

09_05/2019

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ROBESON COUNTY

LOCATION: BRIDGE NO. 770125 OVER LUMBER RIVER ON NC 41/72

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5985A	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
47749.1.2	4774901	PE	
47749.2.1	0041115	ROW	
47749.2.2	0041115	UTILITY	
47749.3.2	4774901	CONST.	

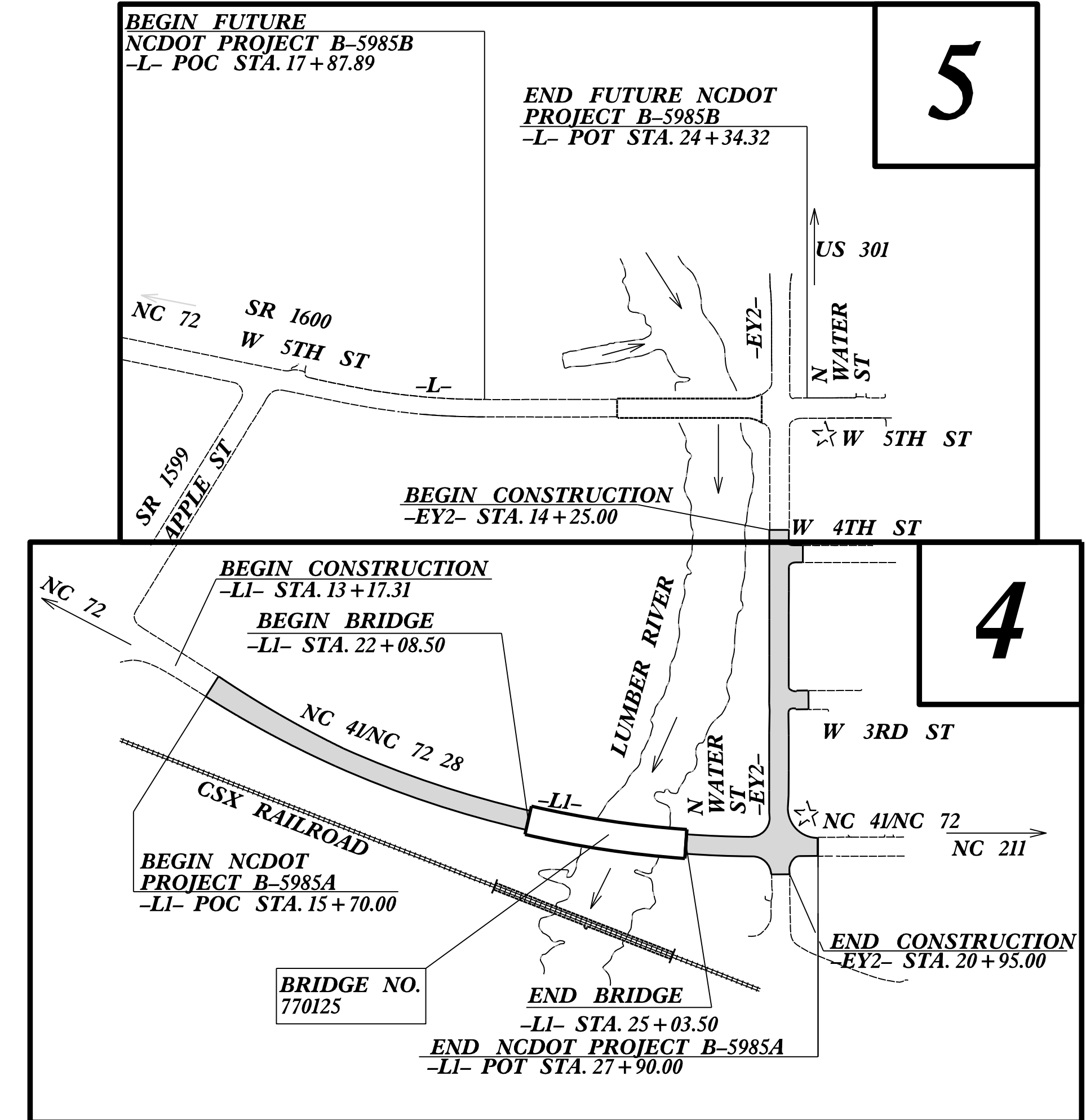
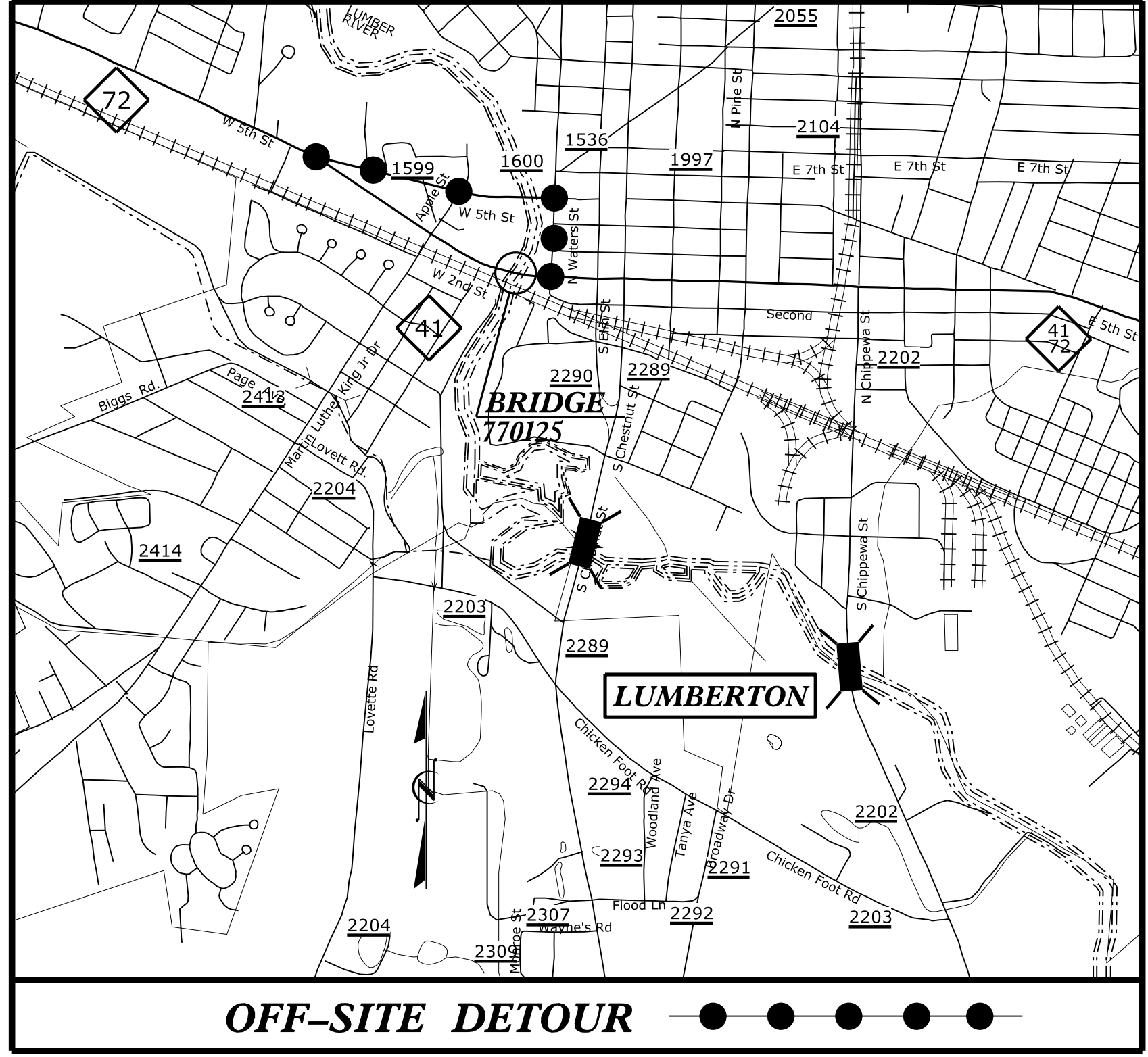
1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

WETHERILL ENGINEERING

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJECT: B-5985A

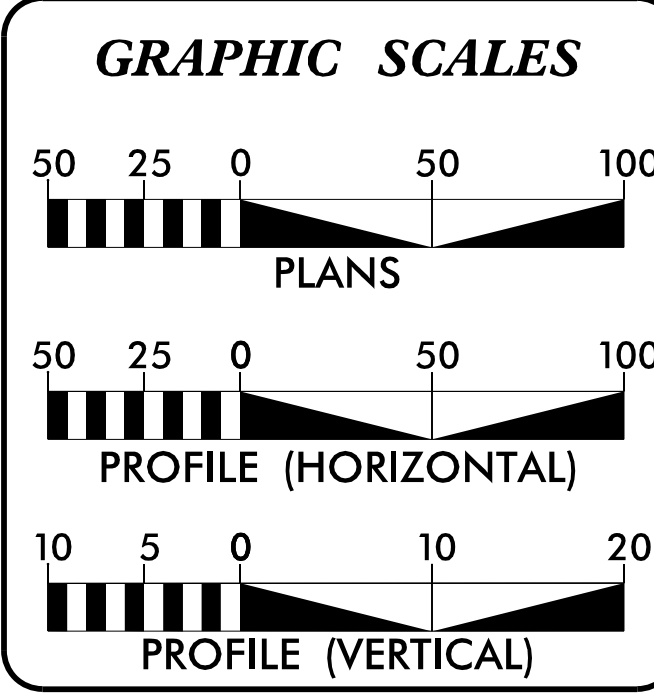
CONTRACT: C204764



BRIDGE #770125

☆ - EXISTING SIGNAL

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



DESIGN DATA

BRIDGE # 770125

ADT 2022 = 15,200
ADT 2042 = 17,000

K = 9 %
D = 55 %
T = 6 % *
V = 40 MPH

* (TTST = 2% +
DUAL = 4%)
FUNC CLASS =
PRINCIPAL ARTERIAL
REGIONAL TIER

PROJECT LENGTH

BRIDGE # 770125

LENGTH ROADWAY PROJECT B-5985A = 0.175 MILES
LENGTH STRUCTURE PROJECT B-5985A = 0.056 MILES

TOTAL LENGTH PROJECT B-5985A = 0.231 MILES

Prepared for:
DIVISION OF HIGHWAYS
STRUCTURES MANAGEMENT UNIT
1000 BIRCH RIDGE DRIVE RALEIGH NC, 27610

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: **EDWARD G. WETHERILL, PE**
PROJECT ENGINEER
JANUARY 27, 2022

LETTING DATE: **GREG S. PURVIS, PE**
PROJECT DESIGN ENGINEER
JULY 18, 2023

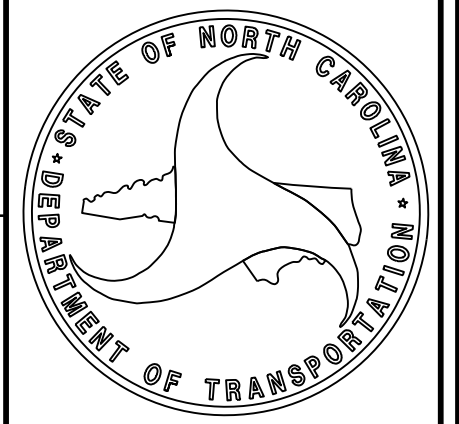
NCDOT CONTACT: **DAVID STUTTS, PE**
PROJECT ENGINEER - PEP/PROGRAM MGT.

HYDRAULICS ENGINEER
5/25/2023

DocuSigned by:
Haminder Singh P.E.

ROADWAY DESIGN ENGINEER
5/25/2023

DocuSigned by:
Gary S. Purvis P.E.



GENERAL NOTES

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 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.

DRIVEWAYS:

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

GUARDRAIL:

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

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

END BENTS:

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

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE WATER/SEWER - LUMBERTON
GAS - PIEDMONT NATURAL GAS; TV- CHARTER COMM. AND DUKE NET
COMMUNICATION - AT&T AND CHARTER COMMUNICATIONS
POWER - LUMBERTON ELECTRIC
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

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.

2018 ROADWAY ENGLISH STANDARD DRAWINGS

EFF. 01-16-2018
REV.

2018 ROADWAY ENGLISH STANDARD DRAWINGS

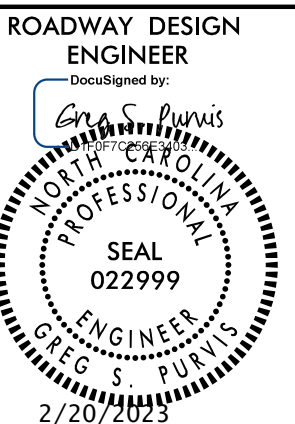
The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2018 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
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
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
DIVISION 4 - MAJOR STRUCTURES	
422.01	Bridge Approach Fills - Type I Standard Approach Fill
422.03	Reinforced Bridge Approach Fills - Type A Alternate Approach Fill for Integral Abutment
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
838.39	Reinforced Concrete Endwall - for Single 72" Pipe 90 Skew
839.45	Notes for Reinforced Concrete Endwall - Std. Dwg 838.21 thru 838.40
838.69	Reinforced Brick Endwall - for Single 72" 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, Grates and Hood - for Use on Standard Catch Basin
840.25	Anchorage for Frames - Brick or Concrete or Precast
840.29	Frames and Narrow Slot Flat Grates
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
848.04	Street Turnout
848.05	Curb Ramp - Proposed Curb & Gutter
848.06	Curb Ramp - Existing Curb & Gutter
852.01	Concrete Islands
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.02	Guide for Rip Rap at Pipe Outlets

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
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2B-1	-L1- AND -EY2- INTERSECTION DETAIL
2C-1	DETAIL FOR TYPE III STRUCTURE ANCHOR UNIT
2C-2	DETAIL FOR GUARDRAIL INSTALLATION
2C-3	DETAIL FOR ROCK PLATING
2C-4 THRU 2C-7	DETAIL FOR CURB RAMPS
3B-1	SUMMARY OF GUARDRAIL SUMMARY, EARTHWORK SUMMARY, AND PAVEMENT REMOVAL SUMMARY
3D-1	DRAINAGE SUMMARY
3G-1	GEOTECHNICAL SUMMARY
3P-1	PARCEL INDEX SHEET
4 THRU 7	PLAN AND PROFILE SHEETS
RW01 THRU RW04	RIGHT OF WAY SHEETS, SURVEY CONTROL SHEETS, PROPOSED ALIGNMENT CONTROL SHEET AND PROPOSED EASEMENT CONTROL SHEET
TMP-1 THRU TMP-9	TRANSPORTATION MANAGEMENT PLANS
PMP-1 THRU PMP-3	PAVEMENT MARKING PLANS
E-1 THRU E-2	ELECTRICAL PLANS
EC-1 THRU EC-6	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-4	SIGNING PLANS
SIG-1.0 THRU SIG-8.1	SIGNAL PLANS
SIG.M1 THRU SIG.M8	METAL POLE STANDARDS
UO-1 THRU UO-3	UTILITIES BY OTHERS PLANS
X-1A	CROSS SECTION SUMMARY SHEET
X-1 THRU X-8	CROSS SECTIONS
S-1 THRU S-49	STRUCTURE PLANS (BRIDGE 125)
SN	STRUCTURE NOTES

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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	(23)
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.

6/2/2019

PAVEMENT SCHEDULE

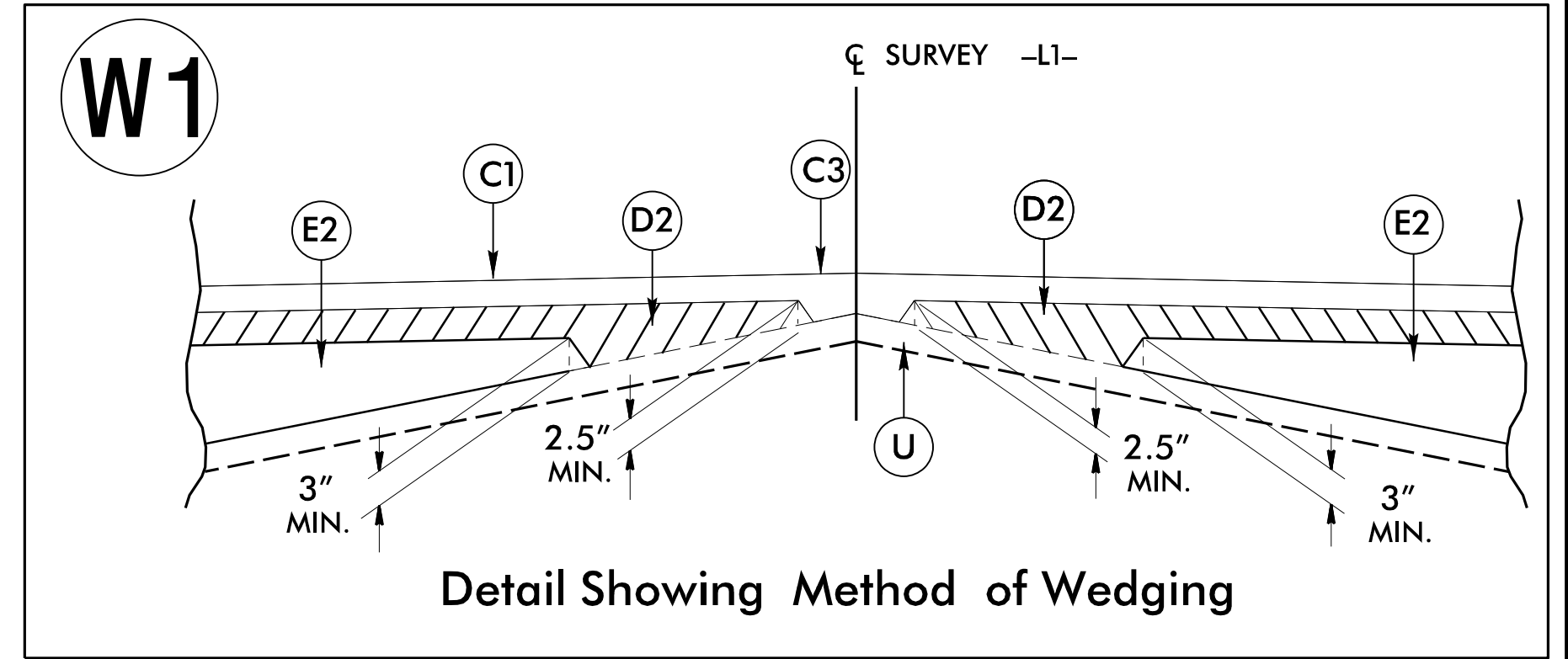
(FINAL PAVEMENT DESIGN)

C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	R1	2'-6" CONCRETE CURB AND GUTTER.
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.	R2	9" X 12" CONCRETE CURB
C3	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 TO EXCEED 2" IN DEPTH.	S1	4" CONCRETE SIDEWALK.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	T	EARTH MATERIAL.
D2	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.	U	EXISTING PAVEMENT.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	V1	MILLING ASPHALT PAVTMENT, 0 TO 1 1/2" DEPTH
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.	V2	MILLING ASPHALT PAVTMENT, 1 1/2" DEPTH
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE		W1	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET No. 2A-1)

WETHERILL ENGINEERING
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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO. B-5985A	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER 2/20/2023 <i>Greg S. Purvis</i>	PAVEMENT DESIGN ENGINEER 2/20/2023 <i>Clark S. Morrison</i>
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



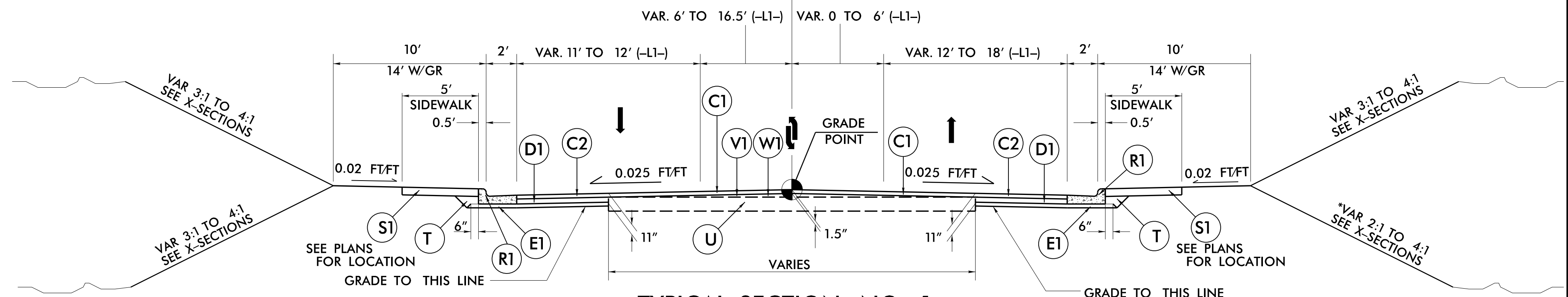
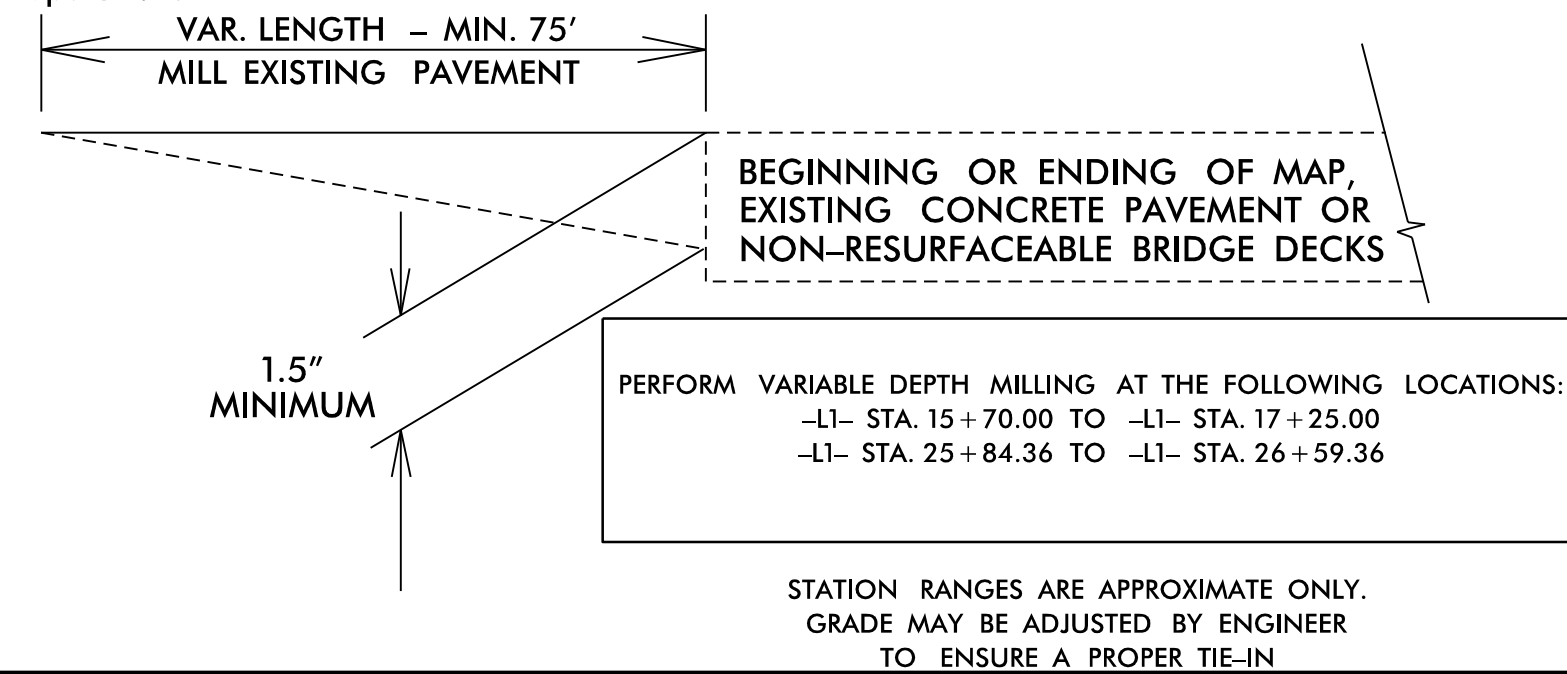
MILLING AT PAVEMENT TIE-INS

NOTES TO CONTRACTOR

For surface mixes over 1" in thickness, mill the existing pavement in accordance with the following sketch as directed by the Engineer.

Locations shall include ties into existing concrete pavement, at bridge approaches where the bridge will not be resurfaced, and at the beginning and ending point of each resurfacing map.

Perform the work in accordance with Section 607 of the January 2018 North Carolina Department of Transportation Standard Specifications for Roads and Structures. Resurfacing will be accomplished at the same time as the milling operation.

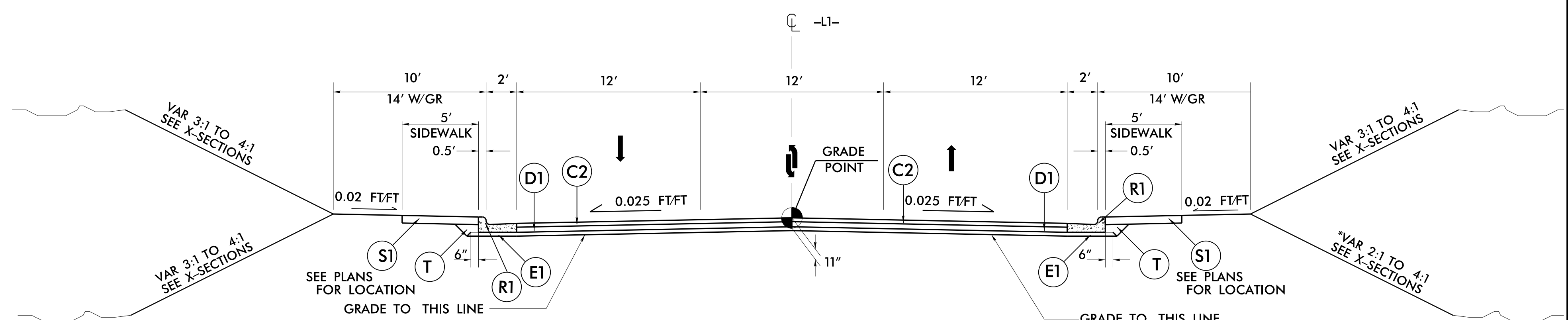


NOTE: USE MILLING DETAIL IN CONJUNCTION WITH TYPICAL SECTION NO. 1

-L1- STA. 15+70.00 TO -L1- STA. 18+40.00
 -L1- STA. 18+40.00 TO -L1- STA. 21+58.50
 -L1- STA. 25+53.50 TO -L1- STA. 26+59.36

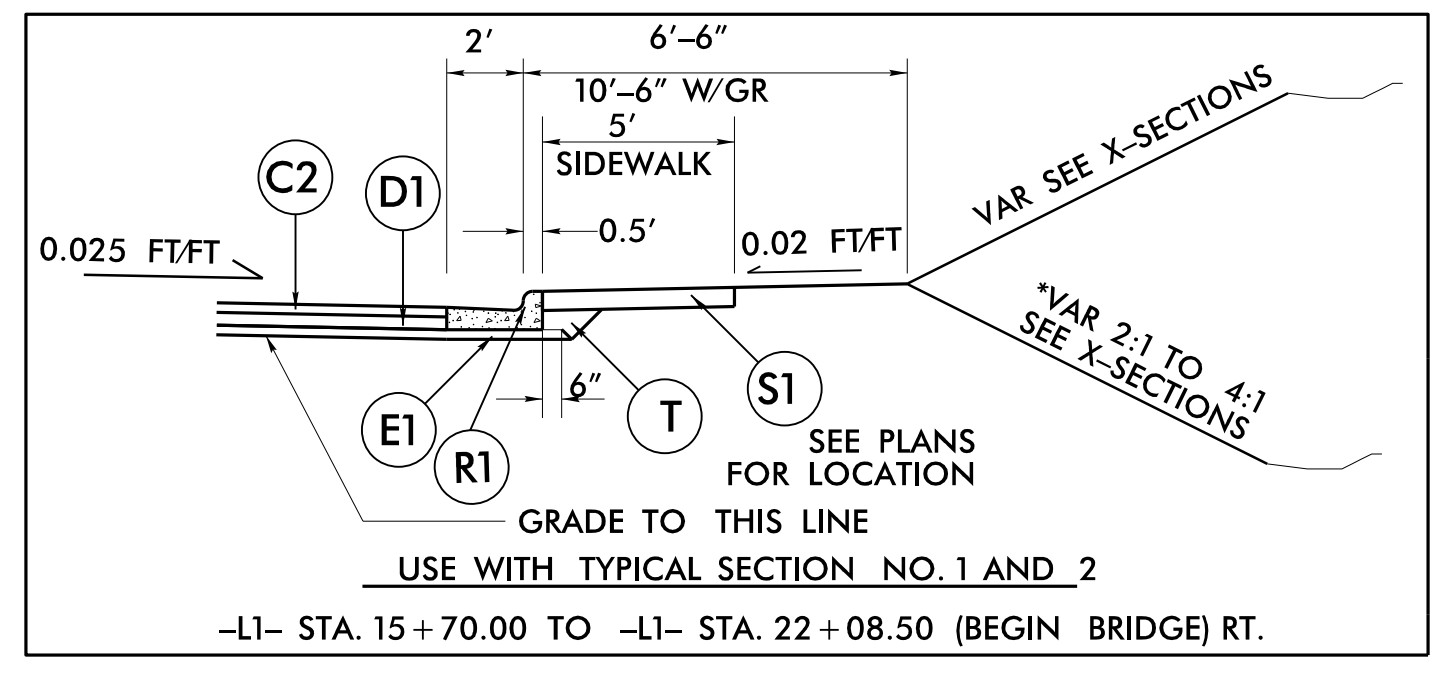
TYPICAL SECTION NO. 1

-L1- STA. 15+70.00 TO -L1- STA. 18+40.00
 -L1- STA. 18+40.00 TO -L1- STA. 21+58.50
 -L1- STA. 25+53.50 TO -L1- STA. 26+59.36



TYPICAL SECTION NO. 2

-L1- STA. 21+58.50 TO -L1- STA. 22+08.50 (BEGIN BRIDGE)
 -L1- STA. 25+03.50 (END BRIDGE) TO -L1- STA. 25+53.50



2/18/2023 B-5985A_rdu_esh_2A-1.dgn

6/2/2023

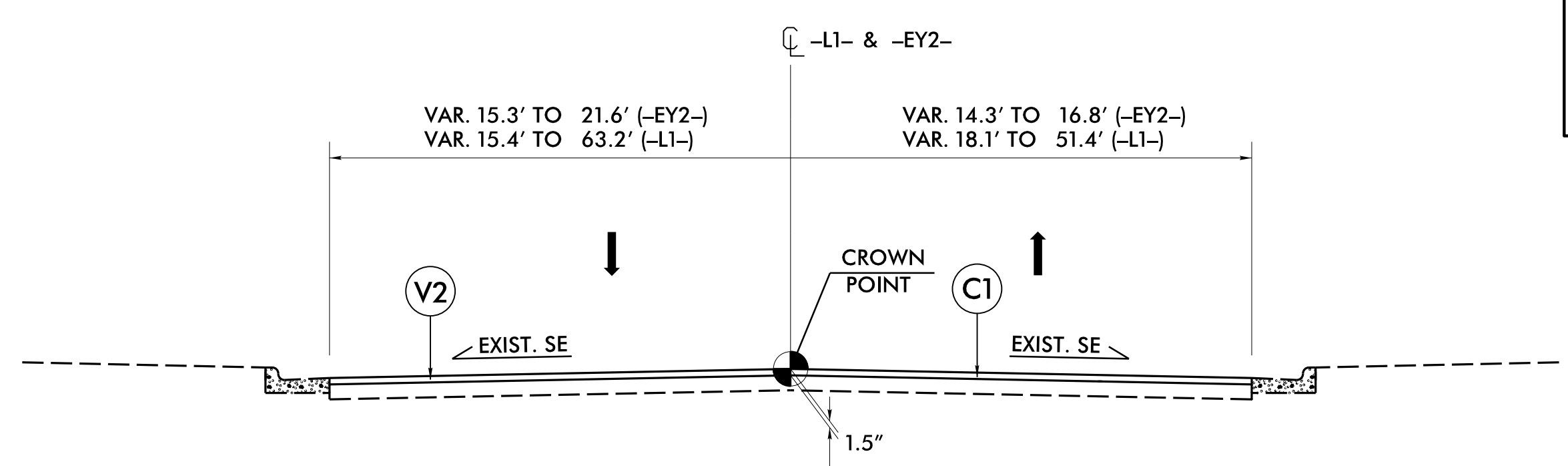
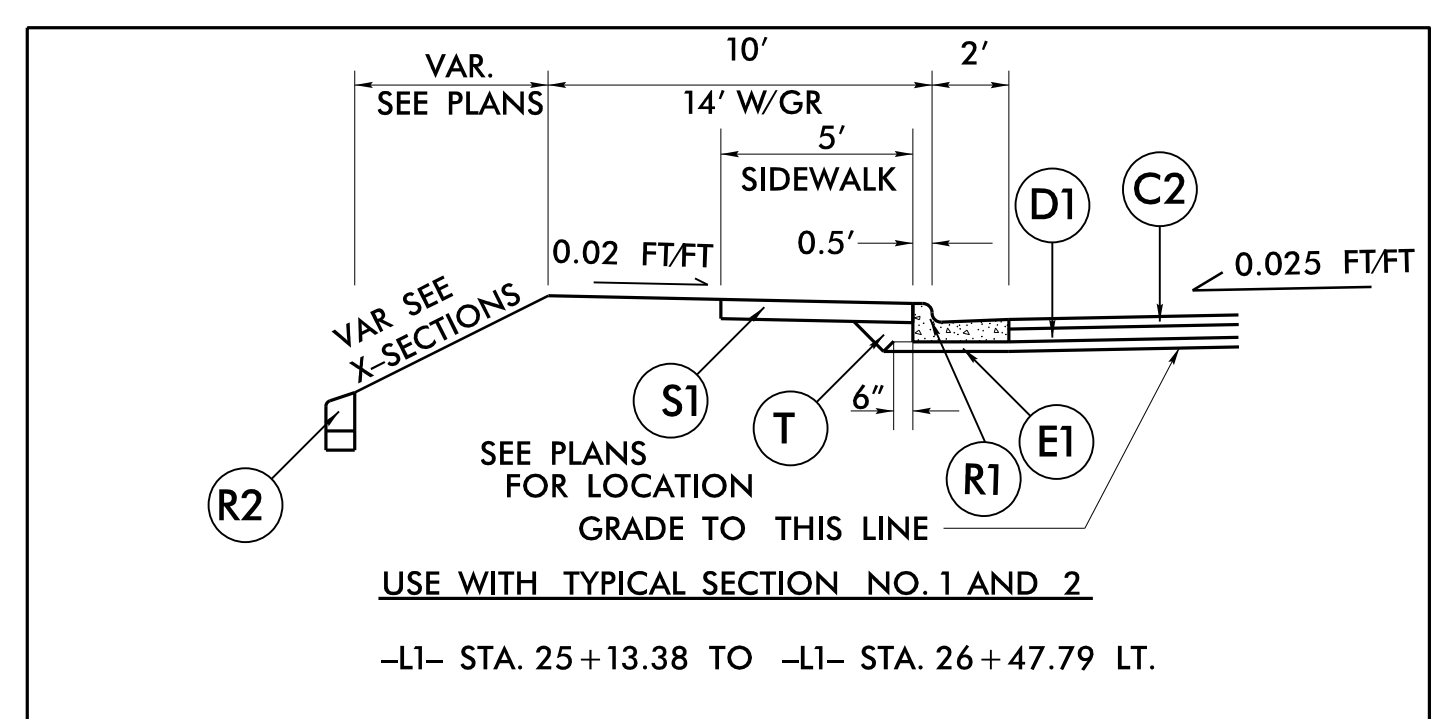
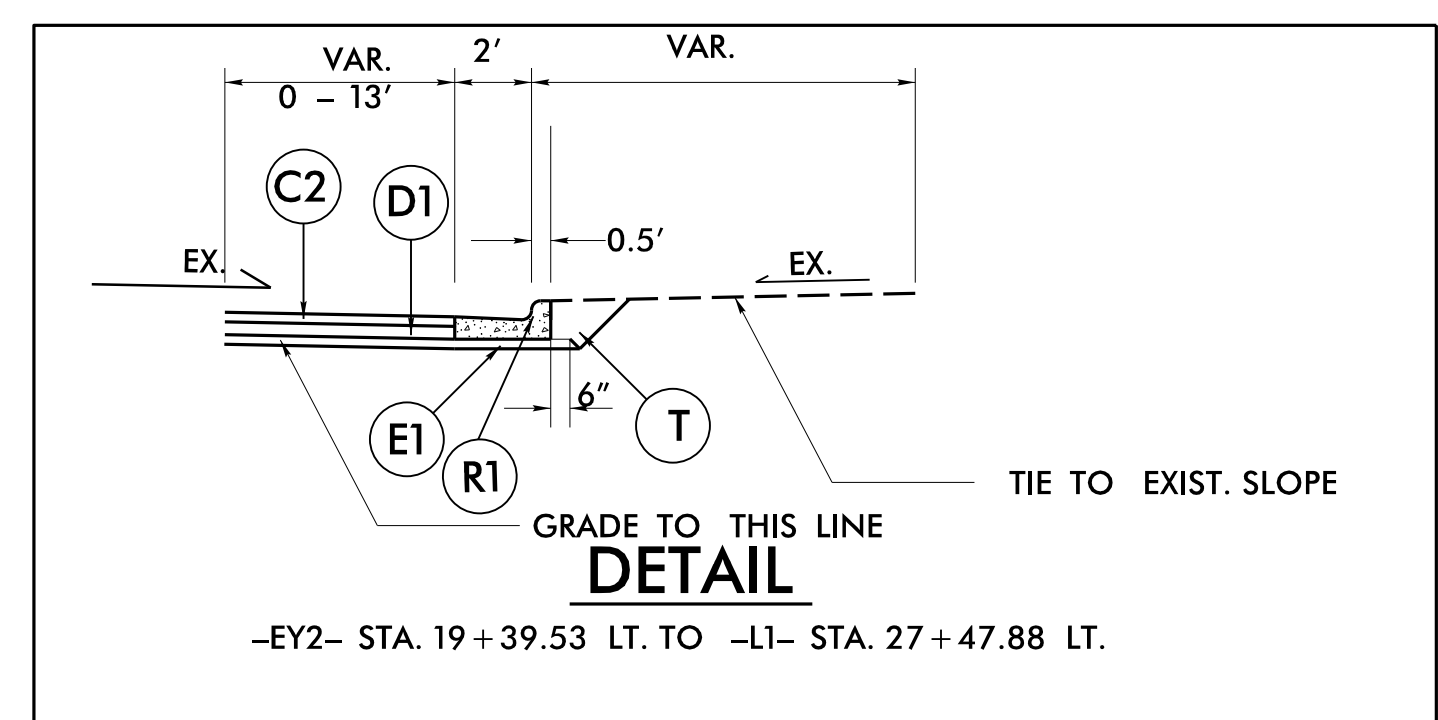
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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

HYDRAULIC DESIGN ENGINEER 2/20/2023 NORTH CAROLINA PROFESSIONAL SEAL 044561 AMINDER SINGH	ROADWAY DESIGN ENGINEER 2/20/2023 NORTH CAROLINA PROFESSIONAL SEAL 022999 GREG S. PUNTSIS	PAVEMENT DESIGN ENGINEER 2/20/2023 NORTH CAROLINA PROFESSIONAL SEAL 22896 CLAYTON S. MORRISON
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PROJECT REFERENCE NO. **B-5985A** SHEET NO. **2A-2**

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



TYPICAL SECTION NO. 3
 -EY2- STA. 14+25.00 TO -EY2- STA. 20+95.00
 -L1- STA. 27+02.01 TO -L1- STA. 27+90.00

PAVEMENT SCHEDULE	
FINAL PAVEMENT DESIGN	
C1	1 1/2" S9.5C
C2	3" S9.5C
C3	VAR. S9.5C
D1	4" I19.0C
D2	VAR. I19.0C
E1	4" B25.0C
E2	VAR. B25.0C
R1	2'-6" C & G
R2	9"X12" CONG. CURB
S1	4" SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
V1	0 TO 1 1/2" MILLING
V2	1 1/2" MILLING
W1	WEDGING

2/18/2023 11:55:40 AM 2A-2.dgn

DETAIL A
CLASS I RIP-RAPPED ENERGY DISSIPATOR BASIN

DIM. (ft)	BASIN # 1	BASIN # 2
A	1.25	1.25
B	1	1
C	1	1
D	0.5	0.5
E	3	3
F	10	10
G	4	4

ALL DIMENSIONS APPROXIMATE

BASIN #	LOCATION (AT OUTLET)
1	24+90 -L1- LT
12 TONS CL. I RR 7 20 SY GEO	

8/17/09

PROJECT REFERENCE NO. B-5985A	SHEET NO. 2B-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 2/20/2023	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
1223 Jones Franklin Rd. Raleigh, N.C. 27606 License No. F-0377 Bus: 919 851 8077 Fax: 919 851 8107	
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION	

REVISIONS

TIE SIDEWALK & C&G
-L1- STA. 26 + 58.52 LT.

END BRIDGE
-L1- STA. 25 + 03.50

END 9"X12"
CURB 61' LT.
STA. 26 + 47.79

25 + 13.24
37.00

F F

9"X12" CURB

R45'

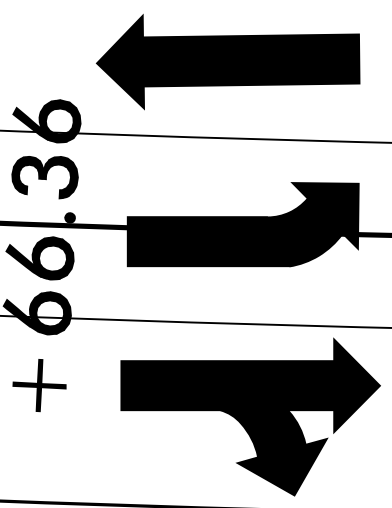
GREU TL-2

TYPE 2B

-L1-
25 + 00

R 3

03
+66.36
03



02

12'
12'
12'

01

TYPE I MOD.
R 3

F

END APPROACH
SLAB
-L1- STA. 25 + 27.67

25 + 07.37
41.00

-L1- PT Sta. 26 + 41.08

END CONSTRUCTION
-EY2- STA. 20 + 95.00



19 + 00

TIE C&G
-EY2- STA. 19 + 39.53

27 + 09.29
53.26

9"X12" CURB

TYPE I

TYPE 2B

TYPE 2B

END PROJECT
-L1- STA. 27 + 90.00

27 + 26.94
33.88

TYPE I

TYPE I

TYPE 2B

R25'

TYPE I

-L1- POT Sta. 26 + 79.13
=-EY2- POT Sta. 20 + 10.35

27 + 20.41
35.27

9"X12" CURB

15.3' 16.8' 21 + 00

27 + 13.54
43.54

-EY2-
S 1° 47' 48.3" W

SEE SHEET 4
FOR PLAN SHEET

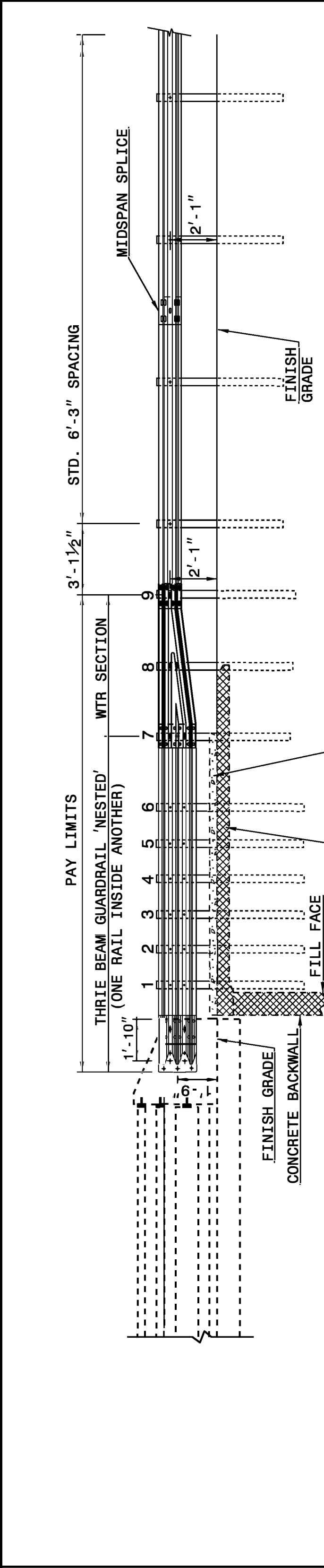
NOT TO SCALE

**INTERSECTION
DETAIL**
-L1-/-EY2-

2/18/2023
I:\Projects\659985A_rdy_PSH_2B-1.dgn
USER:rdy

I4-DEC-2017 10:36 S:\Contracts\Standard Drawings\Special Details\Standard Drawings\Details in Lieu of Standard Drawings\Division 8\0862d0301.dgn
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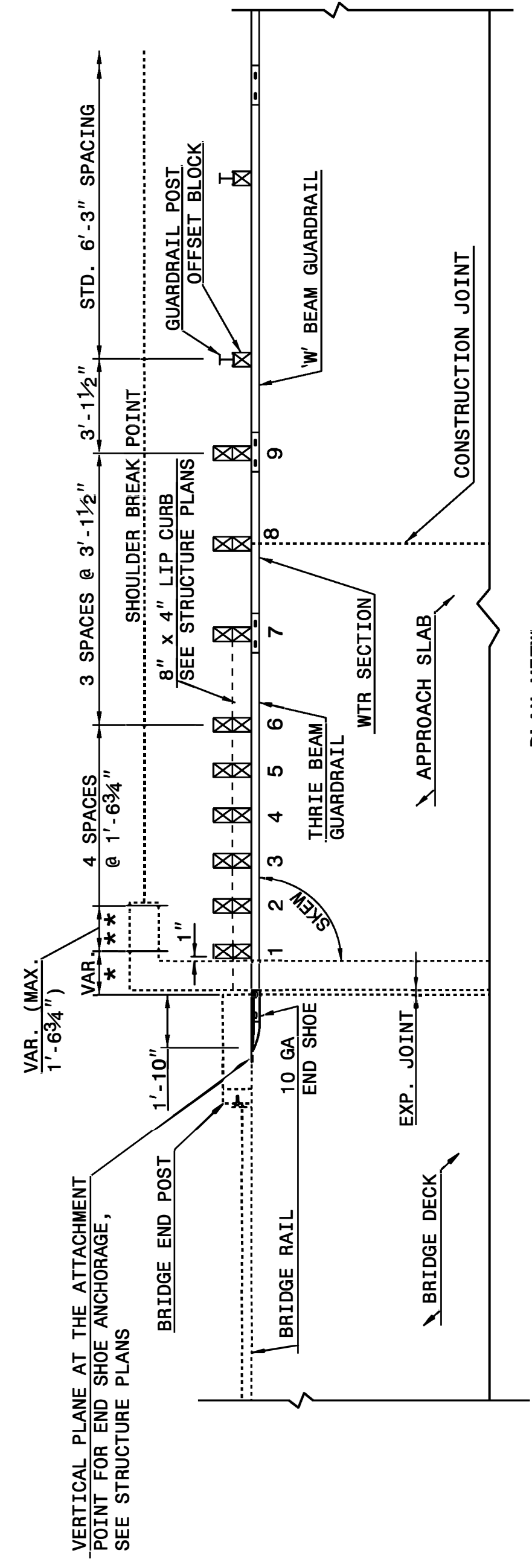
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.



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

SHEET 1 OF 7
862D03

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



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

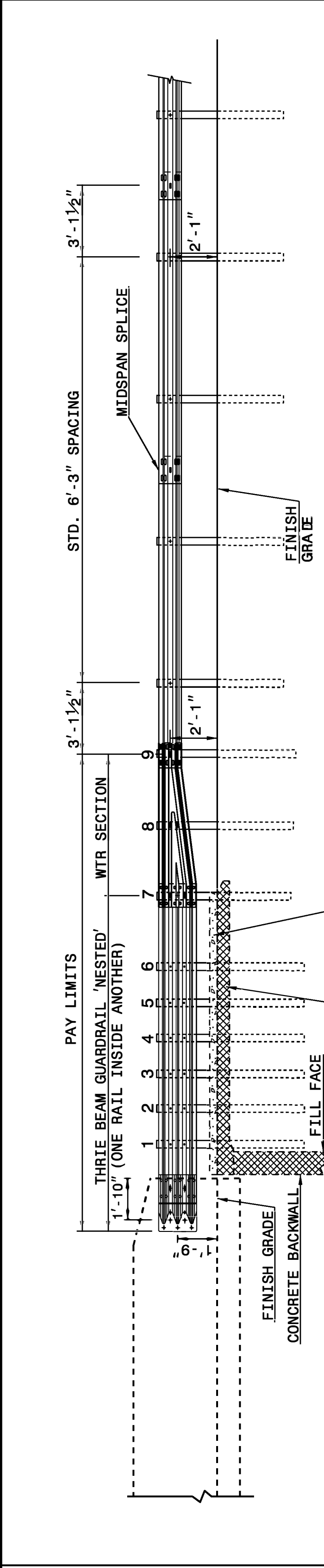
SHEET 1 OF 7
862D03

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

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

SHEET 1 OF 7
862D03

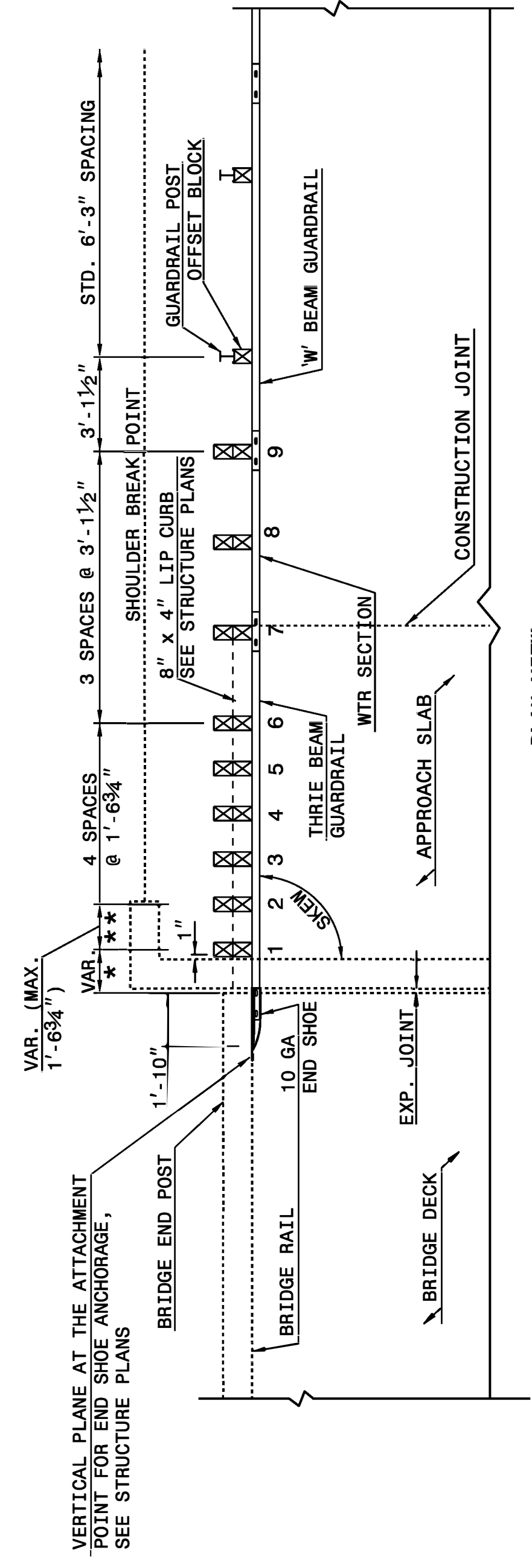
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.



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

SHEET 2 OF 7
862D03

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



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

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

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

SHEET 2 OF 7
862D03

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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

SEE TITLE BLOCK

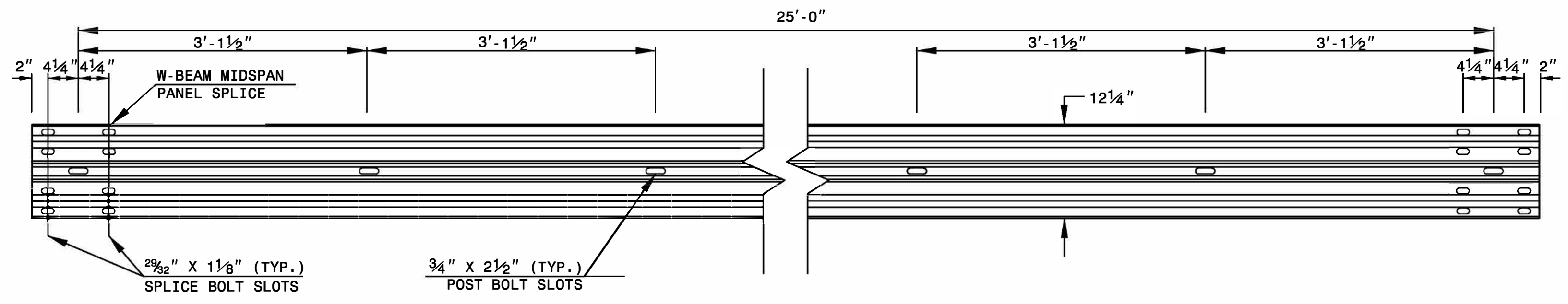
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 CHECKED BY: DATE:
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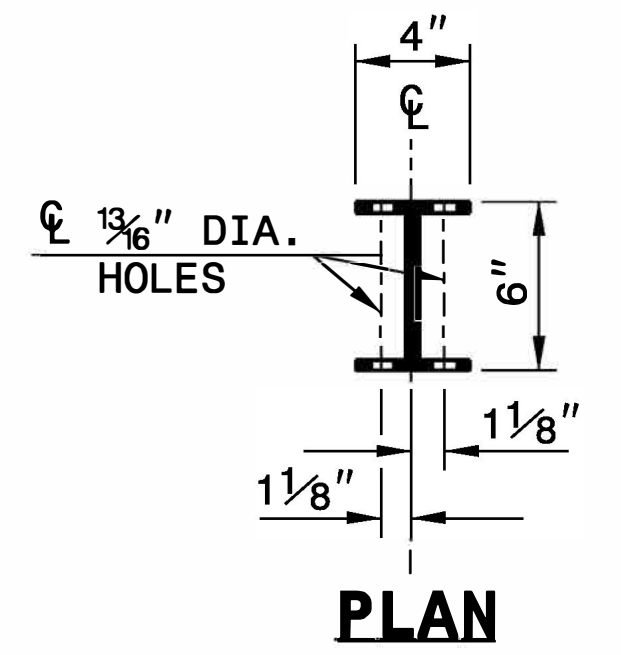
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

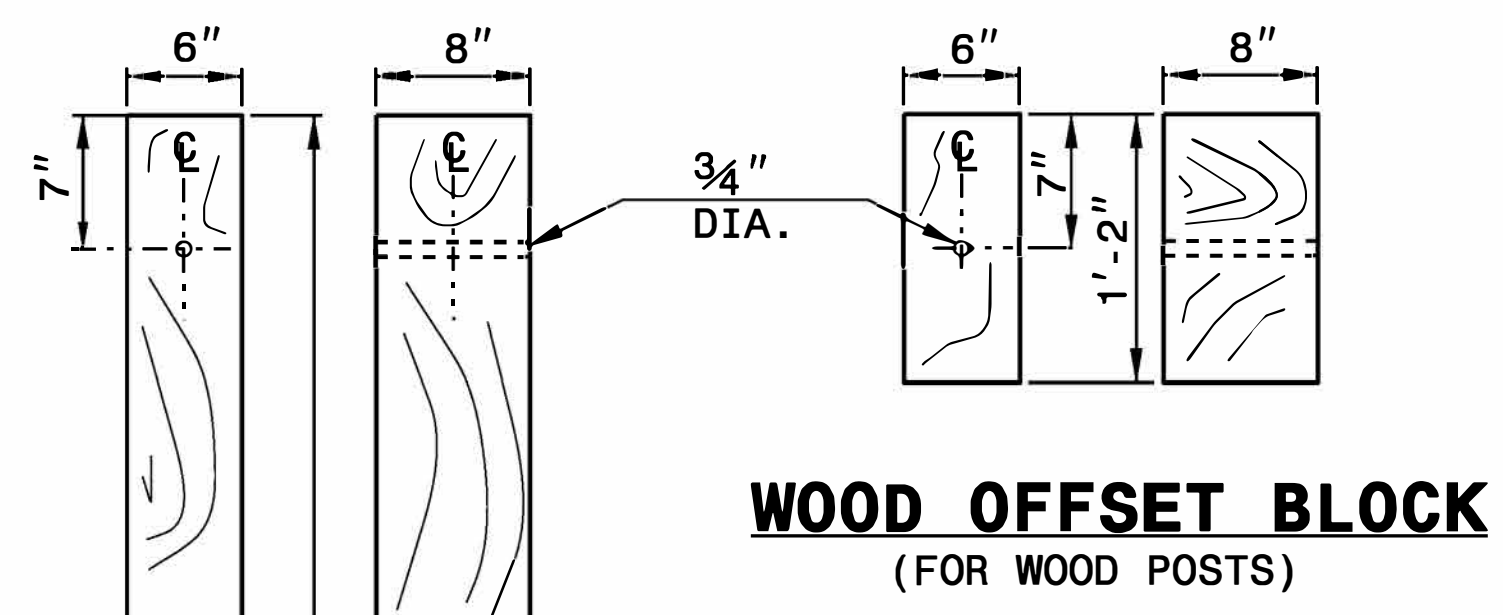
SHEET 6 OF 8
862D02



STANDARD W-BEAM GUARDRAIL

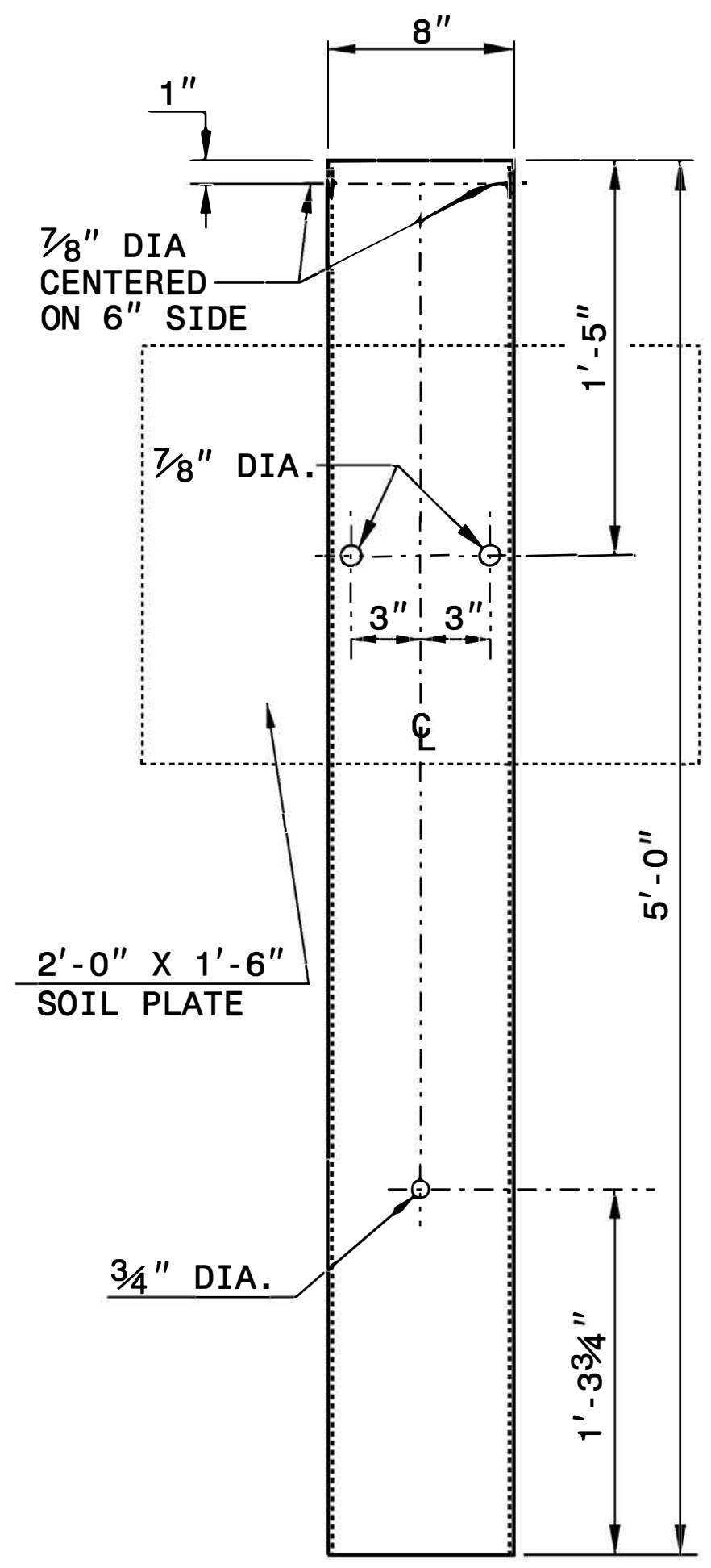


PLAN



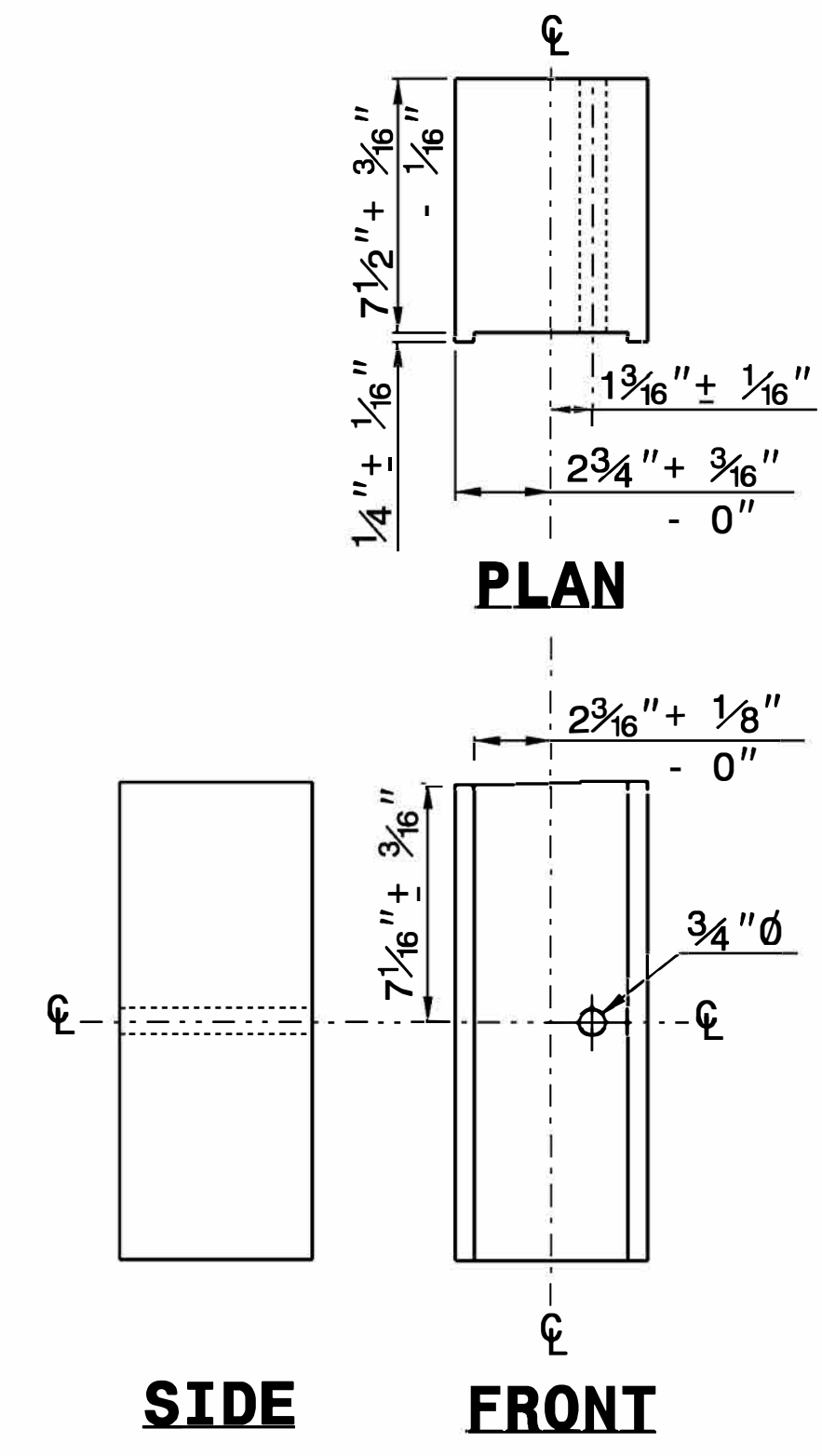
STANDARD LINE POST

SHORT WOOD BREAKAWAY POST



STEEL TUBE
TS 6"x8"x0.1875"

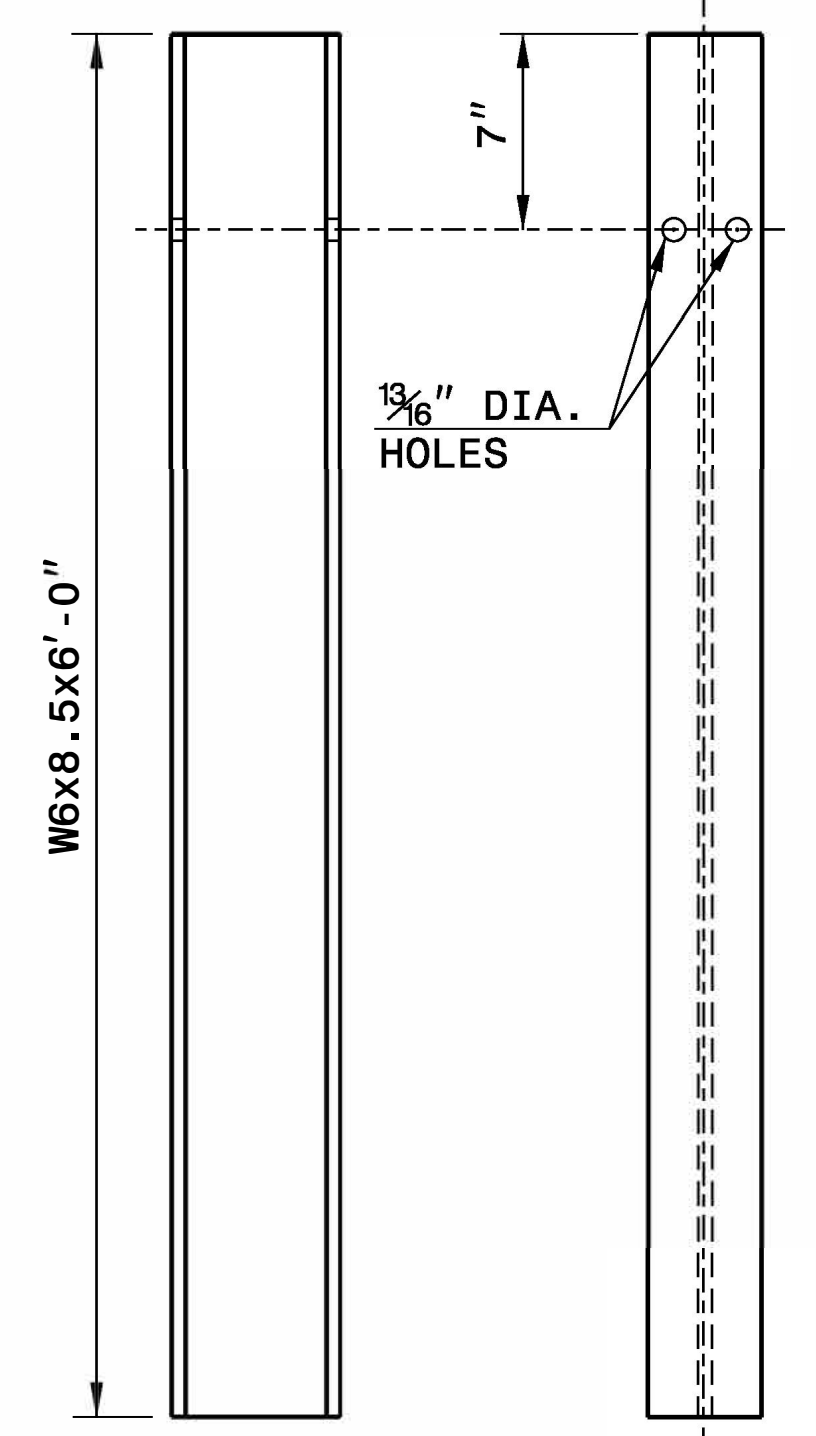
SYSTEM PARTS



SIDE

FRONT

ROUTED OFFSET BLOCK



SIDE

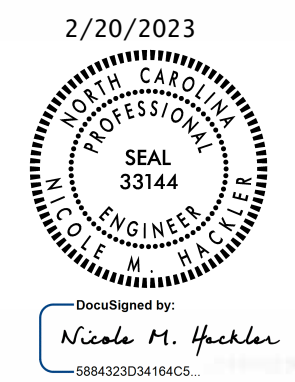
FRONT

"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

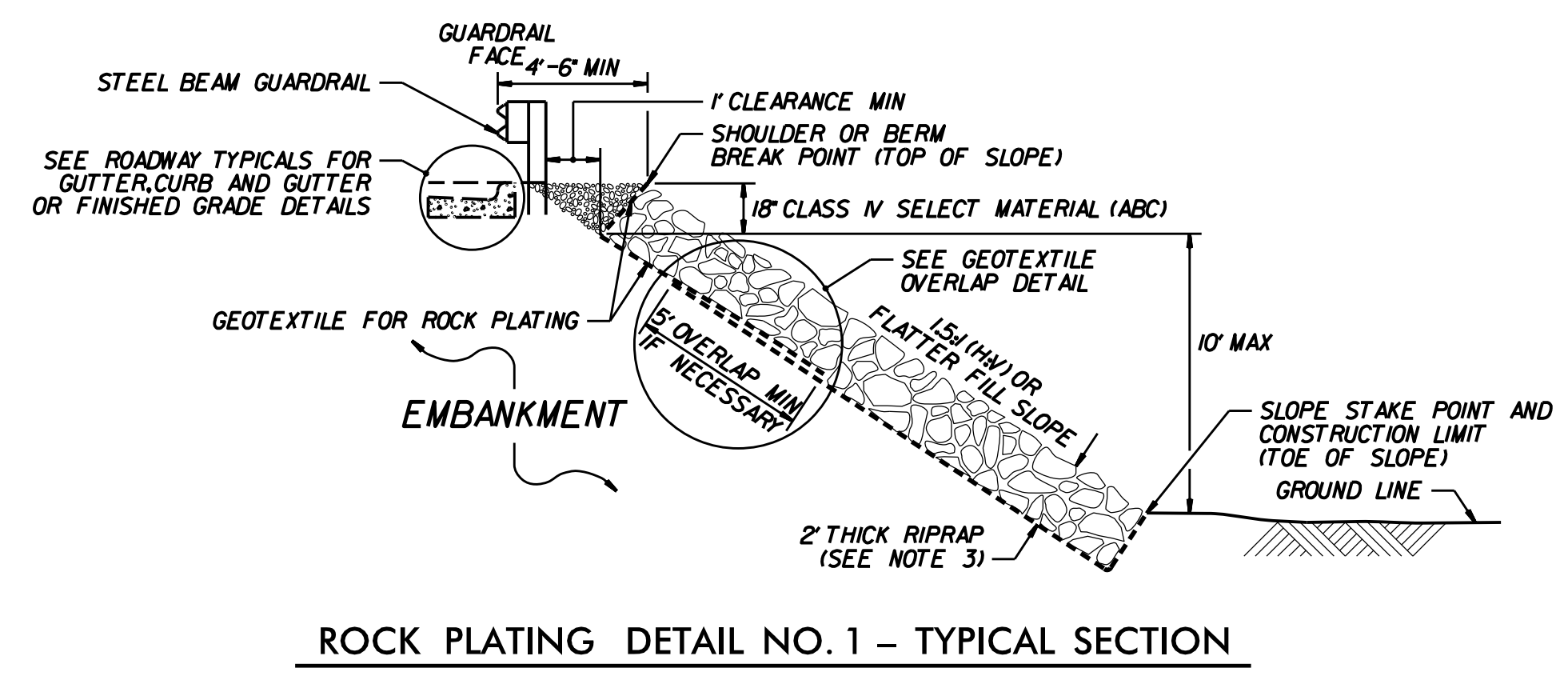
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MODIFIED BY:	DATE:
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STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

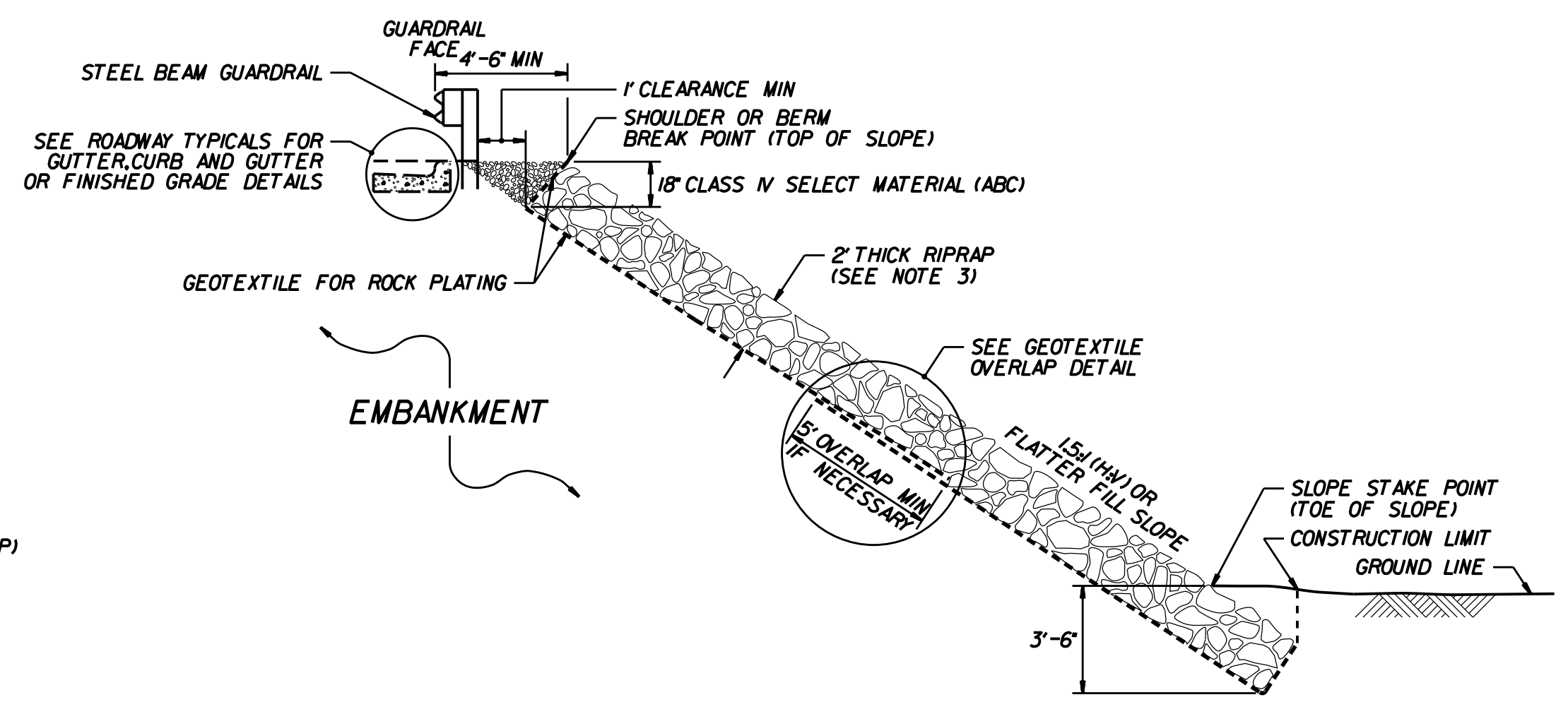
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
ROCK PLATING

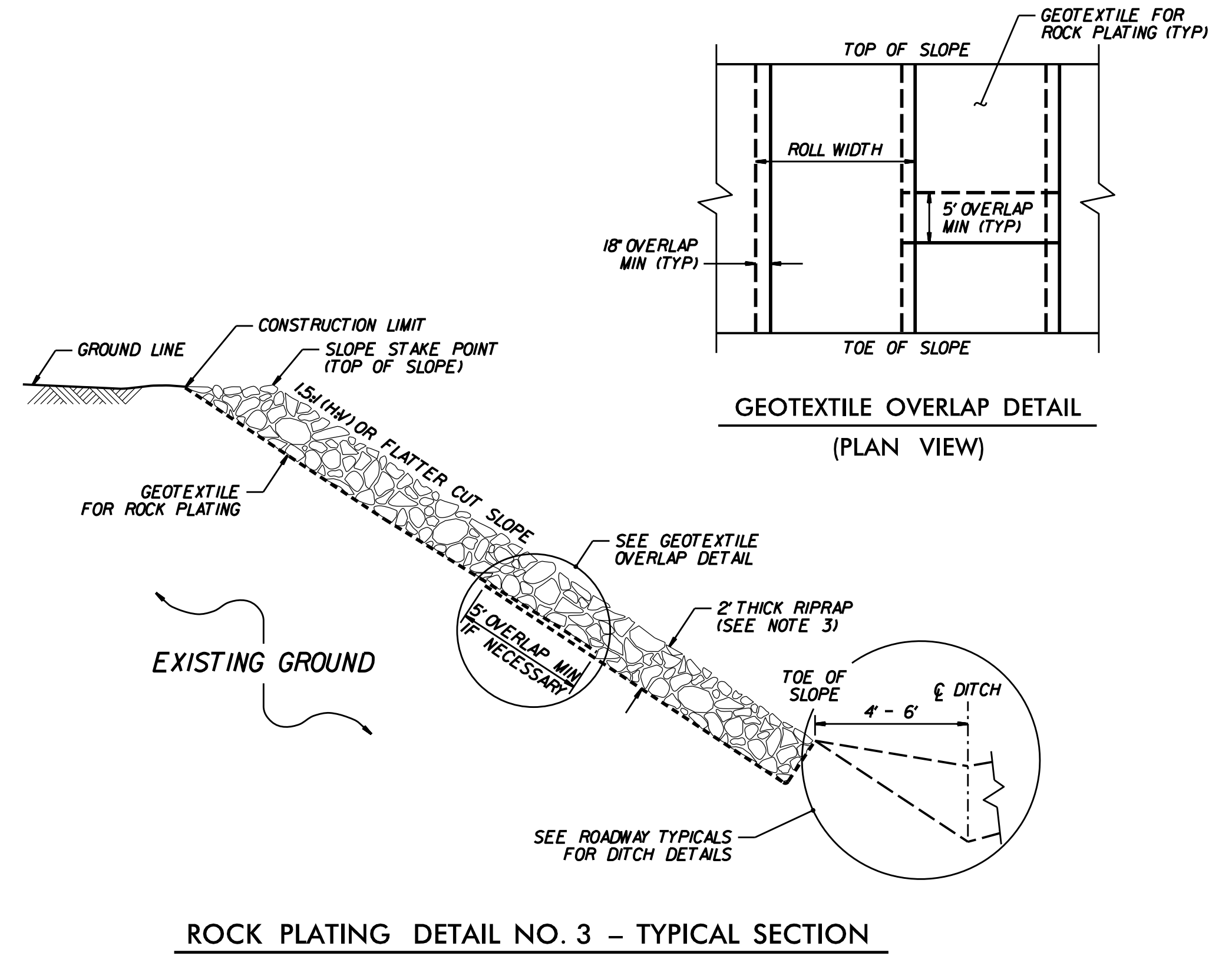
ROADWAY DETAIL DRAWING FOR
ROCK PLATING



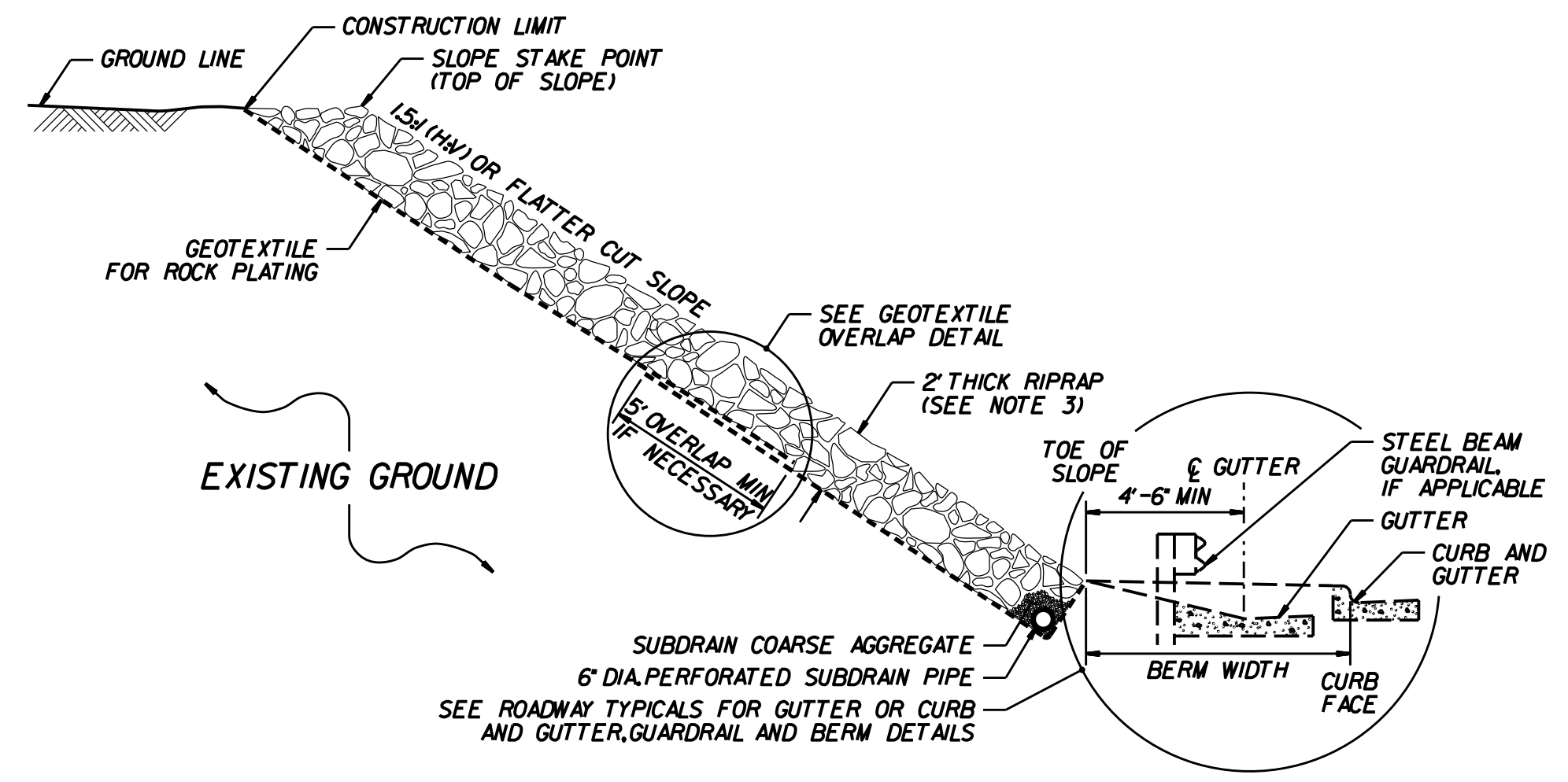
ROCK PLATING DETAIL NO. 1 - TYPICAL SECTION



ROCK PLATING DETAIL NO. 2 - TYPICAL SECTION



ROCK PLATING DETAIL NO. 3 - TYPICAL SECTION



ROCK PLATING DETAIL NO. 4 - TYPICAL SECTION

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

SHEET 1 OF 1
275D01

SHEET 1 OF 1
275D01

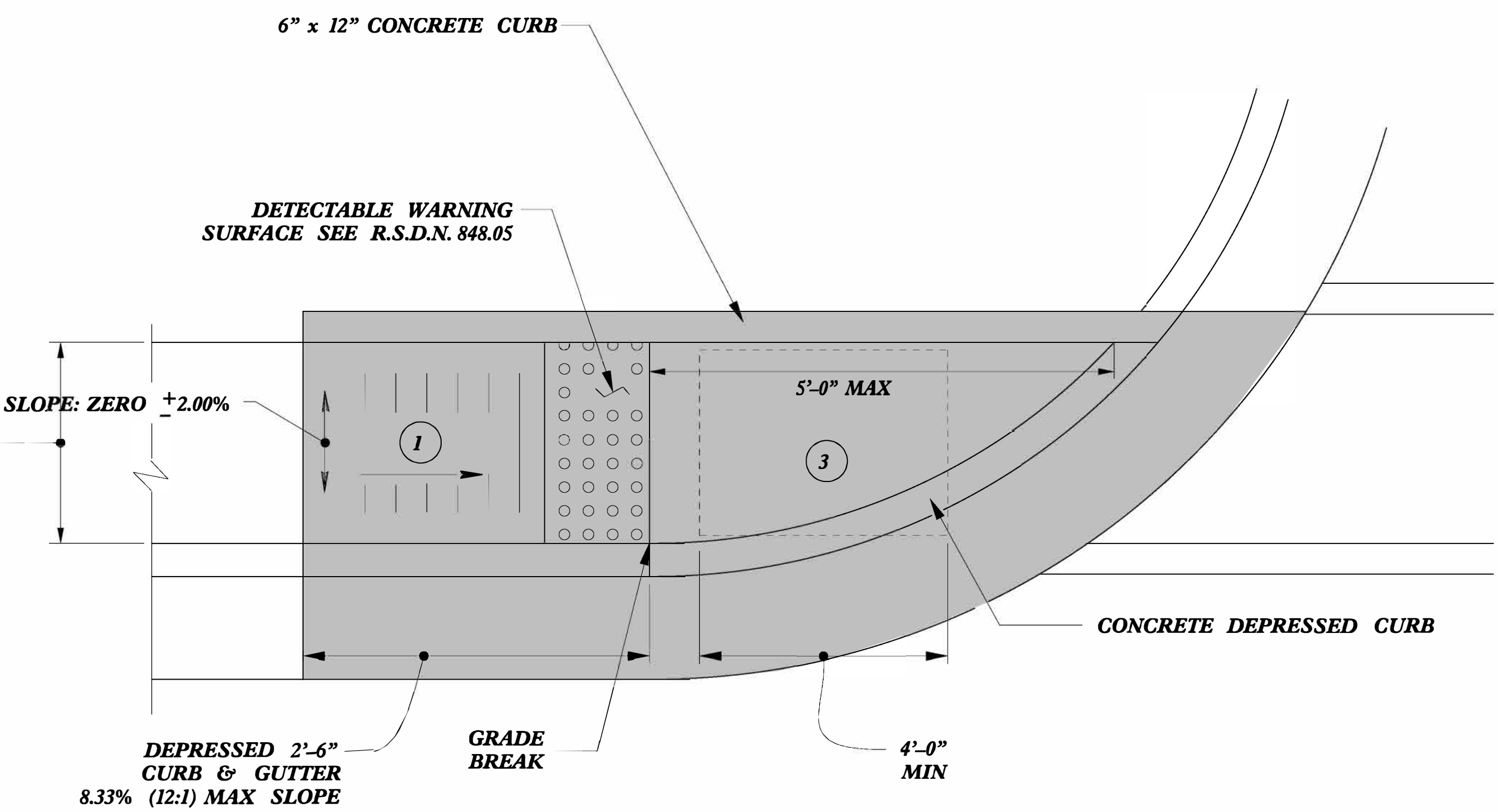
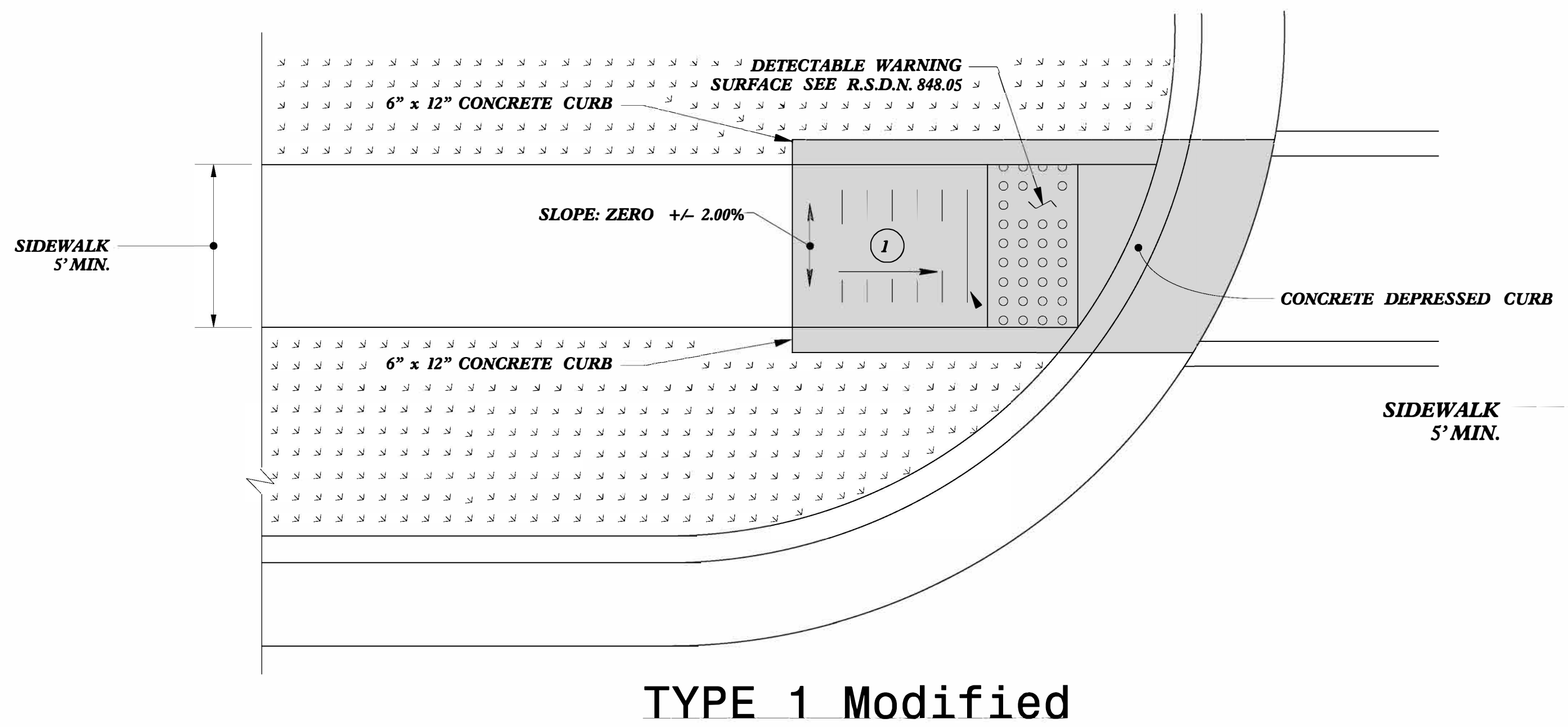
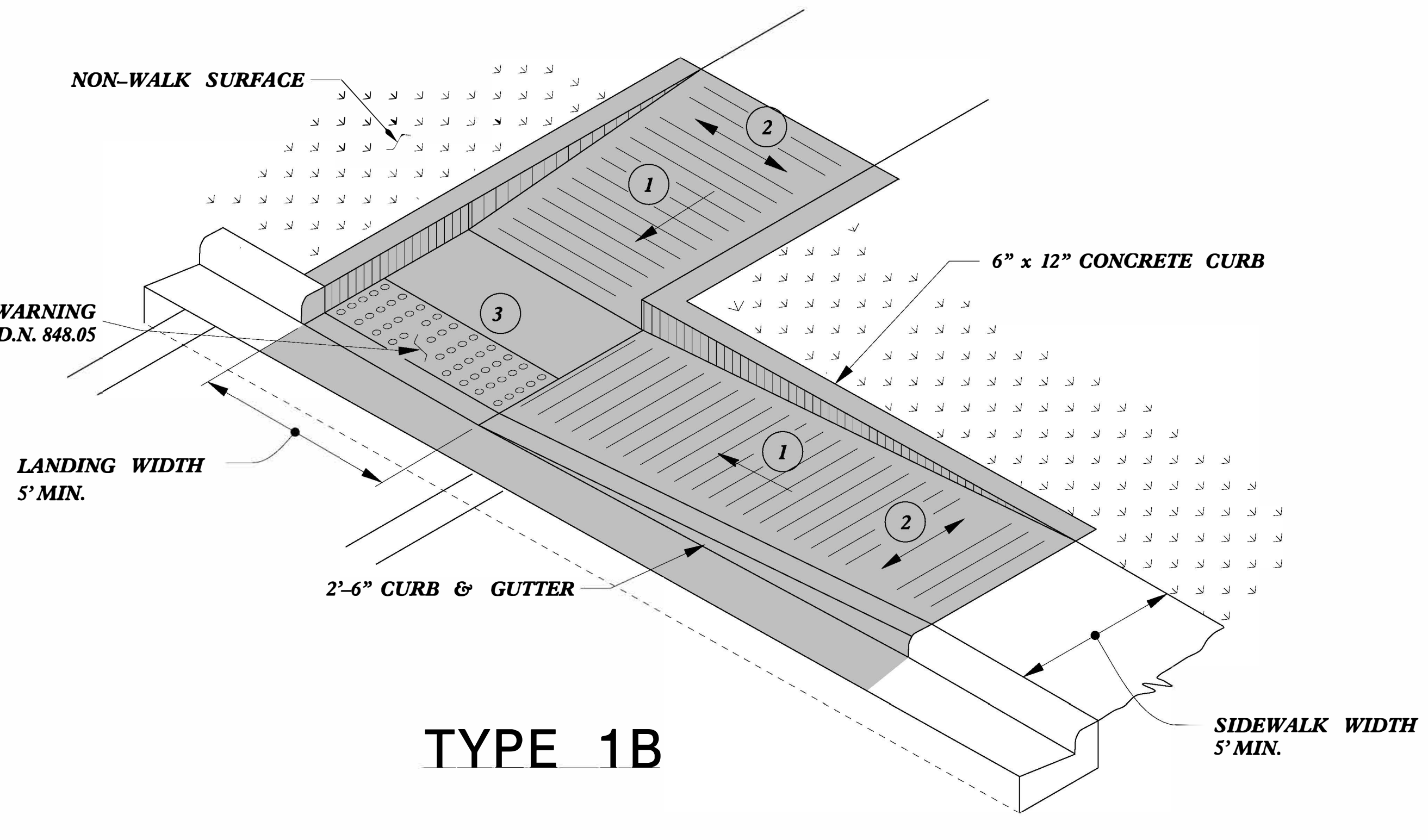
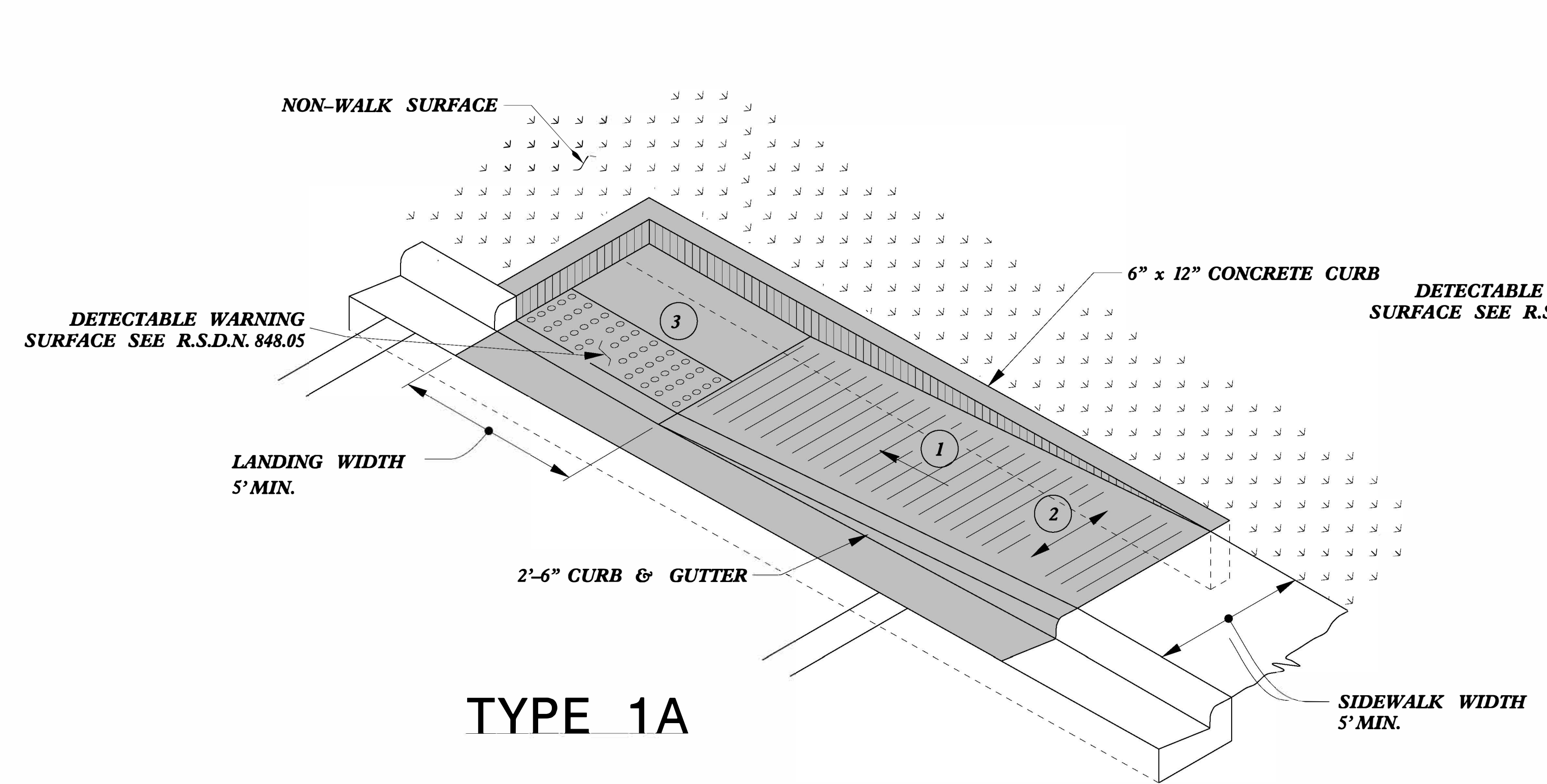
\$\$\$SYTIME\$\$\$
\$\$\$UJ\$\$\$
\$\$\$CUSTMERNAME\$\$\$



CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6900 FAX 919-250-4119

SEE TITLE BLOCK

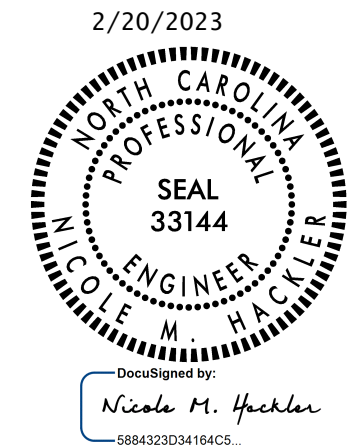
ORIGINAL BY: S. HIDDEN DATE: 03-11-22
 MODIFIED BY: DATE:
 CHECKED BY: DATE:
 FILE SPEC.:



- 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



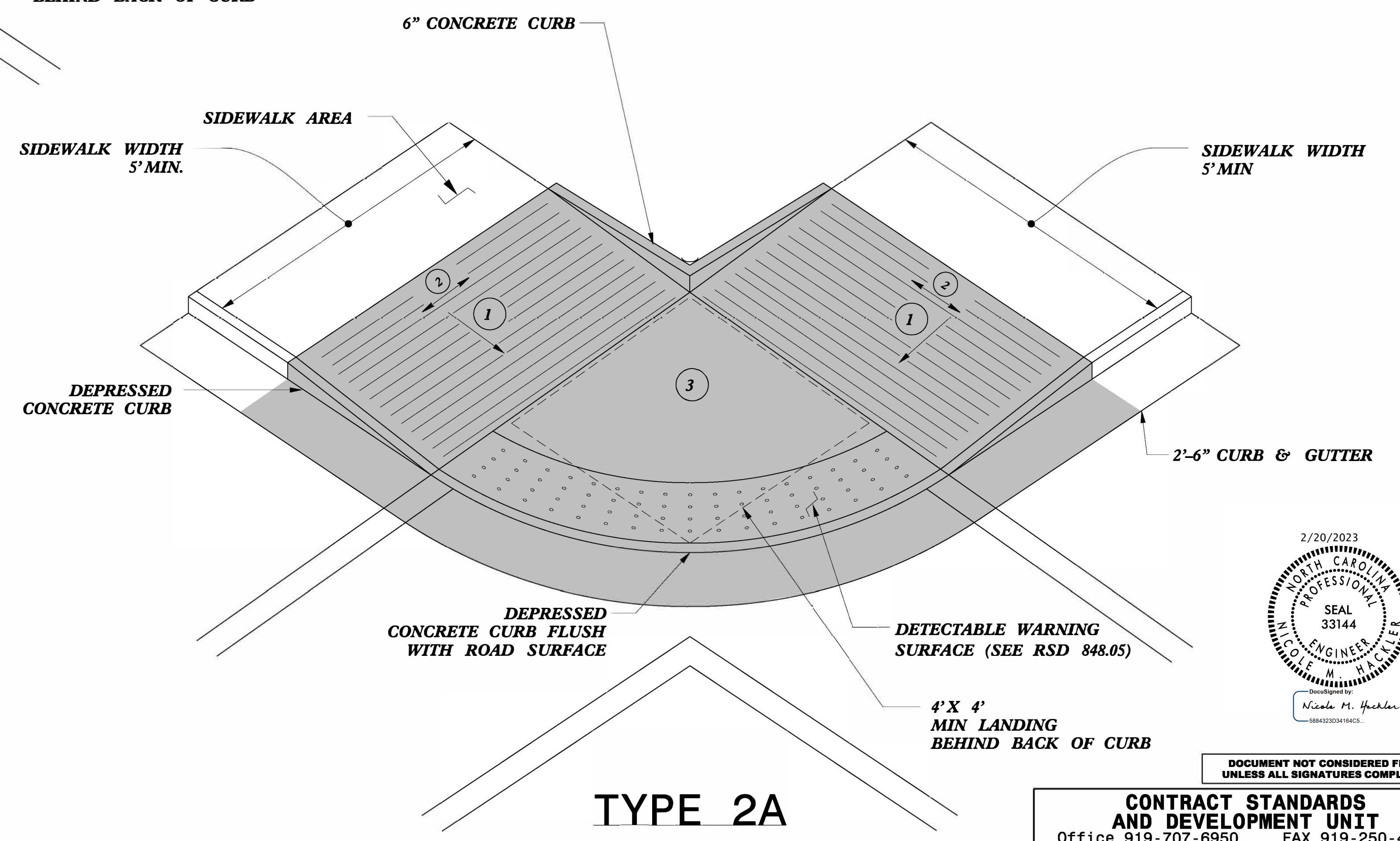
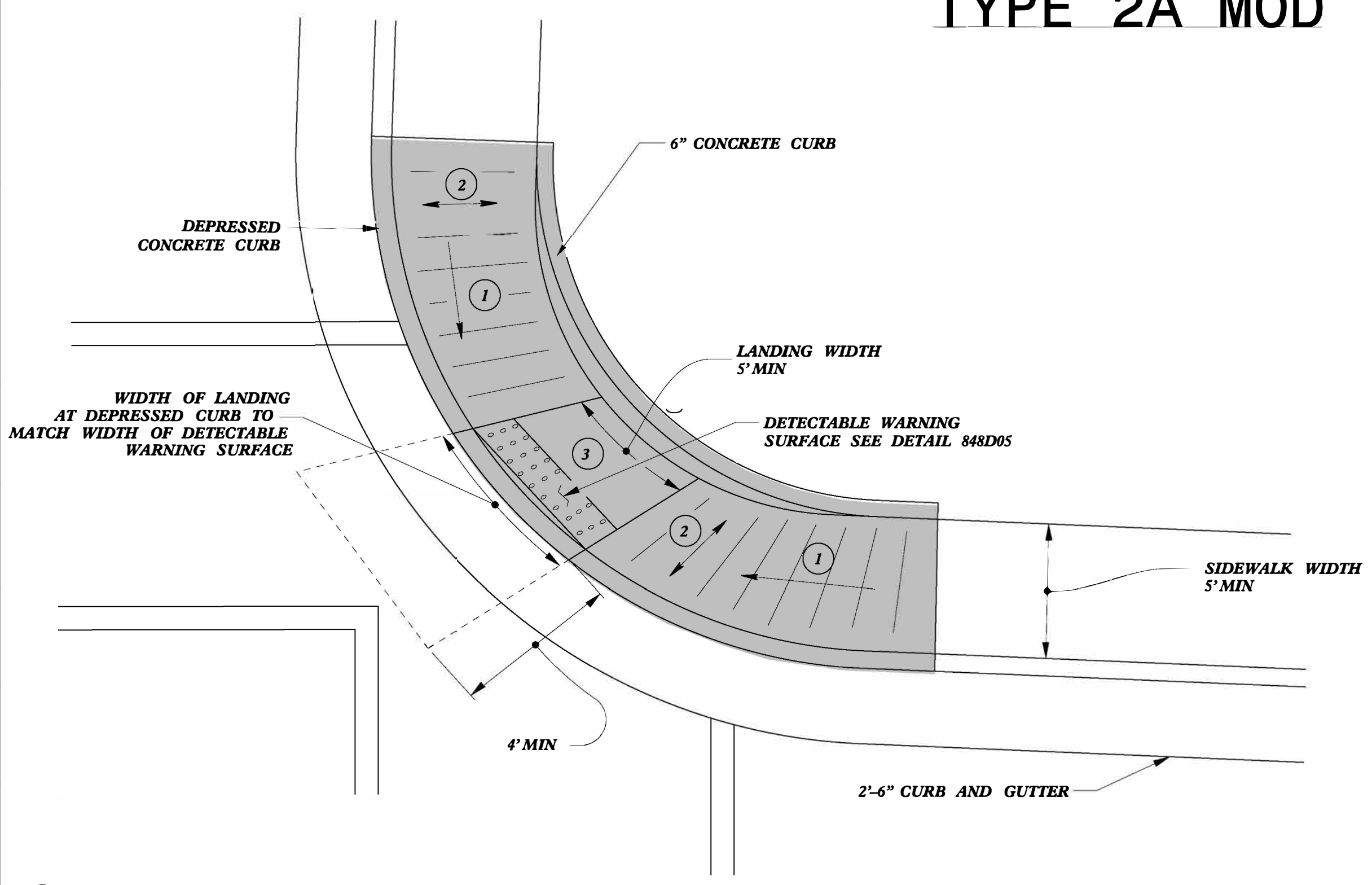
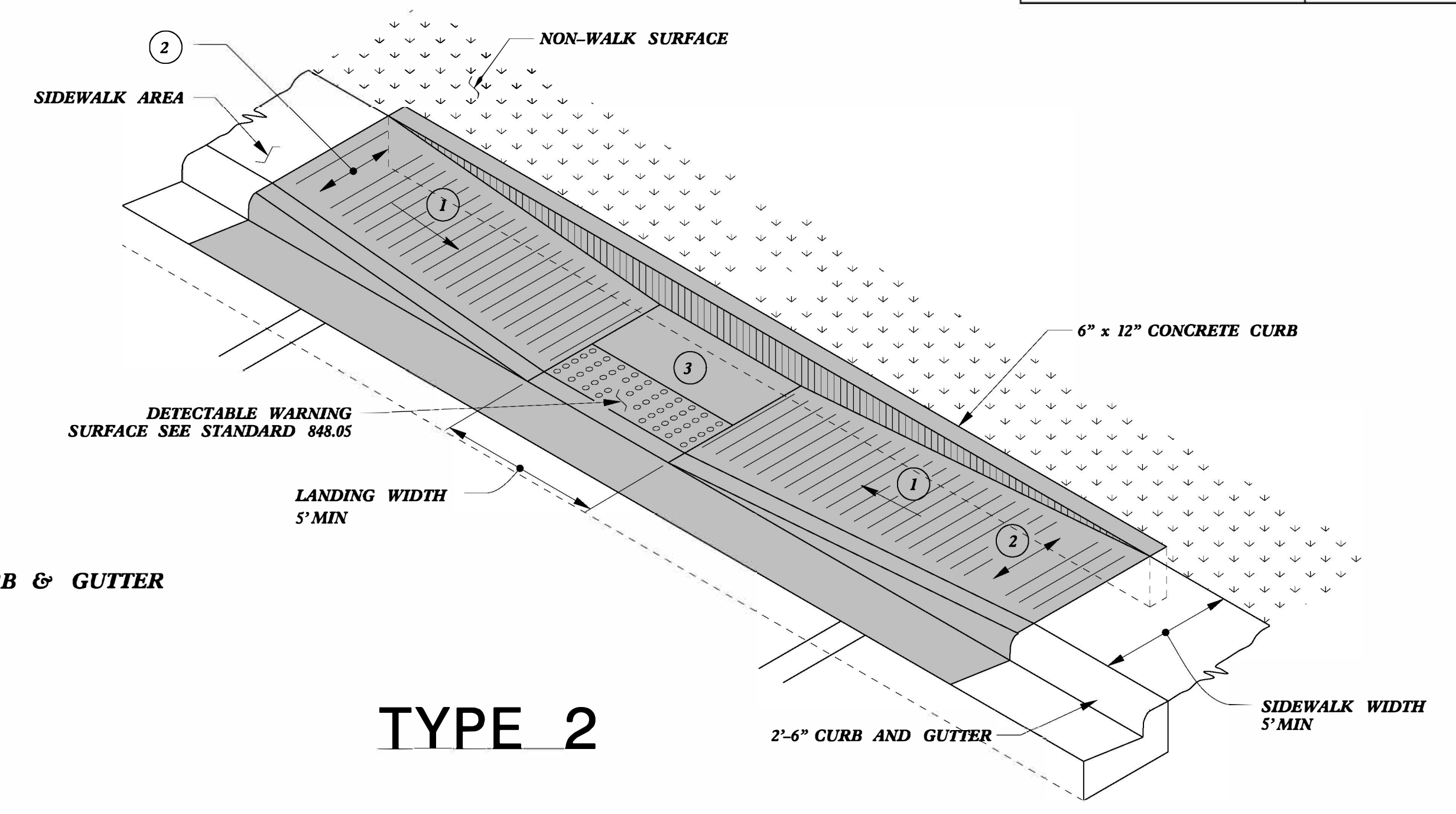
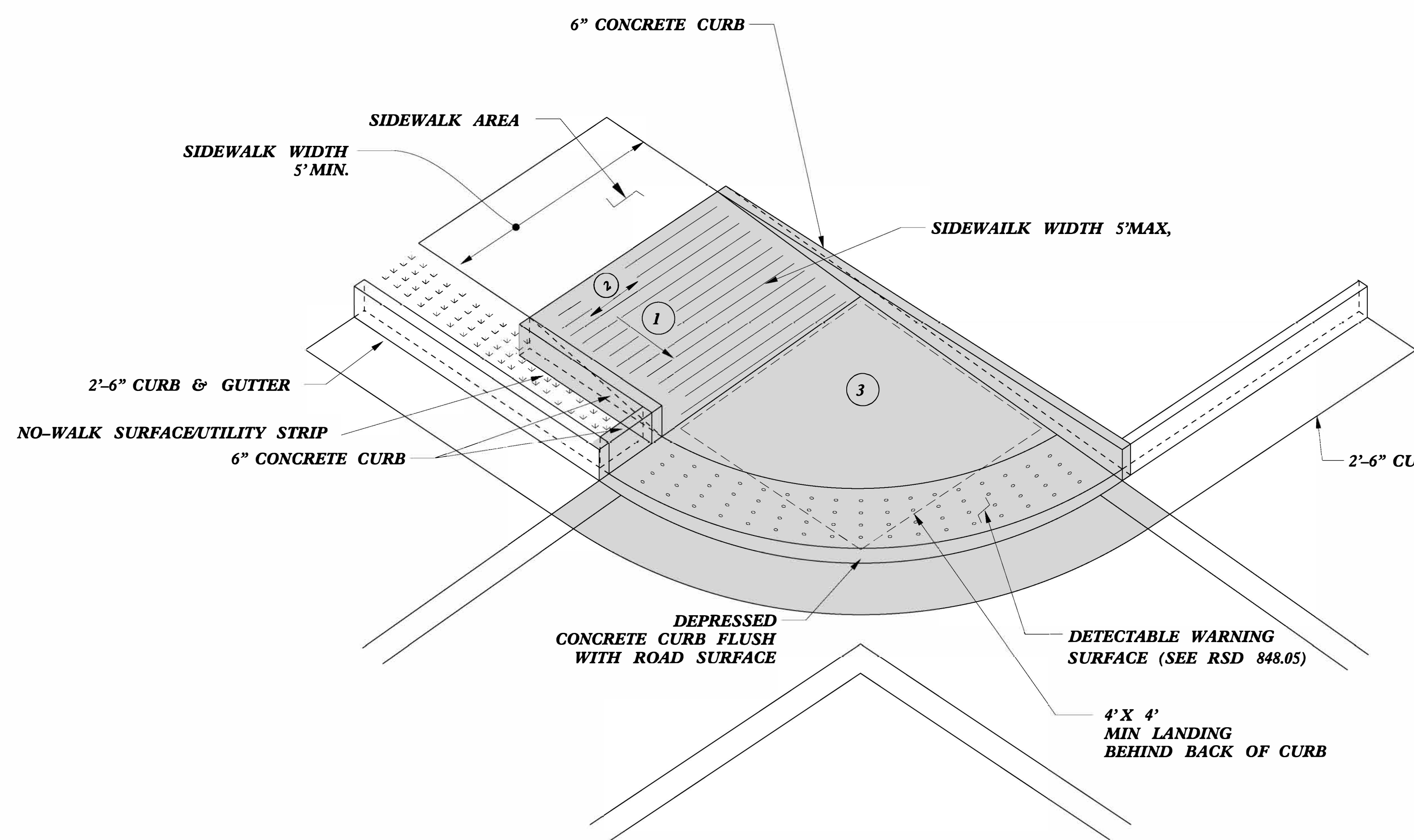
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

C:\TEMP\6655\DWG\2012CurbRamp\CurbRampDetails.dgn
 USER: JSHWERTON
 PLOT DATE: 7/7/11 10:00 AM



- 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



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

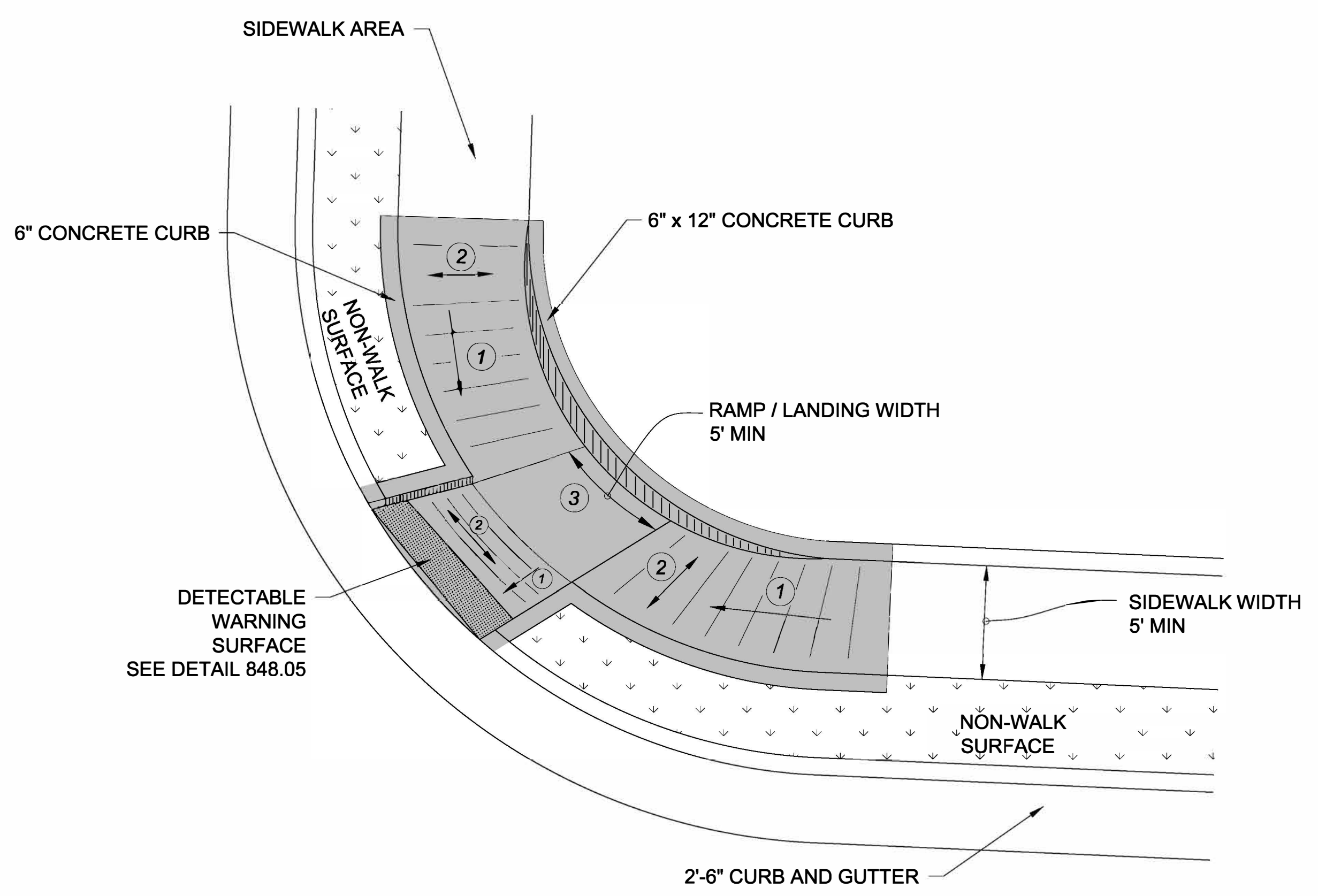
CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

CURB RAMPS

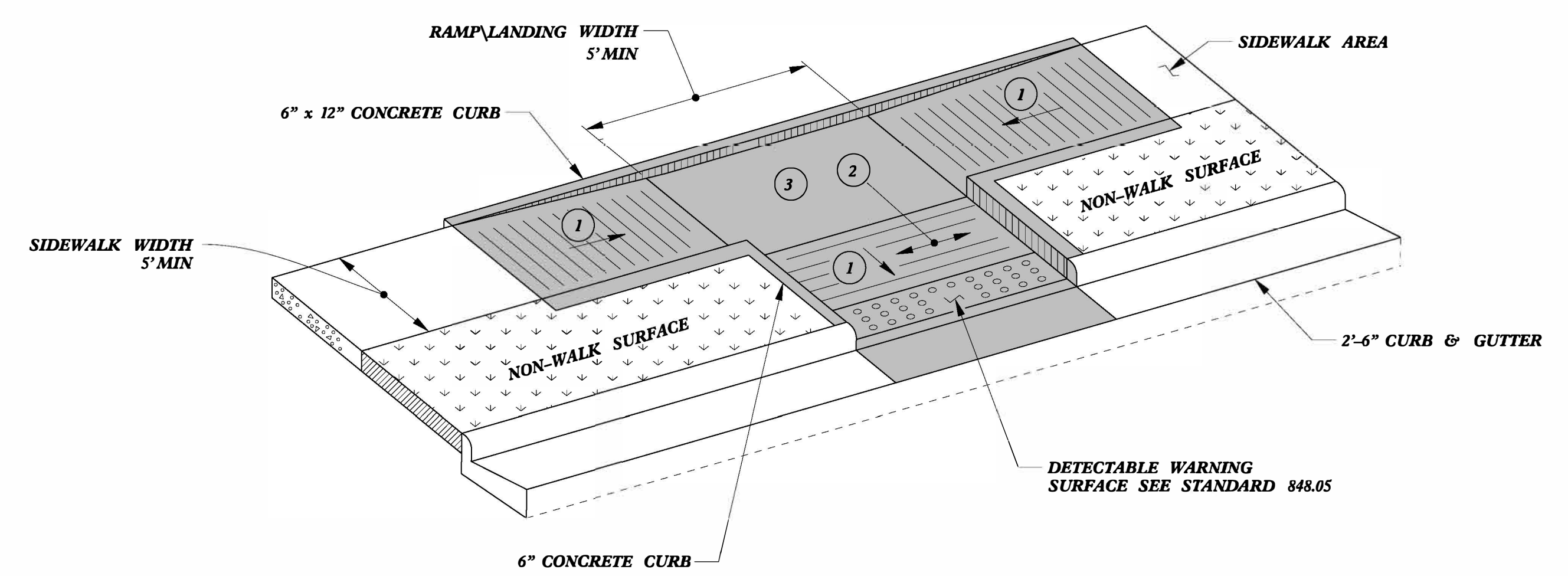
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 MODIFIED BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____
 FILE SPEC. stds/2012CurbRamp/CurbRampDetails.dgn

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

PAY LIMITS FOR 1 CURB RAMP

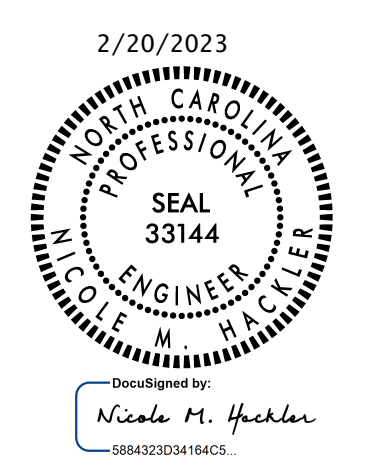


TYPE 3 MODIFIED
INSTALLATION IN A RADIUS



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.



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

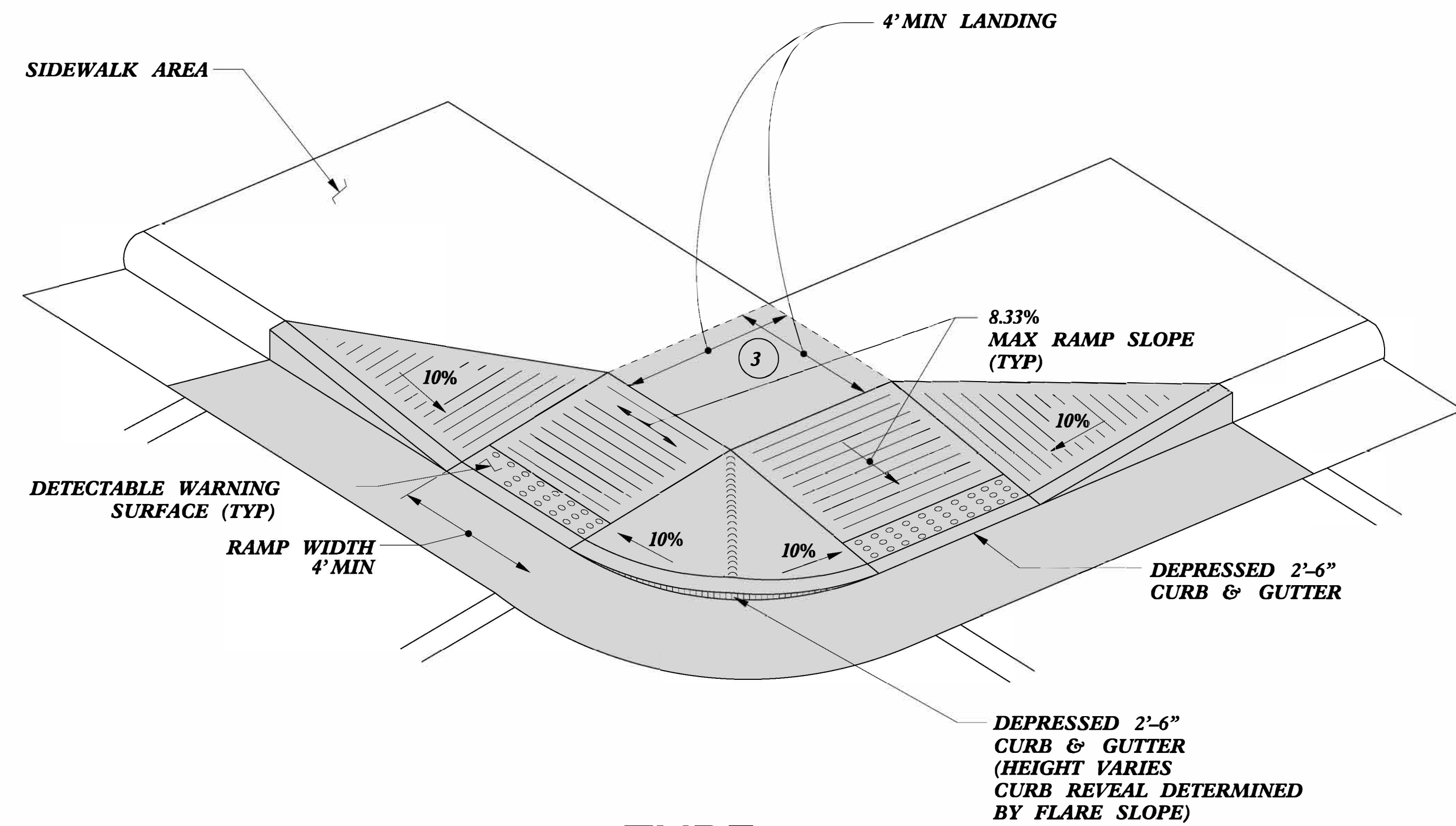
**CONTRACT STANDARDS
AND DEVELOPMENT UNIT**
Office 919-707-6950 FAX 919-250-4119

CURB RAMPS

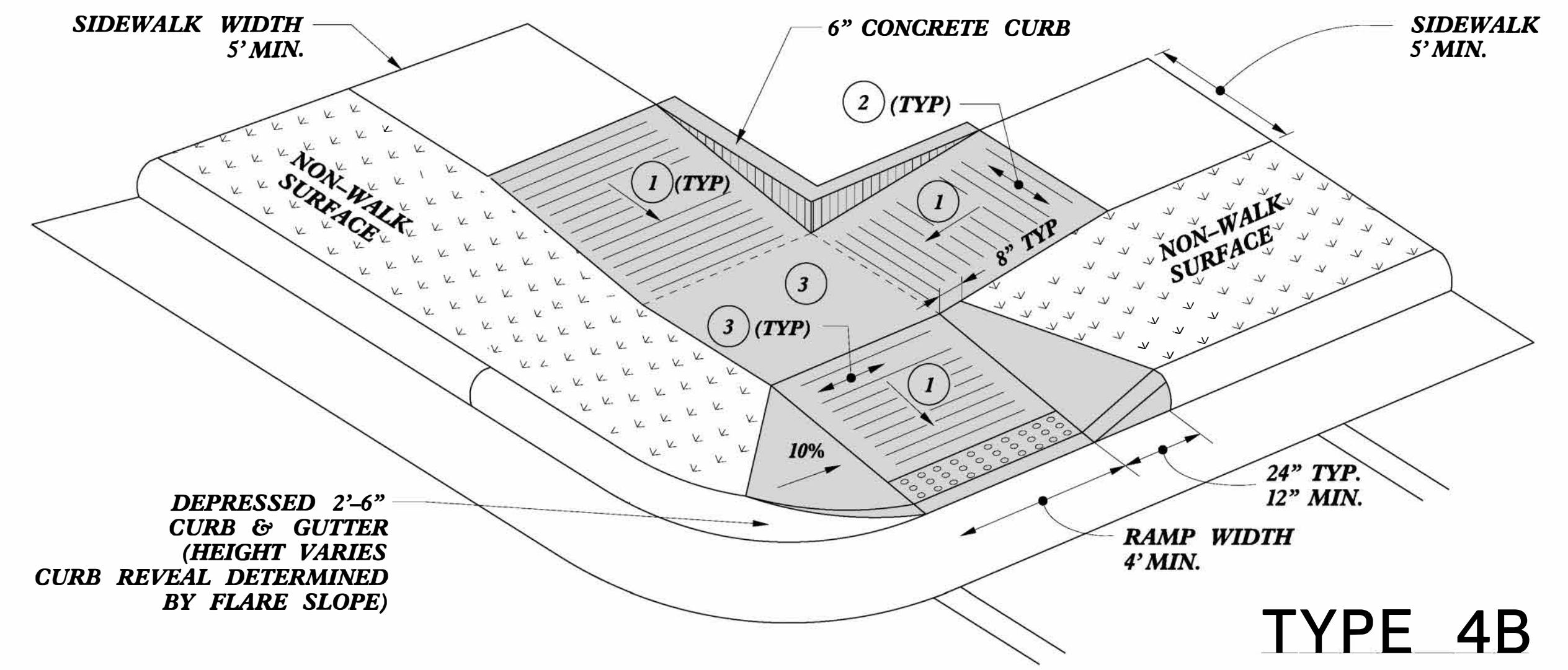
ORIGINAL BY: J.S. HOWERTON DATE: 7/7/11
 MODIFIED BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____
 FILE SPEC. :stds/2012CurbRamp/CurbRampDetails.dgn

5/14/99

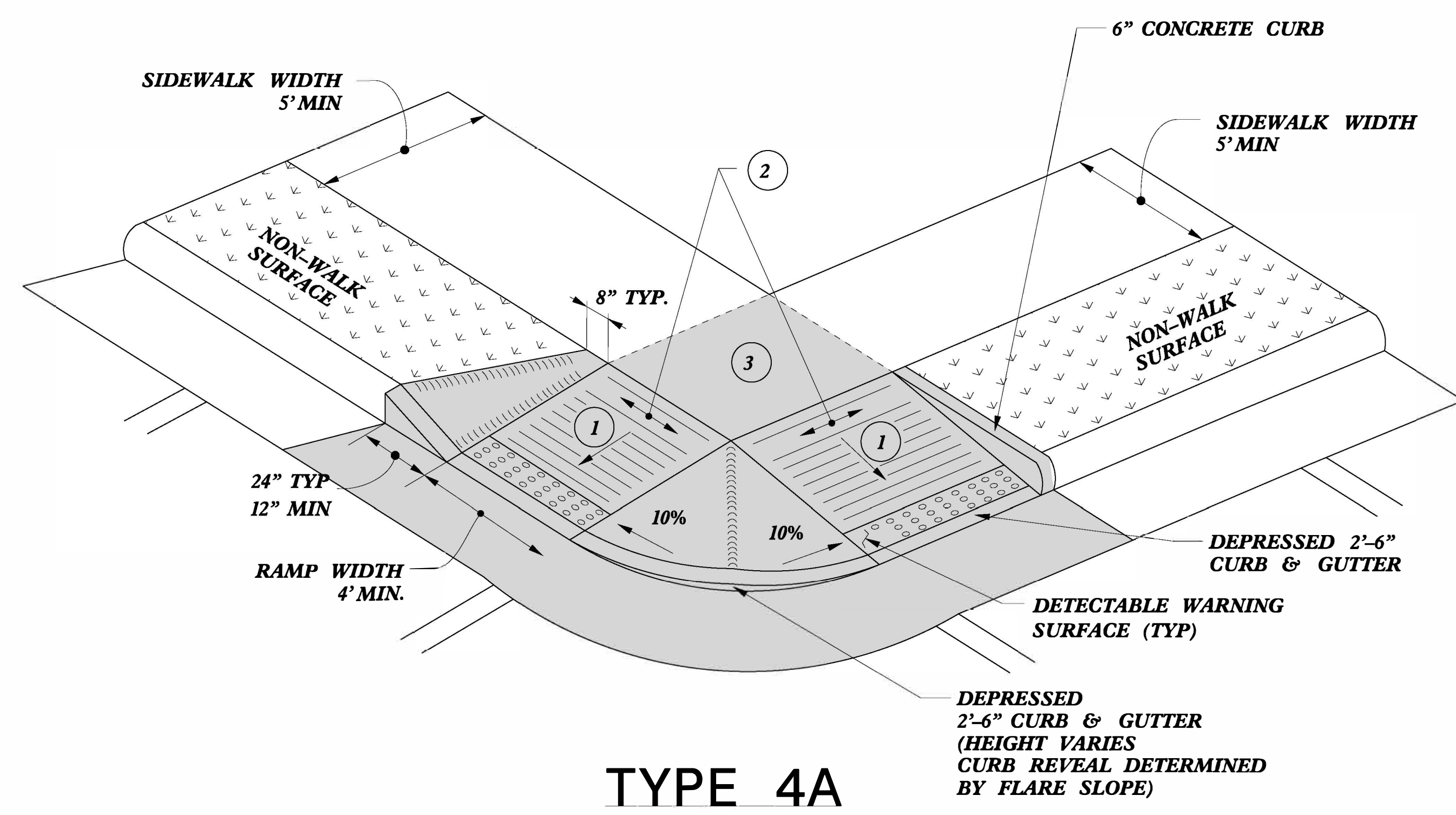
PAY LIMITS FOR 1 OR 2 CURB RAMPS
(CALCULATE BASED ON NUMBER OF SETS
OF TRUNCATED DOMES)



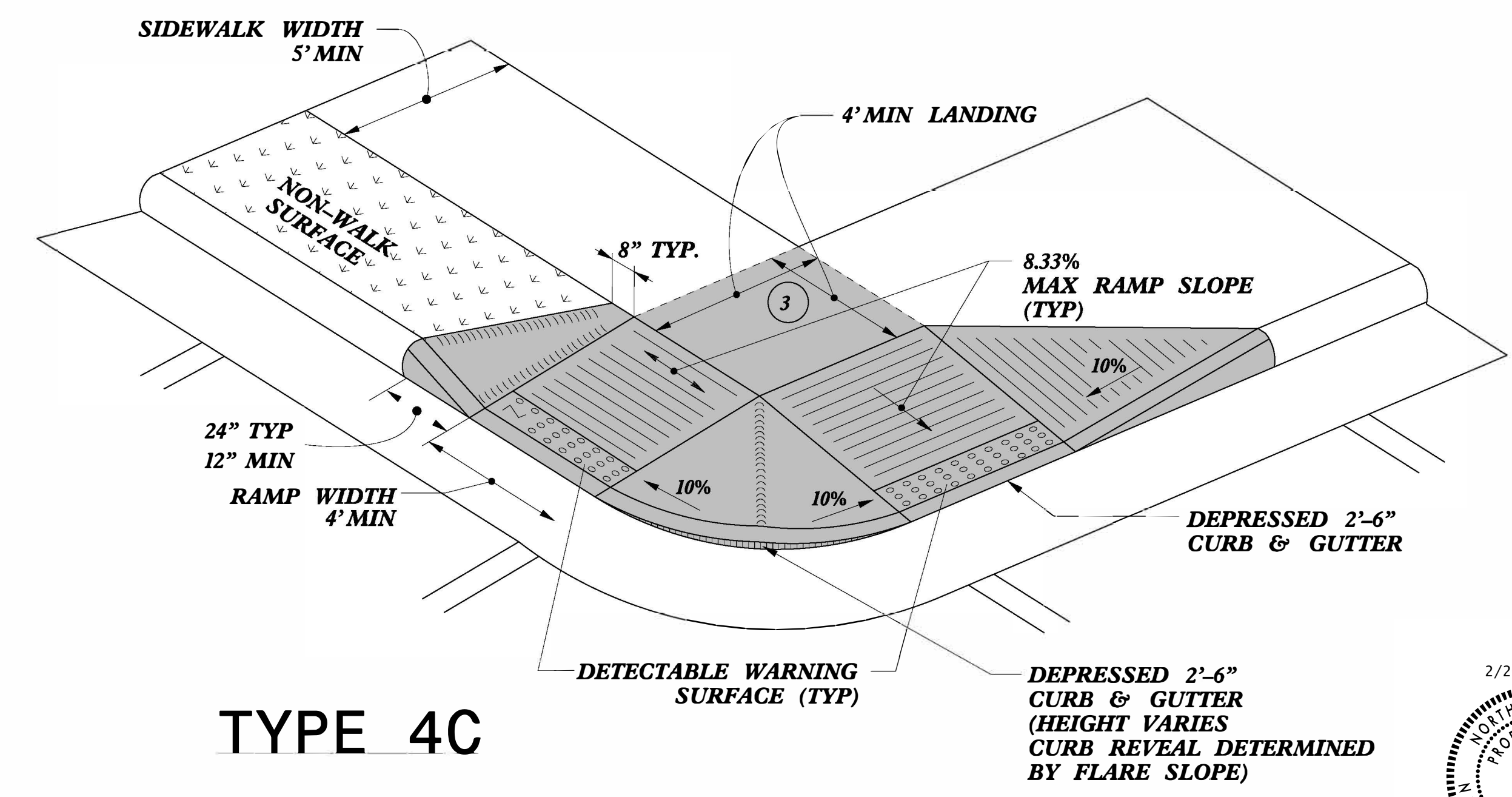
TYPE 4



TYPE 4B

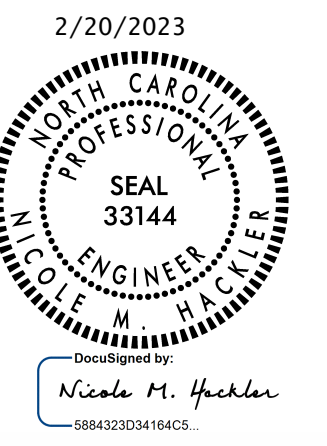


TYPE 4A



TYPE 4C

- 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

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

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

5/14/99

COMPUTED BY: Jinyoung Park DATE: 1/17/2023
 CHECKED BY: Jamey Batts DATE: 1/17/2023

(12-17-19)

PROJECT NO.	SHEET NO.
B-5985A	3G-1

**STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS**

SUMMARY OF ROCK PLATING

LINE	Beginning Slope (H:V)	Approx. Station	Ending Slope (H:V)	Approx. Station	Location LT/RT	Rock Plating Detail No. 1/2/3/4	Riprap Class* 1/2/B	Rock Plating SY
-L1-	2.5:1	20+00±	2.5:1	21+20±	RT	1	2	330
-L1-	2.5:1	21+80±	2:1	22+05±	RT	2	2	70
							TOTAL SY:	400

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

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

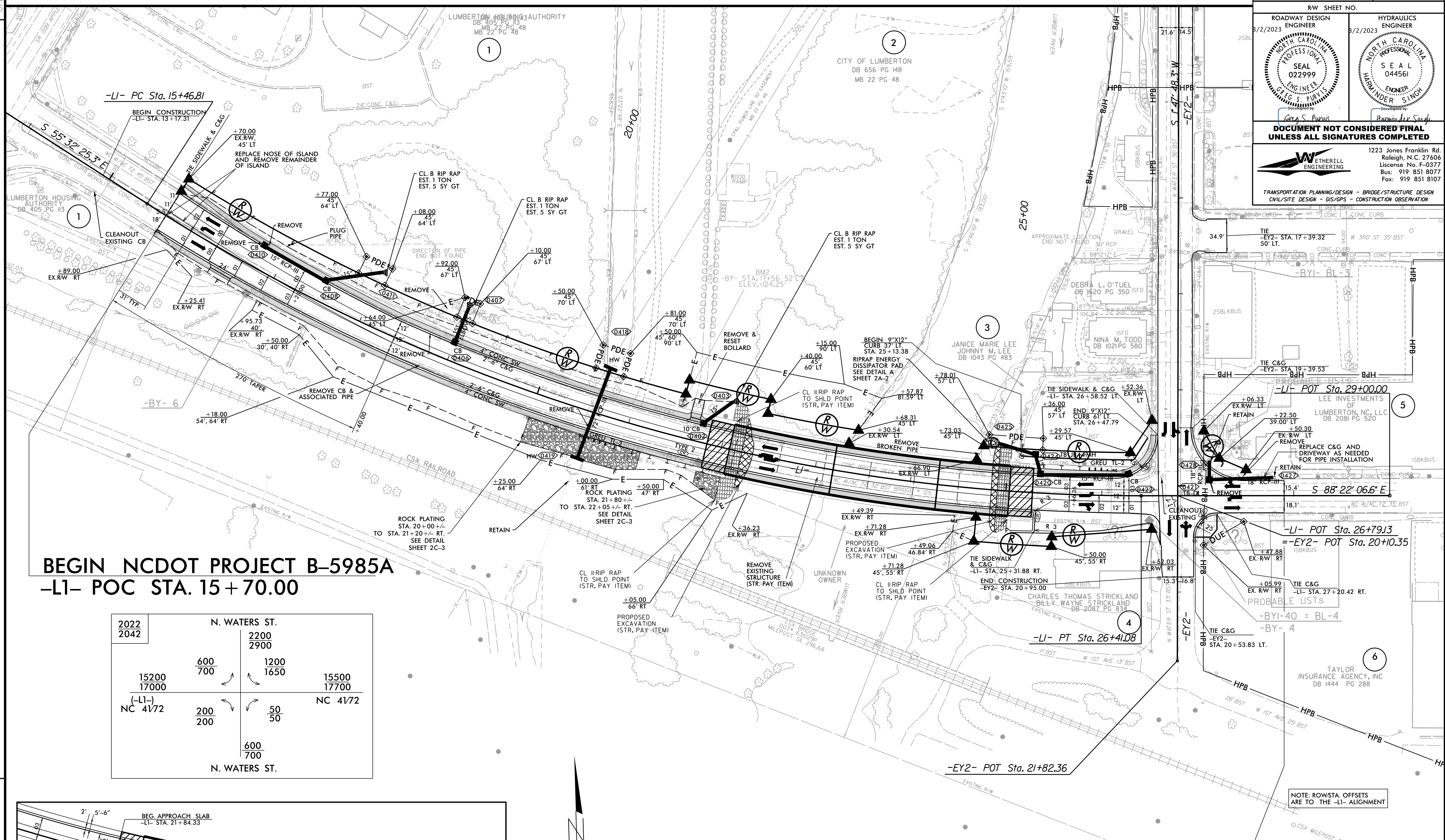
LINE	Station	Station	Aggregate Type* ASU(1/2)/AST	Aggregate Thickness INCHES [8" for ASU(2)]	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Soil Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
			CONTINGENCY	ASU(1)	12	50	100	150	
						TOTAL CY/TONS/SY:	50	100**	150**
								0	0

*ASU(1/2) = Aggregate Subgrade (Type 1 or 2)

*AST = Aggregate Stabilization

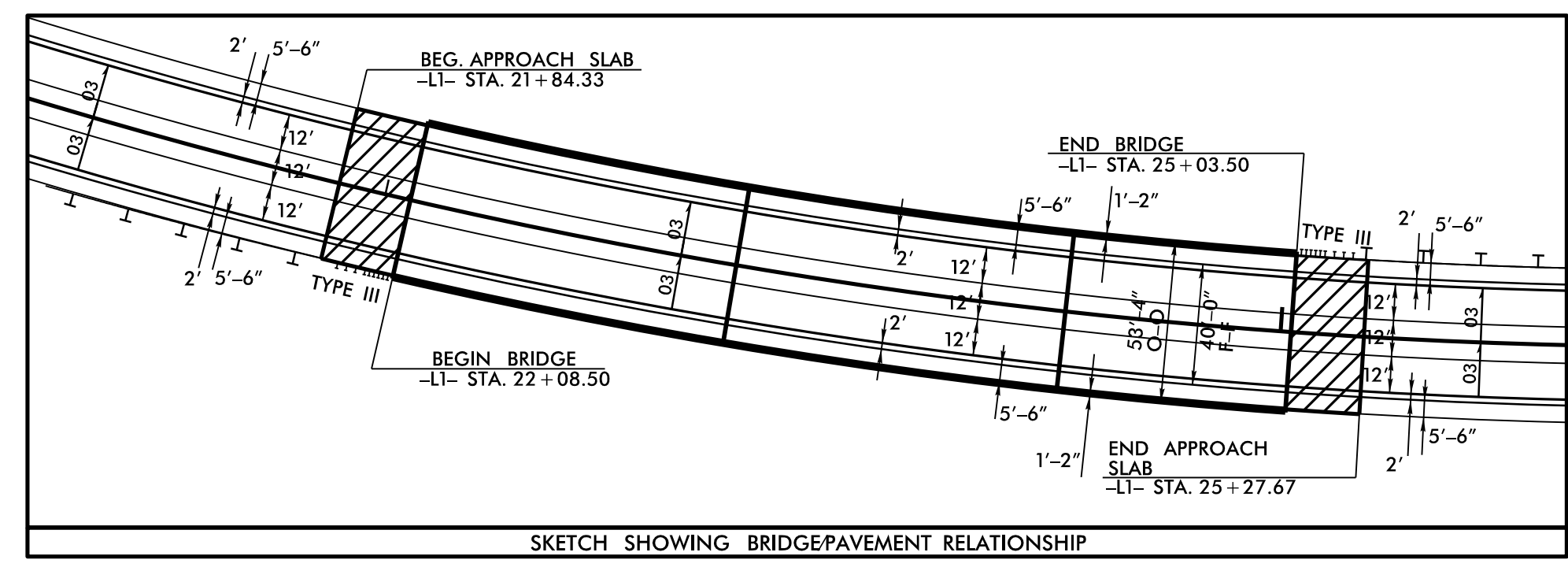
**Total tons of "Class IV Subgrade Stabilization" and total square yards of "Geotextile for Soil Stabilization" are only the estimated quantities for ASU(1/2)/AST and may only represent a portion of the subgrade stabilization and geotextile quantities shown in the Item Sheets of the Proposal.

PROJECT REFERENCE NO. B-5985A		SHEET NO. 4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER 3/2/2023		HYDRAULICS ENGINEER 3/2/2023	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
		1223 Jones Franklin Rd. Raleigh, N.C. 27606 License No. F-0377 Bus: 919 851 8077 Fax: 919 851 8107	
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION			



BEGIN NCDOT PROJECT B-5985A
-L1- POC STA. 15+70.00

2022	N. WATERS ST.			
2042	15200	600	1200	15500
	17000	700	1650	17700
	(-L1-)			NC 41/72
	NC 41/72	200	50	
		200	50	
		600	700	
	N. WATERS ST.			



NC GRID
 NAD 83 NA 2011

-L1-
 PI Sta 21+09.42
 $\Delta = 32^\circ 49' 41.4" (LT)$
 $D = 3^\circ 00' 00.0"$
 $L = 1094.27'$
 $T = 562.61'$
 $R = 1909.86'$
 $SE = .03$
 $RO = SEE PLANS$
 $DS = 40MPH$

END NCDOT PROJECT B-5985A
-L1- POT STA. 27+90.00

NOTE: ROWSTA. OFFSETS ARE TO THE -L1- ALIGNMENT

☆ - EXISTING SIGNAL
 SEE SHEET 6 FOR -L1- PROFILE
 SEE SHEET 7 FOR -EY2- PROFILE
 SEE SHEETS S-1 THRU S-49 FOR STRUCTURE PLANS
 SEE SHEET 2B-1 FOR INT. DETAIL


NOTE: SEE RAILROAD AGREEMENT FOR MORE INFORMATION ON EASEMENT WITHIN RAILROAD RIGHT OF WAY

REVISIONS

3/2/2023 B-5985A_rdy_PSH_4.dgn

2022	N. WATERS ST.			
2042	10500	8500	420	2200
	14200	11200	510	3000
	(-L-) SR 1600			W. 5TH ST.
		400	140	
		850	320	
			2200	
			2900	
			N. WATERS ST.	

-L-
 PI Sta 17+10.16
 $\Delta = 11^{\circ} 32' 05.1" (LT)$
 $D = 4^{\circ} 30' 00.0"$
 $L = 256.33'$
 $T = 128.60'$
 $R = 1,273.24'$

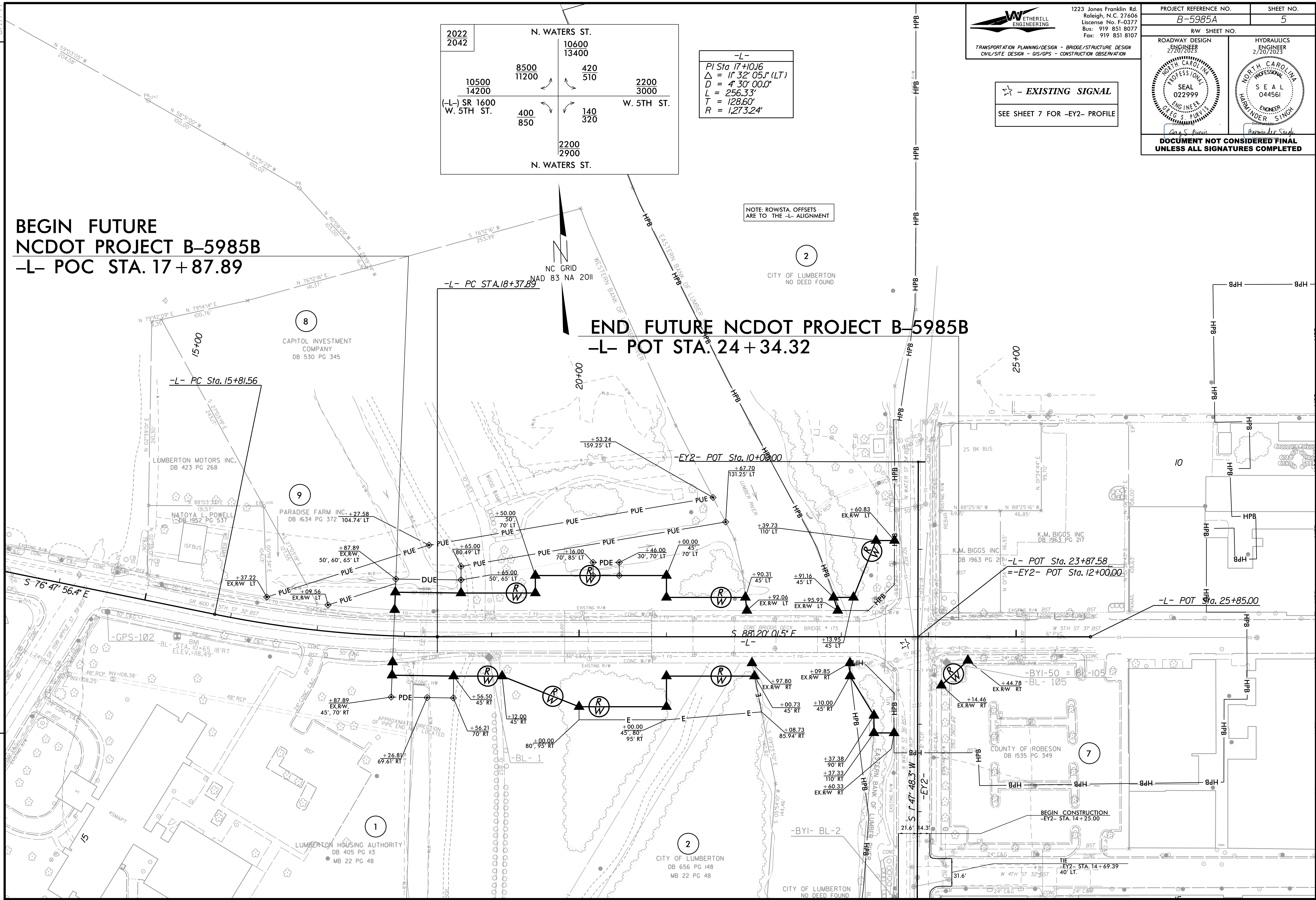
 - EXISTING SIGNAL
 SEE SHEET 7 FOR -EY2- PROFILE

NOTE: ROWSTA. OFFSETS ARE TO THE -L- ALIGNMENT

**BEGIN FUTURE
 NCDOT PROJECT B-5985B
 -L- POC STA. 17+87.89**

**END FUTURE NCDOT PROJECT B-5985B
 -L- POT STA. 24+34.32**

REVISIONS



MATCHLINE SHEET 4 -EY2- STA. 15+00.00

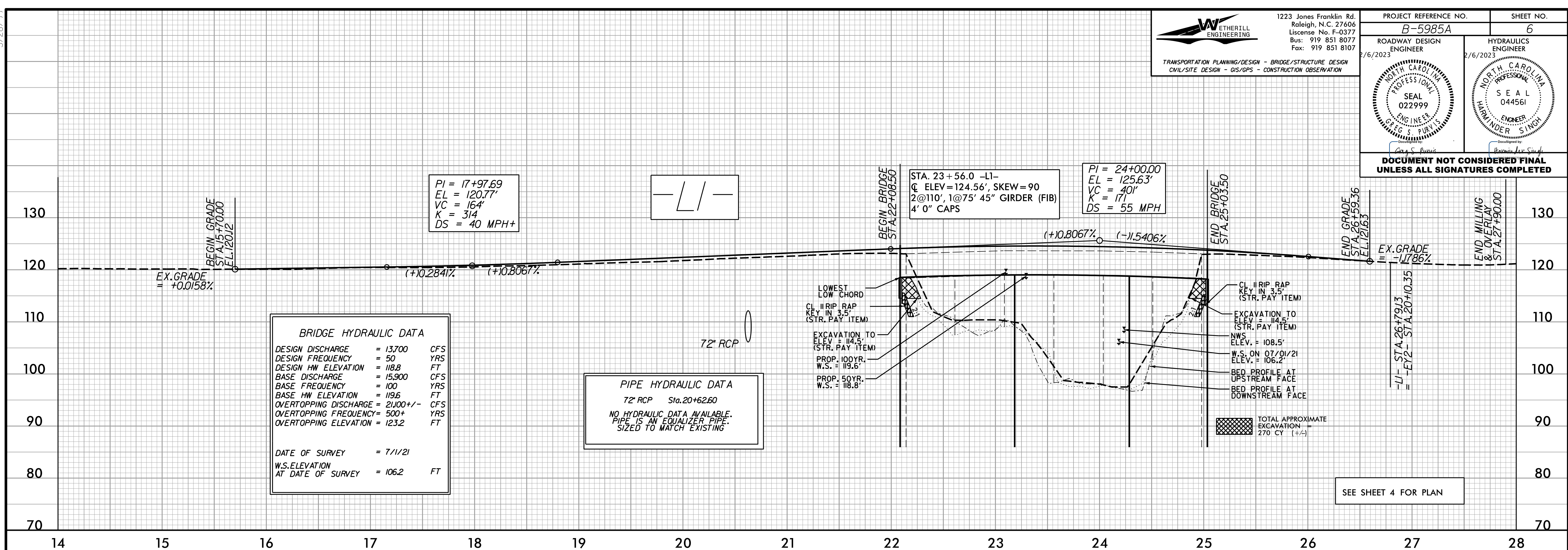
5/28/2023

WETHERILL ENGINEERING
 1223 Jones Franklin Rd.
 Raleigh, N.C. 27606
 License No. F-0377
 Bus: 919 851 8077
 Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO. B-5985A	SHEET NO. 6
ROADWAY DESIGN ENGINEER 2/6/2023	HYDRAULICS ENGINEER 2/6/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



PI = 17+97.69
 EL = 120.77'
 VC = 164'
 K = 314
 DS = 40 MPH+

STA. 23+56.0 -L1-
 ELEV = 124.56', SKEW = 90
 2@110', 1@75' 45" GIRDER (FIB)
 4' 0" CAPS

PI = 24+00.00
 EL = 125.63'
 VC = 401'
 K = 171
 DS = 55 MPH

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 13,700	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 118.8	FT
BASE DISCHARGE	= 15,900	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 119.6	FT
OVERTOPPING DISCHARGE	= 21,000 +/-	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 123.2	FT

DATE OF SURVEY = 7/1/21
 W.S. ELEVATION AT DATE OF SURVEY = 106.2 FT

PIPE HYDRAULIC DATA
 72" RCP Sta. 20+62.60
 NO HYDRAULIC DATA AVAILABLE.
 PIPE IS AN EQUALIZER PIPE.
 SIZED TO MATCH EXISTING

LOWEST LOW CHORD
 CL RIP RAP KEY IN 3.5'
 EXCAVATION TO ELEV = 114.5'
 PROP. 100YR. W.S. = 119.6'
 PROP. 50YR. W.S. = 118.8'

CL RIP RAP KEY IN 3.5'
 EXCAVATION TO ELEV = 114.5'
 NWS ELEV. = 108.5'
 W.S. ON 07/01/21 ELEV. = 106.2'
 BED PROFILE AT UPSTREAM FACE
 BED PROFILE AT DOWNSTREAM FACE


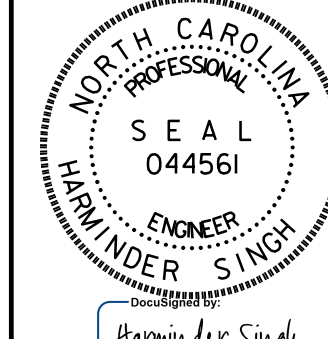
TOTAL APPROXIMATE EXCAVATION = 270 CY (+/-)

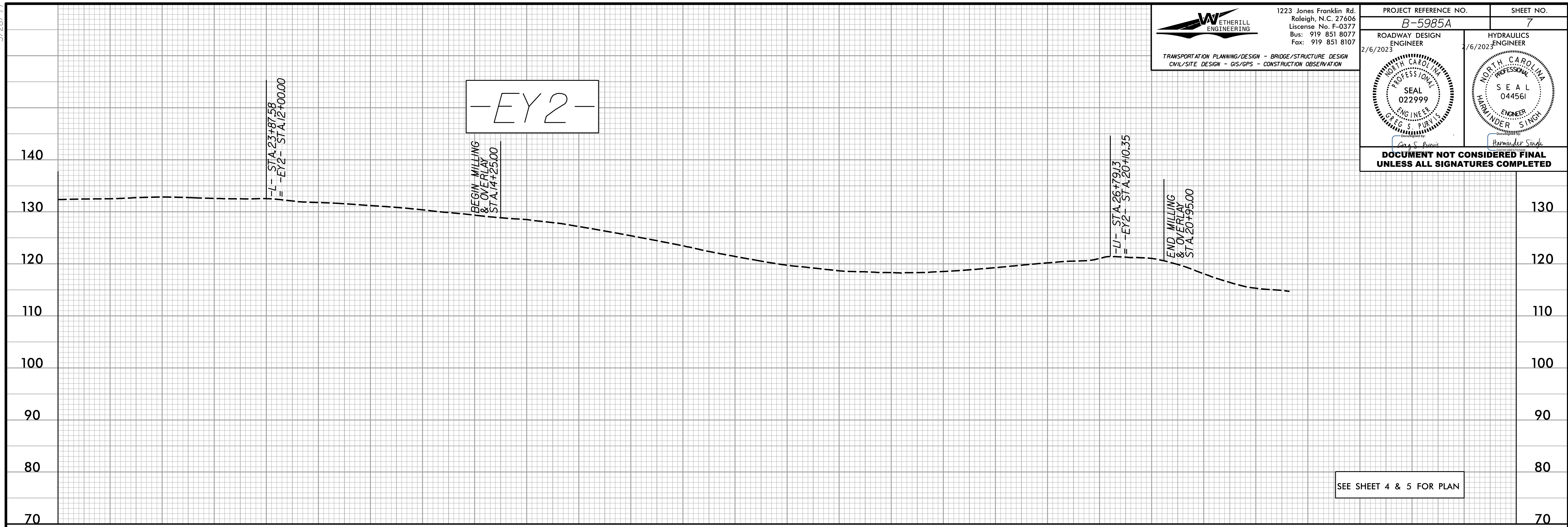
SEE SHEET 4 FOR PLAN

5/28/99

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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
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PROJECT REFERENCE NO. B-5985A	SHEET NO. 7
ROADWAY DESIGN ENGINEER 2/6/2023 	HYDRAULICS ENGINEER 2/6/2023 
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



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