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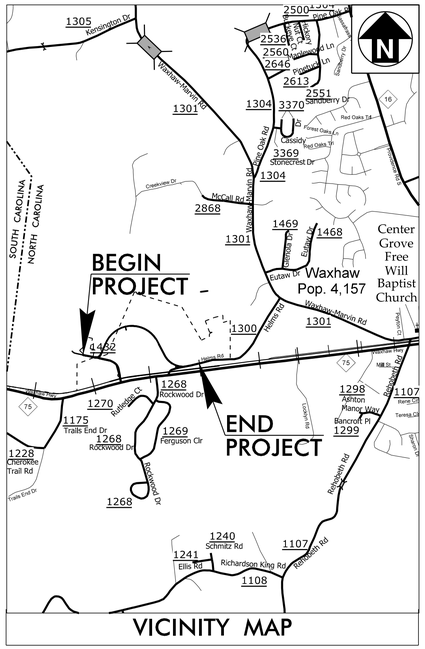
This file or an individual page shall not be considered a certified document.

09/08/2022

TIP PROJECT: Y-5500JC

CONTRACT: C204708

See Sheet 1A For Index of Sheets



VICINITY MAP

STATE OF NORTH CAROLINA
RAIL DIVISION

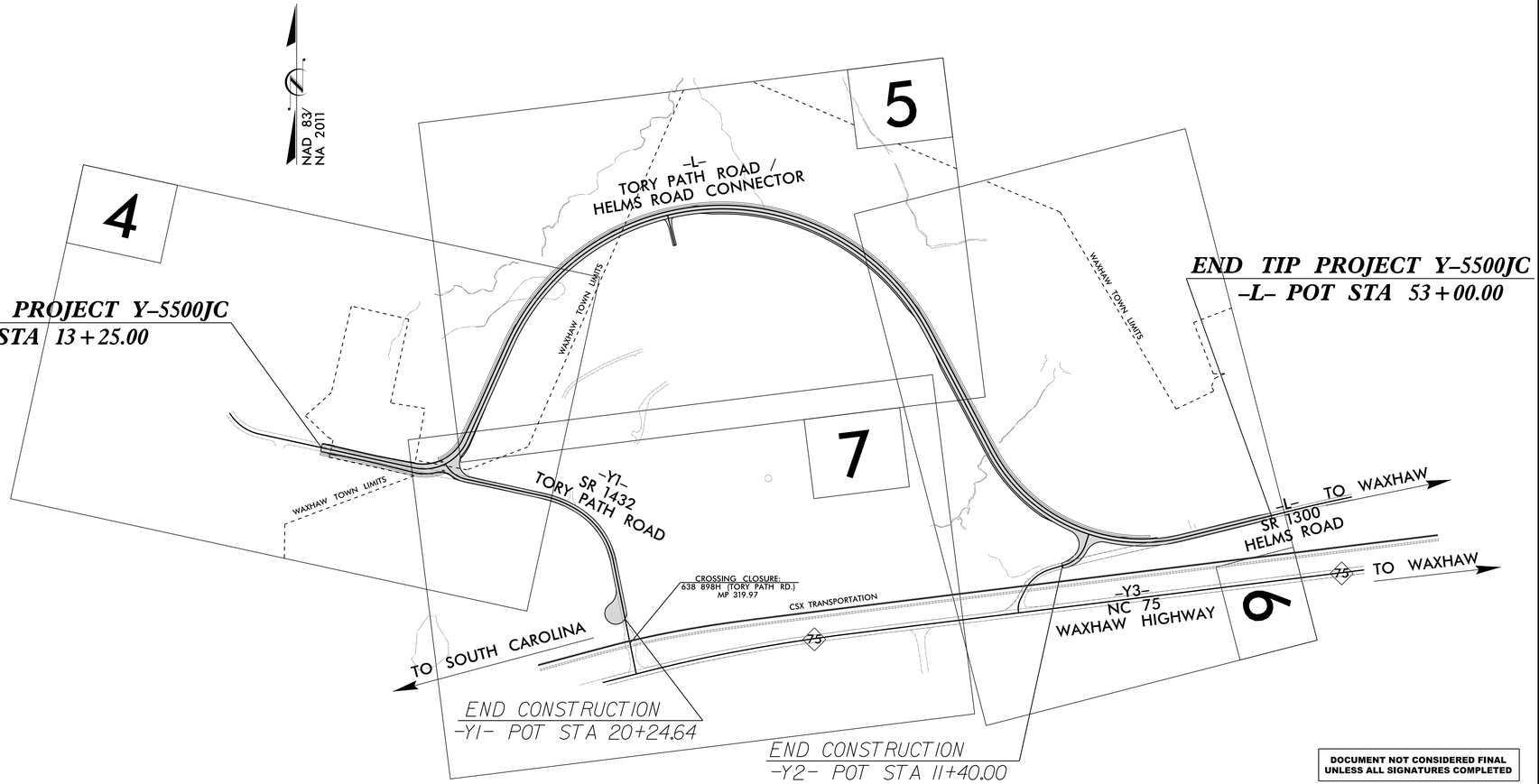
UNION COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	Y-5500JC	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
45533.1.18	1432008	PE
45533.2.5	1432008	R/W
45533.3.18	1432008	CONST

LOCATION: *SR 1432 (TORY PATH ROAD)(CROSSING NUMBER 638 898H, MP 319.97) CROSSING CLOSURE AT CSX TRANSPORTATION, AND EXTENSION TO SR 1300 (HELMS ROAD) IN WAXHAW*

TYPE OF WORK: *GRADING, PAVING, DRAINAGE, AND RAIL CROSSING CLOSURE*



BEGIN TIP PROJECT Y-5500JC
-L- POT STA 13+25.00

END TIP PROJECT Y-5500JC
-L- POT STA 53+00.00

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

PLANS: 50 25 0 50 100

PROFILE (HORIZONTAL): 50 25 0 50 100

PROFILE (VERTICAL): 10 5 0 10 20

DESIGN DATA

ADT 2022 = 320
ADT 2045 = 1200
K = 10 %
D = 55 %
T = 9 % *
V = 40 MPH
* (TTST 1% + DUAL 8%)
FUNC CLASS = LOCAL
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT Y-5500JC = 0.753 MILES
TOTAL LENGTH OF TIP PROJECT Y-5500JC = 0.753 MILES

PLANS PREPARED FOR THE NCDOT BY:
MOTT MACDONALD
7621 Parfey Rd Suite 115
Fuquay-Varina, NC 27526
(919) 552-2253
(919) 552-2254 (Fax)
www.mottmac.com/americas
LICENSE NO. F-0669

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
APRIL 26, 2021

LETTING DATE:
JULY 19, 2022

W. HERBERT TURNER, JR, PE
PROJECT ENGINEER
PEF ENGINEER

JEFFREY COOKE, PE
PROJECT DESIGN ENGINEER
PEF ENGINEER

BRIAN GACKSTETTER, EI
NCDOT DIVISION PROJECT ENGINEER

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 21162 ENGINEER W. HERBERT TURNER, JR
SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 052339 ENGINEER JEFFREY COOKE
SIGNATURE: *P.E.*

NC DEPARTMENT OF TRANSPORTATION
RAIL DIVISION
1556 MAIL SERVICE CENTER
RALEIGH, NC 27699-1556
(919) 707 4110
(919) 707-4154 (FAX)

3:50:17 PM
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COK82519

5/28/99

INDEX OF SHEETS

LIST OF ROADWAY STANDARD DRAWINGS

EFF. 01–16–2018

2018 ROADWAY ENGLISH STANDARD DRAWINGS

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

STD.NO. TITLE

DIVISION 2 – EARTHWORK
200.03 Method of Clearing – Method III
225.02 Guide for Grading Subgrade – Secondary and Local
225.06 Method of Grading Sight Distance at Intersections
225.04 Method of Obtaining Superelevation – Two Lane Pavement
240.01 Guide for Berm Ditch Construction

DIVISION 3 – PIPE CULVERTS
300.01 Method of Pipe Installation
310.10 Driveway Pipe Construction

DIVISION 5 – SUBGRADE, BASES AND SHOULDERS
560.01 Method of Shoulder Construction – High Side of Superelevated Curve – Method I

DIVISION 8 – INCIDENTALS
806.01 Concrete Right–of–Way Marker
806.02 Granite Right–of–Way Marker
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
838.21 Reinforced Concrete Endwall – for Single 54" Pipe 90 Skew
838.45 Notes for Reinforced Concrete Endwall – Std. Dwg 838.21 thru 838.40
838.51 Reinforced Brick Endwall – for Single 54" Pipe 90 Skew
838.75 Notes for Reinforced Brick Endwall – Std. Dwg 838.51 thru 838.70
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
840.25 Anchorage for Frames – Brick or Concrete or Precast
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
840.35 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
846.01 Concrete Curb, Gutter and Curb & Gutter
846.04 Drop Inlet Installation in Shoulder Berm Gutter
848.01 Concrete Sidewalk
848.02 Driveway Turnout – Radius Type
848.05 Curb Ramp – Proposed Curb & Gutter
850.11 Guide for Berm Drainage Outlet – 24" and 30" Pipe
862.01 Guardrail Placement
862.02 Guardrail Installation
862.03 Structure Anchor Units
876.01 Rip Rap in Channels
876.02 Guide for Rip Rap at Pipe Outlets
876.04 Drainage Ditches with Class 'B' Rip Rap

GENERAL NOTES

GENERAL NOTES: 2018 SPECIFICATIONS

EFFECTIVE: 01–16–2018
REVISED:

GRADING AND SURFACING OR RESURFACING AND WIDENING:

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

CLEARING:

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

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.

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.

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 USING 3 FOOT RADII OR RADII 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 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 UNION COUNTY WATER,

COMPORIUM, WINDSTREAM, DUKE ENERGY, PIEDMONT NATURAL GAS, AND CHARTER COMMUNICATIONS.

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

RIGHT–OF–WAY MARKERS:

ALL RIGHT–OF–WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY 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.

PROJECT REFERENCE NO.	SHEET NO.
Y–5500JC	1A
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 052339 ENGINEER JEFFREY COOK

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of:
MOTT MACDONALD
7621 Parfoy Rd Suite 115
Fuquay–Varina, NC 27526
www.mottmac.com/americas
LICENSE NO. F–0669

9/10/2021

PROJECT REFERENCE NO.	SHEET NO.
Y-5500JC	1B

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
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary
- Proposed Wetland Boundary
- Existing Endangered Animal Boundary
- Existing Endangered Plant Boundary
- Existing Historic Property Boundary
- Known Contamination Area: Soil
- Potential Contamination Area: Soil
- Known Contamination Area: Water
- Potential Contamination Area: Water
- Contaminated Site: Known or Potential

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

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

RIGHT OF WAY & PROJECT CONTROL:

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

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut
- Proposed Slope Stakes Fill
- Proposed Curb Ramp
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert
- Bridge Wing Wall, Head Wall and End Wall

MINOR:

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

UTILITIES:

** SUE – Subsurface Utility Engineering*
LOS – Level of Service – A,B,C or D (Accuracy)

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H–Frame Pole
- U/G Power Line Test Hole (SUE – LOS A)*
- U/G Power Line (SUE – LOS B)*
- U/G Power Line (SUE – LOS C)*
- U/G Power Line (SUE – LOS D)*

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole
- Telephone Pedestal
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole
- U/G Telephone Test Hole (SUE – LOS A)*
- U/G Telephone Cable (SUE – LOS B)*
- U/G Telephone Cable (SUE – LOS C)*
- U/G Telephone Cable (SUE – LOS D)*
- U/G Telephone Conduit (SUE – LOS B)*
- U/G Telephone Conduit (SUE – LOS C)*
- U/G Telephone Conduit (SUE – LOS D)*
- U/G Fiber Optics Cable (SUE – LOS B)*
- U/G Fiber Optics Cable (SUE – LOS C)*
- U/G Fiber Optics Cable (SUE – LOS D)*

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
Y-5500JC	2A-1
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 052339 ENGINEER JEFFREY COOKE

PAVEMENT ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CLARK S. MORRISON

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

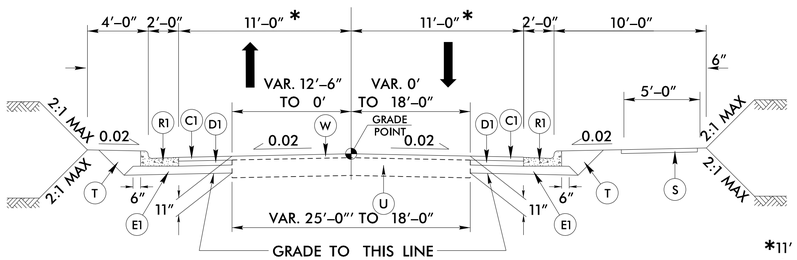
Prepared in the Office of:

MOTT MACDONALD 7621 Purfoy Rd Suite 115 Fuquay-Varina, NC 27526 www.mottmac.com/americas

FINAL PAVEMENT SCHEDULE

C1	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.	E2	PROP. APPROX. 4.5″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.	S	4″ CONCRETE SIDEWALK.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. PER 1″ DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1″ IN DEPTH OR GREATER THAN 1½″ IN DEPTH.	E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1″ DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3″ IN DEPTH OR GREATER THAN 5½″ 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.	J1	6″ AGGREGATE BASE COURSE.	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 2½″ IN DEPTH OR GREATER THAN 4″ IN DEPTH.	R1	2′-6″ CONCRETE CURB AND GUTTER.	W	VARIABLE DEPTH ASPHALT PAVEMENT. (SEE WEDGING DETAIL)
E1	PROP. APPROX. 4″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	R2	SHOULDER BERM GUTTER	NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.	

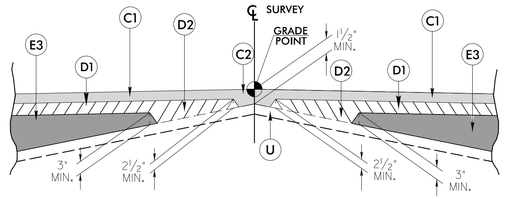
℄ –L– TORY PATH RD /HELMS RD CONNECTOR



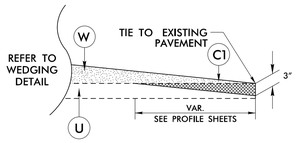
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 FOR:
–L– STA. 13+25.00 TO 17+17.88

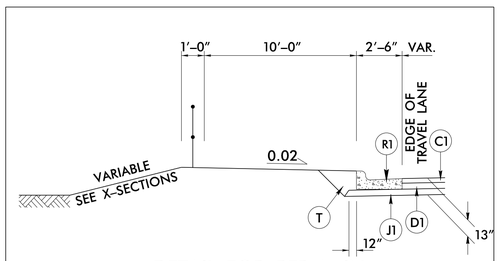
*11′ TO 15′–6″ CURVE WIDENING
–L– STA. 15+10.45 TO 17+17.88



W – Detail Showing Method of Wedging



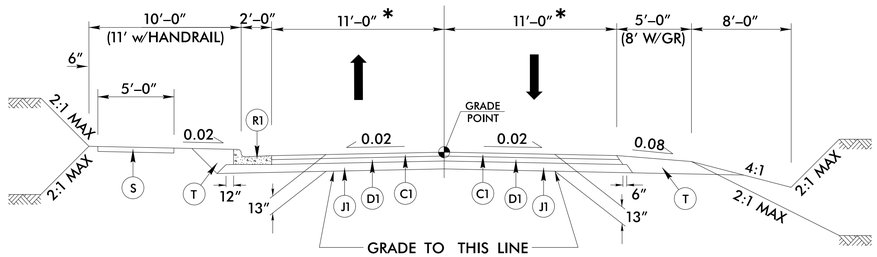
INCIDENTAL MILLING DETAIL
DETAIL SHOWING PROFILE VIEW



DETAIL FOR BERM IN CONJUNCTION WITH HANDRAIL
*SEE DETAIL SHEET 2C–2

–L– STA 24+50.00 TO 37+00.00 LT
–L– STA. 41+50.00 TO 44+00.00 LT

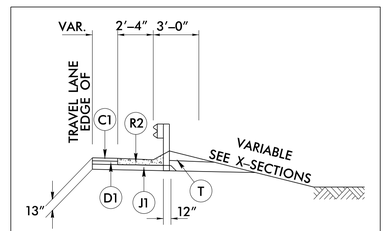
℄ –L– TORY PATH RD /HELMS RD CONNECTOR



TYPICAL SECTION NO. 2

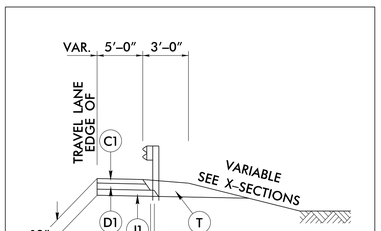
USE TYPICAL SECTION NO. 2 FOR:
–L– STA. 17+17.88 TO 47+00.00

* 11′ TO 15′–6″ CURVE WIDENING
–L– STA. 17+17.88 TO 19+55.13



DETAIL FOR SHOULDER BERM GUTTER IN CONJUNCTION WITH GUARDRAIL

–L– STA 30+95.00 TO 36+75.00 RT



DETAIL FOR SHOULDER IN CONJUNCTION WITH GUARDRAIL

–L– STA 30+00.00 TO 30+95.00 RT
–L– STA 36+75.00 TO 37+40.00 RT
–L– STA 39+60.00 TO 45+40.00 RT

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PROJECT REFERENCE NO.	SHEET NO.
Y-5500JC	2A-2

R/W SHEET NO.

ROADWAY DESIGN ENGINEER — SEAL 052339 (NORTH CAROLINA PROFESSIONAL ENGINEER, JEFFREY COOKE)

PAVEMENT ENGINEER — SEAL 022896 (NORTH CAROLINA PROFESSIONAL ENGINEER, CLARK S. MORRISON)

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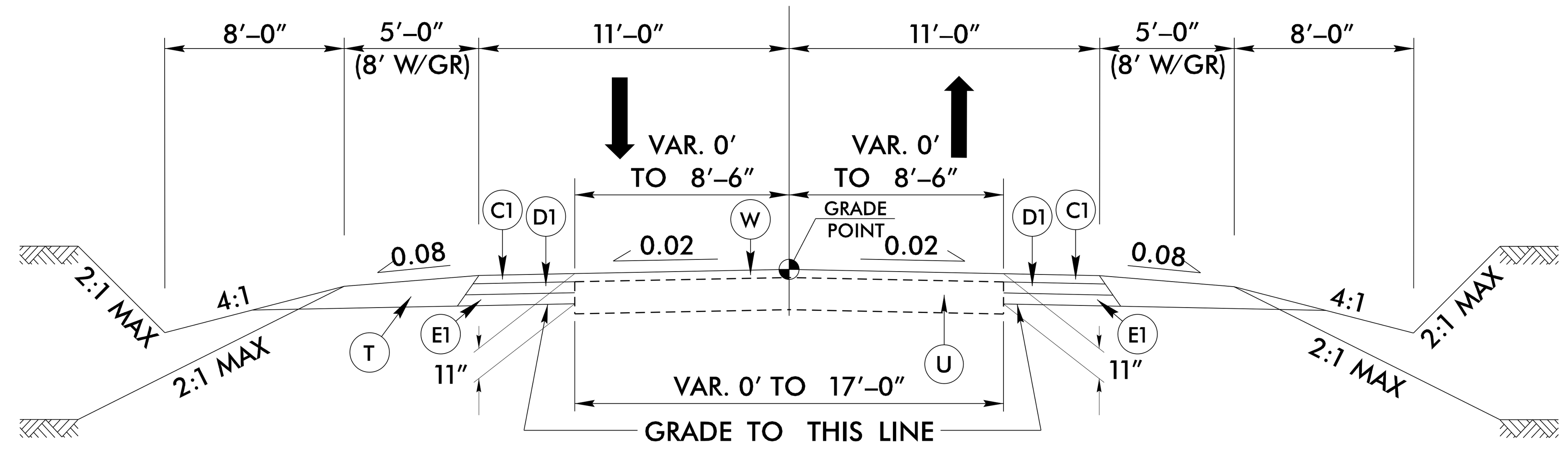
Prepared in the Office of: MOTT MACDONALD, 7621 Purfoy Rd Suite 115, Fuquay-Varina, NC 27526, www.mottmac.com/americas

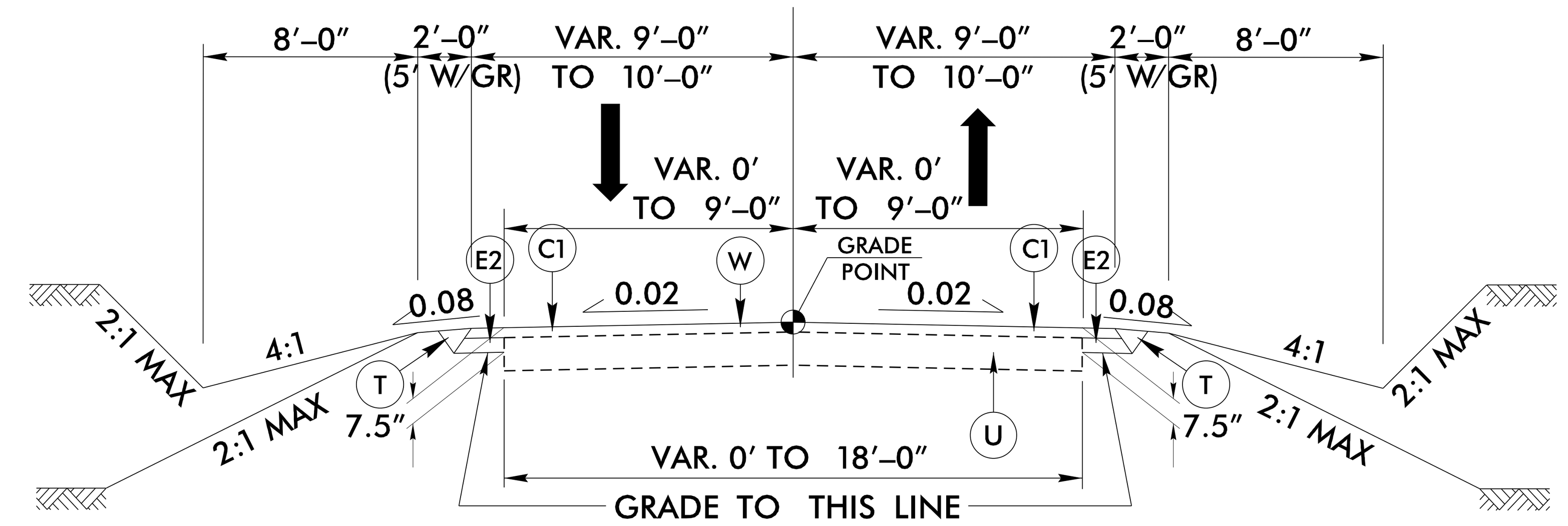
℄ -L- TORY PATH RD /HELMS RD CONNECTOR



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3 FOR:
-L- STA. 47+00.00 TO 53+00.00

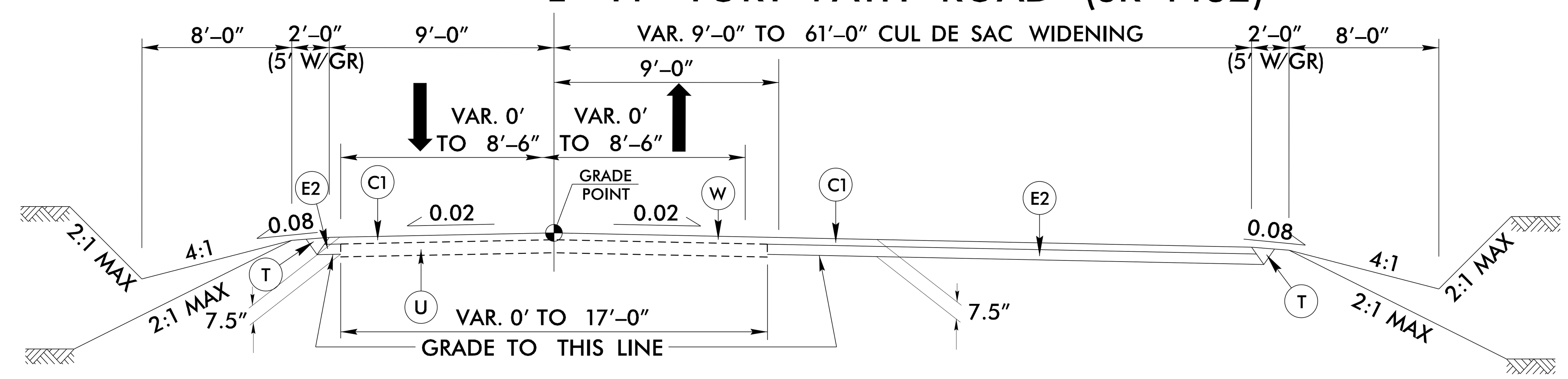
℄ -Y1- TORY PATH ROAD (SR 1432)



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4 FOR:
-Y1- STA. 10+10.04 TO 17+53.78

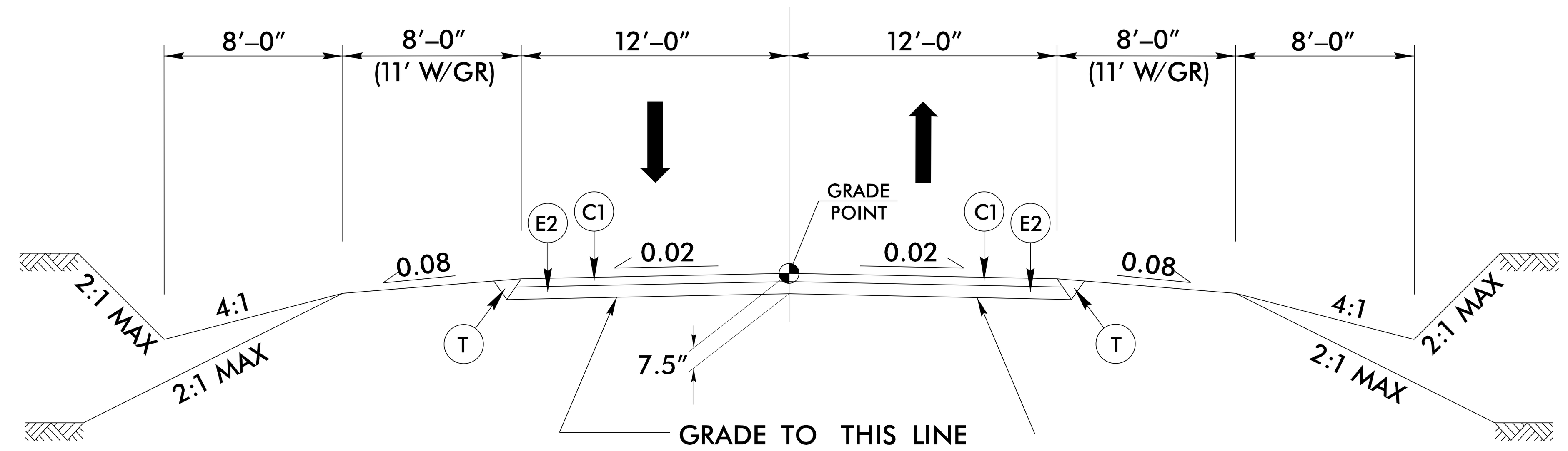
℄ -Y1- TORY PATH ROAD (SR 1432)



TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5 FOR:
-Y1- STA. 17+53.78 TO 18+55.54

℄ -Y2- HELMS ROAD CONNECTOR



TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6 FOR:
-Y2- STA. 10+11.00 TO 11+40.00

FINAL PAVEMENT SCHEDULE	
C1	3" S9.5B
C2	VAR. S9.5B
D1	4" I19.0C
D2	VAR. I19.0C
E1	4" B25.0C
E2	4.5" B25.0C
E3	VAR. B25.0C
J1	6" AGGREGATE BASE COURSE
R1	2'-6" C & G
R2	SHOULDER BERM GUTTER
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING

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

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
Y-5500JC	2B-1

R/W SHEET NO.

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 052339 JEFFREY COOKE

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 21162 W. HERBERT TURNER, JR.

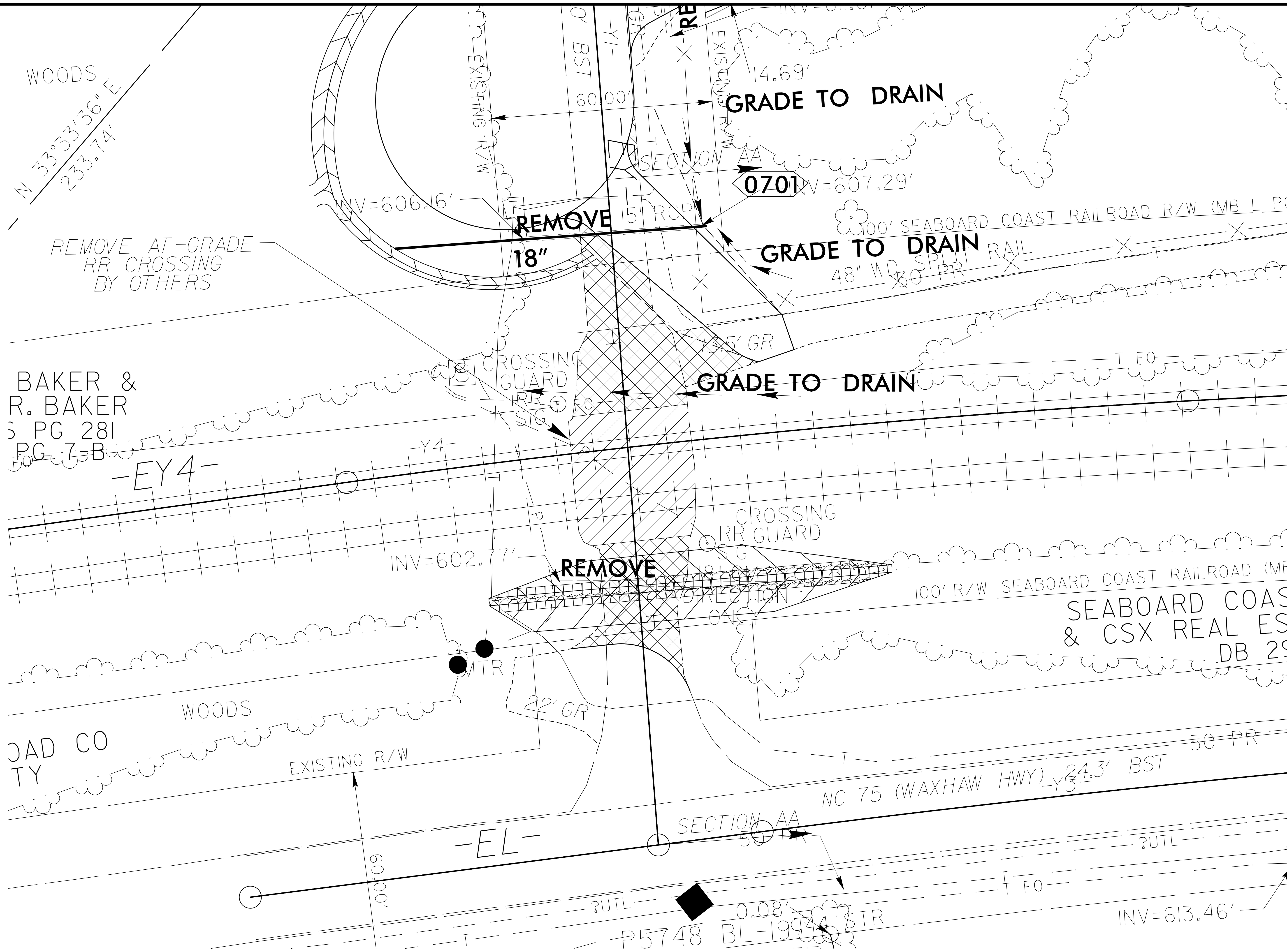
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of: MOTT MACDONALD 7621 Purfoy Rd Suite 115 Fuquay-Varina, NC 27526 www.mottmac.com/americas

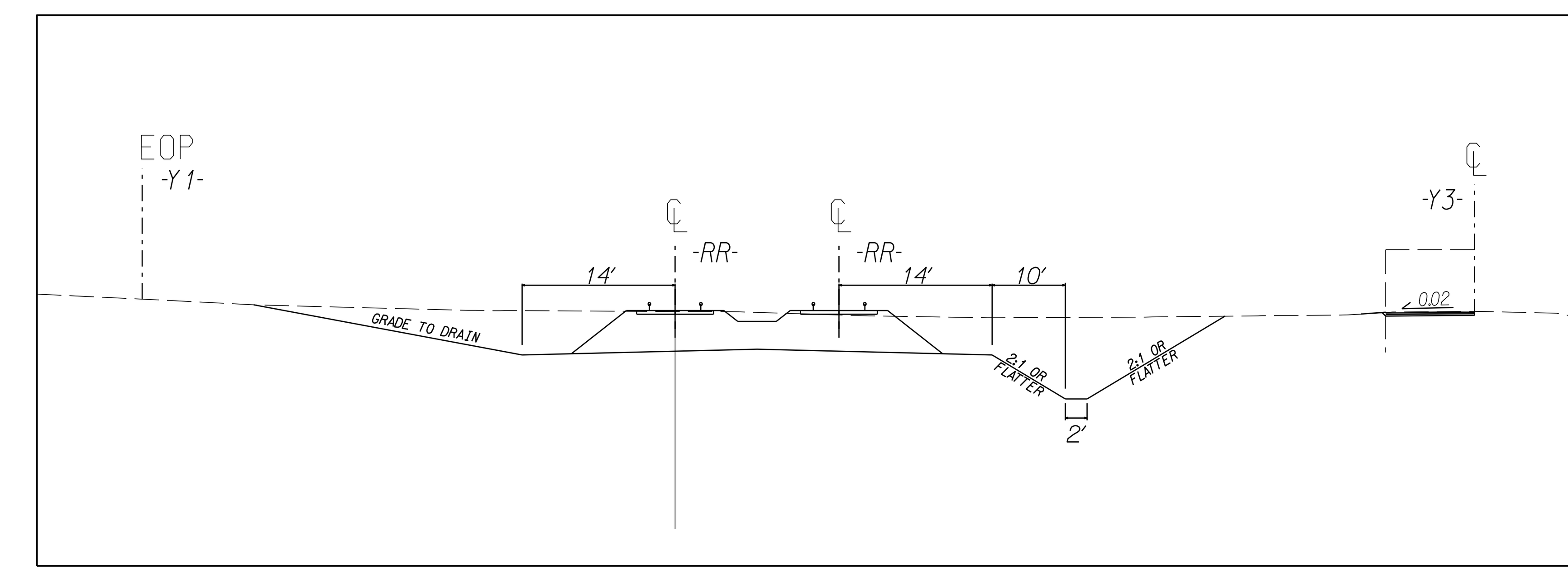
FOR PLAN SHEET, SEE SHEET 7

NAD 83/2011

20' 0' 20' 40'
10'
(ENGLISH)



SECTION AA :



[pattern]	PAVEMENT REMOVAL
[pattern]	REMOVAL BY OTHERS

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

NOTES:

1. CONTACT THE NCDOT RESIDENT ENGINEER TO SCHEDULE THE CLOSURE OF TORY PATH ROAD.
2. THE EXISTING PAVEMENT WITHIN 10' OF THE CENTERLINE OF THE TRACK WILL BE REMOVED BY OTHERS. THE CONCRETE PANELS WILL ALSO BE REMOVED BY OTHERS. THE EXISTING GATES, AND FLASHERS WILL BE REMOVED BY OTHERS.
3. CONTRACTOR SHALL SEED AND MULCH THE DISTURBED AREA OUTSIDE THE RAILROAD BALLAST LINE.
4. CONTRACTOR SHALL CONTACT NORTH CAROLINA 811 TO LOCATE ALL UNDERGROUND UTILITIES IN THE WORK AREA. CONTRACTOR SHALL ALSO CONTACT CSX RAILWAY TO LOCATE ANY UNDERGROUND RAILROAD UTILITIES IN THE WORK AREA PRIOR TO COMMENCEMENT OF WORK ON THE CSX CORRIDOR.
5. CONTRACTOR SHALL REMOVE EXISTING HIGHWAY ROADBED AND GRADE AREA TO MATCH ADJACENT TOPOGRAPHY. ANY EXISTING CULVERTS IN THE RAILROAD DITCHES SHALL BE REMOVED AND GRADE EXISTING DITCHES TO DRAIN. ALL GRADING AND DITCHING SHALL NOT BE WITHIN 14' OF EXISTING RAIL. CONTRACTOR SHALL COORDINATE WITH THE ENGINEER ON HAULING AWAY ANY ASPHALT LEFT BY THE REMOVAL OF OTHERS. ALL PAVEMENT WITHIN THE RAILROAD CORRIDOR IS TO BE REMOVED PRIOR TO THE CONCLUSION OF THE PROJECT
6. PROVIDE PERMANENT SIGNING AS SHOWN.
7. PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.
8. ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERNATING ANY TRAFFIC PATTERN.

CROSSING CLOSURE DETAIL

TORY PATH ROAD

PROJECT REFERENCE NO.	SHEET NO.
Y-5500JC	2C-1

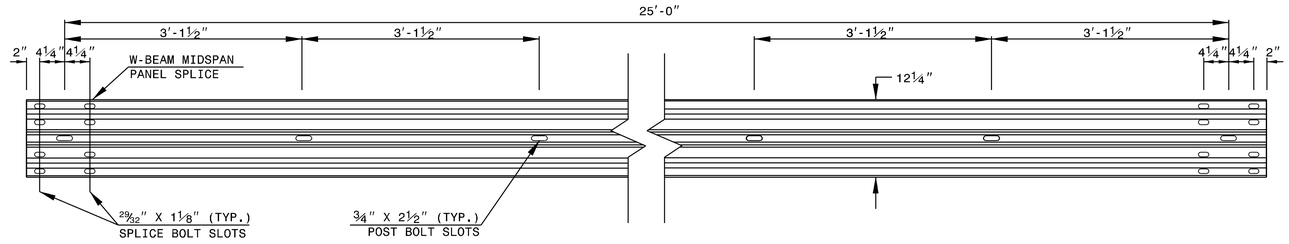
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

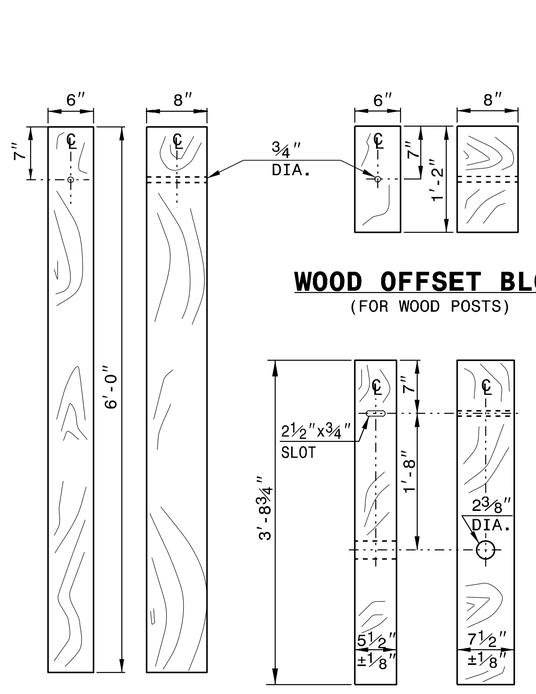
ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8

862D02



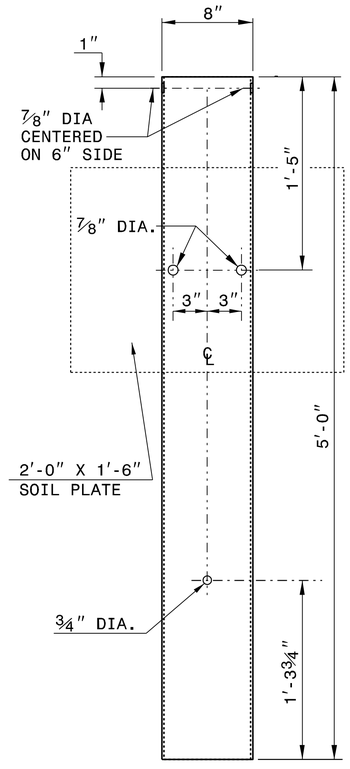
STANDARD W-BEAM GUARDRAIL



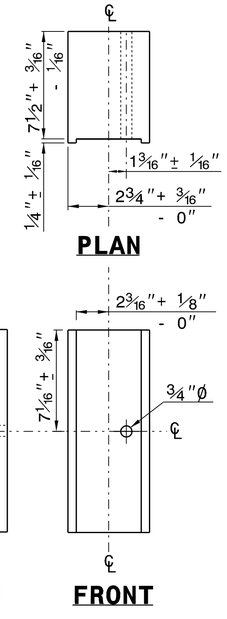
WOOD OFFSET BLOCK
(FOR WOOD POSTS)

STANDARD LINE POST

SHORT WOOD BREAKAWAY POST



STEEL TUBE
TS 6"x8"x0.1875"

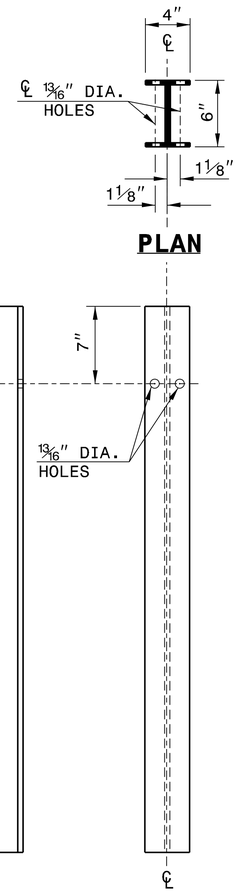


PLAN

SIDE

FRONT

ROUTED OFFSET BLOCK



PLAN

SIDE

FRONT

"W6" STEEL POST

SYSTEM PARTS

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8

862D02

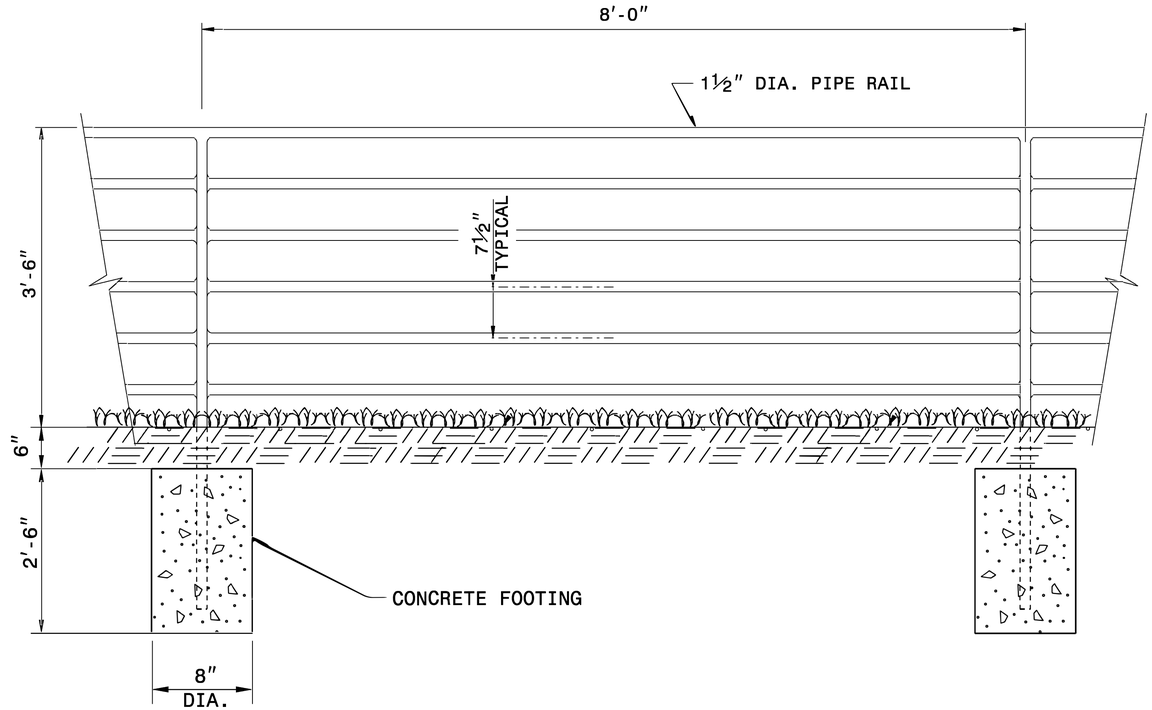
NORTH CAROLINA PROFESSIONAL SEAL 022071 ENGINEER RONALD EUGENE DAVENPORT JR

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

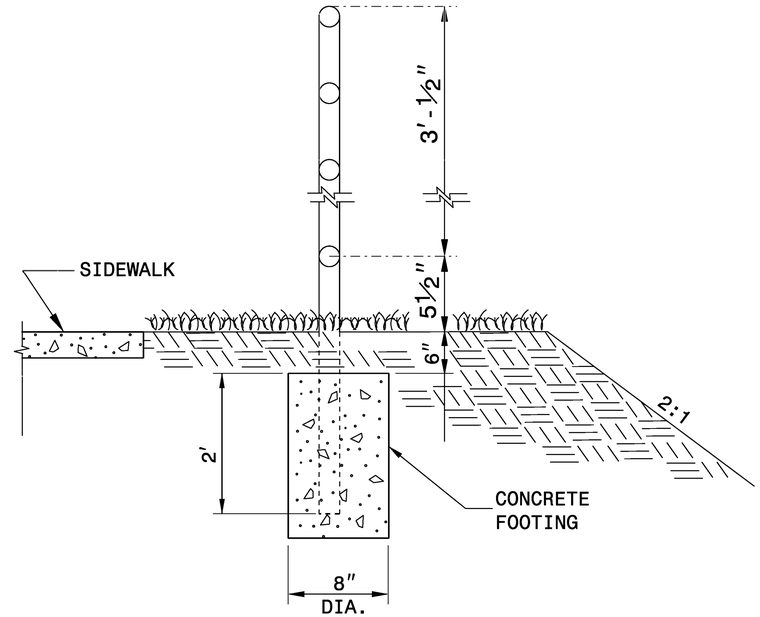
SEE TITLE BLOCK

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

PROJECT REFERENCE NO.	SHEET NO.
Y-5500JC	2C-2



ELEVATION OF HANDRAIL



INSET 'A'

NOTES:

CONSTRUCT PROPOSED STEEL PIPE RAIL OF 1½" DIAMETER SCHEDULE 40 PLAIN END GALVANIZED STEEL PIPE MEETING THE REQUIREMENTS OF ASTM A53.

REPAIR GALVANIZING IN ACCORDANCE WITH SECTION 1076 OF THE NCDOT STANDARD SPECIFICATIONS.

PAINT, IF REQUIRED BY THE ENGINEER, IN ACCORDANCE WITH SECTION 1080 OF THE STANDARD SPECIFICATIONS.

WELD IN ACCORDANCE WITH ARTICLE 1072-18 OF THE STANDARD SPECIFICATIONS.

USE CLASS 'B' CONCRETE FOR HANDRAIL FOOTINGS.

PLACEMENT OF HANDRAIL IN RELATION TO SHOULDER BREAK POINT AND SIDEWALK MAY BE MODIFIED AS DIRECTED BY THE ENGINEER.

NORTH CAROLINA PROFESSIONAL SEAL 022071 ENGINEER JOHNNIE EUTON DAVENPORT

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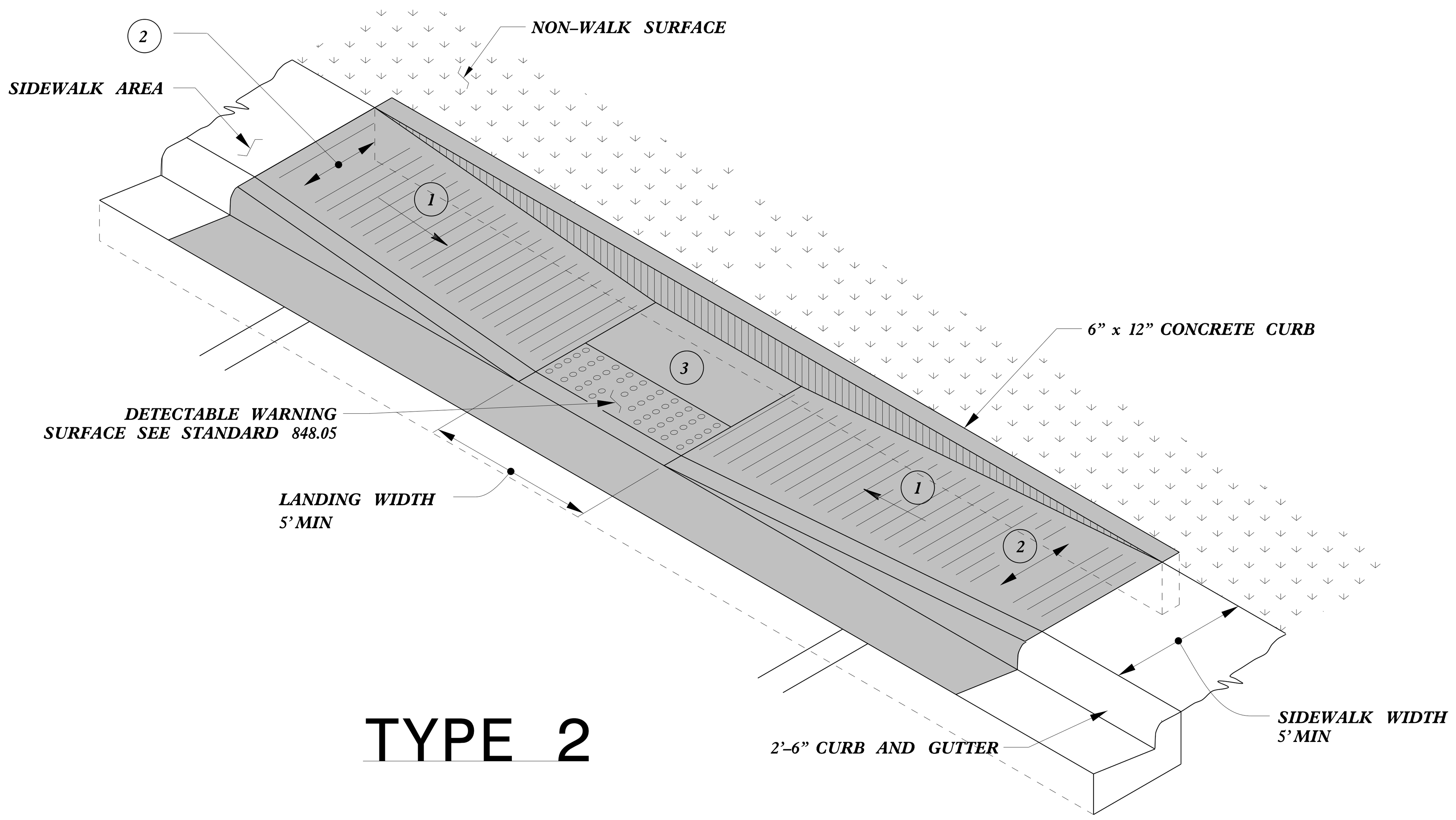
CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

PROPOSED PEDESTRIAN HANDRAIL

ORIGINAL BY: E.E. WARD DATE: 12-99
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: jhowerton/handrail adjacent to sidewalk.dgn

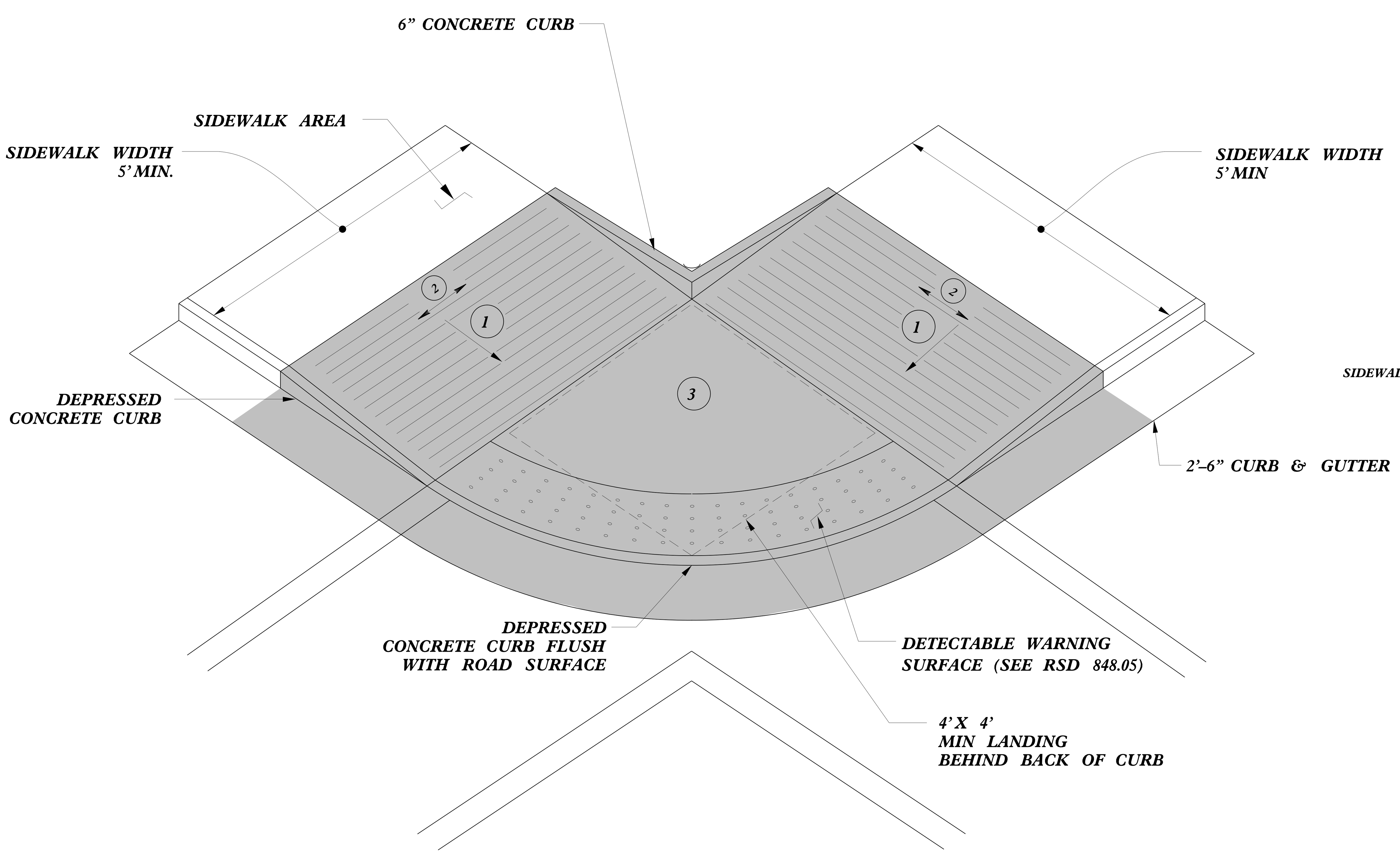
PROJECT REFERENCE NO.	SHEET NO.



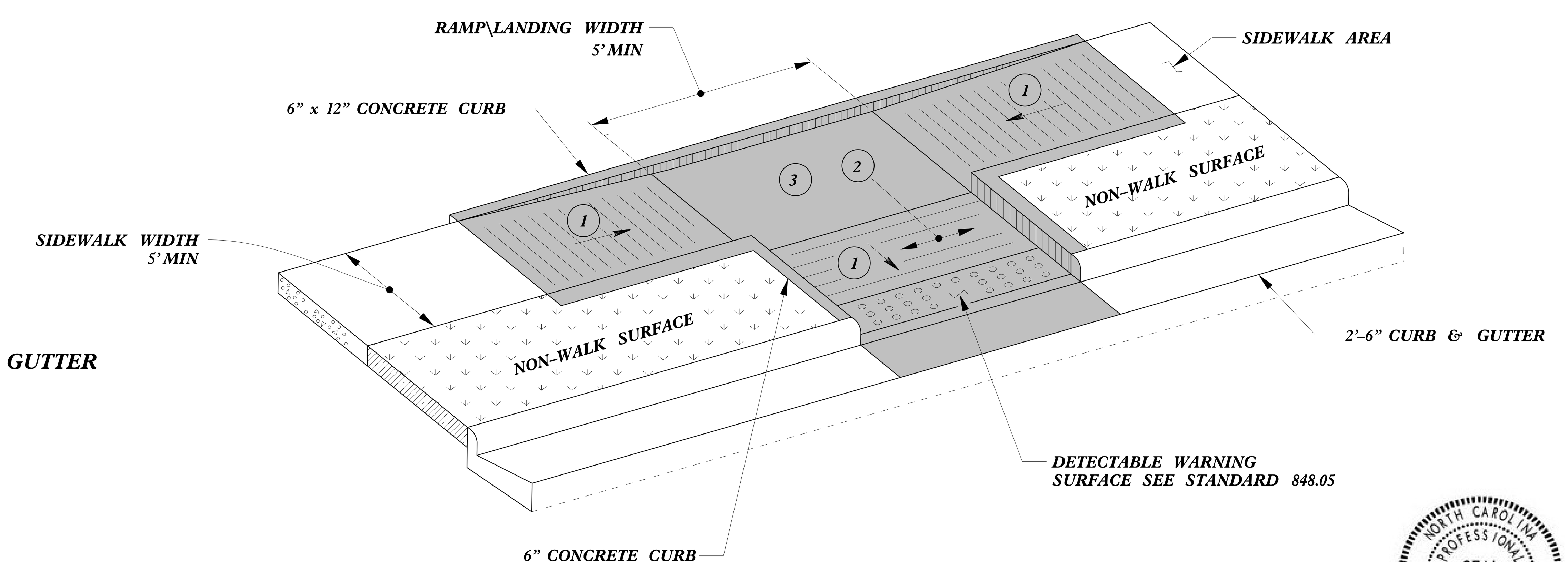
TYPE 2

PAY LIMITS FOR 1 CURB RAMP

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.



TYPE 2A



TYPE 3

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

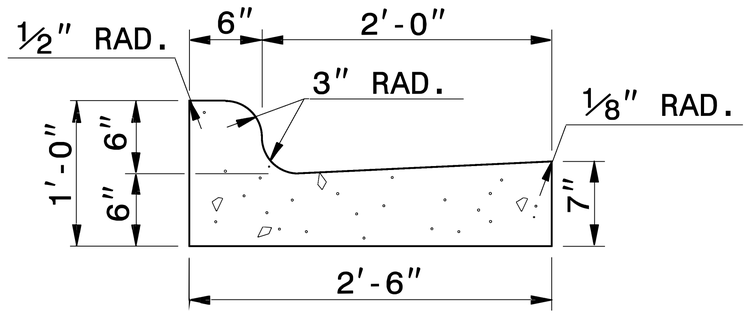
CURB RAMPS

Parallel Ramps

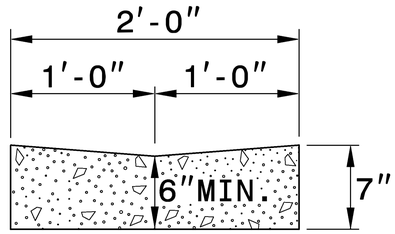
ORIGINAL BY: J.S. HOWERTON DATE: 7/7/11
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: stds/2012CurbRamp/CurbRampDetails.dgn

PROJECT REFERENCE NO.	SHEET NO.
Y-5500JC	2C-4

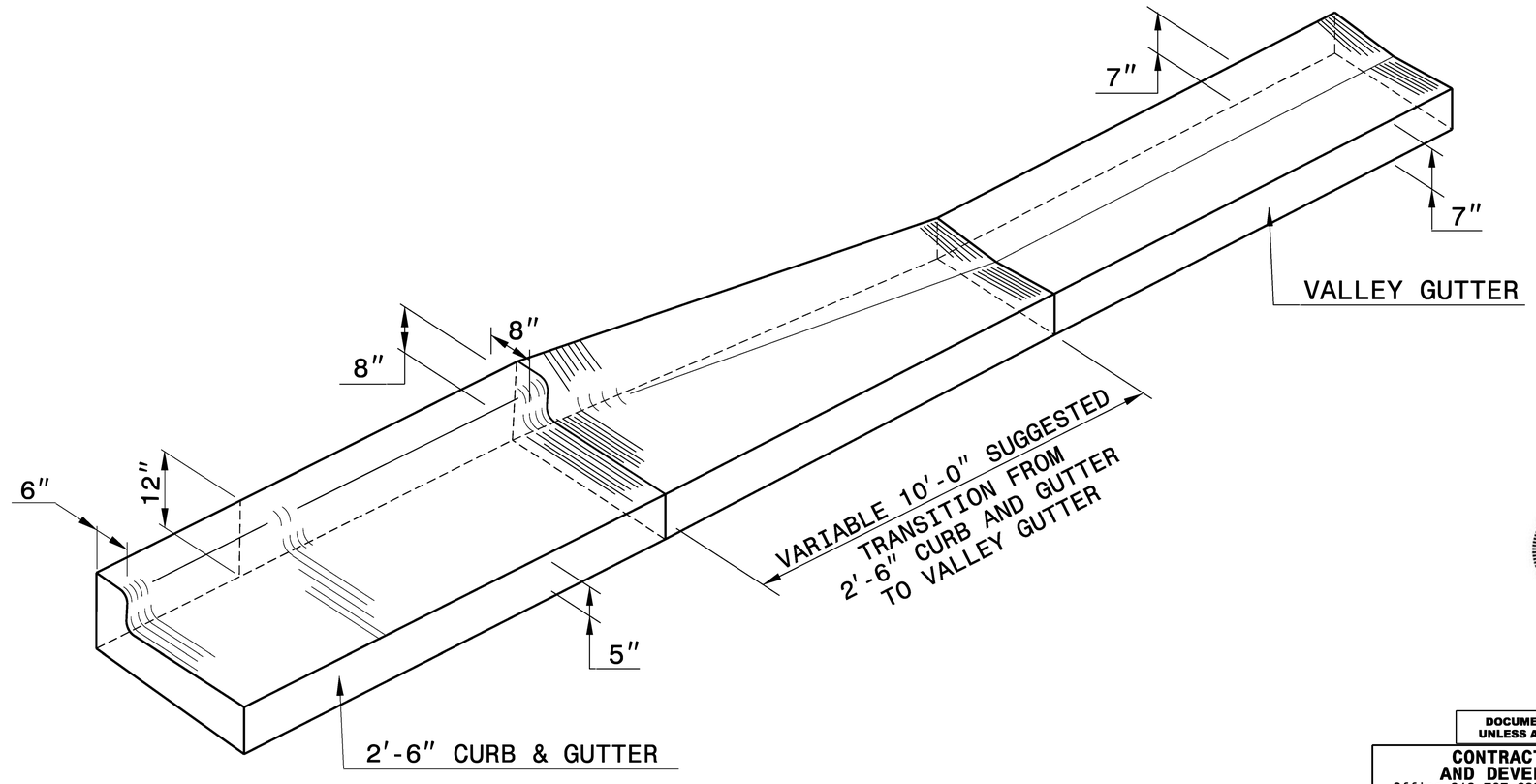
*NOTE: SEE STD. DWG. 846.01
FOR GENERAL NOTES



2'-6" CURB AND GUTTER



VALLEY GUTTER



ISOMETRIC VIEW OF TRANSITION

NORTH CAROLINA PROFESSIONAL SEAL 022071 ENGINEER STEVEN DAVENPORT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

TRANSITION FROM 2'-6" CURB AND GUTTER TO VALLEY GUTTER

ORIGINAL BY: T.S.SPELL DATE: FEB.4.2009
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: w:usr/details/stand/cgtransit.dgn

07-SEP-2017 08:20
S:\Contracts\Special Details\Vericward\usr\details\stand\c&g transition sections.dgn
jhowerton AT CSD-292695

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
Y-5500JC	2D-1
R/W SHEET NO.	

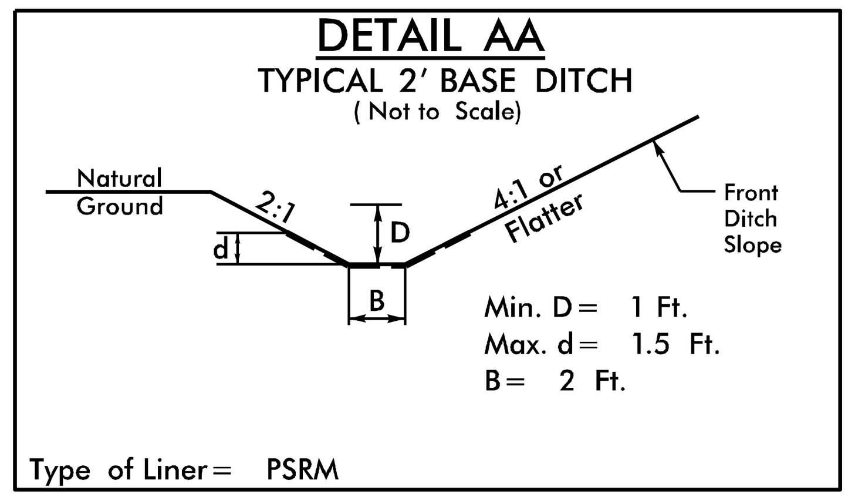
HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

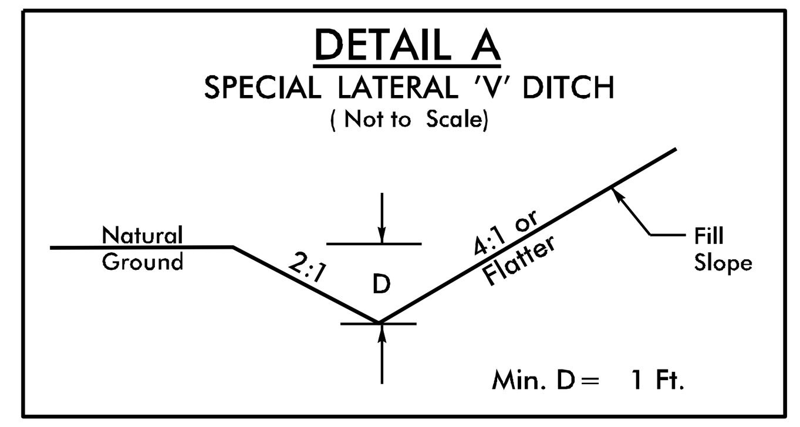
Prepared in the Office of:
MOTT MACDONALD
7621 Purfoy Rd Suite 115
Fuquay-Varina, NC 27526
www.mottmac.com/americas

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

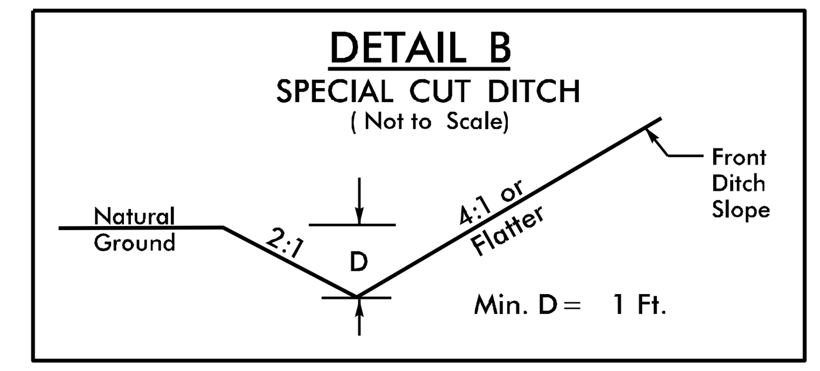
DRAINAGE DITCH DETAILS



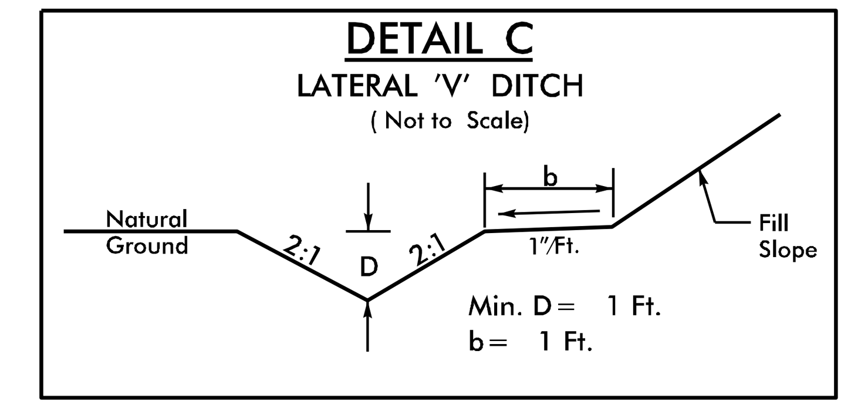
–L– STA. 17+81 TO 22+50 RT



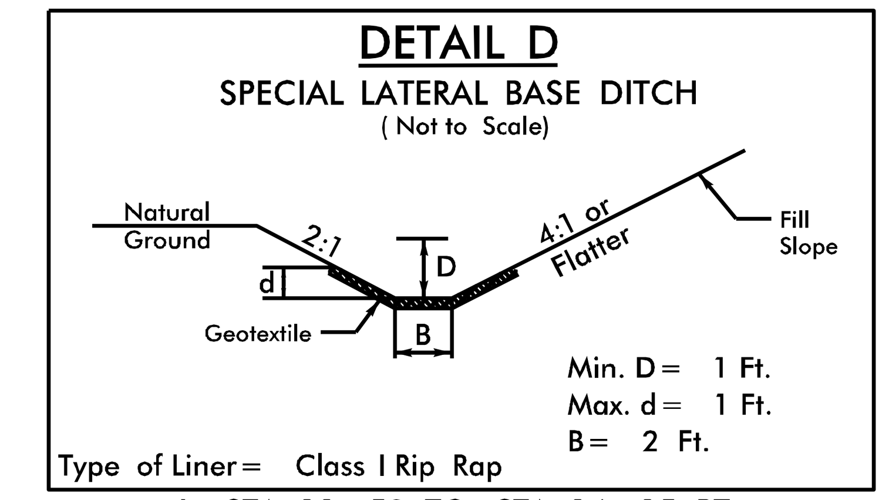
–L– STA. 24+25 TO STA. 25+50 RT
–L– STA. 25+50 TO STA. 26+50 RT



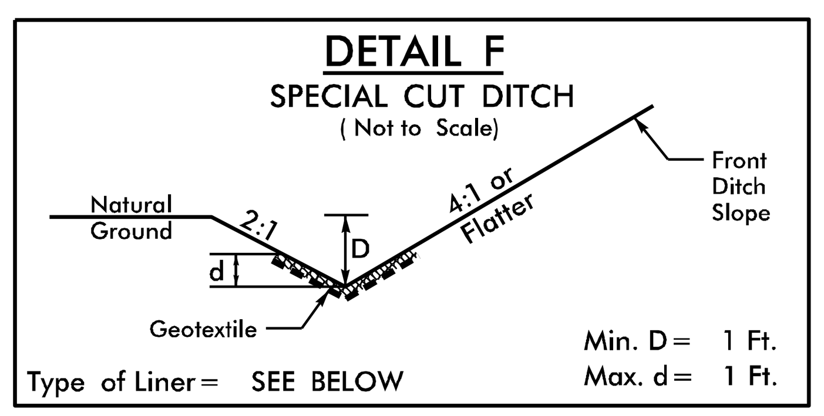
–L– STA. 26+50 TO STA. 28+79 RT
–L– STA. 30+00 TO STA. 31+00 RT
–L– STA. 36+50 TO STA. 38+50 RT
–L– STA. 41+00 TO STA. 41+50 RT



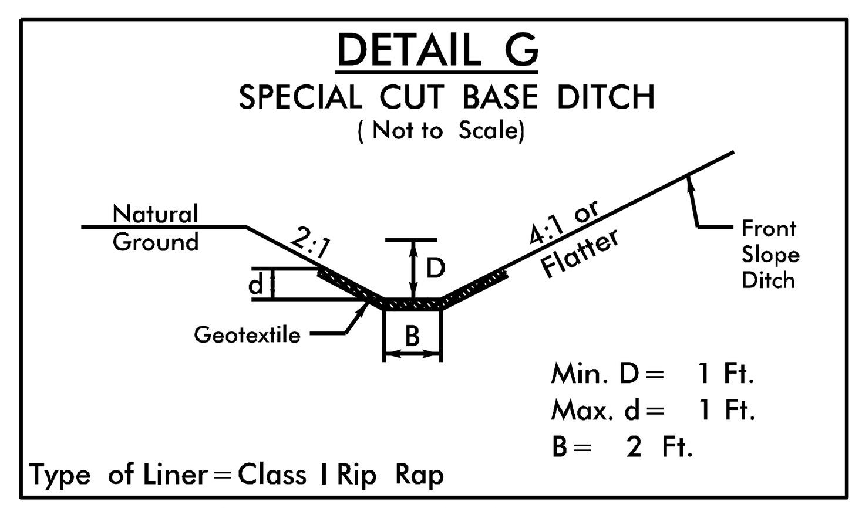
–Y1– STA. 17+00 TO STA. 18+76 RT



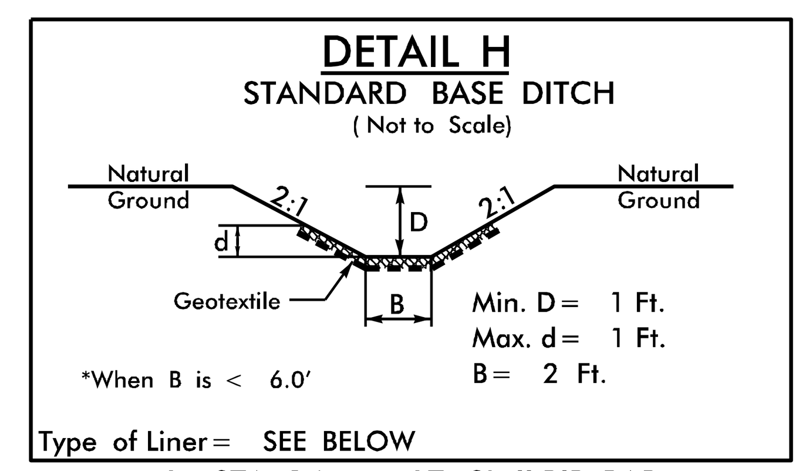
–L– STA. 23+50 TO STA. 24+25 RT



–L– STA. 28+79 TO STA. 30+00 RT, CL B RIP RAP



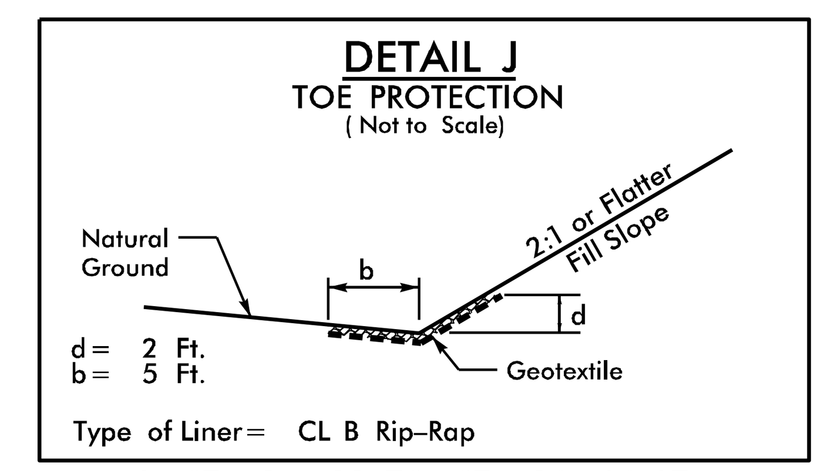
–L– STA. 22+50 TO STA. 23+50 RT



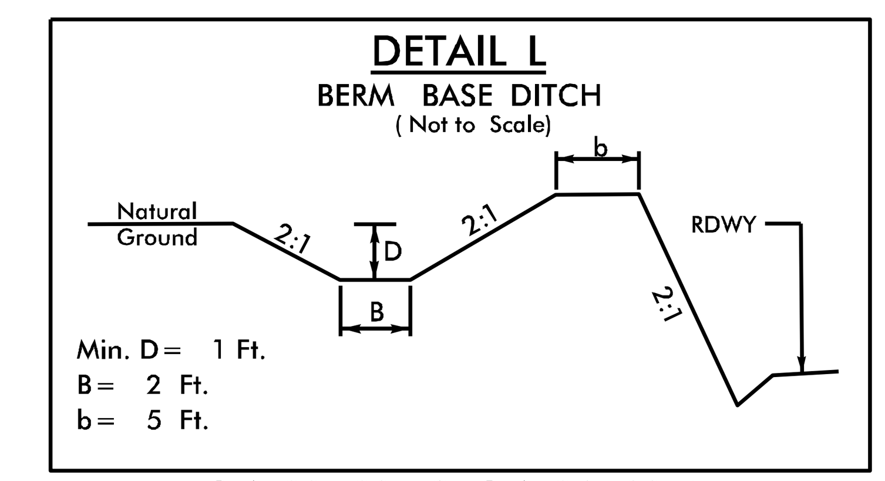
–L– STA. 24+55 LT, CL II RIP RAP
BEGIN EL. = 562.50, END EL. = 560.00

–L– STA. 26+15 RT, CL I RIP RAP
BEGIN EL. = 581.00, END EL. = 577.00

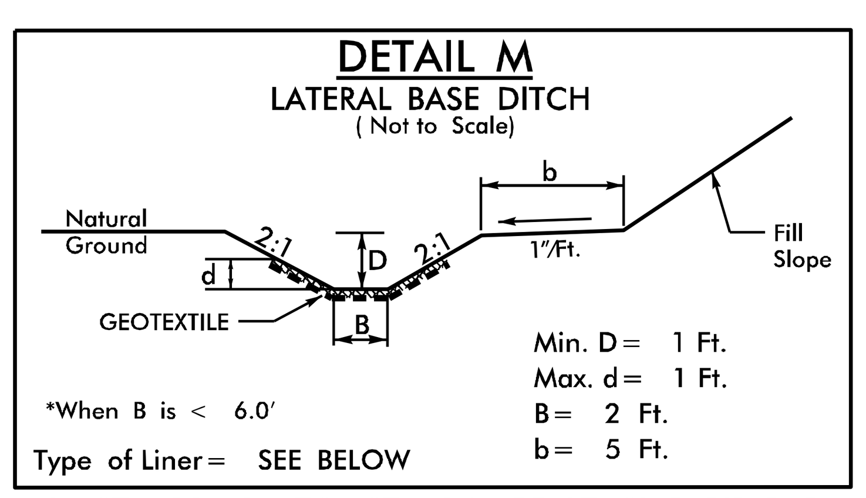
–L– STA. 34+25 RT, CL I RIP RAP
BEGIN EL. = 603.55, END EL. = 597.75



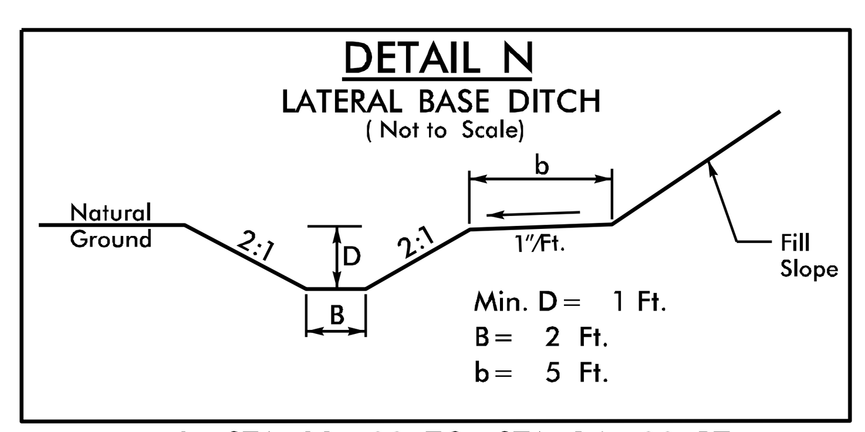
–L– STA. 35+38 TO STA. 36+06 LT
–L– STA. 42+40 TO STA. 43+15 LT
–L– STA. 42+00 TO STA. 44+00 RT



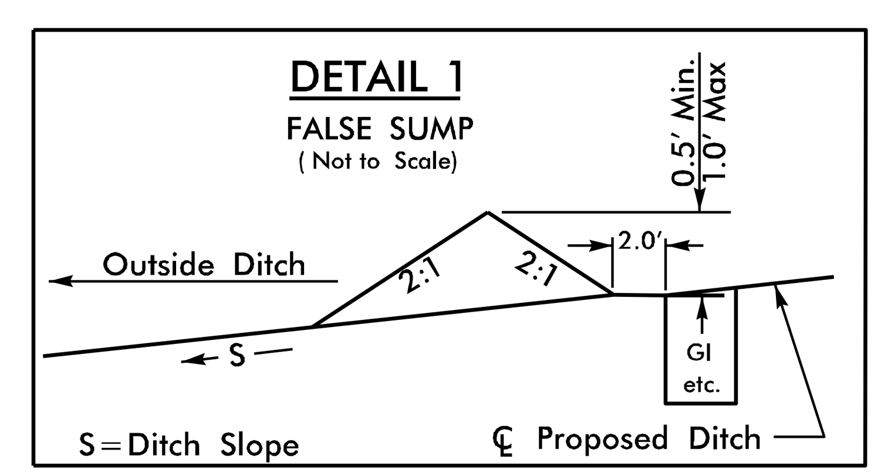
–L– STA. 23+30 TO STA. 24+00 RT



–L– STA. 22+85 TO STA. 24+55 LT, CL B RIP RAP
–L– STA. 31+00 TO STA. 33+00 RT, CL B RIP RAP
–L– STA. 34+00 TO STA. 35+50 RT, CL I RIP RAP
–L– STA. 35+50 TO STA. 36+50 RT, CL B RIP RAP



–L– STA. 33+00 TO STA. 34+00 RT



–L– STA. 41+50 RT
–L– STA. 44+38 RT
–L– STA. 16+45.50 LT

4:45:51 PM
R:\Roadway\Proj\F-14288_rdy_psh2D-1.dgn

COMPUTED BY: JRC	DATE: 6/15/2021
CHECKED BY: VJR	DATE: 9/8/2021

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT NO.	SHEET NO.
Y-5500JC	3B-1

SUMMARY OF EARTHWORK
IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
-L- 13+25.00 TO 43+25.00	100108		65029		35079
-L- 43+25.00 TO 53+00.00	3841		2797		1044
-Y1- 10+11.05 TO 18+55.54	167		455	288	
-Y2- 10+11.00 TO 11+40.00	460		1		459
SUBTOTAL	104576		68282	288	36582
PROJECT SUBTOTAL	104576		68282	288	36582
WASTE IN LIEU OF BORROW				-288	-288
LOSS DUE TO CLEARING & GRUBBING					-850
PROJECT TOTAL	104576		68282		35444
GRAND TOTAL	104576		68282		35444
SAY	116,000				0

NOTE: Appropximate quantities only. Shoulder Borrow, Fine Grading, Clearing and Grubbing, and Removal of Existing Asphalt Pavement will be paid for at the contract Lump Sum price for "Grading".

Note: Earthwork quantities are calculated by the Mott MacDonald. These quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

COMPUTED BY: JRC

EST. DDE = 3520 CUBIC YARDS
EST. SHALLOW UNDERCUT = 100 CUBIC YARDS
EST. ADDITIONAL UNDERCUT = 450 CUBIC YARDS
EST. CLASS IV SUBGRADE STABILIZATION = 200 TONS

SUMMARY OF EXISTING
ASPHALT PAVEMENT REMOVAL

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	SQUARE YARDS
L	17+03.08	17+36.09	RT	19.50
Y1	18+81.54	19+16.00	CL	88.58
Y1	19+56.41	19+82.72	CL	66.26
Y2	10+01.07	10+94.08	LT	363.58
	Y-5500JC		TOTAL	537.91
	Y-5500JC		SAY	565

SUMMARY OF
SHOULDER BERM GUTTER

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	LENGTH
-L-	30+94.99	36+75.00	RT	580.01
			TOTAL	580.01
			SAY	610

GUARDRAIL SUMMARY

SURVEY LINE	BEGIN STATION	END STATION	LOCATION	LENGTH (LF)			WARRANT POINT		"N" DIST. FROM E.O.L	TOTAL SHOULDER WIDTH	FLARE LENGTH		W		ANCHORS				IMPACT ATTENUATOR TYPE 350			REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	GREU, TL-2	TYPE III	CAT-1		NO.	PERMITTED G	PERMITTED NG	
-L-	29+95.86	37+44.65	RT	750.00			31+50.00	36+40.00	5'	8'	25'	25'	1'	1'	2							
-L-	39+56.55	45+42.67	RT	587.50			40+60.00	44+15.00	5'	8'	25'	25'	1'	1'	2							
-L-	22+75.00	37+00.00	LT	1425.00			23+50.00	36+50.00	2'	10'	25'	25'	1'	1'	2							
-L-	41+25.00	44+25.00	LT	300.00			42+00.00	43+50.00	2'	10'	25'	25'	1'	1'	2							
-Y1-	18+96.01	18+96.01	CL	25.00			18+96.01	18+96.01														
-Y1-	19+78.47	19+78.47	CL	25.00			19+78.47	19+78.47														
SUBTOTAL				3112.5											8							
LESS ANCHOR DEDUCTIONS																						
GREU TL-2	8	X	25	200																		
ADDITIONAL POSTS:				5																		
TOTAL				2912.5											8							

US004070AA

COMPUTED BY:	EMR	DATE:	11/19/2021 Rev 4/25/2022
CHECKED BY:	WHT	DATE:	11/19/2021 Rev 4/25/2022

PROJECT NO.	SHEET NO.
Y-5500JC	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)

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

Part 1: Location, elevations and Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC)

LINE & STATION / SIZE / THICKNESS OR GAUGE	OFFSET	STRUCTURE NUMBER FROM	STRUCTURE NUMBER TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	12	15	18	24	30	36	42	48		DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC
L 15+46	14 RT	0401		627.1																	
		0401	0402		624.1	623.4															
L 15+95	14 RT	0402		626.4																	
		0402	0403		623.4	623.3			24									X	X		
L 16+55	17 LT	0405		624.7																	
		0405	0406		621.7	621.6			16									X	X		
L 16+22	77 LT	0404	---						28										X		
L 16+49	41 RT	0408	---						34										X		
L 20+85	14 LT	0407		602.8																	
		0407	0524		599.8	595.3															
L 21+57	14 LT	0524		598.3																	
		0524	0525		595.3	587.9															
L 23+00	14 LT	0525		590.9																	
		0525	0526		587.7	574.0				68							X		X		
L 24+25	59 RT	0501																			
		0501	0522		576.0	567.9															
L 24+46	45 LT	0522		573.3																	
L 26+15	45 RT	0502	--		577.0	566.0	0.4														
		0503	0527		585.5	577.4															
L 28+53	42 LT	0527		582.8																	
		0527	0528		575.3	575.0				20									X		
L 31+77	45 RT	0504	--		582.1	570.5															
		0505	0506		596.5	595.0															
L 35+50	39 LT	0506		604.8																	
		0506	0507		595.0	544.9	1.1				128						X		X		
L 31+00	15 RT	0512		599.2																	
		0512	0513		596.4	592.7			20								X		X		
L 33+10	15 RT	0514		606.8																	
		0514	0515		604.0	598.9			24								X		X		
L 36+70	15 RT	0516		610.9																	
		0516	0517		605.9	603.9			40										X		
		0518	0519		588.0	577.8	1.7				32						X		X		
L 41+50	29 RT	0614																			
		0614	0609		597.0	596.4															
L 41+50	14 LT	0609		600.4																	
		0609	0602		596.4	596.0															
L 42+26	14 LT	0602		600.0																	
		0602	0603		596.0	595.2															
							SHEET TOTALS		186	88	160		24								

Part 2: R. C. PIPE CLASS III and R. C. PIPE CLASS IV

FROM	TO	III 12	III 15	III 18	III 24	III 30	III 36	III 42	III 48	IV 12	IV 15	IV 18	IV 24	IV 30	IV 36	IV 42	IV 48
0401	0402										52						
0407	0524										72						
0524	0525										144						
0501	0522						108										
0502	--			144													
0503	0527		84														
0504	--												152				
0505	0506			92													
0614	0609										44						
0609	0602											72					
0602	0603											40					
SHEET TOTALS			84	236			108				312	112	152				

Part 3: Side drain pipe, endwalls, drainage structures, frames and grates

FROM	TO	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE		ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY	REINFORCED ENDWALLS CY	DRAINAGE STRUCTURE MASONRY CY	QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.	C.B. STD. 840.01 OR STD. 840.02	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
0401									1			1		1				
0402									1			1		1				
0405									1			1			1			
0407									1			1			1			
0524									1			1			1			
0525									1			1			1			
0501						3.4												
0522									1	0.4								
0527									1	2.5								
0506									1	4.8								
0512									1									
0514									1									
0516									1									
0609									1			1			1			
0602									1			1			1			
SHEET TOTALS						3.400			14	7.7		8		2	6			

Part 4: Inlets, boxes, manholes, elbows, miscellaneous and remarks

FROM	TO	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATES STD. 840.16	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	DRIVEWAY D.I. STD. 840.30	FRAME W/ GRATE FOR DRIVEWAY STD. 840.30	J.B. STD. 840.31 OR STD. 840.32	ANGLED VANE GRATES AND FRAMES STD. 840.33	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35	T.B.D.I. FOR STEEL GRATES STD. 840.36	STEEL FRAME WITH TWO GRATES STD. 840.37	TEMP STEEL PLATE COVER MASONRY DRAINAGE	##" SPRING BOX PIPE	SPRING BOX STD. 840.41		M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54		15" DRAINAGE PIPE ELBOW	18" DRAINAGE PIPE ELBOW	24" DRAINAGE PIPE ELBOW	36" DRAINAGE PIPE ELBOW						BERM DRAINAGE OUTLET STD. 850.11 SY	FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
0408	---																																20	Remove Existing
0525	0526																				2													Rod and Lug Connectors
0501	0522																																46	Remove Existing
0522							1											1																
0527							1											1																
0506							1											1																
0506	0507																					2												Rod and Lug Connectors
0512				1						1																								
0512	0513																			2														Rod and Lug Connectors
0514				1						1																								
0514	0515																			2														Rod and Lug Connectors
0516				1						1																								
0518	0519																					2								31					Rod and Lug Connectors
SHEET TOTALS				3			3			3								3		4	2	4								31				66	

US004070AA

COMPUTED BY:	EMR	DATE:	11/19/2021 Rev 4/25/2022
CHECKED BY:	WHT	DATE:	11/19/2021 Rev 4/25/2022

PROJECT NO.	SHEET NO.
Y-5500JC	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)

LINE & STATION / SIZE / THICKNESS OR GAUGE	OFFSET		STRUCTURE NUMBER FROM	STRUCTURE NUMBER TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %
L 49+35	24	LT	0613					
			0613	0615		627.8	625.4	
L 49+00	13	LT	0615		628.6			
			0615	0608		625.4	615.7	
L 47+38	30	RT	0616		624.0			
			0616	0608		619.3	615.7	
L 47+25	13	LT	0608		618.9			
			0608	0610		615.7	596.9	
L 44+50	28	RT	0612					
			0612	0610		597.0	596.9	
L 44+25	13	LT	0610		602.7			
			0610	0603		596.9	595.2	0.6
L 42+58	14	LT	0603		600.1			
			0603	0604		594.7	573.0	1.2
L 52+35	24	LT	0605					
Y1 18+70	26	LT	0701					

LINE & STATION	FROM	TO	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) 12	15	18	24	30	36	42	48		DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	R. C. PIPE CLASS III 12	15	18	24	30	36	42	48	R. C. PIPE CLASS IV 12	15	18	24	30	36	42	48
L 49+35	0613																															
	0613	0615		36										X																		
L 49+00	0615																															
	0615	0608																								172						
L 47+38	0616																															
	0616	0608																								44						
L 47+25	0608																															
	0608	0610																								292						
L 44+50	0612																															
	0612	0610																								48						
L 44+25	0610																															
	0610	0603																									164					
L 42+58	0603																															
	0603	0604				52						X		X																		
L 52+35	0605			24										X																		
Y1 18+70	0701				84									X																		
SHEET TOTALS				60	84	52																				556	164					
PROJECT TOTALS				246	172	212		24											84	236		108				868	276	152				

LINE & STATION	FROM	TO	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE		ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY	REINFORCED ENDWALLS CY	DRAINAGE STRUCTURE MASONRY CY	QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E	F	G	
L 49+35	0613																
	0613	0615															
L 49+00	0615									1			1		1		
	0615	0608															
L 47+38	0616									1							
	0616	0608															
L 47+25	0608									1			1		1		
	0608	0610															
L 44+50	0612																
	0612	0610															
L 44+25	0610									1	0.9		1		1		
	0610	0603															
L 42+58	0603									1	0.4		1			1	
	0603	0604															
L 52+35	0605																
Y1 18+70	0701																
SHEET TOTALS										5	1.3		4		3	1	
PROJECT TOTALS							3.400			19	9.0		12		5	7	

LINE & STATION	FROM	TO	CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATES STD. 840.16	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	DRIVEWAY D.I. STD. 840.30	FRAME W/ GRATE FOR DRIVEWAY STD. 840.30	J.B. STD. 840.31 OR STD. 840.32	ANGLED VANE GRATES AND FRAMES STD. 840.33	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35	T.B.D.I. FOR STEEL GRATES STD. 840.36	STEEL FRAME WITH TWO GRATES STD. 840.37	TEMP STEEL PLATE COVER MASONRY DRAINAGE	##" SPRING BOX PIPE	SPRING BOX STD. 840.41		M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54		15" DRAINAGE PIPE ELBOW	18" DRAINAGE PIPE ELBOW	24" DRAINAGE PIPE ELBOW	36" DRAINAGE PIPE ELBOW					BERM DRAINAGE OUTLET STD. 850.11 SY	FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
L 49+35	0613																																			Open End Pipe
	0613	0615																																		
L 49+00	0615																																			
	0615	0608																																		
L 47+38	0616				1	1																														
	0616	0608																																		
L 47+25	0608																																			
	0608	0610																																		
L 44+50	0612																																			Open End Pipe
	0612	0610																																		
L 44+25	0610																																			
	0610	0603																																		
L 42+58	0603																																			
	0603	0604																								2												Rod and Lug Connectors
L 52+35	0605																																		18	Remove Existing
Y1 18+70	0701																																		107	Remove Existing
SHEET TOTALS					1	1																			2											125	
PROJECT TOTALS					1	1	3			3			3								3		4	4	4						31				191	

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

US004070AA

COMPUTED BY: EMR DATE: 11/19/2021 Rev 4/25/2022

CHECKED BY: WHT DATE: 11/19/2021 Rev 4/25/2022

PROJECT NO.	SHEET NO.
Y-5500JC	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 54 INCHES & OVER)

LINE & STATION / SIZE / THICKNESS OR GAUGE	OFFSET	STRUCTURE NUMBER FROM	TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	R. C. PIPE CLASS III 54	60	66	72	78	84	R. C. PIPE CLASS IV 54	60	66	72	78	84	R. C. PIPE CLASS V 54	60	66	72	78	84	STRUCTURAL PLATE PIPE 60	66	72
L 43+37	73 RT	0601																										
		0601	0604		576.1	570.0	0.4							148														
L 42+60	64 LT	0604		581.0																								
		0604	0611		570.0	569.3	0.5	24																				
SHEET TOTALS								24						148														
PROJECT TOTALS								24						148														

LINE & STATION	FROM	TO	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY	REINFORCED ENDWALLS CY	DRAINAGE STRUCTURE MASONRY CY	QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.	C.B. STD. 840.01 OR STD. 840.02	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	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28
L 43+37	0601			5.2																		
	0601	0604																				
L 42+60	0604				6.470																	
	0604	0611																				
SHEET TOTALS				5.200	6.470																	
PROJECT TOTALS				5.200	6.470																	

LINE & STATION	FROM	TO	G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20	G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	DRIVEWAY D.I. STD. 840.30	FRAME W/ GRATE FOR DRIVEWAY STD. 840.30	J.B. STD. 840.31 OR STD. 840.32	ANGLED VANE GRATES AND FRAMES STD. 840.33	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35	T.B.D.I. FOR STEEL GRATES STD. 840.36	STEEL FRAME WITH TWO GRATES STD. 840.37	TEMP STEEL PLATE COVER MASONRY DRAINAGE	SPRING BOX STD. 840.41	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	ENERGY DISSIPATION BASIN	FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
L 43+37	0601																											
	0601	0604																									42	Invert buried 1 ft below bed
L 42+60	0604												1									1						
	0604	0611																										Invert buried 1 ft below bed
SHEET TOTALS													1									1					42	
PROJECT TOTALS													1									1					42	

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

COMPUTED BY: C.R. LAVENDER DATE: AUGUST 17, 2020	(12-17-19)	PROJECT NO.	SHEET NO.
CHECKED BY: M. H. STEPHENS DATE: August 17, 2020		(Y-5500JC)	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 Soil Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
CONTINGENCY			ASU(1)	12	100	200	300		
				TOTAL CY/TONS/SY:	100	200**	300**	0	0

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

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PARCEL INDEX AND PARCEL DATA SHEET

PARCEL NO.	SHEET NO.	PROPERTY OWNERS NAME	ROW AREA (SQ. FT.)	TCE AREA (SQ. FT.)	PDE AREA (SQ. FT.)	PUE AREA (SQ. FT.)
1	4	WSLD MILLBRIDGE VI LLC	312.02	5,879.21	993.33	
1A	4	WSLD MILLBRIDGE VI LLC				
2	4	SHIRLEY LONG GAMBLE	5,383.14	772.30		
3	4	STEVE HELMS & KAREN E. HELMS	5,709.69	2,024.80		81.90
4	4	WANDA D. OUTLAW	131.06	2,378.57	600.89	
5	4,7	ROSA LEE GANIS	44.51			
6	4,5	WSLD MILLBRIDGE VI LLC	99,294.96	44,264.28	11,963.76	4,082.99
7	5	WSLD MILLBRIDGE VI LLC	4,713.17			
8	5	WILLIAM J. RUSCIOLELLI & DEBORAH H. RUSCIOLELLI	91,680.75	5,937.75	3,898.20	
9	5	JAMES W. WOOD & JUDITH H. WOOD	35,745.78			
10	5,6	WSLD MILLBRIDGE VI LLC	151,128.10	15,350.08	750.24	
11	6	SHERRY FRANCES MCCLAIN	30,931.96	1,868.32	3,617.31	
12	6	WSLD MILLBRIDGE VI LLC	15,243.59			
13	4, 7	FRED E. BAKER & HELEN R. BAKER		1,790.99		2,702.51
14	7	FRED ELLISON BAKER		1,372.56	56.06	1,533.52
15	7	FRED E. BAKER & HELEN R. BAKER			5,922.82	
16	7	STEVE HELMS & KAREN E. HELMS		997.50		

8/17/99

–L–	–Y1–
PI Sta 10+69.26	PI Sta 17+52.31
△ = 41° 08' 29.3" (LT)	△ = 78° 10' 56.6" (LT)
D = 39° 01' 52.1"	D = 38° 11' 49.9"
L = 105.41'	L = 204.68'
T = 55.09'	T = 121.86'
R = 146.80'	R = 150.00'
SE = 0.04	SE = 0.04
R0 = 72'	R0 = 72'
TR = 36'	TR = 36'

–Y1–
PI Sta 10+45.25
△ = 48° 41' 33.8" (LT)
D = 57° 17' 44.8"
L = 84.98'
T = 45.25'
R = 100.00'
SE = 0.04
R0 = 56'
TR = 28'

DESIGN EXCEPTION REQUIRED

–L– SEE PROFILE SHEET 8
–Y1– SEE PROFILE SHEET 9

FOR DITCH DETAILS SEE SHEET 2D–1

FOR CURB RAMP DETAILS SEE SHEET 2C–3

PROJECT REFERENCE NO.	SHEET NO.
Y–5500JC	4
RW SHEET NO.	

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 052339 ENGINEER JEFFREY COONE

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 21162 ENGINEER HERBERT TURNER JR

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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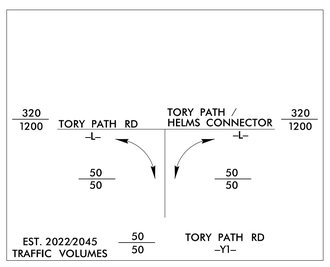

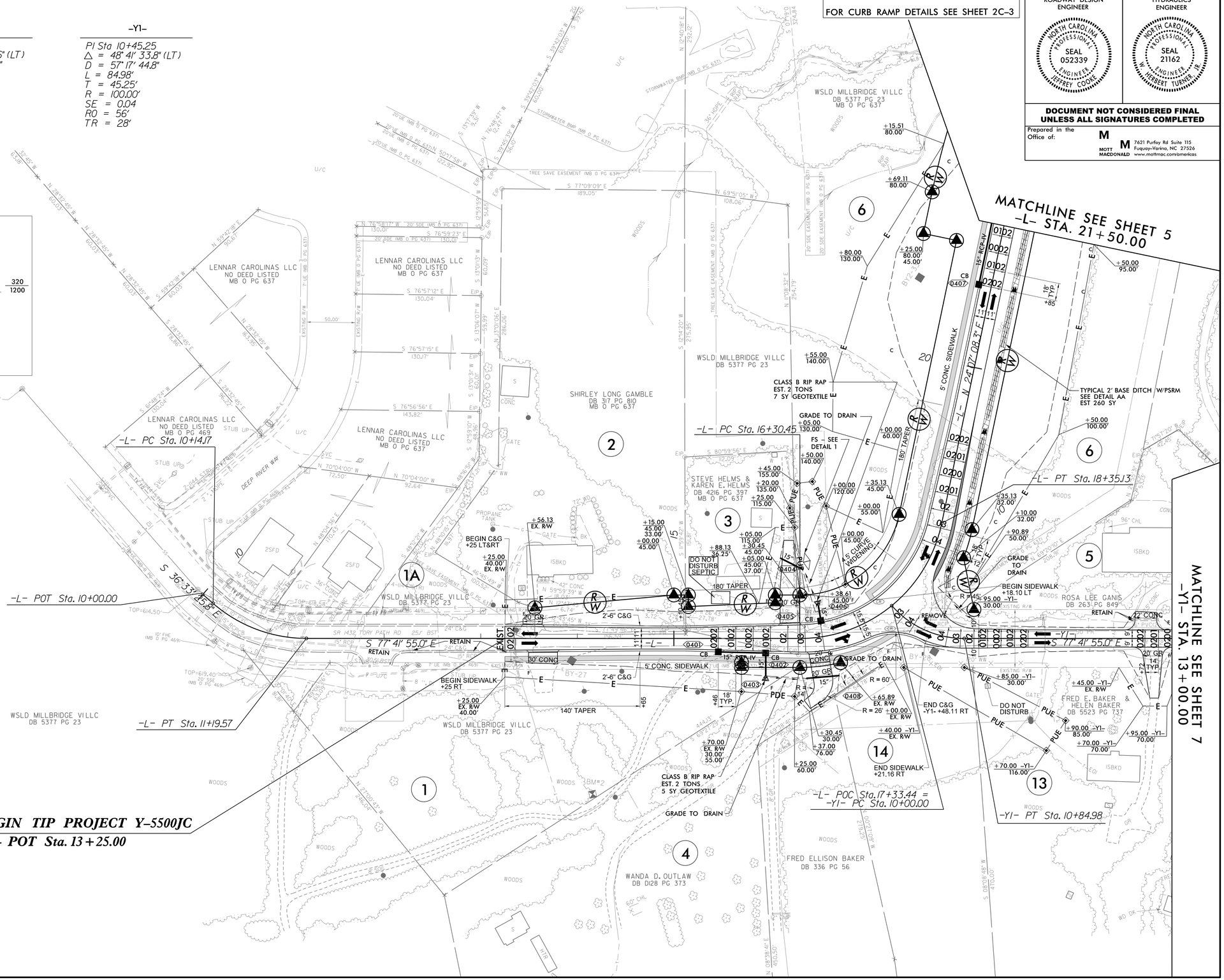

*TRANSITION FROM 20' CONC. DRIVE TO 20' GRAVEL DRIVE AT BERM POINT –L– STA. 16+48 RT

BEG. C&G –L– STA. 13+25.00 RT
BEG. C&G –L– STA. 13+25.00 LT
END C&G –Y1– STA. 10+48.11 RT

BEG. SIDEWALK –L– STA. 13+25.00 RT
END SIDEWALK –L– STA. 17+21.16 RT
BEG. SIDEWALK –L– STA. 17+17.88 LT

EXISTING PAVEMENT REMOVAL

PAVED SHOULDER

3:58:04 PM
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PROJECT REFERENCE NO.	SHEET NO.
Y-5500JC	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 052339 ENGINEER JEFFREY COOKE	NORTH CAROLINA PROFESSIONAL SEAL 21162 ENGINEER W. HERBERT TURNER, JR.

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-L- SEE PROFILE SHEETS 8 & 9
-DR1- SEE PROFILE SHEET 10

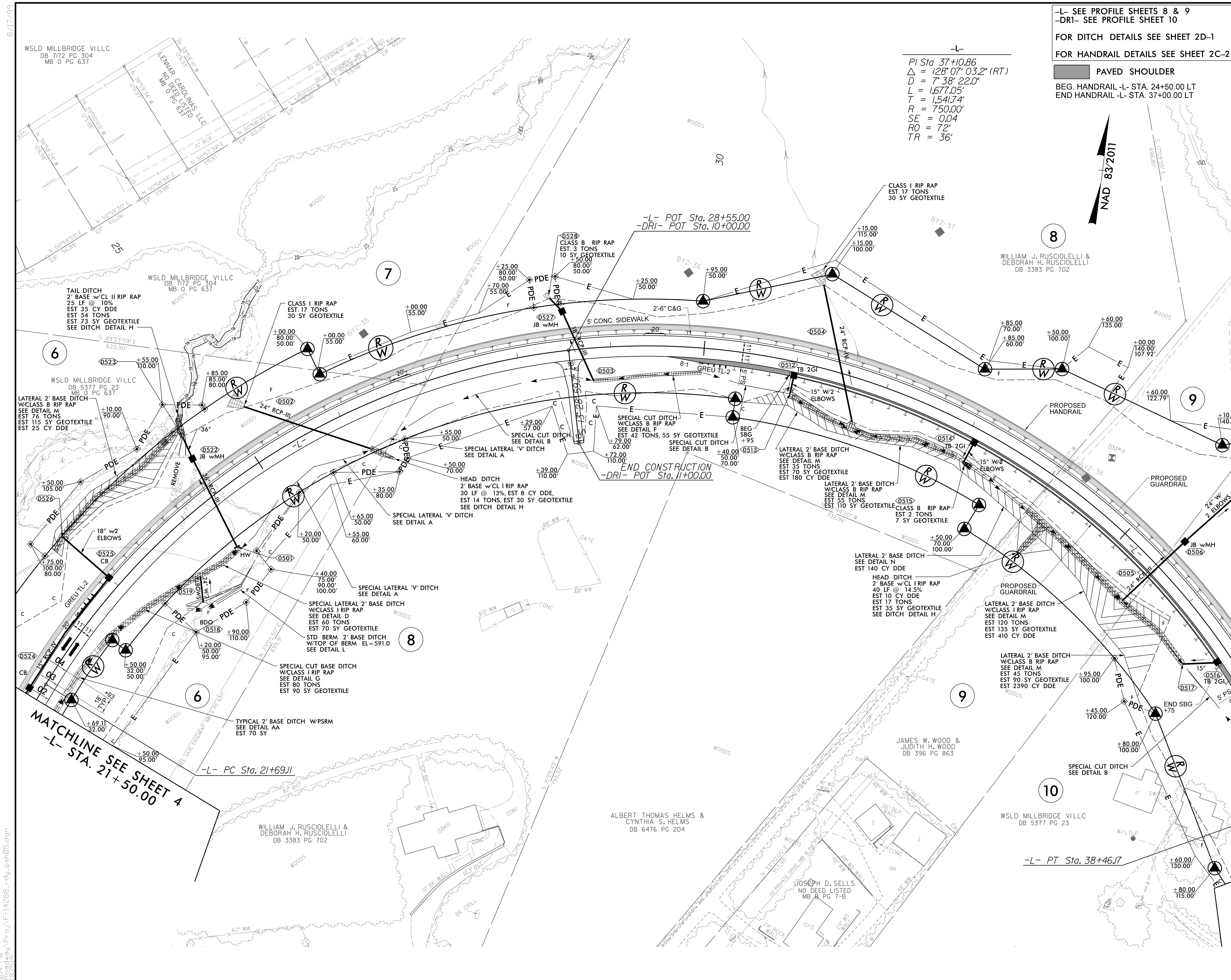
FOR DITCH DETAILS SEE SHEET 2D-1

FOR HANDRAIL DETAILS SEE SHEET 2C-2

PAVED SHOULDER

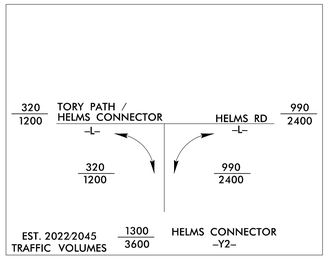
BEG. HANDRAIL -L- STA. 24+50.00 LT
END HANDRAIL -L- STA. 37+00.00 LT

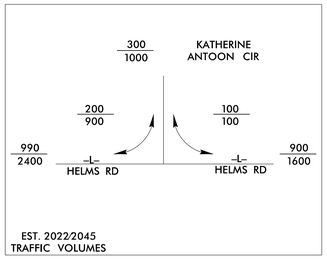
-L-
PI Sta 37+10.86
Δ = 128° 07' 03.2" (RT)
D = 7° 38' 22.0"
L = 1,677.05'
T = 1,541.74'
R = 750.00'
SE = 0.04
RO = 72'
TR = 36'



NAD 83/2011
-L- POT Sta. 28+55.00
-DR1- POT Sta. 10+00.00
END CONSTRUCTION
-DR1- POT Sta. 11+00.00
-L- PC Sta. 21+69.11
-L- PT Sta. 38+46.17
MATCHLINE SEE SHEET 4
-L- STA. 21+50.00
MATCHLINE SEE SHEET 6
-L- STA. 39+00.00
WSLD MILLBRIDGE VILLC DB 7172 PG 304 MB 0 PG 637
LENNAR CAROLINAS LLC NO DEED LISTED MB 0 PG 637
WSLD MILLBRIDGE VILLC DB 5377 PG 23
WILLIAM J. RUSCIOLELLI & DEBORAH H. RUSCIOLELLI DB 3383 PG 702
JAMES W. WOOD & JUDITH H. WOOD DB 396 PG 863
ALBERT THOMAS HELMS & CYNTHIA S. HELMS DB 6476 PG 204
JOSEPH D. SELLS NO DEED LISTED MB 8 PG 7-B
TAIL DITCH 2' BASE w/CL II RIP RAP 25 LF @ 10% EST 35 CY DDE EST 54 TONS EST 73 SY GEOTEXTILE SEE DITCH DETAIL H
CLASS I RIP RAP EST. 17 TONS 30 SY GEOTEXTILE
CLASS B RIP RAP EST. 3 TONS 10 SY GEOTEXTILE
LATERAL 2' BASE DITCH W/CLASS B RIP RAP SEE DETAIL M EST 76 TONS EST 115 SY GEOTEXTILE EST 25 CY DDE
SPECIAL CUT DITCH SEE DETAIL B
SPECIAL LATERAL 'V' DITCH SEE DETAIL A
SPECIAL CUT DITCH W/CLASS B RIP RAP SEE DETAIL F EST 42 TONS, 55 SY GEOTEXTILE
HEAD DITCH 2' BASE w/CL I RIP RAP 30 LF @ 13%, EST 8 CY DDE, EST 14 TONS, EST 30 SY GEOTEXTILE SEE DITCH DETAIL H
SPECIAL LATERAL 2' BASE DITCH W/CLASS I RIP RAP SEE DETAIL D EST 60 TONS EST 70 SY GEOTEXTILE
STD BERM 2' BASE DITCH W/TOP OF BERM EL=591.0 SEE DETAIL L
SPECIAL CUT BASE DITCH W/CLASS I RIP RAP SEE DETAIL G EST 80 TONS EST 90 SY GEOTEXTILE
TYPICAL 2' BASE DITCH W/PSRM SEE DETAIL AA EST 70 SY
LATERAL 2' BASE DITCH W/CLASS B RIP RAP SEE DETAIL M EST 35 TONS EST 70 SY GEOTEXTILE EST 180 CY DDE
LATERAL 2' BASE DITCH W/CLASS B RIP RAP SEE DETAIL M EST 55 TONS EST 110 SY GEOTEXTILE
CLASS B RIP RAP EST 2 TONS 7 SY GEOTEXTILE
LATERAL 2' BASE DITCH SEE DETAIL N EST 140 CY DDE
HEAD DITCH 2' BASE w/CL I RIP RAP 40 LF @ 14.5% EST 10 CY DDE EST 17 TONS EST 35 SY GEOTEXTILE SEE DITCH DETAIL H
LATERAL 2' BASE DITCH W/CLASS I RIP RAP SEE DETAIL M EST 120 TONS EST 135 SY GEOTEXTILE EST 410 CY DDE
LATERAL 2' BASE DITCH W/CLASS B RIP RAP SEE DETAIL M EST 45 TONS EST 90 SY GEOTEXTILE EST 2390 CY DDE
SPECIAL CUT DITCH SEE DETAIL B
CLASS II RIP RAP EST. 25 TONS 38 SY GEOTEXTILE
TOE PROTECTION W/ CL B RIPRAP SEE DETAIL J EST 36 TONS EST 90 SY GEOTEXTILE
PROPOSED HANDRAIL
PROPOSED GUARDRAIL
5' CONC. SIDEWALK
2'-6" C&G
GREU TL-2

8/17/99





-L- SEE PROFILE SHEET 9
-Y2- SEE PROFILE SHEET 9

FOR DITCH DETAILS SEE SHEET 2D-1

EXISTING PAVEMENT REMOVAL

PAVED SHOULDER

BEG. HANDRAIL -L- STA. 41+50.00 LT
END HANDRAIL -L- STA. 44+00.00 LT
END SIDEWALK -L- STA. 49+00.00 LT

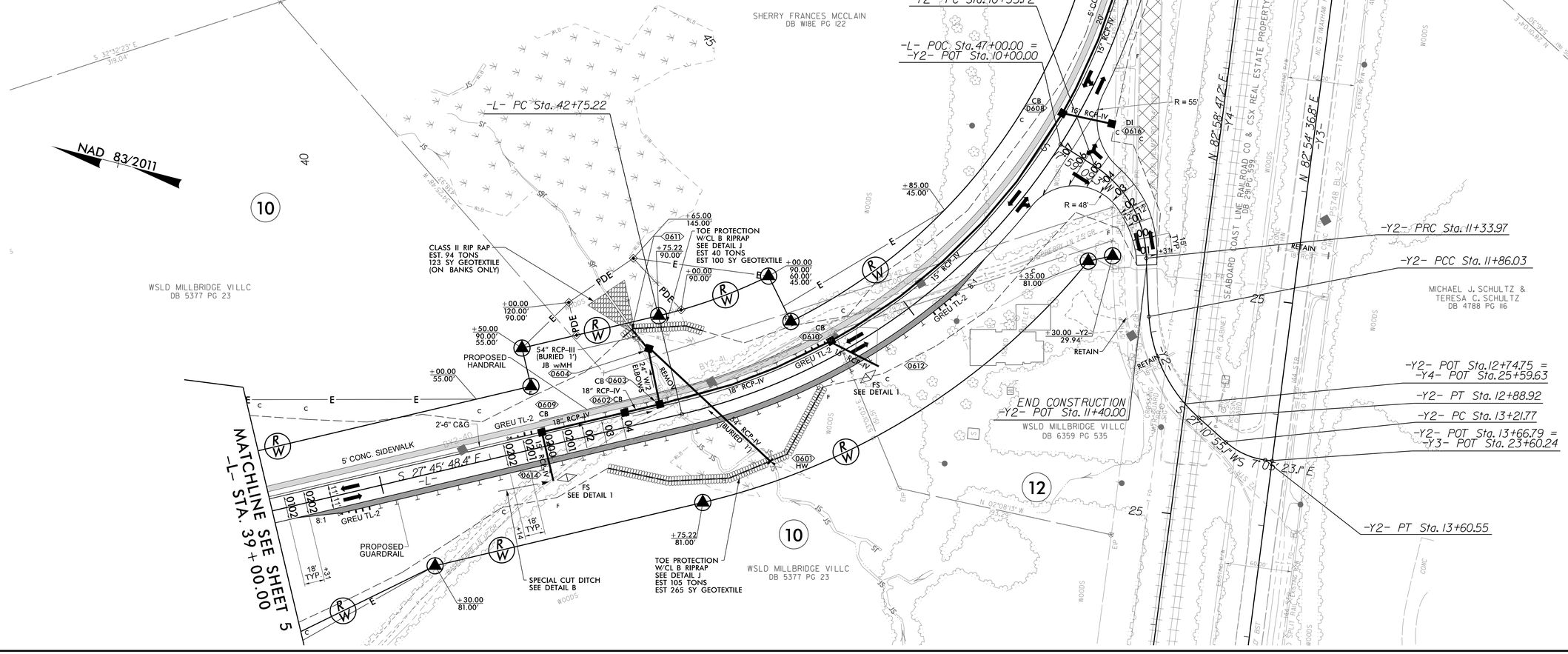
END TIP PROJECT Y-5500JC
-L- POT Sta. 53+00.00

-Y2-

PI Sta 13+41.76	PI Sta 12+40.21	PI Sta 11+60.00	PI Sta 10+89.22
△ = 34° 16' 18.2" (LT)	△ = 44° 23' 17.5" (LT)	△ = 2° 42' 27.2" (LT)	△ = 56° 17' 30.5" (RT)
D = 88° 23' 02.7"	D = 43° 08' 17.3"	D = 5° 12' 02.6"	D = 57° 17' 44.8"
L = 38.78'	L = 102.90'	L = 52.06'	L = 98.25'
T = 19.99'	T = 54.19'	T = 26.04'	T = 53.50'
R = 64.83'	R = 132.82'	R = 1,101.69'	R = 100.00'
SE = 0.04	SE = 0.04	SE = 0.04	SE = 0.04
R0 = 92'	R0 = 92'	R0 = 92'	R0 = 92'
TR = 56'	TR = 56'	TR = 56'	TR = 56'

-L-

PI Sta 47+05.85
△ = 76° 07' 05.2" (LT)
D = 10° 25' 02.7"
L = 730.68'
T = 430.62'
R = 550.00'
SE = 0.04
R0 = 72'
TR = 36'



PROJECT REFERENCE NO.	SHEET NO.
Y-5500JC	6
RW SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 052339 ENGINEER JEFFREY COONS

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21162 ENGINEER HERBERT TURNER JR.

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MATCHLINE SEE SHEET 4
-Y1- STA. 13+00.00
-Y1- PC Sta. 13+38.24
-Y1- PCC Sta. 14+71.88
-Y1- PT Sta. 16+65.31
-Y4- POT Sta. 10+00.00
-Y1- POT Sta.19+28.51 =
-Y4- PC Sta.13+04.32
-Y4- PC Sta. 12+27.55
-Y4- PCC Sta. 14+56.67
-Y4- PT Sta. 17+37.59
-Y3- POT Sta. 10+00.00
-Y3- PC Sta. 11+39.86
-Y1- POT Sta.20+36.52 =
-Y3- PC Sta. 11+11.51
-Y3- PT Sta. 14+46.76
-Y3- PC Sta. 14+65.59
-Y3- PT Sta. 18+16.93
END CONSTRUCTION
-Y1- POT Sta.20+24.64
REMOVE AT GRADE RR CROSSING
NUMBER 638898H AT MILEPOST
SG 319.97 BY OTHERS
LATERAL 'V' DITCH
SEE DETAIL C
EST. 22 CY DDE
OUTLET TO
EXIST SWALE
GRADE TO DRAIN
2' BASE DITCH w/CL B RIP RAP
EST. 130 CY DDE
EST. 60 TONS RIP RAP
EST. 170 SY GEOTEXTILE
SEE CROSSING CLOSURE
DETAIL SHT. 2B-1
ROSA LEE GANIS
DB 263 PG 849
WILLIAM J. RUSCIOLELLI &
DEBORAH H. RUSCIOLELLI
DB 3383 PG 702
ALBERT THOMAS HELMS &
CYNTHIA S. HELMS
DB 6476 PG 204
JOSEPH D. SELLS
DB 443 PG 167
MB B PG 7-B
STEVEN L. HELMS &
KAREN E. HELMS
NO DEED LISTED
MB B PG 7-B
TIMOTHY L. WORLEY
& PAULA B. WORLEY
DB 1515 PG 579
FRED ELLISON BAKER
DB 261 PG 720
PAULA E. MCMANUS BORDERS
DB 330 PG 57
WSLD MILLBRIDGE VILLC
DB 5377 PG 23
STEVEN L. HELMS &
KAREN E. HELMS
DB 340 PG 311
MB B PG 7-B
JACKIE LYNN &
PAMELA JEAN HELMS
DB 392 PG 887
PAULA M. BORDERS
DB 1387 PG 613
FRED E. BAKER &
HELEN R. BAKER
DB 786 PG 281
MB B PG 7-B
SEABOARD COAST LINE RAILROAD CO
& CSX REAL ESTATE PROPERTY
DB 291 PG 599
N 75° 02' 00.6" E
N 79° 33' 11.3" E
N 75° 36' 32.8" E
N 82° 58' 47
NAD 83/2011
TOMMY BYRD &
JENNIFER BYRD
DB 7159 PG 564
MB B PG 378-B
WILLIAM OTERSEN
DB 7003 PG 681
MB B PG 378-B
ELIZABETH STALLINGS STEVENS
DB 4207 PG 653
MB B PG 378-B
MARY LEE BRITTON
DB 6142 PG 298
MB B PG 378-B
JASON BUTLER
DB 7054 PG 209
MB B PG 378-B
2018-2 IH BORROWER LP
DB 7152 PG 556
MB B PG 378-B
GERALD L. TUCKER
DB 5830 PG 572
MB B PG 378-B

-Y1- SEE PROFILE SHEET 9

FOR CROSSING CLOSURE DETAIL SEE SHEET 2B-1
FOR DITCH DETAILS SEE SHEET 2D-1

EXISTING PAVEMENT REMOVAL

-Y1-

PI Sta 14+05.88	PI Sta 15+73.73
△ = 21° 52' 41.6" (RT)	△ = 44° 19' 52.5" (RT)
D = 16° 22' 12.8"	D = 22° 55' 05.9"
L = 133.65'	L = 193.43'
T = 67.65'	T = 101.85'
R = 350.00'	R = 250.00'
SE = 0.04	SE = 0.04
RO = 56'	RO = 56'
TR = 28'	TR = 28'

-Y3-

PI Sta 12+93.37	PI Sta 16+41.31
△ = 3° 56' 38.5" (RT)	△ = 3° 21' 25.6" (RT)
D = 1° 17' 06.4"	D = 0° 57' 19.8"
L = 306.90'	L = 351.35'
T = 153.51'	T = 175.72'
R = 4,458.41'	R = 5,996.45'

-Y4-

PI Sta 13+42.18	PI Sta 15+97.17
△ = 4° 41' 06.6" (RT)	△ = 3° 15' 40.1" (RT)
D = 2° 02' 41.7"	D = 1° 09' 39.2"
L = 229.11'	L = 280.92'
T = 114.62'	T = 140.50'
R = 2,801.88'	R = 4,935.52'

PROJECT REFERENCE NO.	SHEET NO.
Y-5500JC	7
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 052339 ENGINEER JEFFREY COOKE

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 21162 ENGINEER W. HERBERT TURNER, JR.

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PROJECT REFERENCE NO.	SHEET NO.
Y-5500JC	8

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 052339 ENGINEER JEFFREY COOKE

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 21162 ENGINEER W. HERBERT TURNER, JR.

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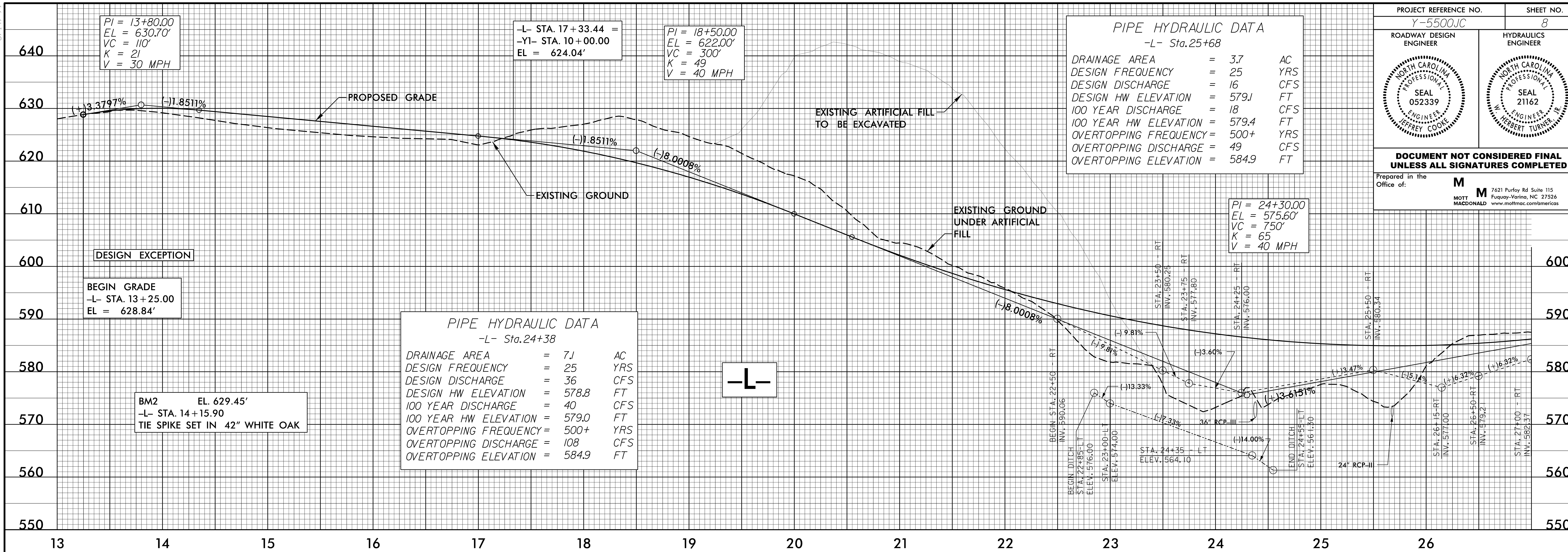
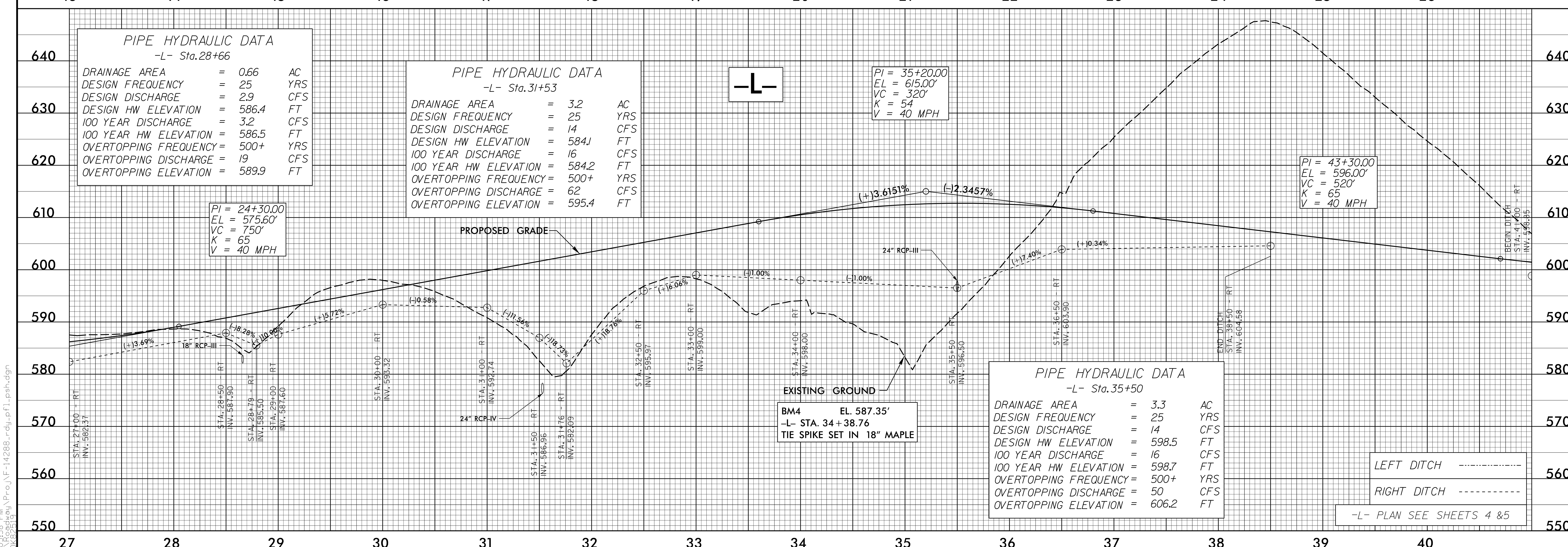


PIPE HYDRAULIC DATA
-L- Sta.25+68

DRAINAGE AREA	=	3.7	AC
DESIGN FREQUENCY	=	25	YRS
DESIGN DISCHARGE	=	16	CFS
DESIGN HW ELEVATION	=	579.1	FT
100 YEAR DISCHARGE	=	18	CFS
100 YEAR HW ELEVATION	=	579.4	FT
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING DISCHARGE	=	49	CFS
OVERTOPPING ELEVATION	=	584.9	FT

PIPE HYDRAULIC DATA
-L- Sta.24+38

DRAINAGE AREA	=	7.1	AC
DESIGN FREQUENCY	=	25	YRS
DESIGN DISCHARGE	=	36	CFS
DESIGN HW ELEVATION	=	578.8	FT
100 YEAR DISCHARGE	=	40	CFS
100 YEAR HW ELEVATION	=	579.0	FT
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING DISCHARGE	=	108	CFS
OVERTOPPING ELEVATION	=	584.9	FT



PIPE HYDRAULIC DATA
-L- Sta.28+66

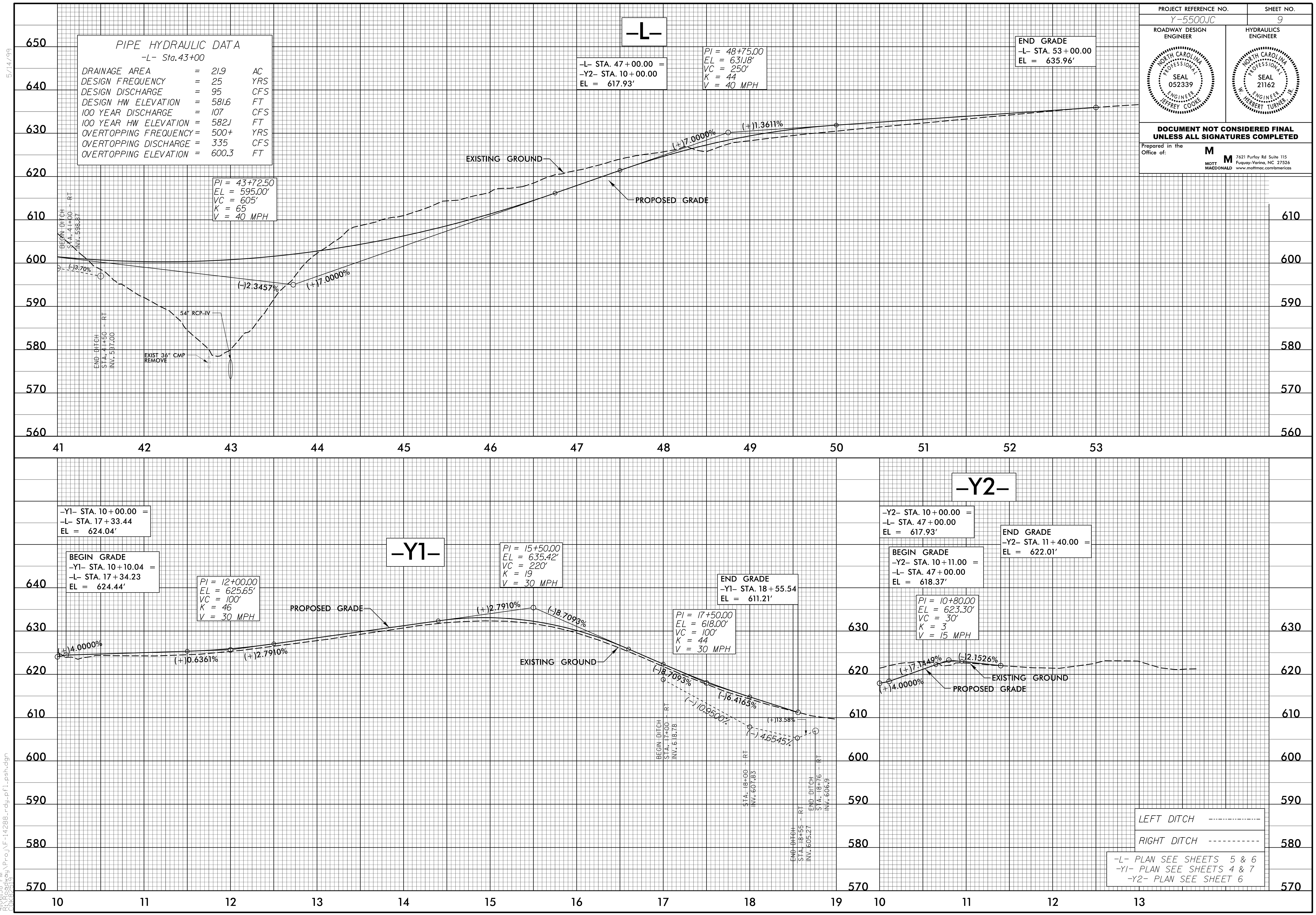
DRAINAGE AREA	=	0.66	AC
DESIGN FREQUENCY	=	25	YRS
DESIGN DISCHARGE	=	2.9	CFS
DESIGN HW ELEVATION	=	586.4	FT
100 YEAR DISCHARGE	=	3.2	CFS
100 YEAR HW ELEVATION	=	586.5	FT
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING DISCHARGE	=	19	CFS
OVERTOPPING ELEVATION	=	589.9	FT

PIPE HYDRAULIC DATA
-L- Sta.31+53

DRAINAGE AREA	=	3.2	AC
DESIGN FREQUENCY	=	25	YRS
DESIGN DISCHARGE	=	14	CFS
DESIGN HW ELEVATION	=	584.1	FT
100 YEAR DISCHARGE	=	16	CFS
100 YEAR HW ELEVATION	=	584.2	FT
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING DISCHARGE	=	62	CFS
OVERTOPPING ELEVATION	=	595.4	FT

PIPE HYDRAULIC DATA
-L- Sta.35+50

DRAINAGE AREA	=	3.3	AC
DESIGN FREQUENCY	=	25	YRS
DESIGN DISCHARGE	=	14	CFS
DESIGN HW ELEVATION	=	598.5	FT
100 YEAR DISCHARGE	=	16	CFS
100 YEAR HW ELEVATION	=	598.7	FT
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING DISCHARGE	=	50	CFS
OVERTOPPING ELEVATION	=	606.2	FT


PROJECT REFERENCE NO.
Y-5500JC
SHEET NO.
9
ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 052339 ENGINEER JEFFREY COOKE
HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 21162 ENGINEER W. HERBERT TURNER, JR.
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-L-
PIPE HYDRAULIC DATA
-L- Sta.43+00
DRAINAGE AREA = 21.9 AC
DESIGN FREQUENCY = 25 YRS
DESIGN DISCHARGE = 95 CFS
DESIGN HW ELEVATION = 581.6 FT
100 YEAR DISCHARGE = 107 CFS
100 YEAR HW ELEVATION = 582.1 FT
OVERTOPPING FREQUENCY = 500+ YRS
OVERTOPPING DISCHARGE = 335 CFS
OVERTOPPING ELEVATION = 600.3 FT
-L- STA. 47+00.00 = -Y2- STA. 10+00.00 EL = 617.93'
PI = 48+75.00 EL = 631.18' VC = 250' K = 44 V = 40 MPH
END GRADE -L- STA. 53+00.00 EL = 635.96'
PI = 43+72.50 EL = 595.00' VC = 605' K = 65 V = 40 MPH
EXISTING GROUND
PROPOSED GRADE
(+)7.0000%
(+)1.3611%
(-)2.3457%
(+)7.0000%
(-)3.70%
BEGIN DITCH STA. 41+00 - RT INV. 598.87
END DITCH STA. 41+50 - RT INV. 597.00
54" RCP-IV
EXIST 36" CMP REMOVE
-Y1- STA. 10+00.00 = -L- STA. 17+33.44 EL = 624.04'
BEGIN GRADE -Y1- STA. 10+10.04 = -L- STA. 17+34.23 EL = 624.44'
-Y1-
PI = 12+00.00 EL = 625.65' VC = 100' K = 46 V = 30 MPH
PI = 15+50.00 EL = 635.42' VC = 220' K = 19 V = 30 MPH
END GRADE -Y1- STA. 18+55.54 EL = 611.21'
PI = 17+50.00 EL = 618.00' VC = 100' K = 44 V = 30 MPH
PROPOSED GRADE
EXISTING GROUND
(+)4.0000%
(+)0.6361%
(+)2.7910%
(+)2.7910%
(-)8.7093%
(-)8.7093%
(-)6.4165%
(-)10.9500%
(-)4.6545%
(+)13.58%
BEGIN DITCH STA. 17+00 - RT INV. 618.78
STA. 18+00 RT INV. 607.83
END DITCH STA. 18+55 - RT INV. 605.27
END DITCH STA. 18+76 - RT INV. 606.9
-Y2-
-Y2- STA. 10+00.00 = -L- STA. 47+00.00 EL = 617.93'
BEGIN GRADE -Y2- STA. 10+11.00 = -L- STA. 47+00.00 EL = 618.37'
END GRADE -Y2- STA. 11+40.00 = EL = 622.01'
PI = 10+80.00 EL = 623.30' VC = 30' K = 3 V = 15 MPH
(+)4.0000%
(+)7.1449%
(-)2.1526%
EXISTING GROUND
PROPOSED GRADE
LEFT DITCH
RIGHT DITCH
-L- PLAN SEE SHEETS 5 & 6
-Y1- PLAN SEE SHEETS 4 & 7
-Y2- PLAN SEE SHEET 6
5/14/99

PROJECT REFERENCE NO.	SHEET NO.
Y-5500JC	10

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 052339 JEFFREY COOKE

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 21162 W. HERBERT TURNER, JR.

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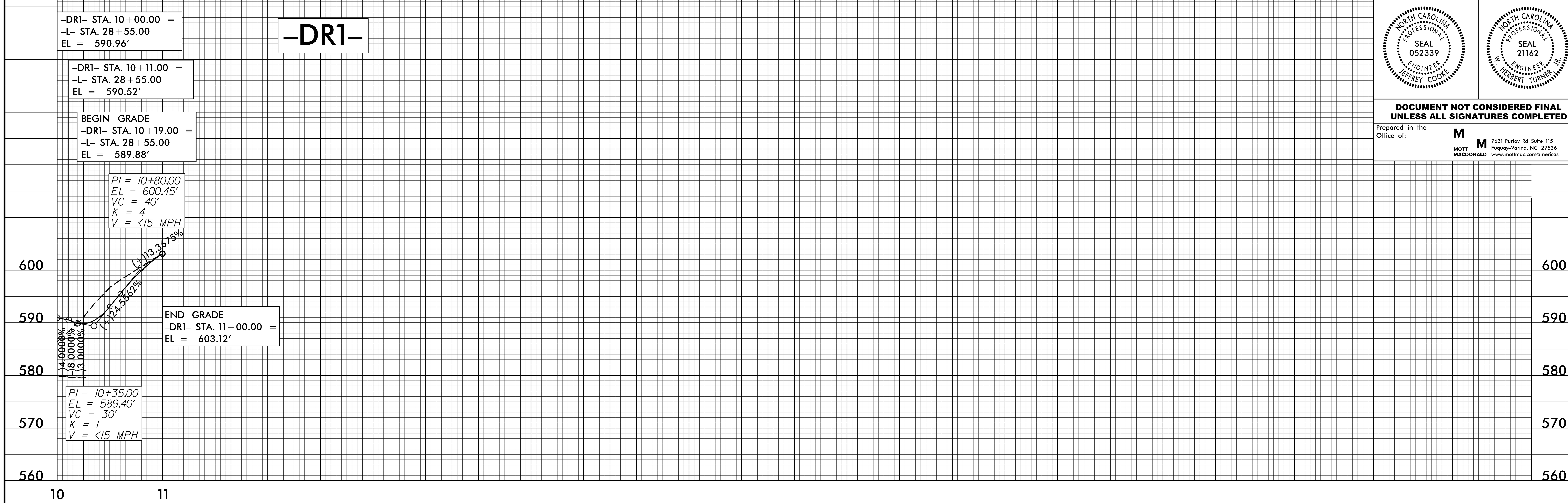
-DR1-



LEFT DITCH

RIGHT DITCH

-DR1- PLAN SEE SHEET 5

5/14/99
4:09:34 PM
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