

09/08/19

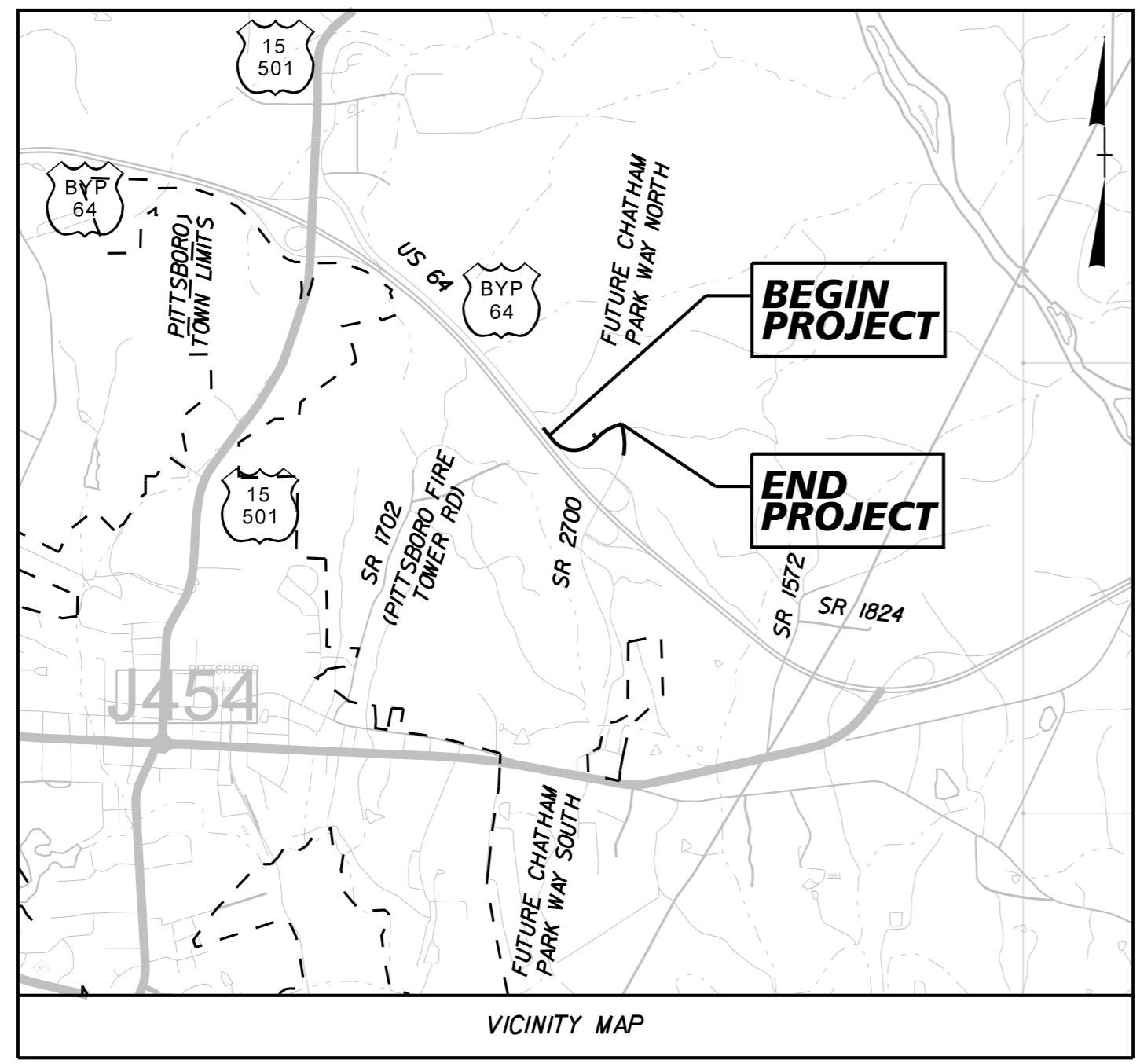
K:\RAL_Roadway\01036731 - R-5963D\Roadway\Proj\R-5963D_rdy_tshdgn

3/6/2024

TIP PROJECT: R-5963D

CONTRACT: C204922

SEE SHEET 1A FOR INDEX OF SHEETS
SEE SHEET 1B FOR CONVENTIONAL PLAN SHEET SYMBOLS



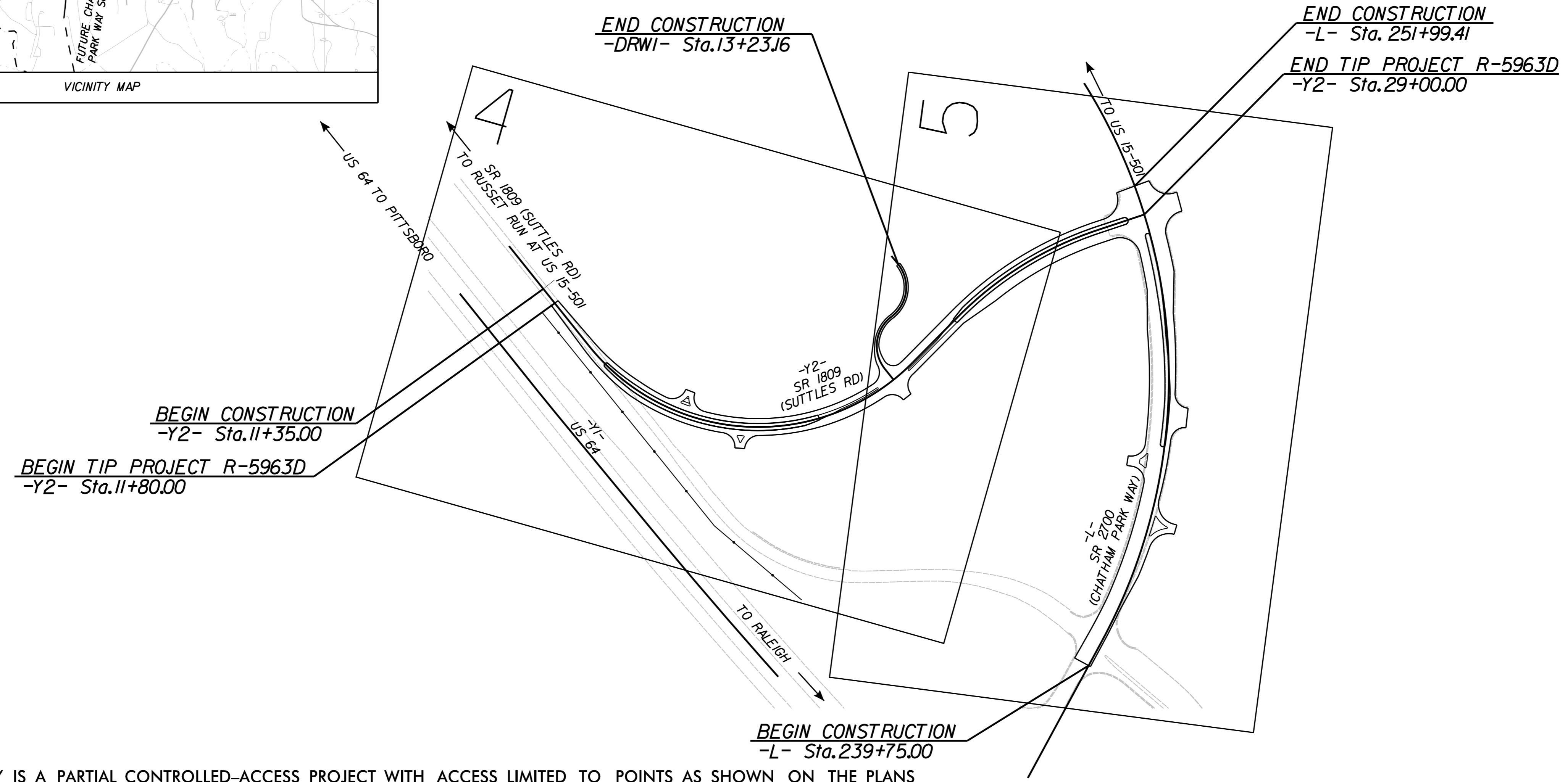
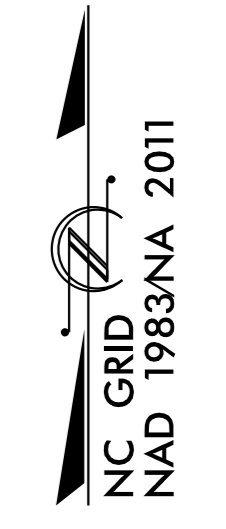
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CHATHAM COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5963D	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
48599.1.5		P.E.	
48599.2.9		RW	
48599.2.10		UTIL	
48599.3.5		CONST.	

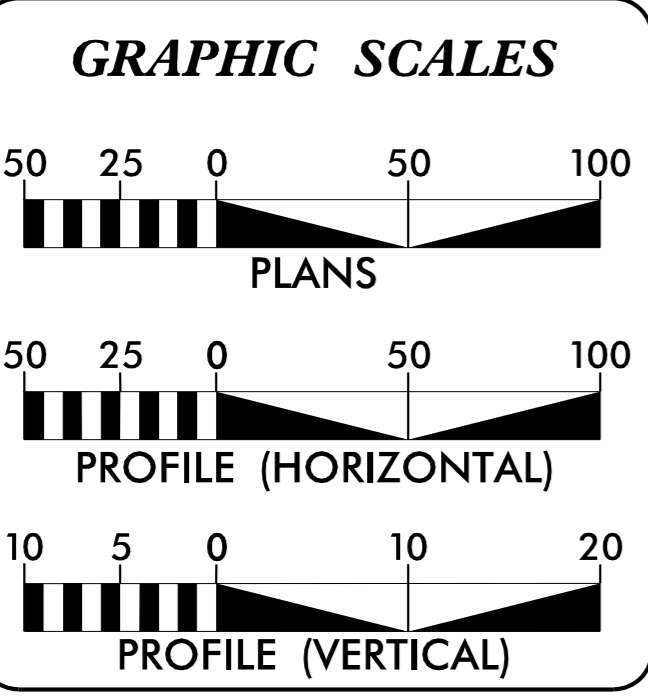
LOCATION: IMPROVEMENTS TO THE EXISTING SR 2700 (CHATHAM PARK WAY) AT US 64, AND REALIGNMENT OF SR 1089 (SUTTLES ROAD) TO A NEW INTERSECTION WITH SR 2700 (CHATHAM PARK WAY) IN PITTSBORO

TYPE OF WORK: GRADING, DRAINAGE, AND PAVING



CHATHAM PARK WAY IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH ACCESS LIMITED TO POINTS AS SHOWN ON THE PLANS

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



R-5963D DESIGN DATA

ADT 2025 =	2000
ADT 2045 =	5200
K =	8%
D =	55
T =	3%*
V =	40 MPH

* (TTST 1% + DUAL 2%)
FUNCTIONAL CLASSIFICATION:
LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-5963D	=	0.326 MILES
TOTAL LENGTH TIP PROJECT R-5963D	=	0.326 MILES

PLANS PREPARED FOR THE NCDOT BY:

2024 STANDARD SPECIFICATIONS

Kimley Horn

VANCE W. BLANTON, P.E.
PROJECT ENGINEER

TYLER G. SPRING, P.E.
PROJECT DESIGN ENGINEER

JEFFREY A. STRODER, P.E.
PROJECT MANAGER
NCDOT HIGHWAY DIVISION 8

RIGHT OF WAY DATE: JULY 28, 2023

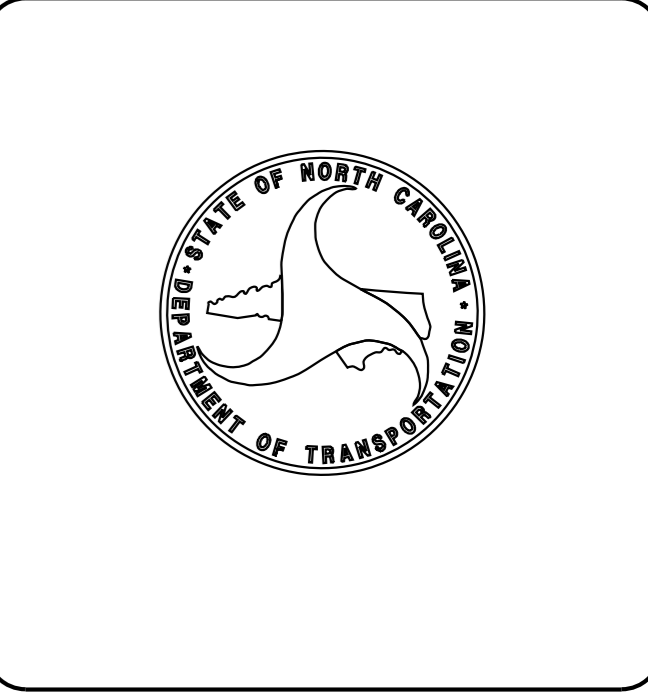
LETTING DATE: APRIL 16, 2024

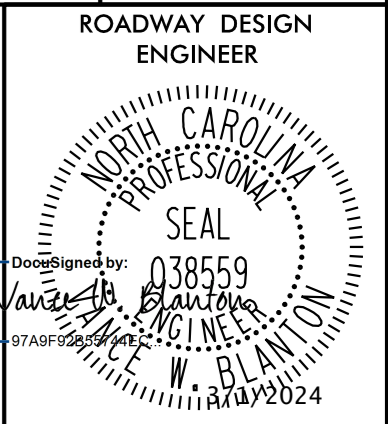
HYDRAULICS ENGINEER

DocuSigned by: David Hursey
48884F426784441...
SEAL 063647
P.E.

ROADWAY DESIGN ENGINEER

DocuSigned by: Vance W. Blanton
17A9F92B5744EC...
SEAL 038559
P.E.





GENERAL NOTES

R-5963D
CHATHAM COUNTY

INDEX OF SHEETS

SHEET NUMBER	SHEET
I	TITLE SHEET
IA	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF ROADWAY STANDARD DRAWINGS
IB	CONVENTIONAL SYMBOLS
2A-1 THRU 2A-2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND MISCELLANEOUS DETAILS
2C-1 THRU 2C-2	ROADWAY DETAILS
2D-1	DRAINAGE DETAILS
3B-1	ROADWAY SUMMARIES
3D-1 THRU 3D-2	DRAINAGE SUMMARIES
3G-1	GEOTECHNICAL SUMMARIES
3P-1	PARCEL INDEX SHEET
4 THRU 5	PLAN SHEETS
6 THRU 7	PROFILE SHEETS
RWO1 THRU RWO5	SURVEY CONTROL, EXISTING CENTERLINES, RIGHT OF WAY, EASEMENTS, AND PROPERTY TIES
TMP-1 THRU TMP-6	TRANSPORTATION MANAGEMENT PLANS
PMP-1 THRU PMP-3	PAVEMENT MARKING PLANS
EC-1 THRU EC-7	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-3	SIGNING PLANS
UC-1 THRU UC-8	UTILITY CONSTRUCTION PLANS
X-1	CROSS-SECTION INDEX
X-1A	CROSS-SECTION SUMMARY SHEET
X-2 THRU X-2I	CROSS-SECTIONS

GENERAL NOTES: 2024 SPECIFICATIONS
EFFECTIVE: 01-16-2024
REVISED:

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

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

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

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

BERM DITCHES:
BERM DITCHES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 240.01 AT LOCATIONS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

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

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

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

UTILITIES:
UTILITY OWNERS ON THIS PROJECT ARE
WATER - THE TOWN OF PITTSBORO
SEWER - THE TOWN OF PITTSBORO
POWER - DUKE ENERGY
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

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

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

EFF. 01-16-2024
REV.

2024 ROADWAY ENGLISH STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" HIGHWAY DESIGN BRANCH - N. C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N. C., DATED JANUARY, 2024 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD.NO. TITLE

DIVISION 2 - EARTHWORK

200.03 METHOD OF CLEARING - METHOD III
225.02 GUIDE FOR GRADING SUBGRADE - SECONDARY AND LOCAL
225.04 METHOD OF OBTAINING SUPERELEVATION - TWO LANE PAVEMENT
225.06 METHOD OF GRADING SIGHT DISTANCE AT INTERSECTIONS
240.01 GUIDE FOR BERM DITCH CONSTRUCTION

DIVISION 3 - PIPE CULVERTS

300.01 METHOD OF PIPE INSTALLATION

DIVISION 5 - SUBGRADE, BASES AND SHOULDERS

560.01 METHOD OF SHOULDER CONSTRUCTION - HIGH SIDE OF SUPERELEVATED CURVE - METHOD I

DIVISION 6 - ASPHALT BASES AND PAVEMENTS

654.01 PAVEMENT REPAIRS

DIVISION 8 - INCIDENTALS

806.01 CONCRETE RIGHT-OF-WAY MARKER
806.02 GRANITE RIGHT-OF-WAY MARKER
806.03 CONCRETE CONTOF OF ACCESS MARKER
815.02 SUBSURFACE DRAIN
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
840.24 FRAMES AND NARROW SLOT SAG GRATES
840.27 BRICK GRATED DROP INLET TYPE 'B' - 12" THRU 36" PIPE
840.31 CONCRETE JUNCTION BOX - 12" THRU 66" PIPE
840.32 BRICK JUNCTION BOX - 12" THRU 66" PIPE
840.35 TRAFFIC BEARING GRATED DROP INLET - FOR CAST IRON DOUBLE FRAME AND GRATES
840.37 STEEL GRATE AND FRAME
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
846.04 DROP INLET INSTALLATION IN SHOULDER BERM GUTTER
848.04 STREET TURNOUT
848.06 CURB RAMP
850.10 GUIDE FOR BERM DRAINAGE OUTLET - 15" AND 18" PIPE
852.01 CONCRETE ISLANDS
852.04 METHOD FOR PLACEMENT OF DROP INLETS IN GRASSED MEDIAN - USING 1'-6" CURB AND GUTTER
852.05 MEDIAN CURB FOR CATCH BASIN - FOR USE WITH 1'-6" CURB AND GUTTER
852.06 METHOD FOR PLACEMENT OF DROP INLETS IN CONCRETE ISLANDS
806.01 CONCRETE RIGHT-OF-WAY MARKER
806.02 GRANITE RIGHT-OF-WAY MARKER
866.02 WOVEN WIRE FENCE - WITH WOOD POST
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

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2/14/2024

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	□
Jurisdictional Stream	---JS---
Buffer Zone 1	---BZ 1---
Buffer Zone 2	---BZ 2---
Flow Arrow	←
Disappearing Stream	-----
Spring	○
Wetland	---MLB---
Proposed Lateral, Tail, Head Ditch	-----
False Sump	-----

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○
Switch	□
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY & PROJECT CONTROL:

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

ROADS AND RELATED FEATURES:

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

Woods Line	-----
Orchard	-----
Vineyard	-----

EXISTING STRUCTURES:

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

UTILITIES:

* SUE - Subsurface Utility Engineering	
LOS - Level of Service - A,B,C or D (Accuracy)	
POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊕
Power Line Tower	⊕
Power Transformer	⊕
U/G Power Cable Hand Hole	⊕
H-Frame Pole	●
U/G Power Line Test Hole (SUE - LOS A)*	⊕
U/G Power Line (SUE - LOS B)*	-----
U/G Power Line (SUE - LOS C)*	-----
U/G Power Line (SUE - LOS D)*	-----
TELEPHONE:	
Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊕
Telephone Pedestal	⊕
Telephone Cell Tower	⊕
U/G Telephone Cable Hand Hole	⊕
U/G Telephone Test Hole (SUE - LOS A)*	⊕
U/G Telephone Cable (SUE - LOS B)*	-----
U/G Telephone Cable (SUE - LOS C)*	-----
U/G Telephone Cable (SUE - LOS D)*	-----
U/G Telephone Conduit (SUE - LOS B)*	-----
U/G Telephone Conduit (SUE - LOS C)*	-----
U/G Telephone Conduit (SUE - LOS D)*	-----
U/G Fiber Optics Cable (SUE - LOS B)*	-----
U/G Fiber Optics Cable (SUE - LOS C)*	-----
U/G Fiber Optics Cable (SUE - LOS D)*	-----

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

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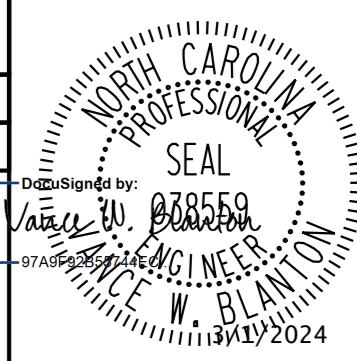
5/14/2024

Kimley Horn

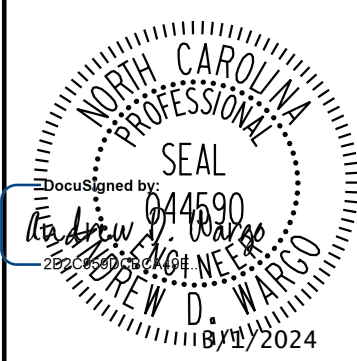
421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NC 27601

RIGHT-OF-WAY REV.
CONST. REV.

PROJECT REFERENCE NO. R-5963D	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

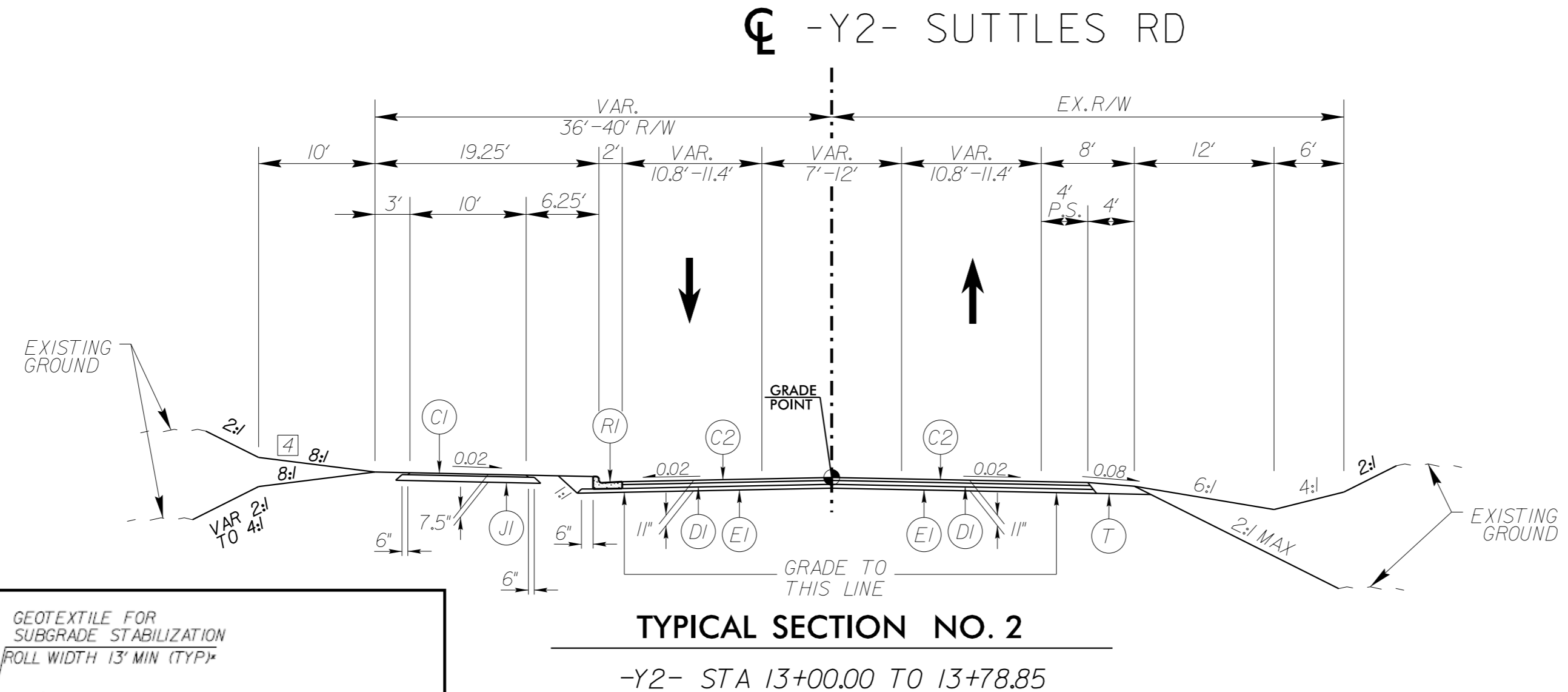
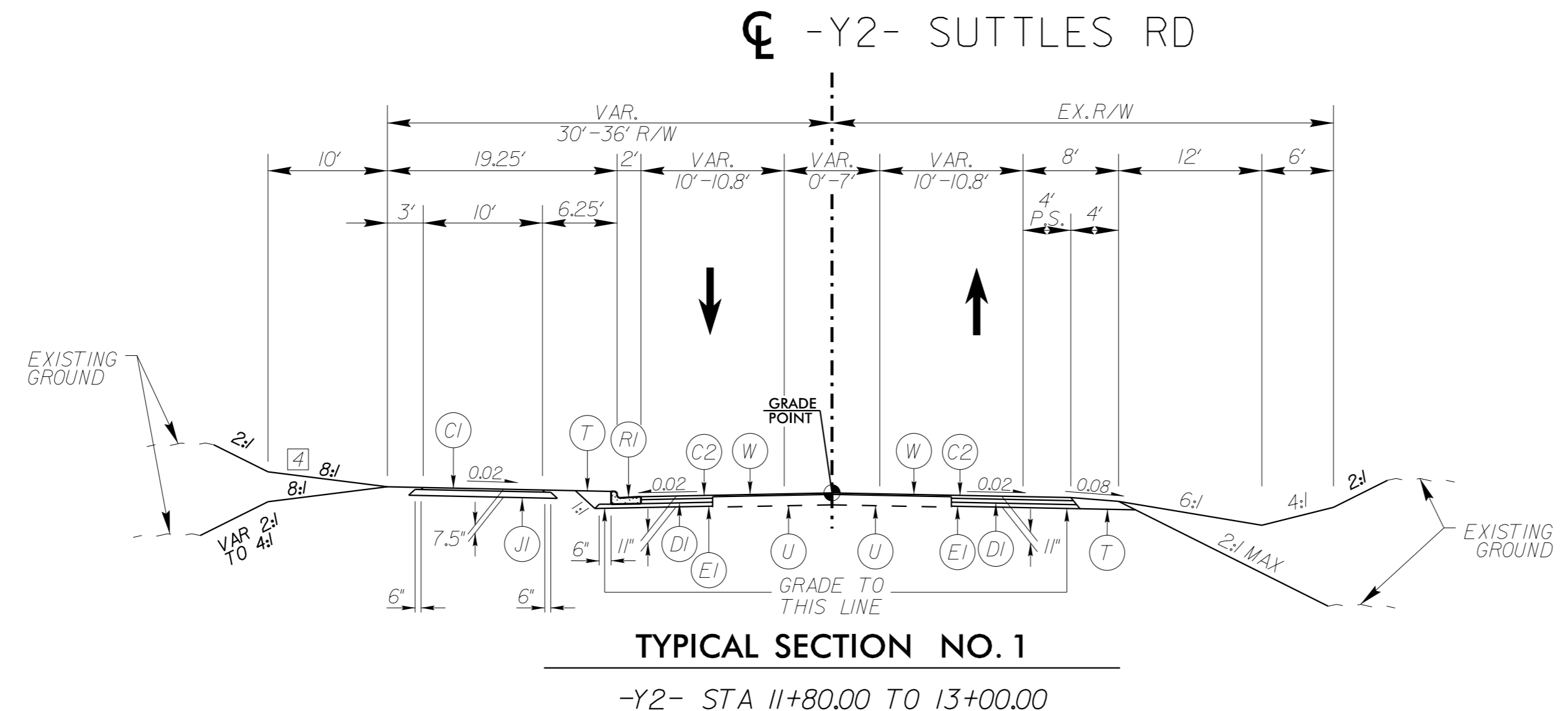


DESIGNED BY:
W. BLANTON
044590
10/18/2024

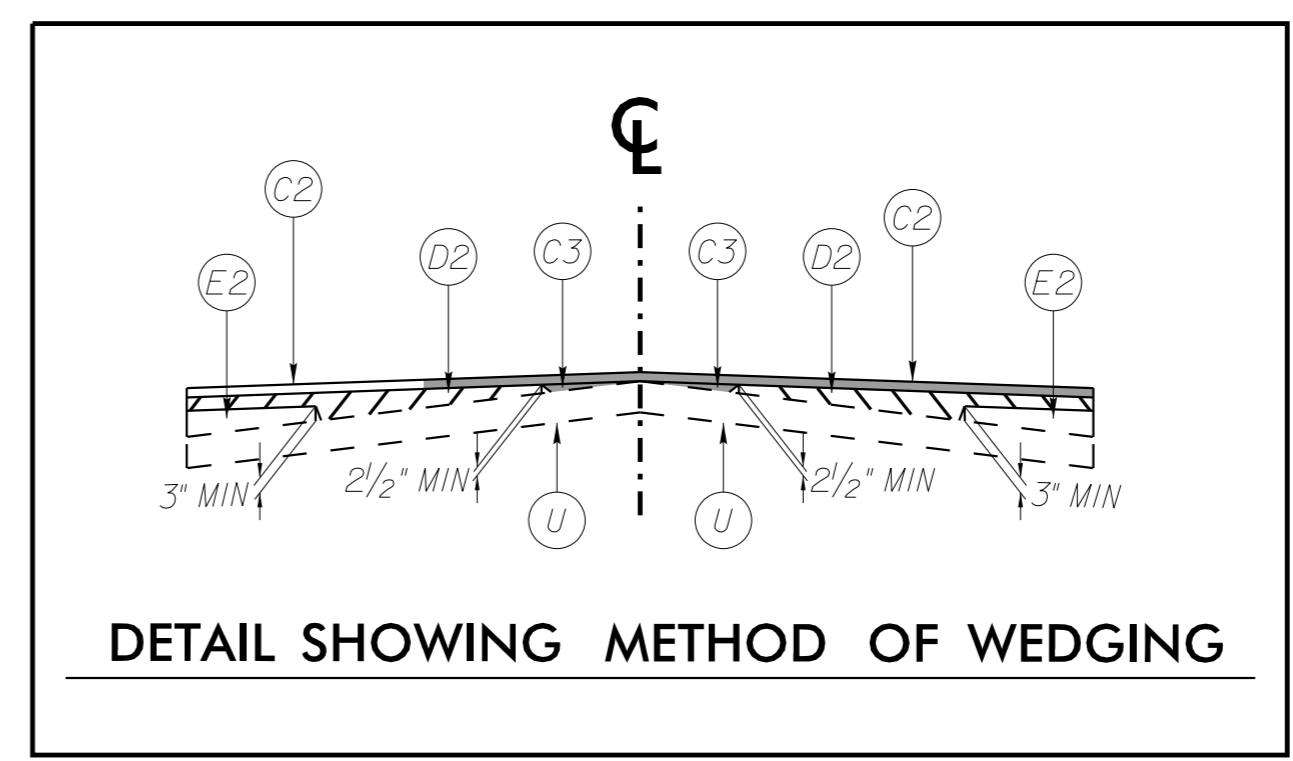
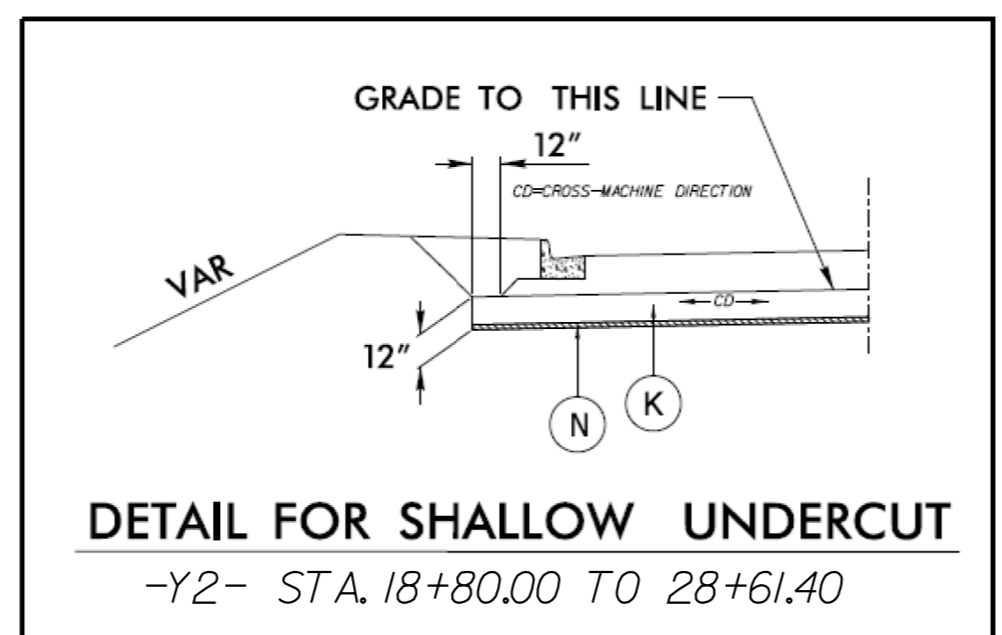
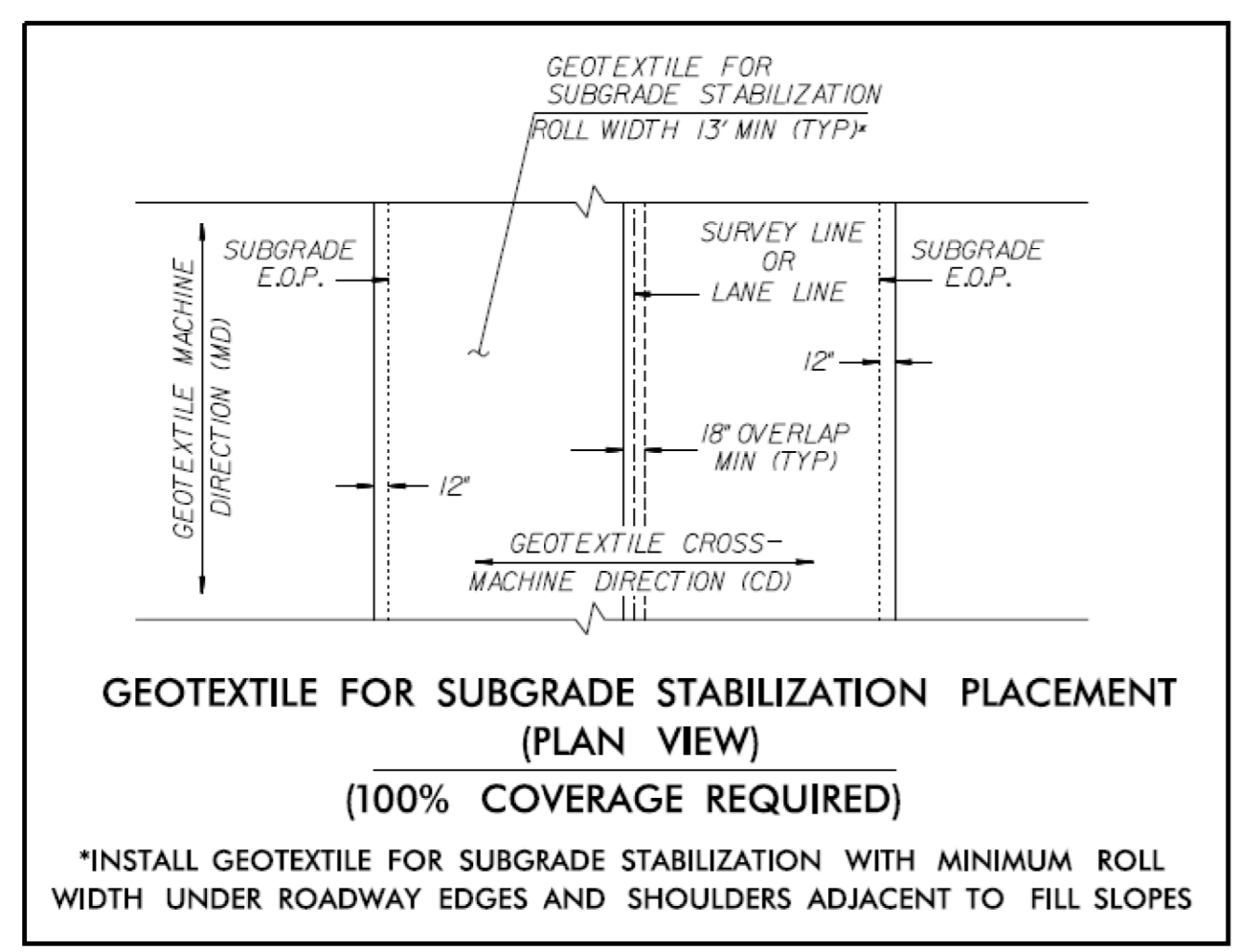
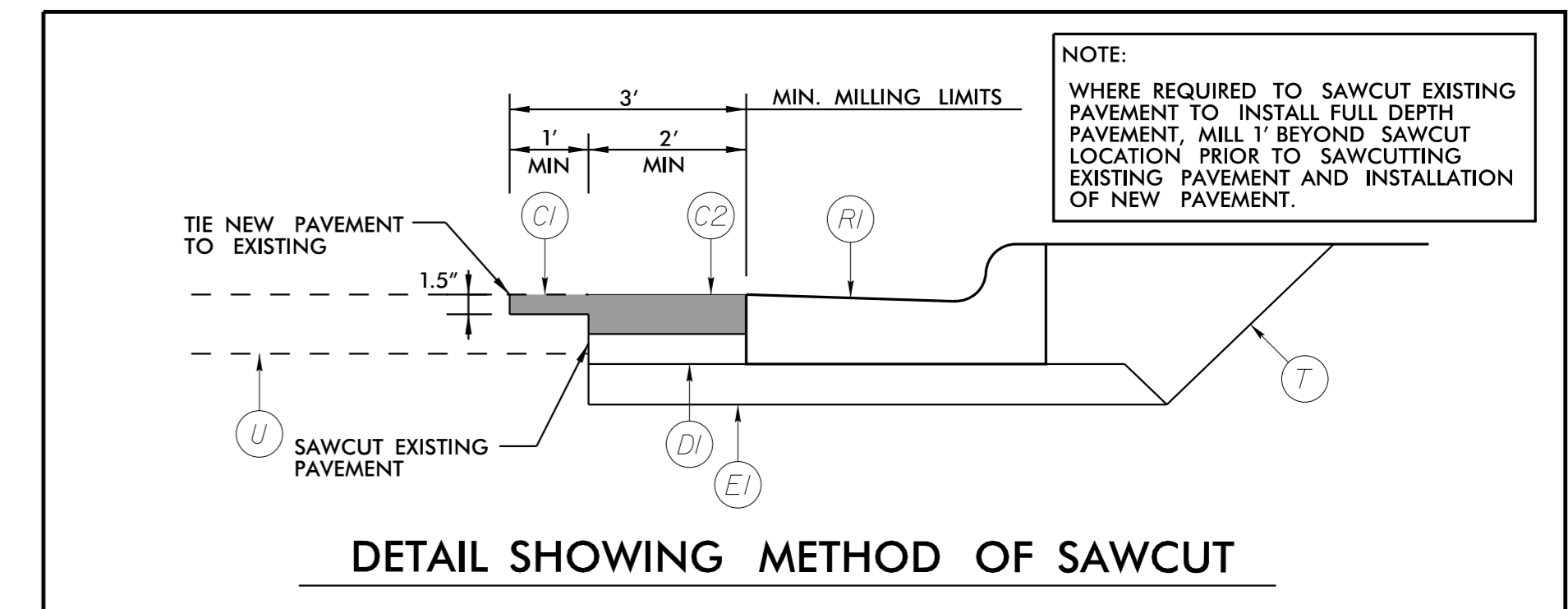


DESIGNED BY:
NEW D. WARGO
044590
10/18/2024

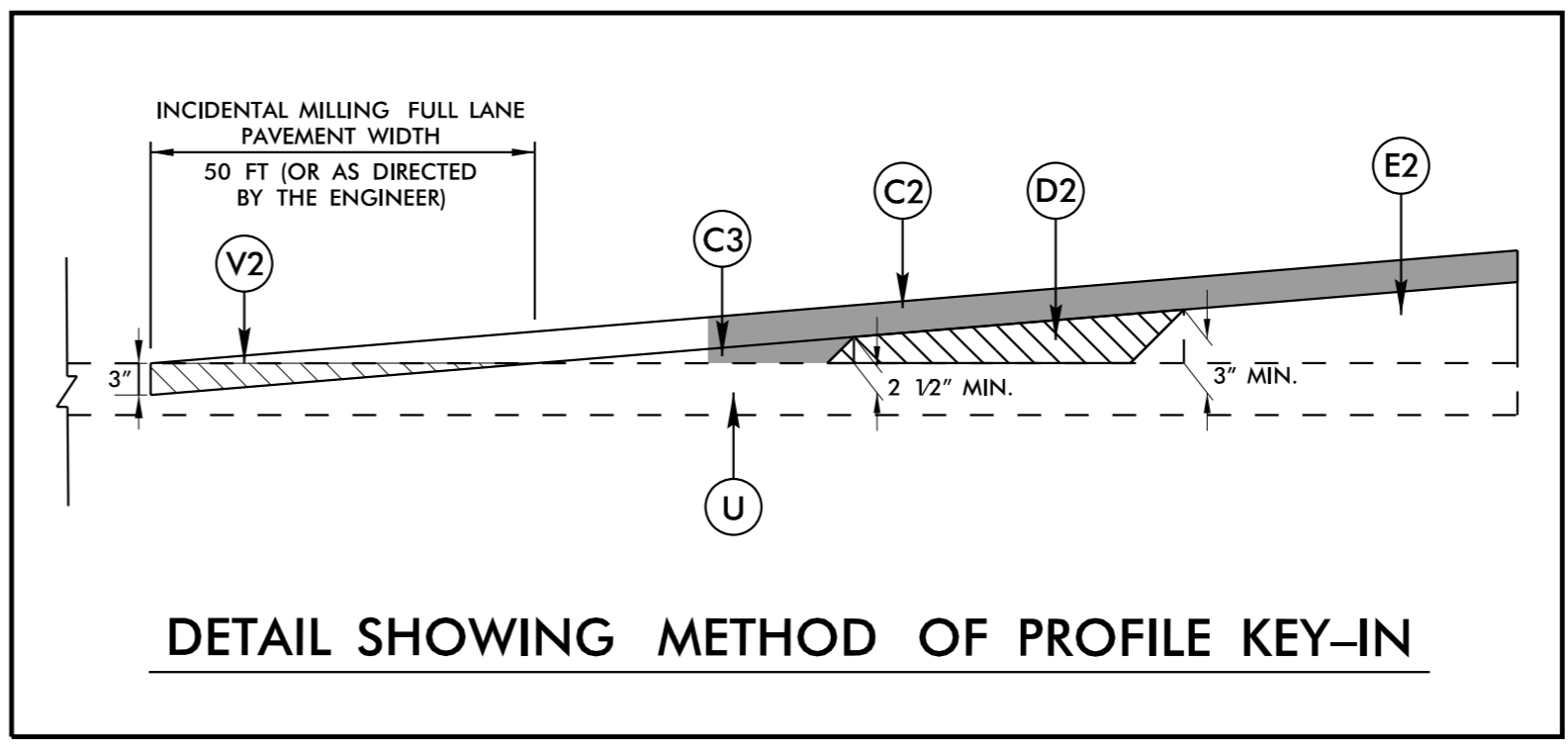
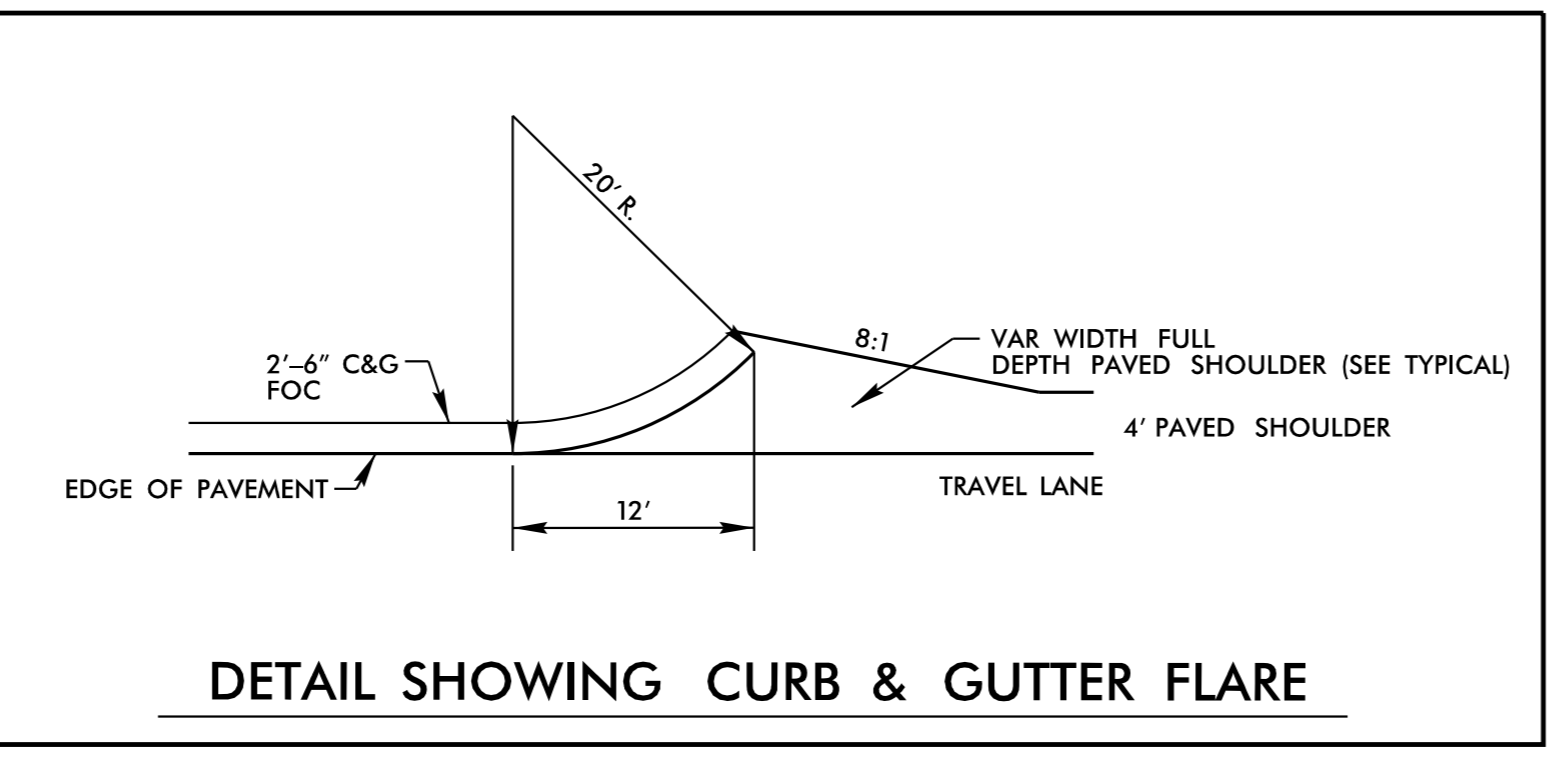
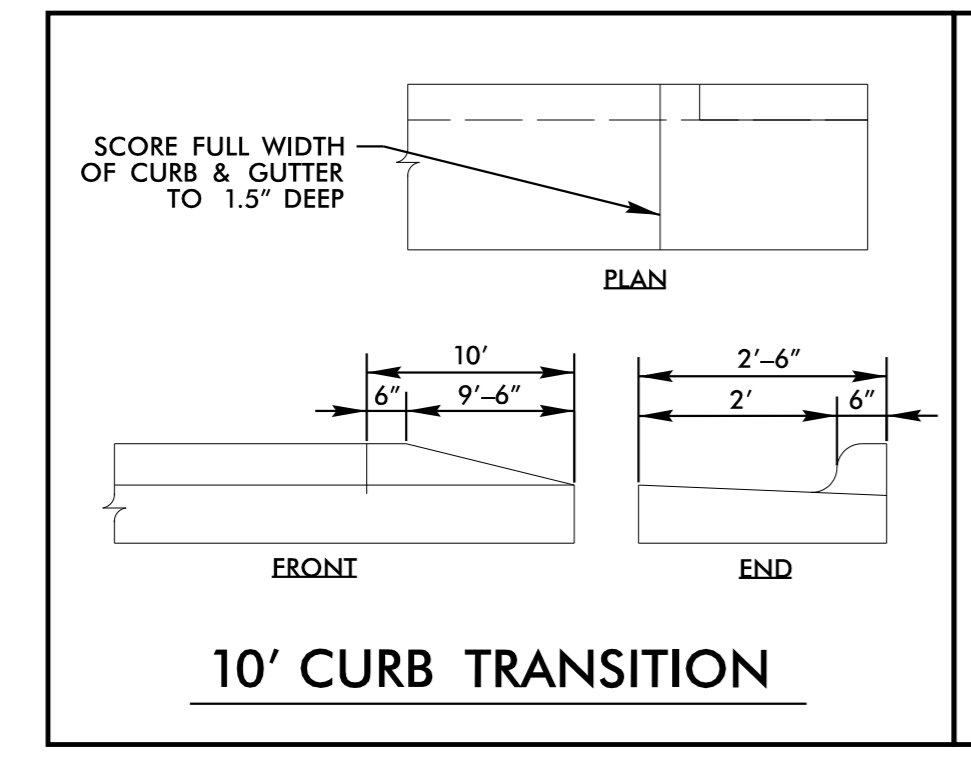
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UNLESS ALL SIGNATURES COMPLETED



- PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE INDICATED
- 1 SEE PLANS AND CROSS SECTIONS FOR MEDIAN TYPES AND LOCATIONS
 - 2 SEE PLANS FOR TURN LANE LOCATIONS
 - 3 SEE DETAIL SHOWING METHOD OF SAWCUT, SHEET 2A-1
 - 4 UTILITY STRIP TO BE GRADED OUTSIDE THE RIGHT-OF-WAY AND BE 8:1 OR FLATTER
 - 5 CONSTRUCT AGGREGATE SUBGRADE - TYPE 2 FROM -Y2- STA. 18+80.00 TO 28+61.40



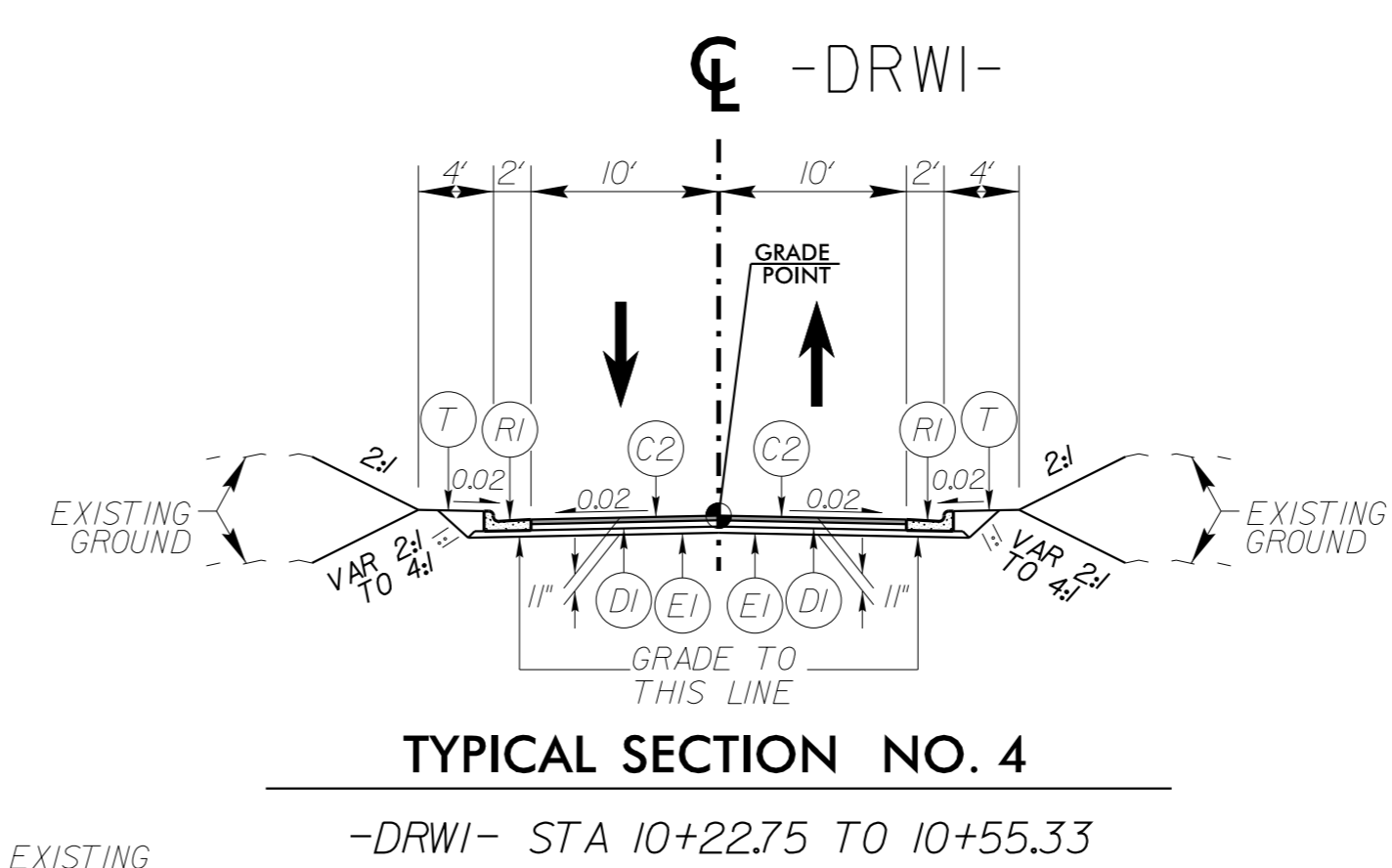
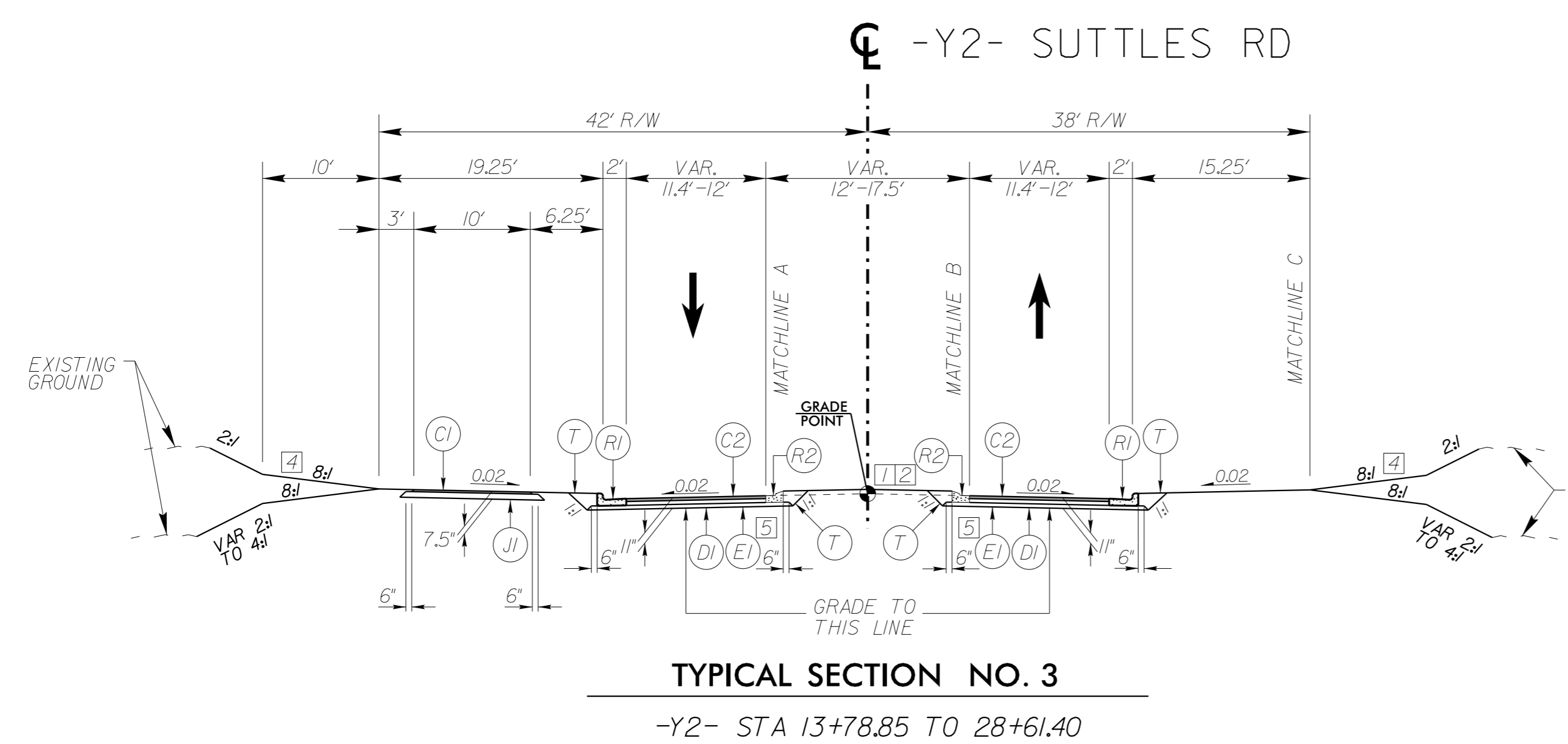
PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	PROPOSED APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C2	PROPOSED APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROPOSED 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" IN DEPTH OR GREATER THAN 1.5" IN DEPTH.
D1	PROPOSED APPROX. 4.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I9.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	PROPOSED VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I9.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROPOSED APPROX. 4.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROPOSED VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH.
J1	PROPOSED 6" AGGREGATE BASE COURSE
K	PROPOSED AGGREGATE SUBGRADE - TYPE 2
N	PROPOSED GEOTEXTILE FOR SUBGRADE STABILIZATION
R1	PROPOSED 2'-6" CONCRETE CURB & GUTTER
R2	PROPOSED 1'-6" CONCRETE CURB & GUTTER
R3	PROPOSED 5" MONOLITHIC CONCRETE ISLAND (KEYED-IN)
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	PROPOSED 1.5" MILLING
V2	INCIDENTAL MILLING
W	WEDGING



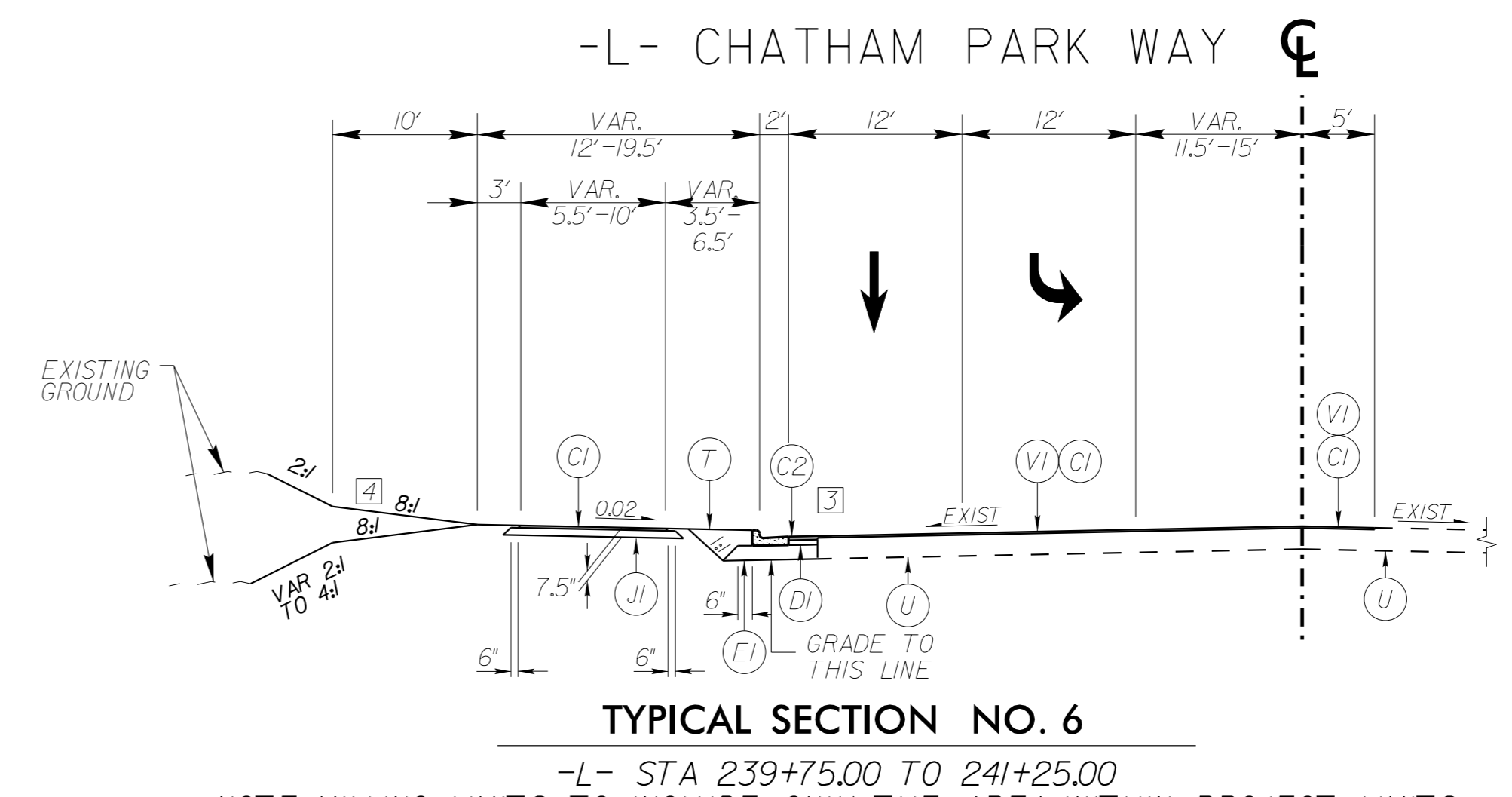
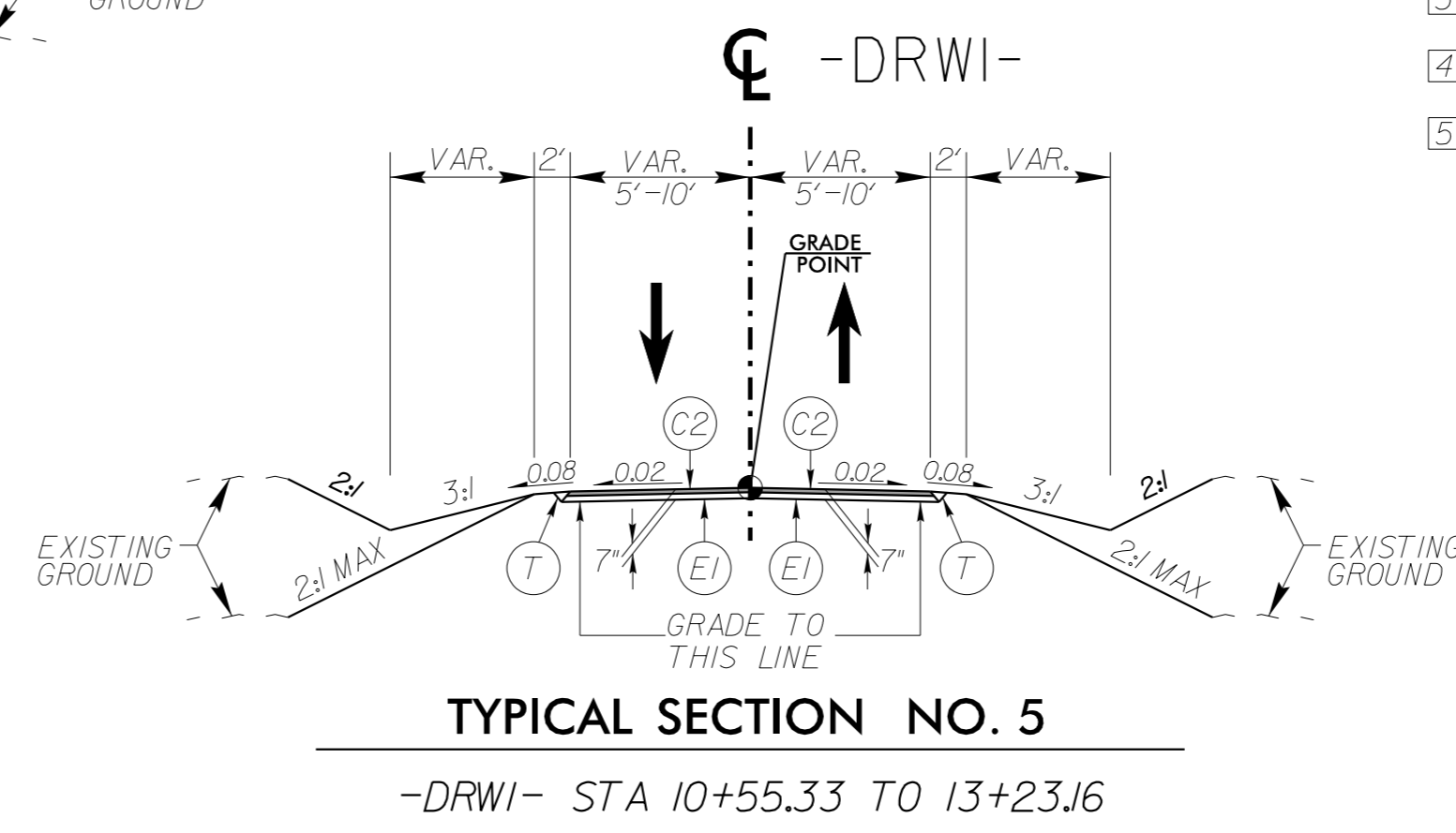
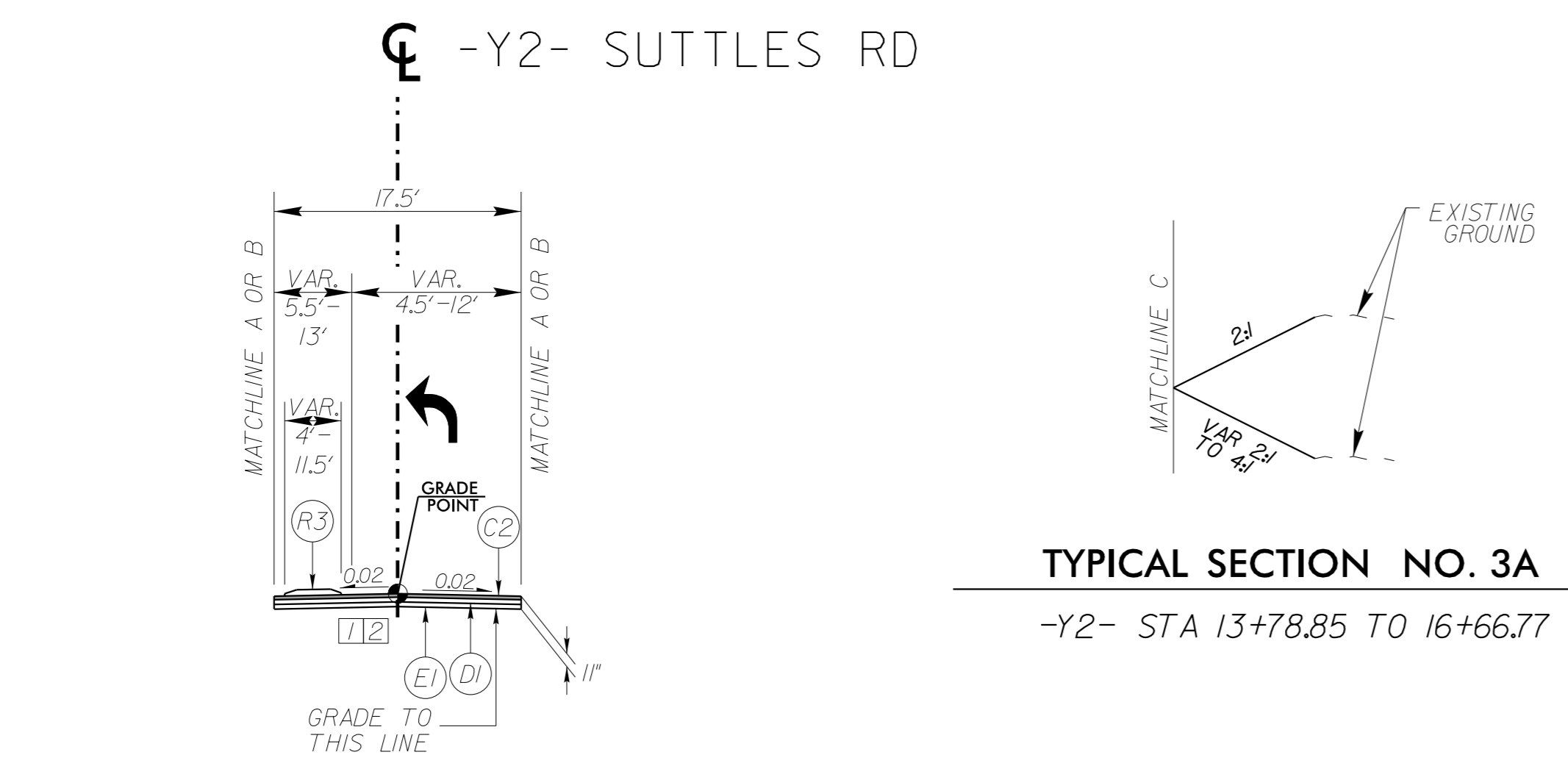
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Kimley Horn
 421 FAYETTEVILLE STREET, SUITE 600
 RALEIGH, NC 27601
 ROADWAY DESIGN ENGINEER
 PAVEMENT DESIGN ENGINEER

PROJECT REFERENCE NO. R-5963D	SHEET NO. 2A-2
ROADWAY DESIGN ENGINEER W. BLANTON	PAVEMENT DESIGN ENGINEER D. WILCO
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



- PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE INDICATED
- 1 SEE PLANS AND CROSS SECTIONS FOR MEDIAN TYPES AND LOCATIONS
 - 2 SEE PLANS FOR TURN LANE LOCATIONS
 - 3 SEE DETAIL SHOWING METHOD OF SAWCUT, SHEET 2A-1
 - 4 UTILITY STRIP TO BE GRADED OUTSIDE THE RIGHT-OF-WAY AND BE 8:1 OR FLATTER
 - 5 CONSTRUCT AGGREGATE SUBGRADE - TYPE 2 FROM -Y2- STA. 18+80.00 TO 28+61.40

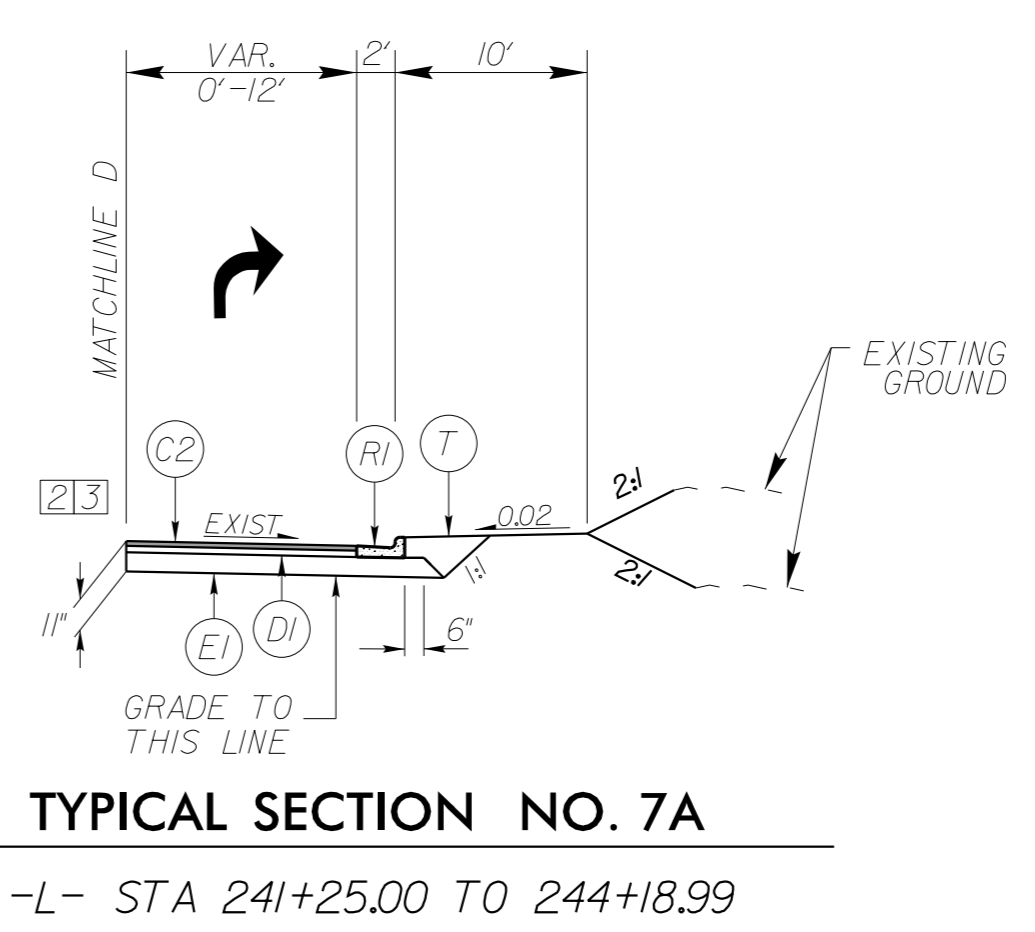
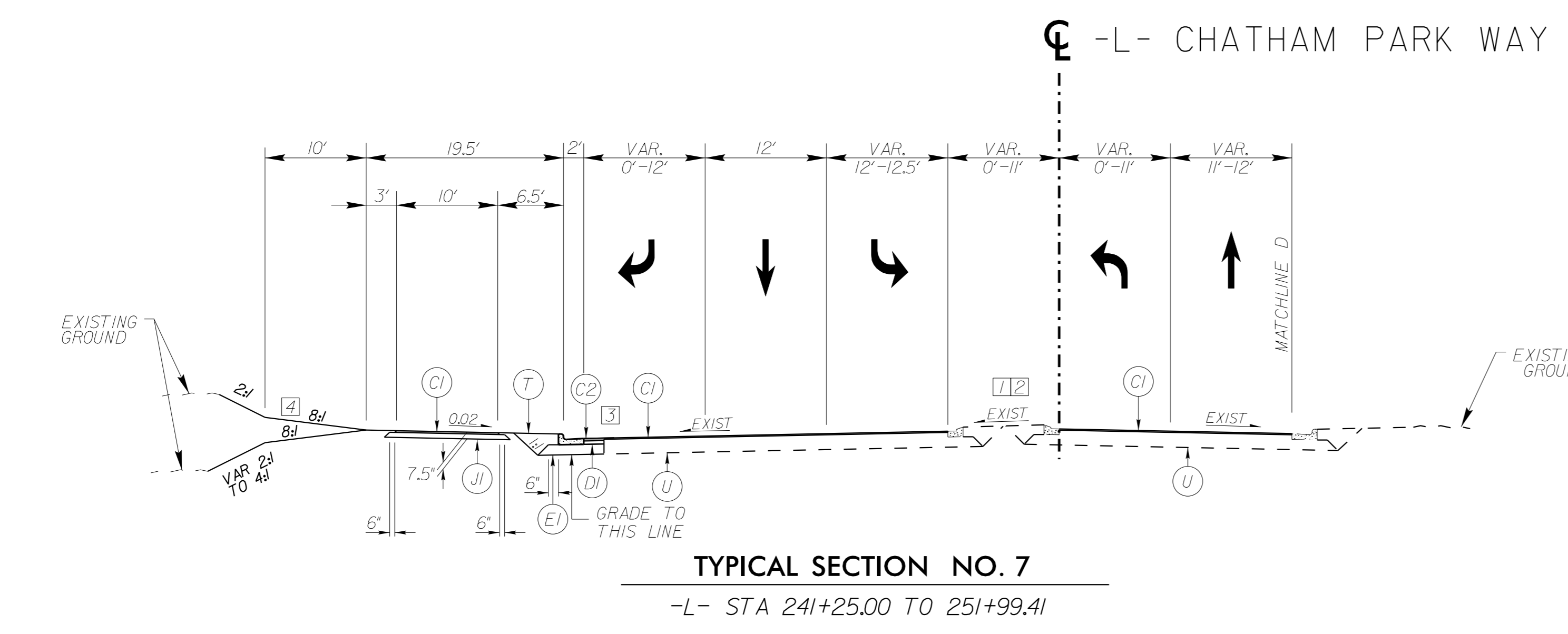


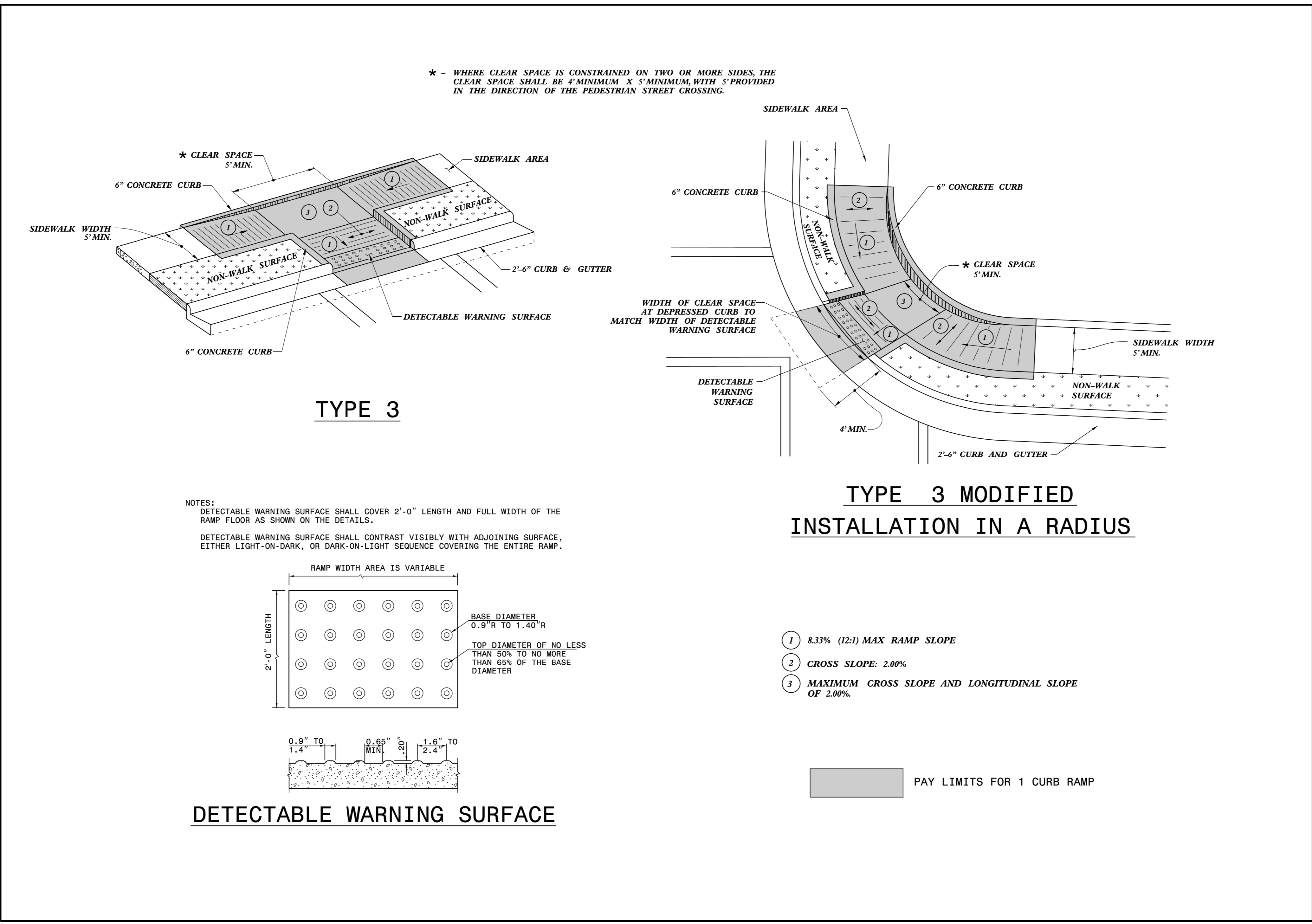
PAVEMENT SCHEDULE
 (FINAL PAVEMENT DESIGN)

C1	1.5" S9.5B
C2	3" S9.5B
C3	VAR. DEPTH S9.5B
D1	4" I19.0C
D2	VAR. DEPTH I19.0C
E1	4" B25.0C
E2	VAR. DEPTH B25.0C
J1	6" ABC
K	AGGREGATE SUBGRADE - TYPE 2
N	GEOTEXTILE FOR SUB. STAB.
R1	2'-6" CONCRETE CURB & GUTTER
R2	1'-6" CONCRETE CURB & GUTTER
R3	5" MONO. CONC. ISLAND (KEYED-IN)
T	EARTH MATERIAL
U	EXISTING PAVEMENT
VI	1.5" MILLING
V2	INCIDENTAL MILLING
W	WEDGING

TYPICAL SECTION NO. 3B
 -Y2- STA 21+7.54 TO 22+80.00
 -Y2- STA 23+70.00 TO 25+32.50

NOTE: MILLING LIMITS TO INCLUDE ONLY THE AREA WITHIN PROJECT LIMITS WHERE THE EXISTING FINAL LAYER OF ASPHALT HAS BEEN PLACED

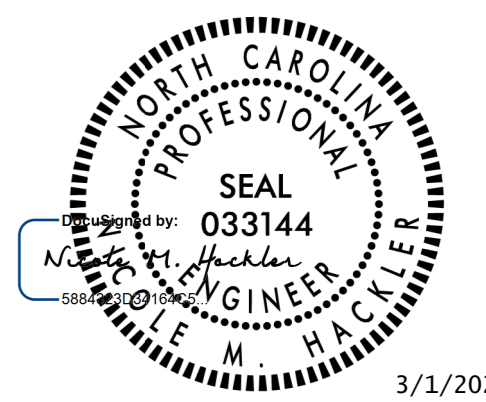




STATE OF NORTH CAROLINA
 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
CURB RAMP
 PARALLEL RAMP

SHEET 9 OF 13
848D06



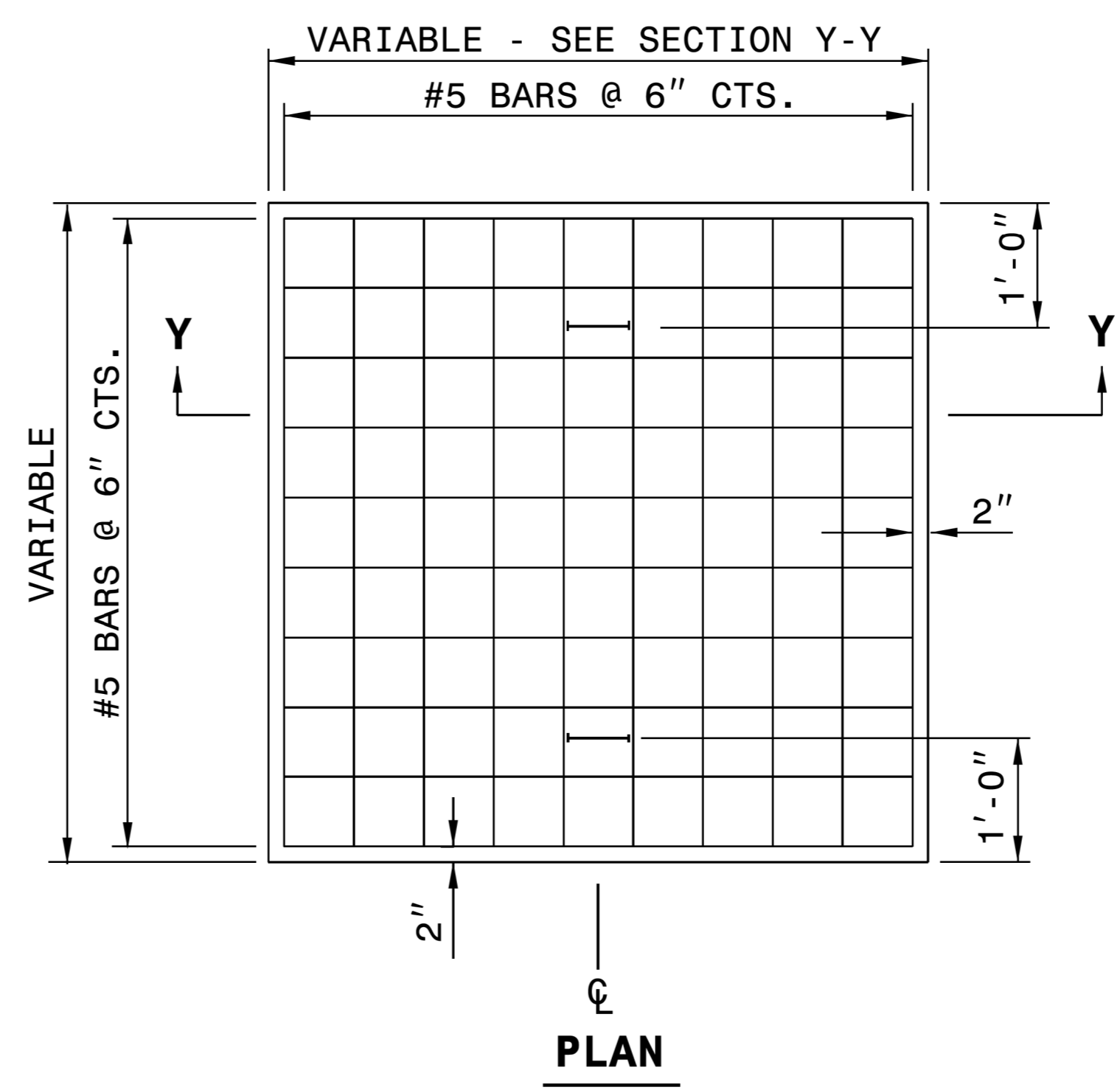
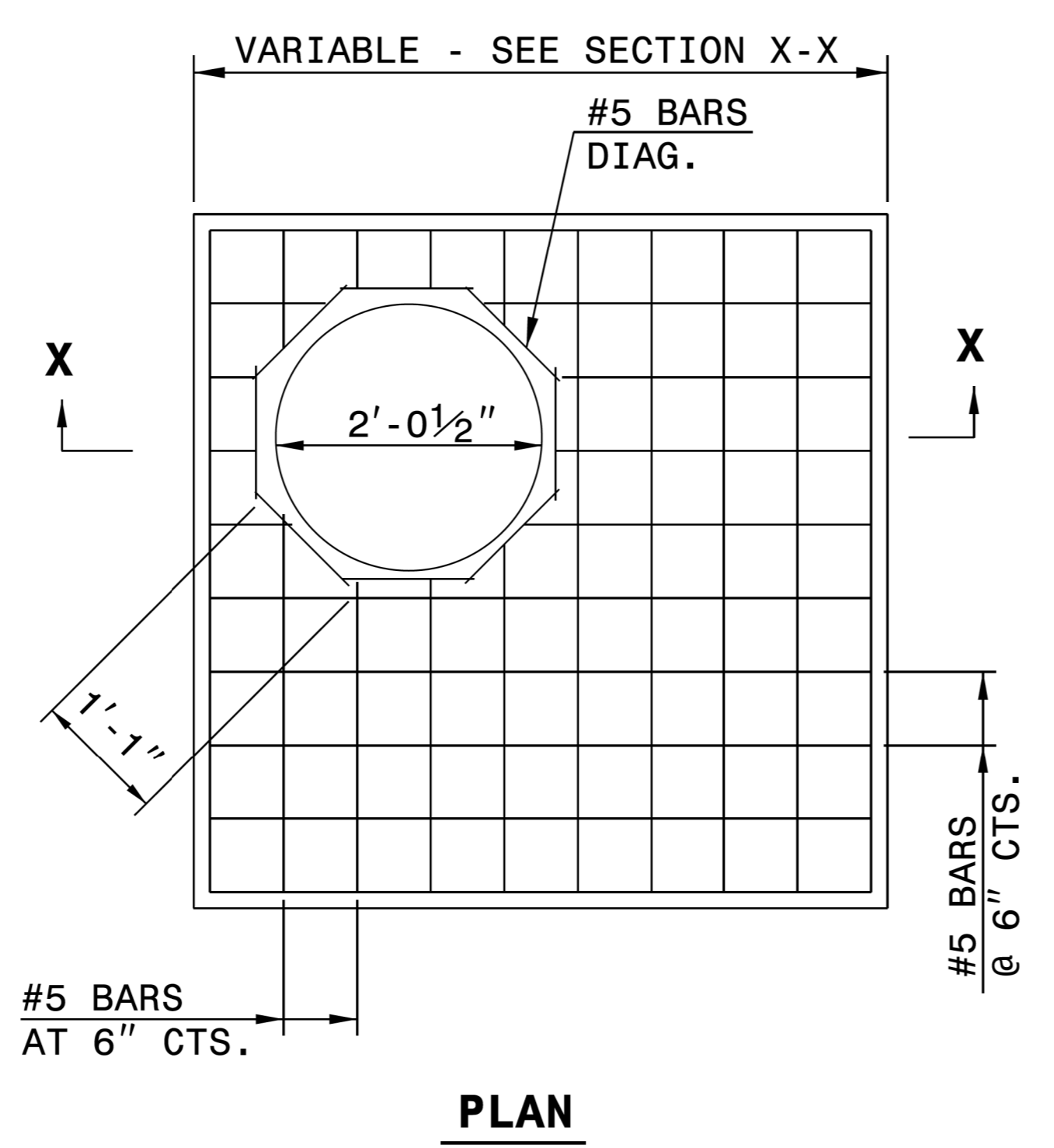
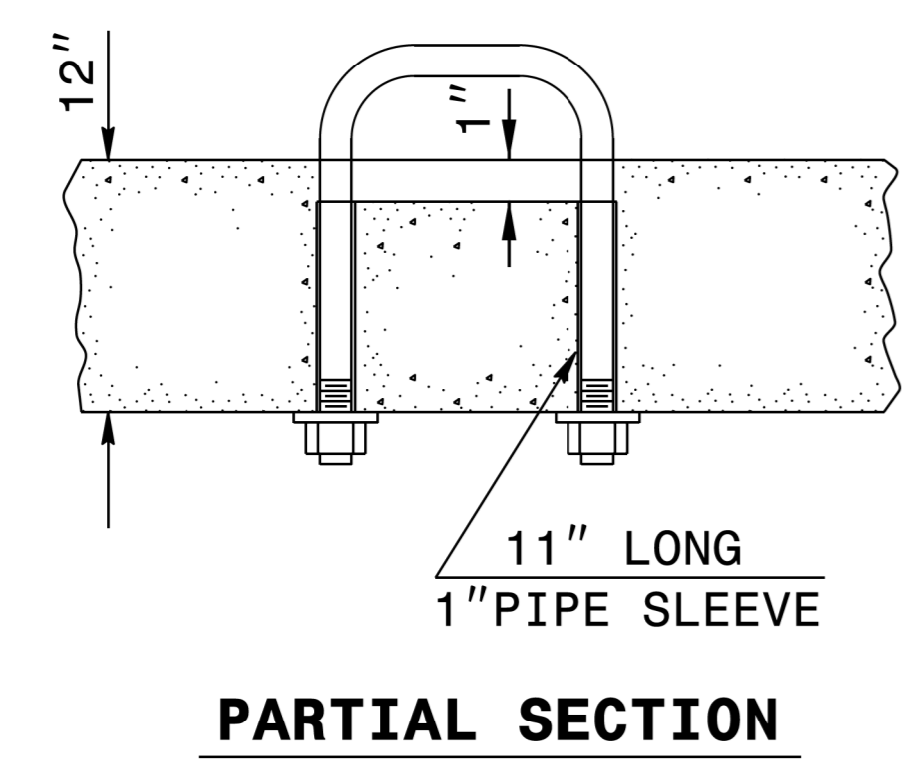
3/1/2024

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

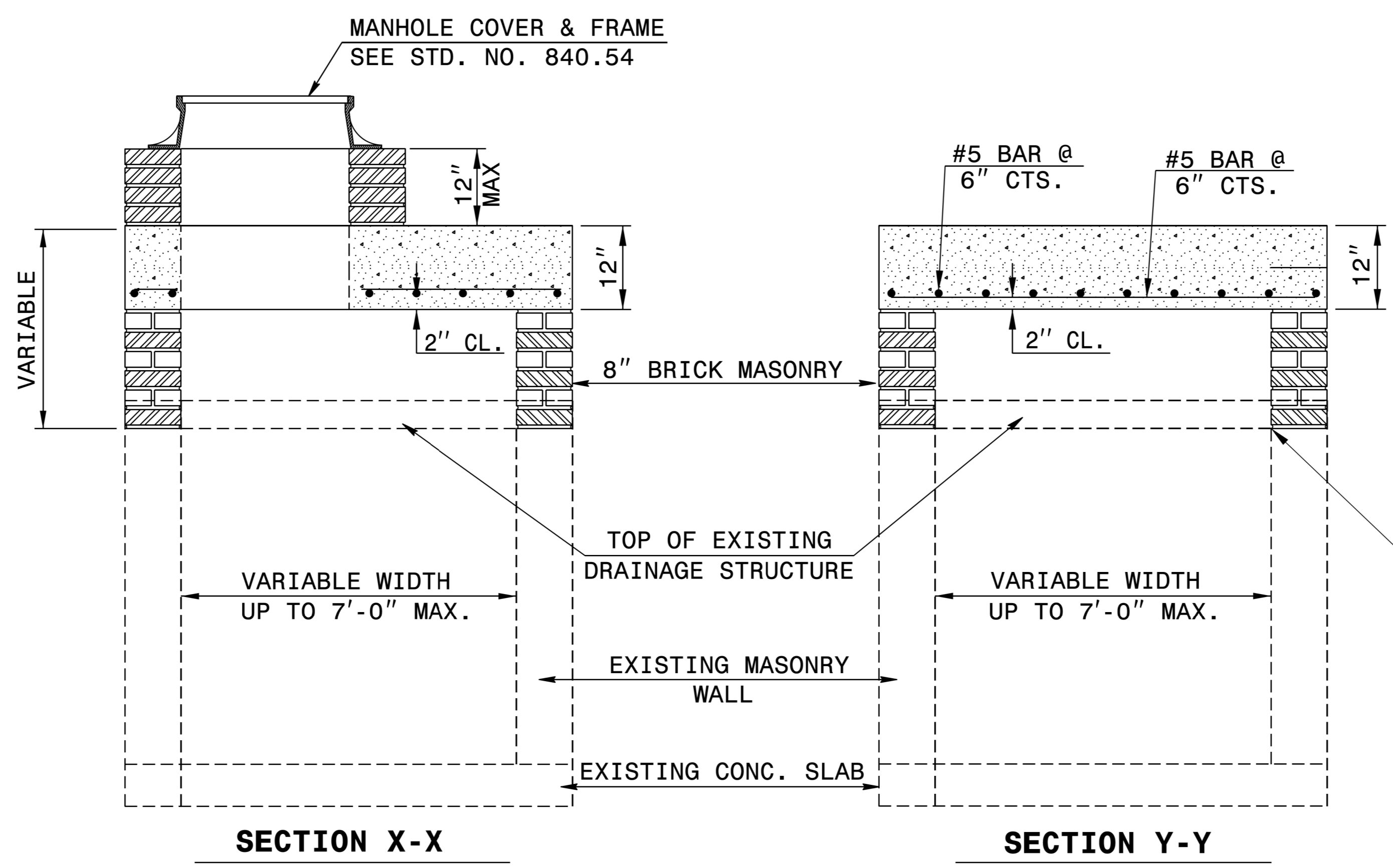
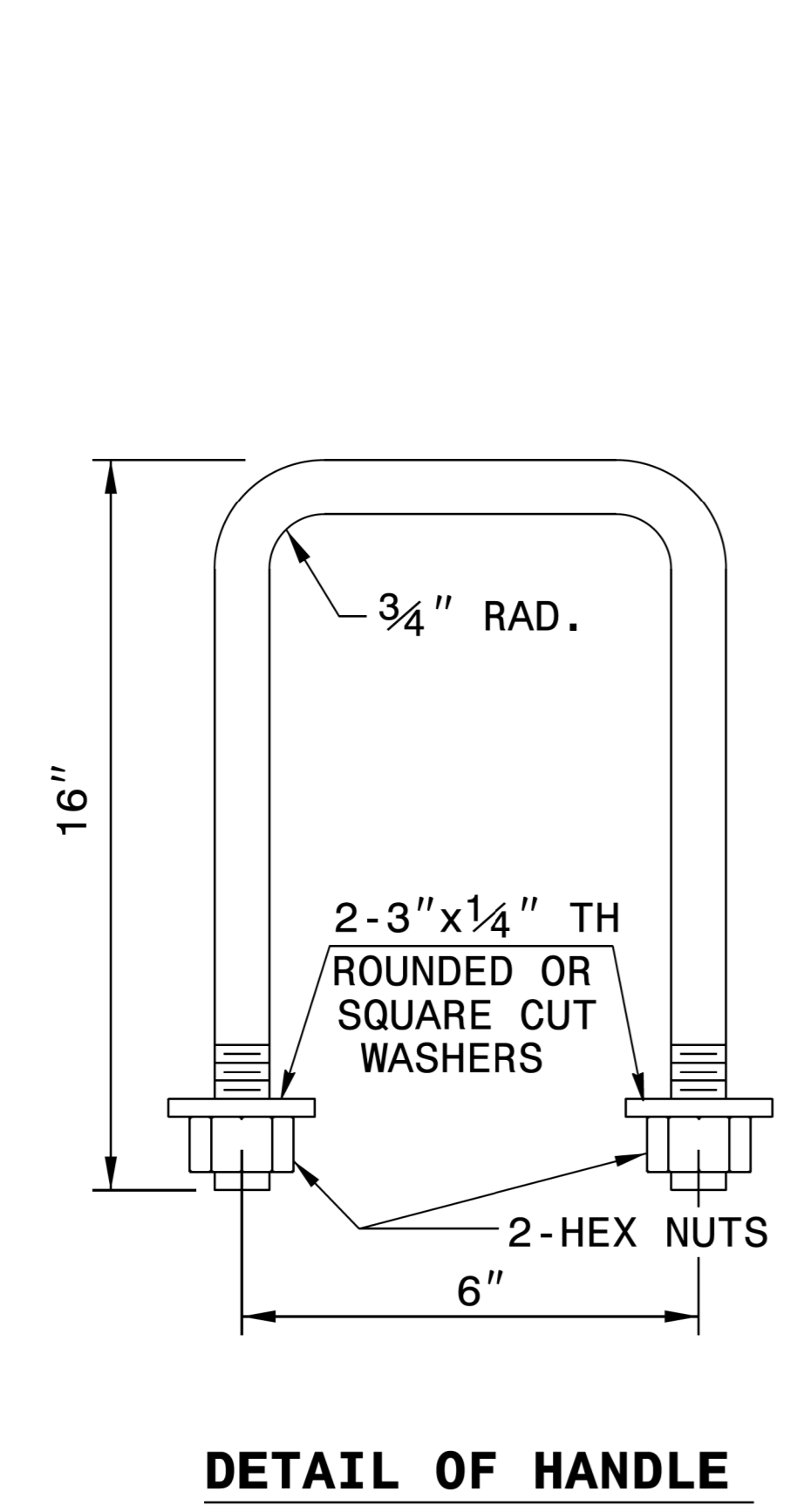
SEE TITLE BLOCK

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



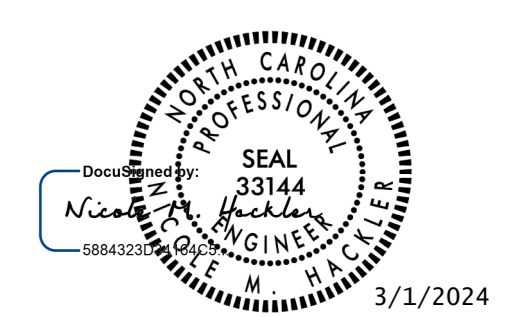
GENERAL NOTES:
 CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.
 FIELD VERIFY THE DIMENSIONS FOR THE EXISTING BOXES.

BILL OF MATERIALS			
MASONRY			
TOP SLAB CONCRETE CLASS "A"	.037YDS ³ PER FT ²		
BRICK MASONRY	.025YDS ³ PER FT ²		
REINFORCING STEEL	7.64LBS PER FT ²		
MANHOLE OPTION QUANTITIES			
SIZE	QTY.	LENGTH	REINF. STEEL LBS.
#5 DIAG.	8	1'-1"	9.04



NOTE:
 CONCRETE AND REINFORCING STEEL QUANTITIES BASED ON SQUARE FOOT AREA OF THE PROPOSED TOP SLAB FOR THE EXISTING DRAINAGE STRUCTURE.
 BRICK MASONRY QUANTITY IS BASED ON THE TOTAL SQUARE FOOTAGE OF EXTERIOR WALL SURFACE AREA TO BE CONSTRUCTED.

ALIGN PROPOSED BRICK VERTICAL ADJUSTMENT TO INNER FACE OF WALL



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

DETAIL TO CONVERT EXISTING TRAFFIC BEARING DROP INLET OR CATCH BASIN TO TRAFFIC BEARING JUNCTION BOX (MANHOLE OPTIONAL)

ORIGINAL BY: T.S.S.	DATE: FEB. 2000
MODIFIED BY: E.E.W.	DATE: NOV. 2001
CHECKED BY:	DATE:
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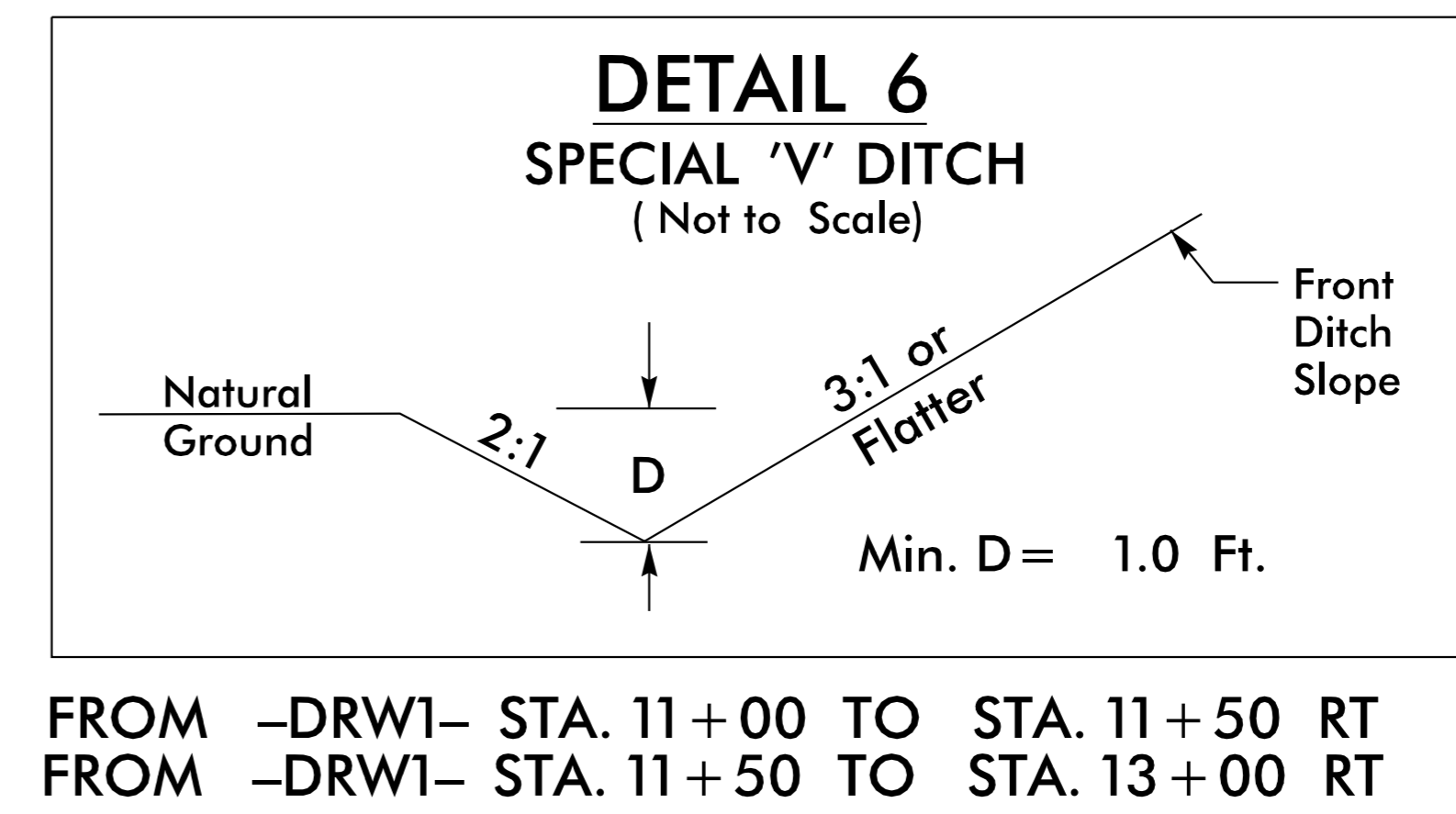
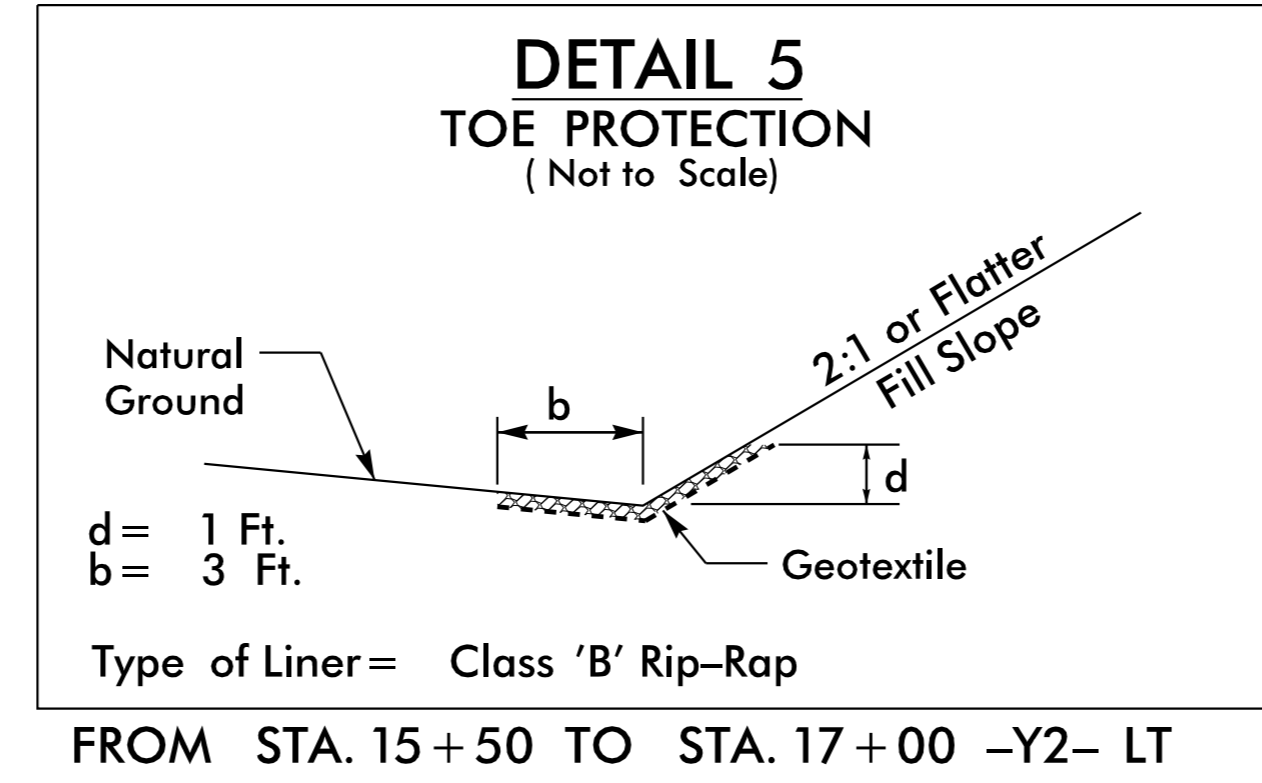
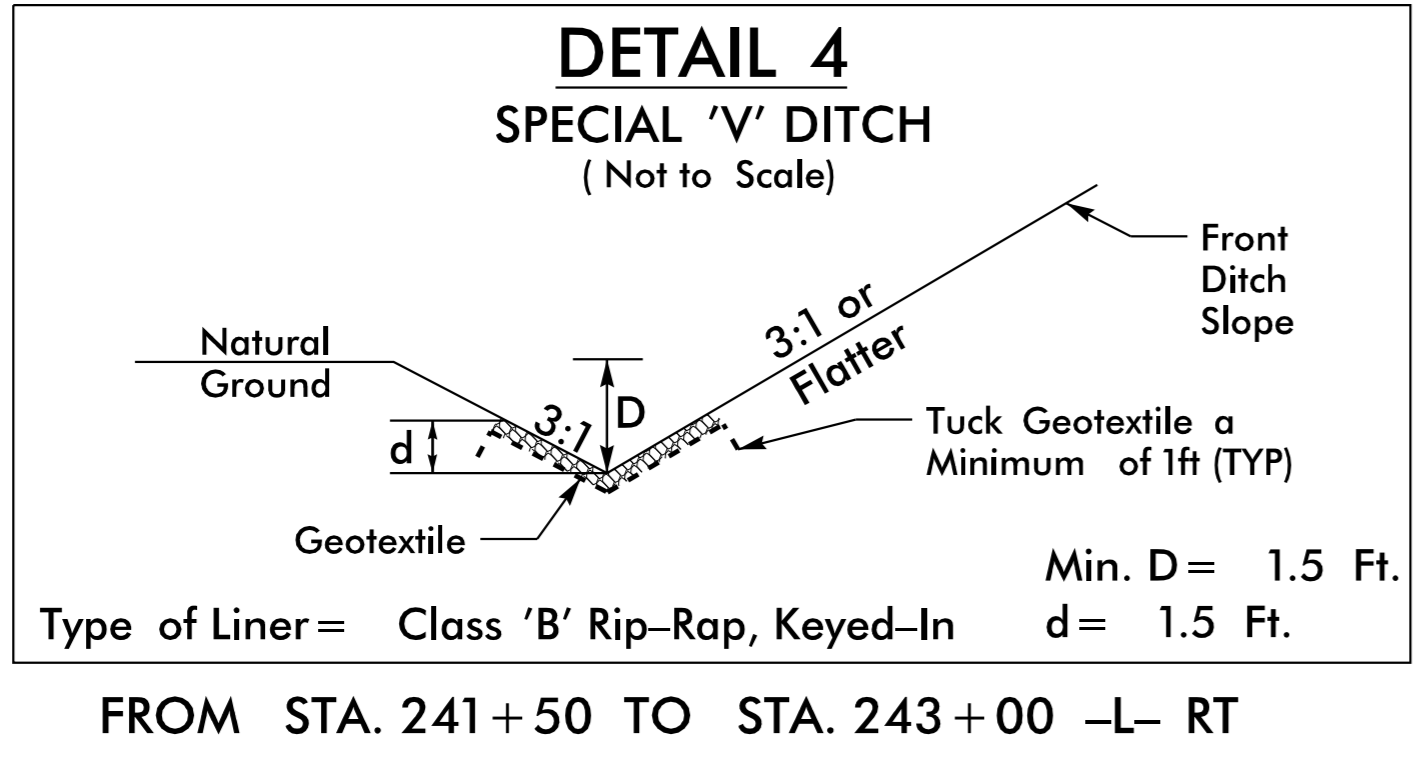
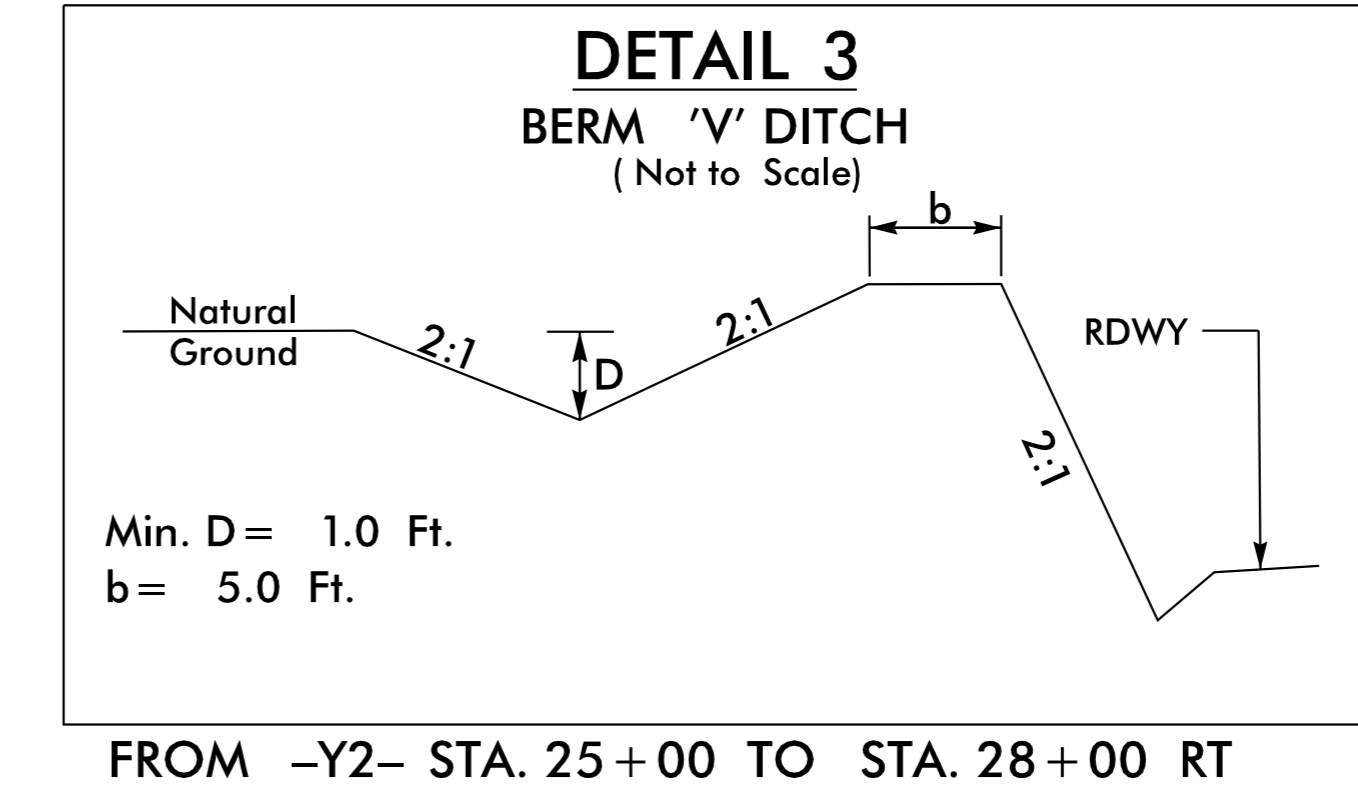
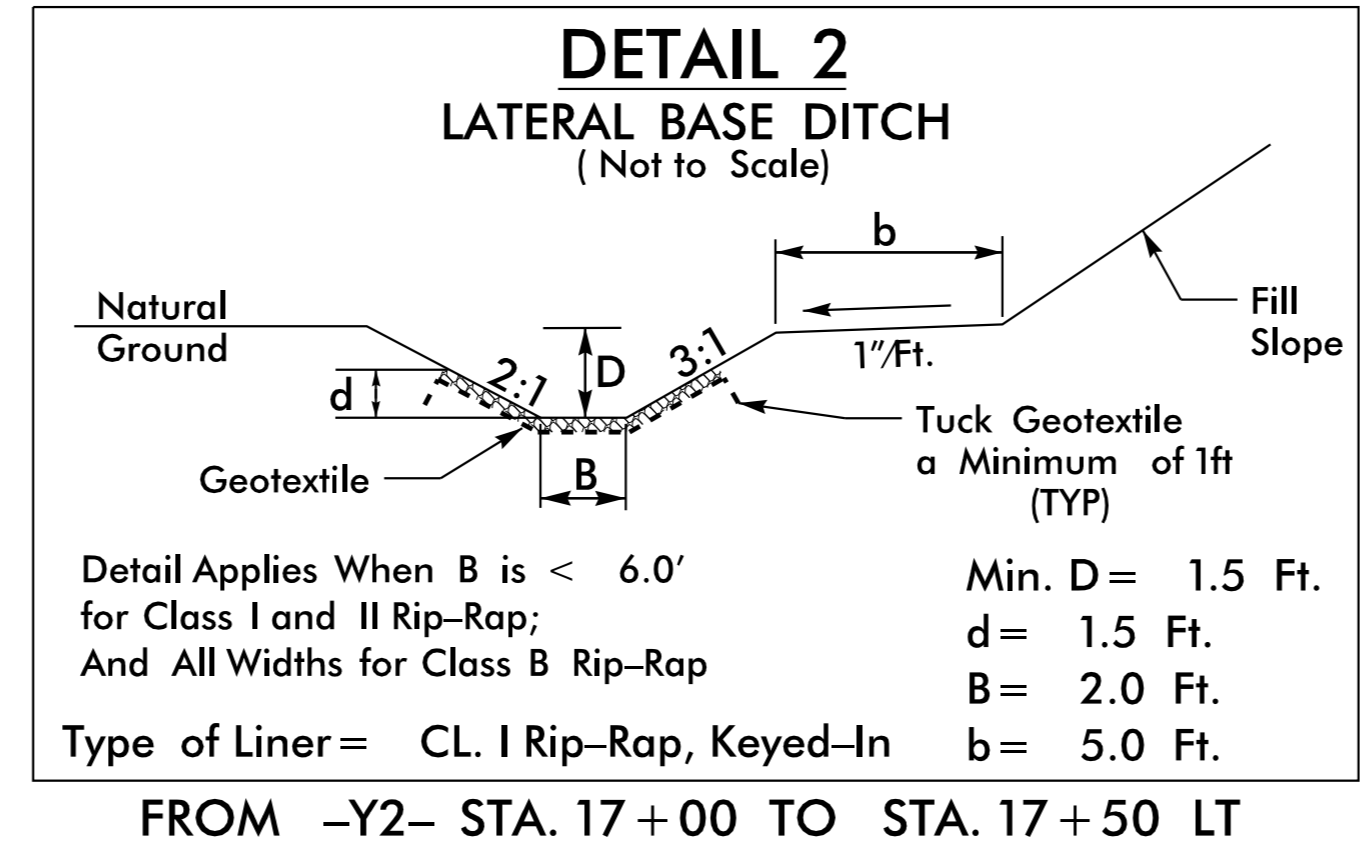
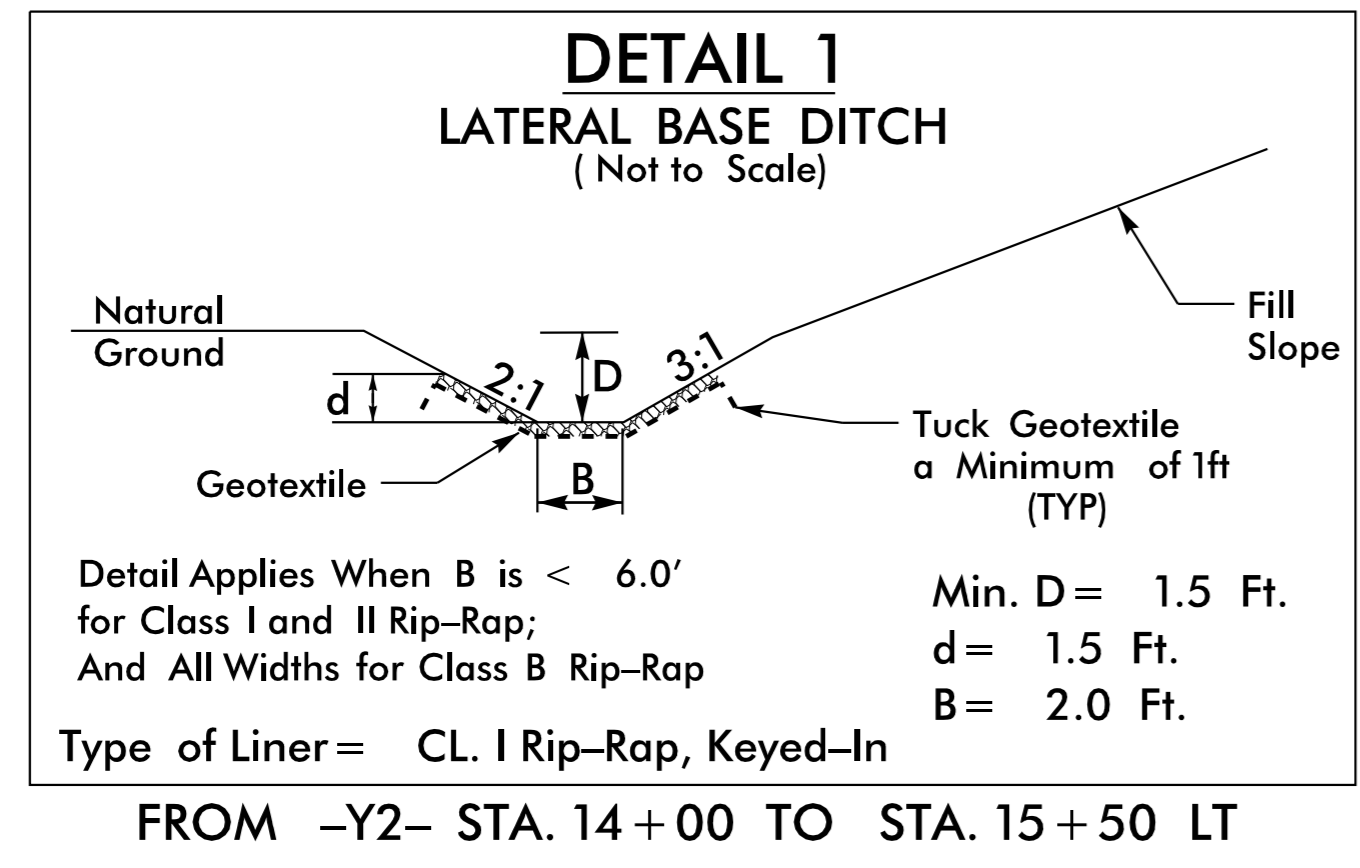
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 AT CSO-292595

5/14/99

Kimley»Horn
 421 FAYETTEVILLE STREET, SUITE 600
 RALEIGH, NC 27601
 RIGHT-OF-WAY REV.
 CONST. REV.

PROJECT REFERENCE NO. R-5963D	SHEET NO. 2D-1
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	SEAL 038559 DAVID L. HURSEY 12/17/2024
	SEAL 053547 DAVID L. HURSEY 12/17/2024
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



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REVISIONS

1/29/2024



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

CHAIN	STATION	STATION	TOTAL UNCLASSIFIED	UNDERCUT	UNSUITABLE EXCAVATION	EMBANKMENT + %	BORROW	UNSUITABLE WASTE	TOTAL WASTE
-Y2-	11 + 80.00	28 + 61.40	29788		14300	51149	35661	14300	14300
-L-	239 + 75.00	250 + 50.00	3876			2852			1024
-DRW1-	10 + 22.75	13 + 23.16	1300			60			1240
		SUBTOTAL	34964		14300	54061	35661	14300	16564
LOSS DUE TO CLEARING & GRUBBING			-2000				2000		
WASTE IN LIEU OF BORROW							-2264		-2264
		PROJECT TOTALS	32964			54061	35397	14300	14300
ESTIMATED 5% TO REPLACE TOPSOIL ON BORROW PITS							1770		
		GRAND TOTALS	32964				37167		
		SAY	33000				37200		

*175 CY GRADE POINT UNDERCUT IS ACCEPTABLE BUT NOT TO BE USED IN THE TOP 3' OF EMBANKMENT OR BACKFILL

ESTIMATED UNDERCUT EXCAVATION	575	CY
ESTIMATED SELECT GRANULAR MATERIAL	400	CY
ESTIMATED SHALLOW UNDERCUT	1200	CY

NOTE: A QUANTITY OF 14,800 CY OF "UNCLASSIFIED EXCAVATION - ACCEPTABLE BUT NOT TO BE USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL" HAS BEEN MEASURED FROM THE CROSS SECTIONS
 13600 CY FROM -Y2- STA 19+25 TO 25+75 (LT & RT)
 1200 CY FROM -Y2- STA 27+25 TO 28+25 (LT & RT)

REMOVAL OF EXISTING ASPHALT PAVEMENT			
LINE	STATION TO STATION	LOCATION	SQ. YDS.
-Y2-	13 + 00 TO 13 + 50	LT/RT	110
-Y2-	15 + 75 TO 16 + 75	RT	255
-Y2-	28 + 03 TO 28 + 60	LT/RT	130
-L-	239 + 75 TO 251 + 99	SAWCUT	537
-L-	240 + 10 TO 240 + 86	LT	444
TOTAL			1476
SAY			1480

BREAKING OF EXISTING ASPHALT PAVEMENT			
LINE	STATION TO STATION	LOCATION	SQ. YDS.
-Y2-	13 + 50 TO 15 + 75	LT/RT	662
TOTAL			662
SAY			670

WOVEN WIRE FENCE, 47" FABRIC SUMMARY			
LINE	STATION TO STATION	LOCATION	LF
-Y2-	11 + 80 TO 18 + 50	RT	953
TOTAL			953
SAY			960

NOTE: APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, BORROW EXCAVATION, FINE GRADING, CLEARING AND GRUBBING, BREAKING OF EXISTING ASPHALT PAVEMENT, AND REMOVAL OF EXISTING ASPHALT PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING."

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REVISIONS

1/29/2024

L22604

COMPUTED BY: KLF DATE: 9/18/2023
CHECKED BY: DATE:

PROJECT NO. R-5963D SHEET NO. 3D-2

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, Top Elevation, Invert Elevation, Minimum Required Slope, Drainage Pipe, C.S. Pipe, R.C. Pipe Class III, R.C. Pipe Class IV, R.C. Pipe Class V, Endwalls, Reinforced Endwalls, Drainage Structure, Quantities for Drainage Structures, Frame, Grates, and Hood, Concrete Transitional Section, Abbreviations, and Remarks. Includes SHEET TOTALS and PROJECT TOTALS at the bottom.

COMPUTED BY: DMB DATE: 9/25/23
 CHECKED BY: REK DATE: 9/25/23

(2-3-23)

PROJECT NO.
R-5963D

SHEET NO.
3G-1

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
-Y2-	18+80	28+75	ASU 2	8	1050	2280	5280		
CONTINGENCY			ASU 1	12	150	300	450		
					TOTAL CY/TONS/SY:	1200	2580**	5730**	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.

5/14/2024

REVISIONS
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-Y1- US 64
PI Sta 37+31.04
 $\Delta = 0^\circ 50' 02.8" (LT)$
 $D = 0^\circ 34' 22.6"$
 $L = 145.58'$
 $T = 72.79'$
 $R = 10,000.00'$
SE = EXIST
RO = EXIST

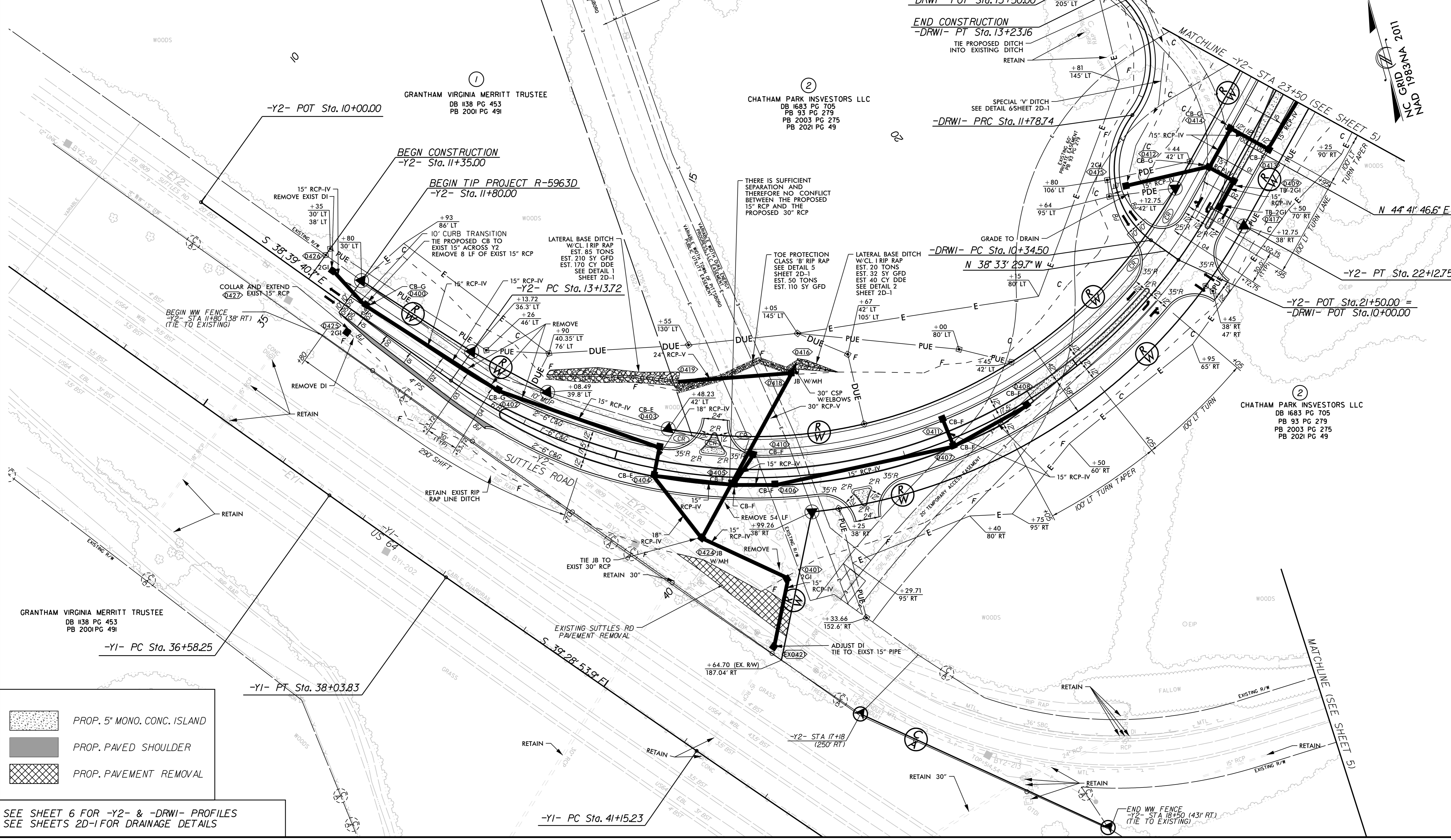
-Y2- SUTTLES ROAD
PI Sta 19+24.40
 $\Delta = 96^\circ 38' 32.8" (LT)$
 $D = 10^\circ 44' 58.8"$
 $L = 899.03'$
 $T = 598.67'$
 $R = 533.00'$
SE = 04
RO = 120'

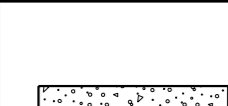

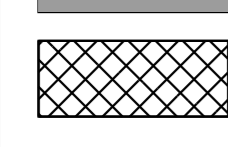
-Y2- SUTTLES ROAD
PI Sta 25+79.65
 $\Delta = 26^\circ 54' 13.7" (RT)$
 $D = 6^\circ 37' 25.6"$
 $L = 406.17'$
 $T = 206.90'$
 $R = 865.00'$
SE = 04
RO = 120'

-DRWI-
PI Sta 11+27.41
 $\Delta = 91^\circ 49' 29.9" (RT)$
 $D = 6^\circ 33' 39" 43.3"$
 $L = 144.24'$
 $T = 92.91'$
 $R = 90.00'$
SE = N/A
RO = N/A

-DRWI-
PI Sta 12+71.84
 $\Delta = 91^\circ 56' 23.8" (LT)$
 $D = 6^\circ 33' 39" 43.3"$
 $L = 144.42'$
 $T = 93.10'$
 $R = 90.00'$
SE = N/A
RO = N/A

Kimley Horn 421 FAYETTEVILLE STREET, SUITE 600 RALEIGH, NC 27601		PROJECT REFERENCE NO. R-5963D	SHEET NO. 4
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



 **PROP. 5" MONO. CONC. ISLAND**
 **PROP. PAVED SHOULDER**
 **PROP. PAVEMENT REMOVAL**

SEE SHEET 6 FOR -Y2- & -DRWI- PROFILES
SEE SHEETS 2D-1 FOR DRAINAGE DETAILS

1/29/2024

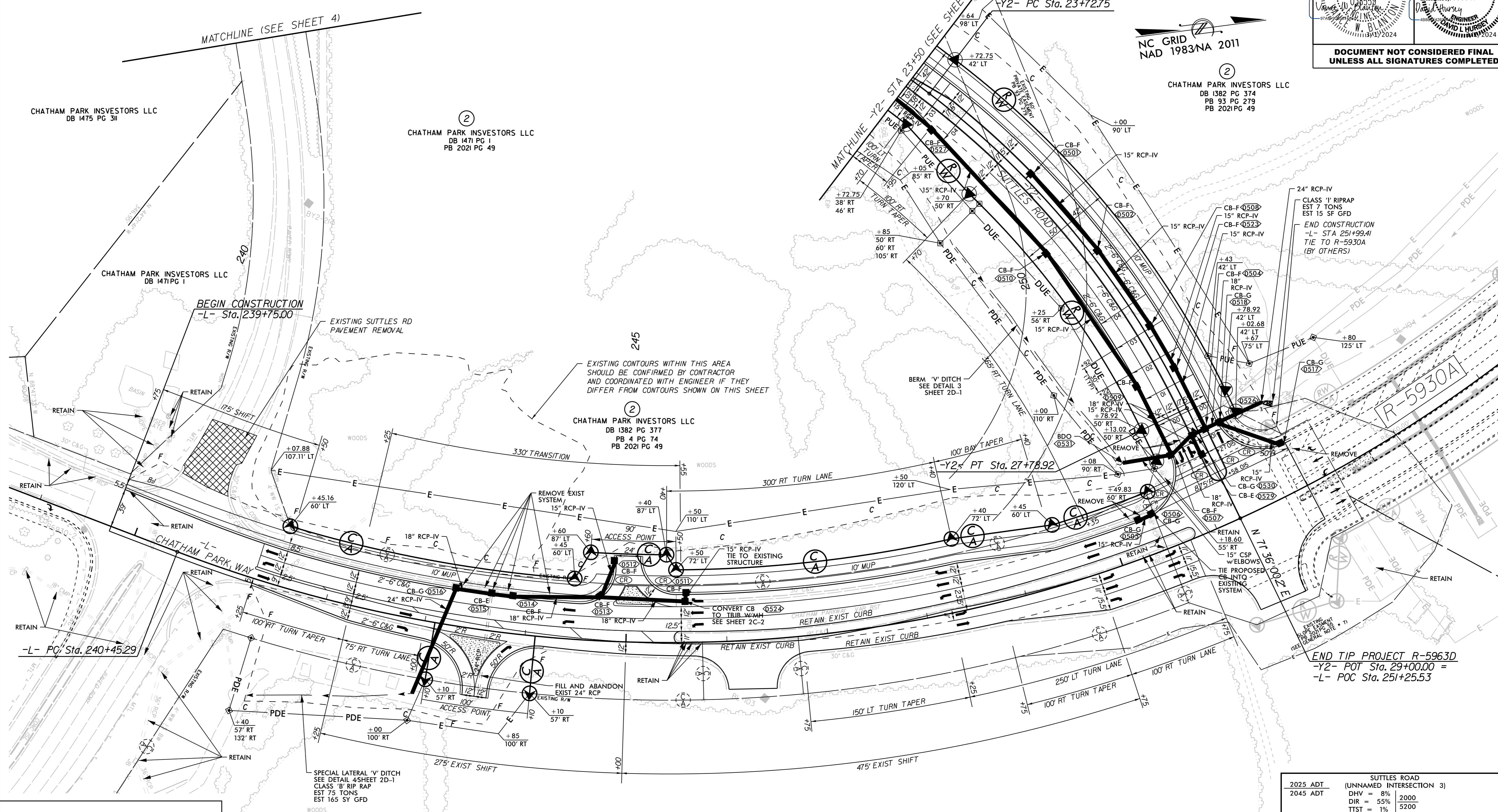
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Kimley Horn

421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NC 27601

RIGHT-OF-WAY REV.
CONST. REV.

PROJECT REFERENCE NO. R-5963D	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



CHATHAM PARK INVESTORS LLC
DB 1475 PG 311

CHATHAM PARK INVESTORS LLC
DB 1471 PG 1
PB 2021 PG 49

CHATHAM PARK INVESTORS LLC
DB 1382 PG 374
PB 93 PG 279
PB 2021 PG 49

CHATHAM PARK INVESTORS LLC
DB 1382 PG 377
PB 4 PG 74
PB 2021 PG 49

CHATHAM PARK INVESTORS LLC
DB 1382 PG 377
PB 4 PG 74
PB 2021 PG 49
PB 2021 PG 191

CHATHAM PARK INVESTORS LLC
DB 1382 PG 377
PB 4 PG 74
PB 2021 PG 49
PB 2021 PG 191

- PROP. 5" MONO. CONC. ISLAND
- PROP. PAVED SHOULDER
- PROP. PAVEMENT REMOVAL

SEE SHEET 6 FOR -Y2- PROFILE
SEE SHEET 2D-1 FOR DRAINAGE DETAILS

SUTTLES ROAD (UNNAMED INTERSECTION 3)		SUTTLES ROAD (UNNAMED INTERSECTION 3)	
2025 ADT	2045 ADT	9700	1200
DHV = 8%	DIR = 55%	30500	3900
TTST = 1%	DUAL = 2%	500	6800
		800	24000
-L- CHATHAM PARK WAY		-L- CHATHAM PARK WAY	
DHV = 8%	DIR = 60%	3700	1500
TTST = 2%	DUAL = 3%	5200	1800
		5500	
SUTTLES ROAD (UNNAMED INTERSECTION 3)		SUTTLES ROAD (UNNAMED INTERSECTION 3)	
DHV = 8%	DIR = 55%	5500	7500
TTST = 1%	DUAL = 2%		

-Y2- SUTTLES ROAD	-L- CHATHAM PARK WAY
PI Sta 25+79.65	PI Sta 248+38.68
Δ = 26° 54' 13.7" (RT)	Δ = 60° 30' 59.0" (LT)
D = 6' 37" 25.6"	D = 4' 12" 46.5"
L = 406.17'	L = 1,436.45'
T = 206.90'	T = 793.39'
R = 865.00'	R = 1,360.00'
SE = 04	SE = EXIST
RO = 120'	RO = N/A

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PROJECT REFERENCE NO. R-5963D	SHEET NO. 6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
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-Y2-

BEGIN TIP PROJECT R-5963D
BEGIN GRADE
-Y2- STA 11+80.00
ELEV = 552.25

CULVERT HYDRAULIC DATA
30" RCP

DESIGN DISCHARGE = 16.70 CFS
DESIGN FREQUENCY = 25 YRS
DESIGN HW ELEVATION = 515.35 FT
BASE DISCHARGE = 18.38 CFS
BASE FREQUENCY = 100 YRS
BASE HW ELEVATION = 515.36 FT
OVERTOPPING DISCHARGE = N/A
OVERTOPPING FREQUENCY = N/A
OVERTOPPING ELEVATION = 542.60 FT

PI = 22+10.00
EL = 564.71'
VC = 460'
K = 45

PI = 15+20.00
EL = 535.52'
VC = 600'
K = 66

-Y2- STA 22+32.00 =
-DRWI- POT Sta. 10+00.00
ELEV = 558.56'

BM*4 ELEVATION = 573.48'
N 723.699 E 1,954.828
BRG. N 15° 09' 15" W,
DIST. 195.7' FROM BY2-210
RAILROAD SPIKE IN 12" GUM

LEGEND
DITCH GRADE LT
DITCH GRADE RT

BEGIN SPECIAL
DITCH GRADE LT
-Y2- STA 14+00
ELEV = 541.26'

END SPECIAL
DITCH GRADE LT
-Y2- STA 17+50
ELEV = 520.63'

SEE SHEET NO. 4 FOR -Y2- PLAN

10 11 12 13 14 15 16 17 18 19 20 21 22 23

-Y2-

-DRWI-

END TIP PROJECT R-5963D
-Y2- 29+00.00 =
-L- STA 251+25.53
ELEV = 540.83'

END GRADE
-Y2- 28+61.40 =
-L- STA 251+25.53 (42' LT)
ELEV = 539.22'

PI = 26+50.00
EL = 538.16'
VC = 420'
K = 64

-DRWI- WATER TOWER DRIVEWAY
-DRWI- STA 10+00.00 =
-Y2- STA 21+50.00
ELEV = 558.95'

BEGIN GRADE
-DRWI- STA 10+22.75 =
-Y2- STA 21+50.00 (22.75' LT)
ELEV = 558.04'

END GRADE
END CONSTRUCTION
-DRWI- 13+23.16
ELEV = 564.41'

PI = 10+54.00
EL = 558.35'
VC = 30'

PI = 11+55.00
EL = 566.09'
VC = 30'

BEGIN SPECIAL
DITCH GRADE RT
-DRWI- STA 11+00
ELEV = 560.50'

END SPECIAL
DITCH GRADE RT
-DRWI- STA 13+00
ELEV = 562.46'

LEGEND
DITCH GRADE LT
DITCH GRADE RT

LEGEND
DITCH GRADE LT
DITCH GRADE RT

SEE SHEET NO. 5 FOR -Y2- PLAN

SEE SHEET NO. 4 FOR -DRWI- PLAN

23 24 25 26 27 28 29 500 520 530 540 550 560 570 580 600

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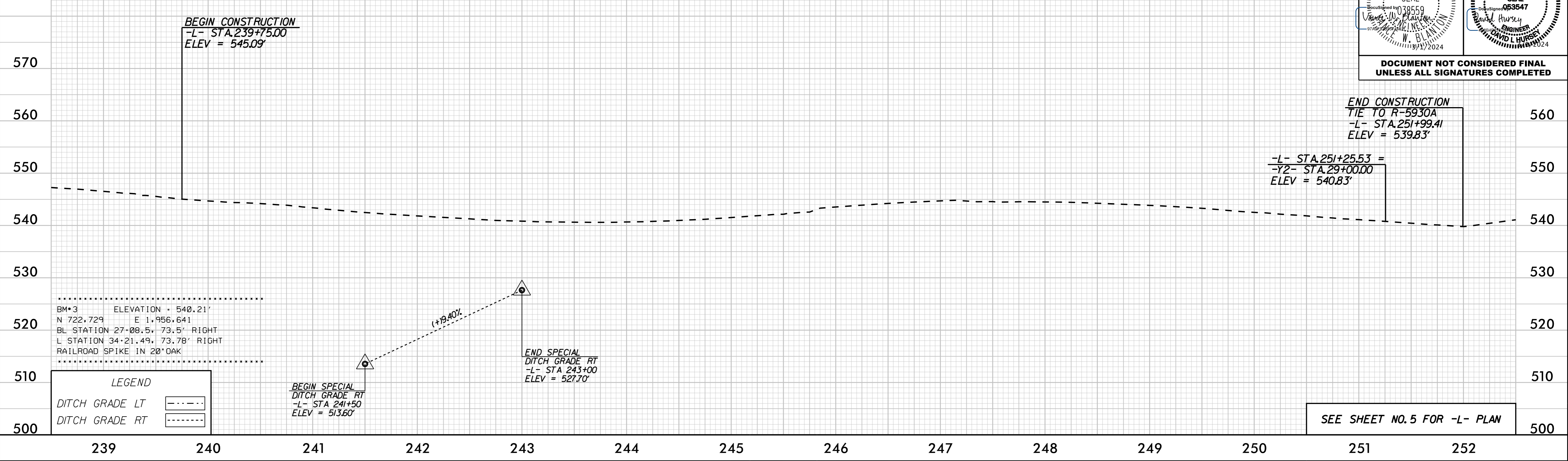
3/1/2024

5/14/99

-L-

Kimley»Horn
 421 FAYETTEVILLE STREET, SUITE 600
 RALEIGH, NC 27601

PROJECT REFERENCE NO. R-5963D	SHEET NO. 7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



BM*3 ELEVATION = 540.21'
 N 722.729 E 1,956.641
 BL STATION 27+08.5, 73.5' RIGHT
 L STATION 34+21.49, 73.78' RIGHT
 RAILROAD SPIKE IN 20' OAK

SEE SHEET NO. 5 FOR -L- PLAN

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3/1/2024