

09/08/19

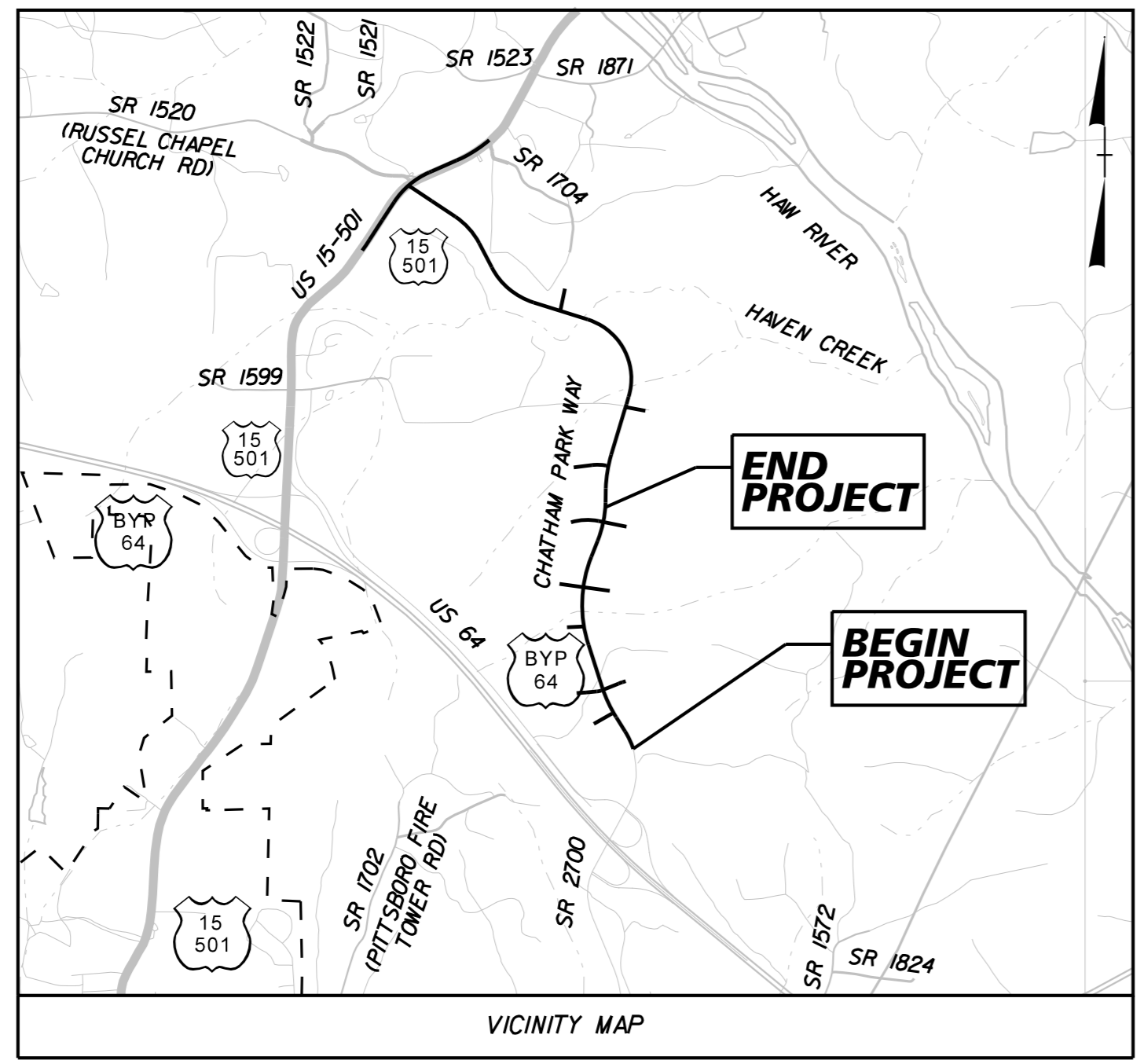
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6/9/2023

TIP PROJECT: R-5930A

CONTRACT: C204872

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

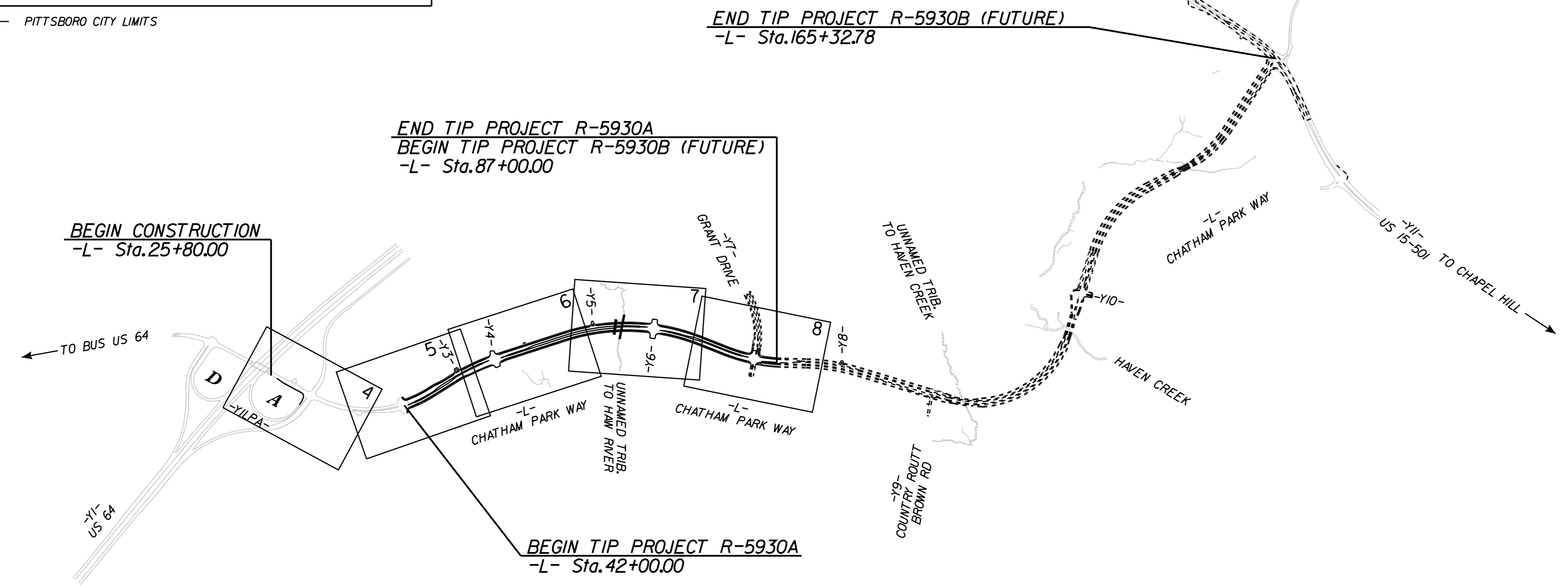


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
CHATHAM COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5930A	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
48548.1.2		PE	
48548.2.1		RW	
48548.2.2		UTL	
48548.3.2		CONST.	

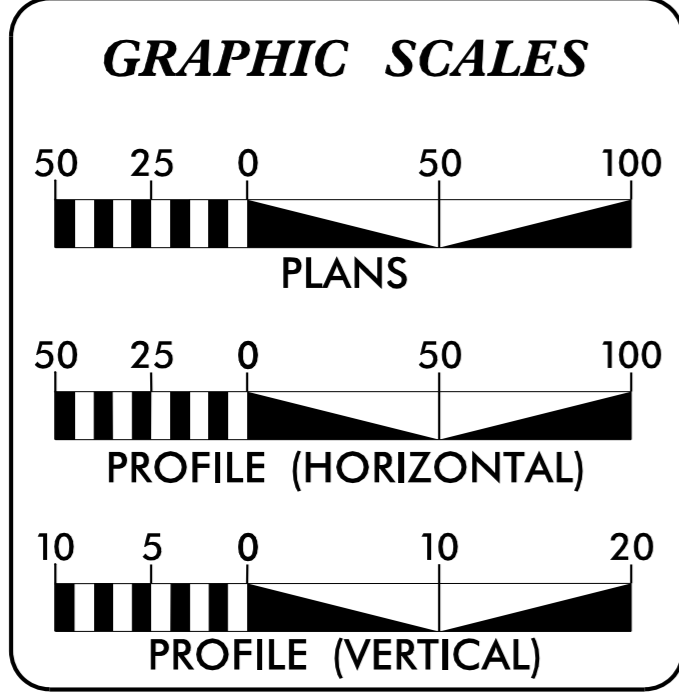
LOCATION: CHATHAM PARK WAY FROM NORTH OF US 64 TO NORTH OF FUTURE GRANT DRIVE

TYPE OF WORK: DRAINAGE, GRADING, PAVING, AND CULVERTS



THIS IS A LIMITED CONTROLLED ACCESS PROJECT WITH ACCESS LIMITED TO POINTS AS SHOWN ON THE PLANS
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



R-5930A DESIGN DATA

ADT 2025 =	0
ADT 2045 =	30000
K =	8%
D =	65
T =	5%*
V =	50 MPH

* (TTST 2% + DUAL 3%)
FUNCTIONAL CLASSIFICATION:
URBAN ARTERIAL
SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-5930A	=	0.852 MILES
TOTAL LENGTH TIP PROJECT R-5930A	=	0.852 MILES

PLANS PREPARED FOR THE NCDOT BY:

2018 STANDARD SPECIFICATIONS

Kimley Horn

VANCE W. BLANTON, P.E.
PROJECT ENGINEER

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

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

RIGHT OF WAY DATE:
NOVEMBER 30, 2022

LETTING DATE:
AUGUST 15, 2023

HYDRAULICS ENGINEER

DocuSigned by:
David Hursey
48884F426784441

7/10/2023

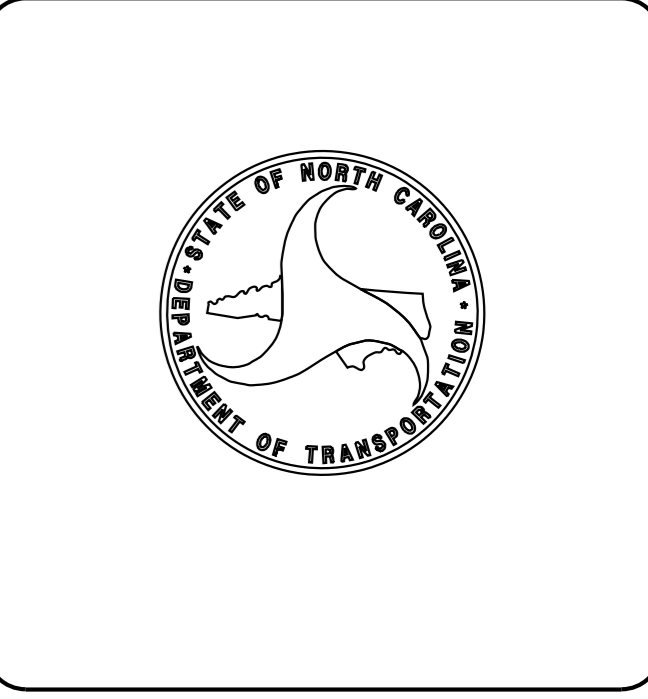
SIGNATURE: _____ P.E.

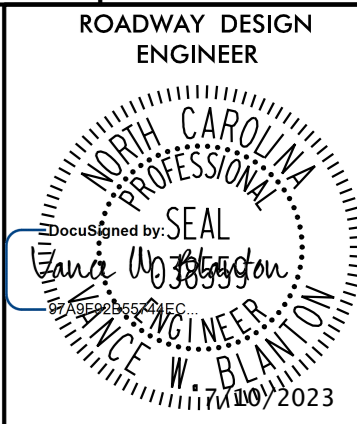
ROADWAY DESIGN ENGINEER

DocuSigned by:
Vance W. Blanton
97A9F9285574AEC

7/10/2023

SIGNATURE: _____ P.E.





GENERAL NOTES

R-5930A
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
2B-1 THRU 2B-2	INTERSECTION DETAILS
2B-3	PEDESTRIAN CULVERT GRADING DETAIL
2C-1	CURB RAMP DETAILS
2C-2 THRU 2C-3	GUARDRAIL DETAILS
2D-1 THRU 2D-2	DRAINAGE DETAILS
3B-1	SUMMARY OF EARTHWORK, REMOVAL AND BREAKING EXISTING ASPHALT PAVEMENT
3B-2	SUMMARIES OF GUARDRAIL
3D-1 THRU 3D-4	DRAINAGE SUMMARIES
3G-1	GEOTECHNICAL SUMMARIES
3P-1	PARCEL INDEX SHEETS
4 THRU 8	PLAN SHEETS
9 THRU 11	PROFILE SHEETS
RWO1 THRU RW16	SURVEY CONTROL, EXISTING CENTERLINES, RIGHT OF WAY, EASEMENTS, AND PROPERTY TIES
TMP-1 THRU TMP-3	TRANSPORTATION MANAGEMENT PLANS
PMP-1 THRU PMP-7	PAVEMENT MARKING PLANS
EC-1 THRU EC-13	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-8	SIGNING PLANS
UC-1 THRU UC-13	UTILITY CONSTRUCTION PLANS
X-1	CROSS-SECTION INDEX
X-1A	CROSS-SECTION SUMMARY SHEET
X-2 THRU X-28	CROSS-SECTIONS
C-TSH	CULVERT TITLE SHEET
CI-1 THRU CI-6	CULVERT (42C001) PLANS
C2-1 THRU C2-6	CULVERT (42C002) PLANS

GENERAL NOTES:

2018 SPECIFICATIONS
EFFECTIVE: 01-16-2018
REVISED:

2018 ROADWAY ENGLISH STANDARD DRAWINGS

EFF. 01-16-2018
REV.

GRADE LINE:
GRADING AND SURFACING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

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
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DIVISION 5 - SUBGRADE, BASES AND SHOULDERS

560.01	METHOD OF SHOULDER CONSTRUCTION - HIGH SIDE OF SUPERELEVATED CURVE - METHOD I
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DIVISION 8 - INCIDENTALS

806.03	CONTOUR OF ACCESS MARKER
815.02	SUBSURFACE DRAIN
838.01	CONCRETE ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS - 15' THRU 48" PIPE 90 SKEW
838.01	BRICK ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS - 15' THRU 48" PIPE 90 SKEW
838.01	PRECAST ENDWALLS - 12" THRU 72" PIPE 90 SKEW
840.00	CONCRETE BASE PAD FOR DRAINAGE STRUCTURES
840.01	BRICK CATCH BASIN - 12" THRU 54" PIPE
840.02	CONCRETE CATCH BASIN - 12" THRU 54" PIPE
840.03	FRAME, GRATES AND HOOD - FOR USE ON STANDARD CATCH BASIN
840.04	CONCRETE DROP INLET - 12" THRU 30" PIPE
840.05	BRICK DROP INLET - 12" THRU 30" PIPE
840.06	DROP INLET FRAME AND GRATES - FOR USE WITH STD DWG 840.14 AND 840.15
840.08	CONCRETE GRATED DROP INLET TYPE 'B' - 12" THRU 36" PIPE
840.24	FRAMES AND NARROW SLOT SAG GRATES
840.25	ANCHORAGE FOR FRAMES - BRICK OR CONCRETE OR PRECAST
840.27	BRICK GRATED DROP INLET TYPE 'B' - 12" THRU 36" PIPE
840.31	CONCRETE JUNCTION BOX - 12" THRU 66" PIPE
840.32	BRICK JUNCTION BOX - 12" THRU 66" PIPE
840.45	PRECAST DRAINAGE STRUCTURE
840.54	MANHOLE FRAME AND COVER
840.66	DRAINAGE STRUCTURE STEPS
846.01	CONCRETE CURB, GUTTER AND CURB & GUTTER
848.04	STREET TURNOUT
848.05	CURB RAMP - PROPOSED CURB & GUTTER
850.01	CONCRETE PAVED DITCHES
850.10	GUIDE FOR BERM DRAINAGE OUTLET - 15' AND 18" PIPE
852.01	CONCRETE ISLANDS
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
852.10	MEDIAN CONSTRUCTION - WITH CURB AND GUTTER
862.01	GUARDRAIL PLACEMENT
862.02	GUARDRAIL INSTALLATION
876.01	RIP RAP IN CHANNELS
876.02	GUIDE FOR RIP RAP AT PIPE OUTLETS
876.04	DRAINAGE DITCHES WITH CLASS 'B' RIP RAP

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 RADII NOTED ON PLANS.

GUARDRAIL:

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

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE THE TOWN OF PITTSBORO.

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 848.05 and/or 848.06.

REVISIONS

K:\RAL_Roadway\01036532 - R-5930 North CPWA Roadway Proj\R-5930A_rdy_1st.dgn

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	-----
Proposed Wetland Boundary	-----
Existing Endangered Animal Boundary	-----
Existing Endangered Plant Boundary	-----
Existing Historic Property Boundary	-----
Known Contamination Area: Soil	-----
Potential Contamination Area: Soil	-----
Known Contamination Area: Water	-----
Potential Contamination Area: Water	-----
Contaminated Site: Known or Potential	☠ ?

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

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

RIGHT OF WAY & PROJECT CONTROL:

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

ROADS AND RELATED FEATURES:

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

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

EXISTING STRUCTURES:

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

UTILITIES:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

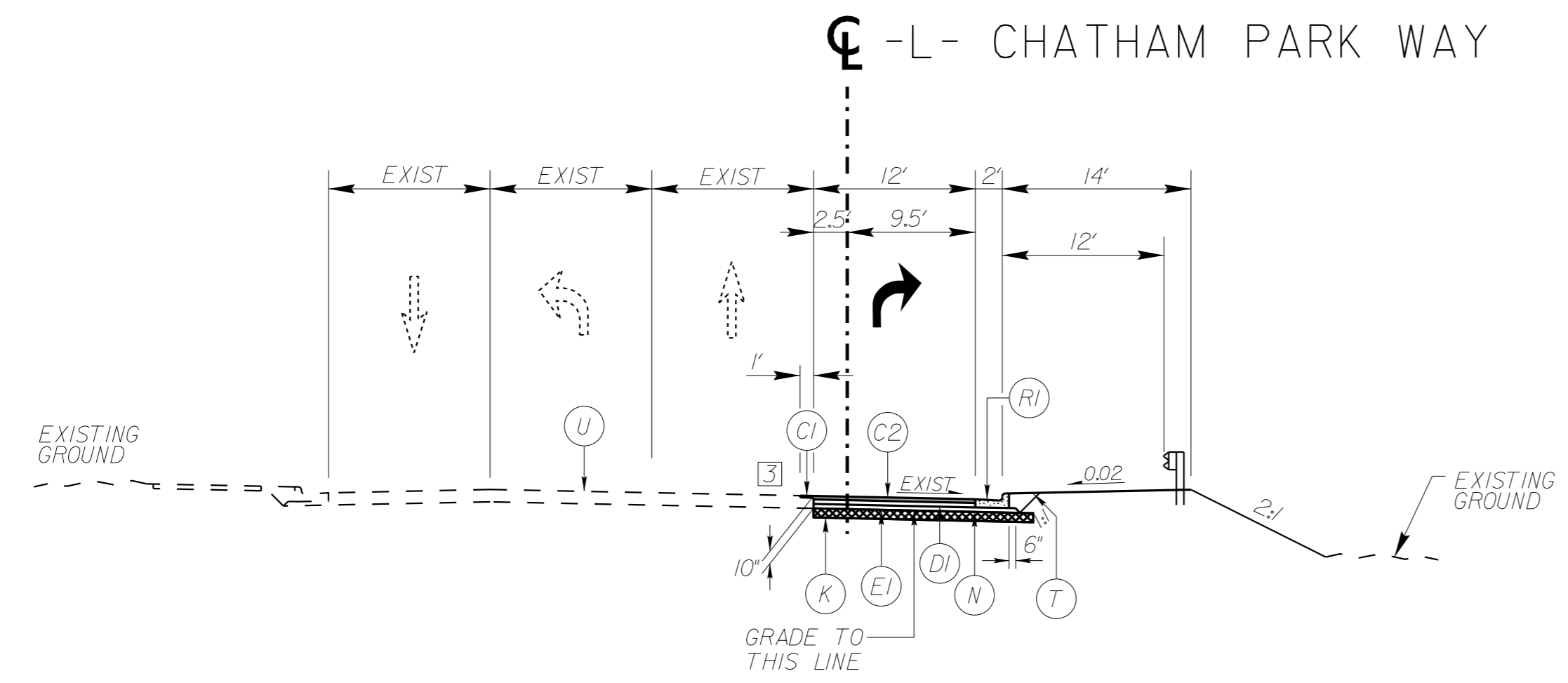
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5/14/2023

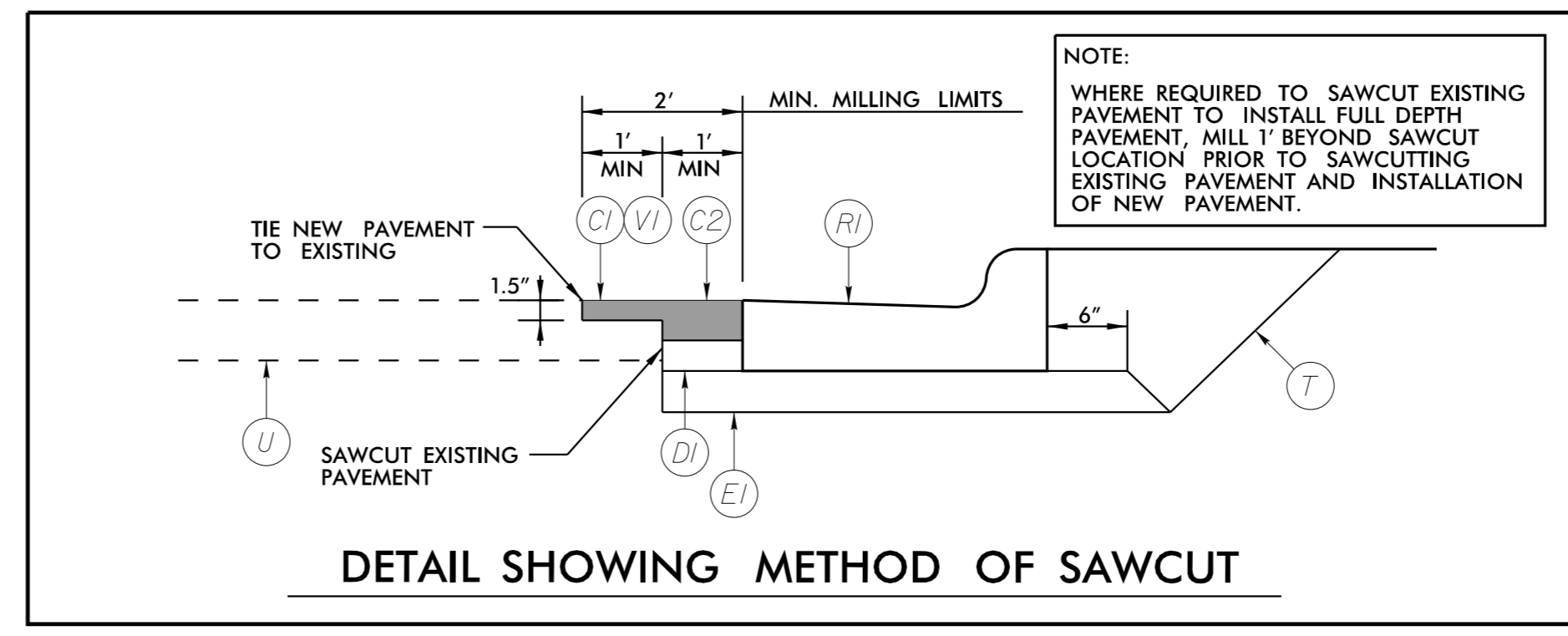
Kimley Horn
 421 FAYETTEVILLE STREET, SUITE 600
 RALEIGH, NC 27601

PROJECT REFERENCE NO. R-5930A	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

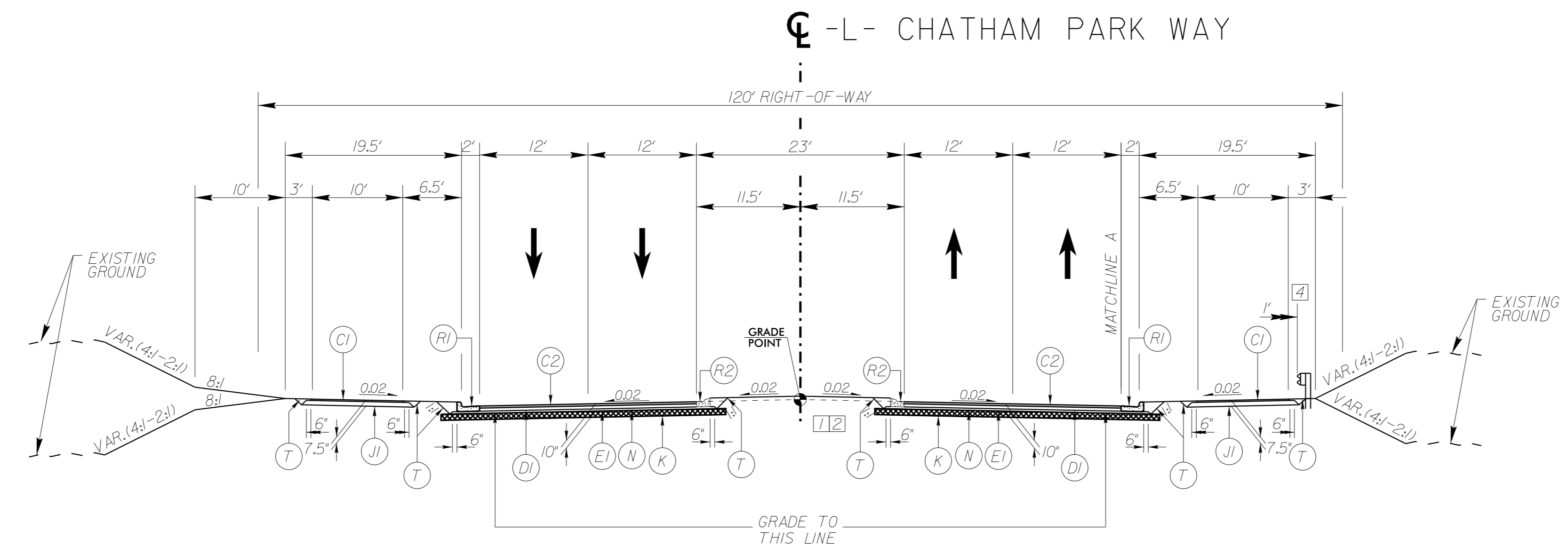
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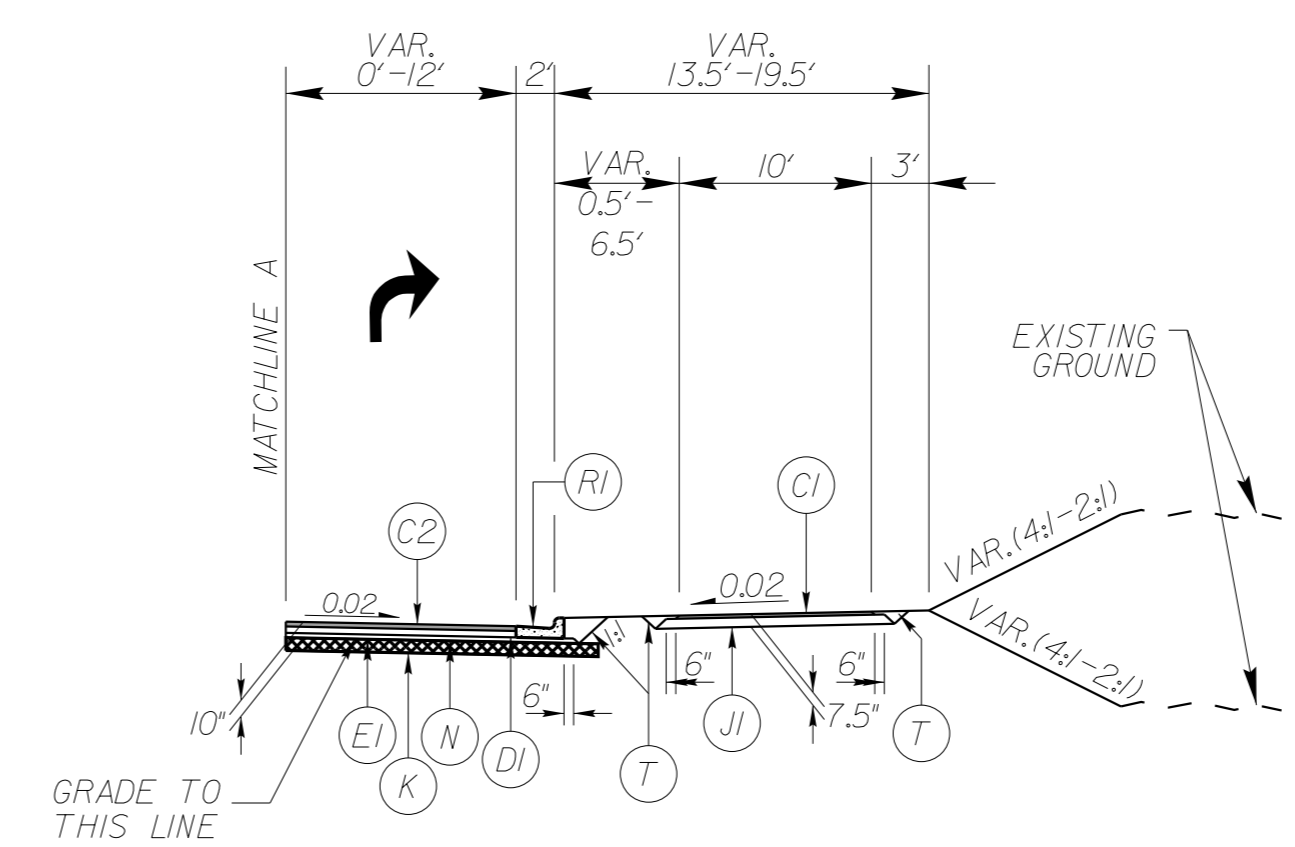
TYPICAL SECTION NO. 1
 -L- STA 26+50.00 TO 30+51.27



- 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 FACE OF GUARDRAIL TO BE PLACED 1' BEHIND MULTI-USE PATH. SEE PLANS FOR SPECIFIC GUARDRAIL LOCATIONS



TYPICAL SECTION NO. 2
 -L- STA 42+00.00 TO 84+41.99



TYPICAL SECTION NO. 2A
 -L- STA 42+45.00 TO 52+95.00

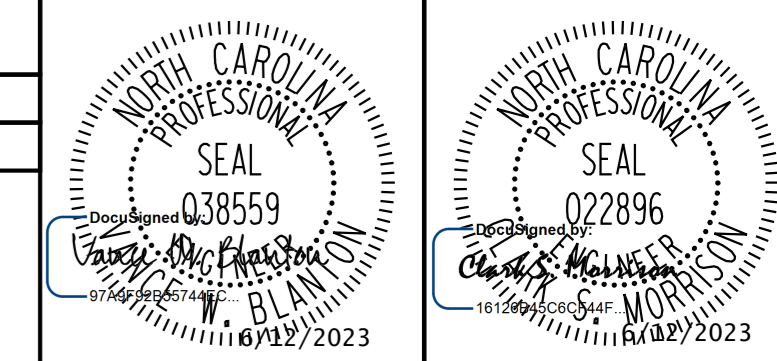
PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	PROPOSED APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C2	PROPOSED APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
DI	PROPOSED APPROX. 4.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
EI	PROPOSED APPROX. 3.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
JI	PROPOSED 6" AGGREGATE BASE COURSE
K	PROPOSED 8" LIME STABILIZATION (METHOD-SLURRY) AT A RATE OF 24 LBS. PER SQ. YD. OR 7" CEMENT STABILIZATION AT A RATE OF 56 LBS. PER SQ. YD. 50/50 SPLIT TO BE USED AT THE DISCRETION OF THE ENGINEER.
N	GEOTEXTILE FOR SUBGRADE STABILIZATION
RI	PROPOSED 2'-6" CONCRETE CURB & GUTTER
R2	PROPOSED 1'-6" CONCRETE CURB & GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
VI	PROPOSED 1.5" MILLING

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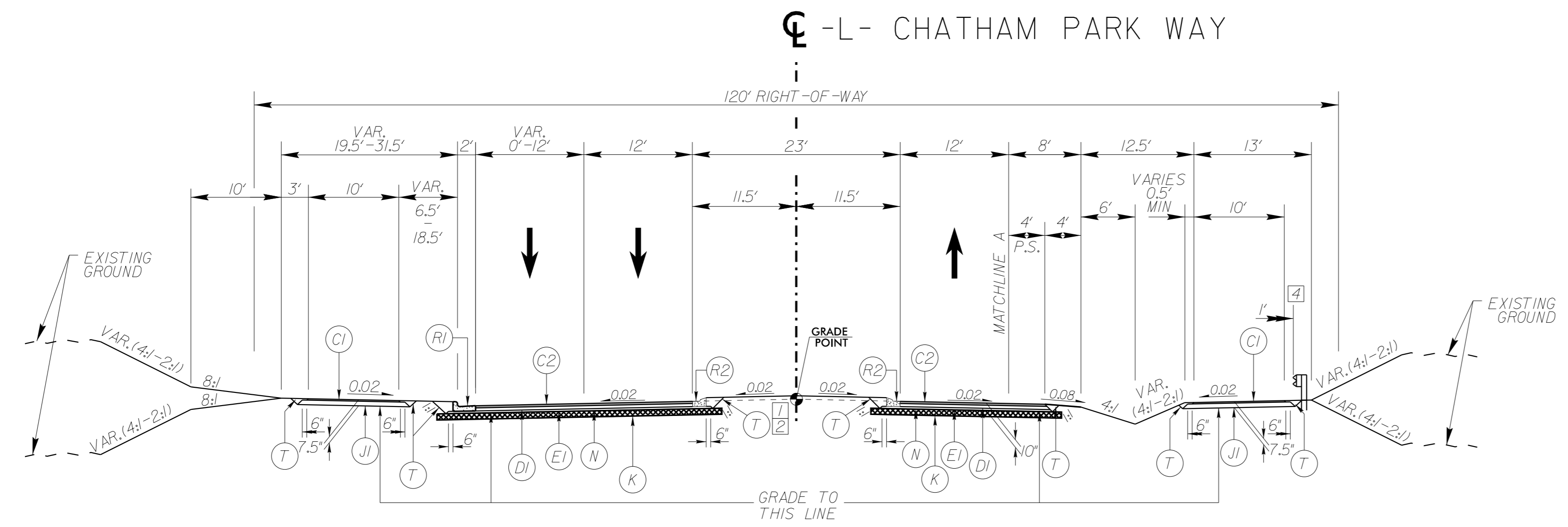
6/12/2023

5/14/2023

PROJECT REFERENCE NO. R-5930A		SHEET NO. 2A-2
ROADWAY DESIGN ENGINEER		PAVEMENT DESIGN ENGINEER
421 FAYETTEVILLE STREET, SUITE 600 RALEIGH, NC 27601		
RIGHT-OF-WAY REV.		
CONST. REV.		

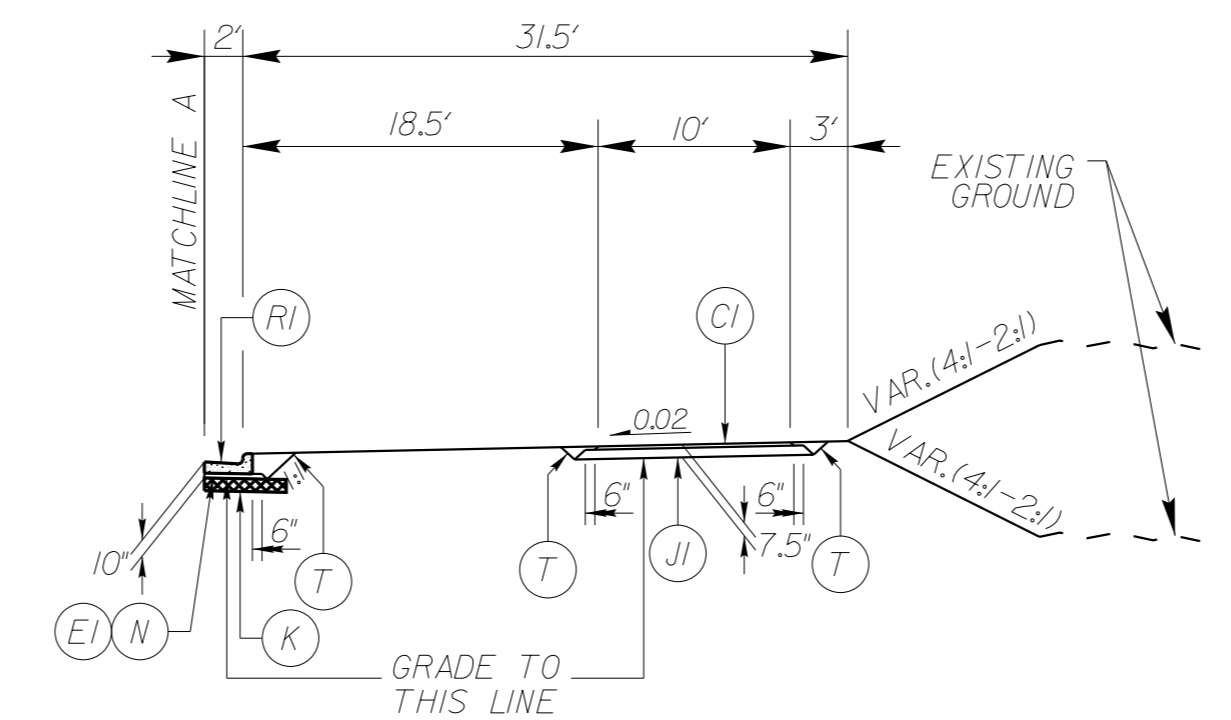


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TYPICAL SECTION NO. 3

-L- STA 84+41.99 TO 87+00.00



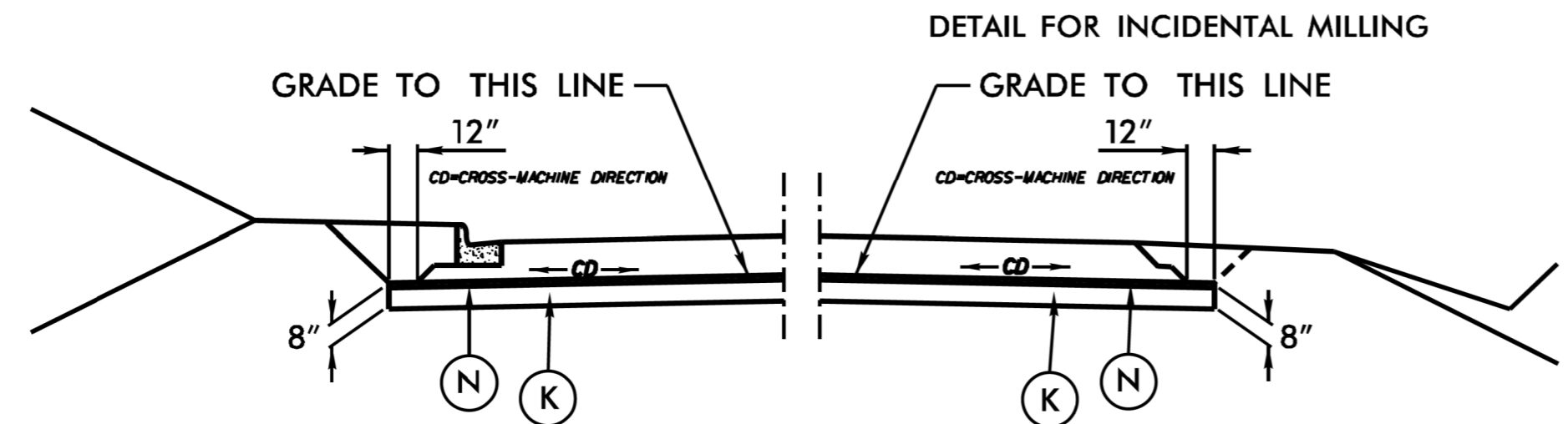
TYPICAL SECTION NO. 3A

-L- STA 84+41.99 TO 85+25.00

PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE INDICATED

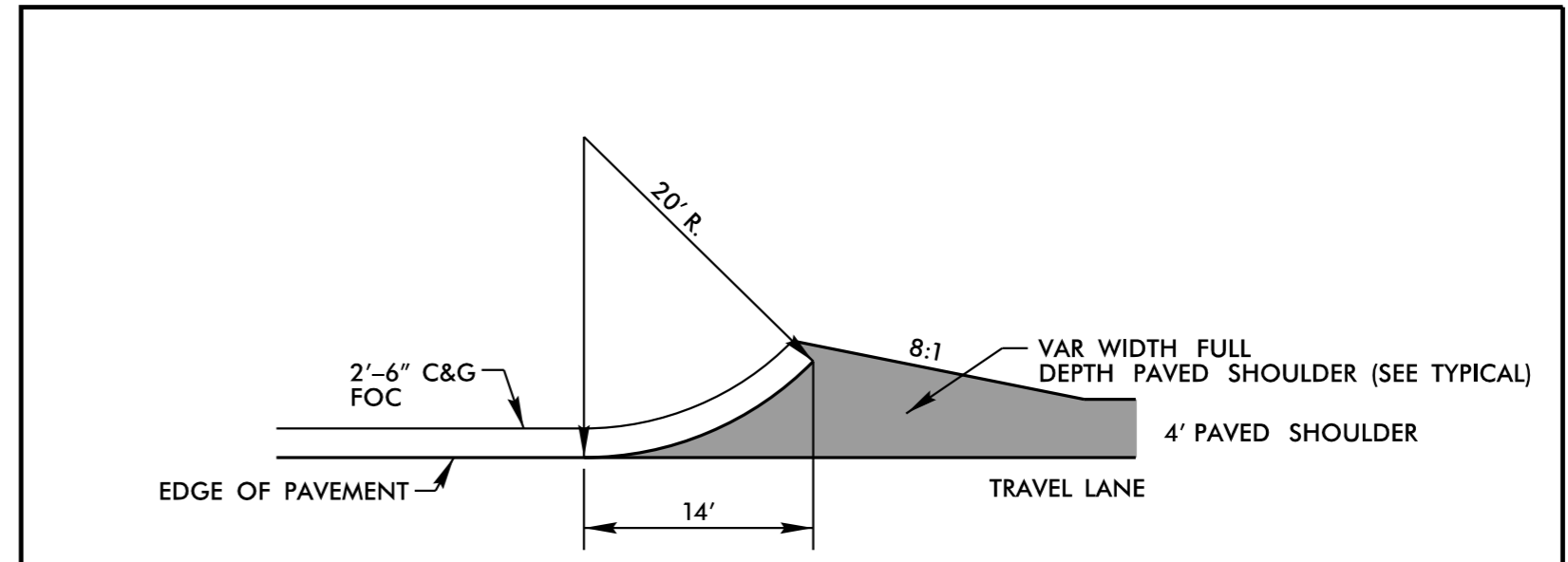
- 1 SEE PLANS AND CROSS SECTIONS FOR MEDIAN TYPES AND LOCATIONS
- 2 SEE PLANS FOR TURN LANE LOCATIONS
- 3 SEE DETAIL SHOWING METHOD OF SAWCUT, SHEET 2A-1
- 4 FACE OF GUARDRAIL TO BE PLACED 1' BEHIND MULTI-USE PATH. SEE PLANS FOR SPECIFIC GUARDRAIL LOCATIONS

GEOTEXTILE FOR SUBGRADE STABILIZATION



USE GEOTEXTILE FOR SUBGRADE STABILIZATION WITH CHEMICAL STABILIZATION FOR:

- L- 43+50 TO 44+50 (RT)
- L- 55+50 TO 57+00 (LT, RT)
- L- 57+00 TO 57+50 (RT)
- L- 67+50 TO 71+50 (LT, RT)
- L- 81+25 TO 82+50 (LT, RT)
- L- 82+50 TO 84+75 (CL)



DETAIL SHOWING CURB & GUTTER FLARE

PAVEMENT SCHEDULE
(FINAL PAVEMENT DESIGN)

CI	1.5' S9.5B
C2	3' S9.5B
DI	4' 119.0C
EI	3' B25.0C
JI	6' ABC
K	CHEMICALLY STABILIZED SUBGRADE
N	GEOTEXTILE FOR SUBGRADE STAB.
R1	2'-6" CONCRETE CURB & GUTTER
R2	1'-6" CONCRETE CURB & GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
VI	1.5' MILLING

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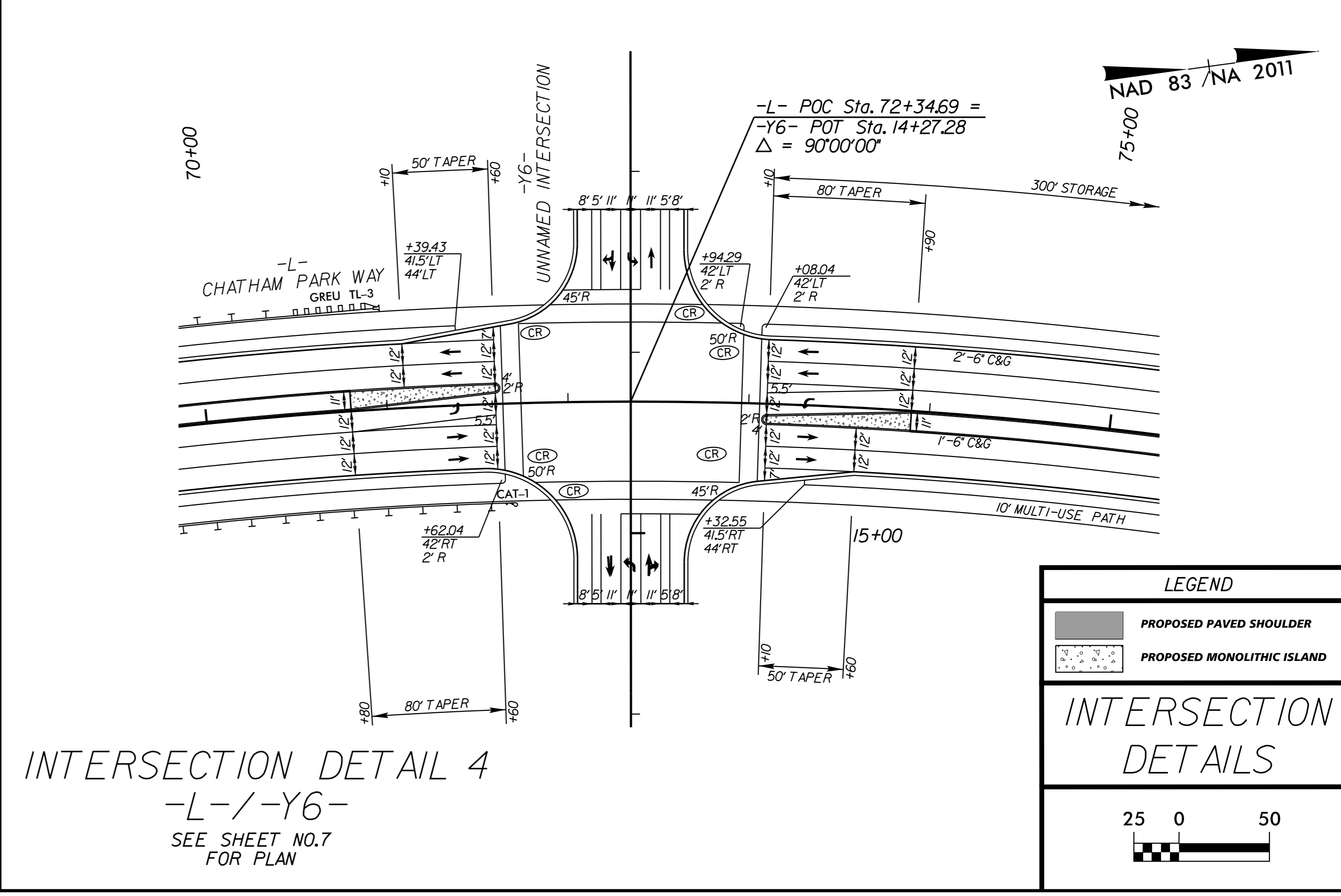
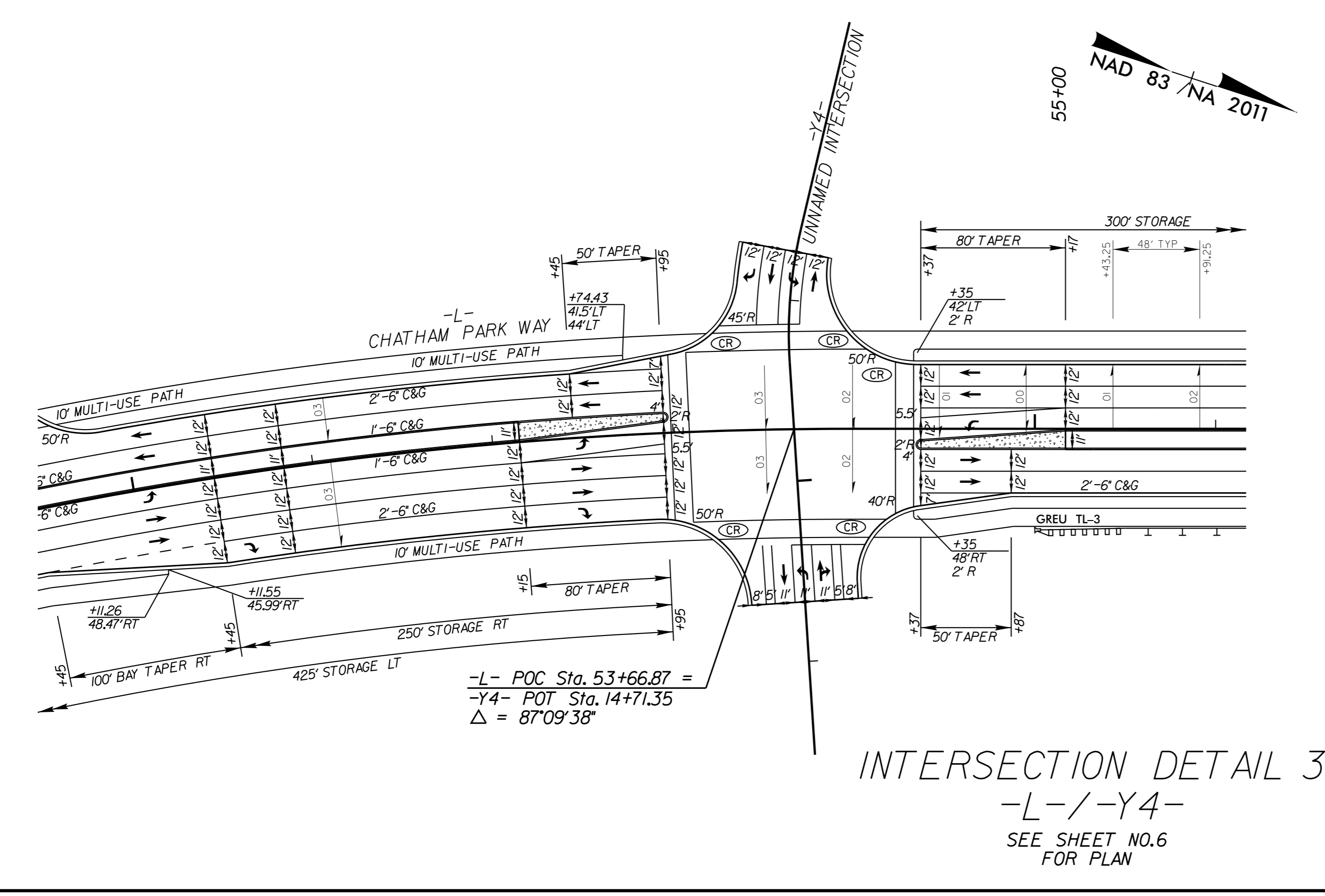
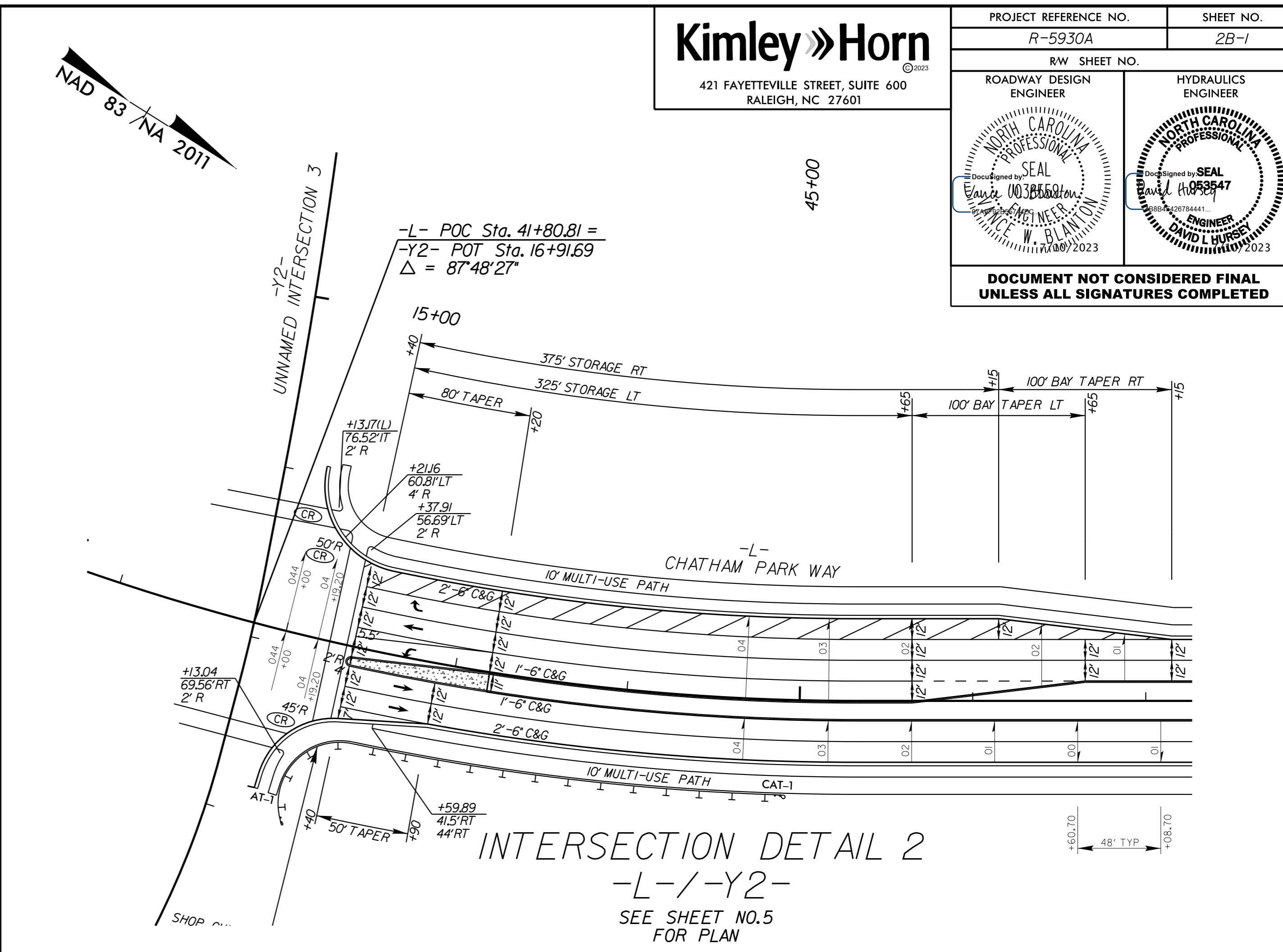
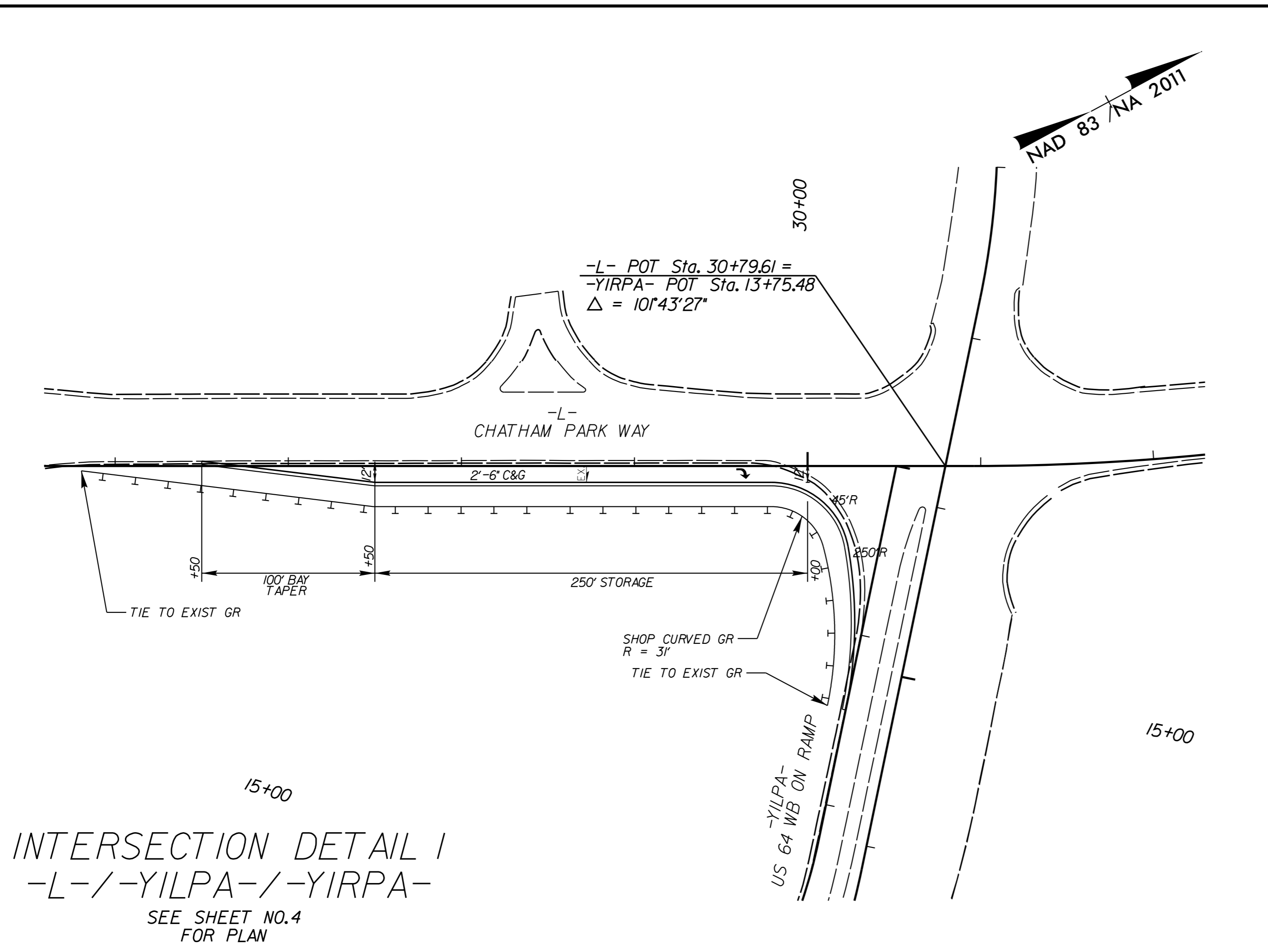
6/9/2023

5/14/1999

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6/9/2023

PROJECT REFERENCE NO. R-5930A	SHEET NO. 2B-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



LEGEND

- PROPOSED PAVED SHOULDER
- PROPOSED MONOLITHIC ISLAND


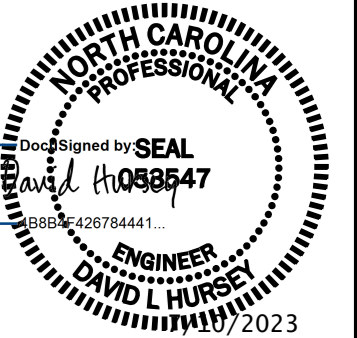
INTERSECTION DETAILS

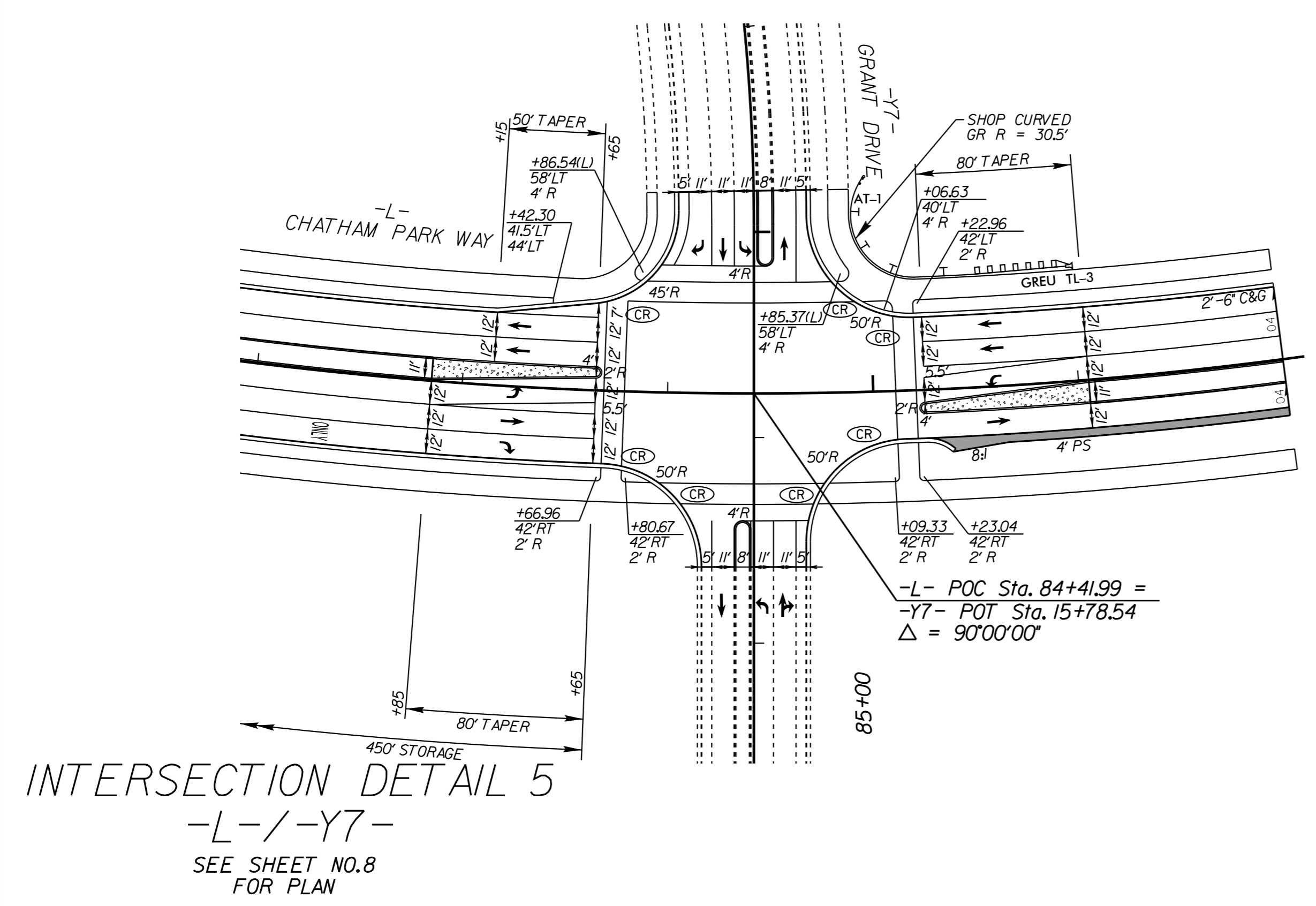
25 0 50

5/14/2023


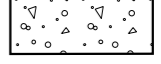
NAD 83 / NA 2011

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

PROJECT REFERENCE NO. R-5930A	SHEET NO. 2B-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER 
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	




LEGEND

-  PROPOSED PAVED SHOULDER
-  PROPOSED MONOLITHIC ISLAND

INTERSECTION DETAILS

25 0 50

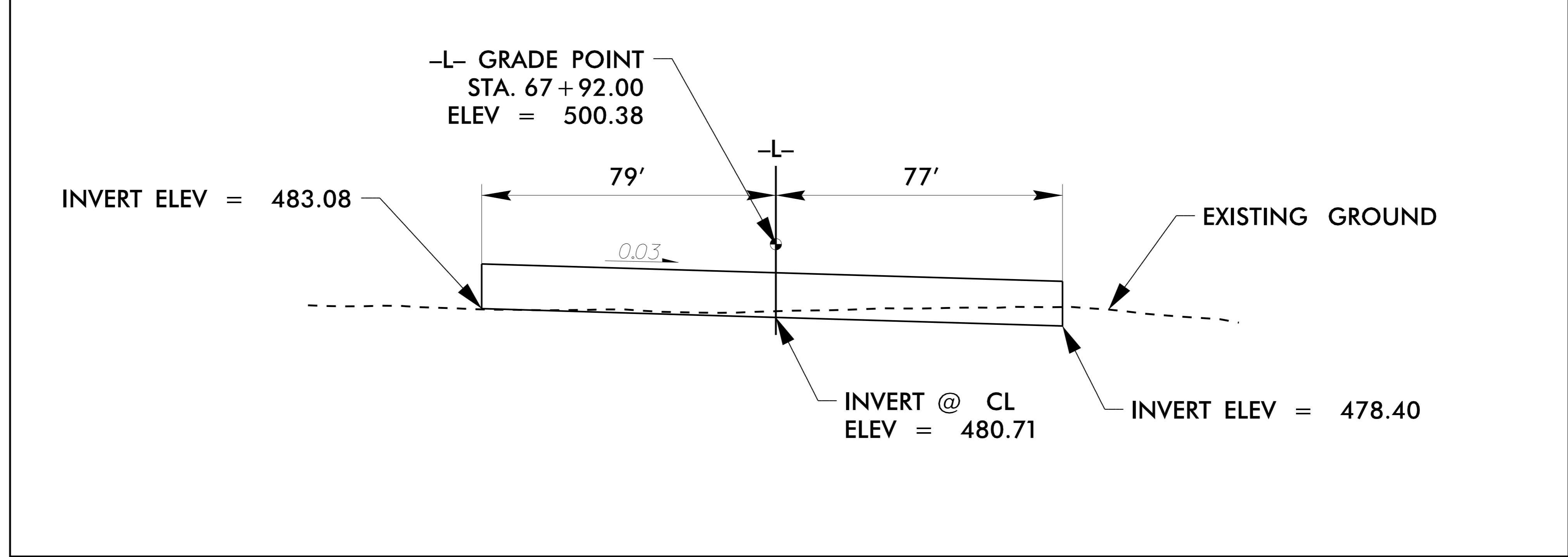
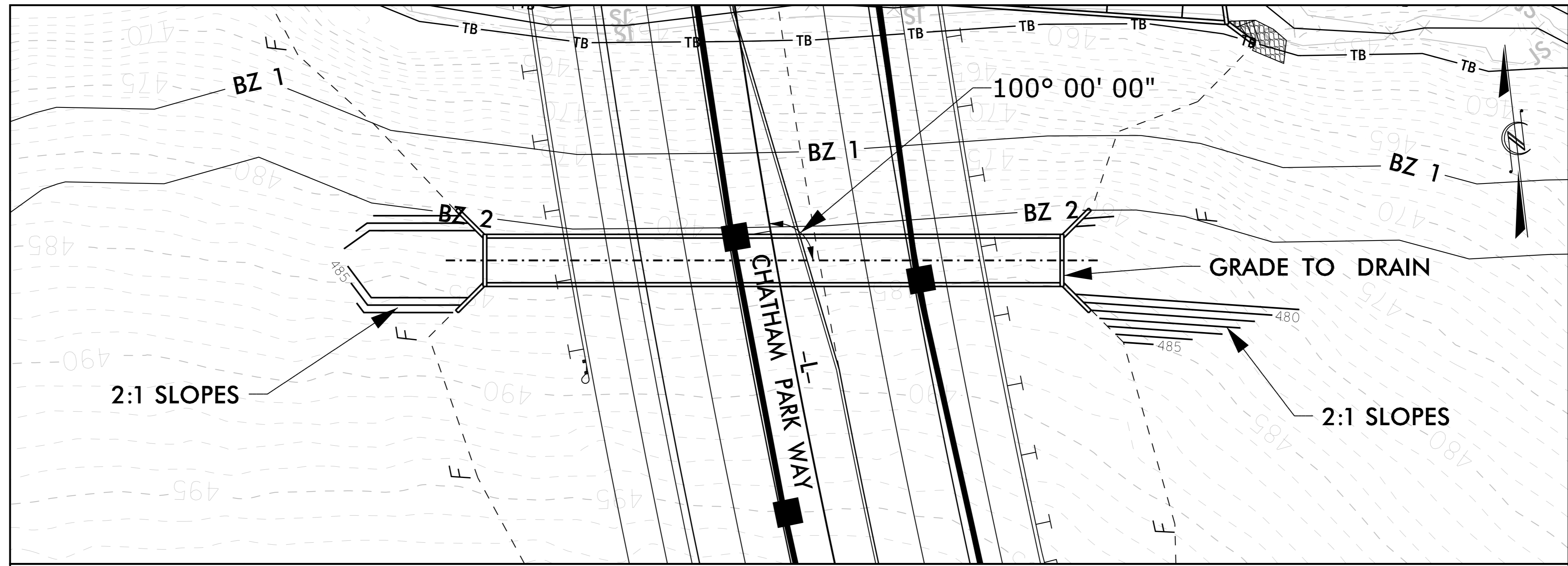


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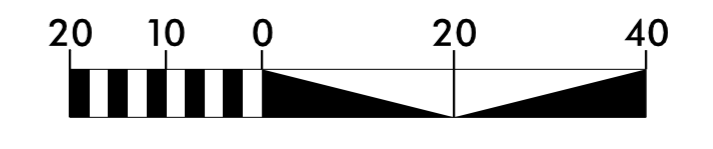


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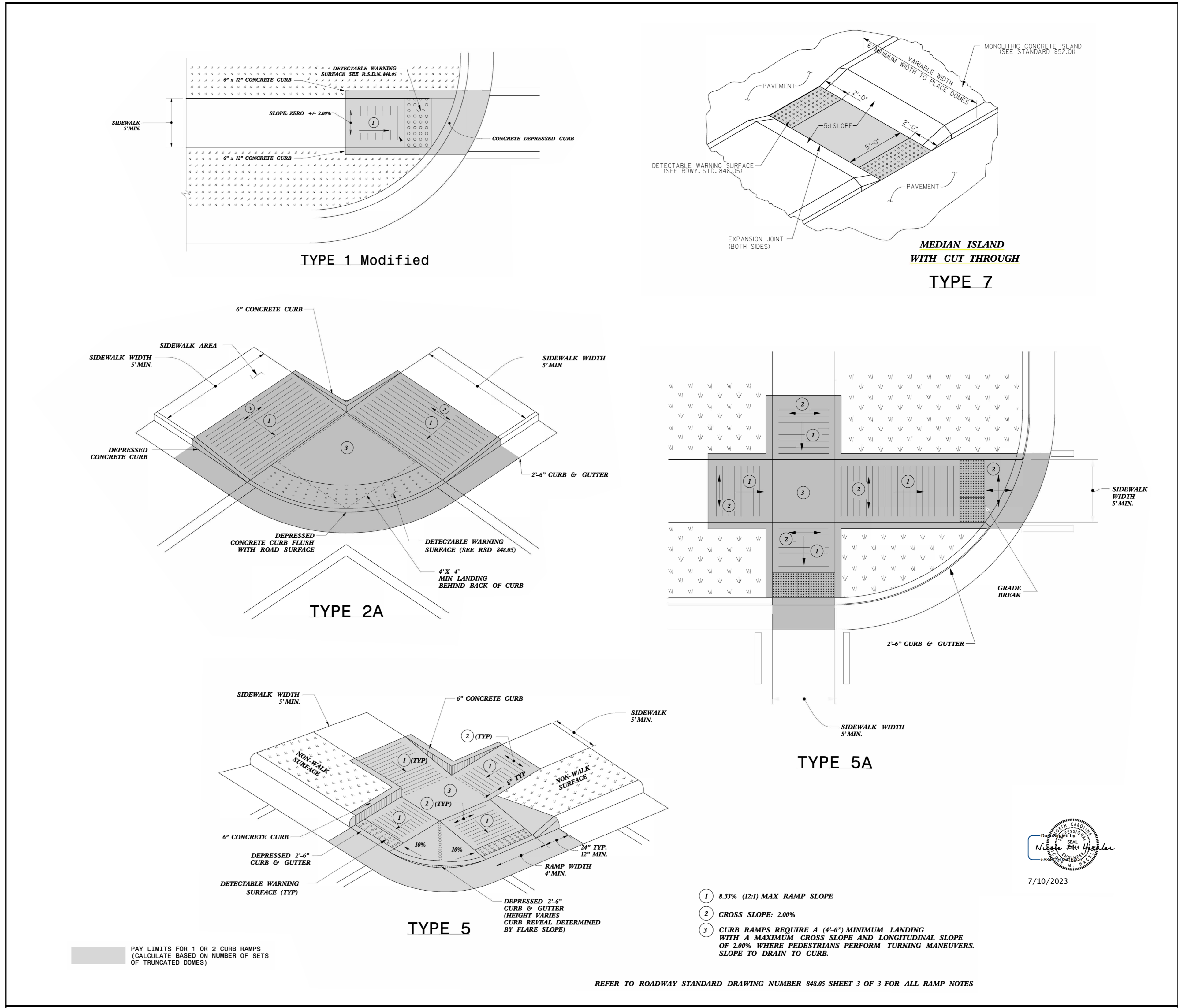
REVISIONS



PEDESTRIAN CULVERT GRADING DETAIL
12' X 12' RCBC @ -L- STA 67+92

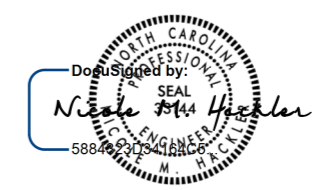


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REVISIONS



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

- 1 8.33% (12:1) MAX RAMP SLOPE
- 2 CROSS SLOPE: 2.00%
- 3 CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.



7/10/2023

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

CURB RAMP DETAILS

5/14/99

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 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

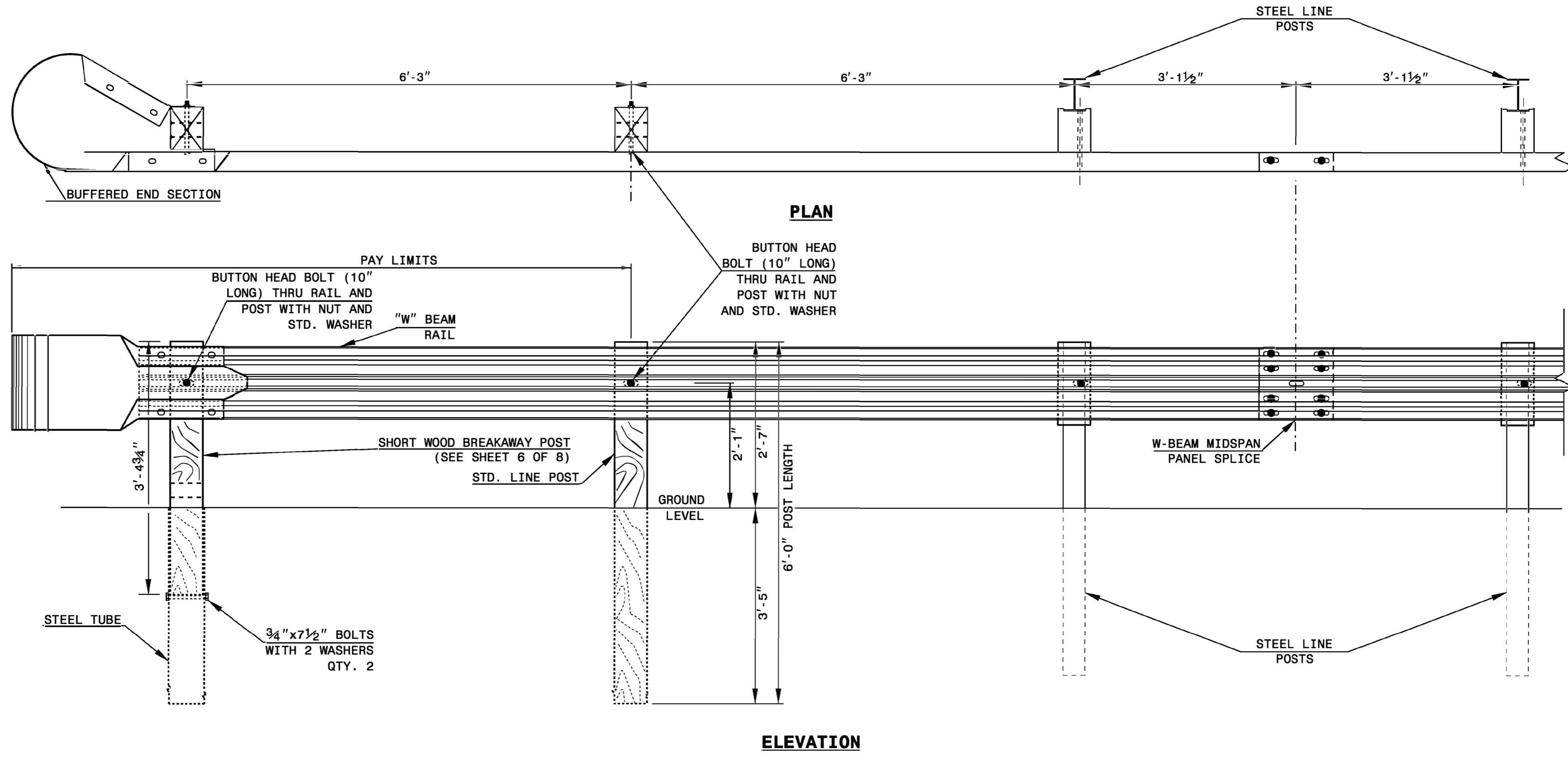
ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET OF

SHEET OF



**TRAILING END UNIT ASSEMBLY
 A.T. - 1 SYSTEM**

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6/9/2023



7/10/2023

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

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

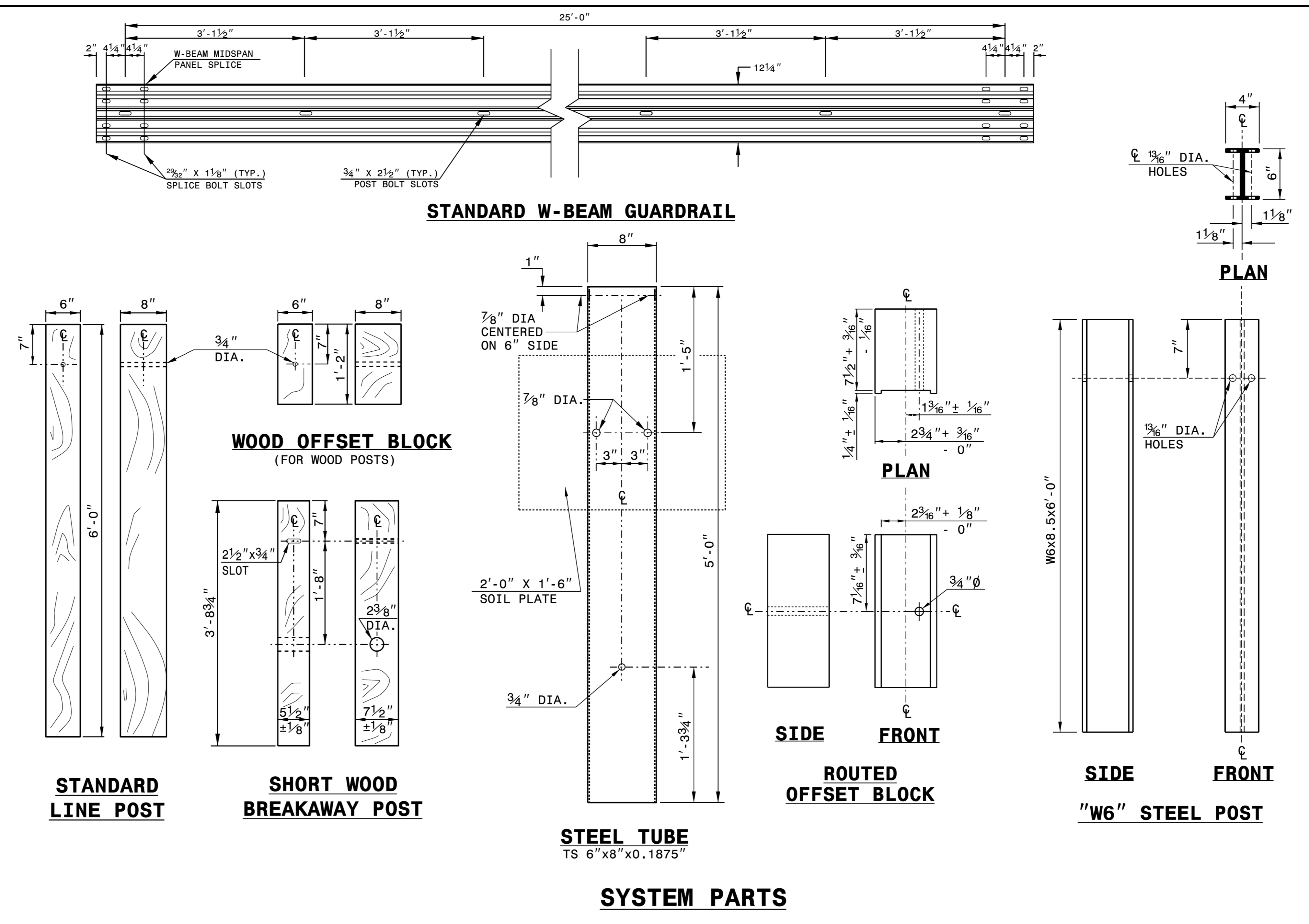
A.T. - 1 SYSTEM

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

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02



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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

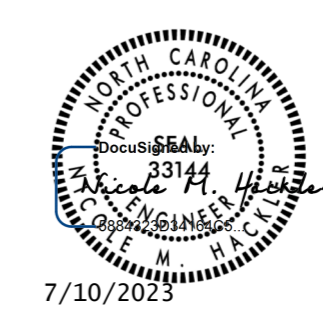
SHEET 6 OF 8
862D02

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REVISIONS

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

SEE TITLE BLOCK

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

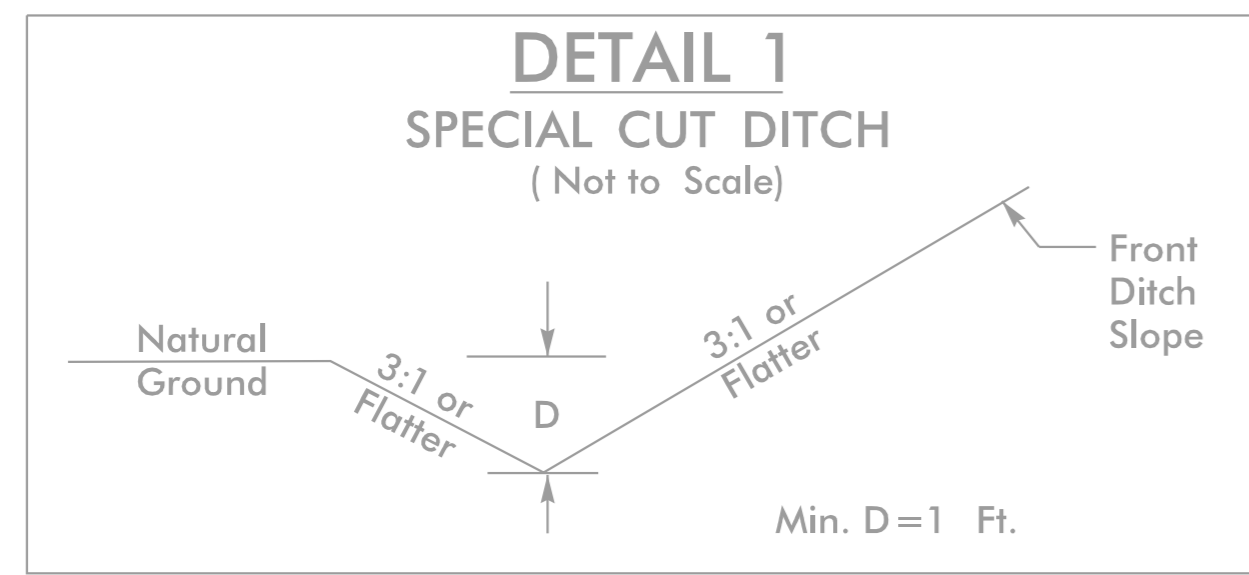


7/10/2023

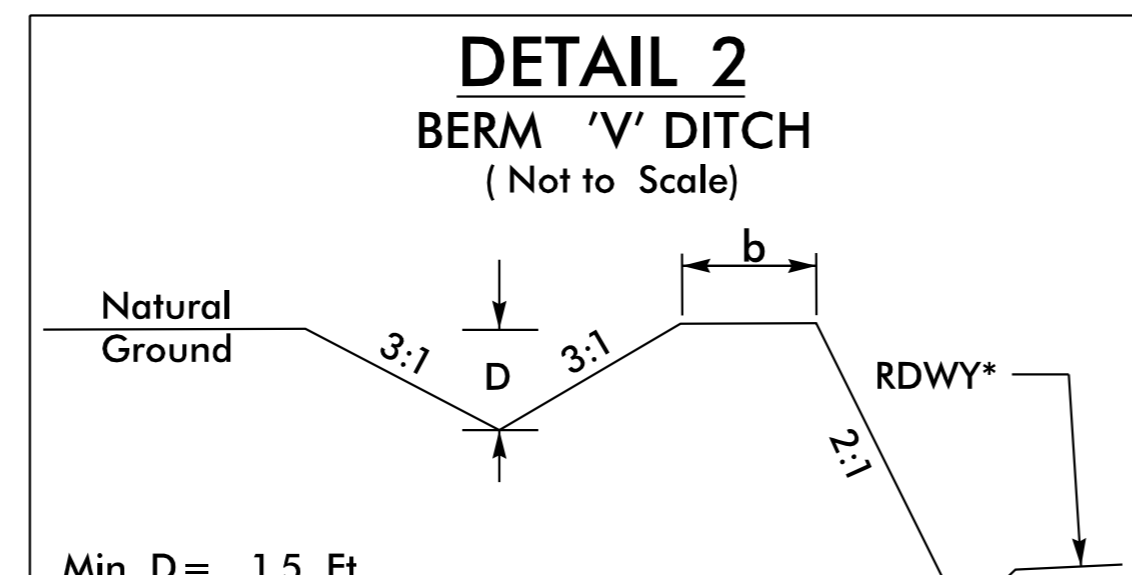
5/14/99

6/9/2023

PROJECT REFERENCE NO. R-5930A	SHEET NO. 2D-1
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

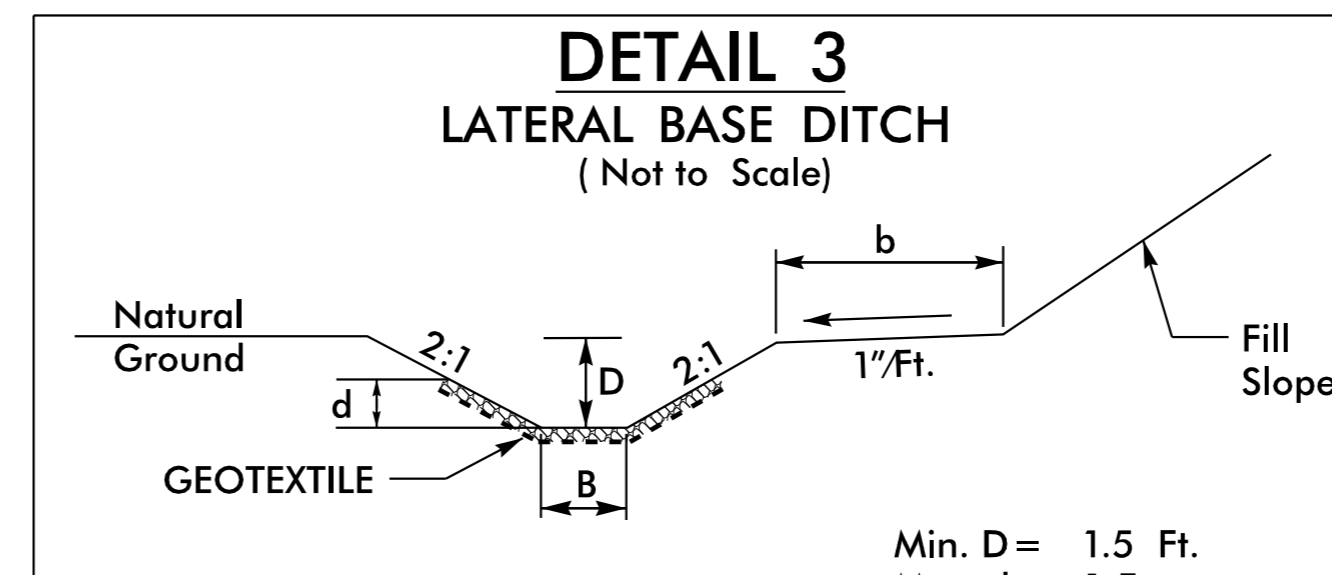


DETAIL APPLIES TO R-5930B (FUTURE)



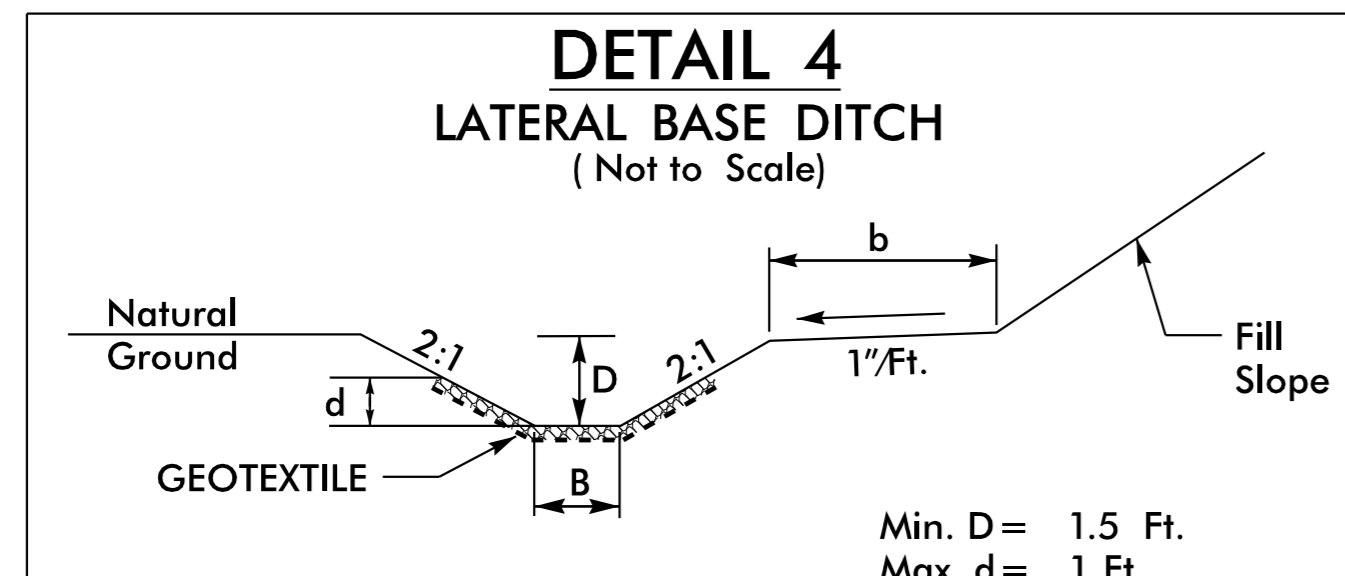
Min. D = 1.5 Ft.
b = 5 Ft.
*RDWY or Cut Ditch. See Detail 7 where applicable

FROM STA. 42+70 TO STA. 49+40 -L- (LT)
FROM STA. 49+40 TO STA. 53+00 -L- (LT)
FROM STA. 85+00 TO STA. 87+00 -L- (RT)



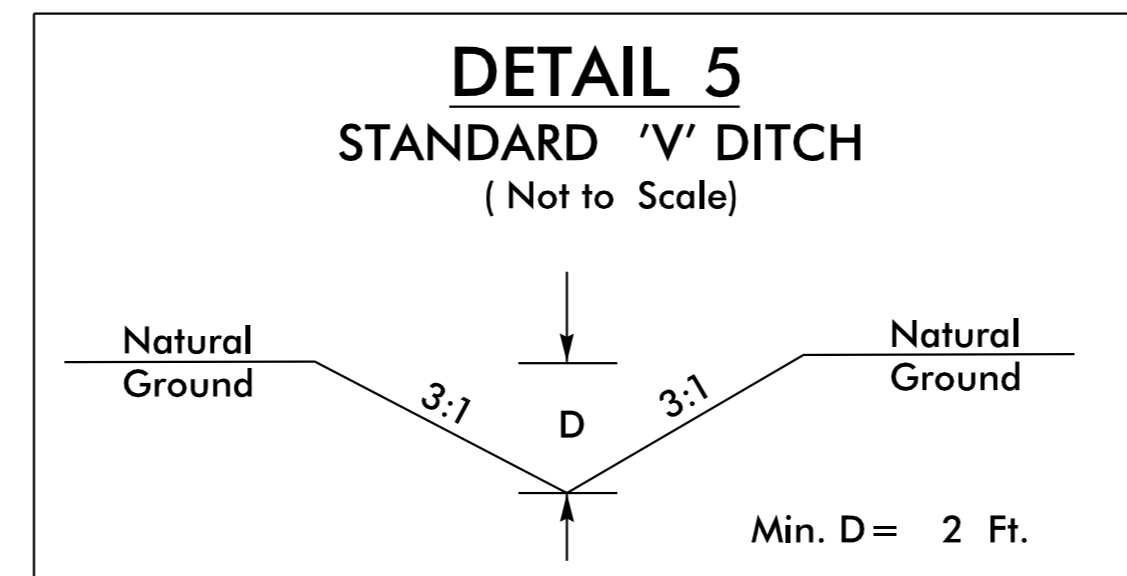
Min. D = 1.5 Ft.
Max. d = 1 Ft.
B = 4 Ft.
b = 5 Ft.
*When B is < 6.0'
Type of Liner = CL-I Rip-Rap

FROM STA. 68+50 TO STA. 70+00 -L- (RT)
FROM STA. 82+50 TO STA. 83+50 -L- (RT)

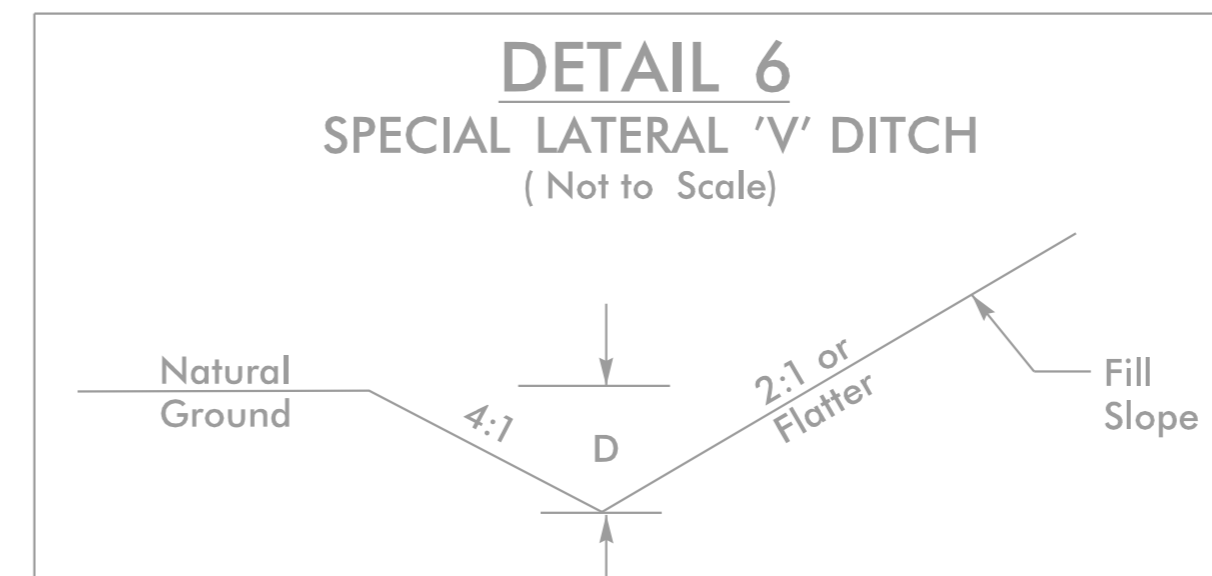


Min. D = 1.5 Ft.
Max. d = 1 Ft.
B = 2 Ft.
b = 5 Ft.
*When B is < 6.0'
Type of Liner = CL-B Rip-Rap

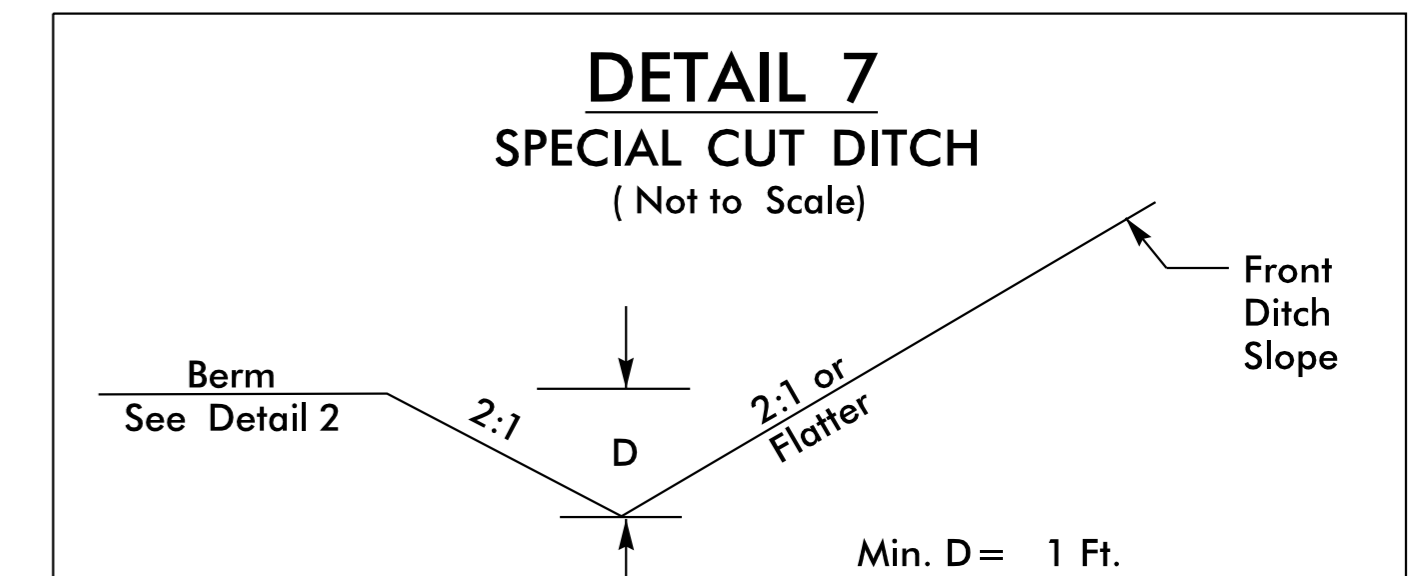
FROM STA. 70+00 TO STA. 71+50 -L- (RT)



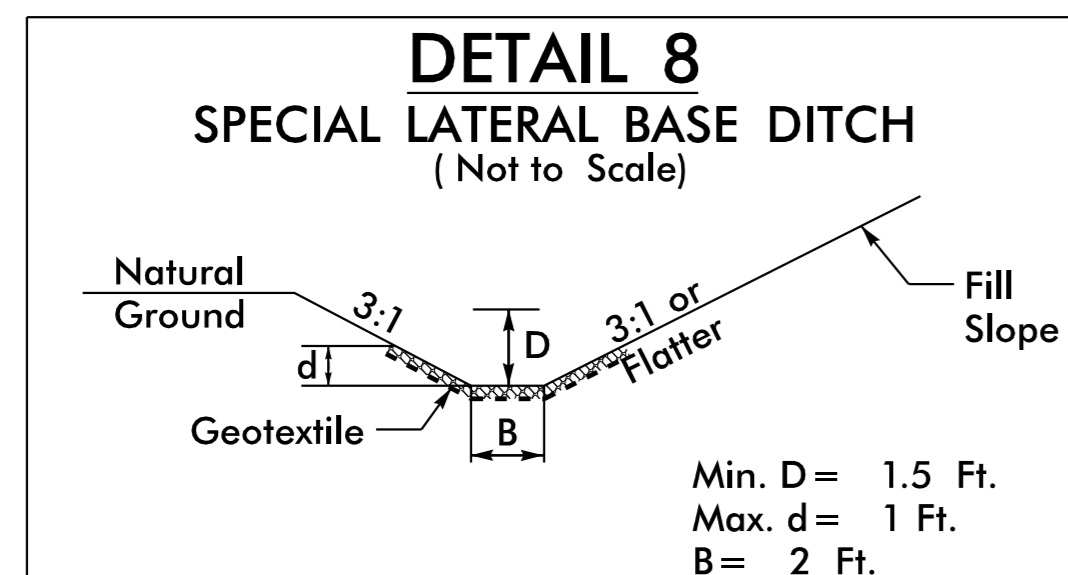
STA. 47+70 -L- (RT)



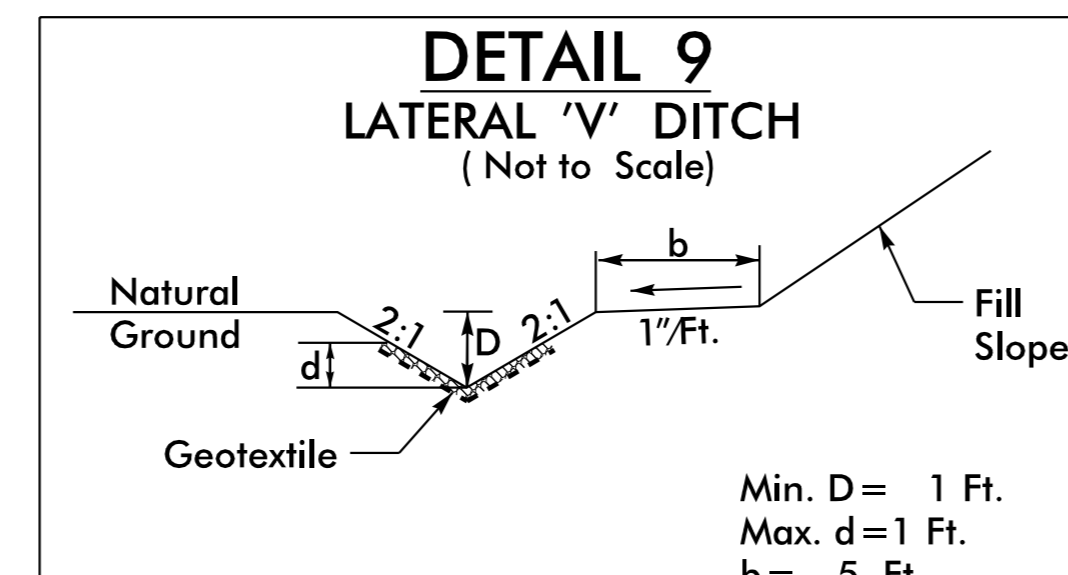
DETAIL APPLIES TO R-5930B (FUTURE)



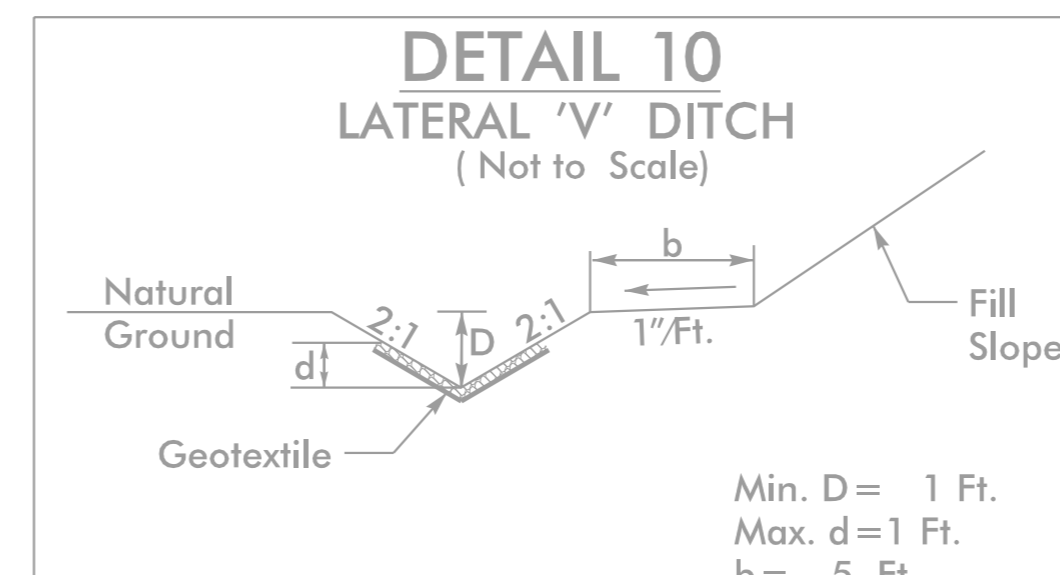
FROM STA. 42+70 TO STA. 48+90 -L- (LT)
FROM STA. 49+50 TO STA. 49+75 -L- (LT)
FROM STA. 49+75 TO STA. 51+75 -L- (LT)
FROM STA. 51+75 TO STA. 53+15 -L- (LT)



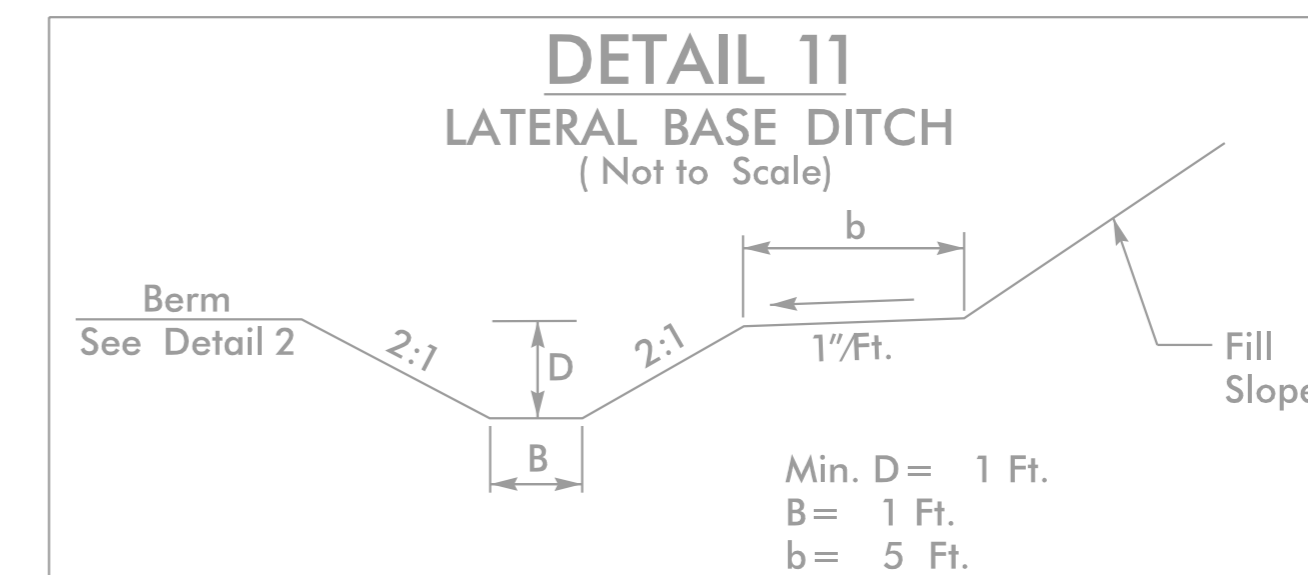
Type of Liner = CL-B Rip-Rap
FROM STA. 54+75 TO STA. 57+30 -L- (LT)



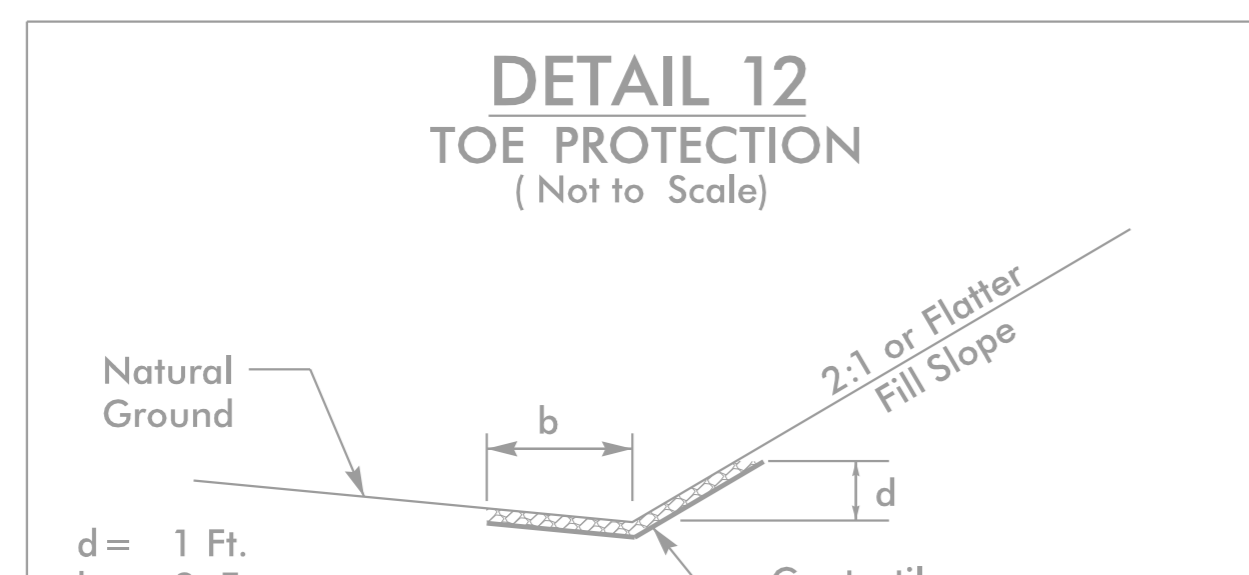
Type of Liner = CL-I Rip-Rap
FROM STA. 69+05 TO STA. 70+00 -L- (LT)
FROM STA. 70+00 TO STA. 71+50 -L- (LT)



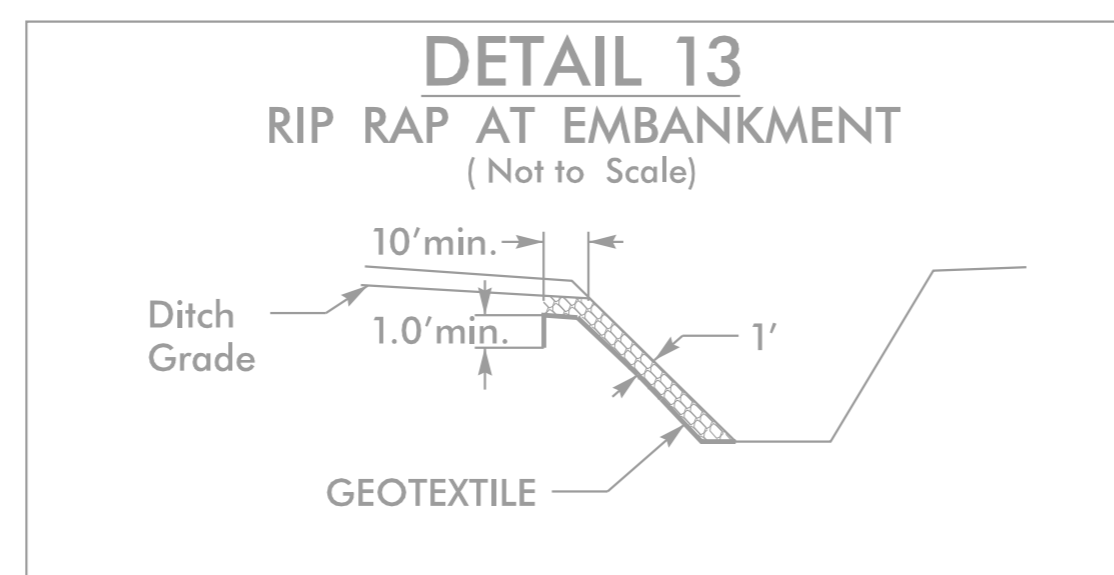
Type of Liner = CL-B Rip-Rap
DETAIL APPLIES TO R-5930B (FUTURE)



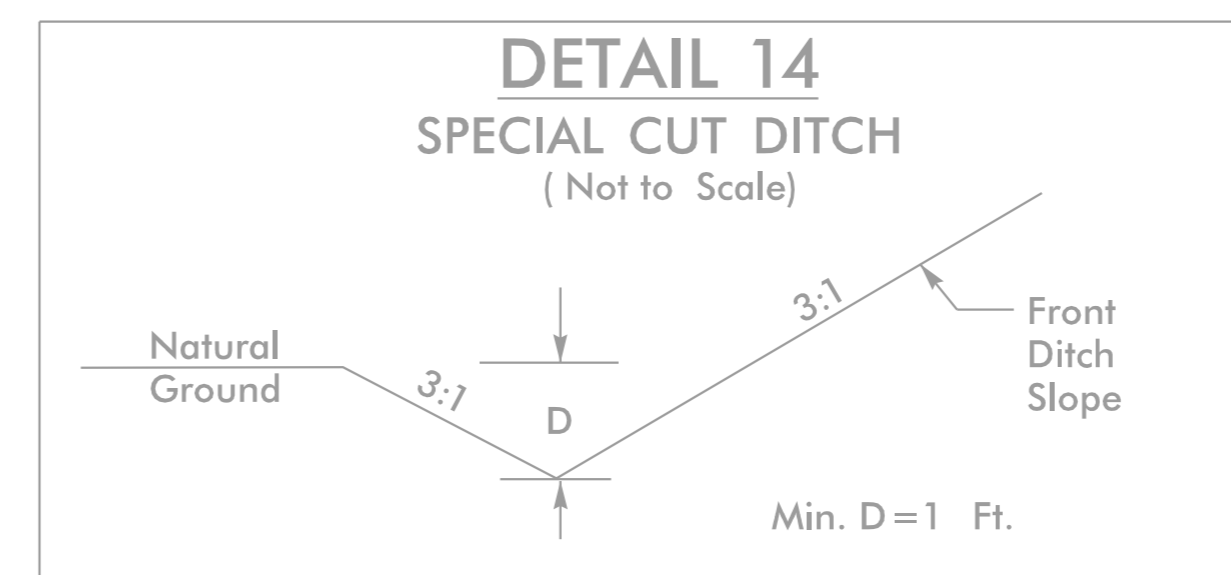
DETAIL APPLIES TO R-5930B (FUTURE)



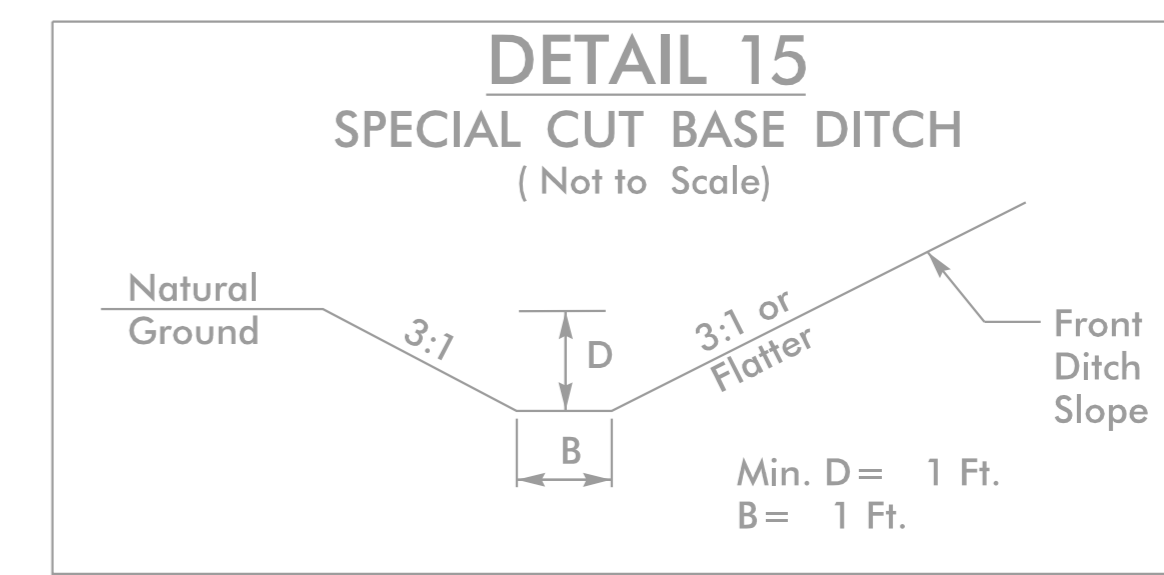
d = 1 Ft.
b = 2 Ft.
Type of Liner = CL-B Rip-Rap
DETAIL APPLIES TO R-5930B (FUTURE)



Type of Liner = CL-I Rip-Rap
DETAIL APPLIES TO R-5930B (FUTURE)



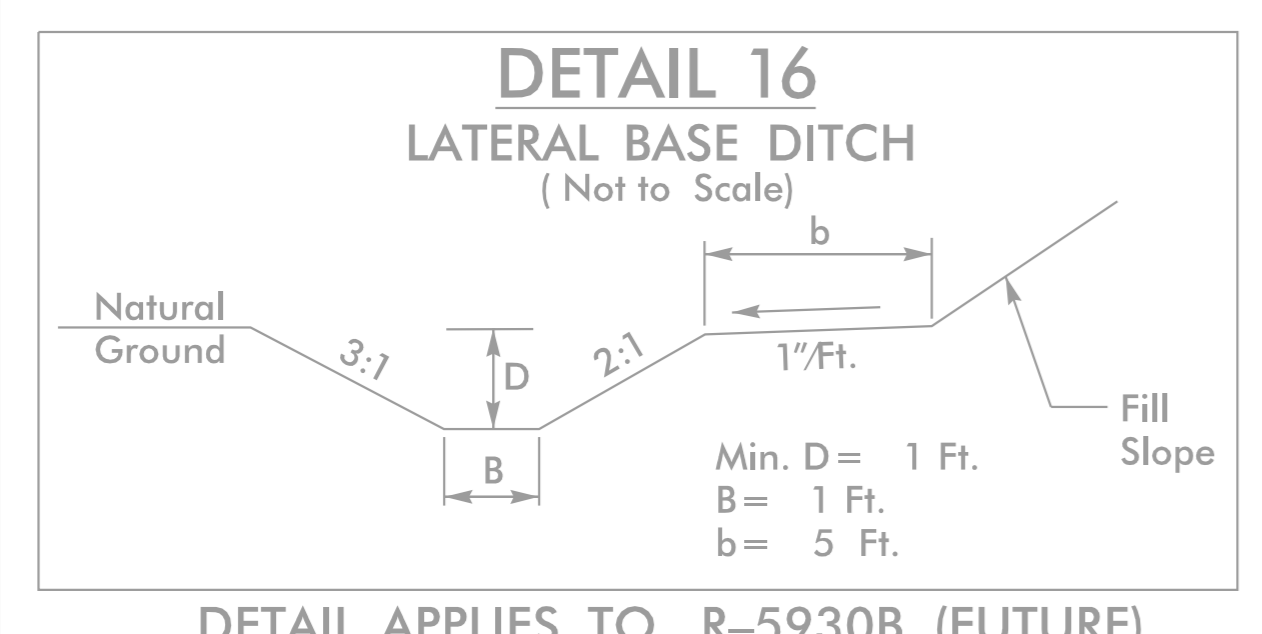
DETAIL APPLIES TO R-5930B (FUTURE)



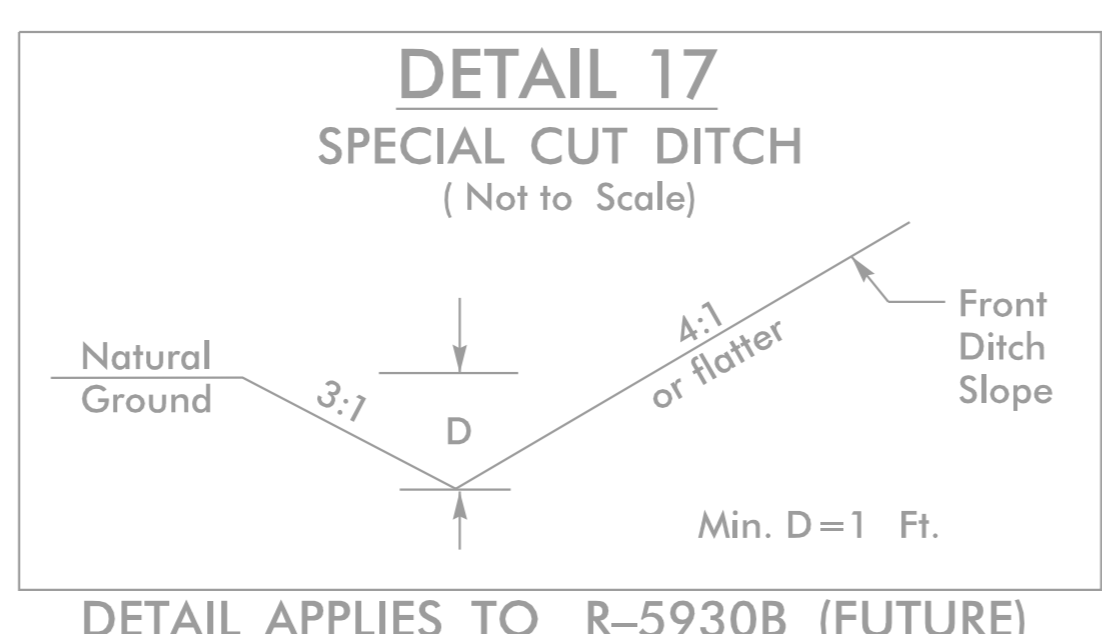
DETAIL APPLIES TO R-5930B (FUTURE)

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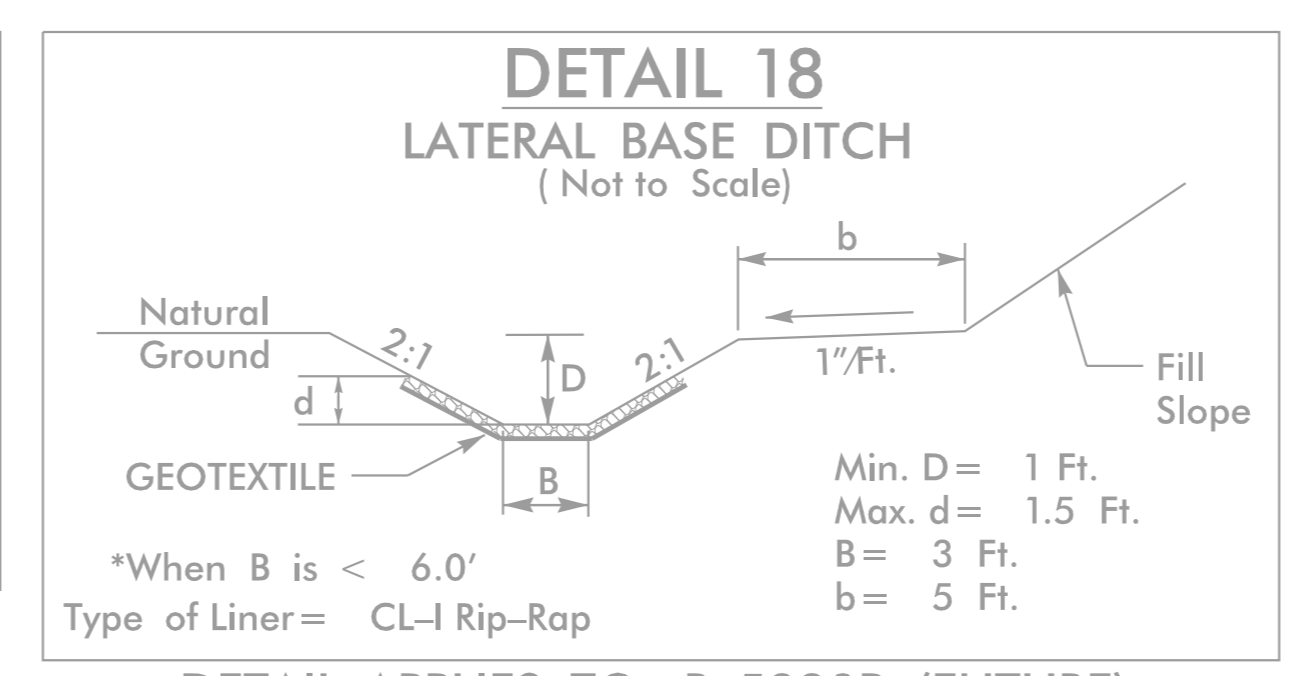
PROJECT REFERENCE NO. R-5930A	SHEET NO. 2D-2
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	DESIGNED BY SEAL Evan H. Hester No. 00365599 NORTH CAROLINA PROFESSIONAL ENGINEER W. BLANTON 2023
	DESIGNED BY SEAL David L. Hursey No. 003547 NORTH CAROLINA PROFESSIONAL ENGINEER 2023
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



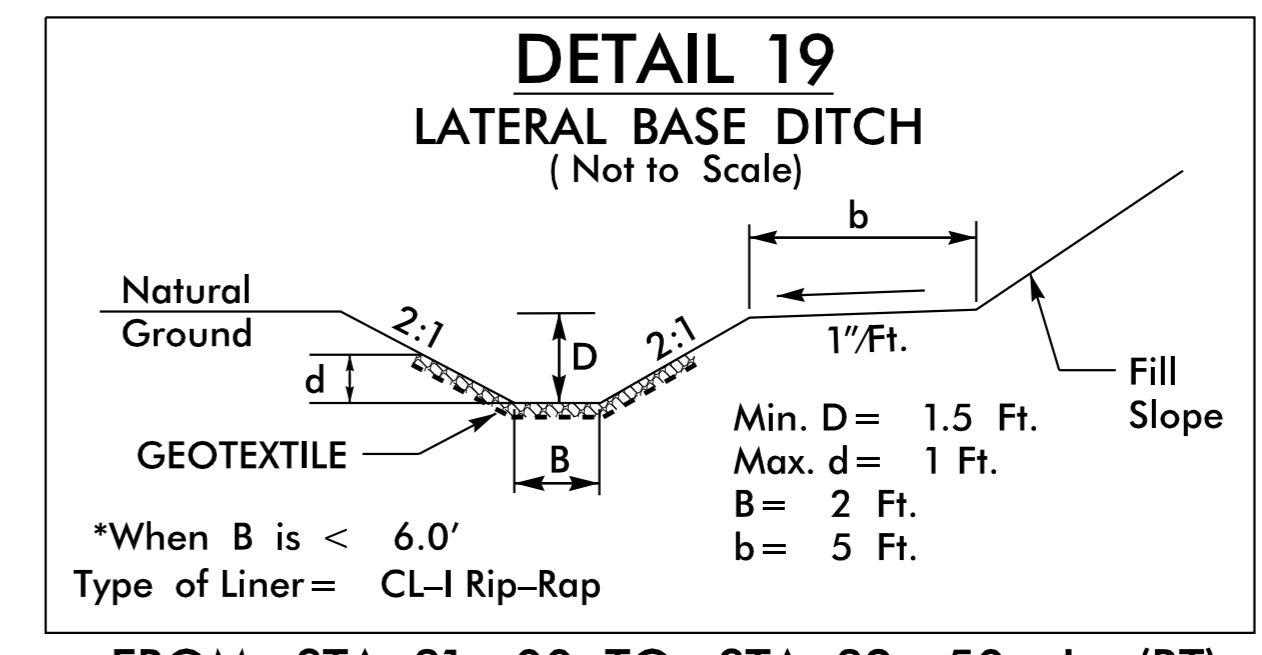
DETAIL APPLIES TO R-5930B (FUTURE)



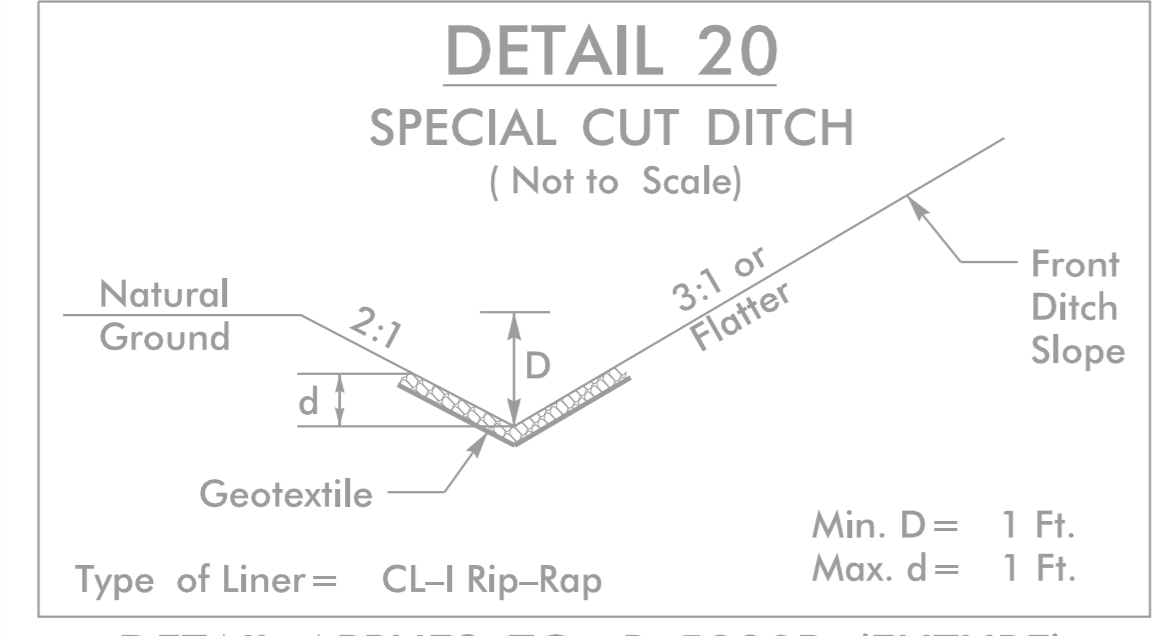
DETAIL APPLIES TO R-5930B (FUTURE)



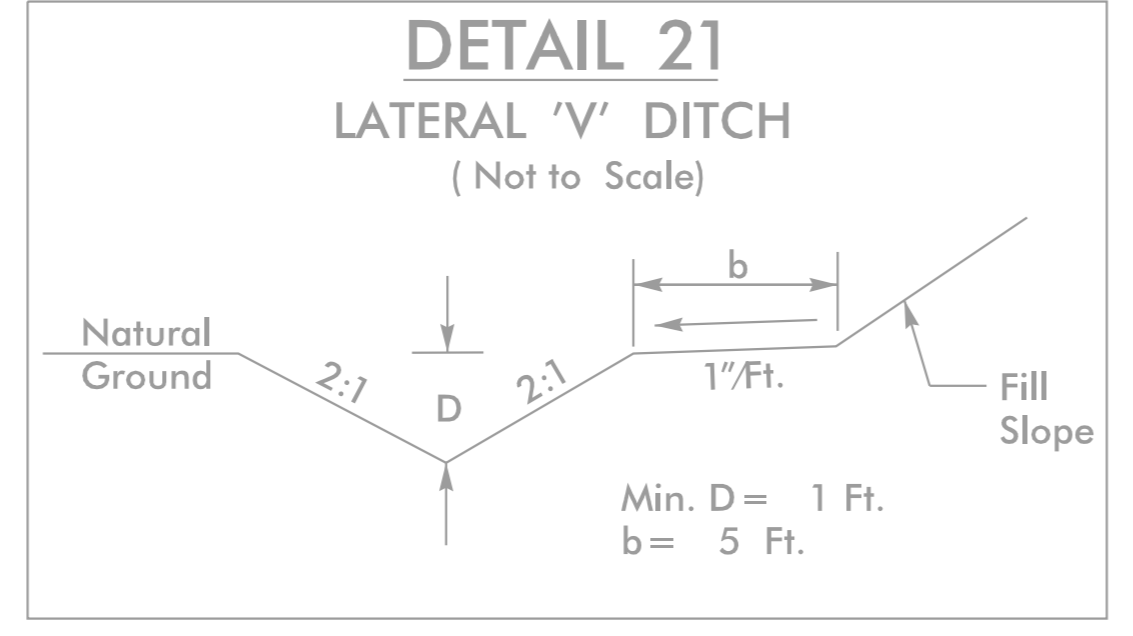
DETAIL APPLIES TO R-5930B (FUTURE)



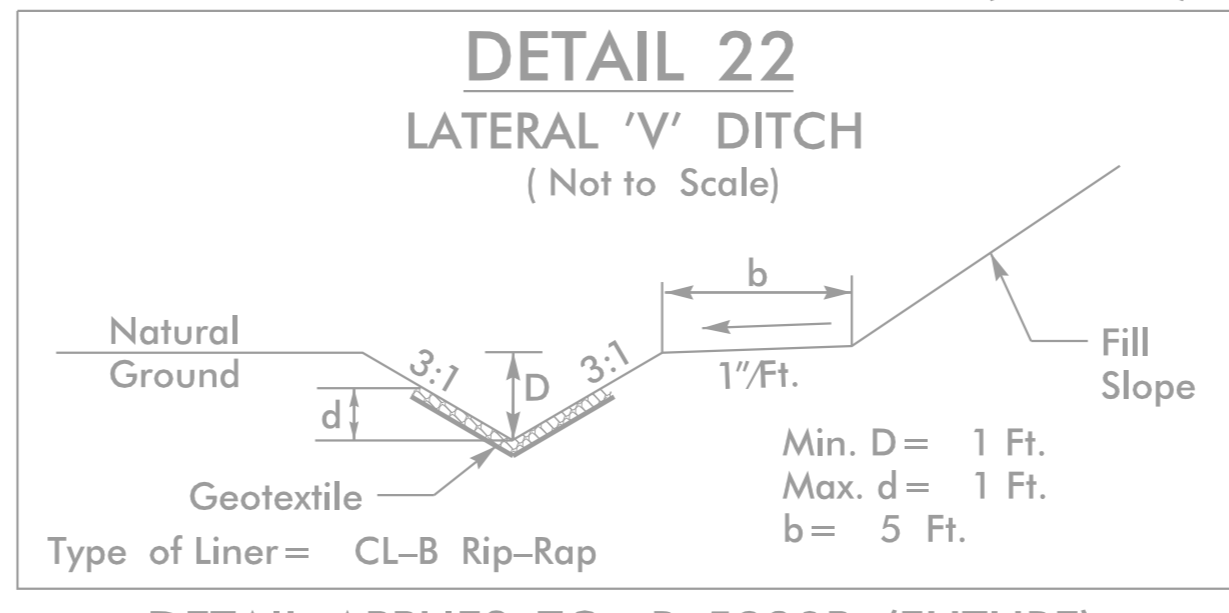
FROM STA. 81+00 TO STA. 82+50 -L- (RT)



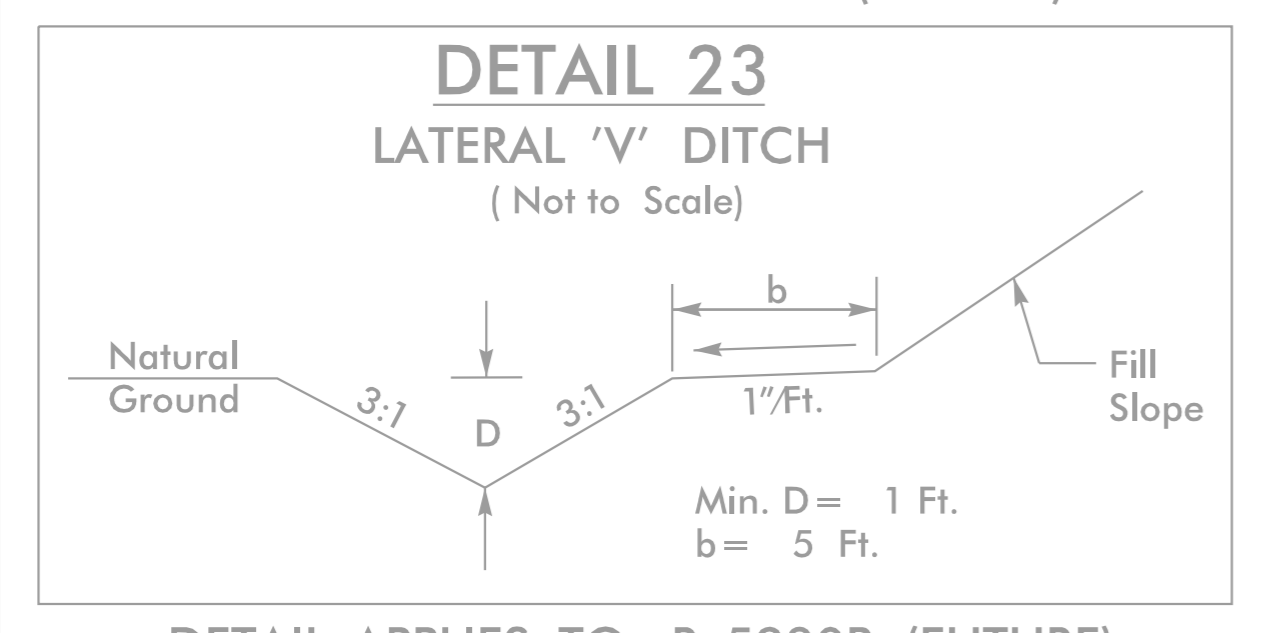
DETAIL APPLIES TO R-5930B (FUTURE)



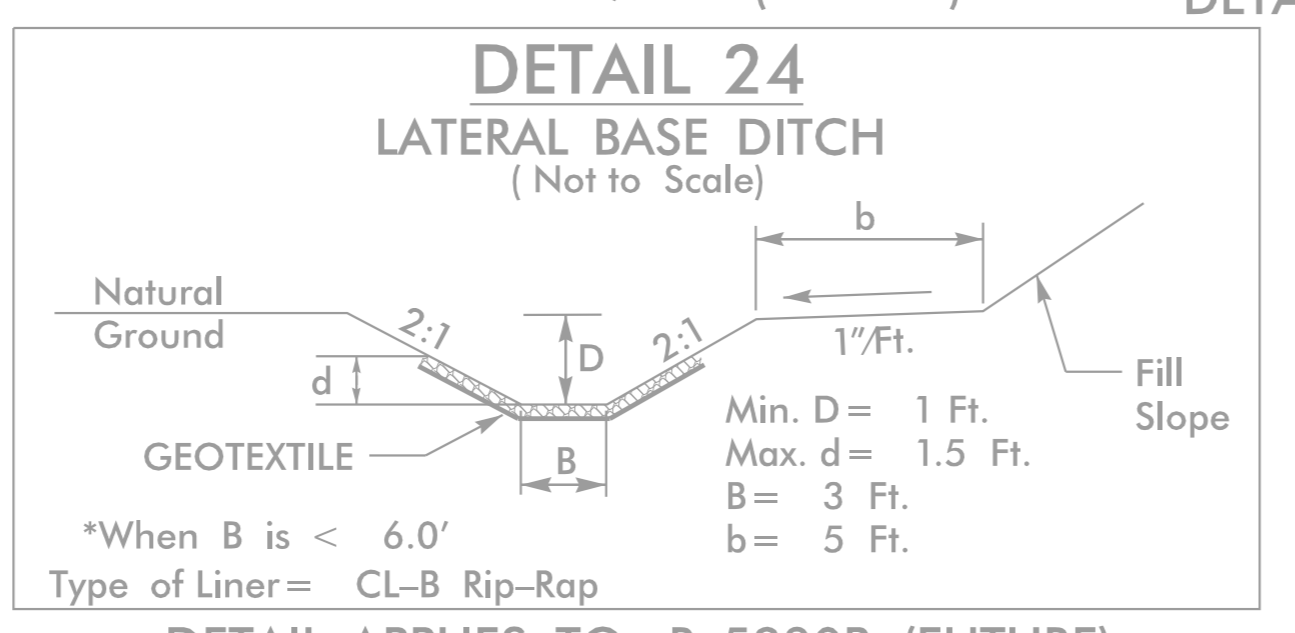
DETAIL APPLIES TO R-5930B (FUTURE)



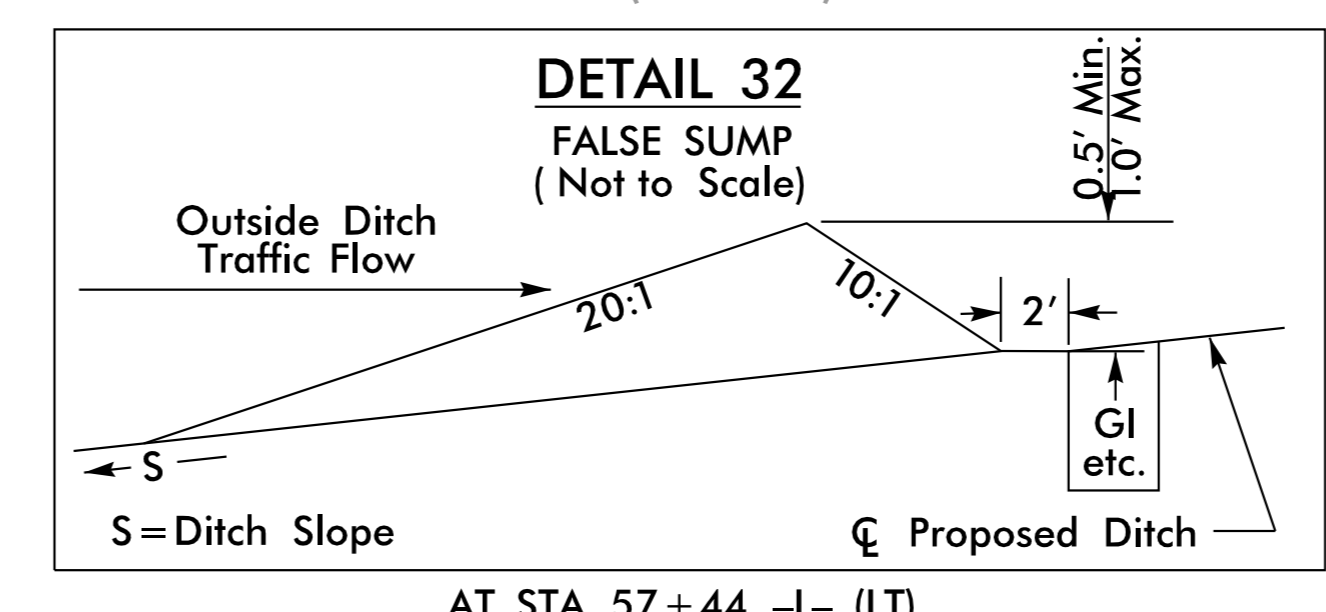
DETAIL APPLIES TO R-5930B (FUTURE)



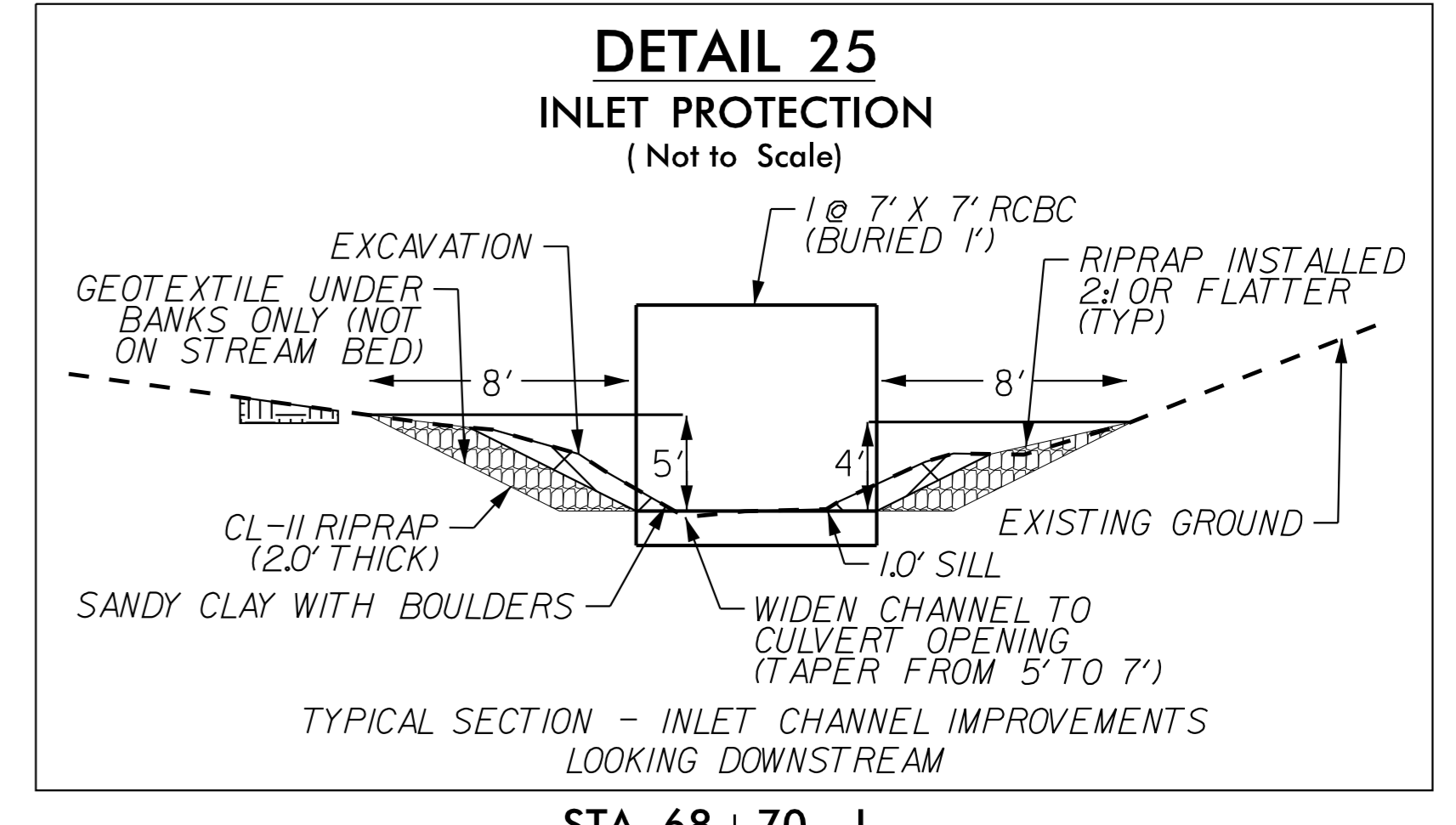
DETAIL APPLIES TO R-5930B (FUTURE)



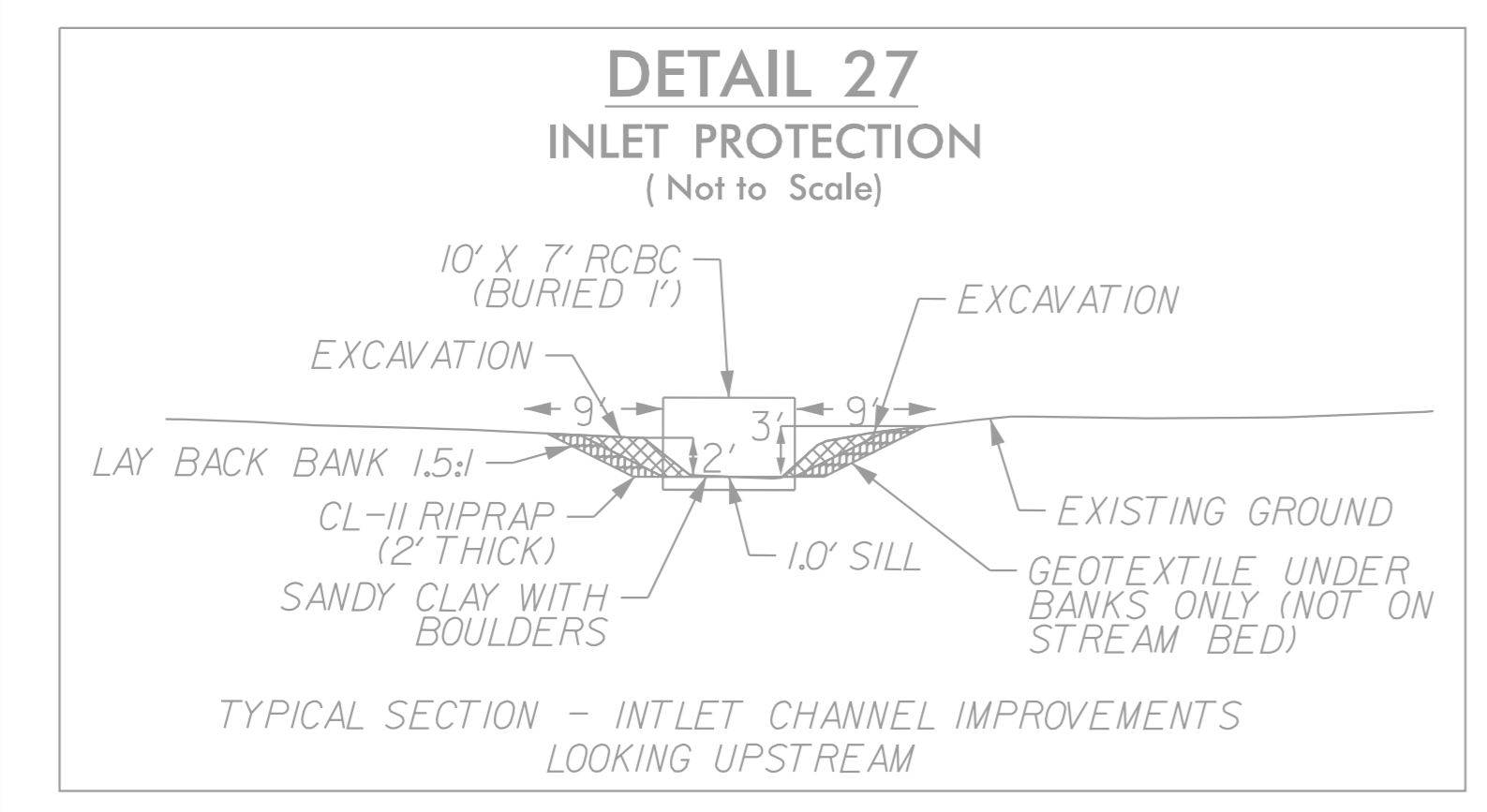
DETAIL APPLIES TO R-5930B (FUTURE)



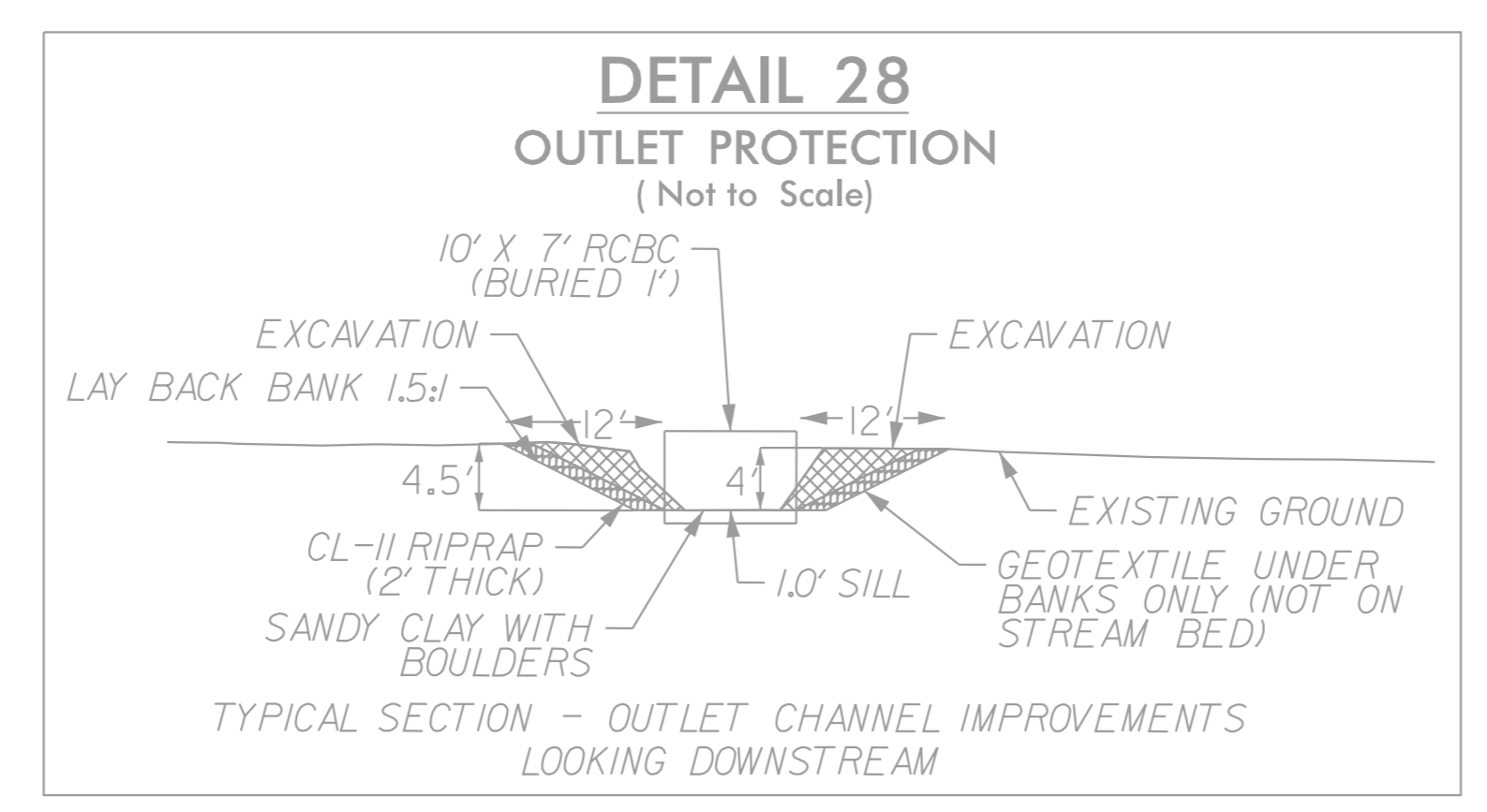
AT STA. 57+44 -L- (LT)



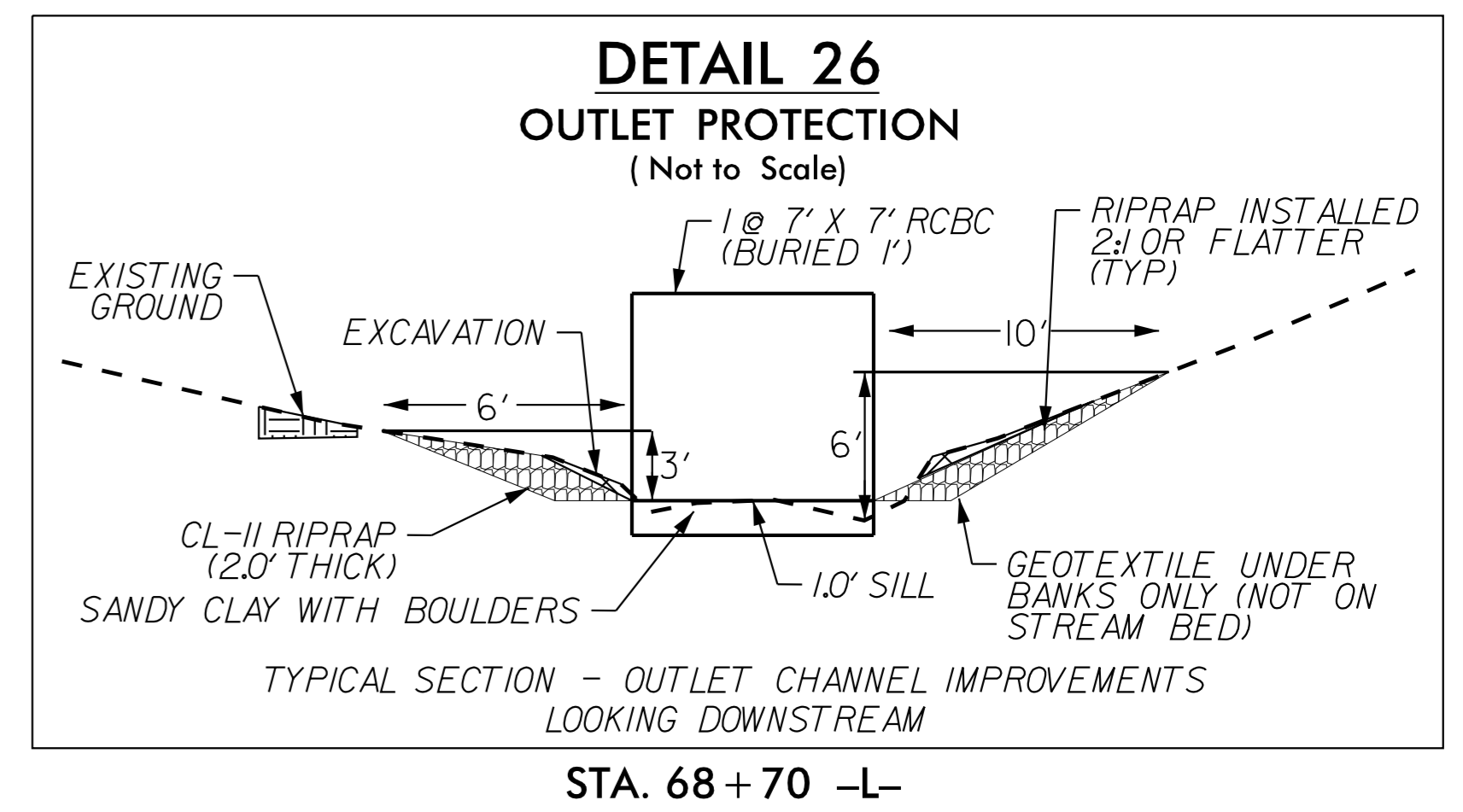
STA. 68+70 -L-



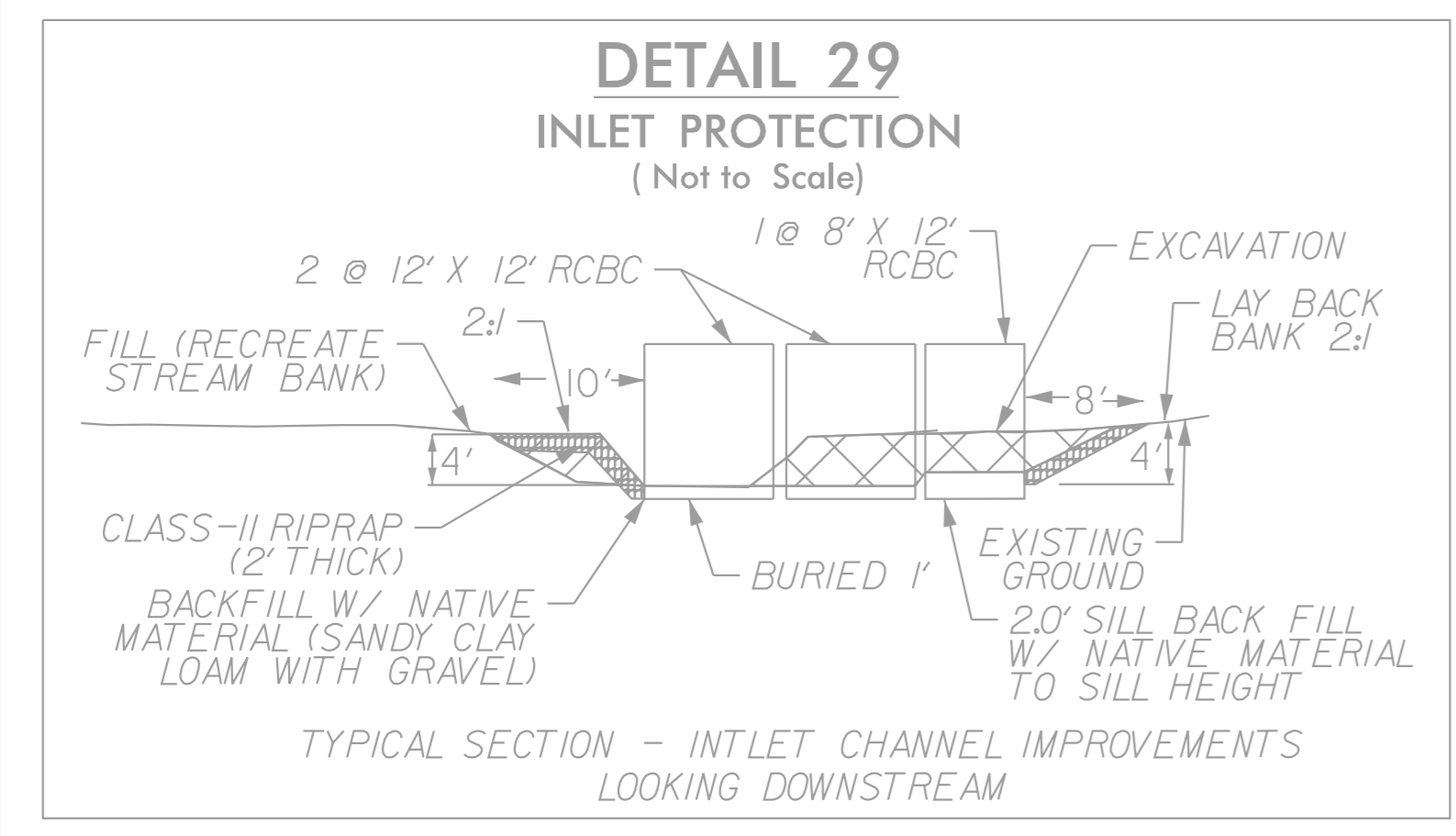
DETAIL APPLIES TO R-5930B (FUTURE)



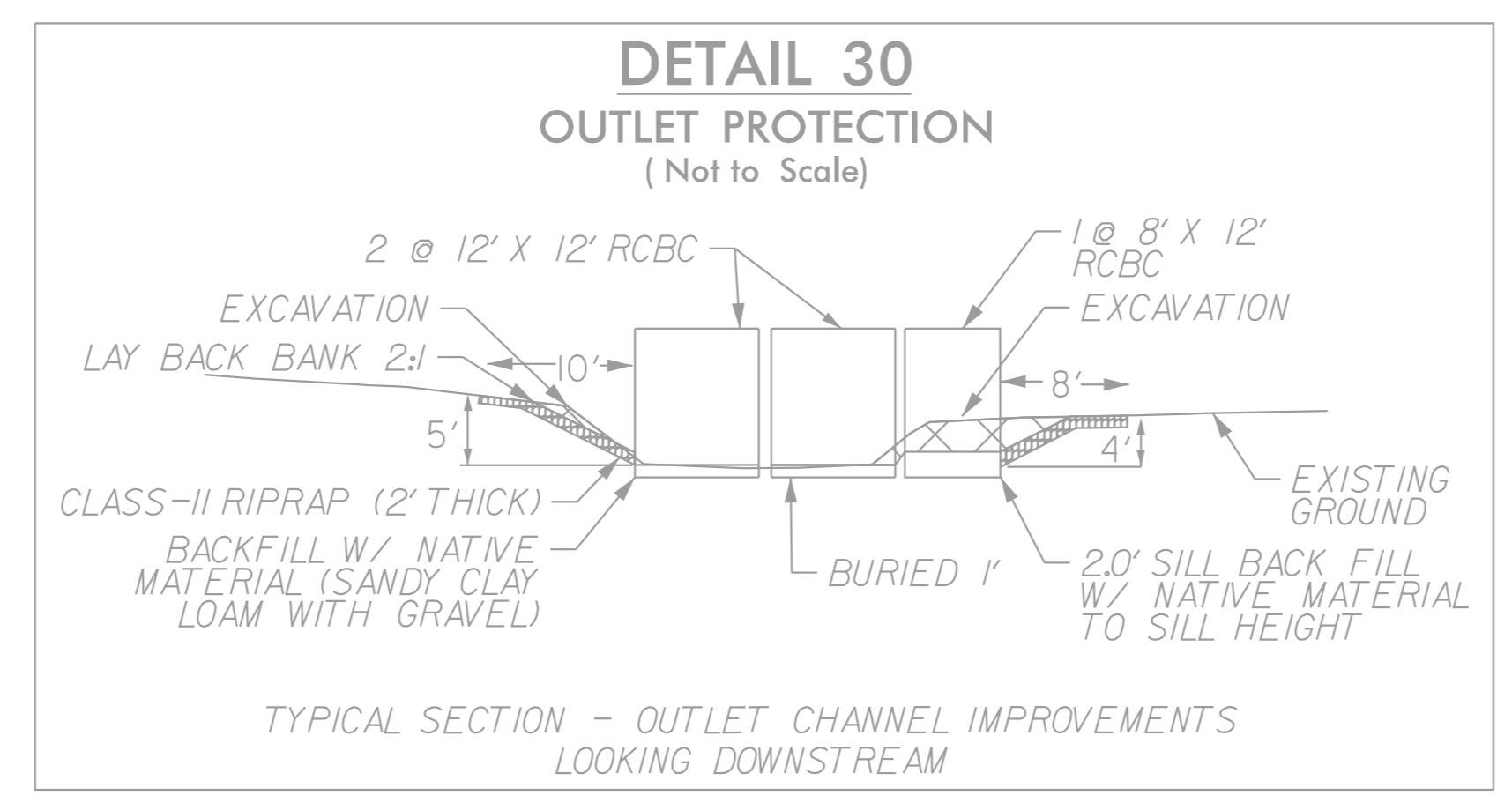
DETAIL APPLIES TO R-5930B (FUTURE)



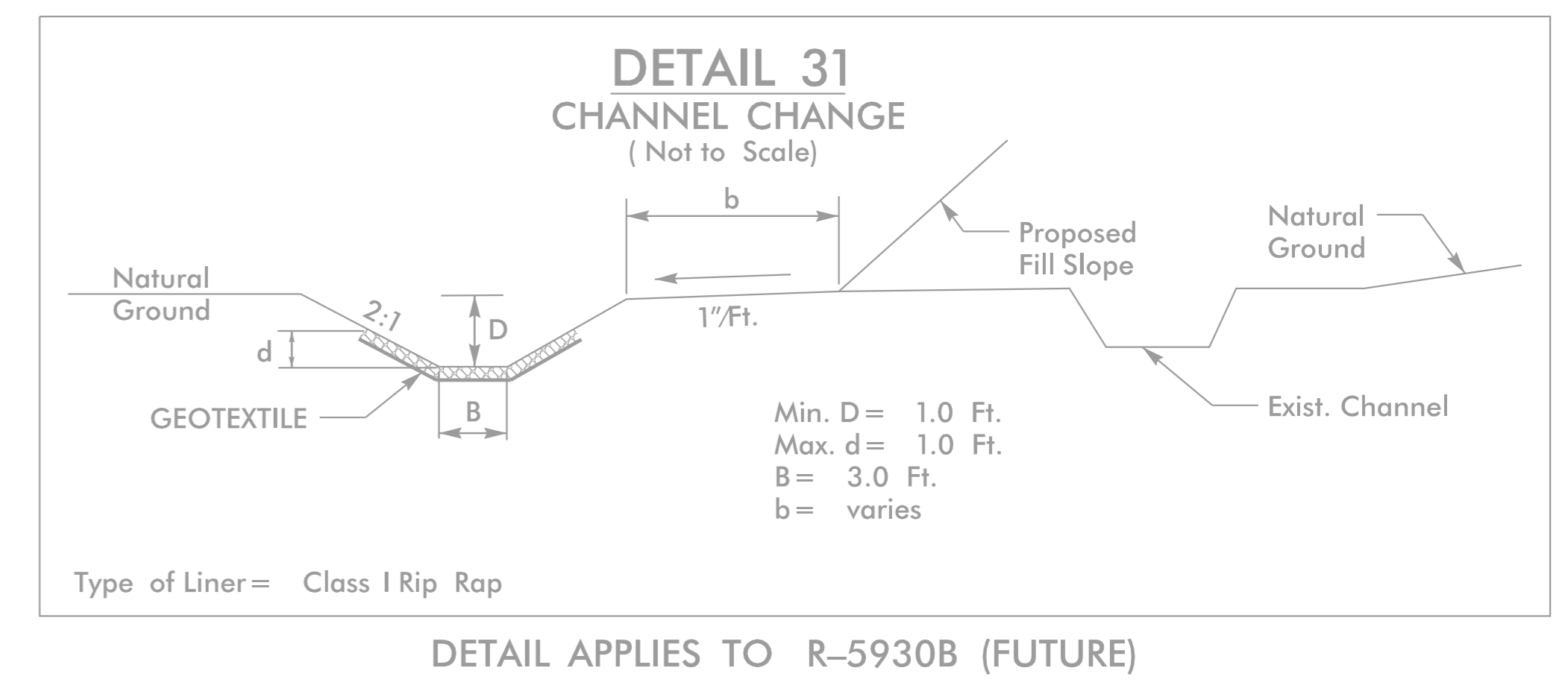
STA. 68+70 -L-



DETAIL APPLIES TO R-5930B (FUTURE)



DETAIL APPLIES TO R-5930B (FUTURE)



DETAIL APPLIES TO R-5930B (FUTURE)

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6/9/2023



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

CHAIN	STATION	STATION	TOTAL UNCLASSIFIED	UNDERCUT	UNSUITABLE EXCAVATION	EMBANKMENT + %	BORROW	TOTAL WASTE
-L-	25 + 80.00	30 + 33.03	231			2114	1883	
-L-	42 + 00.00	87 + 58.75	179449	* 4550	5365	100690		83309
-YILPA-	10 + 09.70	11 + 44.10	45			195	150	
		SUBTOTAL	179725			102999	2033	83309
LOSS DUE TO CLEARING & GRUBBING			-4760				4760	
ADDITIONAL UNDERCUT TO BE FILLED WITH BORROW				1380		1656	1656	1380
WASTE IN LIEU OF BORROW							-8449	-8449
ADDITIONAL UNDERCUT TO BE FILLED WITH SELECT GRANULAR MATERIAL				1000				1000
	GRAND TOTALS		174965	6930		104655	0	77240
	SAY		175000					

* 4550 CY UNDERCUT BY STATION RANGE TO BE FILLED WITH SELECT GRANULAR MATERIAL. CALCULATED EMBANKMENT TOTAL DOES NOT INCLUDE A QUANTITY TO BACKFILL THIS UNDERCUT AND DOES NOT REQUIRE AN ADJUSTMENT

ESTIMATED SELECT GRANULAR MATERIAL 5550 CY

NOTE: A QUANTITY OF 16,030 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
 5200 CY FROM -L- STA 45+75 TO 48+25 (LT & RT)
 6775 CY FROM -L- STA 62+25 TO 64+25 (LT & RT)
 375 CY FROM -L- STA 78+25 TO 79+75 (LT)
 3680 CY FROM -L- STA 85+75 TO 87+00 (LT & RT)

REMOVAL OF EXISTING ASPHALT PAVEMENT			
LINE	STATION TO STATION	LOCATION	SQ. YDS.
-L-	42 + 00 TO 42 + 53	RT / LT	603
TOTAL			603
SAY			610

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STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

"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 GUARDRAIL END UNIT, TYPE TL-3
 NG = NON-GATING GUARDRAIL END UNIT, TYPE TL-3

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOULDER WIDTH	FLARE LENGTH		W		ANCHORS			IMPACT ATTENUATOR TYPE TL-3			TERMINAL SECTIONS	REMOVE EXISTING GUARDRAIL	REMOVE AND RESET EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	GREU TL-3	CAT-1	AT-1	EA	G	NG				
-L-	25+75	30+25	RT	500	50				14'	16'												550		
-L-	42+00	45+00	RT	250	75		42+00	44+50	19.5'	21.5'						1	1							
-L-	55+00	57+50	RT	250			56+00	57+25	19.5'	21.5'	50		1		1	1								
-L-	66+50	71+75	RT	525			67+50	70+00	19.5'	21.5'	50		1		1	1								
-L-	67+50	71+00	LT	350			70+00	68+00	19.5'	21.5'	50		1		1	1								
-L-	85+00	86+00	LT	50	50		85+00	85+00	19.5'	21.5'					1		1							
			SUBTOTAL	1925	175										4	4	2					550		
			LESS ANCHOR DEDUCTIONS																					
	GREU TL-3	4 @ 50'	=	200																				
	CAT-1	4 @ 6.25'	=	25																				
	AT-1	2 @ 6.25'	=	12.5																				
			TOTAL	1688	175										4	4	2					550		
			SAY	1700	175										4	4	2					550		

ADDITIONAL GUARDRAIL POSTS = 5 EA

K:\RAL_Roadway\01036532 - R-5930 North CPWA Roadway\Proj\R-5930A_rdy_psh_sumdgn
 REVISIONS

LC2173

COMPUTED BY: KLF DATE: 11/14/2022
CHECKED BY: DATE:

PROJECT NO. R-5930A 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, PVC, or PP PIPE), C. S. PIPE, R. C. PIPE CLASS III, R. C. PIPE CLASS IV, R. C. PIPE CLASS V, ENDWALLS, DRAINAGE STRUCTURE, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, CONCRETE TRANSITIONAL SECTION, GRADE TYPE, PIPE REMOVAL, and REMARKS. Includes a SHEET TOTALS row at the bottom.

ABBREVIATIONS
C.A.A. CORRUGATED ALUMINIUM ALLOY
C.B. CATCH BASIN
C.S. CORRUGATED STEEL
D.I. DROP INLET
G.D.I. GRATED DROP INLET
H.D.P.E. HIGH DENSITY POLYETHYLENE
J.B. JUNCTION BOX
M.H. MANHOLE
N.S. NARROW SLOT
P.V.C. POLYVINYL CHLORIDE
R.C. REINFORCED CONCRETE
T.B.D.I. TRAFFIC BEARING DROP INLET
T.B.J.B. TRAFFIC BEARING JUNCTION BOX
W.S. WIDE SLOT

LC2173

COMPUTED BY: KLF DATE: 11/14/2022
CHECKED BY: DATE:

PROJECT NO. R-5930A SHEET NO. 3D-3

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, Slope, Pipe Type (Drainage, C.S., R.C. Class III, IV, V), Endwalls, Quantities for Drainage Structures, Frame, Grates, and Hood, Concrete Transitional Section, and Remarks. Includes a SHEET TOTALS row at the bottom.

ABBREVIATIONS table listing symbols for materials like CORRUGATED ALUMINIUM ALLOY, CATCH BASIN, CORRUGATED STEEL, etc.

SHEET TOTALS

COMPUTED BY: J. B. Barfield DATE: 4/26/23
 CHECKED BY: _____ DATE: _____

(2-3-23)

PROJECT NO.	SHEET NO.
48548.1.2 (R-5930A)	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	500
				TOTAL LF:	500

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

SUMMARY OF GEOTEXTILE
 FOR SUBGRADE STABILIZATION

LINE	Station	Station	Geotextile for Subgrade Stabilization SY	Offset
-L-	43+50	44+50	356	RT
-L-	55+50	57+00	1267	LT, RT
-L-	57+00	57+50	178	RT
-L-	67+50	71+50	3600	LT, RT
-L-	81+25	82+50	1069	LT, RT
-L-	82+50	84+75	2817	CL
	CONTINGENCY			
		TOTAL SY:	9287*	

*Total square yards of "Geotextile for Subgrade Stabilization" is only the estimated quantity for subgrades and may only represent a portion of the geotextile quantity shown in the Item Sheets of the Proposal.

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
	CONTINGENCY		AST	3				200	
			TOTAL CY/TONS/SY:		0	0**	0**	200	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.

Kimley Horn

421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NC 27601

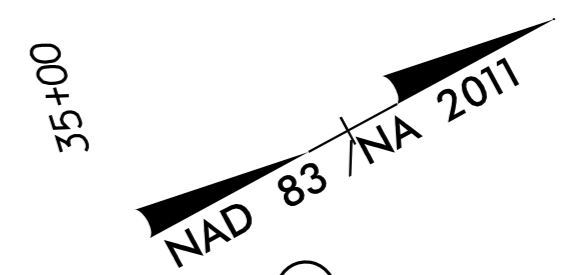
RIGHT-OF-WAY REV.
CONST. REV.

PROJECT REFERENCE NO. <i>R-5930A</i>	SHEET NO. 4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DESIGNED BY SEAL
Evan W. Blanton
1038559
PROFESSIONAL ENGINEER
NORTH CAROLINA
10/27/2023

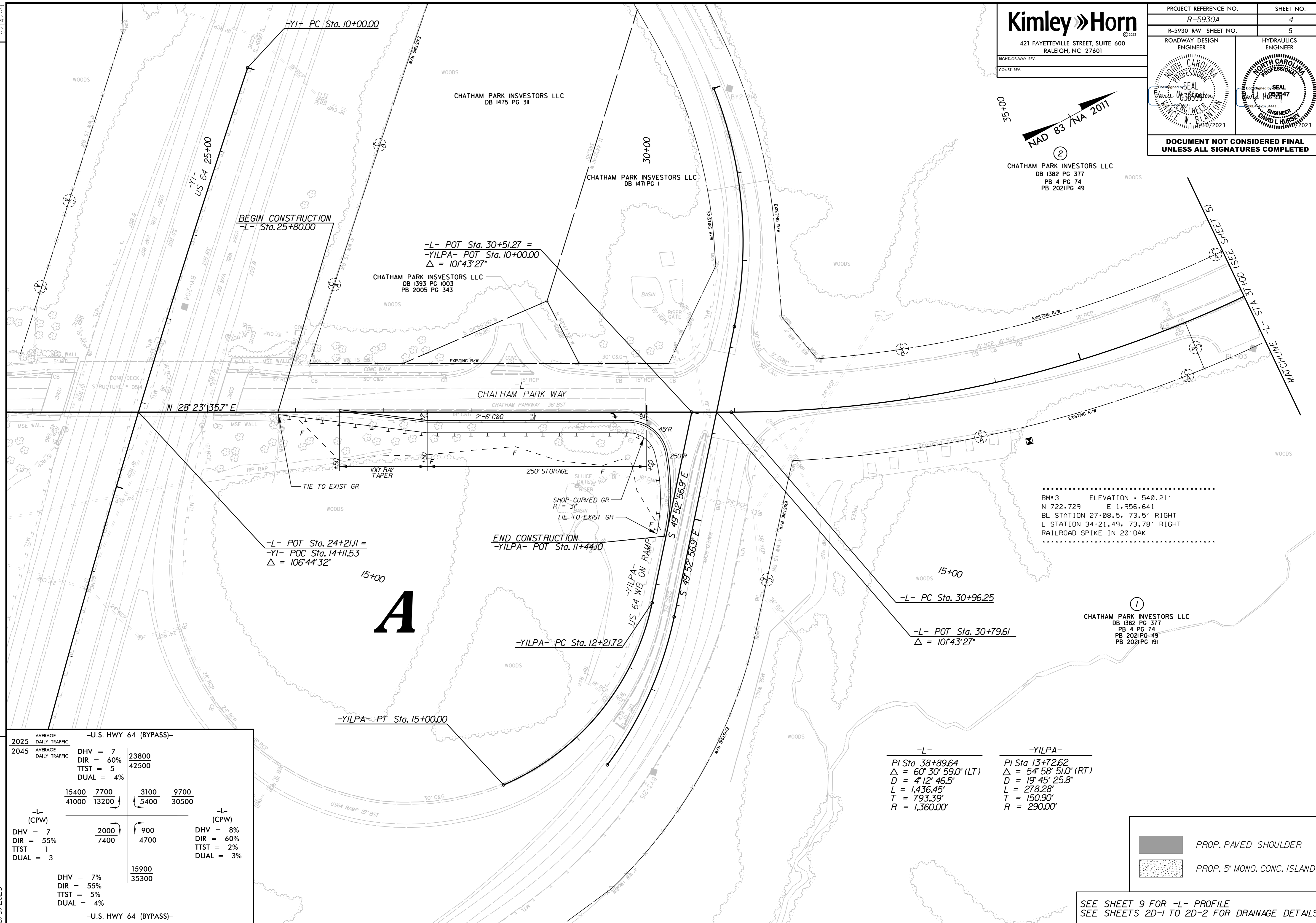
DESIGNED BY SEAL
David L. Hursey
1103547
PROFESSIONAL ENGINEER
NORTH CAROLINA
10/27/2023

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



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

REVISIONS



-U.S. HWY 64 (BYPASS)-			
2025 AVERAGE DAILY TRAFFIC	DHW = 7	23800	
2045 AVERAGE DAILY TRAFFIC	DIR = 60%	42500	
	TTST = 5		
	DUAL = 4%		
	15400 7700	3100 9700	
	41000 13200	5400 30500	
-L- (CPW)		-L- (CPW)	
DHW = 7	2000	DHW = 8%	900
DIR = 55%	7400	DIR = 60%	4700
TTST = 1		TTST = 2%	
DUAL = 3		DUAL = 3%	
	15900		
	35300		
-U.S. HWY 64 (BYPASS)-			

PROP. PAVED SHOULDER

PROP. 5" MONO. CONC. ISLAND

SEE SHEET 9 FOR -L- PROFILE
SEE SHEETS 2D-1 TO 2D-2 FOR DRAINAGE DETAILS

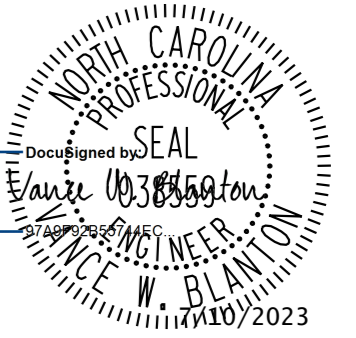

6/9/2023

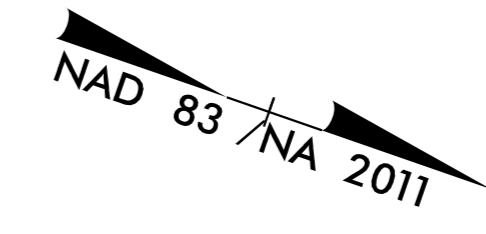
5/14/19

Kimley Horn

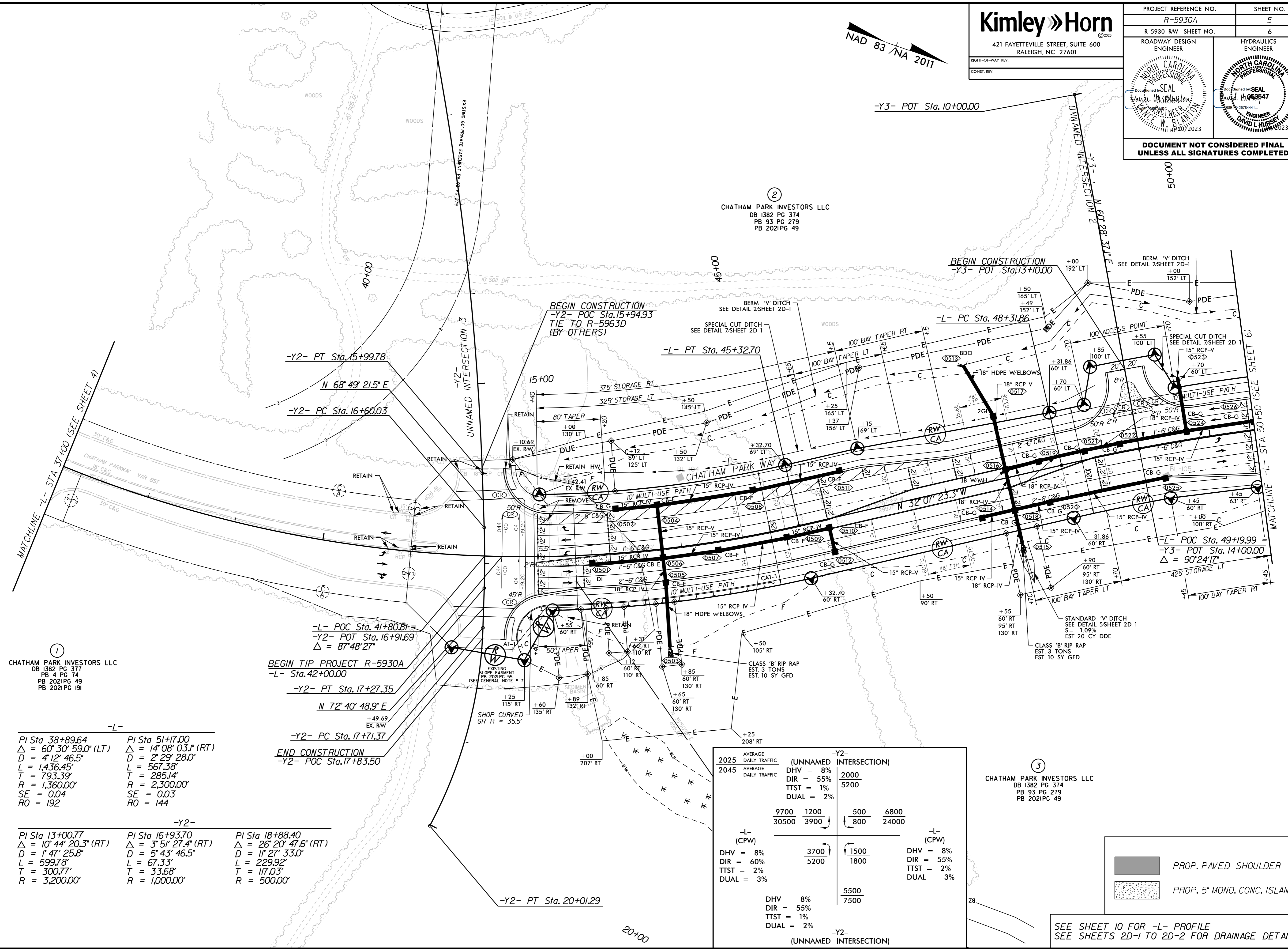
421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NC 27601

RIGHT-OF-WAY REV.
CONST. REV.

PROJECT REFERENCE NO. R-5930A	SHEET NO. 5
R-5930 RW SHEET NO. 6	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
 W. BLANTON PROFESSIONAL ENGINEER No. 036540 Exp. 12/31/2023	 DAVID L. HULSE PROFESSIONAL ENGINEER No. 036547 Exp. 12/31/2023
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



REVISIONS



①
CHATHAM PARK INVESTORS LLC
DB 1382 PG 377
PB 4 PG 74
PB 2021 PG 49
PB 2021 PG 191

-L-
PI Sta 38+89.64 PI Sta 51+17.00
Δ = 60° 30' 59.0" (LT) Δ = 14° 08' 03.1" (RT)
D = 4' 12' 46.5" D = 2' 29' 28.0"
L = 1,436.45' L = 567.38'
T = 793.39' T = 285.14'
R = 1,360.00' R = 2,300.00'
SE = 0.04 SE = 0.03
RO = 192 RO = 144

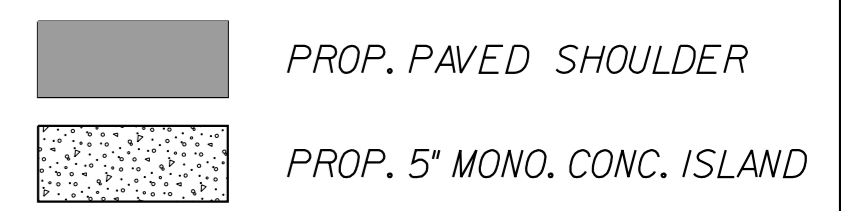
-Y2-
PI Sta 13+00.77 PI Sta 16+93.70 PI Sta 18+88.40
Δ = 10° 44' 20.3" (RT) Δ = 3° 51' 27.4" (RT) Δ = 26° 20' 47.6" (RT)
D = 1' 47' 25.8" D = 5' 43' 46.5" D = 11' 27' 33.0"
L = 599.78' L = 67.33' L = 229.92'
T = 300.77' T = 33.68' T = 117.03'
R = 3,200.00' R = 1,000.00' R = 500.00'

BEGIN TIP PROJECT R-5930A
-L- Sta. 42+00.00
-Y2- PT Sta. 17+27.35
N 72° 40' 48.9" E
-Y2- PC Sta. 17+71.37
END CONSTRUCTION
-Y2- POC Sta. 17+83.50

SHOP CURVED
GR R = 35.5'

2025 AVERAGE DAILY TRAFFIC	-Y2- UNNAMED INTERSECTION			
	DHV = 8%	DIR = 55%	TTST = 1%	DUAL = 2%
2045 AVERAGE DAILY TRAFFIC	9700	1200	500	6800
-L- (CPW)	30500	3900	1500	24000
DHV = 8%	DIR = 60%	TTST = 2%	DUAL = 3%	
	3700	5200	1800	
DHV = 8%	DIR = 55%	TTST = 1%	DUAL = 2%	
	5500	7500		
				-Y2- UNNAMED INTERSECTION

③
CHATHAM PARK INVESTORS LLC
DB 1382 PG 374
PB 93 PG 279
PB 2021 PG 49



SEE SHEET 10 FOR -L- PROFILE
SEE SHEETS 2D-1 TO 2D-2 FOR DRAINAGE DETAILS

6/9/2023

5/14/199

BM+5 ELEVATION = 480.21'
 N 725.736 E 1,955.112'
 BL STATION 60+02.8, 601.0' LEFT
 L STATION 66+65.51, 553.35' LEFT
 RAILROAD SPIKE IN 12" PINE
 GRANTHAM VIRGINIA MERRITT TRUSTEE
 DB 1138 PG 453
 PB 2001 PG 491

Kimley Horn
 421 FAYETTEVILLE STREET, SUITE 600
 RALEIGH, NC 27601
 ROADWAY DESIGN ENGINEER
 CONST. REV.

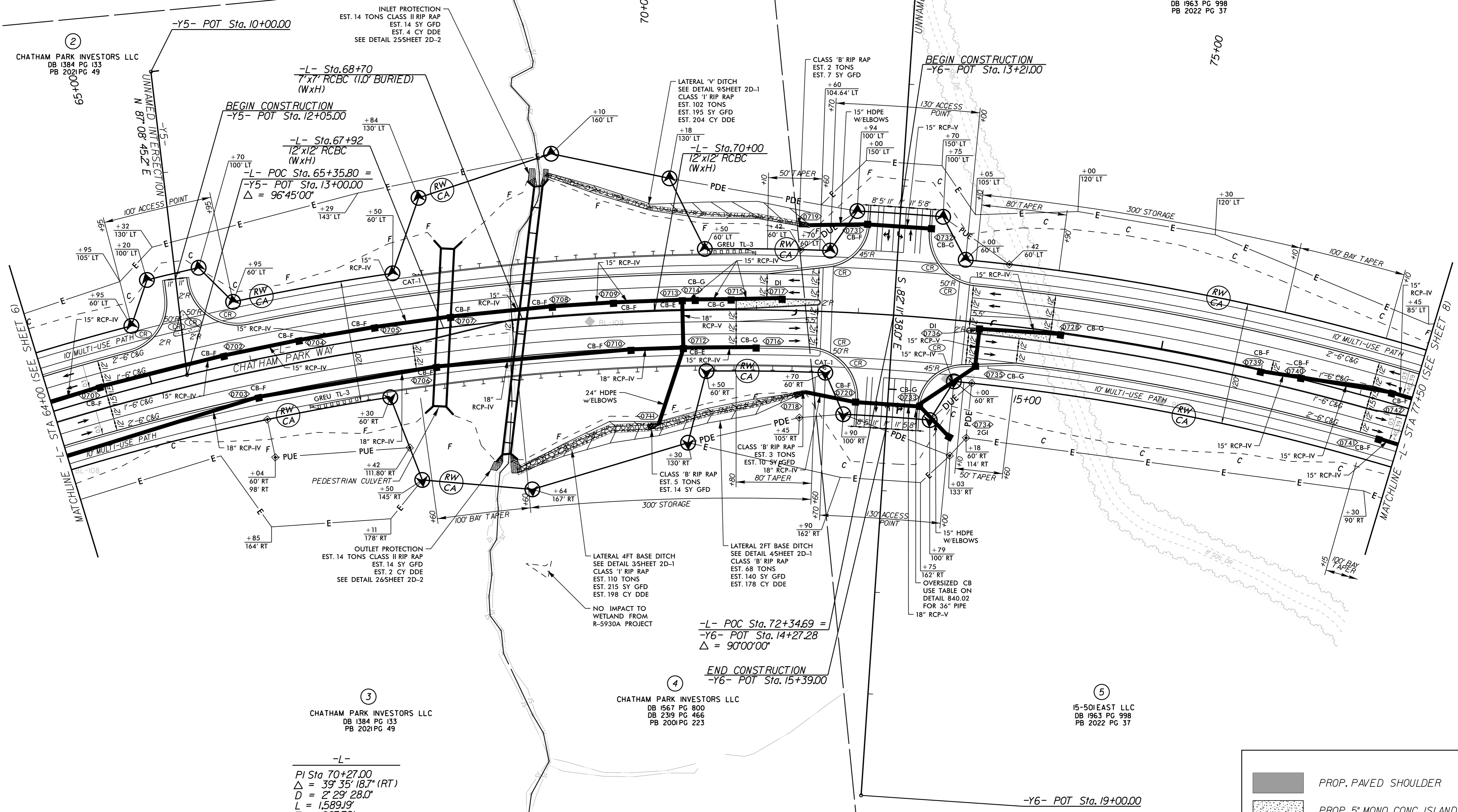
PROJECT REFERENCE NO. R-5930A	SHEET NO. 7
R-5930 RW SHEET NO. 8	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	SEAL 063547 DAVID L. HURSEY 6/12/2023
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

④
 CHATHAM PARK INVESTORS LLC
 DB 1567 PG 800
 DB 2319 PG 466
 PB 2001 PG 223

NAD 83 / NA 2011

⑤
 15-50EAST LLC
 DB 1963 PG 998
 PB 2022 PG 37

②
 CHATHAM PARK INVESTORS LLC
 DB 1384 PG 133
 PB 2021 PG 49



③
 CHATHAM PARK INVESTORS LLC
 DB 1384 PG 133
 PB 2021 PG 49

④
 CHATHAM PARK INVESTORS LLC
 DB 1567 PG 800
 DB 2319 PG 466
 PB 2001 PG 223

⑤
 15-50EAST LLC
 DB 1963 PG 998
 PB 2022 PG 37

-L-
 PI Sta 70+27.00
 $\Delta = 39' 35' 18.7''$ (RT)
 $D = 2' 29' 28.0''$
 $L = 1,589.19'$
 $T = 827.79'$
 $R = 2,300.00'$
 $SE = 0.03$
 $RO = 144$

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

SEE SHEET 11 FOR -L- PROFILE
 SEE SHEETS 2D-1 TO 2D-2 FOR DRAINAGE DETAILS
 SEE SHEET 2C-1 FOR PEDESTRIAN CULVERT (-L- 67+92) GRADING DETAIL

REVISIONS

6/9/2023

5/14/1999

Kimley Horn

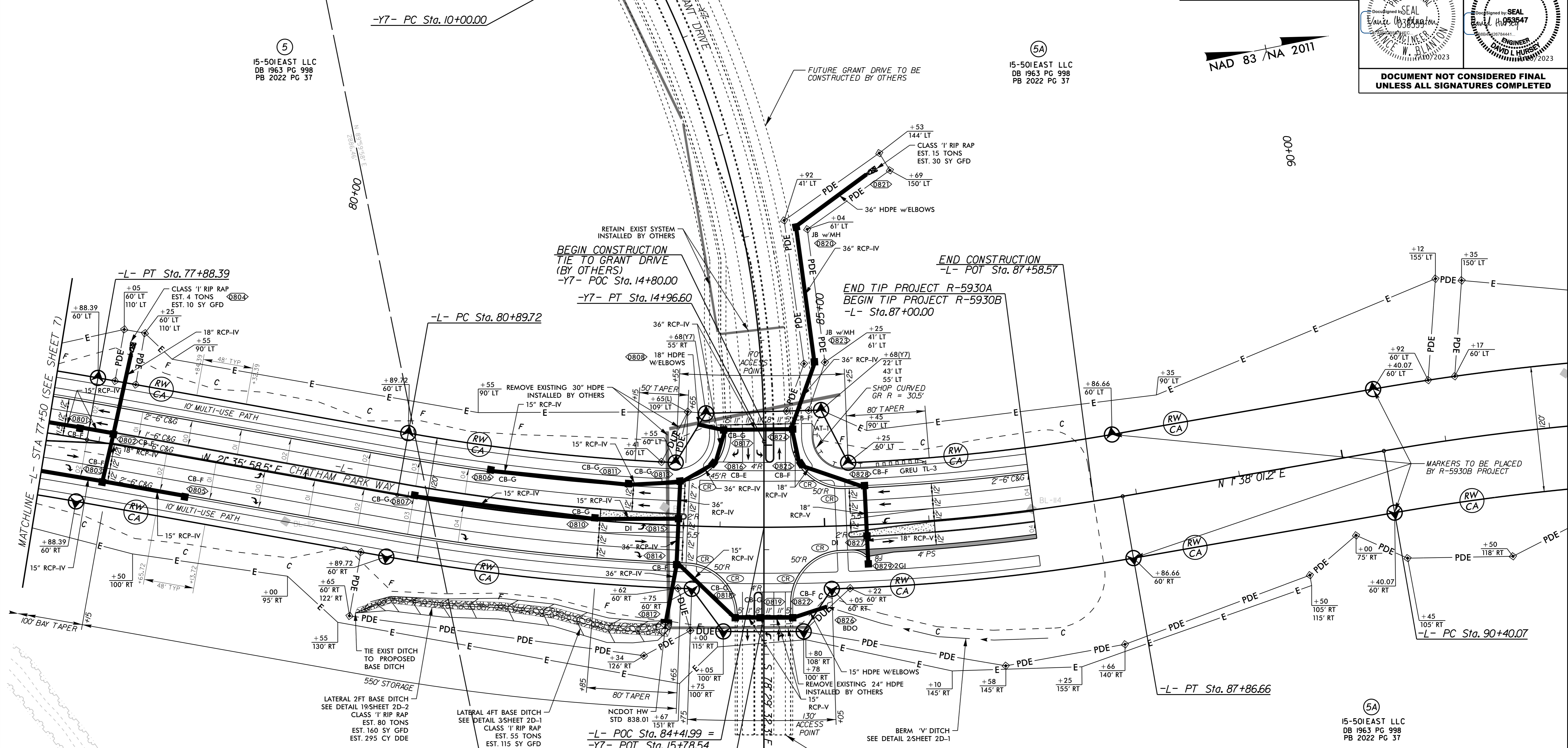
421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NC 27601

RIGHT-OF-WAY REV.
CONST. REV.

PROJECT REFERENCE NO. R-5930A	SHEET NO. 8
R-5930 RW SHEET NO. 9	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

BM*6 ELEVATION = 445.84'
 N 728.259 E 1.955.699
 BL STATION 84+67.9, 331.0' LEFT
 L STATION 91+56.97, 375.34' LEFT
 RAILROAD SPIKE IN 13' OAK

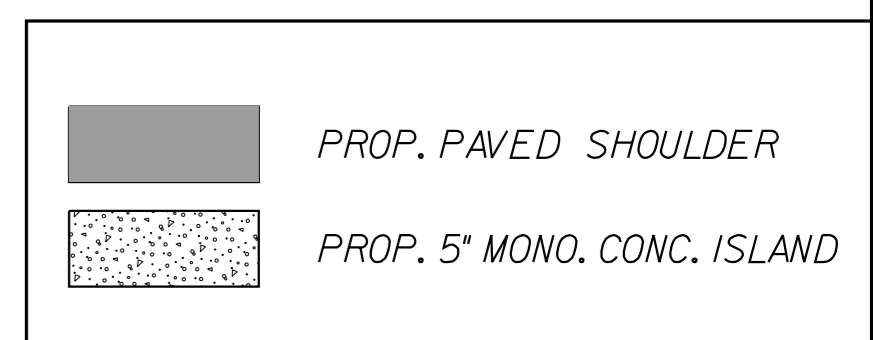
NAD 83 / NA 2011



REVISIONS

-L-	-Y7-	-L-	-Y7-
PI Sta 70+27.00	PI Sta 84+41.76	PI Sta 93+44.86	PI Sta 12+53.53
$\Delta = 39' 35" 18.7" (RT)$	$\Delta = 19' 57" 57.3" (LT)$	$\Delta = 15' 05" 51.3" (RT)$	$\Delta = 28' 27" 11.8" (RT)$
$D = 2' 29" 28.0"$	$D = 2' 51" 53.2"$	$D = 2' 29" 28.0"$	$D = 5' 43" 46.5"$
$L = 1,589.19'$	$L = 696.94'$	$L = 606.06'$	$L = 496.60'$
$T = 827.79'$	$T = 352.04'$	$T = 304.79'$	$T = 253.53'$
$R = 2,300.00'$	$R = 2,000.00'$	$R = 2,300.00'$	$R = 1,000.00'$
$SE = 0.03$	$SE = 0.04$	$SE = 0.03$	
$RO = 144$	$RO = 192$	$RO = 144$	

2025 AVERAGE DAILY TRAFFIC		-Y7- (GRANT DR EXTENSION)	
2045	AVERAGE DAILY TRAFFIC	DHV = 8%	3500
		DIR = 55%	11200
		TTST = 1%	
		DUAL = 3%	
		6800	2800
		21800	6000
		700	4700
		1500	15100
		0	800
		3000	
		0	7500
		DHV = 8%	
		DIR = 65%	
		TTST = 1%	
		DUAL = 2%	



SEE SHEET 11 FOR -L- PROFILE
 SEE SHEETS 2D-1 TO 2D-2 FOR DRAINAGE DETAILS

6/9/2023

5/14/99



421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NC 27601

PROJECT REFERENCE NO. R-5930A	SHEET NO. 9
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

BM*1 ELEVATION = 470.55'
N 721.385 E 1.955.349
BL STATION 10+13.5, 437.1' LEFT
L STATION 17+20.57, 486.05' LEFT
RAILROAD SPIKE IN 12" PINE

-L- STA 17+82.45 =
-YIRPD- STA 10+00.00
ELEV = 514.49'

-L- STA 18+18.24 =
-YILPD- STA 10+00.00
ELEV = 517.06'

EXISTING GROUND

LEGEND

DITCH GRADE LT	
DITCH GRADE RT	

K:\PAL_Roadway\01036532 - R-5930 North CPW Roadway\Proj\R-5930A_rdy_pl_09.dgn

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

BEGIN CONSTRUCTION
-L- STA 25+80.00
ELEV = 547.61'

-L- STA 30+51.27 =
-YILPA- STA 10+00.00
ELEV = 544.73'

-L- STA 30+79.61 =
-YIRPA- STA 13+75.48
ELEV = 544.42'

EXISTING GROUND

-L- STA 24+21.11 =
-YI- STA 14+11.53
ELEV = 516.19'

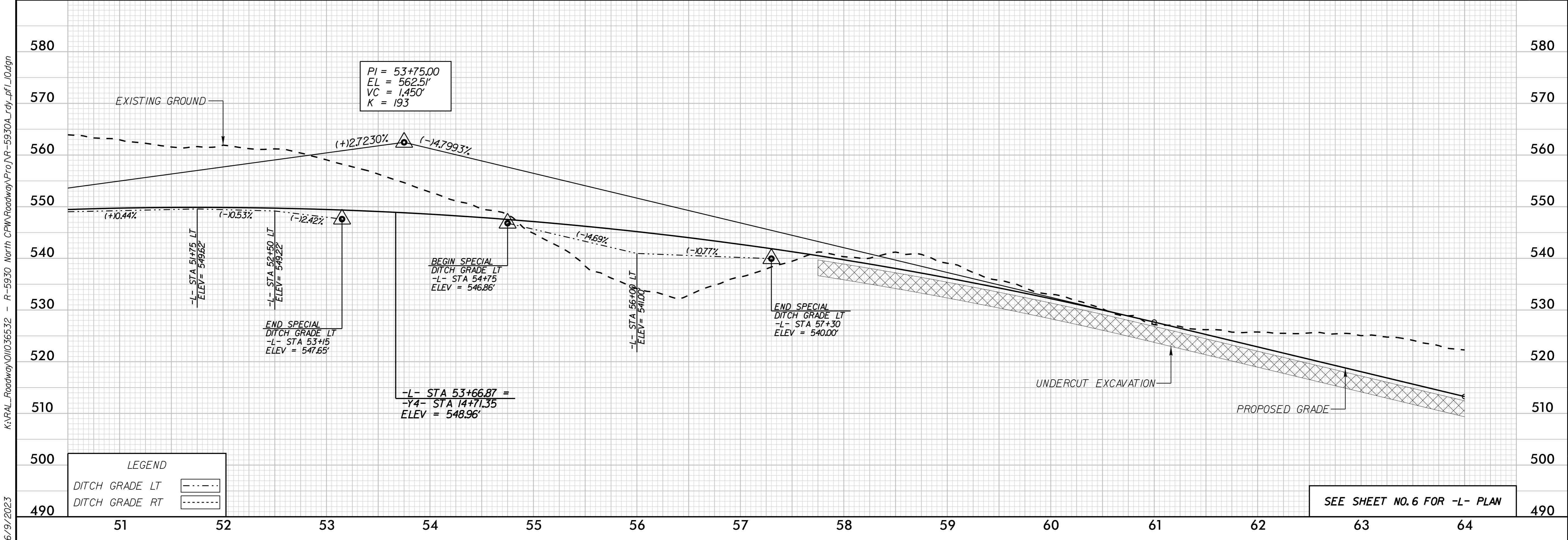
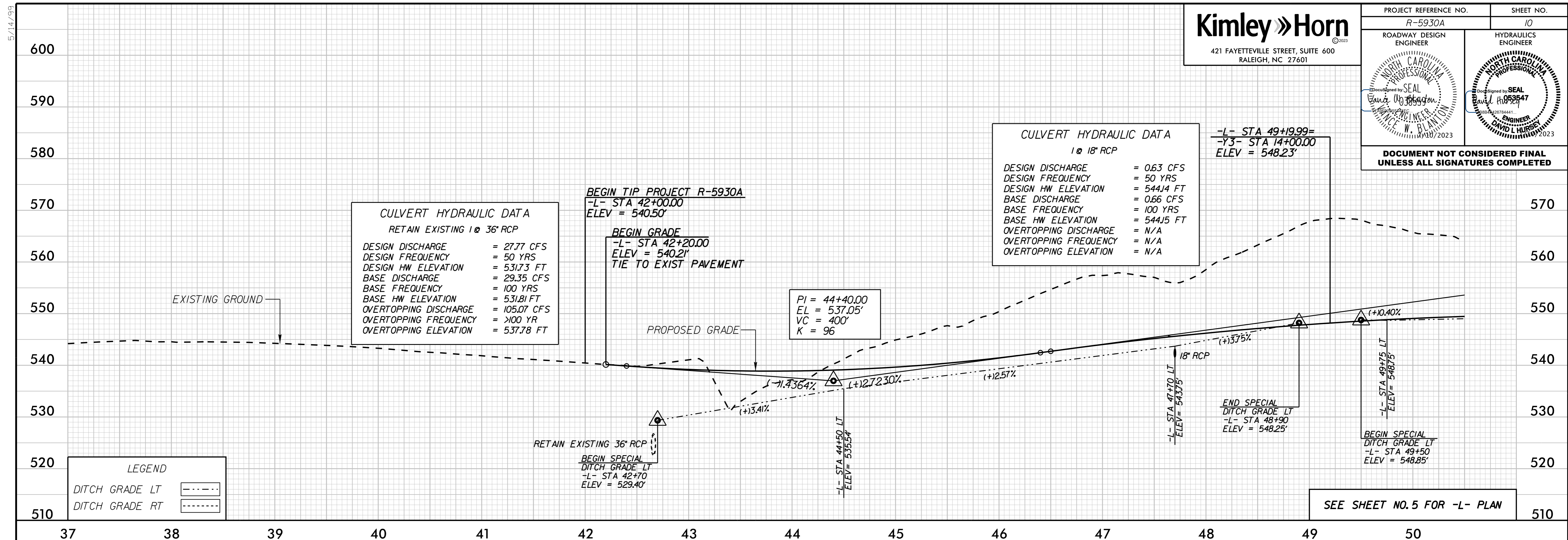
LEGEND

DITCH GRADE LT	
DITCH GRADE RT	

SEE SHEET NO. 4 FOR -L- PLAN

6/9/2023

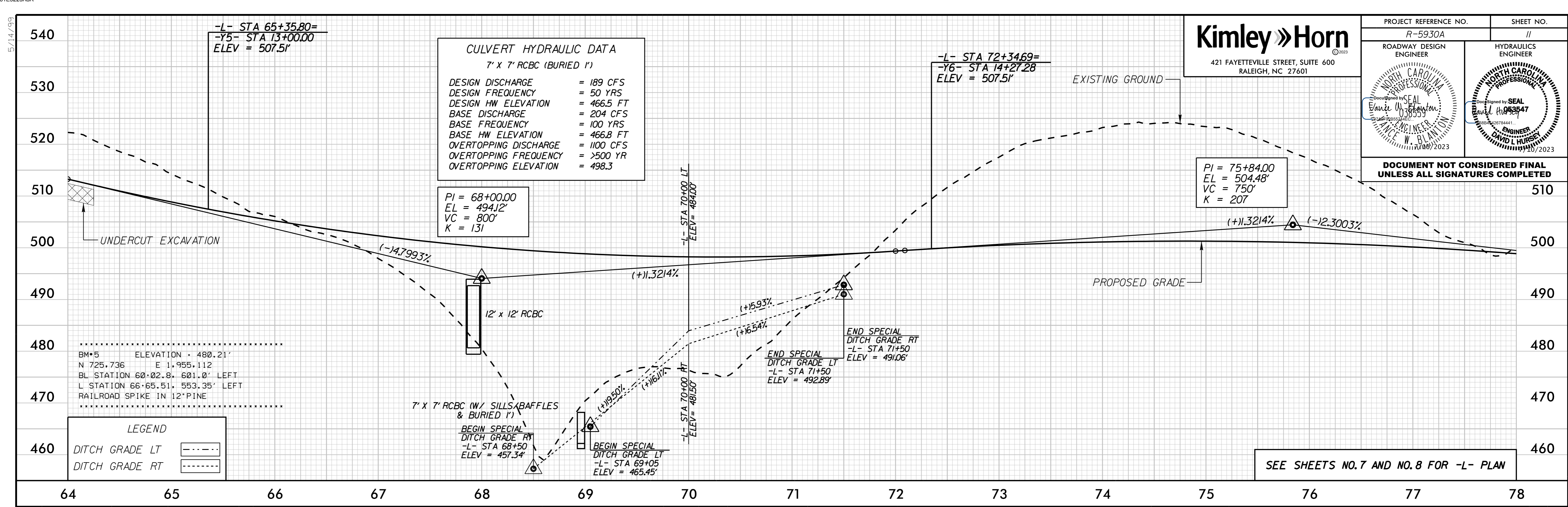
PROJECT REFERENCE NO. R-5930A	SHEET NO. 10
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<i>David W. Blanton</i> DAVID W. BLANTON PROFESSIONAL ENGINEER No. 1008547 EXPIRES 12/31/2023	<i>David L. Hulse</i> DAVID L. HULSE PROFESSIONAL ENGINEER No. 1008547 EXPIRES 12/31/2023
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



5/14/1999

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6/9/2023



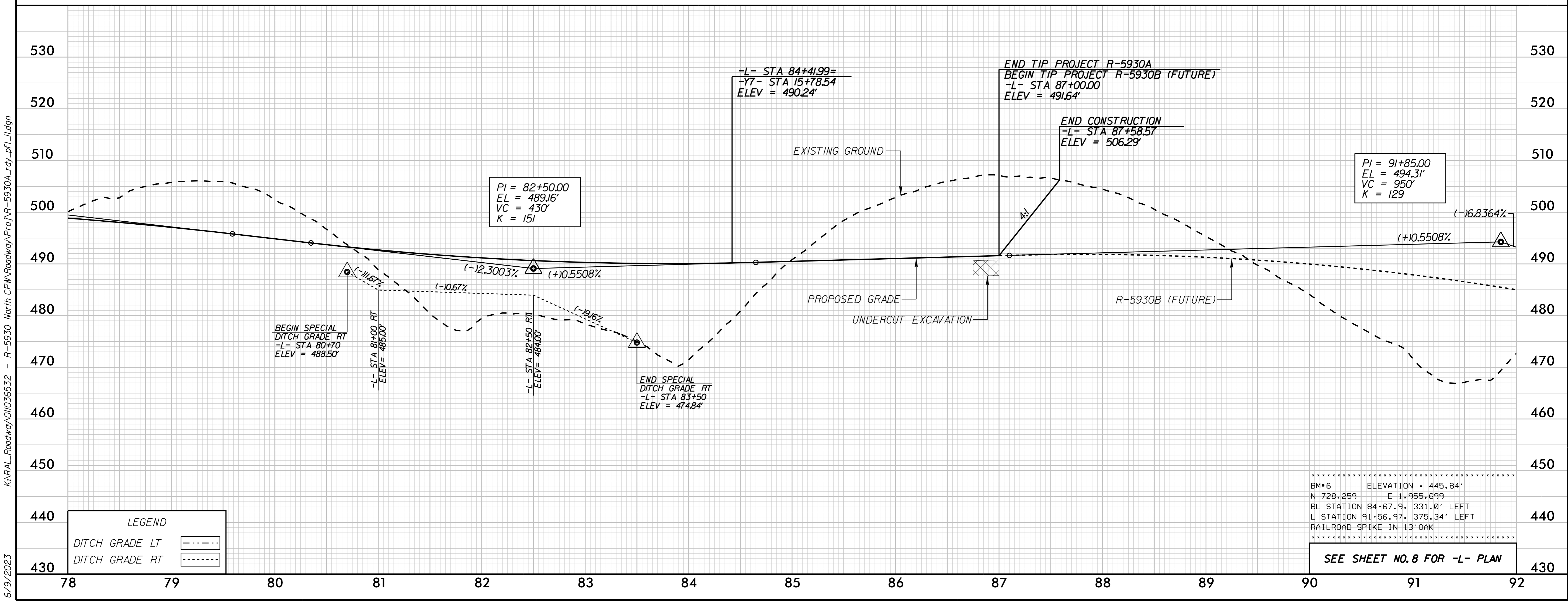
Kimley Horn
421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NC 27601

PROJECT REFERENCE NO. R-5930A	SHEET NO. 11
ROADWAY DESIGN ENGINEER Evan W. Blanton Professional Seal No. 103547 Exp. 12/31/2023	HYDRAULICS ENGINEER David L. Hulse Professional Seal No. 103547 Exp. 12/31/2023

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

BM*5 ELEVATION = 480.21'
N 725.736 E 1,955.112
BL STATION 60+02.8, 601.0' LEFT
L STATION 66+65.51, 553.35' LEFT
RAILROAD SPIKE IN 12" PINE

SEE SHEETS NO. 7 AND NO. 8 FOR -L- PLAN



BM*6 ELEVATION = 445.84'
N 728.259 E 1,955.699
BL STATION 84+67.9, 331.0' LEFT
L STATION 91+56.97, 375.34' LEFT
RAILROAD SPIKE IN 13" OAK

SEE SHEET NO. 8 FOR -L- PLAN

K:\PAL_Roadway\01036532 - R-5930 North CPW Roadway\Pro\R-5930A_rdy_pl_11.dgn
6/9/2023