

09.08/19

TIP PROJECT: I-5972

CONTRACT: C204873

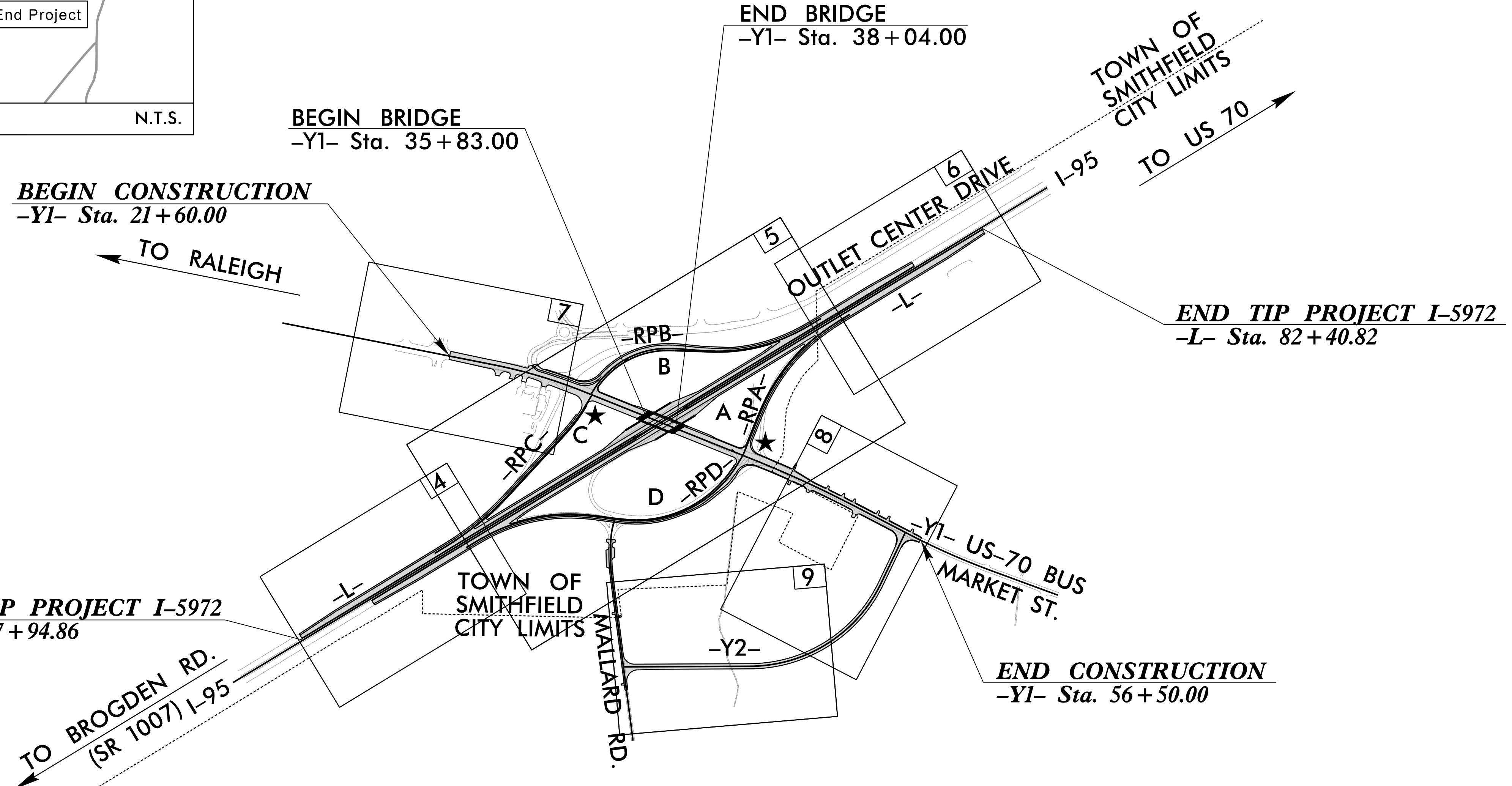
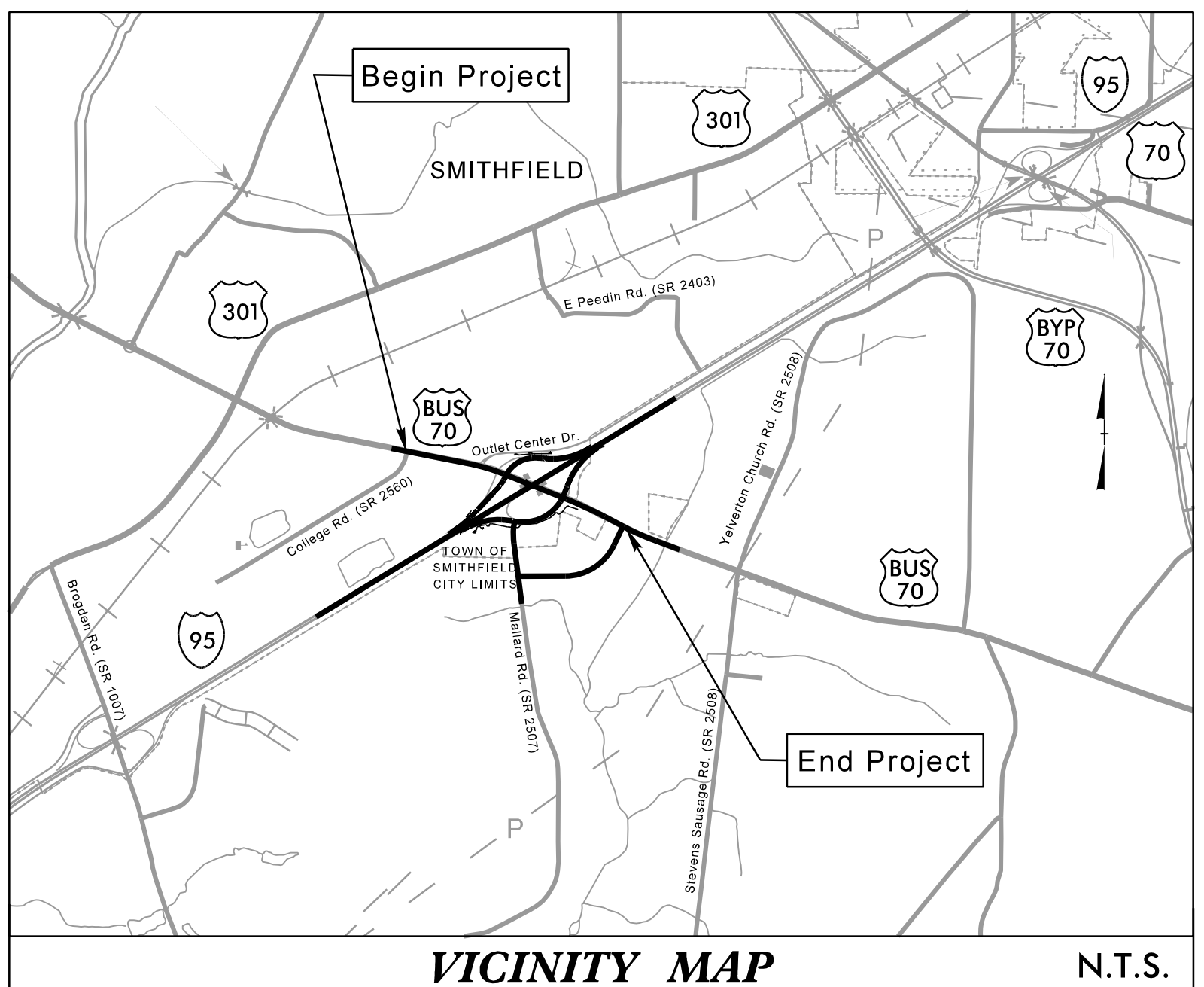
10/5/2023 R:\Roadway\Proj\N5972_Rdy_tsh.dgn

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

JOHNSTON COUNTY

LOCATION: I-95 AND US-70 BUSINESS, (E. MARKET STREET), EXIT 95 INTERCHANGE FROM OUTLET CENTER DR. TO WEST OF YELVERTON GROVE RD. TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURE, RETAINING WALL, SIGNING AND SIGNALS

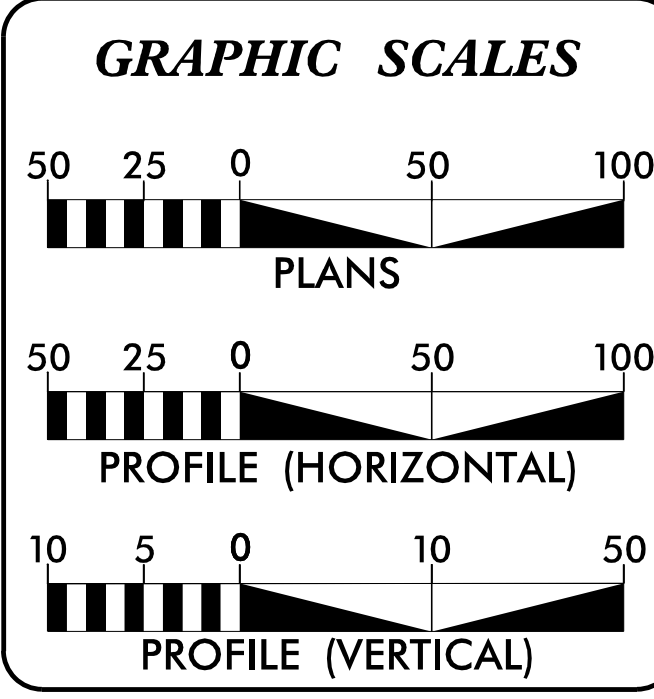
Table with columns: STATE, STATE PROJECT REFERENCE NO., SHEET NO., TOTAL SHEETS. Includes project number I-5972 and sheet number 1.



NOTE: 1. THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.

★ - PROPOSED SIGNALS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

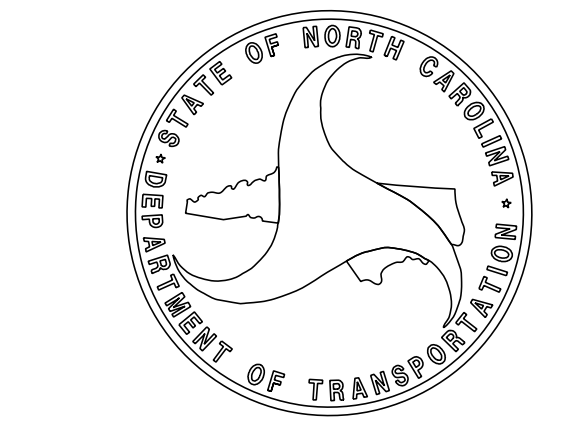


DESIGN DATA table with rows for ADT 2023, ADT 2043, K, D, T, V, and FUNC. CLASS.

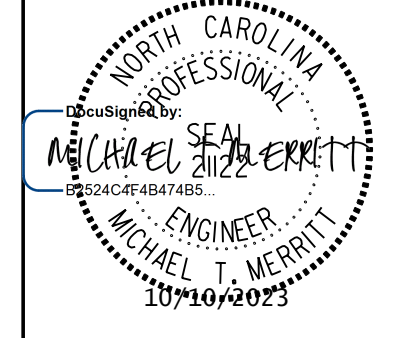
PROJECT LENGTH table with rows for LENGTH OF ROADWAY TIP PROJECT I-5972 and TOTAL LENGTH OF TIP PROJECT I-5972.

Table with project specifications including RIGHT OF WAY DATE, LETTING DATE, and NCDOT CONTACT.

Table with professional signatures for HYDRAULICS ENGINEER and ROADWAY DESIGN ENGINEER.



INDEX of SHEETS, GENERAL NOTES, and LIST of STANDARDS

PROJECT REFERENCE NO. I-5972	SHEET NO. 1A
ROADWAY DESIGN ENGINEER	
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

EFF. 01-16-2018
REV.

INDEX OF SHEETS	
SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2A-1 THRU 2A-5	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAIL
2B-1	INTERSECTION DETAIL SHEET
2B-2 THRU 2B-3	TEMPORARY RAMP SHEETS
2C-1 THRU 2C-10	ROADWAY SPECIAL DETAILS
2D-1	DRAINAGE DETAILS
2G-1 THRU 2G-4	TEMPORARY SHORING DETAIL
2G-5	ROCK EMBANKMENT DETAIL AND NOTES
3B-1 THRU 3B-3	SUMMARY OF EARTHWORK, PAVEMENT REMOVAL SUMMARY, SHOULDER BERM SUMMARY, GUARDRAIL SUMMARY, WOVEN WIRE FENCE, AND RIP RAP AND GEOTEXTILE FOR WETLAND
3D-1 THRU 3D-4	DRAINAGE SUMMARY SHEETS
3G-1	GEOTECH SUMMARY SHEET
3P-1	PARCEL INDEX SHEET
4 THRU 9	PLAN SHEETS
10 THRU 19	PROFILE SHEETS
RW01 THRU RW09	SURVEY CONTROL SHEETS W/EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION
TMP-1 THRU TMP-49	TRAFFIC MANAGEMENT PLANS
PMP-1 THRU PMP-8	PAVEMENT MARKING PLANS
EC-1 THRU EC-15	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
SIGN-1 THRU SIGN-11	SIGNING PLANS
SIG-1 THRU SCP-11	SIGNAL PLANS
UC-1 THRU UO-12	UTILITY CONSTRUCTION PLANS
UO-1 THRU UO-7	UTILITY BY OTHERS PLANS
X-0 THRU X-76	CROSS SECTIONS
S-1 THRU S-54	BRIDGE STRUCTURE PLANS
CU-1 THRU CU-5	CULVERT STRUCTURE PLANS
W-1 THRU W-5	MSE WALL STRUCTURE PLANS

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
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method III
225.01	Guide for Grading Subgrade - Interstate and Freeway
225.02	Guide for Grading Subgrade - Secondary and Local
225.03	Deceleration and Acceleration Lanes
225.04	Method of Obtaining Superelevation - Two Lane Pavement
225.05	Method of Obtaining Superelevation - Divided Highways
225.06	Method of Grading Sight Distance at Intersections
225.09	Guide for Shoulder and Ditch Transition at Grade Separations
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
560.02	Method of Shoulder Construction - High Side of Superelevated Curve - Method II
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
610.03	Guide for Paving Shoulders Under Bridges - Method III
654.01	Pavement Repairs
665.01	Asphalt Shoulders - Milled Rumble Strips
DIVISION 7 - CONCRETE PAVEMENTS AND SHOULDERS	
700.05	Tying Proposed Pavement to Existing
DIVISION 8 - INCIDENTALS	
815.02	Subsurface Drain
816.04	Markers for Drainage Structure and Concrete Pad
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
838.22	Reinforced Concrete Endwall - for Double and Triple 54" Pipes 90 Skew
838.52	Reinforced Brick Endwall - for Double and Triple 54" Pipes 90 Skew
838.75	Notes for Reinforced Brick Endwall - Std. Dwg 838.51 thru 838.70
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, Grates and Hood - for Use on Standard Catch Basin
840.14	Concrete Drop Inlet - 12" thru 30" Pipe
840.15	Brick Drop Inlet - 12" thru 30" Pipe
840.16	Drop Inlet Frame and Grates - for use with Std. Dwg 840.14 and 840.15
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.19	Concrete Grated Drop Inlet Type 'D' - 12" thru 36" Pipe
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
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.28	Brick Grated Drop Inlet Type 'D' - 12" thru 36" Pipe
840.31	Concrete Junction Box - 12" thru 66" Pipe
840.32	Brick Junction Box - 12" thru 66" Pipe
840.36	Traffic Bearing Grated Drop Inlet - for Steel (840.37) Double Frame and Grates
840.37	Steel Grate and Frame
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
840.51	Brick Manhole - 12" thru 36" Pipe
840.52	Precast Manhole - 4', 5' and 6' Diameter
840.53	Precast Manhole with Masonry Base - 12" thru 42" Pipe
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
840.71	Concrete and Brick Pipe Plug
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
848.01	Concrete Sidewalk
848.04	Street Turnout
848.05	Curb Ramp - Proposed Curb & Gutter
852.01	Concrete Islands
852.02	Concrete Mountable Median - for Use with Rigid or Flexible Pavement
852.06	Method for Placement of Drop Inlets in Concrete Islands
854.04	Concrete Median Barrier - Precast Permanent
857.01	Precast Reinforced Concrete Barrier - 41" Single Faced
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
862.04	Anchoring End of Guardrail - B-77 and B-83 Anchor Units
866.02	Woven Wire Fence - with Wood Post
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.03	Drainage Ditches with Class 'A' Rip Rap
876.04	Drainage Ditches with Class 'B' Rip Rap

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

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

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

SUPERELEVATION:
ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.05 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:
ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.02

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.

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".

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

UTILITIES:
UTILITY OWNERS ON THIS PROJECT ARE DUKE ENERGY, YADTEL, AT&T, SPECTRUM, PNG, BAPTIST HOSPITAL, CITY OF WINSTON-SALEM (WATER), & DAVIE COUNTY (SEWER).
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

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

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

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99

10/5/2023
R:\Roadway\Pro\15972\Fdy_psh01A.dgn
default

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	-C-
Proposed Slope Stakes Fill	-F-
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:

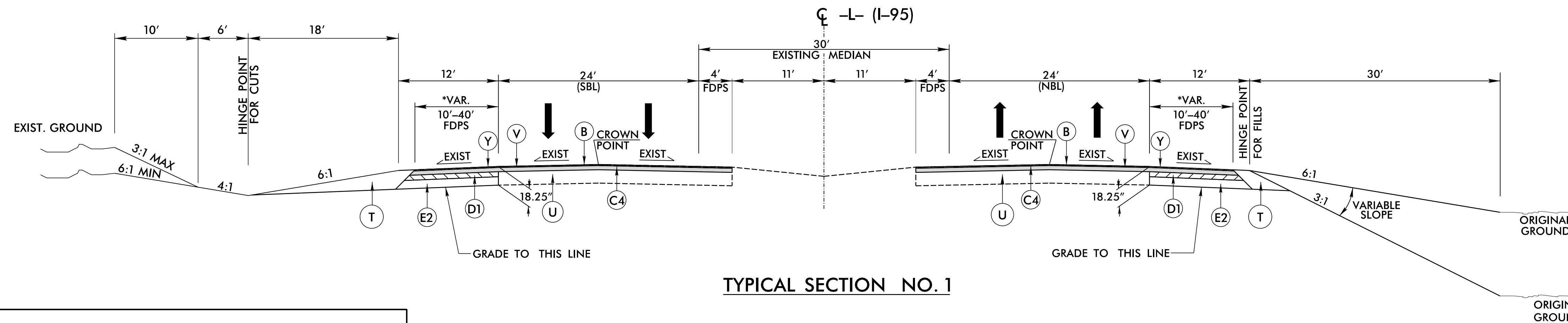
Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	⊠
Utility Unknown U/G Line (SUE - LOS B)*	-----
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	⊠
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊕
Abandoned According to Utility Records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

FINAL PAVEMENT SCHEDULE

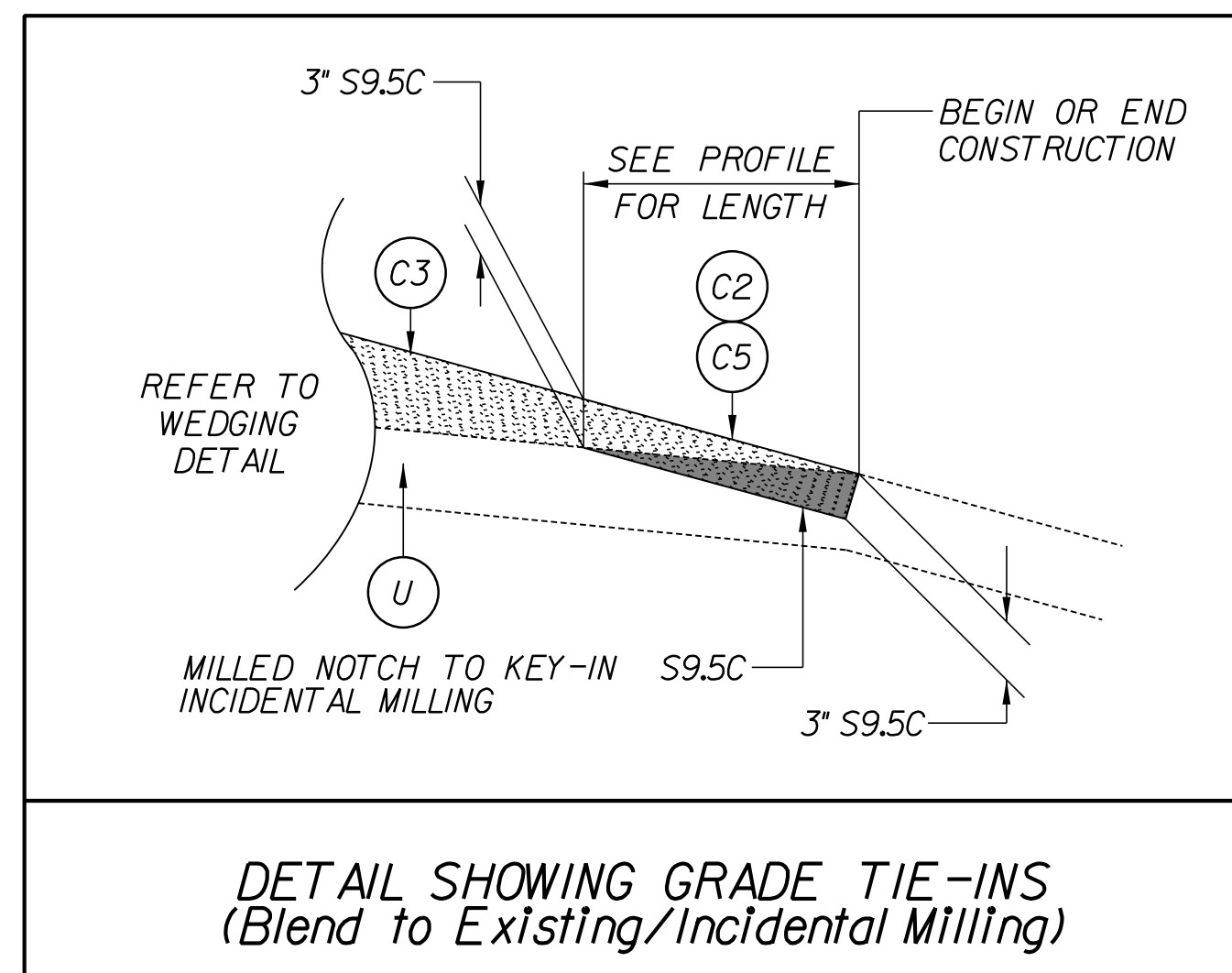
B	PROP. OPEN-GRADED ASPHALT FRICTION COURSE, TYPE FC 0.75".	D3	PROP. APPROX. 2 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	R2	5" MONOLITHIC CONCRETE ISLAND
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ.YD. IN EACH OF TWO LAYERS.	D4	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.	S	4" CONCRETE SIDEWALK
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ.YD. IN EACH OF TWO LAYERS.	E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ.YD.	T	EARTH MATERIAL
C3	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ.YD.	E2	PROP. APPROX. 10 1/2" ASPHALT CONCRETE BASE COURSE TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.	U	EXISTING PAVEMENT.
C4	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5D, AT AN AVERAGE RATE OF 168 LBS. PER SQ.YD. IN EACH OF TWO LAYERS.	E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.	V	MILL 2 1/4" EXISTING ASPHALT
C5	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1" IN DEPTH OR GREATER THAN 2" IN DEPTH.	K	8" CLASS IV SUBGRADE STABILIZATION W/FABRIC	W	VAR. DEPTH ASPHALT PAVEMENT (SEE WEDGEING DETAIL).
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ.YD.	R1	2-6" CONCRETE CURB AND GUTTER.	Y	MILLED RUMBLE STRIPS
D2	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE TYPE I19.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ.YD.				

PROJECT REFERENCE NO. 1-5972	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER <i>Michael T. Merritt</i>	PAVEMENT DESIGN ENGINEER <i>Andrew D. Ward</i>

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



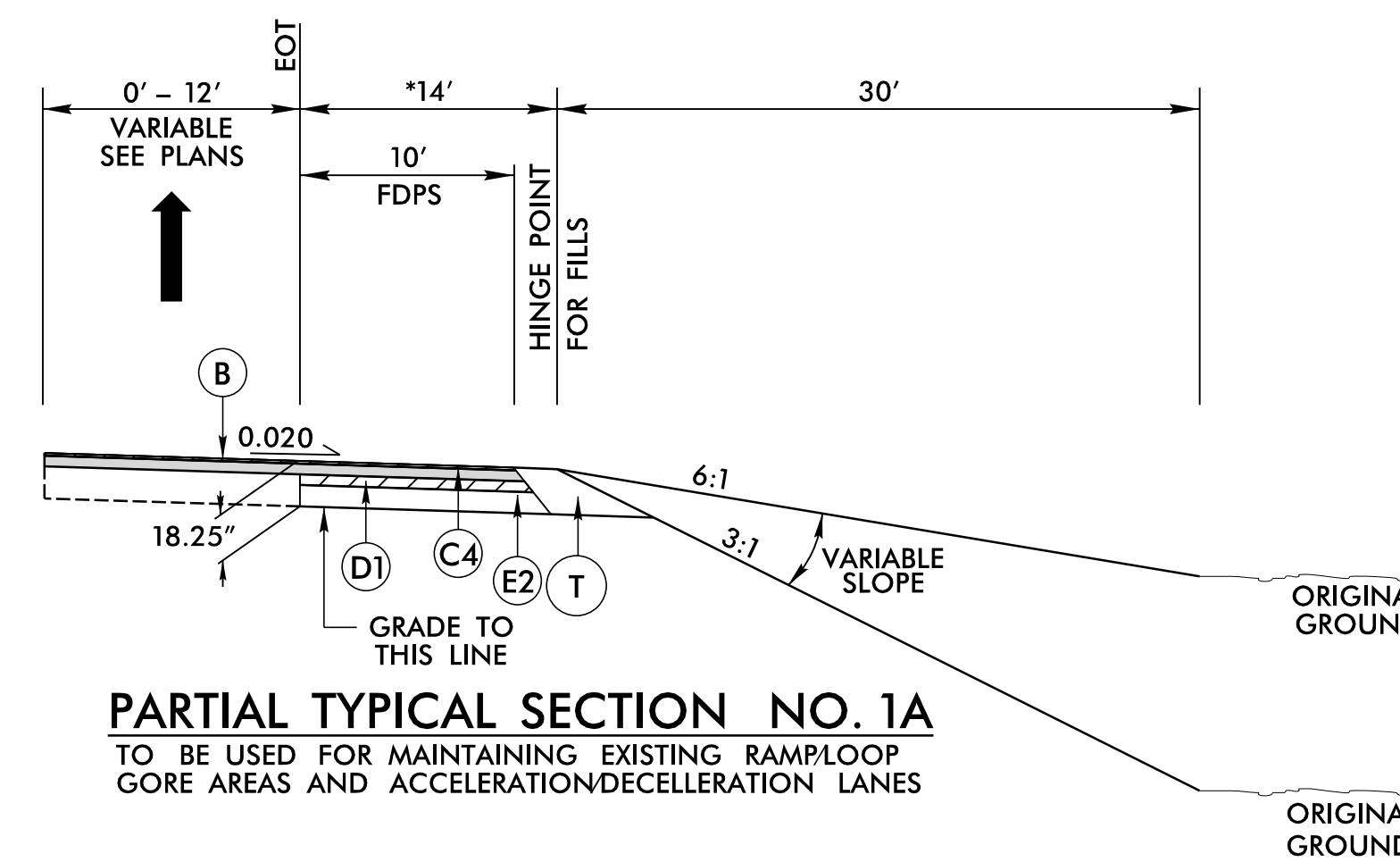
USE TYPICAL SECTION NO. 1
 -L- (SBL) STA. 27+94.86 TO 77+11.40
 -L- (NBL) STA. 33+39.00 TO 82+40.82
 *SEE PLANS FOR LOCATIONS



**DETAIL SHOWING GRADE TIE-INS
(Blend to Existing/Incidental Milling)**

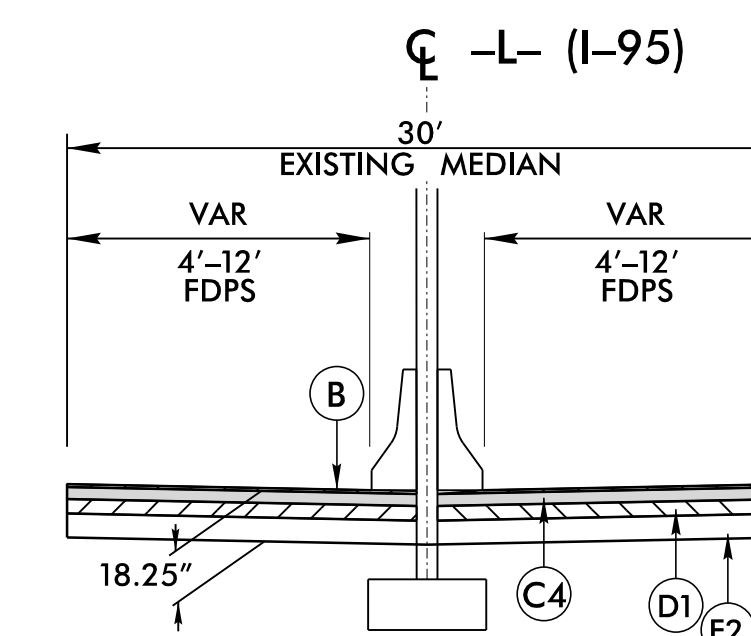
- L- (SBL) STA. 27+94.86 TO 28+44.86
- L- (SBL) STA. 76+61.00 TO 77+11.00
- L- (NBL) STA. 33+39.00 TO 33+89.00
- L- (NBL) STA. 81+90.82 TO 82+40.82
- Y1- STA. 21+70.00 TO 22+20.00
- Y1- STA. 56+00.00 TO 56+50.00
- Y3- STA. 13+50.00 TO 14+00.00

NOTES:
SEE PLANS FOR LOCATION OF CONCRETE ISLANDS, AUXILIARY LANES, AND TAPERS.



PARTIAL TYPICAL SECTION NO. 1A
 TO BE USED FOR MAINTAINING EXISTING RAMPLOOP GORE AREAS AND ACCELERATION/DECELERATION LANES

- USE PARTIAL TYPICAL SECTION NO. 1A
- L- STA. 27+94.86 LT TO 38+74.87 LT
 - *-RPC- STA. 10+00.00 TO 14+29.37
 - L- STA. 33+39.00 RT TO 40+78.85 RT
 - *-RPD- STA. 10+00.00 TO 13+99.18
 - *-RPB- STA. 10+00.00 TO 13+89.59
 - L- STA. 69+78.99 TO 77+11.40 LT
 - *-RPA- STA. 10+00.00 TO 13+72.83
 - L- STA. 71+60.82 RT TO 82+40.82 RT



PARTIAL TYPICAL SECTION NO. 1B

TO BE USED FOR -L- UNDER STRUCTURE
 USE PARTIAL TYPICAL SECTION NO. 1B

RK&K
 P: (919) 878-9560
 8601 Six Forks Road, Forum 1, Suite 700
 Raleigh, North Carolina 27615-3960
 NC License No. F-0112
 Engineers | Construction Managers | Planners | Scientists
 www.rk.com
 Responsive People | Creative Solutions

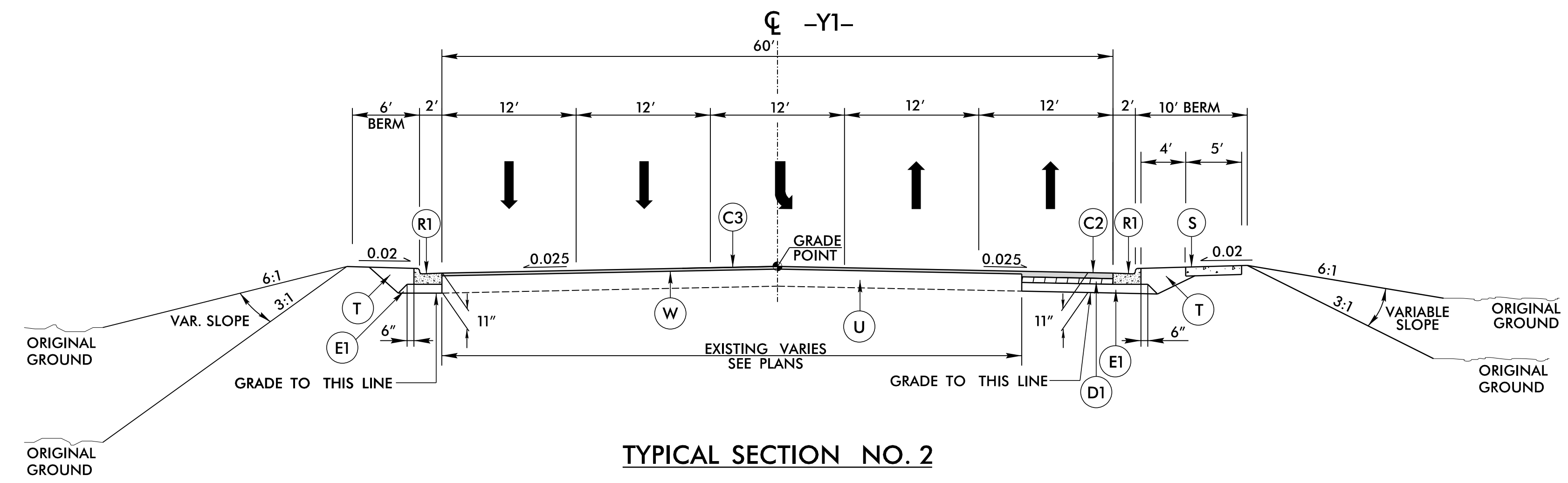
6/2/2023 10:45:20 AM I:\Projects\15972\Proj\15972_Rd\15972_tup.dgn

6/2/2023

FINAL PAVEMENT SCHEDULE	
C2	3" TYPE S9.5C
C3	1 1/2" TYPE S9.5C
C5	VAR. TYPE S9.5C
D1	4" TYPE I19.0C
D3	2 1/2" TYPE I9.0C
D4	VAR. TYPE I9.0C
E1	4" TYPE B25.0C
E3	VAR. TYPE B25.0C
R1	2'-6" CONC. C&G
R2	5" MONO. CONC. ISLAND
S	4" CONC. SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING

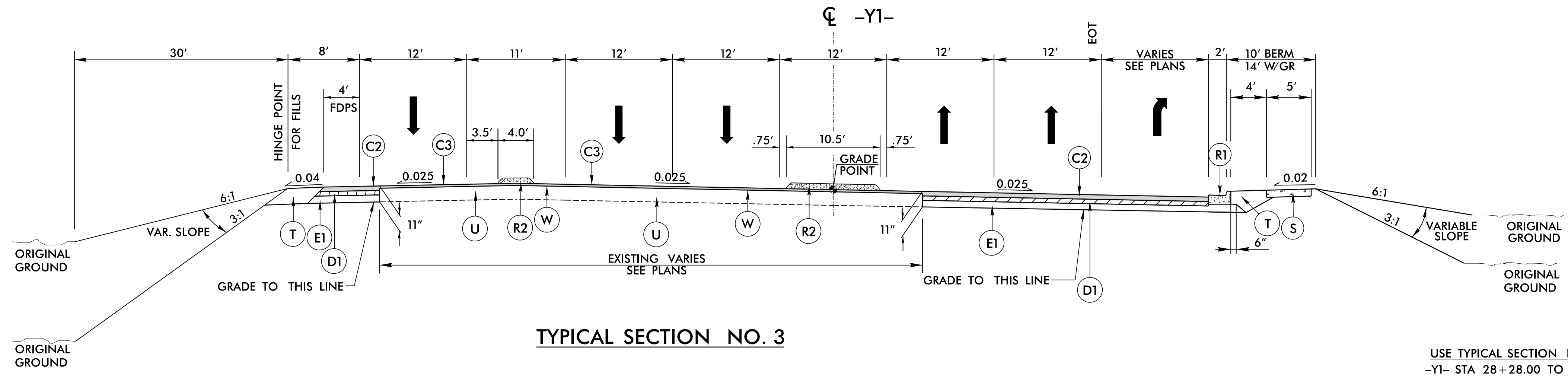
PROJECT REFERENCE NO. 1-5972	SHEET NO. 2A-2
ROADWAY DESIGN ENGINEER <i>[Signature]</i>	PAVEMENT DESIGN ENGINEER <i>[Signature]</i>

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



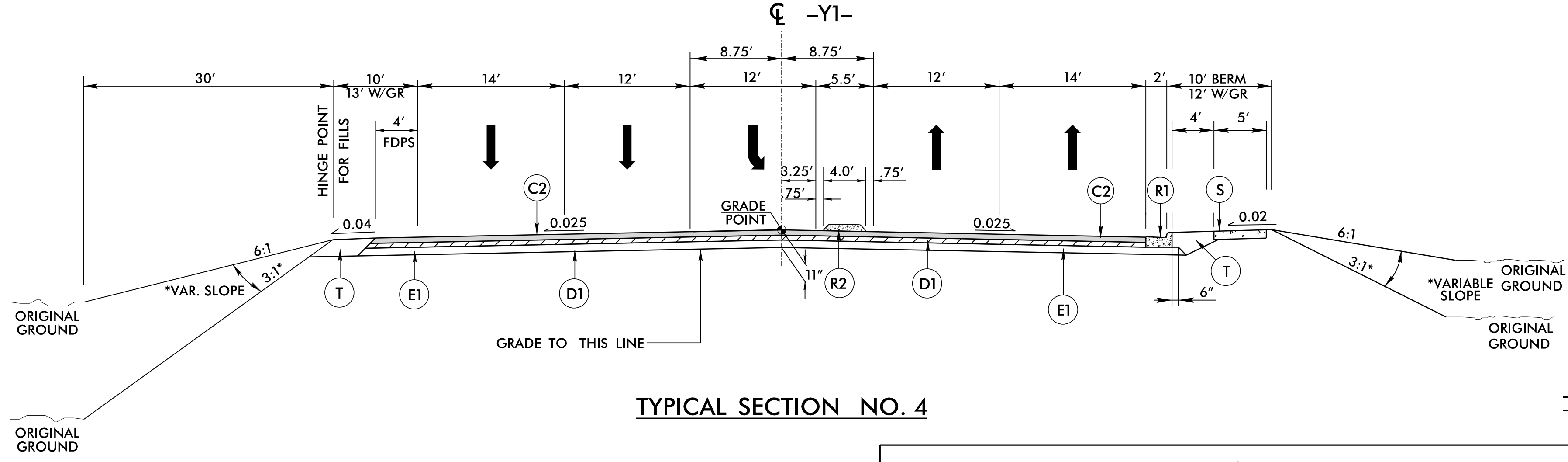
TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2
-Y1- STA 21+70.00 TO STA 28+28.00



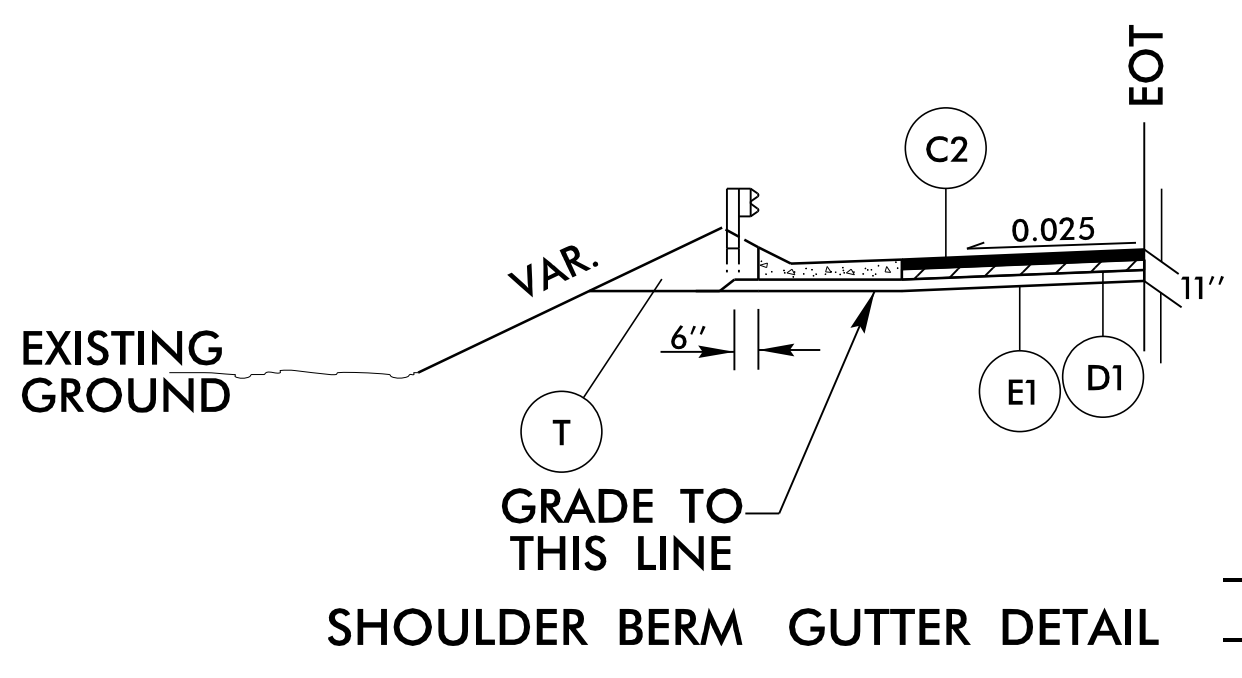
TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3
-Y1- STA 28+28.00 TO STA 31+63.00



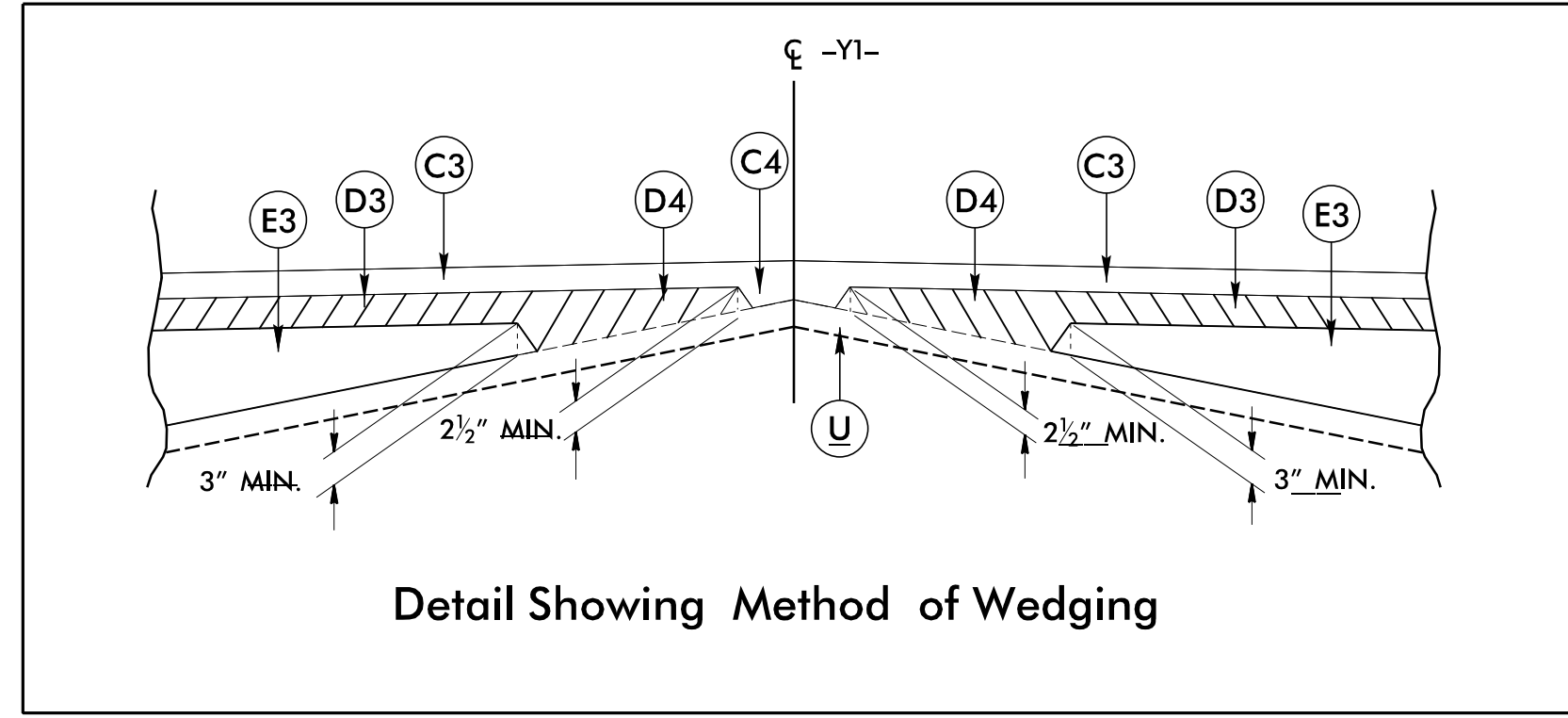
TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4
-Y1- STA 31+63.00 TO 35+83.00 (BEGIN BRIDGE)
-Y1- STA 38+04.00 (END BRIDGE) TO 40+00.00



SHOULDER BERM GUTTER DETAIL

USE DETAIL
-Y1- STA. 35+76.65 TO 35+92.65 LT
-Y1- STA. 38+59.68 TO 38+78.21 LT



Detail Showing Method of Wedging

NOTES:
SEE PLANS FOR LOCATION OF CONCRETE ISLANDS, AUXILIARY LANES, AND TAPERS.
*4:1 MAX INSIDE INTERCHANGE

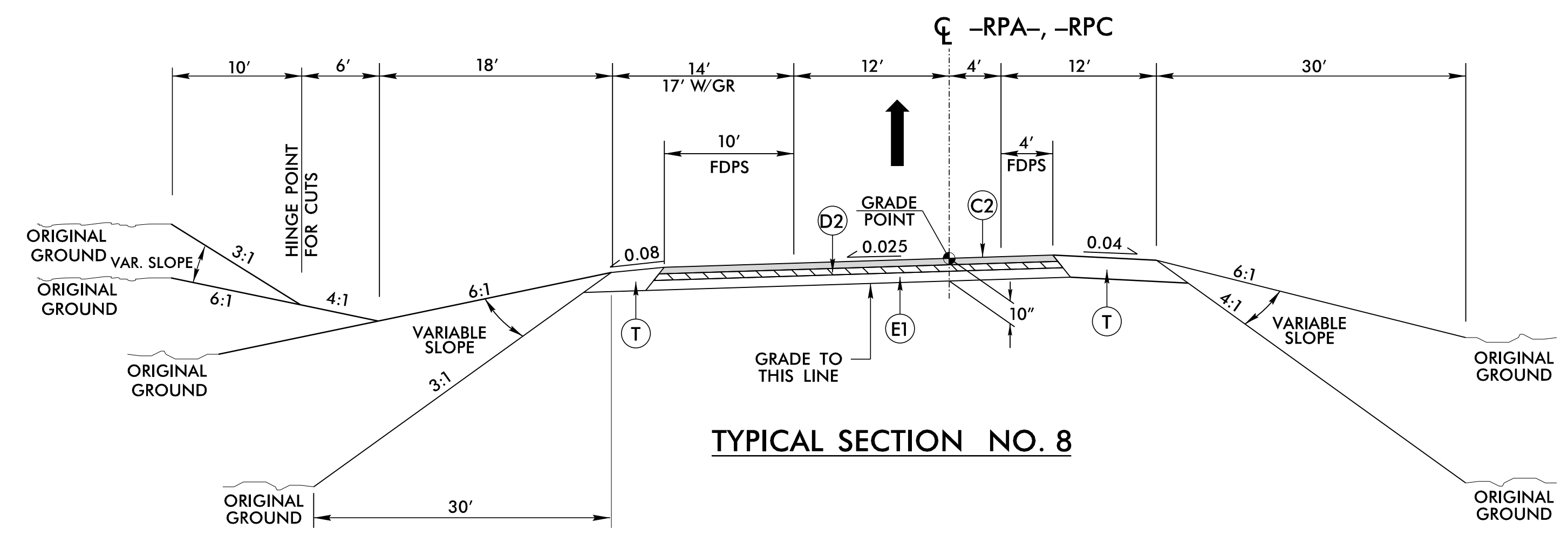
RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rk.com
Responsive People | Creative Solutions

6/2/2023

FINAL PAVEMENT SCHEDULE	
C1	3" TYPE S9.5B
C2	3" TYPE S9.5C
C3	1½" TYPE S9.5C
D2	3" TYPE I19.0C
E1	4" TYPE B25.0C
K	8" CL IV SUBGRADE STABILIZATION W/FABRIC
T	EARTH MATERIAL
U	EXISTING PAVEMENT

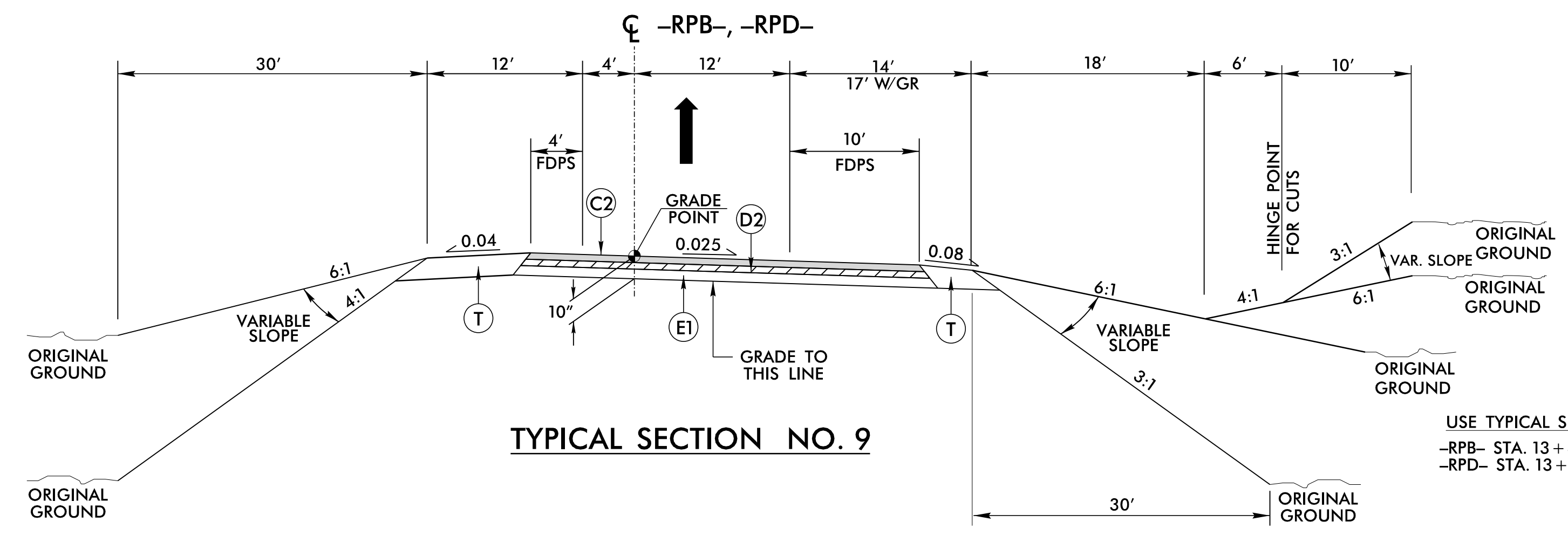
PROJECT REFERENCE NO. 1-5972	SHEET NO. 2A-4
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER

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



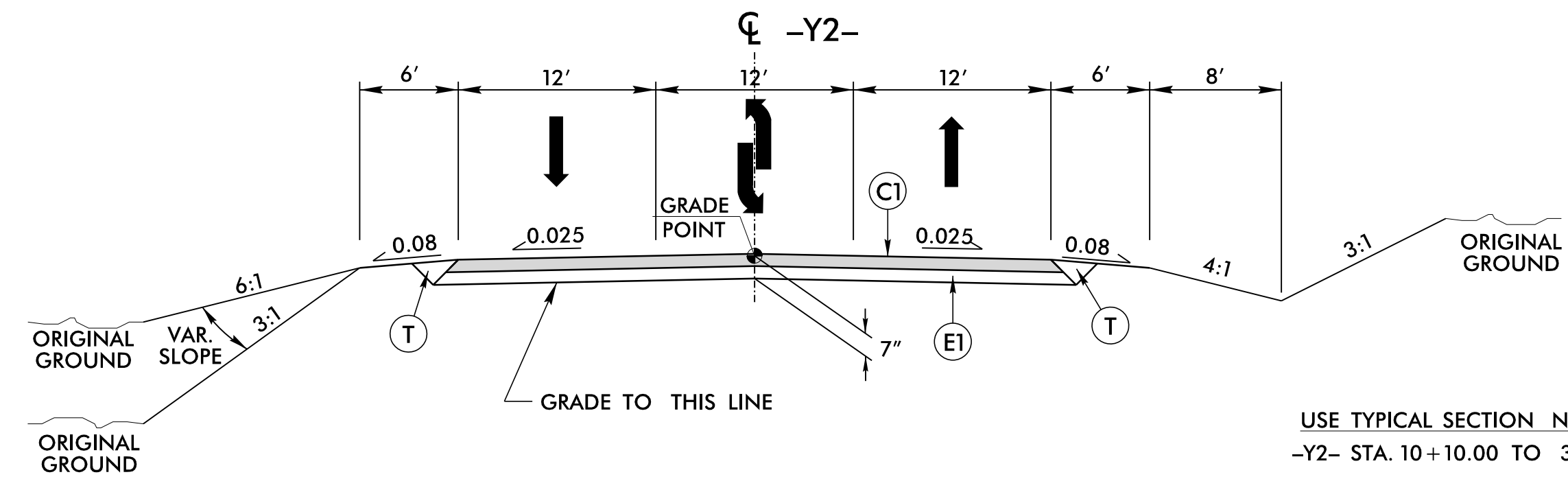
USE TYPICAL SECTION NO. 8
-RPA- STA. 13+72.83 TO 22+11.91
-RPC- STA. 14+29.37 TO 25+11.14

TYPICAL SECTION NO. 8



USE TYPICAL SECTION NO. 9
-RPB- STA. 13+89.59 TO 27+08.73
-RPD- STA. 13+99.18 TO 30+85.81

TYPICAL SECTION NO. 9



USE TYPICAL SECTION NO. 10
-Y2- STA. 10+10.00 TO 33+59.29

TYPICAL SECTION NO. 10

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

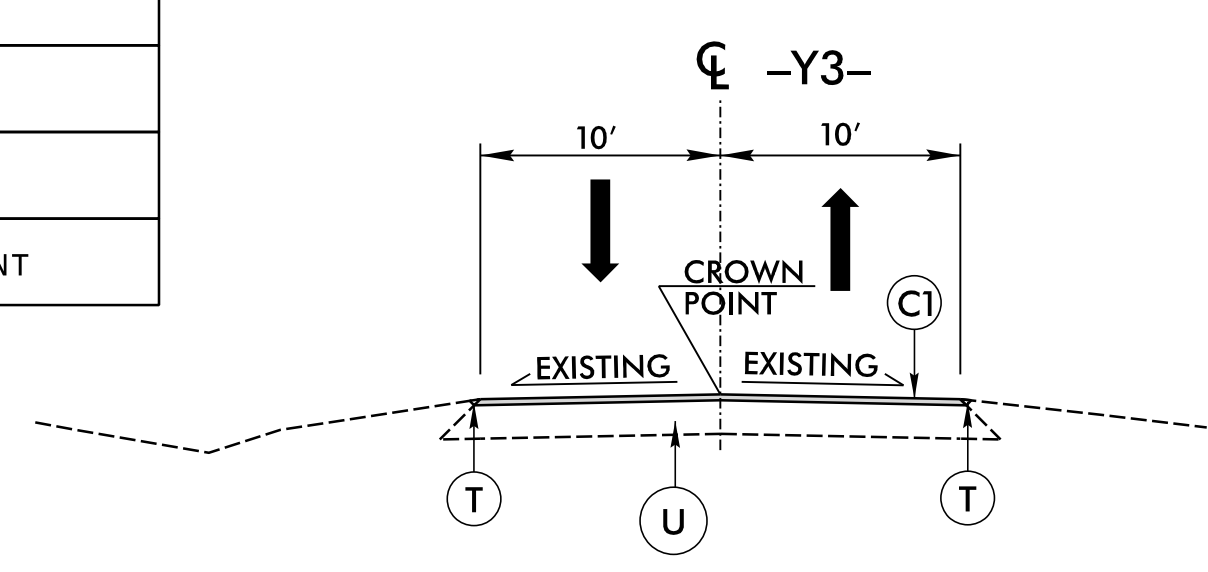
I:\5\2023
 RPA\2023\Proj\15972-Rd\1-typ.dgn
 sheet

6/2/2023

FINAL PAVEMENT SCHEDULE	
C1	3" TYPE S9.5B
C2	3" TYPE S9.5C
C3	1½" TYPE S9.5C
D2	3" TYPE I19.0C
E1	4" TYPE B25.0C
T	EARTH MATERIAL
U	EXISTING PAVEMENT

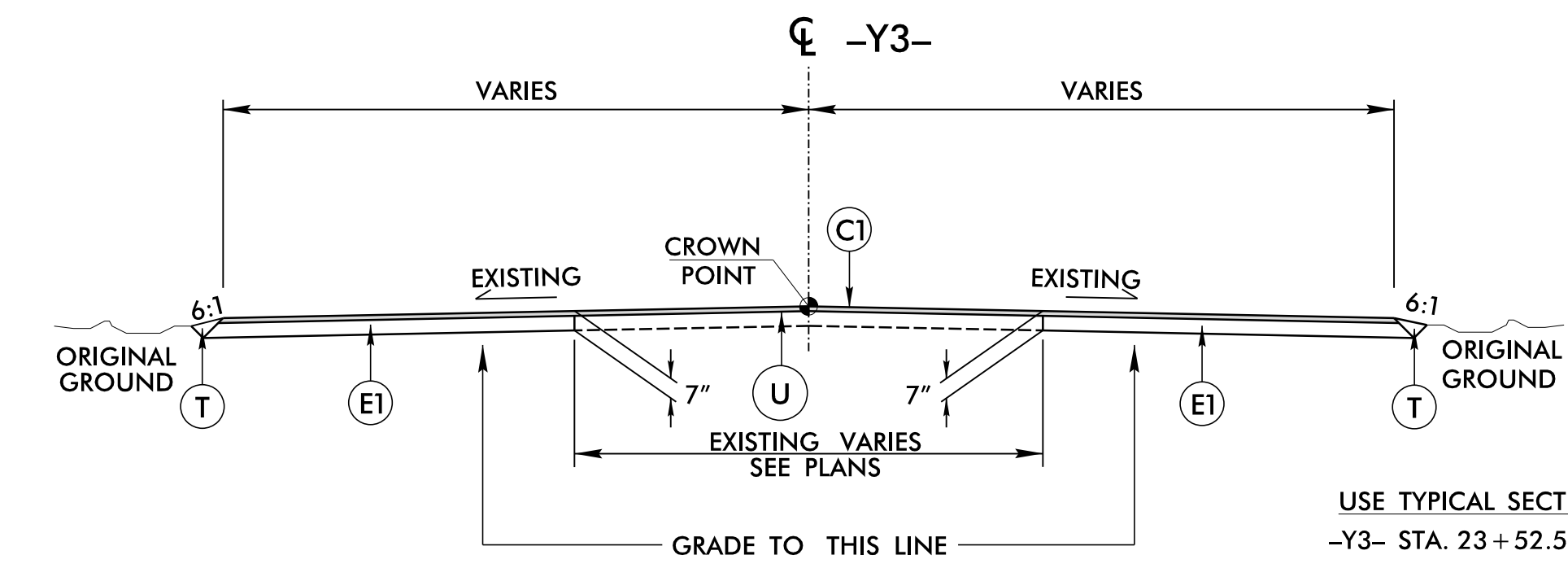
PROJECT REFERENCE NO. 1-5972	SHEET NO. 2A-5
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER

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



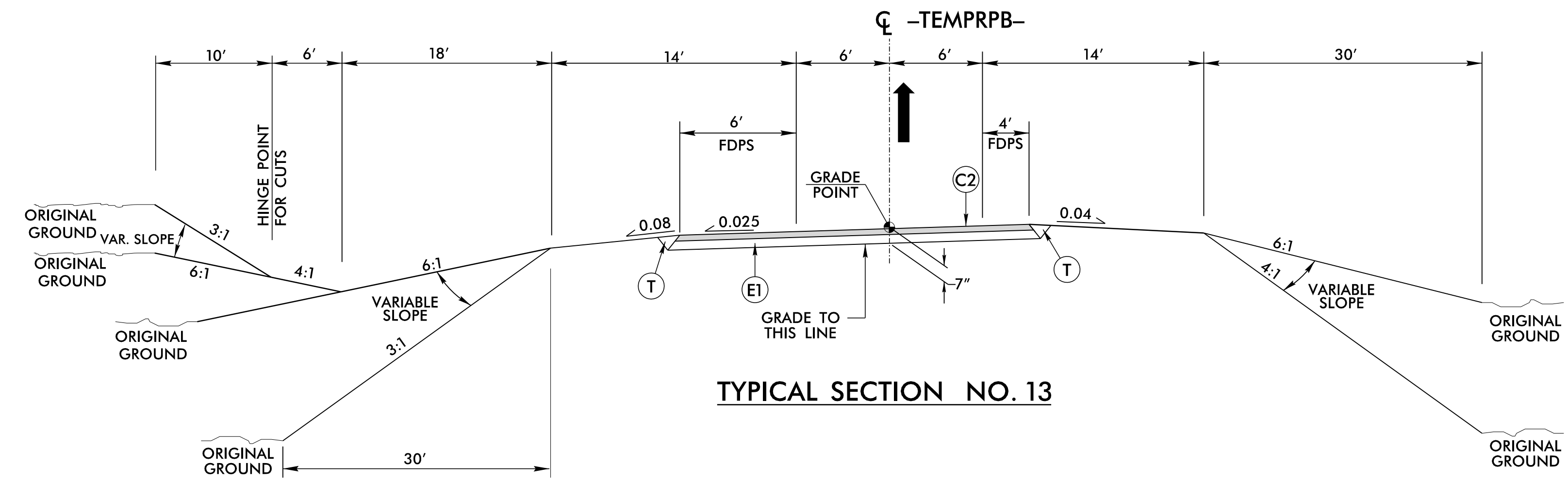
TYPICAL SECTION NO. 11
WIDEN AS NEEDED IN PLAN VIEW

USE TYPICAL SECTION NO. 10
-Y3- STA. 13+50.00 TO 23+52.50



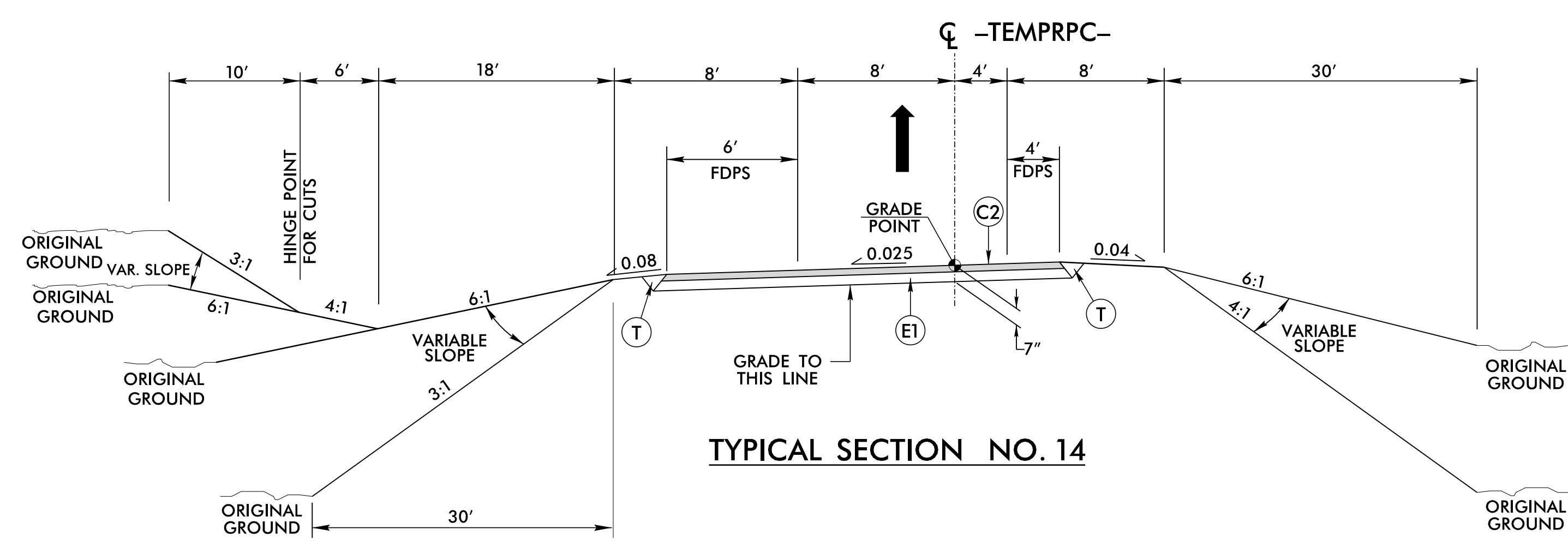
TYPICAL SECTION NO. 12
FOR "T" TURNAROUND

USE TYPICAL SECTION NO. 12
-Y3- STA. 23+52.50 TO 23+91.75



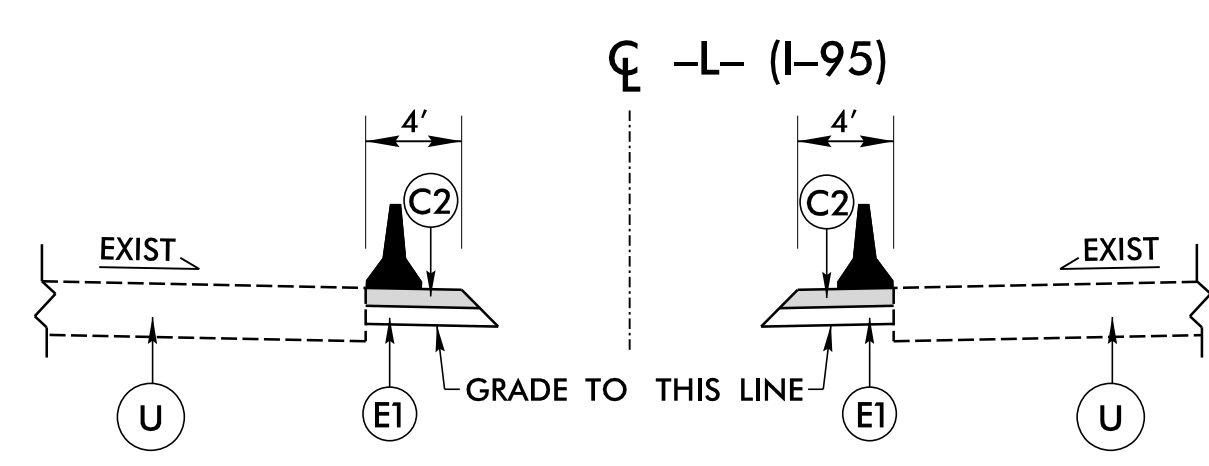
TYPICAL SECTION NO. 13

USE TYPICAL SECTION NO. 13
-TEMPRPB- STA. 10+70.00 TO 17+61.81



TYPICAL SECTION NO. 14

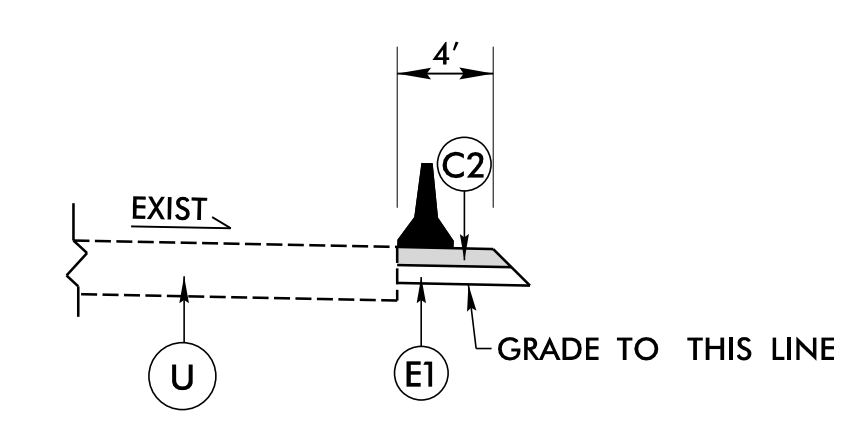
USE TYPICAL SECTION NO. 14
-TEMPRPC- STA. 10+00.00 TO 22+44.37



DETAIL 'A'

USE DETAIL 'A' (TEMPORARY PAVEMENT)
 -L- STA. 24+05 TO 50+00 LT
 -L- STA. 24+41 TO 50+00 RT
 -L- STA. 60+63 TO 85+86 LT
 -L- STA. 62+00 TO 86+31 RT

NOTE:
SEE TRANSPORTATION MANAGEMENT PLANS FOR
LOCATION AND TEMPORARY PAVEMENT TIES TO
EXISTING PAVEMENT



DETAIL 'B'

USE DETAIL 'B' (TEMPORARY PAVEMENT)
 -Y1- STA. 30+74 TO 35+82 RT
 -Y1- STA. 38+04 TO 41+82 RT

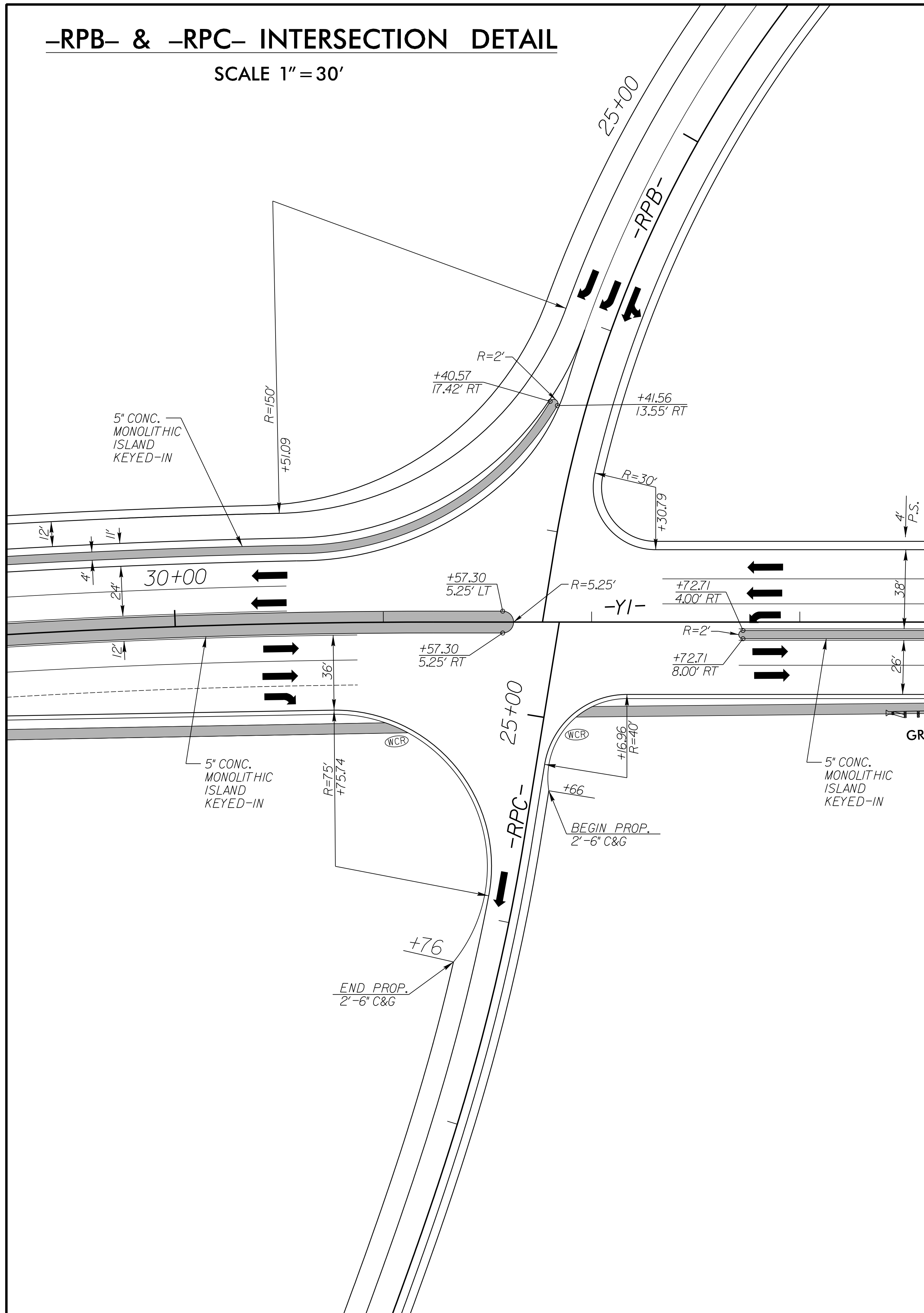
NOTE:
SEE TRANSPORTATION MANAGEMENT PLANS FOR
LOCATION AND TEMPORARY PAVEMENT TIES TO
EXISTING PAVEMENT

RK&K
 P: (919) 878-9560
 8601 Six Forks Road, Forum 1, Suite 700
 Raleigh, North Carolina 27615-3960
 NC License No. F-0112
 Engineers | Construction Managers | Planners | Scientists
 www.rkk.com
 Responsive People | Creative Solutions

1/8/2023
 H:\Projects\15972\Proj\15972-Rd\15972-tp.dgn
 sheet

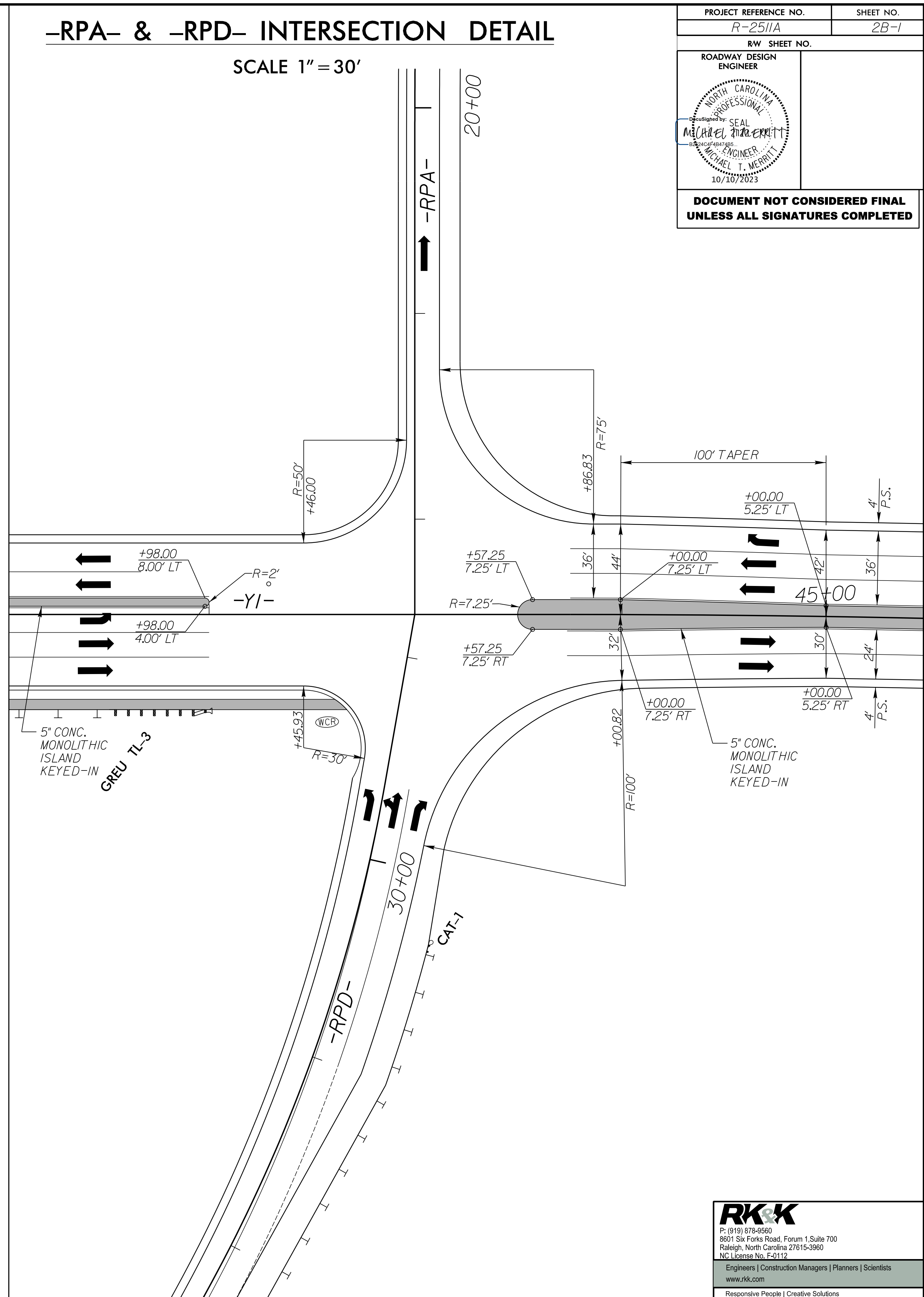
-RPB- & -RPC- INTERSECTION DETAIL

SCALE 1" = 30'

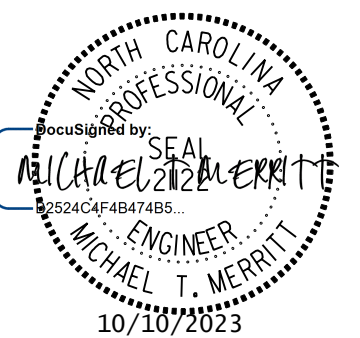
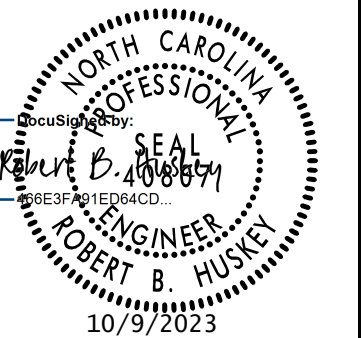


-RPA- & -RPD- INTERSECTION DETAIL

SCALE 1" = 30'

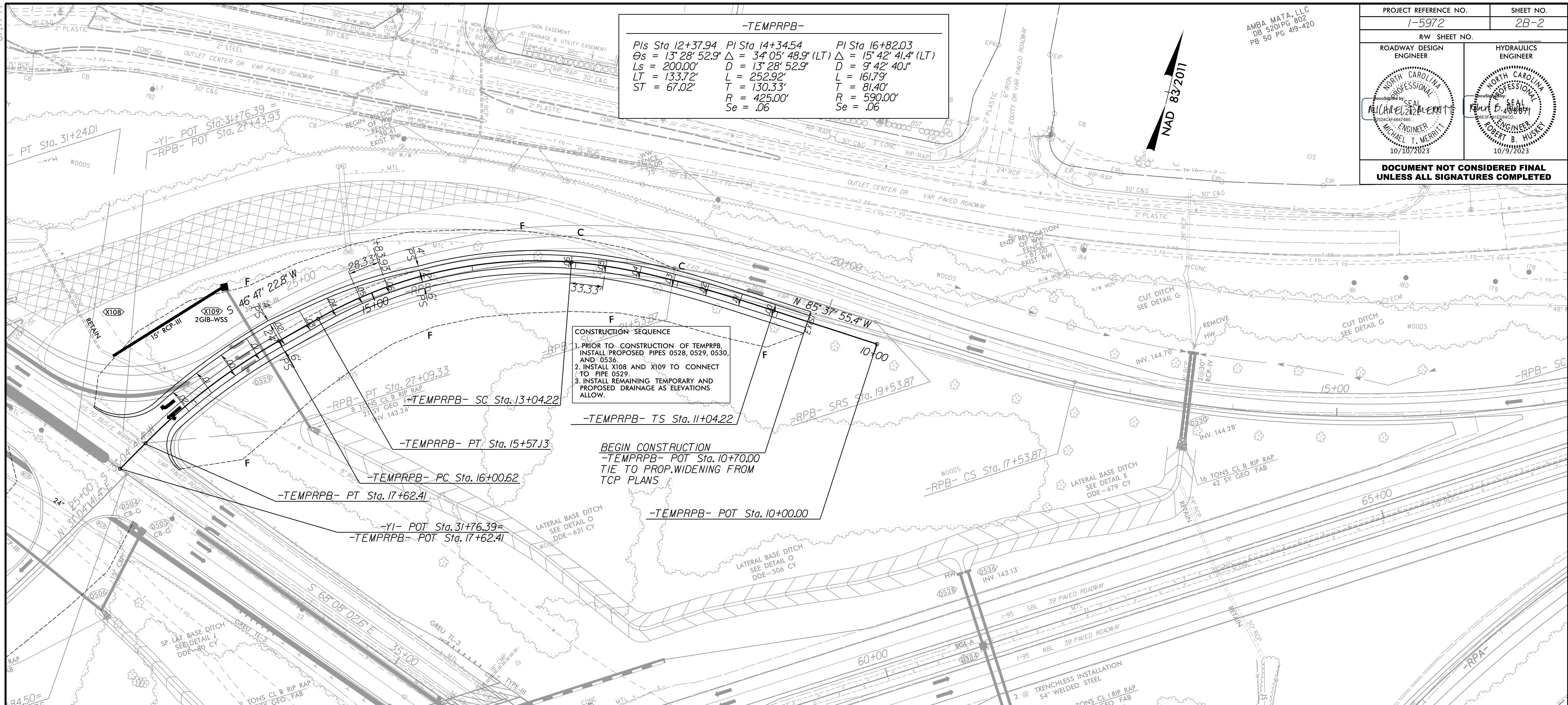
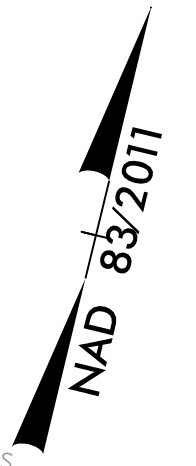


PROJECT REFERENCE NO. R-2511A	SHEET NO. 2B-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	

PROJECT REFERENCE NO. 1-5972	SHEET NO. 2B-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER 
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

-TEMPRPB-

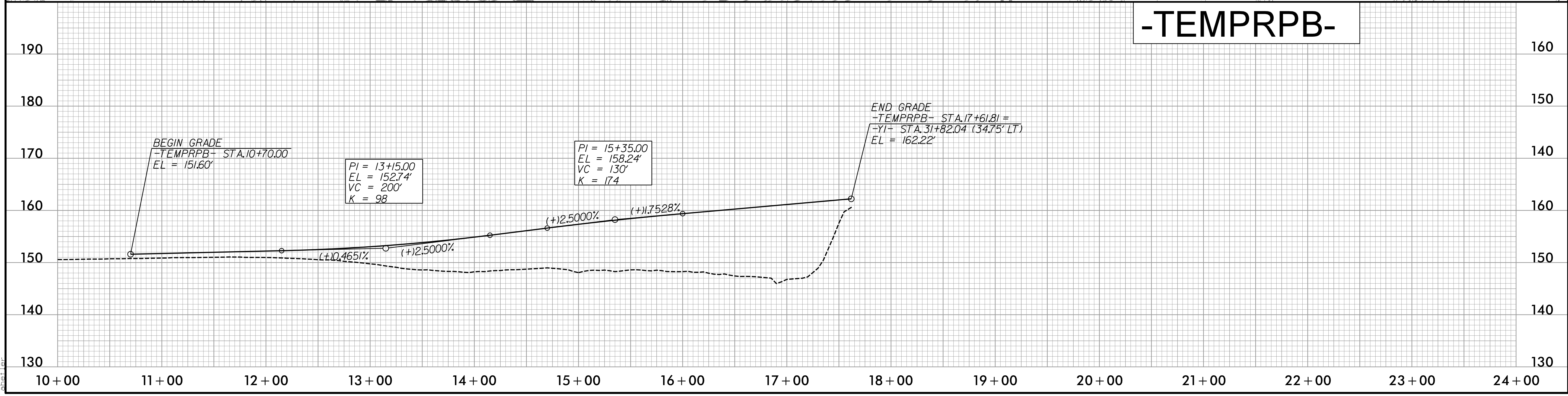
PIs Sta 12+37.94	PI Sta 14+34.54	PI Sta 16+82.03
Os = 13° 28' 52.9"	Δ = 34° 05' 48.9" (LT)	Δ = 15° 42' 41.4" (LT)
Ls = 200.00'	D = 13° 28' 52.9"	D = 9° 42' 40.1"
LT = 133.72'	L = 252.92'	L = 161.79'
ST = 67.02'	T = 130.33'	T = 81.40'
	R = 425.00'	R = 590.00'
	Se = .06	Se = .06



CONSTRUCTION SEQUENCE

1. PRIOR TO CONSTRUCTION OF TEMP RPB, INSTALL PROPOSED PIPES 0528, 0529, 0530, AND 0536.
2. INSTALL X108 AND X109 TO CONNECT TO PIPE 0529.
3. INSTALL REMAINING TEMPORARY AND PROPOSED DRAINAGE AS ELEVATIONS ALLOW.

BEGIN CONSTRUCTION
 -TEMPRPB- POT Sta. 10+70.00
 TIE TO PROP. WIDENING FROM TCP PLANS

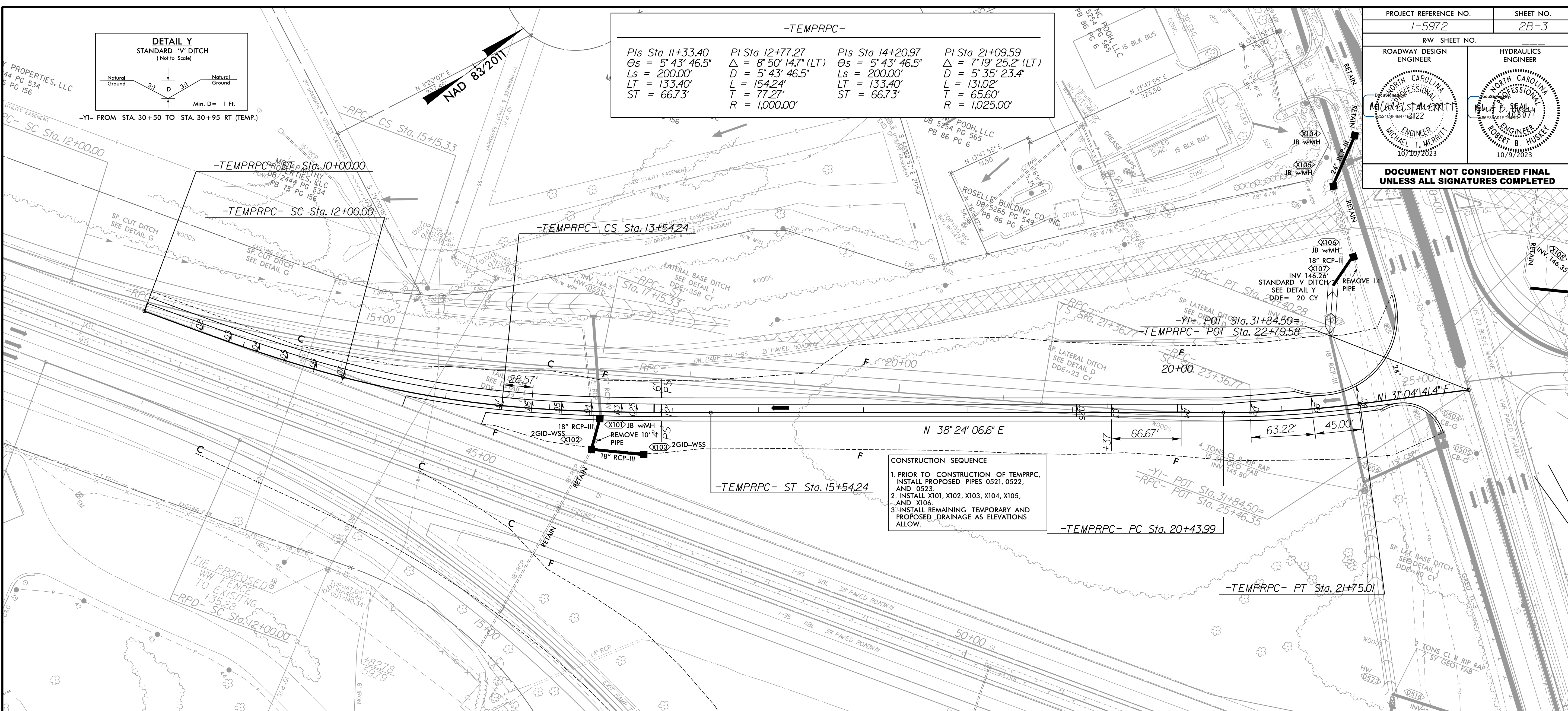
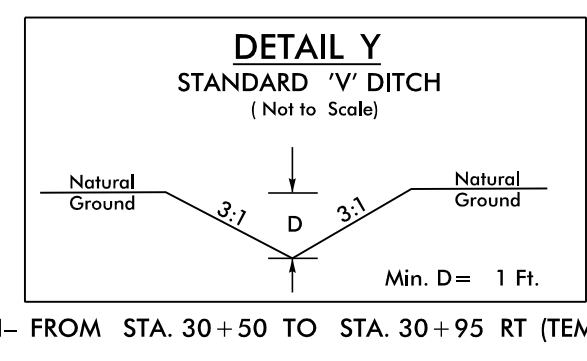


10/5/2023
 R:\Projects\15972.Rd\psh02B.dgn

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

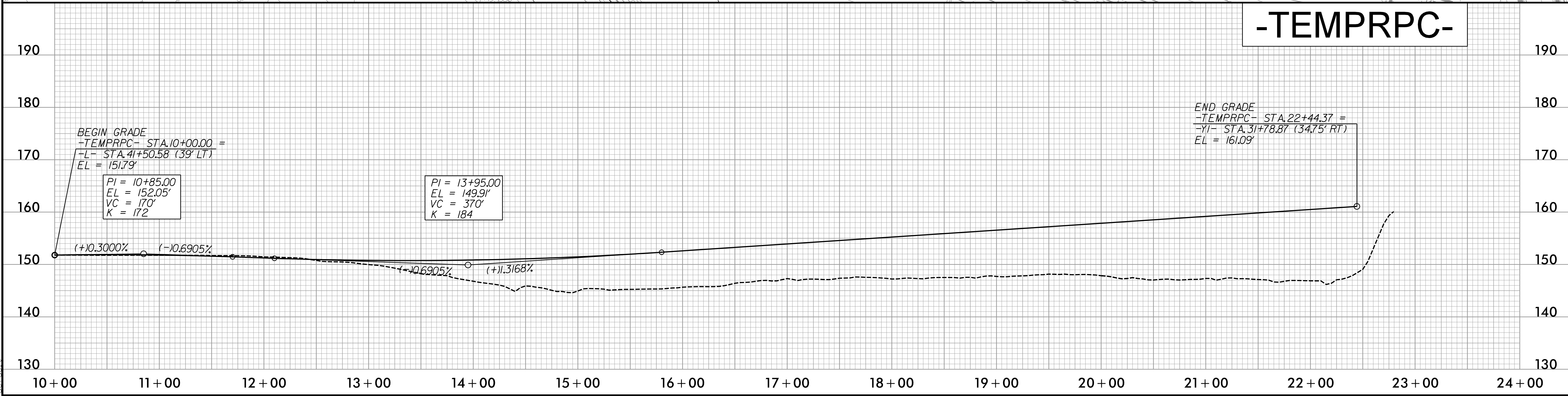
-TEMPRPC-

PIs Sta 11+33.40 θs = 5° 43' 46.5" Ls = 200.00' LT = 133.40' ST = 66.73'	PI Sta 12+77.27 Δ = 8° 50' 14.7" (LT) D = 5° 43' 46.5" L = 154.24' T = 77.27' R = 1,000.00'	PIs Sta 14+20.97 θs = 5° 43' 46.5" Ls = 200.00' LT = 133.40' ST = 66.73'	PI Sta 21+09.59 Δ = 7° 19' 25.2" (LT) D = 5° 35' 23.4" L = 131.02' T = 65.60' R = 1,025.00'
--	--	--	--



CONSTRUCTION SEQUENCE

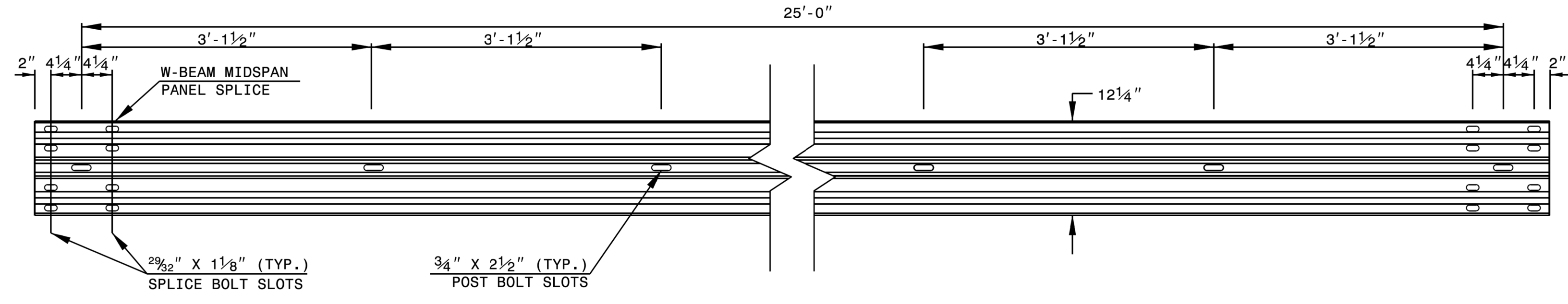
1. PRIOR TO CONSTRUCTION OF TEMP RPC, INSTALL PROPOSED PIPES 0521, 0522, AND 0523.
2. INSTALL X101, X102, X103, X104, X105, AND X106.
3. INSTALL REMAINING TEMPORARY AND PROPOSED DRAINAGE AS ELEVATIONS ALLOW.



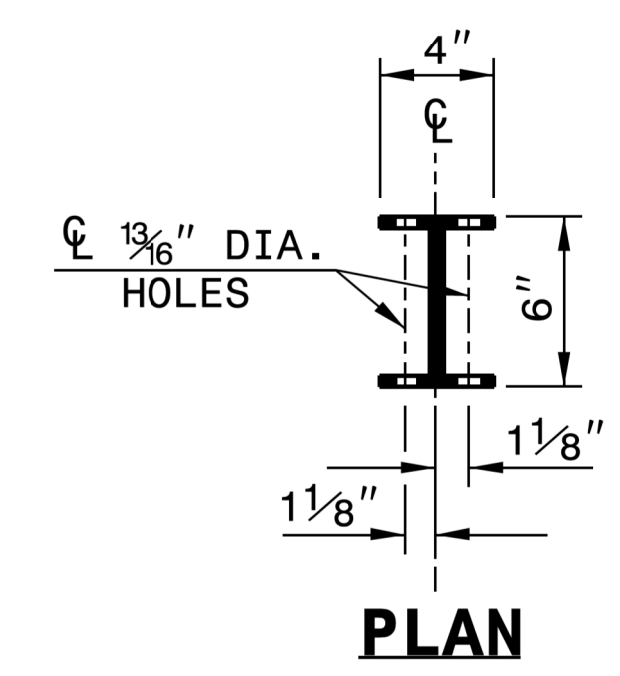
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

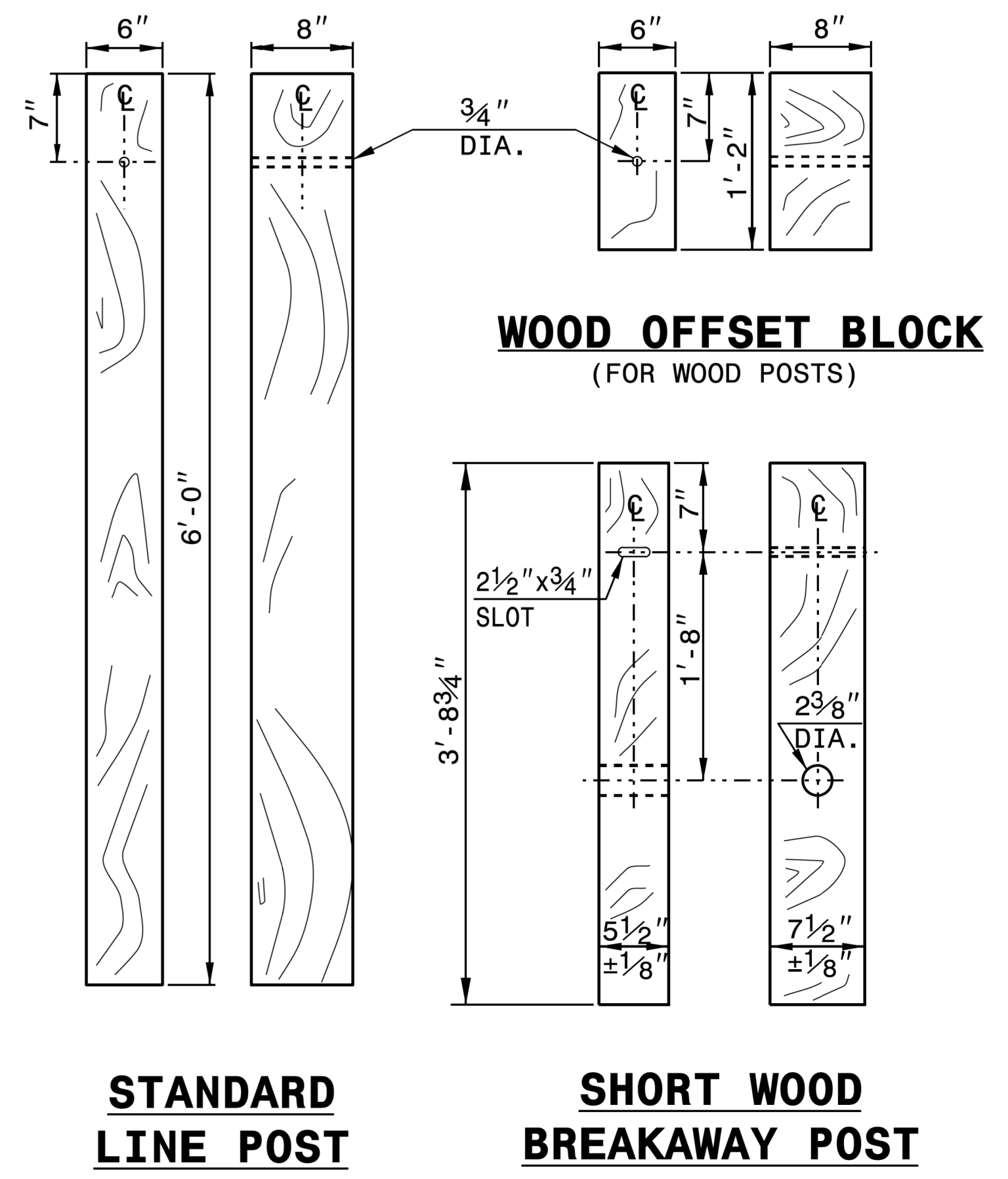
SHEET 6 OF 8
862D02



STANDARD W-BEAM GUARDRAIL

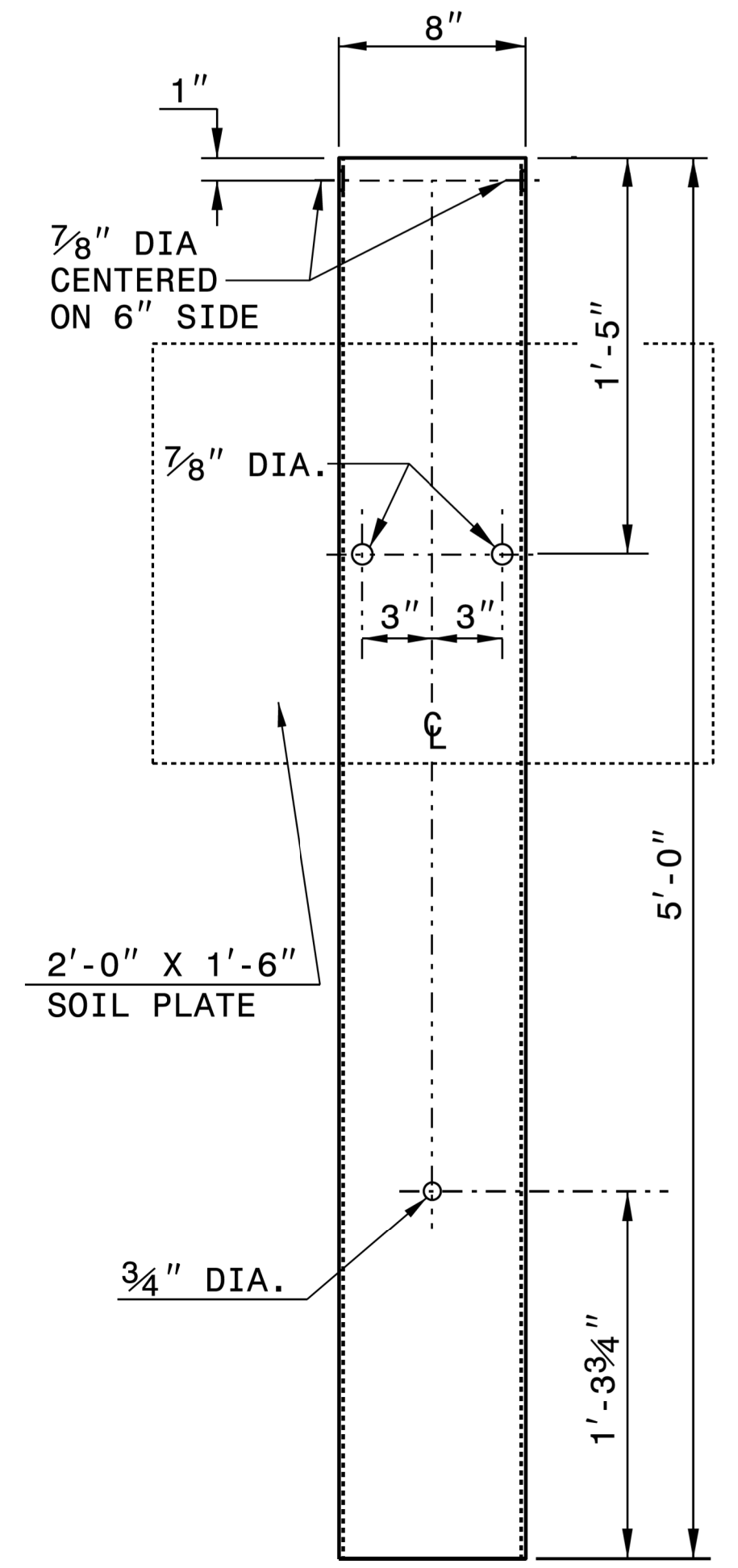


PLAN



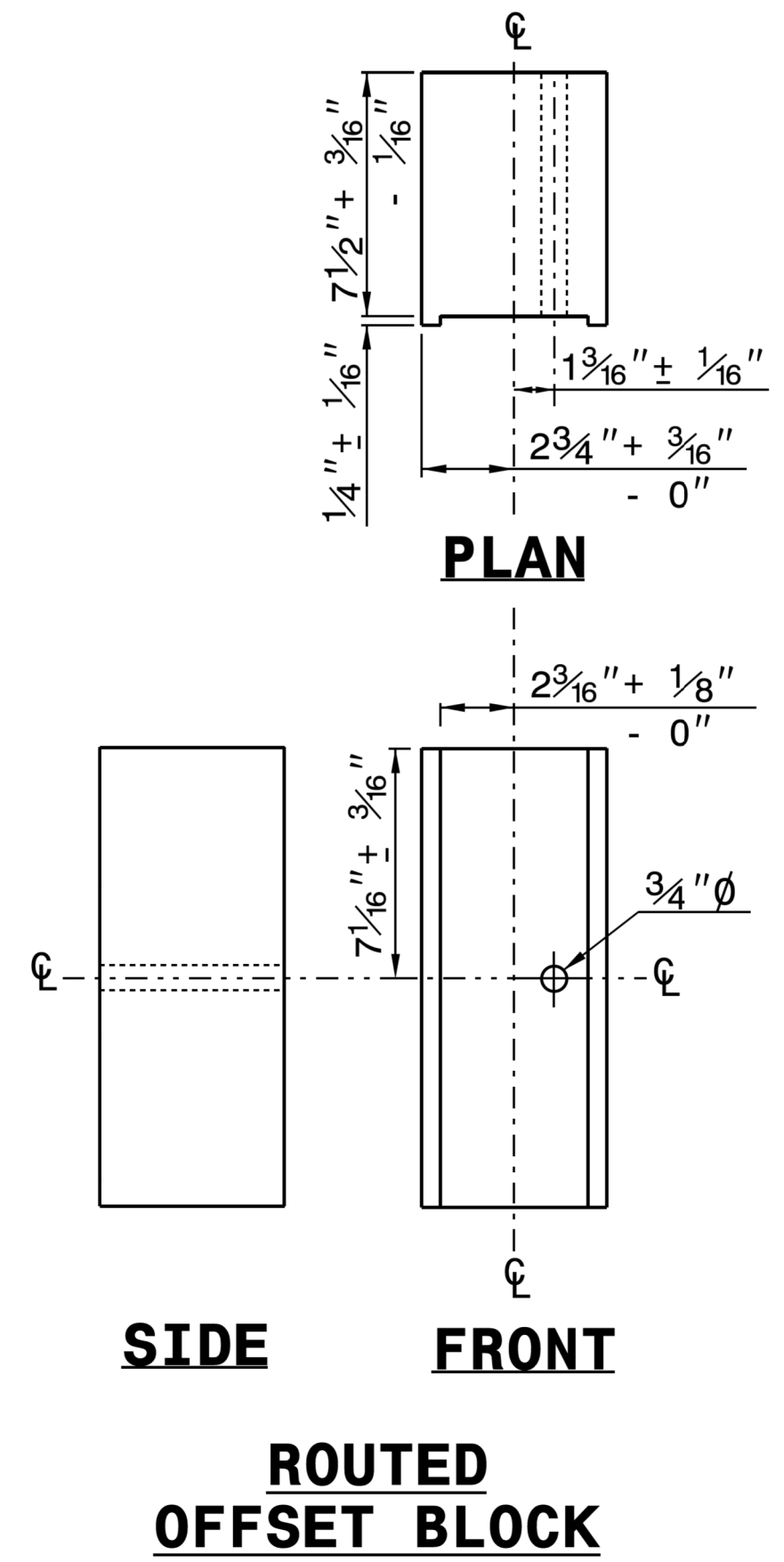
STANDARD LINE POST

SHORT WOOD BREAKAWAY POST



STEEL TUBE
TS 6"x8"x0.1875"

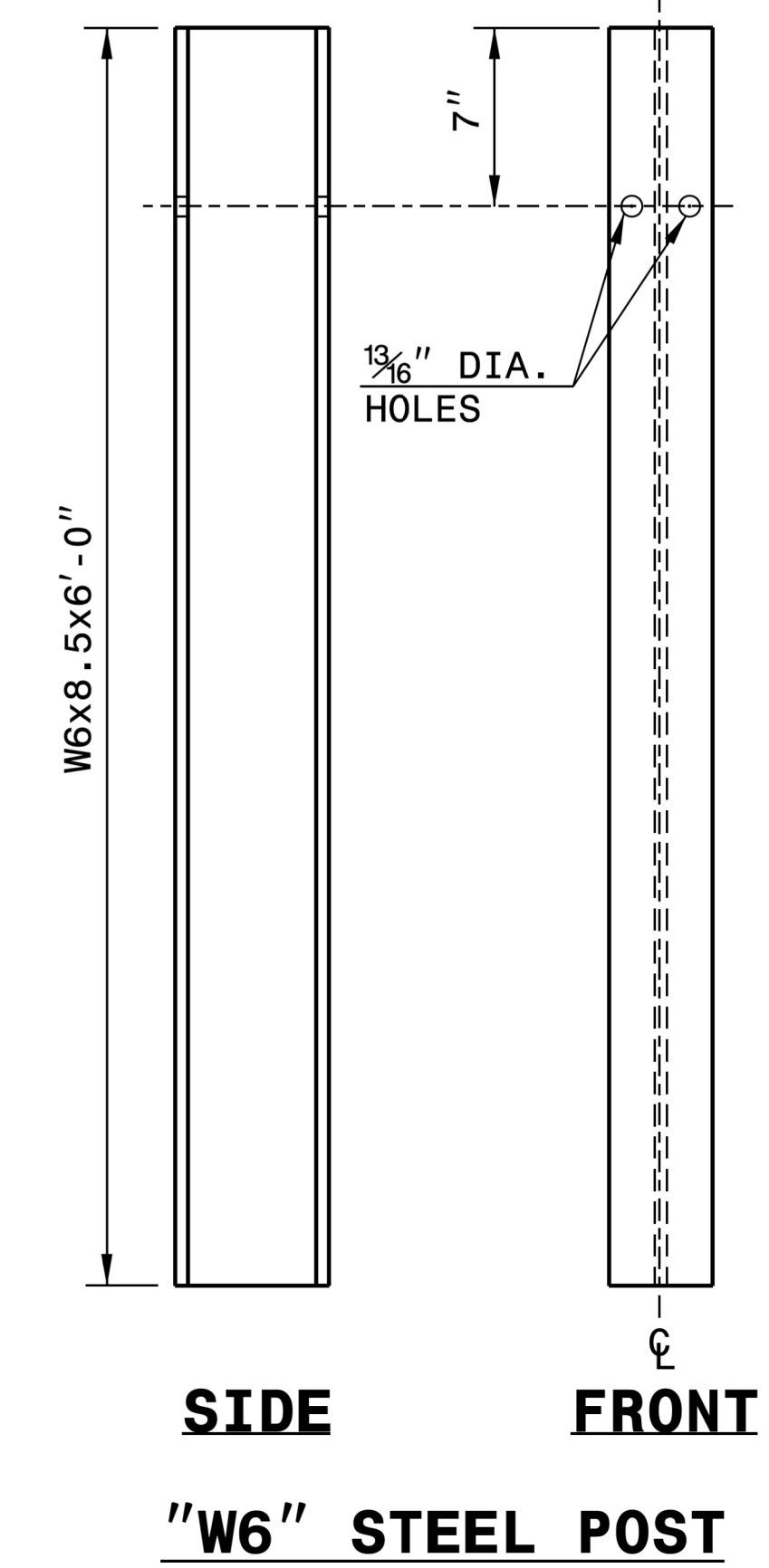
SYSTEM PARTS



SIDE

FRONT

ROUTED OFFSET BLOCK



SIDE

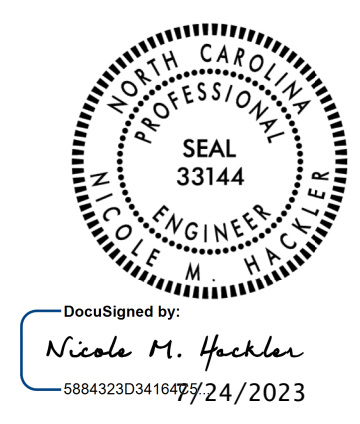
FRONT

"W6" STEEL POST

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02



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

SEE TITLE BLOCK

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

14-DEC-2017 10:36 S:\Contracts\Special Details\Standard Drawings\Details in Lieu of Standard Drawings\Division 8\0862d0301.dgn
 Jhowerton AT CSD-252595

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

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

SHEET 1 OF 7
862D03

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

PLAN VIEW

ELEVATION

NOTE:

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

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

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

SHEET 1 OF 7
862D03

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

PLAN VIEW

ELEVATION

NOTE:

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

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

SEE TITLE BLOCK

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

DocuSigned by:
Nicole M. Hecker
58843203416479/24/2023

ORIGINAL BY: J. HOWERTON DATE: 06-22-12
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.:

SHEET 2 OF 7
862D03

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

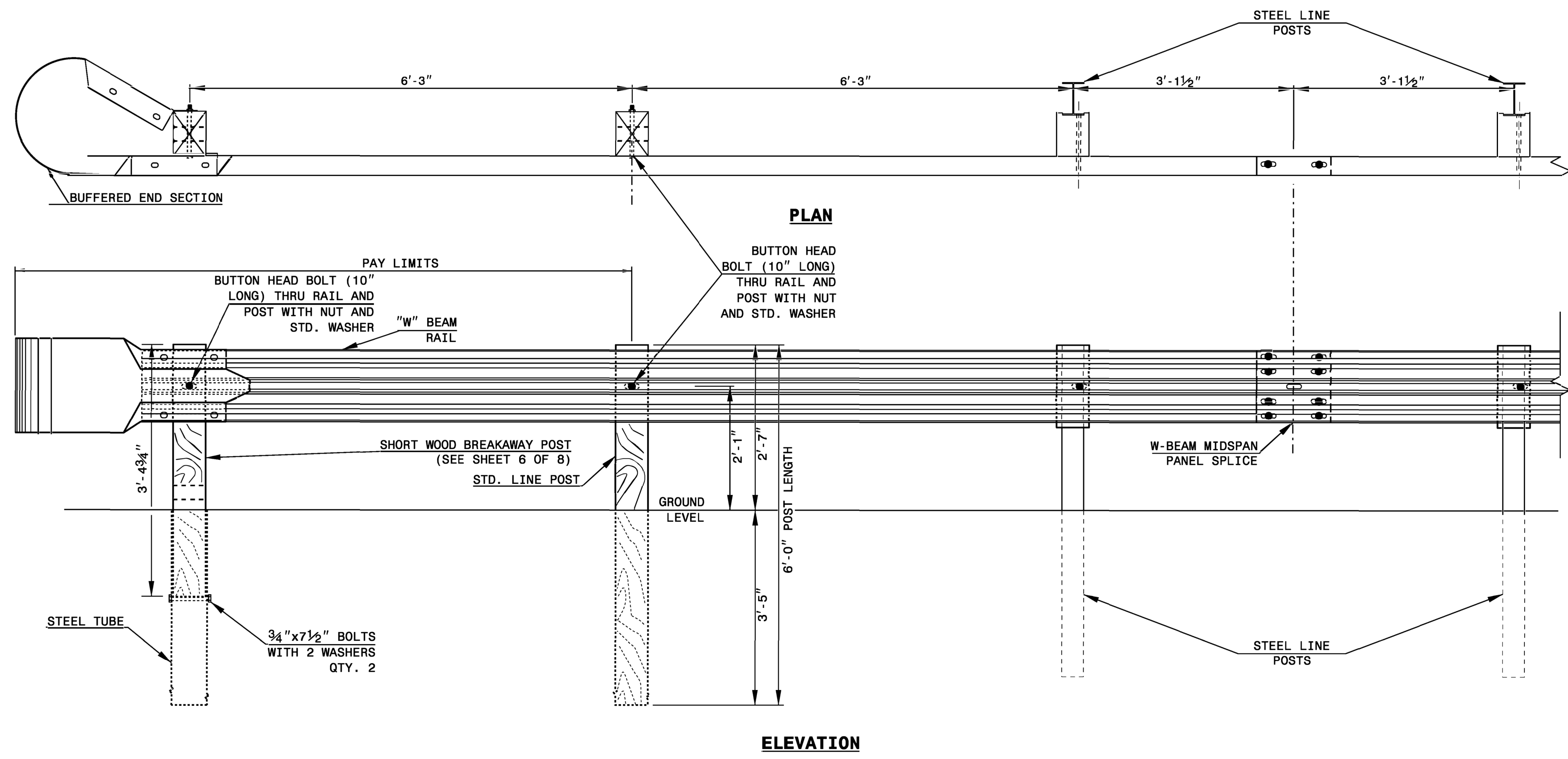
ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

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



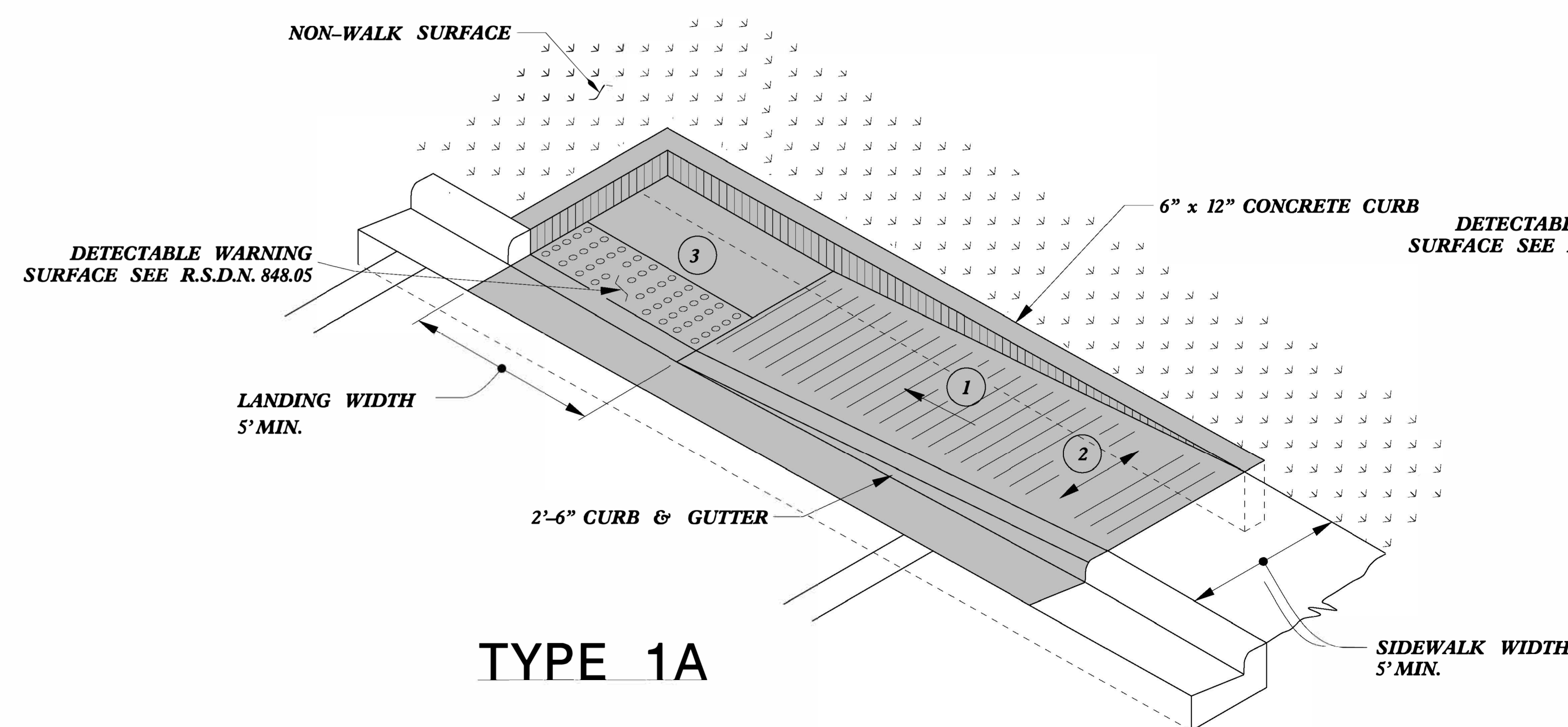
DocuSigned by:
Nicole M. Hacker
588432303410/2023

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

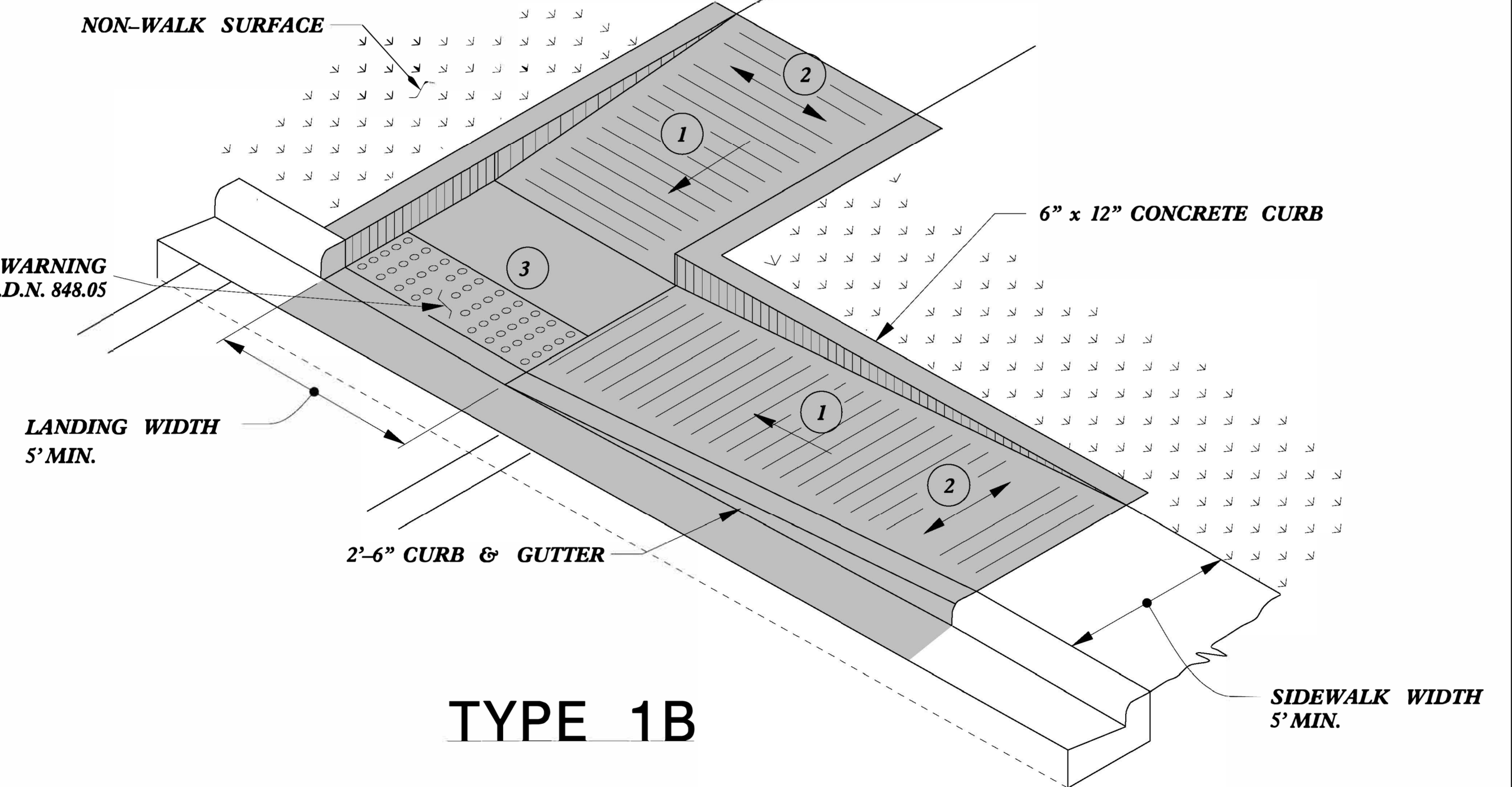
**CONTRACTS STANDARDS
AND DEVELOPMENT UNIT**
Office 919-707-6950 FAX 919-250-4119

A.T. - 1 SYSTEM

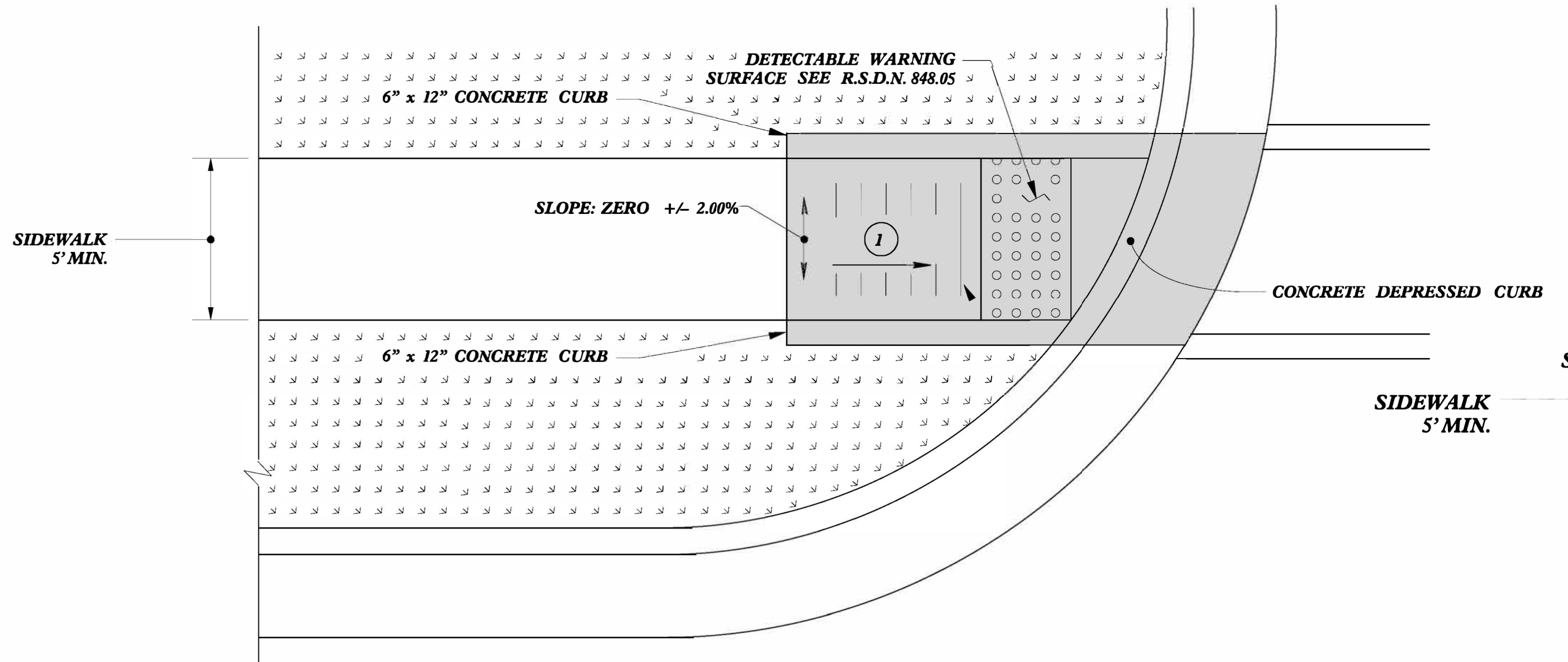
ORIGINAL BY: _____ DATE: _____
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: _____



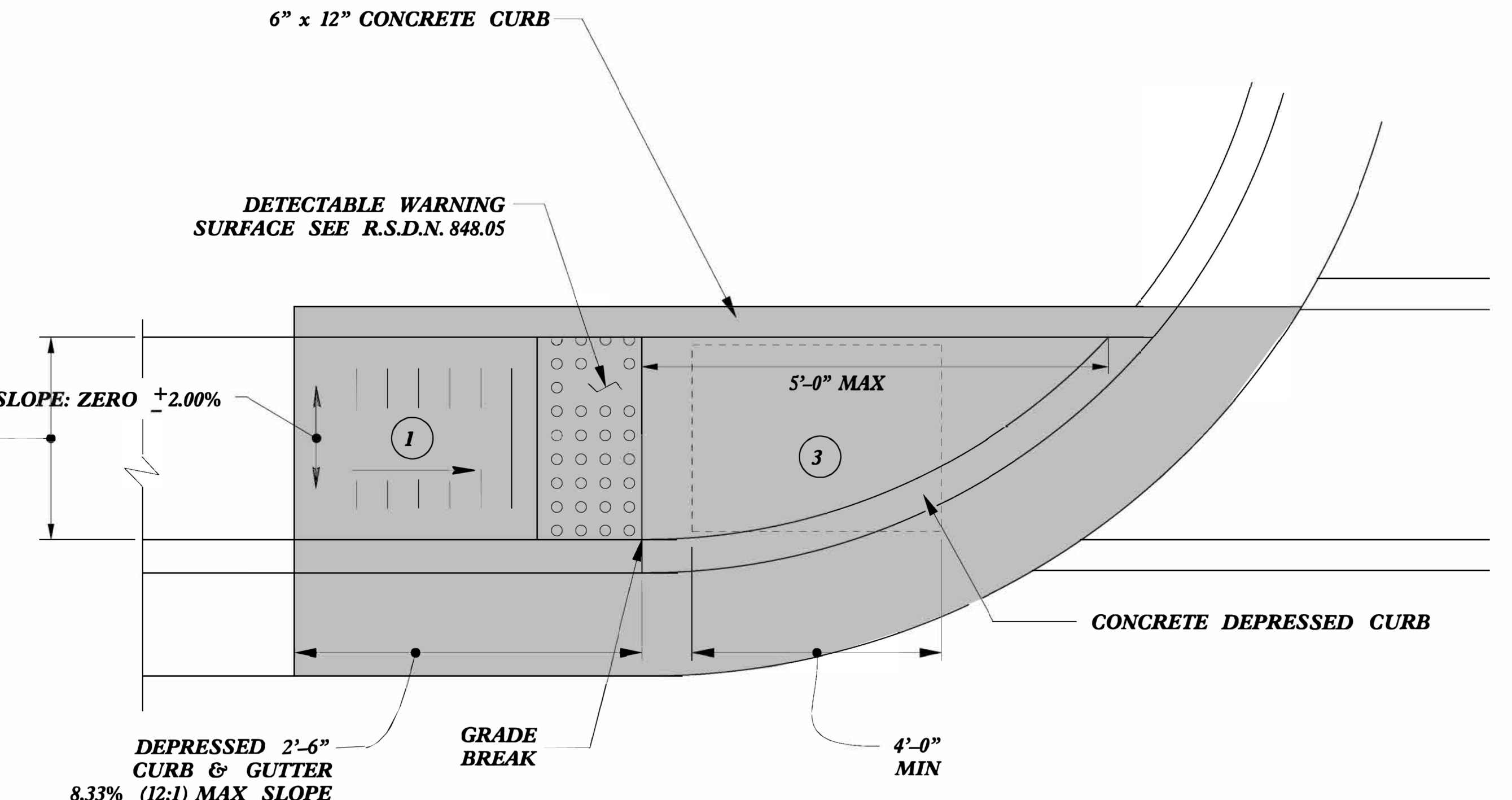
TYPE 1A



TYPE 1B



TYPE 1 Modified



TYPE 1

- 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.

PAY LIMITS FOR 1 CURB RAMP

REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

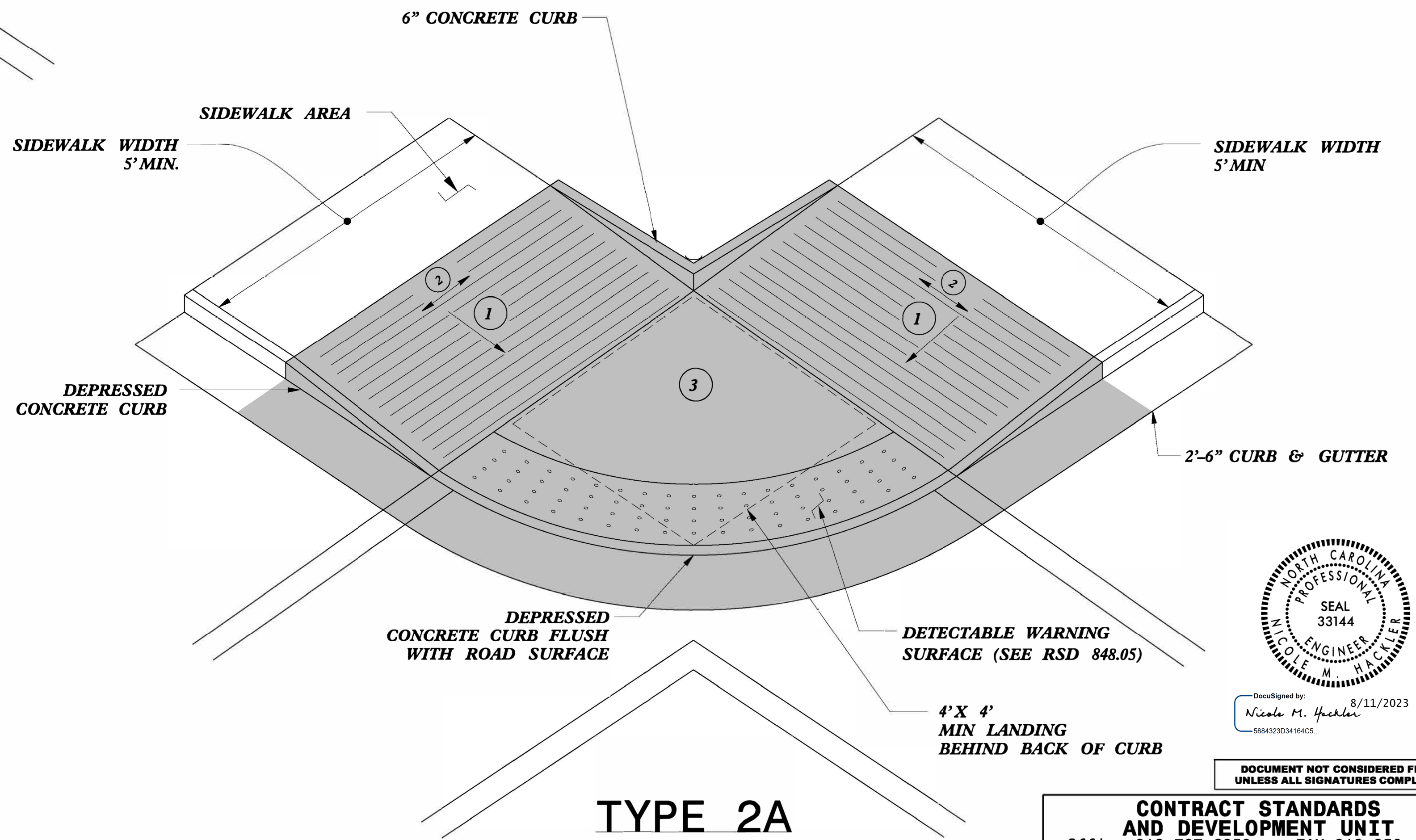
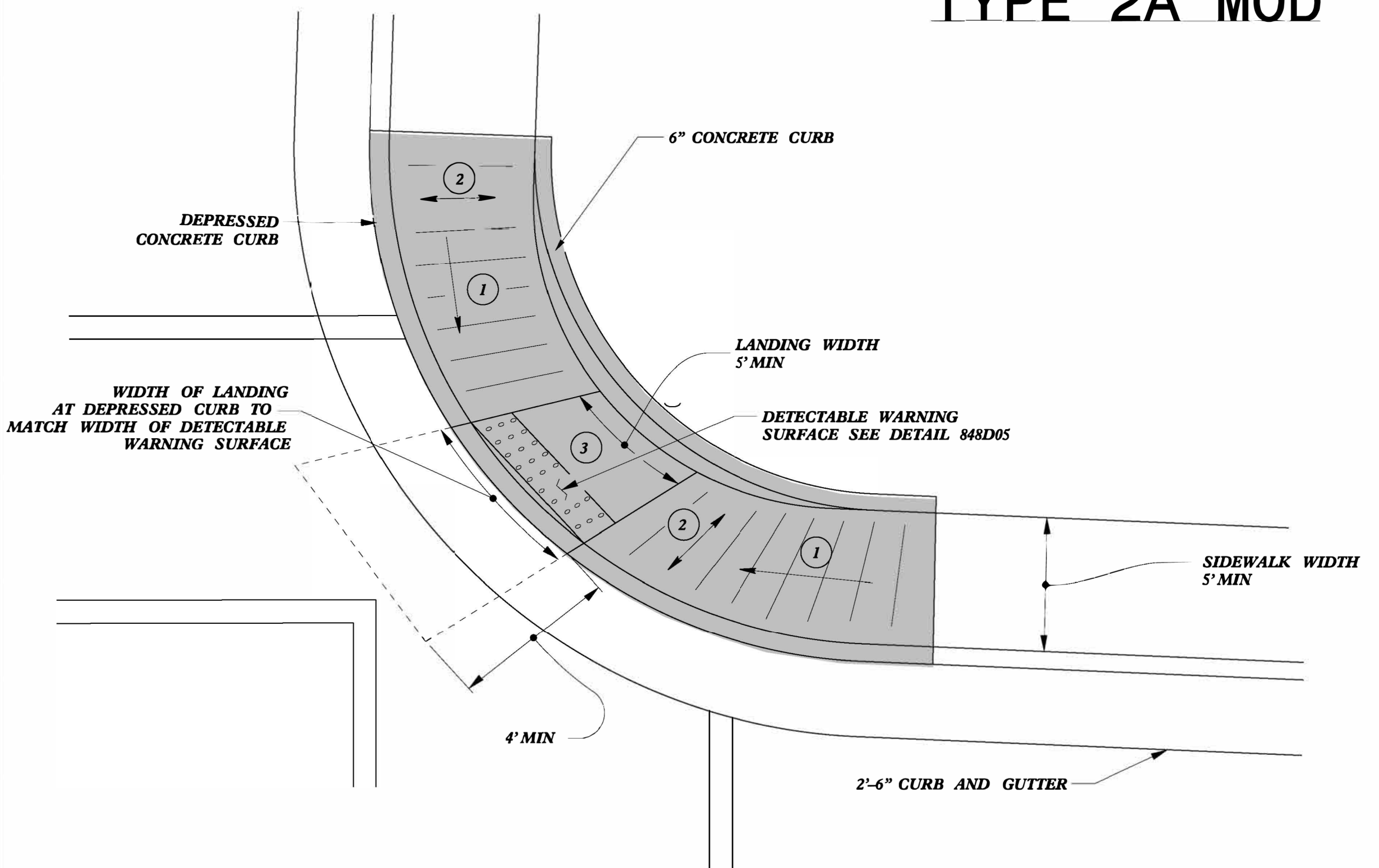
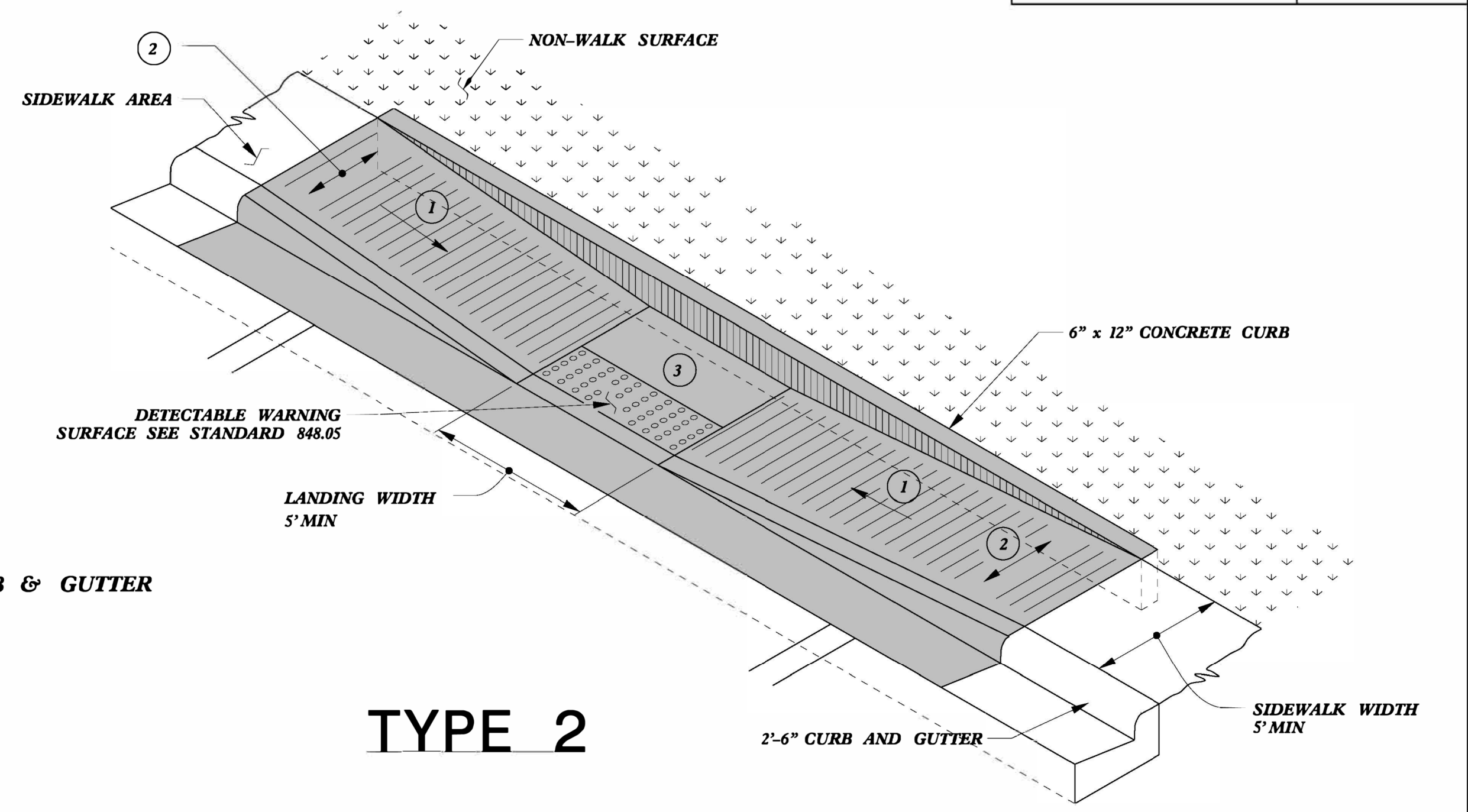
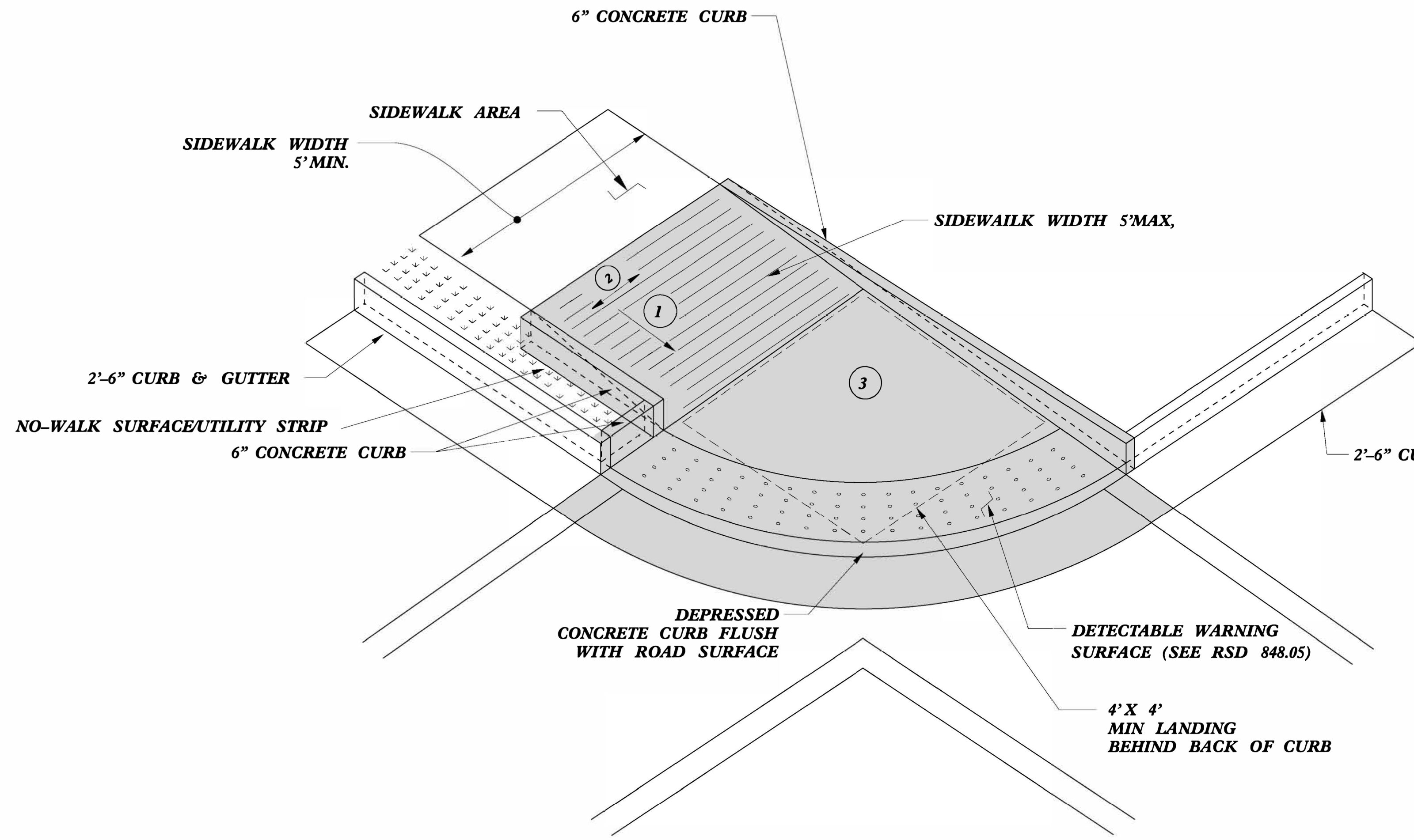


DocuSigned by:
Nicole M. Heckler
8/11/2023
5884323034164C5

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

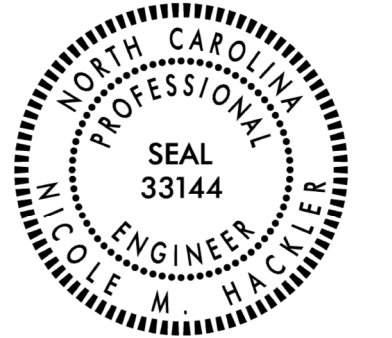
CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950	FAX 919-250-4119
CURB RAMPS	
Directional Ramps	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC: stds/2012CurbRamp/CurbRampDetails.dgn	

5/14/99



- 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.

PAY LIMITS FOR 1 CURB RAMP



DocuSigned by:
Nicole M. Hecker
8/11/2023
5884923034164CS...

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

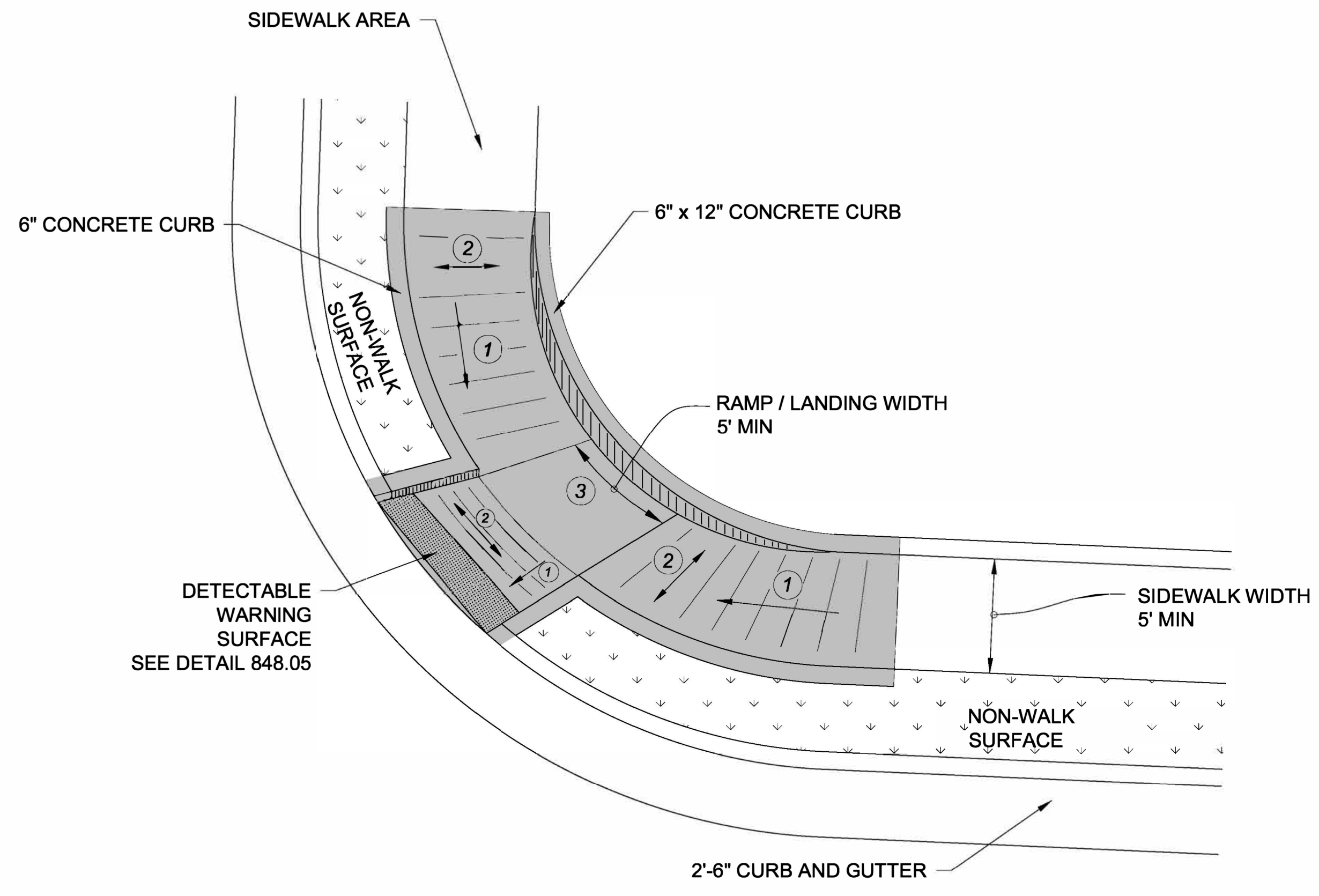
CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

CURB RAMPS

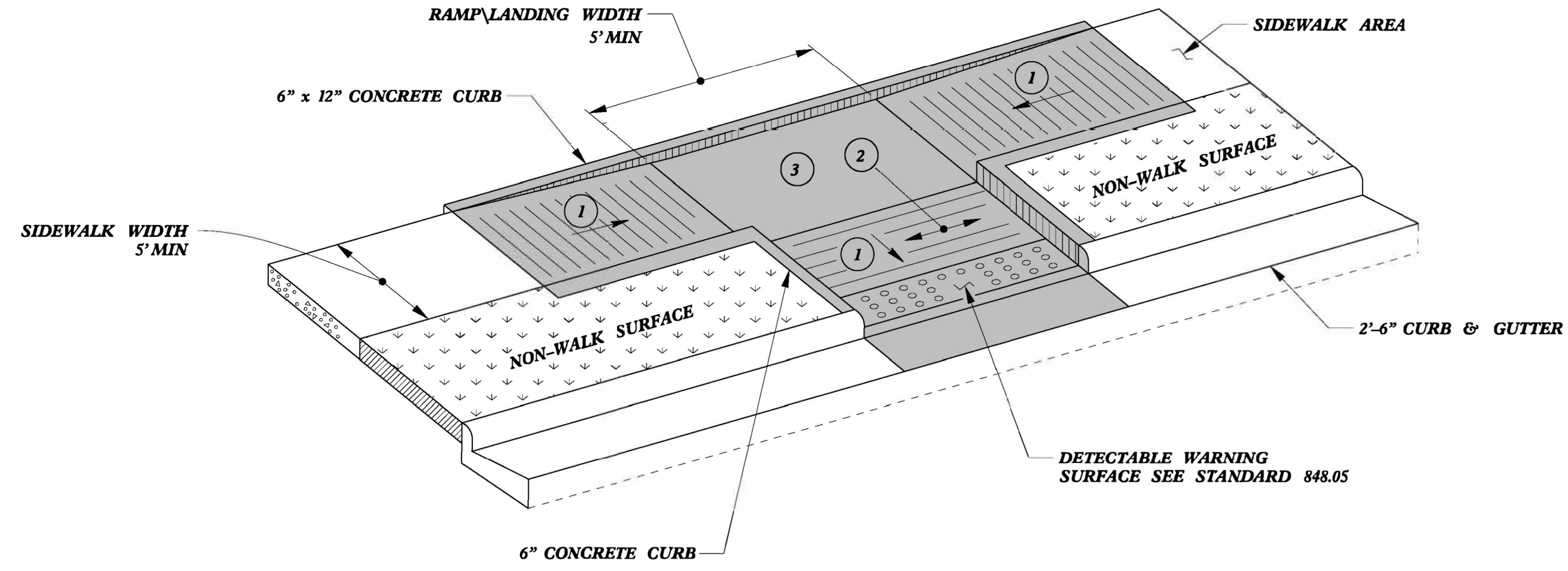
ORIGINAL BY: J.S. HOWERTON DATE: 7/7/11
MODIFIED BY: DATE: _____
CHECKED BY: DATE: _____
FILE SPEC: stds/2012CurbRamp/CurbRampDetails.dgn

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

PAY LIMITS FOR 1 CURB RAMP

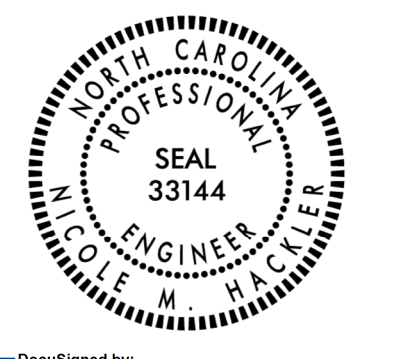


TYPE 3 MODIFIED
INSTALLATION IN A RADIUS



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.



DocuSigned by:
Nicole M. Heckler
8/11/2023
5884323034164C5

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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

5/14/99
 1
 2
 3
 4
 5
 6
 7
 8
 9
 10
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20
 21
 22
 23
 24
 25
 26
 27
 28
 29
 30
 31
 32
 33
 34
 35
 36
 37
 38
 39
 40
 41
 42
 43
 44
 45
 46
 47
 48
 49
 50
 51
 52
 53
 54
 55
 56
 57
 58
 59
 60
 61
 62
 63
 64
 65
 66
 67
 68
 69
 70
 71
 72
 73
 74
 75
 76
 77
 78
 79
 80
 81
 82
 83
 84
 85
 86
 87
 88
 89
 90
 91
 92
 93
 94
 95
 96
 97
 98
 99
 100