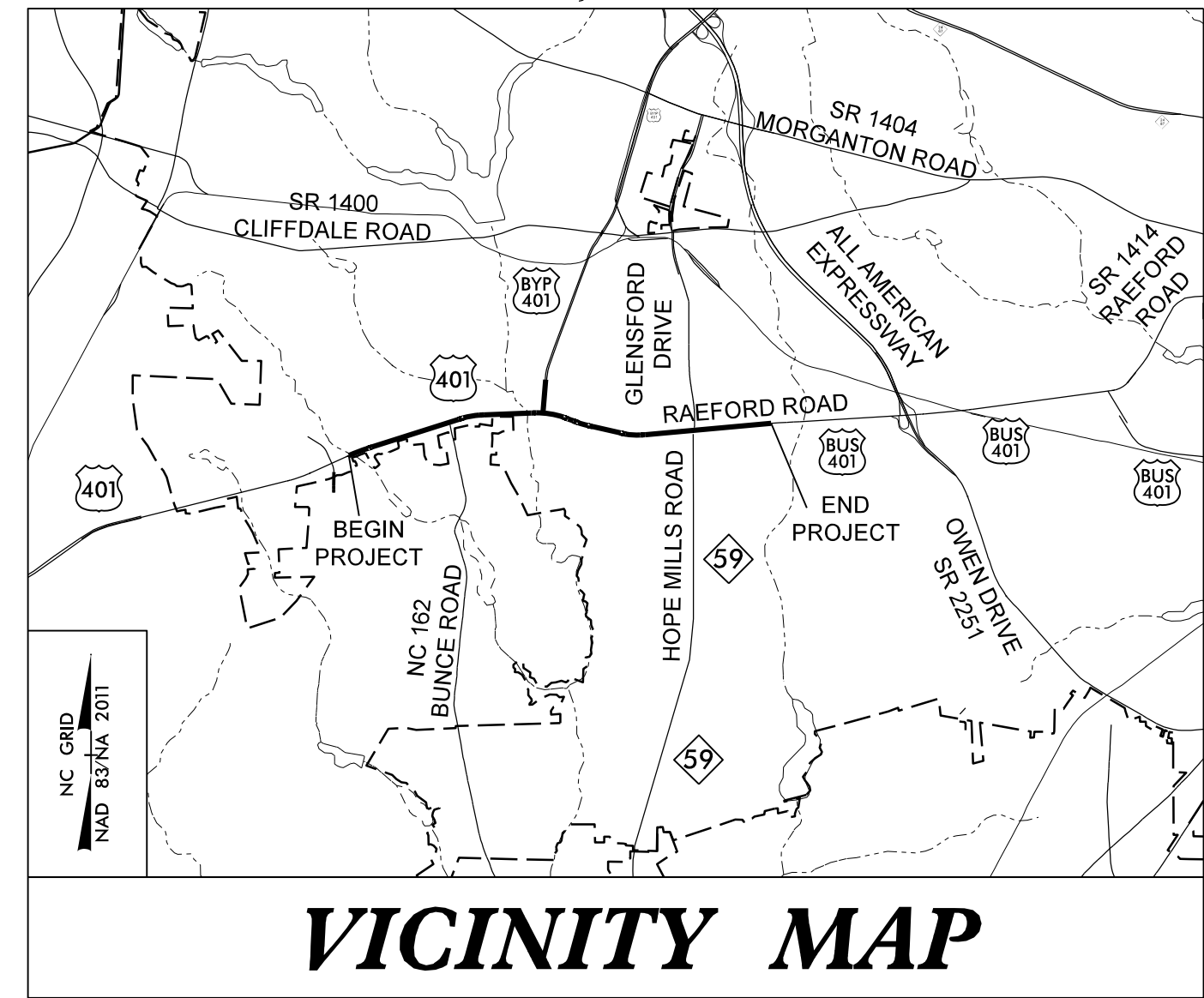


TIP PROJECT: U-4405B
CONTRACT: C204797

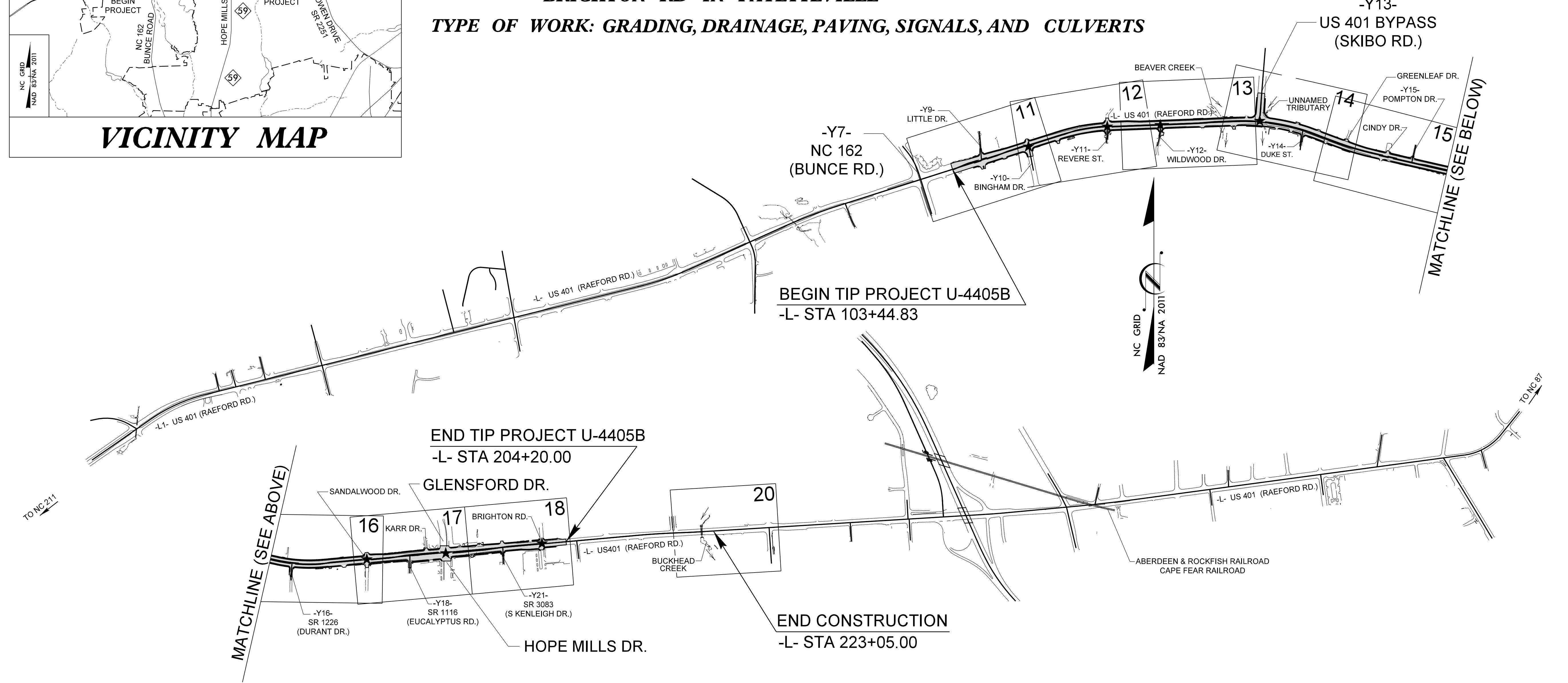
See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
CUMBERLAND COUNTY

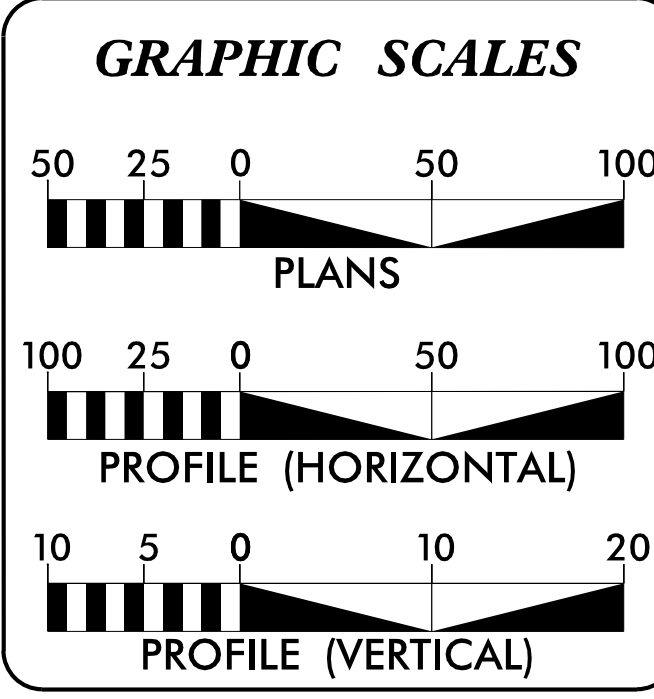
LOCATION: US 401 (RAEFORD RD.) EAST OF NC 162 (BUNCE RD) TO EAST OF BRIGHTON RD IN FAYETTEVILLE
TYPE OF WORK: GRADING, DRAINAGE, PAVING, SIGNALS, AND CULVERTS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4405B	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
39049.1.FR3	STPDA-0401(308)	PE	
39049.2.3		RW	
39049.2.5		UTIL	
39049.3.3	STPDA-0401(301)	CONST	



★ PROPOSED SIGNAL

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



DESIGN DATA

ADT 2025 =	65,890
ADT 2045 =	73,715
K =	10 %
D =	60 %
T =	3 %*
V =	50 MPH

* (TTST = 1% & DUAL = 2%)

FUNC CLASS =
URBAN ARTERIAL
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-4405B = 1.908 MILES
TOTAL LENGTH TIP PROJECT U-4405B = 1.908 MILES

NCDOT CONTACT: KHALED ALAKHDAR

Prepared In the Office of:
AtkinsRéalis 1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JULY 29, 2016

LETTING DATE: MARCH 18, 2025

VIRGINIA T. SCHAAR, PE
PROJECT ENGINEER

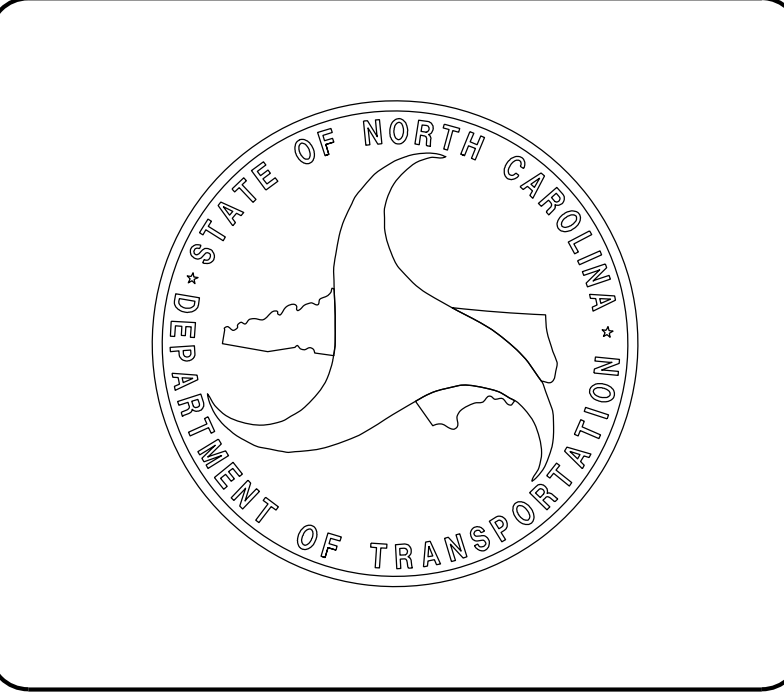
BRUCE B. PAYNE, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

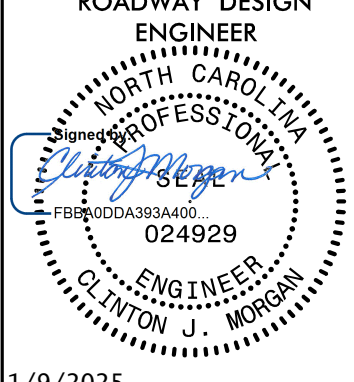
DocuSigned by:
Frank Fleming
1/30/2025
SIGNATURE: *Frank Fleming* P.E.

ROADWAY DESIGN ENGINEER

DocuSigned by:
Virginia Schaar
1/30/2025
SIGNATURE: *Virginia Schaar* P.E.



8/17/99

PROJECT REFERENCE NO. U-4405B	SHEET NO. 1A
ROADWAY DESIGN ENGINEER	
	
1/9/2025	

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SHEET NUMBER	INDEX OF SHEETS
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2A-1 THRU 2A-5	PAVEMENT SCHEDULE, TYPICAL SECTIONS, WEDGING DETAIL, AND MILLING DETAIL
2B-1 THRU 2B-2	INTERSECTION DETAILS
2C-1 THRU 2C-13	DETAIL OF 8"x12" CURB TO 2'-6" CURB & GUTTER TRANSITION SECTION, SPECIAL DI 840014, EXTRA DEPTH CONCRETE CATCH BASIN, DETAIL TO CONVERT EXISTING DI, CB, OTCB OR GI TO JUNCTION BOX (MANHOLE OPTIONAL), METHOD FOR PLACEMENT OF DROP INLETS IN CONCRETE ISLANDS, DETAIL OF 1'-6" CURB & GUTTER TRANSITION SECTION, METHOD OF PIPE INSTALLATION (RIGID PIPE), PIPE COLLAR, CONCRETE SIDEWALK, CURB RAMP (PARALLEL), CURB RAMP (SHARED LANDING), GUARDRAIL PLACEMENT, DETAIL TO CONVERT DROP INLET OR JB TO CATCH BASIN
2D-1 THRU 2D-12	CANTILEVER HEADWALL DETAILS
3B-1	SUMMARY OF GUARDRAIL, PAVEMENT REMOVAL SUMMARY, AND EARTHWORK SUMMARY
3D-1 THRU 3D-14	DRAINAGE SUMMARY
3G-1	GEOTECHNICAL SUMMARY
3P-1	PARCEL INDEX SHEET
11 THRU 18, 20	PLAN SHEETS
36 THRU 40, 47 THRU 48	PROFILE SHEETS
RW-01 THRU RW-03 RW-11 THRU RW-18	SURVEY CONTROL, ALIGNMENT CONTROL, R/W & EASEMENT CONTROL, R/W SHEETS
TMP-1 THRU TMP-16	TRAFFIC MANAGEMENT PLANS
PMP-1 THRU PMP-09	PAVEMENT MARKING PLANS
EC-1 THRU EC-25	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-15	SIGNING PLANS
SIG-1 THRU SIG-M9	SIGNAL PLANS
SCP-1 THRU SCP-14	SIGNAL COMMUNICATION PLANS
UC-1 THRU UC-11	UTILITY CONSTRUCTION SHEETS
UC-12 THRU UC-19	UTILITY PROFILE SHEETS
UD-1, UD-1B UD-9 THRU UD-18	UTILITIES BY OTHERS PLANS
X-0A THRU X-0D	CROSS-SECTION INDEX SHEET AND SUMMARY
X-1 THRU X-45	CROSS-SECTIONS
C-1 THRU C-18	CULVERT PLANS

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 TYPICAL ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

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

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

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

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

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

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

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

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

UTILITIES: UTILITY OWNERS ON THIS PROJECT ARE Fayetteville PWC (Power), Fayetteville PWC (Communications), Aqua NC (Water), Fayetteville PWC (Water and Sewer), Piedmont Natural Gas (Gas), CenturyLink (Communications), Spectrum (Communication), Level 3 (Communication)
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

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

CURB RAMPS: CURB RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS. CONSTRUCT ALL CURB RAMPS ACCORDANCE WITH STD 848.06.

2024 ROADWAY ENGLISH STANDARD DRAWINGS
EFF. 01-16-2024
REV.
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:

STD. NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Super-elevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
310.10	Driveway Pipe Construction
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Super-elevated Curve - Method I
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
815.02	Subsurface Drain
838.01	Concrete Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
838.11	Brick Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
840.00	Concrete Base Pad for Drainage Structures
840.01	Brick Catch Basin - 12" thru 54" Pipe
840.02	Concrete Catch Basin - 12" thru 54" Pipe
840.03	Frame, Grates and Hood - for Use on Standard Catch Basin
840.14	Concrete Drop Inlet - 12" thru 30" Pipe
840.15	Brick Drop Inlet - 12" thru 30" Pipe
840.16	Drop Inlet Frame and Grates - for use with Std. Dwg 840.14 and 840.15
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.19	Concrete Grated Drop Inlet Type 'D' - 12" thru 36" Pipe
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.28	Brick Grated Drop Inlet Type 'D' - 12" thru 36" Pipe
840.29	Frames and Narrow Slot Flat Grates
840.31	Concrete Junction Box - 12" thru 66" Pipe
840.32	Brick Junction Box - 12" thru 66" Pipe
840.34	Traffic Bearing Junction Box - for Use with Pipes 42" and Under
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
848.02	Driveway Turnout - Radius Type
848.04	Street Turnout
848.06	Curb Ramp (Use Details in Lieu of Standards for Sheets 9 and 10 of 13)
852.01	Concrete Islands
852.04	Method for Placement of Drop Inlets in Grassed Median - Using 1'-6" Curb and Gutter
852.06	Method for Placement of Drop Inlets in Concrete Islands
857.01	Precast Reinforced Concrete Barrier - 41" Single Faced
862.01	Guardrail Placement (Use Details in Lieu of Standards for Sheets 4, 6, 12, and 14 of 15)
862.02	Guardrail Installation
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

Note: Not to Scale

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

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin (EIP)	○
Computed Property Corner	×
Existing Concrete Monument (ECM)	□
Parcel / Sequence Number	(23)
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	WLB
Proposed Wetland Boundary	WLB
Existing Endangered Animal Boundary	EAB
Existing Endangered Plant Boundary	EPB
Existing Historic Property Boundary	HPB
Known Contamination Area: Soil	-x-x-x-x-x-x-x-
Potential Contamination Area: Soil	-x-x-x-x-x-x-x-
Known Contamination Area: Water	-x-x-x-x-x-x-x-
Potential Contamination Area: Water	-x-x-x-x-x-x-x-
Contaminated Site: Known or Potential	☠ ?

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	□
Jurisdictional Stream	JS
Buffer Zone 1	BZ 1
Buffer Zone 2	BZ 2
Flow Arrow	←
Disappearing Stream	→
Spring	○
Wetland	WLB
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)	◆
Proposed C/A Monument	▲
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	E
Proposed Temporary Drainage Easement	TDE
Proposed Permanent Drainage Easement	PDE
Proposed Permanent Drainage/Utility Easement	DUE
Proposed Permanent Utility Easement	PUE
Proposed Temporary Utility Easement	TUE
Proposed Aerial Utility Easement	AUE

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	C
Proposed Slope Stakes Fill	F
Proposed Curb Ramp	CR
Existing Metal Guardrail	T T T T
Proposed Guardrail	T T T T
Existing Cable Guiderail	□ □ □
Proposed Cable Guiderail	□ □ □
Equality Symbol	⊕
Pavement Removal	⊗
Single Tree	☼
Single Shrub	☼
Hedge	~~~~~

VEGETATION:

Woods Line	-----
Orchard	☼ ☼ ☼ ☼
Vineyard	□

EXISTING STRUCTURES:

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

UTILITIES:

* 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)*	P
U/G Power Line (SUE - LOS C)*	P
U/G Power Line (SUE - LOS D)*	P

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)*	T
U/G Telephone Cable (SUE - LOS C)*	T
U/G Telephone Cable (SUE - LOS D)*	T
U/G Telephone Conduit (SUE - LOS B)*	TC
U/G Telephone Conduit (SUE - LOS C)*	TC
U/G Telephone Conduit (SUE - LOS D)*	TC
U/G Fiber Optics Cable (SUE - LOS B)*	T FO
U/G Fiber Optics Cable (SUE - LOS C)*	T FO
U/G Fiber Optics Cable (SUE - LOS D)*	T FO

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)*	W
U/G Water Line (SUE - LOS C)*	W
U/G Water Line (SUE - LOS D)*	W
Above Ground Water Line	A/G Water

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)*	TV
U/G TV Cable (SUE - LOS C)*	TV
U/G TV Cable (SUE - LOS D)*	TV
U/G Fiber Optic Cable (SUE - LOS B)*	TV FO
U/G Fiber Optic Cable (SUE - LOS C)*	TV FO
U/G Fiber Optic Cable (SUE - LOS D)*	TV FO

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

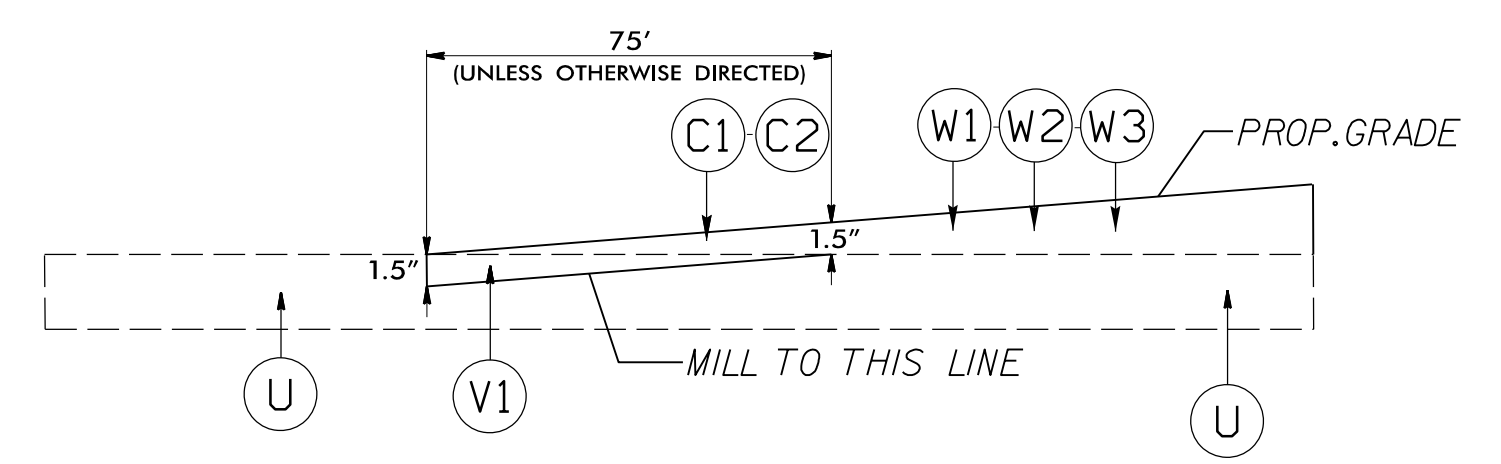
Utility Pole	●
Utility Pole with Base	⊠
Utility Located Object	○
Utility Traffic Signal Box	⊠
Utility Unknown U/G Line (SUE - LOS B)*	TUL
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	UST
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊕
Abandoned According to Utility Records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

PROJECT REFERENCE NO. U-4405B	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER

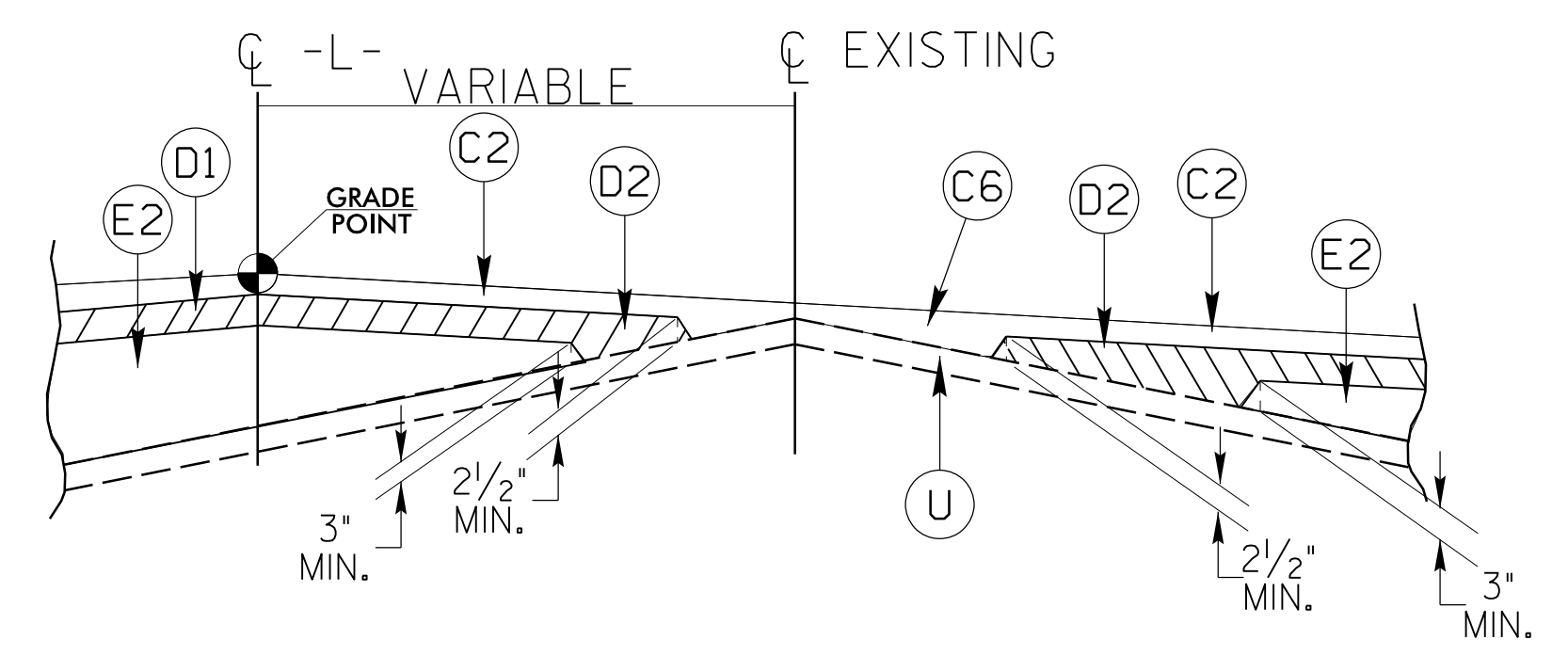
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

FINAL PAVEMENT SCHEDULE			
C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.	N1	GEOTEXTILE FOR SUBGRADE STABILIZATION
C2	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	R1	2'-6" CONCRETE CURB AND GUTTER
C3	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.	R2	1'-6" CONCRETE CURB AND GUTTER
C4	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	R4	5" MONOLITHIC CONCRETE ISLAND (KEYED IN)
C5	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 1/2" IN DEPTH.	S	4" CONCRETE SIDEWALK
C6	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1 1/2" OR GREATER THAN 2" IN DEPTH.	T	EARTH MATERIAL
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	U	EXISTING PAVEMENT
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2" OR GREATER THAN 4" IN DEPTH.	V1	INCIDENTAL MILLING
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	W1	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAILS)
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 1/2" IN DEPTH.	W2	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAILS)
K2	CLASS IV SUBGRADE STABILIZATION	W3	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAILS)

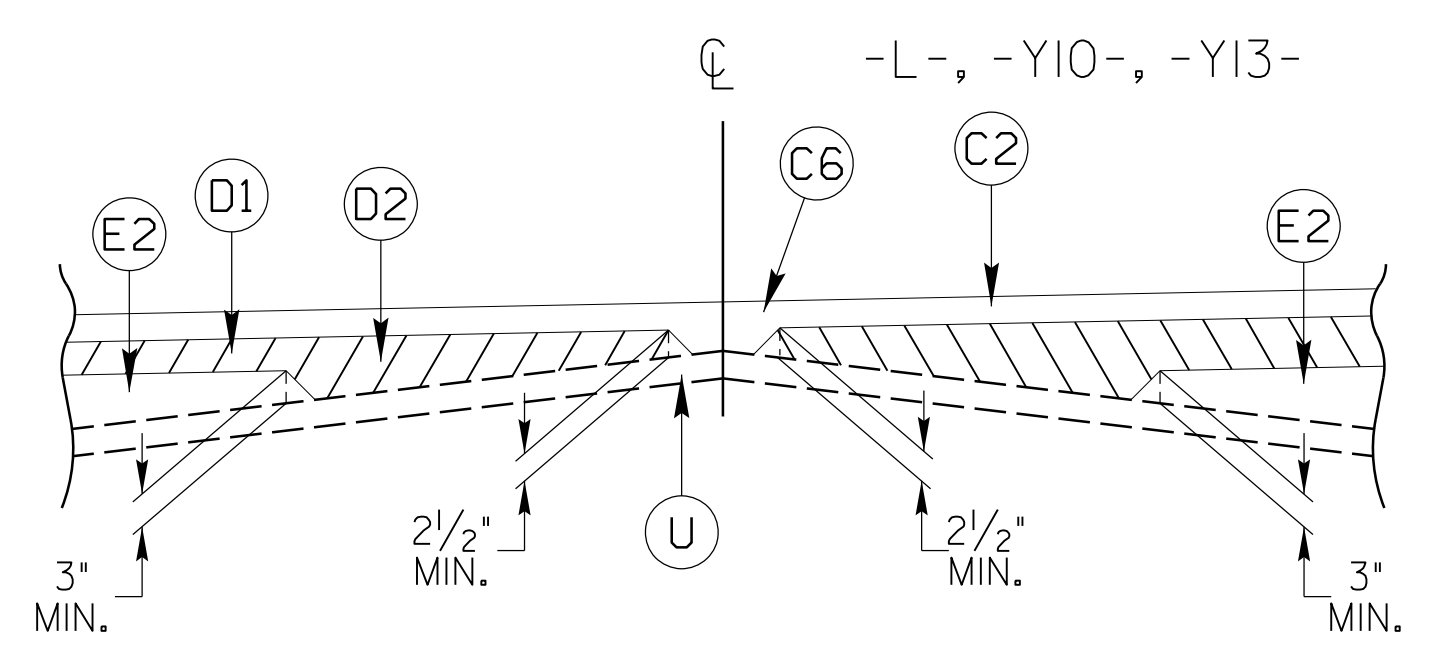
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



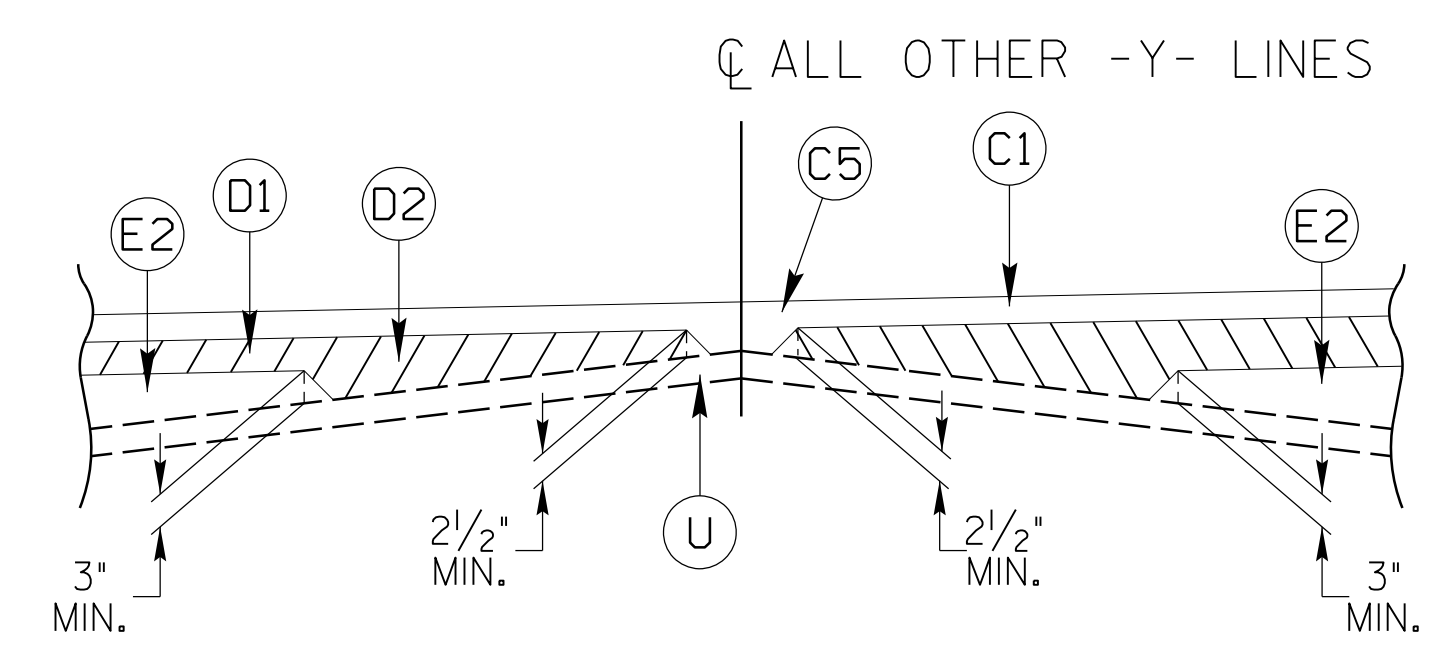
DETAIL FOR INCIDENTAL MILLING
-L-, -Y10-, -Y13-, AND GLENSFORD RD USE C2
ALL OTHER ALIGNMENTS USE C1



W1 DETAIL #1 SHOWING METHOD OF WEDGING

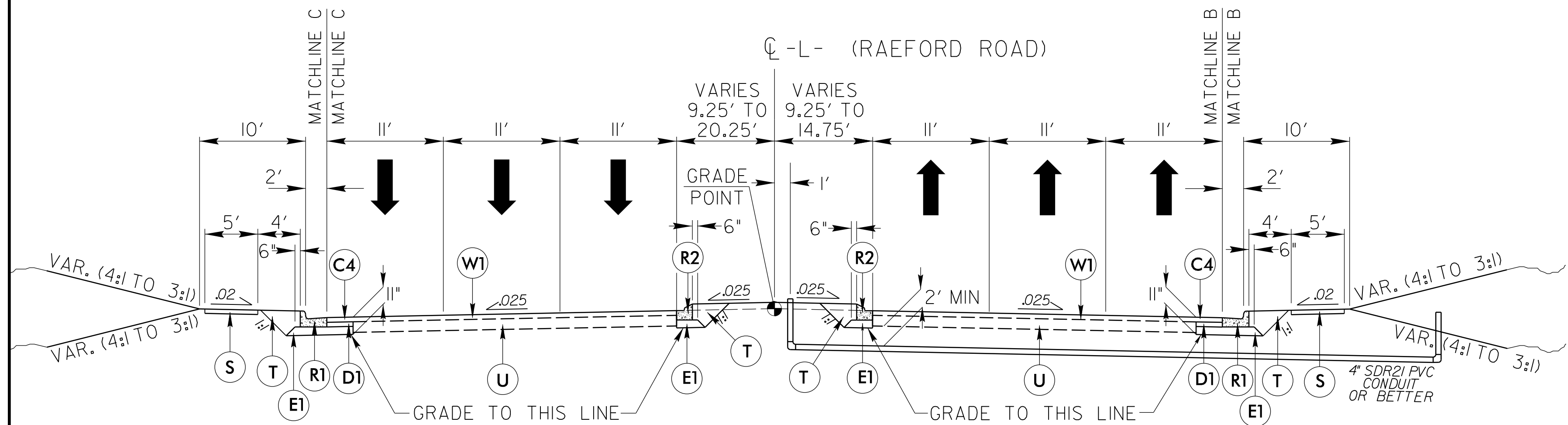


W2 DETAIL #2 SHOWING METHOD OF WEDGING



W3 DETAIL #3 SHOWING METHOD OF WEDGING

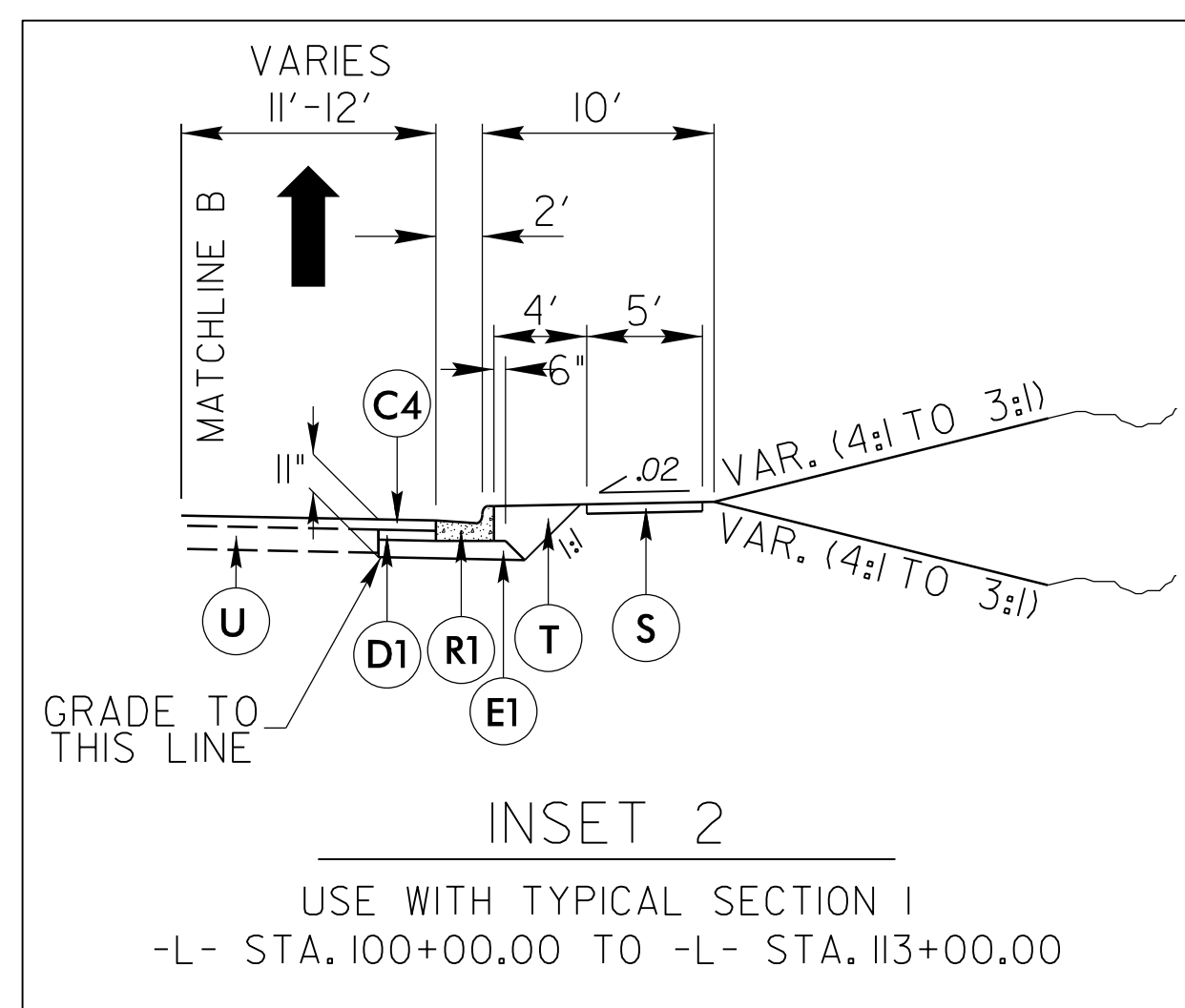
PROJECT REFERENCE NO. U-4405B	SHEET NO. 2A-2
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



TYPICAL SECTION I

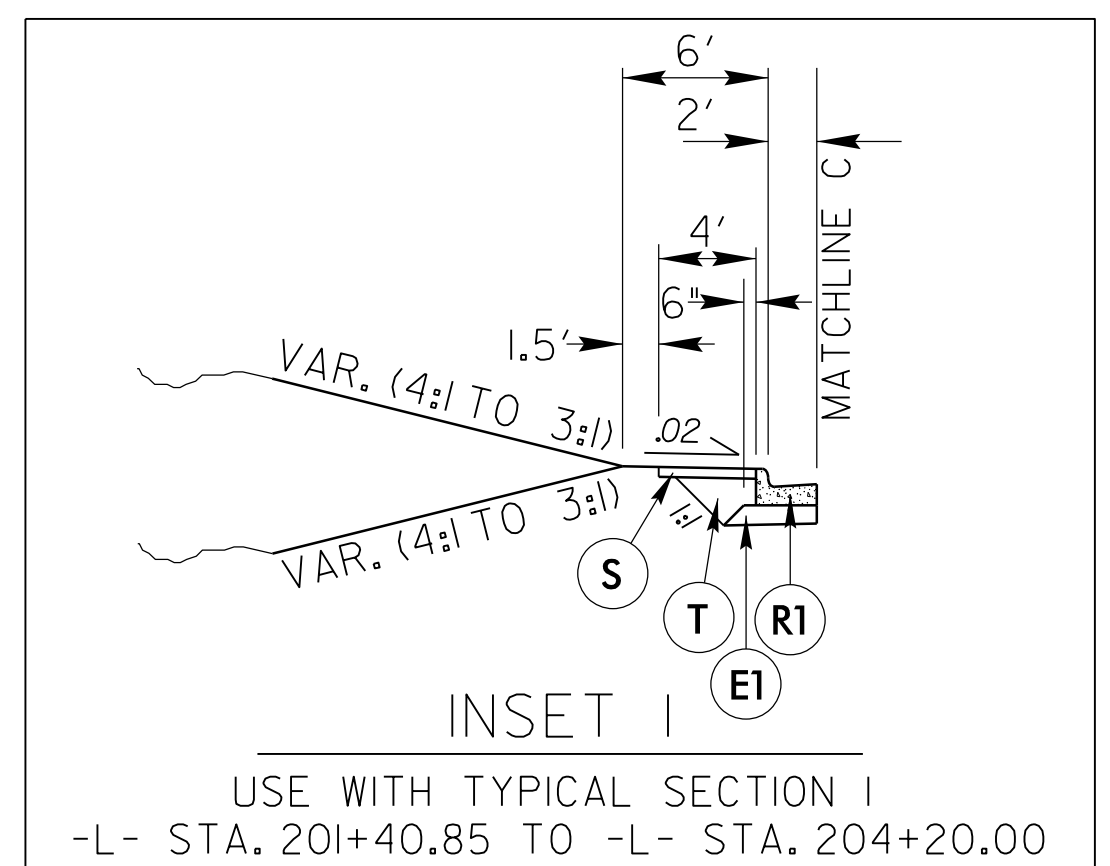
-L- STA. 103+44.83 TO -L- STA. 138+50.00
-L- STA. 148+88.00 TO -L- STA. 204+20.00

NOTE: IF WARRANTED, GUARDRAIL WILL BE PLACED AT THE FACE OF CURB
NOTE: CONTRACTOR WILL DRILL/BORE 4\"/>



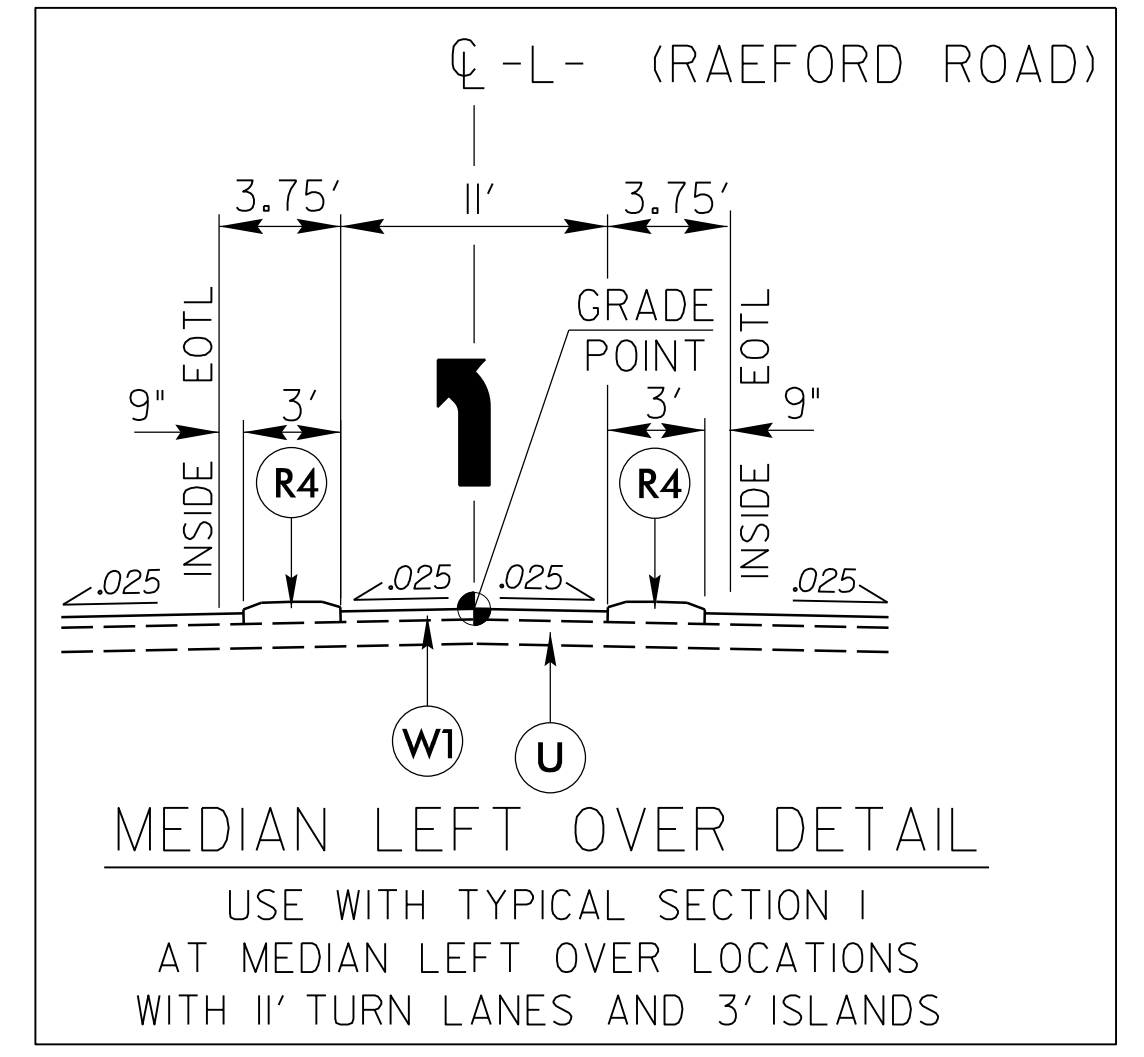
INSET 2

USE WITH TYPICAL SECTION I
-L- STA. 100+00.00 TO -L- STA. 113+00.00



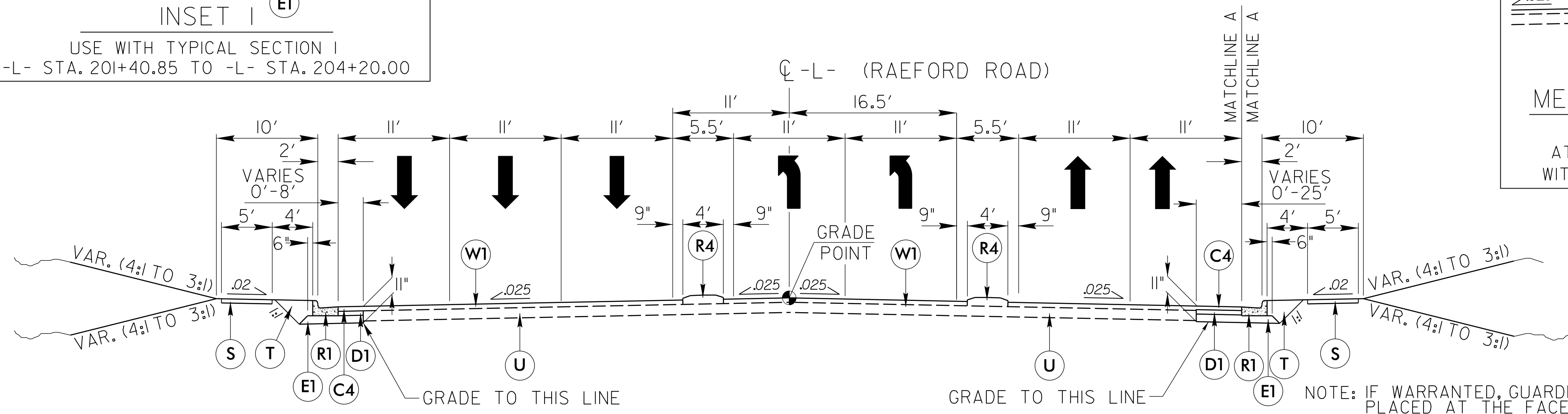
INSET 1

USE WITH TYPICAL SECTION I
-L- STA. 201+40.85 TO -L- STA. 204+20.00



MEDIAN LEFT OVER DETAIL

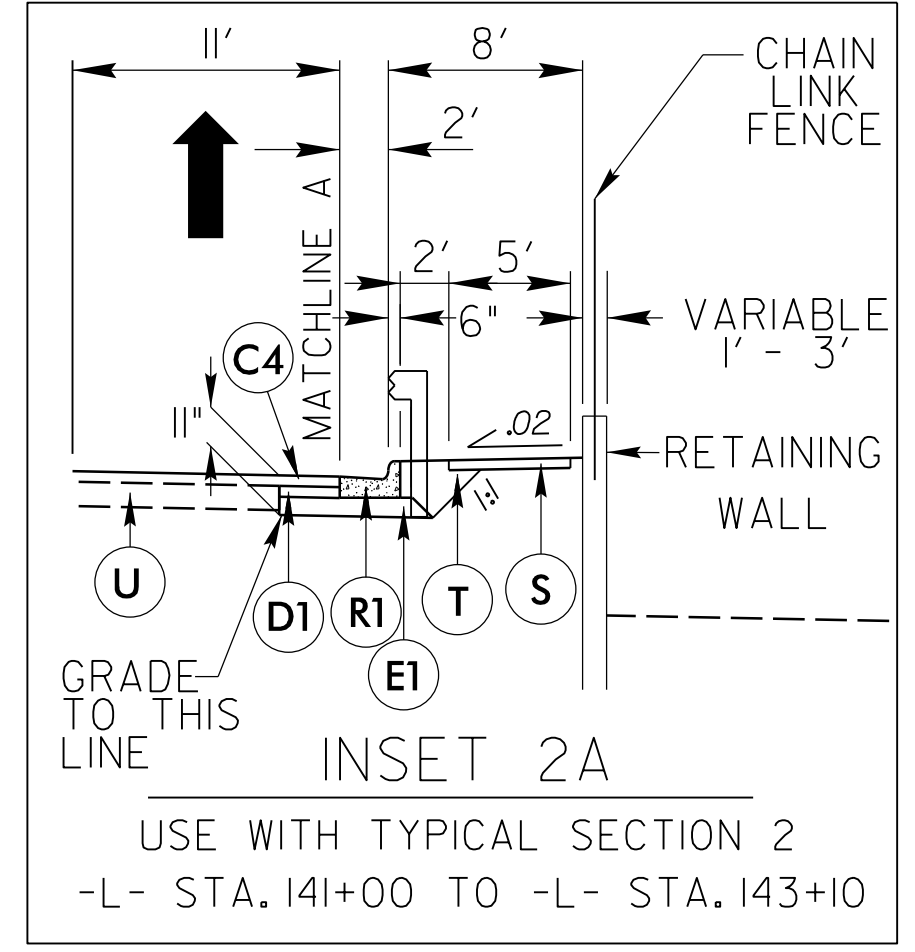
USE WITH TYPICAL SECTION I
AT MEDIAN LEFT OVER LOCATIONS
WITH 11' TURN LANES AND 3' ISLANDS



TYPICAL SECTION 2

-L- STA. 138+50.00 TO -L- STA. 148+88.00

NOTE: IF WARRANTED, GUARDRAIL WILL BE PLACED AT THE FACE OF CURB



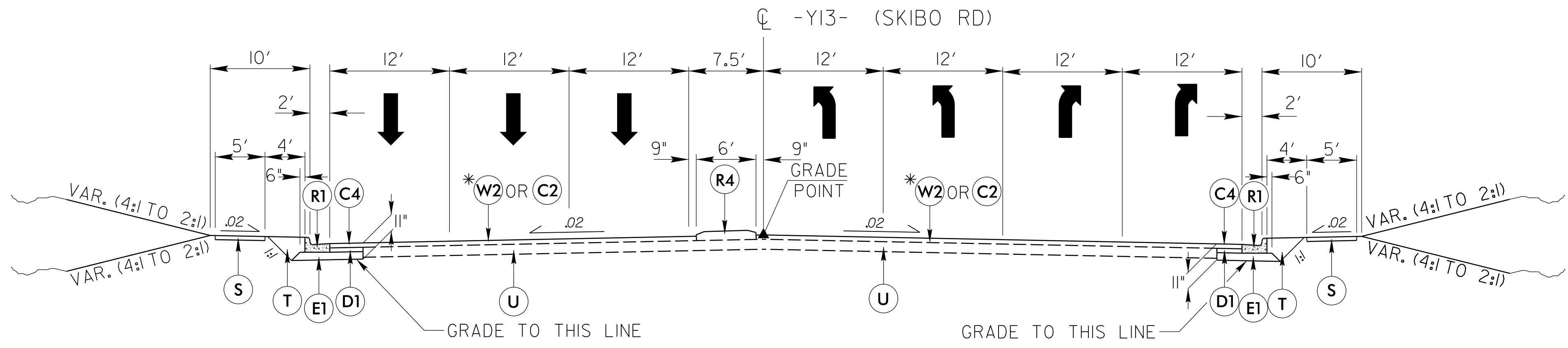
INSET 2A

USE WITH TYPICAL SECTION 2
-L- STA. 141+00 TO -L- STA. 143+10

PAVEMENT SCHEDULE

C4	3" S9.5C
D1	4" I19.0C
E1	4" B25.0C
R1	2'-6" CURB AND GUTTER
R2	1'-6" CURB AND GUTTER
R4	MONOLITHIC ISLAND (KEYED IN)
S	SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W1	WEDGING

PROJECT REFERENCE NO. U-4405B	SHEET NO. 2A-3
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



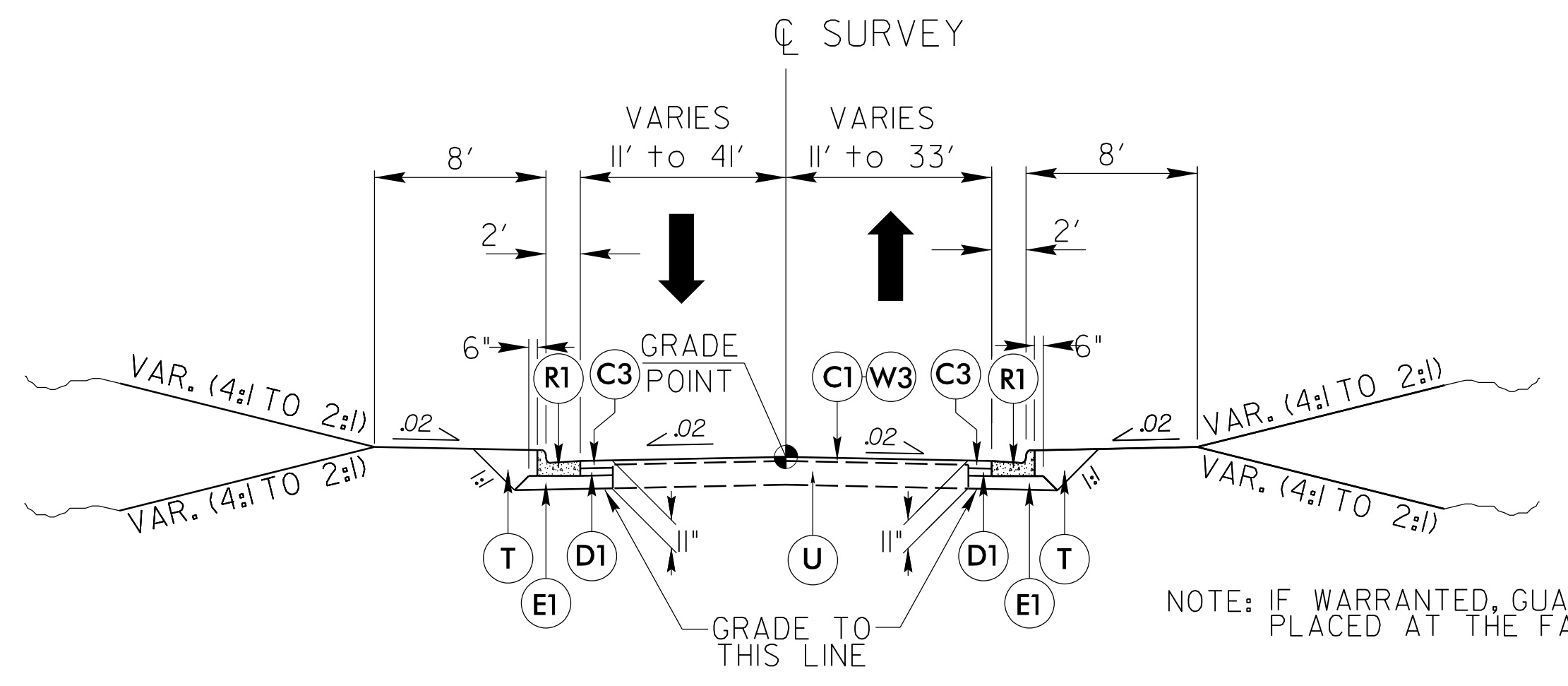
TYPICAL SECTION 3
-Y13- STA. 16+50.00 TO -Y13- STA. 19+67.93

NOTE: IF WARRANTED, GUARDRAIL WILL BE PLACED AT THE FACE OF CURB
* RESURFACE FROM 16+50.00 TO 18+15.00 WITH 1.5" S9.5C

PAVEMENT SCHEDULE	
C2	1.5" S9.5C
C4	3" S9.5C
D1	4" #9.0C
E1	4" B25.0C
R1	2'-6" CURB AND GUTTER
R4	MONOLITHIC ISLAND (KEYED IN)
S	SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W2	WEDGING

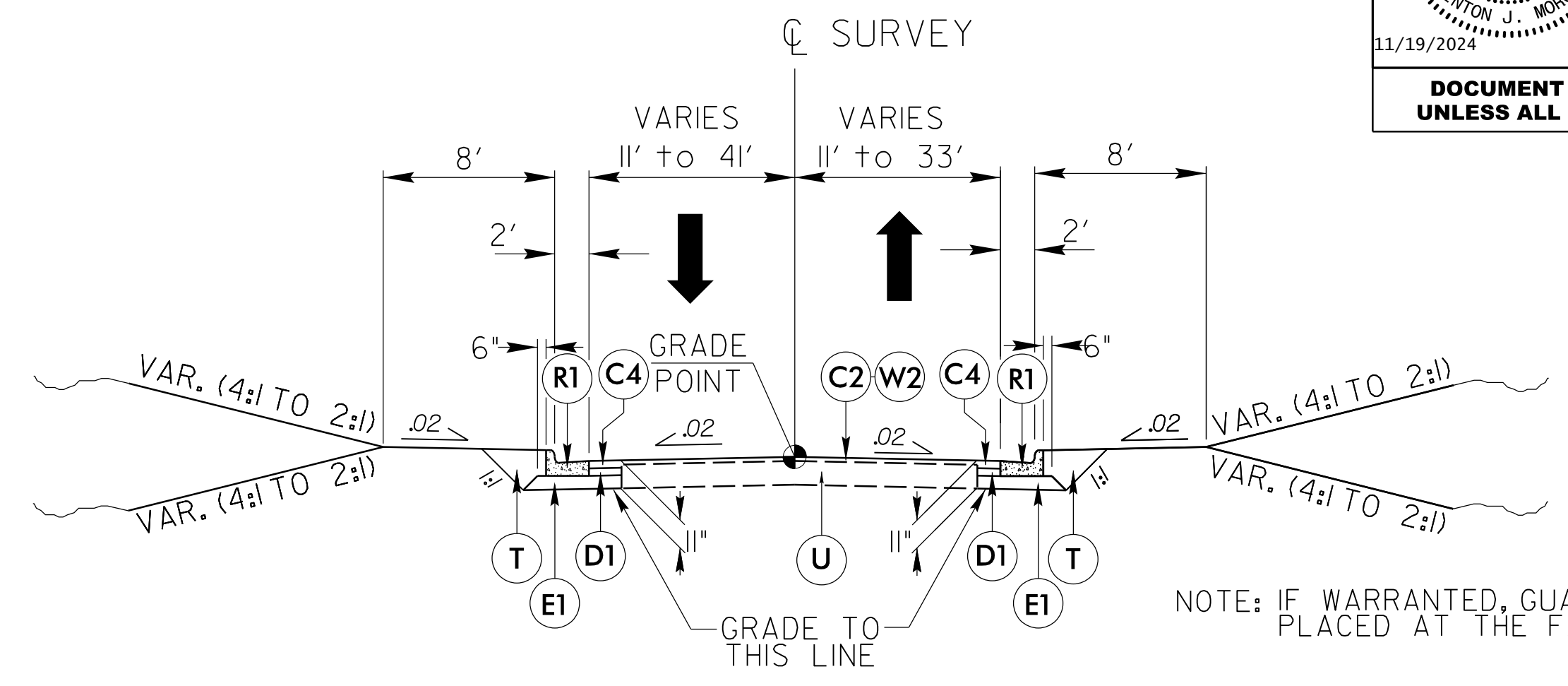
6/2/2024

PROJECT REFERENCE NO. U-4405B	SHEET NO. 2A-4
ROADWAY DESIGN ENGINEER CLINTON J. MORGAN 11/19/2024	PAVEMENT DESIGN ENGINEER SITHAI ZHANG 11/20/2024
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



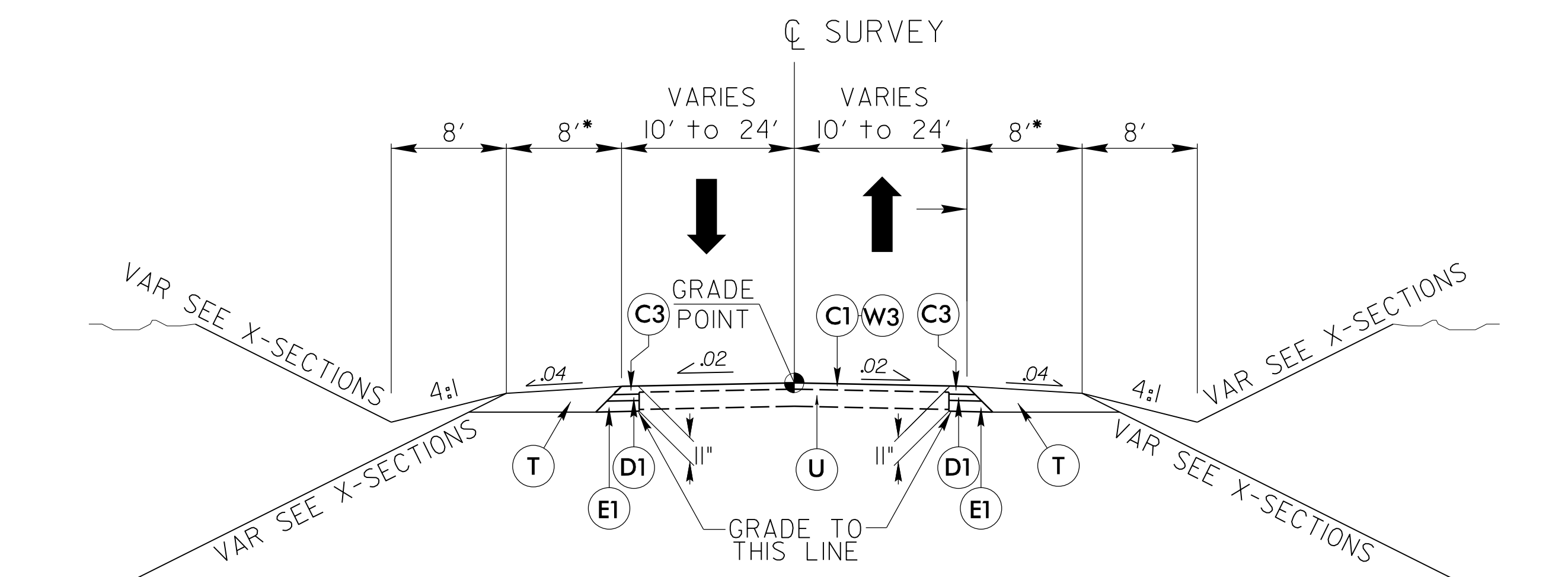
TYPICAL SECTION 4

- Y11- STA. 10+42.52 TO -Y11- STA. 11+60.00
- Y12- STA. 10+42.25 TO -Y12- STA. 11+50.00
- Y14- STA. 10+44.61 TO -Y14- STA. 11+45.00
- Y21- STA. 10+43.54 TO -Y21- STA. 11+10.00



TYPICAL SECTION 4A

- Y10- STA. 10+53.59 TO -Y10- STA. 11+45.00



TYPICAL SECTION 5

*NOTE: WIDEN SHOULDER 3' FOR GUARDRAIL

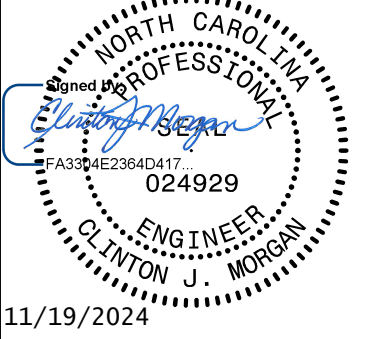
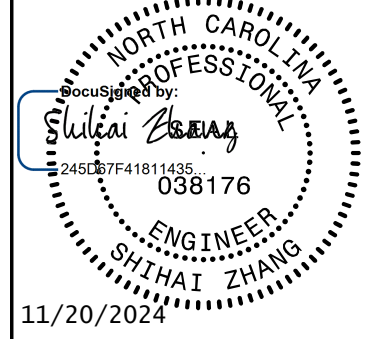
- Y15- STA. 11+40.00 TO -Y15- STA. 11+82.96
- Y16- STA. 10+42.27 TO -Y16- STA. 11+70.00
- Y18- STA. 10+47.17 TO -Y18- STA. 11+50.00

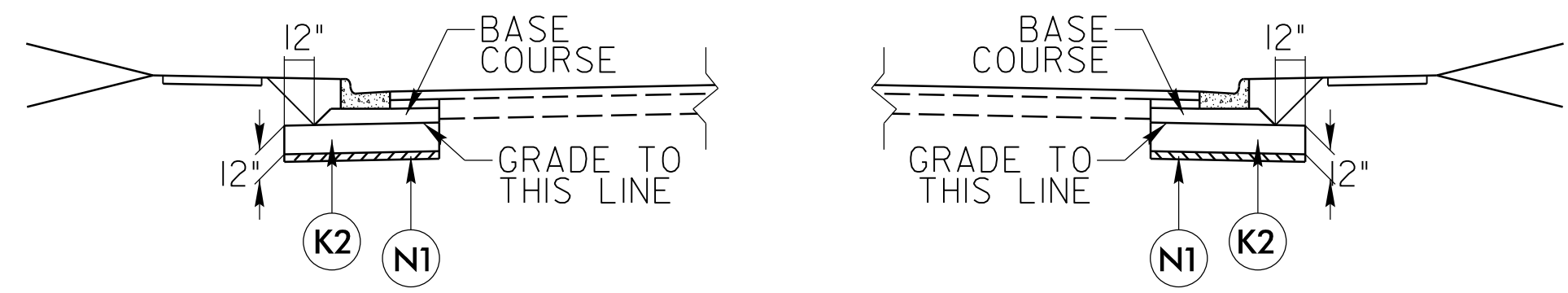
PAVEMENT SCHEDULE

C1	1.5" S9.5B
C2	1.5" S9.5C
C3	3" S9.5B
C4	3" S9.5C
D1	4" I19.0C
E1	4" B25.0C
R1	2'-6" CURB AND GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W2	WEDGING
W3	WEDGING

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6/2/99

PROJECT REFERENCE NO. <i>U-4405B</i>	SHEET NO. <i>2A-5</i>
ROADWAY DESIGN ENGINEER <i>Clinton J. Morgan</i>	PAVEMENT DESIGN ENGINEER <i>Siyhai Zhang</i>
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



AGGREGATE SUBGRADE DETAIL

USE IN CONJUNCTION WITH TYPICAL SECTIONS AS DIRECTED BY THE RESIDENT ENGINEER AND AT STATIONS:
 -L- STA. 105+75 +/- TO -L- STA. 107+25 +/-
 -L- STA. 146+25 +/- TO -L- STA. 153+25 +/-

PAVEMENT SCHEDULE	
C4	3" S9.5C
D1	4" 119.0C
E1	4" B25.0C
K2	CLASS IV SUBGRADE STABILIZATION
N1	GEOTEXTILE FOR SUBGRADE STABILIZATION
R1	2'-6" CURB AND GUTTER
S	SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT

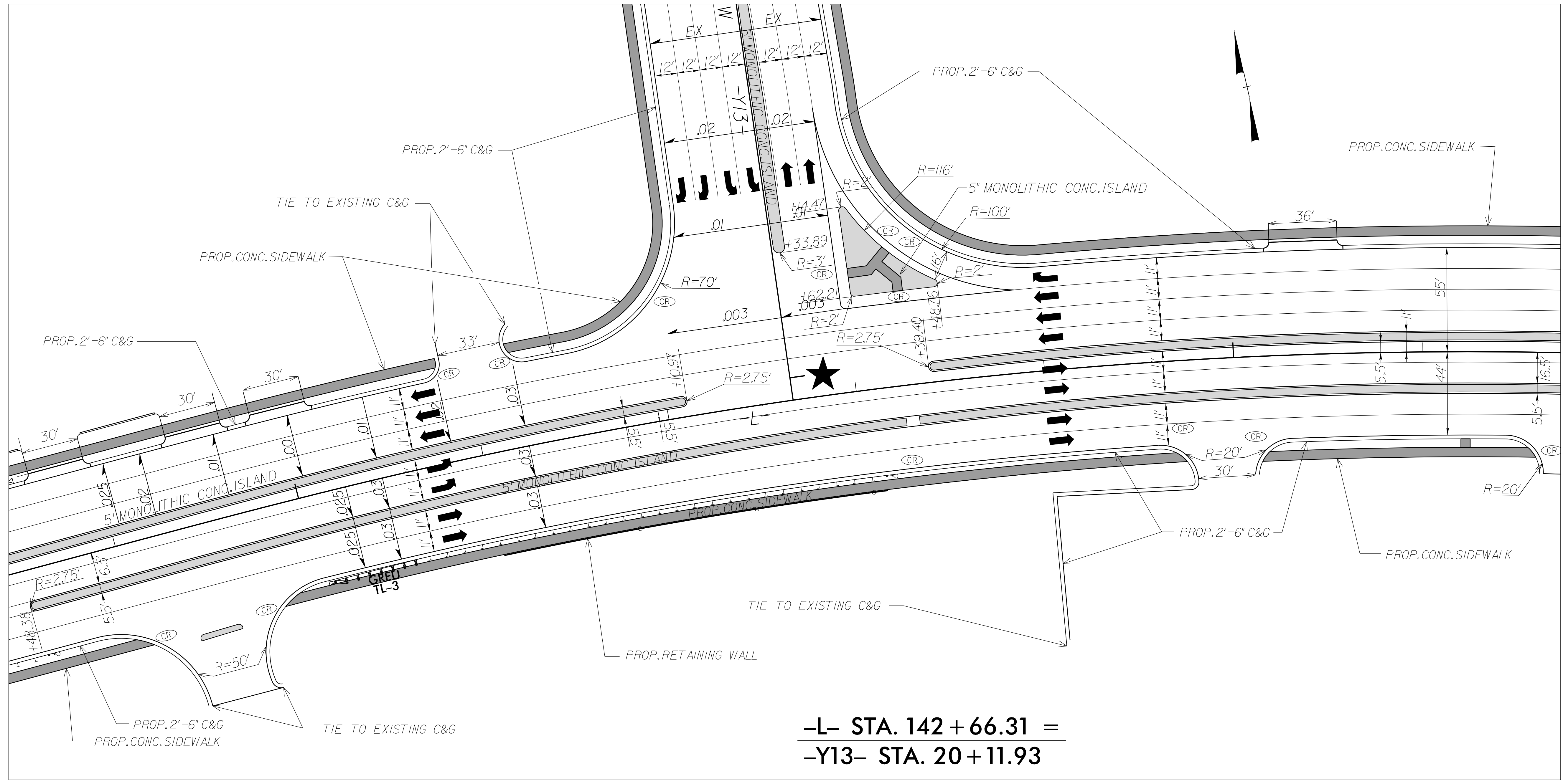
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8/17/99

INTERSECTION DETAILS

NOT TO SCALE

PROJECT REFERENCE NO. U-4405B	SHEET NO. 2B-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



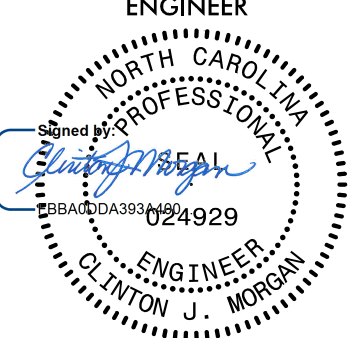
**INTERSECTION OF
RAEFORD ROAD (-L-)
AND SKIBO ROAD (-Y13-)
(SEE PLAN SHEET 13 AND 14)**

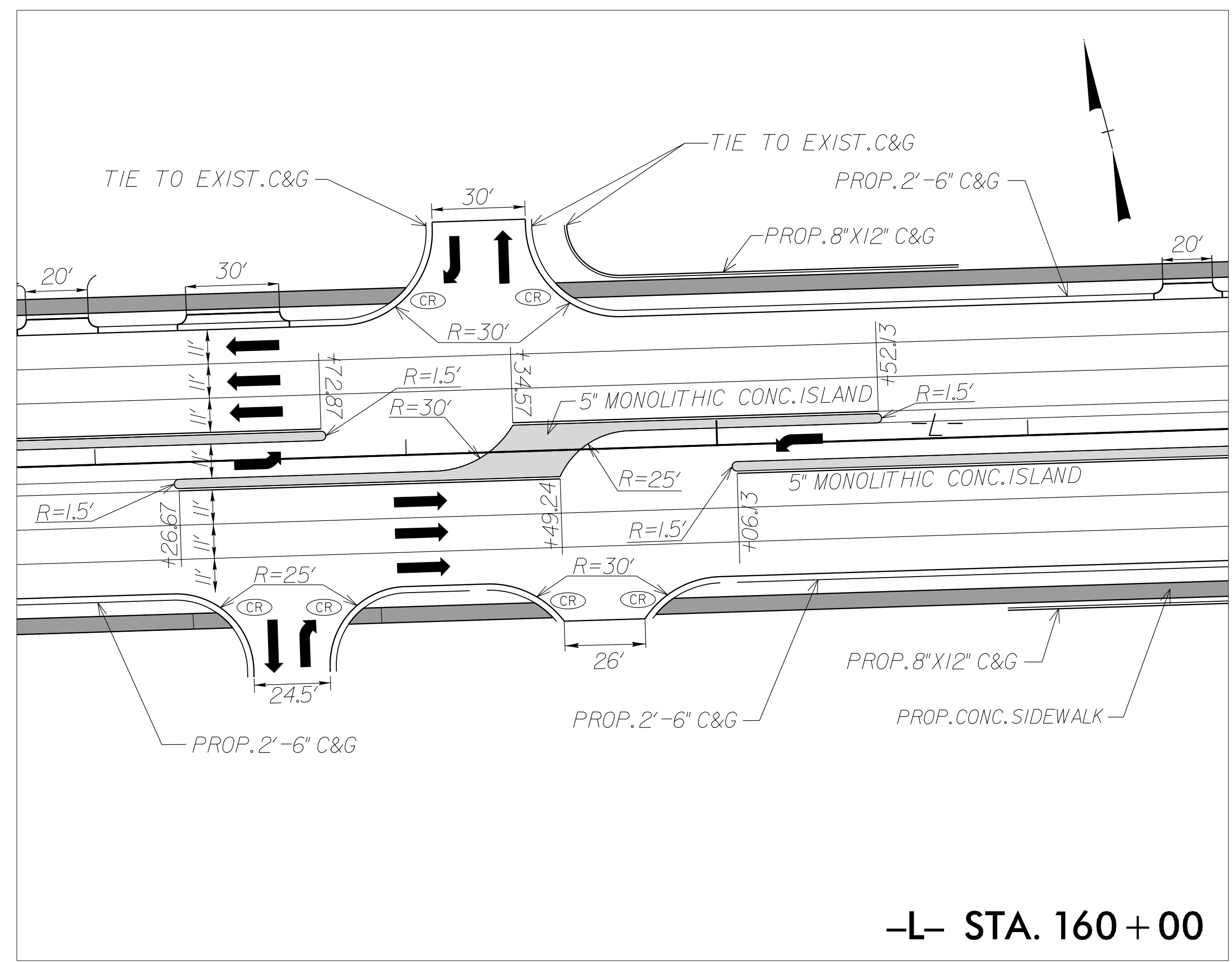
**NOTE: SEE PMP PLANS FOR WHEEL CHAIR RAMP
AND PAVEMENT MARKING LOCATIONS**

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INTERSECTION DETAILS

NOT TO SCALE

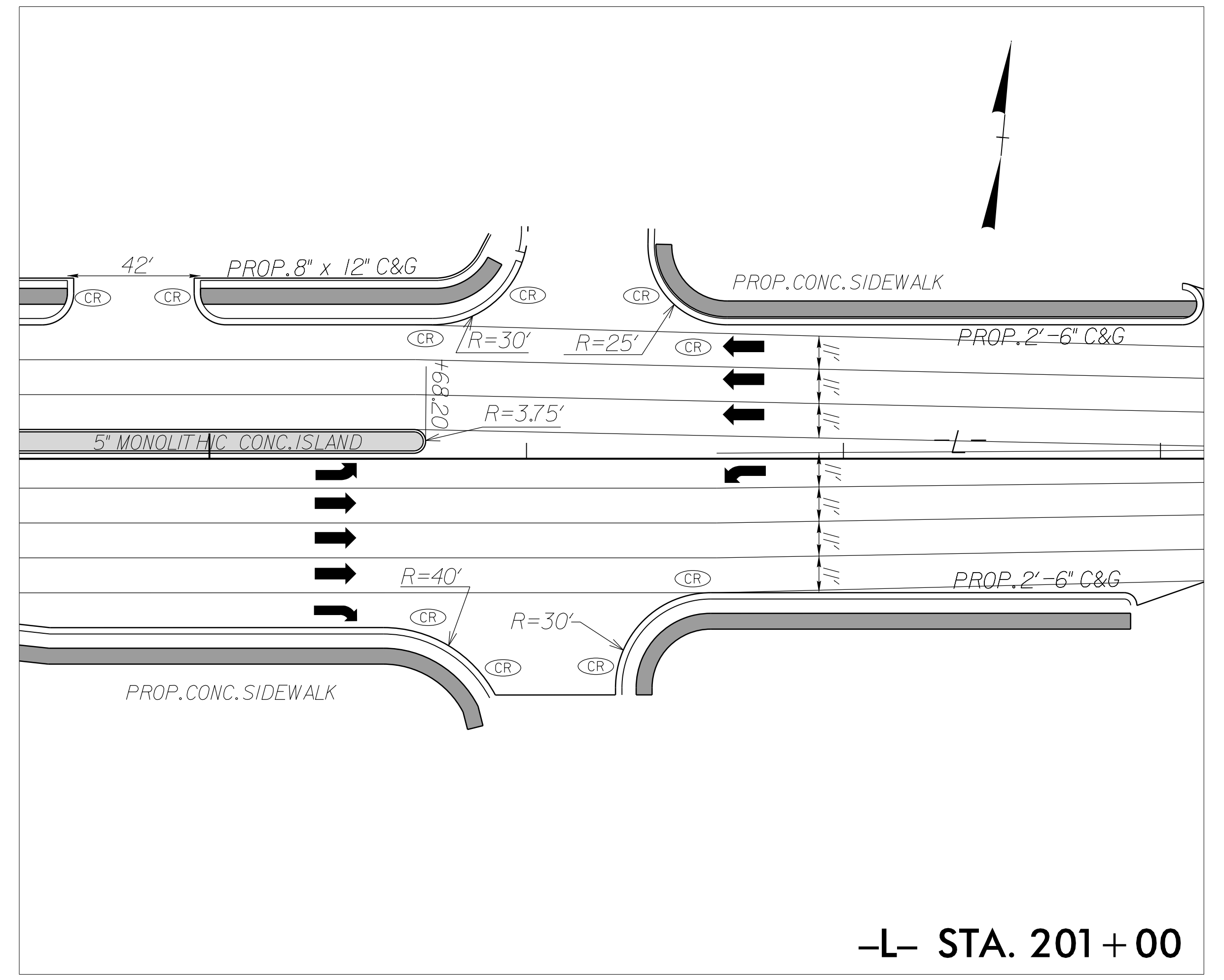
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RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER
11/20/2024	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



-L- STA. 160 + 00

**BETWEEN
DUKE STREET (-Y14-)
AND POMPTON DRIVE (-Y15-)
ON RAEFORD ROAD (-L-)
(SEE PLAN SHEET 15)**

**BETWEEN
S KENLEIGH DRIVE (-Y21-)
AND SCOTLAND DRIVE (-Y23-)
ON RAEFORD ROAD (-L-)
(SEE PLAN SHEET 18)**

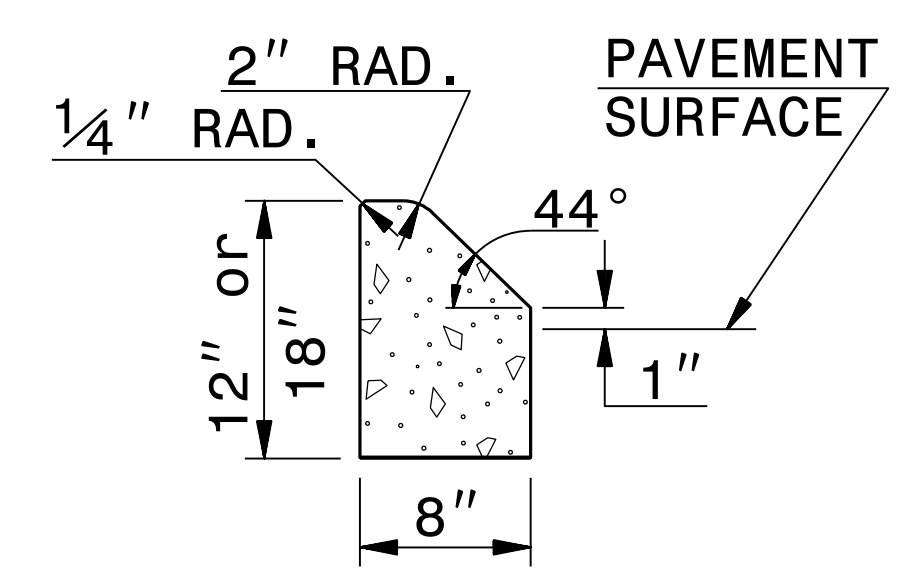


-L- STA. 201 + 00

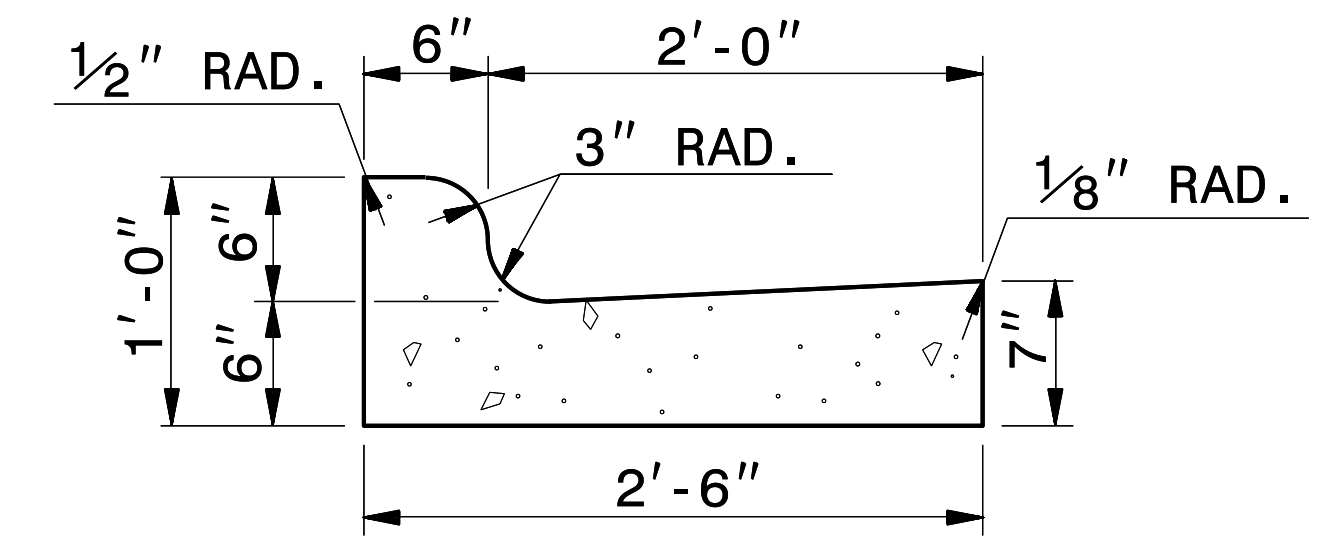
NOTE: SEE PMP PLANS FOR WHEEL CHAIR RAMP AND PAVEMENT MARKING LOCATIONS

5/14/99

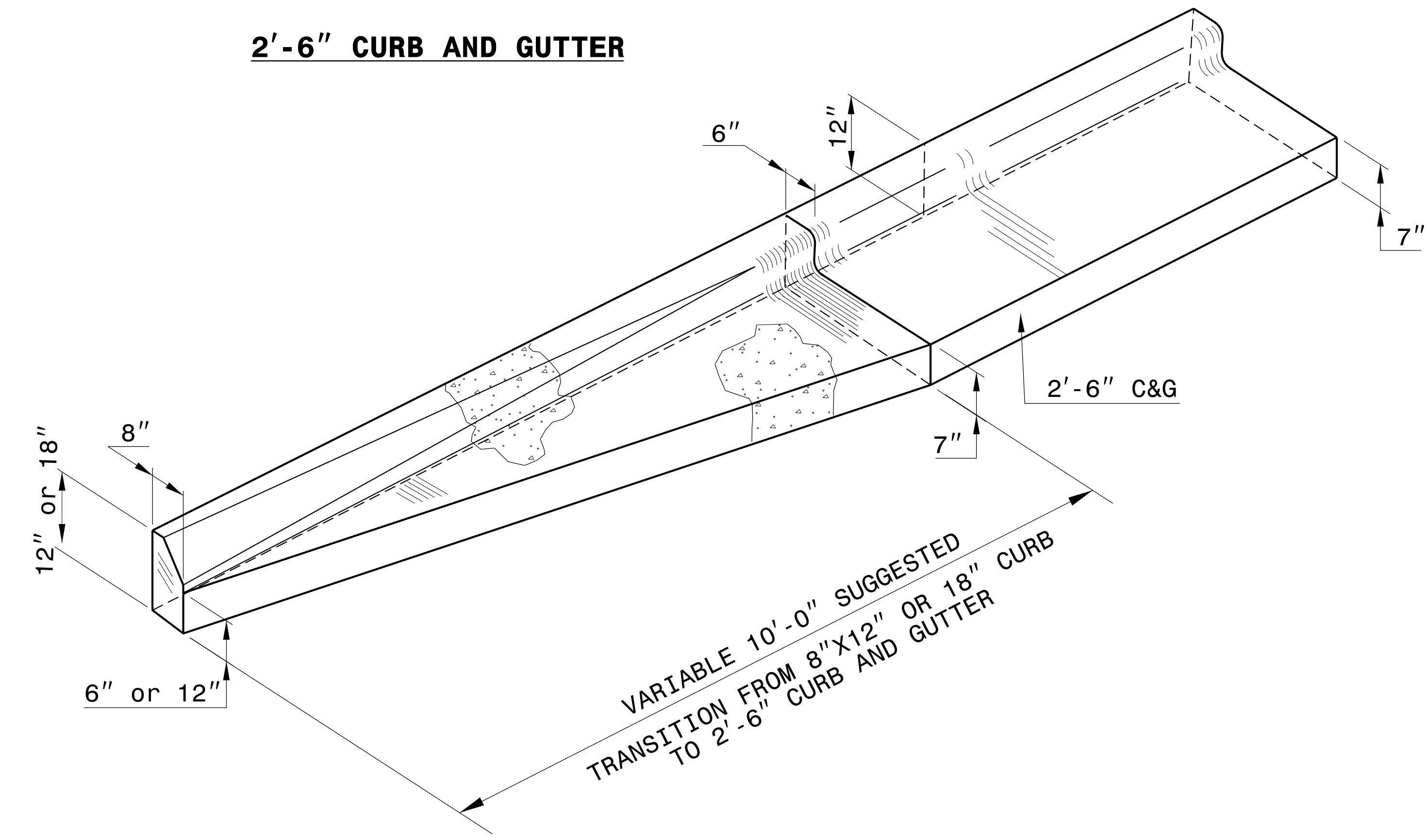
*NOTE: SEE STD. DWG. 846.01 FOR GENERAL NOTES



8" X 12" or 18" CONCRETE CURB



2'-6" CURB AND GUTTER



ISOMETRIC VIEW OF TRANSITION



11/22/2024

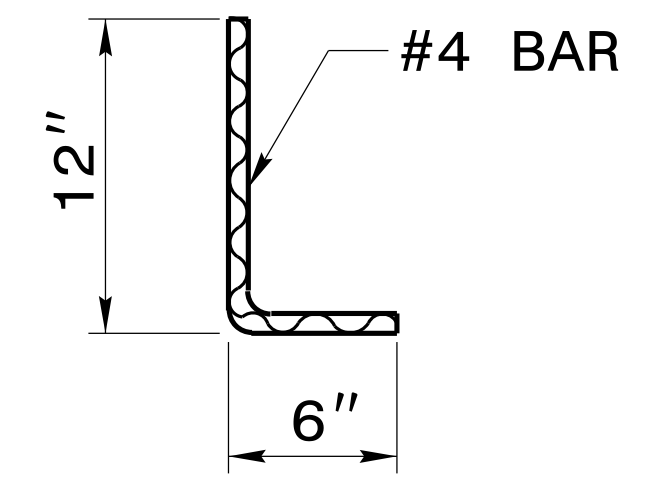
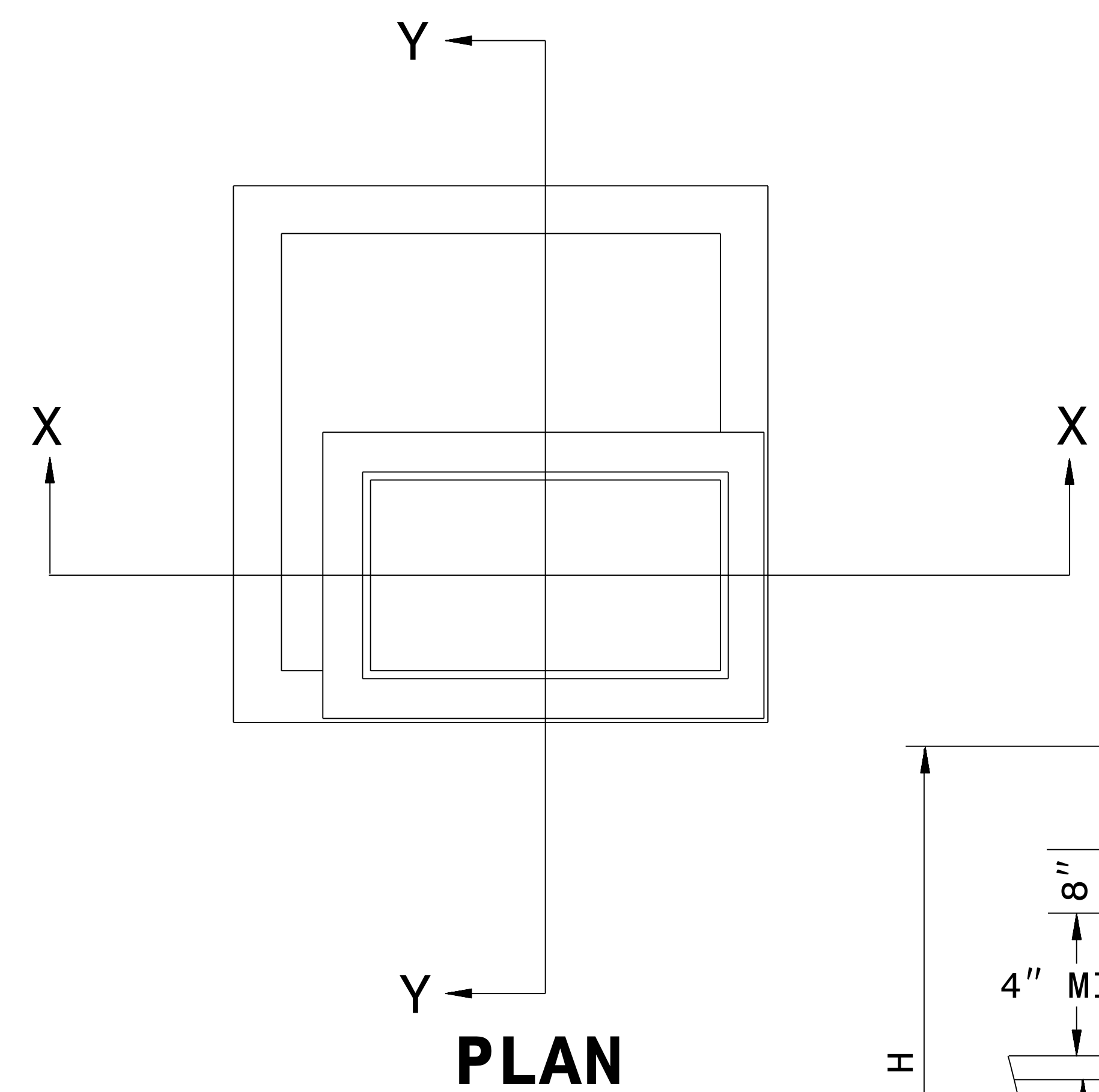
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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DETAIL OF 8" x 12" or 18" CURB TO 2'-6" CURB & GUTTER TRANSITION SECTION

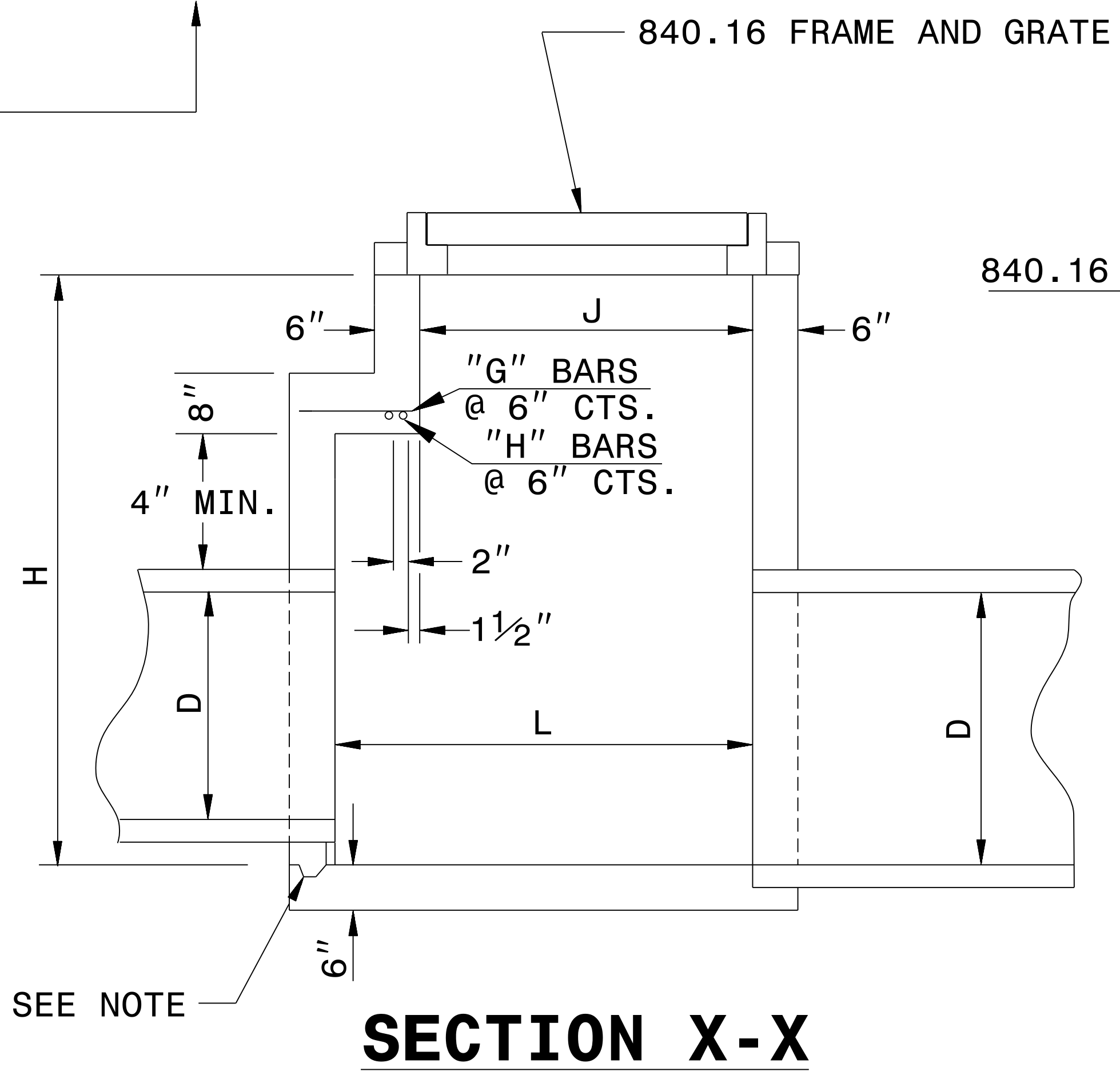
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 MODIFIED BY: K. KEMPF DATE: 4-05-18
 CHECKED BY: _____ DATE: _____
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J.Hoverton AT USD-292595

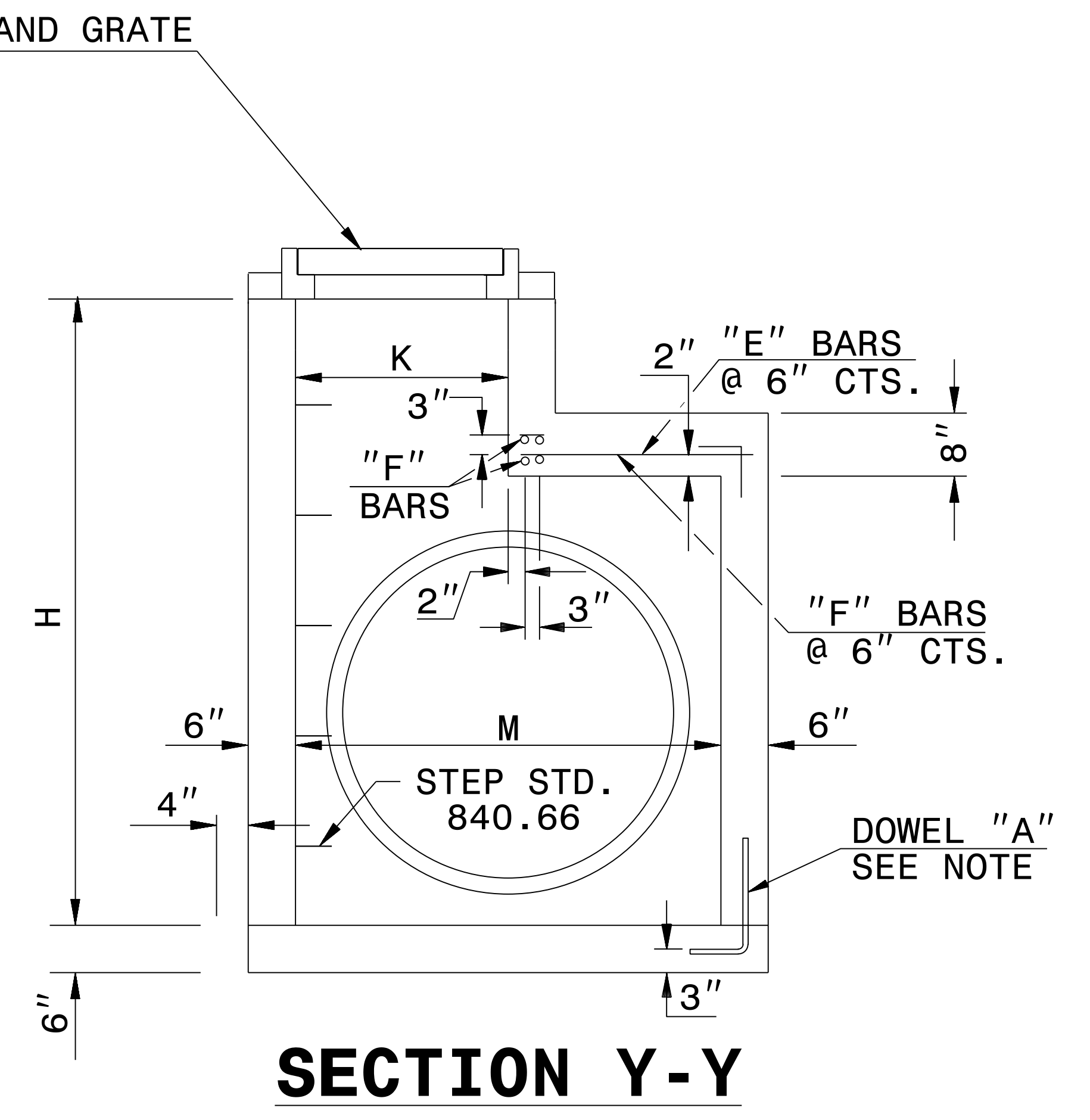


DOWEL

GENERAL NOTES:
 USE CLASS "B" CONCRETE THROUGHOUT.
 PROVIDE ALL DROP INLETS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.
 OPTIONAL CONSTRUCTION - MONOLITHIC POUR 2" KEYWAY OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
 USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
 IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
 CONSTRUCT WITH PIPE CROWNS MATCHING.
 INSTALL 2" WEEPHOLES AS DIRECTED BY THE ENGINEER.
 INSTALL STONE DRAINS, OF A MINIMUM OF 1 CUBIC FOOT OF NO. 78M STONE IN A POROUS FABRIC BAG OR WRAP, AT EACH WEEP HOLE OR AS DIRECTED BY THE ENGINEER.
 CHAMFER ALL EXPOSED CORNERS 1".
 DRAWING NOT TO SCALE.
 DIMENSIONS MAY BE FIELD ADJUSTED AS DIRECTED BY THE ENGINEER.



SECTION X-X

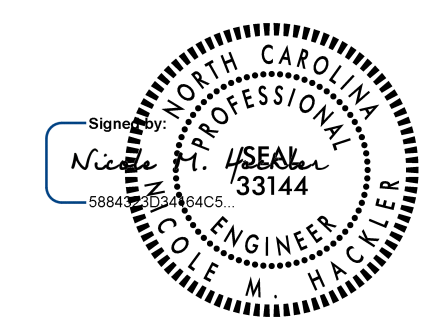


SECTION Y-Y

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

DIMENSIONS OF BOX AND PIPE						REINFORCING STEEL - NO. 4 BARS								CU YDS CONC. IN BOX				DEDUCTIONS FOR ONE PIPE		
PIPE	SPAN	WIDTH	SPAN	WIDTH	HEIGHT	BARS E		BARS F		BARS G		BARS H		TOTAL	BOTTOM SLAB	H TOTAL	H PER FT HT	TOTAL	C.S.	R.C.
D	J	K	L	M	H	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	LBS.						
12"	3'-0"	2'-0"	3'-8"	2'-0"	3'-9"	—	—	—	—	—	—	—	—	—	0.362	0.926	0.247	1.288	0.015	0.024
15"	3'-0"	2'-0"	3'-8"	2'-0"	4'-0"	—	—	—	—	—	—	—	—	—	0.362	0.988	0.247	1.350	0.023	0.036
18"				2'-0"	4'-3"	—	—	—	—	—	—	—	—	—	0.362	1.050	0.247	1.412	0.033	0.049
24"				2'-10"	4'-9"	8	1'-5"	6	4'-9"	—	—	—	—	27	0.444	1.362	0.278	1.806	0.059	0.085
30"			3'-8"	3'-5"	5'-3"	8	2'-0"	7	4'-9"	—	—	—	—	33	0.502	1.644	0.288	2.146	0.092	0.127
36"			4'-0"	4'-0"	5'-9"	8	2'-5"	8	4'-11"	4	0'-9"	2	4'-11"	47	0.560	1.931	0.321	2.525	0.132	0.178
42"			4'-10"	4'-10"	6'-3"	10	3'-1"	9	5'-7"		1'-5"	3	5'-7"	67	0.704	2.500	0.370	3.282	0.180	0.243
48"			5'-4"	5'-4"	6'-9"	11	3'-7"	10	6'-1"		1'-11"	4	6'-1"	87	0.823	3.013	0.407	3.920	0.235	0.317
54"			6'-0"	6'-0"	7'-3"	12	4'-1"	11	6'-7"		2'-5"	5	6'-7"	107	0.951	3.589	0.444	4.677	0.297	0.401
60"			6'-6"	6'-6"	7'-9"	13	4'-9"	12	7'-3"		3'-1"	6	7'-3"	135	1.311	4.539	0.494	5.775	0.367	0.495
66"			7'-2"	7'-2"	8'-3"	14	5'-4"	14	7'-10"		3'-7"	7	7'-10"	168	1.136	5.061	0.537	6.506	0.444	0.599
72"	3'-0"	2'-0"	7'-8"	7'-8"	8'-9"	15	5'-11"	15	8'-5"	4	4'-3"	8	8'-5"	199	1.500	5.860	0.580	7.473	0.528	0.713

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11/22/2024

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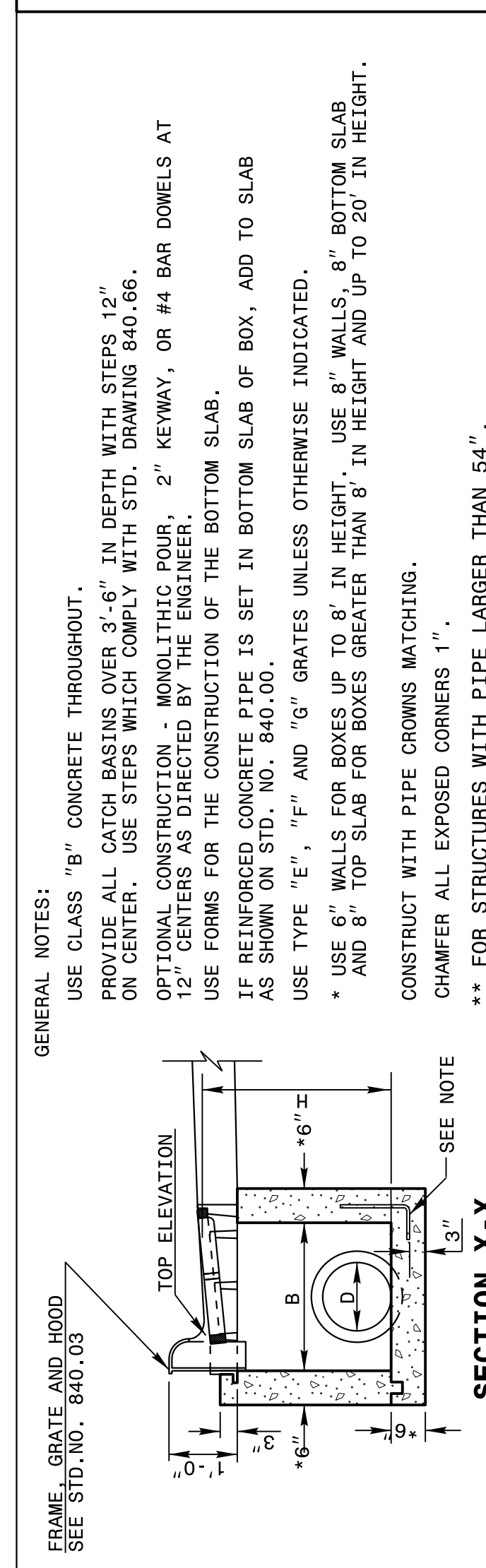
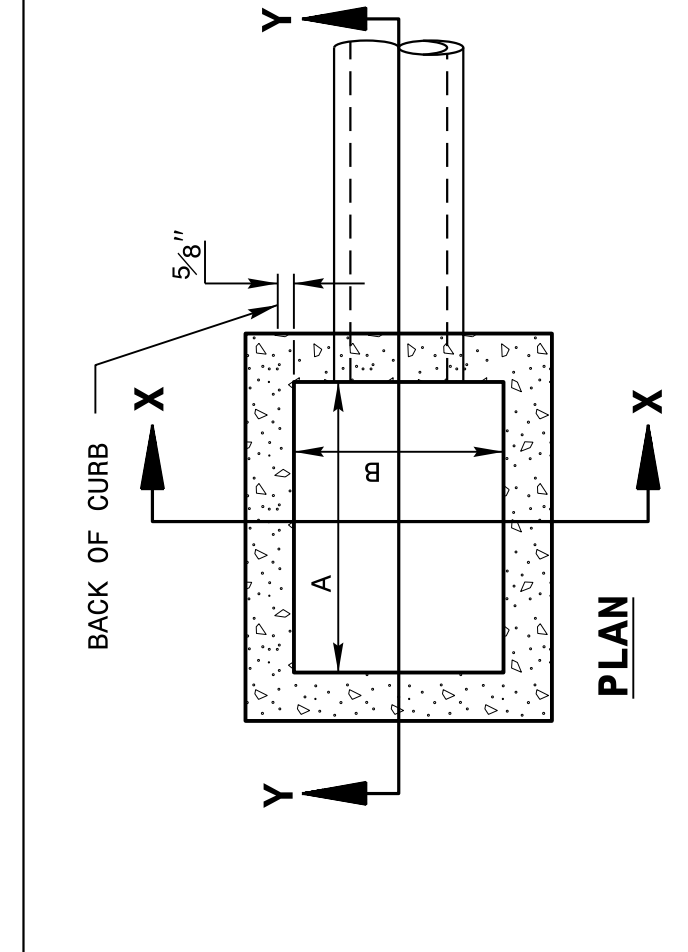
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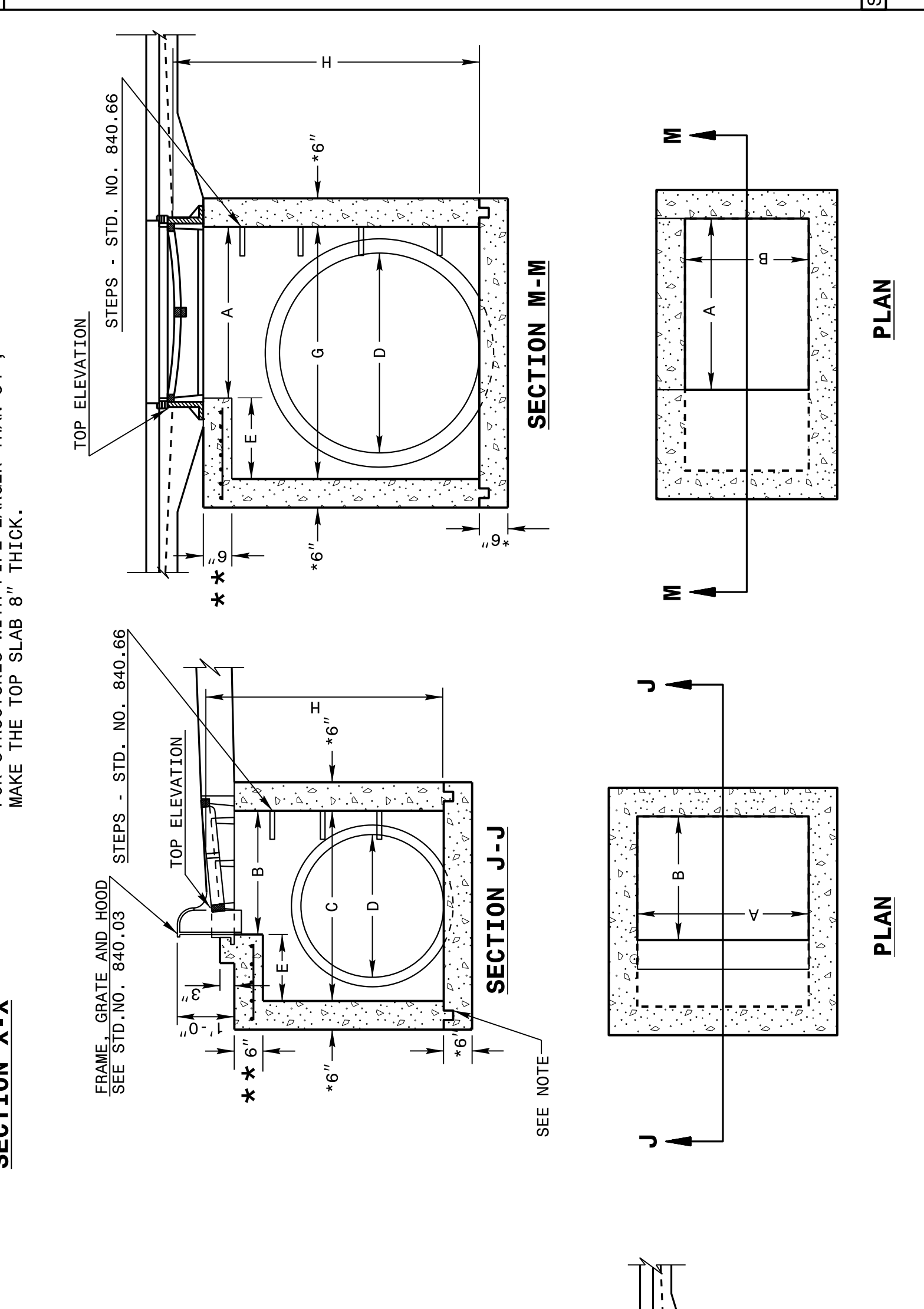
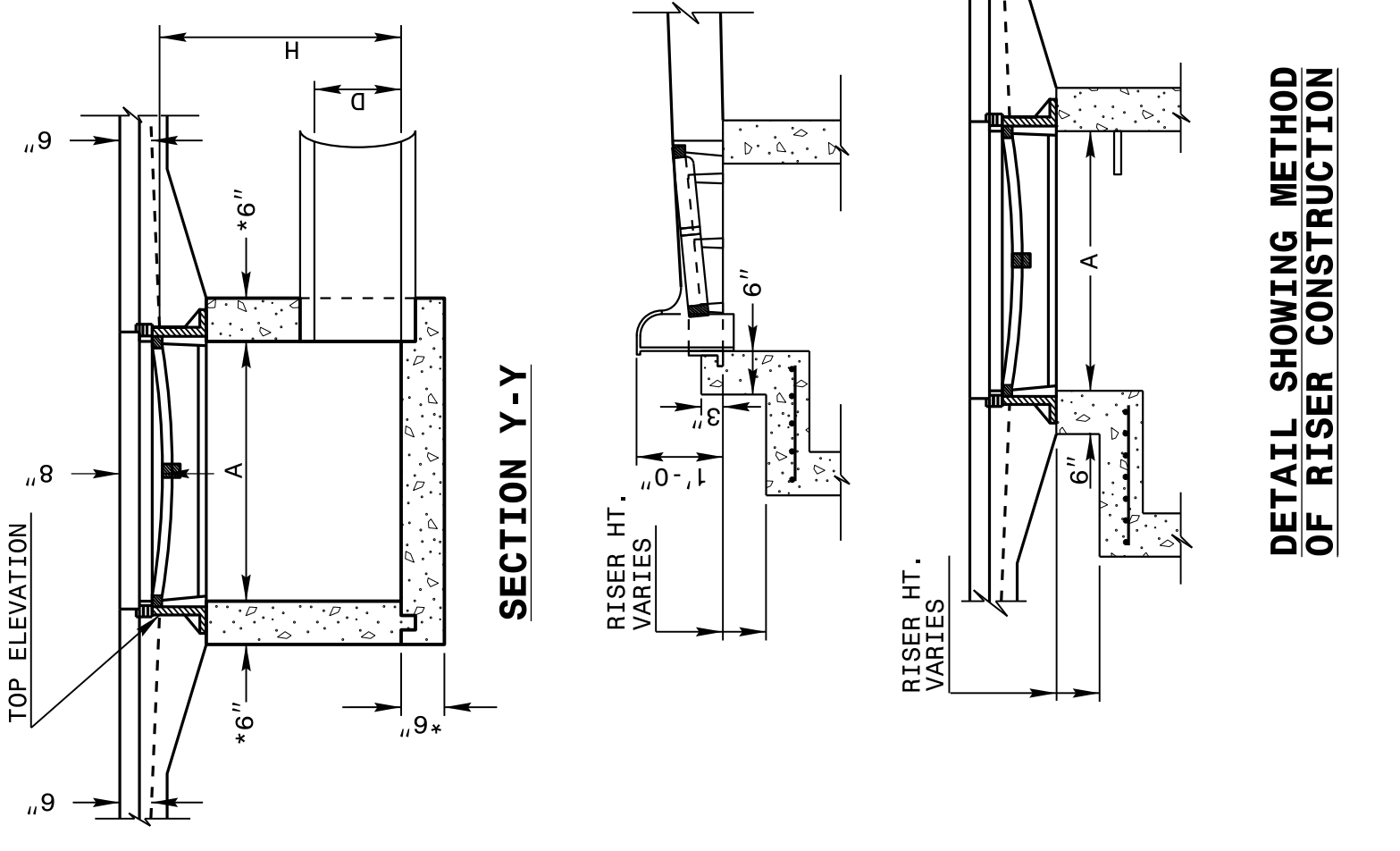
5/14/99

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



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

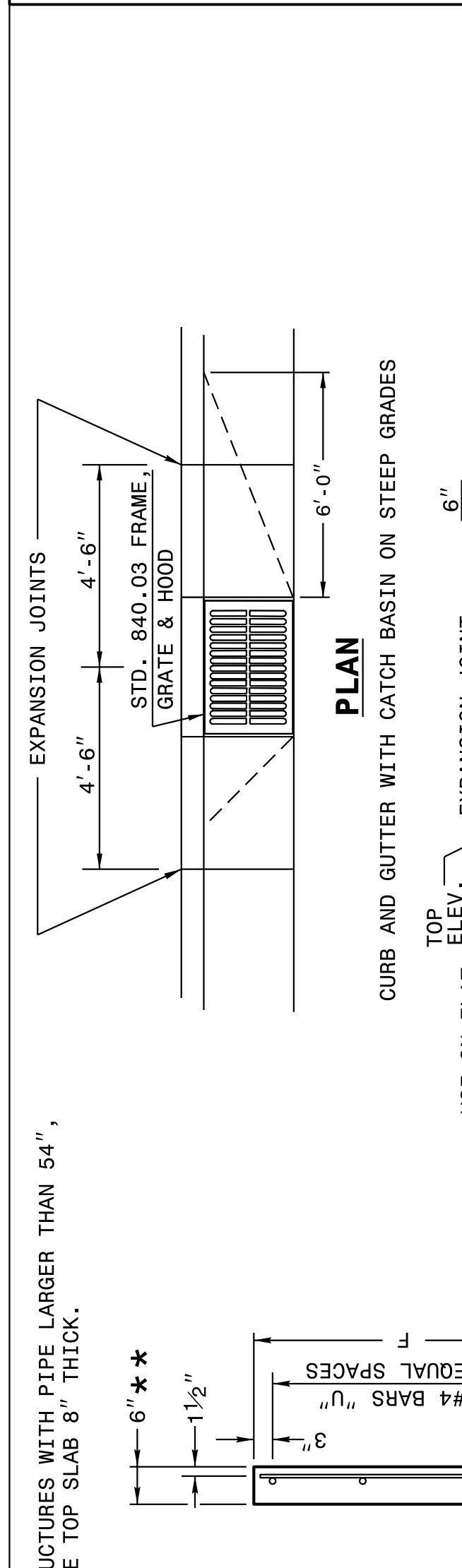
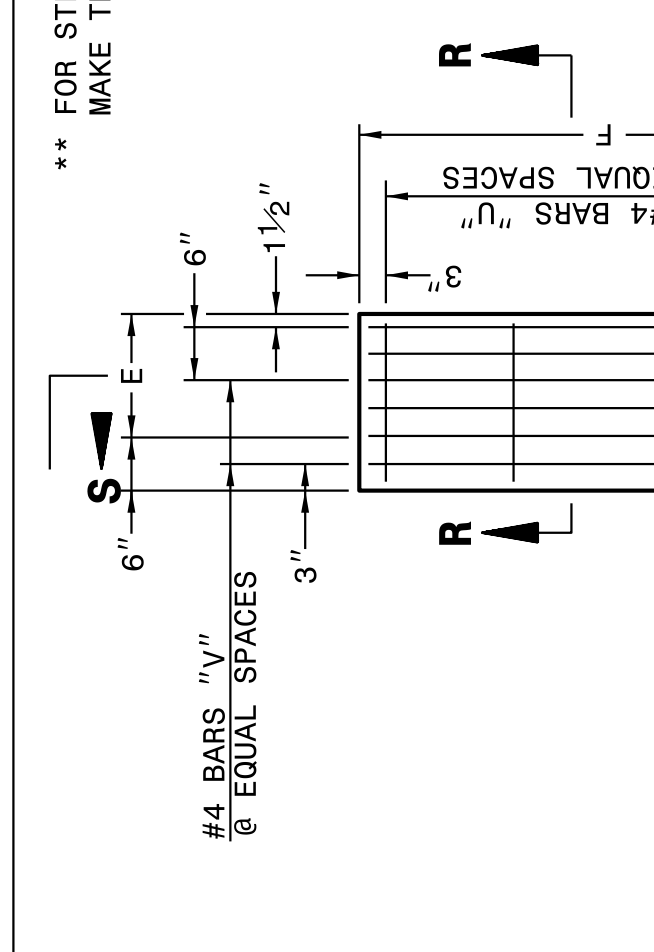
ENGLISH DETAIL DRAWING FOR
**EXTRA DEPTH
 CONCRETE CATCH BASIN**
 12" THRU 84" PIPE



SHEET 1 OF 2
840D02

SHEET 1 OF 2
840D02

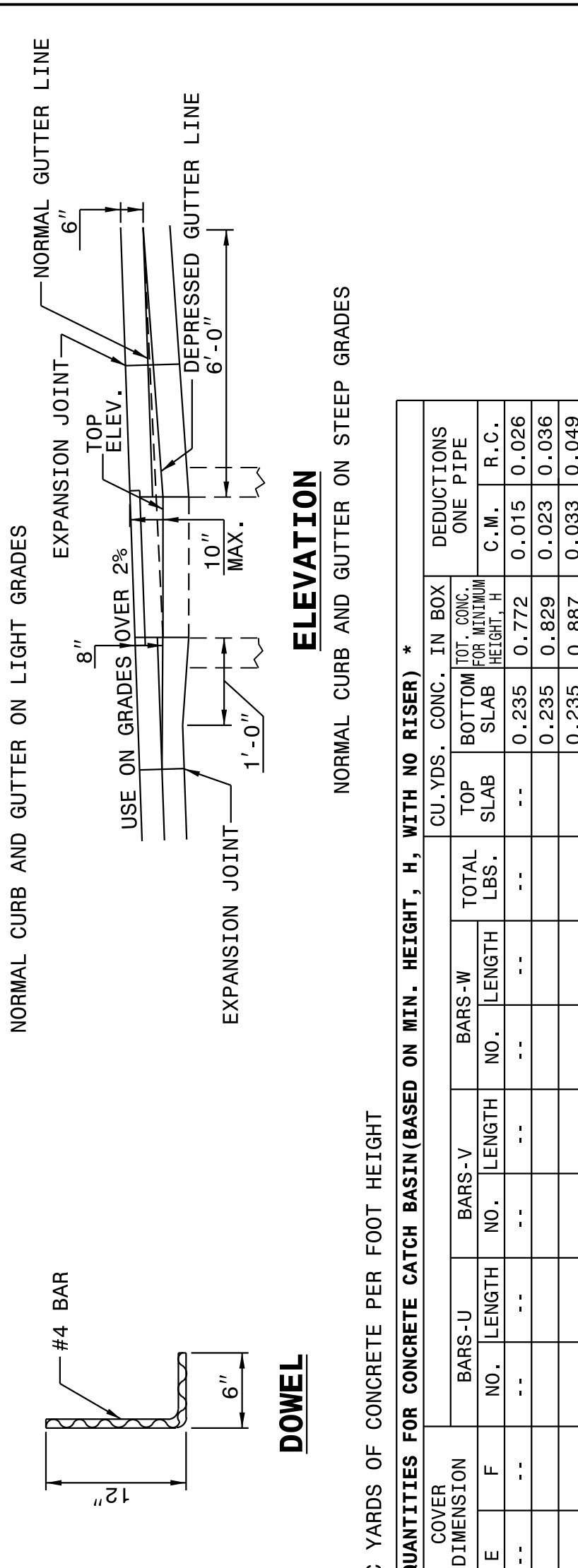
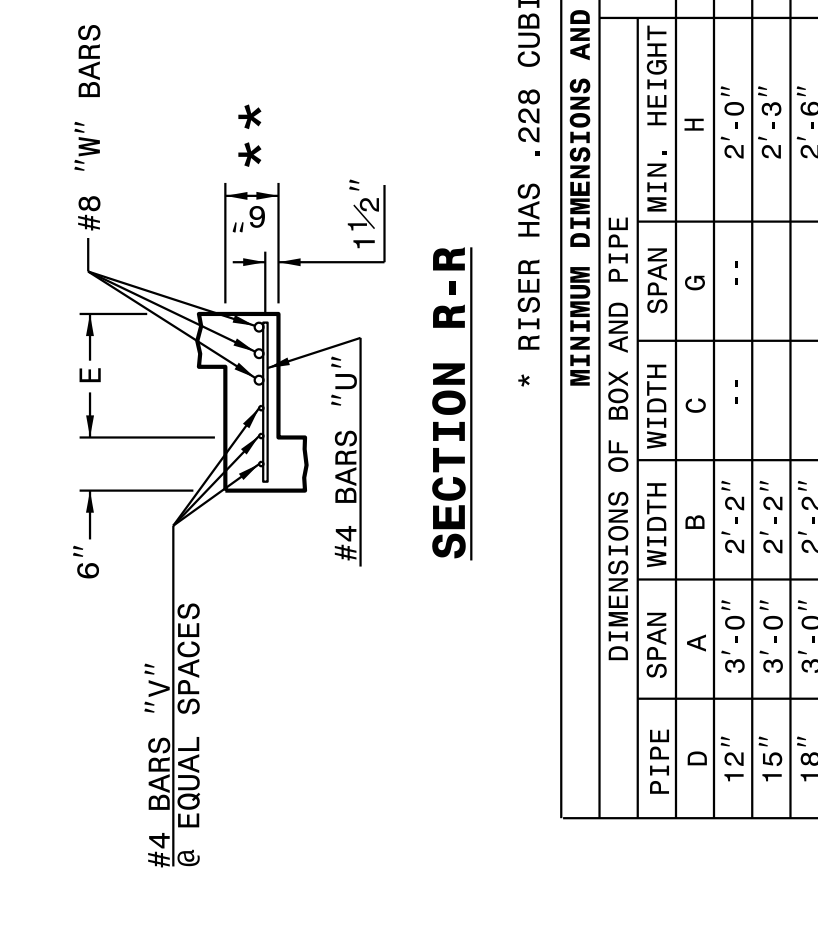
STATE OF NORTH CAROLINA
 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.



SHEET 1 OF 2
840D02

SHEET 1 OF 2
840D02

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



SHEET 2 OF 2
840D02

SHEET 2 OF 2
840D02

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

PIPE D.	DIMENSIONS OF BOX AND PIPE			COVER DIMENSION			MINIMUM DIMENSIONS AND QUANTITIES FOR CONCRETE CATCH BASIN (BASED ON MIN. HEIGHT, H, WITH NO RISER) *			DEDUCTIONS				
	SPAN	WIDTH	HEIGHT	E	F	G	BAR-S-U NO.	BAR-S-V LENGTH	BAR-S-W NO.	TOTAL LBS.	TOP SLAB CU. YDS.	BOTTOM SLAB FOR MINIMUM HEIGHT, H	CONC. ONE PIPE C. M.	R.C.
12"	3'-0"	2'-2"	2'-0"	..	2'-0"	2'-3"	..	..	..	..	0.235	0.772	0.015	0.026
15"	3'-0"	2'-2"	2'-3"	..	2'-3"	2'-6"	..	..	..	..	0.235	0.829	0.023	0.036
18"	3'-0"	2'-2"	3'-1"	..	3'-1"	3'-4"	..	..	..	..	0.235	0.887	0.033	0.049
24"	3'-0"	2'-2"	3'-10"	..	3'-10"	4'-4"	..	..	..	..	0.235	1.001	0.059	0.085
30"	3'-0"	2'-2"	3'-4"	..	3'-4"	4'-7"	..	..	..	..	0.123	0.347	1.433	0.092
36"	3'-0"	2'-2"	3'-10"	..	3'-10"	4'-10"	..	..	..	..	0.161	0.432	1.714	0.132
42"	3'-0"	2'-2"	4'-5"	..	4'-5"	5'-5"	..	..	..	..	0.200	0.543	1.738	0.180
48"	3'-0"	2'-2"	5'-0"	..	5'-0"	6'-0"	..	..	..	..	0.235	0.667	2.052	0.235
54"	3'-0"	2'-2"	5'-7"	..	5'-7"	6'-7"	..	..	..	..	0.289	0.802	2.387	0.297
60"	3'-0"	2'-2"	6'-3"	..	6'-3"	7'-3"	..	..	..	..	0.340	0.973	2.722	0.363
66"	3'-0"	2'-2"	6'-11"	..	6'-11"	7'-6"	..	..	..	..	0.391	1.160	3.057	0.440
72"	3'-0"	2'-2"	7'-6"	..	7'-6"	8'-6"	..	..	..	..	0.442	1.340	3.392	0.524
78"	3'-0"	2'-2"	8'-1"	..	8'-1"	9'-1"	..	..	..	..	0.493	1.530	3.727	0.615
84"	3'-0"	2'-2"	8'-9"	..	8'-9"	9'-9"	0.544	1.760	4.062	0.713

CONTRACT STANDARDS AND DEVELOPMENT UNIT
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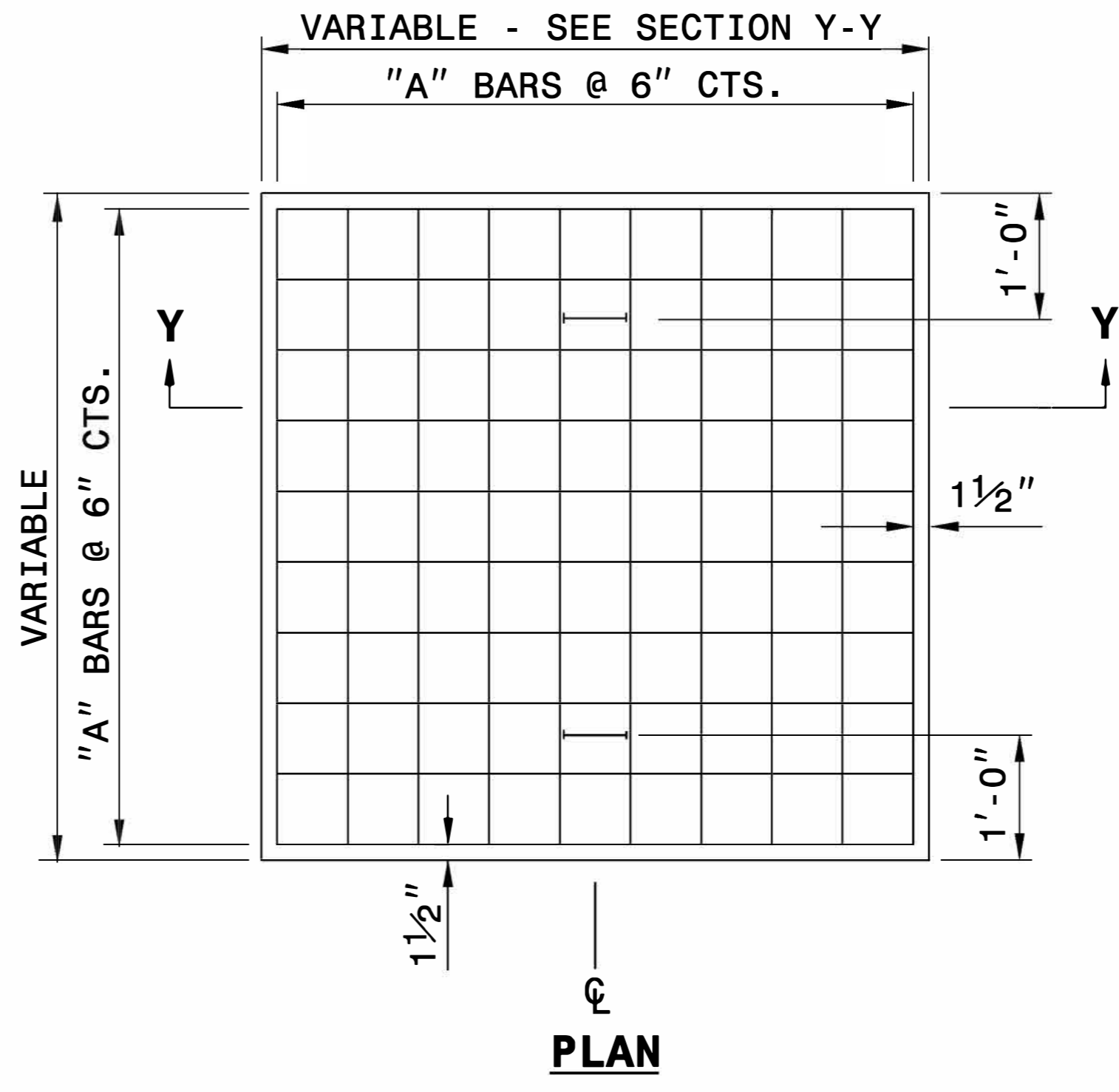
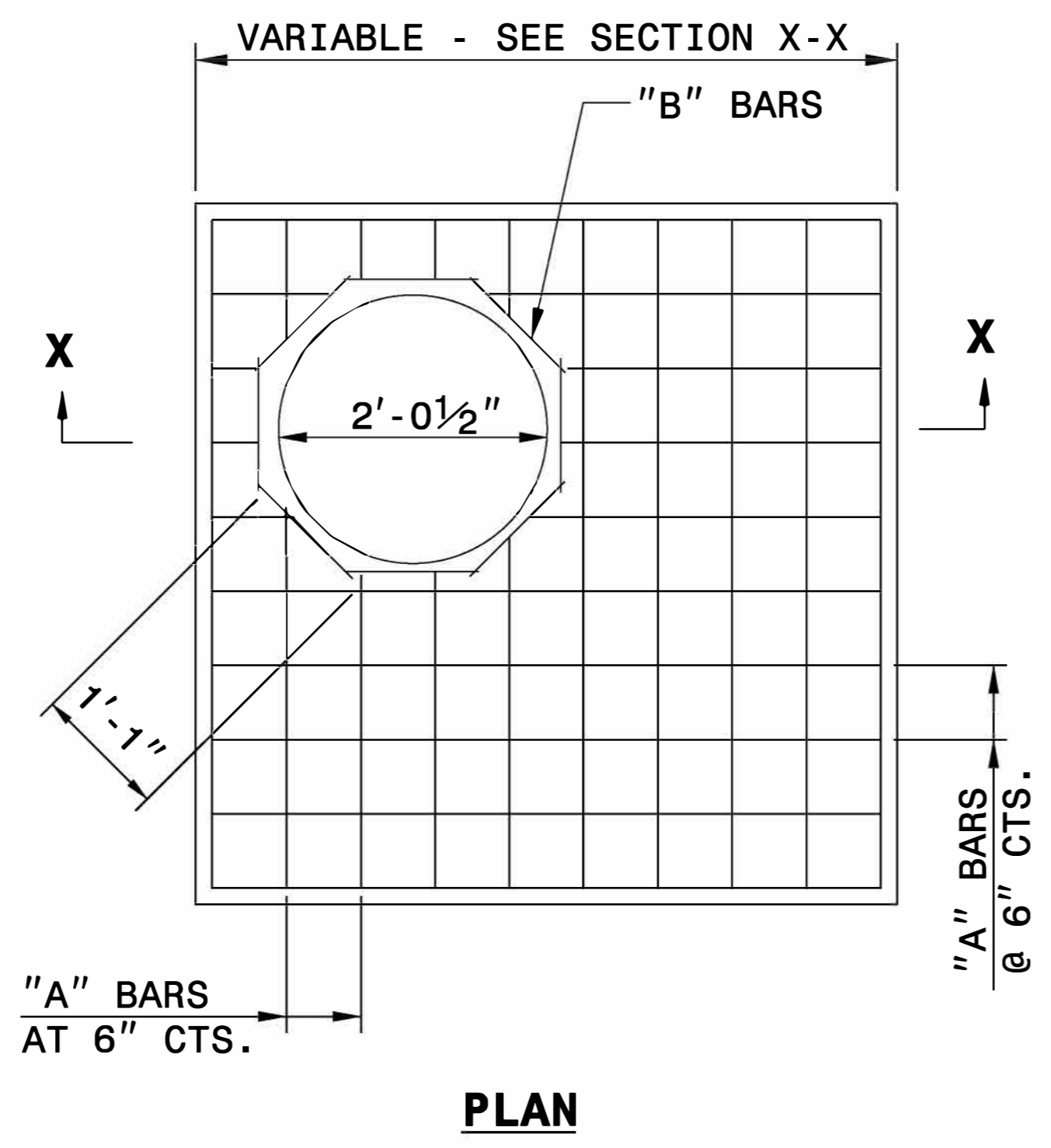
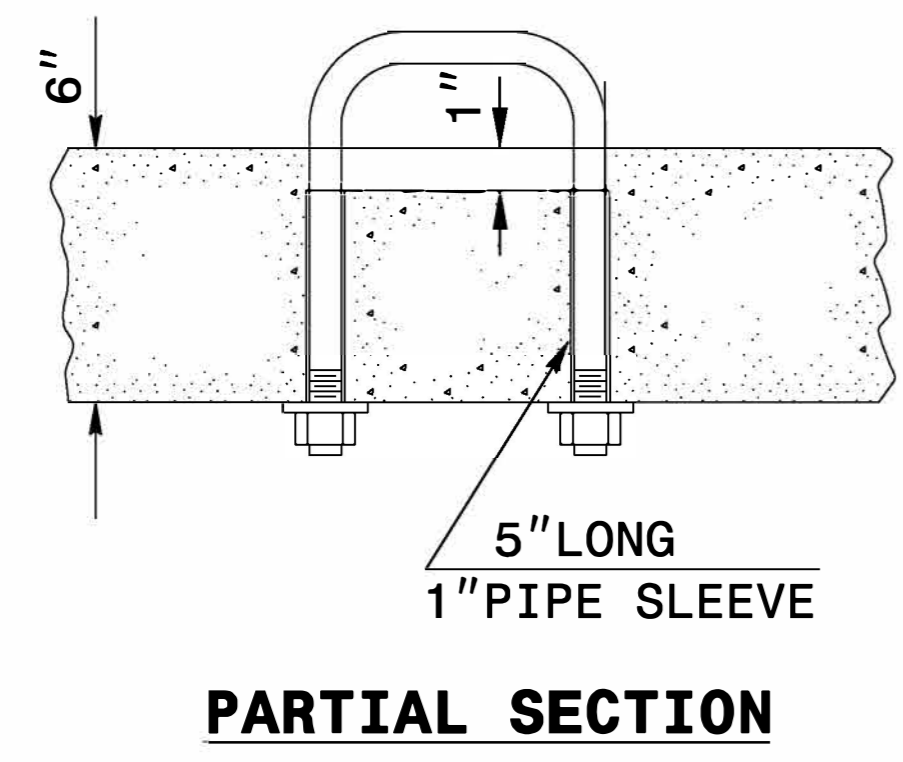
SEE PLATE FOR TITLE

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 MODIFIED BY: E.E. WARD DATE: 3-1-02
 CHECKED BY: _____ DATE: _____
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11/22/2024

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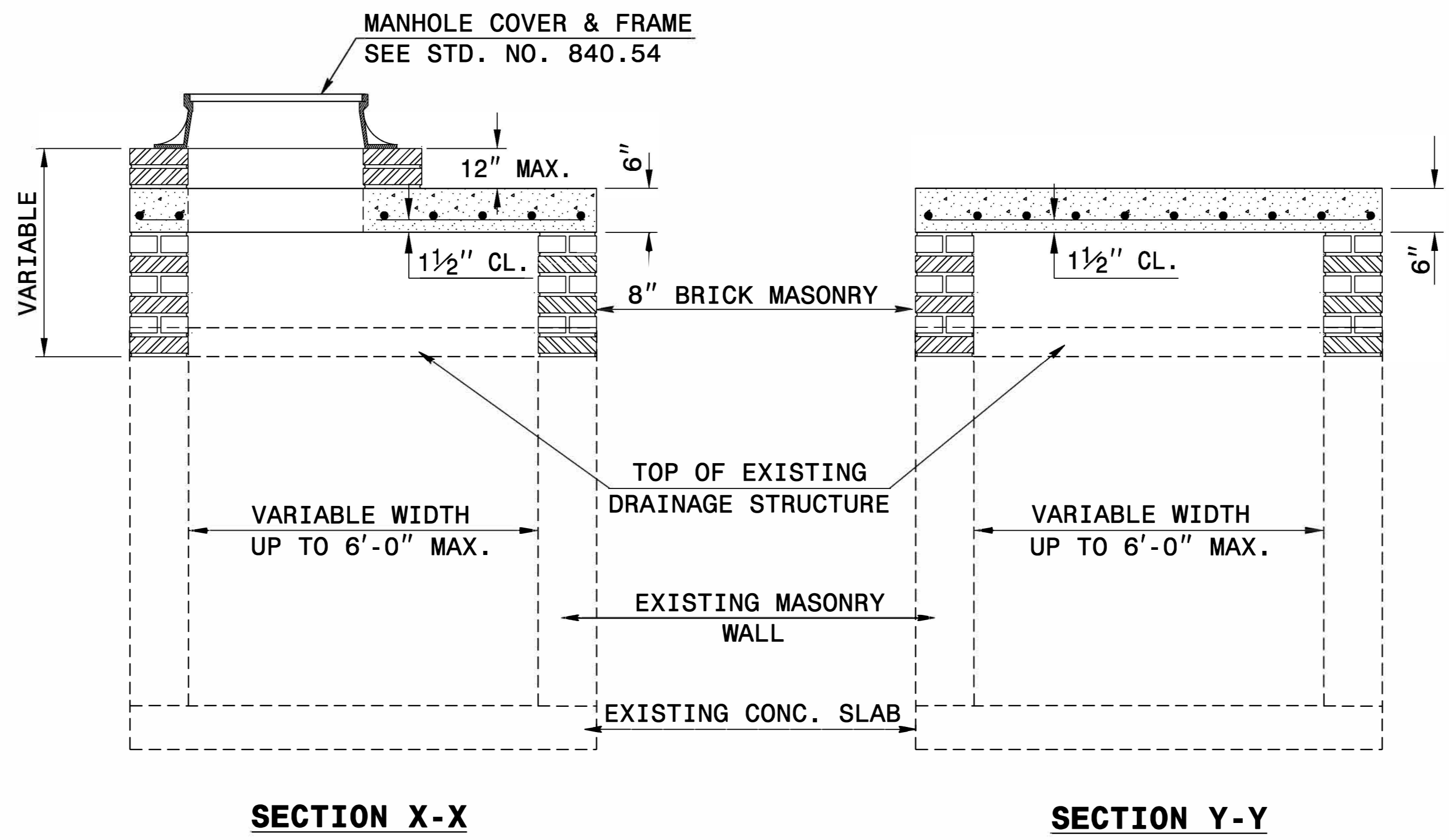
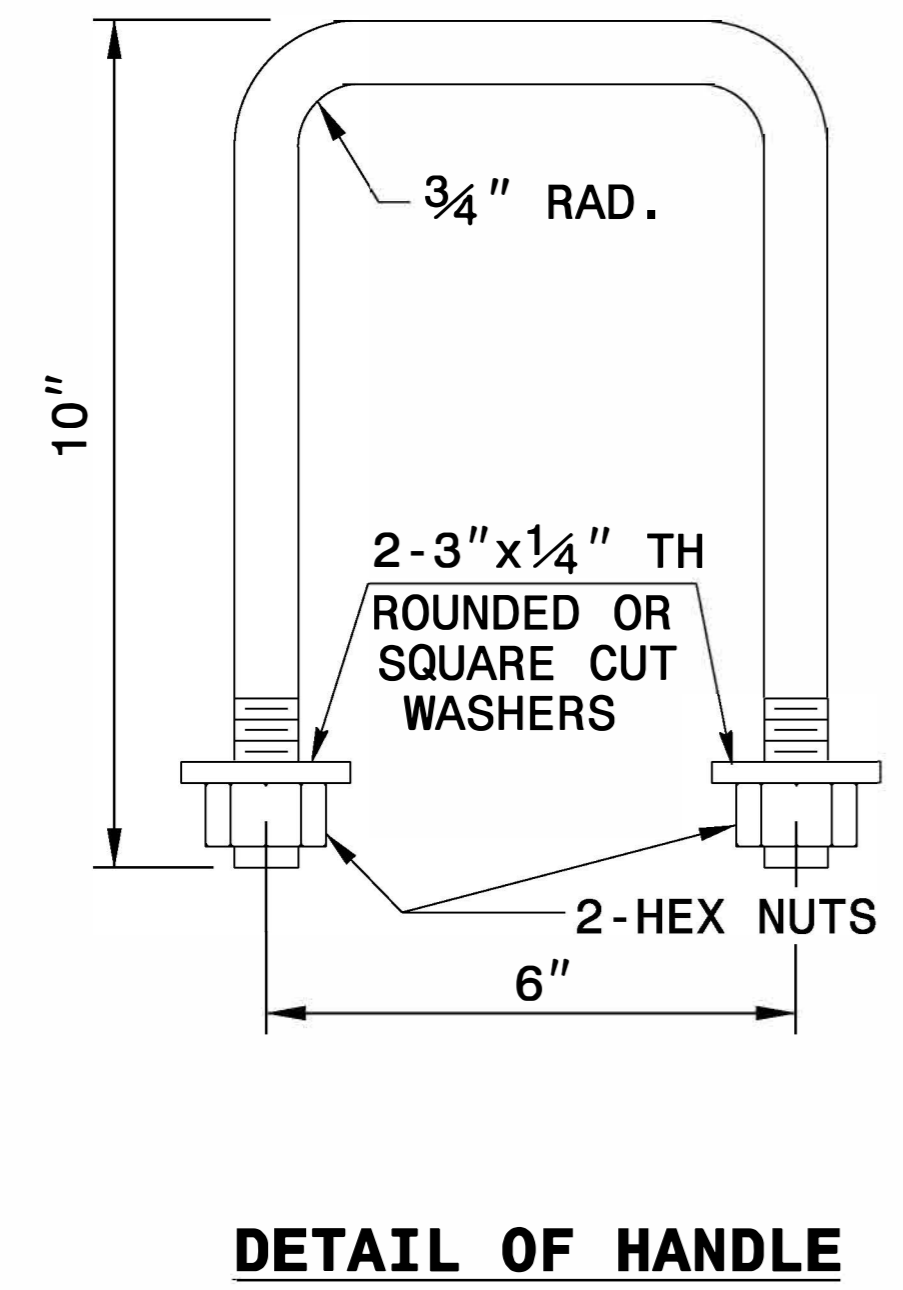
GENERAL NOTES:

CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.

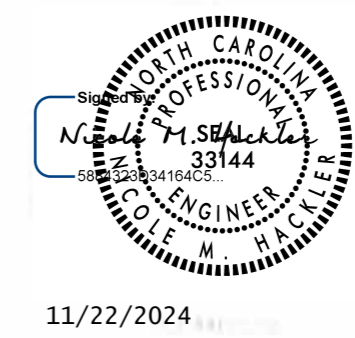
THE DIMENSIONS FOR THE EXISTING BOXES ARE APPROXIMATE AND MAY VARY SLIGHTLY.

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.



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 Office 919-707-6950 FAX 919-250-4119

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

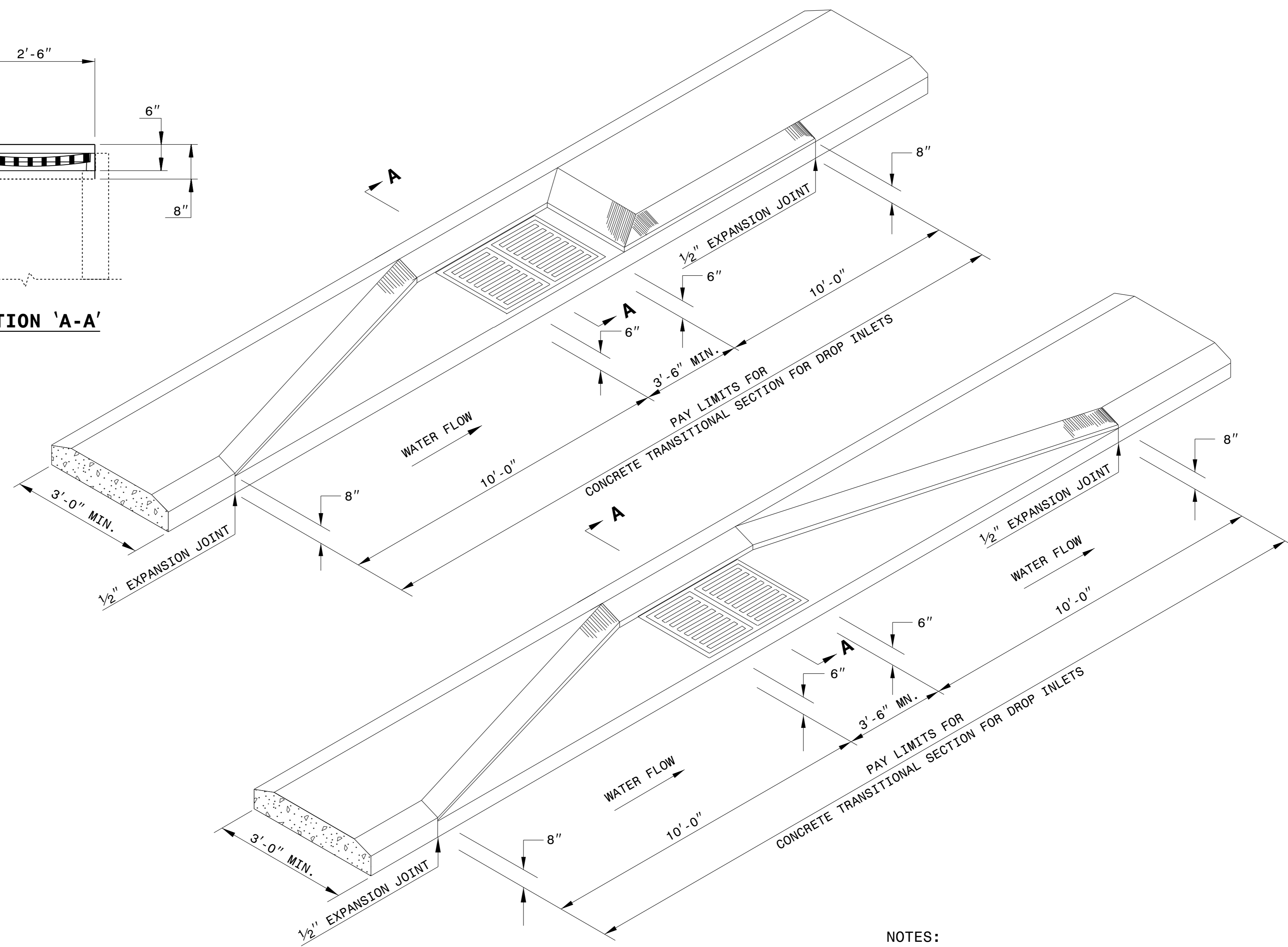
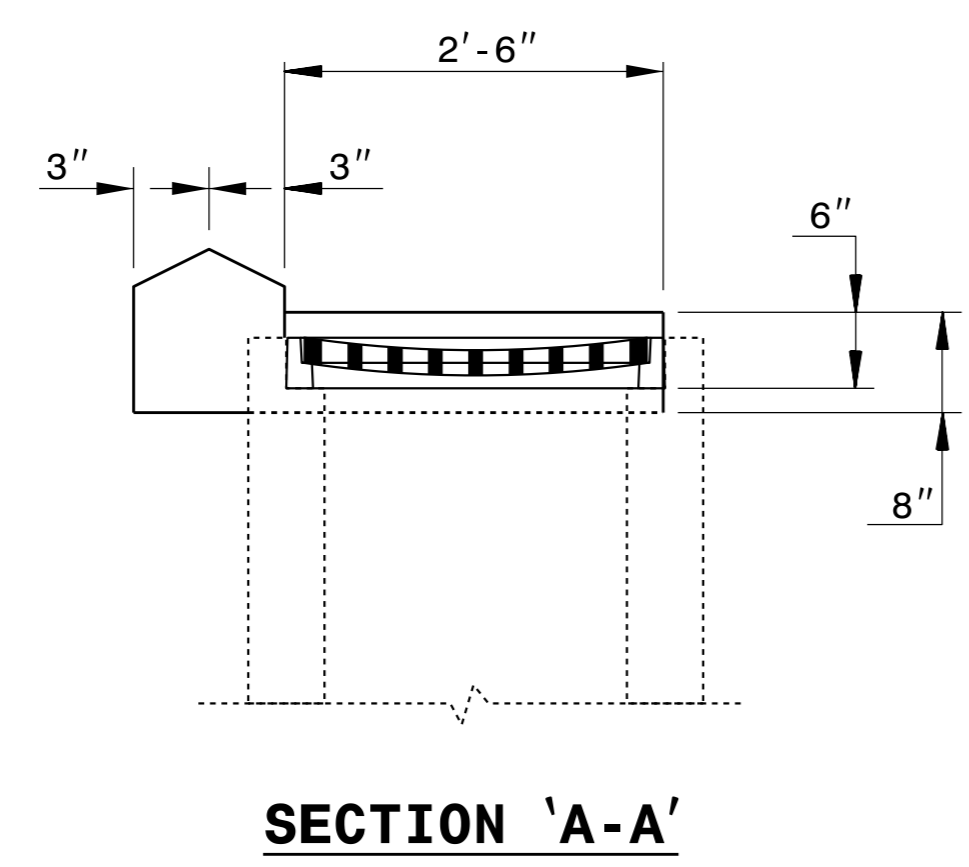
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11/22/2024
 T.S.S.
 39144
 N.C.
 PROFESSIONAL ENGINEER

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

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

SHEET 1 OF 1
852D06

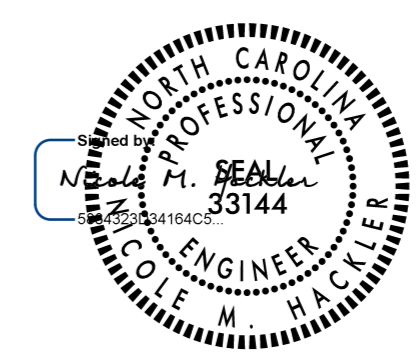


NOTES:
-REFER TO STD. NO. 840.14 AND 840.15 FOR DRAINAGE STRUCTURE.
-REFER TO STD. NO. 840.16 FOR GRATE AND FRAME.

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

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

SHEET 1 OF 1
852D06

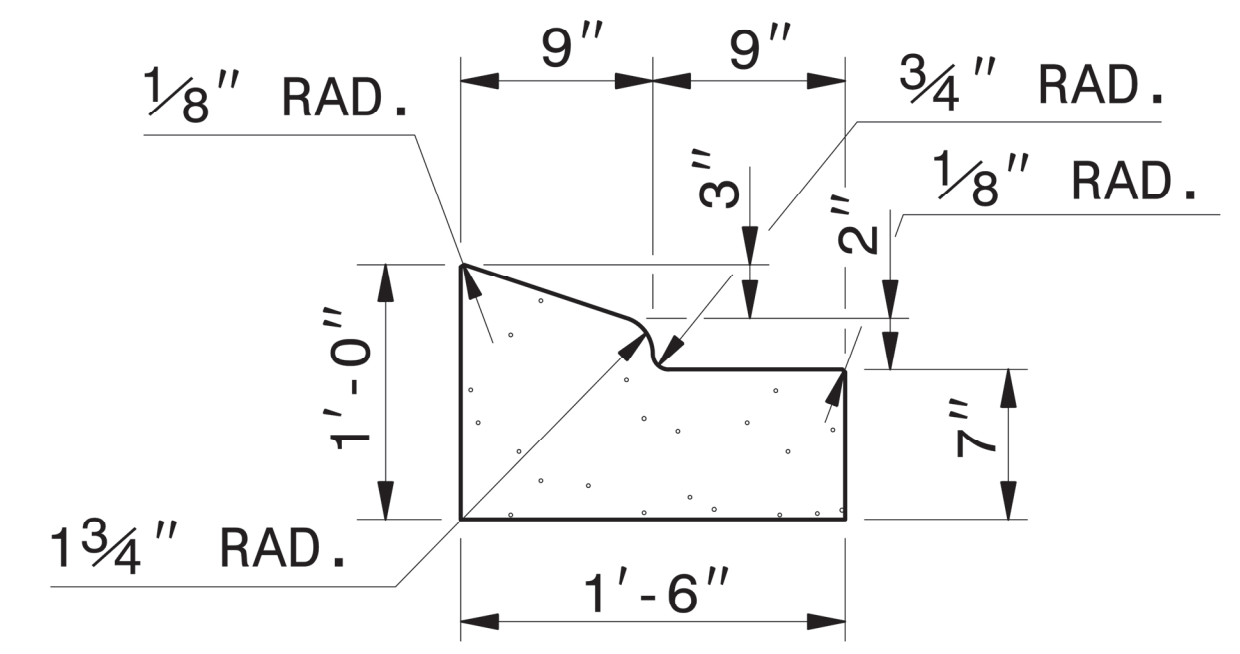


11/22/2024

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CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950	FAX 919-250-4119
SEE TITLE PLATE	
ORIGINAL BY: KKEMPF	DATE: 8/2/10
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
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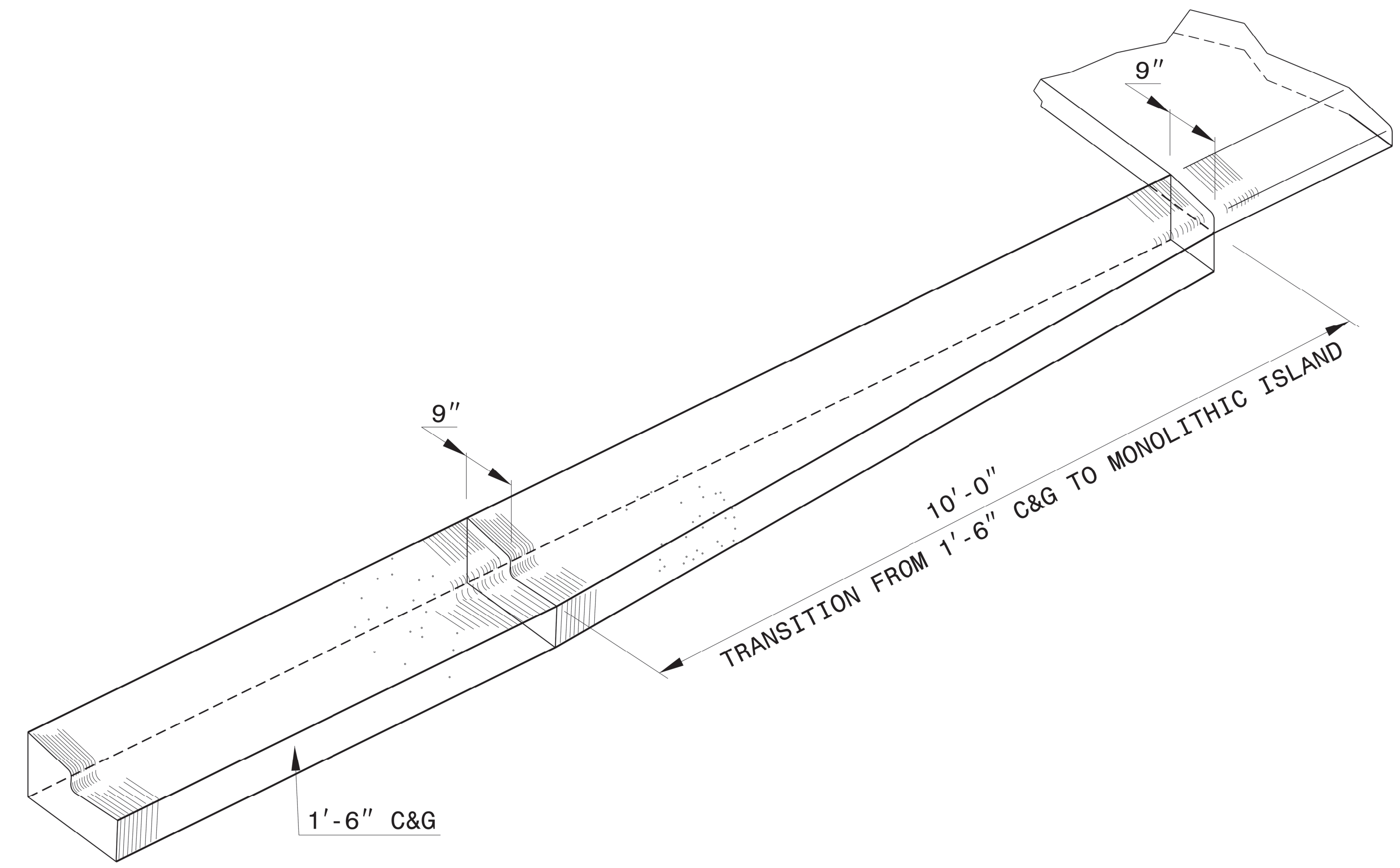
852D06



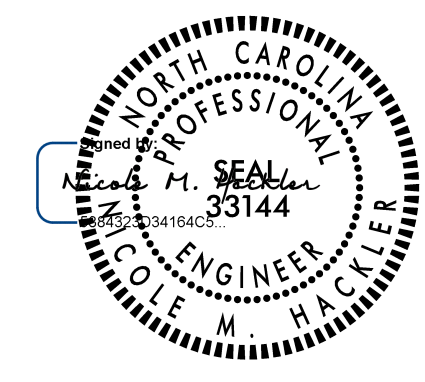
1'-6" CURB AND GUTTER

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

SEE ROADWAY PLANS FOR LOCATION OF CURB TRANSITION.



ISOMETRIC VIEW OF TRANSITIONING CURB & GUTTER



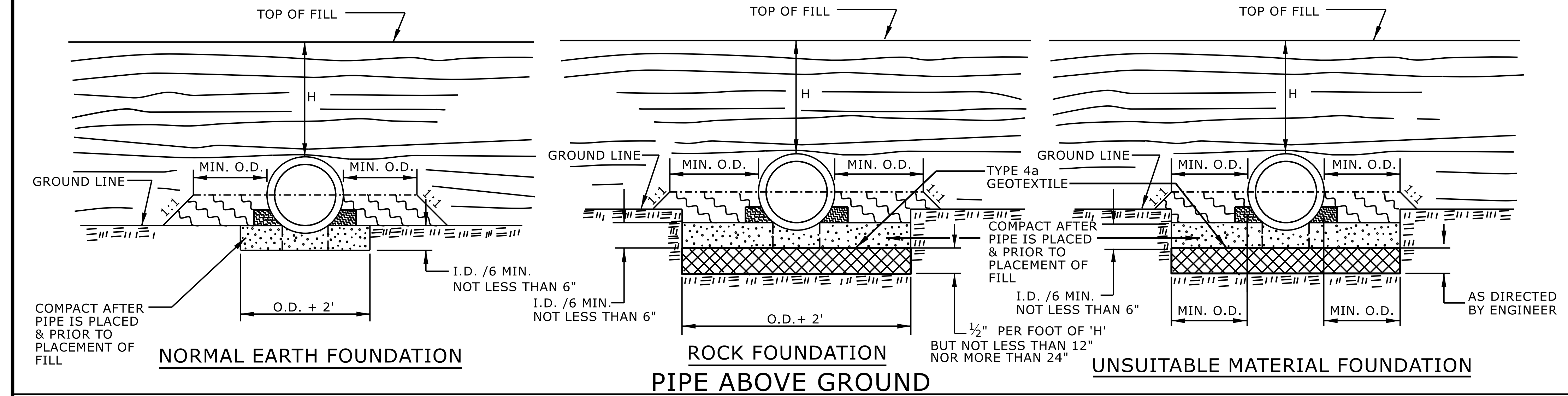
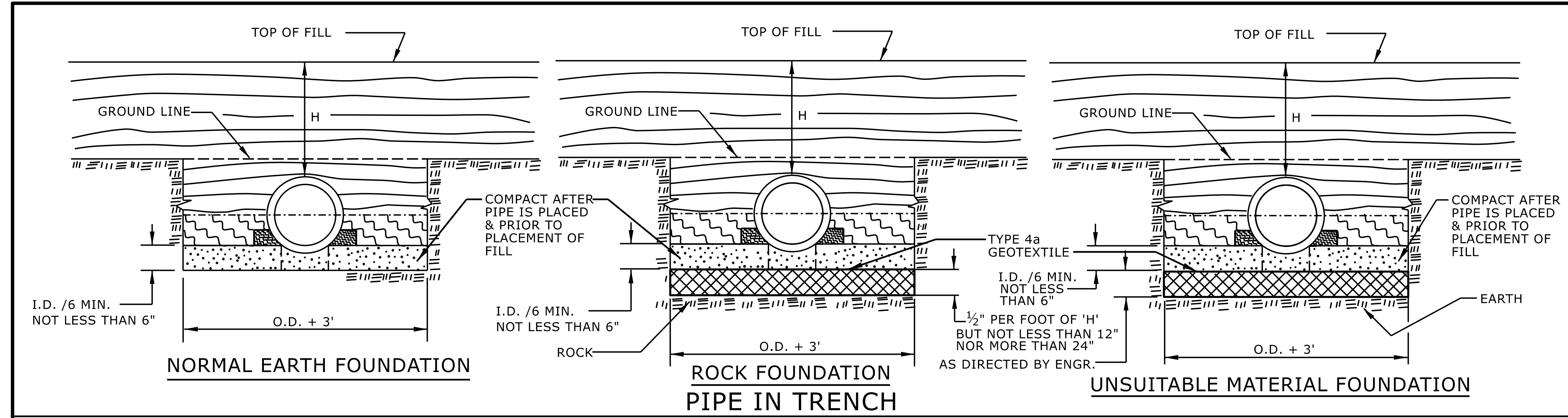
11/22/2024

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Office 919-707-6950 FAX 919-250-4119

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

ORIGINAL BY:	DATE:
MODIFIED BY: KKEMPF	DATE: 09-24-14
CHECKED BY:	DATE:
FILE SPEC.: kkempf/english/curb_gutter_transition.dgn	



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.

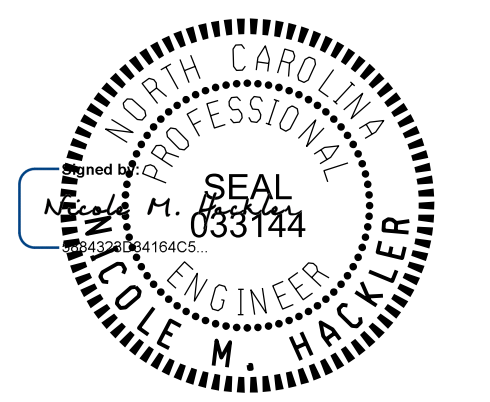
DO NOT OPERATE HEAVY EQUIPMENT OVER ANY PIPE CULVERT UNTIL THE PIPE CULVERT HAS BEEN PROPERLY BACKFILLED AND COVERED WITH AT LEAST 3 FEET OF APPROVED MATERIAL.

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

- SPRINGLINE OF PIPE
- [Pattern] SELECT BACKFILL MATERIAL CLASS III OR CLASS II, BELOW SPRINGLINE.
- [Pattern] UNDISTURBED EARTH MATERIAL
- [Pattern] 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



11/22/2024

SHEET 2 OF 2
300.01

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

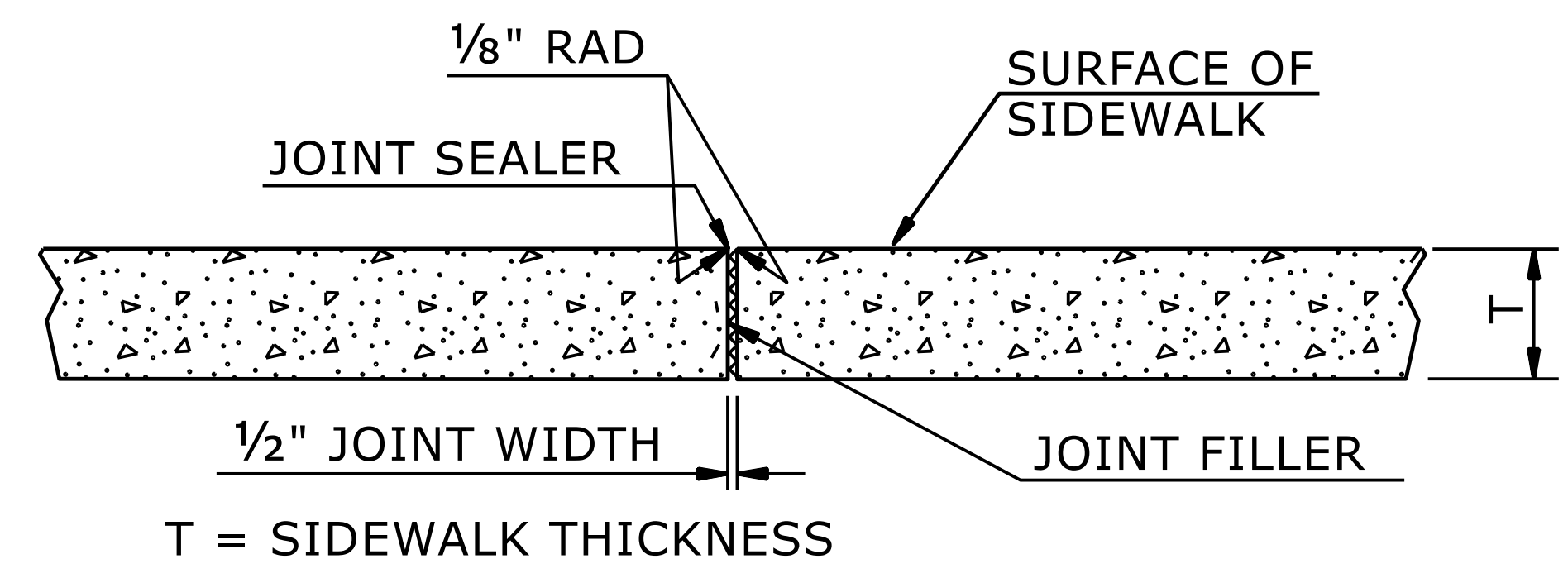
ORIGINAL BY: S.CALHOUN DATE: 7-25-2024
 MODIFIED BY: DATE:
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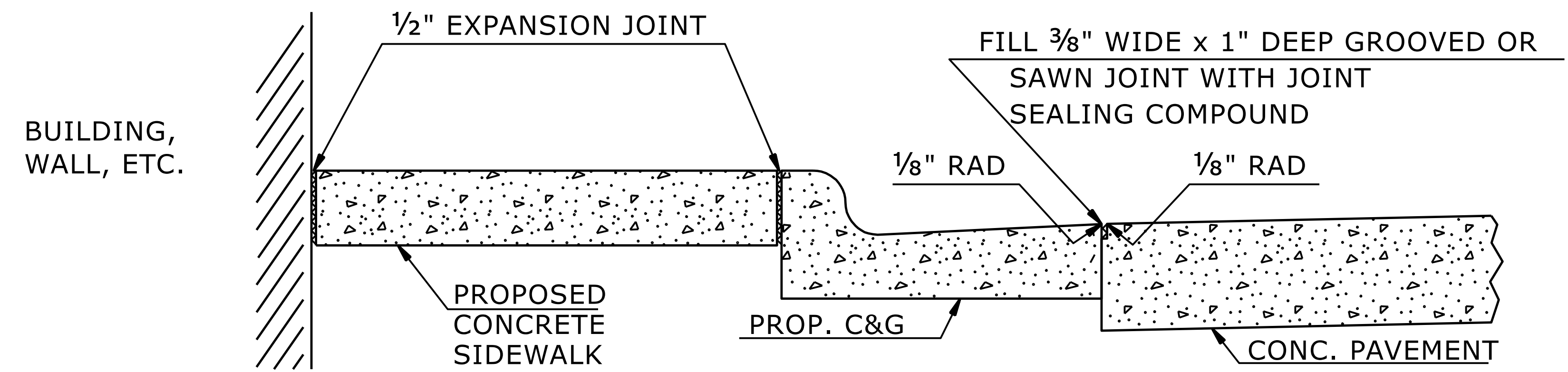
CONSTRUCT STANDARD SIDEWALK 5' WIDE AND 4" THICK UNLESS OTHERWISE DENOTED ON PLANS.

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.



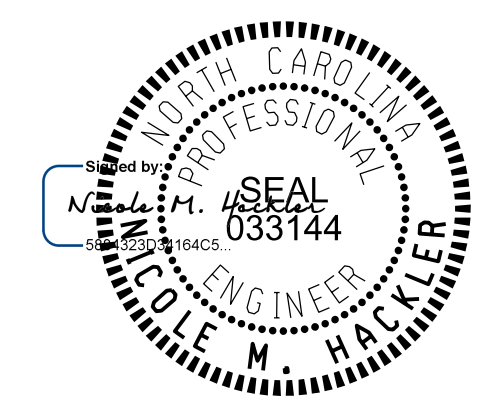
TRANSVERSE EXPANSION JOINT IN SIDEWALK



DETAILS SHOWING JOINTS IN CONCRETE SIDEWALK

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

ROADWAY DETAIL DRAWING FOR
CONCRETE SIDEWALK



11/22/2024

SHEET 1 OF 1
848D01

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

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

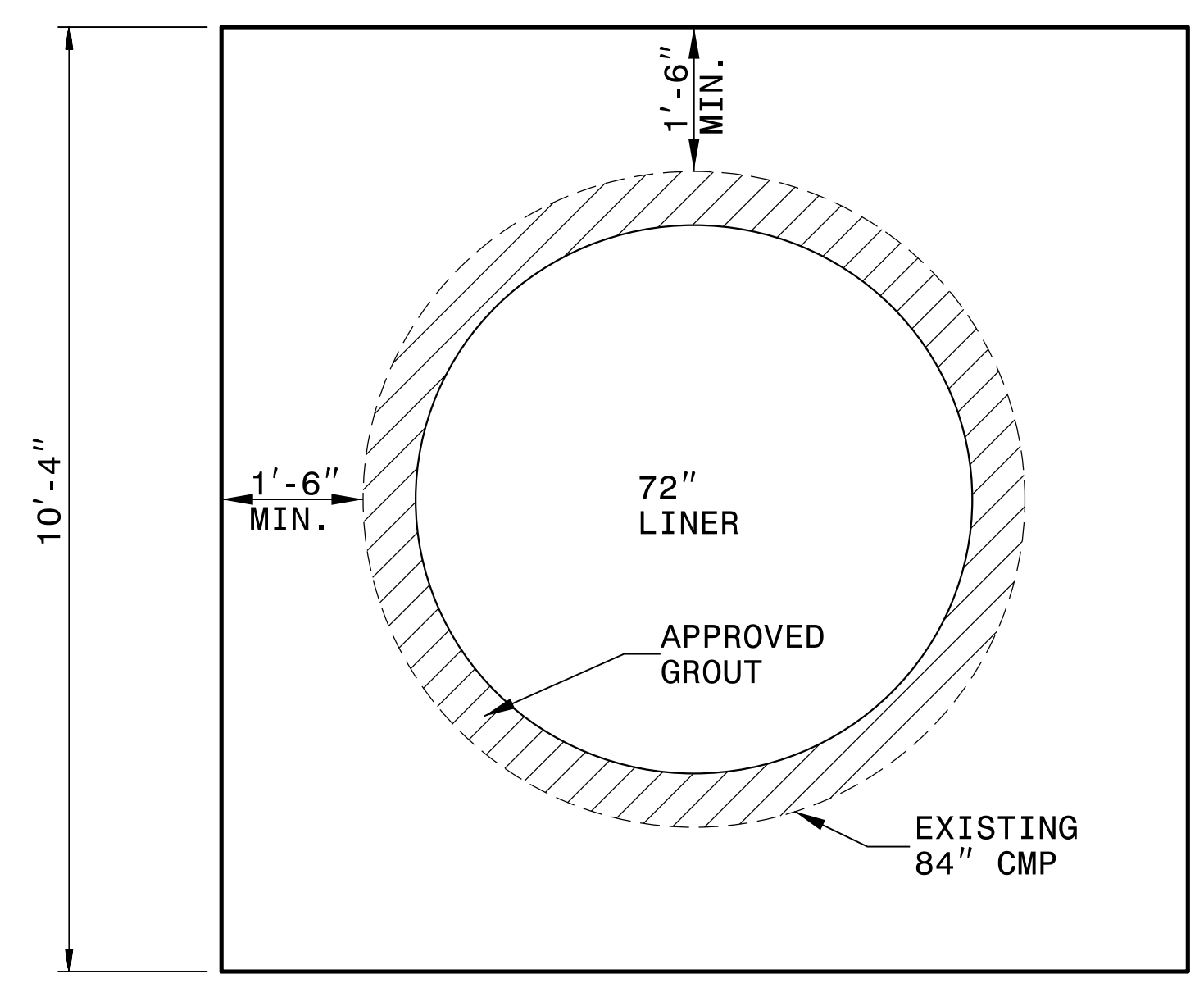
ENGLISH DETAIL DRAWING FOR
PIPE COLLAR

SHEET 1 OF 1
840D72

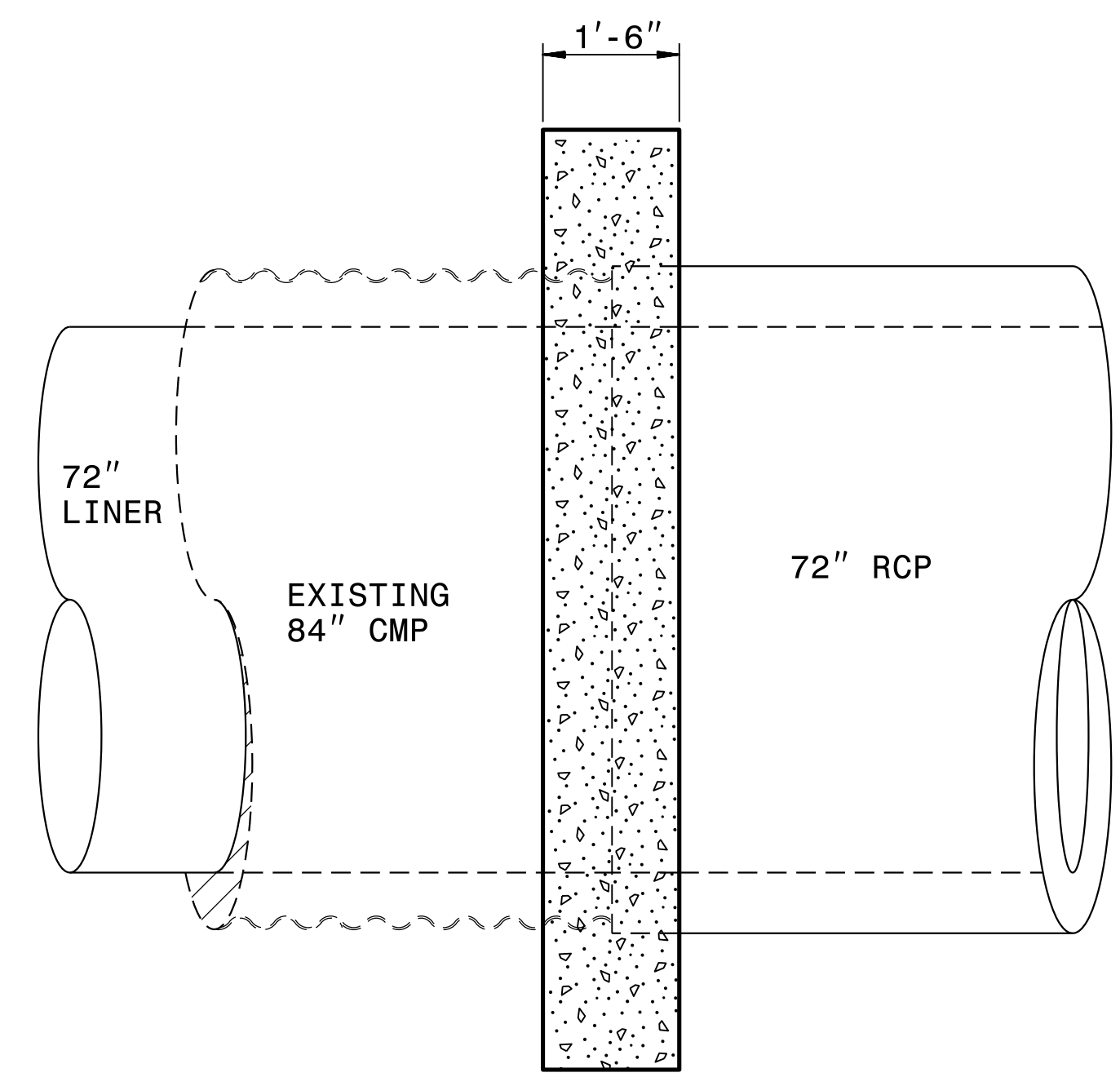
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
PIPE COLLAR

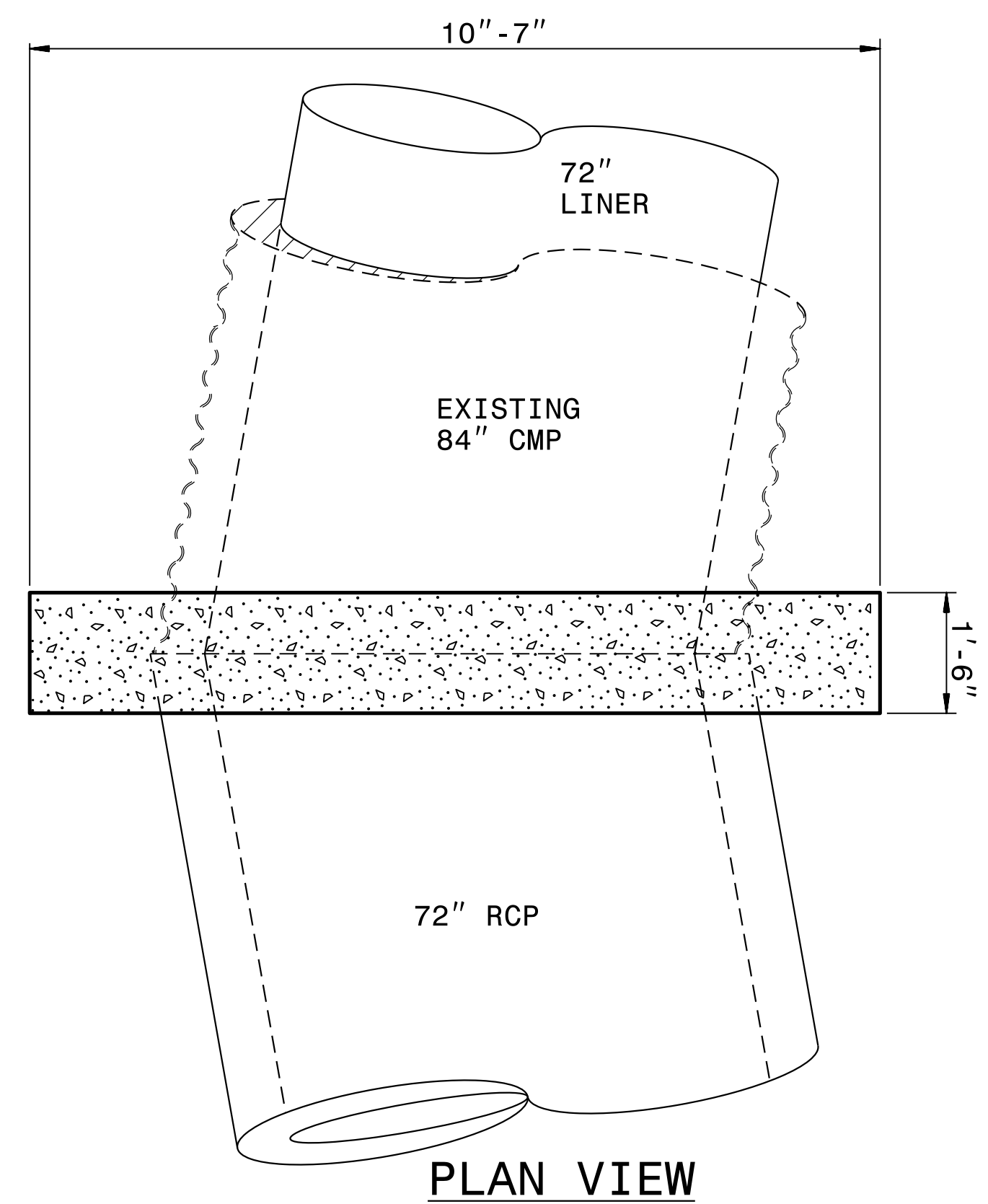
SHEET 1 OF 1
840D72



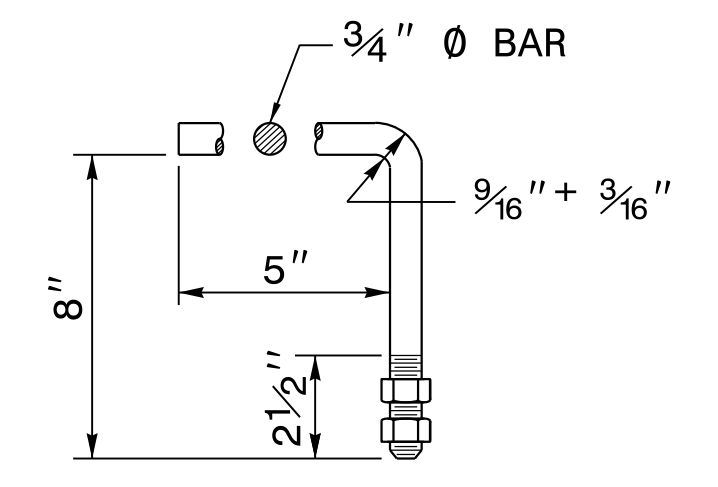
SECTION THROUGH COLLAR



ELEVATION



PLAN VIEW



HOOK BOLT

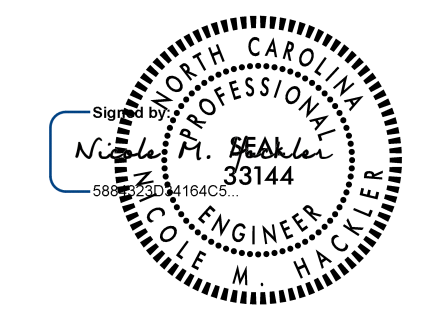
HOOK BOLTS (CONSTRUCT ANCHORS AT 2'-0" CTS. ALONG THE CIRCUMFERENCE OF THE 84" CMP. EMBED THE HOOK BOLTS IN THE CONCRETE ENDWALL 8" IN DEPTH. THE GALVANIZED 3/4" DIA. HOOK BOLTS MUST MEET ASTM A-307 OR ASTM A-836. BOTH BOLTS AND NUTS MUST BE IN ACCORDANCE WITH ASTM A-153 FOR GALVANIZING.

GENERAL NOTES:

- USE PIPE COLLAR FOR EXTENDING EXISTING PIPE CULVERTS, AT LOCATIONS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER. THIS INCLUDES EXTENDING EXISTING PIPES WITH PIPES OF DIFFERENT MATERIALS.
- CUT PIPES AS DIRECTED BY THE ENGINEER TO INSURE TIGHT FIT.
- CONSTRUCT THE PIPE COLLAR OF CLASS "B" OR BETTER CONCRETE.
- DIMENSIONS MAY BE ADJUSTED IN THE FIELD AS DIRECTED BY THE ENGINEER.

BILL OF MATERIAL
CLASS "B" CONC. (Cu.Yds.) = 3.7

20-APR-2018 16:55 S:\Contractors\CD\150515\Special Details\kempf\english\collar_84cmp_slipline.dgn kempf AT CS072925%6



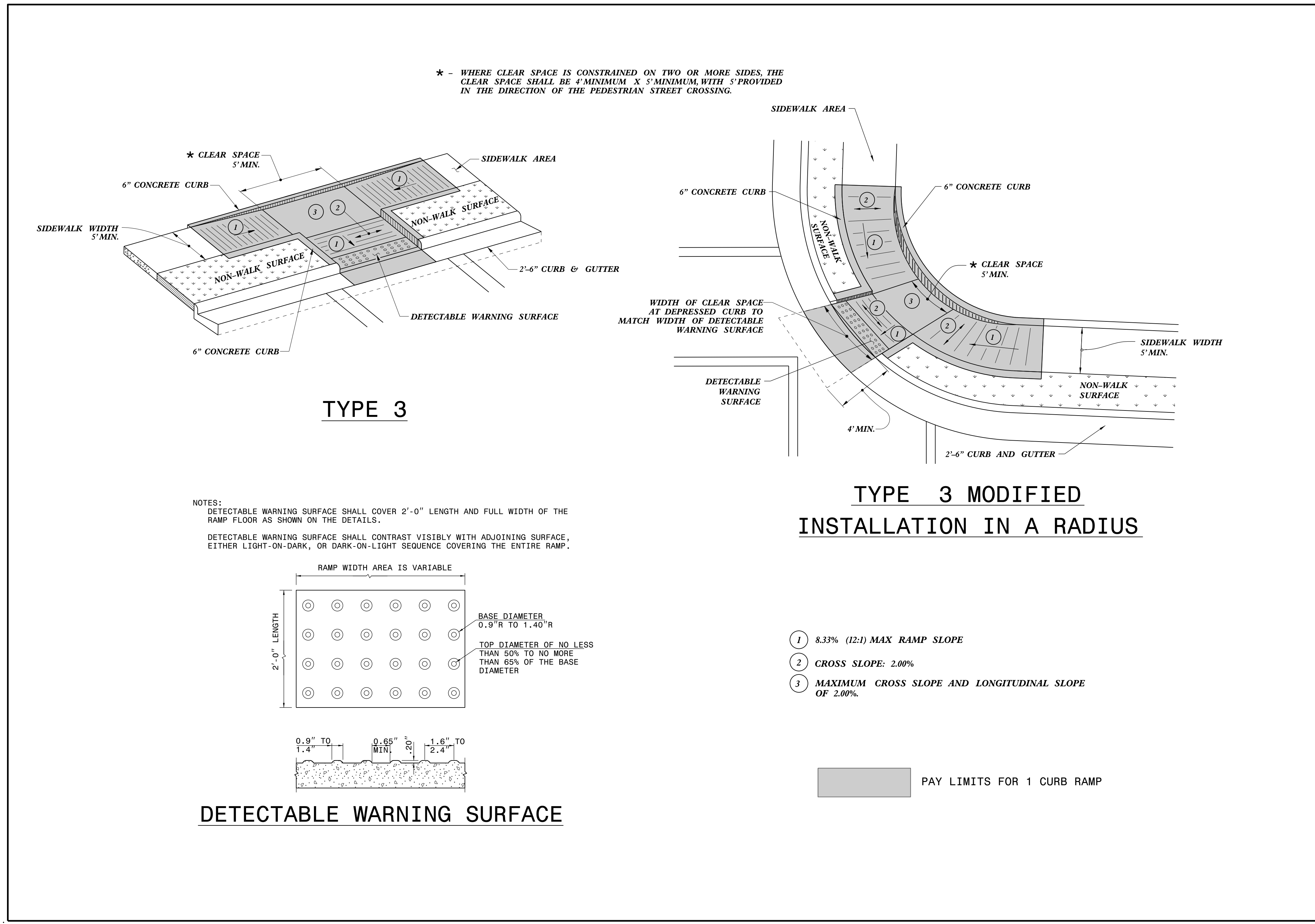
11/22/2024

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Office 919-707-6950 FAX 919-250-4119

SEE PLATE FOR TITLE

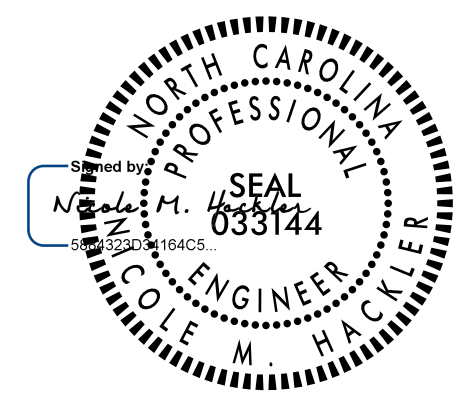
ORIGINAL BY: _____ DATE: _____
 MODIFIED BY: *K.A. Kempf* DATE: *March 23, 2018*
 CHECKED BY: _____ DATE: _____
 FILE SPEC.: details/kempf/english/collar_84cmp_slipline.dgn



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

ROADWAY DETAIL DRAWING FOR
CURB RAMP
PARALLEL RAMP

SHEET 9 OF 13
848D06



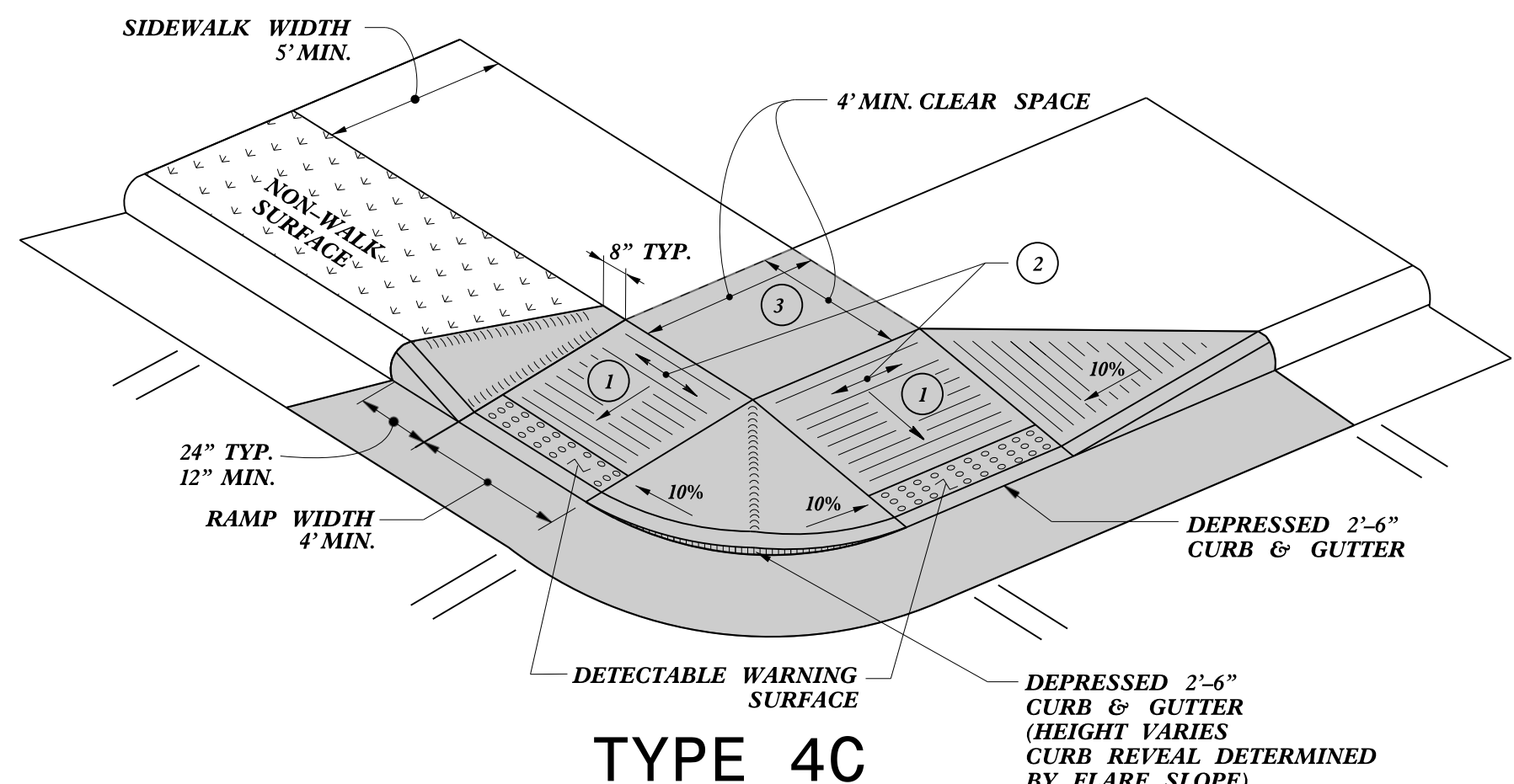
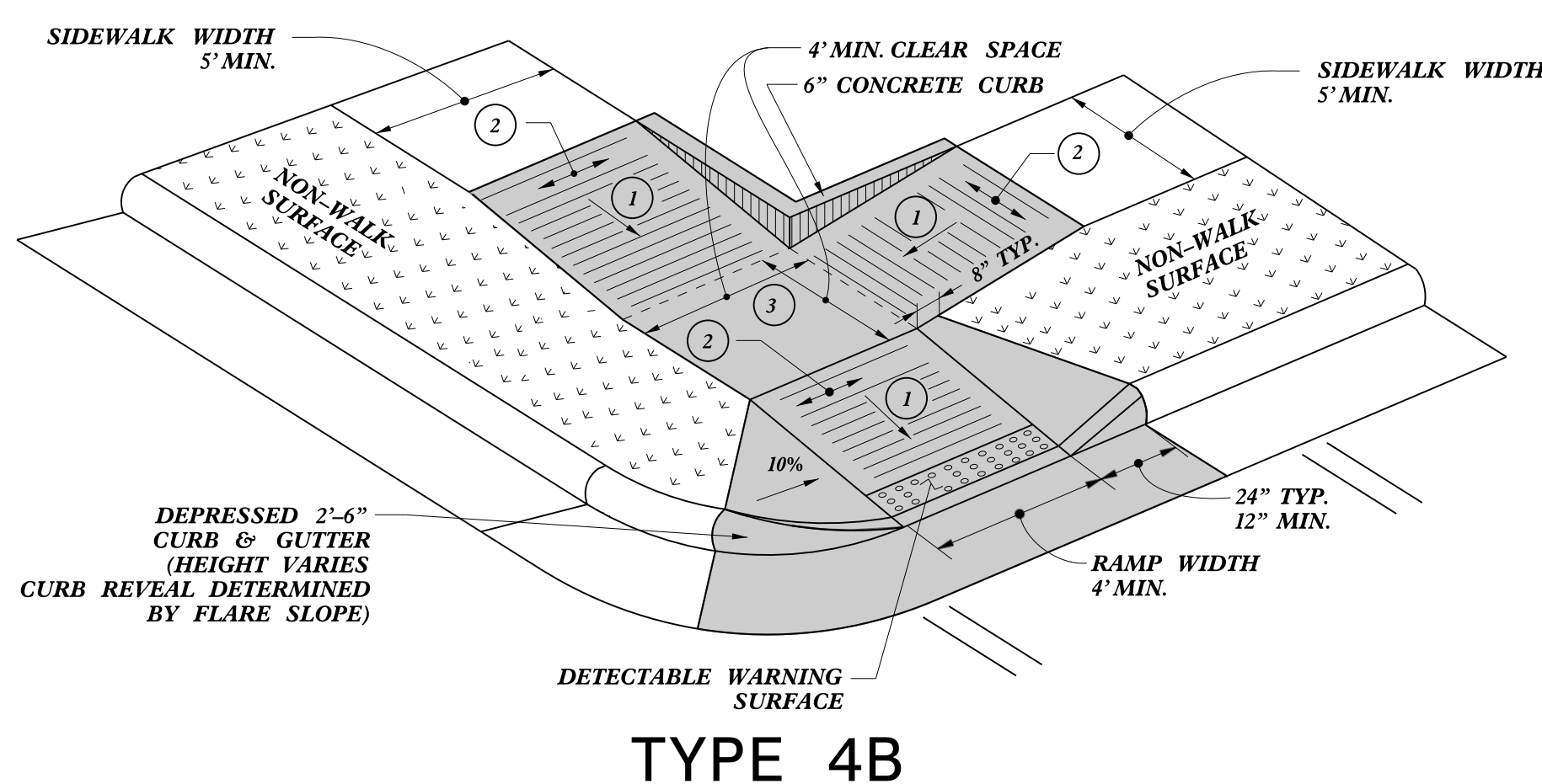
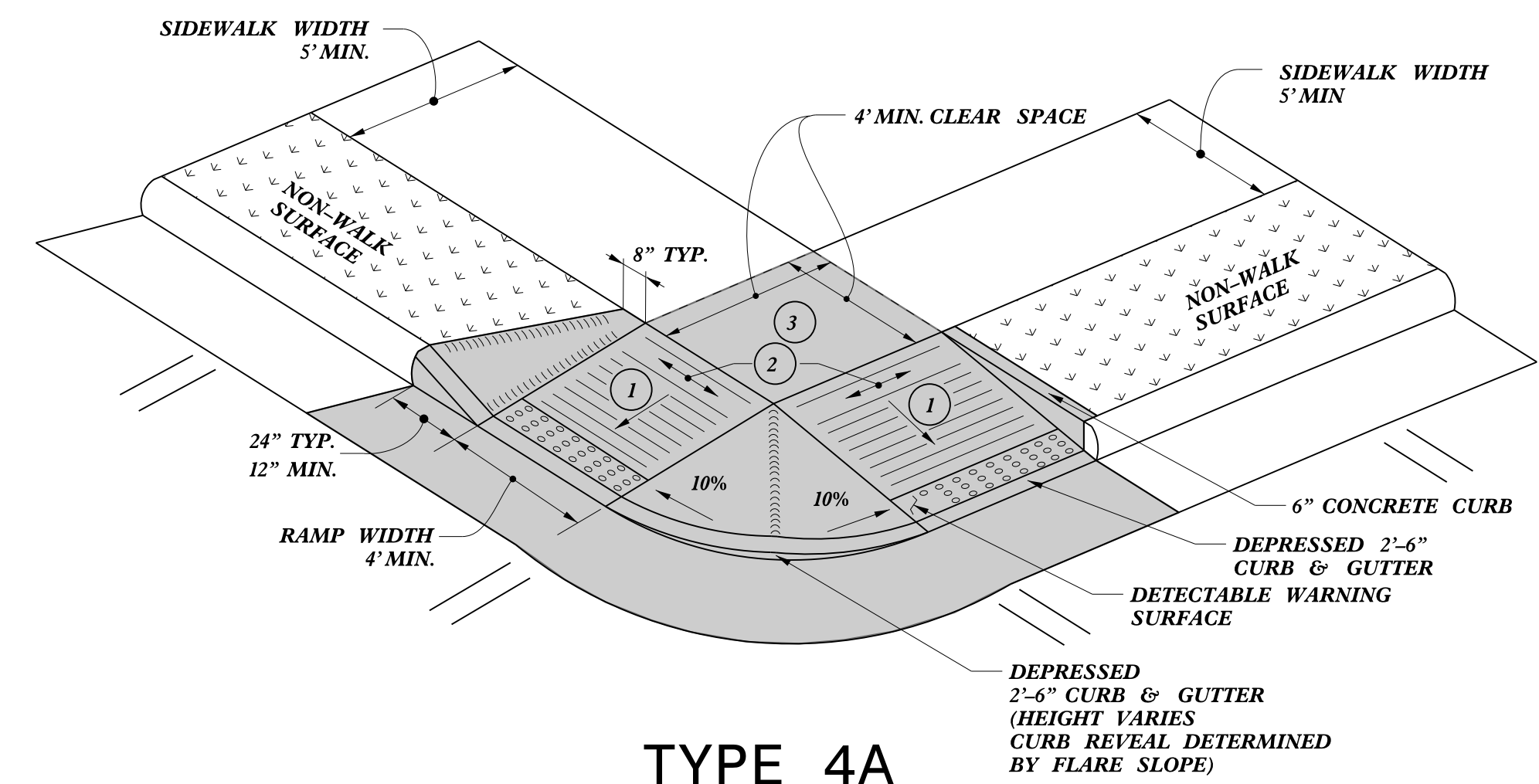
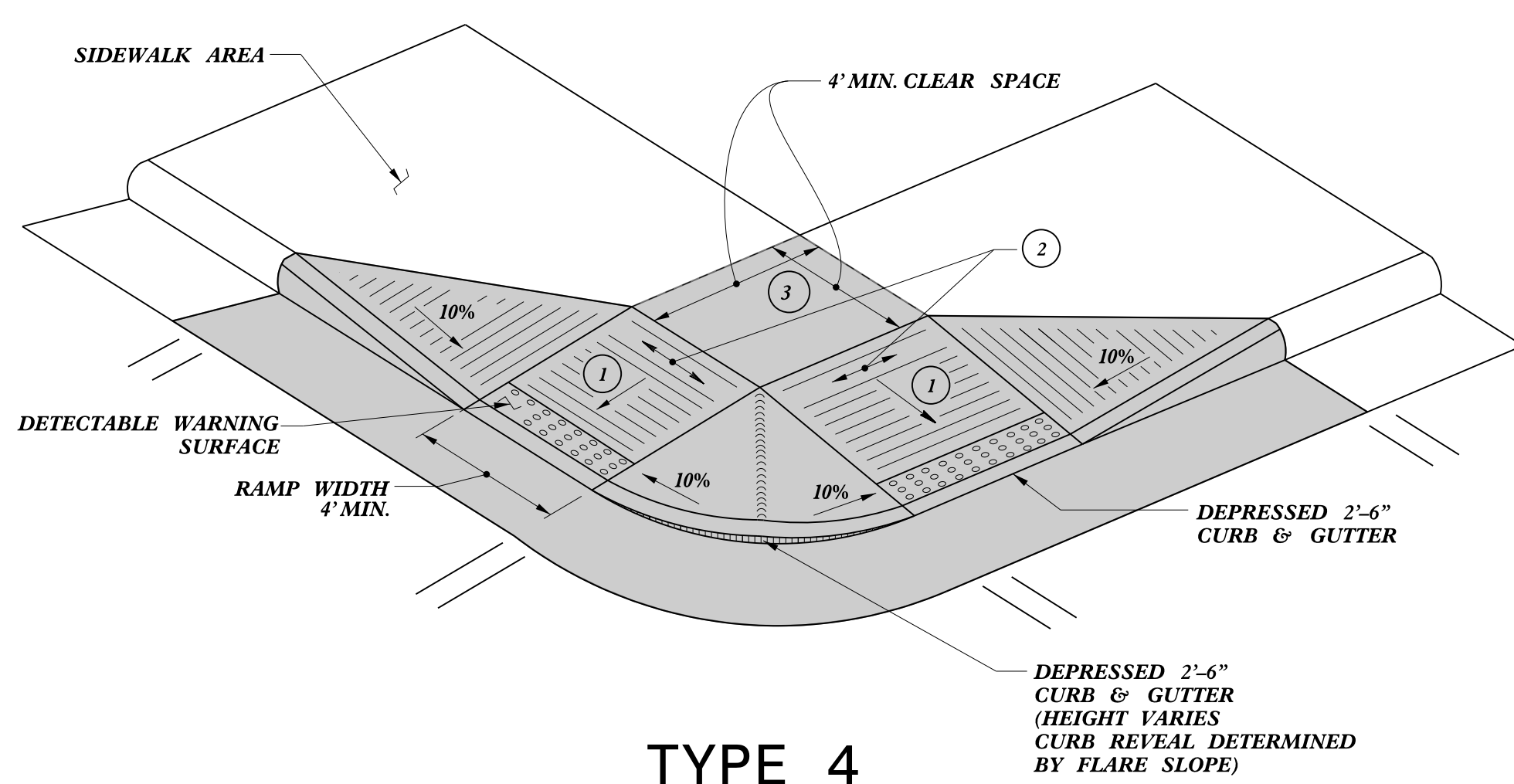
11/22/2024

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UNLESS ALL SIGNATURES COMPLETED

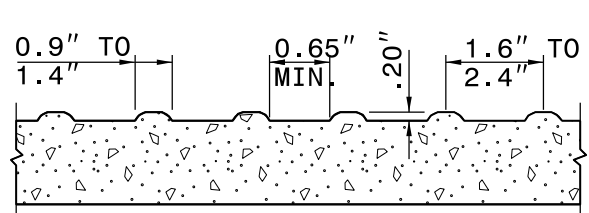
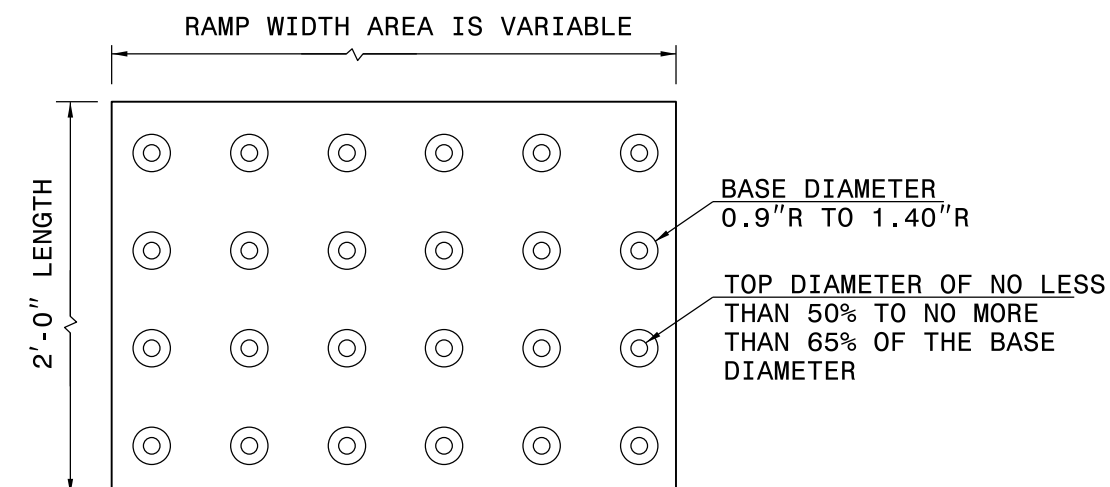
**CONTRACTS STANDARDS
AND DEVELOPMENT UNIT**
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SEE TITLE BLOCK

ORIGINAL BY: S.CALHOUN	DATE: 12-22-2023
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC.: special_details\nmhackler\0609.dgn	



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.

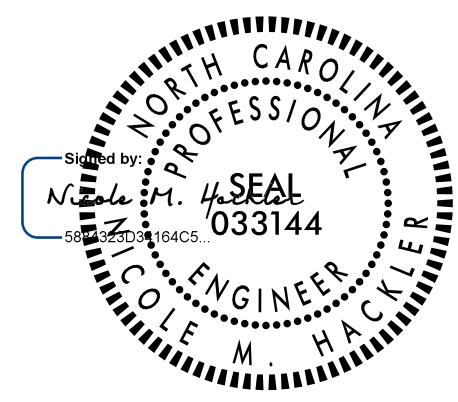


- 1 8.33% (12:1) MAX RAMP SLOPE
- 2 CROSS SLOPE: 2.00%
- 3 MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00%

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

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

ROADWAY DETAIL DRAWING FOR
CURB RAMP
 SHARED LANDING



11/22/2024

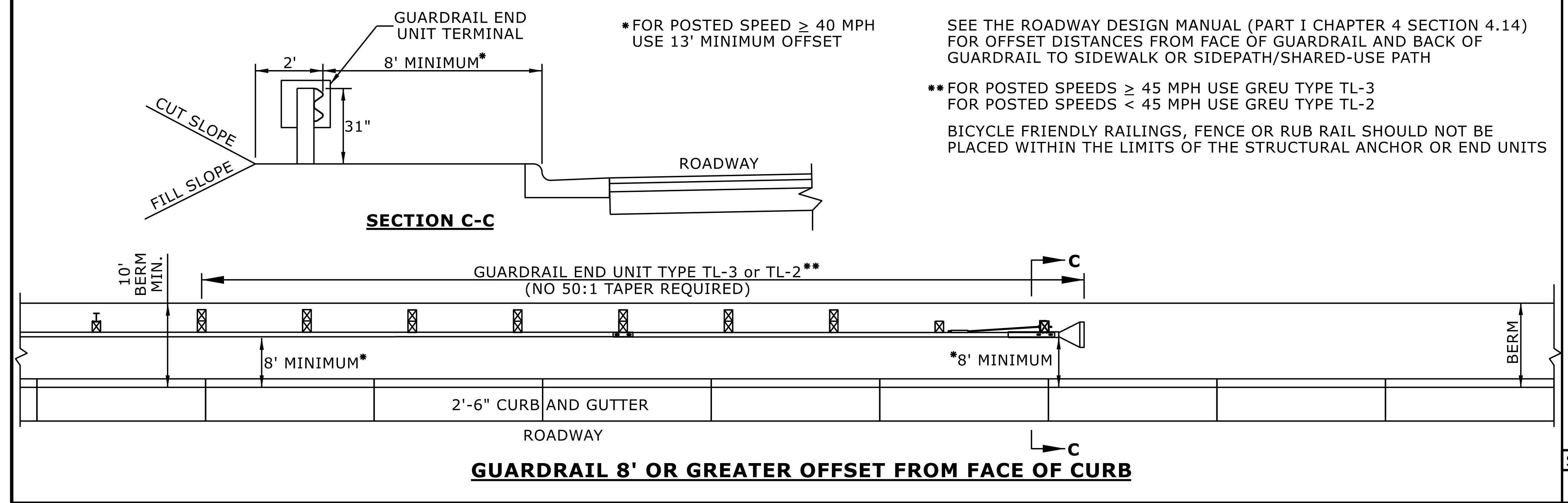
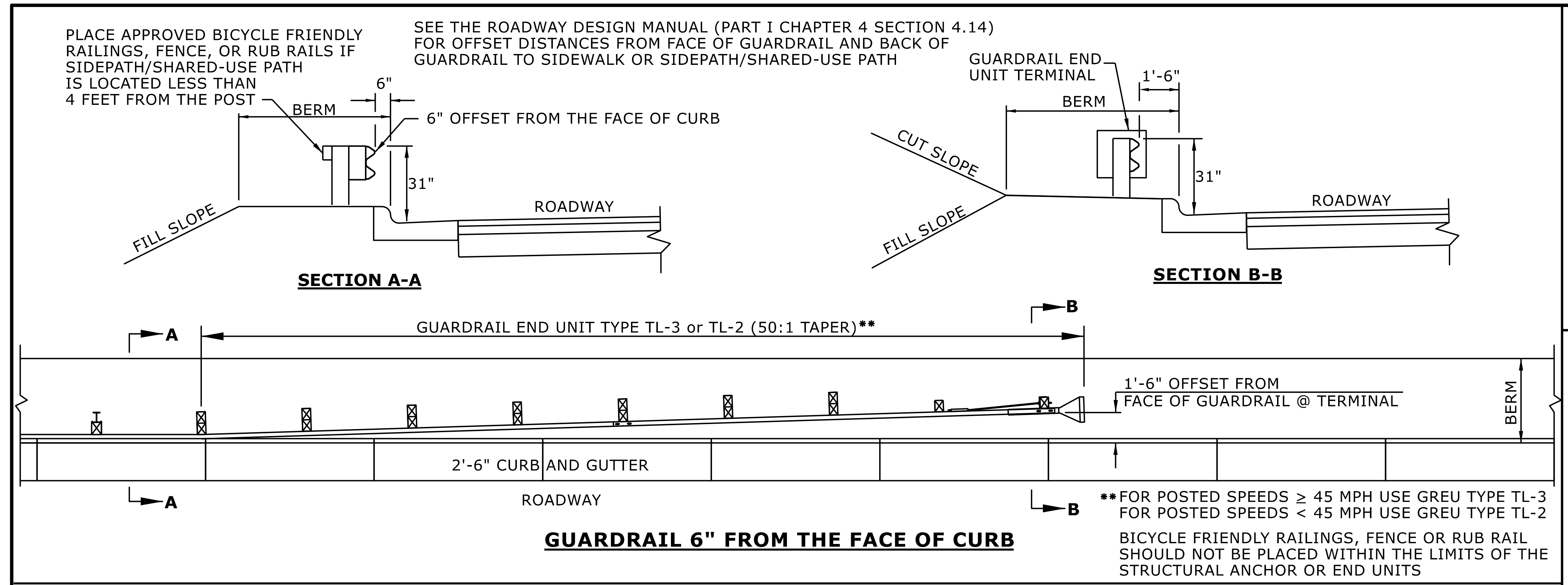
SHEET 10 OF 13
848D06

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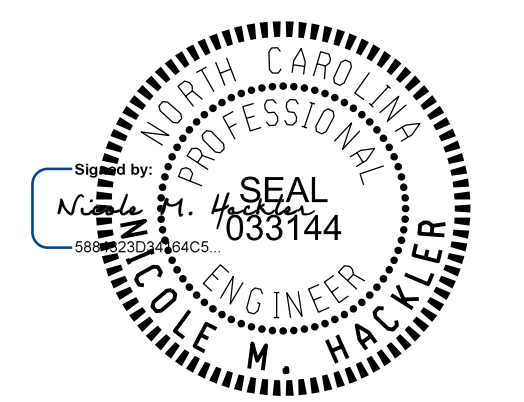
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 CHECKED BY: DATE: _____
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STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT
GUARDRAIL TREATMENT AT CURB AND GUTTER



11/22/2024

SHEET 12 OF 15
862D01

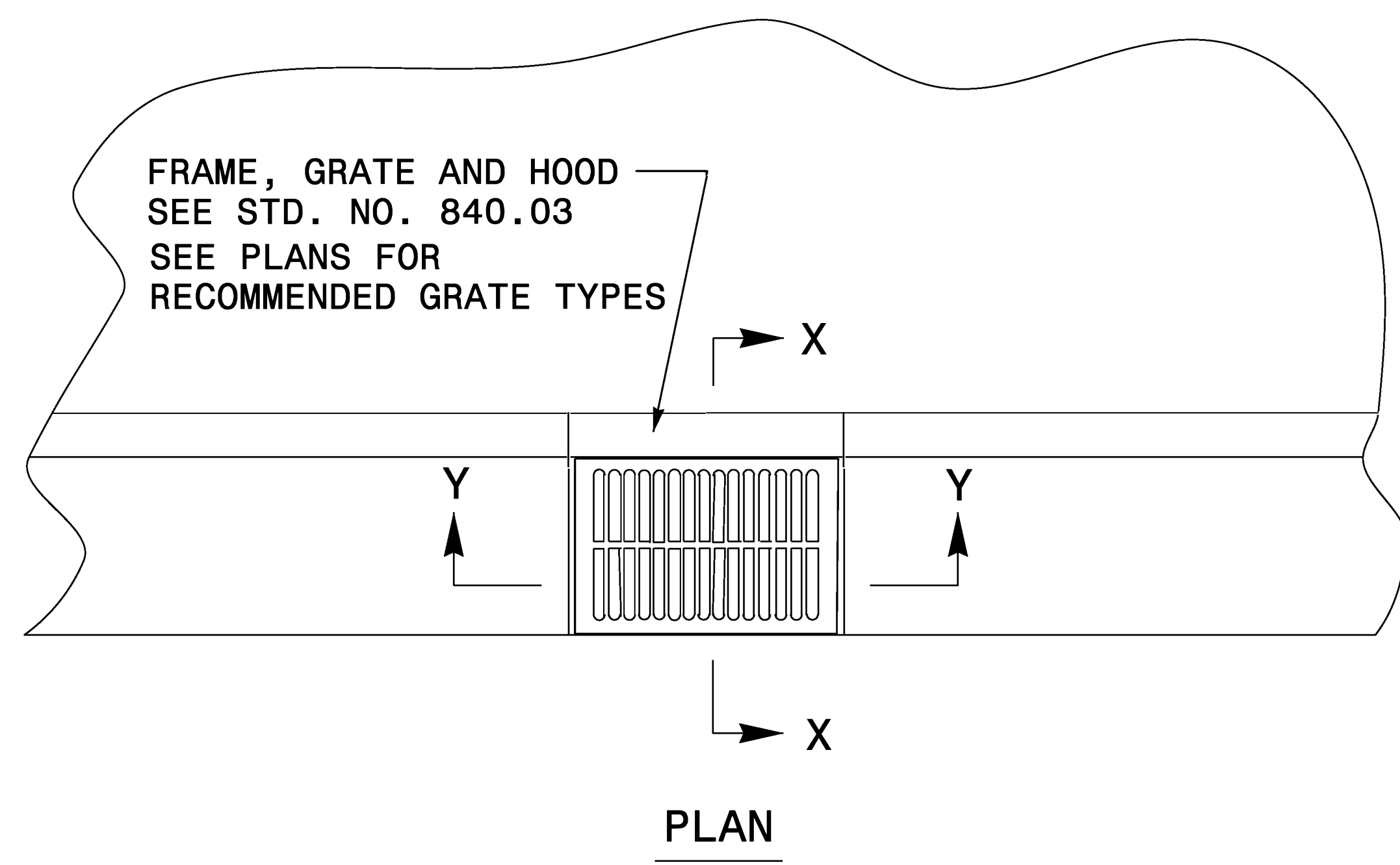
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CONTRACTS STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

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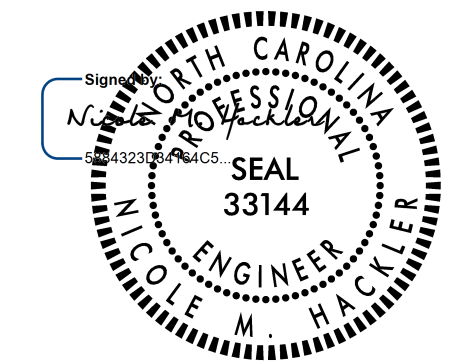
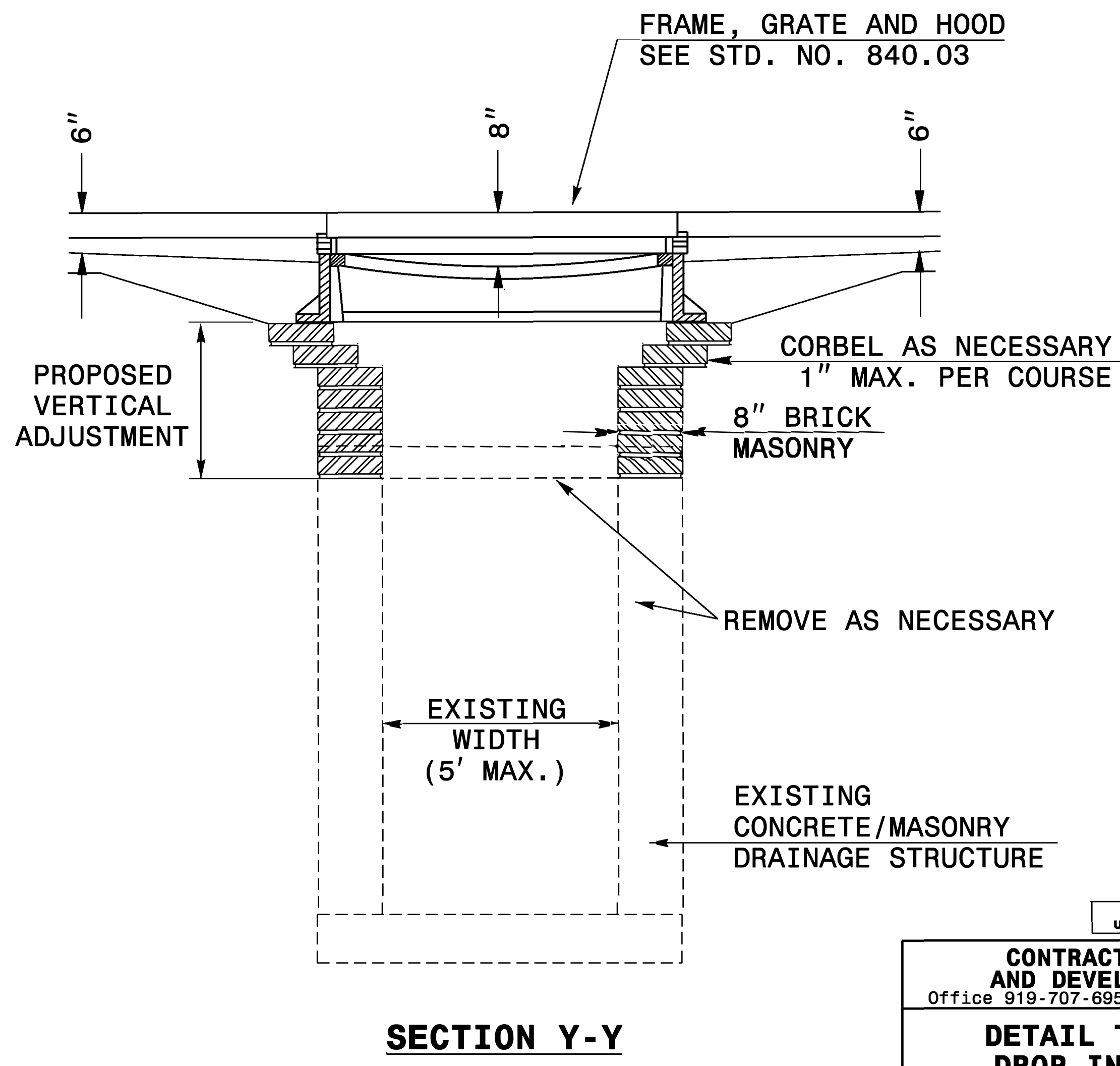
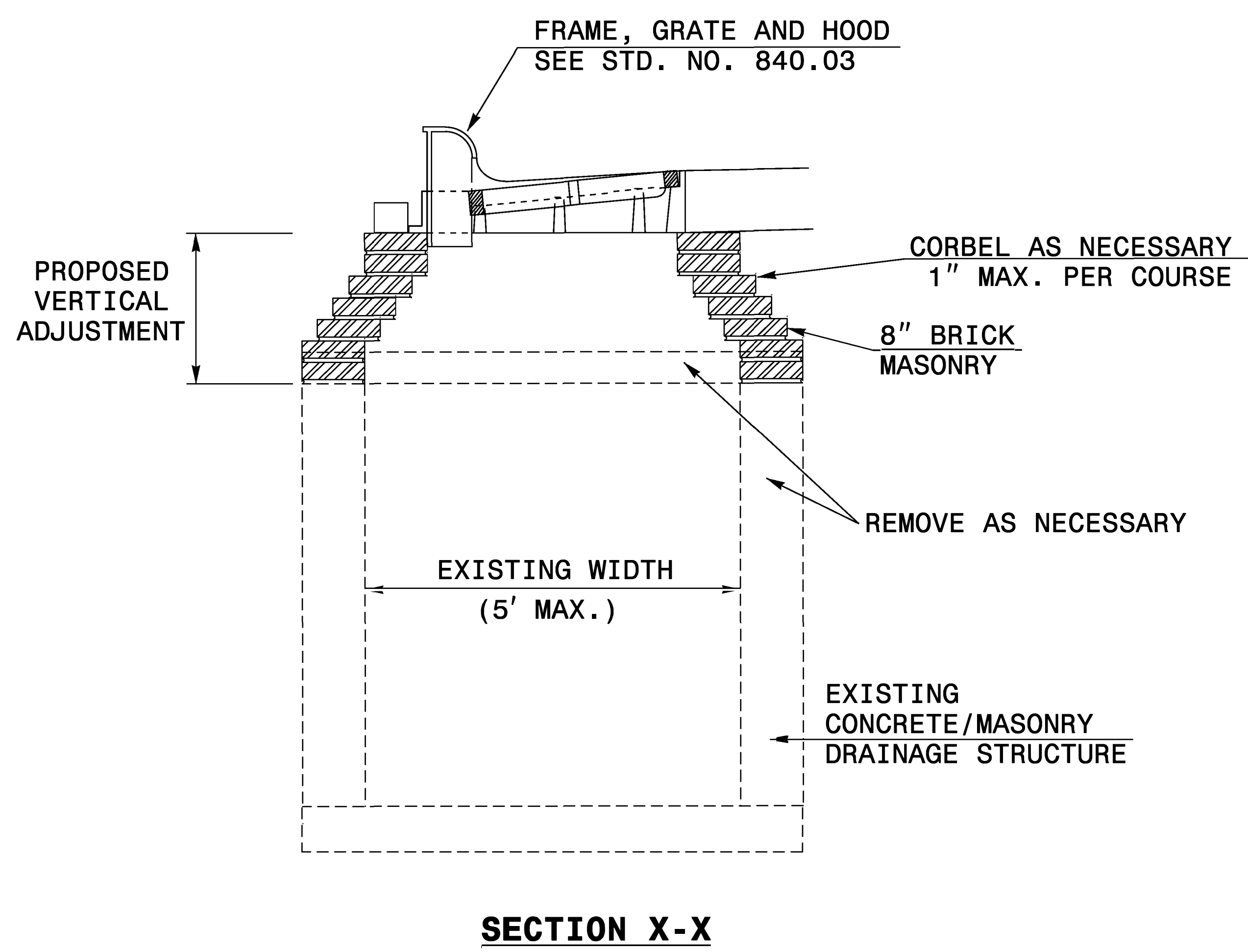
ORIGINAL BY: S.CALHOUN DATE: 7-25-2024
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: DATE:

5/14/99



GENERAL NOTES:

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



1/9/2025

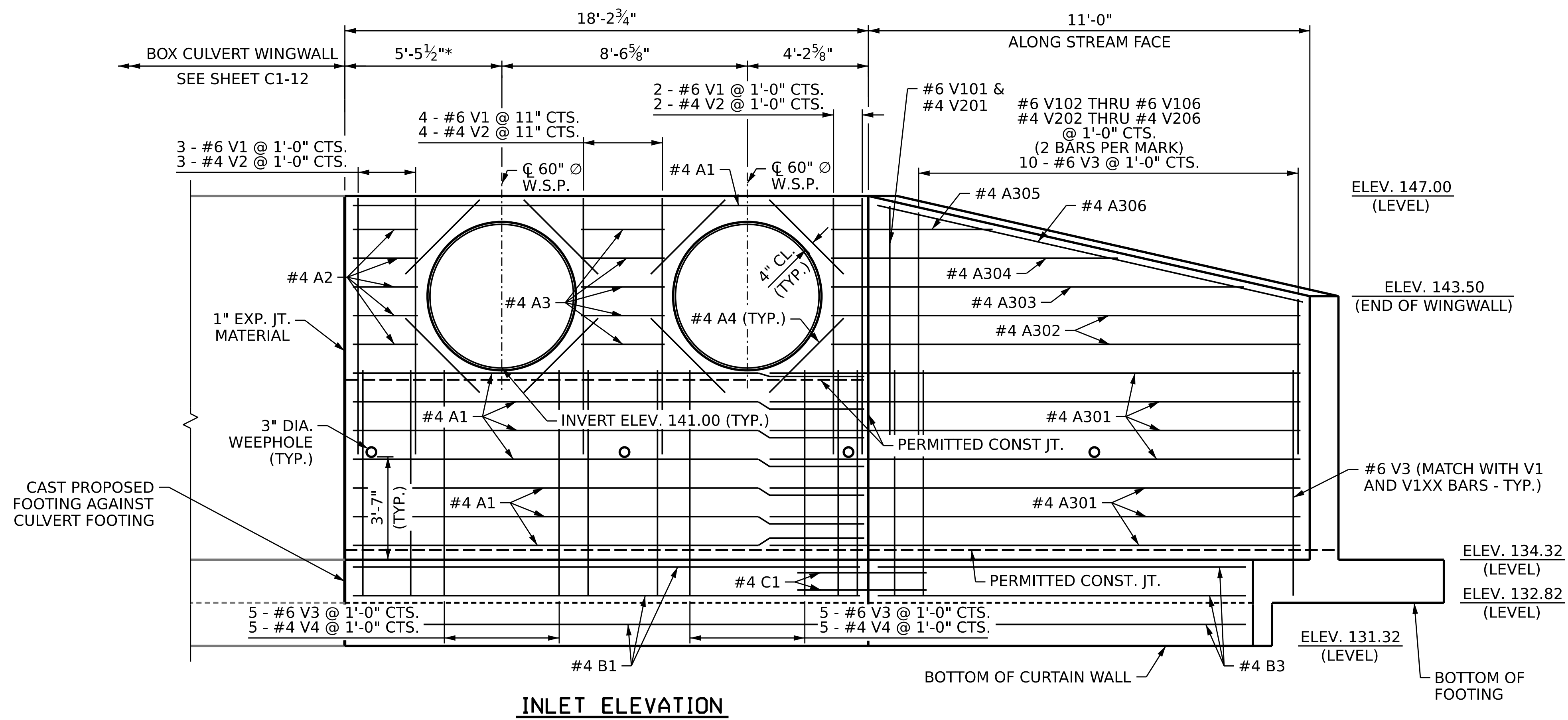
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

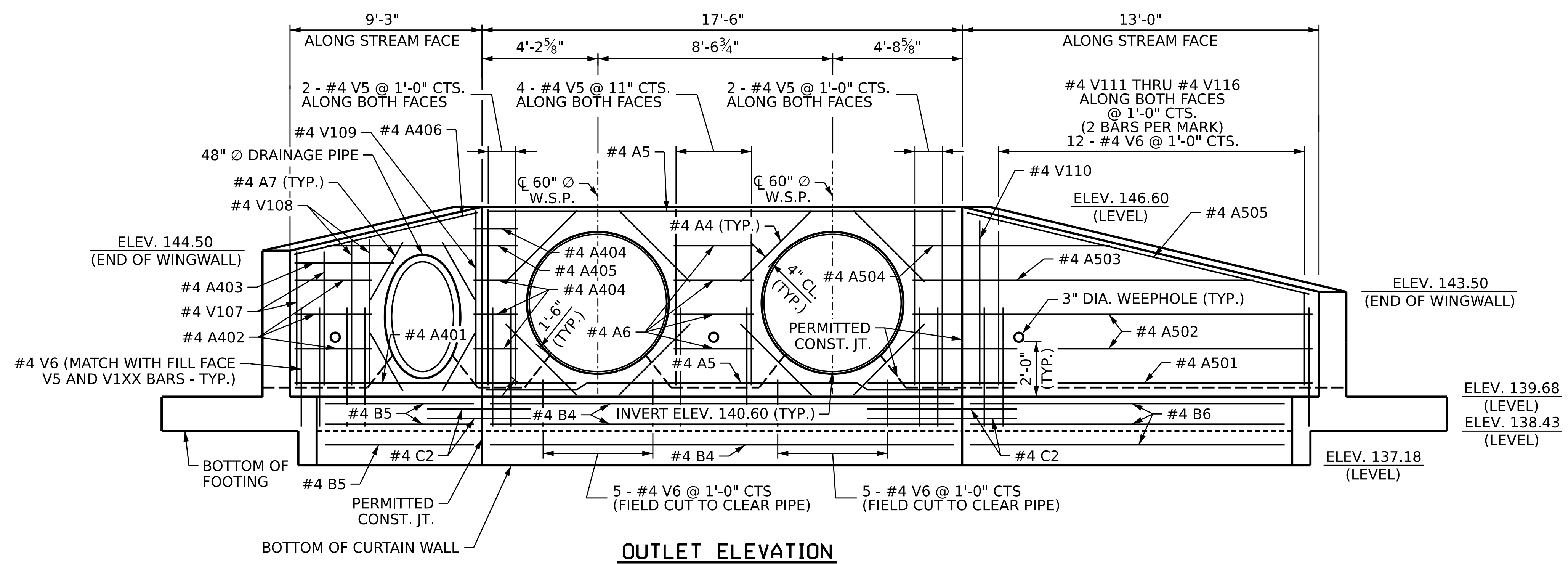
DETAIL TO CONVERT DROP INLET OR JB TO CATCH BASIN

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

26-JUN-2017 10:42 S:\Contracts\Special Details\howerton\convert Di or JB to CB.dgn
howerton AT 050-292595



INLET ELEVATION



OUTLET ELEVATION

NOTES

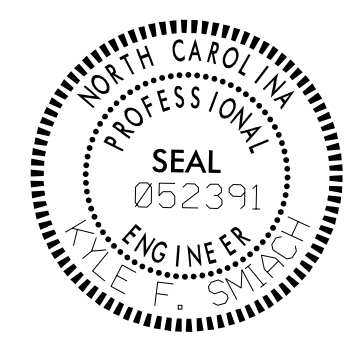
- ALL CORNERS SHALL BE CHAMFERED 1" OR HAVE A RADIUS OF 1".
- CLASS "A" CONCRETE SHALL BE USED.
- THE INLET FOUNDATION HAS BEEN DESIGNED FOR A FACTORED BEARING PRESSURE OF 2,760 PSF AND A SLIDING COEFFICIENT OF 0.554.
- THE OUTLET FOUNDATION HAS BEEN DESIGNED FOR A FACTORED BEARING PRESSURE OF 1,550 PSF AND A SLIDING COEFFICIENT OF 0.554.
- WHERE 'DRAINAGE PIPE' IS SPECIFIED, ADJUST BLOCKOUTS IN THE WALL THICKNESS OF THE PIPE SELECTED.
- THE INLET FOOTING ELEVATIONS SHALL BE CONSTRUCTED TO MATCH THOSE OF THE ADJACENT BOX CULVERT WINGWALL.
- DIMENSIONS DENOTED WITH A (*) ARE DEPENDENT ON THE PLACEMENT OF THE ADJACENT CULVERT WINGWALL. VERIFY DIMENSIONS IN THE FIELD PRIOR TO CONSTRUCTION.
- FIELD CUT "B" BARS IN THE CURTAIN WALL AS REQUIRED FOR FITUP.
- FIELD CUT THE HOOK OFF THE T2 AND T4 BARS WHEN THE BAR EXTENDS BEYOND THE LIMITS OF THE CURTAIN WALL.

PROJECT NO. **U-4405**
CUMBERLAND COUNTY
 STATION: **137+99.59 -L-**

SHEET 1 OF 12

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**BEAVER CREEK
 DOUBLE 60" WELDED
 STEEL PIPE HEADWALLS**



DocuSigned by:
 Kyle Smiach
 11/21/2024

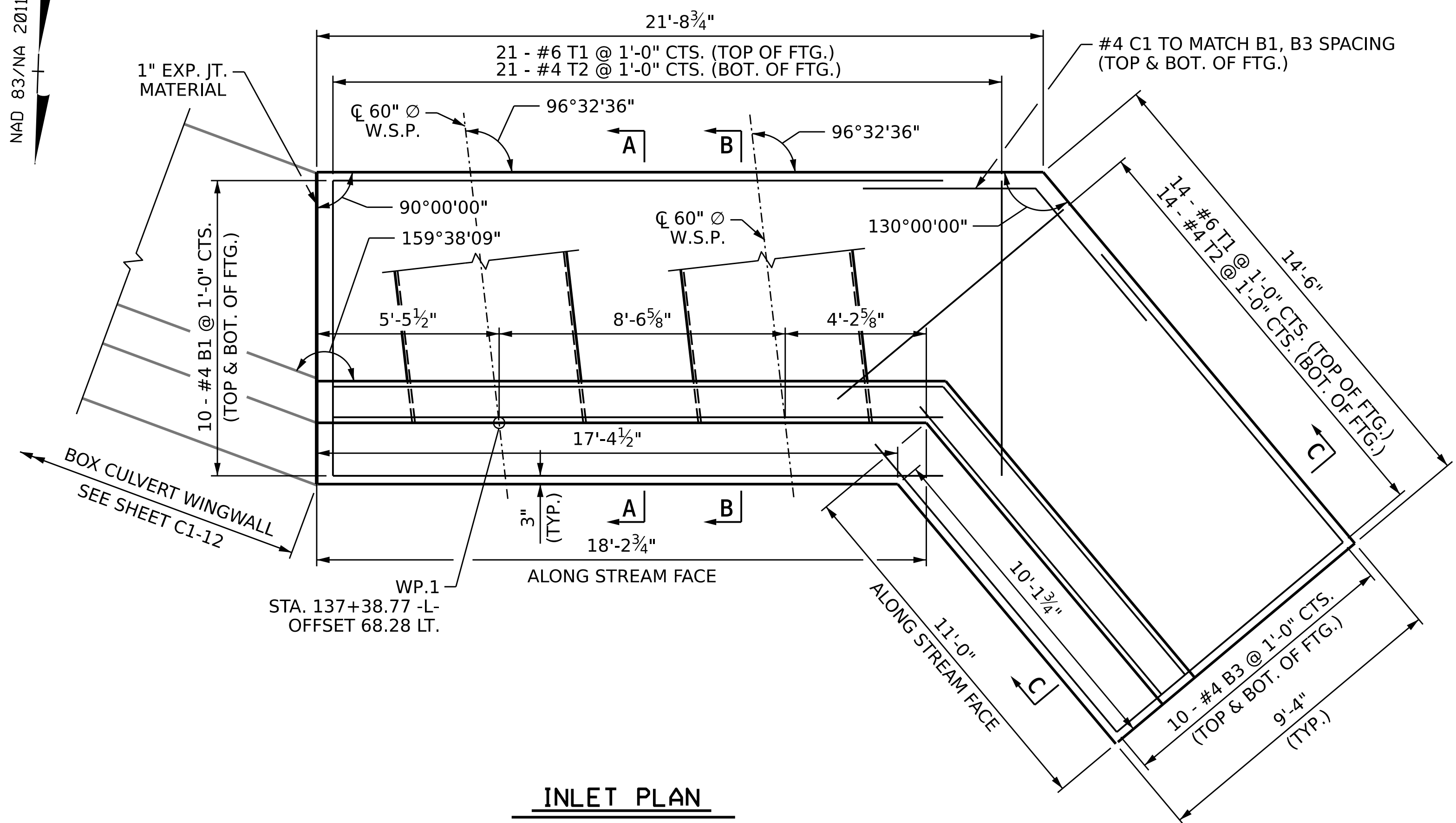
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NO.	BY:	DATE:	NO.	BY:	DATE:	2D-1
1			3			TOTAL SHEETS
2			4			12

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

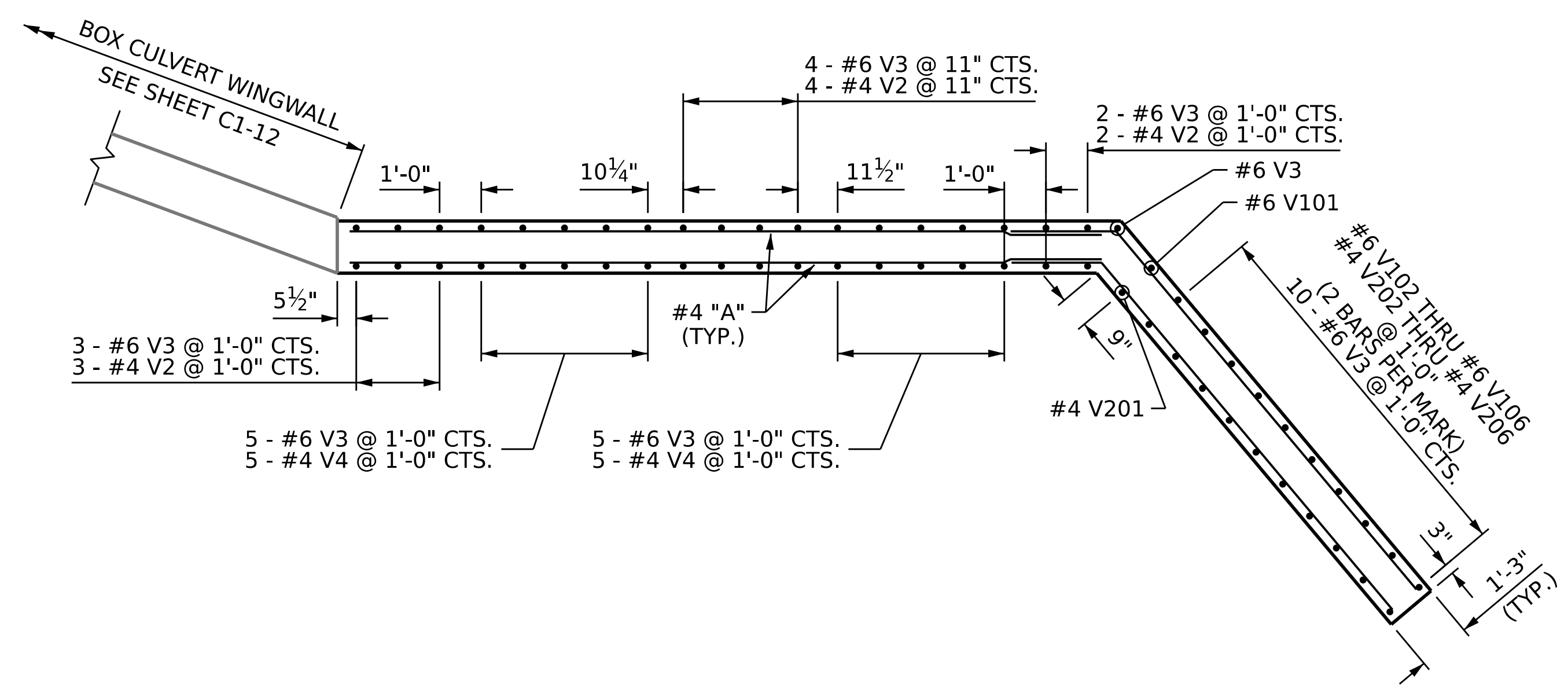


DRAWN BY : C.E. HONIGMAN DATE : 11/2024
 CHECKED BY : K.F. SMIACH DATE : 11/2024
 DESIGN ENGINEER OF RECORD: K.F. SMIACH DATE : 11/2024

NAD 83/NA 2011



INLET PLAN



INLET STEM PLAN

(SHOWN 6" ABOVE FOOTING ELEVATION)
NOTE: LAP V3 DOWELS WITH V1 AND V1XX BARS.

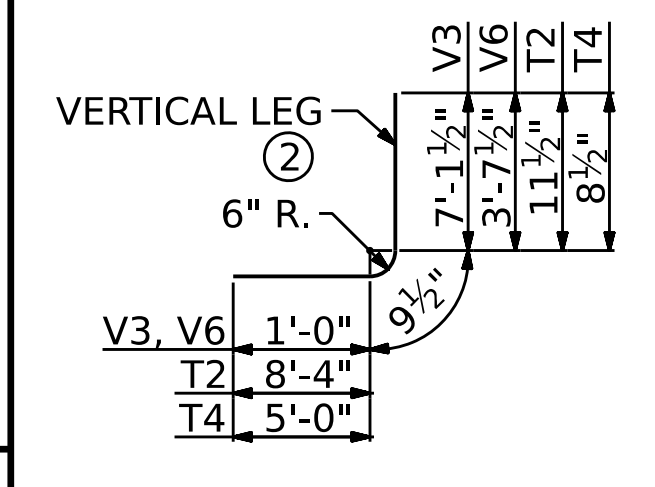
BAR TYPE		BILL OF MATERIAL				
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT		
A1	16	#4	STR.	18'-3"	195	
A2	10	#4	STR.	2'-4"	16	
A3	10	#4	STR.	3'-0"	20	
A4	32	#4	STR.	3'-8"	78	
A5	4	#4	STR.	18'-2"	49	
A6	8	#4	STR.	3'-0"	16	
A7	8	#4	STR.	3'-0"	16	
B1	21	#4	STR.	18'-3"	256	
B3	21	#4	STR.	11'-3"	158	
B4	15	#4	STR.	18'-2"	182	
B5	15	#4	STR.	9'-5"	94	
B6	15	#4	STR.	13'-1"	132	
A301	14	#4	1	13'-0"	122	
A302	4	#4	1	12'-4"	33	
A303	2	#4	1	10'-8"	14	
A304	2	#4	1	7'-6"	10	
A305	2	#4	1	4'-4"	6	
A306	2	#4	STR.	11'-0"	15	
A401	2	#4	1	11'-4"	15	
A402	6	#4	STR.	3'-0"	12	
A403	2	#4	STR.	3'-4"	4	
A404	8	#4	1	2'-3"	12	
A405	2	#4	1	6'-3"	8	
A406	2	#4	STR.	9'-2"	12	
A501	2	#4	1	15'-0"	20	
A502	4	#4	1	14'-10"	40	
A503	2	#4	1	12'-5"	17	
A504	2	#4	1	7'-2"	10	
A505	2	#4	STR.	13'-0"	17	
T1	35	#6	STR.	8'-10"	464	
T2	35	#4	2	10'-1"	236	
T3	99	#4	STR.	5'-6"	364	
T4	51	#4	2	6'-6"	221	
V1	10	#6	STR.	8'-10"	133	
V2	9	#4	STR.	12'-2"	73	
V3	31	#6	2	8'-11"	415	
V4	10	#4	STR.	6'-2"	41	
V5	17	#4	STR.	6'-5"	73	
V6	47	#4	2	5'-5"	170	
C1	20	#4	1	10'-4"	138	
C2	28	#4	1	9'-2"	171	
V101	1	#6	STR.	11'-11"	18	
V102	2	#6	STR.	11'-3"	34	
V103	2	#6	STR.	10'-8"	32	
V104	2	#6	STR.	10'-0"	30	
V105	2	#6	STR.	9'-4"	28	
V106	2	#6	STR.	8'-9"	26	
V107	4	#4	STR.	4'-4"	12	
V108	4	#4	STR.	4'-9"	13	
V109	2	#4	STR.	6'-3"	8	
V110	2	#4	STR.	6'-2"	8	
V111	4	#4	STR.	5'-9"	15	
V112	4	#4	STR.	5'-3"	14	
V113	4	#4	STR.	4'-9"	13	
V114	4	#4	STR.	4'-4"	12	
V115	4	#4	STR.	3'-10"	10	
V116	4	#4	STR.	3'-4"	9	
REINFORCING STEEL					4,435	LBS.

INLET

CLASS A CONCRETE	
1 WING	5.5 C.Y.
1 HEADWALL	9.3 C.Y.
1 FOOTING	17.6 C.Y.
TOTAL	32.4 C.Y.

OUTLET

CLASS A CONCRETE	
2 WINGS	4.2 C.Y.
1 HEADWALL	3.1 C.Y.
1 FOOTING	13.5 C.Y.
TOTAL	20.8 C.Y.



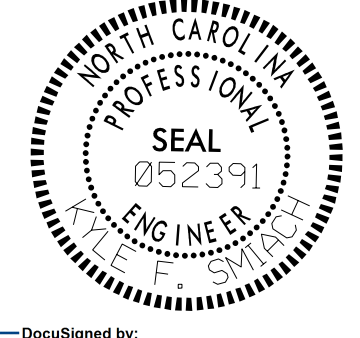
DIMENSIONS ARE OUT TO OUT

PROJECT NO. **U-4405**
CUMBERLAND COUNTY
 STATION: **137+99.59 -L-**

SHEET 2 OF 12

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**BEAVER CREEK
 DOUBLE 60" WELDED
 STEEL PIPE HEADWALLS**



DocuSigned by: Kyle Smiach 11/21/2024

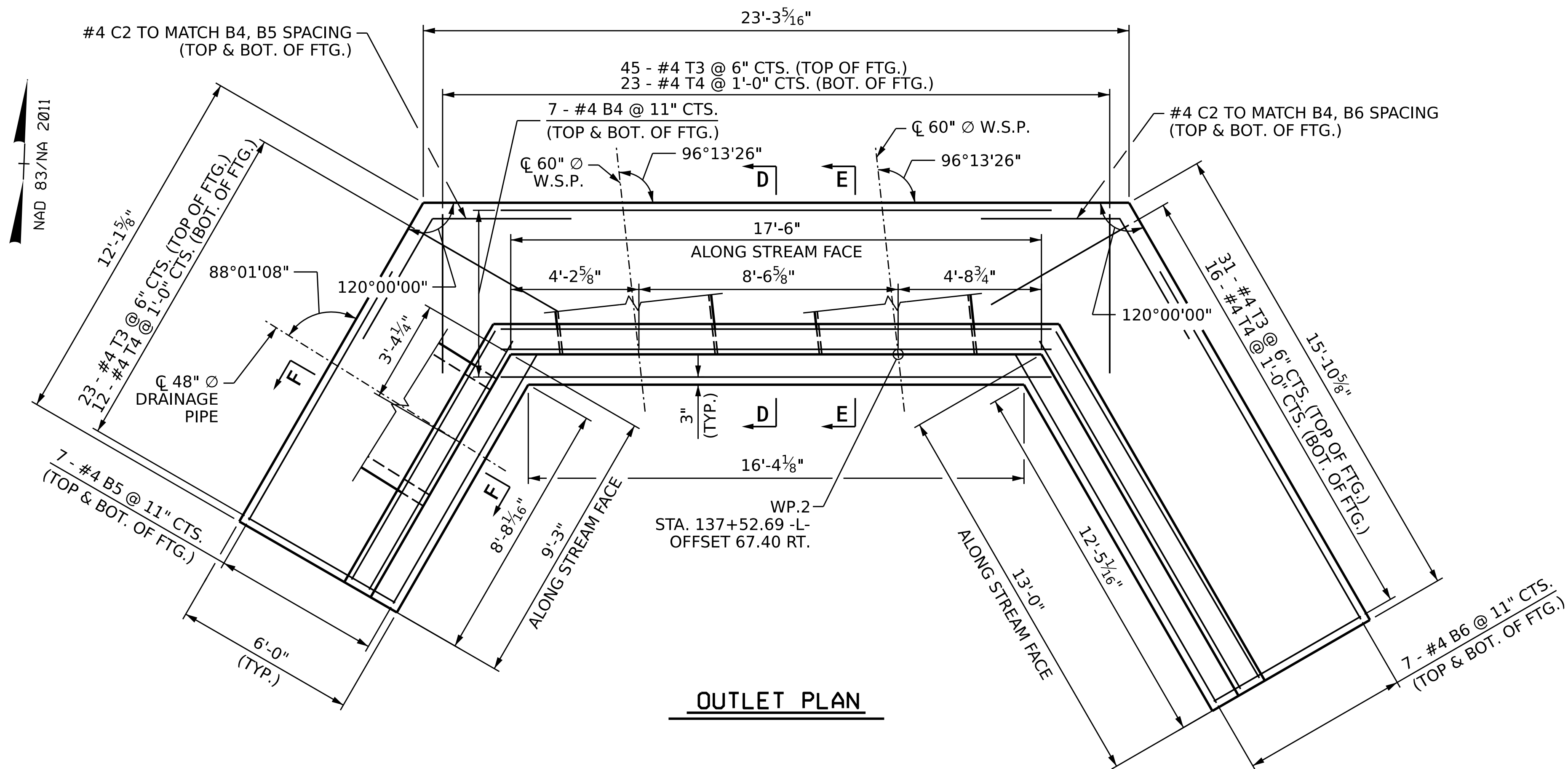
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

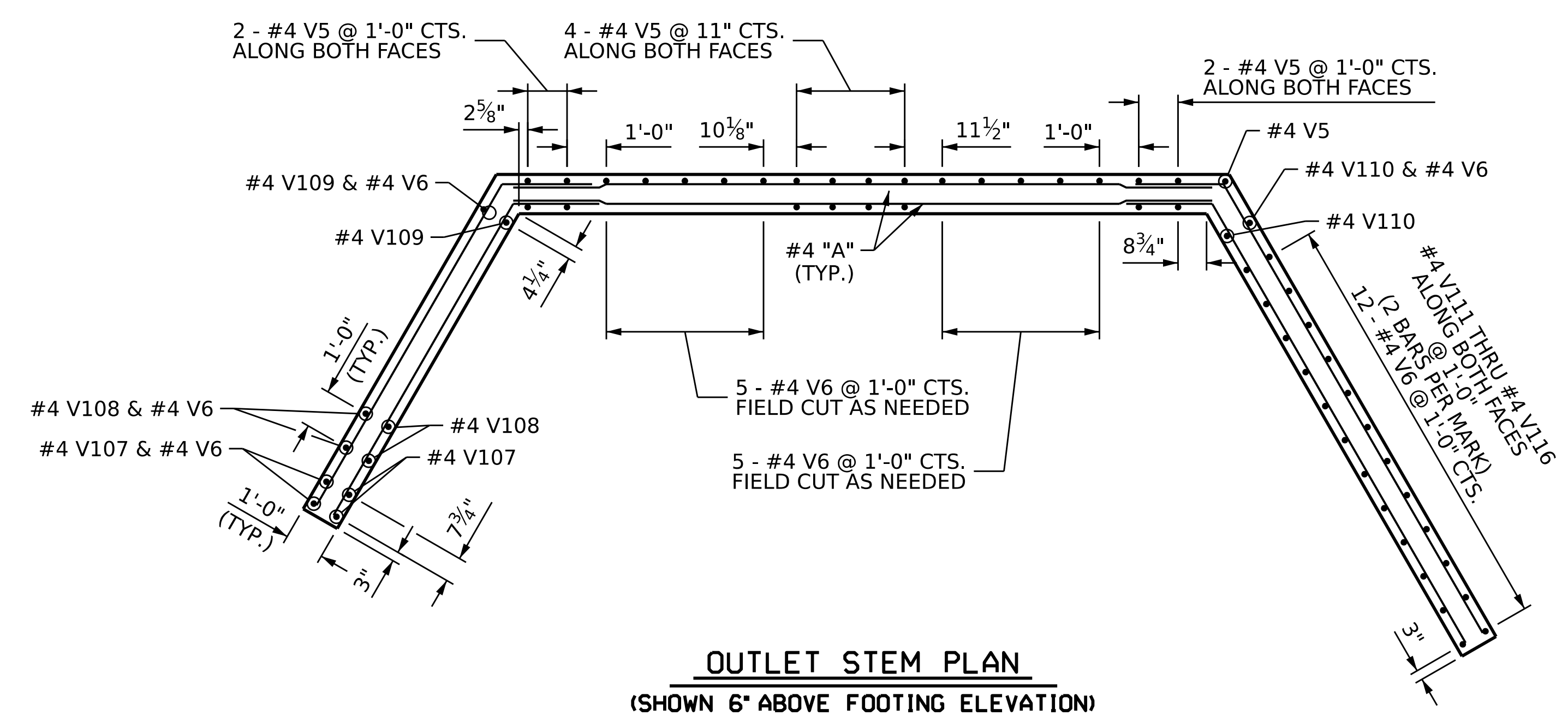


VHB Engineering NC, P.C. (C-3705)
 940 Main Campus Drive, Suite 500
 Raleigh, NC 27606

DRAWN BY : C.E. HONIGMAN	DATE : 11/2024
CHECKED BY : K.F. SMIACH	DATE : 11/2024
DESIGN ENGINEER OF RECORD: K.F. SMIACH	DATE : 11/2024



OUTLET PLAN

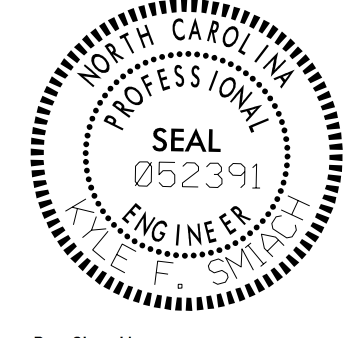


OUTLET STEM PLAN

(SHOWN 6" ABOVE FOOTING ELEVATION)
NOTE: LAP V6 DOWELS WITH FILL FACE V5 AND V1XX BARS.
LAPPED V6 BARS NOT SHOWN IN THIS SECTION FOR CLARITY.

PROJECT NO. **U-4405**
CUMBERLAND COUNTY
STATION: **137+99.59 -L-**
SHEET **3** OF **12**

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
**BEAVER CREEK
DOUBLE 60" WELDED
STEEL PIPE HEADWALLS**



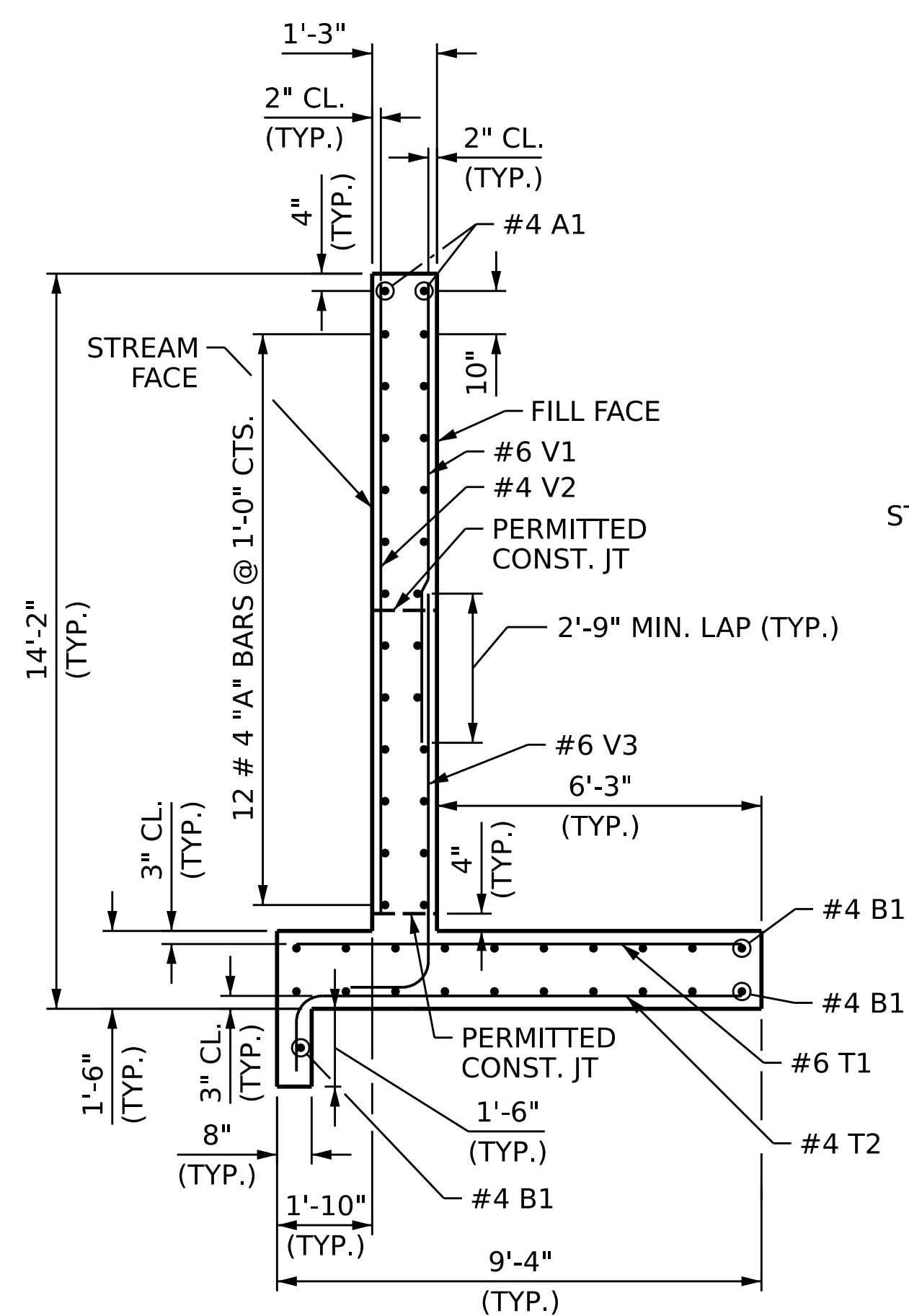
DocuSigned by:
Kyle Smiach
11/21/2024

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

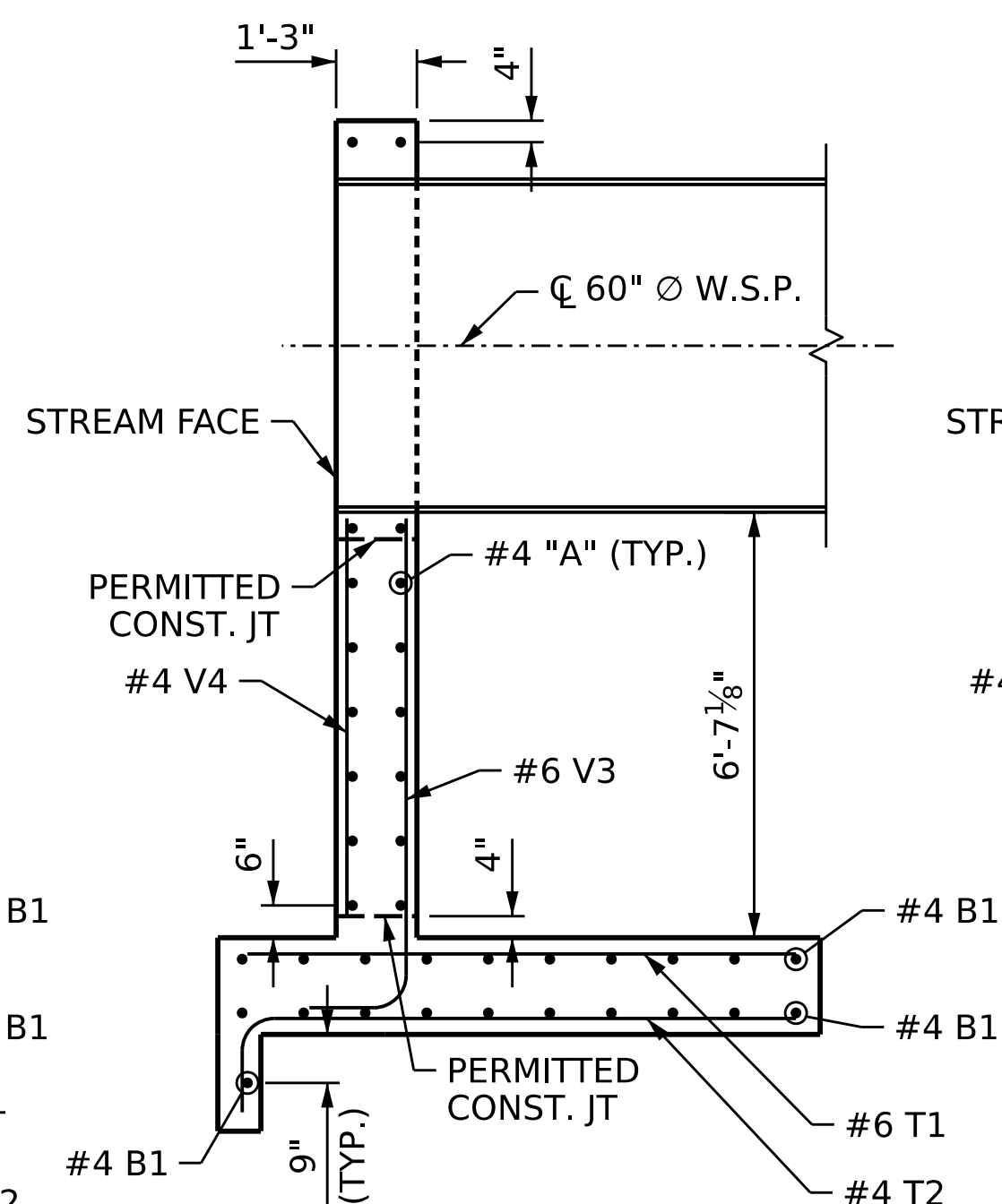
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	2D-3
1			3			TOTAL SHEETS
2			4			12



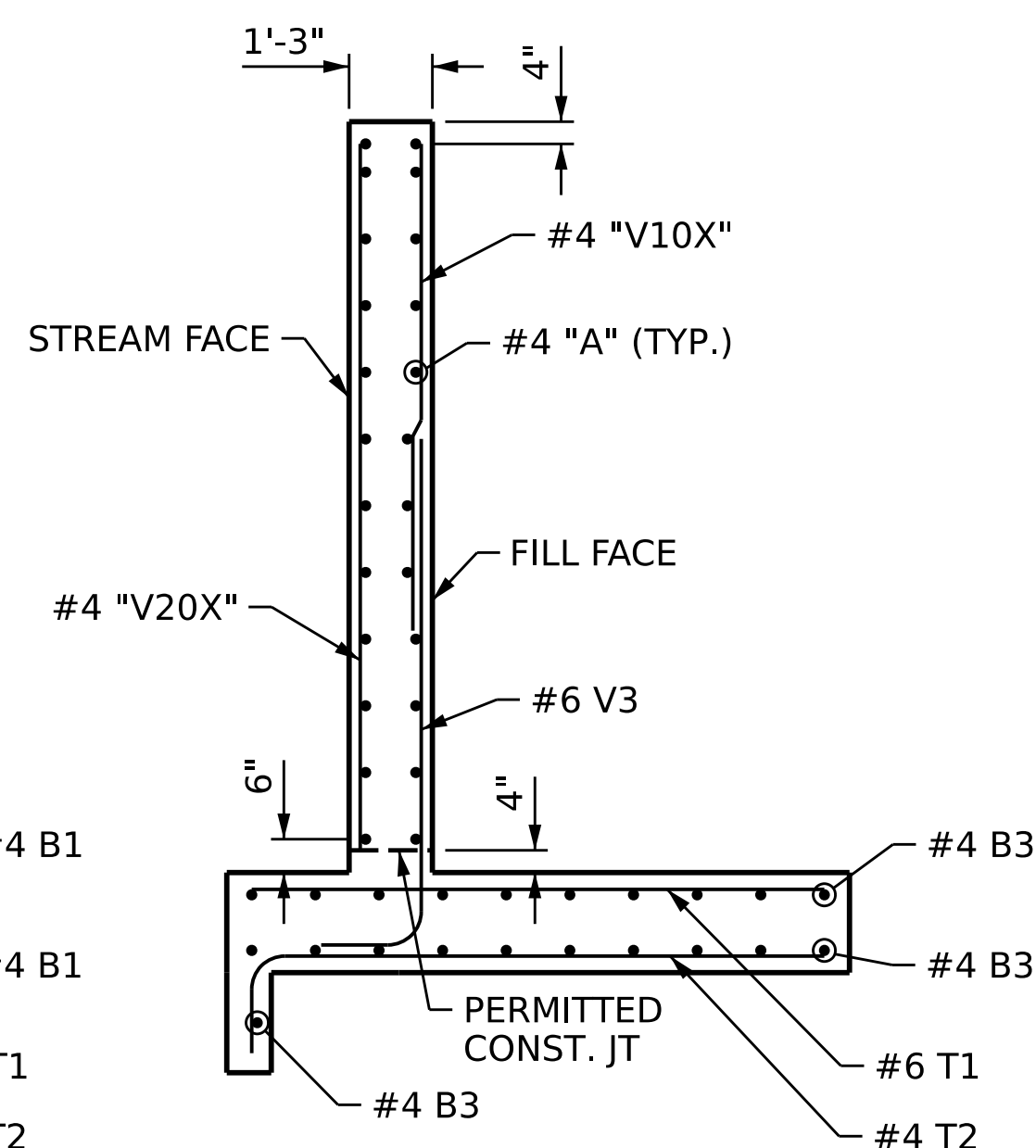
DRAWN BY : **C.E. HONIGMAN** DATE : **11/2024**
CHECKED BY : **K.F. SMIACH** DATE : **11/2024**
DESIGN ENGINEER OF RECORD: **K.F. SMIACH** DATE : **11/2024**



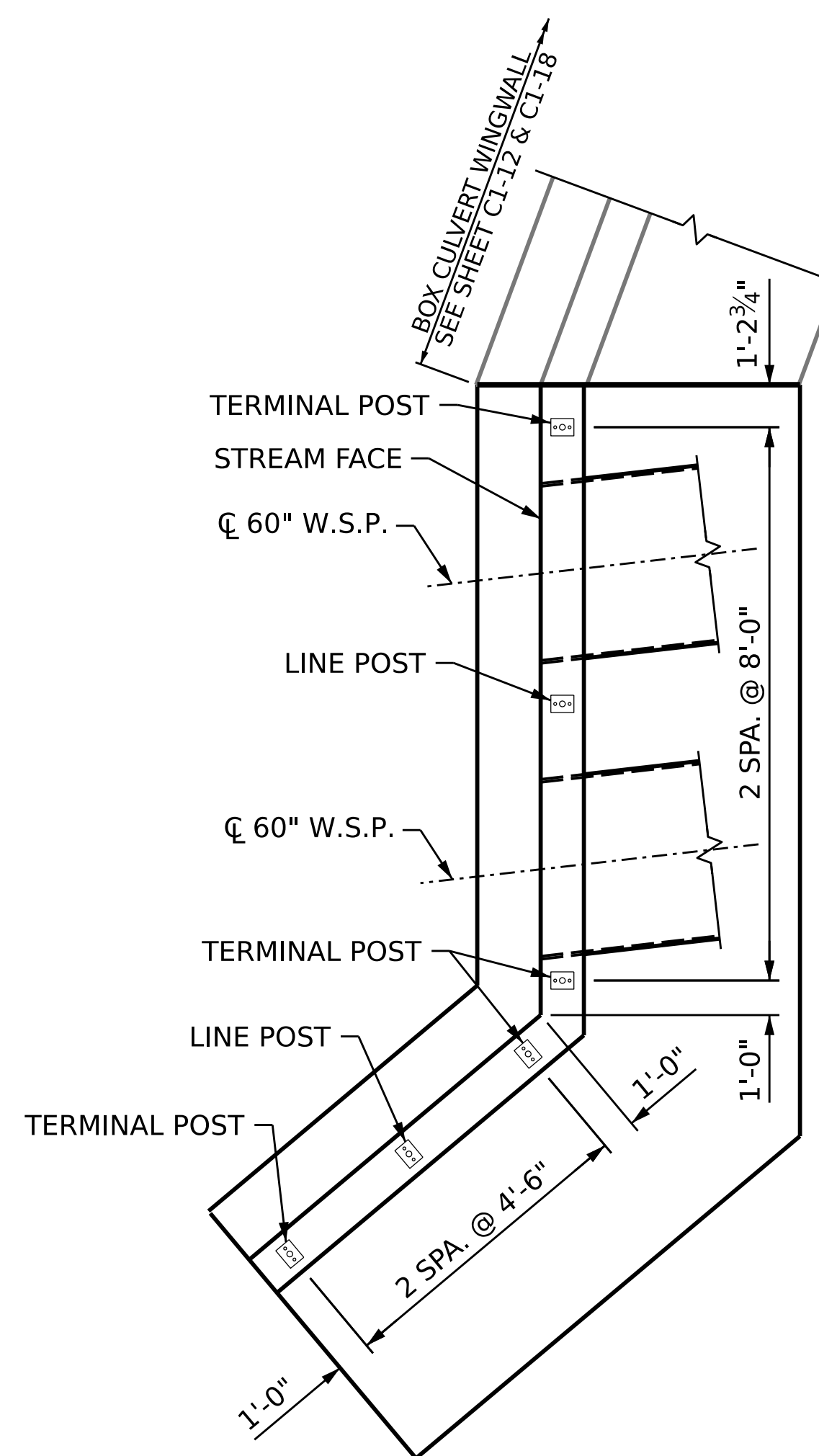
SECTION A-A



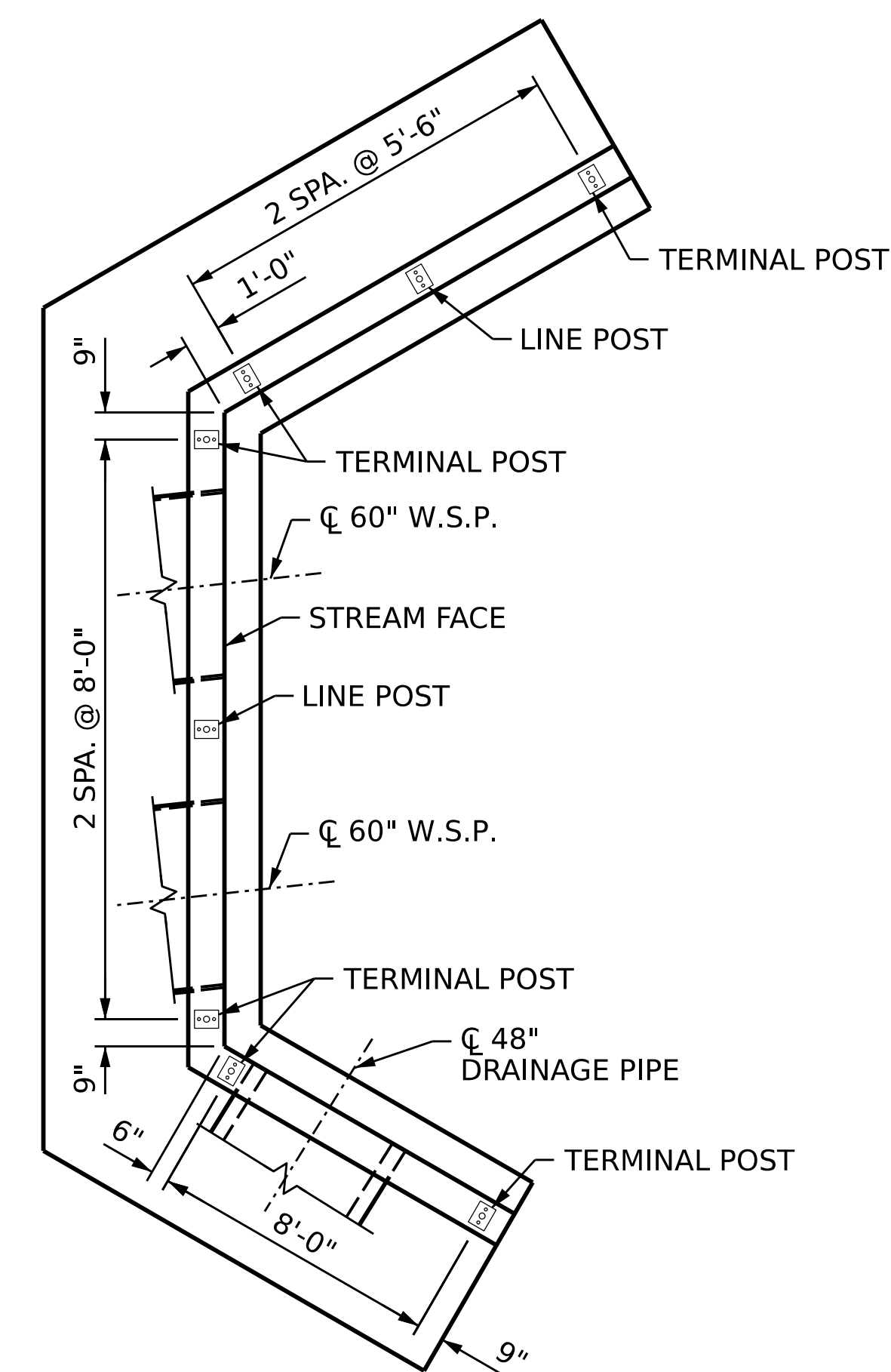
SECTION B-B



SECTION C-C



INLET POST SPACING



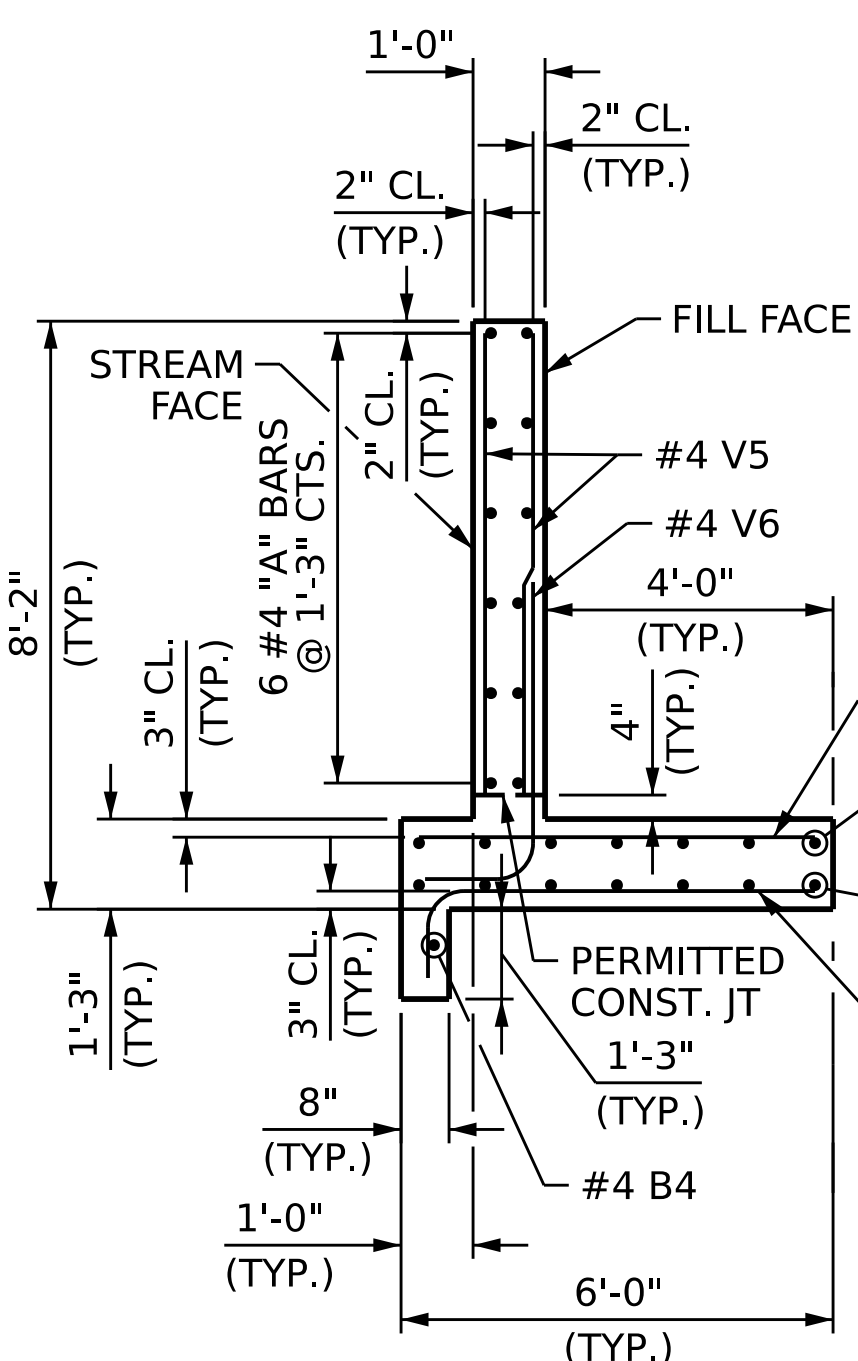
OUTLET POST SPACING

FENCE POST SPACING

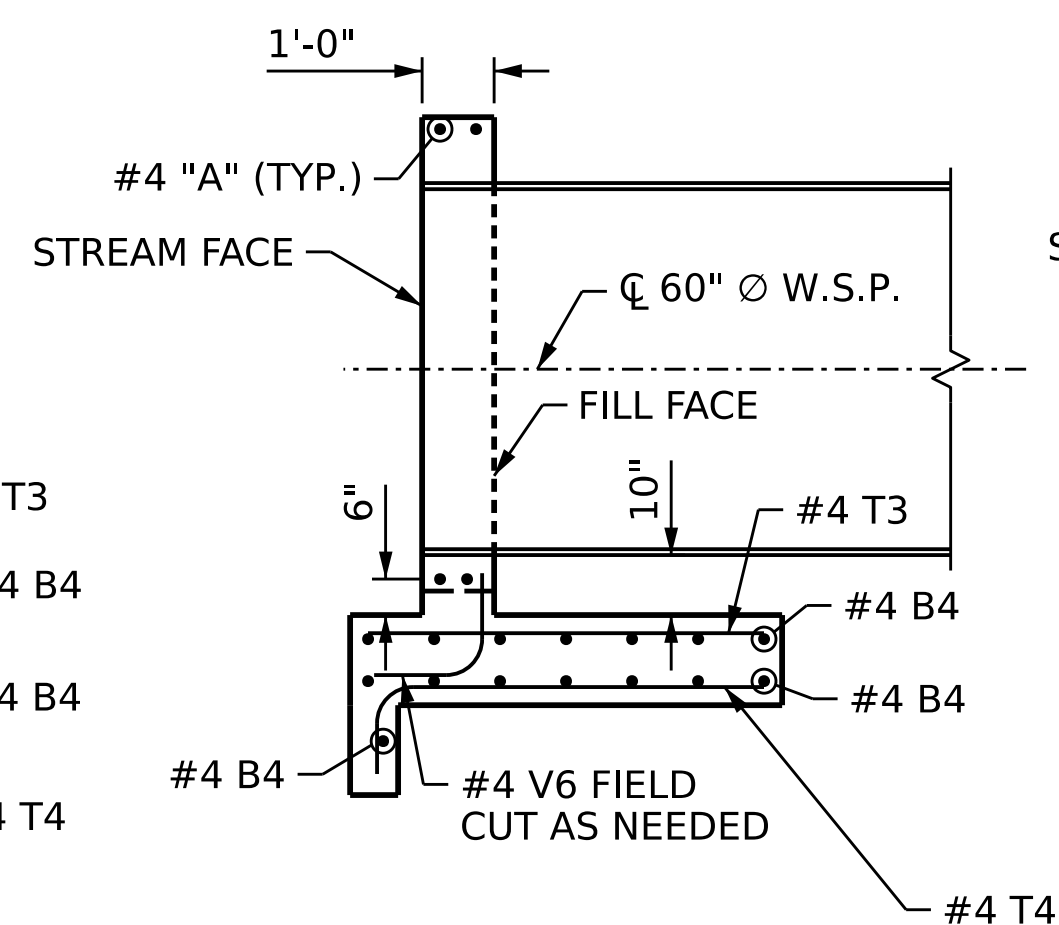
FENCING NOTES

- INSTALL FENCING IN ACCORDANCE WITH SECTION 866 OF THE STANDARD SPECIFICATIONS.
- COORDINATE THIS SHEET WITH INFORMATION ON SHEET C1-17.

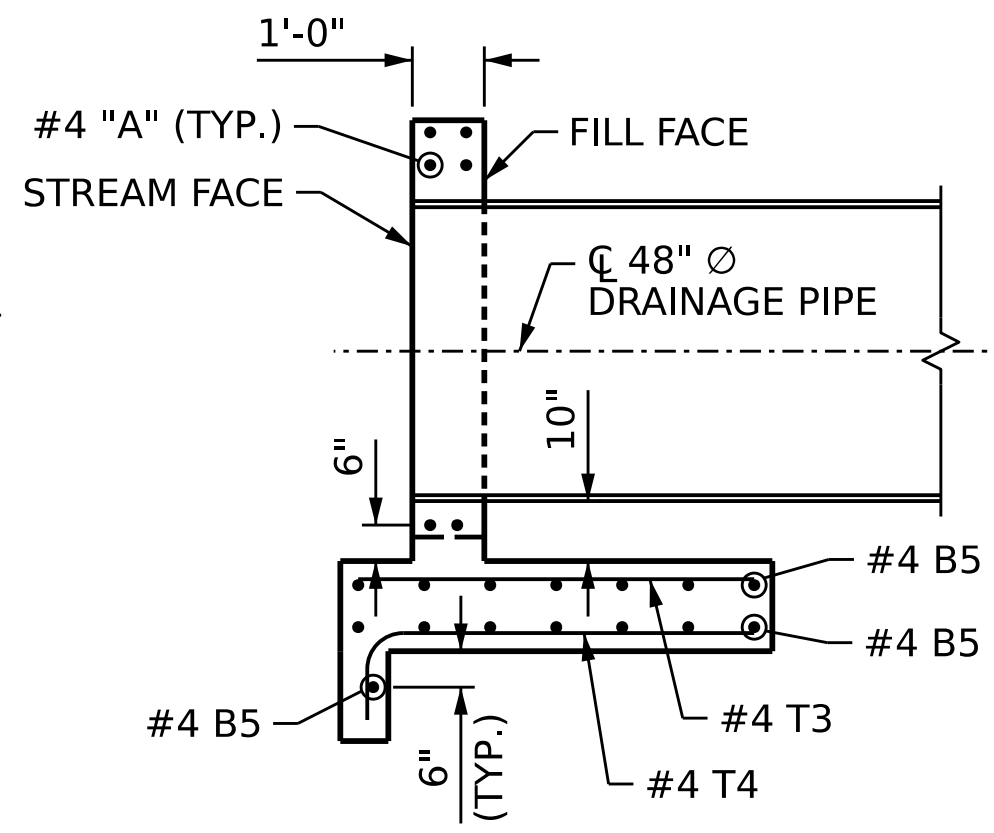
BILL OF MATERIAL FOR CHAIN LINK FENCE, 72" FABRIC		
CHAIN LINK FENCE, 72" FABRIC	LIN. FT.	60
METAL LINE POSTS FOR 72" CHAIN LINK FENCE	EA.	4
METAL TERMINAL POSTS FOR 72" CHAIN LINK FENCE	EA.	10



SECTION D-D



SECTION E-E



SECTION F-F



VHB Engineering NC, P.C. (C-3705)
 940 Main Campus Drive, Suite 500
 Raleigh, NC 27606

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 CHECKED BY : K.F. SMIACH DATE : 11/2024
 DESIGN ENGINEER OF RECORD: K.F. SMIACH DATE : 11/2024

11/20/2024
 \\hbc.com\gbl\proj\Releigh\39115.01 Atkins-U4405 ROW\NCDOT\Structures\13799.40\10x12\Drawings\403.007_U4405B.SMU.PGD04.dgn
 chonigman



DocuSigned by:
 Kyle Smiach
 11/21/2024

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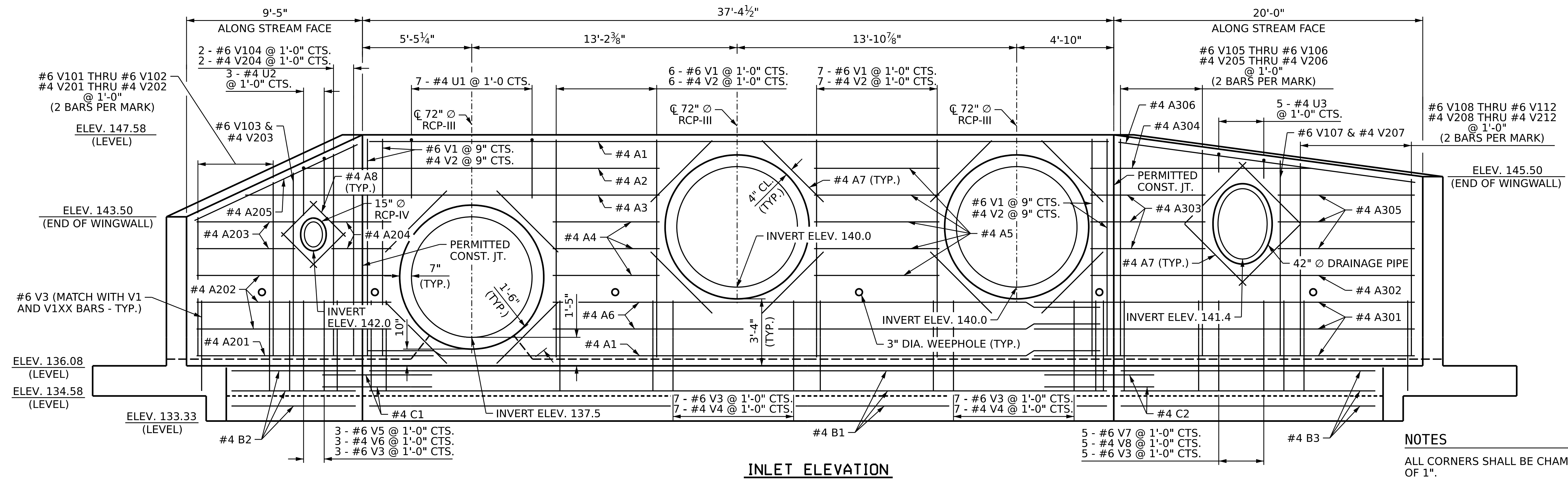
PROJECT NO. **U-4405**
CUMBERLAND COUNTY
 STATION: **137+99.59 -L-**

SHEET 4 OF 12

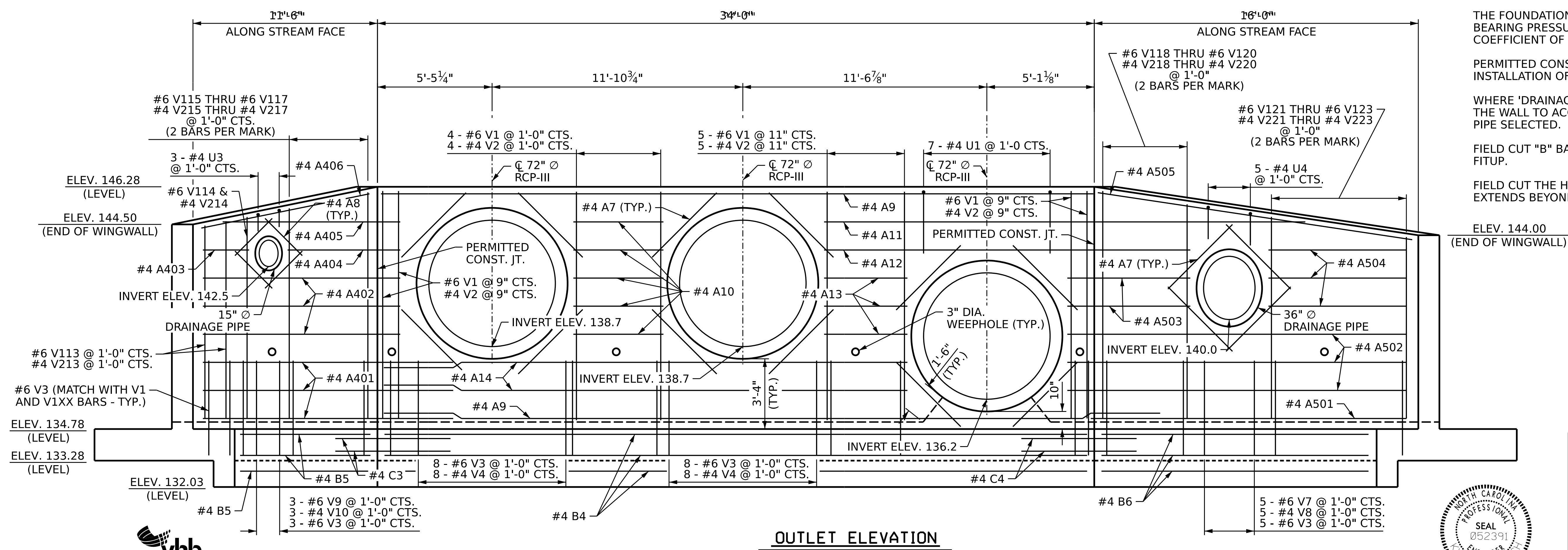
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**BEAVER CREEK
 DOUBLE 60" WELDED
 STEEL PIPE HEADWALLS**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	2D-4
1			3			TOTAL SHEETS
2			4			12



INLET ELEVATION



OUTLET ELEVATION

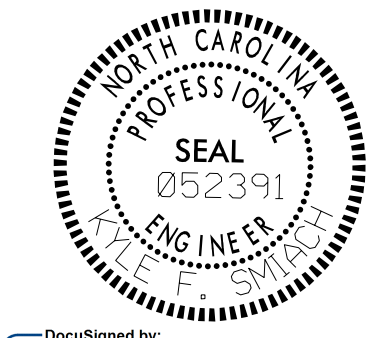
NOTES

- ALL CORNERS SHALL BE CHAMFERED 1" OR HAVE A RADIUS OF 1".
- CLASS "A" CONCRETE SHALL BE USED.
- THE FOUNDATION HAS BEEN DESIGNED FOR A FACTORED BEARING PRESSURE OF 2,760 PSF AND A SLIDING COEFFICIENT OF 0.554.
- PERMITTED CONSTRUCTION JOINTS FOR BACKFILL AND INSTALLATION OF PIPES IN WINGS ARE ACCEPTABLE.
- WHERE "DRAINAGE PIPE" IS SPECIFIED, ADJUST BLOCKOUTS IN THE WALL TO ACCOMMODATE THE WALL THICKNESS OF THE PIPE SELECTED.
- FIELD CUT "B" BARS IN THE CURTAIN WALL AS REQUIRED FOR FITUP.
- FIELD CUT THE HOOK OFF THE T2 BARS WHEN THE BAR EXTENDS BEYOND THE LIMITS OF THE CURTAIN WALL.

PROJECT NO. **U-4405**
CUMBERLAND COUNTY
 STATION: **143+37.12 -L-**
 SHEET 5 OF 12

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**UNNAMED TRIBUTARY TO
 BEAVER CREEK
 TRIPLE 72" REINFORCED
 CONCRETE PIPE
 HEADWALLS**



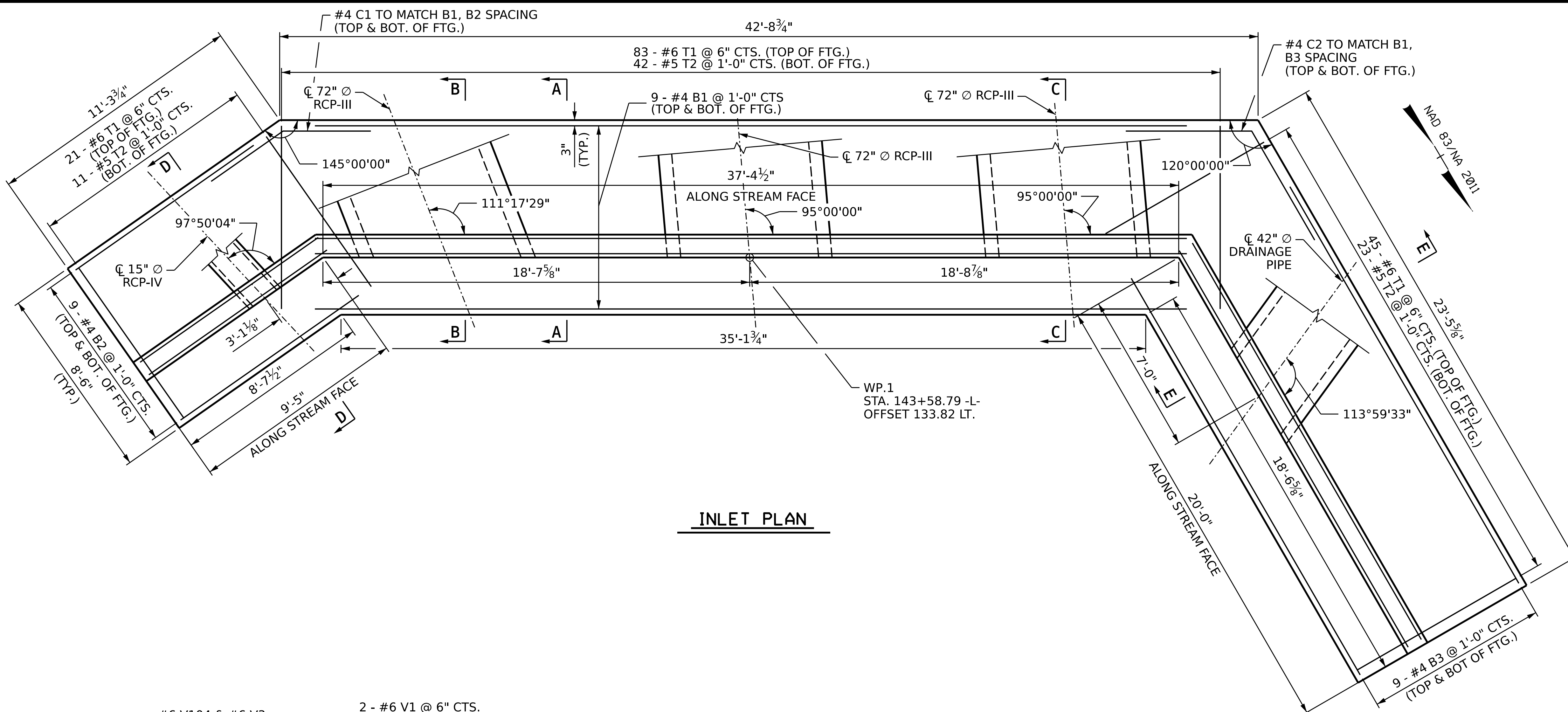
Designed by: **Kyle Smiach** 11/21/2024
 REVISIONS
 NO. BY: DATE: NO. BY: DATE:
 1 2 3 4
 DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			20-5
2			4			TOTAL SHEETS 12

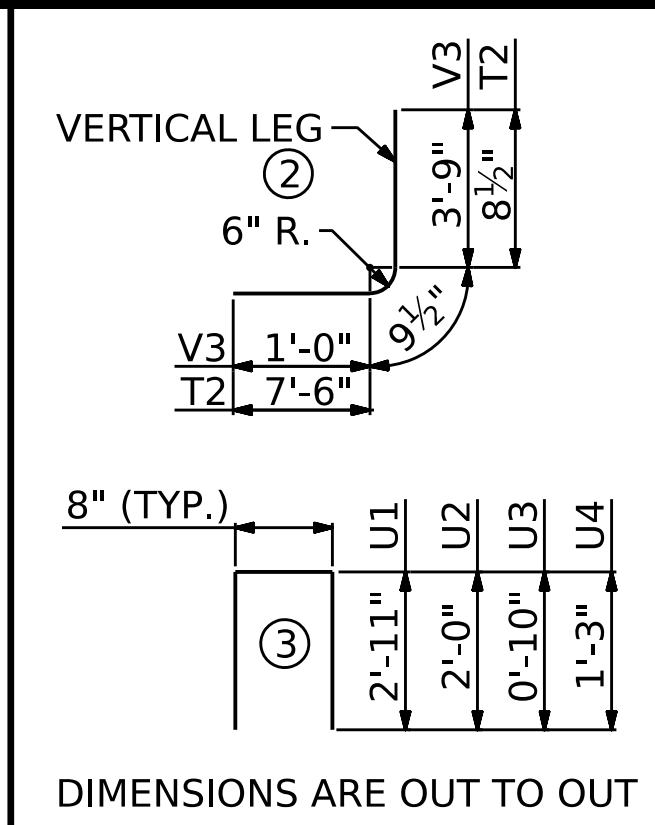


DRAWN BY : **C.E. HONIGMAN** DATE : **11/2024**
 CHECKED BY : **K.F. SMIACH** DATE : **11/2024**
 DESIGN ENGINEER OF RECORD : **K.F. SMIACH** DATE : **11/2024**

8/26/21



INLET PLAN

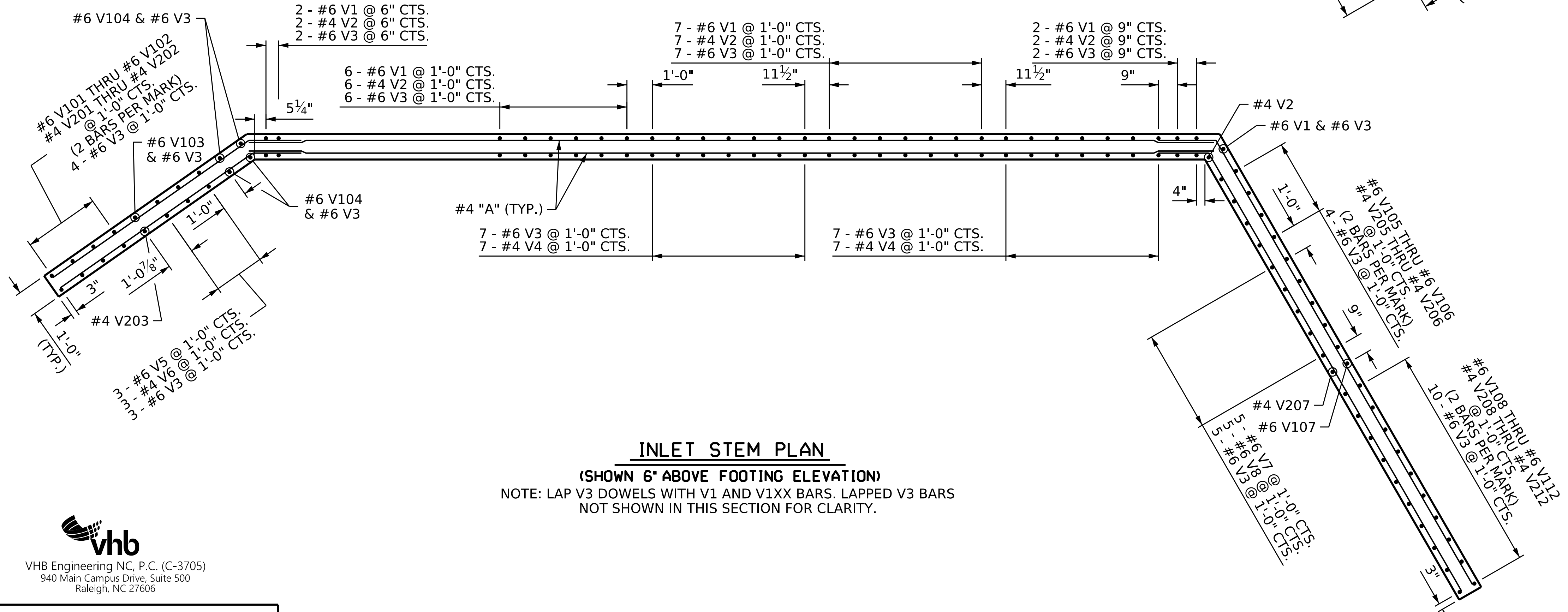


BILL OF MATERIAL					
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1	4	#4	STR.	37'-4"	100
A2	2	#4	1	17'-8"	24
A3	2	#4	1	20'-8"	28
A4	6	#4	STR.	5'-0"	20
A5	10	#4	STR.	6'-0"	40
A6	4	#4	STR.	27'-2"	74
A7	64	#4	STR.	4'-4"	185
A8	16	#4	STR.	2'-6"	27
A9	4	#4	STR.	34'-0"	91
A10	10	#4	STR.	4'-0"	27
A11	2	#4	1	22'-4"	30
A12	2	#4	1	18'-2"	24
A13	6	#4	STR.	3'-8"	15
A14	4	#4	STR.	25'-0"	67
B1	19	#4	STR.	38'-1"	484
B2	19	#4	STR.	9'-6"	121
B3	19	#4	STR.	20'-0"	255
B4	19	#4	STR.	34'-9"	441
B5	19	#4	STR.	11'-7"	147
B6	19	#4	STR.	16'-0"	204

DIMENSIONS ARE OUT TO OUT

BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
V101	2	#6	STR.	6'-11"	21
V102	2	#6	STR.	7'-9"	23
V103	1	#6	STR.	8'-8"	13
V104	2	#6	STR.	10'-5"	31
V105	2	#6	STR.	10'-9"	32
V106	2	#6	STR.	10'-6"	32
V107	1	#6	STR.	9'-11"	15
V108	2	#6	STR.	9'-9"	29
V109	2	#6	STR.	9'-6"	29
V110	2	#6	STR.	9'-4"	28
V111	2	#6	STR.	9'-1"	28
V112	2	#6	STR.	8'-11"	27
V113	2	#6	STR.	9'-2"	28
V114	1	#6	STR.	9'-6"	14
V115	2	#6	STR.	10'-1"	31
V116	2	#6	STR.	10'-5"	31
V117	2	#6	STR.	10'-9"	32
V118	2	#6	STR.	10'-9"	32
V119	2	#6	STR.	10'-5"	32
V120	2	#6	STR.	10'-2"	31
V121	2	#6	STR.	9'-3"	28
V122	2	#6	STR.	9'-0"	27
V123	2	#6	STR.	8'-8"	26
V201	2	#4	STR.	6'-11"	9
V202	2	#4	STR.	7'-9"	10
V203	1	#4	STR.	8'-8"	6
V204	2	#4	STR.	10'-5"	14
V205	2	#4	STR.	10'-9"	14
V206	2	#4	STR.	10'-6"	14
V207	1	#4	STR.	9'-11"	7
V208	2	#4	STR.	9'-9"	13
V209	2	#4	STR.	9'-6"	13
V210	2	#4	STR.	9'-4"	12
V211	2	#4	STR.	9'-1"	12
V212	2	#4	STR.	8'-11"	12
V213	2	#4	STR.	9'-2"	12
V214	1	#4	STR.	9'-6"	6
V215	2	#4	STR.	10'-1"	14
V216	2	#4	STR.	10'-5"	14
V217	2	#4	STR.	10'-9"	14
V218	2	#4	STR.	10'-9"	14
V219	2	#4	STR.	10'-5"	14
V220	2	#4	STR.	10'-2"	14
V221	2	#4	STR.	9'-3"	12
V222	2	#4	STR.	9'-0"	12
V223	2	#4	STR.	8'-8"	12
A201	2	#4	1	11'-2"	15
A202	6	#4	1	10'-3"	41
A203	4	#4	STR.	4'-6"	12
A204	4	#4	1	3'-0"	8
A205	2	#4	STR.	10'-0"	13
A301	6	#4	1	21'-10"	88
A302	2	#4	1	20'-9"	28
A303	6	#4	1	5'-0"	20
A304	2	#4	1	13'-7"	18
A305	6	#4	STR.	11'-7"	40
A306	2	#4	STR.	19'-8"	26
A401	6	#4	1	13'-3"	53
A402	6	#4	1	12'-4"	49
A403	2	#4	STR.	2'-3"	3
A404	2	#4	1	7'-3"	10
A405	2	#4	1	10'-0"	13
A406	2	#4	STR.	11'-4"	15
A501	2	#4	1	17'-8"	24
A502	6	#4	1	16'-9"	67
A503	4	#4	1	6'-0"	16
A504	6	#4	STR.	5'-0"	20
A505	2	#4	STR.	15'-10"	21
T1	282	#6	STR.	8'-0"	3389
T2	144	#5	2	9'-0"	1352
V1	31	#6	STR.	11'-0"	512
V2	31	#4	STR.	11'-0"	228
V3	120	#6	2	5'-7"	1006
V4	30	#4	STR.	2'-10"	57
V5	3	#6	STR.	5'-0"	23
V6	3	#4	STR.	5'-0"	10
V7	10	#6	STR.	4'-2"	63
V8	10	#4	STR.	4'-2"	28
V9	3	#6	STR.	6'-10"	31
V10	3	#4	STR.	6'-10"	14
U1	14	#4	3	6'-6"	61
U2	3	#4	3	4'-8"	9
U3	8	#4	3	2'-4"	12
U4	5	#4	3	3'-2"	11
C1	18	#4	1	7'-8"	92
C2	18	#4	1	11'-0"	132
C3	18	#4	1	9'-0"	108
C4	18	#4	1	5'-4"	64

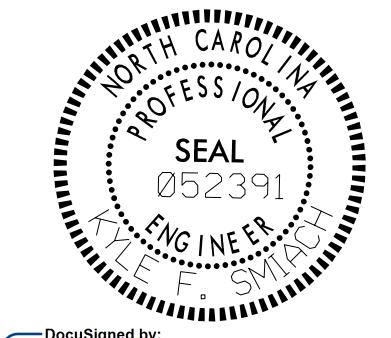
REINFORCING STEEL 11,100 LBS.



INLET STEM PLAN

(SHOWN 6" ABOVE FOOTING ELEVATION)
NOTE: LAP V3 DOWELS WITH V1 AND V1XX BARS. LAPPED V3 BARS NOT SHOWN IN THIS SECTION FOR CLARITY.

PROJECT NO. **U-4405**
CUMBERLAND COUNTY
STATION: **143+37.12 -L-**
SHEET 6 OF 12



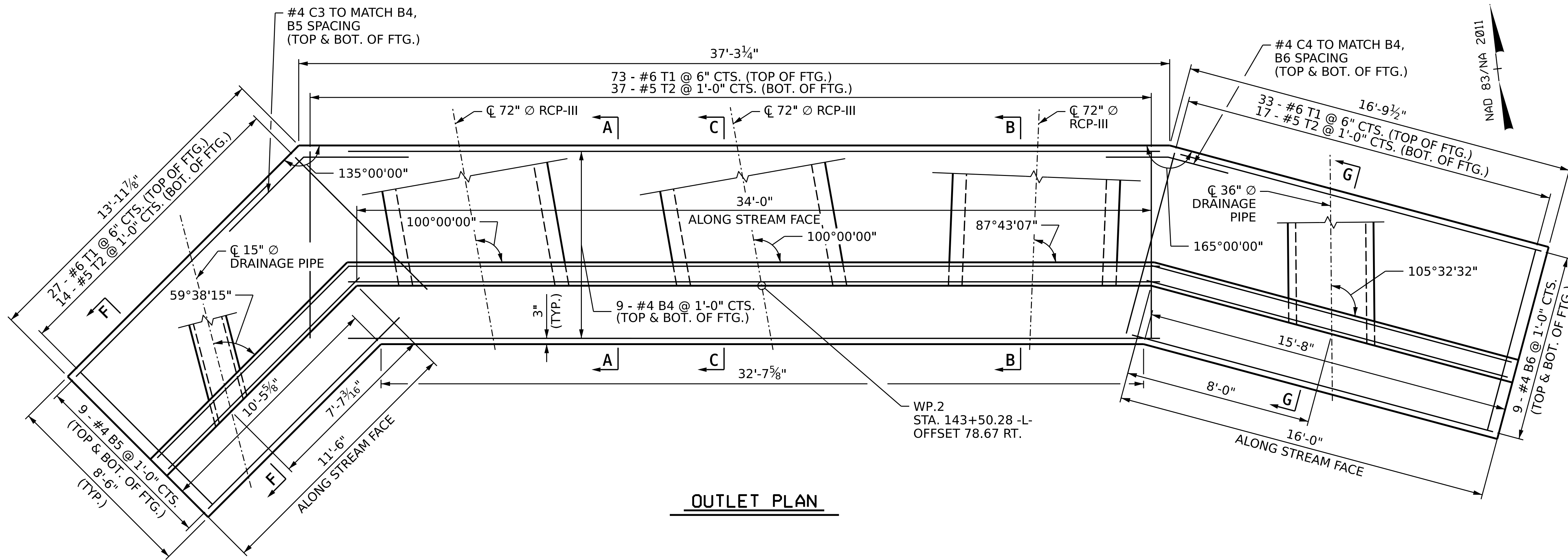
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
**UNNAMED TRIBUTARY TO
BEAVER CREEK
TRIPLE 72" REINFORCED
CONCRETE PIPE
HEADWALLS**

REVISIONS				SHEET NO.
NO.	BY:	DATE:	NO.	DATE:
1			3	
2			4	



DRAWN BY : **C.E. HONIGMAN** DATE : **11/2024**
CHECKED BY : **K.F. SMIACH** DATE : **11/2024**
DESIGN ENGINEER OF RECORD: **K.F. SMIACH** DATE : **11/2024**

8/26/21



OUTLET PLAN

BAR TYPE

A502, A503	1'-0"
A501	1'-11"
A405	9'-0"
A404	6'-3"
A401, A402	11'-4"
A302, A303, A304	0'-10"
A301	1'-11"
A204	2'-0"
A201, A202	9'-3"
A11, A12	12'-8"
A2, A3	14'-8"
C4	2'-8"
C3	4'-6"
C2	5'-6"
C1	3'-10"

REFER TO TABLE FOR BAR ANGLE

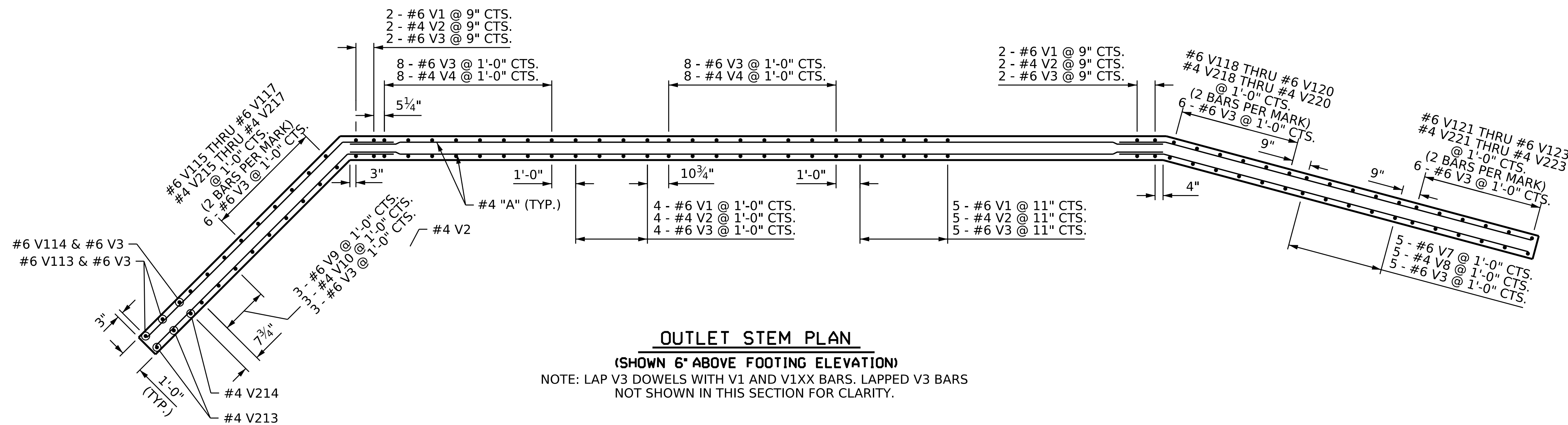
ANGLE	BAR
145°00'00"	C1, A2, A3, A201, A202, A204
120°00'00"	C2, A301, A302, A303, A304
135°00'00"	C3, A401, A402, A404, A405
165°00'00"	C4, A11, A12, A501, A502, A503

INLET

CLASS A CONCRETE	
2 WINGS	10.4 C.Y.
1 HEADWALL	11.6 C.Y.
1 FOOTING	36.0 C.Y.
TOTAL	58.0 C.Y.

OUTLET

CLASS A CONCRETE	
2 WINGS	10.4 C.Y.
1 HEADWALL	10.1 C.Y.
1 FOOTING	32.9 C.Y.
TOTAL	53.4 C.Y.



OUTLET STEM PLAN

(SHOWN 6" ABOVE FOOTING ELEVATION)

NOTE: LAP V3 DOWELS WITH V1 AND V1XX BARS. LAPPED V3 BARS NOT SHOWN IN THIS SECTION FOR CLARITY.

PROJECT NO. **U-4405**

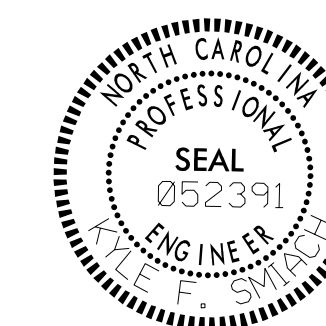
CUMBERLAND COUNTY

STATION: **143+37.12 -L-**

SHEET 7 OF 12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**UNNAMED TRIBUTARY TO
BEAVER CREEK
TRIPLE 72" REINFORCED
CONCRETE PIPE
HEADWALLS**



DocuSigned by:
Kyle Smiach 11/21/2024

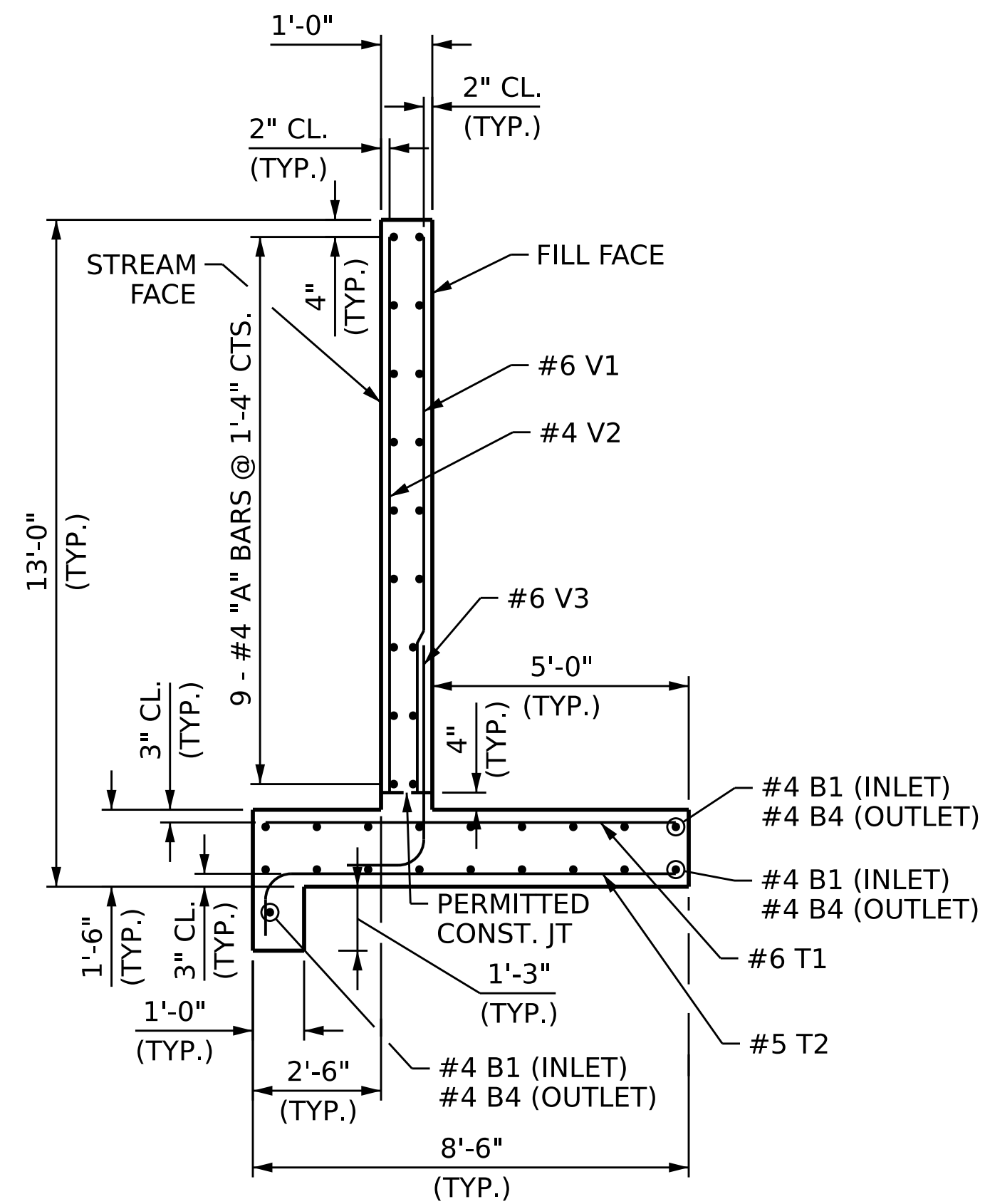
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

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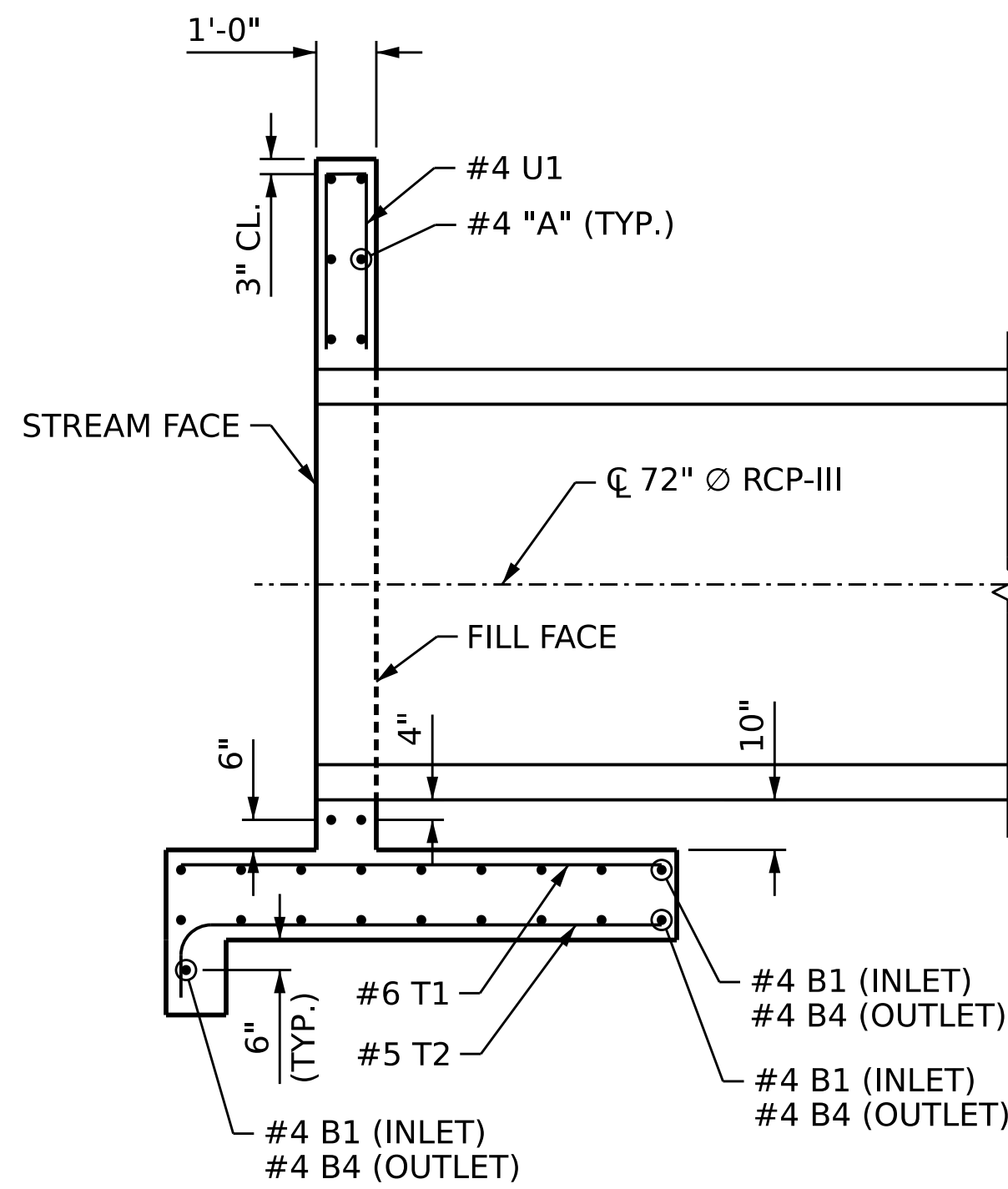


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Raleigh, NC 27606

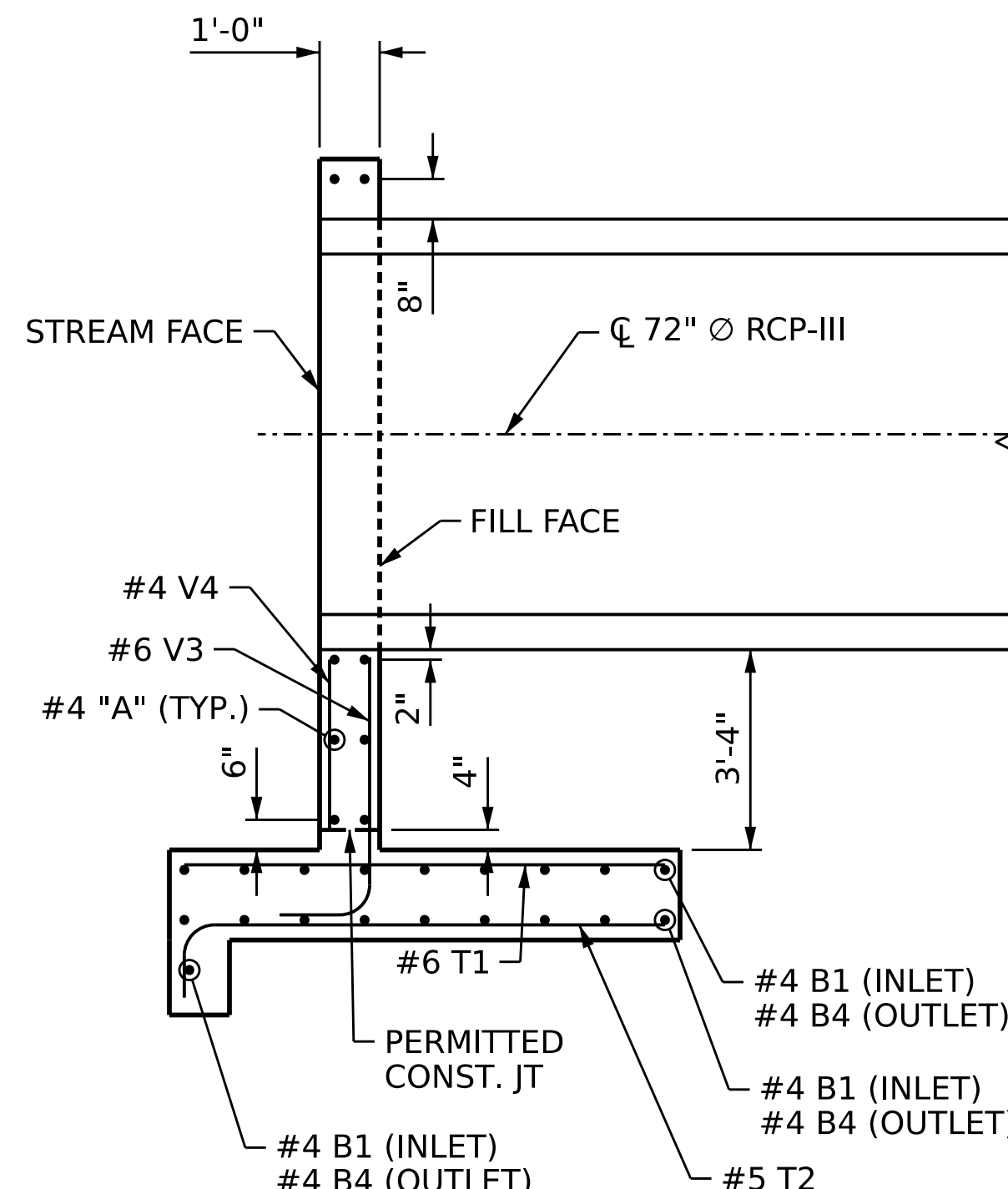
DRAWN BY : C.E. HONIGMAN	DATE : 11/2024
CHECKED BY : K.F. SMIACH	DATE : 11/2024
DESIGN ENGINEER OF RECORD: K.F. SMIACH	DATE : 11/2024



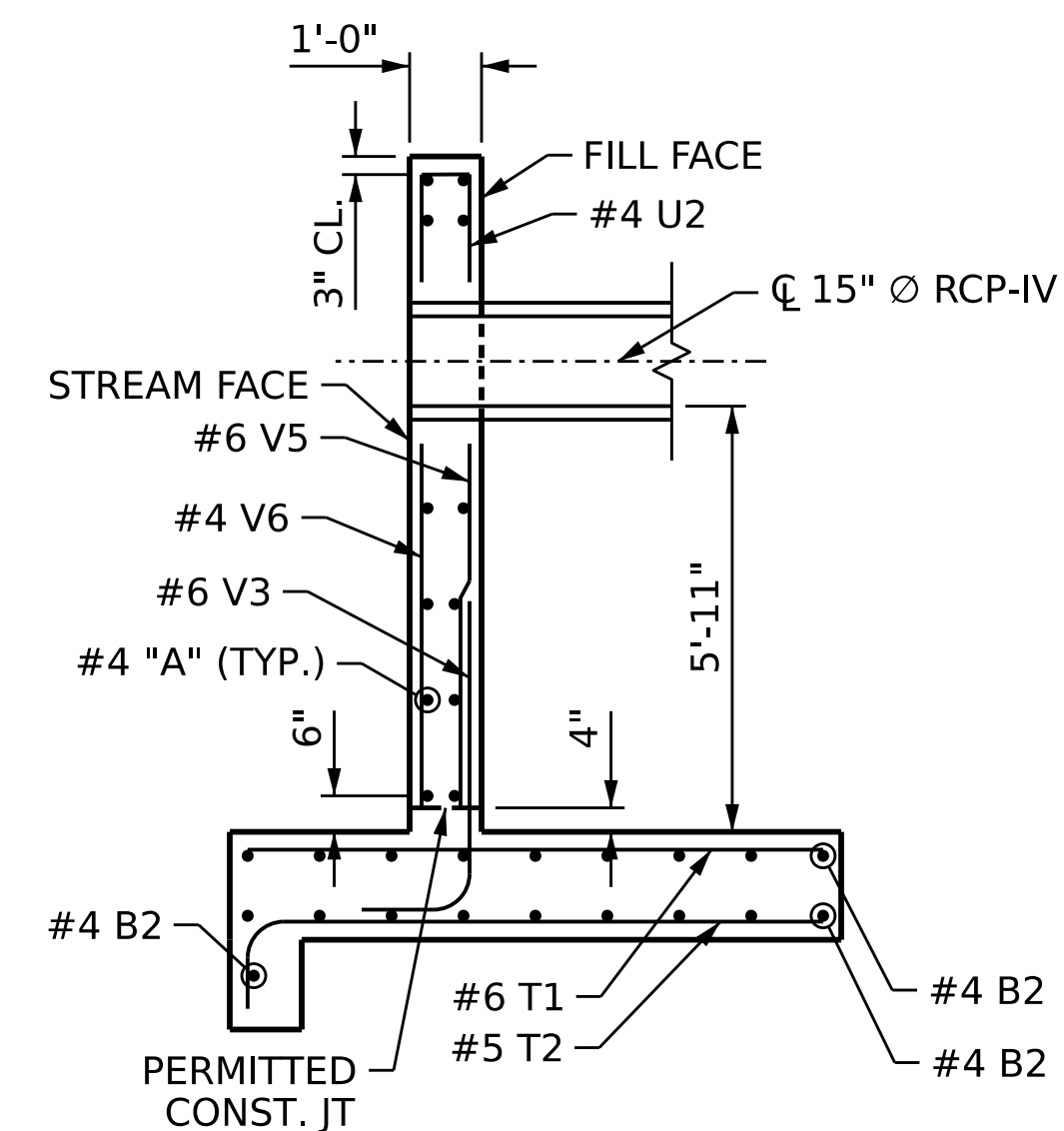
SECTION A-A



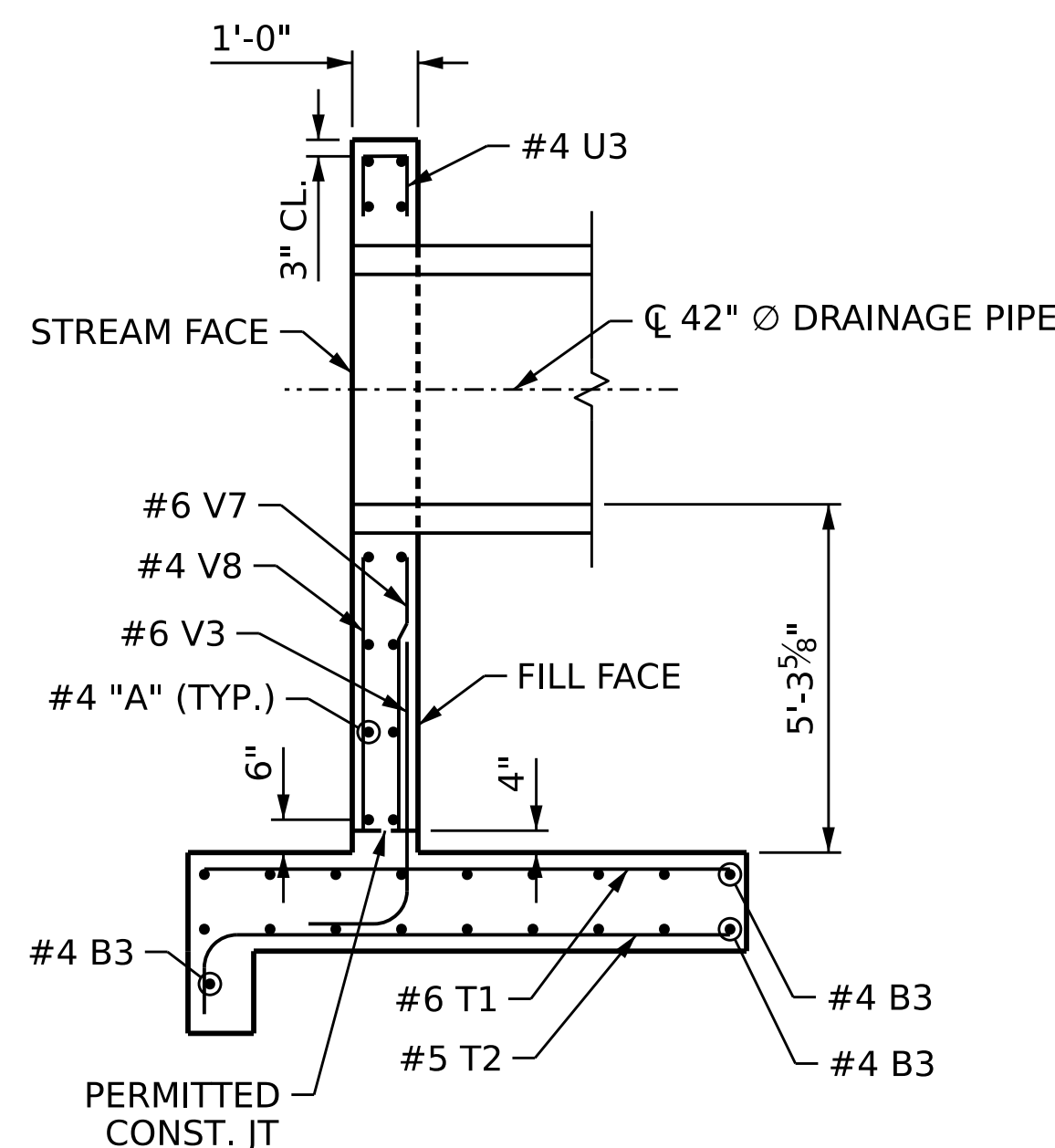
SECTION B-B



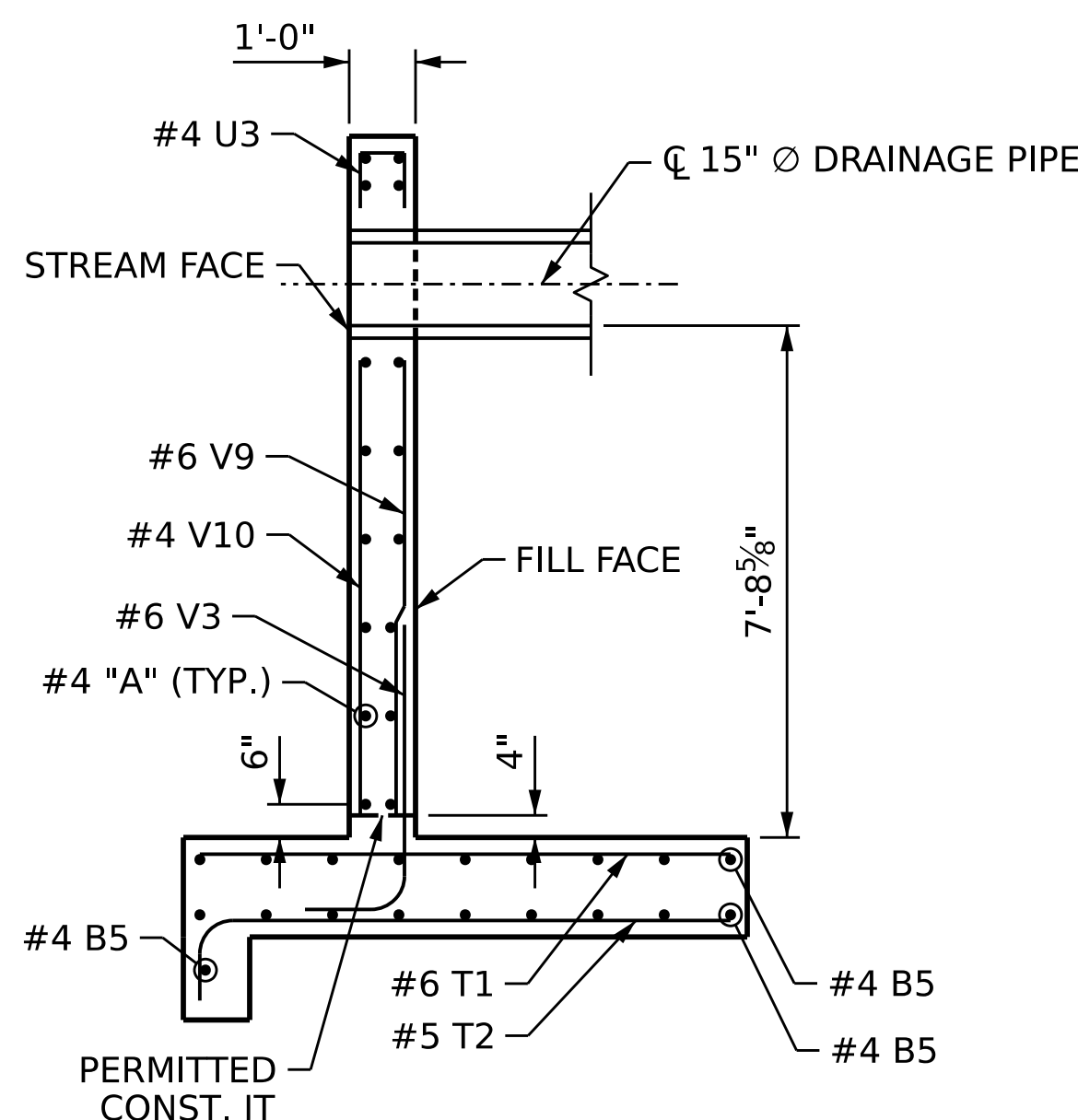
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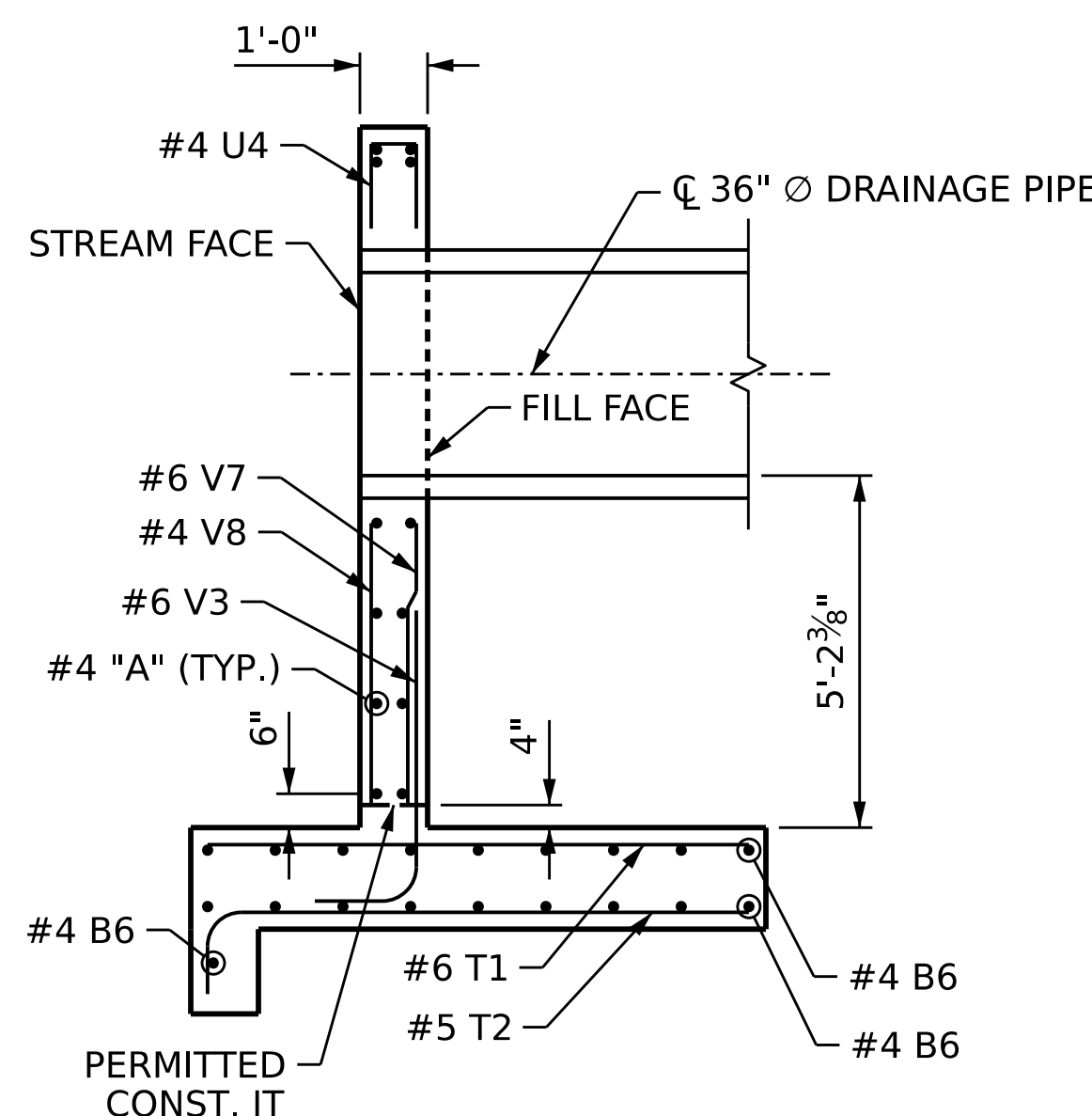
SECTION D-D



SECTION E-E



SECTION F-F



SECTION G-G

PROJECT NO. **U-4405**
CUMBERLAND COUNTY
 STATION: **143+37.12 -L-**

SHEET 8 OF 12

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**UNNAMED TRIBUTARY TO
 BEAVER CREEK
 TRIPLE 72" REINFORCED
 CONCRETE PIPE
 HEADWALLS**



DocuSigned by:
 Kyle Smiach
 11/21/2024

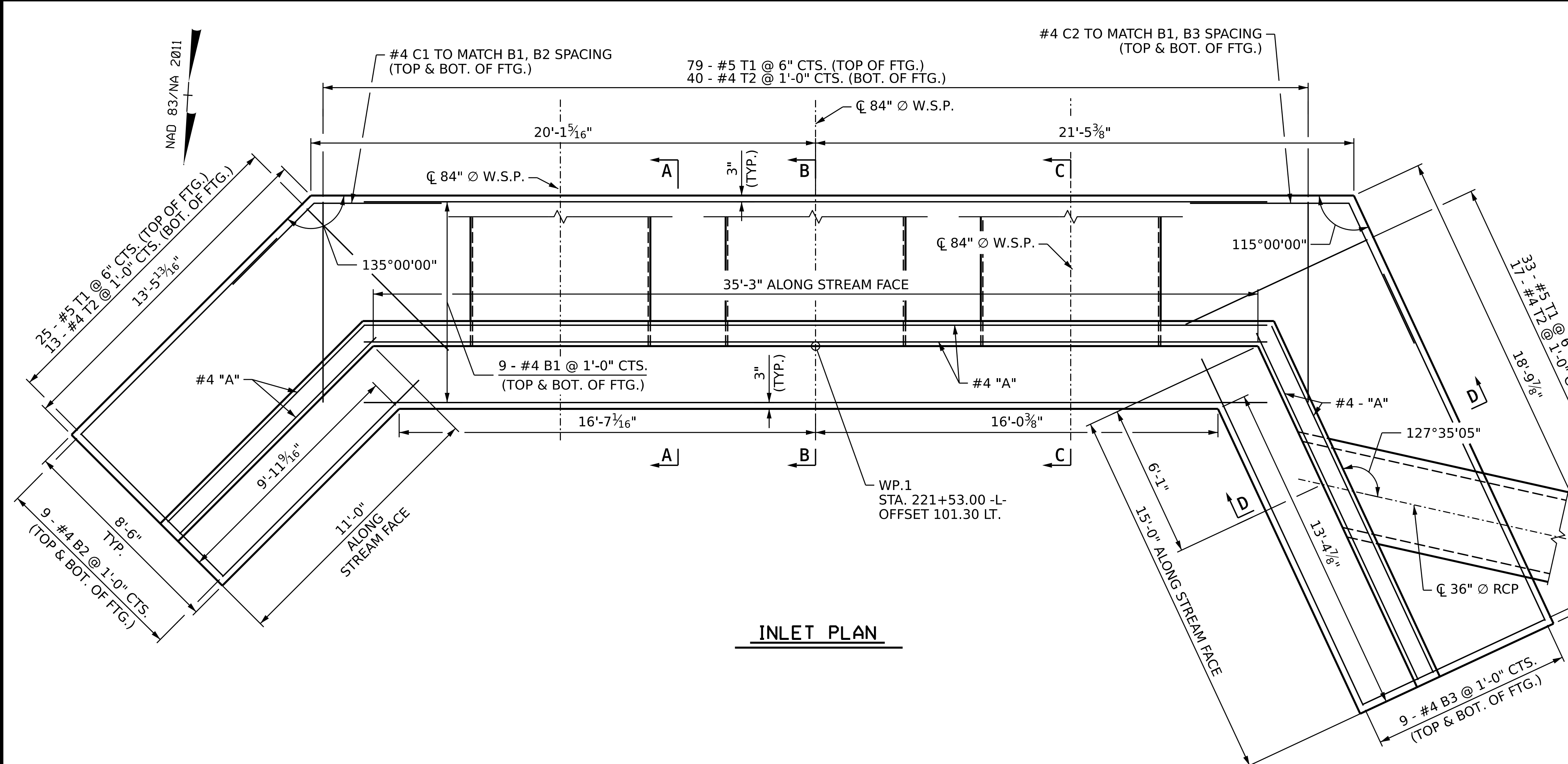
DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

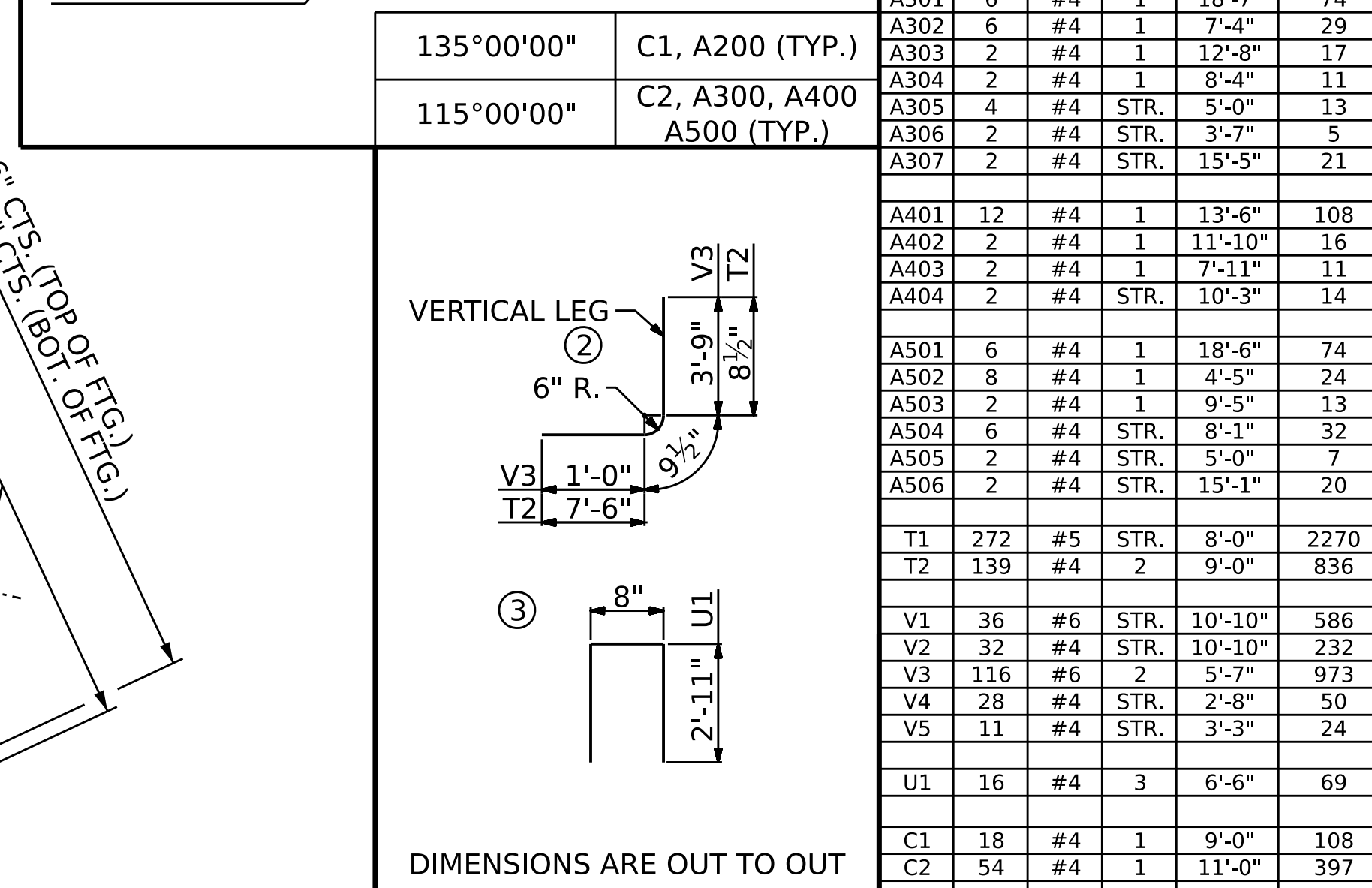
TOTAL SHEETS: 12



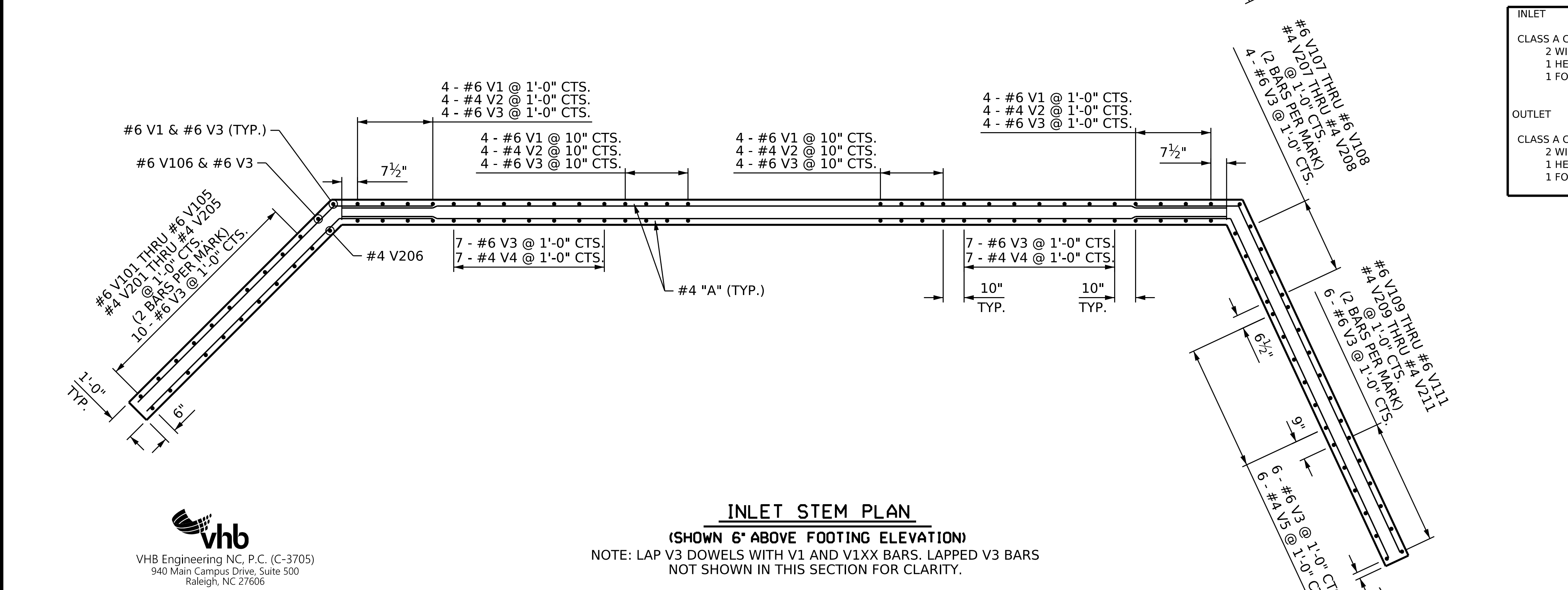
DRAWN BY : **C.E. HONIGMAN** DATE : **11/2024**
 CHECKED BY : **K.F. SMIACH** DATE : **11/2024**
 DESIGN ENGINEER OF RECORD: **K.F. SMIACH** DATE : **11/2024**



BAR TYPE		BILL OF MATERIAL				
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT		
A1	8	#4	STR.	35'-3"	188	
A6	8	#4	STR.	12'-7"	68	
A7	16	#4	STR.	13'-6"	144	
A8	24	#4	STR.	11'-6"	184	
A9	48	#4	STR.	4'-0"	128	
B1	38	#4	STR.	36'-0"	914	
B2	19	#4	STR.	11'-1"	141	
B3	38	#4	STR.	15'-3"	387	
B4	19	#4	STR.	10'-3"	130	
A201	10	#4	1	14'-6"	97	
A202	2	#4	1	13'-1"	17	
A203	2	#4	1	10'-0"	13	
A204	2	#4	1	6'-8"	9	
A205	2	#4	STR.	11'-7"	16	
A301	6	#4	1	18'-7"	74	
A302	6	#4	1	7'-4"	29	
A303	2	#4	1	12'-8"	17	
A304	2	#4	1	8'-4"	11	
A305	4	#4	STR.	5'-0"	13	
A306	2	#4	STR.	3'-7"	5	
A307	2	#4	STR.	15'-5"	21	
A401	12	#4	1	13'-6"	108	
A402	2	#4	1	11'-10"	16	
A403	2	#4	1	7'-11"	11	
A404	2	#4	STR.	10'-3"	14	
A501	6	#4	1	18'-6"	74	
A502	8	#4	1	4'-5"	24	
A503	2	#4	1	9'-5"	13	
A504	6	#4	STR.	8'-1"	32	
A505	2	#4	STR.	5'-0"	7	
A506	2	#4	STR.	15'-1"	20	
T1	272	#5	STR.	8'-0"	2270	
T2	139	#4	2	9'-0"	836	
V1	36	#6	STR.	10'-10"	586	
V2	32	#4	STR.	10'-10"	232	
V3	116	#6	2	5'-7"	973	
V4	28	#4	STR.	2'-8"	50	
V5	11	#4	STR.	3'-3"	24	
U1	16	#4	3	6'-6"	69	
C1	18	#4	1	9'-0"	108	
C2	54	#4	1	11'-0"	397	
V201	2	#4	STR.	6'-6"	9	
V202	2	#4	STR.	7'-4"	10	
V203	2	#4	STR.	8'-2"	11	
V204	2	#4	STR.	9'-0"	12	
V205	2	#4	STR.	9'-10"	13	
V206	1	#4	STR.	10'-8"	7	
V207	2	#4	STR.	10'-5"	14	
V208	2	#4	STR.	9'-10"	13	
V209	2	#4	STR.	7'-7"	10	
V210	2	#4	STR.	7'-0"	9	
V211	2	#4	STR.	6'-5"	9	
V212	2	#4	STR.	7'-7"	10	
V213	2	#4	STR.	8'-3"	11	
V214	2	#4	STR.	9'-0"	12	
V215	2	#4	STR.	9'-8"	13	
V216	2	#4	STR.	10'-4"	14	
V217	1	#4	STR.	10'-9"	7	
V218	1	#4	STR.	9'-4"	6	
V219	2	#4	STR.	8'-11"	12	
V220	2	#4	STR.	8'-5"	11	
V221	2	#4	STR.	7'-11"	11	
V222	2	#4	STR.	7'-6"	10	

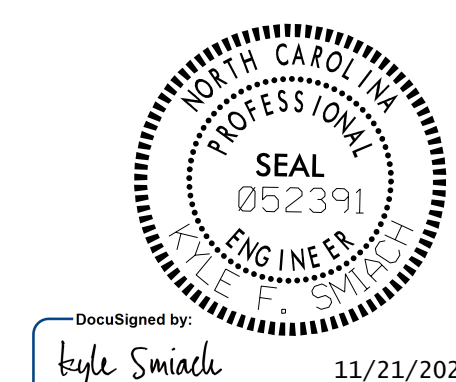


INLET		OUTLET	
CLASS A CONCRETE		CLASS A CONCRETE	
2 WINGS	8.5 C.Y.	2 WINGS	8.2 C.Y.
1 HEADWALL	10.5 C.Y.	1 HEADWALL	10.5 C.Y.
1 FOOTING	33.7 C.Y.	1 FOOTING	33.6 C.Y.
TOTAL	52.7 C.Y.	TOTAL	52.3 C.Y.



DRAWN BY : C.E. HONIGMAN DATE : 10/2024
 CHECKED BY : K.F. SMIACH DATE : 10/2024
 DESIGN ENGINEER OF RECORD: K.F. SMIACH DATE : 10/2024

INLET STEM PLAN
 (SHOWN 6" ABOVE FOOTING ELEVATION)
 NOTE: LAP V3 DOWELS WITH V1 AND V1XX BARS. LAPPED V3 BARS NOT SHOWN IN THIS SECTION FOR CLARITY.

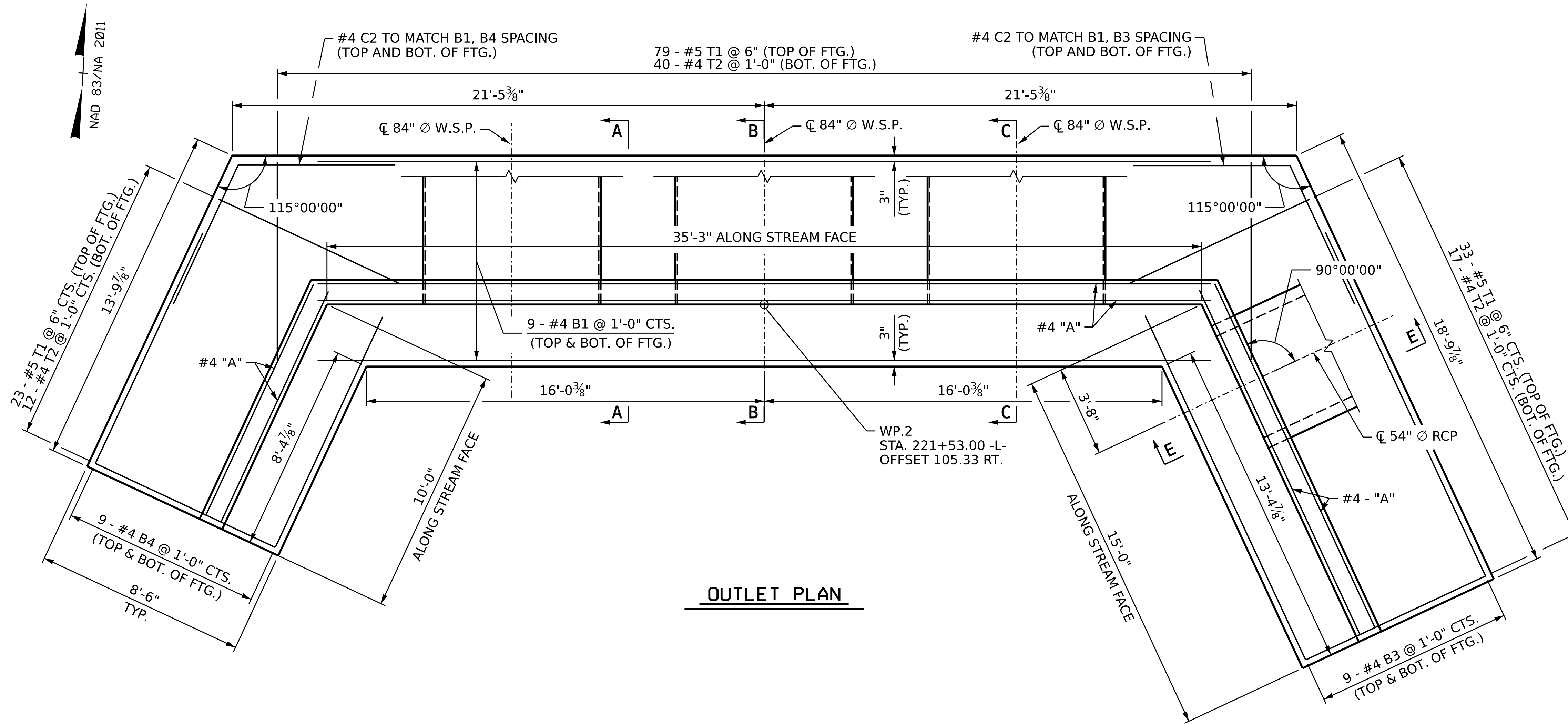


PROJECT NO. **U-4405**
CUMBERLAND COUNTY
 STATION: **221+53.00 -L-**
 SHEET 10 OF 12

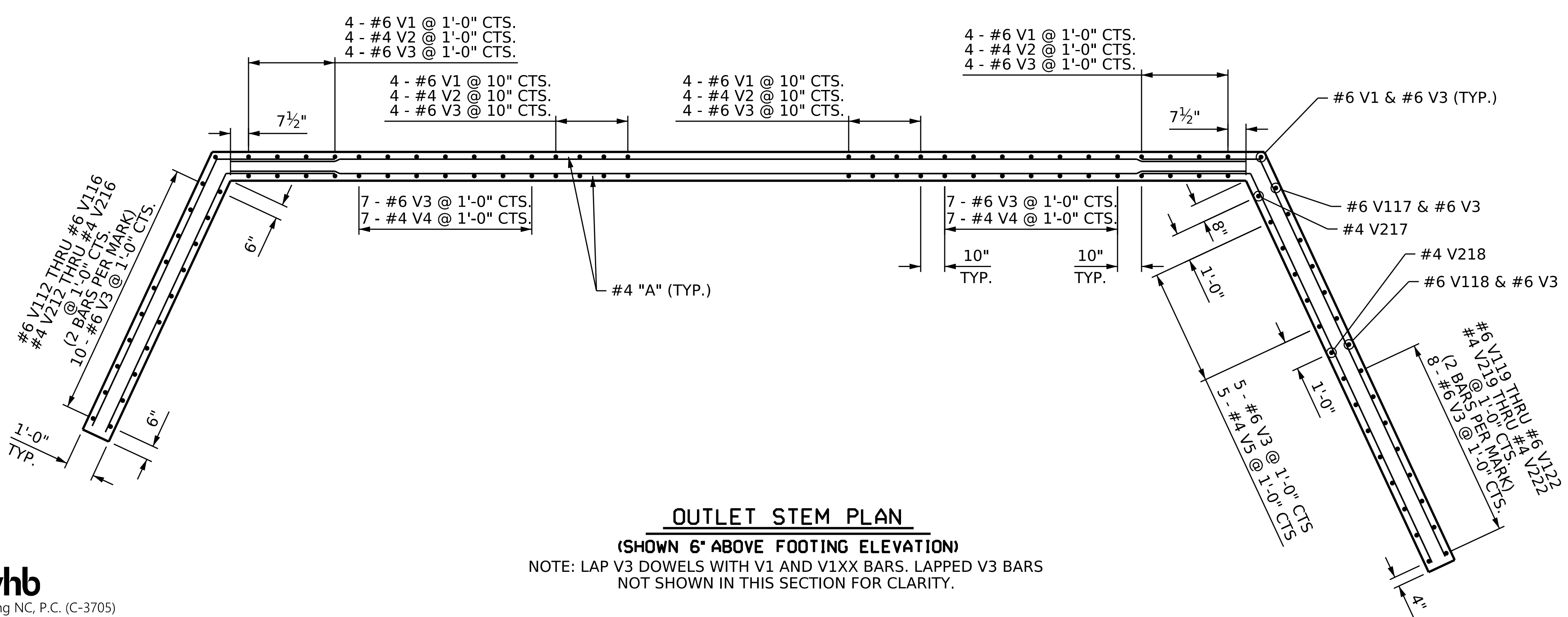
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH				
BUCKHEAD CREEK TRIPLE 84" WELDED STEEL PIPE HEADWALLS				
REVISIONS				SHEET NO.
NO.	BY:	DATE:	NO.	DATE:
1			3	
2			4	
TOTAL SHEETS				12

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

8/26/21



OUTLET PLAN



OUTLET STEM PLAN

(SHOWN 6" ABOVE FOOTING ELEVATION)
 NOTE: LAP V3 DOWELS WITH V1 AND V1XX BARS. LAPPED V3 BARS NOT SHOWN IN THIS SECTION FOR CLARITY.

PROJECT NO. **U-4405**
CUMBERLAND COUNTY
 STATION: **221+53.00 -L-**
 SHEET 11 OF 12

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**BUCKHEAD CREEK
 TRIPLE 84" WELDED
 STEEL PIPE HEADWALLS**



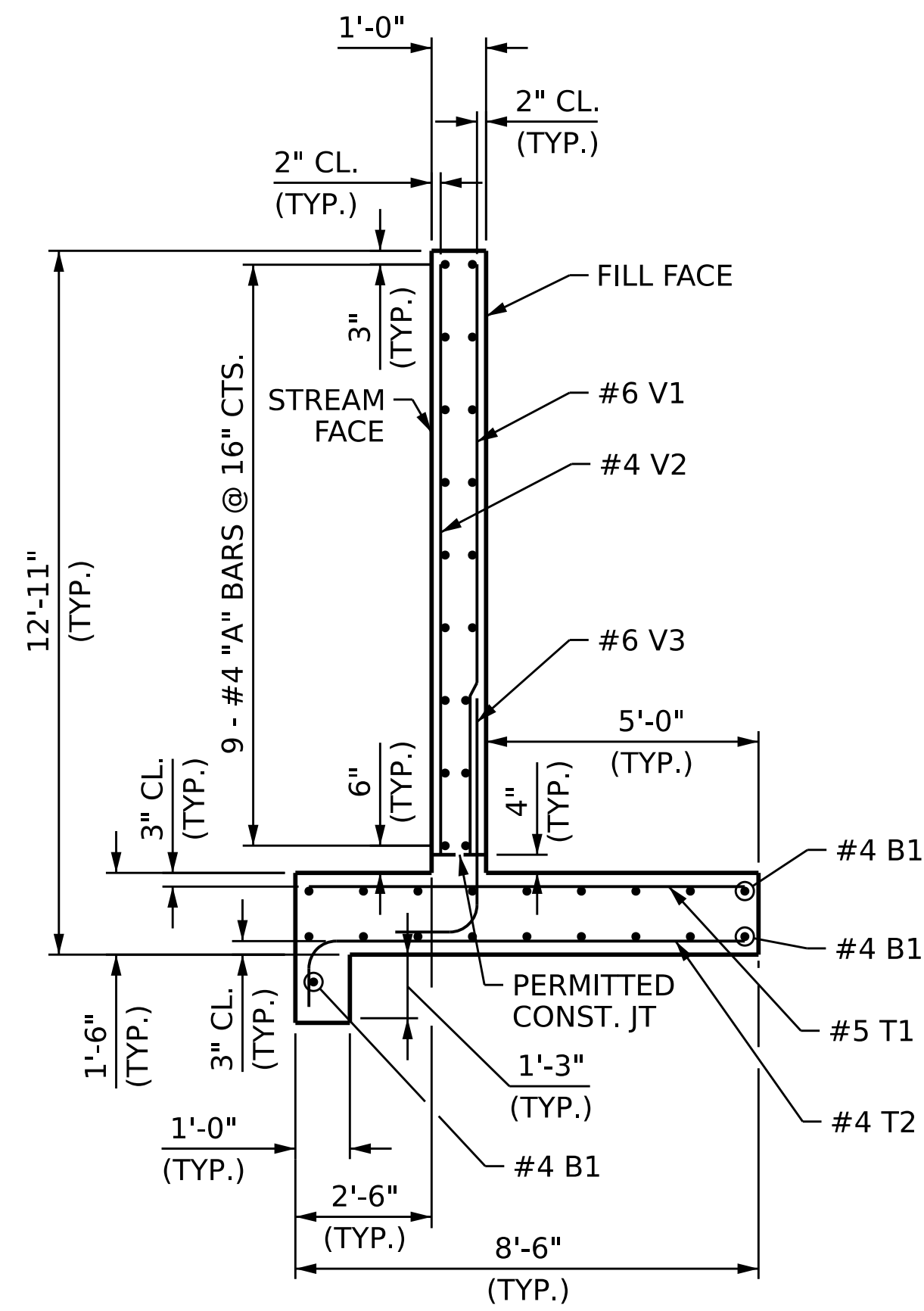
Designed by: *Kyle Smiach*
 11/21/2024

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	20-11
1			3			TOTAL SHEETS
2			4			12

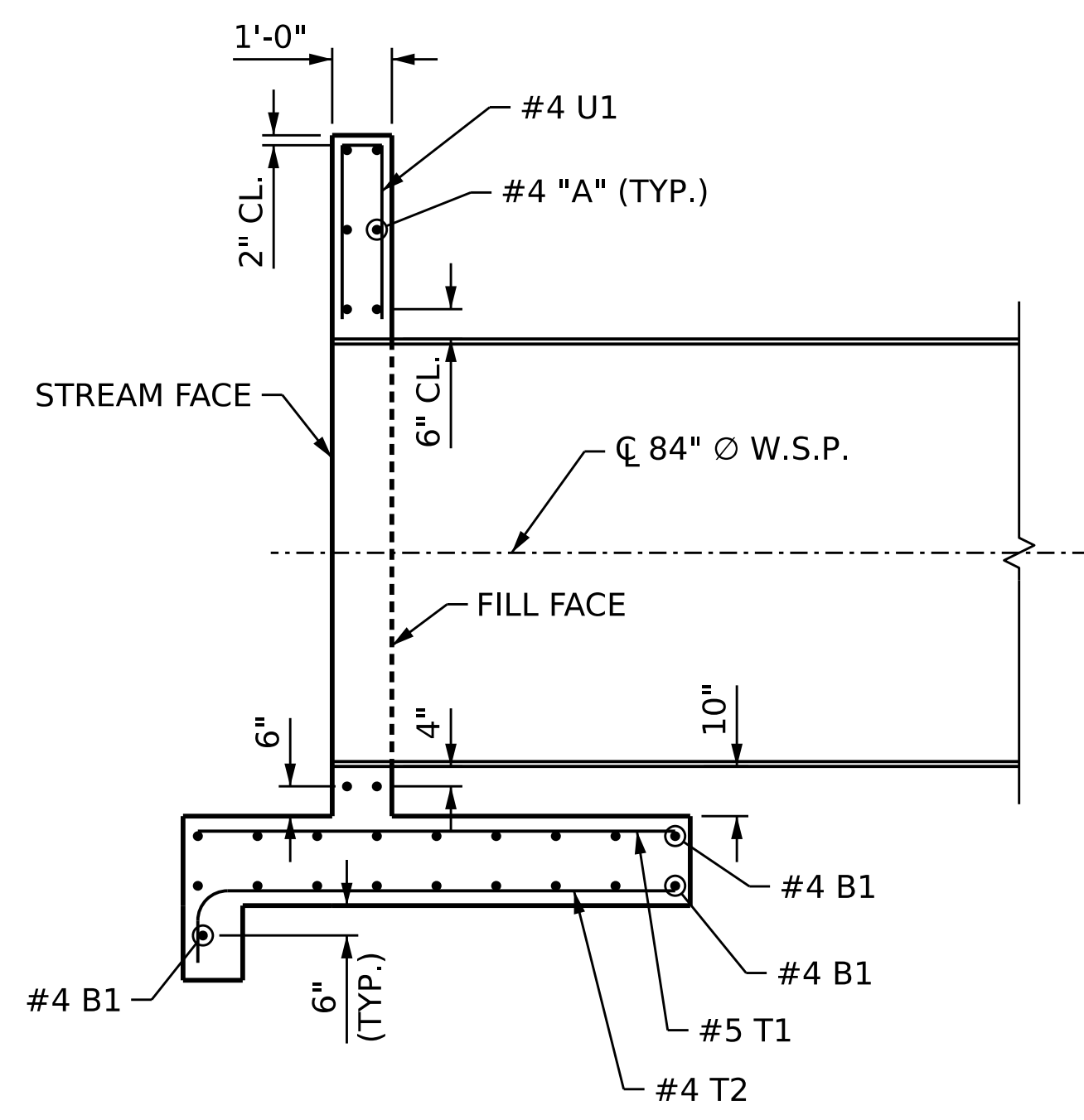
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



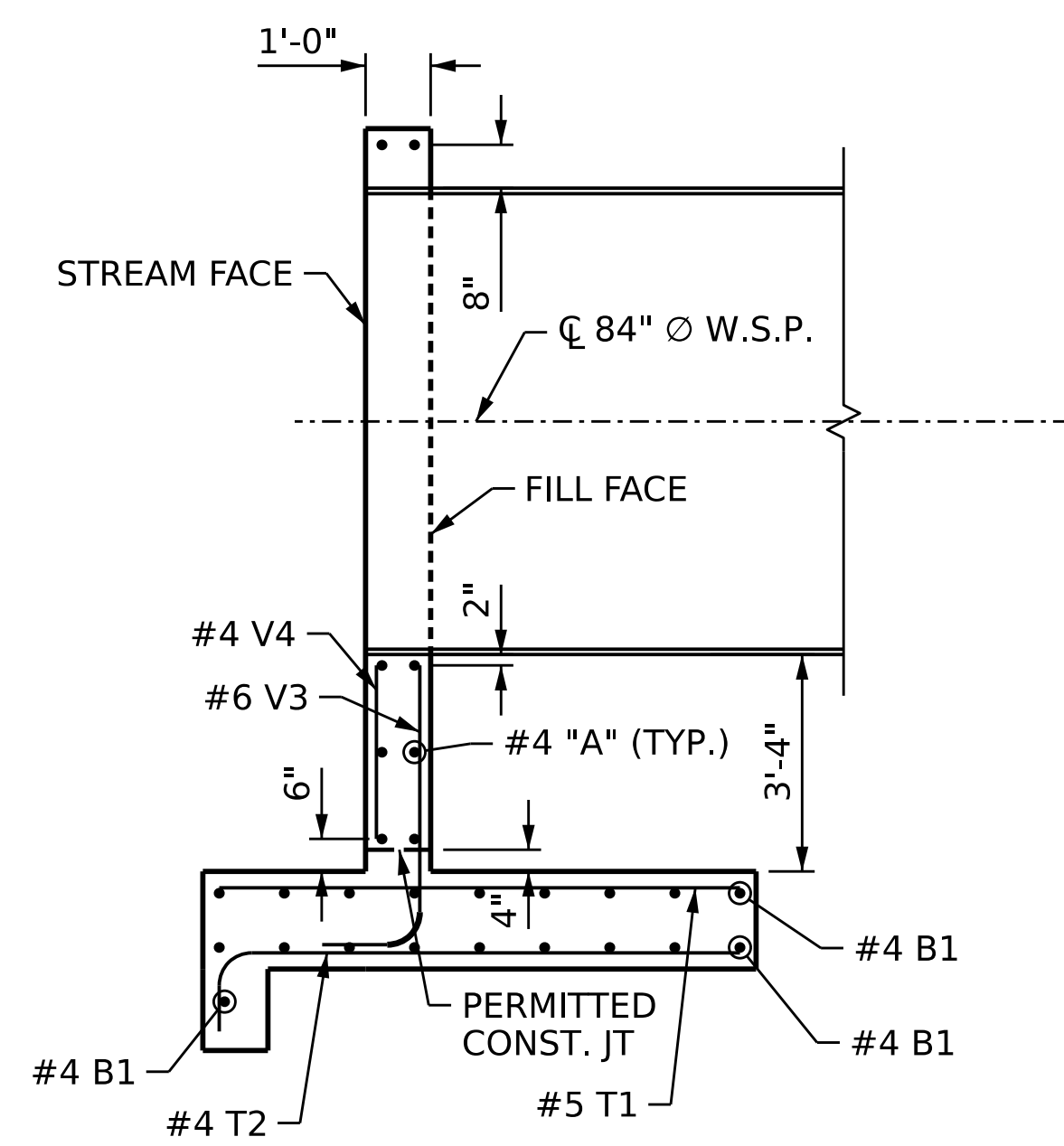
DRAWN BY : **C.E. HONIGMAN** DATE : **10/2024**
 CHECKED BY : **K.F. SMIACH** DATE : **10/2024**
 DESIGN ENGINEER OF RECORD: **K.F. SMIACH** DATE : **10/2024**



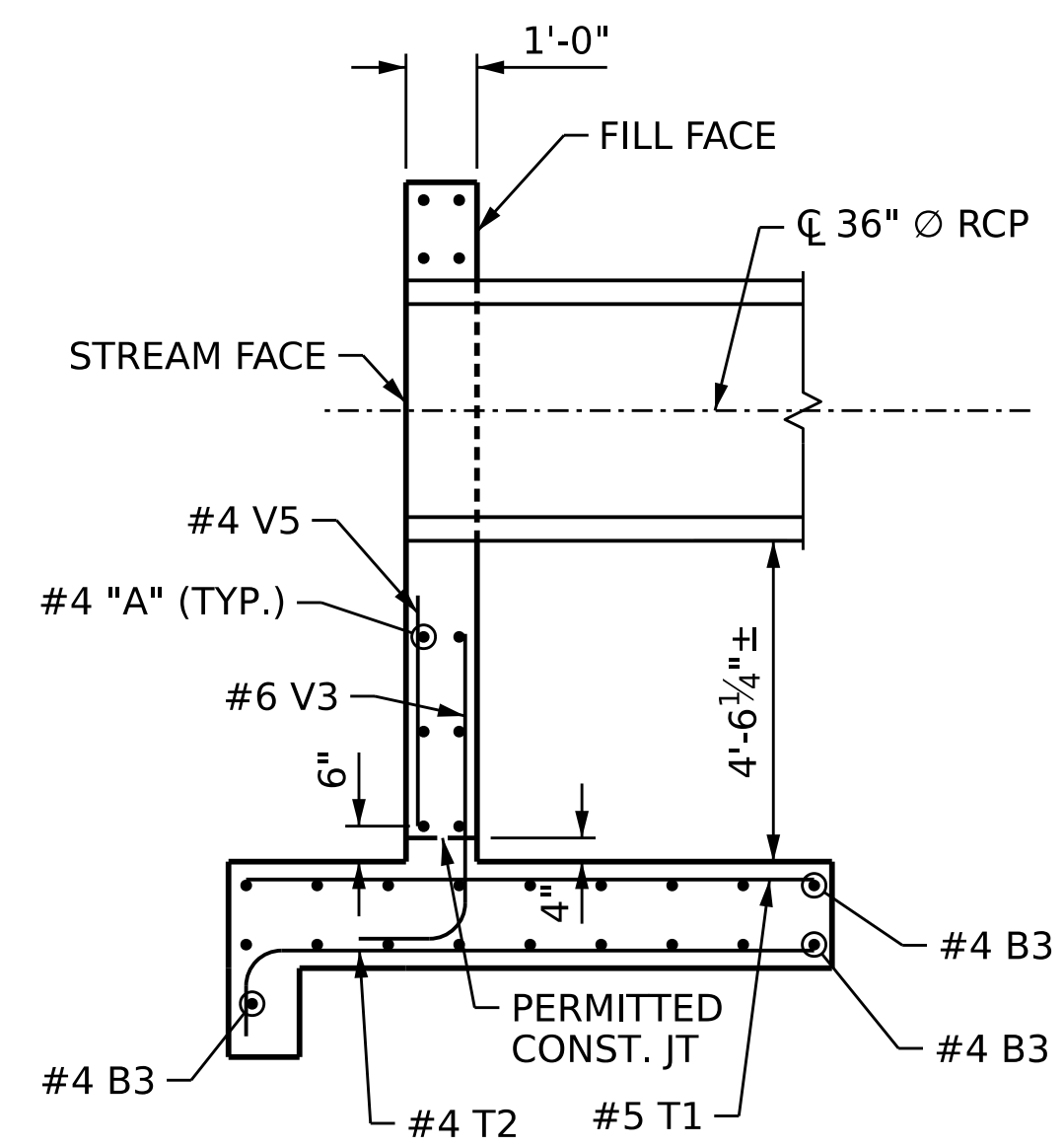
SECTION A-A



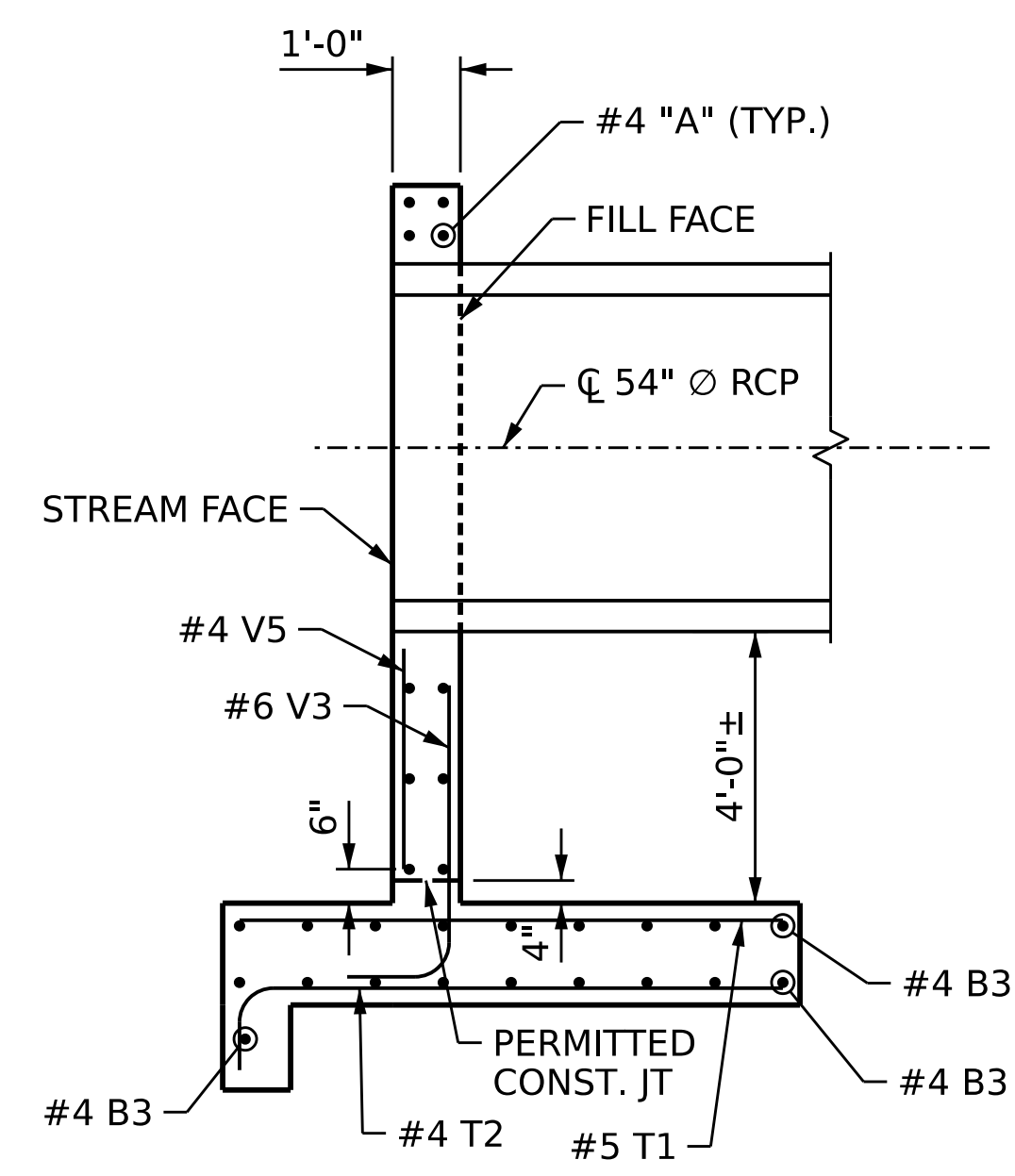
SECTION B-B



SECTION C-C



SECTION D-D



SECTION E-E

PROJECT NO. **U-4405**
CUMBERLAND COUNTY
 STATION: **221+53.00 -L-**
 SHEET 12 OF 12

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**BUCKHEAD CREEK
 TRIPLE 84" WELDED
 STEEL PIPE HEADWALLS**



DocuSigned by:
 Kyle Smiach
 11/21/2024

REVISIONS						SHEET NO. 2D-12
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 12
2			4			

DRAWN BY : **C.E. HONIGMAN** DATE : **10/2024**
 CHECKED BY : **K.F. SMIACH** DATE : **10/2024**
 DESIGN ENGINEER OF RECORD: **K.F. SMIACH** DATE : **10/2024**



12/06/07

COMPUTED BY: CJM DATE: 1/6/2023
CHECKED BY: BBP DATE: 10/10/2024

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. SHEET NO.
U-4405B 3B-1

ASPHALT PAVEMENT
REMOVAL SUMMARY

Table with 5 columns: SURVEY LINE, STATION, STATION, LOCATION LT/RT/CL, YD. Includes rows for survey lines -L- and -L- with stationing and a total row.

SUMMARY OF EARTHWORK

Large table with 7 columns: LINE, STATION, STATION, UNCL. EXCAV. (CY), EMB. (+%)(CY), BORROW (CY), WASTE (CY). Includes sub-totals for Phase I, Phase II, Phase III, and PROJECT TOTAL.

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

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

GUARDRAIL SUMMARY

Main table with columns: SURVEY LINE, BEG. STA., END STA., LOCATION, LENGTH (STRAIGHT, SHOP CURVED, DOUBLE FACED), WARRANT POINT (APPROACH END, TRAILING END), "N" DIST. FROM E.O.L., TOTAL SHOUL. WIDTH, FLARE LENGTH (APPROACH END, TRAILING END), W (APPROACH END, TRAILING END), ANCHORS (GREU TL-3, TYPE III, B-77, CAT-1), IMPACT ATTENUATOR TYPE 350 (EA, G, NG), SINGLE FACED GUARDRAIL, REMOVE EXISTING GUARDRAIL, REMOVE AND STOCKPILE EXISTING GUARDRAIL, REMARKS.

P2-NOV-2024 14-46
R:\P\2024\14-46\4405B\cdj_psh_3B.dgn

Z:\601

COMPUTED BY: VHB DATE: 11/20/2024
CHECKED BY: VHB DATE: 11/20/2024

PROJECT NO. U-4405B SHEET NO. 3D-1

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

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

Table with columns: LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC), R. C. PIPE CLASS IV, ENDWALLS, REINFORCED ENDWALLS, MASONRY, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, CONCRETE TRANSITIONAL SECTION, and REMARKS. Includes a SHEET TOTALS row at the bottom.

COMPUTED BY: VHB DATE: 11/20/2024
CHECKED BY: VHB DATE: 11/20/2024

PROJECT NO. SHEET NO.
U-4405B 3D-5

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

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

Table with columns for Line & Station, Offset, Structure Number, Invert Elevation, Minimum Required Slope, Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC), R. C. PIPE CLASS IV, Quantities for Drainage Structures, Frame, Grates, and Hood, Concrete Transitional Section, and Remarks. Includes a SHEET TOTALS row at the bottom.

Z:\600

COMPUTED BY: VHB DATE: 11/20/2024
CHECKED BY: VHB DATE: 11/20/2024

PROJECT NO. U-4405B SHEET NO. 3D-8

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

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

Table with columns: LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC), R. C. PIPE CLASS IV, ENDWALLS, REINFORCED ENDWALLS, MASONRY, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, CONCRETE TRANSITIONAL SECTION, and REMARKS. Includes a SHEET TOTALS row at the bottom.

Z:\600

COMPUTED BY: VHB DATE: 11/20/2024
CHECKED BY: VHB DATE: 11/20/2024

PROJECT NO. U-4405B SHEET NO. 3D-10

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

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

Table with columns: LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC), R. C. PIPE CLASS IV, ENDWALLS, REINFORCED ENDWALLS, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, CONCRETE TRANSITIONAL SECTION, and REMARKS. Includes a SHEET TOTALS row at the bottom.

Z11295

COMPUTED BY: VHB DATE: 12/13/2024
CHECKED BY: VHB DATE: 12/13/2024

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO. SHEET NO.
U-4405B 3D-14

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 54 INCHES & OVER)

Table with columns: LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC), R. C. PIPE CLASS III, R. C. PIPE CLASS IV, 84" Host Pipe Grouting, 72" Pipe Rehabilitation CIPP De-watering (EA), 72" Pipe Rehabilitation CIPP Pre-Installation Inspection (LF), 72" Pipe Rehabilitation CIPP Liner (LF), 60" WELDED STEEL PIPE 0.875" THICK, GRADE B IN SOIL, 60" WELDED STEEL PIPE 0.875" THICK, GRADE B NOT IN SOIL, 72" WELDED STEEL PIPE 1" THICK, GRADE B IN SOIL, 72" WELDED STEEL PIPE 1" THICK, GRADE B NOT IN SOIL, 84" WELDED STEEL PIPE 1" THICK, GRADE B IN SOIL, 84" WELDED STEEL PIPE 1" THICK, GRADE B NOT IN SOIL, ENDWALLS STD. 840.01 OR STD. 840.02 (UNLESS NOTED OTHERWISE), REINFORCED ENDWALLS, MASONRY DRAINAGE STRUCTURE, QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)), FRAME, GRATES, AND HOOD (STD. 840.03), GRATE TYPE (E, F, G), CONCRETE TRANSITIONAL SECTION (D.I. STD. 852.04 OR STD. 852.06, C.B. STD. 852.05), OPEN THROAT C.B. STD. 840.04 OR STD. 840.05, CONCRETE BRIDGE APPROACH D.I. STD. 840.13, D.I. STD. 840.14 OR STD. 840.15, D.I. FRAME AND GRATES STD. 840.16, MODIFIED CONC. FLUME, PREFORMED SCOUR HOLE (PER EACH), ENERGY DISSIPATION BASIN, FLOWABLE FILL, CONCRETE COLLARS CL. "B" STD. 840.72, CONCRETE AND BRICK PIPE PLUG STD. 840.71, PIPE REMOVAL, ABBREVIATIONS (C.A.A., C.B., C.S., D.I., G.D.I., H.D.P.E., J.B., M.H., N.S., P.V.C., R.C., T.B.D.I., T.B.J.B., W.S.), and REMARKS.

SHEET TOTALS: 52, 284, 600, 344, 110, 2, 260, 260, 140, 140, 62, 62, 312, 312, 269,600, 30,503, 5, 3, 6, 1, 21,6352
PROJECT TOTALS: 52, 284, 600, 344, 110, 2, 260, 260, 140, 140, 62, 62, 312, 312, 269,600, 30,503, 5, 3, 6, 1, 21,6352

COMPUTED BY: Thein Tun Zan DATE: 10-24-2024
 CHECKED BY: Jinyoung Park DATE: 10-24-2024

PROJECT NO.	SHEET NO.
39049.1.FR3 (U-4405B)	3G-1

(9-17-24)

**STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS**

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
CONTINGENCY				SD	200
				TOTAL LF:	200

*UD = Underdrain
 *BD = Blind Drain
 *SD = Subsurface Drain

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

LINE	Station	Station	Aggregate Type* ASU(1/2)/ AST	Aggregate Thickness INCHES [8" for ASU(2)]	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Subgrade Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
-L-	105+75	107+25	ASU (1)	12	50	100	150		
-L-	146+25	153+25	ASU (1)	12	800	1600	2400		
CONTINGENCY			ASU	12	100	200	300		
TOTAL CY/TONS/SY:					950	1900**	2850**	0	0

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

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

12/06/07

COMPUTED BY: CLR DATE: 01/06/23
CHECKED BY: CJM DATE: 01/09/23

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. SHEET NO.
U-4405B 3P-1

PARCEL INDEX

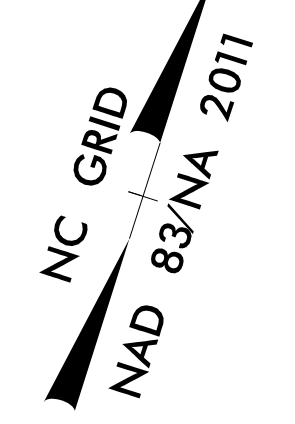
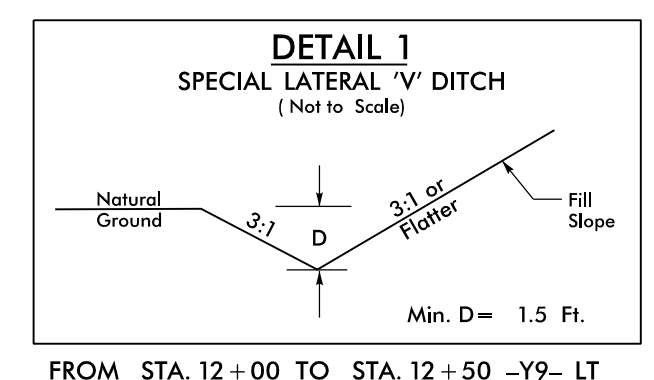
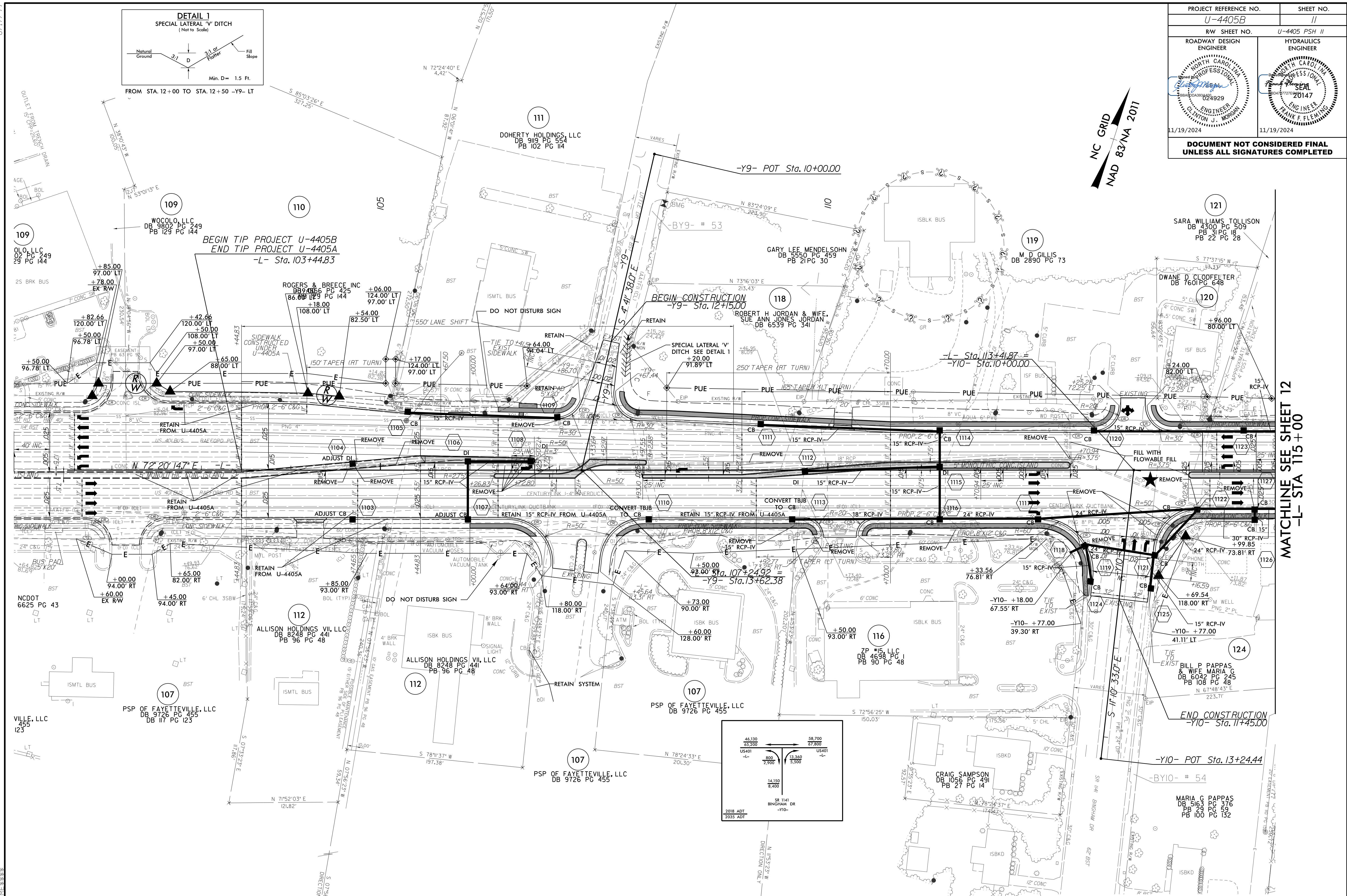
PARCEL NO.	SHEET NO.	PROPERTY OWNER NAME
107	10 & 11	PSP OF FAYETTEVILLE, LLC
109	10 & 11	WOCOLO, LLC
110	11	ROGERS & BREECE INC
111	11	DOHERTY HOLDINGS, LLC
112	11	ALLISON HOLDINGS VII, LLC
116	11	ZP #15, LLC
118	11	ROBERT H JORDAN & WIFE, SUE ANN JONES JORDAN
119	11	M D GILLIS
120	11	DWANE D CLODFELTER
121	11 & 12	SARA WILLIAMS TOLLISON AND JOHN ELWOOD WILLIAMS
124	11 & 12	BILL P PAPPAS & WIFE MARIA G
125	12	R & T INVESTMENTS
126	12	RAYMOND A BASS III & WIFE, LAUREN F. BASS
127	12	CSI PARTNERS, LLC
128	12	B O G, LLC
129	12 & 13	TIME WARNER CABLE SOUTHEAST, LLC
132	12	HAMANN INVESTMENTS, LLC
133	12 & 13	BRUCE K ALLEN
135	13	YONG JIN YU AND WIFE, SUNNY PYON YU
136	13	SKIBO CROSSING, LLC
137	13	CITY OF FAYETTEVILLE
138	13	JALARAM BAPA ENTERPRISES, LLC
139	13	EDWARD C SCHANTZ AND WIFE, RAYMONDE M. SCHANTZ
140	13	JOSEPH E MOLGORA & WIFE
141	13 & 14	BRYANNA COMPANY
142	13	AMERICAN FLAG-RAEFORD ROAD
143	13 & 14	AMERICAN FLAG-RAEFORD ROAD
144	14	TARHEEL TACO, LLC
153	14	LEWIS CHAPEL MISSIONARY
154	14	OLAND B LITTLE
156	14	WAFFLE HOUSE INC
157	14	SCHULTZ RENTAL, LLC
158	14	D-J's LEASING CORP
163	14	LEWIS CHAPEL MISSIONARY
164	14	WILLIAM D SHERMAN JR
165	14	HEAVERD DOBBS OXENDINE
166	14	RAY JOHNSON
167	14 & 15	WILLIAM D SHERMAN, JR
168	15	RICHARD R ALLEN, JR
169	15	O'REILLY AUTOMOTIVE, INC
171	15	LEWIS CHAPEL MISSIONARY
175	15	CLYDE CULBRETH HEIRS
176	15	LEWIS CHAPEL MISSIONARY
177	15	CAROL OWEN PHILLIPS
179	15	CLARICE EDGE
180	15	LAMONIER BRYANT & WIFE, WILLIE JEAN BRYANT
181	15	JOAN ALLEN JOHNSON
182	15	WORD OF DELIVERANCE TEMPLE
183	15	HARVEY SCHULTZ
184	15	ROGER R COMPTON & WIFE, VANNA S. COMPTON
185	15 & 16	M W AUTO, LLC
186	15	TAE SUN KIM AND WIFE, SARAH J. KIM
187	15 & 16	MARVIN WILLIAM SMITH, JR AND WIFE, T. SHIRLEY SMITH
189	16	LILLIAN SPEARS DARBY
190	16	KENNETH C DECKER
191	16	POULOS FAMILY LIMITED
192	16	JOE B. RAYNOR, JR. ESTATE
193	16 & 17	DPGP INVESTMENTS, LLC
194	17	PRICE/FISHER FAMILY PROPERTIES, LLC
195	16	WESLEY C. POWERS AND LAURA POWERS VOORIS
196	16	JOHN SAMUEL ALEXANDER TRUSTEE
197	16	CAROL OWEN PHILLIPS
198	16	JOHN P TAYLOR & WIFE
198A	16	UNKNOWN

PARCEL INDEX

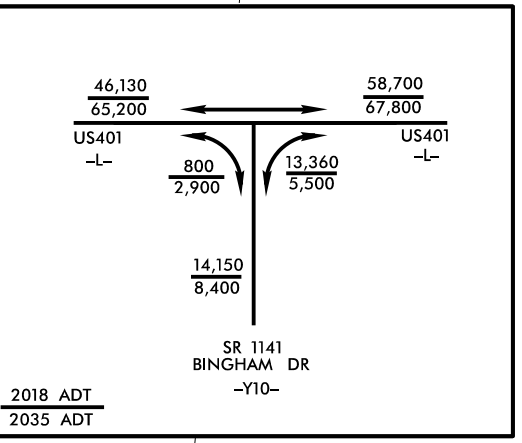
PARCEL NO.	SHEET NO.	PROPERTY OWNER NAME
199	16 & 17	ELMWOOD HOLDINGS, LLC
20A	17	WILSON F YARBOROUGH, JR TRUSTEE
21A	17	PEARL W FAIRCLOTH, ET AL
22A	17	L'I THRIFT FOOD MARTS INC
23A	17	PAUL INVESTMENTS, LLC
25A	17	SCP 2007-C27-078, LLC
25AZ	17	MARY JOHNSON, ET AL
27A	17 & 18	CIRCLE K STORES, INC.
27B	17 & 18	ALDI (INC), LLC
28A	17 & 18	JANICE BILLINGS
201	18	4807 RAEFORD ROAD, LLC
202	18	ANDERSON RAEFORD REAL PROPERTY, LLC
203	18	ANDERSON RAEFORD WF, LLC
204	18 & 19	GOLDEN OF RAEFORD, LLC
205	18	TANDEM INVESTMENTS, LLC
205A	18	WILLIAM HAWLEY
206	18	PATRECE PROPERTIES INC #658
207	18	TRADE LAND COMPANY, LLC
208	18	NLP III, LLC
209	18	DOMINIC MARANGI
218	20	ALDERWOODS, INC.
220	20	RREF II BB-NC, LLC
221	20	IRELAND CROSSING, INC
223	20	IRELAND CROSSING, INC
224	20	IRELAND CROSSING, INC
225	20	IRELAND CROSSING, INC
226	20	JOHN M TEW & WIFE SHIRLEY
227	20	KENT A VAN BELOIS & WIFE
228	20	NCP FAYETTEVILLE, LLC
229	20	4104 RAEFORD ROAD, LLC
232	20	UNKNOWN

09-JAN-2007 10:08 AM
D:\R\14405B_P\14405B_P.dwg - Parcel Index.dgn
\$\$\$\$\$USERNAME\$\$\$\$\$

PROJECT REFERENCE NO. U-4405B	SHEET NO. 11
RW SHEET NO. U-4405 PSH 11	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
11/19/2024	11/19/2024
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



MATCHLINE SEE SHEET 12
-L- STA 115+00



**NOTE: BUS PADS WILL BE PAID FOR AS SIDEWALK
SEE SHEET 36 FOR -L- PROFILE
SEE SHEET 47 FOR -Y9- & -Y10- PROFILE**

PROP CONC SIDEWALK

14-OCT-2024 17:15
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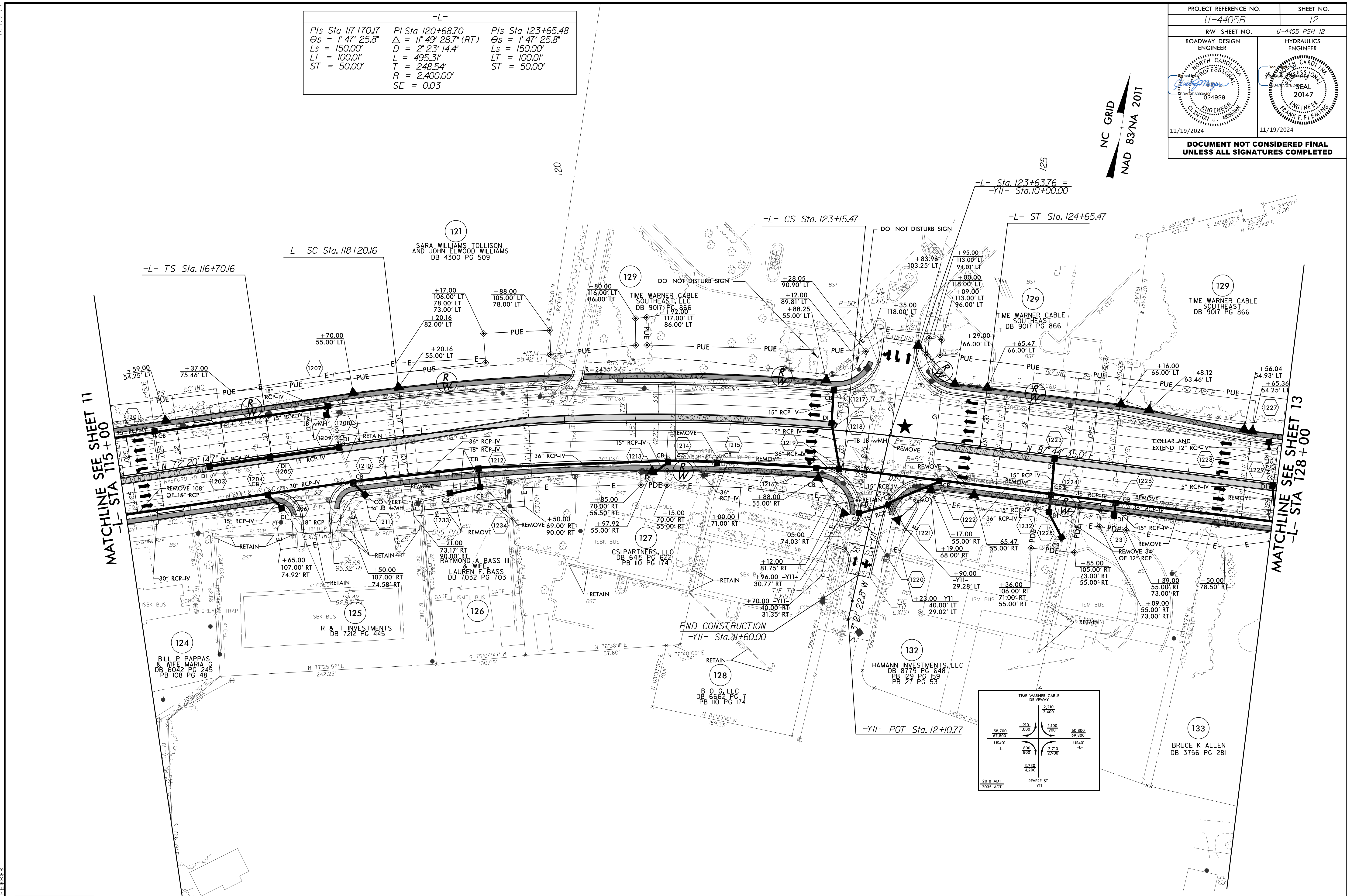
8.17.2024

14-OCT-2024 17:21
R:\Roadwork\N\4405B_rdy_psh_12.dgn
3:38:38 PM

-L-		
Pls Sta 117+70.17	Pls Sta 120+68.70	Pls Sta 123+65.48
$\Delta s = 1' 47" 25.8"$	$\Delta = 1' 49" 28.7" (RT)$	$\Delta s = 1' 47" 25.8"$
$Ls = 150.00'$	$D = 2' 23" 14.4"$	$Ls = 150.00'$
$LT = 100.01'$	$L = 495.31'$	$LT = 100.01'$
$ST = 50.00'$	$T = 248.54'$	$ST = 50.00'$
	$R = 2,400.00'$	
	$SE = 0.03$	

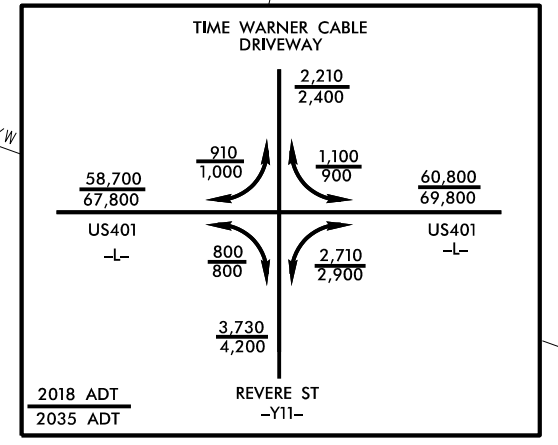
PROJECT REFERENCE NO. U-4405B	SHEET NO. 12
RW SHEET NO. U-4405 PSH 12	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER
11/19/2024	11/19/2024
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

NC GRID
NAD 83/NA 2011



MATCHLINE SEE SHEET 11
-L- STA 115+00

MATCHLINE SEE SHEET 13
-L- STA 128+00



★ PROPOSED SIGNAL

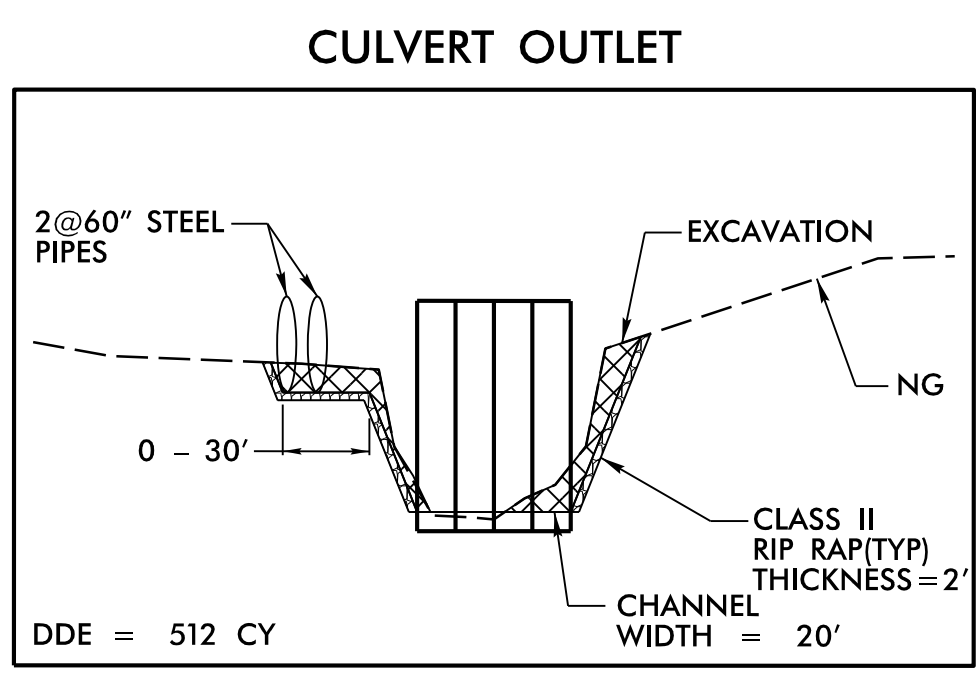
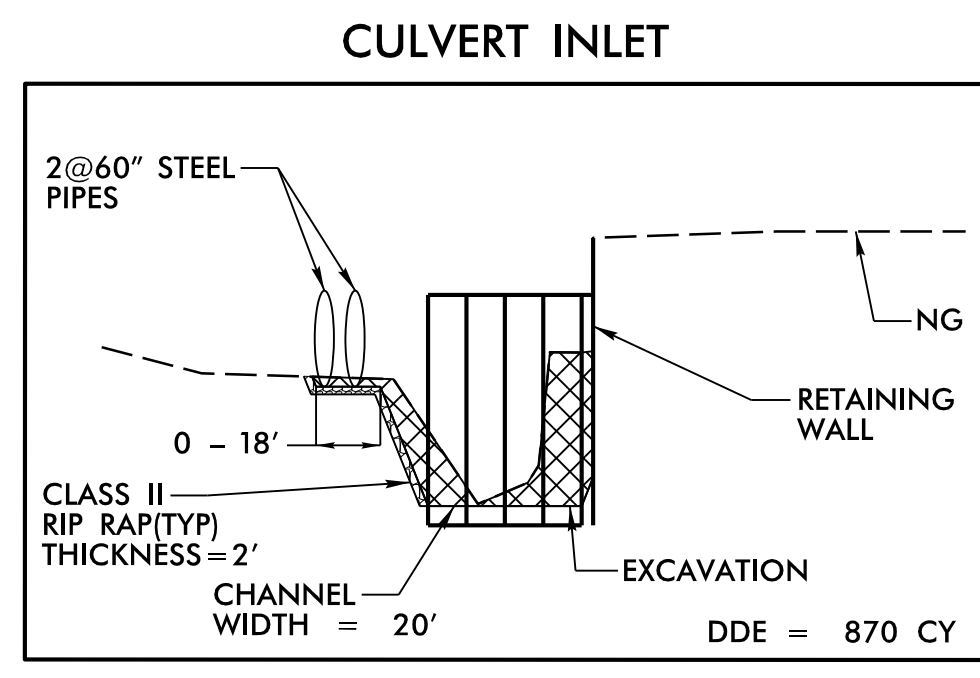
▬ PROP CONC SIDEWALK

NOTE: BUS PADS WILL BE PAID FOR AS SIDEWALK
SEE SHEET 36 & 37 FOR -L- PROFILE
SEE SHEET 47 FOR -YII- PROFILE

8.17.7.99

PROJECT REFERENCE NO. U-4405B	SHEET NO. 13
RW SHEET NO. U-4405 PSH 13	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	ENGINEER
11/19/2024	11/19/2024

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



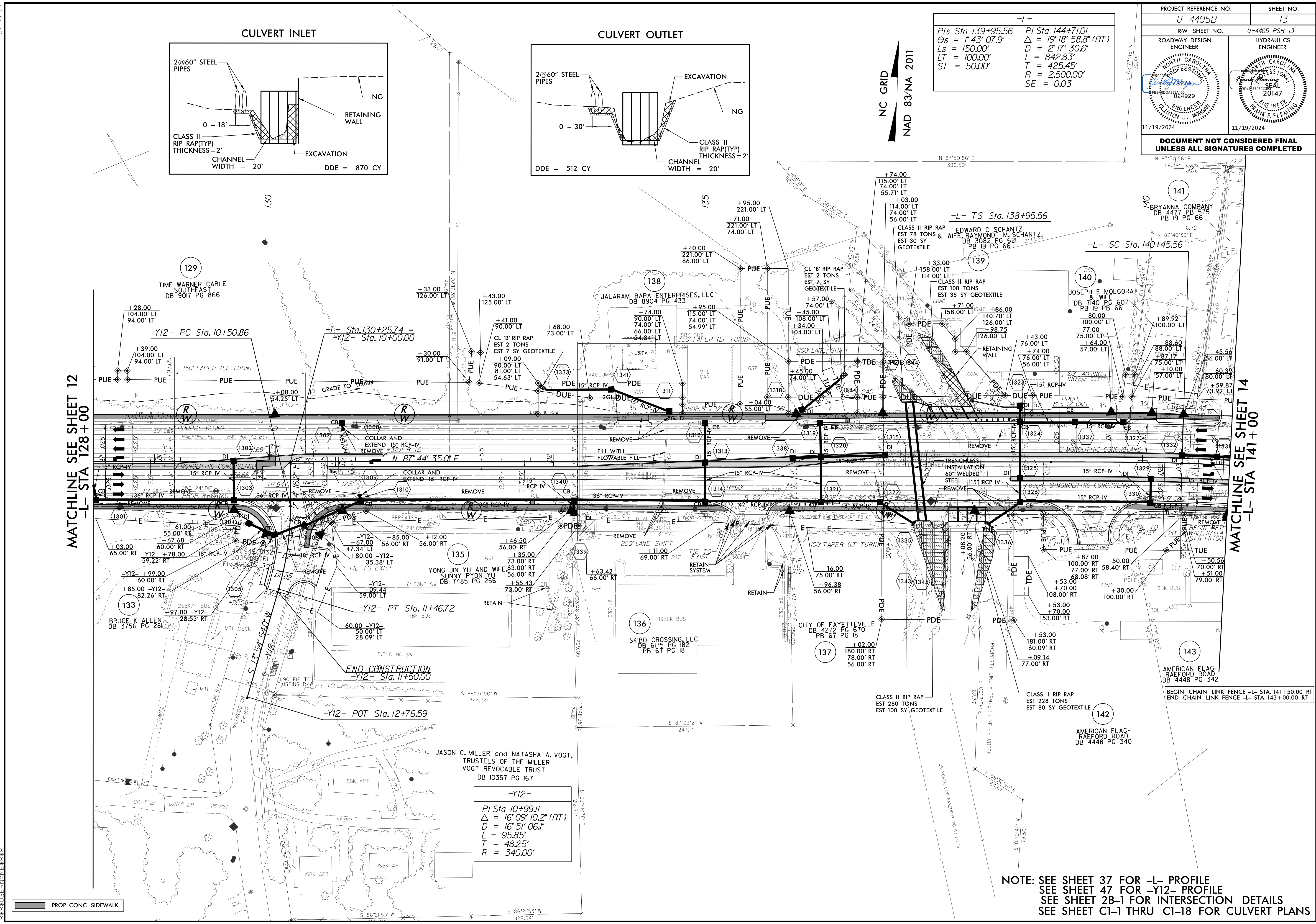
-L-
 Pts Sta 139+95.56
 $\Theta_s = 1' 43' 07.9"$
 $L_s = 150.00'$
 $LT = 100.00'$
 $ST = 50.00'$

Pi Sta 144+71.01
 $\Delta = 19' 18' 58.8" (RT)$
 $D = 2' 17' 30.6"$
 $L = 842.83'$
 $T = 425.45'$
 $R = 2,500.00'$
 $SE = 0.03$

NC GRID
NAD 83/NA 2011

MATCHLINE SEE SHEET 12
-L- STA 128+00

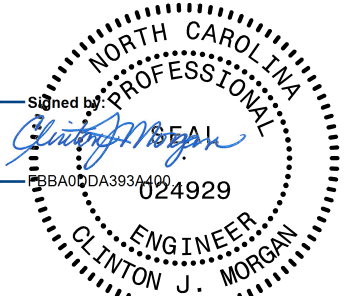

MATCHLINE SEE SHEET 14
-L- STA 141+00



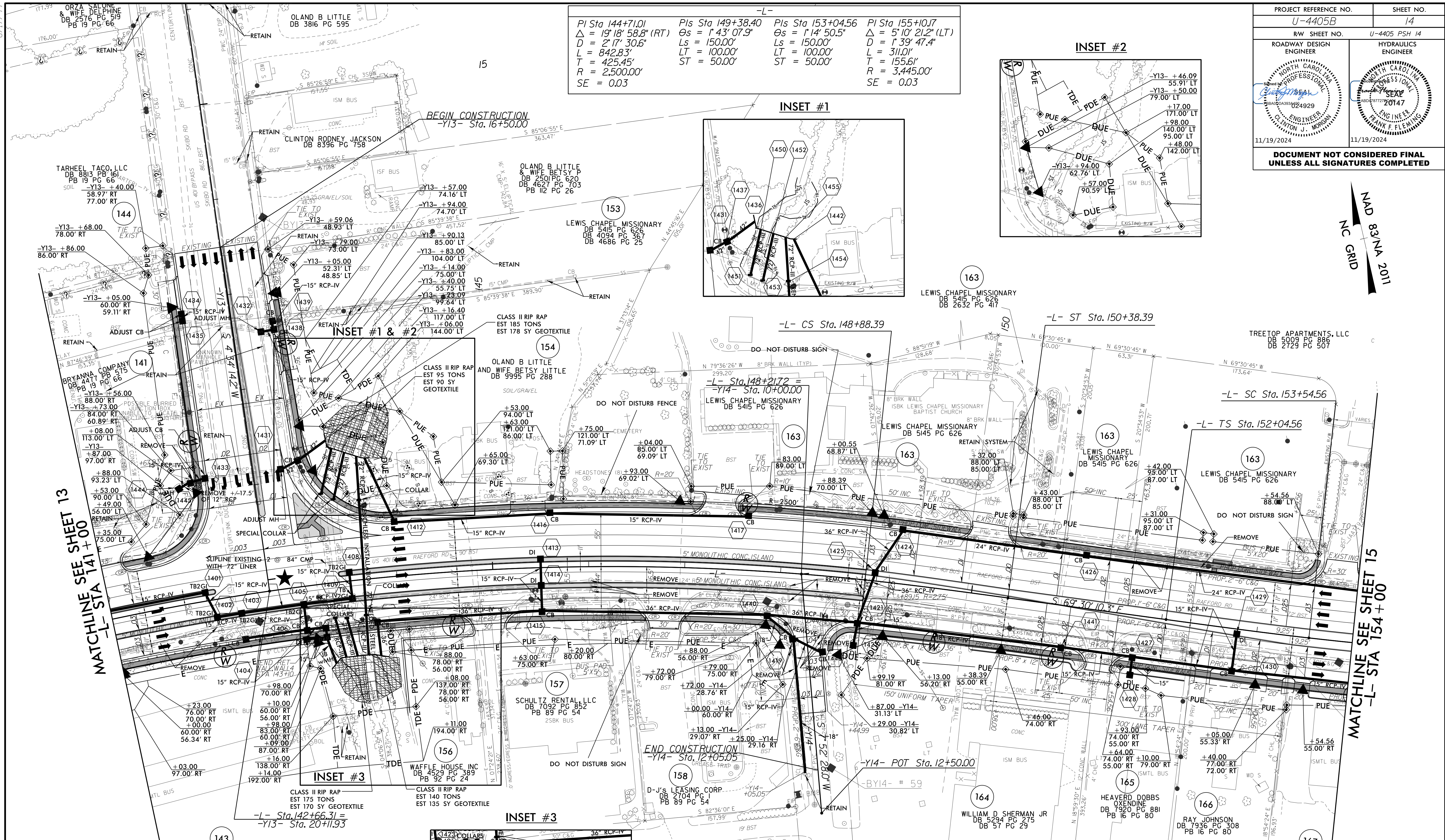
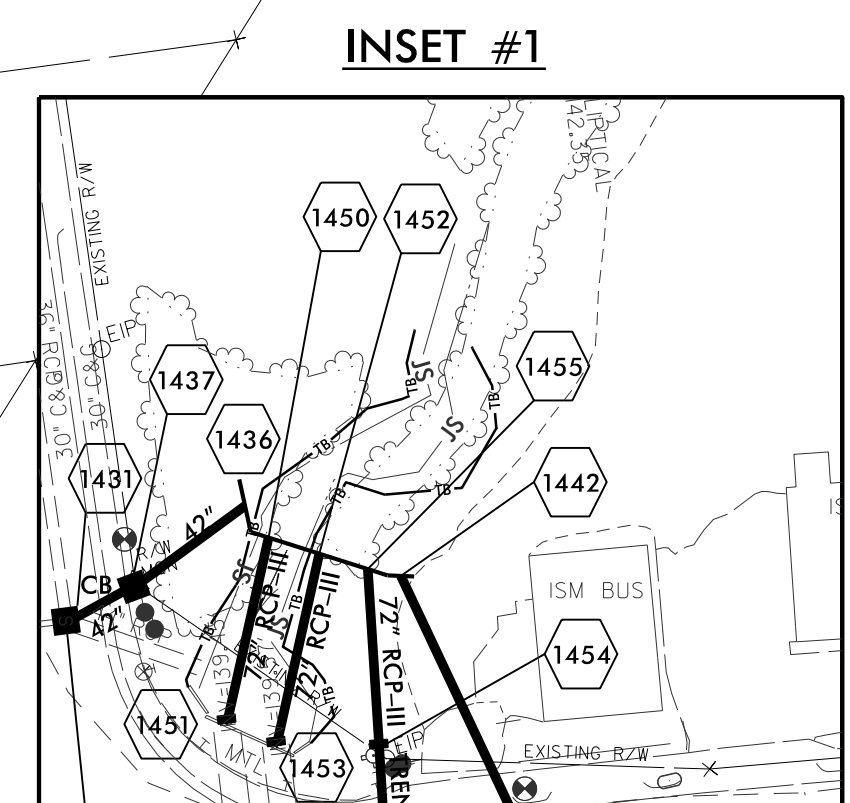
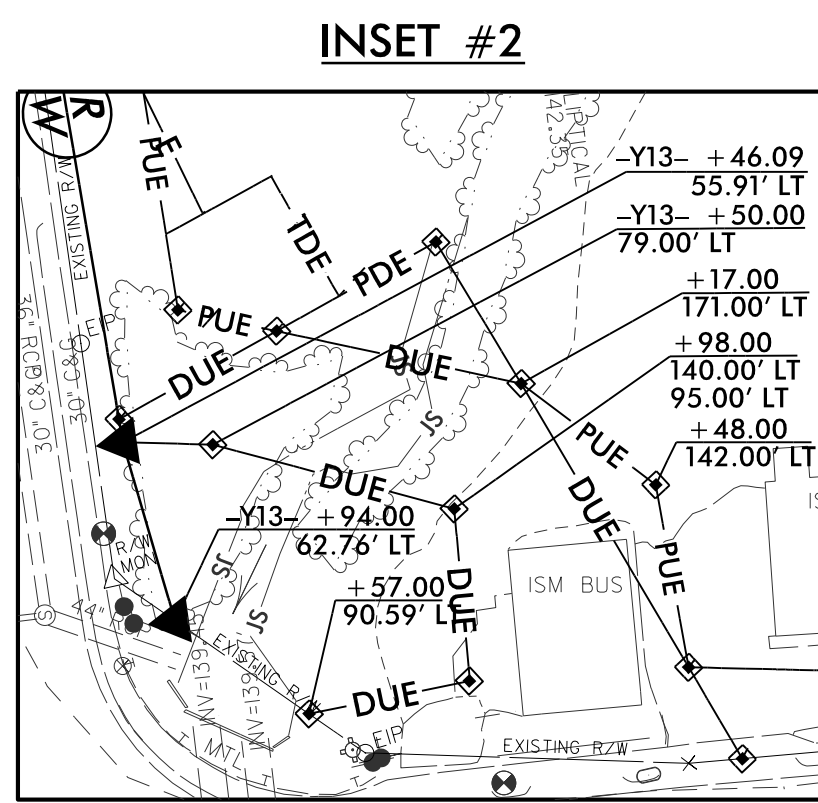
-Y12-
 Pi Sta 10+99.11
 $\Delta = 16' 09' 10.2" (RT)$
 $D = 16' 51' 06.1"$
 $L = 95.85'$
 $T = 48.25'$
 $R = 340.00'$

NOTE: SEE SHEET 37 FOR -L- PROFILE
 SEE SHEET 47 FOR -Y12- PROFILE
 SEE SHEET 2B-1 FOR INTERSECTION DETAILS
 SEE SHEET C1-1 THRU C1-18 FOR CULVERT PLANS

13 NOV 2024 14:33
 R:\Roadway\PSH\4405B_rdw\esh_13.dgn
 \$\$\$\$\$\$DISPERSED\$\$\$\$\$\$

PROJECT REFERENCE NO. U-4405B	SHEET NO. 14
RW SHEET NO. U-4405 PSH 14	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	ENGINEER
	
11/19/2024	11/19/2024
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

$PI\ Sta\ 144+71.01$ $\Delta = 19'18"58.8" (RT)$ $D = 2'17"30.6"$ $L = 842.83'$ $T = 425.45'$ $R = 2,500.00'$ $SE = 0.03$	$PIs\ Sta\ 149+38.40$ $\Theta s = 1'43"07.9"$ $Ls = 150.00'$ $LT = 100.00'$ $ST = 50.00'$	$PIs\ Sta\ 153+04.56$ $\Theta s = 1'14"50.5"$ $Ls = 150.00'$ $LT = 100.00'$ $ST = 50.00'$	$PI\ Sta\ 155+10.17$ $\Delta = 5'10"21.2" (LT)$ $D = 1'39"47.4"$ $L = 311.01'$ $T = 155.61'$ $R = 3,445.00'$ $SE = 0.03$
---	---	---	--

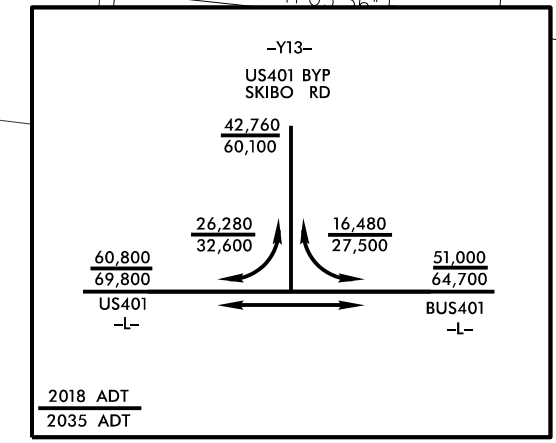
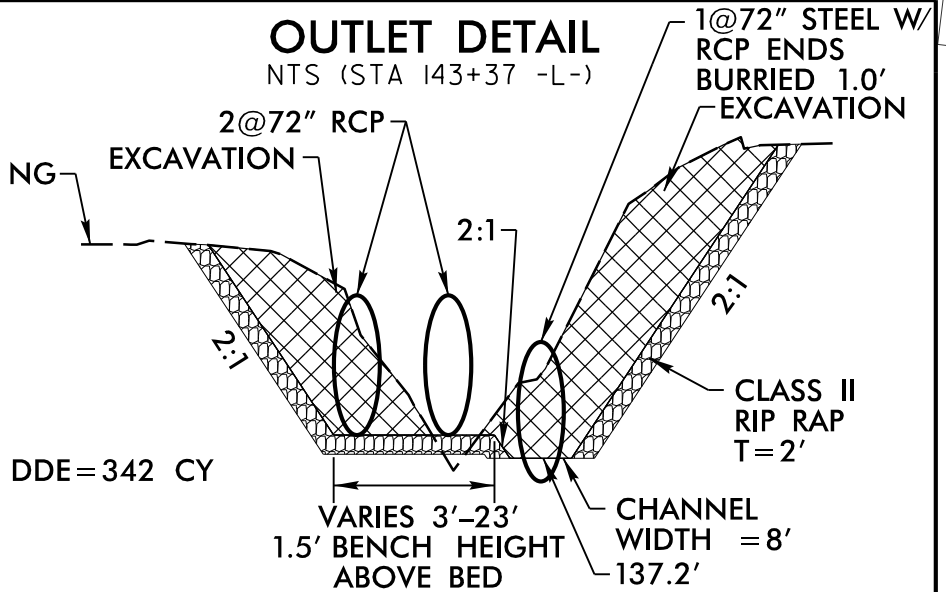
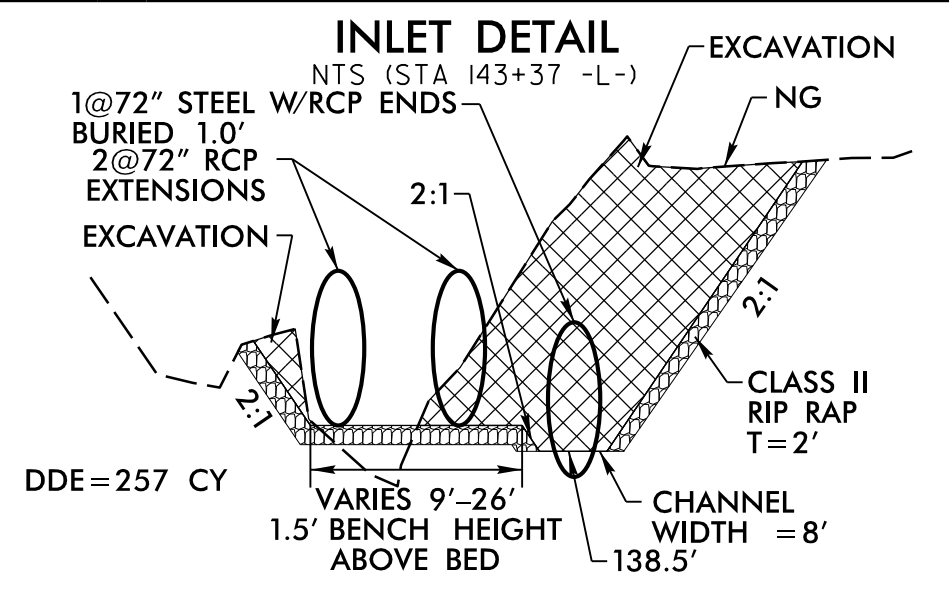
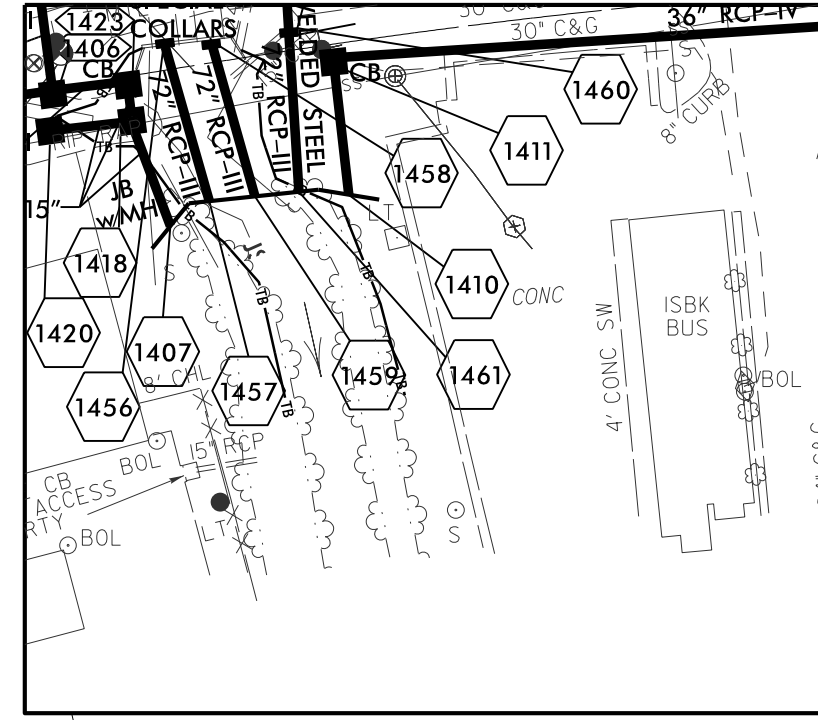


MATCHLINE SEE SHEET 13
-L- STA 141+00

MATCHLINE SEE SHEET 15
-L- STA 154+00

INSET #1 & #2

INSET #3



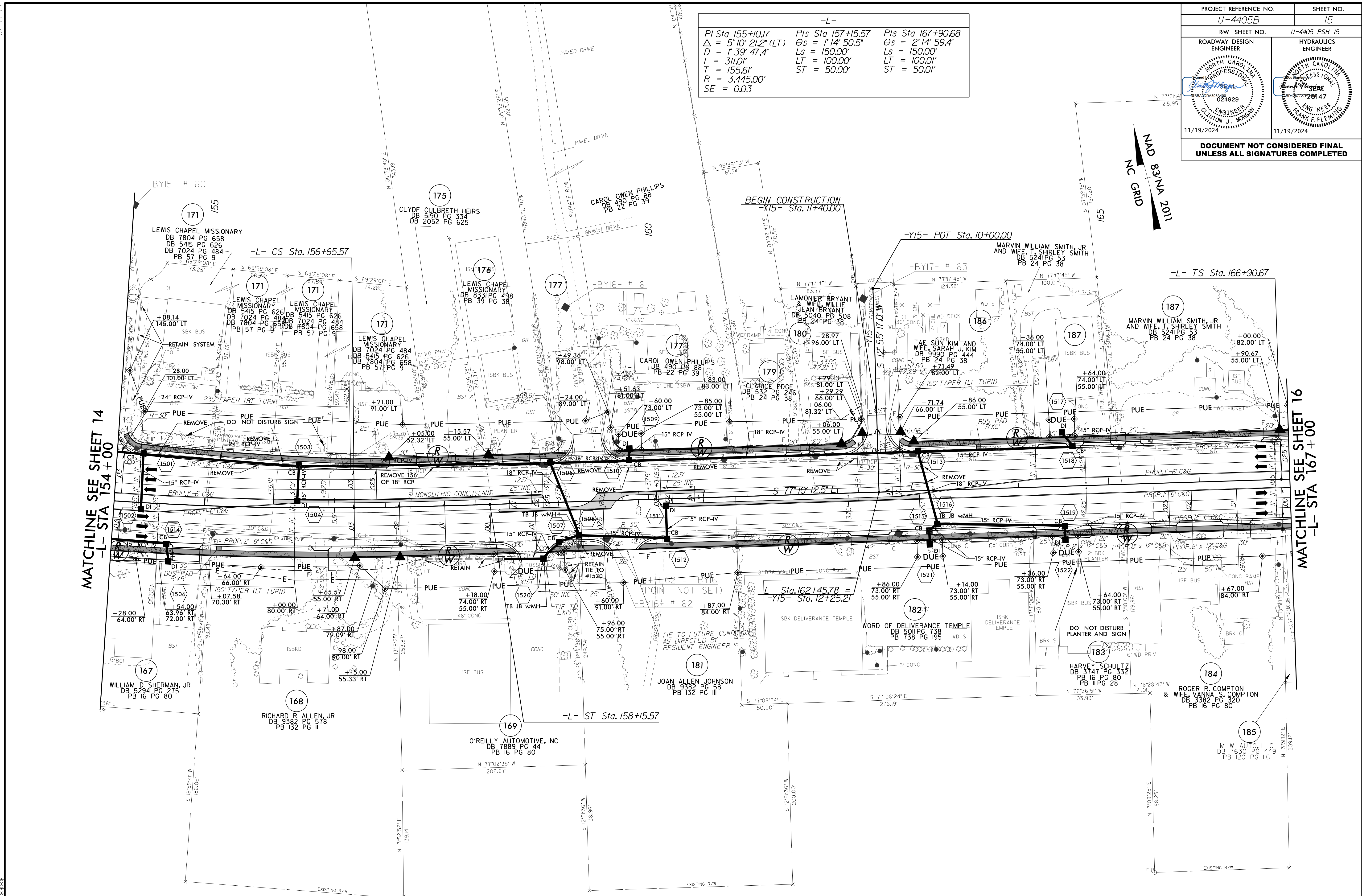
NOTE: SEE SHEET 37 & 38 FOR -L- PROFILE
SEE SHEET 47 FOR -Y13- & -Y14- PROFILE
SEE SHEET 2B-1 FOR INTERSECTION DETAILS
BUS PADS WILL BE PAID FOR AS SIDEWALK

★ PROPOSED SIGNAL
PROP CONC SIDEWALK

13-NOV-2024 14:33
USER:NAME

PROJECT REFERENCE NO. U-4405B	SHEET NO. 15
RW SHEET NO. U-4405 PSH 15	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

-L-		
PI Sta 155+10.17	PIs Sta 157+15.57	PIs Sta 167+90.68
$\Delta = 5'10" 21.2" (LT)$	$\Delta s = 1'14" 50.5"$	$\Delta s = 2'14" 59.4"$
$D = 1'39" 47.4"$	$Ls = 150.00'$	$Ls = 150.00'$
$L = 311.01'$	$LT = 100.00'$	$LT = 100.01'$
$T = 155.61'$	$ST = 50.00'$	$ST = 50.01'$
$R = 3,445.00'$		
$SE = 0.03$		



MATCHLINE SEE SHEET 14
-L- STA 154+00

MATCHLINE SEE SHEET 16
-L- STA 167+00

PROP CONC SIDEWALK

NOTE: SEE SHEET 38 FOR -L- PROFILE
SEE SHEET 48 FOR -Y15- PROFILE
SEE SHEET 2B-2 FOR INTERSECTION DETAILS
BUS PADS WILL BE PAID FOR AS SIDEWALK

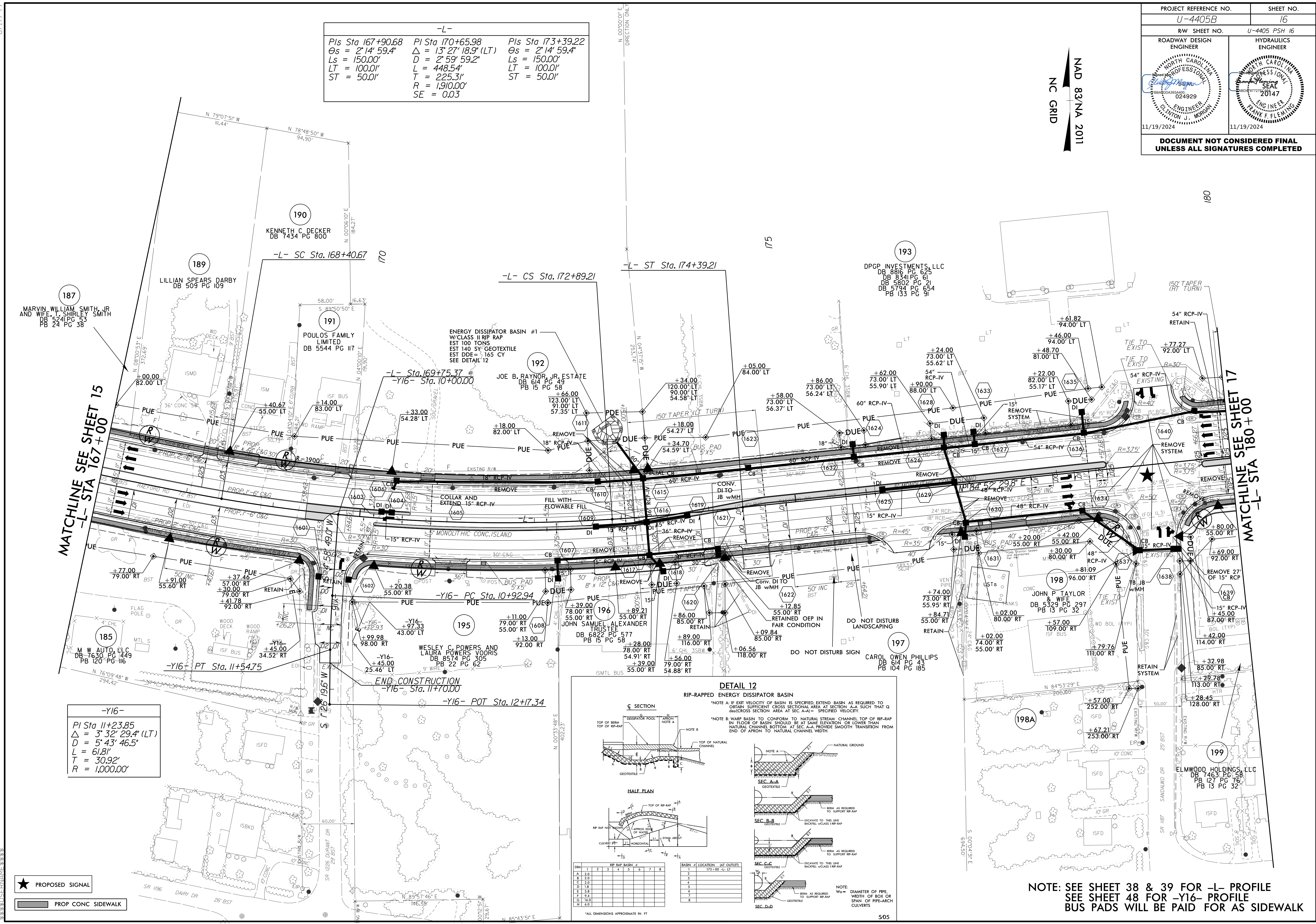
13-NOV-2024 14:34
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14405B_PSH_15.dgn

PROJECT REFERENCE NO. U-4405B	SHEET NO. 16
RDW SHEET NO. U-4405 PSH 16	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	ENGINEER
11/19/2024	11/19/2024
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

NAD 83/NA 2011
NC GRID

-L-

PIs Sta 167+90.68 θs = 2°14'59.4" Ls = 150.00' LT = 100.01' ST = 50.01'	PI Sta 170+65.98 Δ = 13°27'18.9" (LT) D = 2°59'59.2" L = 448.54' T = 225.31' R = 1,910.00' SE = 0.03	PIs Sta 173+39.22 θs = 2°14'59.4" Ls = 150.00' LT = 100.01' ST = 50.01'
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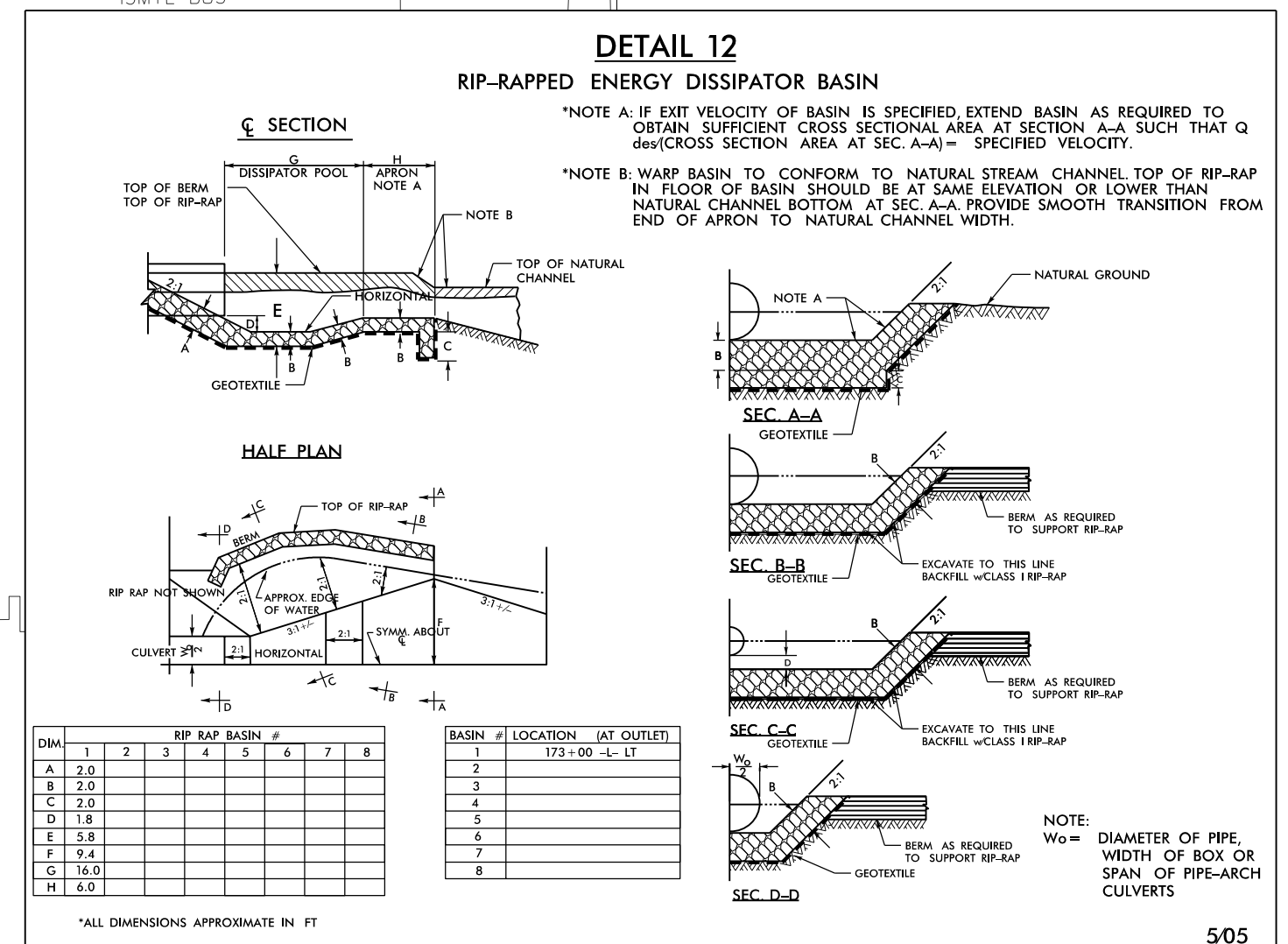


MATCHLINE SEE SHEET 15
-L- STA 167+00

MATCHLINE SEE SHEET 17
-L- STA 180+00

-Y16-

PI Sta 11+23.85 Δ = 3°32'29.4" (LT) D = 5°43'46.5" L = 61.81' T = 30.92' R = 1,000.00'



**NOTE: SEE SHEET 38 & 39 FOR -L- PROFILE
SEE SHEET 48 FOR -Y16- PROFILE
BUS PADS WILL BE PAID FOR AS SIDEWALK**

★ PROPOSED SIGNAL

▬ PROP CONC SIDEWALK

8.17.7.99
11/19/2024 15:31 R:\Roadwork\PSH\U4405B_rdw\ps_h.16.dgn