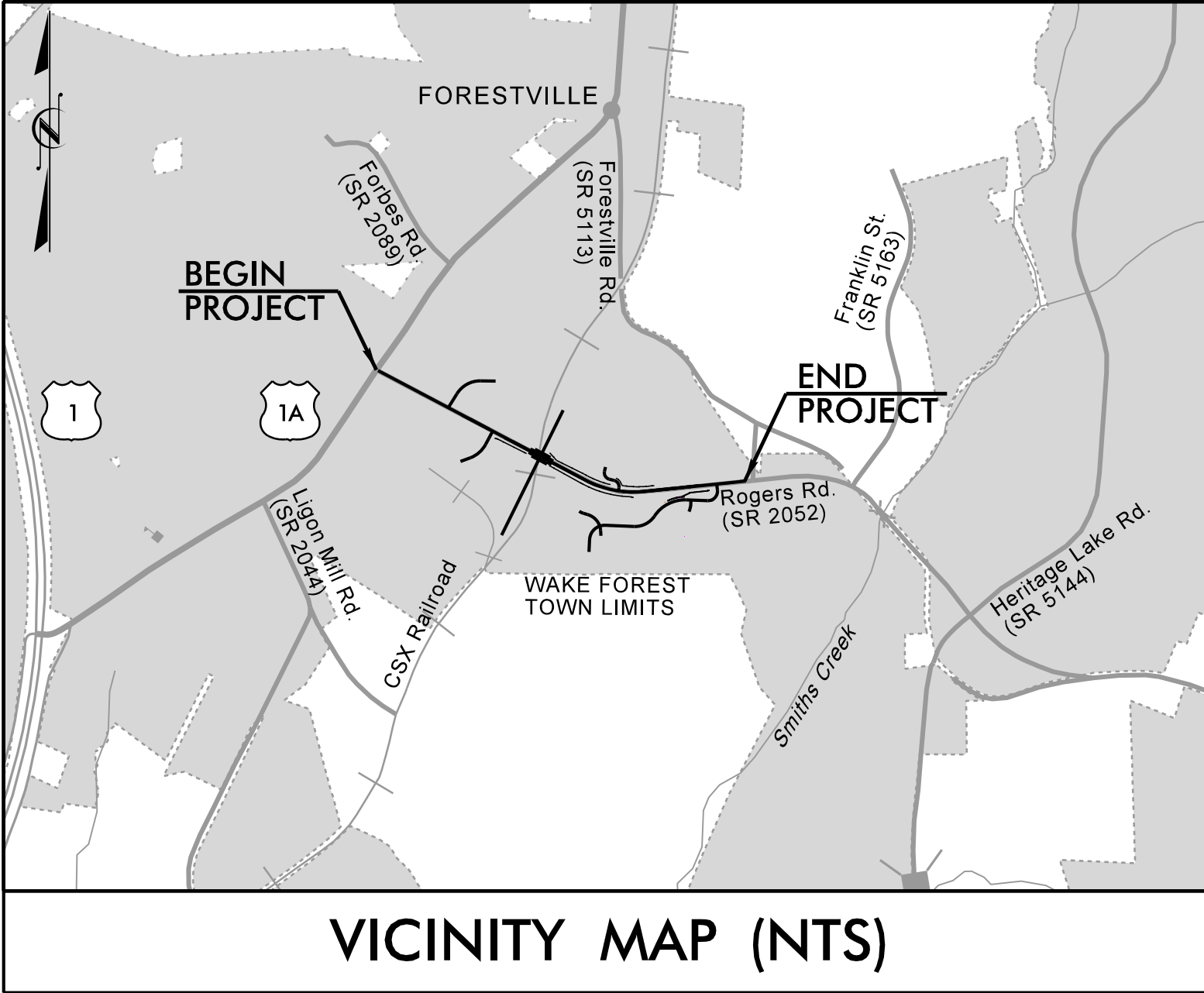


09.08/2019

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



VICINITY MAP (NTS)

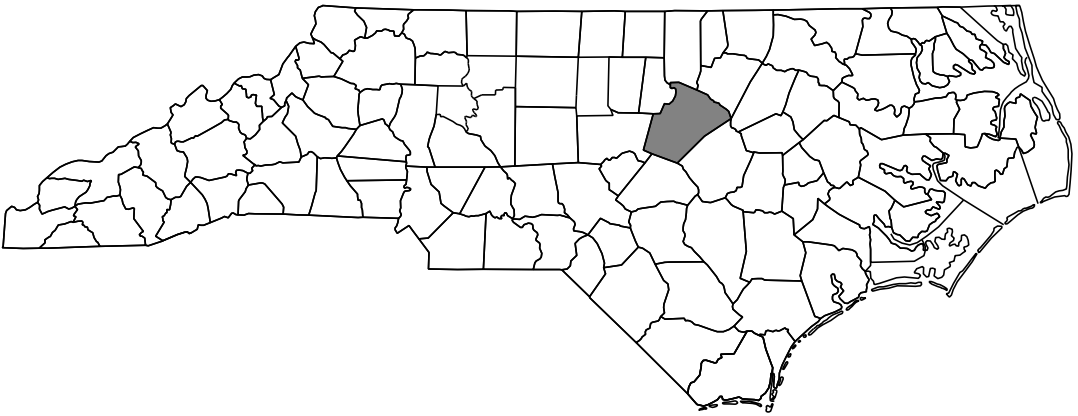
STATE OF NORTH CAROLINA
NCDOT RAIL DIVISION

WAKE COUNTY

LOCATION: ROGERS ROAD (SR 2052) GRADE SEPARATION
OVER CSX RAILROAD (CROSSING NO. 633905Y)
AT MILE POST S 142.53

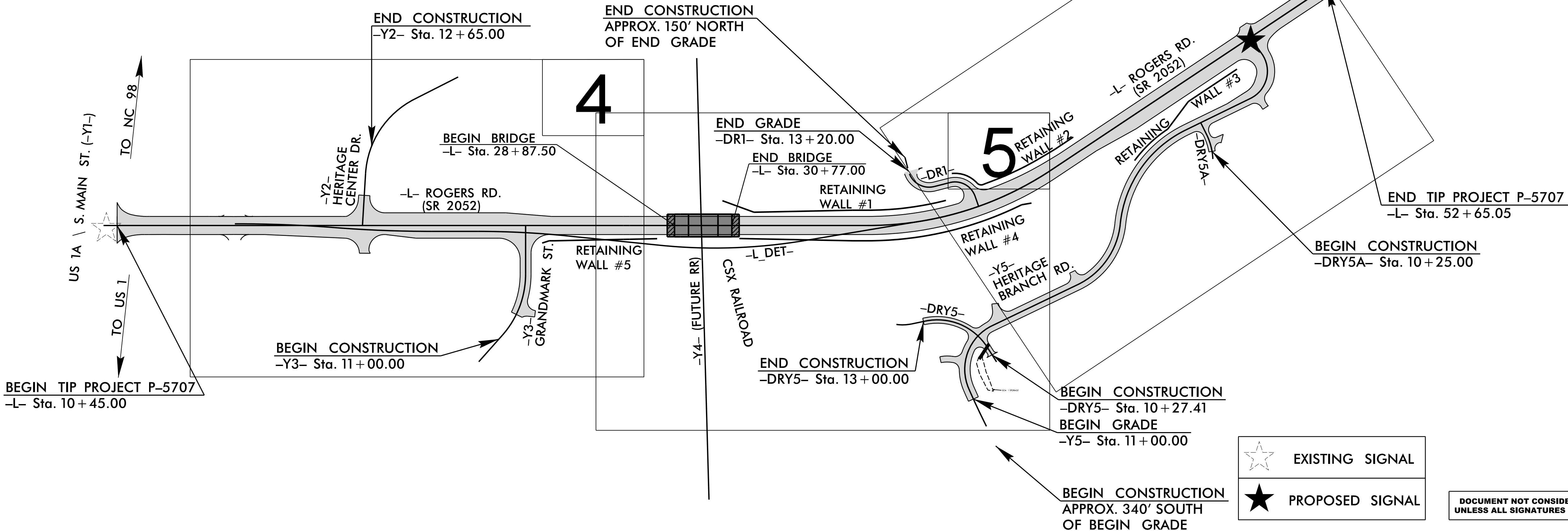
TYPE OF WORK: DRAINAGE, GRADING, PAVING, SIGNALS,
STRUCTURE, WIDENING &
RETAINING WALLS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	P-5707	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
44643.1.1		PE	
44643.2.1		ROW & UTILITIES	
44643.3.1		CONSTRUCTION	



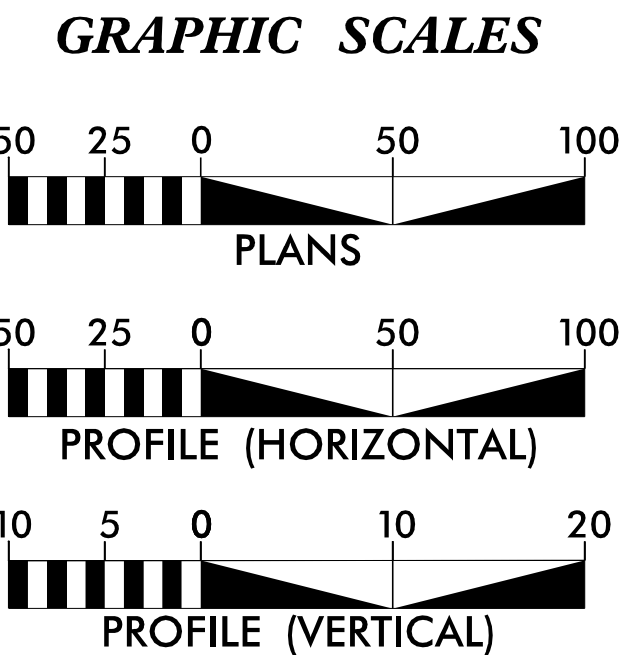
TIP PROJECT: P-5707

CONTRACT: C204338



★	EXISTING SIGNAL
★	PROPOSED SIGNAL

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



DESIGN DATA	
ADT 2026	= 28,418
ADT 2046	= 38,679
D	= 55%
K	= 8%
T	= 3% *
V	= 50 MPH
*TTST 1.0% / DUAL 2.0%	
FUNC CLASS = URBAN	
MAJOR COLLECTOR	
SUBREGIONAL TIER	

PROJECT LENGTH	
LENGTH ROADWAY TIP PROJECT P-5707	0.763 miles
LENGTH STRUCTURE TIP PROJECT P-5707	0.036 miles
TOTAL LENGTH OF PROJECT P-5707	0.799 miles

PLANS PREPARED BY:

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

FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY DATE:
JUNE 12, 2018

LETTING DATE:
OCTOBER 20, 2026

Brandon McInnis, P.E.
PROJECT ENGINEER

Jillian Huskey, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

8/20/2026

Signed by: *Brandon McInnis*
SIGNATURE

ROADWAY DESIGN ENGINEER

8/21/2026

Signed by: *Jillian Huskey*
SIGNATURE

NC DEPARTMENT OF TRANSPORTATION
RAIL DIVISION
ENGINEERING COORDINATION
AND SAFETY

2024 STANDARD SPECIFICATIONS

NCDOT RAIL DIVISION
CONTACT: Brian Gackstetter, E.I.

8/17/2026
R:\Roadway\Projects\5707.Rdw_psh01A.dgn
anashchenko

INDEX of SHEETS, GENERAL NOTES, and LIST of STANDARDS

INDEX OF SHEETS		LIST OF STANDARDS	
SHEET NUMBER	SHEET	2024 ROADWAY ENGLISH STANDARD DRAWINGS	EFF. 01-16-2024 REV.
1	TITLE SHEET	The following Roadway Standards as appear in "Roadway Standard Drawings" Contracts Standards and Development Unit – N. C. Department of Transportation – Raleigh, N. C., Dated January 16, 2024 are applicable to this project and by reference hereby are considered a part of these plans:	
1A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARDS		
1B	CONVENTIONAL SYMBOLS		
2A-1 THRU 2A-5	PAVEMENT SCHEDULE AND TYPICAL SECTIONS		
2B-1 THRU 2B-2B	DETOUR SHEETS	STD.NO.	TITLE
2B-3	INTERSECTION DETAIL	DIVISION 2 – EARTHWORK	
2B-4 THRU 2B-5	CROSSING CLOSURE DETAILS	200.03	Method of Clearing – Method III
2C-1 THRU 2C-2	METHOD OF PIPE INSTALLATION DETAILS	225.02	Guide for Grading Subgrade – Secondary and Local
2C-3	CONCRETE SIDEWALK DETAIL	225.04	Method of Obtaining Superelevation – Two Lane Pavement
2C-4 THRU 2C-5	CURB RAMP DETAILS	225.06	Method of Grading Sight Distance at Intersections
2C-6 THRU 2C-9	GUARDRAIL PLACEMENT DETAILS	DIVISION 4 – MAJOR STRUCTURES	
2C-10	EXTRA DEPTH CONCRETE MEDIAN DROP INLET TYPE 'A'	423.01	Bridge Approach Fills – Type 1 Approach Fill for Bridge Abutment
2C-11	EXTRA DEPTH CATCH BASIN DETAIL	423.02	Bridge Approach Fills – Type 1A Alternate Approach Fill for Integral Bridge Abutment
2C-12	CONCRETE JUNCTION BOX UP TO 30' HEIGHT DETAIL	DIVISION 6 – ASPHALT BASES AND PAVEMENTS	
2C-13	MINIMUM DEPTH CONCRETE CATCH BASIN	654.01	Pavement Repairs
2C-14	TEMPORARY STEEL PLATE COVER	DIVISION 8 – INCIDENTALS	
2C-15	CONVERT EXISTING DI, CB, OTCB, OR GITO JUNCTION BOX	806.01	Concrete Right-of-Way Marker
2C-16	SILLBAFFLE LAYOUT & DETAILS	806.02	Granite Right-of-Way Marker
2D-1	DRAINAGE DITCH DETAILS	815.02	Subsurface Drain
2D-2	-Y5- DRAINAGE LAYOUT DETAIL SHEET	838.01	Concrete Endwall for Single and Double Pipe Culverts – 15" thru 48" Pipe 90 Skew
2G-1 THRU 2G-3	STANDARD TEMPORARY WALL DETAILS	838.11	Brick Endwall for Single and Double Pipe Culverts – 15" thru 48" Pipe 90 Skew
2H-1 THRU 2H-3	SCM DETAILS	838.21	Reinforced Concrete Endwall – for Single 54" Pipe – 90 Skew
3B-1	EARTHWORK SUMMARY	838.45	Notes for Reinforced Concrete Endwall – Standard Drawings 838.21 thru 838.40
3B-2	GUARDRAIL SUMMARY	838.51	Reinforced Brick Endwall – for Single 54" Pipe – 90 Skew
3B-3	PAVEMENT REMOVAL & BREAKING SUMMARIES	838.75	Notes for Reinforced Brick Endwall – Standard Drawings 838.51 thru 838.70
3B-4	FENCE SUMMARY	840.00	Concrete Base Pad for Drainage Structures
3D-1 THRU 3D-7	DRAINAGE SUMMARIES	840.01	Brick Catch Basin – 12" thru 54" Pipe
3G-1	GEOTECHNICAL SUMMARIES	840.02	Concrete Catch Basin – 12" thru 54" Pipe
3P-1	PARCEL INDEX SHEET	840.03	Frame, Grates and Hood – for Use on Standard Catch Basin
4 THRU 6-ROW	PLAN SHEETS	840.14	Concrete Drop Inlet – 12" thru 30" Pipe
7 THRU 10	PROFILE SHEETS	840.15	Brick Drop Inlet – 12" thru 30" Pipe
RW-1 THRU RW-6	ROW & SURVEY CONTROL PLANS	840.16	Drop Inlet Frame and Grates – for use with Std. Dwg 840.14 and 840.15
TMP-1 THRU TMP-39	TRANSPORTATION MANAGEMENT PLANS	840.17	Concrete Grated Drop Inlet Type 'A' – 12" thru 72" Pipe
PMP-1 THRU PMP-6	PAVEMENT MARKINGS PLANS	840.18	Concrete Grated Drop Inlet Type 'B' – 12" thru 36" Pipe
ECS-1 THRU ECS-4	ELECTRICAL CONDUIT PLANS	840.19	Concrete Grated Drop Inlet Type 'D' – 12" thru 36" Pipe
EC-1 THRU EC-9	EROSION CONTROL PLANS	840.24	Frames and Narrow Slot Sag Grates
RF-1	REFORESTATION DETAIL SHEET	840.25	Anchorage for Frames – Brick or Concrete or Precast
SIGN-1 THRU SIGN-6	SIGNING PLANS	840.26	Brick Grated Drop Inlet Type 'A' – 12" thru 72" Pipe
SIG.1 THUR SIG.10.3	SIGNAL PLANS	840.27	Brick Grated Drop Inlet Type 'B' – 12" thru 36" Pipe
SIG.M1A THRU SIG.M9	STANDARD DRAWINGS FOR METAL POLES	840.28	Brick Grated Drop Inlet Type 'D' – 12" thru 36" Pipe
SCP-1 THRU SCP-9	SIGNAL COMMUNICATION PLANS	840.31	Concrete Junction Box – 12" thru 66" Pipe
UC-1 THRU UC-10	UTILITY CONSTRUCTION PLANS	840.32	Brick Junction Box – 12" thru 66" Pipe
UO-1 THRU UO-4	UTILITIES BY OTHERS PLANS	840.34	Traffic Bearing Junction Box – for Use with Pipes 42" and Under
X-1	CROSS-SECTION INDEX	840.45	Precast Drainage Structure
X-1A THRU X-1B	CROSS-SECTION SUMMARY SHEET	840.46	Traffic Bearing Precast Drainage Structure
X-2 THRU X-48	CROSS-SECTIONS	840.54	Manhole Frame and Cover
S-1 THRU S-39	STRUCTURE PLANS	840.66	Drainage Structure Steps
S-40 THRU S-47	JUNCTION BOX AND HEADWALL PLANS	840.71	Concrete and Brick Pipe Plug
W-1 THRU W-19	WALL PLANS	840.72	Pipe Collar
		846.01	Concrete Curb, Gutter and Curb & Gutter
		848.03	Driveway Turnout – Drop Curb Type
		848.04	Street Turnout
		848.06	Curb Ramp
		850.01	Concrete Paved Ditches
		852.01	Concrete Islands
		857.01	Precast Reinforced Concrete Barrier
		862.01	Guardrail Placement
		862.02	Guardrail Installation
		862.03	Structure Anchor Units
		866.01	Chain Link Fence – 4', 5' and 6' High Fence
		866.06	Chain Link Fence on Retaining Wall
		876.01	Rip Rap in Channels and Ditches
		876.02	Guide for Rip Rap at Pipe Outlets
		876.04	Drainage Ditches with Class 'B' Rip Rap

NCDOT GENERAL NOTES	
GENERAL NOTES:	2024 SPECIFICATIONS
	EFFECTIVE: 01-16-2024 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. 225.04 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.	
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 WAKE EMC, TOWN OF WAKE FOREST, DOMINION ENERGY, BRIGHTSPEED COMMUNICATIONS, WINDSTREAM COMMUNICATIONS, MCIVERIZON, SPECTRUM, CROWN CASTLE, TING. 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 CONTRACT.	
CURB RAMPS	
CURB RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS. CONSTRUCT ALL CURB RAMPS ACCORDANCE WITH STD 848.06. SEE PAVEMENT MARKING PLANS FOR CURB RAMP LOCATIONS AND TYPES.	

PROJECT REFERENCE NO.
P-5707

SHEET NO.
1A

ROADWAY DESIGN
ENGINEER

01/14/2026



John R. B. Binger
Professional Engineer
EE06CA23C373439

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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	
Existing Fence Line	
Proposed Woven Wire Fence	
Proposed Chain Link Fence	
Proposed Barbed Wire Fence	
Existing Wetland Boundary	
Proposed Wetland Boundary	
Existing Endangered Animal Boundary	
Existing Endangered Plant Boundary	
Existing Historic Property Boundary	
Known Contamination Area: Soil	
Potential Contamination Area: Soil	
Known Contamination Area: Water	
Potential Contamination Area: Water	
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	
Buffer Zone 1	
Buffer Zone 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:

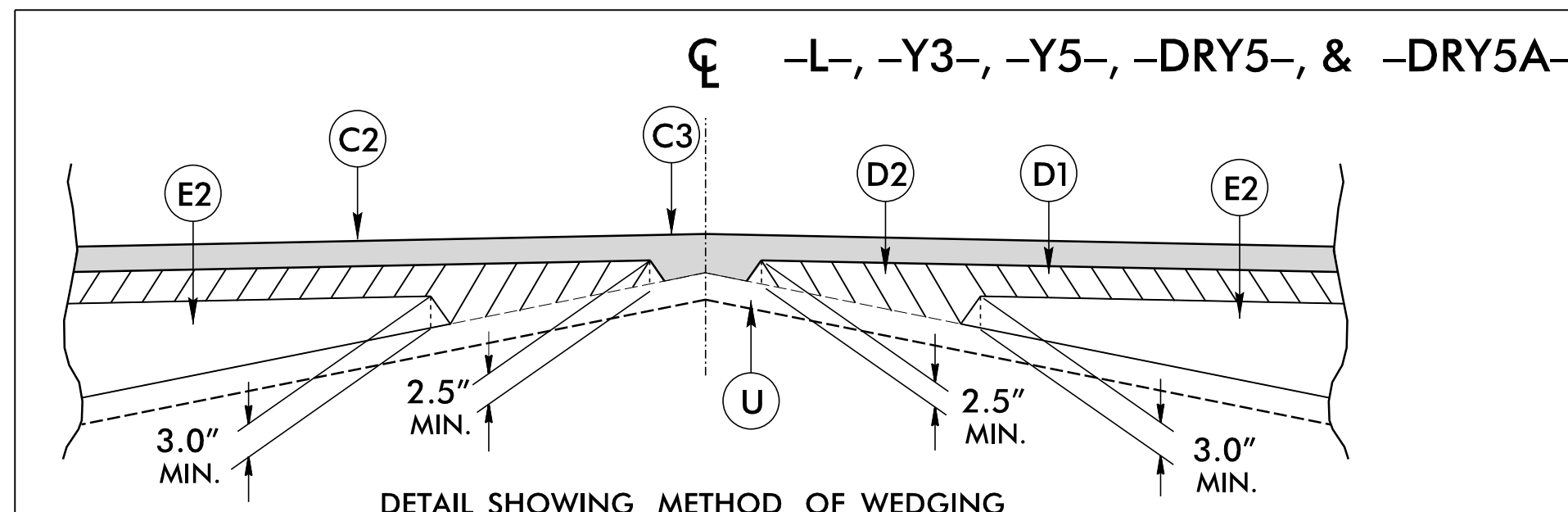
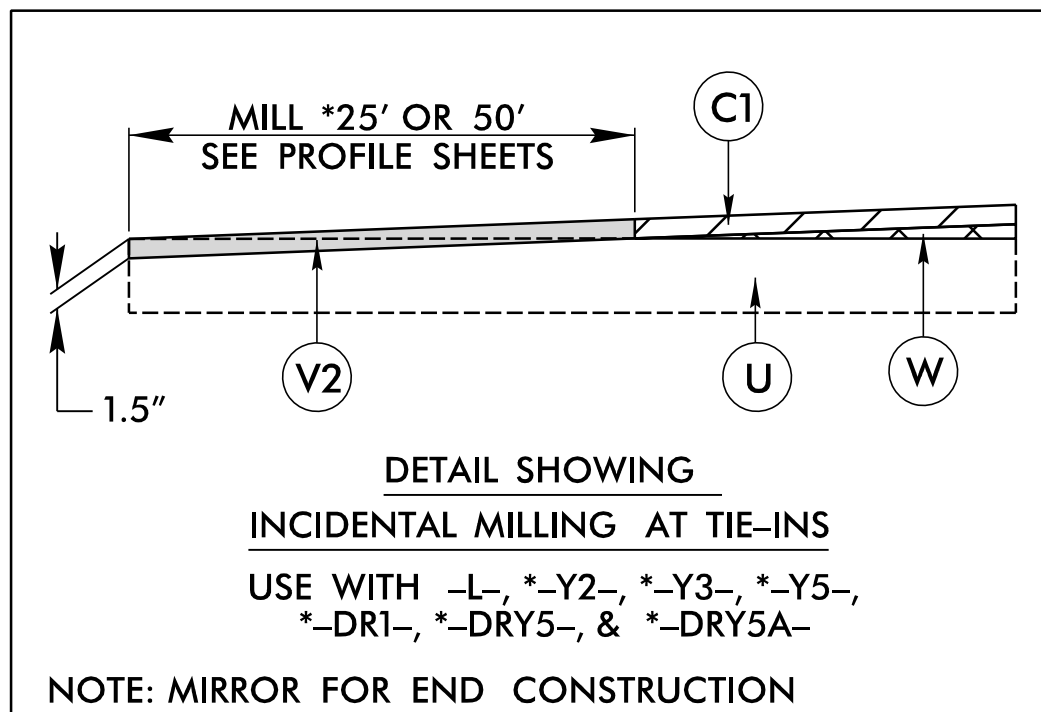
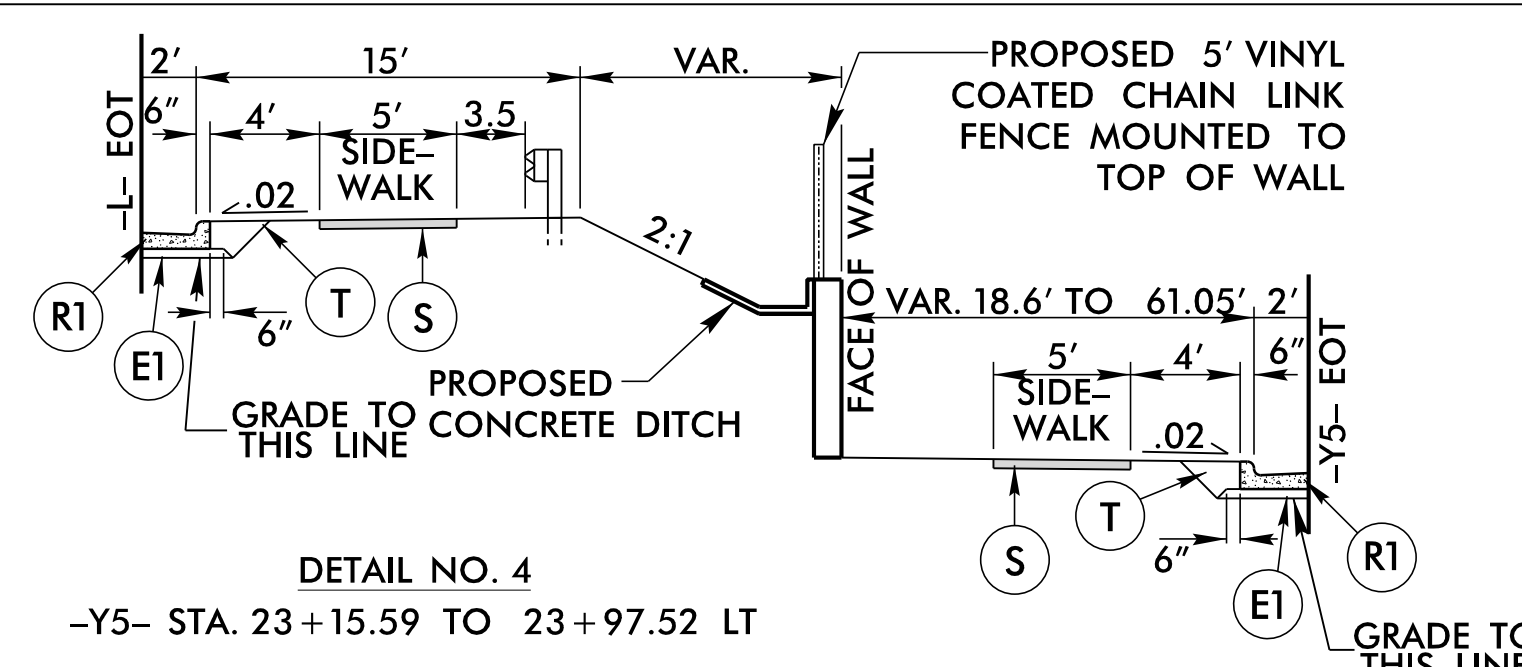
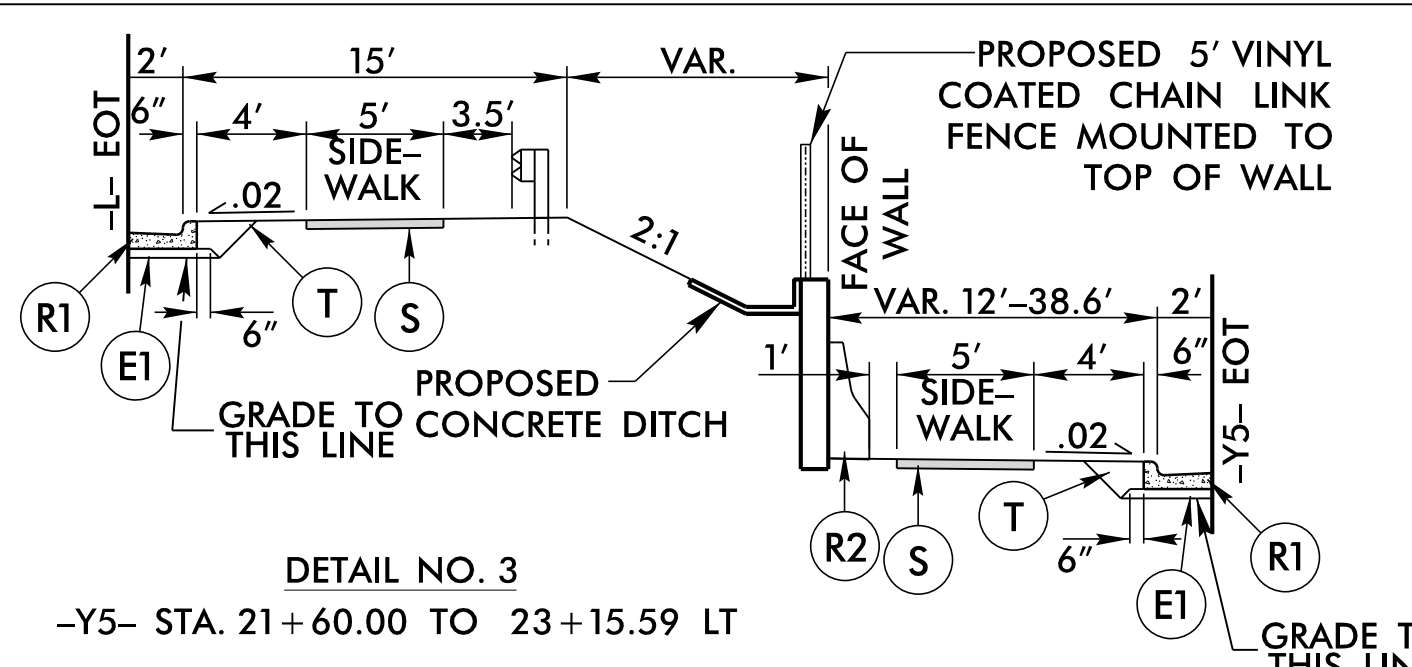
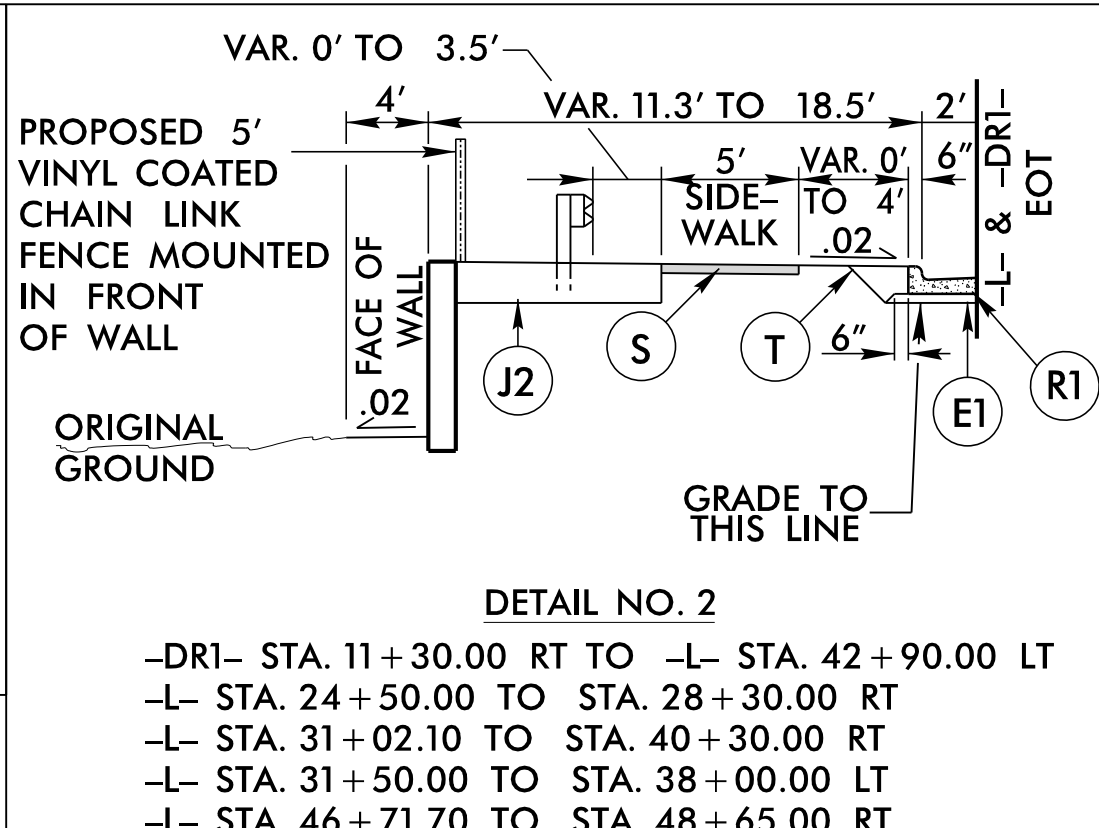
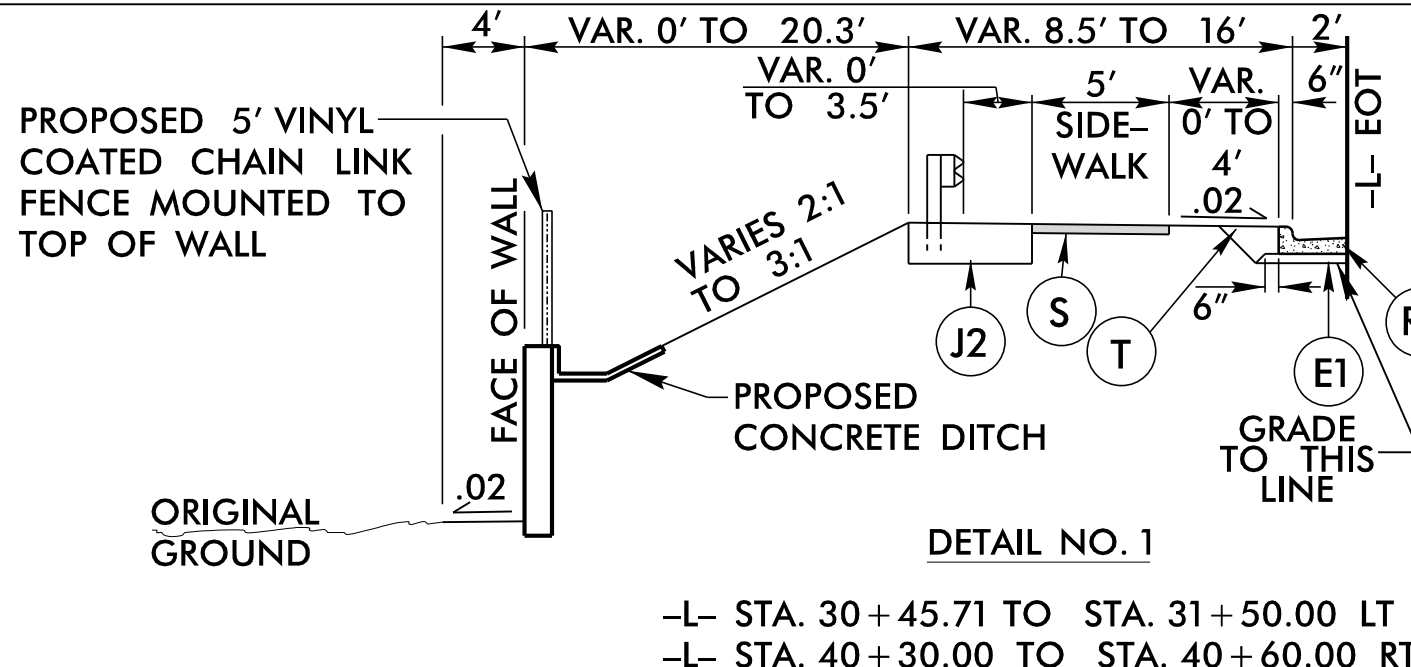
Sanitary Sewer Manhole	
Sanitary Sewer Cleanout	
U/G Sanitary Sewer Line	
Above Ground Sanitary Sewer	
SS Force Main Line Test Hole (SUE – LOS A)*	
SS Force Main Line (SUE – LOS B)*	
SS Force Main Line (SUE – LOS C)*	
SS Force Main Line (SUE – LOS D)*	

MISCELLANEOUS:

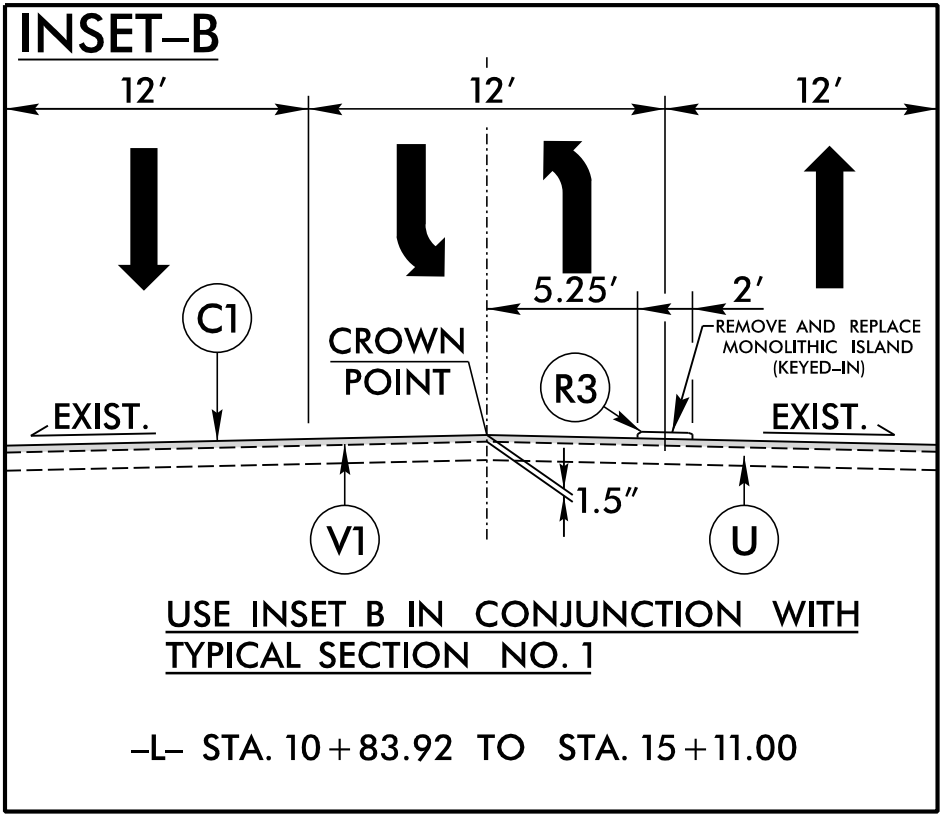
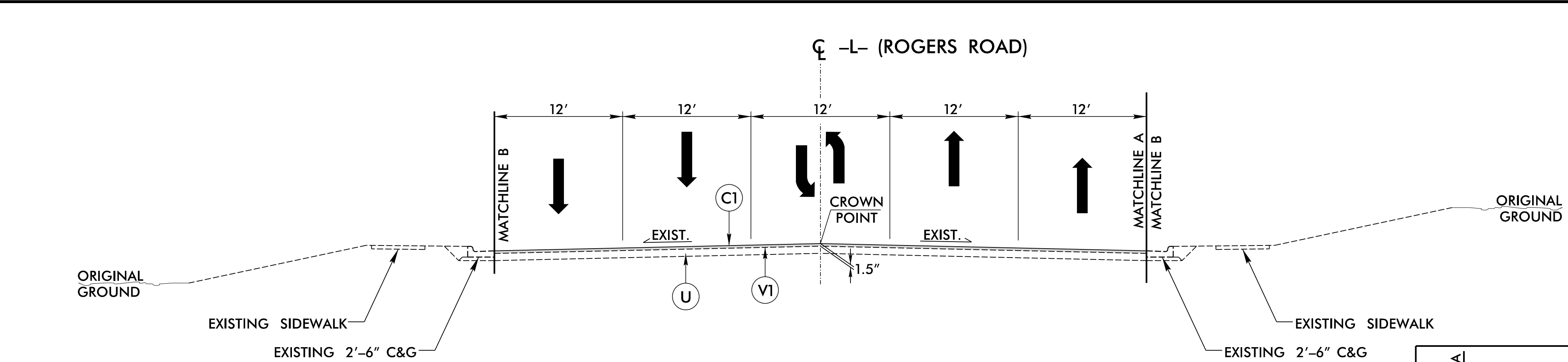
Utility Pole	
Utility Pole with Base	
Utility Located Object	
Utility Traffic Signal Box	
Utility Unknown U/G Line (SUE – LOS B)*	
U/G Tank; Water, Gas, Oil	
Underground Storage Tank, Approx. Loc.	
A/G Tank; Water, Gas, Oil	
Geoenvironmental Boring	
Abandoned According to Utility Records	
End of Information	

FINAL PAVEMENT DESIGN

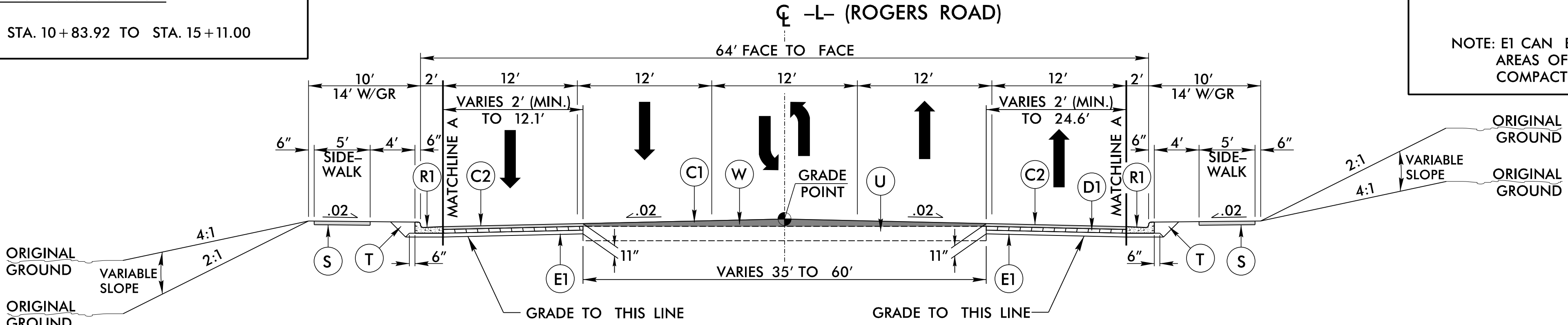
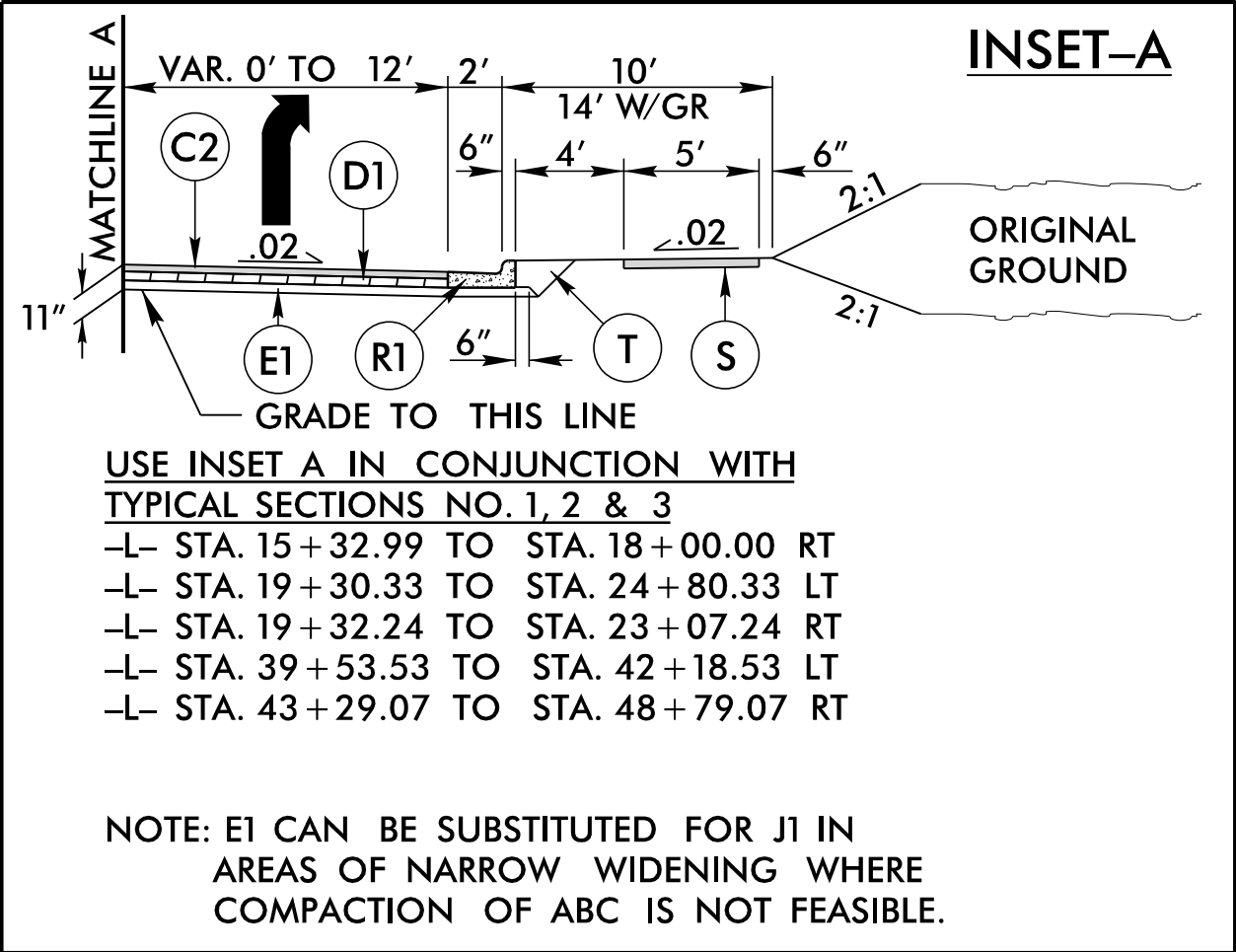
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD	P	PRIME COAT AT THE RATE OF 0.35 GAL. PER SQ. YD
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS	R1	2'-6" CONCRETE CURB AND GUTTER
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1" OR GREATER THAN 1.5" IN DEPTH	R2	SINGLE FACED CONCRETE BARRIER
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD	R3	5" MONOLITHIC CONCRETE ISLAND (KEYED-IN)
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 2.5" OR GREATER THAN 4" IN DEPTH	S	4" CONCRETE SIDEWALK
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AVERAGE RATE OF 456 LBS. PER SQ. YD	T	EARTH MATERIAL
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" OR GREATER THAN 5.5" IN DEPTH	U	EXISTING PAVEMENT
J1	6" AGGREGATE BASE COURSE	V1	1.5" MILLING
J2	13" AGGREGATE BASE COURSE (M) SHOULDER CONSTRUCTION	V2	INCIDENTAL MILLING
NOTES: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE. SEE PLANS FOR LOCATION OF CONCRETE ISLAND, TURN LANES, AND TAPERS		W	WEDGING



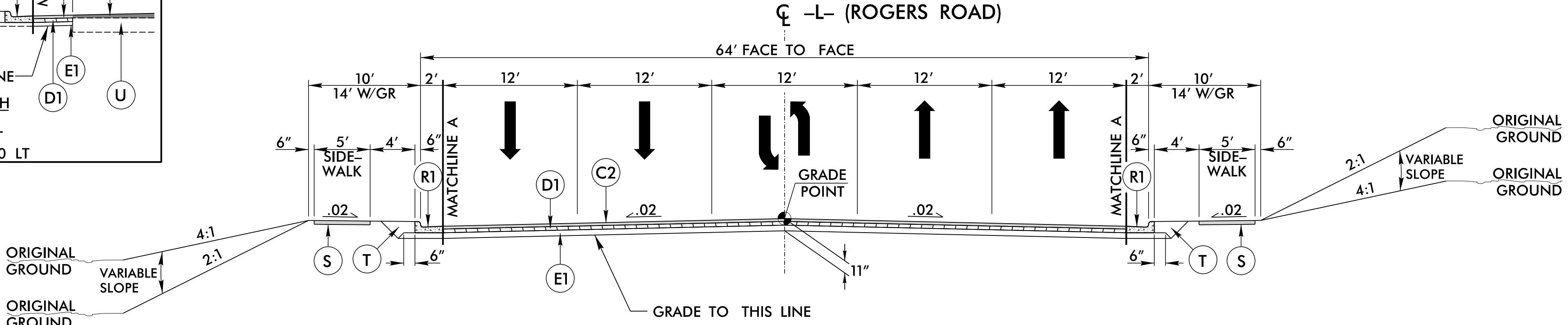
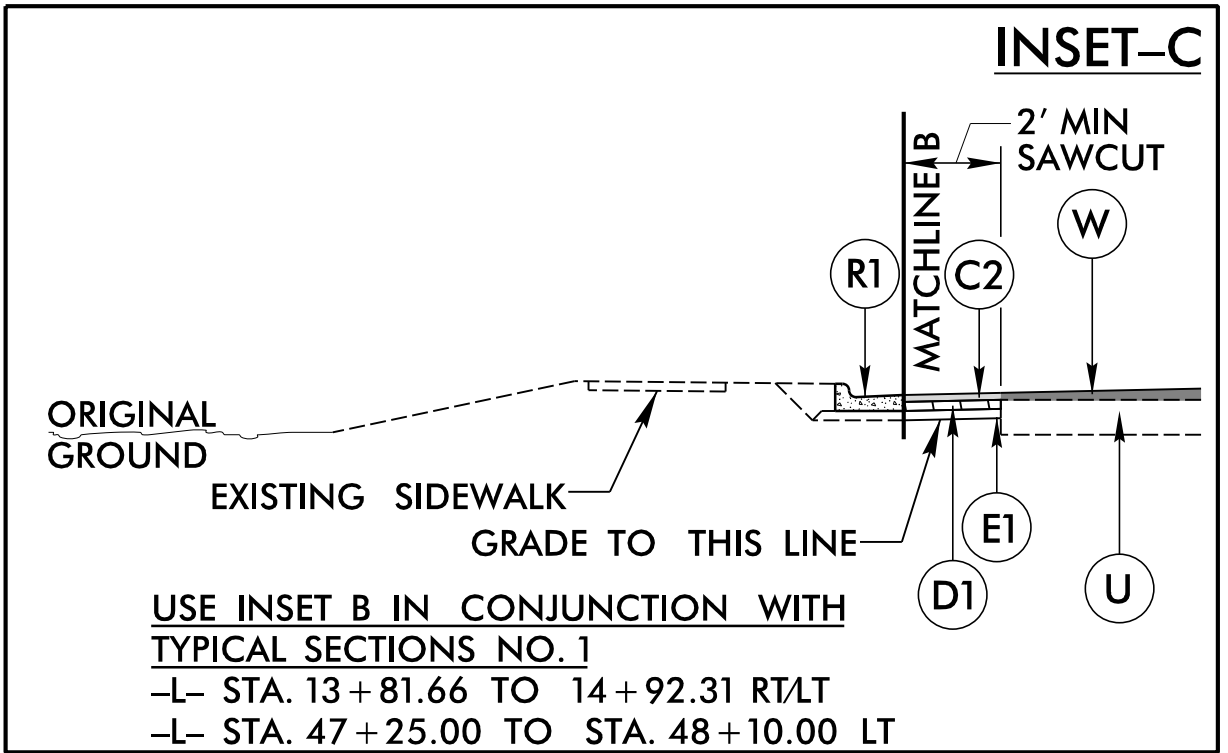
PAVEMENT SCHEDULE	
C1	1.5" S9.5B
C2	3" S9.5B
C3	VAR. S9.5B
D1	4" I19.0C
D2	VAR. I19.0C
E1	4" B25.0C
E2	VAR. B25.0C
J1	6" ABC
J2	13" ABC(M)
P	PRIME COAT
R1	2'-6" C&G
R2	SINGLE FACE BARRIER
R3	5" CONC. ISLAND
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
V1	1.5" MILLING
W	WEDGING



TYPICAL SECTION NO. 1
-L- STA. 10+45.00 TO STA. 18+00.00
-L- STA. 47+25.00 TO STA. 52+65.05
NOTE: MILL 1.5" AND REPLACE WITH C1.



TYPICAL SECTION NO. 2
-L- STA. 18+00.00 TO STA. 21+55.00
-L- STA. 45+50.00 TO STA. 47+25.00



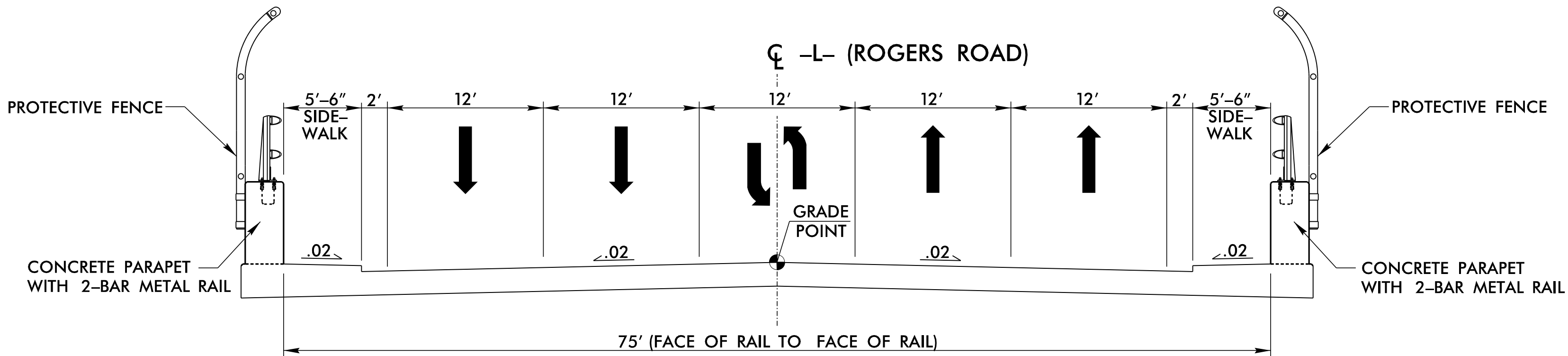
TYPICAL SECTION NO. 3
-L- STA. 21+55.00 TO STA. 28+87.50
-L- STA. 30+77.00 TO STA. 45+50.00

NOTES : PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE NOTED.
SEE PLANS FOR LOCATION OF CONCRETE ISLAND, TURN LANES, AND TAPERS.

PROJECT REFERENCE NO. P-5707	SHEET NO. 2A-2
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

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PAVEMENT SCHEDULE	
C1	1.5" S9.5B
C2	3" S9.5B
C3	VAR. S9.5B
D1	4" I19.0C
D2	VAR. I19.0C
E1	4" B25.0C
E2	VAR. B25.0C
J1	6" ABC
J2	13" ABC(M)
P	PRIME COAT
R1	2'-6" C&G
R2	SINGLE FACE BARRIER
R3	5" CONC. ISLAND
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
V1	1.5" MILLING
W	WEDGING

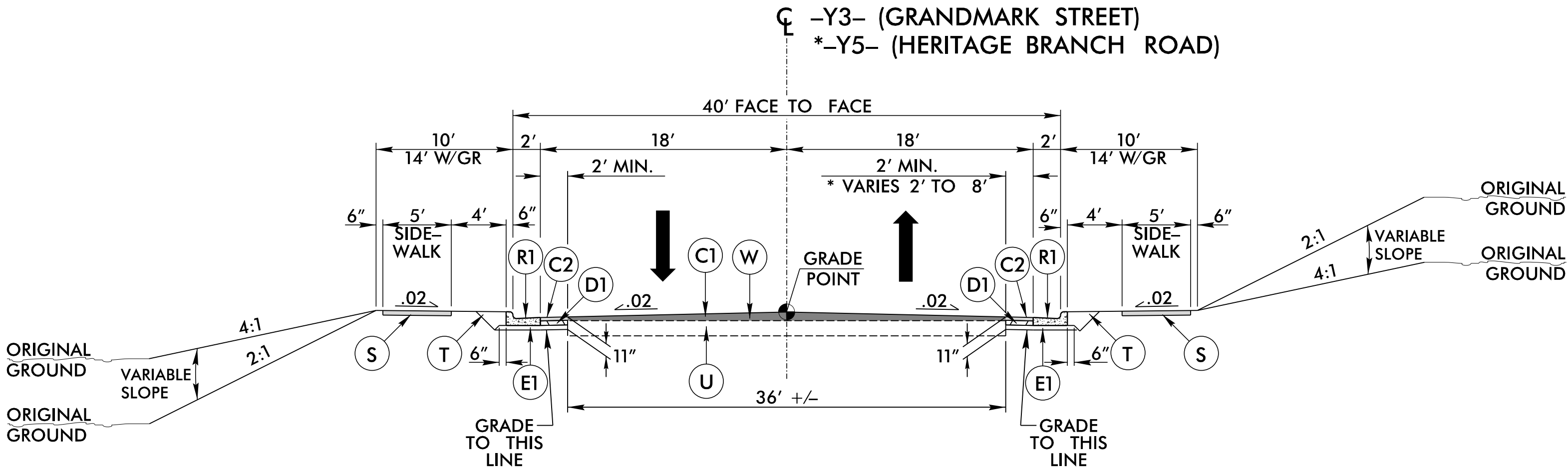


TYPICAL SECTION NO. 4

BRIDGE TYPICAL

-L- STA. 28+87.50 TO 30+77.00

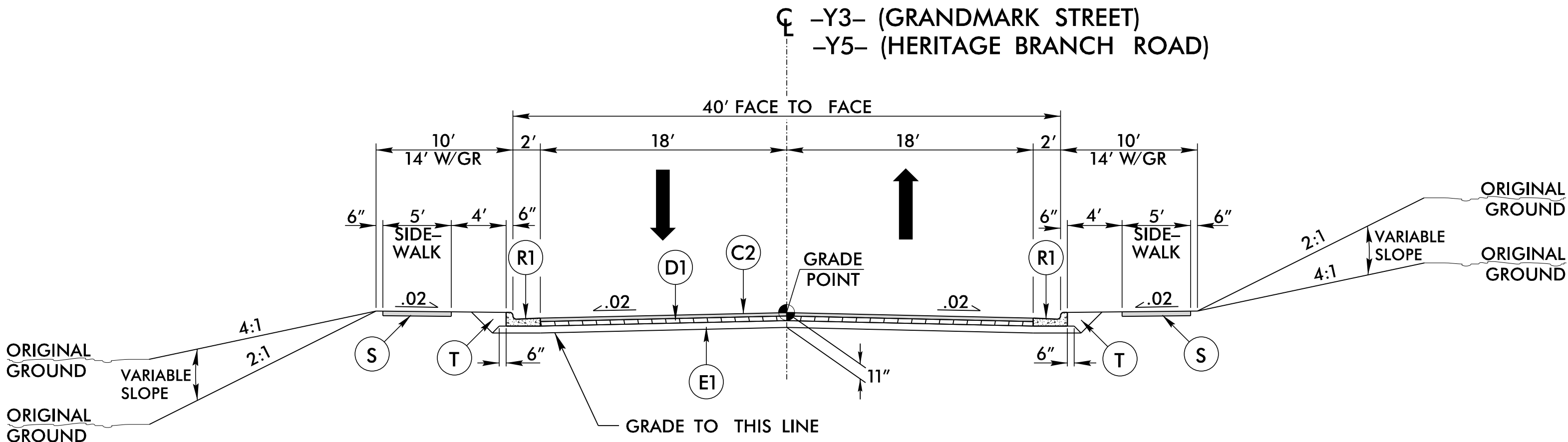
NOTE: SEE STRUCTURE PLANS FOR CONSTRUCTION OF BRIDGE



TYPICAL SECTION NO. 5

-Y3- STA. 12+00.00 TO STA. 13+15.00

*-Y5- STA. 11+00.00 TO STA. 11+61.54



TYPICAL SECTION NO. 6

-Y3- STA. 13+15.00 TO STA. 14+69.09

-Y5- STA. 11+61.54 TO STA. 27+96.08

NOTES : PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE NOTED.
SEE PLANS FOR LOCATION OF CONCRETE ISLAND, TURN LANES, AND TAPERS.

PROJECT REFERENCE NO.	SHEET NO.
P-5707	2A-3
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



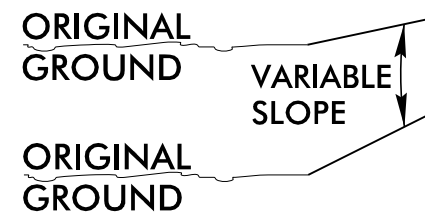
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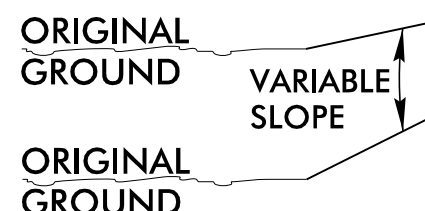
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RESURFACE EXISTING HERITAGE BRANCH DRIVE FROM SOUTHERN RADIUS
OF BOULDER POINTE DRIVE APPROXIMATELY 340' SOUTH OF BEGIN GRADE
TO BEGIN GRADE AT -Y5- STA. 11+00.00



-DR1- STA. 10+30.00 TO STA. 13+02.42



-DRY5- STA. 10+27.41 TO STA. 10+87.54
-DRY5- STA. 12+20.00 TO STA. 13+00.00
*-DRY5A- STA. 10+25.00 TO STA. 10+87.76

*NOTE: USE 5' SIDEWALK FOR -DRY5A- LT

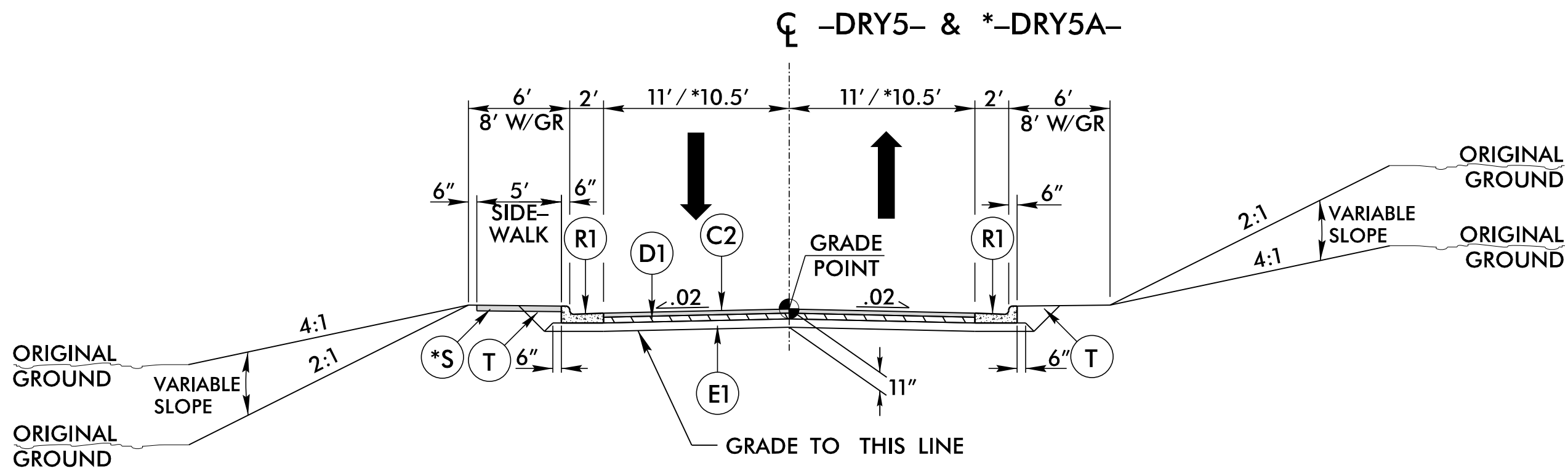
NOTES : PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE NOTED.
SEE PLANS FOR LOCATION OF CONCRETE ISLAND, TURN LANES, AND TAPERS.

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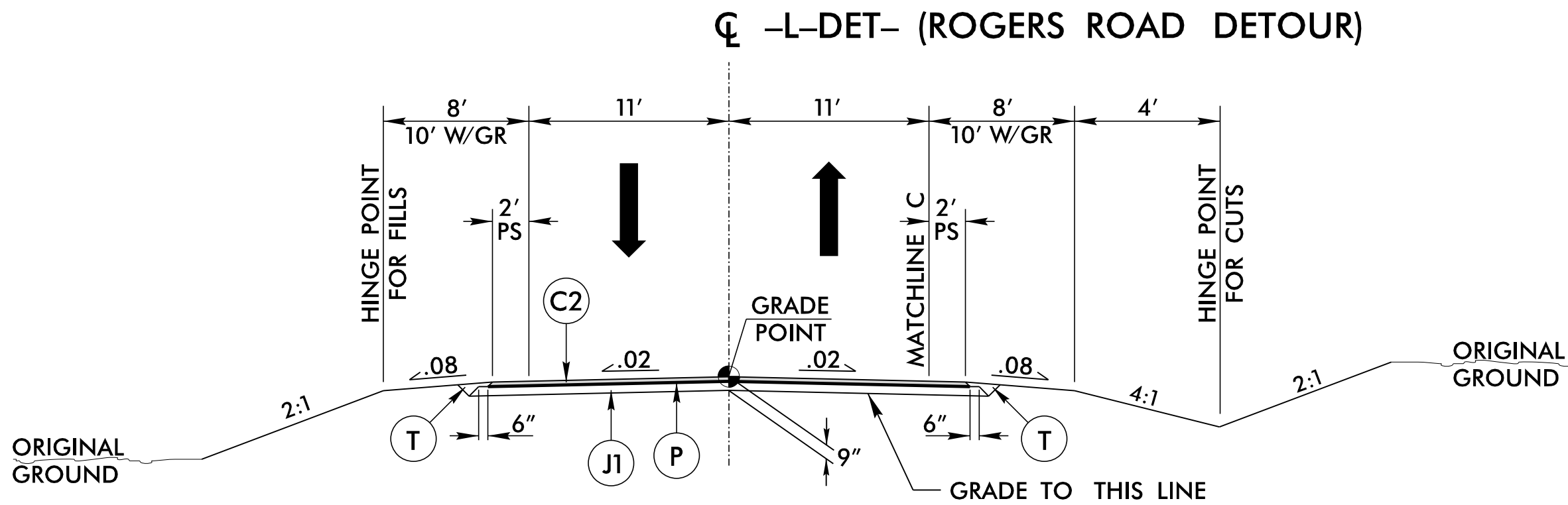
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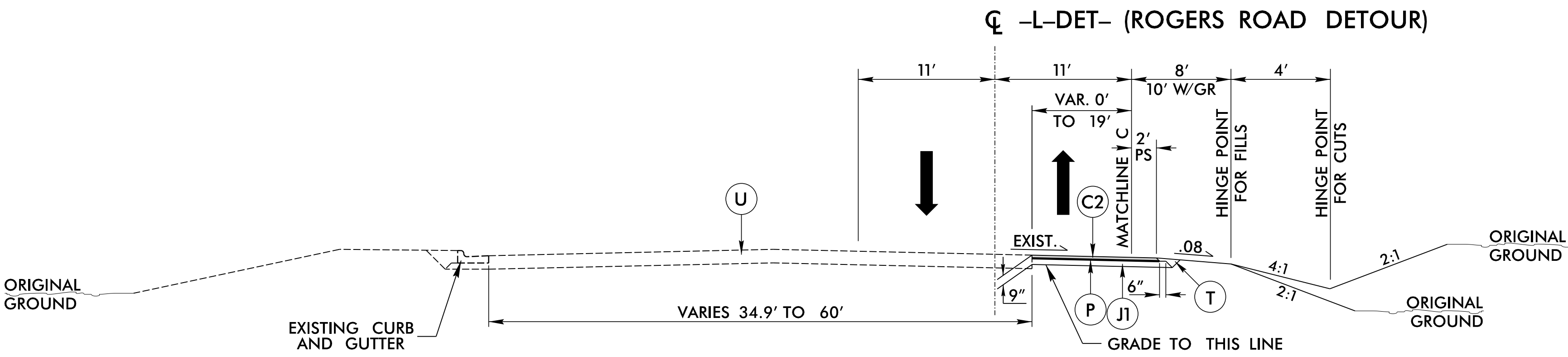
PAVEMENT SCHEDULE	
C1	1.5" S9.5B
C2	3" S9.5B
C3	VAR. S9.5B
D1	4" I19.0C
D2	VAR. I19.0C
E1	4" B25.0C
E2	VAR. B25.0C
J1	6" ABC
J2	13" ABC(M)
P	PRIME COAT
R1	2'-6" C&G
R2	SINGLE FACE BARRIER
R3	5" CONC. ISLAND
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
V1	1.5" MILLING
W	WEDGING



TYPICAL SECTION NO. 10
-DRY5- STA. 11+23.59 TO STA. 12+20.00
*-DRY5A- STA. 10+87.76 TO STA. 11+09.64
*NOTE: USE 5' SIDEWALK FOR -DRY5A- LT

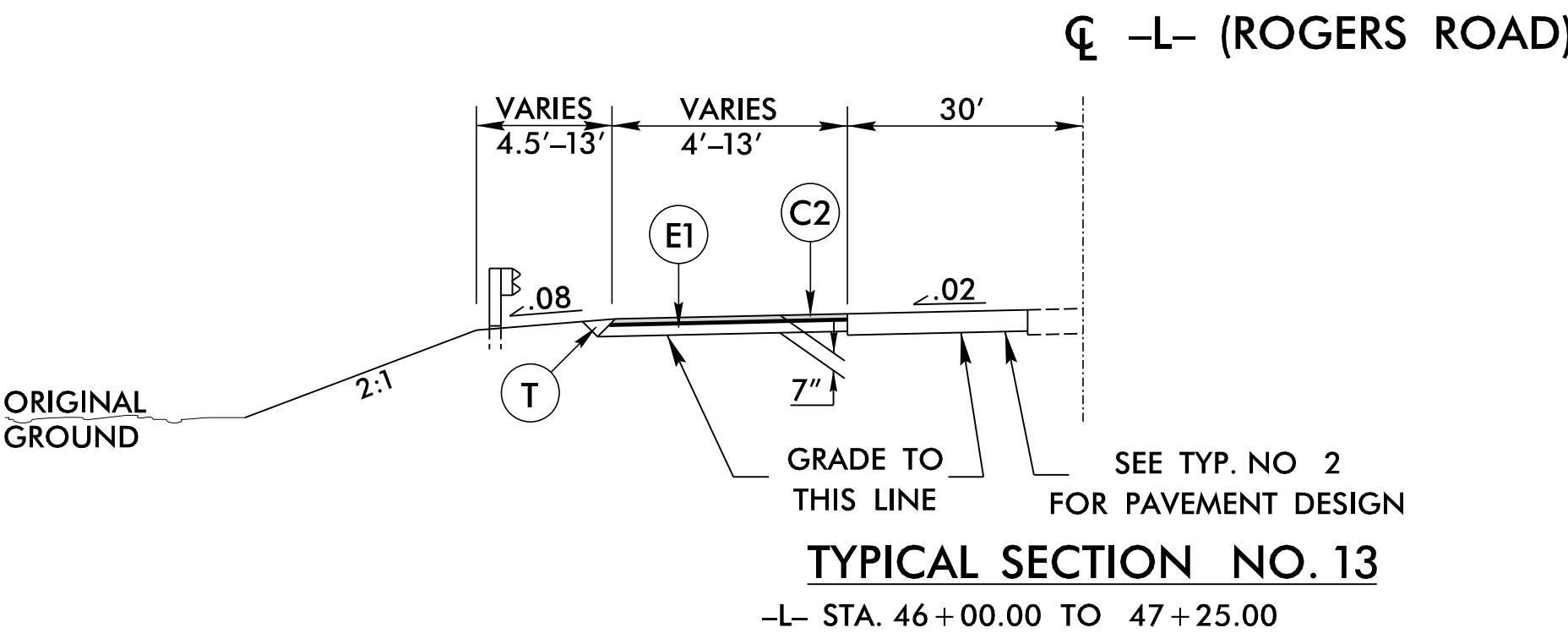


TYPICAL SECTION NO. 11
-L-DET- STA. 20+27.89 TO STA. 30+83.59



TYPICAL SECTION NO. 12
-L-DET- STA. 12+34.78 TO STA. 20+27.89
-L-DET- STA. 30+83.59 TO STA. 32+17.86

NOTE: E1 CAN BE SUBSTITUTED FOR J1 IN AREAS OF NARROW WIDENING WHERE COMPACTION OF ABC IS NOT FEASIBLE.



TYPICAL SECTION NO. 13
-L- STA. 46+00.00 TO 47+25.00

NOTES : PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE NOTED.
SEE PLANS FOR LOCATION OF CONCRETE ISLAND, TURN LANES, AND TAPERS.

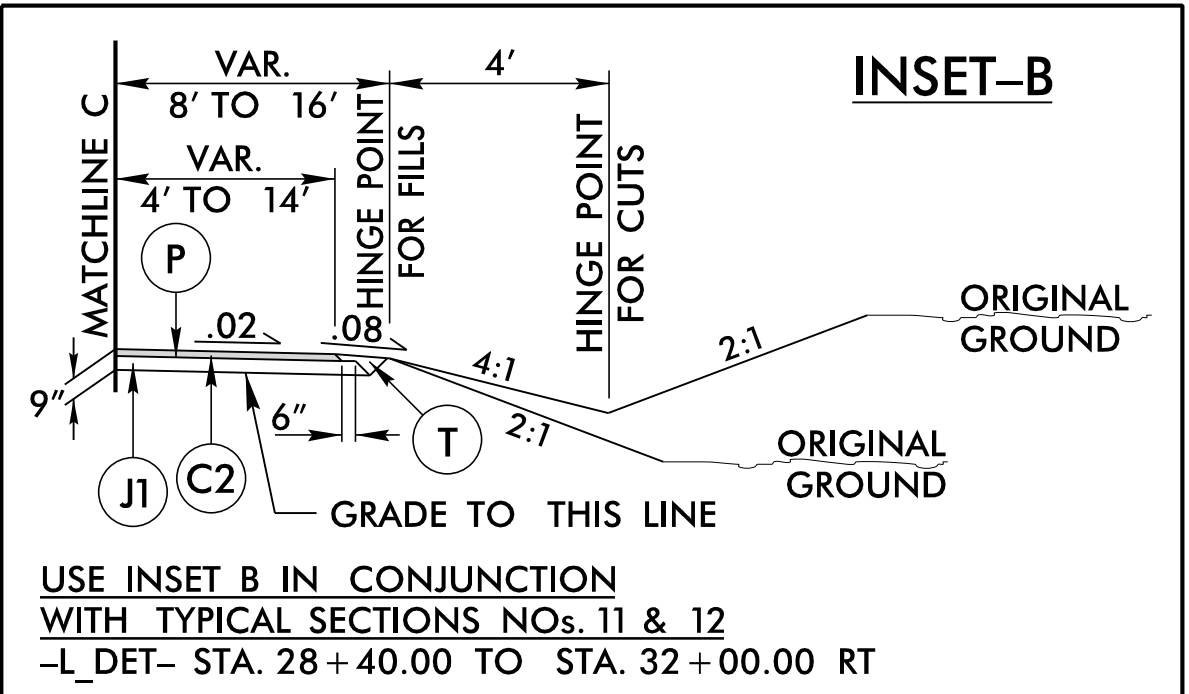
PROJECT REFERENCE NO.
P-5707

SHEET NO.
2A-5

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



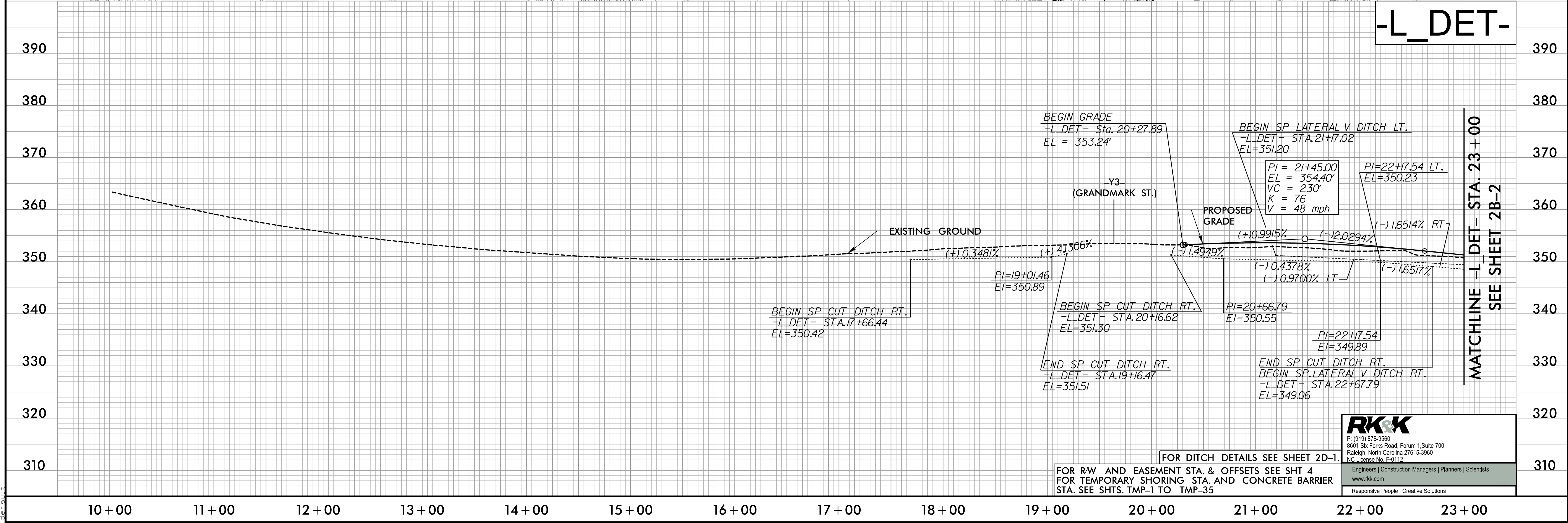
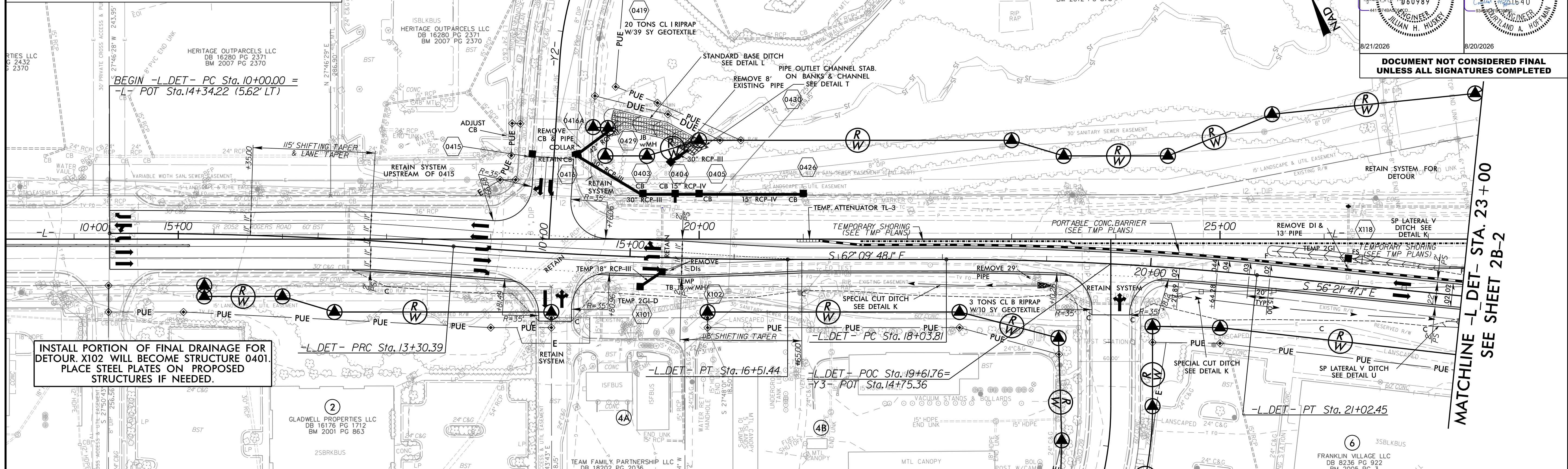
USE INSET B IN CONJUNCTION WITH TYPICAL SECTIONS NOS. 11 & 12
-L-DET- STA. 28+40.00 TO STA. 32+00.00 RT

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-L_DET-		
PI Sta 11+65.28 Δ = 4' 37' 01.2" (RT) D = 1' 23' 50.8" L = 330.39' T = 165.28' R = 4,100.00' e = NC Runout = N/A	PI Sta 14+90.99 Δ = 4' 29' 11.7" (LT) D = 1' 23' 50.8" L = 321.05' T = 160.61' R = 4,100.00' e = NC Runout = N/A	PI Sta 19+53.26 Δ = 5' 48' 01.0" (RT) D = 1' 56' 32.0" L = 298.64' T = 149.45' R = 2,950.00' e = 0.02 (RC) Runout = 40.00'



PROJECT REFERENCE NO. P-5707		SHEET NO. 2B-1	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

-L_DET-	
FOR DITCH DETAILS SEE SHEET 2D-1.	
FOR RW AND EASEMENT STA. & OFFSETS SEE SHT 4	
FOR TEMPORARY SHORING STA. AND CONCRETE BARRIER STA. SEE SHTS. TMP-1 TO TMP-35	

8/17/99

NOTES:

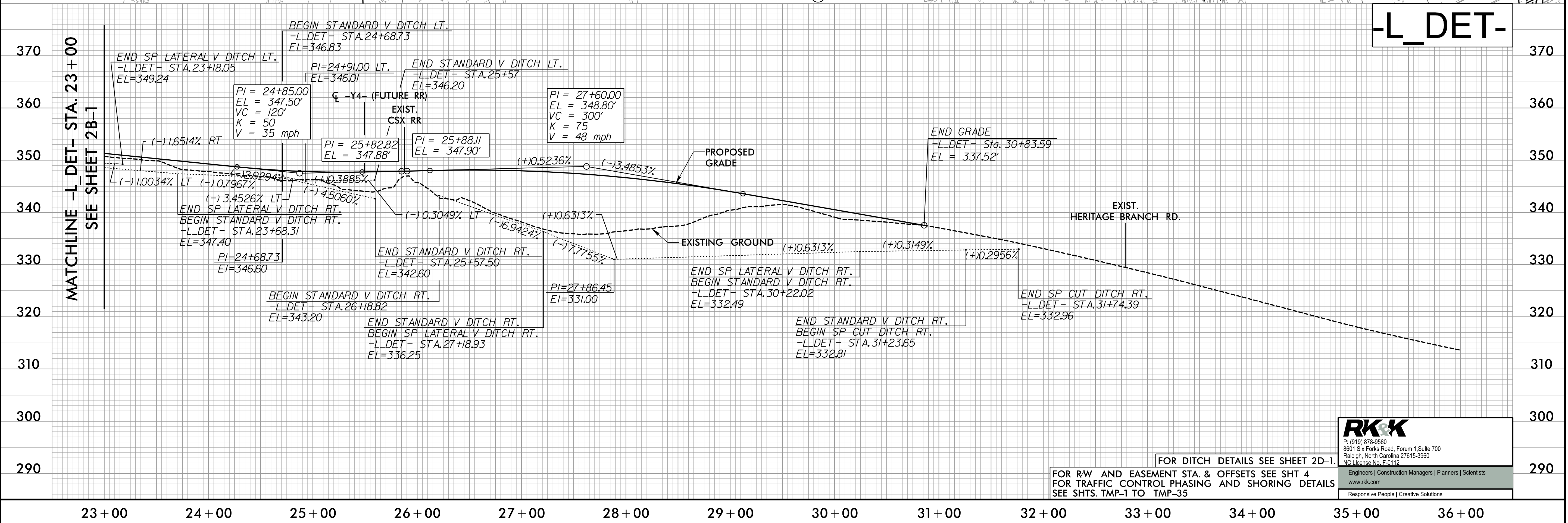
1. CONTRACTOR SHALL COORDINATE WITH NCDOT & CSX RAILROAD PRIOR TO ANY COMMENCEMENT OF WORK WITHIN CSX RAILROAD RIGHT-OF-WAY.
2. CONTRACTOR SHALL CONTACT NORTH CAROLINA BII TO LOCATE ALL UNDERGROUND UTILITIES IN THE WORK AREA. CONTRACTOR SHALL ALSO CONTACT CSX RAILROAD TO LOCATE ANY UNDERGROUND RAILROAD UTILITIES IN THE WORK AREA PRIOR TO COMMENCEMENT OF WORK WITHIN THE CSX RIGHT-OF-WAY.
3. PAVING FROM -L_DET- STA.25+55.00 TO STA.26+00.00 TO BE PERFORMED BY OTHERS.
4. ENSURE ALL NECESSARY SIGNING, RAILROAD SIGNALS, AND GATES ARE IN PLACE AND OPERATIONAL PRIOR TO ALTERING ANY TRAFFIC PATTERN.
5. ONCE TRAFFIC IS SHIFTED OFF OF -L_DET-, ENSURE DETOUR GRADING IS REMOVED FROM CSX RIGHT-OF-WAY AND EXISTING DRAINAGE PATTERNS ARE REESTABLISHED.

-L_DET-

PI Sta 26+48.34
 $\Delta = 15' 16" 51.4" (LT)$
 $D = 3' 10" 59.2"$
 $L = 480.06'$
 $T = 241.47'$
 $R = 1,800.00'$
 $e = 0.03$
 $Runout = 60.00'$

PI Sta 35+17.02
 $\Delta = 24' 12" 21.2" (LT)$
 $D = 5' 12" 31.3"$
 $L = 464.72'$
 $T = 235.88'$
 $R = 1,100.00'$

MATCHLINE -L_DET- STA. 23+00
SEE SHEET 2B-1



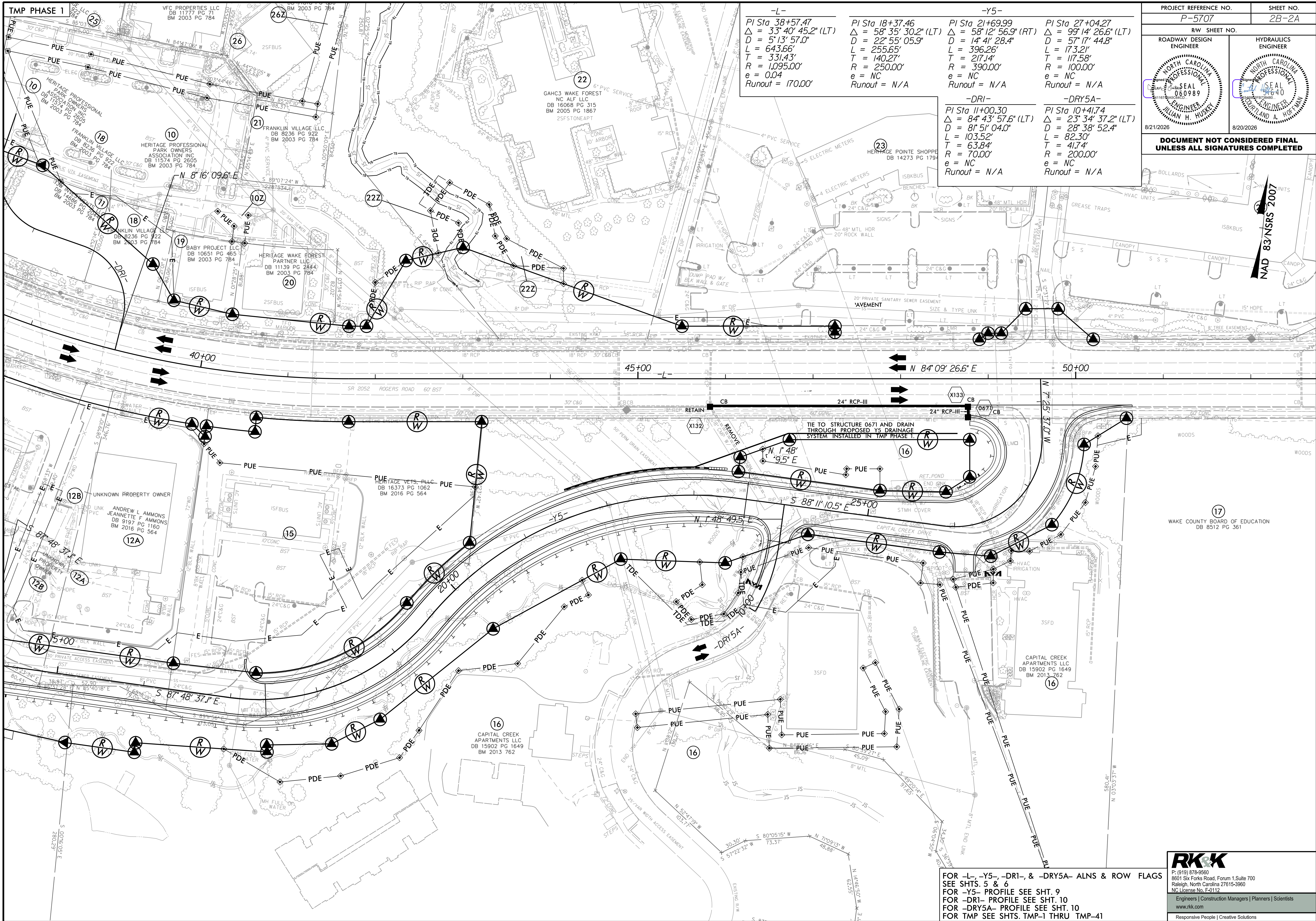
PROJECT REFERENCE NO. P-5707		SHEET NO. 2B-2	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 060989 JULIAN H. HUSKEY 8/21/2026	
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 060989 JULIAN H. HUSKEY 8/21/2026		NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 060989 JULIAN H. HUSKEY 8/21/2026	
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FOR DITCH DETAILS SEE SHEET 2D-1.
FOR RW AND EASEMENT STA. & OFFSETS SEE SHT 4
FOR TRAFFIC CONTROL PHASING AND SHORING DETAILS
SEE SHTS. TMP-1 TO TMP-35

8/20/2026
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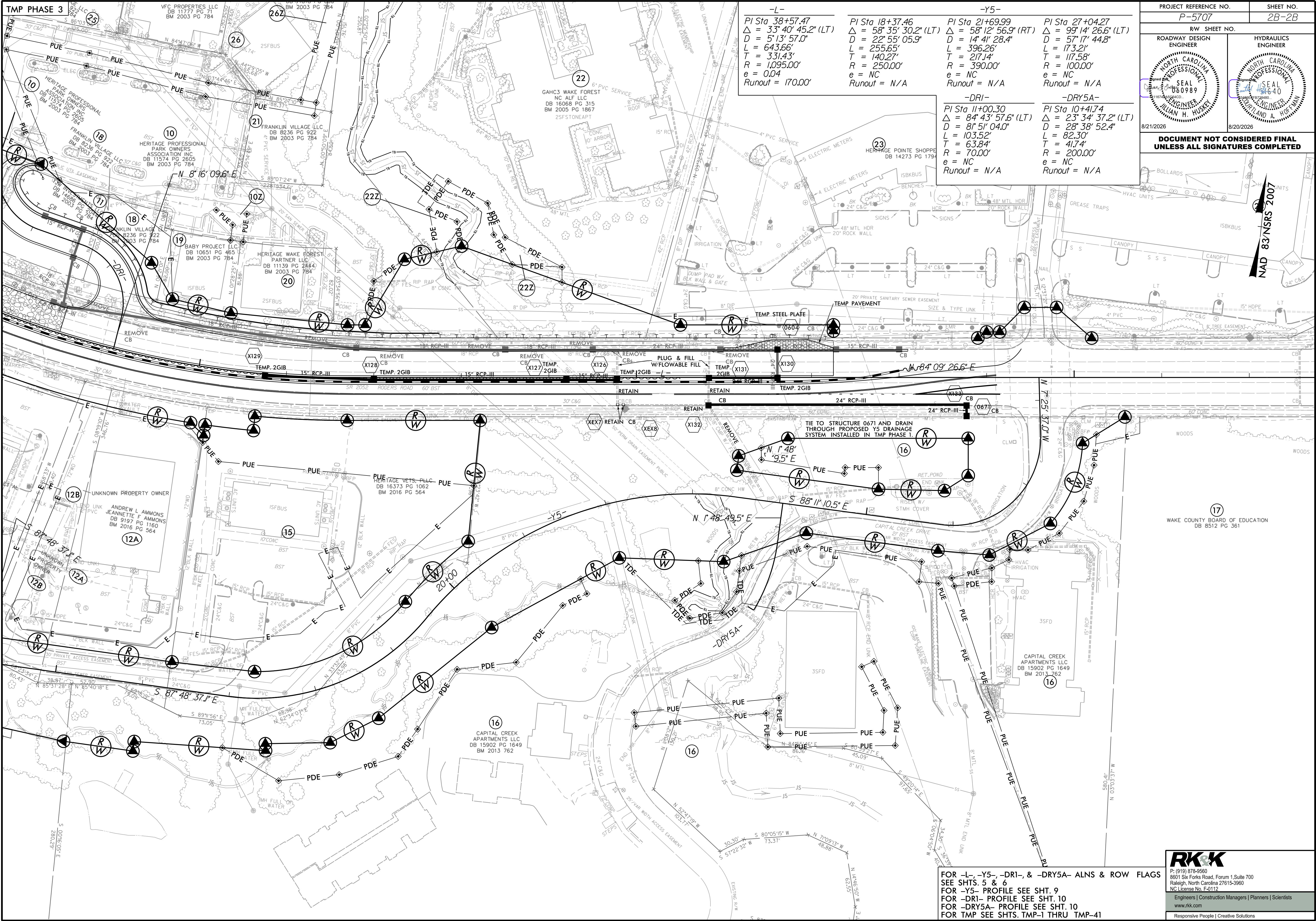


-L-		-Y5-	
PI Sta 38+57.47 Δ = 33° 40' 45.2" (LT) D = 5° 13' 57.0" L = 643.66' T = 331.43' R = 1,095.00' e = 0.04 Runout = 170.00'	PI Sta 18+37.46 Δ = 58° 35' 30.2" (LT) D = 22° 55' 05.9" L = 255.65' T = 140.27' R = 250.00' e = NC Runout = N/A	PI Sta 21+69.99 Δ = 58° 12' 56.9" (RT) D = 14° 41' 28.4" L = 396.26' T = 217.14' R = 390.00' e = NC Runout = N/A	PI Sta 27+04.27 Δ = 99° 14' 26.6" (LT) D = 57° 17' 44.8" L = 173.21' T = 117.58' R = 100.00' e = NC Runout = N/A
-DR1-		-DRY5A-	
PI Sta 11+00.30 Δ = 84° 43' 57.6" (LT) D = 8° 51' 04.0" L = 103.52' T = 63.84' R = 70.00' e = NC Runout = N/A	PI Sta 10+41.74 Δ = 23° 34' 37.2" (LT) D = 28° 38' 52.4" L = 82.30' T = 41.74' R = 200.00' e = NC Runout = N/A		

PROJECT REFERENCE NO. P-5707	SHEET NO. 2B-2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

FOR -L-, -Y5-, -DR1-, & -DRY5A- ALNS & ROW FLAGS
SEE SHTS. 5 & 6
FOR -Y5- PROFILE SEE SHT. 9
FOR -DR1- PROFILE SEE SHT. 10
FOR -DRY5A- PROFILE SEE SHT. 10
FOR TMP SEE SHTS. TMP-1 THRU TMP-41

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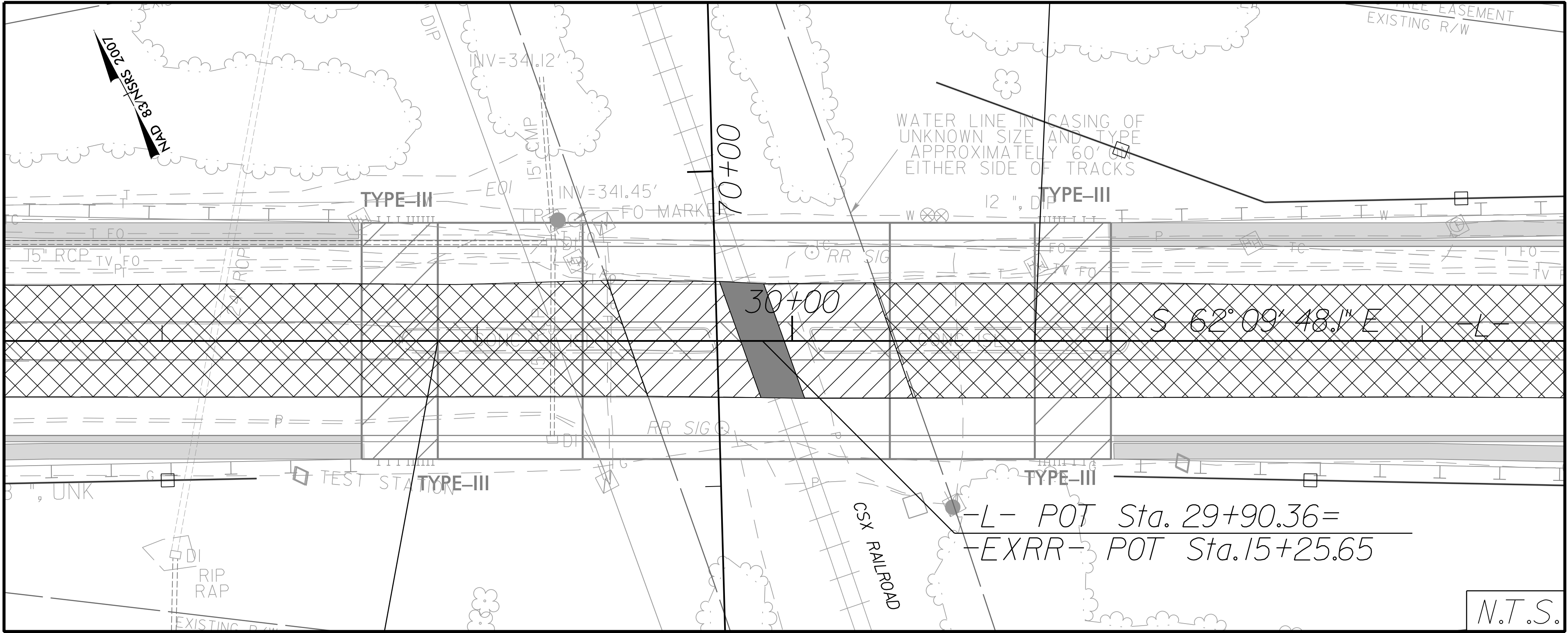
-L-	-Y5-	-Y5-	-Y5-
PI Sta 38+57.47 Δ = 33° 40' 45.2" (LT) D = 5' 13' 57.0" L = 643.66' T = 331.43' R = 1,095.00' e = 0.04 Runout = 170.00'	PI Sta 18+37.46 Δ = 58° 35' 30.2" (LT) D = 22° 55' 05.9" L = 255.65' R = 250.00' e = NC Runout = N/A	PI Sta 21+69.99 Δ = 58° 12' 56.9" (RT) D = 14° 41' 28.4" L = 396.26' T = 217.14' R = 390.00' e = NC Runout = N/A	PI Sta 27+04.27 Δ = 99° 14' 26.6" (LT) D = 57° 17' 44.8" L = 173.21' T = 117.58' R = 100.00' e = NC Runout = N/A
		-DRI-	-DRY5A-
		PI Sta 11+00.30 Δ = 84° 43' 57.6" (LT) D = 81° 51' 04.0" L = 103.52' T = 63.84' R = 70.00' e = NC Runout = N/A	PI Sta 10+41.74 Δ = 23° 34' 37.2" (LT) D = 28° 38' 52.4" L = 82.30' T = 41.74' R = 200.00' e = NC Runout = N/A

PROJECT REFERENCE NO. P-5707		SHEET NO. 2B-2B	
RW SHEET NO. ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

5/14/99

CROSSING CLOSURE DETAIL

ROGERS ROAD



PROJECT REFERENCE NO.	SHEET NO.
P-5707	2B-4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

NOTE: ALL WORK WITHIN CSX CORRIDOR TO BE COORDINATED WITH NCDOT & CSX.

	OBLITERATE EXISTING PAVEMENT
	PAVEMENT REMOVAL
	PAVEMENT REMOVAL BY OTHERS

NOTES:

1. CONTACT THE NCDOT RESIDENT ENGINEER TO SCHEDULE THE CLOSURE OF ROGERS ROAD AT-GRADE CROSSING.
2. CSX FORCES WILL REMOVE CROSSING SURFACE TO APPROXIMATELY 2-FEET CENTERLINE OF RAIL EACH SIDE, AND ALL CROSSING WARNING DEVICES. CROSSING WILL BE REMOVED AFTER RECEIPT OF NOTICE FROM NCDOT THAT THE BRIDGE WORK IS COMPLETE.
3. CONTRACTOR SHALL STABILIZE THE DISTURBED AREA OUTSIDE THE RAILROAD BALLAST LINE.
4. CONTRACTOR SHALL CONTACT NORTH CAROLINA BII TO LOCATE ALL UNDERGROUND UTILITIES IN THE WORK AREA. CONTRACTOR SHALL ALSO CONTACT CSX RAILROAD TO LOCATE ANY UNDERGROUND RAILROAD UTILITIES IN THE WORK AREA PRIOR TO COMMENCEMENT OF WORK WITHIN THE CSX RIGHT-OF-WAY.
5. CONTRACTOR SHALL REMOVE EXISTING HIGHWAY ROADBED AND GRADE AREA TO MATCH ADJACENT TOPOGRAPHY. ANY EXISTING CULVERTS IN THE RAILROAD DITCHES SHALL BE REMOVED AND GRADE EXISTING DITCHES TO DRAIN. CONTRACTOR SHALL COORDINATE WITH THE ENGINEER ON HAULING AWAY ANY ASPHALT LEFT BY THE REMOVAL BY OTHERS. ALL PAVEMENT WITHIN THE CSX RAILROAD RIGHT-OF-WAY CORRIDOR IS TO BE REMOVED PRIOR TO THE CONCLUSION OF THE PROJECT.
6. PROVIDE PERMANENT SIGNING AS SHOWN IN THE P-5707 SIGNING PLANS.
7. PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC MANAGEMENT PLANS.
8. ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERNATING ANY TRAFFIC PATTERN.

CSX GENERAL NOTES:

1. A CSX FLAGMAN IS REQUIRED FOR ALL CONSTRUCTION ACTIVITIES TAKING PLACE ON OR ADJACENT TO CSX RIGHT-OF-WAY. A MINIMUM OF 30 DAYS ADVANCE NOTICE IS REQUIRED TO SCHEDULE A FLAGMAN. SIX (6) DAYS ADVANCE NOTIFICATION IS REQUIRED TO TERMINATE FLAGGING PROTECTION.
2. ALL CONSTRUCTION ACTIVITIES WITHIN CSX RIGHT-OF-WAY WILL BE SUBJECT TO THE REQUIREMENTS SPECIFIED IN THE CSX CRITERIA FOR OVERHEAD BRIDGES AND CSX CONSTRUCTION SUBMISSION CRITERIA, WITH REFERENCE BEING MADE TO THE LATEST VERSION RELEASED PRIOR TO THE DATE OF THE CONSTRUCTION AGREEMENT.
3. ALL CSX FACILITIES, AND ANY UTILITIES FOUND ON CSX RIGHT-OF-WAY SHALL BE PROTECTED THROUGHOUT THE PROJECT.
4. ALL UTILITIES MUST BE PHYSICALLY LOCATED BEFORE WORK CAN BEGIN. THE UTILITY LOCATE ONE-CALL SERVICE MAY NOT CAPTURE ALL BURIED FACILITIES LOCATED WITHIN RAILROAD RIGHT-OF-WAY. THE CONTRACTOR SHALL CONTACT THE RAILROAD REPRESENTATIVES AT LEAST TWO (2) DAYS IN ADVANCE OF ANY WORK THAT MAY DAMAGE BURIED UTILITIES. UPON REQUEST FROM THE CONTRACTOR OR AGENCY, RAILROAD SIGNAL FORCES WILL LOCATE AND MARK UNDERGROUND SIGNAL, COMMUNICATION, AND POWER LINES IN THE AREA TO BE DISTURBED. THE CONTRACTOR SHALL AVOID EXCAVATION OR OTHER DISTURBANCE OF THESE UTILITIES WHICH ARE CRITICAL TO MAINTAIN SAFE RAILROAD OPERATIONS.
5. ALL NEW UTILITY INSTALLATIONS AND MODIFICATIONS TO EXISTING FACILITIES, INCLUDING STORMWATER FACILITIES, WILL REQUIRE A SEPARATE APPLICATION TO CSX THROUGH THE PROPERTY PORTAL WEBSITE. ALL UTILITIES OWNED BY THE STATE WILL BE SUBMITTED BY ARCADIS ON YOUR BEHALF AND WILL REQUIRE AN ADDITIONAL REVIEW FEE ASSESSED BY CSX REAL ESTATE AND FACILITIES MANAGEMENT. ADDITIONAL INFORMATION CAN BE FOUND AT THIS URL: [HTTP://WWW.CSX.COM/INDEX.CFM/CUSTOMERS/VALUE-ADDED-SERVICES/PROPERTY-REAL-ESTATE/PERMITTING-UTILITY-INSTALLATIONS-AND-RIGHTS-OF-ENTRY/](http://www.csx.com/index.cfm/customers/value-added-services/property-real-estate/permitting-utility-installations-and-rights-of-entry/)
6. BRIDGE CONSTRUCTION MAY NOT BEGIN ON OR ADJACENT TO CSX RIGHT-OF-WAY PRIOR TO RECEIPT OF CSX'S WRITTEN APPROVAL OF THE CONTRACTOR'S INSURANCE DOCUMENTS.
7. THE CONTRACTOR WILL BE REQUIRED TO PROVIDE CRANE RATING SHEETS INDICATING THE CRANES WILL HAVE ADEQUATE CAPACITY TO SUSTAIN 150% OF THE ACTUAL WEIGHT OF EACH PICK. THIS IS BEYOND ANY SAFETY FACTORS THAT MAY BE BUILT INTO THE CRANE CHART(S).
8. CONSTRUCTION EQUIPMENT AND VEHICLES SHALL NOT CROSS THE TRACKS AT GRADE WITHOUT AN APPROVED CROSSING PERMIT. TEMPORARY CONSTRUCTION HAUL ROADS ACROSS CSX TRACKS WILL REQUIRE A SEPARATE APPLICATION AND A MINIMUM PAYMENT TO CSX. PROPERTY SERVICES OF \$5,000.00. AGREEMENT EXTENSIONS REQUIRE ADDITIONAL PAYMENT. ACTUAL COST IS VARIABLE AND PROJECT SPECIFIC. ADDITIONAL INFORMATION CAN BE FOUND AT THE FOLLOWING URL: [HTTPS://WWW.CSX.COM/INDEX.CFM/CUSTOMERS/VALUE-ADDED-SERVICES/PROPERTY-REAL-ESTATE/PERMITTING-UTILITY-INSTALLATIONS-AND-RIGHTS-OF-ENTRY/](https://www.csx.com/index.cfm/customers/value-added-services/property-real-estate/permitting-utility-installations-and-rights-of-entry/)

8/18/2026
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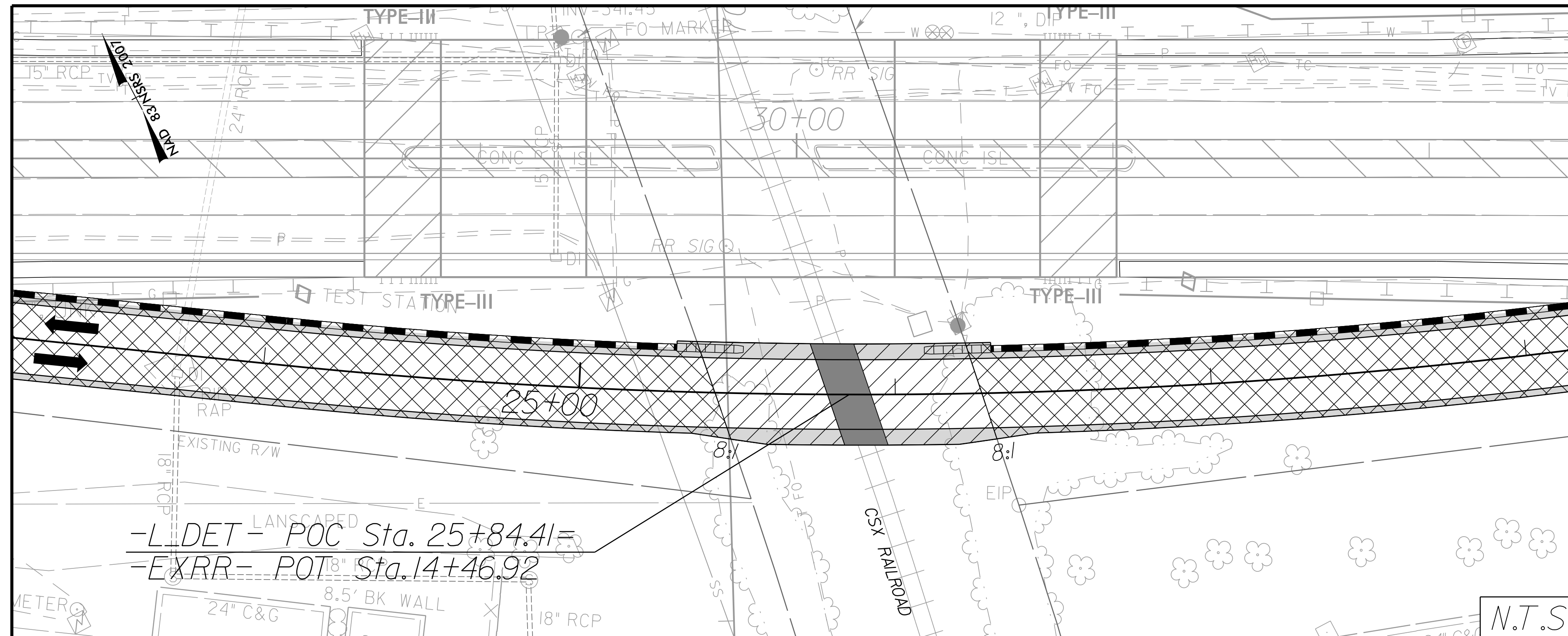


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FOR -L- DET- DESIGN SEE SHT. 2B-2
FOR -L- PLAN VIEW SEE SHT. 5

ROGERS ROAD DETOUR



NOTE: ALL WORK WITHIN CSX CORRIDOR TO
BE COORDINATED WITH NCDOT & CSX.

- OBLITERATE
EXISTING
PAVEMENT

PAVEMENT
REMOVAL

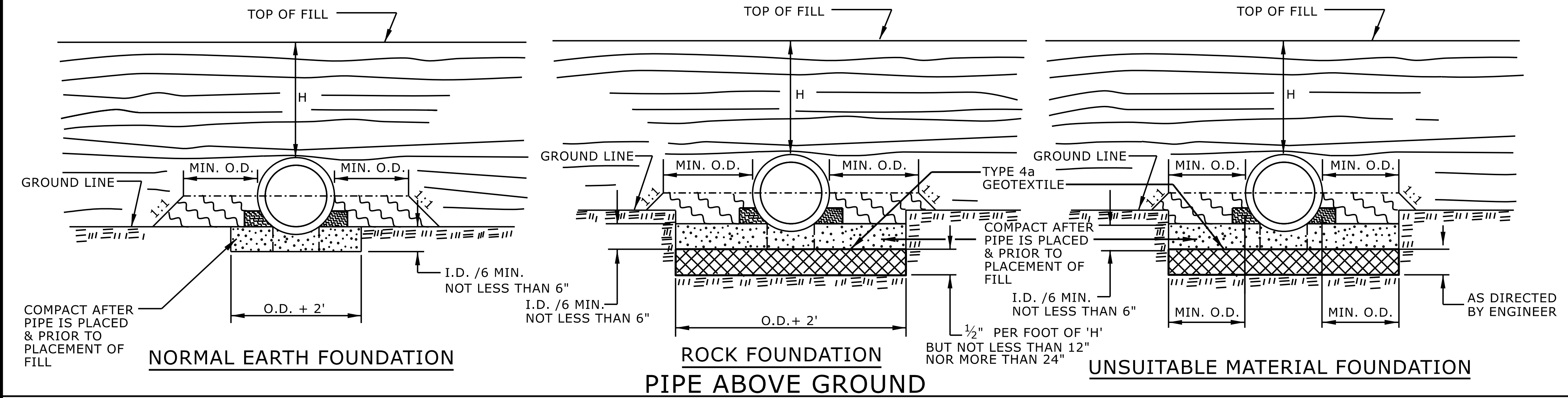
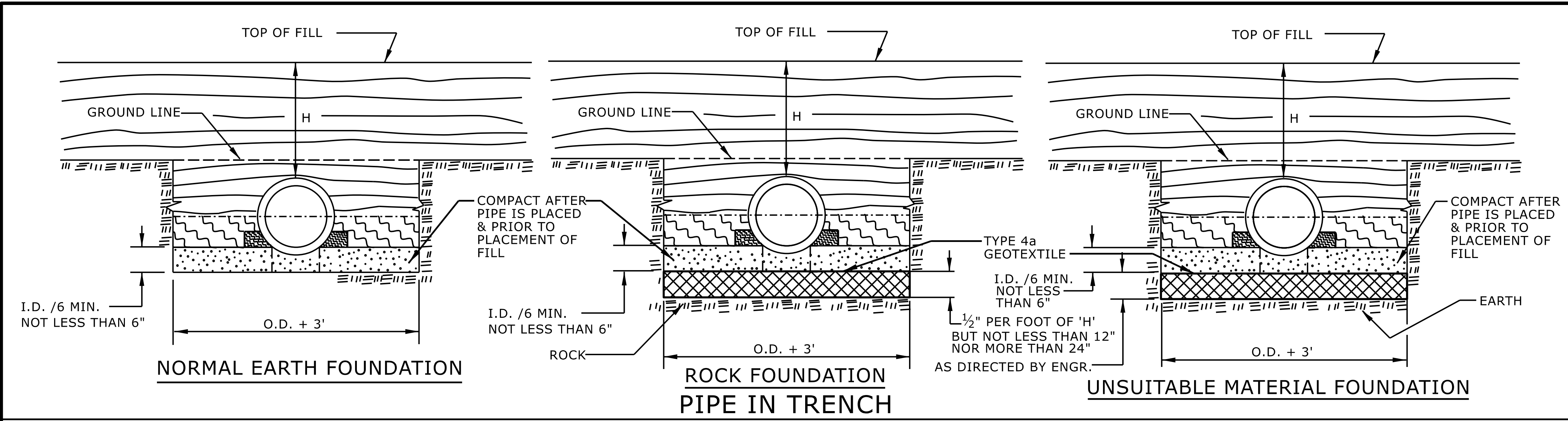
PAVEMENT
REMOVAL
BY OTHERS

1. CONTACT THE NCDOT RESIDENT ENGINEER TO SCHEDULE THE CLOSURE OF ROGERS ROAD AT-GRADE CROSSING.

2. CSX FORCES WILL REMOVE CROSSING SURFACE TO APPROXIMATELY 2-FOOT CENTERLINE OF RAIL EACH SIDE, AND ALL CROSSING WARNING DEVICES. CROSSING WILL BE REMOVED AFTER RECEIPT OF NOTICE FROM NCDOT THAT THE BRIDGE WORK IS COMPLETE.
3. CONTRACTOR SHALL STABILIZE THE DISTURBED AREA OUTSIDE THE RAILROAD BALLAST LINE.
4. CONTRACTOR SHALL CONTACT NORTH CAROLINA 811 TO LOCATE ALL UNDERGROUND UTILITIES IN THE WORK AREA. CONTRACTOR SHALL ALSO CONTACT CSX RAILROAD TO LOCATE ANY UNDERGROUND RAILROAD UTILITIES IN THE WORK AREA PRIOR TO COMMENCEMENT OF WORK WITHIN THE CSX RIGHT-OF-WAY.
5. CONTRACTOR SHALL REMOVE EXISTING HIGHWAY ROADBED AND GRADE AREA TO MATCH ADJACENT TOPOGRAPHY. ANY EXISTING CULVERTS IN THE RAILROAD DITCHES SHALL BE REMOVED AND GRADE EXISTING DITCHES TO DRAIN. CONTRACTOR SHALL COORDINATE WITH THE ENGINEER ON HAULING AWAY ANY ASPHALT LEFT BY THE REMOVAL BY OTHERS. ALL PAVEMENT WITHIN THE CSX RAILROAD RIGHT-OF-WAY CORRIDOR IS TO BE REMOVED PRIOR TO THE CONCLUSION OF THE PROJECT.
6. PROVIDE PERMANENT SIGNING AS SHOWN IN THE P-5707 SIGNING PLANS.
7. PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC MANAGEMENT PLANS.
8. ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERNATING ANY TRAFFIC PATTERN.

1. A CSX FLAGMAN IS REQUIRED FOR ALL CONSTRUCTION ACTIVITIES TAKING PLACE ON OR ADJACENT TO CSX RIGHT-OF-WAY. A MINIMUM OF 30 DAYS ADVANCE NOTICE IS REQUIRED TO SCHEDULE A FLAGMAN. SIX (6) DAYS ADVANCE NOTIFICATION IS REQUIRED TO TERMINATE FLAGGING PROTECTION.

2. ALL CONSTRUCTION ACTIVITIES WITHIN CSX RIGHT-OF-WAY WILL BE, SUBJECT TO THE REQUIREMENTS SPECIFIED IN THE CSX CRITERIA FOR OVERHEAD BRIDGES AND CSX CONSTRUCTION SUBMISSION CRITERIA, WITH REFERENCE BEING MADE TO THE LATEST VERSION RELEASED PRIOR TO THE DATE OF THE CONSTRUCTION AGREEMENT.
3. ALL CSX FACILITIES, AND ANY UTILITIES FOUND ON CSX RIGHT-OF-WAY SHALL BE PROTECTED THROUGHOUT THE PROJECT.
4. ALL UTILITIES MUST BE PHYSICALLY LOCATED BEFORE WORK CAN BEGIN. THE UTILITY LOCATE ONE-CALL SERVICE MAY NOT CAPTURE ALL BURIED FACILITIES LOCATED WITHIN RAILROAD RIGHT-OF-WAY. THE CONTRACTOR SHALL CONTACT THE RAILROAD REPRESENTATIVES AT LEAST TWO (2) DAYS IN ADVANCE OF ANY WORK THAT MAY DAMAGE BURIED UTILITIES. UPON REQUEST FROM THE CONTRACTOR OR AGENCY, RAILROAD SIGNAL FORCES WILL LOCATE AND MARK UNDERGROUND SIGNAL, COMMUNICATION, AND POWER LINES IN THE AREA TO BE DISTURBED. THE CONTRACTOR SHALL AVOID EXCAVATION OR OTHER DISTURBANCE OF THESE UTILITIES WHICH ARE CRITICAL TO MAINTAIN SAFE RAILROAD OPERATIONS.
5. ALL NEW UTILITY INSTALLATIONS AND MODIFICATIONS TO EXISTING FACILITIES, INCLUDING STORMWATER FACILITIES, WILL REQUIRE A SEPARATE APPLICATION TO CSX THROUGH THE PROPERTY PORTAL WEBSITE. ALL UTILITIES OWNED BY THE STATE WILL BE SUBMITTED BY ARCADIS ON YOUR BEHALF AND WILL REQUIRE AN ADDITIONAL REVIEW FEE ASSESSED BY CSX REAL ESTATE AND FACILITIES MANAGEMENT. ADDITIONAL INFORMATION CAN BE FOUND AT THIS URL:
[HTTP://WWW.CSX.COM/INDEX.CFM/CUSTOMERS/VALUE-ADDED-SERVICES/PROPERTY-REAL-ESTATE/PERMITTING-UTILITY-INSTALLATIONS-AND-RIGHTS-OF-ENTRY/](http://www.csx.com/index.cfm/customers/value-added-services/property-real-estate/permitting-utility-installations-and-rights-of-entry/)
6. BRIDGE CONSTRUCTION MAY NOT BEGIN ON OR ADJACENT TO CSX RIGHT-OF-WAY PRIOR TO RECEIPT OF CSX'S WRITTEN APPROVAL OF THE CONTRACTOR'S INSURANCE DOCUMENTS.
7. THE CONTRACTOR WILL BE REQUIRED TO PROVIDE CRANE RATING SHEETS INDICATING THE CRANES WILL HAVE ADEQUATE CAPACITY TO SUSTAIN 150% OF THE ACTUAL WEIGHT OF EACH PICK. THIS IS BEYOND ANY SAFETY FACTORS THAT MAY BE BUILT INTO THE CRANE CHART(S).
8. CONSTRUCTION EQUIPMENT AND VEHICLES SHALL NOT CROSS THE TRACKS AT GRADE WITHOUT AN APPROVED CROSSING PERMIT. TEMPORARY CONSTRUCTION HAUL ROADS ACROSS CSX TRACKS WILL REQUIRE A SEPARATE APPLICATION AND A MINIMUM PAYMENT TO CSX PROPERTY SERVICES OF \$5,000.00. AGREEMENT EXTENSIONS REQUIRE ADDITIONAL PAYMENT. ACTUAL COST IS VARIABLE AND PROJECT SPECIFIC. ADDITIONAL INFORMATION CAN BE FOUND AT THE FOLLOWING URL:
[HTTPS://WWW.CSX.COM/INDEX.CFM/CUSTOMERS/VALUE-ADDED-SERVICES/PROPERTY-REAL-ESTATE/PERMITTING-UTILITY-INSTALLATIONS-AND-RIGHTS-OF-ENTRY/](https://www.csx.com/index.cfm/customers/value-added-services/property-real-estate/permitting-utility-installations-and-rights-of-entry/)



GENERAL NOTES:

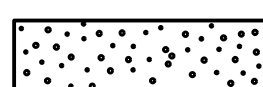
I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.

O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.

H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP OF THE EMBANKMENT AT THAT POINT.

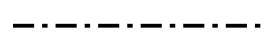
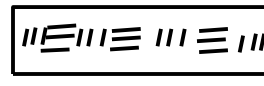
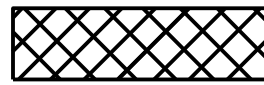
 APPROVED SUITABLE LOCAL MATERIAL.

 TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.

 LOOSELY PLACED SELECT MATERIAL CLASS III OR CLASS II, TYPE 1 FOR PIPE BEDDING. LEAVE SECTION DIRECTLY BENEATH PIPE UNCOMPACTED AS PIPE SEATING AND BACKFILL WILL ACCOMPLISH COMPACTION.

DO NOT OPERATE HEAVY EQUIPMENT OVER ANY PIPE CULVERT UNTIL THE PIPE CULVERT HAS BEEN PROPERLY BACKFILLED AND COVERED WITH AT LEAST 3 FEET OF APPROVED MATERIAL.

REFER TO NCDOT PIPE MATERIAL SELECTION GUIDE AND STANDARD SPECIFICATIONS FOR ALLOWABLE PIPE FILL HEIGHTS AND PIPE SPECIFICATIONS.

-  SPRINGLINE OF PIPE
-  SELECT BACKFILL MATERIAL CLASS III OR CLASS II, BELOW SPRINGLINE.
-  UNDISTURBED EARTH MATERIAL
-  SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE WITH TYPE IV GEOTEXTILE AS DIRECTED BY THE ENGINEER.

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DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
METHOD OF PIPE INSTALLATION
RIGID PIPE

SHEET 2 OF 2
300.01

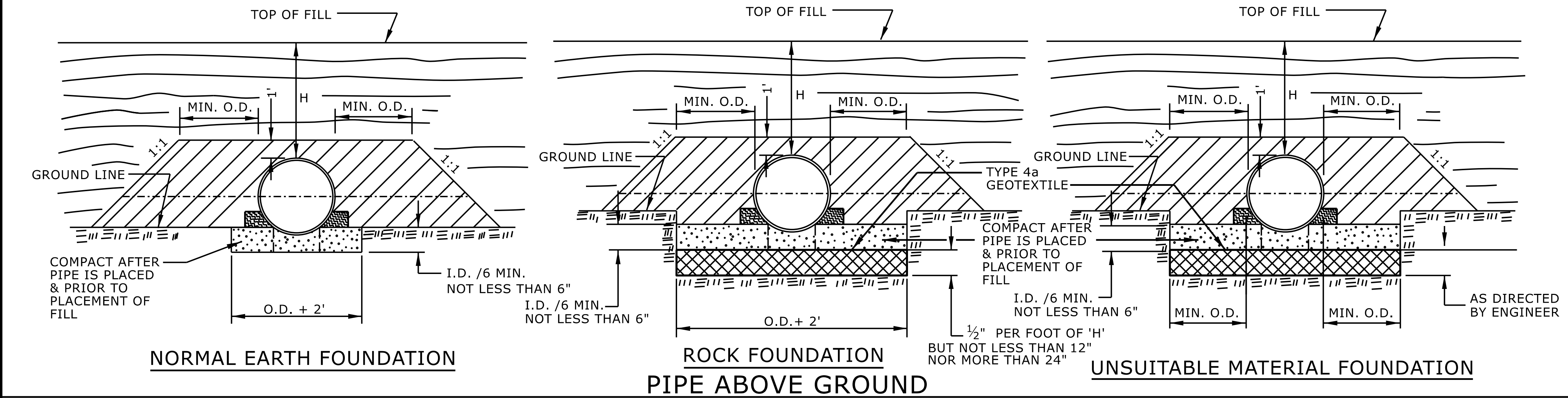
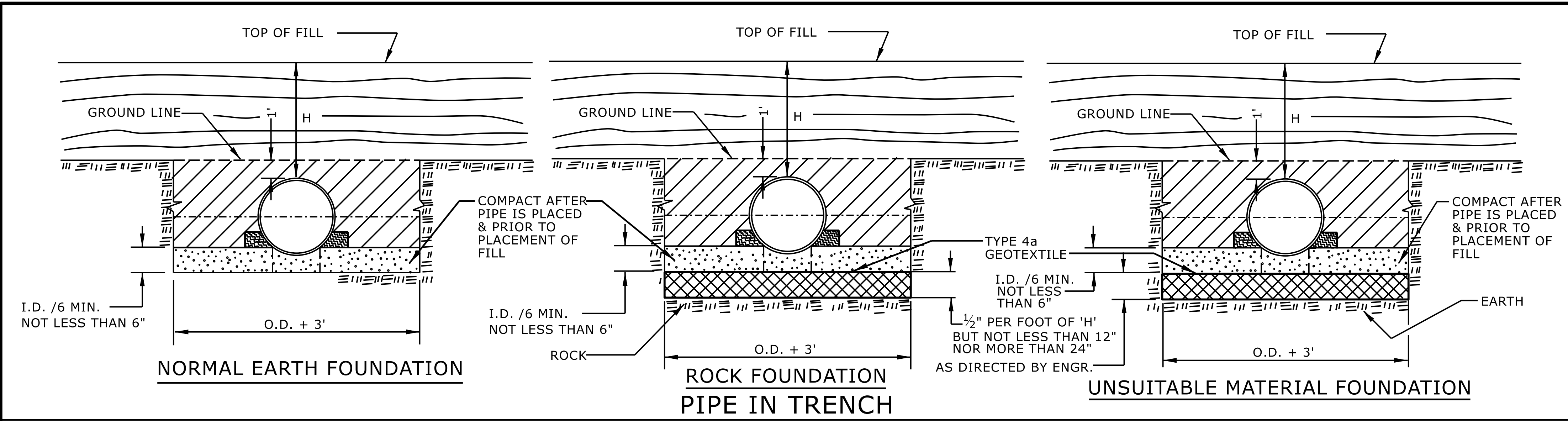

Signed by:
Nicole M. Hackler
5884323D3418AC5...
8/20/2026

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

SEE TITLE BLOCK

ORIGINAL BY: S.CALHOUN	DATE: 7-25-2024
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC.:	



GENERAL NOTES:

I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.

O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.

H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP OF THE EMBANKMENT AT THAT POINT.

APPROVED SUITABLE LOCAL MATERIAL.

TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.

LOOSELY PLACED SELECT MATERIAL CLASS III OR CLASS II, TYPE 1 FOR PIPE BEDDING. LEAVE SECTION DIRECTLY BENEATH PIPE UNCOMPACTED AS PIPE SEATING AND BACKFILL WILL ACCOMPLISH COMPACTION.

DO NOT OPERATE HEAVY EQUIPMENT OVER ANY PIPE CULVERT UNTIL THE PIPE CULVERT HAS BEEN PROPERLY BACKFILLED AND COVERED WITH AT LEAST 3 FEET OF APPROVED MATERIAL.

REFER TO NCDOT PIPE MATERIAL SELECTION GUIDE AND STANDARD SPECIFICATIONS FOR ALLOWABLE PIPE FILL HEIGHTS AND PIPE SPECIFICATIONS.

SPRINGLINE OF PIPE

SELECT BACKFILL MATERIAL CLASS III OR CLASS II, TYPE 1 ABOVE AND BELOW SPRINGLINE.

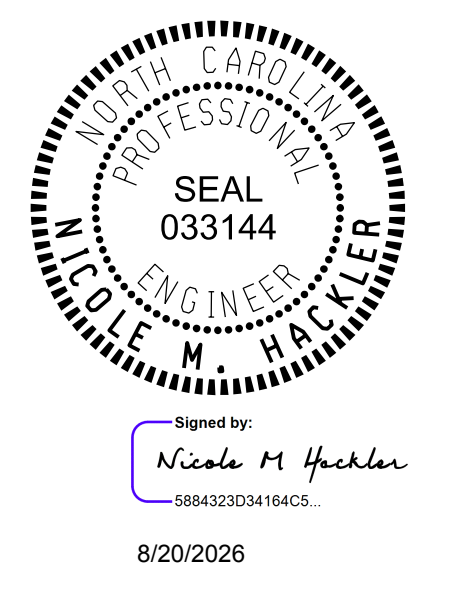
UNDISTURBED EARTH MATERIAL

SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE WITH TYPE IV GEOTEXTILE AS DIRECTED BY THE ENGINEER.

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ROADWAY DETAIL DRAWING FOR
METHOD OF PIPE INSTALLATION
FLEXIBLE PIPE

SHEET 1 OF 2
300.01



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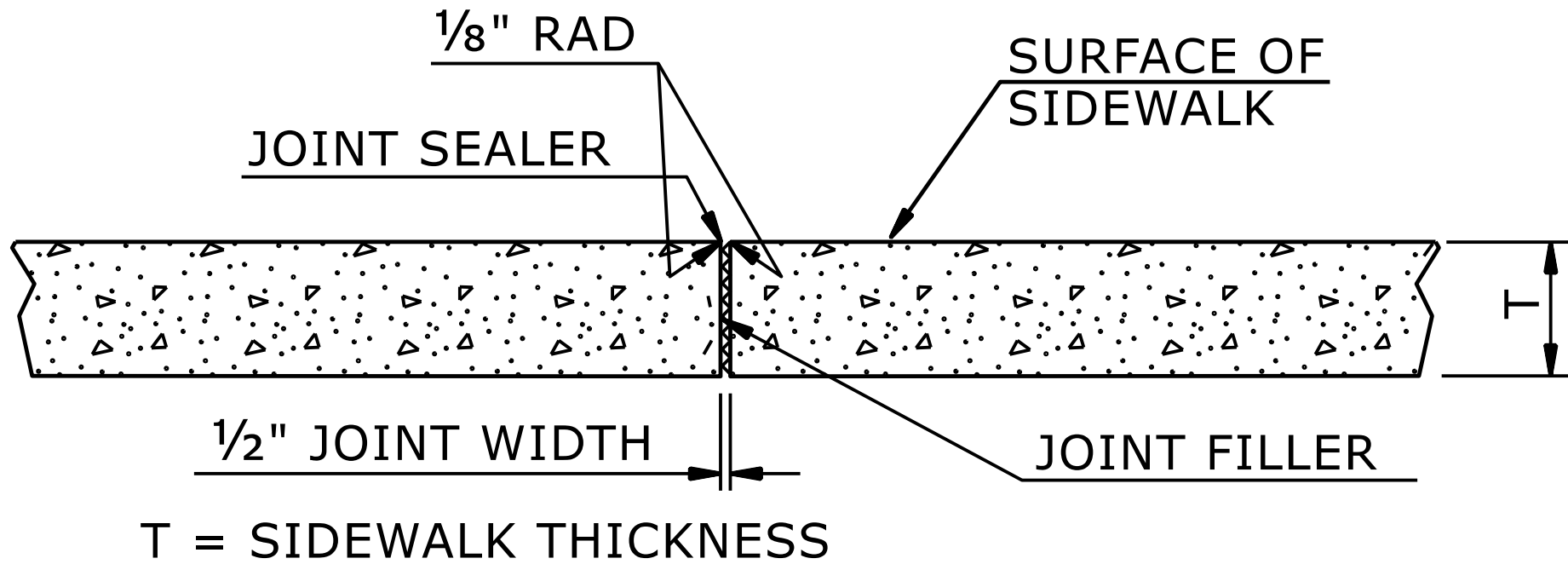
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MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: DATE:

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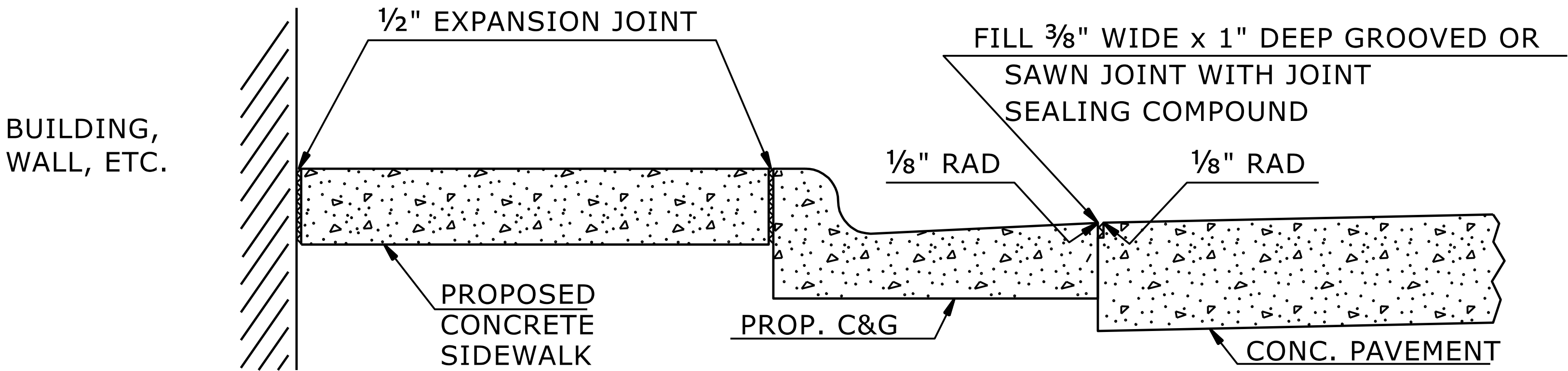
CONSTRUCT STANDARD SIDEWALK 5' WIDE AND 4" THICK UNLESS OTHERWISE DENOTED ON PLANS.

PLACE A GROOVE JOINT 1" DEEP WITH 1/8" RADII IN THE CONCRETE SIDEWALK AT 5' INTERVALS. ONE 1/2" EXPANSION JOINT WILL BE REQUIRED AT 50' INTERVALS. A 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE THE SIDEWALK JOINS ANY RIGID STRUCTURE.

SEE STD. DWG. 848.06 FOR CURB RAMP LOCATION REQUIREMENTS AND CONSTRUCTION GUIDELINES.



TRANSVERSE EXPANSION JOINT
IN SIDEWALK



DETAILS SHOWING JOINTS IN CONCRETE SIDEWALK

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RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
CONCRETE SIDEWALK

SHEET 1 OF 1
848D01



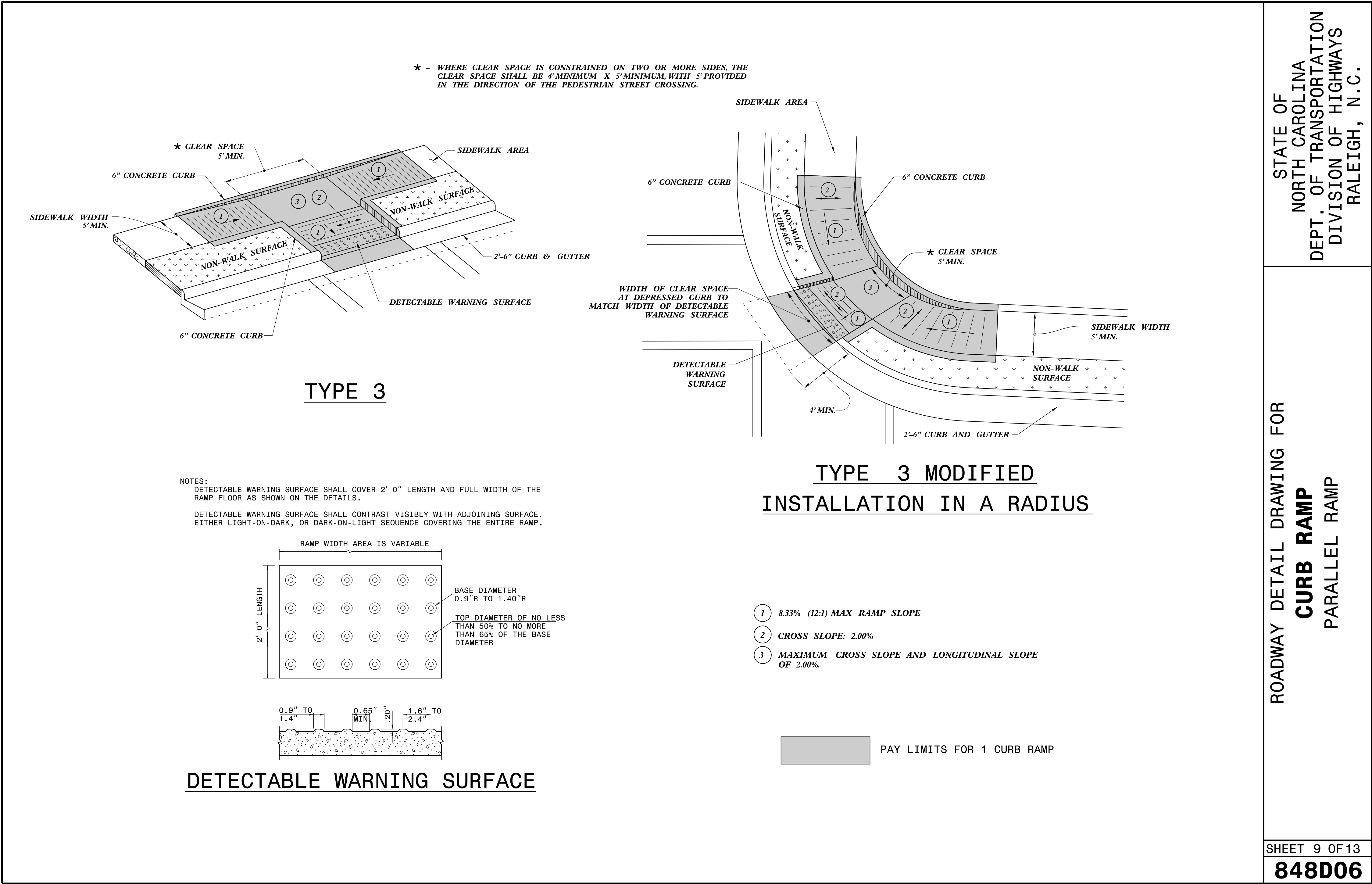
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FILE SPEC.: DATE:



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5884323034164CS...

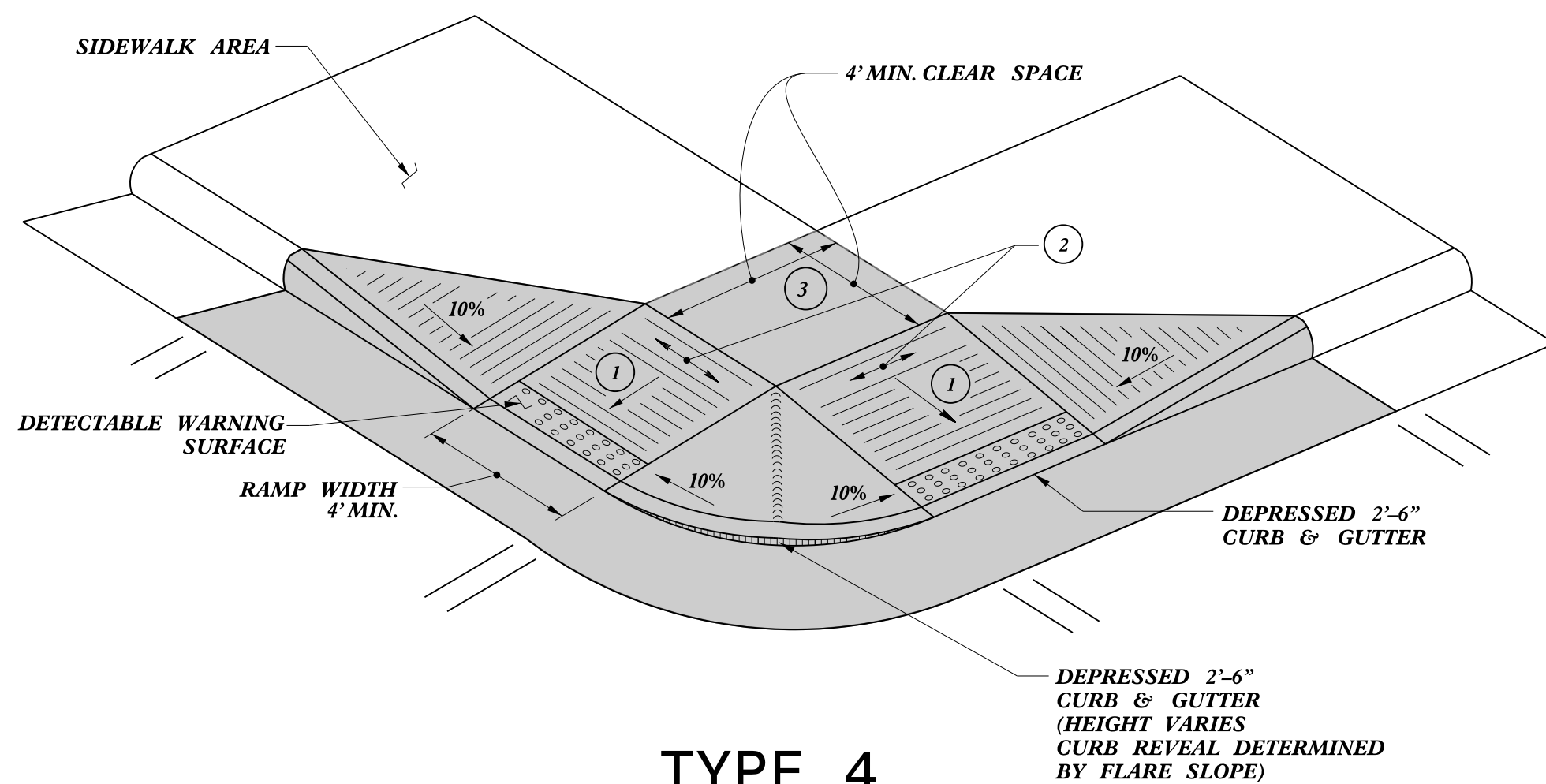
8/20/2026

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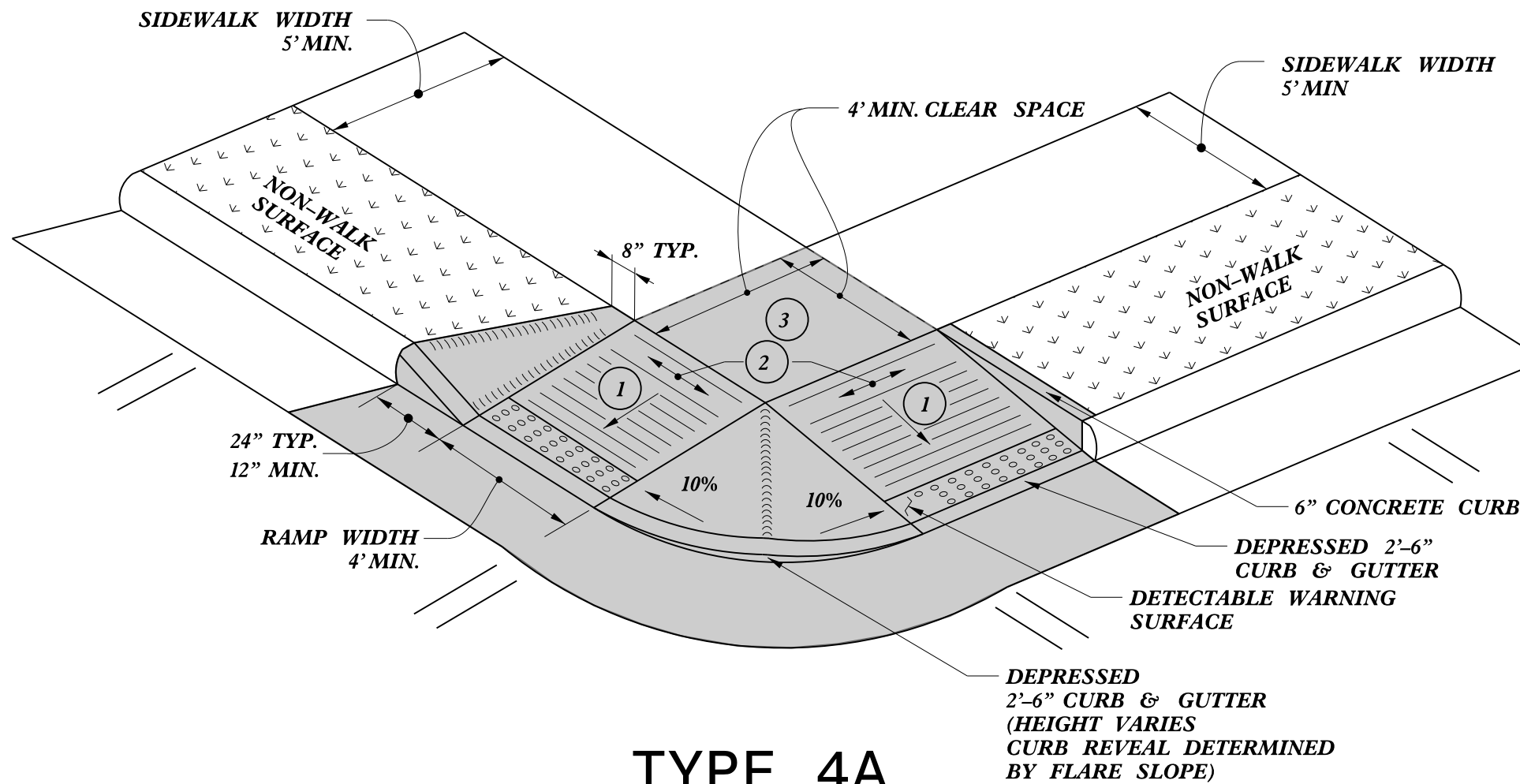
CONTRACTS STANDARDS
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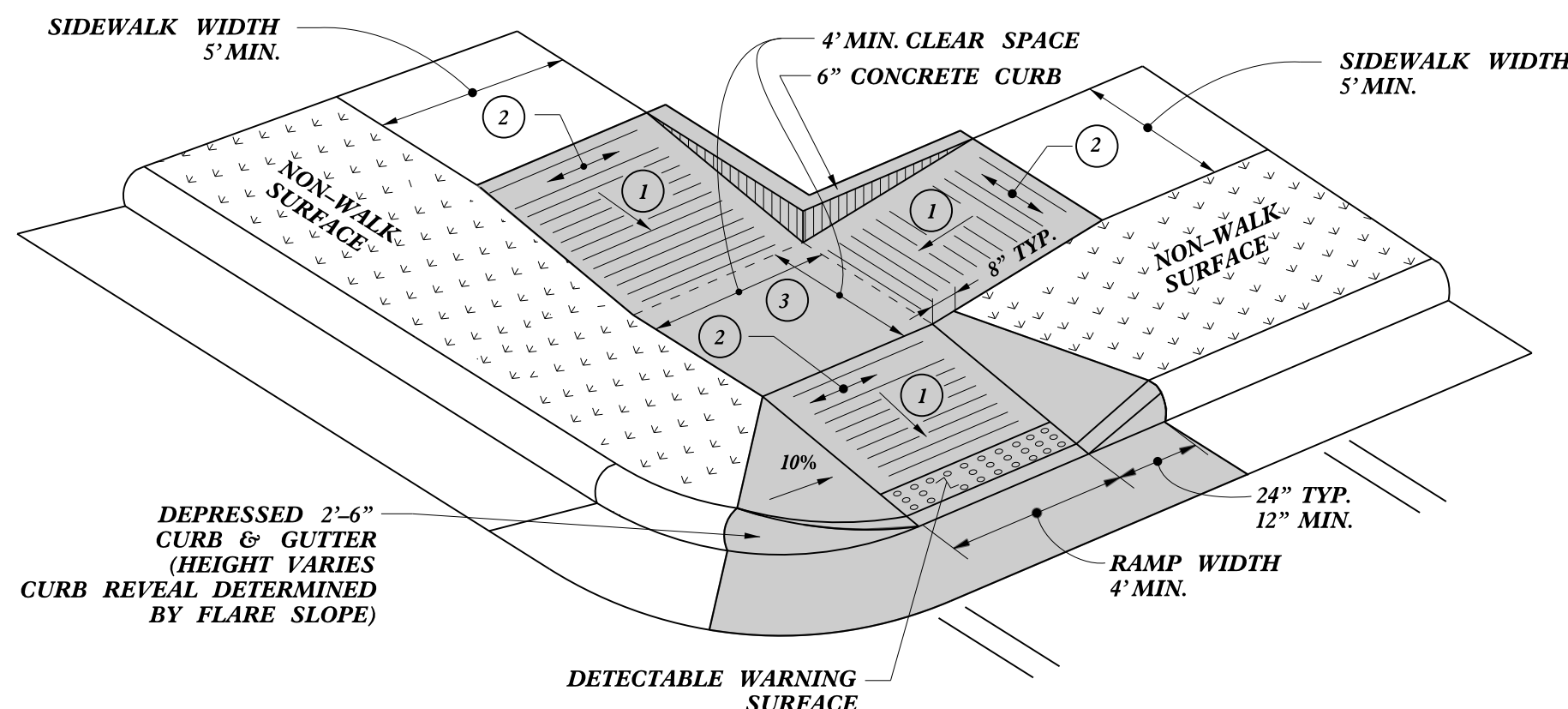
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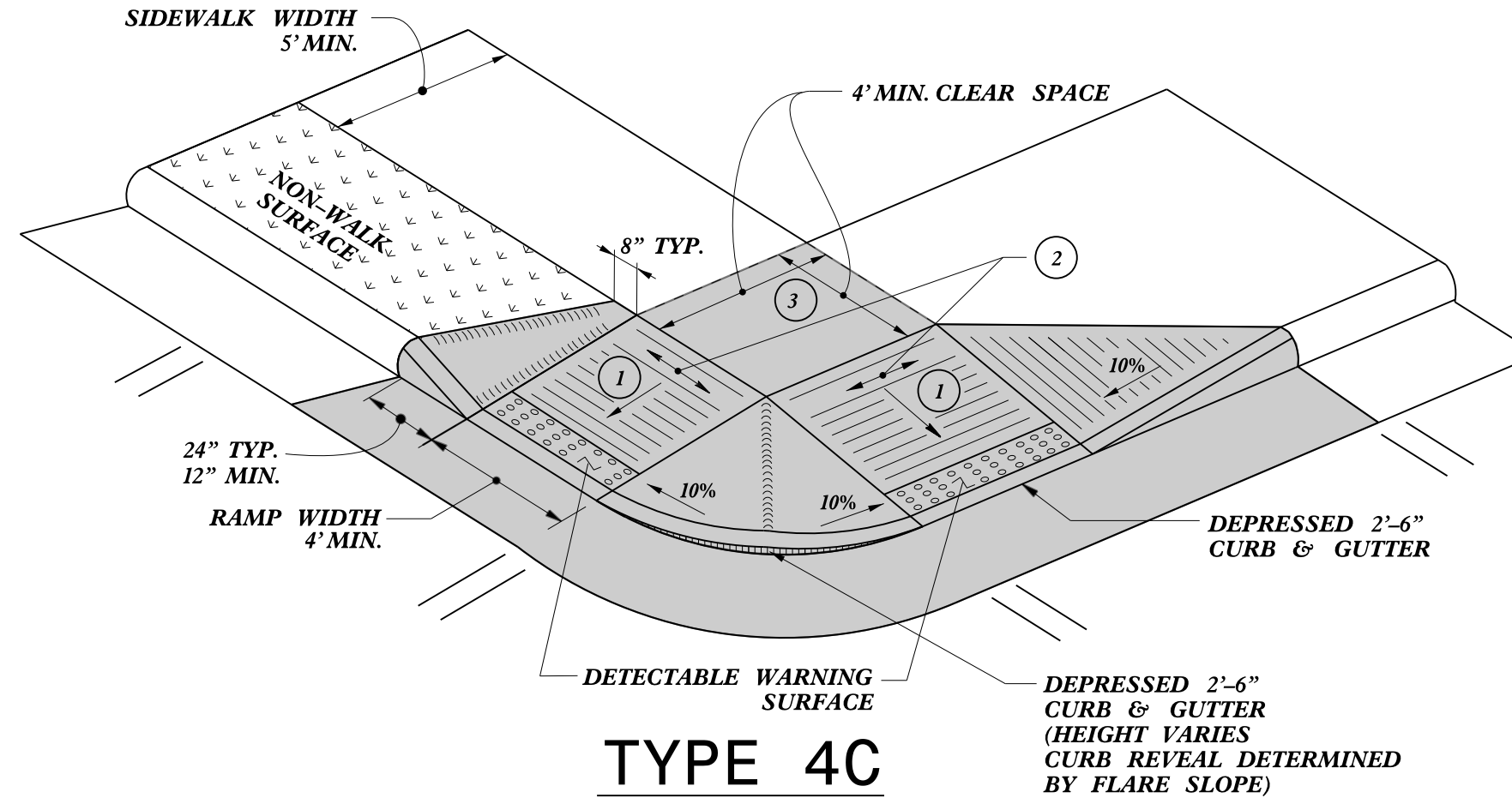
TYPE 4



TYPE 4A

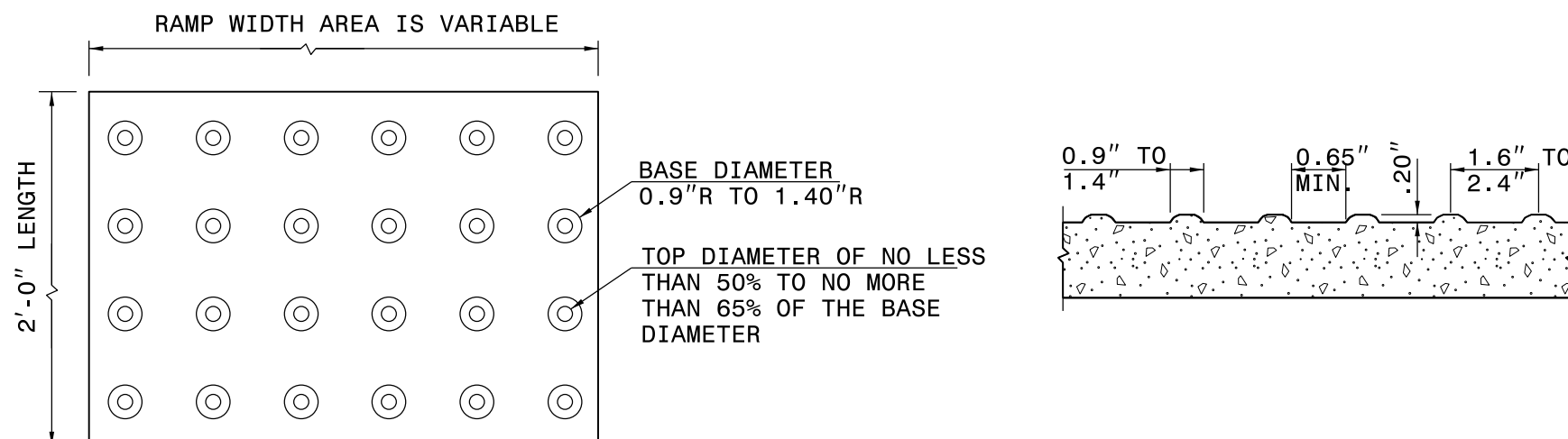


TYPE 4B



TYPE 4C

NOTES:
DETECTABLE WARNING SURFACE SHALL COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.
DETECTABLE WARNING SURFACE SHALL CONTRAST VISIBLY WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.



DETECTABLE WARNING SURFACE

- 1 8.33% (12:1) MAX RAMP SLOPE
- 2 CROSS SLOPE: 2.00%
- 3 MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00%

PAY LIMITS FOR 1 OR 2 CURB RAMPS
(CALCULATE BASED ON NUMBER OF SETS OF DETECTABLE WARNING SURFACES)

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ROADWAY DETAIL DRAWING FOR
CURB RAMP
SHARED LANDING

SHEET 10 OF 13
848D06

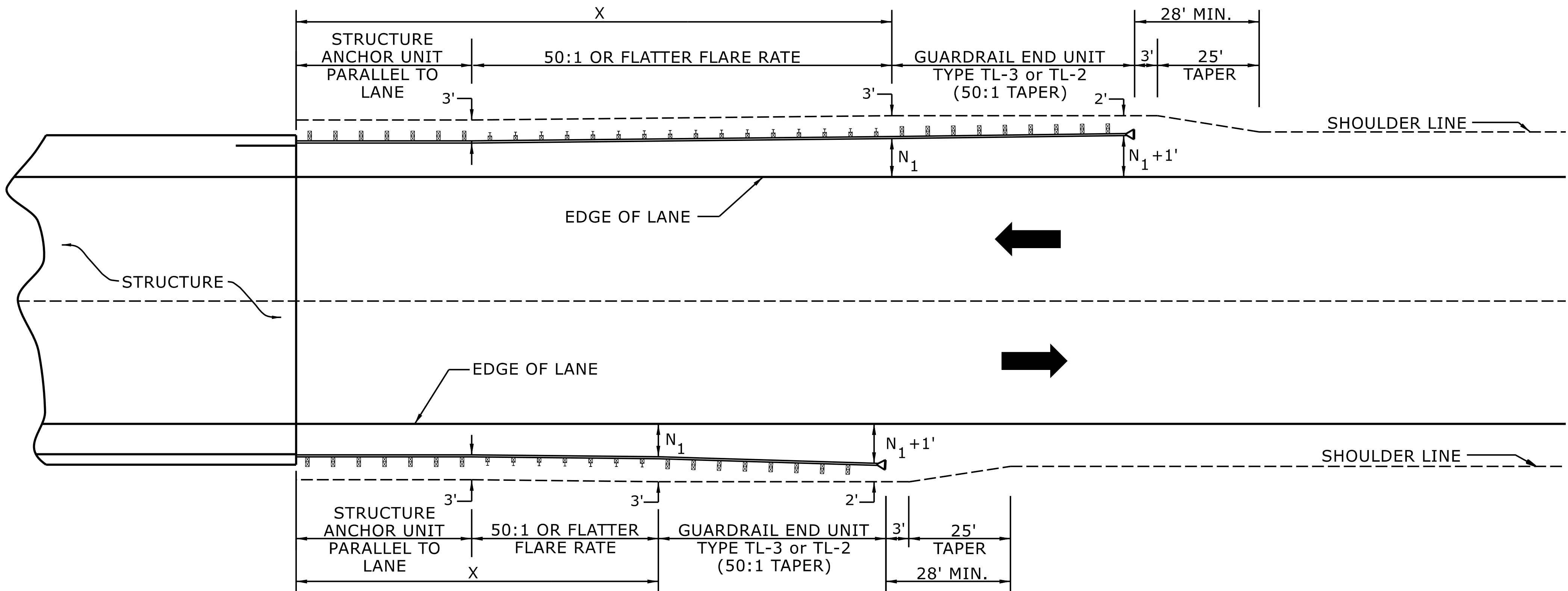


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CHECKED BY: DATE:
FILE SPEC.: special_details\nmhacker\848D0610.dgn



USE FLARE RATE AS THE CONTROL IF THE " N_1 " DISTANCE IS NOT OBTAINED.
(" N_1 " IS BASED ON SHOULDER WIDTHS IN THE ROADWAY DESIGN MANUAL)

SEE STD. 862.03 FOR STRUCTURE ANCHOR UNITS

FOR POSTED SPEEDS $\geq$ 45MPH USE GREU TYPE TL-3
FOR POSTED SPEEDS $<$ 45MPH USE GREU TYPE TL-2

GUARDRAIL LENGTH OF NEED (X) IS CALCULATED BASED ON THE AASHTO ROADSIDE DESIGN GUIDE.

LENGTHS AND OFFSETS FOR PROPOSED GUARDRAIL AT TWO LANE - TWO WAY LOCATIONS

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ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT

SHEET 4 OF 15
862D01



Signed by:
Nicole M. Hacker
588432034164CS
8/20/2026

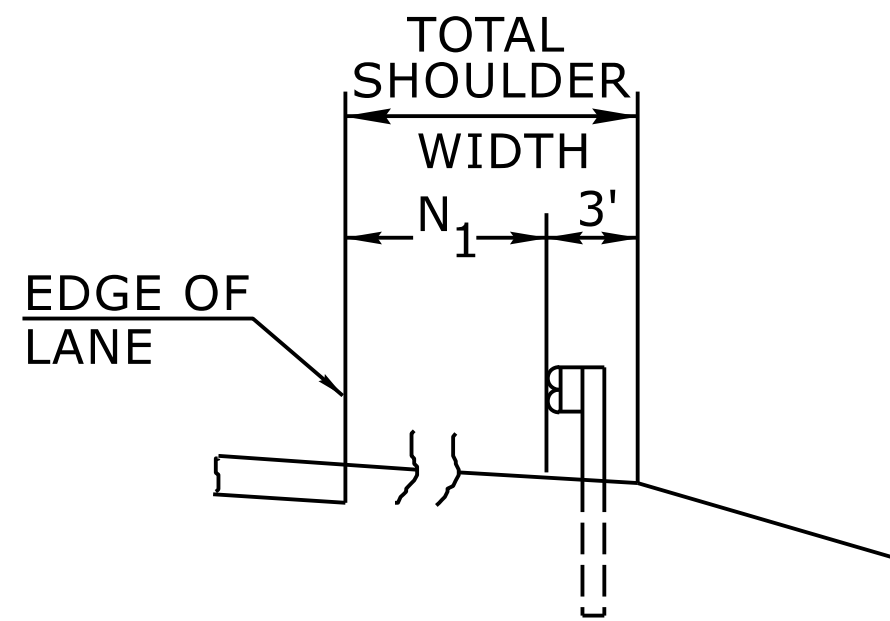
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**CONTRACTS STANDARDS
AND DEVELOPMENT UNIT**

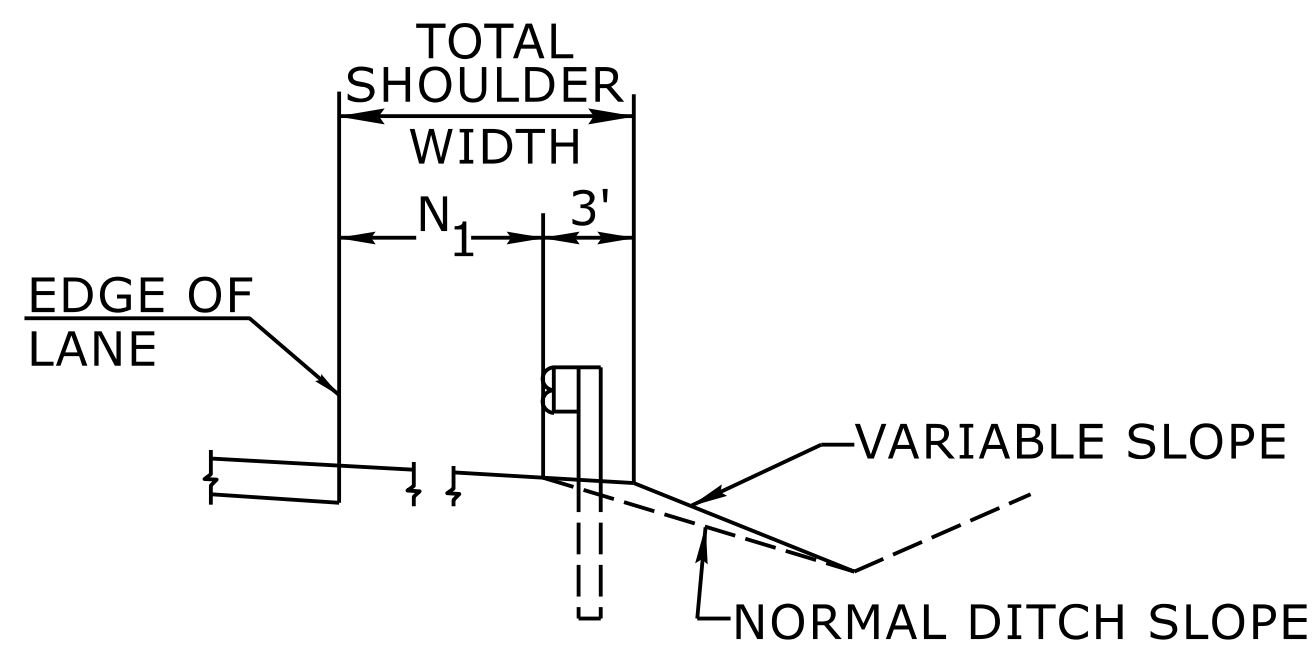
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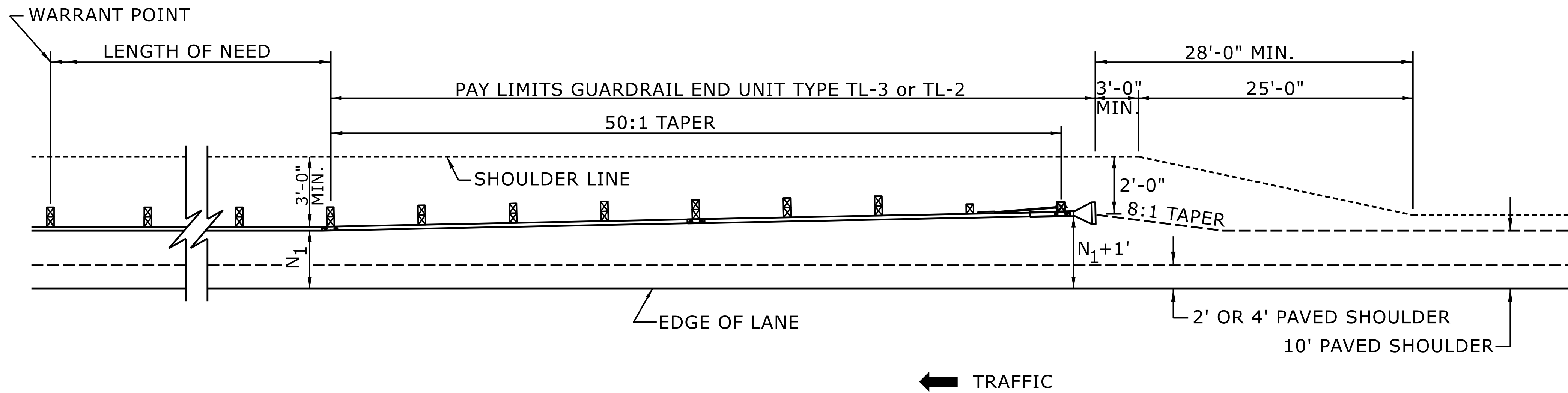


FILL SECTION



CUT SECTION

"N₁"= DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL WHERE GUARDRAIL IS PARALLEL TO LANE.



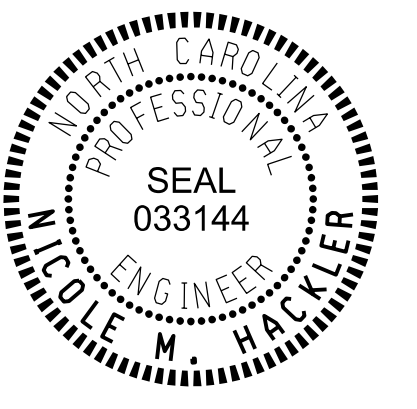
FOR POSTED SPEEDS $\geq$ 45mph USE GREU TYPE TL-3
FOR POSTED SPEEDS $<$ 45mph USE GREU TYPE TL-2

DETAIL OF BEGINNING OF GUARDRAIL IN CUT OR FILL SECTION

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT

SHEET 6 OF 15
862D01

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RALEIGH, N.C.



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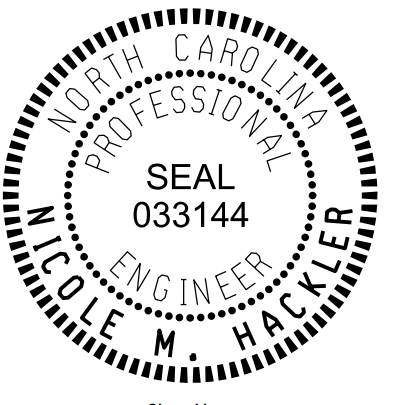
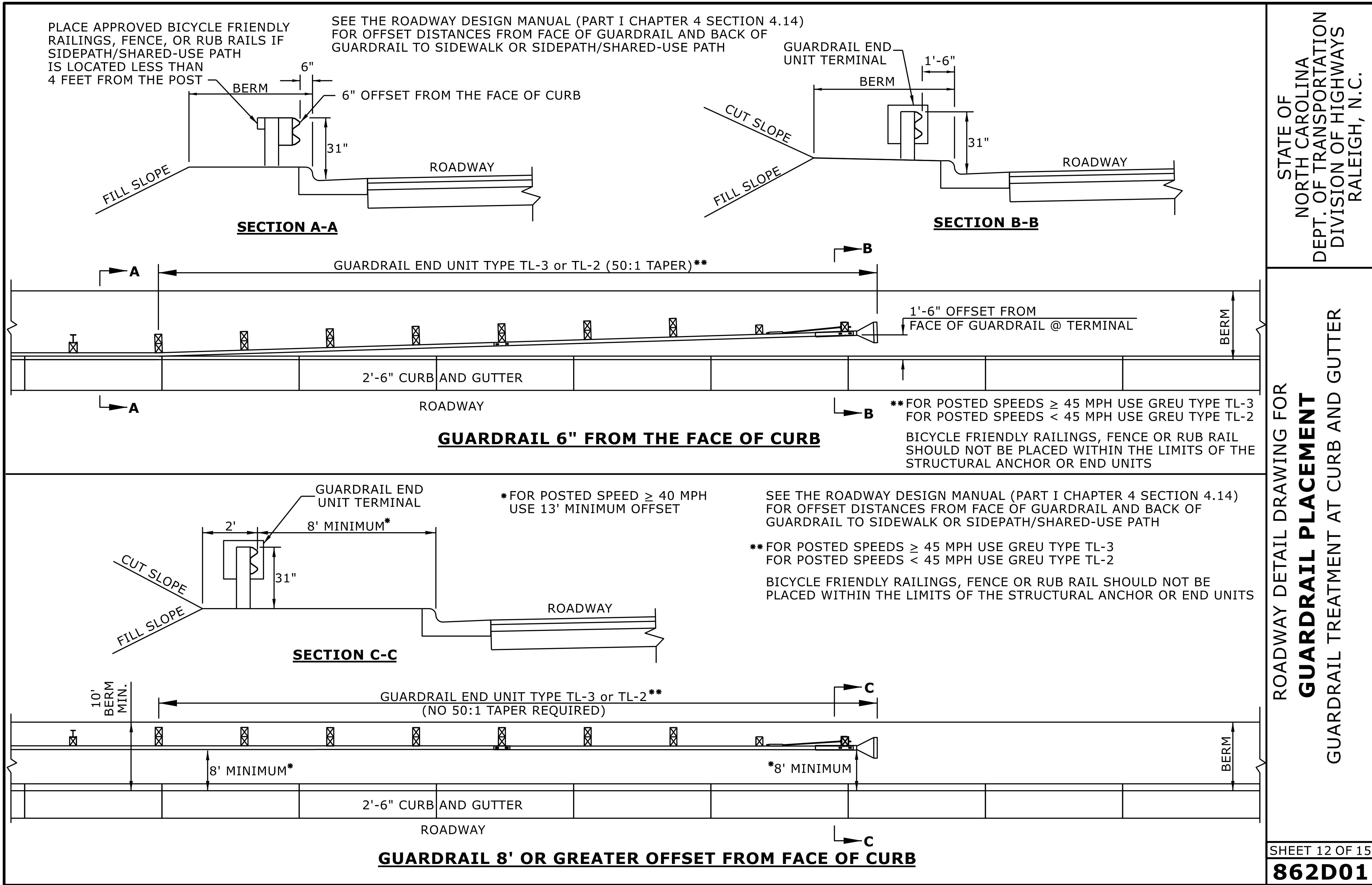
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CONTRACTS STANDARDS
AND DEVELOPMENT UNIT

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AND DEVELOPMENT UNIT

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FAX 919-250-4119

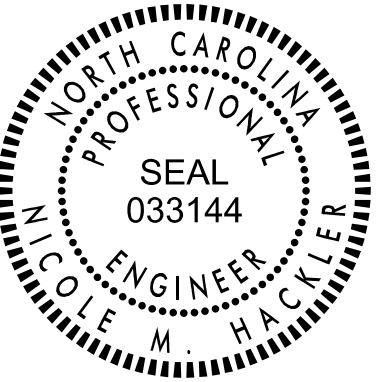
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MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC.:	

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RALEIGH, N.C.

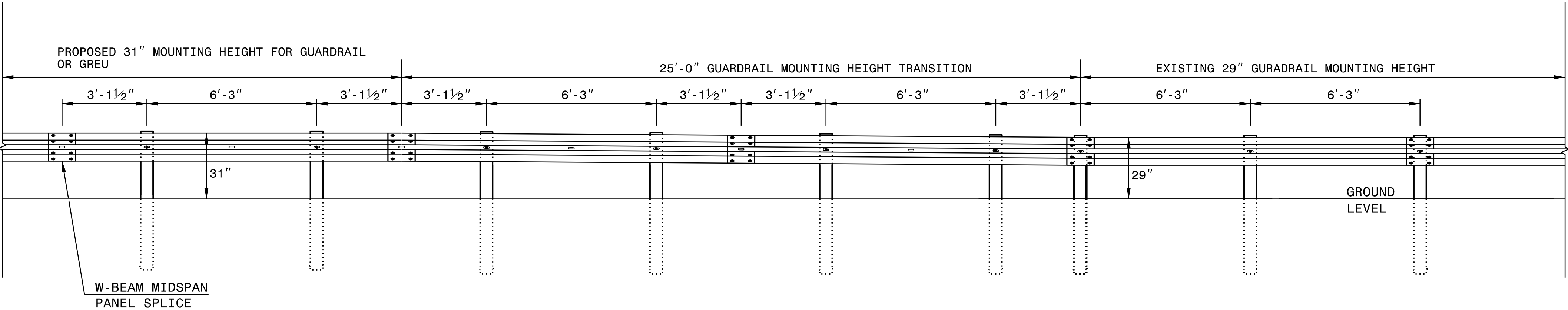
ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 5 OF 9
862D02



Signed by:
Nicole M. Hackler
5884323D3416AC5
8/20/2026

**NOTE: IF EXISTING GUARDRAIL IS LOWER THAN 29", USE AN ADDITIONAL 12'-6" LONG SECTION OF GUARDRAIL,
FOR EVERY 1" OF HEIGHT DIFFERENCE, TO TRANSITION FROM EXISTING GUARDRAIL TO PROPOSED 31" GUARDRAIL.**



ELEVATION VIEW

TRANSITION FROM 29" TO 31" W-BEAM GUARDRAIL MOUNTING HEIGHT

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ORIGINAL BY: K. Aldridge	DATE: 02-25
MODIFIED BY:	DATE:
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FILE SPEC.:	

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DIVISION OF HIGHWAYS
RALEIGH, N.C.

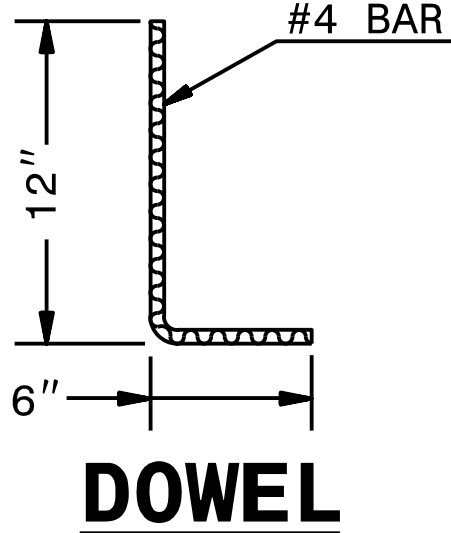
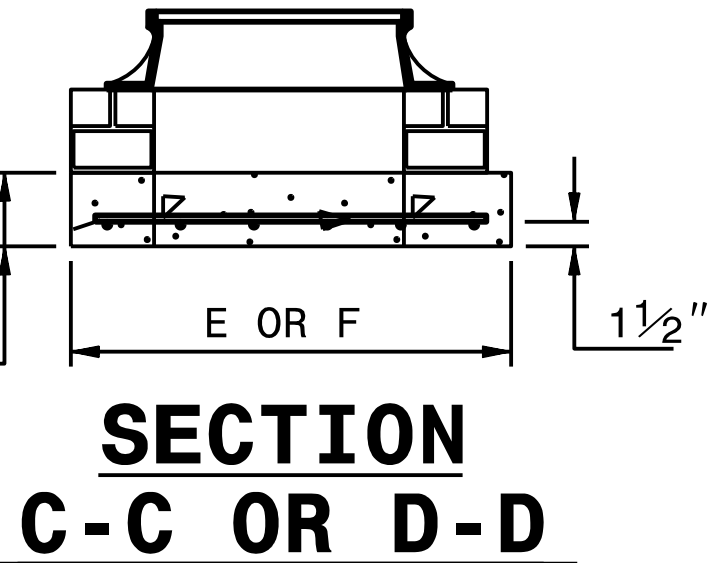
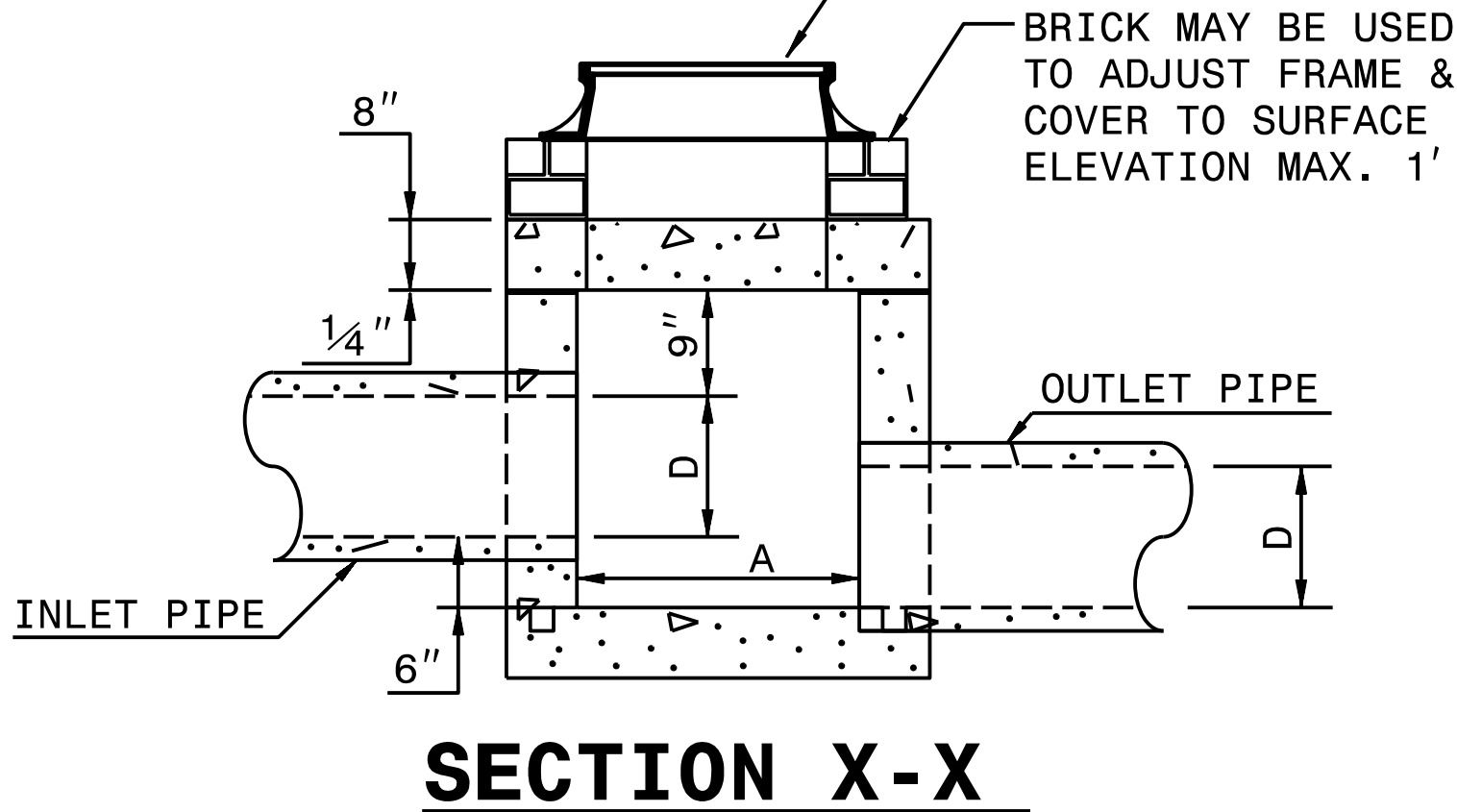
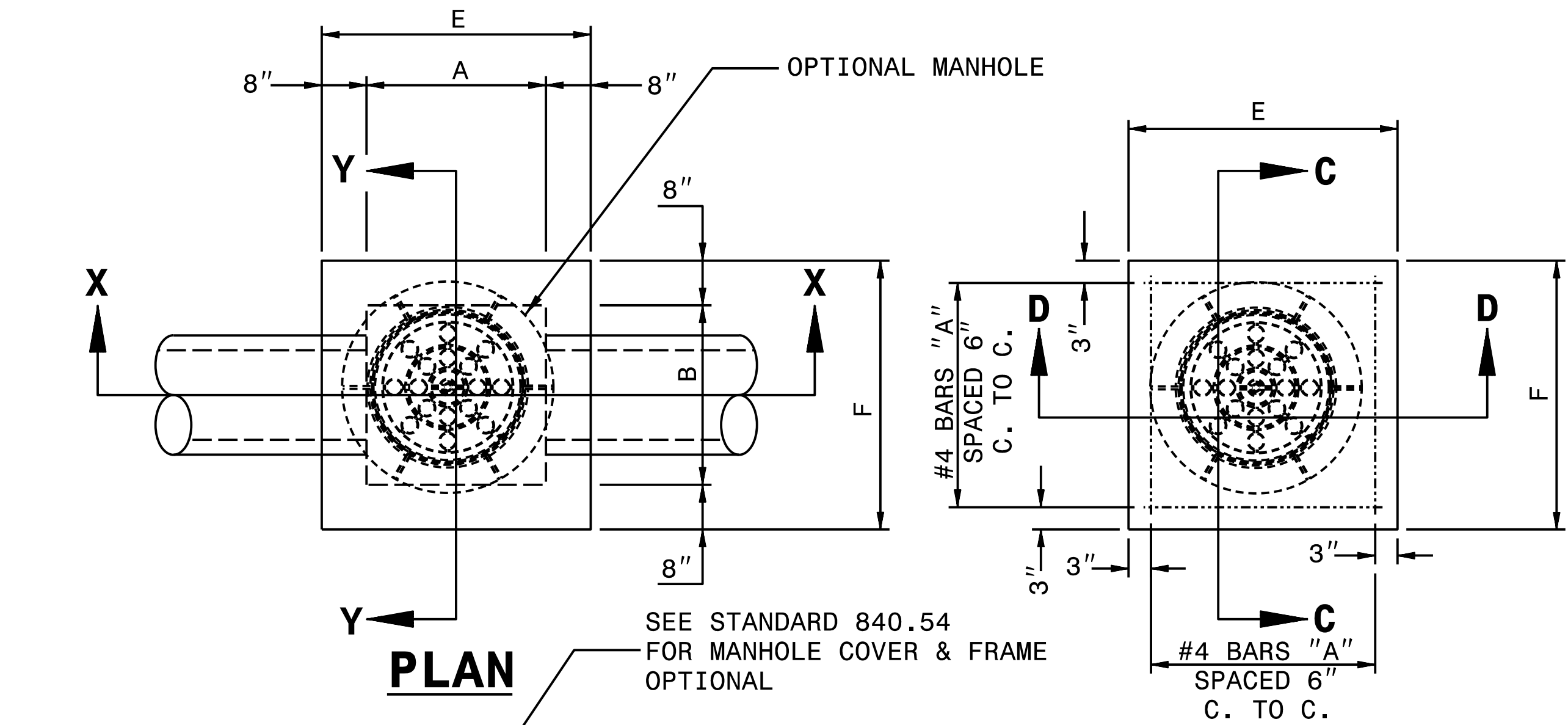
ROADWAY DETAIL DRAWING FOR
CONCRETE JUNCTION BOX
(WITH OPTIONAL MANHOLE)
UP TO 30' IN HEIGHT

SHEET 1 OF 1
840D31

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DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
CONCRETE JUNCTION BOX
(WITH OPTIONAL MANHOLE)
UP TO 30' IN HEIGHT

SHEET 1 OF 1
840D31



GENERAL NOTES:

CHAMFER ALL EXPOSED CORNERS 1".

USE CLASS "B" CONCRETE THROUGHOUT.

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

USE FORMS TO CONSTRUCT THE BOTTOM SLAB.

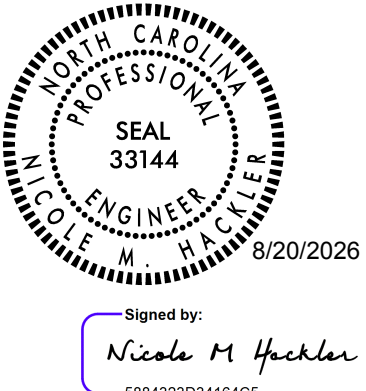
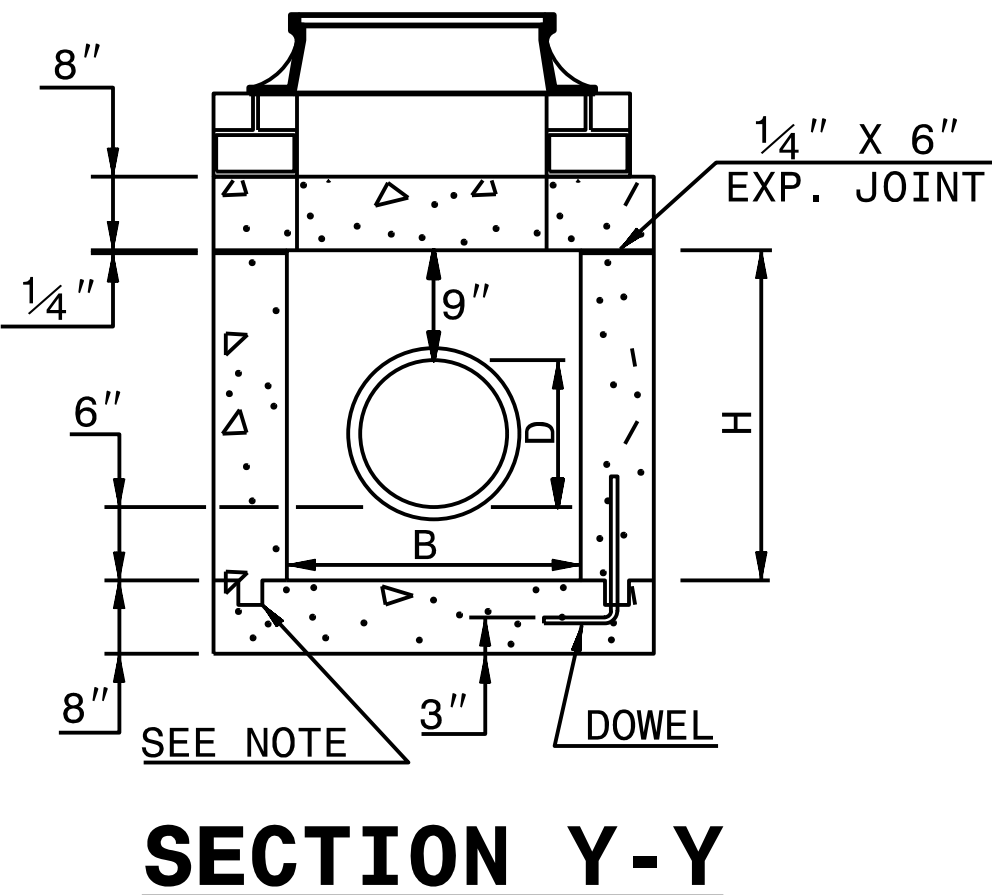
IF REINFORCED CONCRETE PIPE IS SET IN BASE SLAB OF BOX, ADD TO BASE AS SHOWN ON STANDARD NO. 840.00.

PROVIDE ALL JUNCTION BOXES OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTERS IN ACCORDANCE WITH STD. NO. 840.66.

ADJUST THE STEEL, CONCRETE AND BRICK MASONRY QUANTITIES TO INCLUDE THE ADDITION OF THE MANHOLE (I.E. DIAGONAL BARS SHORTENED AROUND OPENING IN TOP SLAB, ADDITIONAL VARIABLE HEIGHT BRICK MASONRY, OPENING IN TOP SLAB.)

MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 25 FEET.

DIMENSIONS AND QUANTITIES FOR CONCRETE JUNCTION BOXES														
DIMENSIONS OF BOX AND PIPE				REINFORCEMENT BARS "A"		TOP SLAB DIMENSIONS		CUBIC YARDS IN BOX			TOTAL QUANTITIES BOX AND SLABS		DEDUCTIONS FOR ONE PIPE CU.YDS.	
PIPE	SPAN	WIDTH	HEIGHT	NO.	LENGTH	E	F	TOP SLAB	BOTTOM SLAB	WALL/ FT. OF HT.	LBS. REINF.	CU. YDS. MIN. "H"	C.S.	R.C.
12"	2'-0"	2'-0"	2'-3"	12	2'-9"	3'-0"	3'-0"	0.222	0.222	0.246	22	0.998	0.015	0.024
15"	2'-3"	2'-3"	2'-6"	12	3'-0"	3'-3"	3'-3"	0.261	0.261	0.271	24	1.200	0.023	0.036
18"	2'-6"	2'-6"	2'-9"	14	3'-3"	3'-6"	3'-6"	0.302	0.302	0.295	30	1.416	0.033	0.049
24"	3'-0"	3'-0"	3'-3"	16	3'-9"	4'-0"	4'-0"	0.394	0.394	0.344	40	1.907	0.059	0.085
30"	3'-6"	3'-6"	3'-9"	18	4'-3"	4'-6"	4'-6"	0.499	0.499	0.394	51	2.474	0.092	0.127
36"	4'-0"	4'-0"	4'-3"	20	4'-9"	5'-0"	5'-0"	0.616	0.616	0.443	64	3.114	0.132	0.178
42"	4'-6"	4'-6"	4'-9"	22	5'-3"	5'-6"	5'-6"	0.745	0.745	0.492	77	3.828	0.180	0.243
48"	5'-4"	5'-4"	5'-3"	26	6'-3"	6'-4"	6'-4"	0.988	0.988	0.541	111	4.819	0.235	0.317
54"	5'-10"	5'-10"	5'-9"	28	6'-7"	6'-10"	6'-10"	1.150	1.150	0.591	126	5.696	0.297	0.401
60"	6'-6"	6'-6"	6'-3"	30	7'-3"	7'-6"	7'-6"	1.386	1.386	0.640	145	6.770	0.367	0.495
66"	7'-1"	7'-1"	6'-9"	32	7'-10"	8'-1"	8'-1"	1.609	1.609	0.689	169	7.870	0.444	0.589



Signed by:
Nicole M. Hatcher
588432303416405...

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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

SEE PLATE FOR TITLE

ORIGINAL BY: J. HOWERTON DATE: 12/30/19
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC: jhowerton/840d31 up to 30ft of fill.dgn

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

ENGLISH DETAIL DRAWING FOR
**MINIMUM DEPTH
CONCRETE CATCH BASIN**
12" THRU 84" PIPE

SHEET 1 OF 2

840D02

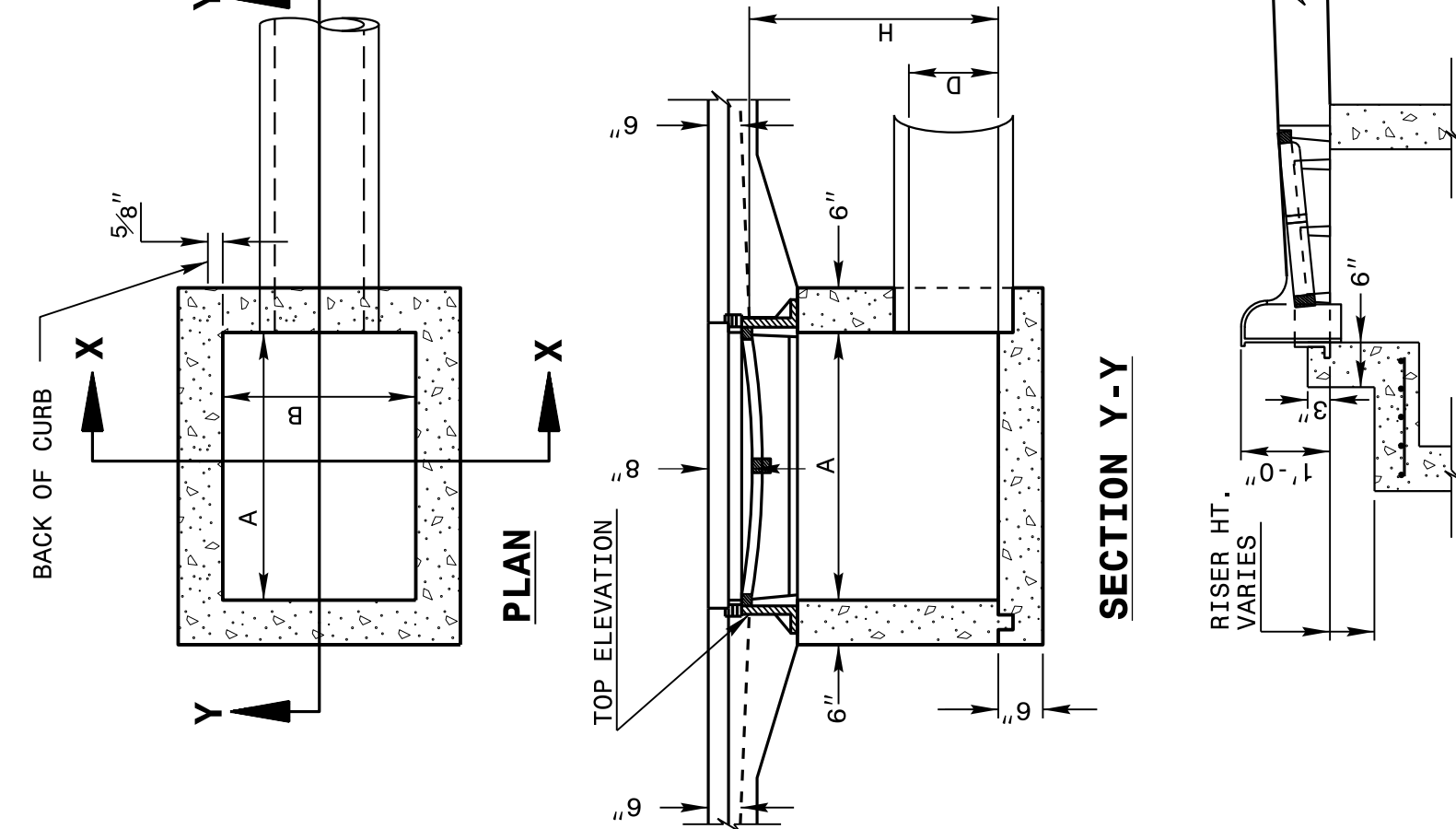
GENERAL NOTES:
USE CLASS "B" CONCRETE THROUGHOUT.
PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.
OPTIONAL CONSTRUCTION - MONOLITHIC FOUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.
FOR 8'-0" IN HEIGHT OR LESS USE 6" WALLS AND BOTTOM SLAB. OVER 8'-0" TO 16'-0" IN HEIGHT USE 8" WALLS AND BOTTOM SLAB. ADJUST QUANTITIES ACCORDINGLY.
CONSTRUCT WITH PIPE CROWNS MATCHING.
CHAMFER ALL EXPOSED CORNERS 1".
** FOR STRUCTURES WITH PIPE LARGER THAN 54", MAKE THE TOP SLAB 8" THICK.

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

ENGLISH DETAIL DRAWING FOR
**MINIMUM DEPTH
CONCRETE CATCH BASIN**
12" THRU 84" PIPE

SHEET 1 OF 2

840D02



DETAIL SHOWING METHOD
OF RISER CONSTRUCTION

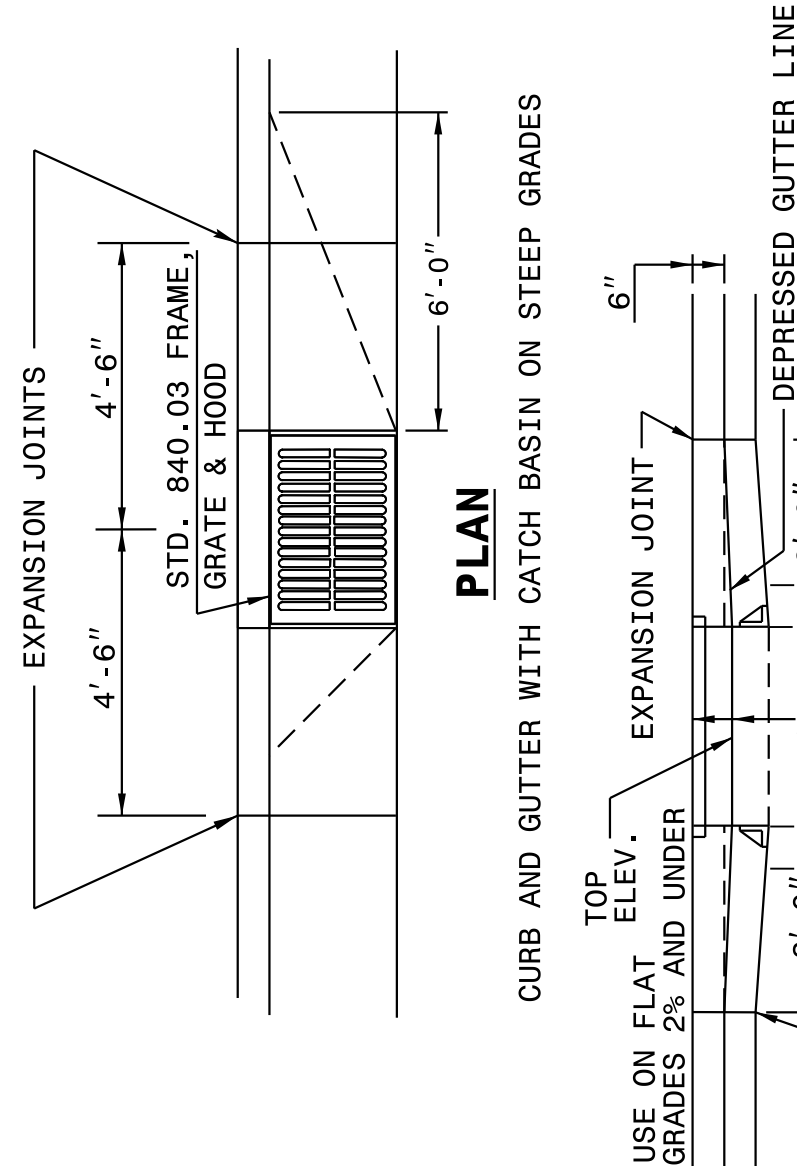
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
**MINIMUM DEPTH
CONCRETE CATCH BASIN**
12" THRU 84" PIPE

SHEET 2 OF 2

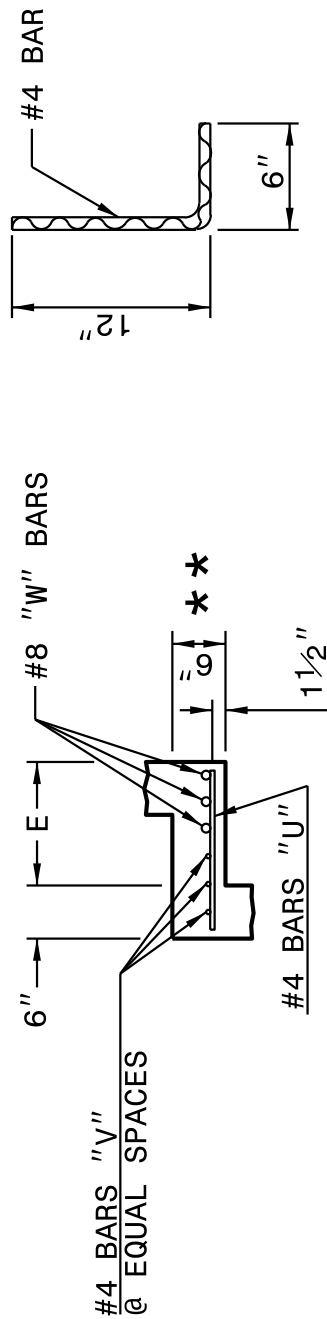
840D02

** FOR STRUCTURES WITH PIPE LARGER THAN 54",
MAKE THE TOP SLAB 8" THICK.



PLAN OF TOP SLAB

SECTION S-S



SECTION R-R

DOWEL

* RISER HAS .228 CUBIC YARDS OF CONCRETE PER FOOT HEIGHT

MINIMUM DIMENSIONS AND QUANTITIES FOR CONCRETE CATCH BASIN (BASED ON MIN. HEIGHT, H, WITH NO RISER) *									
DIMENSIONS OF BOX AND PIPE					COVER				
PIPE D.	SPAN	WIDTH	DEPTH	MIN. HEIGHT	COVER DIMENSION	BARS-U NO.	BARS-V NO.	BARS-W NO.	TOTAL LBS.
12"	3'-0"	2'-2"	2'-2"	2'-0"	2'-0"	4	4	4	39
15"	3'-0"	2'-2"	2'-2"	2'-3"	2'-3"	5	5	5	43
18"	3'-0"	2'-2"	2'-2"	3'-1"	3'-1"	6	6	6	51
24"	3'-0"	2'-2"	2'-2"	3'-4"	3'-4"	8	8	8	66
30"	3'-0"	2'-2"	2'-2"	3'-10"	3'-10"	10	10	10	84
36"	3'-0"	2'-2"	2'-2"	4'-6"	4'-6"	12	12	12	102
42"	3'-0"	2'-2"	2'-2"	4'-11"	4'-11"	14	14	14	118
48"	3'-0"	2'-2"	2'-2"	5'-6"	5'-6"	16	16	16	134
54"	3'-0"	2'-2"	2'-2"	6'-0"	6'-0"	18	18	18	150
60"	3'-0"	2'-2"	2'-2"	6'-3"	6'-3"	20	20	20	166
66"	3'-0"	2'-2"	2'-2"	6'-6"	6'-6"	22	22	22	182
72"	3'-0"	2'-2"	2'-2"	7'-6"	7'-6"	24	24	24	200
78"	3'-0"	2'-2"	2'-2"	8'-1"	8'-1"	26	26	26	216
84"	3'-0"	2'-2"	2'-2"	8'-9"	8'-9"	28	28	28	232

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

SEE PLATE FOR TITLE

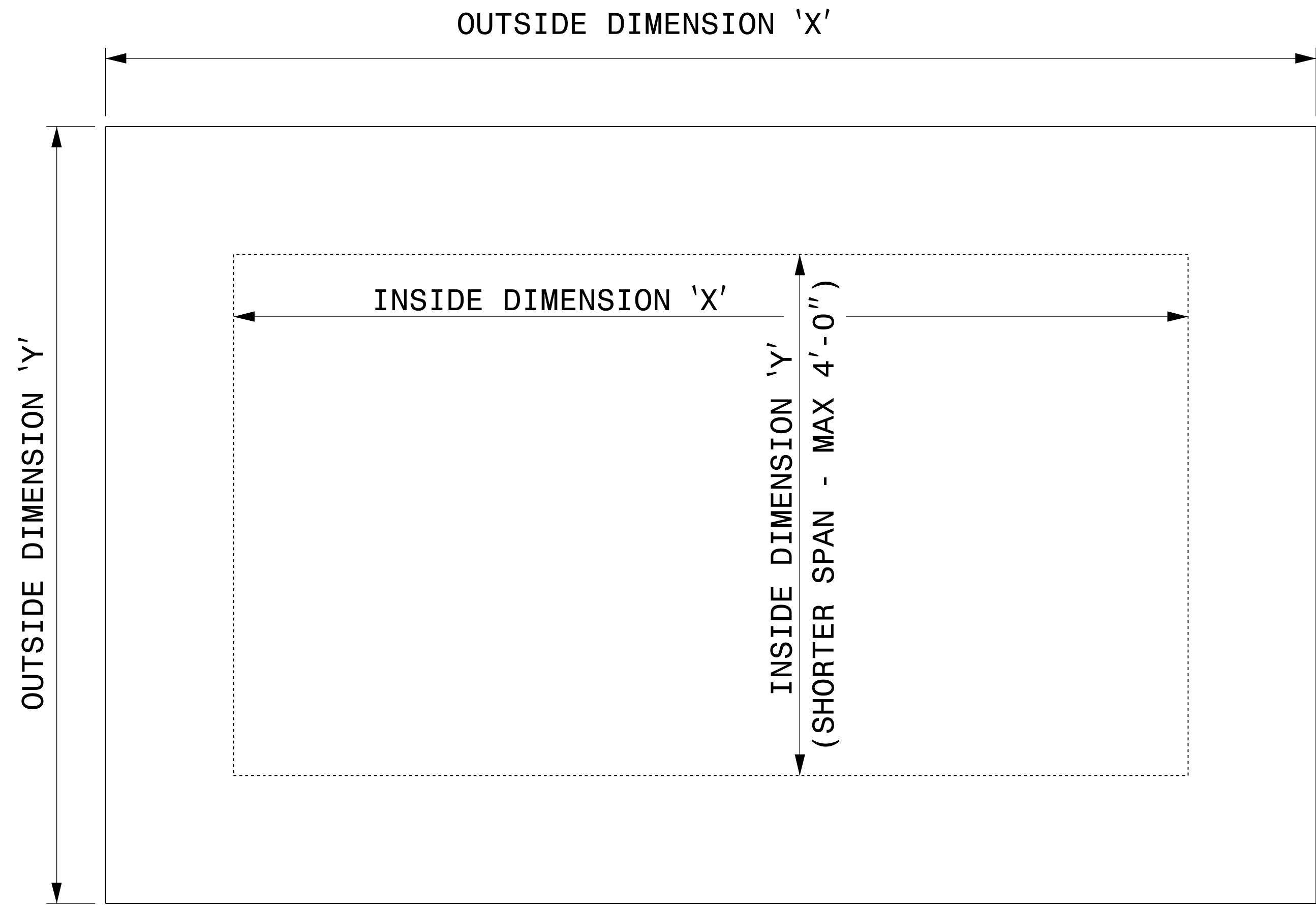
ORIGINAL BY: 2002 Std.840.01 DATE:
MODIFIED BY: E.E. WARD DATE: 3-1-02
CHECKED BY: DATE:
FILE SPEC.: s:Special Details/jhowerton/840d02.dgn



8/20/2026

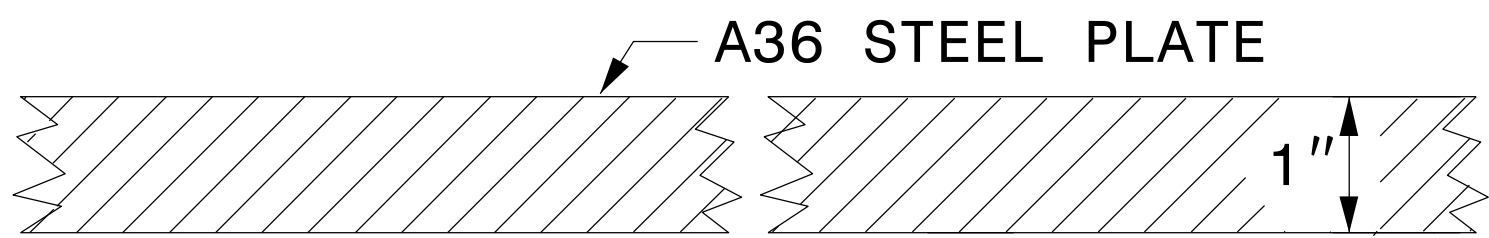
Signed by:
Nicole M. Hepler
588432034164C5

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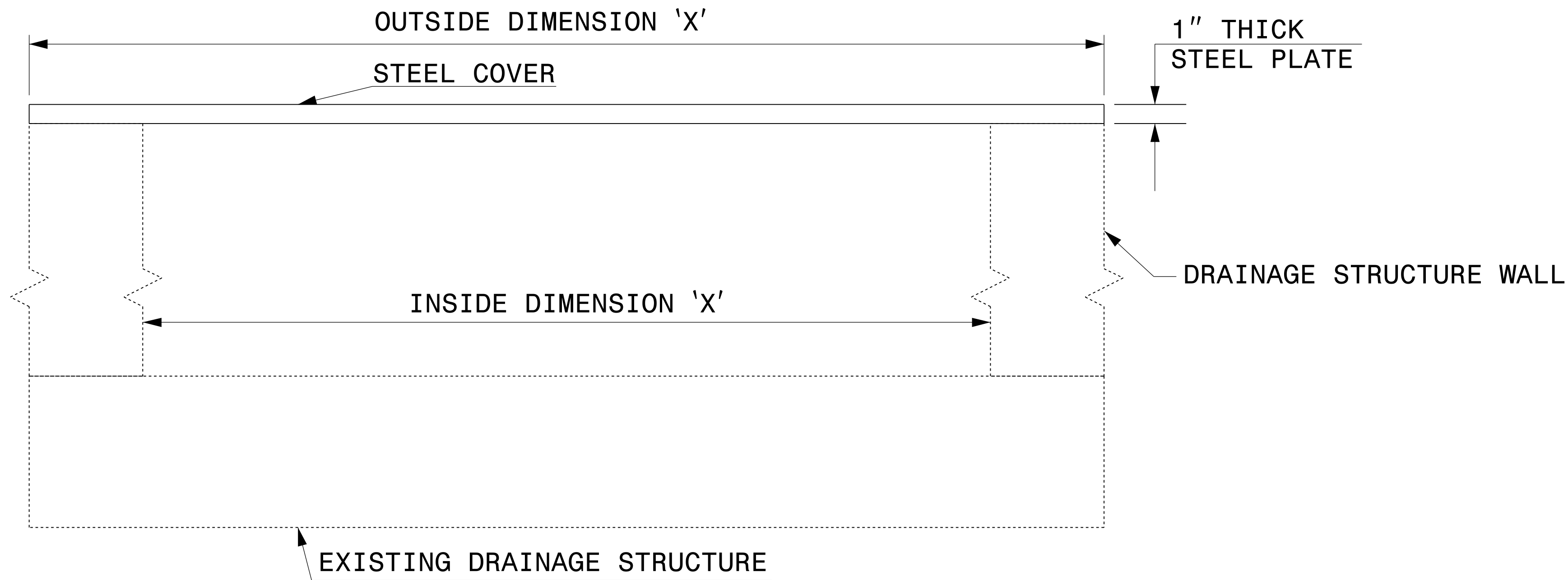
GENERAL NOTES:

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

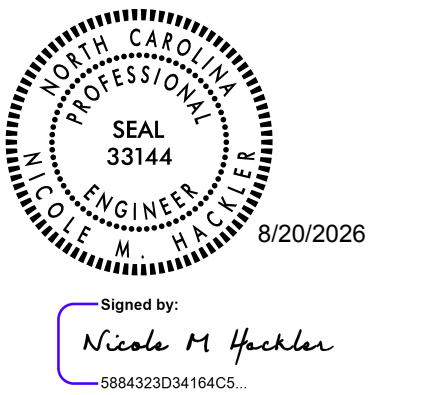


SECTION VIEW OF STEEL TOP PLATE

PLAN VIEWS

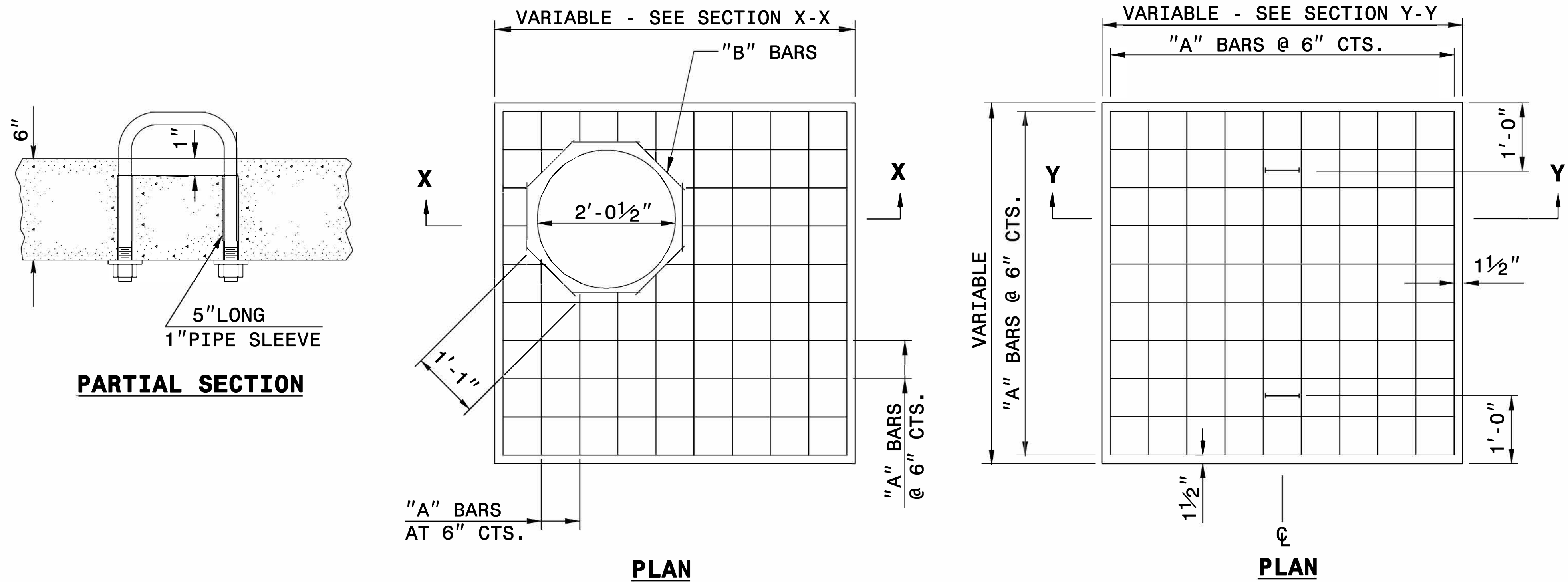


ELEVATION VIEWS



DOCUMENT NOT CONSIDERED FINAL
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CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950	FAX 919-250-4119
DETAIL OF TEMPORARY 1" STEEL COVER OVER DRAINAGE STRUCTURE	
ORIGINAL BY: E.E. WARD	DATE: 2-2-98
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC.: eric:/usr/details/metric/stand/stlcvr2.dgn	



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.

BILL OF MATERIALS

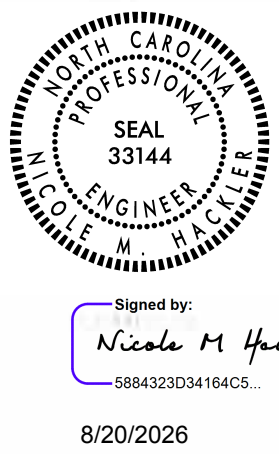
REINFORCING STEEL				
CODE	SIZE	QTY.	LENGTH	REINF. STEEL LBS.
A	#4	20	4'-6"	60.12
B	#4	8	1'-1"	5.79
TOTAL				65.91 *
MASONRY				CU YDS
TOP SLAB CONCRETE CLASS "B"				.4326 *
BRICK MASONRY PER FT HT (MIN)				.4111

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

DETAIL OF HANDLE

SECTION X-X

SECTION Y-Y



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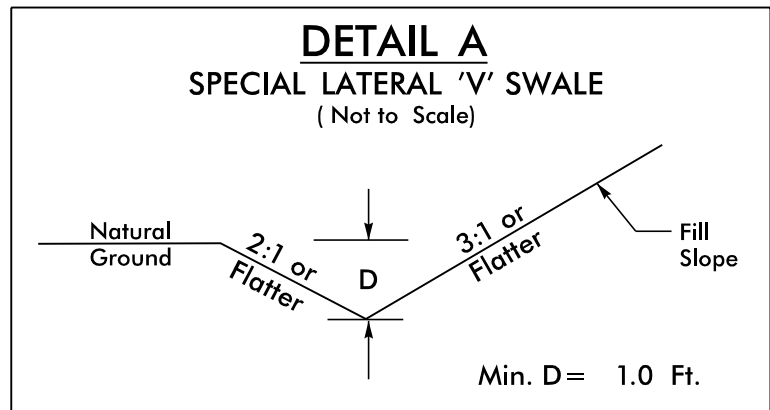
**CONTRACT STANDARDS
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**DETAIL TO CONVERT EXISTING
DI, CB, OTCB or GI
TO JUNCTION BOX
(MANHOLE OPTIONAL)**

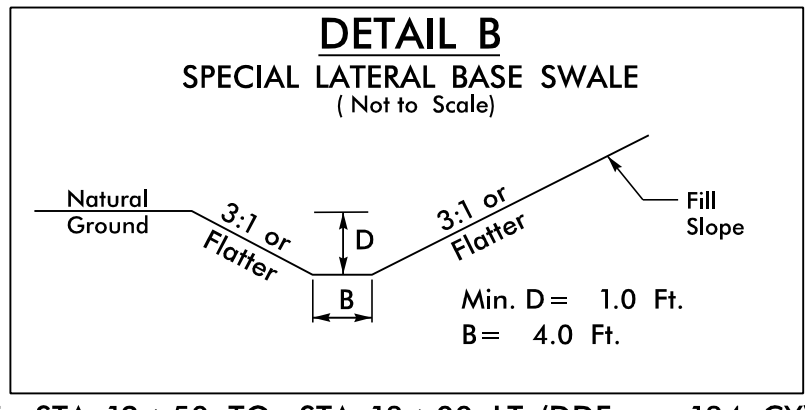
ORIGINAL BY: T.S.S.	DATE: NOV. 1997
MODIFIED BY: T.S.S.	DATE: FEB. 2000
CHECKED BY:	DATE:
FILE SPEC.: ds174:/usr/details/stand/boxtojbe.dgn	

DRAINAGE DITCH DETAILS

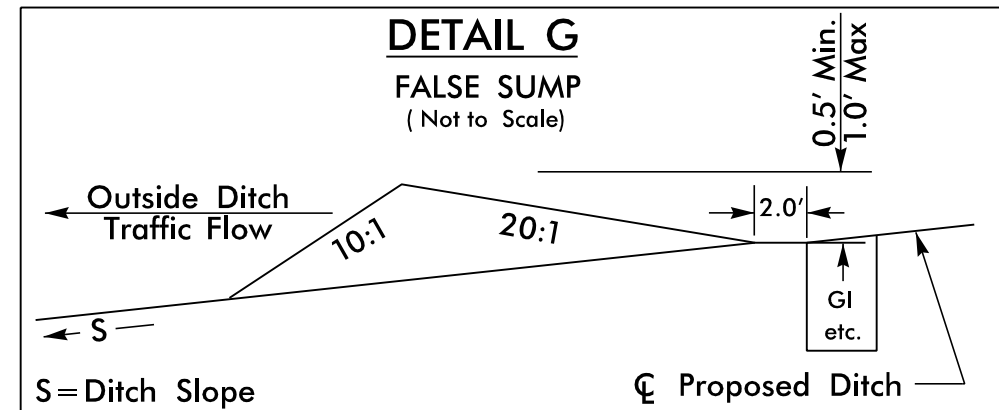
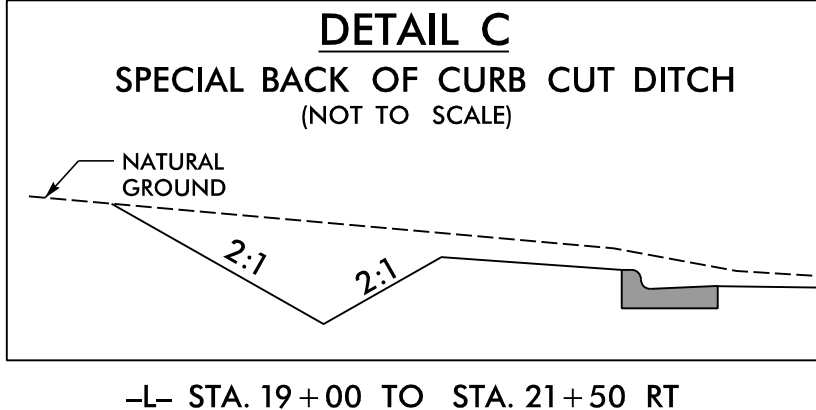
PROJECT REFERENCE NO.	SHEET NO.
P-5707	2D-1
HYDRAULICS ENGINEER	
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



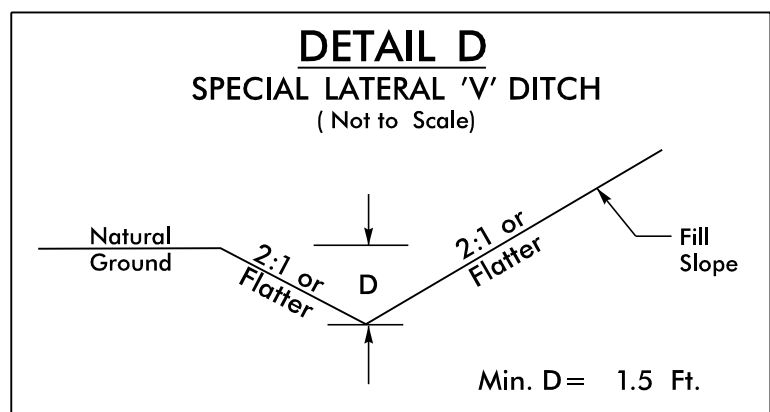
-DRY5- STA. 11+44 TO STA. 12+00 LT
-Y5- STA. 11+50 TO STA. 12+07 LT



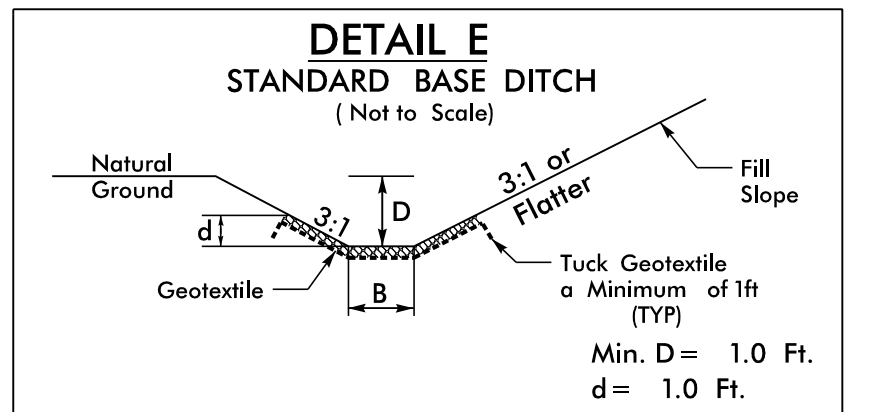
-Y5- STA. 12+50 TO STA. 13+00 LT (DDE = 134 CY)



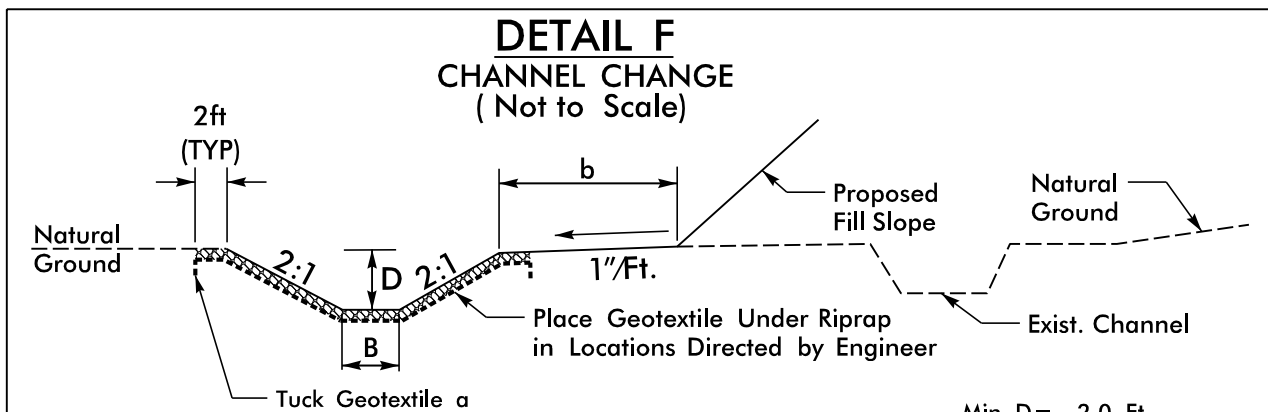
-L- STA. 27+86 RT
-L- STA. 28+14 RT
-Y5- 18+90 RT



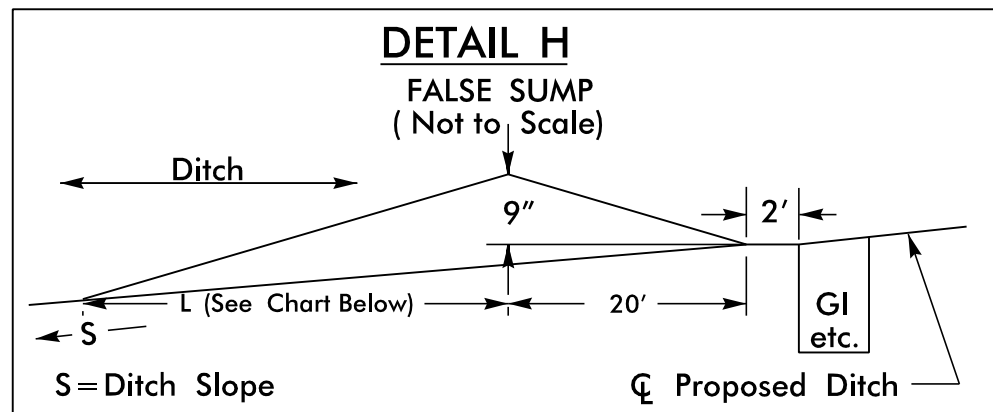
-L- STA. 21+50 TO STA. 23+00 RT



Type of Liner = CL I Rip-Rap, Keyed-In
-Y5- STA. 13+50 TO STA. 14+55 RT (DDE = 201 CY;
CL I RIPRAP = 85 TONS; GEOTEXTILE = 163 SY)

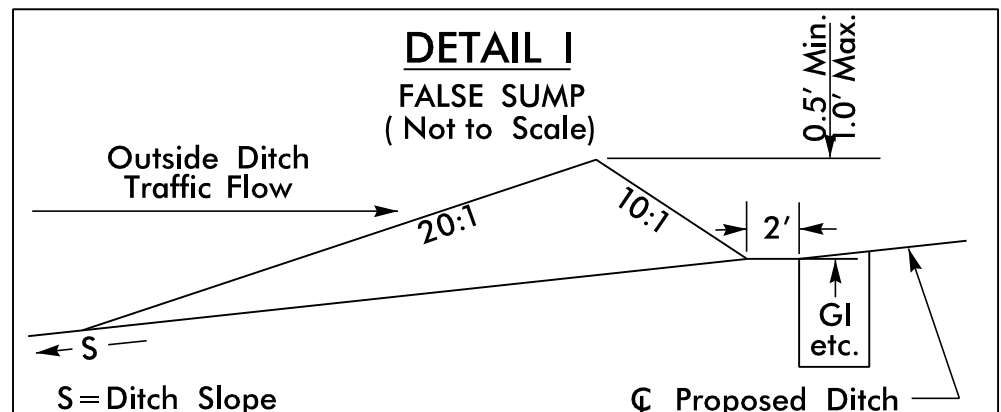


Type of Liner = CL I Rip-Rap, Keyed-In
-Y5- STA. 17+36.86 TO STA. 18+75 RT (DDE = 261 CY;
CL I RIPRAP = 144 TONS; GEOTEXTILE = 255 SY)
-Y5- STA. 20+00 TO STA. 21+24 RT (DDE = 298 CY;
CL I RIPRAP = 143 TONS; GEOTEXTILE = 253 SY)

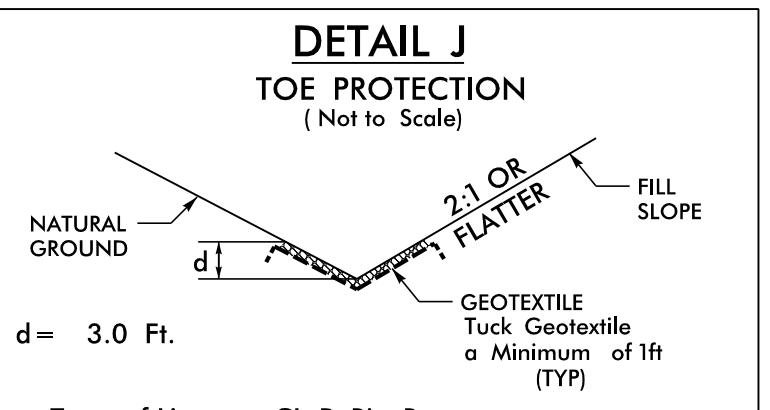


Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

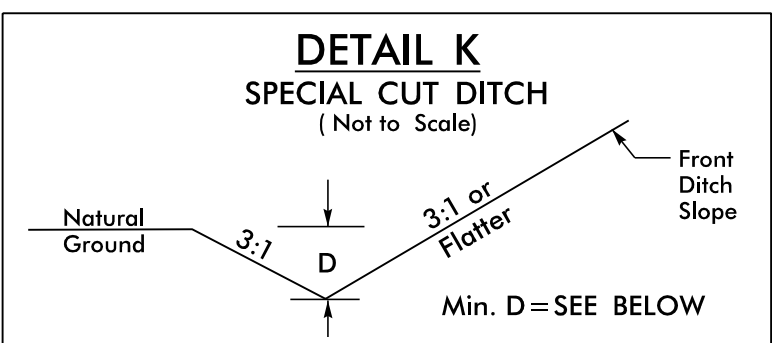
-L DET- STA. 22+01 LT



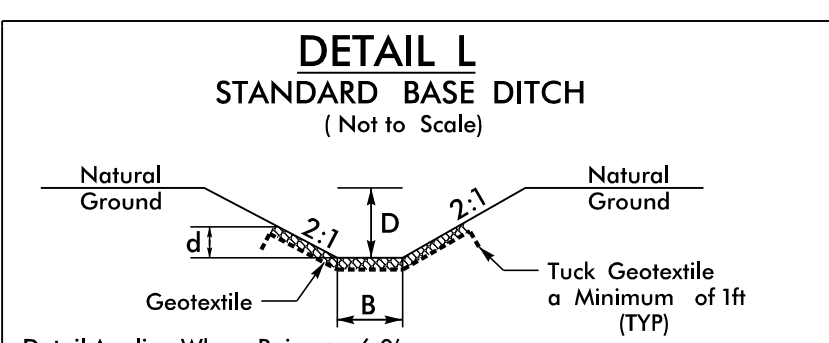
-DRY5- STA. 12+29 RT
-DRY5- STA. 12+63 RT
-L- STA. 19+65 RT
-L- STA. 20+88 RT



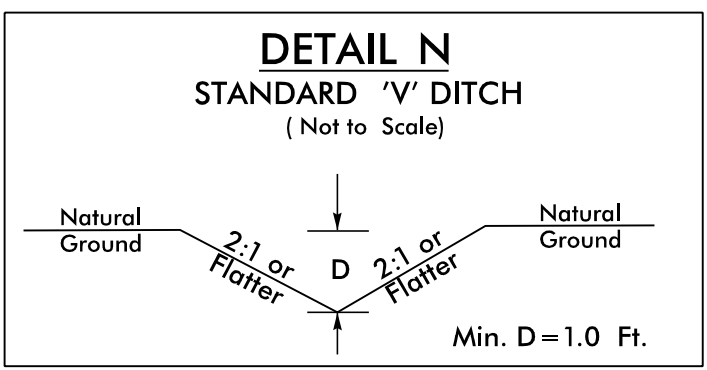
Type of Liner = CL B Rip-Rap
-L- STA. 43+69 TO STA. 44+00 LT
(CL B RIPRAP = 42 TONS; GEOTEXTILE = 92 SY)
-Y5- STA. 14+90 TO STA. 16+60 LT
(CL B RIPRAP = 105 TONS; GEOTEXTILE = 254 SY)
-Y5- STA. 17+50 TO STA. 20+00 LT
(CL B RIPRAP = 185 TONS; GEOTEXTILE = 425 SY)
-Y5- STA. 24+90 TO STA. 25+90 LT
(CL B RIPRAP = 70 TONS; GEOTEXTILE = 160 SY)



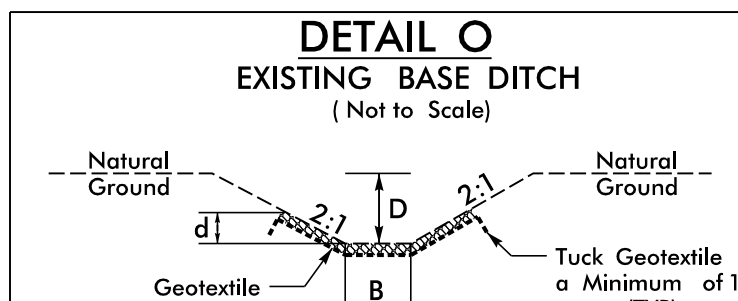
-L DET- STA. 17+66.44 TO STA. 19+16.47 RT, D/d=1.5'
-L DET- STA. 20+16.62 TO STA. 20+66.79 RT, D/d=1.0'
-L DET- STA. 20+66.79 TO STA. 22+67.79 RT, D/d=1.0'
-L DET- STA. 21+17.02 TO STA. 23+15.66 LT, D/d=1.0'
-L DET- STA. 31+23.65 TO STA. 31+74.39 RT, D/d=1.0'



Type of Liner = CL I Rip-Rap, Keyed-In
Detail Applies When B is < 6.0'
for Class I and II Rip-Rap;
And All Widths for Class B Rip-Rap;
-Y2- STA. 11+11 RT, L=82', S=9.40%,
BEG ELEV=342.5, END ELEV=334.8
CL I RIPRAP = 75 TON
GEOTEXTILE = 163 SY
(DDE = 55 CY)

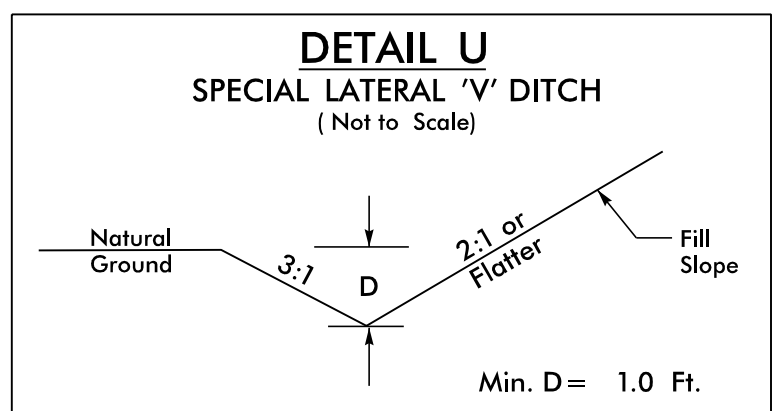
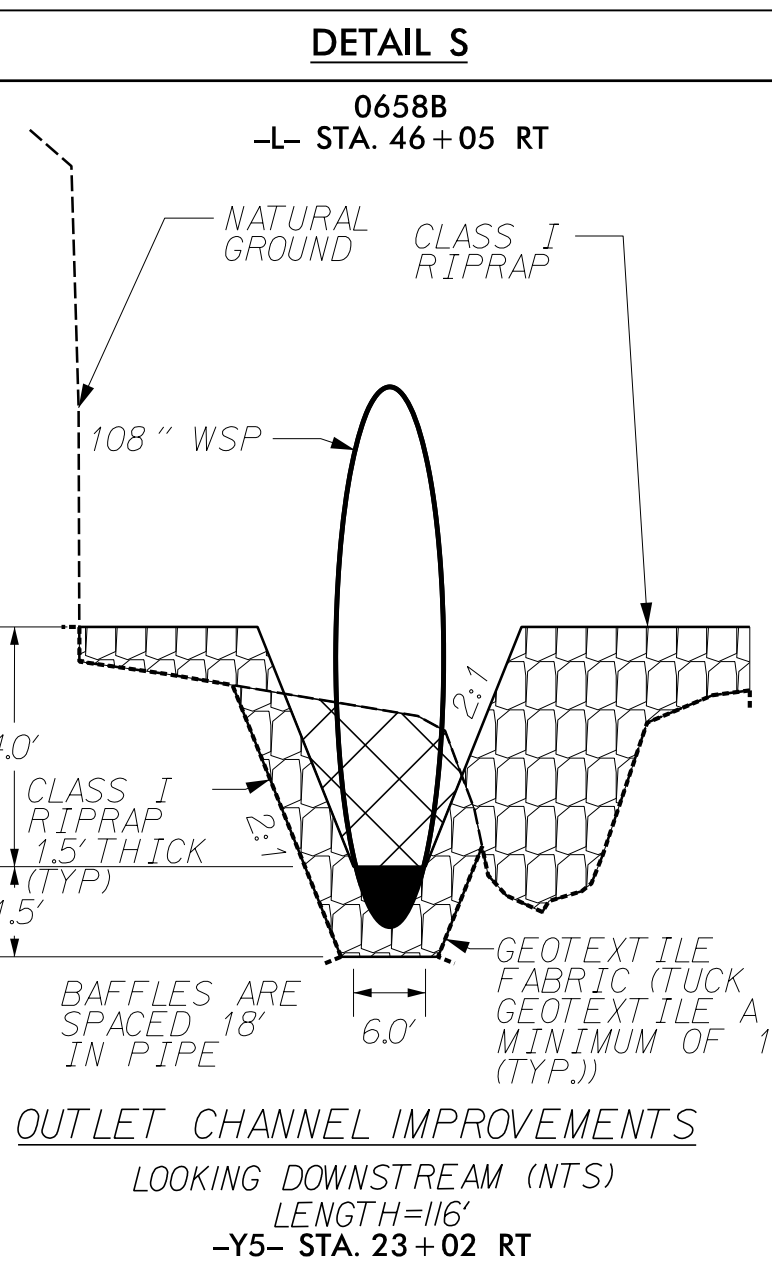
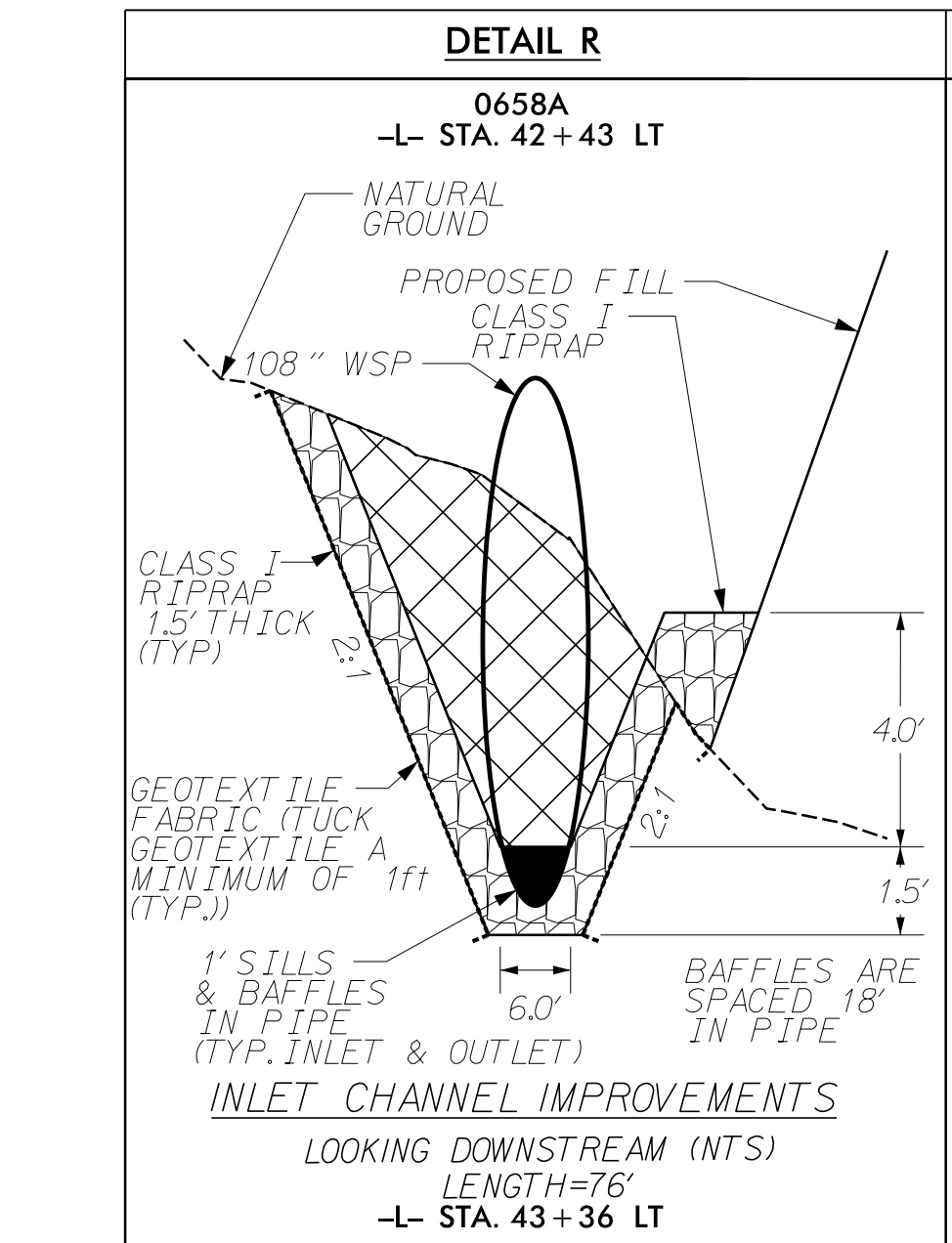
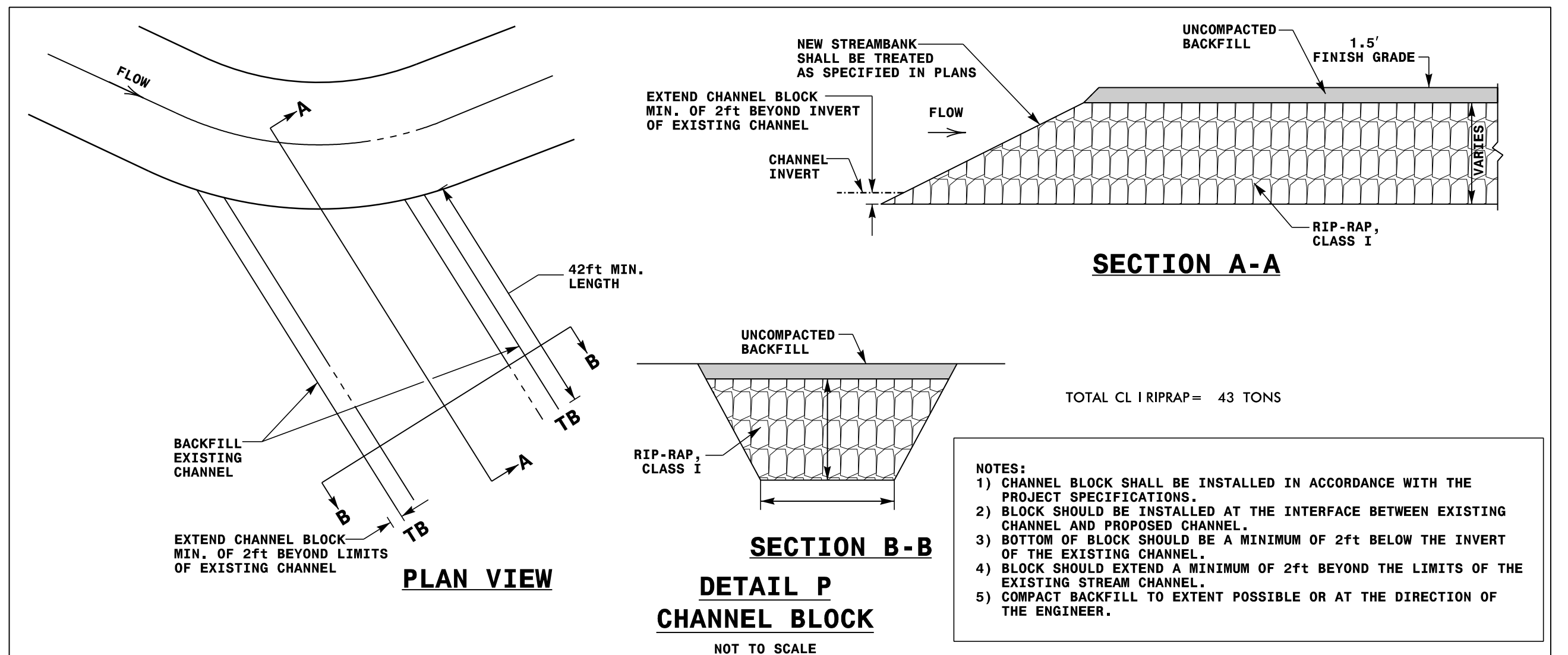


-L DET- STA. 23+68.31 RT, L=101', S=0.79%, *
BEG ELEV=347.4, END ELEV=346.6
(DDE = 80 CY)
-L DET- STA. 24+68.73 RT, L=88', S=4.53%, *
BEG ELEV=346.6, END ELEV=342.6
(DDE = 67 CY)
-L DET- STA. 24+67.66 LT, L=24', S=3.45%,
BEG ELEV=346.8, END ELEV=346.0
(DDE = 44 CY)
-L DET- STA. 24+91.41 LT, L=66', S=3.05%,
BEG ELEV=346.0, END ELEV=346.2
(DDE = 58 CY)
-L DET- STA. 26+18.82 RT, L=100', S=6.94%, *
BEG ELEV=343.2, END ELEV=336.3
(DDE = 80 CY)
-L DET- STA. 30+22.02 RT, L=102, S=3.15%, *
BEG ELEV=332.5, END ELEV=332.8
(DDE = 307 CY)
-L- STA. 35+00 RT, L=100, S=0.85%
BEG ELEV=332.7, END ELEV=333.5
(DDE = 161 CY)

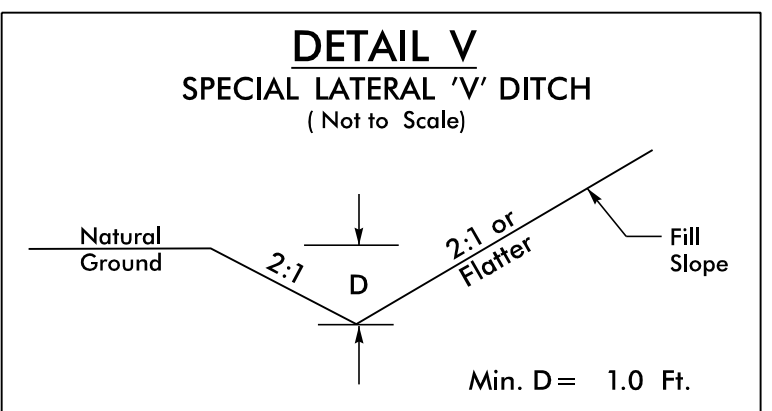


Type of Liner = CL B Rip-Rap, Keyed-In
-L- STA. 31+21 TO STA. 32+17 LT
(CL B RIPRAP = 50 TONS; GEOTEXTILE = 111 SY)

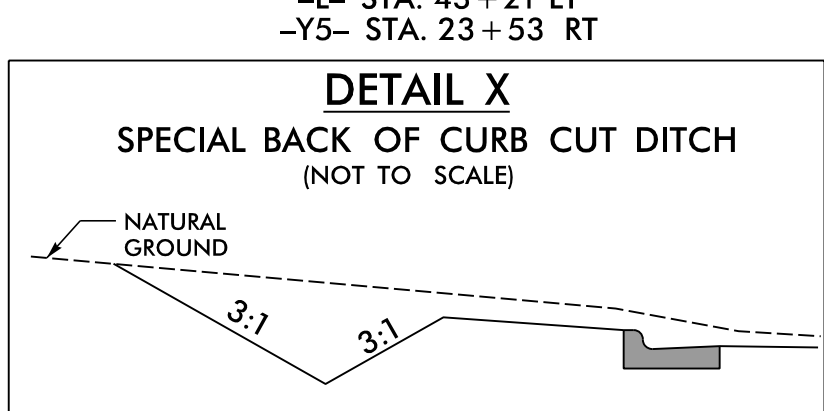
PERMANENT CHANNEL EXCAVATION
TOTAL CHANNEL EXCAVATION = 900 CY (360 CY INLET, 540 CY OUTLET)
TOTAL CL I RIPRAP = 1300 TONS (390 TONS INLET, 910 TONS OUTLET)
TOTAL GEOTEXTILE FAB. = 1200 SY (630 SY INLET, 570 SY OUTLET)



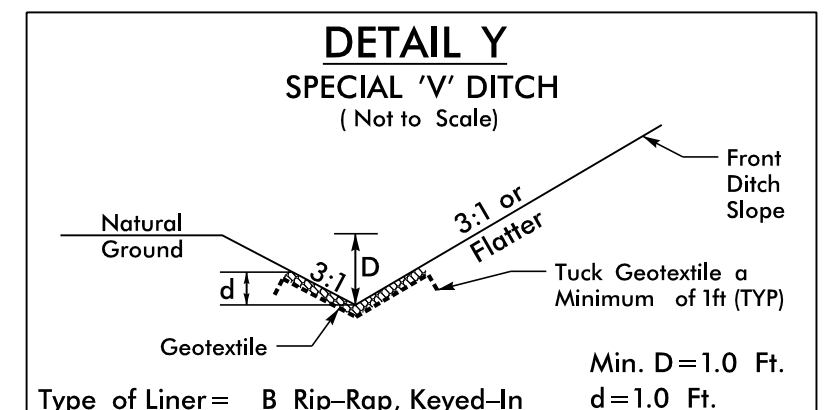
-L DET- STA. 22+67.79 TO STA. 23+68.31 RT *
-L DET- STA. 27+18.93 TO STA. 30+22.02 RT *



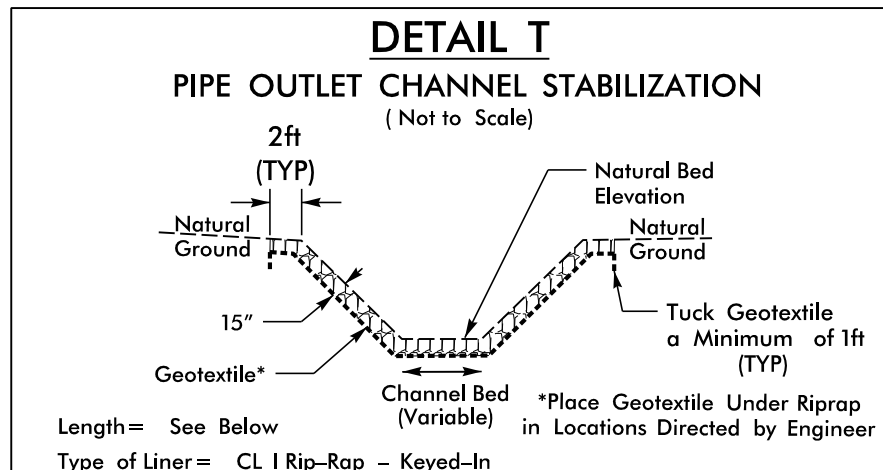
-Y5- STA. 20+00 TO STA. 21+00 LT



-Y5- STA. 21+00 TO STA. 21+59 LT



-L- STA. 24+50 TO STA. 25+00 RT
CL B RIPRAP = 16 TONS; GEOTEXTILE = 36 SY

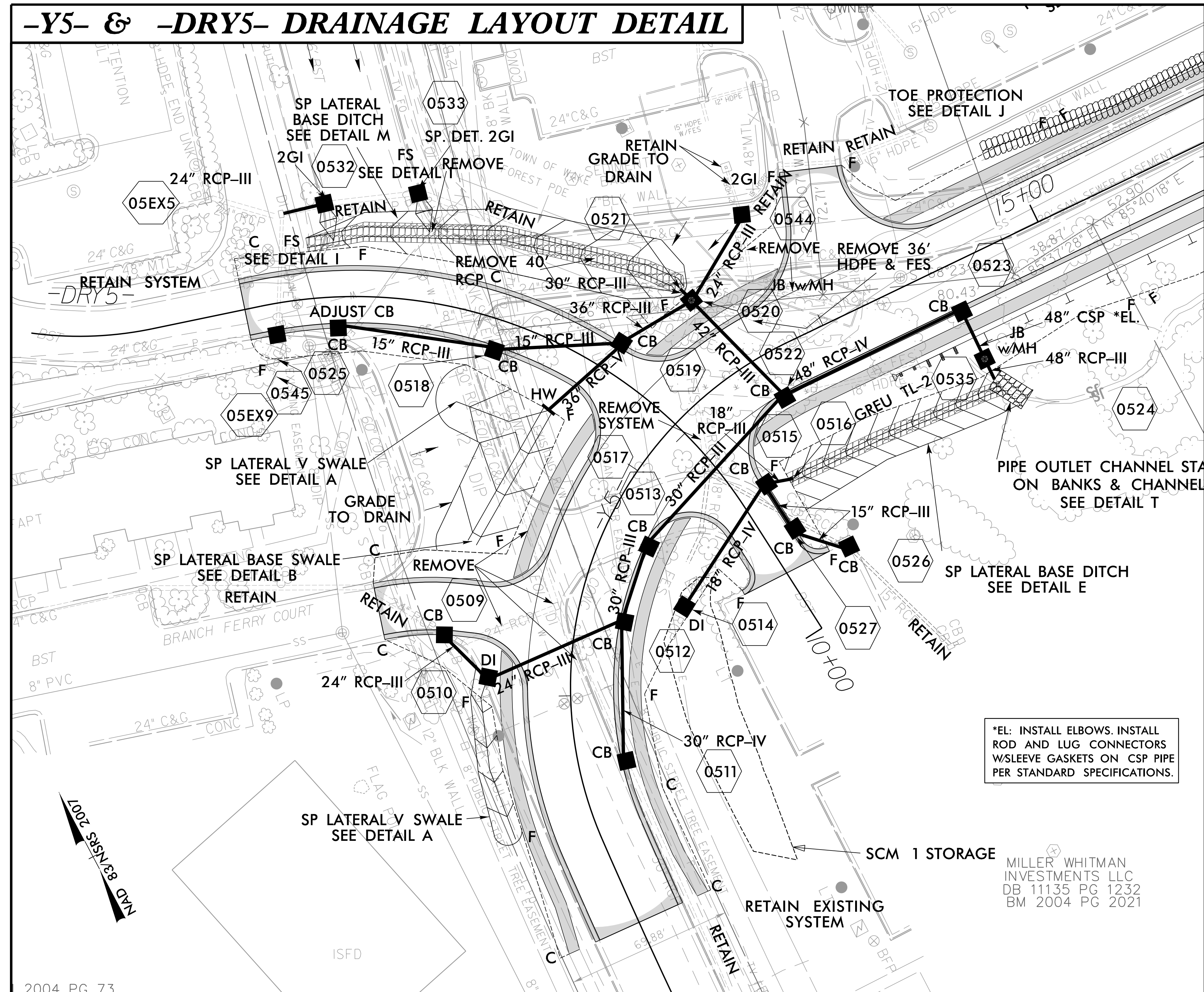


-L- STA. 19+90 LT, L=10'
(CL I RIPRAP = 11 TONS; GEOTEXTILE = 22 SY)
-Y5- STA. 14+55 RT, L=16'
(CL I RIPRAP = 26 TONS; GEOTEXTILE = 50 SY)

*DITCH TO BE CONSTRUCTED DURING DETOUR PHASE AND RETAINED THROUGH FINAL CONSTRUCTION

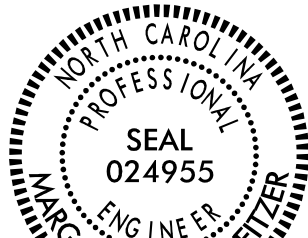
DRAINAGE LAYOUT DETAIL SHEET

PROJECT REFERENCE NO.	SHEET NO.
P-5707	2D-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER 
8/21/2026	8/20/2026
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



FOR PLAN VIEW SEE SHEETS 5.
FOR DITCH DETAILS SEE SHEET 2D-1.
FOR STR 0514 DETAILS SEE SHEET 2H-2.

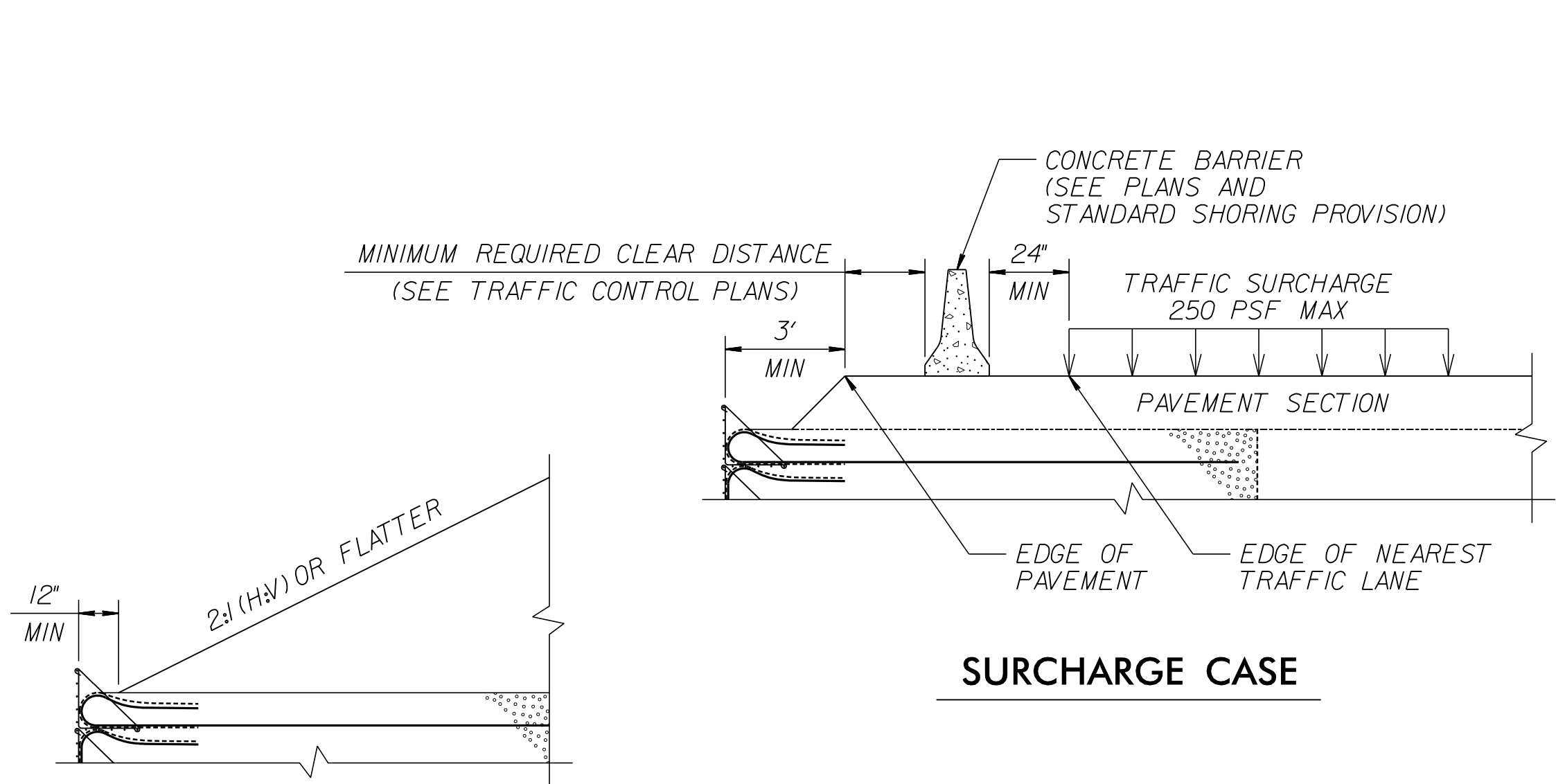




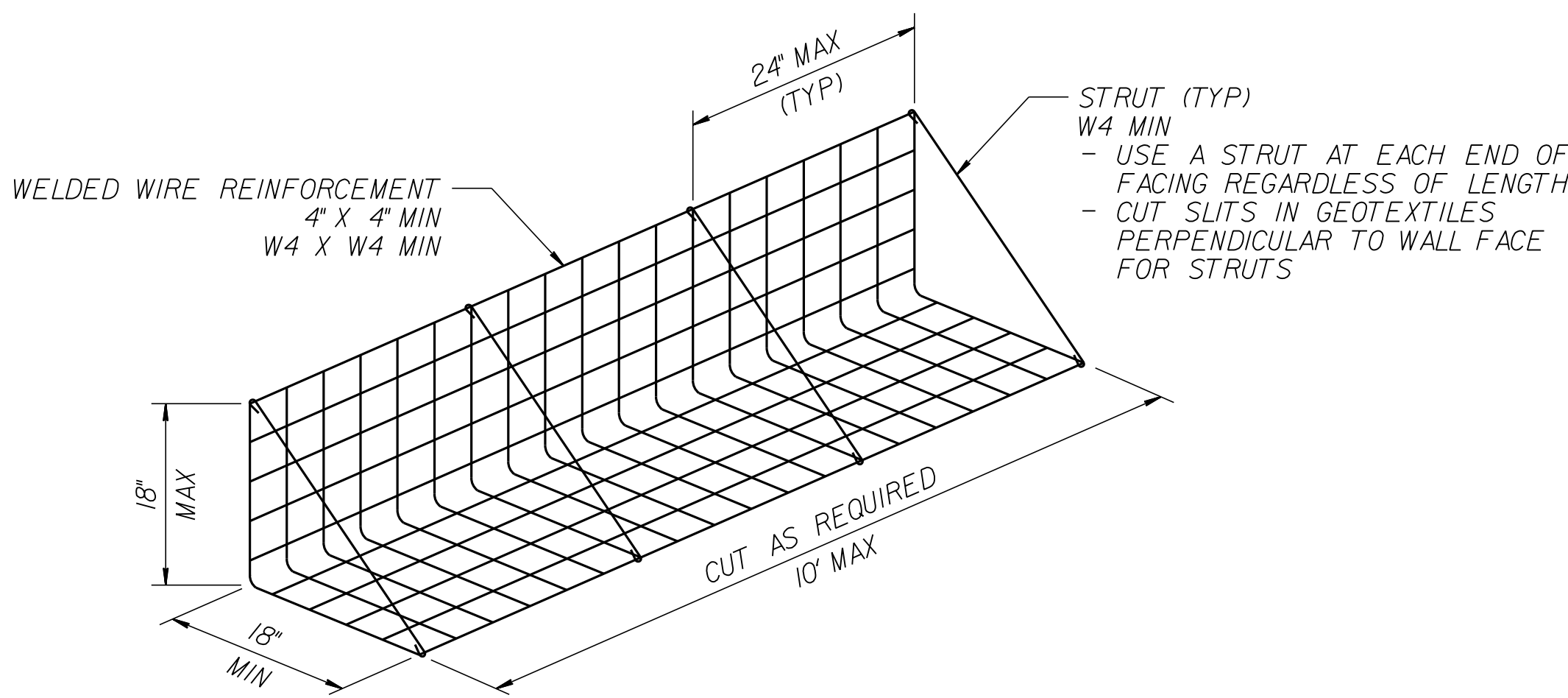
DocuSign
Margaret M. Switzer
44C68BA0B0C4F3... 4/27/2026

SIGNATURE DATE SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

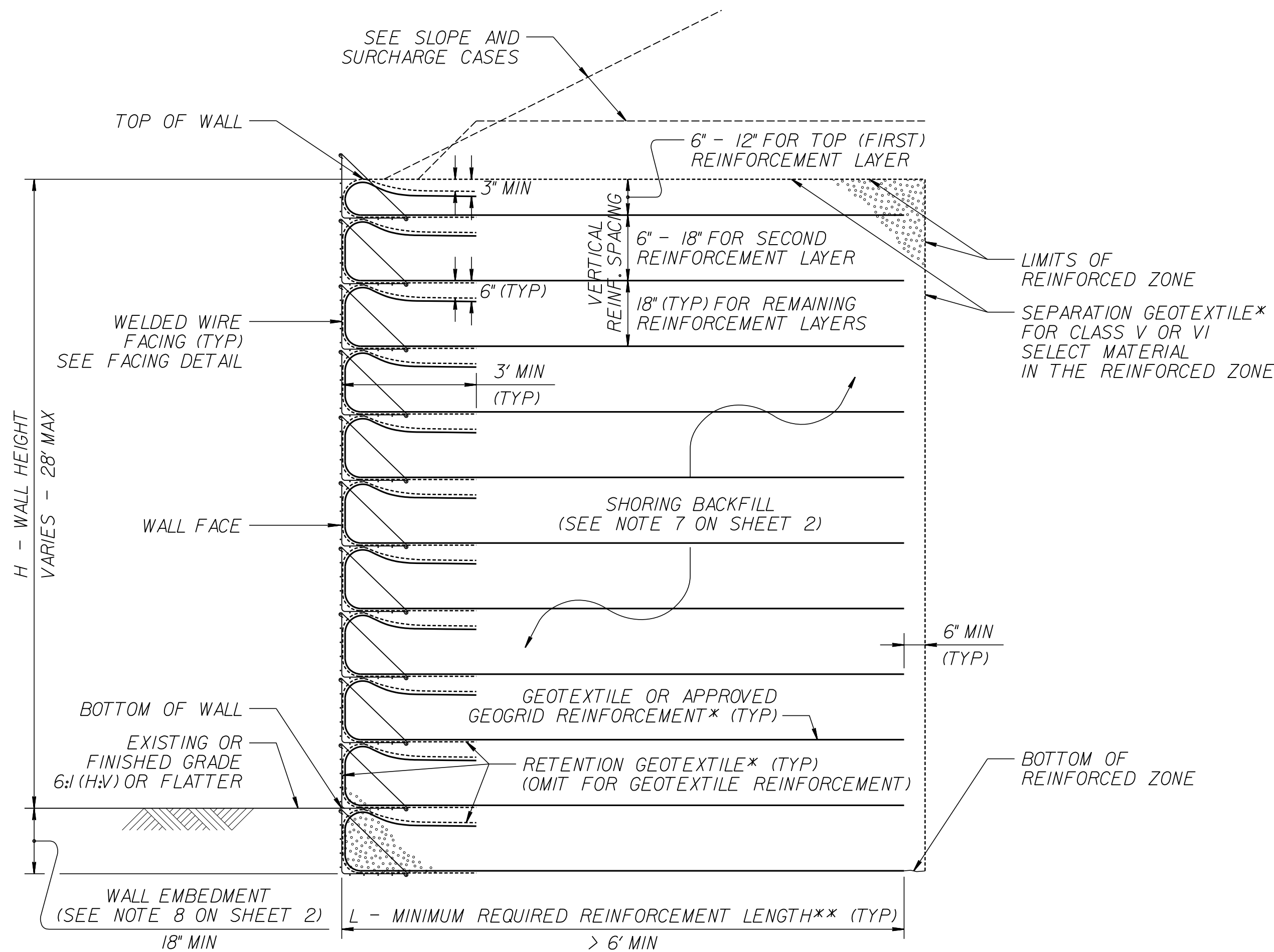


SURCHARGE CASE



FACING DETAIL

SLOPE CASE

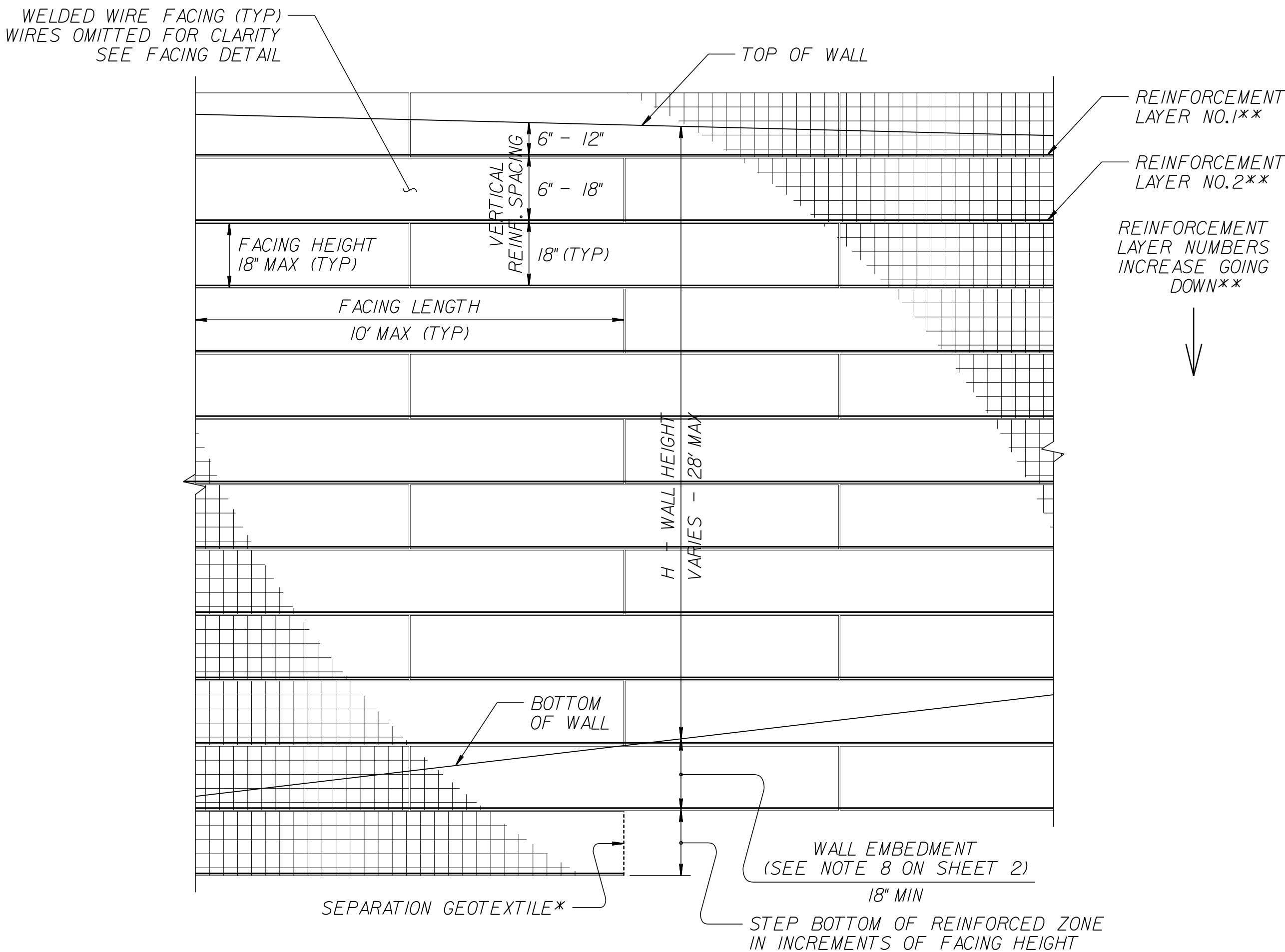


STANDARD TEMPORARY WALL

(FOR STANDARD TEMPORARY WALLS ON STRUCTURES,
SEE TEMPORARY WALL ON STRUCTURE DETAIL ON SHEET 2.)

*SEE GEOSYNTHETIC PLACEMENT DETAILS ON SHEET 2.

**SEE REINFORCEMENT TABLES ON SHEET 3.



STANDARD TEMPORARY WALL – PARTIAL ELEVATION

*SEE GEOSYNTHETIC PLACEMENT DETAILS ON SHEET 2.

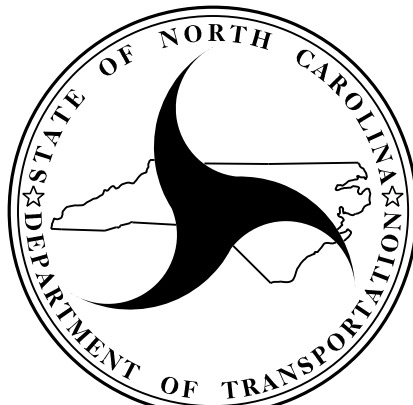
**SEE REINFORCEMENT TABLES ON SHEET 3.



P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
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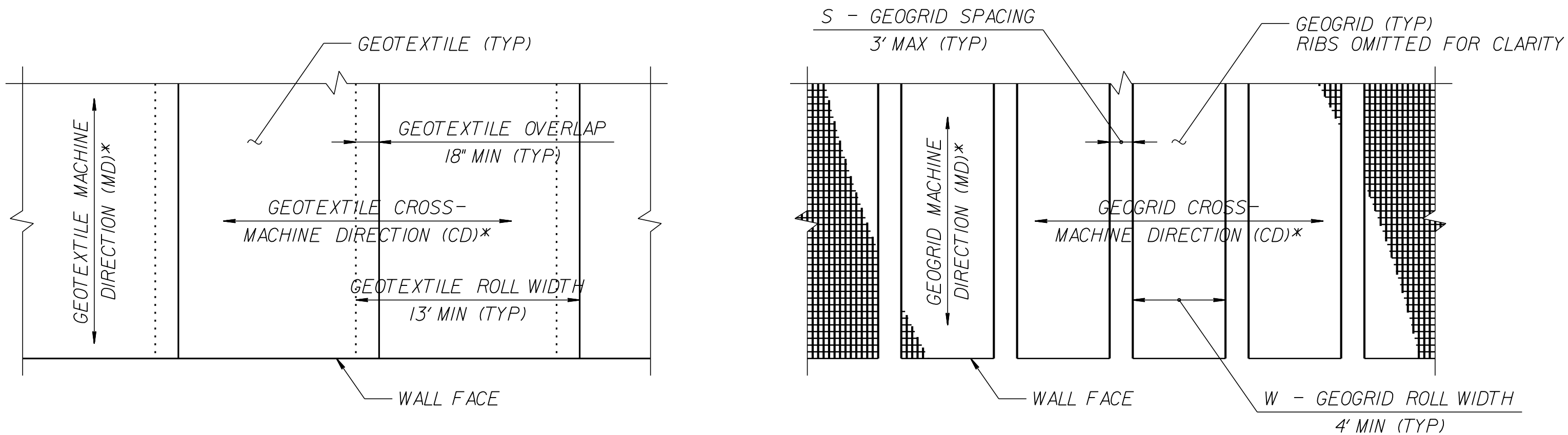
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL
ENGINEERING UNIT

STANDARD DETAIL NO. 1801.02

STANDARD
TEMPORARY WALL
SHEET 1 OF 3

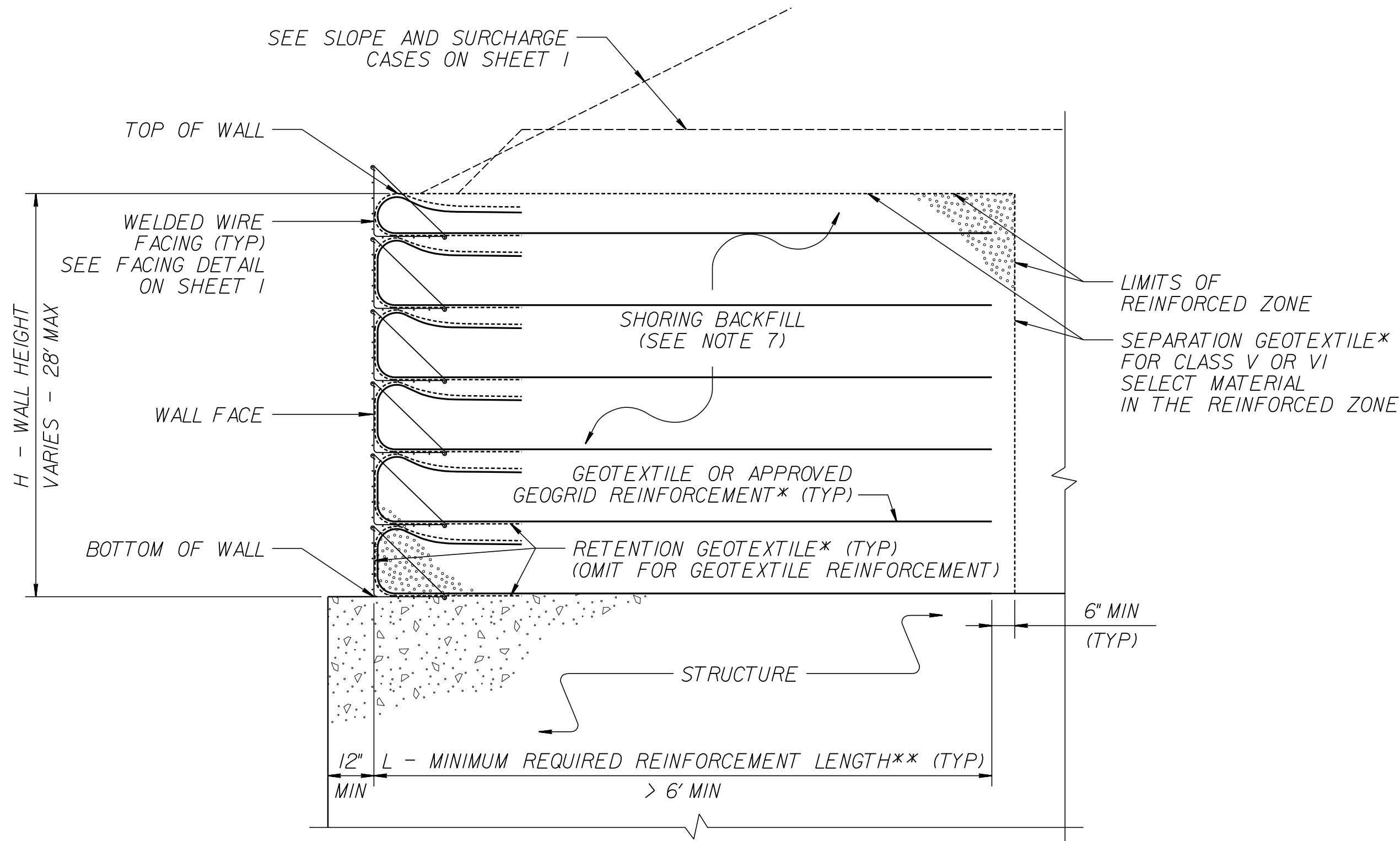
DATE: 11-19-13



GEOTEXTILE PLACEMENT
(100% COVERAGE MIN FOR
GEOTEXTILE REINFORCEMENT)

GEOGRID PLACEMENT
(80% COVERAGE MIN FOR
GEOGRID REINFORCEMENT –
 $\frac{W}{W+S} \times 100 \geq 80\%$,
SEE NOTE 11)

GEOSYNTHETIC PLACEMENT DETAILS
(PLAN VIEW)
*SEE NOTE 12.



TEMPORARY WALL ON STRUCTURE DETAIL
*SEE GEOSYNTHETIC PLACEMENT DETAILS.
**SEE REINFORCEMENT TABLES ON SHEET 3.

- NOTES:
- 1.-AT THE CONTRACTOR'S OPTION,USE STANDARD TEMPORARY WALLS AS NOTED IN THE PLANS.
 2. FOR STANDARD TEMPORARY WALLS,SEE STANDARD SHORING PROVISION.
 3. STANDARD TEMPORARY WALLS ARE BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
UNIT WEIGHT, γ = 120 PCF
FRICTION ANGLE, ϕ = 30 DEGREES
COHESION, c = 0 PSF
 4. DO NOT USE STANDARD TEMPORARY WALLS IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE.
 5. DO NOT USE STANDARD TEMPORARY WALLS WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS BELOW TEMPORARY WALLS.
 6. USE GROUNDWATER ELEVATION NOTED IN THE PLANS,IF NO GROUNDWATER ELEVATION IS SHOWN IN THE PLANS,ASSUME GROUNDWATER DEPTH IS LESS THAN 7' BELOW BOTTOM OF REINFORCED ZONE.DO NOT USE STANDARD TEMPORARY WALLS IF GROUNDWATER OR FLOOD ELEVATION IS ABOVE BOTTOM OF REINFORCED ZONE.
 7. DO NOT USE A-2-4 SOIL FOR STANDARD TEMPORARY WALLS AROUND CULVERTS OR IN THE REINFORCED ZONE OF STANDARD TEMPORARY WALLS FOR SLOPE CASES.DO NOT USE CLASS VI SELECT MATERIAL IN THE REINFORCED ZONE OF STANDARD TEMPORARY WALLS WITH GEOTEXTILE REINFORCEMENT.
 8. WALL EMBEDMENT IS NOT REQUIRED FOR STANDARD TEMPORARY WALLS ON STRUCTURES OR ROCK AS DETERMINED BY THE ENGINEER.
 9. DO NOT USE MORE THAN 4 DIFFERENT REINFORCEMENT STRENGTHS FOR EACH STANDARD TEMPORARY WALL.
 10. GEOGRIDS FOR GEOGRID REINFORCEMENT ARE APPROVED FOR SHORT TERM DESIGN STRENGTHS (3-YEAR DESIGN LIFE) IN THE MD AND CD BASED ON MATERIAL TYPE.THE LIST OF APPROVED GEOGRIDS WITH DESIGN STRENGTHS IS AVAILABLE FROM:connect.ncdot.gov/resources/Geological/Pages/Products.aspx DEFINE MATERIAL TYPE FROM THE WEBSITE ABOVE FOR SHORING BACKFILL AS FOLLOWS:

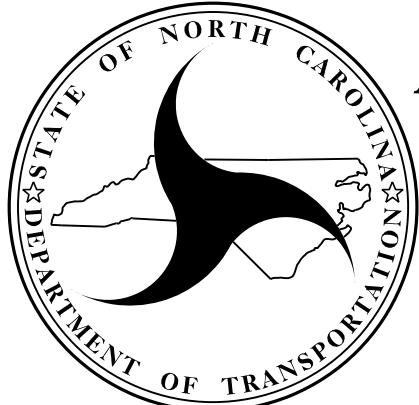
MATERIAL TYPE	SHORING BACKFILL
BORROW	A-2-4 SOIL
FINE AGGREGATE	CLASS II,TYPE I OR CLASS III SELECT MATERIAL
COARSE AGGREGATE	CLASS V OR VI SELECT MATERIAL

11. FOR GEOGRID REINFORCEMENT WITH LESS THAN 100% COVERAGE,STAGGER REINFORCEMENT SO GEOGRIDS ARE CENTERED OVER GAPS IN THE REINFORCEMENT LAYER BELOW.
12. AT THE CONTRACTOR'S OPTION,REINFORCEMENT MAY BE INSTALLED WITH THE MD PARALLEL TO THE WALL FACE IF BOTH OF THE FOLLOWING CONDITIONS OCCUR:
- W (REINFORCEMENT ROLL WIDTH) $\geq$ (MINIMUM REQUIRED REINFORCEMENT LENGTH) + 4.5' AND
- REINFORCEMENT STRENGTH IN CD $\geq$ MINIMUM REQUIRED REINFORCEMENT STRENGTH IN MD.
13. SUBMIT A "STANDARD TEMPORARY WALL SELECTION FORM" AT LEAST 7 DAYS BEFORE STARTING TEMPORARY WALL CONSTRUCTION.STANDARD SHORING SELECTION FORMS ARE AVAILABLE FROM:
connect.ncdot.gov/resources/Geological/Pages/Geotech_Forms_Details.aspx
14. DO NOT PLACE SHORING BACKFILL OR REINFORCEMENT UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.
15. FOR STANDARD TEMPORARY WALLS WITH PILE FOUNDATIONS IN THE REINFORCED ZONE,DRIVE PILES THROUGH REINFORCEMENT AFTER CONSTRUCTING TEMPORARY WALLS.
16. DO NOT SPLICE OR OVERLAP REINFORCEMENT SO SEAMS ARE PARALLEL TO THE WALL FACE.
17. CONTACT THE ENGINEER WHEN EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS,PAVEMENTS,PIPES,INLETS OR UTILITIES WILL INTERFERE WITH REINFORCEMENT.
18. FOR STANDARD TEMPORARY WALLS WITH INTERIOR ANGLES LESS THAN 90 DEGREES,WRAP GEOSYNTHETICS AT ACUTE CORNERS AS DIRECTED BY THE ENGINEER.
19. FOR STANDARD TEMPORARY WALLS WITH TOP OF WALL WITHIN 5' OF FINISHED GRADE,REMOVE TOP FACING AND INCORPORATE TOP REINFORCEMENT LAYER INTO FILL WHEN PLACING FILL IN FRONT OF WALL.

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NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL
ENGINEERING UNIT

STANDARD DETAIL NO.1801.02

STANDARD
TEMPORARY WALL
SHEET 2 OF 3

DATE: 10-19-21

PROJECT REFERENCE NO.

P-5707

SHEET NO.

2G-3

GEOTECHNICAL ENGINEER

SEAL

024955

ENGINEER

MARGARET M. SWITZER

4/27/2026

DocuSign

Margaret M. Switzer

4AC68A08BC4F3...

SIGNATURE

DATE

ENGINEER

SIGNATURE

DATE

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

WALL HEIGHT (H) + WALL EMBEDMENT (FT)	NUMBER OF REINFORCEMENT LAYERS*
2.5 - 4	3
4 - 5.5	4
5.5 - 7	5
7 - 8.5	6
8.5 - 10	7
10 - 11.5	8
11.5 - 13	9
13 - 14.5	10
14.5 - 16	11
16 - 17.5	12
17.5 - 19	13
19 - 20.5	14
20.5 - 22	15
22 - 23.5	16
23.5 - 25	17
25 - 26.5	18
26.5 - 28	19
28 - 29.5	20

*BASED ON VERTICAL REINFORCEMENT SPACING SHOWN ON SHEET 1.

SLOPE OR SURCHARGE CASE	GROUNDWATER DEPTH BELOW BOTTOM OF REINFORCED ZONE (SEE NOTE 6 ON SHEET 2) (FT)	SHORING BACKFILL TYPE IN THE REINFORCED ZONE (SEE NOTE 7 ON SHEET 2)	H - WALL HEIGHT (FT)																									
			< 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	
SLOPE CASE	> 0	CLASS II,TYPE I, CLASS III,CLASS V OR CLASS VI SELECT MATERIAL	6	6	7	8	9	11	12	13	13	14	15	16	17	18	19	20	21	22	23	24	24	25	26	27	27	
SURCHARGE CASE	> 0 TO 7 FOR H < 20' > 0 TO 10 FOR H ≥ 20'	ALL SHORING BACKFILL TYPES	6	7	7	8	8	9	9	10	11	11	12	12	13	14	14	15	16	17	17	18	19	19	20	21	22	
	> 7 FOR H < 20' > 10 FOR H ≥ 20'	A-2-4 SOIL	6	6	7	8	8	9	9	10	11	11	12	12	13	14	14	15	16	16	17	18	18	19	20	20	21	
		CLASS II,TYPE I OR CLASS III SELECT MATERIAL	6	6	7	7	8	8	9	10	10	11	11	12	12	13	14	15	15	16	16	17	17	18	18	19	20	
		CLASS V OR CLASS VI SELECT MATERIAL	6	6	7	7	7	8	8	9	9	10	10	11	12	13	13	14	14	15	15	16	17	17	18	19	19	

L – MINIMUM REQUIRED REINFORCEMENT LENGTH (FT)
(FOR ALL REINFORCEMENT TYPES)

REINFORCEMENT LAYER NUMBER*	SHORING BACKFILL TYPE IN THE REINFORCED ZONE (SEE NOTE 7 ON SHEET 2)				
	SLOPE CASE		SURCHARGE CASE		
	CLASS II,TYPE I OR CLASS III SELECT MATERIAL	CLASS V SELECT MATERIAL	A-2-4 SOIL	CLASS II,TYPE I OR CLASS III SELECT MATERIAL	CLASS V SELECT MATERIAL
1	2400	2400	2400	2400	2400
2	2400	2400	2400	2400	2400
3	2400	2400	2400	2400	2400
4	2400	2400	2500	2400	2400
5	2500	2400	3000	2400	2400
6	3000	2400	3500	2800	2400
7	3500	2700	4000	3200	2600
8	4000	3100	4500	3600	2900
9	4500	3500	5000	4000	3200
10	5000	3900	5500	4400	3500
11	5500	4300	6000	4800	3800
12	6000	4700	6500	5200	4100
13	6500	5100	7000	5600	4400
14	7000	5400	7500	6000	4700
15	7500	5800	8000	6400	5000
16	8000	6200	8500	6800	5300
17	8500	6600	9000	7200	5600
18	9000	7000	9500	7600	5900
19	9500	7400	10000	8000	6200
20	10000	7800	10500	8400	6500

GEOTEXTILE REINFORCEMENT
ULTIMATE TENSILE STRENGTH (LB/FT)

REINFORCEMENT LAYER NUMBER*	SHORING BACKFILL TYPE IN THE REINFORCED ZONE (SEE NOTE 7 ON SHEET 2)				
	SLOPE CASE		SURCHARGE CASE		
	CLASS II,TYPE I OR CLASS III SELECT MATERIAL	CLASS V OR CLASS VI SELECT MATERIAL	A-2-4 SOIL	CLASS II,TYPE I OR CLASS III SELECT MATERIAL	CLASS V OR CLASS VI SELECT MATERIAL
1	240	200	340	290	240
2	380	310	520	430	350
3	530	420	700	570	460
4	690	550	870	720	570
5	860	690	1050	860	680
6	1030	830	1220	1000	790
7	1200	970	1400	1150	900
8	1370	1110	1580	1290	1010
9	1550	1240	1750	1430	1120
10	1720	1380	1930	1580	1230
11	1890	1520	2100	1720	1340
12	2060	1660	2280	1860	1450
13	2240	1800	2450	2010	1560
14	2410	1940	2630	2150	1670
15	2580	2080	2800	2290	1780
16	2750	2220	2980	2440	1890
17	2930	2360	3160	2580	2000
18	3100	2500	3330	2720	2110
19	3270	2640	3510	2860	2220
20	3440	2780	3690	3000	2330

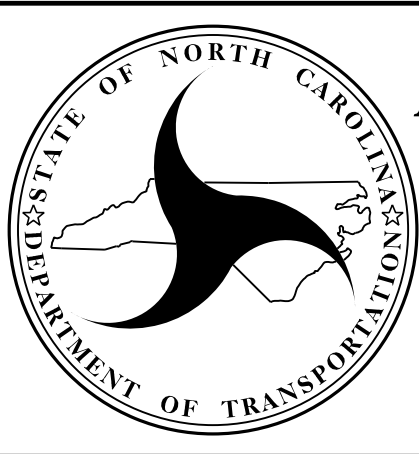
GEOGRID REINFORCEMENT
SHORT-TERM DESIGN STRENGTH (LB/FT)
(SEE NOTE 10 ON SHEET 2.)

MINIMUM REQUIRED REINFORCEMENT STRENGTH IN MD
(SEE NOTE 9 ON SHEET 2.)
*SEE PARTIAL ELEVATION ON SHEET 1
FOR REINFORCEMENT LAYER NUMBERING.

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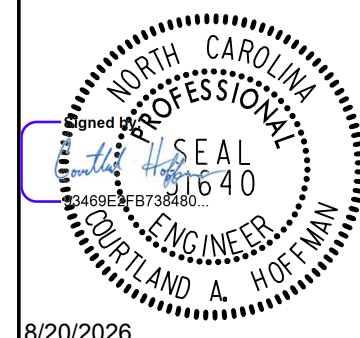
STANDARD DETAIL NO.1801.02

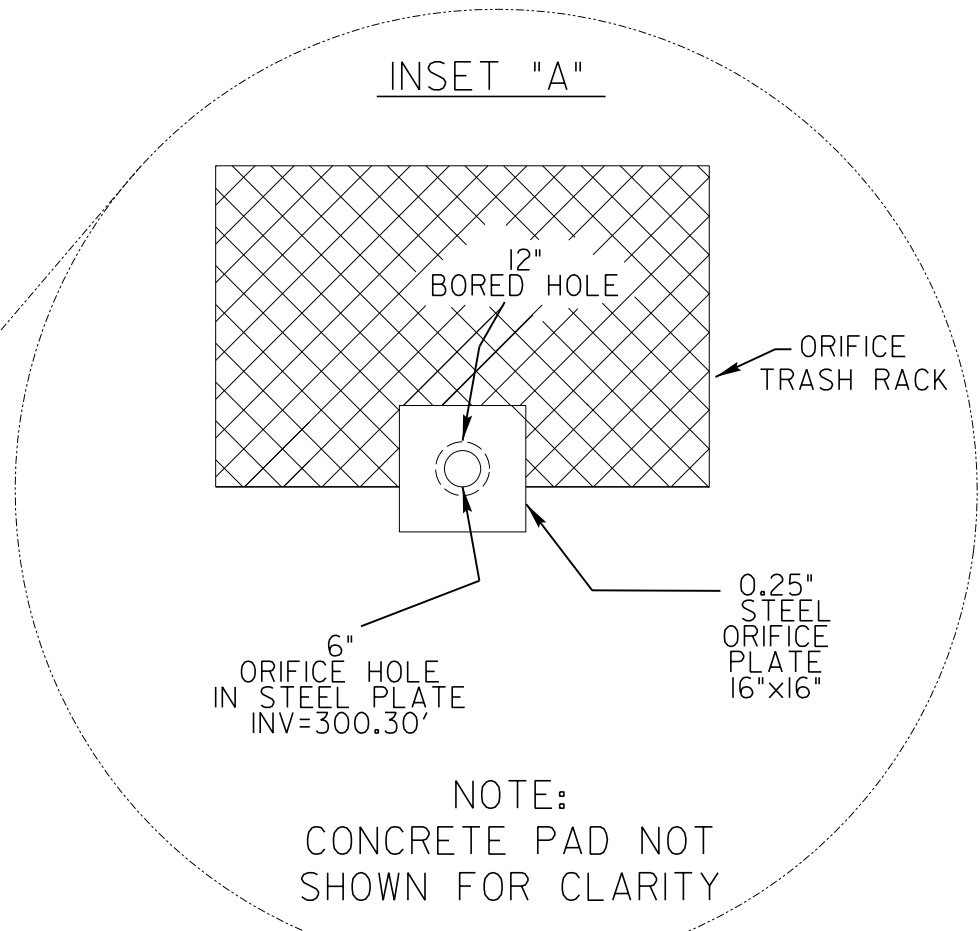
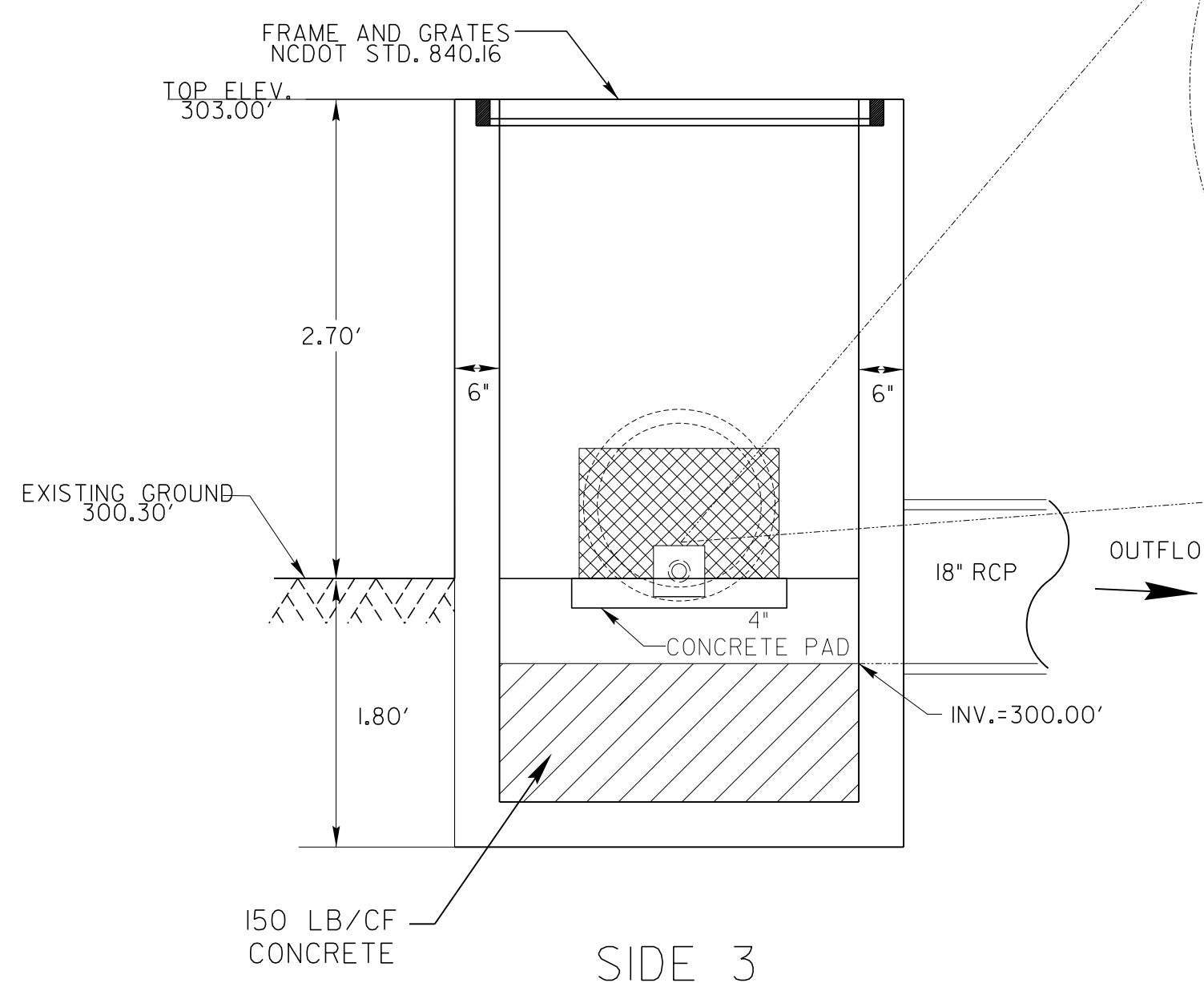
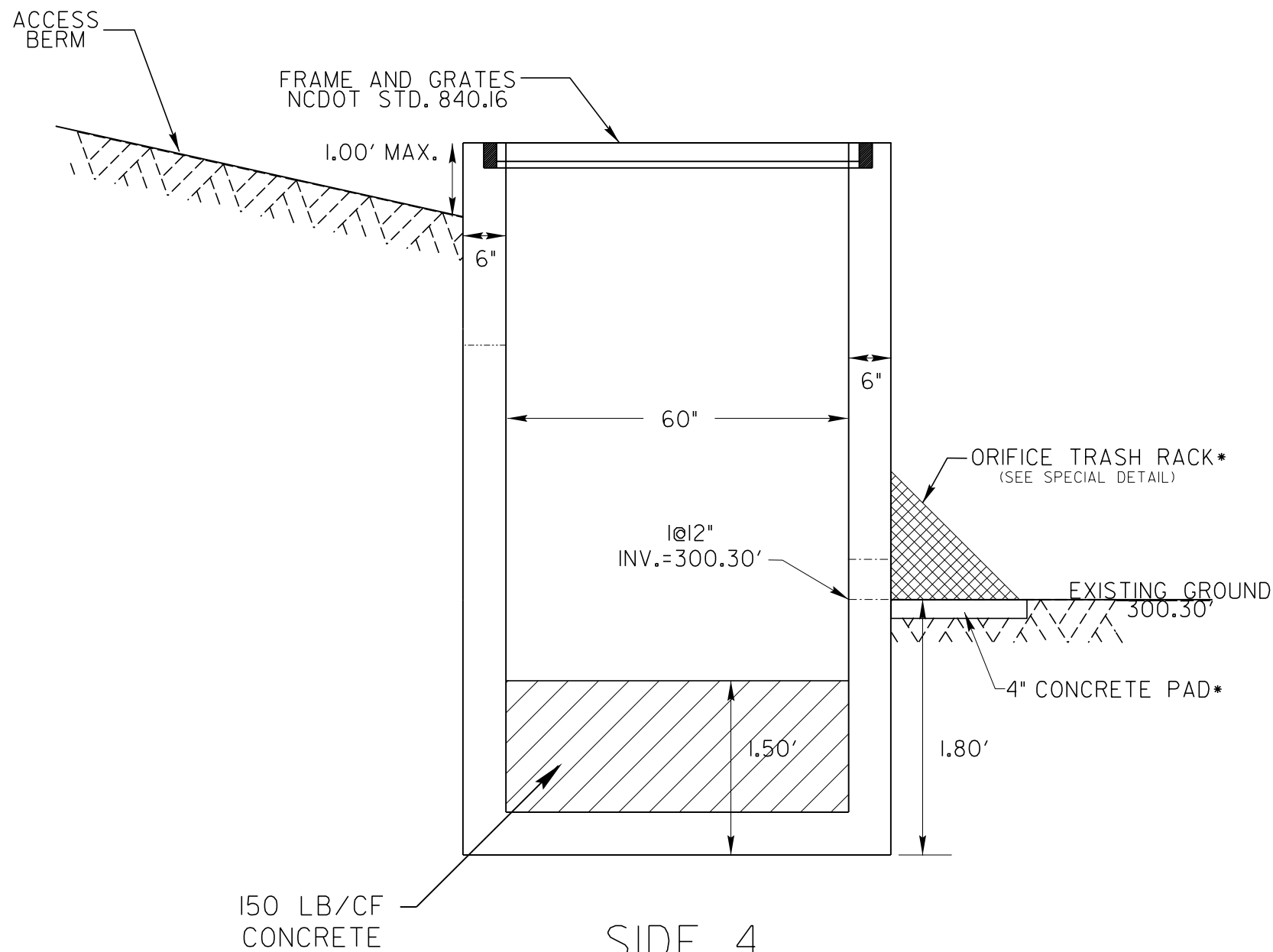
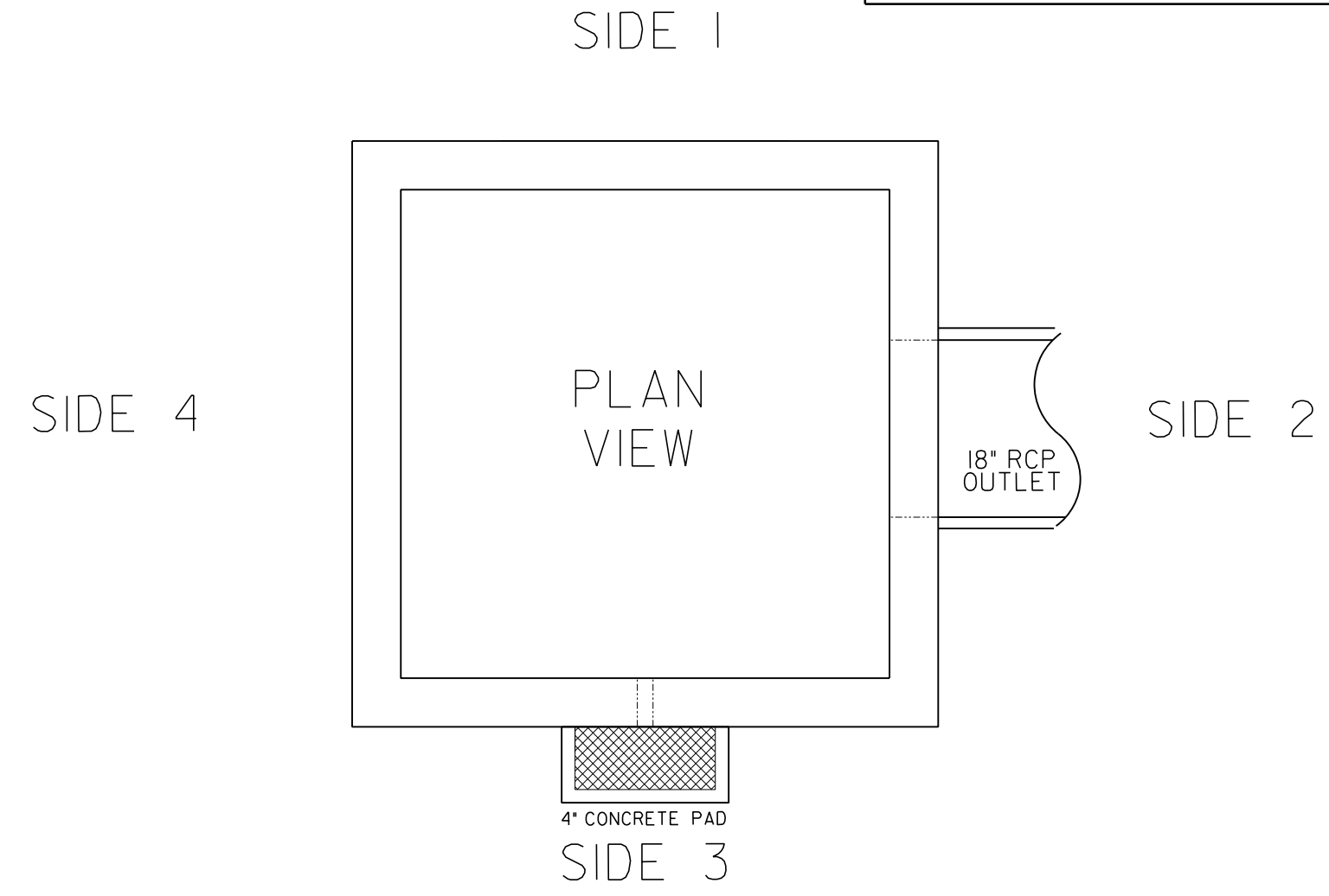
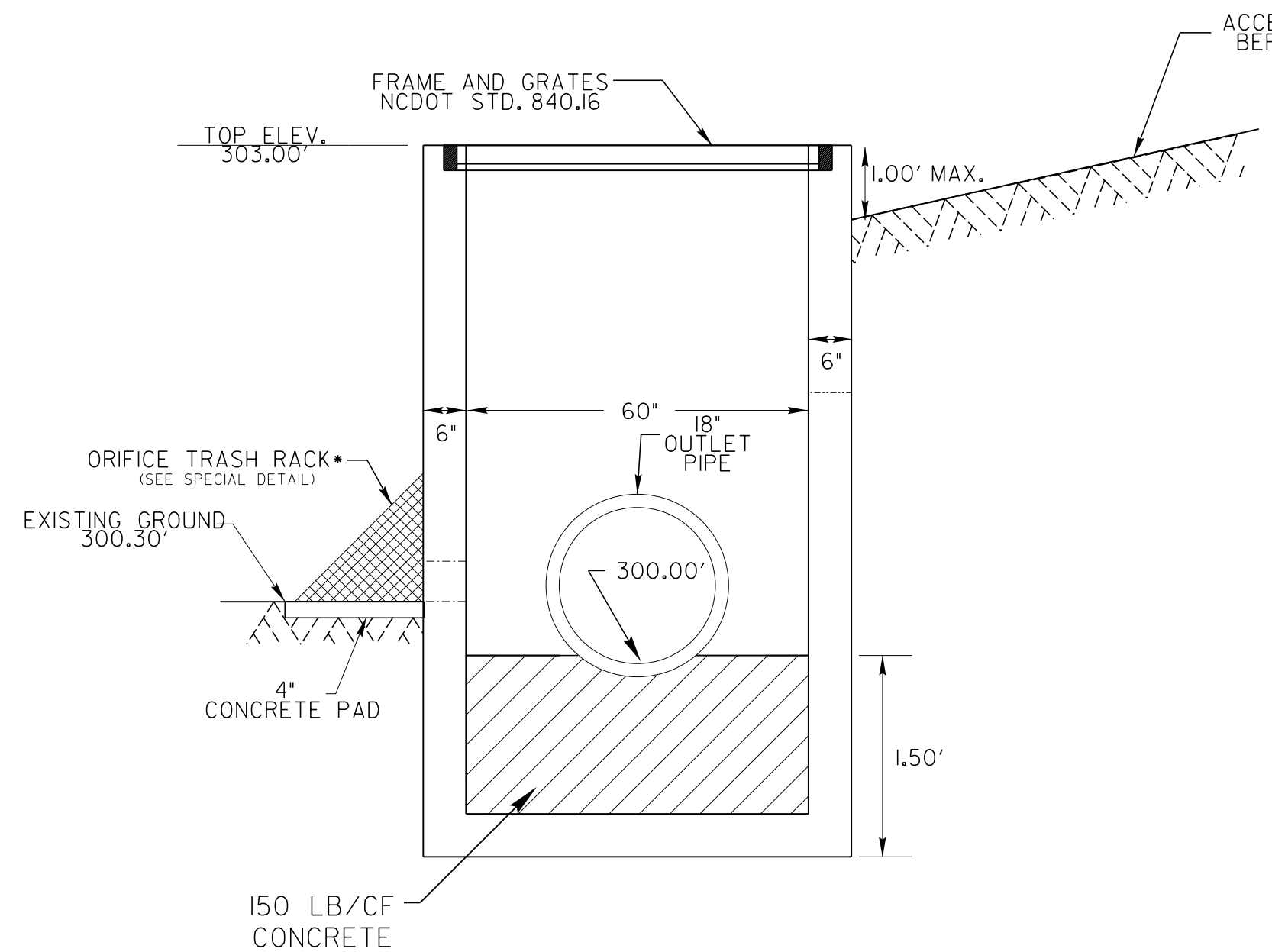
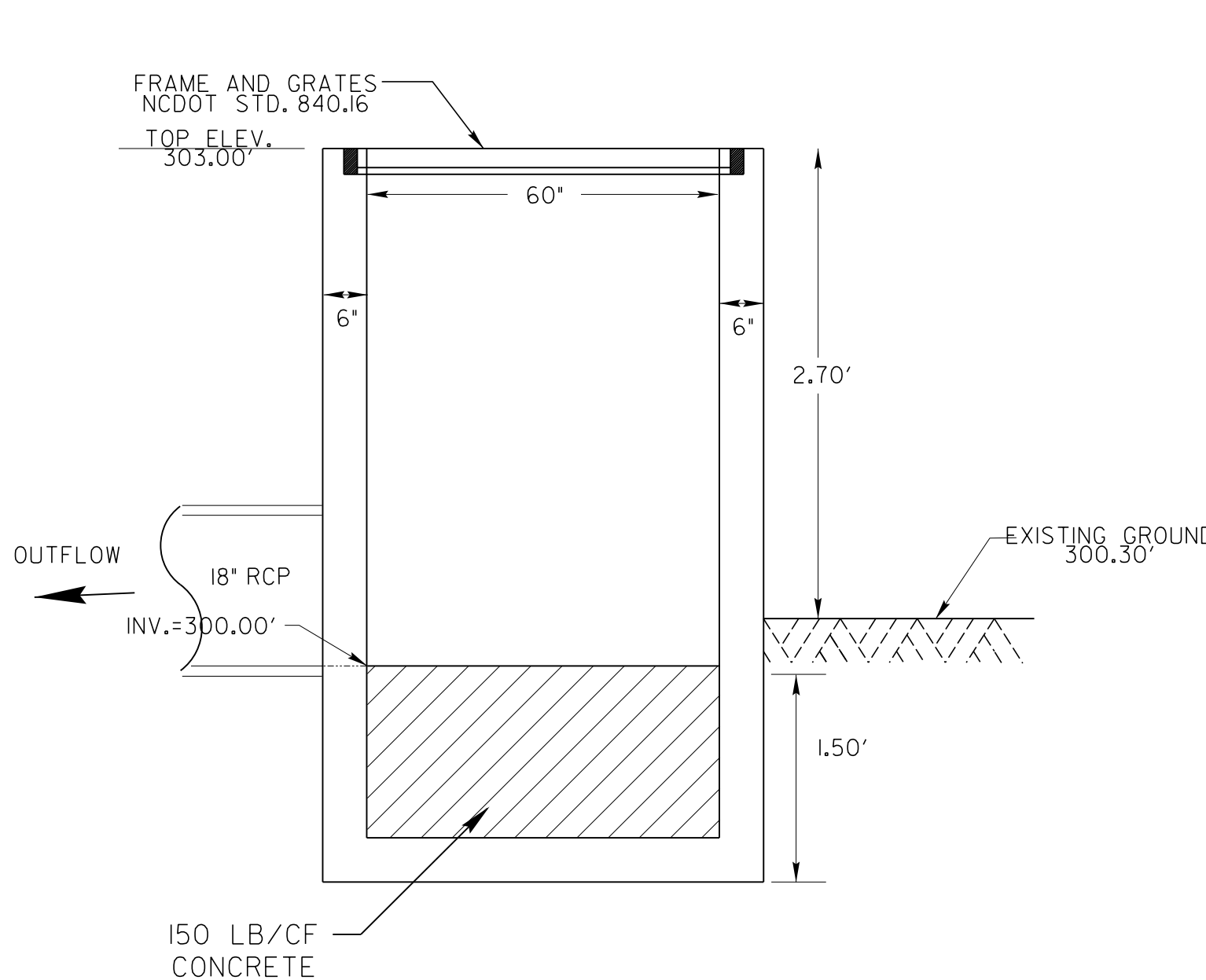
STANDARD
TEMPORARY WALL
SHEET 3 OF 3

DATE: 11-19-13

5/9/2026

8/20/2026
C:\Users\CAH\Documents\Projects\PSH\SCM Details\PSH02H-2.3.Dry Pond Details.dgn
In: CAH

DESIGNED BY: <u>CAH</u>	DATE: <u>07 /11 /2022</u>	PROJECT REFERENCE NO.	SHEET NO.
CHECKED BY: <u>DMK</u>	DATE: <u>07 /12 /2022</u>	<u>P-5707</u>	<u>2H-2</u>
		RW SHEET NO.	
		HYDRAULICS ENGINEER  8/20/2026	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



NOTE: INSTALL STEPS IN
CONTROL STRUCTURES ON 14"
CENTERS IN ACCORDANCE WITH STD. 840.66

OUTLET STRUCTURE 0514 (N.T.S)

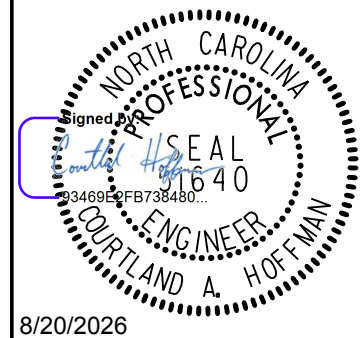
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8/20/2026
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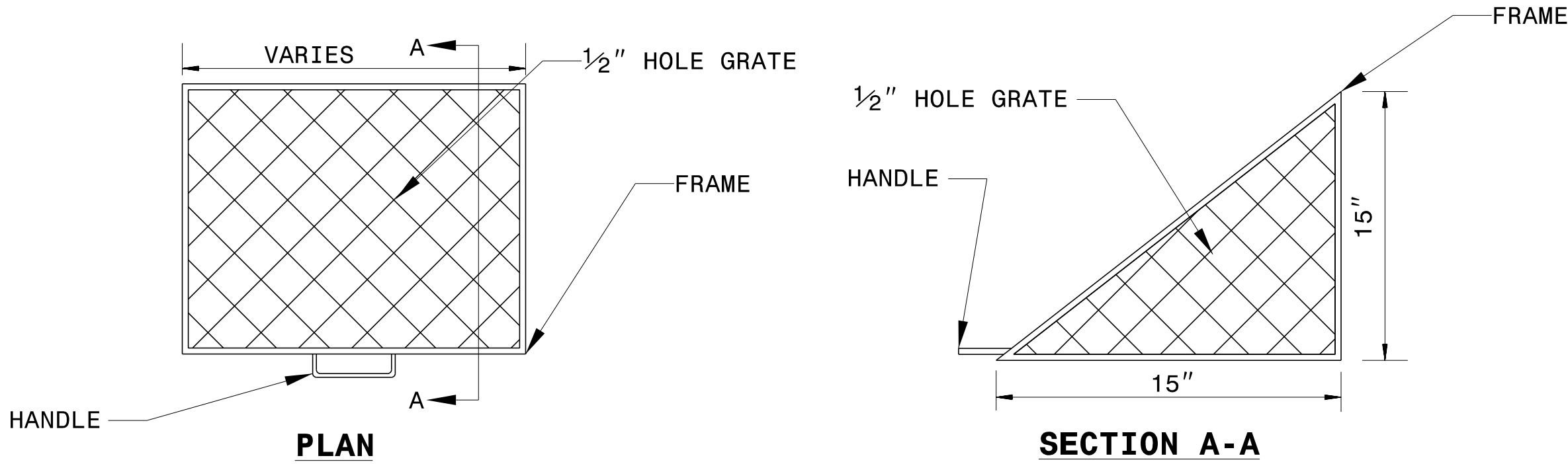
DESIGNED BY: CAH
CHECKED BY: DMK
DATE: 07 /11 /2022
DATE: 07 /12 /2022

PROJECT REFERENCE NO. SHEET NO.
P-5707 2H-3

R/W SHEET NO.

HYDRAULICS ENGINEER

8/20/2026

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- ORIFICE TRASH RACK NOTES:
1. ALL JOINTS SHALL BE FULLY WELDED AROUND JOINT WITH A MINIMUM OF A 1/4" BEAD.
 2. IF BOLTS ARE CHEMICALLY ANCHORED, REFER TO SECTION 420-13, ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, JANUARY 2024, FOR ANCHORING PROCEDURE. FIELD TESTING IS NOT REQUIRED.
 3. REMOVABLE ORIFICE TRASH RACK SHALL BE ATTACHED TO CONCRETE BOX BY HINGE OR SLIDE RAIL SYSTEM.
 4. RACK AND HARDWARE SHALL BE ALUMINUM OR GALVANIZED IN ACCORDANCE WITH ASTMA 153.

ORIFICE TRASH RACK

*TRASH RACK IS INCIDENTAL TO THE DRAINAGE STRUCTURE

ORIFICE TRASH RACK (N.T.S.)


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IN CUBIC YARDS

[illegible]

NOTE: QUANTITIES ARE APPROXIMATE ONLY. THE RESIDENT ENGINEER WILL USE METHODS INCLUDING BUT NOT LIMITED TO RECROSS-SECTIONING, TRUCK MEASUREMENTS, AND AERIAL SURVEYS TO COMPUTE FINAL QUANTITIES WHICH THE CONTRACTOR WILL BE PAID.

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5/9/06

8/7/2026

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ibuskou

COMPUTED BY: JAM

DATE: 04 /14 /2025

CHECKED BY: ESP

DATE: 04 /16 /2025

N = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
TOTAL BERM WIDTH = DISTANCE FROM FACE OF CURB TO SHOULDER BREAK POINT.
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.
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

DIVISION OF HIGHWAYS

STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
P-5707	3B-2
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GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL BERM WIDTH (ft)	FLARE LENGTH (ft)		W (ft)		ANCHORS								IMPACT ATTENUATOR TYPE TL-3		DOUBLE FACED CONCRETE BARRIER	SINGLE FACED CONCRETE BARRIER	REMOVE EXISTING GUARDRAIL	REMARKS		
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	XI	GREU TL-3	TYPE III	CAT-1	GREU TL-2	AT-1	G	NG							
L	24+73.24	28+87.50	RT	418.75			24+70.00	BEGIN BR.	14.0	14.0		325.0		6.5				1												
L	30+77.00	48+79.52	RT	1,831.25			END BRIDGE	48+80.00	14.0	14.0	325.0		6.5				1													
L	19+30.33	28+87.50	LT	968.75			BEGIN BR.	19+30.00	14.0	14.0	325.0		6.5				1													
L	30+77.00	38+52.67	LT	756.25	18.75		44+50.00	END BRIDGE	14.0	14.0		325.0		6.5			1			1										
L	39+40.53	47+25.00	LT	775.00			47+25.00	39+42.08	14.0	14.0																		TIE TO EXISTING GUARDRAIL		
DR1	10+49.25	12+80.00	RT	50.00	218.75		10+50.00	12+75.00	8.0	8.0										1										
Y5	14+17.12	23+83.00	RT	950.00	25.00		15+00.00	23+80.00	14.0	14.0	50.0		1.0						1	1										
Y5	26+47.71	27+71.32	LT		87.50			24+79.00	14.0	14.0										1										
Y5	21+60.00	23+15.59	LT				23+00.00														1			168.00						
Y5	21+28.75	21+60.00	LT	25.00				21+60.00	12.5	12.5									1											
Y2	10+61.38	10+99.00	RT		68.75				14.0	14.0										1										
Y3	13+90.09	14+54.09	RT		93.75				14.0	14.0										1										
L	39+27.00	49+10.00	RT																							983.00				
L	40+71.00	47+25.00	LT																							654.00				
			SUBTOTAL	5,775.00	512.50													4	1	1	6		1		168.00	1,637.00				
	LESS ANCHOR DEDUCTIONS																													
	GREU TL-2	1	@ 25' =	-25.00'																										
	AT-1	6	@ 6.25' =		-37.50'																									
	TYPE III	4	@ 18.75' =	-75.00'																										
	CAT-1	1	@ 6.25' =	-6.25'																										
			TOTAL GUARDRAIL =	5,668.75	475.00																									
			TOTAL SAY	5,700.00'	487.50'		10 ADDITIONAL GUARDRAIL POSTS											4	1	1	6		1		170	1,640				

TEMPORARY GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL BERM WIDTH (ft)	FLARE LENGTH (ft)		W (ft)		ANCHORS										IMPACT ATTENUATOR TYPE TL-3	PORTABLE CONCRETE BARRIER	SINGLE FACED CONCRETE BARRIER	REMOVE EXISTING GUARDRAIL	REMARKS				
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	XI	GREU TL-3	B-77	TYPE III	CAT-1	TES	AT-1											
L_DET	16+60.44	25+51.66	LT																			2											
L_DET	26+09.35	30+61.86	LT																			2											
L	46+00.00	47+25.00	LT	125.00																													
			SUBTOTAL	125.00																		4											
	LESS ANCHOR DEDUCTIONS																																
	CAT-1		@ 6.25' =																														
	GREU TL-3		@ 50.00' =																														
			TOTAL BARRIER =	125.00																													
			SAY	137.50'																		4											

LINE	STATION	STATION	LOCATION	LENGTH OR AREA	WIDTH	SQUARE YARDS
-L_DET-	12+35	14+00	RT	754.57		83.84
-L_DET-	14+47	17+66	RT	5285.35		587.26
-L_DET-	24+00	25+78	CL	4990.75		554.53
-L_DET-	25+93	27+00	CL	3094.15		343.79
-L-	29+36	30+31	CL	3519.03		391.00
-L-	46+73	50+05	RT	11,660.64		1,295.63
-Y5-	11+00	12+21	LT	1,108.00		123.11
-Y5-	12+38	13+11	LT	5,940.86		660.10
-Y5-	Parking Lot		RT	6,725.24		747.25
-DR5-	12+04	12+75	RT	9,901.54		1,100.17
-DRY5-	10+50	10+75	LT	184.24		20.47
-DR1-	12+42	13+12	LT	1,257.49		139.72
TEMPORARY PAVEMENT						
-L-	46+00.00	47+25.00	LT	1,194.20		132.69
					TOTAL	6,179.56
					SAY	6,180

LINE	STATION	STATION	LOCATION	LENGTH OR AREA	WIDTH	SQUARE YARDS
-L- / -L_DET-	22+00.00	24+00.00	CL	11,973.66		1,330.41
-L_DET-	27+00.00	32+31.09	CL	16,401.52		1,822.39
-L-	21+55.00	29+35.00	CL	27,736.76		3,081.86
-L-	30+31.00	45+50.00	CL	86,207.84		9,578.65
-Y3-	13+15.00	14+82.00	CL	8,263.73		918.19
					TOTAL	16,731.50
					SAY	16,740

5/29/06

DIVISION OF HIGHWAYS

STATE OF NORTH CAROLINA

CHAIN LINK FENCE, 60” FABRIC (VINYL COATED)

	LT.	A	B	C	D	E	F
STATION TO STATION	OR	FABRIC	END	CORNER	LINE	LINE	TERMINAL
	RT.	L.F.	BRACE	BRACE	BRACE	POSTS	POSTS
-L- 24+50.00 TO 28+30.00 (WALL 05)	RT	381.50	2	2		31.79	4
-L- 30+45.71 TO 38+00.00 (WALL01)	LT	748.50	2	1	1	62.38	4
-DR1- 11+30.00 TO -L- 42+90.00 (WALL02)	LT	452.50	2		1	37.54	3
-Y5- 21+60.00 TO -L- 48+65.00 (WALL03)	LT	458.94	2	2		38.24	4
-L- 31+02.10 TO 40+60.00 (WALL04)	RT	984.50	2	1	2	82.21	5
TOTAL		3025.94				252.16	20
SAY		3030.00				260.00	20.00

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

***SUB-REGIONAL & REGIONAL
LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)***

[illegible]

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

***SUB-REGIONAL & REGIONAL
LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)***

[illegible]

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***SUB-REGIONAL & REGIONAL
LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)***

[illegible]

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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

PROJECT REFERENCE NO.	SHEET NO.
P-5707	3D-4
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

STATION	OFFSET	STRUCTURE NO.		TOP ELEVATION (ft.)	INVERT ELEVATION (ft.)	INVERT ELEVATION (ft.)	SLOPE CRITICAL	DRAINAGE PIPE (ft.) (RCP, C.S.P., CAAP, HDPE, PP or PVC)										C. S. PIPE (ft.)						R.C. PIPE CLASS III (ft.)						R.C. PIPE CLASS IV (ft.)						PIPE AS NOTED (ft.)				ENDWALLS		QUANTITIES FOR DRAINAGE STRUCTURES		*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. *A + (1.3 X COL. 'B')		FRAME, GRATES, AND HOOD STANDARD 840.03			CONCRETE TRANSITIONAL SECTION		CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71		CONC. COLLARS CL. "B" C.Y. STD. 840.72		PIPE REMOVAL LIN. FT.	ABBREVIATIONS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
								15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE, PP or PVC	.064	15"	18"	24"	30"	36"	42"	48"	15"	18"	24"	30"	36"	42"	48"	15"	24"	24"	36"	R.C. PIPE (CONTRACTOR DESIGN) TRENCHLESS WELDED STEEL (IN SOIL)	TRENCHLESS WELDED STEEL (IN SOIL)	TRENCHLESS WELDED STEEL (NOT IN SOIL)	RCP-V															R.C.P.	C.S.P.	PER EACH (0" THRU 5.0')	A	B	5.1" THRU 10.0'	10.1" AND ABOVE	E	F	G	DROP INLET	CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH TWO FLAT GRATES STD. 840.20	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	G.D.I. (N.S.) FR. WITH TWO FLAT GRATES STD. 840.29	J.B. STD. 840.31 OR 840.32	T.B.I.B. STD. 840.34	CONV. CB TO T.B.I.B.	M.H. STD. 840.51 OR 840.53	M.H. FRAME AND COVER STD. 840.54	ADJUST CB	CONV. CB TO J.B.W.H.	BERM DRAINAGE OUTLET	CONV. T.B.I.B. TO CB	OUTLET STRUCTURE SEE SHEET 2H-2	SPECIAL DETAIL - MINIMUM DEPTH CB	SPECIAL DETAIL - EXTRA DEPTH CB	SPECIAL DETAIL - EXTRA DEPTH 2G	SPECIAL DETAIL - EXTRA DEPTH J.B	TEMPORARY STEEL PLATE COVERS FOR MASONRY DRAINAGE	FLOWABLE FILL (CY)	C.S. PIPE ELBOWS	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	REMARKS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
								SIZE	THICKNESS OR GAUGE	FROM	TO	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE, PP or PVC	.064	15"	18"	24"	30"	36"	42"	48"	15"	18"	24"	30"	36"	42"	48"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CONTRACTOR DESIGN) TRENCHLESS WELDED STEEL (IN SOIL)	TRENCHLESS WELDED STEEL (IN SOIL)	TRENCHLESS WELDED STEEL (NOT IN SOIL)	RCP-V															R.C.P.	C.S.P.	PER EACH (0" THRU 5.0')	A	B	5.1" THRU 10.0'	10.1" AND ABOVE	E	F	G	DROP INLET	CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH TWO FLAT GRATES STD. 840.20	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	G.D.I. (N.S.) FR. WITH TWO FLAT GRATES STD. 840.29	J.B. STD. 840.31 OR 840.32	T.B.I.B. STD. 840.34	CONV. CB TO T.B.I.B.	M.H. STD. 840.51 OR 840.53	M.H. FRAME AND COVER STD. 840.54	ADJUST CB	CONV. CB TO J.B.W.H.	BERM DRAINAGE OUTLET	CONV. T.B.I.B. TO CB	OUTLET STRUCTURE SEE SHEET 2H-2	SPECIAL DETAIL - MINIMUM DEPTH CB	SPECIAL DETAIL - EXTRA DEPTH CB	SPECIAL DETAIL - EXTRA DEPTH 2G	SPECIAL DETAIL - EXTRA DEPTH J.B	TEMPORARY STEEL PLATE COVERS FOR MASONRY DRAINAGE	FLOWABLE FILL (CY)	C.S. PIPE ELBOWS	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	REMARKS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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