIRED EMBEDMENT". IS "



**CONCRETE BARRIER**  
\*\*TOP OF SHORING = EDGE OF PAVEMENT

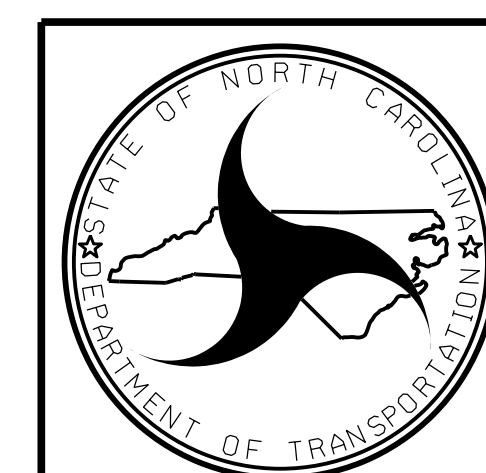


**TEMPORARY GUARDRAIL**  
\*\*GUARDRAIL FACE = EDGE OF PAVEMENT



**STANDARD TEMPORARY SHORING (SLOPE CASE)**  
\*SEE TABLE ABOVE.

**STANDARD TEMPORARY SHORING (SURCHARGE CASE)**  
\*SEE TABLE ABOVE.



NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL  
ENGINEERING UNIT

STANDARD DETAIL NO. 1801.01

STANDARD  
TEMPORARY SHORING



STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS  
**SUMMARY OF EARTHWORK**  
 IN CUBIC YARDS

Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

HARNETT & WAKE COUNTIES						
STATION	STATION	UNCL EXCAV.	UNDERCUT EXCAV.	EMBANK. +%	BORROW	WASTE
245+70.00 -L-	274+00.00 -L-	17,301	8,743	42,551	36,358	19,851
SUBTOTALS:		17,301	8,743	42,551	36,358	19,851
WASTE IN LIEU OF BORROW						
SUMMARY AREA 1 - SUBTOTAL		17,301	8,743	42,551	36,358	19,851
274+00.00 -L-	303+00.00 -L-	15,347	3,912	205,106	201,888	16,041
SUBTOTALS:		15,347	3,912	205,106	201,888	16,041
WASTE IN LIEU OF BORROW						
SUMMARY AREA 2 - SUBTOTAL		15,347	3,912	205,106	201,888	16,041
303+00.00 -L-	313+25.00 -L-	33,765		26,920		6,845
12+25.00 -Y6-	14+94.81 -Y6-	177		1,458	1,281	
15+85.18 -Y6-	18+00.00 -Y6-	1,160		58		1,103
SUBTOTALS:		35,102		28,436	1,281	7,948
WASTE IN LIEU OF BORROW					-1,281	-1,281
SUMMARY AREA 3 - SUBTOTAL		35,102		28,436	0	6,667
313+25.00 -L-	332+50.00 -L-	37,965	1,968	68,006	31,903	3,830
11+25.00 -Y7-	12+76.80 -Y7-	979		81		898
13+55.18 -Y7-	15+00.00 -Y7-	524		59	59	524
SUBTOTALS:		39,417	1,968	68,146	32,962	5,252
WASTE IN LIEU OF BORROW					-898	-898
SUMMARY AREA 4 - SUBTOTAL		39,417	1,968	68,146	31,064	4,354
332+50.00 -L-	362+00.00 -L-	25,806	14,074	78,871	76,266	37,275
SUBTOTALS:		25,806	14,074	78,871	76,266	37,275
WASTE IN LIEU OF BORROW						
SUMMARY AREA 5 - SUBTOTAL		25,806	14,074	78,871	76,266	37,275
362+00.00 -L-	390+50.00 -L-	6,066	10,531	64,018	62,551	15,130
10+43.50 -Y8-	22+38.00 -Y8-	601		10,301	10,298	598
10+20.75 -Y22-	17+74.03 -Y22-	103		2,494	2,391	
10+43.50 -Y8-	12+33.87 -Y23-	243		118		126
SUBTOTALS:		7,013	10,531	76,931	75,240	15,854
WASTE IN LIEU OF BORROW					-126	-126
SUMMARY AREA 6 - SUBTOTAL		7,013	10,531	76,931	75,115	15,728
390+50.00 -L- RT	400+00.00 -L- RT	138	116	4,603	4,472	123
400+00.00 -L- RT	415+34.21 -L- RT	166		5,930	5,821	58
415+42.21 -L- RT	440+00.00 -L- RT	7,202		1,483		5,720
444+00.00 -L- RT	459+00.00 -L- RT	232		2,894	2,723	61
10+50.76 -Y20-	11+48.00 -Y20-	7		214	207	
12+53.44 -Y9-	15+25.00 -Y9-	5		376	373	2
10+37.50 -L_DRV_2-	12+17.98 -L_DRV_2-	35		441	406	
10+49.63 -Y12_REV-	19+47.59 -Y12_REV-	2,594		2,025		569
10+11.00 -Y12A_REV-	11+88.00 -Y12A_REV-	28		39	11	
11+25.00 -Y14-	12+32.84 -Y14-	31		38	35	28
12+67.78 -LDETNB-	37+33.51 -LDETNB-	2,649		314		
SUBTOTALS:		13,087	116	18,357	14,048	6,561
WASTE IN LIEU OF BORROW					-3,198	-3,198
SUMMARY AREA 7 - SUBTOTAL		13,087	116	18,357	10,850	3,363

STATION	STATION	UNCL EXCAV.	UNDERCUT EXCAV.	EMBANK. +%	BORROW	WASTE
390+50.00 -L- LT	459+00.00 -L- LT	125	155	783	673	170
400+00.00 -L- LT	415+34.21 -L- LT	75		2,251	2,200	24
415+42.21 -L- RT	440+00.00 -L- LT	2,383		3,476	1,093	
444+00.00 -L- RT	459+00.00 -L- LT	2,142		4,369	3,256	1,029
11+00.00 -Y19-	11+62.11 -Y19-	49		34		
10+20.00 -Y9-	11+77.58 -Y9-	113		55	55	113
14+50.00 -Y10-	15+02.10 -Y10-	5		115	110	
13+50.00 -Y11-	14+50.59 -Y11-	61		89	28	
10+40.00 -Y13-	12+72.43 -Y13-	56		269	213	
10+10.98 -Y13A-	11+00.00 -Y13A-	9		51	42	
11+50.00 -Y15-	12+37.50 -Y15-	90		19		71
10+05.00 -Y21-	10+62.50 -Y21-	23		26	3	
10+37.71 -Y16-	11+25.00 -Y16-	1		30	29	
10+75.00 -Y17-	13+06.60 -Y17-	71		68		4
SUBTOTALS:		5,203	155	11,635	7,702	1,411
WASTE IN LIEU OF BORROW					-90	-90
SUMMARY AREA 8 - SUBTOTAL		5,203	155	11,635	7,485	1,321
459+00.00 -L- RT	485+57.00 -L- RT	2,734	1,527	29,949	27,909	2,221
SUBTOTALS:		2,734	1,527	29,949	27,909	2,221
WASTE IN LIEU OF BORROW						
SUMMARY AREA 9 - SUBTOTAL		2,734	1,527	29,949	27,909	2,221
459+00.00 -L- LT	485+57.00 -L- LT	67,574	1,371	1,708		67,238
SUBTOTALS:		67,574	1,371	1,708		67,238
WASTE IN LIEU OF BORROW						
SUMMARY AREA 10 - SUBTOTAL		67,574	1,371	1,708		67,238
PROJECT TOTALS (AREAS 1-10):		228,636	42,397	561,690	467,062	174,058
MATERIAL FOR SHOULDER CONSTRUCTION				8,575	8,575	
LOSS DUE TO CLEARING & GRUBBING		-9,800			9,800	
ADDITIONAL UNDERCUT			3,700	4,625	4,625	3,700
GRADE POINT UNDERCUT			1,600	2,000	2,000	1,600
SELECT GRANULAR IN LIEU OF BORROW				-66,125	-66,125	
WASTE IN LIEU OF BORROW					-69,019	-69,019
PROJECT TOTALS		218,836	47,697	510,765	425,937	110,339
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT					21,297	
GRAND TOTALS:		218,836	47,697	510,765	447,234	110,339
SAY		221,100	48,200		451,800	

-L- PAVEMENT STRUCTURE VOLUME = 24,883 CY  
 ESTIMATED DDE = 5,410 CY  
 THE FOLLOWING QUANTITIES ARE PER THE "GEOTECHNICAL REPORT - ROADWAY DESIGN AND CONSTRUCTION RECOMMENDATIONS" LETTER DATED NOVEMBER 17, 2021  
 ESTIMATED UNCLASSIFIED EXCAVATION ACCEPTABLE BUT NOT TO BE USED IN THE TOP 3 FT OF EMBANKMENT OR BACKFILL = 34,300 CY  
 ESTIMATED UNDERCUT EXCAVATION FOR GRADE POINT UNDERCUT = 1,600 CY  
 ESTIMATED SHALLOW UNDERCUT BY STATIONS = 7,250 CY  
 ESTIMATED ADDITIONAL SHALLOW UNDERCUT AS CONTINGENCY TO BE USED AS DIRECTED BY THE ENGINEER = 500 CY  
 TOTAL SHALLOW UNDERCUT = 7,750 CY  
 ESTIMATED CLASS IV SUBGRADE STABILIZATION TO REPLACE SHALLOW UNDERCUT = 21,220 TONS  
 ESTIMATED CLASS IV SUBGRADE STABILIZATION TO REPLACE SHALLOW UNDERCUT AS CONTINGENCY TO BE USED AS DIRECTED BY THE ENGINEER = 1,000 CY  
 TOTAL CLASS IV SUBGRADE STABILIZATION = 22,200 TONS  
 ESTIMATED SELECT GRANULAR MATERIAL TO REPLACE UNDERCUT FOR SUBGRADE STABILITY = 42,000 CY  
 ESTIMATED SELECT GRANULAR MATERIAL FOR SOIL STABILIZATION = 7,200 CY  
 ESTIMATED SELECT GRANULAR MATERIAL TO REPLACE UNDERCUT FOR EMBANKMENT STABILITY AS CONTINGENCY TO BE USED AS DIRECTED BY THE ENGINEER = 2,700 CY  
 ESTIMATED SELECT GRANULAR MATERIAL TO REPLACE UNDERCUT FOR SUBGRADE STABILITY AS CONTINGENCY TO BE USED AS DIRECTED BY THE ENGINEER = 1,000 CY  
 TOTAL SELECT GRANULAR MATERIAL = 52,900 CY

12/06/20

COMPUTED BY: DBE DATE: 3/15/2022  
 CHECKED BY: CTR DATE: 6/2/2022

PROJECT REFERENCE NO. R-5705B SHEET NO. 3B-2

### SUMMARY OF WOVEN WIRE FENCE, 47" FABRIC

IN LINEAR FEET AND EACH

STATION TO STATION	LT. or RT.	FABRIC LF	4" POSTS EA	5" POSTS EA
-L- 246+00 to 250+25	LT	443.06	25	13
-L- 250+85 to 256+65	LT	598.94	37	10
-L- 257+25 to 263+10	LT	602.09	38	10
-L- 263+70 to 272+15	LT	867.31	57	10
-L- 272+75 to 275+05	LT	230.46	14	4
-L- 275+65.36 to 281+00	LT	534.64	34	7
-L- 281+60 to 287+10	LT	555.54	34	10
-L- 287+70 to 288+28	LT	58.00	2	4
-L- 288+88 to 302+50.49	LT	1392.26	89	19
-L- 303+10.17 to 310+55	LT	755.07	47	13
-L- 311+15 to 313+46.88	LT	273.88	16	7
-L- 313+74.97 to 318+80	LT	546.42	32	13
-L- 319+40 to 329+10	LT	986.99	62	16
-L- 329+70 to 331+99.79	LT	255.83	14	7
-L- 332+59.49 to 339+65	LT	740.44	43	19
-L- 340+25 to 350+75	LT	1098.77	66	22
-L- 351+35 to 364+90	LT	1397.94	91	16
-L- 365+50 to 370+07.12	LT	466.26	30	7
-L- 370+67.12 to 381+40.01	LT	1079.50	68	16
-L- 382+00 to 387+80	LT	577.26	36	10
-L- 388+40 to 390+24	LT	172.96	10	4
-L- 246+00 to 250+25	RT	413.58	26	7
-L- 250+85 to 251+96	RT	108.02	6	4
-L- 252+16 to 256+65	RT	451.51		10
-L- 257+25 to 264+89	RT	743.46	48	10
-L- 265+49 to 273+65.93	RT	798.19	52	10
-L- 274+25.93 to 279+35	RT	510.43	31	10
-L- 279+95 to 281+72	RT	177.06	11	4
-L- 281+92 to 289+10	RT	722.33	46	10
-L- 289+70 to 299+35	RT	987.18	62	16
-L- 299+95 to 301+74	RT	179.00	11	4
-L- 301+91.38 to 302+76.38	RT	95.71	5	4
-L- 303+35.42 to 310+67	RT	764.27	46	16

### SUMMARY OF WOVEN WIRE FENCE, 47" FABRIC (CONTINUED)

IN LINEAR FEET AND EACH

STATION TO STATION	LT. or RT.	FABRIC LF	4" POSTS EA	5" POSTS EA
-L- 310+87 to 312+71.54	RT	205.63	9	10
-L- 312+98.94 to 316+26	RT	389.76	22	10
-L- 316+46 to 317+84.22	RT	140.99	8	4
-L- 318+44.23 to 326+87	RT	874.93	54	16
-L- 327+12 to 329+10	RT	200.97	11	7
-L- 329+70 to 332+28	RT	274.89	16	7
-L- 332+87.86 to 335+65	RT	295.30	17	7
-L- 336+25 to 338+65	RT	240.00	15	4
-L- 339+25 to 350+51	RT	1131.79	72	16
-L- 351+35 to 365+50	RT	1391.36	91	16
-L- 366+10 to 375+06	RT	912.56	58	13
-L- 375+26 to 378+40	RT	315.04	17	10
-L- 379+40 to 381+99.43	RT	285.11	17	7
-L- 383+19.23 to 386+25	RT	361.99	22	7
-L- 387+68.17 to 389+92	RT	237.25	15	4
TOTAL		26,842	1,630	480
SAY		26,850	1,630	480

NOTE: LT. OR RT. INDICATES LEFT OR RIGHT OF THE MAIN LINE.

### SUMMARY OF ASPHALT PAVEMENT REMOVAL

IN SQUARE YARDS

LINE	BEG STATION	END STATION	LOCATION	SQUARE YARDS
-Y8--Y23-	17 + 65	11 + 00	LT/RT	1027
-Y22-	11 + 77	16 + 20	LT	132
-Y23--L-	17 + 06	390 + 70	RT	1058
-L--Y9-	393 + 94	10 + 57	LT/RT	630
-L-	409 + 29	410 + 62	LT	9
-Y11-	14 + 08	14 + 51	LT	10
-Y11-	14 + 08	14 + 45	RT	23
-Y13-	11 + 37	11 + 71	LT	1
-Y13-	11 + 52	11 + 75	RT	1
-Y13-	12 + 13	12 + 48	RT	7
-Y12REV-	11 + 15	13 + 07	LT	49
-Y12REV-	14 + 98	15 + 38	LT	3
-L-	414 + 59	416 + 59	LT LANE	246
-L-	419 + 12	435 + 70	CL	5657
-L-	441 + 01	443 + 01	CENTER LANE	304
-Y14-	11 + 25	11 + 98	RT	10
-L-	445 + 94	447 + 38	CL	223
-L-	455 + 26	459 + 31	CL	898
-Y17-	10 + 75	13 + 09	RT	181
-L-	459 + 96	471 + 35	LT	3482
-L-	472 + 10	485 + 57	RT	2921
-L-	473 + 39	484 + 35	LT	3151
-LDETNB-	12 + 67.78	16 + 39.77	LT	1548
-LDETNB-	17 + 78.58	31 + 22.17	LT	20351
-LDETNB-	31 + 73.24	35 + 90.35	LT	4018
-LDETNB-	37 + 00.20	37 + 33.51	LT	15
TOTAL				45856
SAY				46000

### SUMMARY OF SHOULDER BERM GUTTER

IN LINEAR FEET

STATION TO STATION	LOCATION	LF
-L- STA. 281 + 96.00 to 286 + 60.00	LT	464
-L- STA. 281 + 70.00 to 286 + 33.00	RT	463
-L- STA. 291 + 57.00 to 301 + 19.00	LT	962
-L- STA. 290 + 70.00 to 301 + 03.00	RT	1072
-L- STA. 311 + 77.00 to 315 + 90.00	LT	417
-L- STA. 326 + 06.00 to 328 + 50.00	LT	244
-L- STA. 326 + 45.00 to 328 + 80.00	RT	239
-L- STA. 344 + 15.00 to 350 + 64.00	RT	649
-L- STA. 344 + 76.00 to 348 + 35.00	LT	359
TOTAL		4,869
SAY		4,870

### GUARDRAIL SUMMARY

W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.  
 G = GATING IMPACT ATTENUATOR TYPE 350  
 NG = NON-GATING IMPACT ATTENUATOR TYPE 350

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.  
 TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.  
 FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS					IMPACT ATTENUATOR TYPE 350			REMOVE EXISTING GUARDRAIL (LF)	REMARKS													
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	AT-1	CAT-1	GREU (TL-3)	EA	G	NG																	
-L-	246 + 93.75	250 + 00.00	LT	306.25'			249 + 25.00	248 + 75.00	10'	13'	50'		1'																								
-L-	252 + 57.50	255 + 60.00	LT	306.25'			254 + 25.00	252 + 65.00	10'	13'	50'		1'																								
-L-	281 + 20.00	286 + 38.75	RT	518.75'			282 + 45.00	286 + 25.00	10'	13'	50'		1'																								
-L-	281 + 90.00	287 + 08.75	LT	518.75'			285 + 83.75	282 + 00.00	10'	13'	50'		1'																								
-L-	290 + 20.07	301 + 23.20	RT	968.75'	162.50'		281 + 45.07	301 + 20.00	10'	13'	50'		1'																								
-L-	291 + 50.00	301 + 68.75	LT	1018.75'			301 + 75.00	291 + 60.00	10'	13'	50'		1'																								
-L-	310 + 60.00	315 + 65.00	RT	506.25'			311 + 85.00	315 + 65.00	10'	13'	50'		1'																								
-L-	311 + 70.00	315 + 97.00	LT	325.00'	100.00'		314 + 70.00	311 + 75.00	10'	13'	50'		1'		1																						
-L-	325 + 93.75	329 + 00.00	LT	306.25'			326 + 00.00	327 + 75.00	10'	13'		50'		1'																							
-L-	325 + 95.00	328 + 88.75	RT	293.75'			327 + 25.00	328 + 75.00	10'	13'		50'		1'																							
-L-	343 + 65.00	350 + 71.25	RT	706.25'			344 + 90.00	350 + 70.00	10'	13'		50'		1'																							
-L-	344 + 66.25	348 + 85.00	LT	418.75'			347 + 60.00	344 + 75.00	10'	13'		50'		1'																							
-L-	406 + 44.00	408 + 67.75	RT	218.75'			407 + 20.00	408 + 72.00	2'	12'		50'		1'																							
-L-	459 + 89.98	471 + 34.00	LT																								1191'										
-L-	460 + 86.39	470 + 69.02	RT																								1013'										
-L-	473 + 40.58	482 + 60.52	RT																								922'										
-L-	473 + 83.00	482 + 09.41	LT																								825'										
SUBTOTAL (LF)				6412.50'	262.50'																																
LESS ANCHORS (LF)				687.50'																																	
TOTAL (LF)				5725.00'	262.50'																																
SAY (LF)				5725.00'	262.50'																																
ADDITIONAL GUARDRAIL POSTS: SAY 5 EA											TOTAL ANCHORS (EA)																										
											ANCHOR UNIT LENGTH (LF)																										
											DEDUCTION PER TYPE (LF)																										
											TOTAL DEDUCTION (LF)																										

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