09/08/99

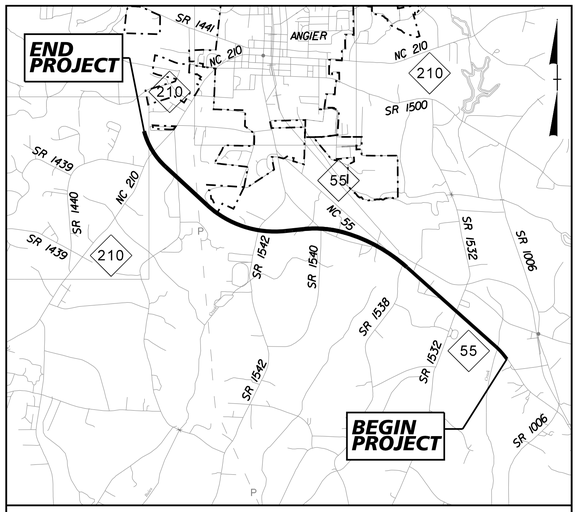
TIP PROJECT: R-5705A

CONTRACT: C204785

K:\RAL_Roadway\OI\036479 - R-5705A - NC 55\Roadway\Proj\R5705A_rdy_1shdgn

8/8/2023

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



VICINITY MAP

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5705A	1	

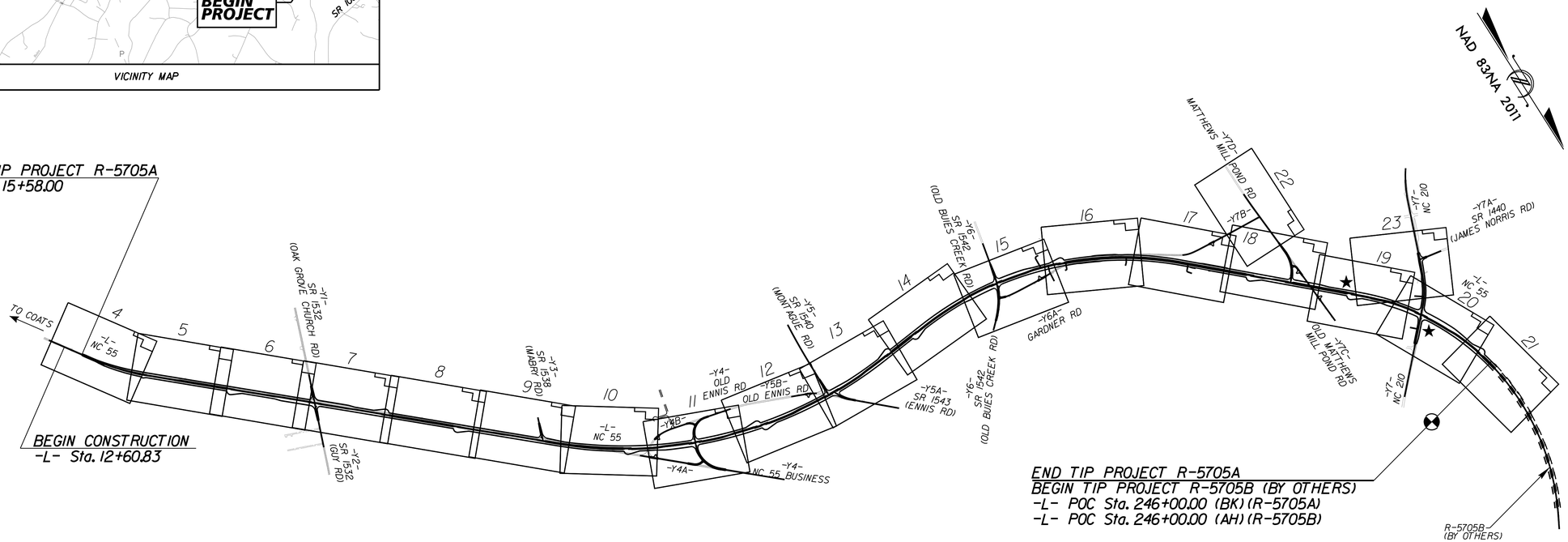
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
46377.1.2		P.E.
46377.2.1		RIGHT-OF-WAY
46377.2.5		UTILITIES
46377.3.1		CONSTRUCTION

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

HARNETT COUNTY

LOCATION: NC 55 FROM JUST SOUTH OF SR 1532 (OAK GROVE CHURCH ROAD) TO NC 210

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



** DESIGN SPEED = 50 MPH FROM –L– STA. 15+58.00 TO STA. 112+18.00 (EXISTING NC 55)
60 MPH FROM –L– STA. 112+18.00 TO STA. 246+00.00 (NEW LOCATION)

★ *TRAFFIC SIGNAL*

THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS SHOWN ON THE PLANS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

5 2.5 0 5 10
PROFILE (VERTICAL)

DESIGN DATA

AADT 2023	=	16,400
AADT 2045	=	27,100
K	=	9%
D	=	60%
T	=	4%*
** V	=	50/60 MPH

* (TTST 1% + DUAL 3%)
FUNCTIONAL CLASSIFICATION: MINOR ARTERIAL
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-5705A	=	4.364 MILES
TOTAL LENGTH ROADWAY TIP PROJECT R-5705A	=	4.364 MILES

PLANS PREPARED FOR THE NCDOT BY:

Kimley»Horn © 2019
NC LICENSE #F-0102
FAYETTEVILLE STREET, SUITE 600
RALEIGH, NORTH CAROLINA 27601
PHONE: (919) 677-2000

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MARCH 9, 2021

LETTING DATE:
SEPTEMBER 19, 2023

JEFFREY W. MOORE, P.E.
PROJECT ENGINEER

EVERETT J. LOVING, P.E.
PROJECT DESIGN ENGINEER

DAVID WEBB, P.E.
SENIOR PROJECT MANAGER
NCDOT PROJECT MANAGEMENT UNIT

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 052128 JORDAN BENDL 8/3/2023

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024436 JEFFREY W. MOORE 8/3/2023

SIGNATURE: *P.E.*

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PROJECT REFERENCE NO.	SHEET NO.
R-5705A	IA

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

R-5705A
HARNETT COUNTY

INDEX OF SHEETS

GENERAL NOTES

2018 SPECIFICATIONS

EFFECTIVE: 01-16-18

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 OR STD. NO. 225.05 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 AND STD. NO. 560.02.

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.

STREET TURNOUT:

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

GUARDRAIL:

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

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC NOT SHOWN ON THE PLANS WILL BE PAID FOR AT THE CONTRACT PRICE FOR "TEMPORARY SHORING".

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE :

DUKE ENERGY
PIEDMONT NATURAL GAS
CHARTER
CENTURYLINK
CONTERRA
SEGRA
HARNETT REGIONAL WATER

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

RIGHT-OF-WAY MARKERS:

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

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 TRANSPORATION - 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	
200.02	METHOD OF CLEARING - METHOD III
225.01	GUIDE FOR GRADING SUBGRADE - INTERSTATE AND FREEWAY
225.02	GUIDE FOR GRADING SUBGRADE - SECONDARY AND LOCAL
225.04	METHOD OF OBTAINING SUPERELEVATION - TWO LANE PAVEMENT
225.05	METHOD OF OBTAINING SUPERELEVATION - DIVIDED HIGHWAYS
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
310.10	DRIVEWAY PIPE CONSTRUCTION
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	METHOD OF SHOULDER CONSTRUCTION - HIGH SIDE OF SUPERELEVATED CURVE - METHOD I
560.02	METHOD OF SHOULDER CONSTRUCTION - HIGH SIDE OF SUPERELEVATED CURVE - METHOD II
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	PAVEMENT REPAIRS
DIVISION 8 - INCIDENTALS	
806.01	CONCRETE RIGHT-OF-WAY MARKER
806.02	GRANITE RIGHT-OF-WAY-MARKER
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
838.21	REINFORCED CONCRETE ENDWALL FOR SINGLE 54" PIPE 90 SKEW
838.33	REINFORCED CONCRETE ENDWALL FOR SINGLE 66" PIPE 90 SKEW
838.45	NOTES FOR REINFORCED CONCRETE ENDWALL
838.51	REINFORCED BRICK ENDWALL FOR SINGLE 54" PIPE 90 SKEW
838.63	REINFORCED BRICK ENDWALL FOR SINGLE 66" PIPE 90 SKEW
838.75	NOTES FOR REINFORCED BRICK ENDWALL
838.80	PRECAST ENDWALLS - 12" THRU 72" PIPE 90 SKEW
840.00	CONCRETE BASE PAD FOR DRAINAGE STRUCTURES
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
840.17	CONCRETE GRATED DROP INLET TYPE 'A' - 12" THRU 72" PIPE
840.18	CONCRETE GRATED DROP INLET TYPE 'B' - 12" THRU 36" PIPE
840.19	CONCRETE GRATED DROP INLET TYPE 'D' - 12" THRU 36" PIPE
840.24	FRAMES AND NARROW SLOT SAG GRATES
840.25	ANCHORAGE FOR FRAMES - BRICK OR CONCRETE OR PRECAST
840.26	BRICK GRATED DROP INLET TYPE 'A' - 12" THRU 72" PIPE
840.27	BRICK GRATED DROP INLET TYPE 'B' - 12" THRU 36" PIPE
840.28	BRICK GRATED DROP INLET TYPE 'D' - 12" THRU 36" PIPE
840.29	FRAMES AND NARROW SLOT FLAT GRATES
840.31	CONCRETE JUNCTION BOX - 12" THRU 66" PIPE
840.32	BRICK JUNCTION BOX - 12" THRU 66" PIPE
840.34	TRAFFIC BEARING JUNCTION BOX - FOR USE WITH PIPES 42" AND UNDER
840.35	TRAFFIC BEARING GRATED DROP INLET - FOR CAST IRON DOUBLE FRAME AND GRATES
840.36	TRAFFIC BEARING GRATED DROP INLET - FOR STEEL DOUBLE FRAME AND GRATES
840.37	STEEL FRAME WITH TWO 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
848.04	STREET TURNOUT
850.01	CONCRETE PAVED DITCHES
850.10	GUIDE FOR BERM DRAINAGE OUTLET - 15" AND 18" PIPE
850.11	GUIDE FOR BERM DRAINAGE OUTLET - 24" AND 30" PIPE
852.01	CONCRETE ISLANDS
852.04	METHOD FOR PLACEMENT OF DROP INLETS IN GRASSED MEDIAN - USING 1'-6" CURB AND GUTTER
852.05	MEDIAN CURB FOR CATCH BASIN - FOR USE WITH 1'-6" CURB AND GUTTER
852.06	METHOD FOR PLACEMENT OF DROP INLETS IN CONCRETE ISLANDS
862.01	GUARDRAIL PLACEMENT
862.02	GUARDRAIL INSTALLATION
862.03	STRUCTURE ANCHOR UNITS
866.02	WOVEN WIRE FENCE - WITH WOOD POST
876.01	RIP RAP IN CHANNELS
876.02	GUIDE FOR RIP RAP AT PIPE OUTLETS
876.04	DRAINAGE DITCHES WITH CLASS 'B' RIP RAP

8/8/2023

09/10/2021

PROJECT REFERENCE NO.	SHEET NO.
R-5705A	1B

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale **S.U.E. = Subsurface Utility Engineering*

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Computed Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Existing Historic Property Boundary — HPB
- Known Contamination Area: Soil — S
- Potential Contamination Area: Soil — S
- Known Contamination Area: Water — W
- Potential Contamination Area: Water — W
- Contaminated Site: Known or Potential

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY & PROJECT CONTROL:

- Secondary Horiz and Vert Control Point
- Primary Horiz Control Point
- Primary Horiz and Vert Control Point
- Exist Permanent Easment Pin and Cap
- New Permanent Easement Pin and Cap
- Vertical Benchmark
- Existing Right of Way Marker
- Existing Right of Way Line
- New Right of Way Line — RW
- New Right of Way Line with Pin and Cap — RW
- New Right of Way Line with Concrete or Granite R/W Marker — RW
- New Control of Access Line with Concrete C/A Marker — CA
- Existing Control of Access — CA
- New Control of Access — CA
- Existing Easement Line — E
- New Temporary Construction Easement — E
- New Temporary Drainage Easement — TDE
- New Permanent Drainage Easement — PDE
- New Permanent Drainage / Utility Easement — DUE
- New Permanent Utility Easement — PUE
- New Temporary Utility Easement — TUE
- New Aerial Utility Easement — AUE

ROADS AND RELATED FEATURES:

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

VEGETATION:

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

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H-Frame Pole
- U/G Power Line LOS B (S.U.E.*) — P
- U/G Power Line LOS C (S.U.E.*) — P
- U/G Power Line LOS D (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- U/G Telephone Cable LOS B (S.U.E.*) — T
- U/G Telephone Cable LOS C (S.U.E.*) — T
- U/G Telephone Cable LOS D (S.U.E.*) — T
- U/G Telephone Conduit LOS B (S.U.E.*) — TC
- U/G Telephone Conduit LOS C (S.U.E.*) — TC
- U/G Telephone Conduit LOS D (S.U.E.*) — TC
- U/G Fiber Optics Cable LOS B (S.U.E.*) — T FO
- U/G Fiber Optics Cable LOS C (S.U.E.*) — T FO
- U/G Fiber Optics Cable LOS D (S.U.E.*) — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- U/G Water Line LOS B (S.U.E*)
- U/G Water Line LOS C (S.U.E*)
- U/G Water Line LOS D (S.U.E*)
- Above Ground Water Line — A/G Water

TV:

- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- U/G TV Cable LOS B (S.U.E.*) — TV
- U/G TV Cable LOS C (S.U.E.*) — TV
- U/G TV Cable LOS D (S.U.E.*) — TV
- U/G Fiber Optic Cable LOS B (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS C (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS D (S.U.E.*) — TV FO

GAS:

- Gas Valve
- Gas Meter
- U/G Gas Line LOS B (S.U.E.*) — G
- U/G Gas Line LOS C (S.U.E.*) — G
- U/G Gas Line LOS D (S.U.E.*) — G
- Above Ground Gas Line — A/G Gas

SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- SS Forced Main Line LOS B (S.U.E.*) — FSS
- SS Forced Main Line LOS C (S.U.E.*) — FSS
- SS Forced Main Line LOS D (S.U.E.*) — FSS

MISCELLANEOUS:

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

NOTES:
1. SEE PLANS FOR MEDIAN WIDTHS
2. MILL EXIST. PAVEMENT TO A DEPTH OF 2.5" (V1), REPLACE WITH 2.5" I19.0C (D1), AND OVERLAY WITH 3" S9.5C (C3)
3. PAVEMENT EDGE SLOPES 1:1 UNLESS OTHERWISE INDICATED

Kimley»Horn ©2019
P.O. BOX 33068 • RALEIGH, N.C. 27636-3068

RIGHT-OF-WAY REV.

CONST. REV.

PROJECT REFERENCE NO.	SHEET NO.
R-5705A	2A-1

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024436 JEFFREY W. MOORE 8/10/2023

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022896 CLARK S. MORRISON 8/10/2023

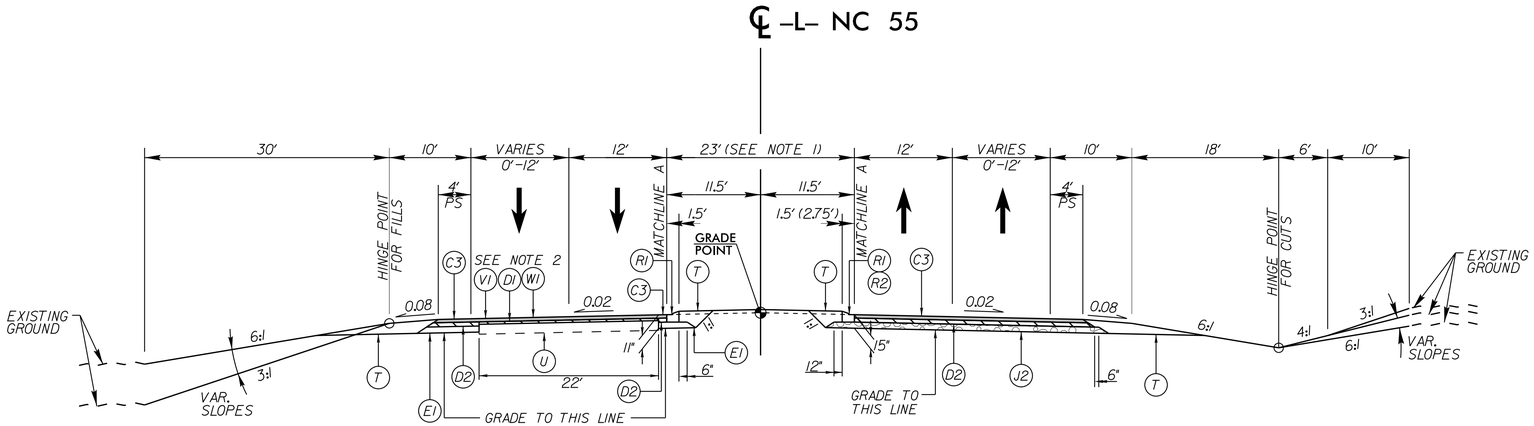
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

5/14/99

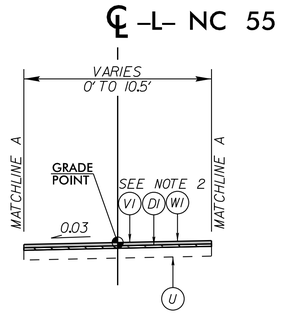
TYPICAL SECTION NO. 1

-L- STA 15+58.00 TO 92+74.00



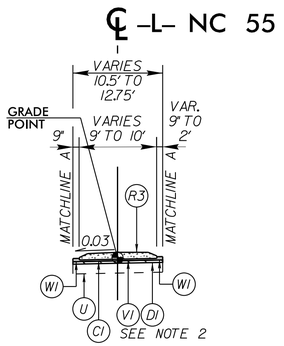
TYPICAL SECTION NO. 1A

-L- STA 15+58.00 TO 21+12.50



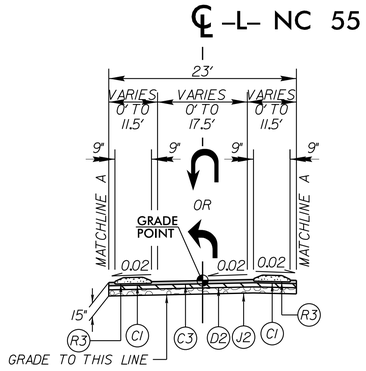
TYPICAL SECTION NO. 1B

-L- STA 21+12.50 TO 21+80.00



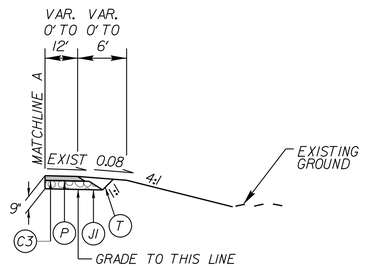
TYPICAL SECTION NO. 1C

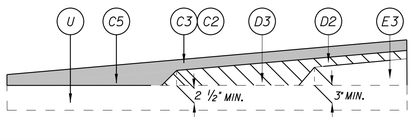
-L- STA 25+21.83 TO 30+54.33
-L- STA 38+69.48 TO 64+26.00
-L- STA 74+32.36 TO 88+79.10



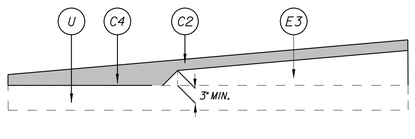
TYPICAL SECTION NO. 1D

TEMPORARY WIDENING
-L- STA 21+21.92 TO 26+55.00 (LT)

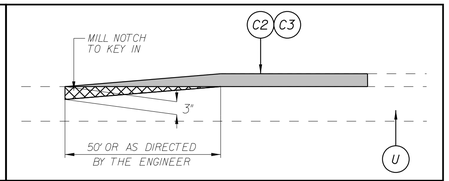




WEDGING DETAIL W1 FOR RESURFACING



WEDGING DETAIL W2 FOR RESURFACING



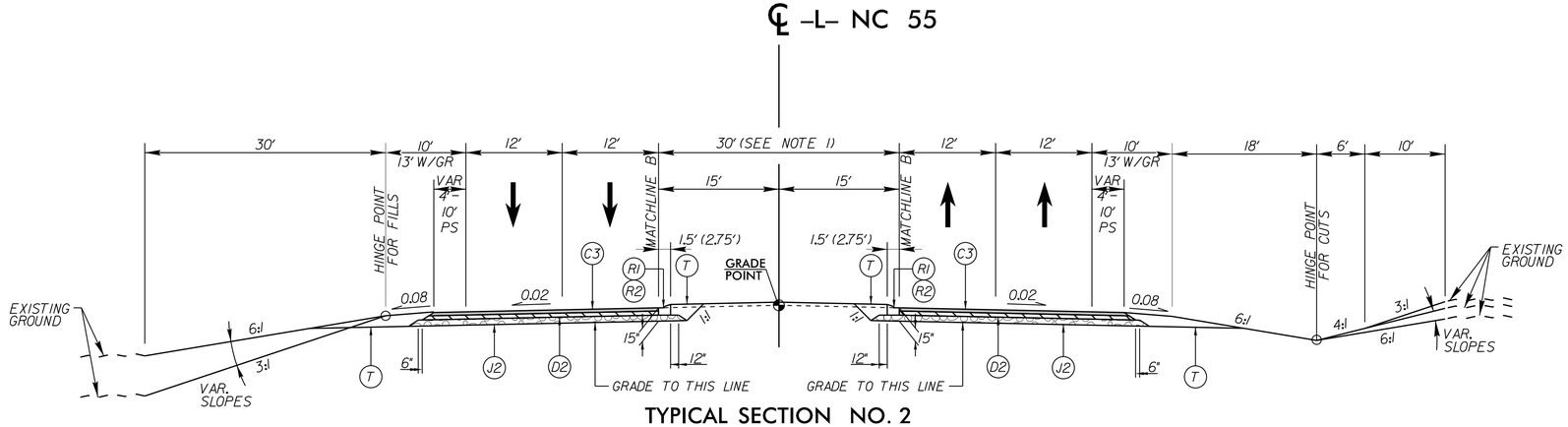
INCIDENTAL MILLING DETAIL

8/10/2023

5/14/99

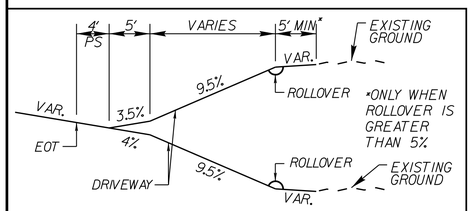
REVISIONS

NOTES:
1. SEE PLANS FOR MEDIAN WIDTHS
2. PAVEMENT EDGE SLOPES 1:1 UNLESS OTHERWISE INDICATED

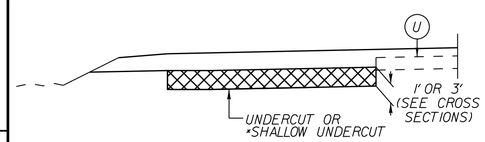


TYPICAL SECTION NO. 2

-L- STA 92+74.00 TO 246+00.00



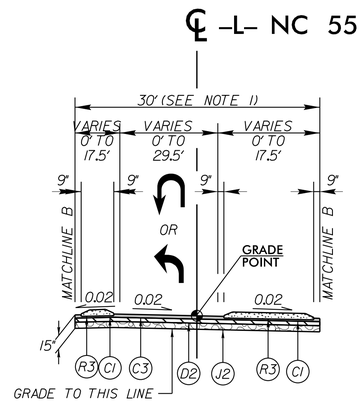
DRIVEWAY GRADING DETAIL



-L- STA 102+25.00 TO 107+25.00 (LT/RT) (SEE T.S.NO. 2)
-L- STA 110+25.00 TO 121+25.00 (LT/RT) (SEE T.S.NO. 2)
-L- STA 142+75.00 TO 151+25.00 (LT/RT) (SEE T.S.NO. 2)
-L- STA 156+75.00 TO 159+75.00 (LT/RT) (SEE T.S.NO. 2)
-L- STA 175+25.00 TO 176+75.00 (LT/RT) (SEE T.S.NO. 2)
-L- STA 185+75.00 TO 190+75.00 (LT/RT) (SEE T.S.NO. 2)
-L- STA 206+75.00 TO 214+75.00 (LT/RT) (SEE T.S.NO. 2)
-L- STA 227+75.00 TO 229+25.00 (LT/RT) (SEE T.S.NO. 2)
-L- STA 239+75.00 TO 241+25.00 (LT/RT) (SEE T.S.NO. 2)
-L- STA 242+75.00 TO 246+00.00 (LT/RT) (SEE T.S.NO. 2)
*-L- STA 16+75.00 TO 21+75.00 (LT/RT) (SEE T.S.NO. 1)
*-L- STA 70+25.00 TO 72+25.00 (LT/RT) (SEE T.S.NO. 1)
*-Y7- STA 23+75.00 TO 25+75.00 (LT/RT) (SEE T.S.NO. 14)
*-Y7- STA 28+25.00 TO 29+25.00 (LT/RT) (SEE T.S.NO. 15)
*-Y7- STA 33+45.00 TO 36+75.00 (LT/RT) (SEE T.S.NOS. 14 & 15)

UNDERCUT EXCAVATION/SHALLOW UNDERCUT DETAIL

8/8/2023



TYPICAL SECTION NO. 2A

-L- STA 100+98.00 TO 102+18.00
-L- STA 111+18.00 TO 113+18.00
-L- STA 121+63.00 TO 123+88.00
-L- STA 133+43.00 TO 135+99.00
-L- STA 144+99.00 TO 146+19.00
-L- STA 149+85.90 TO 151+05.90
-L- STA 164+58.00 TO 166+48.00
-L- STA 175+48.00 TO 176+68.00
-L- STA 220+85.73 TO 224+70.73
-L- STA 231+91.00 TO 233+91.00
-L- STA 243+36.00 TO 244+56.00

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RIGHT-OF-WAY REV.

CONST. REV.

PROJECT REFERENCE NO.	SHEET NO.
R-5705A	2A-2

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024436 JEFFREY W. MOORE 8/9/2023 ENGINEER

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022896 CLARK S. MORRISON 8/10/2023 ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PAVEMENT SCHEDULE

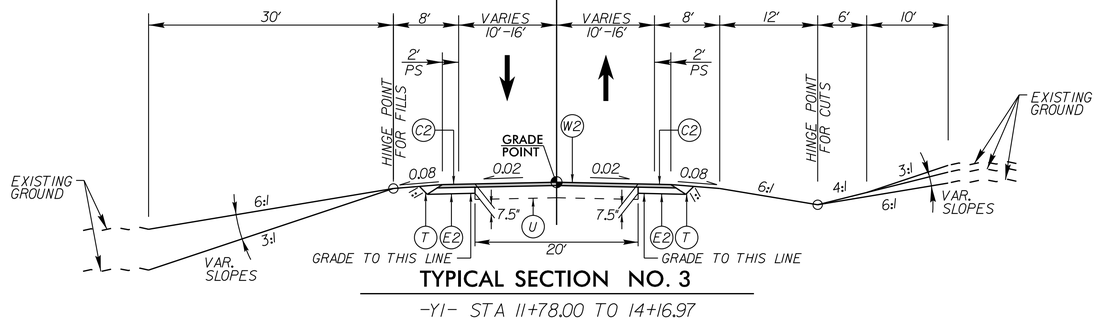
C1	PROPOSED APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROPOSED APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROPOSED APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C4	PROPOSED VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 1.5" IN DEPTH.
C5	PROPOSED VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
D1	PROPOSED APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROPOSED APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D3	PROPOSED VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2.5" OR GREATER THAN 4" IN DEPTH
E1	PROPOSED APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROPOSED APPROX. 4.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.
E3	PROPOSED VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" OR GREATER THAN 5.5" IN DEPTH.
J1	PROPOSED 6" AGGREGATE BASE COURSE
J2	PROPOSED 8" AGGREGATE BASE COURSE
P	PRIME COAT AT THE RATE OF 0.35 GAL PER SQ.YD
R1	PROPOSED 1'-6" CONCRETE CURB & GUTTER
R2	PROPOSED 2'-9" CONCRETE CURB & GUTTER
R3	PROPOSED 5" MONOLITHIC CONCRETE ISLAND (KEYED-IN)
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING ASPHALT PAVEMENT, 2.5" DEPTH
V2	MILLING ASPHALT PAVEMENT, 3" DEPTH
W1	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL W1 FOR RESURFACING)
W2	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL W2 FOR RESURFACING)

5/14/99

REVISIONS

NOTES:
1. PAVEMENT EDGE SLOPES 1:1 UNLESS OTHERWISE INDICATED

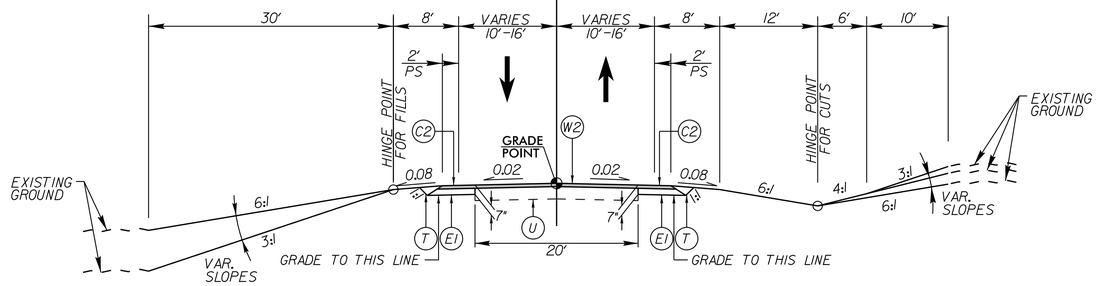
℄ –Y1– SR 1532 (OAK GROVE CHURCH RD)



TYPICAL SECTION NO. 3

–Y1– STA 11+78.00 TO 14+16.97

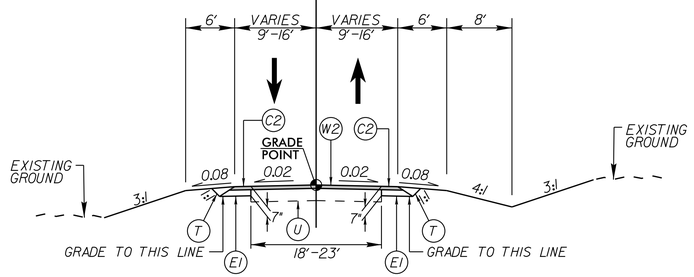
℄ –Y2– SR 1532 (GUY RD)



TYPICAL SECTION NO. 4

–Y2– STA 10+38.01 TO 12+82.00

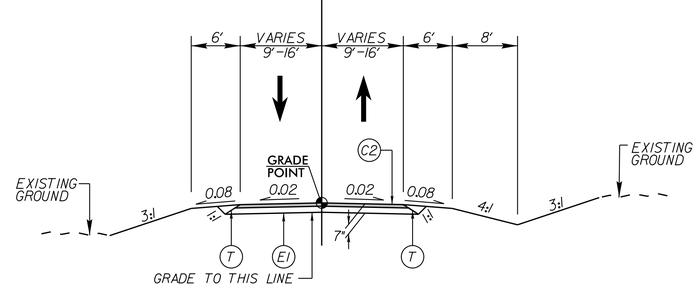
℄ –Y3– SR 1538 (MABRY RD)
℄ –Y4– SR 1543 (OLD ENNIS RD)
℄ –Y5– SR 1540 (MONTAGUE RD)



TYPICAL SECTION NO. 5

–Y3– STA 10+88.00 TO 13+36.74
–Y4– STA 13+61.00 TO 15+00.47
–Y5– STA 19+76.00 TO 22+22.97

℄ –Y4– SR 1543 (OLD ENNIS RD)



TYPICAL SECTION NO. 6

–Y4– STA 15+00.47 TO 18+42.99

8/8/2023

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RIGHT-OF-WAY REV.
CONST. REV.

PROJECT REFERENCE NO.	SHEET NO.
R-5705A	2A-3

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024436 ENGINEER JEFFREY W. MOORE
8/8/2023

PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CLARK S. MORRISON
8/10/2023

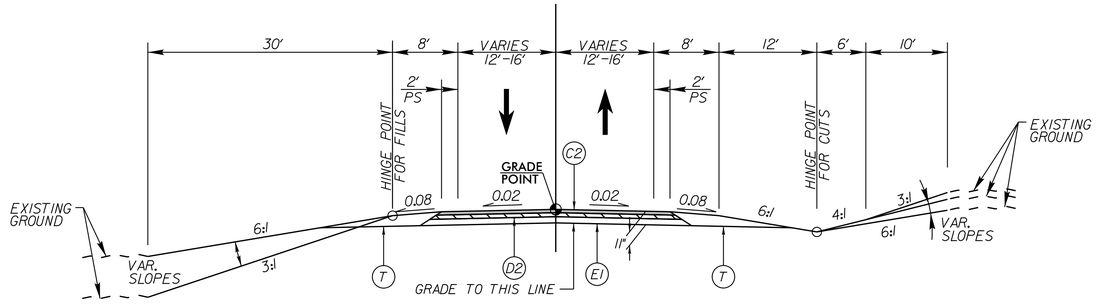
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PAVEMENT SCHEDULE

C1	PROPOSED APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROPOSED APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROPOSED APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C4	PROPOSED VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 1.5" IN DEPTH.
C5	PROPOSED VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
D1	PROPOSED APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROPOSED APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D3	PROPOSED VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2.5" OR GREATER THAN 4" IN DEPTH
E1	PROPOSED APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROPOSED APPROX. 4.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.
E3	PROPOSED VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" OR GREATER THAN 5.5" IN DEPTH.
J1	PROPOSED 6" AGGREGATE BASE COURSE
J2	PROPOSED 8" AGGREGATE BASE COURSE
P	PRIME COAT AT THE RATE OF 0.35 GAL PER SQ.YD
R1	PROPOSED 1'-6" CONCRETE CURB & GUTTER
R2	PROPOSED 2'-9" CONCRETE CURB & GUTTER
R3	PROPOSED 5" MONOLITHIC CONCRETE ISLAND (KEYED-IN)
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING ASPHALT PAVEMENT, 2.5" DEPTH
V2	MILLING ASPHALT PAVEMENT, 3" DEPTH
W1	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL W1 FOR RESURFACING)
W2	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL W2 FOR RESURFACING)

NOTES:
1. PAVEMENT EDGE SLOPES 1:1 UNLESS OTHERWISE INDICATED

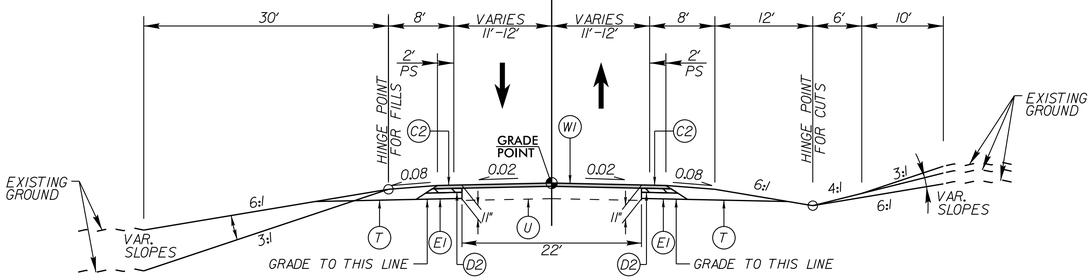
℄ –Y4– NC 55 BUSINESS



TYPICAL SECTION NO. 7

–Y4– STA 19+20.94 TO 23+39.00

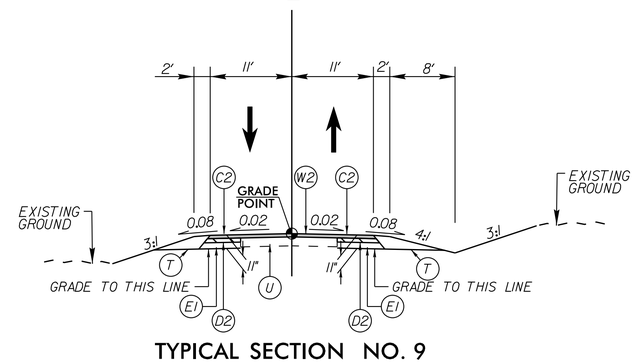
℄ –Y4– NC 55 BUSINESS



TYPICAL SECTION NO. 8

–Y4– STA 23+39.00 TO 25+77.00

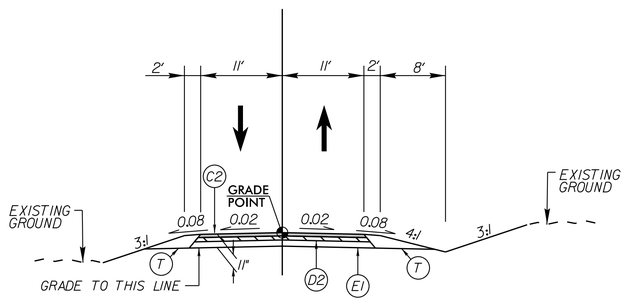
℄ –Y4A– ACCESS ROAD 1



TYPICAL SECTION NO. 9

–Y4A– STA 17+50.00 TO 18+75.00

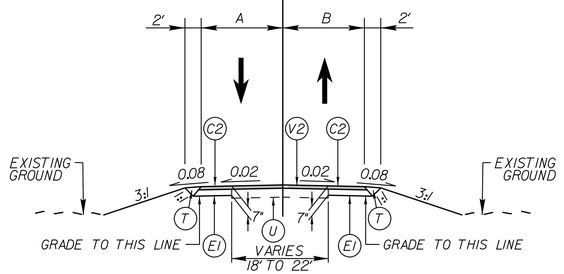
℄ –Y4A– ACCESS ROAD 1



TYPICAL SECTION NO. 10

–Y4A– STA 18+75.00 TO 20+08.00

℄ –Y4A– ACCESS ROAD 1
–Y4B– ACCESS ROAD 2 TURNAROUND
℄ –Y5B– OLD ENNIS RD TURNAROUND
–Y6A– GARDNER RD TURNAROUND
–Y7B– ACCESS ROAD 3 TURNAROUND
–Y7C– OLD MATTHEWS MILL POND RD TURNAROUND



TYPICAL SECTION NO. 11

–Y4A– TURNAROUND STA 11+40.00 TO 12+90.74
–Y4B– TURNAROUND STA 10+02.00 TO 11+10.00
–Y5B– TURNAROUND STA 12+15.00 TO 13+19.00
–Y6A– TURNAROUND STA 16+66.00 TO 18+19.00
–Y7B– TURNAROUND STA 18+00.00 TO 19+00.00
–Y7C– TURNAROUND STA 19+84.00 TO 20+84.00

	A	B
–Y4A– TURNAROUND	10.5' TO 52.5'	11.5'
–Y4B– TURNAROUND	10'	10' TO 54'
–Y5B– TURNAROUND	9'	11' TO 55'
–Y6A– TURNAROUND	10.5' TO 54.5'	9.5'
–Y7B– TURNAROUND	10' TO 54'	10'
–Y7C– TURNAROUND	9' TO 55'	9' TO 55'

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RIGHT-OF-WAY REV.
CONST. REV.

PROJECT REFERENCE NO.	SHEET NO.
R-5705A	2A-4

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024436 JEFFREY W. MOORE 8/10/2023

PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022896 CLARK S. MORRISON 8/10/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

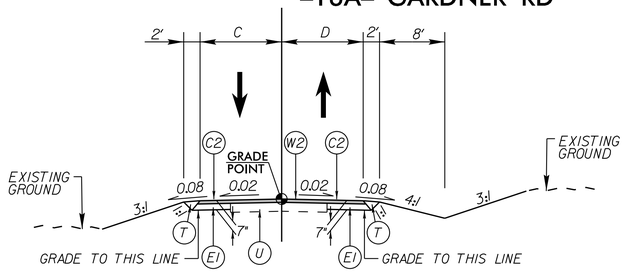
REVISIONS
5/14/99
8/10/2023

5/14/99

REVISIONS

NOTES:
1. PAVEMENT EDGE SLOPES 1:1 UNLESS OTHERWISE INDICATED
2. CONSTRUCT 3:1 BACK SLOPE FROM -Y7- STA 23+30.00 TO -Y7A- INTERSECTION

℄ -Y4B- ACCESS ROAD 2
-Y6A- GARDNER RD



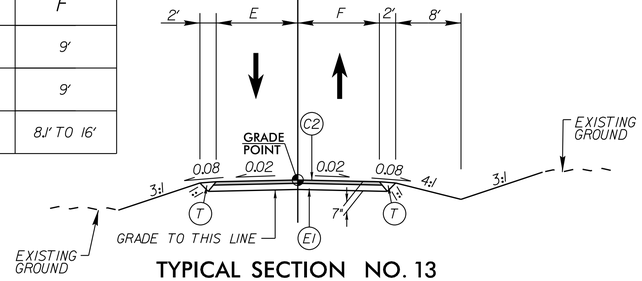
	C	D
-Y4B-	9'	9'
-Y6A-	10'	10'

TYPICAL SECTION NO. 12

-Y4B- STA 15+54.00 TO 16+32.00
-Y6A- STA 10+12.69 TO 11+17.00

℄ -Y4B- ACCESS ROAD 2
-Y7C- ACCESS ROAD 4
-Y7D- MATTHEWS MILL POND RD

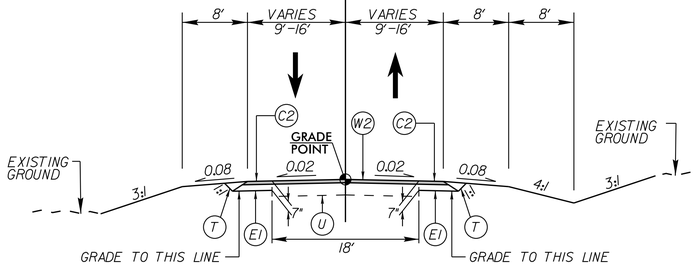
	E	F
-Y4B-	9'	9'
-Y7C-	9'	9'
-Y7D-	8.3' TO 16'	8.1' TO 16'



TYPICAL SECTION NO. 13

-Y4B- STA 16+32.00 TO 17+00.00
-Y7C- STA 13+73.45 TO 14+10.64
-Y7D- STA 16+52.07 TO 19+66.00

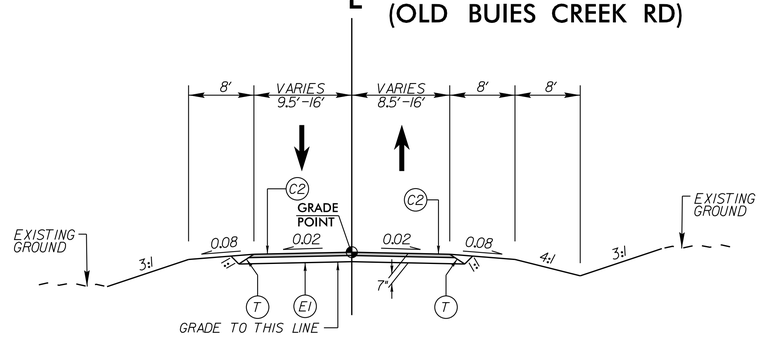
-Y5A- SR 1543 (ENNIS RD)
-Y6- SR 1542
(OLD BUIES CREEK RD)
℄ -Y7A- SR 1440
(JAMES NORRIS RD)
-Y7C- ACCESS ROAD 4
-Y7D- MATTHEWS MILL POND RD



TYPICAL SECTION NO. 15

-Y5A- STA 10+97.00 TO 13+64.00
-Y6- STA 13+41.00 TO 15+25.00
-Y6- STA 16+95.86 TO 22+44.00
-Y7A- STA 46+91.77 TO 47+90.00
-Y7C- STA 14+10.64 TO 16+00.00
-Y7D- STA 13+30.00 TO 16+52.07

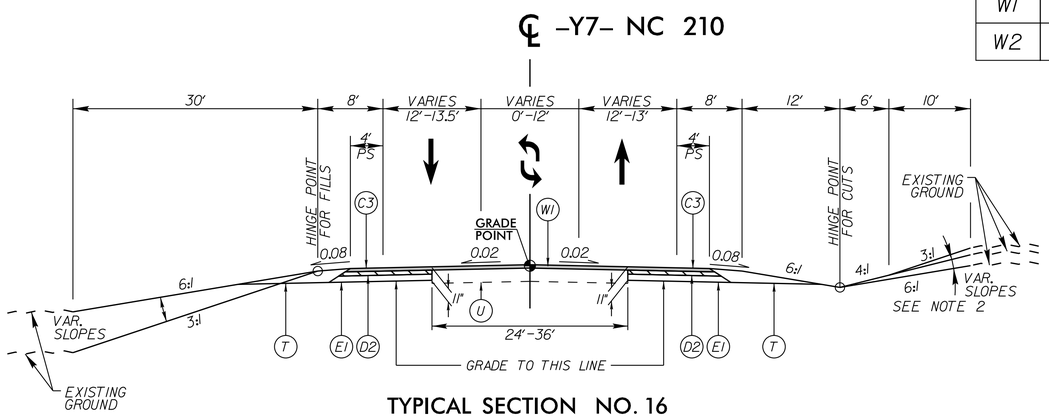
-Y5A- SR 1543 (ENNIS RD)
℄ -Y6- SR 1542
(OLD BUIES CREEK RD)



TYPICAL SECTION NO. 14

-Y5A- STA 10+42.91 TO 10+97.00
-Y6- STA 15+25.00 TO 16+16.60

℄ -Y7- NC 210



TYPICAL SECTION NO. 16

-Y7- STA 23+30.00 TO 26+25.00
-Y7- STA 34+25.00 TO 37+60.00

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RIGHT-OF-WAY REV.

CONST. REV.

PROJECT REFERENCE NO.	SHEET NO.
R-5705A	2A-5

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024436 JEFFREY W. MOORE 8/8/2023

PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022896 CLARK S. MORRISON 8/30/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PAVEMENT SCHEDULE

C1	PROPOSED APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROPOSED APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROPOSED APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C4	PROPOSED VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 1.5" IN DEPTH.
C5	PROPOSED VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
D1	PROPOSED APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROPOSED APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D3	PROPOSED VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2.5" OR GREATER THAN 4" IN DEPTH
E1	PROPOSED APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
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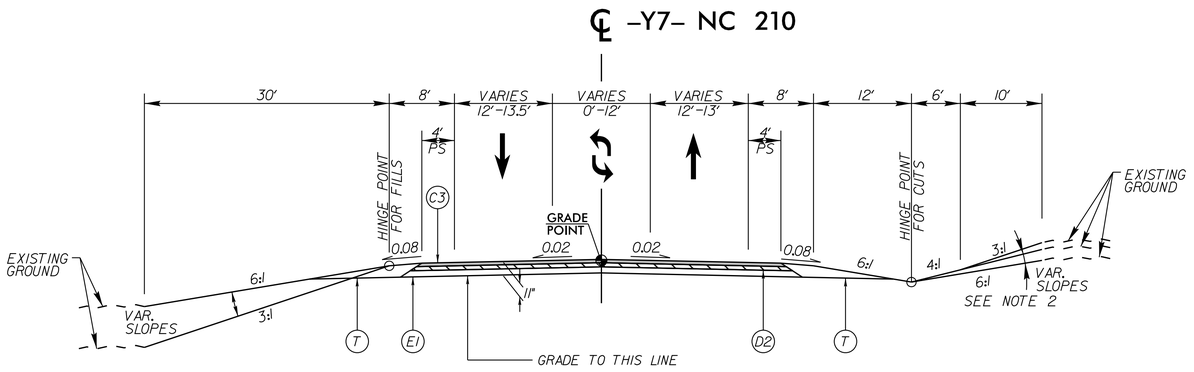
J1	PROPOSED 6" AGGREGATE BASE COURSE
J2	PROPOSED 8" AGGREGATE BASE COURSE
P	PRIME COAT AT THE RATE OF 0.35 GAL PER SQ.YD
R1	PROPOSED 1'-6" CONCRETE CURB & GUTTER
R2	PROPOSED 2'-9" CONCRETE CURB & GUTTER
R3	PROPOSED 5" MONOLITHIC CONCRETE ISLAND (KEYED-IN)
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING ASPHALT PAVEMENT, 2.5" DEPTH
V2	MILLING ASPHALT PAVEMENT, 3" DEPTH
W1	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL W1 FOR RESURFACING)
W2	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL W2 FOR RESURFACING)

5/14/99

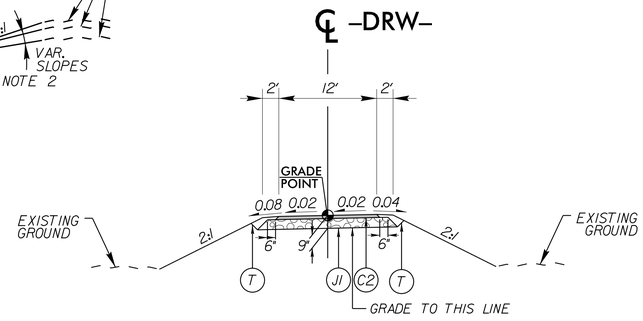
REVISIONS

NOTES:
1. PAVEMENT EDGE SLOPES 1:1 UNLESS OTHERWISE INDICATED
2. TEMPORARY SHOULDERS AND SLOPES MATCH THE FINAL CONDITIONS.



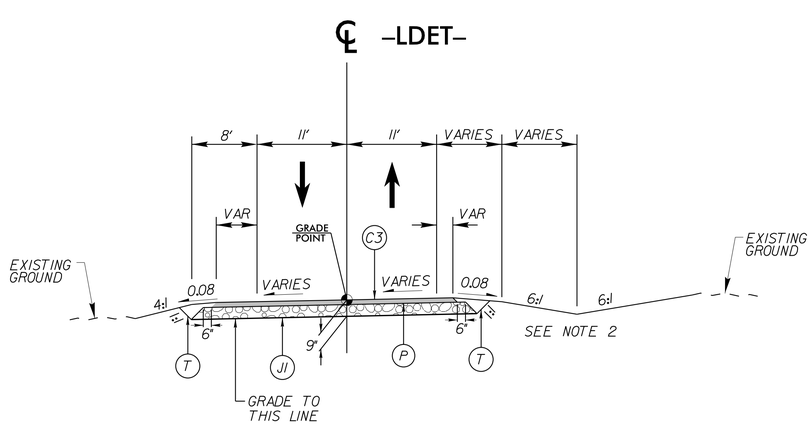
TYPICAL SECTION NO. 17

-Y7- STA 26+25.00 TO 32+60.28
-Y7- STA 33+40.63 TO 34+25.00



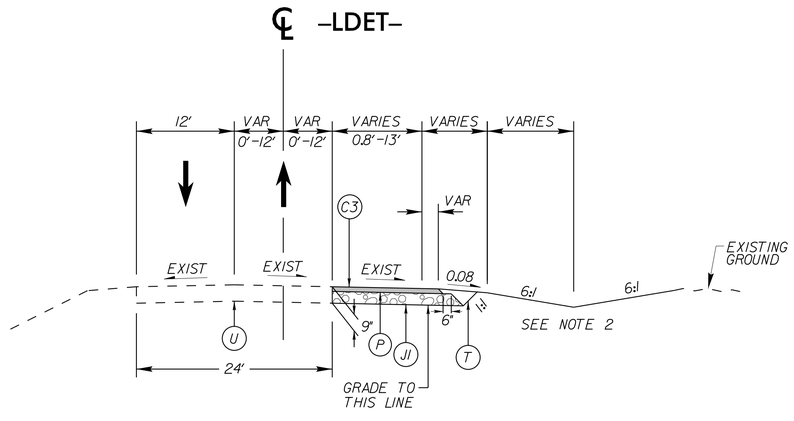
TYPICAL SECTION NO. 18

-DRW2- STA 10+43.00 TO 12+00.00
-DRW3- STA 10+43.00 TO 12+38.00
-DRW4- STA 10+43.00 TO 11+26.90
-DRW5- STA 10+43.00 TO 11+07.00
-DRW7- STA 10+43.00 TO 11+45.00
-DRW8- STA 10+28.00 TO 10+75.00
-DRW10- STA 10+22.00 TO 10+85.00



TYPICAL SECTION NO. 19

TEMPORARY WIDENING
-LDET- STA 94+50.58 TO 97+73.77



TYPICAL SECTION NO. 20

TEMPORARY WIDENING
-LDET- STA 97+73.77 TO 100+14.37

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RIGHT-OF-WAY REV.

CONST. REV.

PROJECT REFERENCE NO.	SHEET NO.
R-5705A	2A-6

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024436 JEFFREY W. MOORE 8/9/2023

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022896 CLARK S. MORRISON 8/10/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

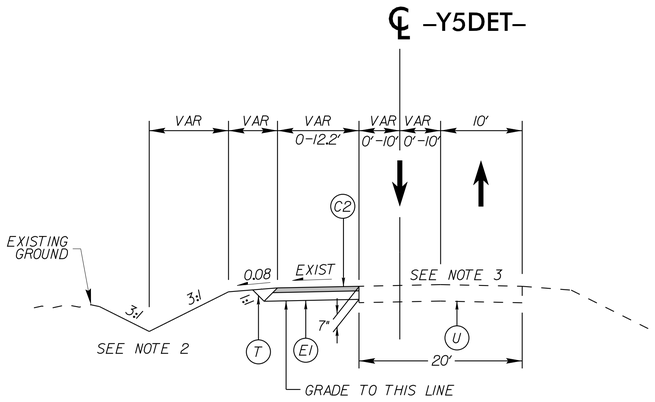
PAVEMENT SCHEDULE

C1	PROPOSED APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROPOSED APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROPOSED APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C4	PROPOSED VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 1.5" IN DEPTH.
C5	PROPOSED VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
D1	PROPOSED APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROPOSED APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D3	PROPOSED VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2.5" OR GREATER THAN 4" IN DEPTH
E1	PROPOSED APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROPOSED APPROX. 4.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.
E3	PROPOSED VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" OR GREATER THAN 5.5" IN DEPTH.
J1	PROPOSED 6" AGGREGATE BASE COURSE
J2	PROPOSED 8" AGGREGATE BASE COURSE
P	PRIME COAT AT THE RATE OF 0.35 GAL PER SQ.YD
R1	PROPOSED 1'-6" CONCRETE CURB & GUTTER
R2	PROPOSED 2'-9" CONCRETE CURB & GUTTER
R3	PROPOSED 5" MONOLITHIC CONCRETE ISLAND (KEYED-IN)
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING ASPHALT PAVEMENT, 2.5" DEPTH
V2	MILLING ASPHALT PAVEMENT, 3" DEPTH
W1	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL W1 FOR RESURFACING)
W2	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL W2 FOR RESURFACING)

5/14/99

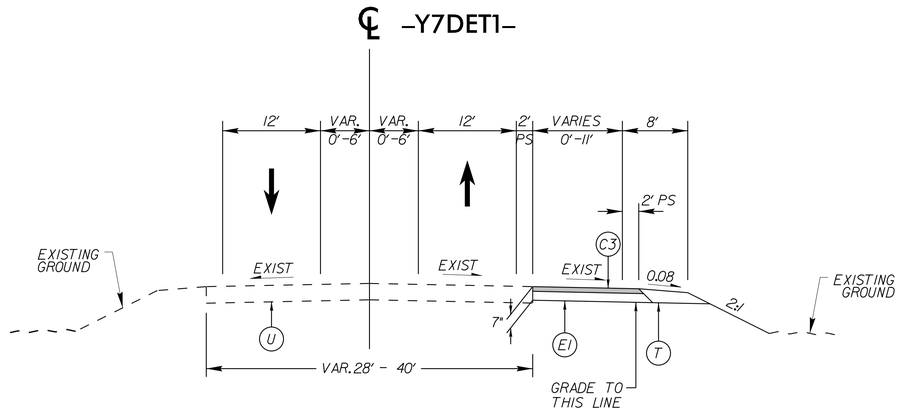
REVISIONS

NOTES:
1. PAVEMENT EDGE SLOPES 1:1 UNLESS OTHERWISE INDICATED
2. TEMPORARY SHOULDERS AND SLOPES MATCH THE FINAL CONDITIONS.
3. MATCH GRADE AND SLOPE OF PROPOSED -Y5-/-L-/-Y5A- CONSTRUCTION



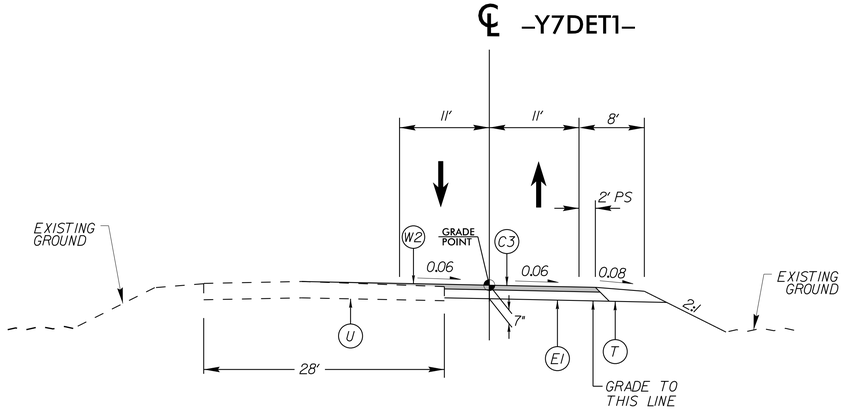
TYPICAL SECTION NO. 21

TEMPORARY WIDENING
-Y5DET- STA 11+69.18 TO 12+94.56 (LT)
-Y5DET- STA 14+10.49 TO 15+88.94 (RT)



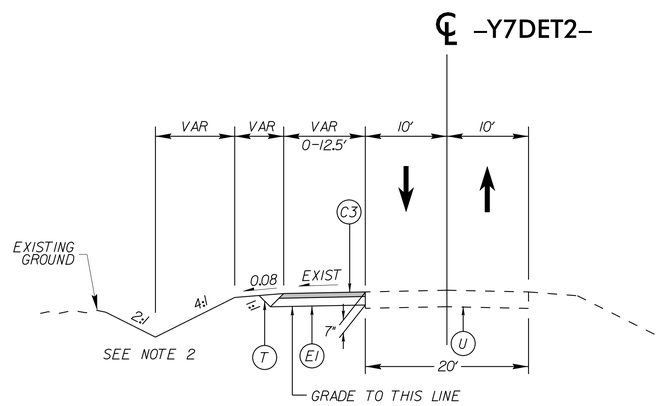
TYPICAL SECTION NO. 22

TEMPORARY WIDENING
-Y7DET1- STA 12+46.51 TO 15+61.19
-Y7DET1- STA 23+37.98 TO 27+86.59



TYPICAL SECTION NO. 23

TEMPORARY WIDENING
-Y7DET1- STA 15+61.19 TO 23+37.98



TYPICAL SECTION NO. 24

TEMPORARY WIDENING
-Y7DET2- STA 22+52.23 TO 24+15.92 (LT)

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RIGHT-OF-WAY REV.

CONST. REV.

PROJECT REFERENCE NO.	SHEET NO.
R-5705A	2A-7

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024406 JEFFREY W. MOORE 8/8/2023 ENGINEER

PAVEMENT DESIGN ENGINEER

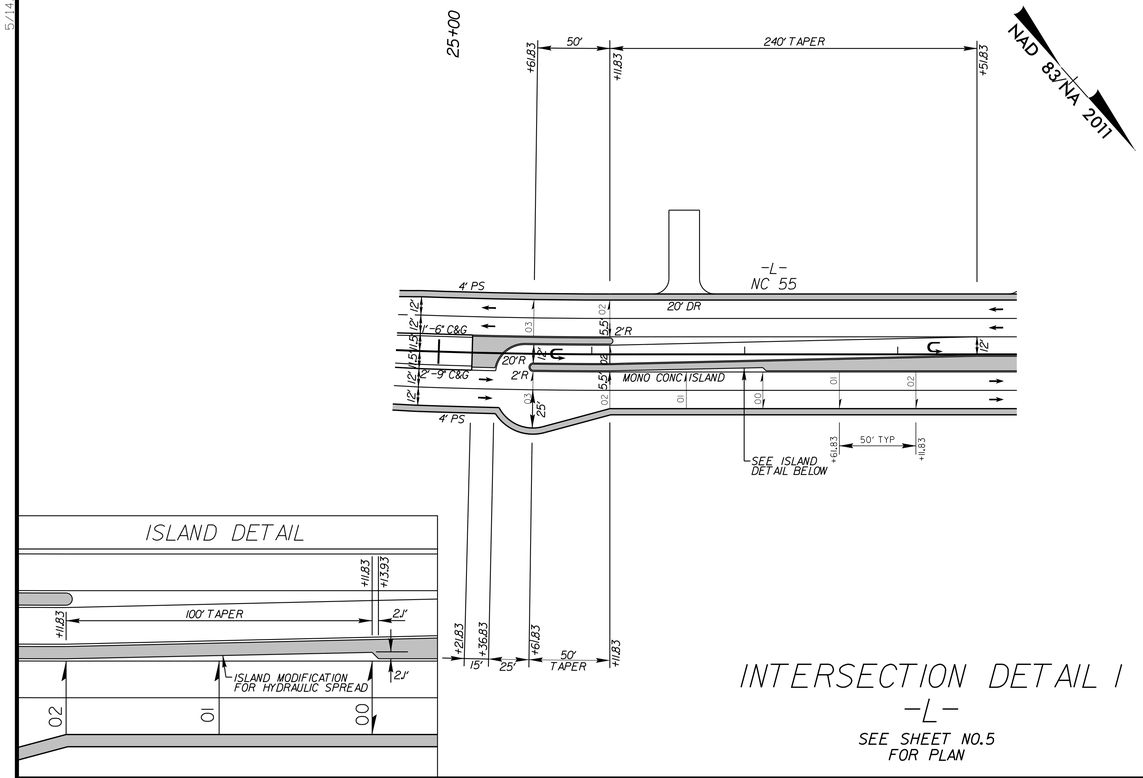
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022896 CLARK S. MORRISON 8/8/2023 ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PAVEMENT SCHEDULE

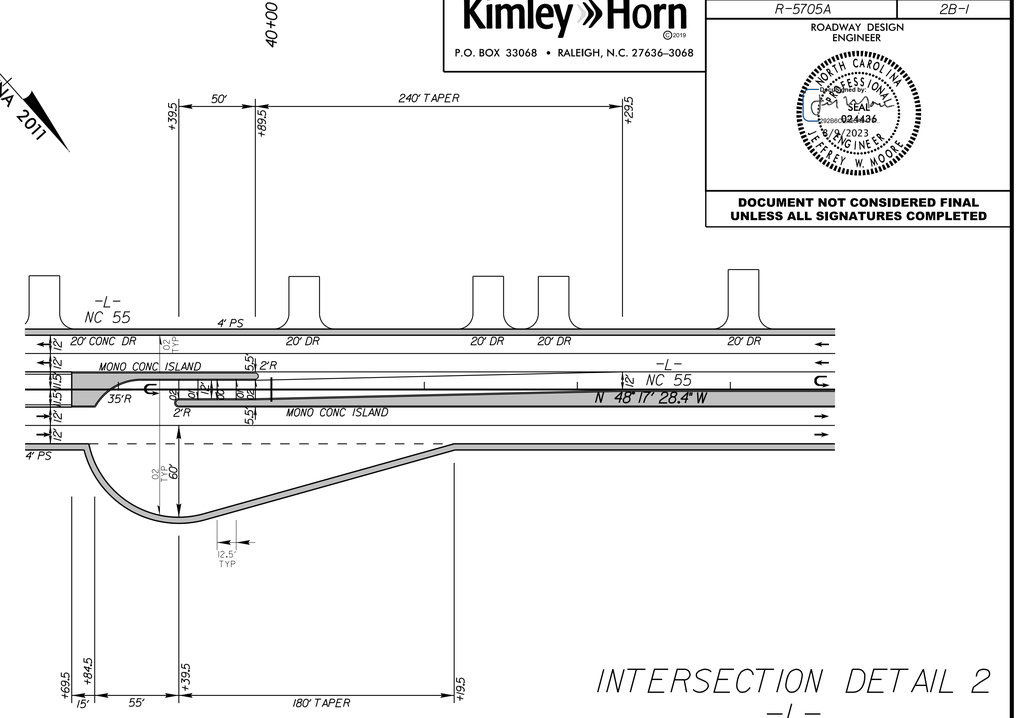
C1	PROPOSED APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROPOSED APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROPOSED APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C4	PROPOSED VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 1.5" IN DEPTH.
C5	PROPOSED VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
D1	PROPOSED APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROPOSED APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D3	PROPOSED VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2.5" OR GREATER THAN 4" IN DEPTH
E1	PROPOSED APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROPOSED APPROX. 4.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.
E3	PROPOSED VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" OR GREATER THAN 5.5" IN DEPTH.
J1	PROPOSED 6" AGGREGATE BASE COURSE
J2	PROPOSED 8" AGGREGATE BASE COURSE
P	PRIME COAT AT THE RATE OF 0.35 GAL PER SQ.YD
R1	PROPOSED 1'-6" CONCRETE CURB & GUTTER
R2	PROPOSED 2'-9" CONCRETE CURB & GUTTER
R3	PROPOSED 5" MONOLITHIC CONCRETE ISLAND (KEYED-IN)
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING ASPHALT PAVEMENT, 2.5" DEPTH
V2	MILLING ASPHALT PAVEMENT, 3" DEPTH
W1	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL W1 FOR RESURFACING)
W2	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL W2 FOR RESURFACING)

5/14/99



INTERSECTION DETAIL 1
-L-

SEE SHEET NO.5
FOR PLAN



INTERSECTION DETAIL 2
-L-

SEE SHEET NO.6
FOR PLAN

PROJECT REFERENCE NO.	SHEET NO.
R-5705A	2B-1

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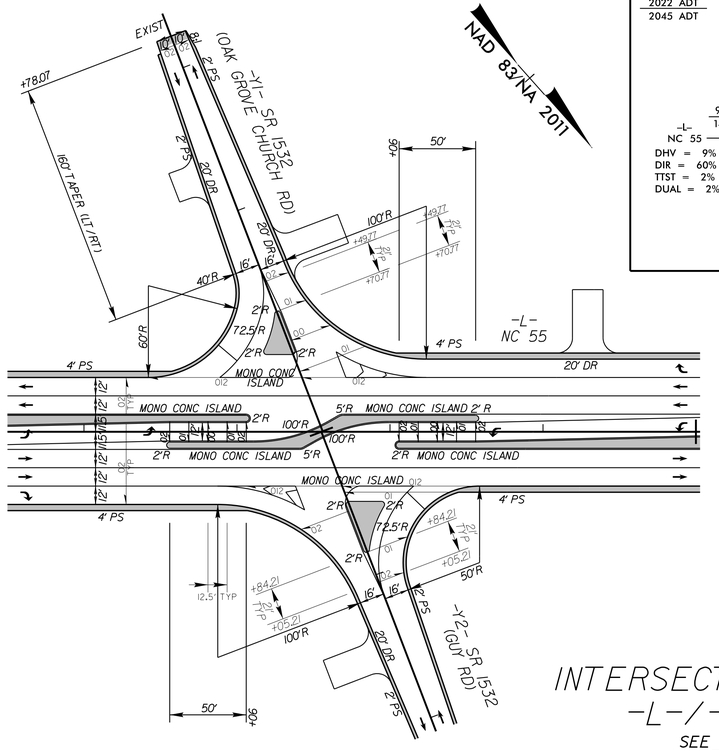
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024436 ENGINEER JEFFREY W. MOORE
Digitally signed by
Date: 8/9/2023

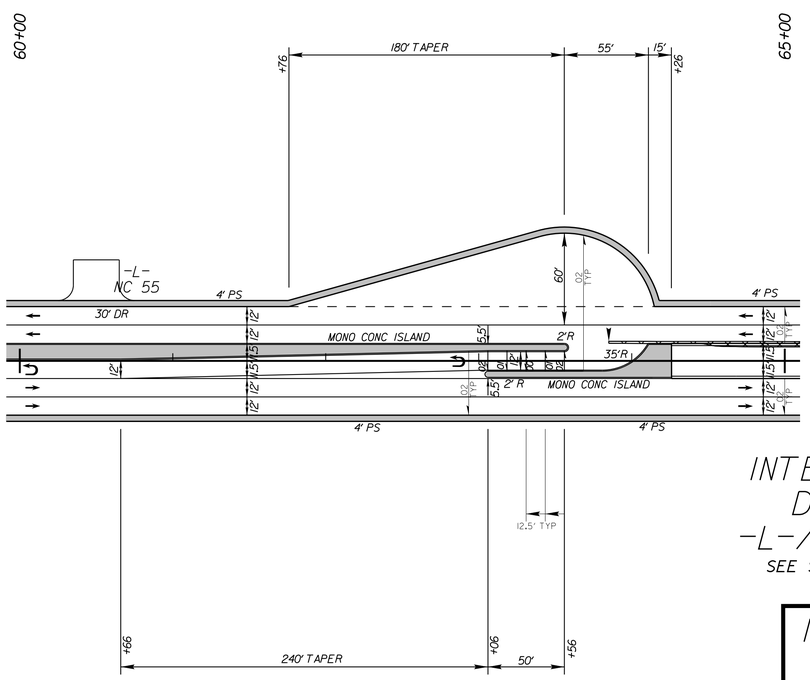
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



2022 ADT / 2045 ADT		
	-Y1- SR 1532 (OAK GROVE CHURCH RD)	DHV = 9% DIR = 60% TTST = 1% DUAL = 3%
	3300 / 7300	
9300 / 14100	500 / 1100	1700 / 3000 — 11000 / 17100
-L- NC 55		-L- NC 55
DHV = 9% DIR = 60% TTST = 2% DUAL = 2%	300 / 800	900 / 1900 DHV = 9% DIR = 60% TTST = 2% DUAL = 2%
	2300 / 5900	DHV = 9% DIR = 60% TTST = 1% DUAL = 4%
	-Y2- SR 1532 (GUY RD)	

INTERSECTION DETAIL 3
-L-/-Y1-/-Y2-

SEE SHEET NO.7
FOR PLAN



INTERSECTION DETAIL 4
-L-/-Y1-/-Y2-

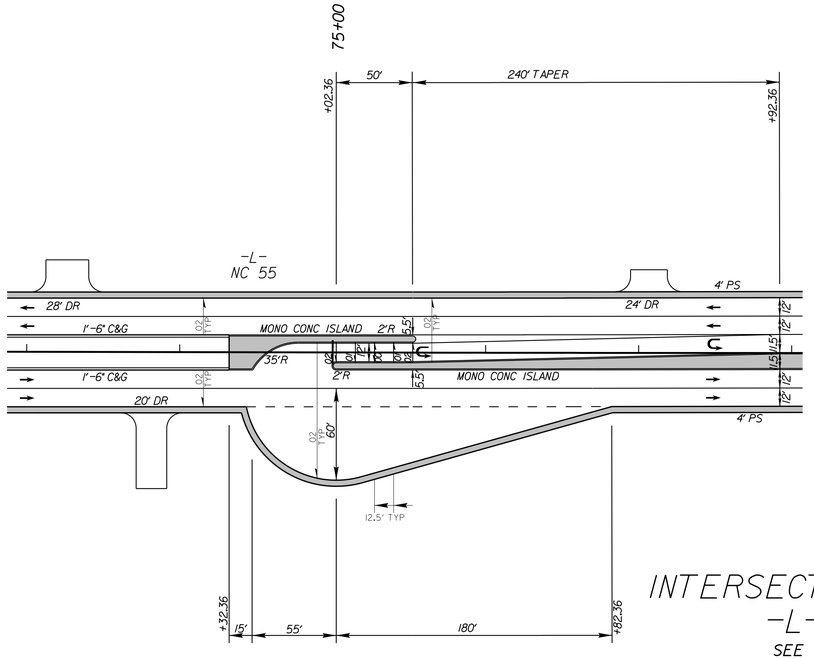
SEE SHEET NOS. 7 & 8
FOR PLAN

INTERSECTION DETAILS

25 0 50

8/8/2023

5/14/99



INTERSECTION DETAIL 5
-L-/-Y3-

SEE SHEET NO.8
FOR PLAN

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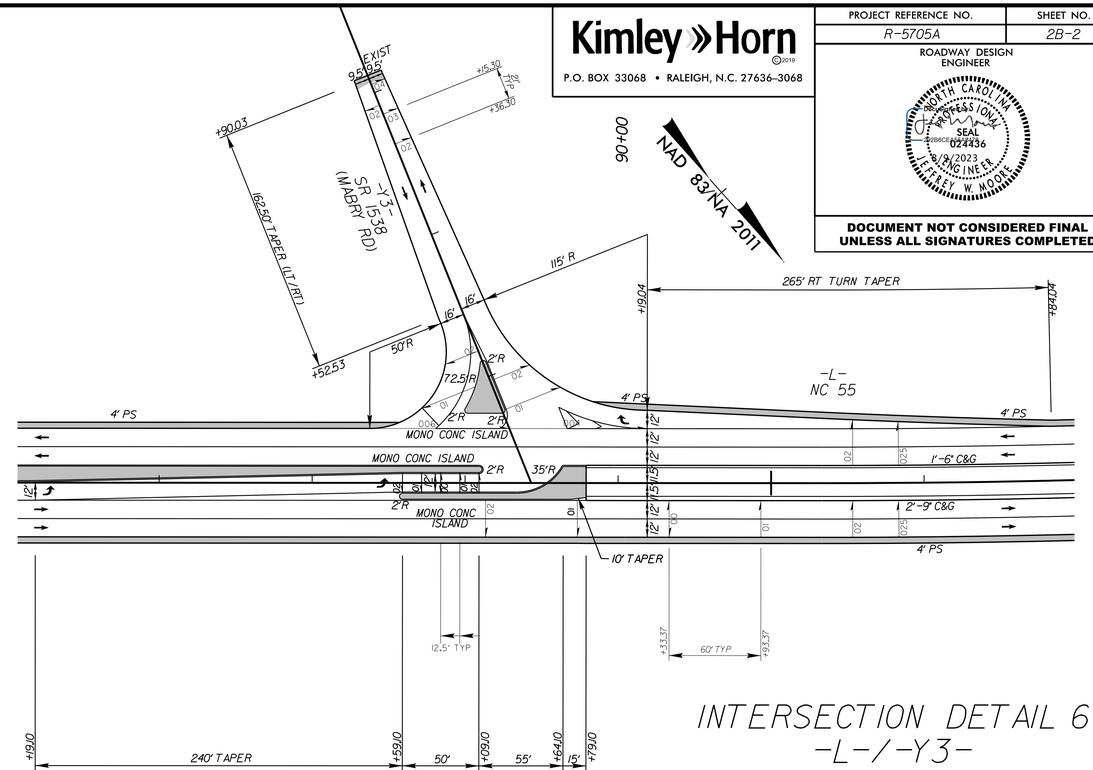
PROJECT REFERENCE NO.	SHEET NO.
R-5705A	2B-2

ROADWAY DESIGN ENGINEER

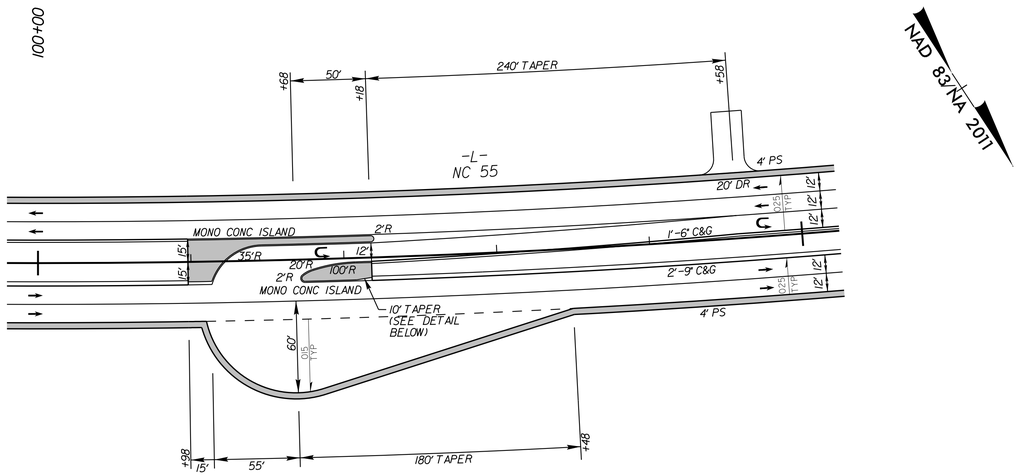
NORTH CAROLINA PROFESSIONAL SEAL 024436 ENGINEER JEFFREY W. MOORE 8/9/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



INTERSECTION DETAIL 6
-L-/-Y3-

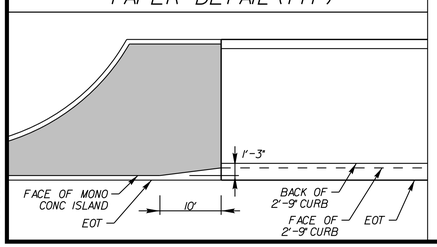
SEE SHEET NO.9
FOR PLAN

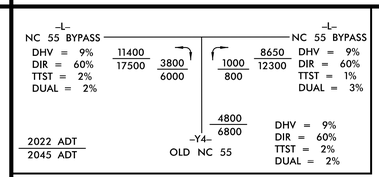


INTERSECTION DETAIL 7
-L-/-Y4-

SEE SHEET NO.10
FOR PLAN

MONO CONC ISLAND TAPER DETAIL (TYP)





INTERSECTION DETAIL 8
-L-/-Y4-

SEE SHEET NO.11
FOR PLAN

INTERSECTION DETAILS

25 0 50

8/8/2023

5/14/99

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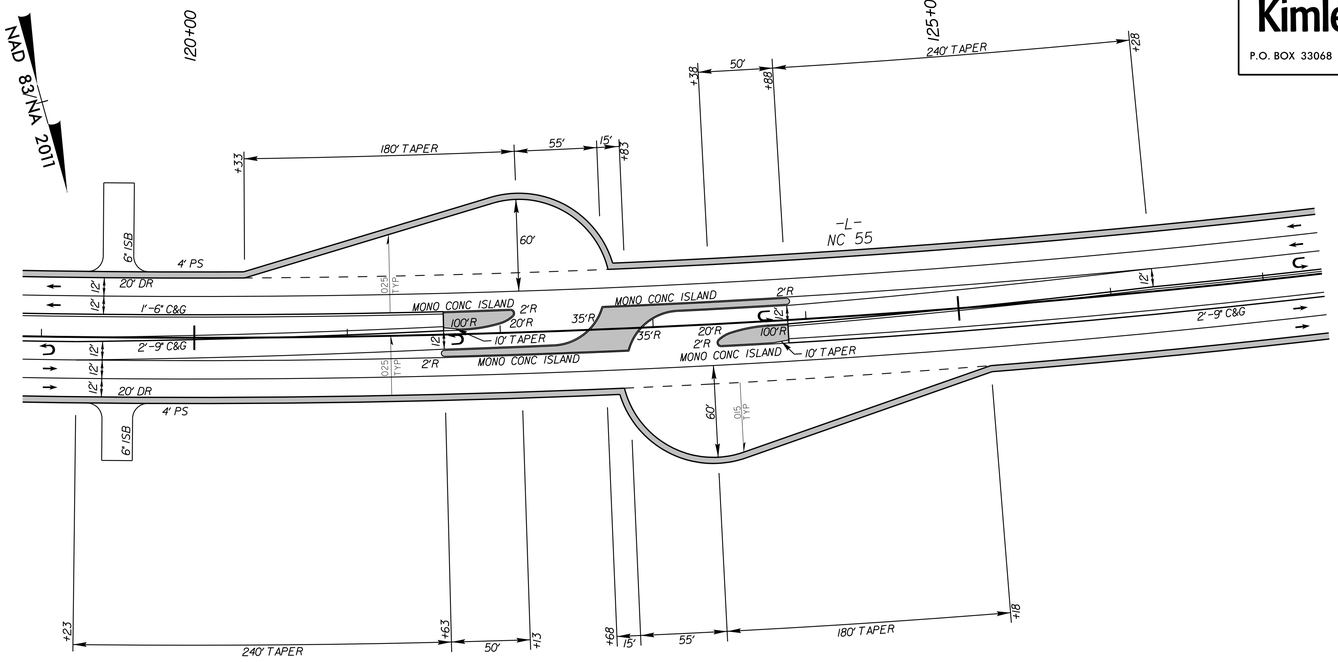
PROJECT REFERENCE NO.	SHEET NO.
R-5705A	2B-3

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024436 ENGINEER JEFFREY W. MOORE
8/9/2023

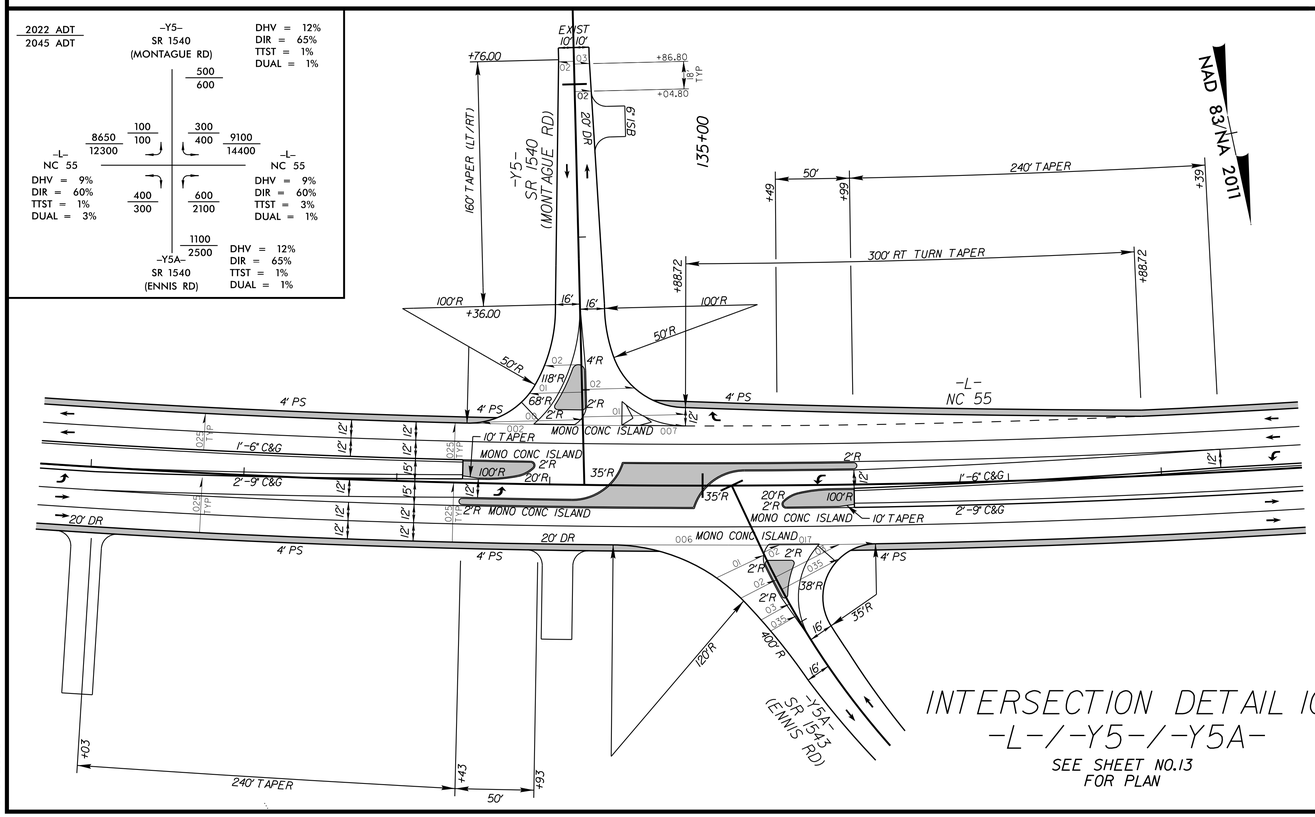
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



INTERSECTION DETAIL 9
-L-/-Y4-/-Y5-

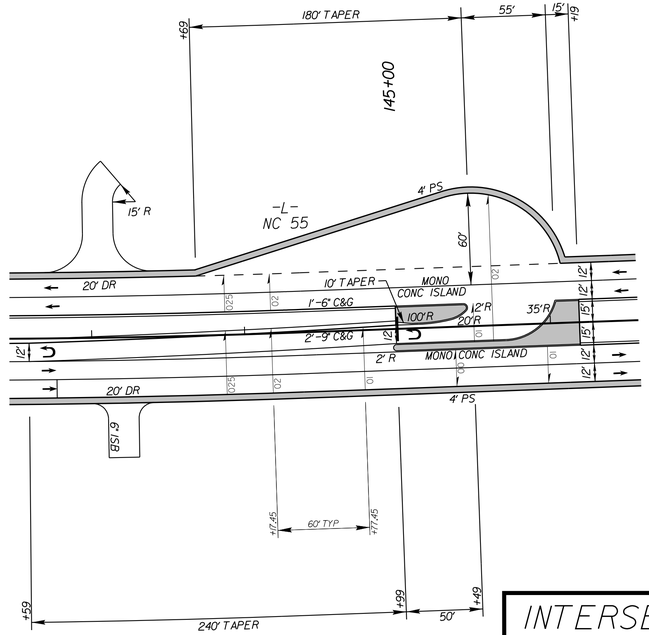
SEE SHEET NO.12
FOR PLAN

2022 ADT	-Y5-	DHV = 12%
2045 ADT	SR 1540 (MONTAGUE RD)	DIR = 65%
		TTST = 1%
	500 / 600	DUAL = 1%
8650 / 12300	100 / 100	300 / 400 — 9100 / 14400
-L- NC 55		-L- NC 55
DHV = 9%		DHV = 9%
DIR = 60%	400 / 300	600 / 2100 — DIR = 60%
TTST = 1%		TTST = 3%
DUAL = 3%		DUAL = 1%
	1100 / 2500	DHV = 12%
	-Y5A- SR 1540 (ENNIS RD)	DIR = 65%
		TTST = 1%
		DUAL = 1%



INTERSECTION DETAIL 10
-L-/-Y5-/-Y5A-

SEE SHEET NO.13
FOR PLAN



INTERSECTION DETAIL 11
-L-/-Y5-

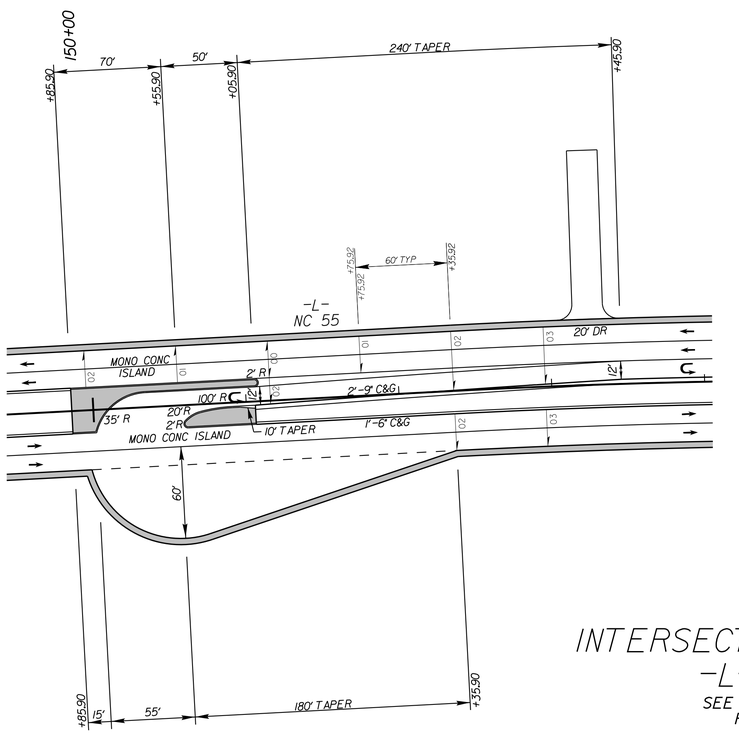
SEE SHEET NO.13
FOR PLAN

INTERSECTION DETAILS

25 0 50

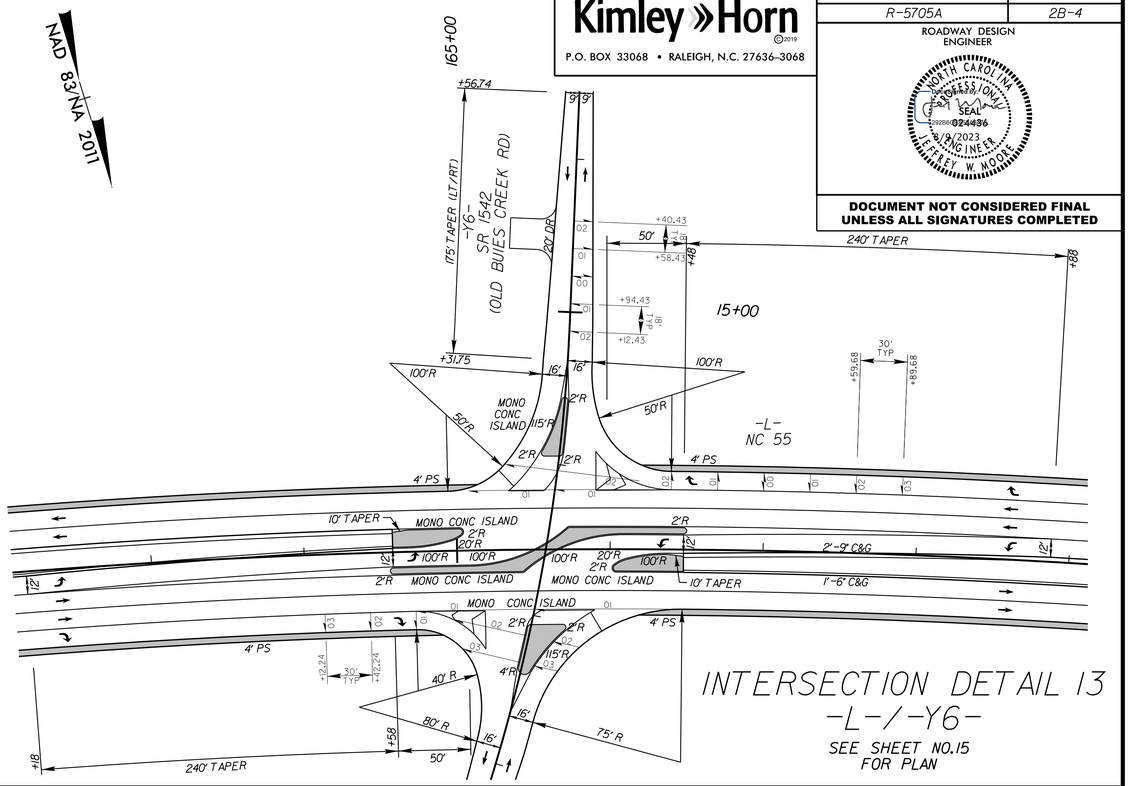
8/8/2023

5/14/99



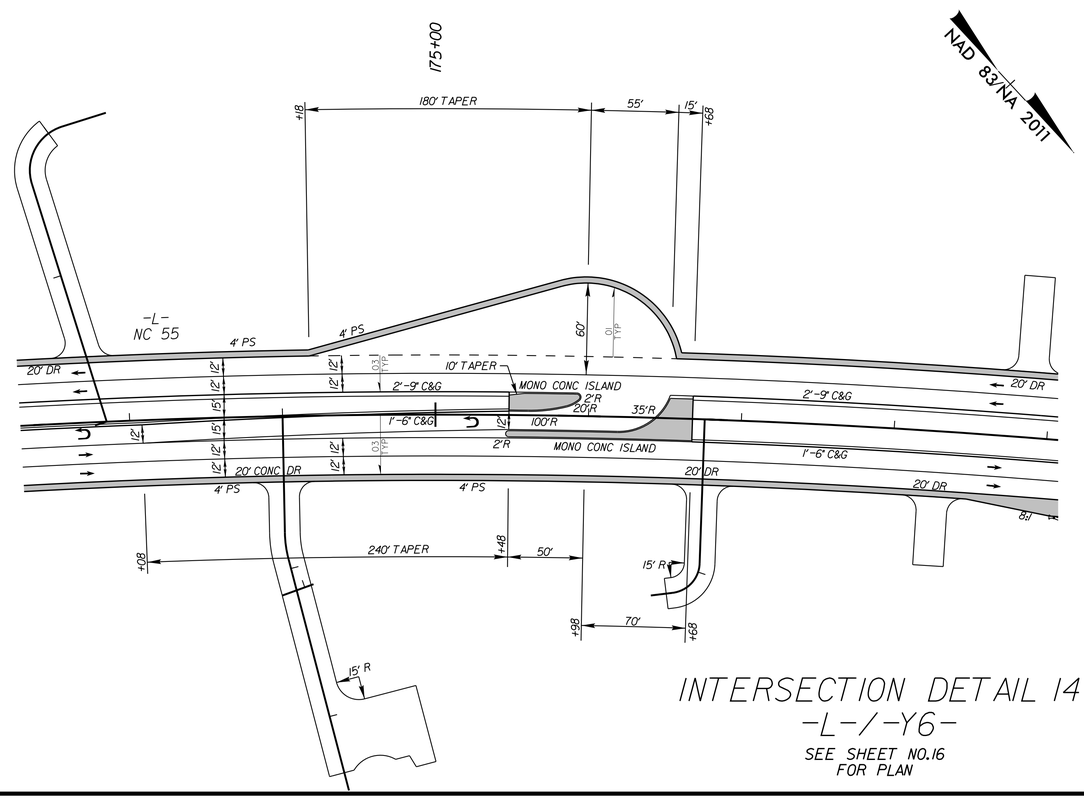
INTERSECTION DETAIL 12
-L-/-Y6-

SEE SHEET NO.14
FOR PLAN



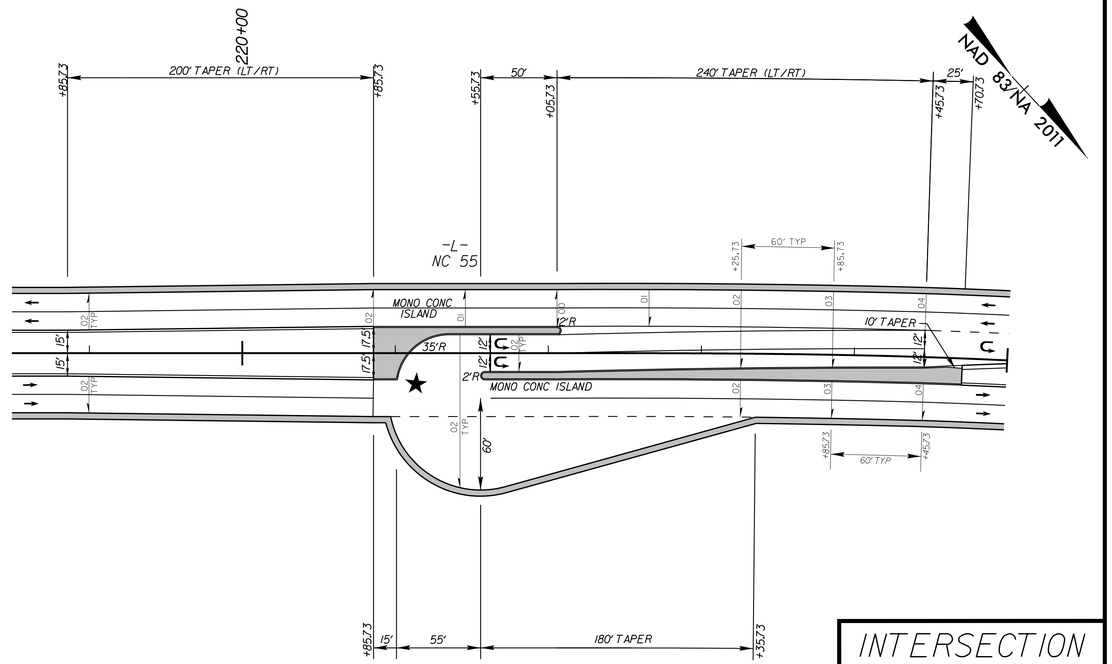
INTERSECTION DETAIL 13
-L-/-Y6-

SEE SHEET NO.15
FOR PLAN



INTERSECTION DETAIL 14
-L-/-Y6-

SEE SHEET NO.16
FOR PLAN



★ TRAFFIC SIGNAL

INTERSECTION DETAIL 15
-L-/-Y7-

SEE SHEET NO.19
FOR PLAN

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PROJECT REFERENCE NO.	SHEET NO.
R-5705A	2B-4

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024436 8/8/2023 JEFFREY W. MOORE

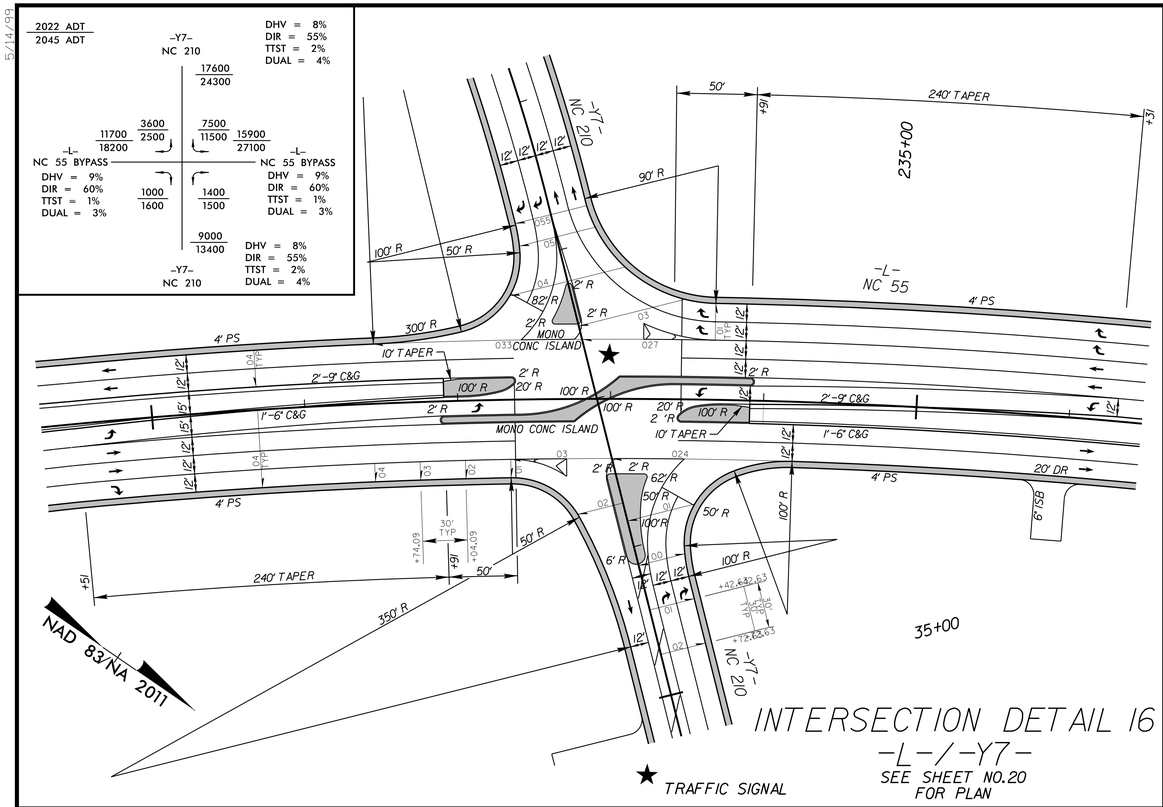
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

INTERSECTION DETAILS

25 0 50

8/8/2023

5/14/99



INTERSECTION DETAIL 16
-L-/-Y7-

SEE SHEET NO.20
FOR PLAN

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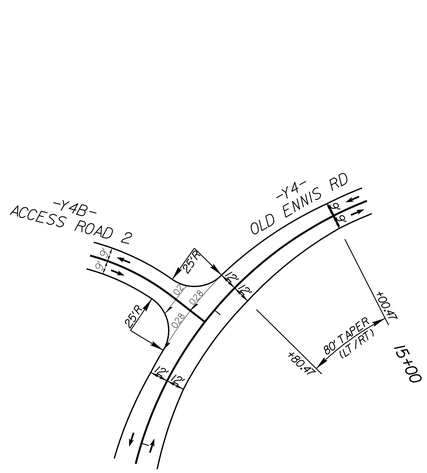
PROJECT REFERENCE NO.	SHEET NO.
R-5705A	2B-5

ROADWAY DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

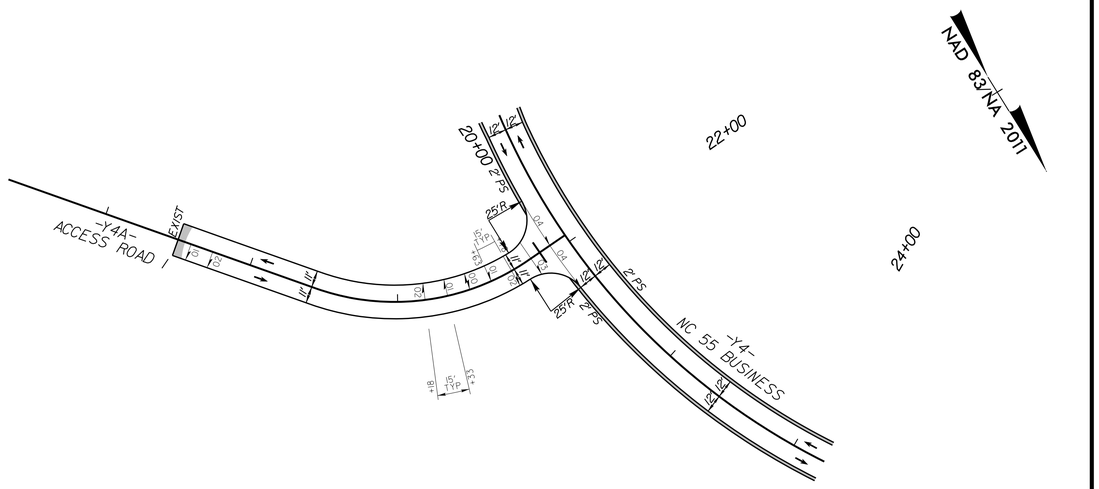
INTERSECTION DETAIL 17
-L-/-Y7-

SEE SHEET NO.21
FOR PLAN



INTERSECTION DETAIL 18
-Y4-/-Y4B-

SEE SHEET NO.11
FOR PLAN



INTERSECTION DETAIL 19
-Y4-/-Y4A-

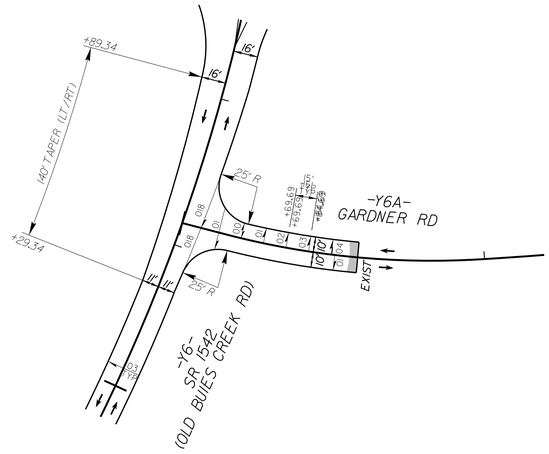
SEE SHEET NO.11
FOR PLAN

INTERSECTION DETAILS

25 0 50

8/8/2023

5/14/99



NAD 83/NA 2011

20+00

INTERSECTION DETAIL 20
-Y6-/-Y6A-

SEE SHEET NO.15
FOR PLAN

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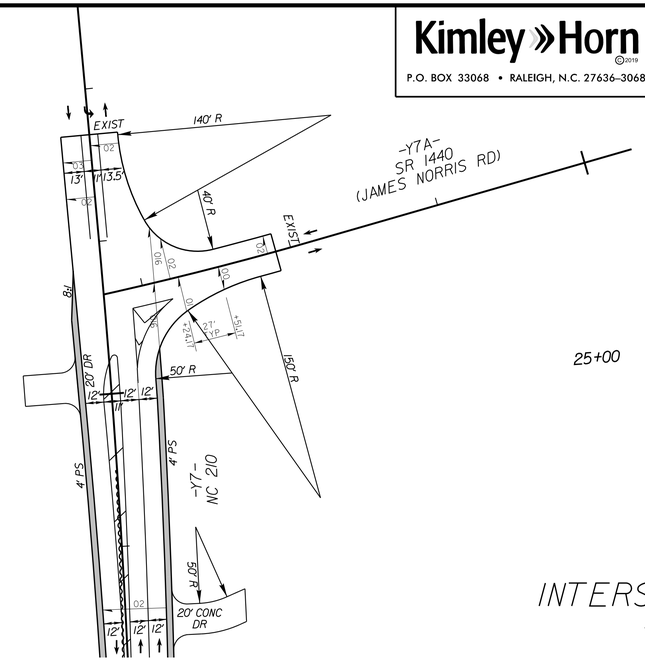
PROJECT REFERENCE NO.	SHEET NO.
R-5705A	2B-6

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024436 8/9/2023 JEFFREY W. MOORE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

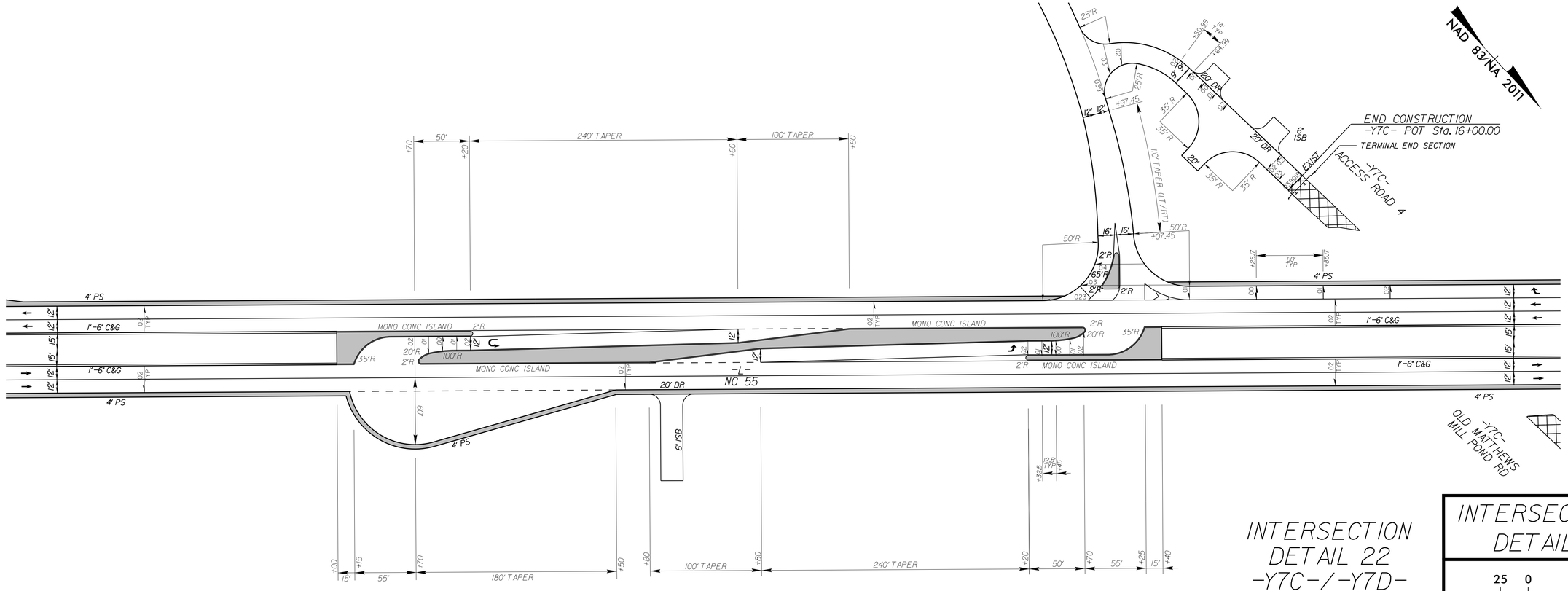


25+00

NAD 83/NA 2011

INTERSECTION DETAIL 21
-Y7-/-Y7A-

SEE SHEET NO.23
FOR PLAN



INTERSECTION DETAIL 22
-Y7C-/-Y7D-

SEE SHEET NO.18
FOR PLAN

INTERSECTION DETAILS

25 0 50

8/8/2023

REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
R-5705A	2B-7
R/W SHEET NO. 4	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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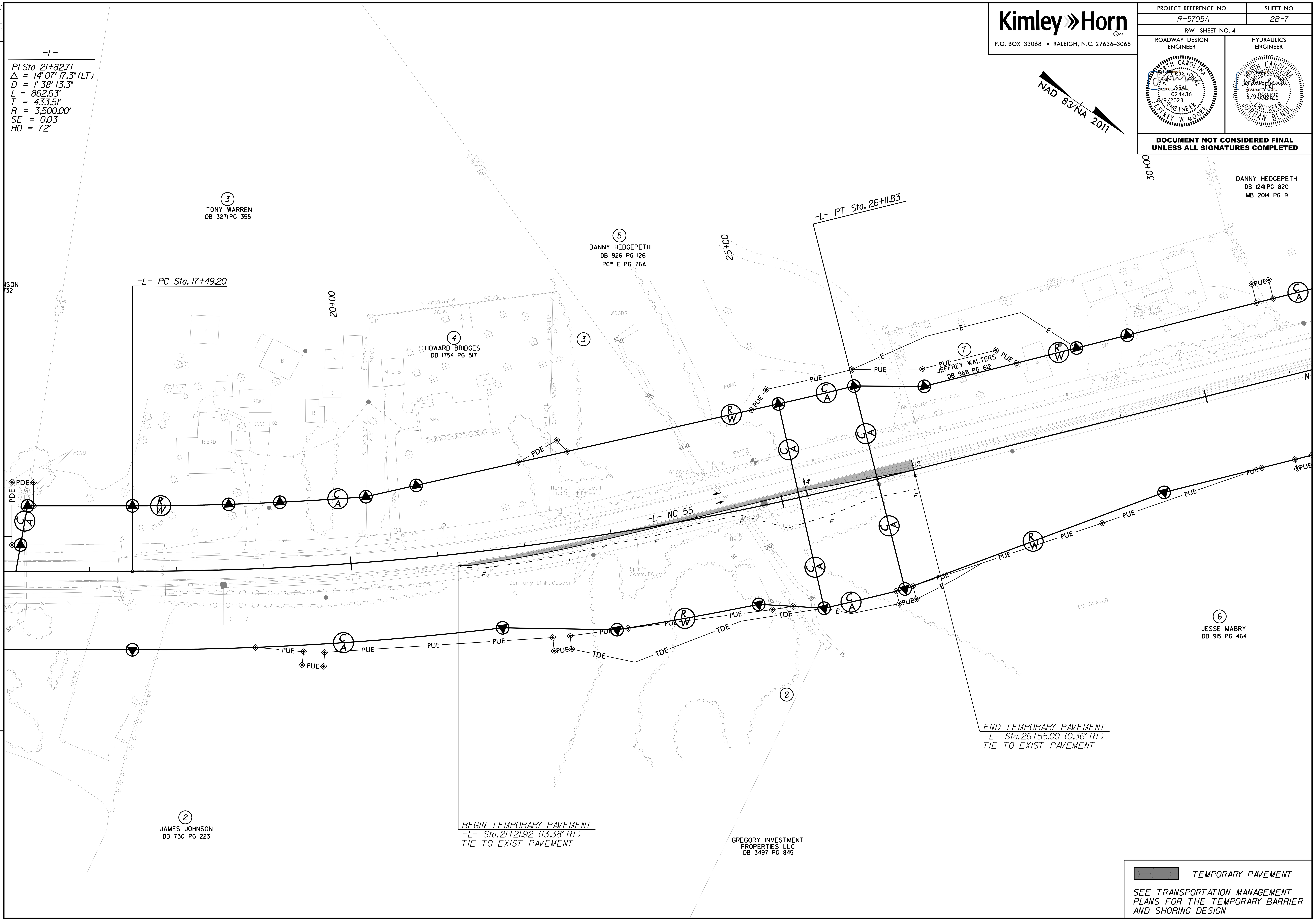

TEMPORARY PAVEMENT

SEE TRANSPORTATION MANAGEMENT PLANS FOR THE TEMPORARY BARRIER AND SHORING DESIGN

5/14/99

8/8/2023

PROJECT REFERENCE NO.	SHEET NO.
R-5705A	2B-8
R/W SHEET NO. 4	

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ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024436 JEFFREY W. MOORE 8/9/2023

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 050228 JORDAN BENDT 8/9/2023

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REVISIONS
5/14/99

8/8/2023

NAD 83/NA 2011

-LDET-

PI Sta 93+75.29
△ = 1° 19' 20.3" (LT)
D = 0° 52' 41.3"
L = 150.58'
T = 75.29'
R = 6,524.75'

PI Sta 96+12.31
△ = 2° 50' 19.7" (LT)
D = 0° 52' 40.2"
L = 323.39'
T = 161.73'
R = 6,527.00'

PI Sta 98+88.92
△ = 5° 47' 52.3" (RT)
D = 2° 31' 26.6"
L = 229.71'
T = 114.95'
R = 2,270.00'

-LDET- PC Sta. 93+00.00 =
-L- POC Sta.93+00.00 (23.82' RT)

-LDET- PCC Sta. 94+50.58

-LDET- PRC Sta. 97+73.97

-LDET- POT Sta. 101+06.29 =
-L- POC Sta.101+00.00 (64.18' RT)

-LDET- PT Sta. 100+03.68

BEGIN GRADE
BEGIN TEMPORARY PAVEMENT
-LDET- Sta.94+50.58 (0' LT) =
-L- Sta. 94+49.84 (38.70' RT)
TIE TO CONSTRUCTED -L- PAVEMENT

END GRADE
-LDET- Sta. 97+73.77 (0' LT) =
-L- Sta.97+71.79 (29.72' RT)

END TEMPORARY PAVEMENT
-LDET- Sta.100+14.37 (13' RT) =
-L- Sta. 100+08.07 (62.65' RT)
TIE TO EXIST PAVEMENT

51 ISABEL LOREDO
DB 3258 PG 986
MB 2014 PG 313

52 W E COLLIER
DB 2768 PG 34

53 RILDA COLLIER LIFE ESTATE
DB 3278 PG 598

54 RILDA COLLIER LIFE ESTATE
DB 3278 PG 600

55 CLAY E. GARDNER
DENISE P. GARDNER
DB 3636 PG 222
MB 2009 PG 275

56 JERRY TUCKER
DB 2208 PG 537
MB 2001PG 641

57 RIVER RUN DEVELOPERS
DB 3454 PG 424

49 CLAY E. GARDNER
DENISE P. GARDNER
DB 3677 PG 997

KENNETH SNIPES
DB 3372 PG 76

95

100

TEMPORARY PAVEMENT

SEE SHEET 39 FOR -LDET- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
R-5705A	2B-9
R/W SHEET NO. 4	

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ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024436 JEFFREY W. MOORE
SEAL 024436 8/9/2023 ENGINEER JEFFREY W. MOORE

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 052128 JORDAN BEND
SEAL 052128 8/9/2023 ENGINEER JORDAN BEND

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NAD 83/NA 2011

5/14/99 REVISIONS

8/8/2023

-Y5DET-

PI Sta 13+45.11
△ = 47° 25' 36.0" (LT)
D = 10° 25' 02.7"
L = 455.26'
T = 241.59'
R = 550.00'

PI Sta 17+69.62
△ = 1° 02' 29.9" (LT)
D = 1° 00' 00.0"
L = 104.16'
T = 52.08'
R = 5,729.58'

-Y5DET- POT Sta. 10+00.00 =
-Y5- POT Sta.19+18.21 (0' LT)

-Y5DET- PC Sta. 11+03.52

BEGIN TEMPORARY PAVEMENT
-Y5DET- Sta.11+69.18 (10' LT) =
-Y5- Sta.20+86.04 (13.84' LT)
TIE TO CONSTRUCTED Y5 PAVEMENT

END TEMPORARY PAVEMENT
-Y5DET- Sta.12+94.56 (10' LT) =
-Y5- Sta.22+05.54 (42.25' LT)
TIE TO CONSTRUCTED Y5 PAVEMENT

BEGIN TEMPORARY PAVEMENT
-Y5DET- Sta.14+10.49 (10' RT) =
-Y5A- Sta.10+40.38 (41.08' RT)
TIE TO CONSTRUCTED Y5A PAVEMENT

END TEMPORARY PAVEMENT
-Y5DET- Sta.15+88.94 (10' RT)=
-Y5A- Sta.12+11.34 (13.09' RT)
TIE TO CONSTRUCTED Y5A PAVEMENT

-Y5DET- PT Sta. 15+58.79

-Y5DET- PC Sta. 17+17.54

-Y5DET- PT Sta. 18+21.71

-Y5DET- POT Sta. 19+31.38 =
-Y5A- POT Sta.15+52.50 (0' LT)

JON SALSBURY
DB 2382 PG 966
PC# F PG 620A

ADRIANO ALVAREZ
DB 2199 PG 280

JUAN GONZALEZ
DB 2377 PG 712
PC# F PG 620A

DAVID FELDMANN
DB 3586 PG 623
PC# F PG 620A

BENNIE MANGUM
DB 799 PG 611

WILLIAM HAWLEY
DB 1889 PG 108
MB 2016 PG 67

JOSEPH LIPSCOMB
DB 1903 PG 67

LORI MCVEIGH PERRY
LAYTON ANDREW PERRY
DB 3743 PG 300

TONY MABRY
DB 1417 PG 6
MB 2000 PG 279

CHRISTY JORDAN
DB 3524 PG 729
MB 2000 PG 466

STEPHEN YEO
DB 3359 PG 962
MB 2000 PG 466

LETESHA WYNN
DB 2136 PG 830
MB 2000 PG 466

BOBBY MABRY
DB 3404 PG 350
MB 2016 PG 25

SHIRLEY HAWLEY
DB 3184 PG 180

DANIEL HONEYCUT
DB 3182 PG 966

THOMAS
DB 217

TEMPORARY PAVEMENT

PROJECT REFERENCE NO.	SHEET NO.
R-5705A	2B-10
R/W SHEET NO. 24	

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ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024436 ENGINEER JEFFREY W. MOORE 8/9/2023

NORTH CAROLINA PROFESSIONAL SEAL 052128 ENGINEER JORDAN BENDL 8/9/2023

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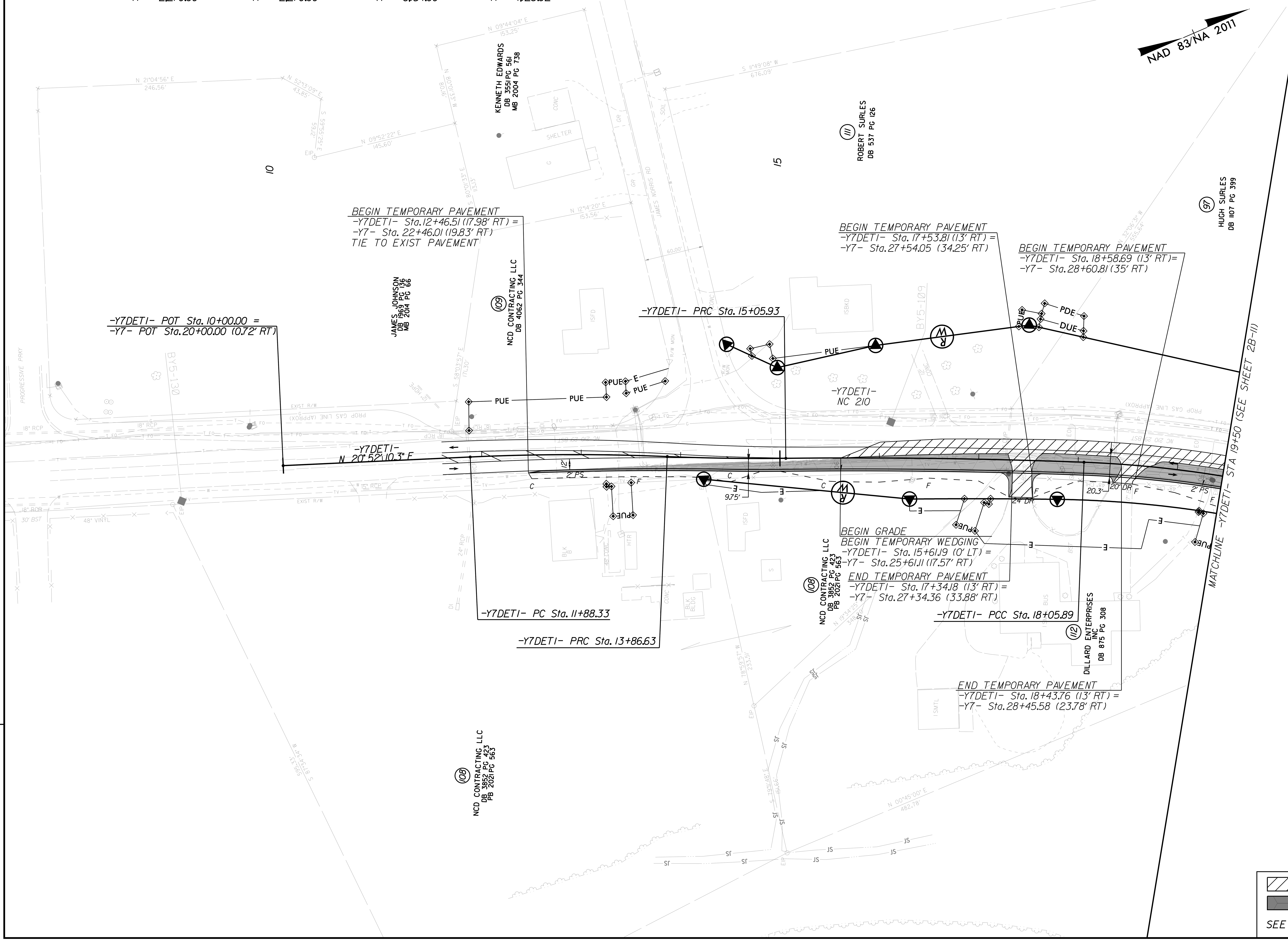
-Y7DET1-

PI Sta 12+87.54	PI Sta 14+46.29	PI Sta 16+55.94	PI Sta 19+71.12
Δ = 5° 00' 18.5" (RT)	Δ = 3° 00' 40.9" (LT)	Δ = 2° 47' 33.8" (RT)	Δ = 16° 43' 35.1" (RT)
D = 2° 31' 26.6"	D = 2° 31' 26.6"	D = 0° 55' 51.7"	D = 5° 05' 52.3"
L = 198.30'	L = 119.31'	L = 299.96'	L = 328.11'
T = 99.21'	T = 59.67'	T = 150.01'	T = 165.23'
R = 2,270.00'	R = 2,270.00'	R = 6,154.00'	R = 1,123.92'



TEMPORARY WEDGING

TEMPORARY PAVEMENT

SEE SHEET 40 FOR -Y7DET1- PROFILE

REVISIONS

5/14/99

8/8/2023

REVISIONS 5/14/99

8/8/2023

-Y7DET1-

PI Sta 19+71.12
△ = 16° 43' 35.1" (RT)
D = 5° 05' 52.3"
L = 328.11'
T = 165.23'
R = 1,123.92'

PI Sta 24+20.21
△ = 1° 15' 18.8" (RT)
D = 2° 30' 54.6"
L = 49.91'
T = 24.95'
R = 2,278.00'

PI Sta 27+47.51
△ = 4° 48' 31.2" (LT)
D = 2° 31' 14.6"
L = 190.77'
T = 95.44'
R = 2,273.00'

PI Sta 29+39.03
△ = 4° 51' 10.2" (RT)
D = 2° 31' 26.6"
L = 192.26'
T = 96.19'
R = 2,270.00'

PI Sta 31+05.11
△ = 0° 14' 00.1" (RT)
D = 0° 10' 00.0"
L = 140.01'
T = 70.00'
R = 34,377.47'

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PROJECT REFERENCE NO.	SHEET NO.
R-5705A	2B-11
R/W SHEET NO. 24	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024436 JEFFREY W. MOORE
8/9/2023
JEFFREY W. MOORE, ENGINEER

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL JORDAN BENDT
8/9/2023
JORDAN BENDT, ENGINEER

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NAD 83/NA 2011

END GRADE
END TEMPORARY WEDGING
-Y7DET1- Sta. 23+37.98 (0' LT) =
-Y7- Sta. 33+45.93 (17.80' RT)

-Y7DET1- PC Sta. 26+52.07

-Y7DET1- POT Sta. 32+92.52 =
-Y7- POT Sta. 43+00.00 (0' LT)

-Y7DET1- NC 210

-Y7DET1- N 42° 22' 56.9" E

-Y7DET1- N 43° 38' 15.6" E

N 43° 54' 54.7" E

-Y7DET1- PT Sta. 21+34.00

-Y7DET1- PT Sta. 24+45.16

-Y7DET1- PC Sta. 23+95.26

-Y7DET1- PCC Sta. 30+35.10

-Y7DET1- PRC Sta. 28+42.84

-Y7DET1- PT Sta. 31+75.11

END TEMPORARY PAVEMENT
-Y7DET1- Sta. 27+86.59 (13' RT) =
-Y7- Sta. 37+95.21 (25' RT)
TIE TO EXIST PAVEMENT

MATCHLINE -Y7DET1- STA 19+50 (SEE SHEET 2B-10)

SEE SHEET 2B-10

HUGH SURLES DB 107 PG 399

LARRY BARNES
DB 2421 PG 655
MB 2006 PG 407

LAMCO CUSTOM BUILDERS LLC DB 3549 PG 267

WILBERT AMERSON DB 390 PG 648 MB 204 PG 323

DEBORAH MATTHEWS DB 903 PG 584

WALLACE DUNCAN DB 1615 PG 136 MB 2002 PG 431

NUNEZ CONCRETE INC DB 2433 PG 335 MB 2006 PG 892

HANLON FAMILY TRUST DB 1612 PG 643 MB 2006 PG 892

SCOTT CARROLL DB 2420 PG 425 MB 2006 PG 892

MARK WORTMAN DB 2958 PG 98 MB 2002 PG 1391

RICKS INVESTMENTS PROPERTIES DB 2420 PG 451 MB 2006 PG 892

DONALD GREGORY DB 2420 PG 458 MB 2006 PG 892

MICHAEL RABAYDA DB 3245 PG 949

TEMPORARY WEDGING
TEMPORARY PAVEMENT

SEE SHEET 40 FOR -Y7DET1- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
R-5705A	2B-12
R/W SHEET NO. 24	

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ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024436 8/9/2023 ENGINEER JEFFREY W. MOORE

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 052128 8/9/2023 ENGINEER JORDAN BLEND

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REVISIONS 5/14/99

8/8/2023

NAD 83/NA 2011

-Y7DET2-

PI Sta 22+12.19	PI Sta 24+58.63	PI Sta 26+42.48
Δ = 5° 40' 36.3" (LT)	Δ = 8° 38' 47.7" (RT)	Δ = 0° 39' 24.4" (RT)
D = 2° 54' 30.3"	D = 2° 54' 30.3"	D = 0° 55' 31.7"
L = 195.18'	L = 297.30'	L = 70.97'
T = 97.67'	T = 148.93'	T = 35.48'
R = 1,970.00'	R = 1,970.00'	R = 6,191.00'

-Y7DET2- POT Sta. 18+00.00 =
-Y7- POT Sta.18+00.00 (0.41' RT)

-Y7DET2- PC Sta. 21+14.52

-Y7DET2- PRC Sta. 23+09.70

-Y7DET2- PCC Sta. 26+07.00

-Y7DET2- PT Sta. 26+77.96 =
-Y7- POC Sta.26+76.51 (17.08' LT)

BEGIN TEMPORARY PAVEMENT
-Y7DET2- Sta.22+76.41 (13' LT) =
-Y7- Sta.22+75.19 (18.45' LT)
TIE TO EXIST PAVEMENT

END TEMPORARY PAVEMENT
-Y7DET2- Sta.24+16.65 (55.19' LT) =
-Y7- Sta.24+13.51 (71.12' LT)
TIE TO EXIST PAVEMENT

KENNETH EDWARDS
DB 3551 PG 561
MB 2004 PG 738

ROBERT SURLES
DB 537 PG 126

HUGH SURLES
DB 1107 PG 399

JAMES JOHNSON
DB 1963 PG 136
MB 2004 PG 66

NCD CONTRACTING LLC
DB 4062 PG 344

NCD CONTRACTING LLC
DB 3852 PG 423
PB 2021 PG 563

DILLARD ENTERPRISES INC
DB 875 PG 308

JAMES NORRIS RD

PROGRESSIVE PKWY

TEMPORARY PAVEMENT

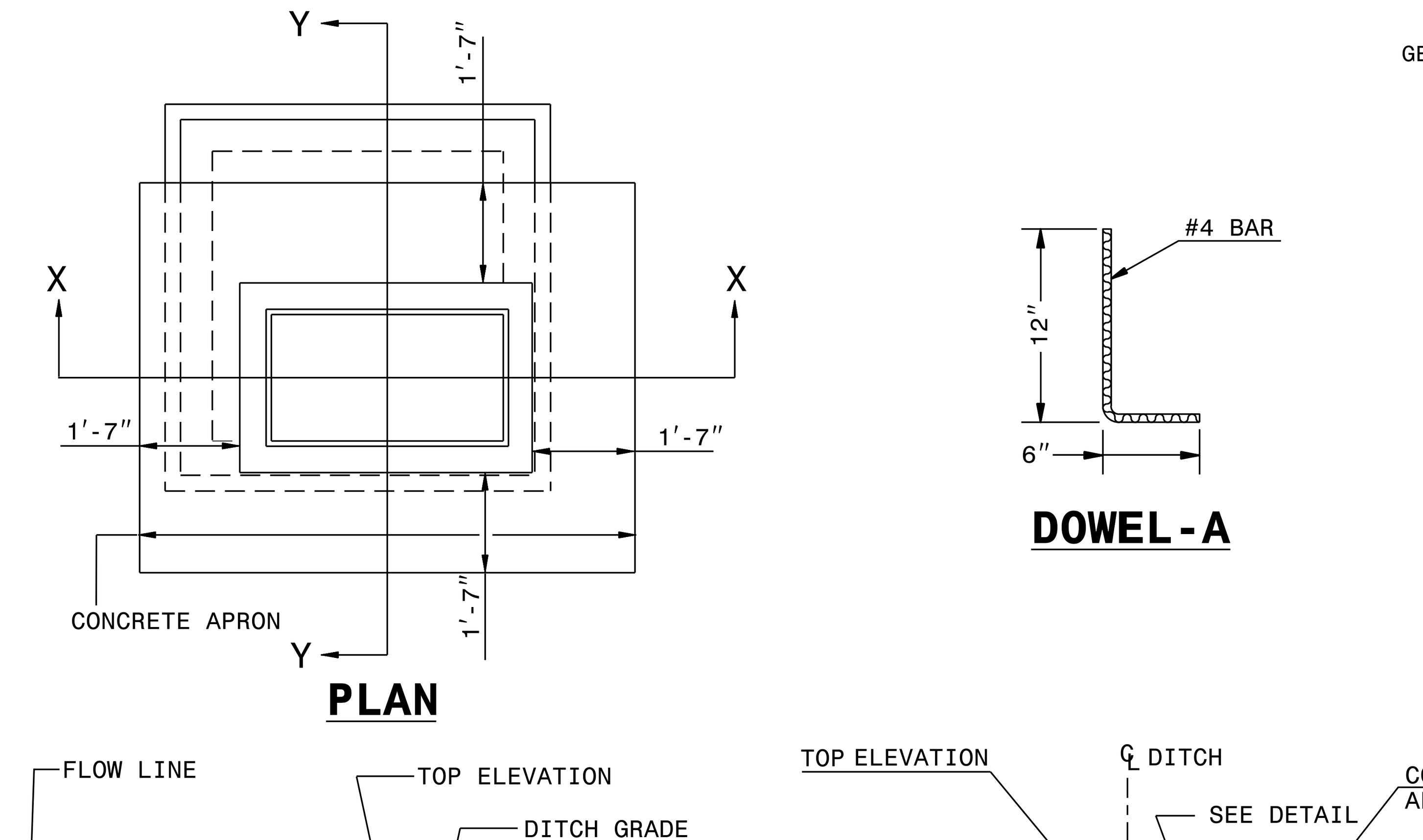
11-SEP-2017 11:55
S:\Contracts\Contracts\Special Details\jhowerton\840D17 Minimum Depth Type A.dgn
jhowerton AT CSD-292595

PROJECT REFERENCE NO.	SHEET NO.
R-5705A	2C-1

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

ENGLISH DETAIL DRAWING FOR
CONCRETE GRATED DROP INLET TYPE 'A'
MINIMUM DEPTH
12" THRU 72" PIPE

SHEET 1 OF 2
840d17



GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE ALL GRATED DROP INLETS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.

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

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

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

CONSTRUCT WITH PIPE CROWNS MATCHING.

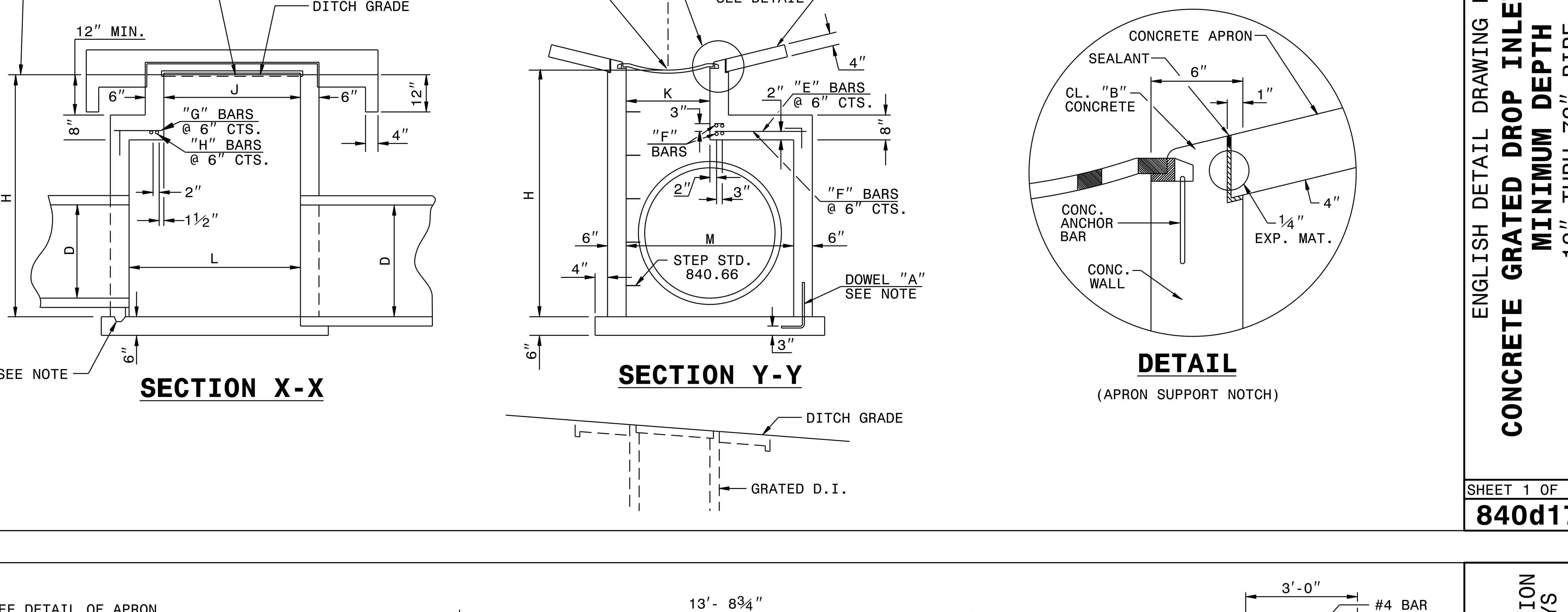
USE STANDARD FRAMES AND GRATES 840.22 (SHOWN), 840.24(SHOWN), 840.20 (NOT SHOWN) OR 840.29 (NOT SHOWN).

SEE STANDARD DRAWING 840.25 FOR ATTACHMENT OF FRAMES AND GRATES.

CHAMFER ALL EXPOSED CORNERS 1".

DRAWING NOT TO SCALE.

MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 12 FEET.



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

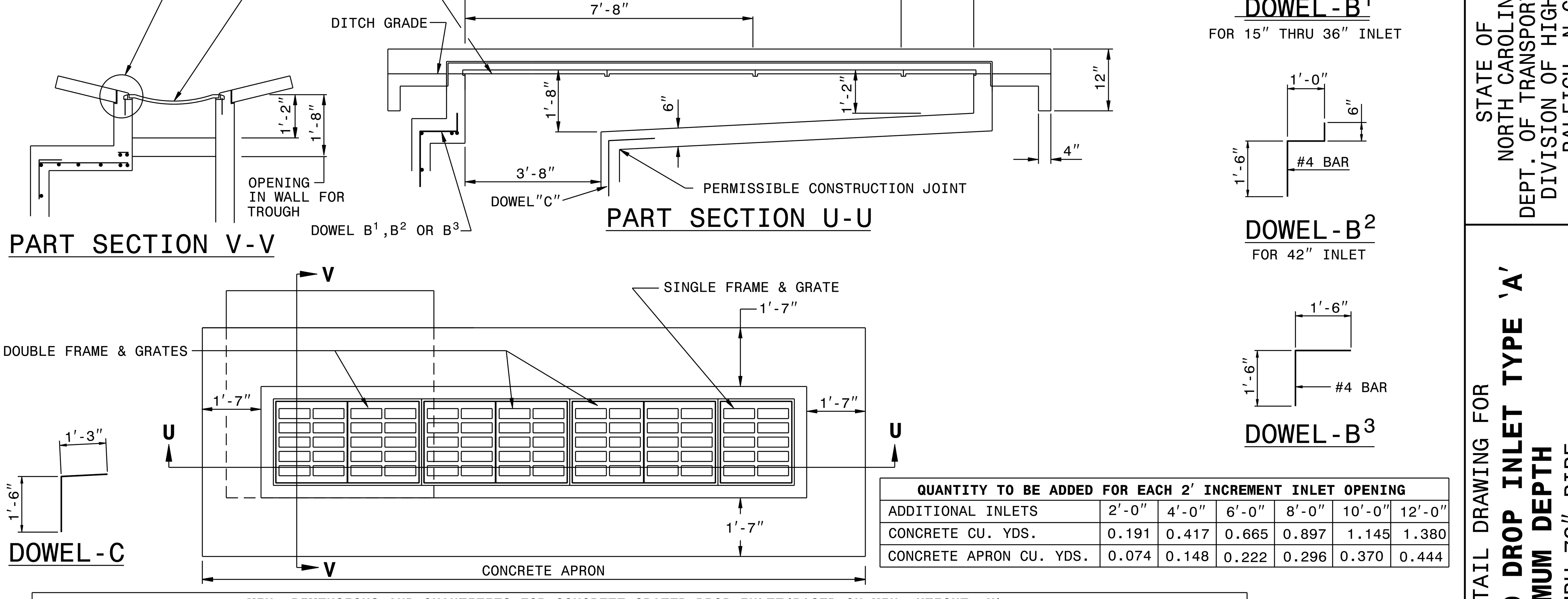
ENGLISH DETAIL DRAWING FOR
CONCRETE GRATED DROP INLET TYPE 'A'
MINIMUM DEPTH
12" THRU 72" PIPE

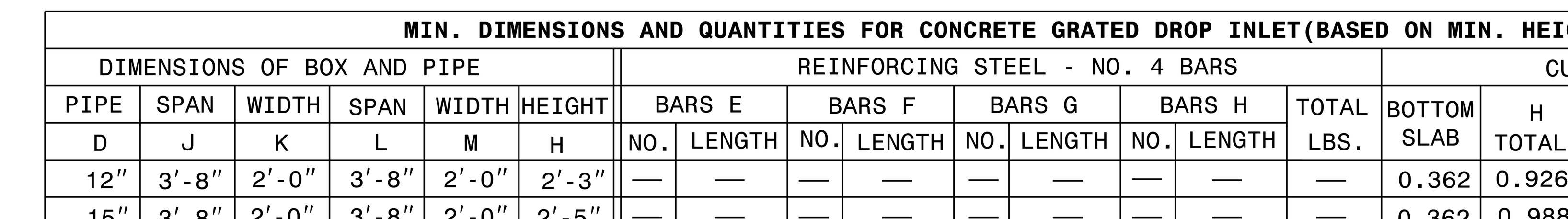
SHEET 1 OF 2
840d17

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

ENGLISH DETAIL DRAWING FOR
CONCRETE GRATED DROP INLET TYPE 'A'
MINIMUM DEPTH
12" THRU 72" PIPE

SHEET 2 OF 2
840d17





QUANTITY TO BE ADDED FOR EACH 2' INCREMENT INLET OPENING						
ADDITIONAL INLETS	2'-0"	4'-0"	6'-0"	8'-0"	10'-0"	12'-0"
CONCRETE CU. YDS.	0.191	0.417	0.665	0.897	1.145	1.380
CONCRETE APRON CU. YDS.	0.074	0.148	0.222	0.296	0.370	0.444

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

DIMENSIONS OF BOX AND PIPE						REINFORCING STEEL - NO. 4 BARS									CU YDS CONC. IN BOX					DEDUCTIONS FOR ONE PIPE	
PIPE	SPAN	WIDTH	SPAN	WIDTH	HEIGHT	BARS E		BARS F		BARS G		BARS H		TOTAL	BOTTOM SLAB	H TOTAL	H PER FT HT	APRON	TOTAL		
D	J	K	L	M	H	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	LBS.						C.S.	R.C.
12"	3'-8"	2'-0"	3'-8"	2'-0"	2'-3"	—	—	—	—	—	—	—	—	—	0.362	0.926	0.247	0.395	1.683	0.015	0.024
15"	3'-8"	2'-0"	3'-8"	2'-0"	2'-5"	—	—	—	—	—	—	—	—	—	0.362	0.988	0.247	0.395	1.745	0.023	0.036
18"				2'-0"	2'-8"	—	—	—	—	—	—	—	—	—	0.362	1.050	0.247		1.807	0.033	0.049
24"				2'-10"	3'-3"	8	1'-5"	6	4'-9"	—	—	—	—	27	0.444	1.362	0.278		2.201	0.059	0.085
30"			3'-8"	3'-5"	3'-10"	8	2'-0"	7	4'-9"	—	—	—	—	33	0.502	1.644	0.288		2.541	0.092	0.127
36"			4'-0"	4'-0"	4'-4"	8	2'-5"	8	4'-11"	4	0'-9"	2	4'-11"	47	0.560	1.931	0.321		2.920	0.132	0.178
42"			4'-10"	4'-10"	5'-0"	10	3'-1"	9	5'-7"		1'-5"	3	5'-7"	67	0.704	2.500	0.370		3.677	0.180	0.243
48"			5'-4"	5'-4"	5'-6"	11	3'-7"	10	6'-1"		1'-11"	4	6'-1"	87	0.823	3.013	0.407		4.315	0.235	0.317
54"			6'-0"	6'-0"	6'-0"	12	4'-1"	11	6'-7"		2'-5"	5	6'-7"	107	0.951	3.589	0.444		5.072	0.297	0.401
60"			6'-6"	6'-6"	6'-7"	13	4'-9"	12	7'-3"		3'-1"	6	7'-3"	135	1.311	4.539	0.494		6.170	0.367	0.495
66"			7'-2"	7'-2"	7'-1"	14	5'-4"	14	7'-10"		3'-7"	7	7'-10"	168	1.136	5.061	0.537		6.901	0.444	0.599
72"	3'-8"	2'-0"	7'-8"	7'-8"	7'-8"	15	5'-11"	15	8'-5"	4	4'-3"	8	8'-5"	199	1.500	5.860	0.580	0.395	7.868	0.528	0.713

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

ENGLISH DETAIL DRAWING FOR
CONCRETE GRATED DROP INLET TYPE 'A'
MINIMUM DEPTH
12" THRU 72" PIPE

SHEET 2 OF 2
840d17

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 33144 NICOLE M. HACKLER

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

SEE TITLE BLOCK

ORIGINAL BY: J. Howerton DATE: 1/22/14
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: jhowerton\minimum depth type A.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-5705A	2C-2

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

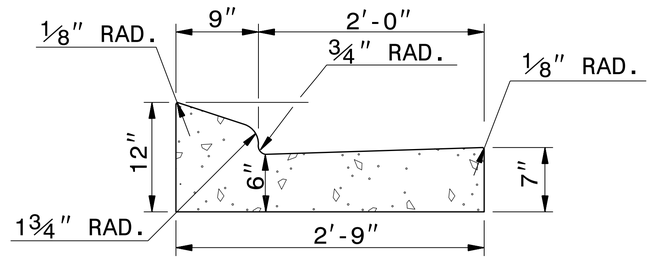
ENGLISH DETAIL DRAWING FOR

2′-9″ CONCRETE CURB & GUTTER

SHEET 1 OF 1

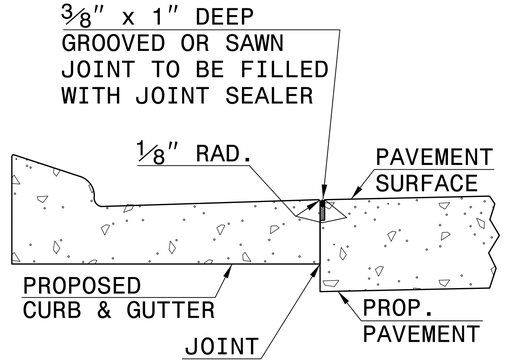
846D01

GENERAL NOTES:
- -PLACE CONTRACTION JOINTS AT 10′ INTERVALS, EXCEPT THAT A 15′ SPACING MAY BE USED WHEN A MACHINE IS USED OR WHEN SATISFACTORY SUPPORT FOR THE FACE FORM CAN BE OBTAINED WITHOUT THE USE OF TEMPLATES AT 10′ INTERVALS.
- -JOINT SPACING MAY BE ALTERED IF REQUIRED BY THE ENGINEER.
- -CONTRACTION JOINTS MAY BE INSTALLED WITH THE USE OF TEMPLATES OR FORMED BY OTHER APPROVED METHODS. MAKE NON-TEMPLATE FORMED JOINTS A MIN. OF 1½″ DEEP.
- -FILL ALL CONSTRUCTION JOINTS WITH JOINT FILLER AND SEALER.
- -SPACE EXPANSION JOINTS AT 90′ INTERVALS AND ADJACENT TO ALL RIGID OBJECTS.
- -SEE RDWY. STD. DWG. NO. 846.01, SHEET 2 OF 3 FOR PLACEMENT IN SUPERELEVATIONS. (USE 2′-6″ CURB AND GUTTER RATES)

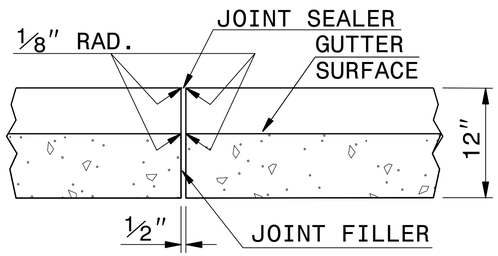


2′-9″ CURB AND GUTTER

SECTION VIEW OF CURB AND GUTTER



LONGITUDINAL JOINT



TRANSVERSE EXPANSION JOINT IN CURB AND GUTTER

SECTION VIEW OF JOINTS

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

ENGLISH DETAIL DRAWING FOR

2′-9″ CONCRETE CURB & GUTTER

SHEET 1 OF 1

846D01

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 33144 NICOLE M. HAGLER 8/4/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

SEE PLATE FOR TITLE

ORIGINAL BY: STD. 846.01 DATE:
MODIFIED BY: E.E. WARD DATE: 8-15-00
CHECKED BY: DATE:
FILE SPEC.: /usr/details/stand/c&g2'-9".dgn

10-AUG-2017 11:46
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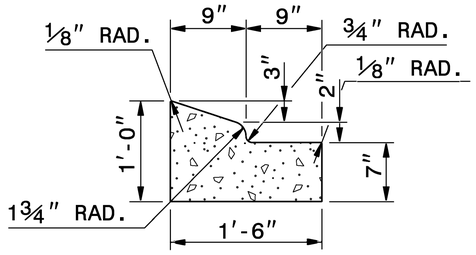
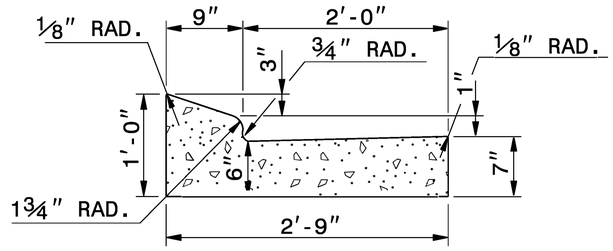
jhowerton AT CSD-292595

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-5705A	2C-3



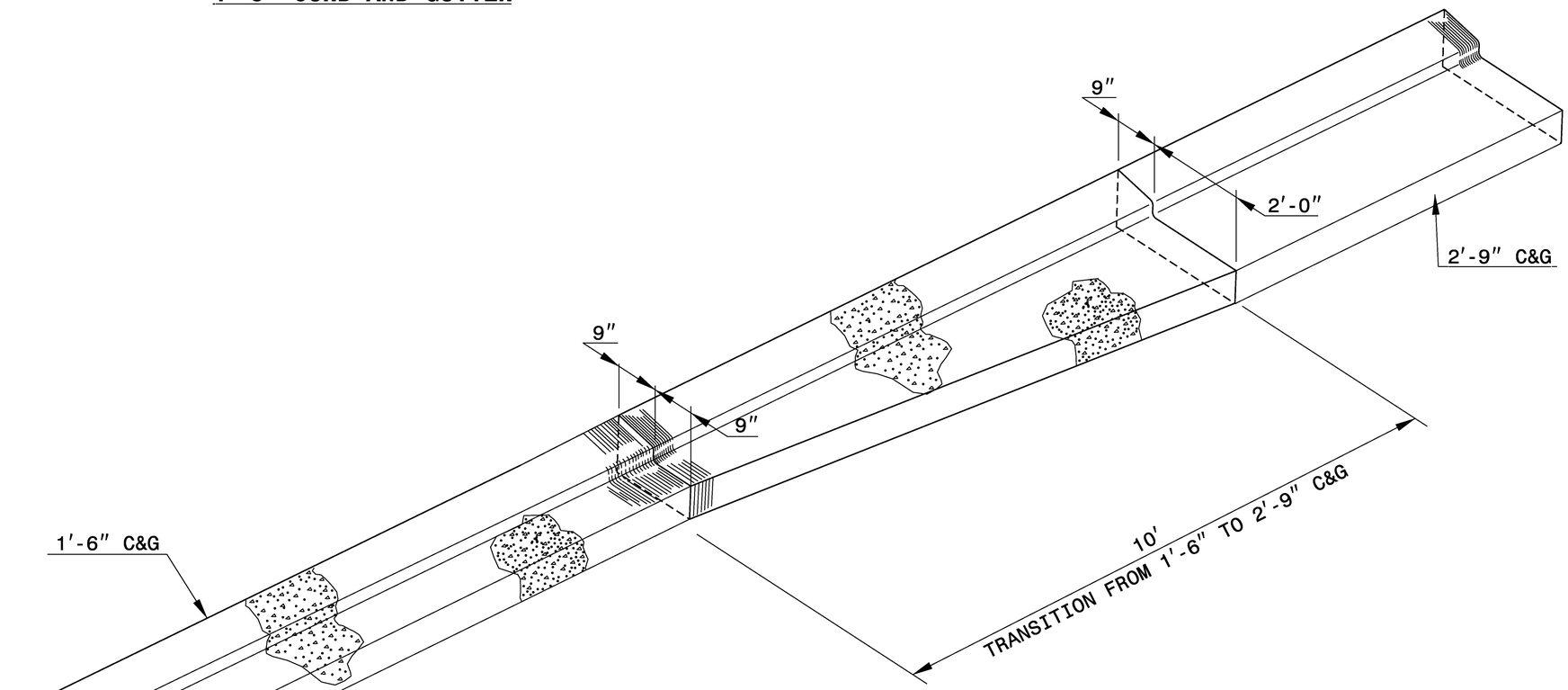
1'-6" CURB AND GUTTER



2'-9" CURB AND GUTTER

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

SEE ROADWAY PLANS FOR LOCATION OF CURB TRANSITION.



ISOMETRIC VIEW OF TRANSITIONING CURB & GUTTER

NORTH CAROLINA PROFESSIONAL SEAL 33144 ENGINEER NICOLE M HACKLER 8/6/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

DETAIL OF 1'-6" TO 2'-9" CURB & GUTTER TRANSITION SECTION

ORIGINAL BY: T.S.SPELL DATE: NOV. 26, 2001
MODIFIED BY: T.S.SPELL DATE: JAN. 23, 2007
CHECKED BY: DATE:
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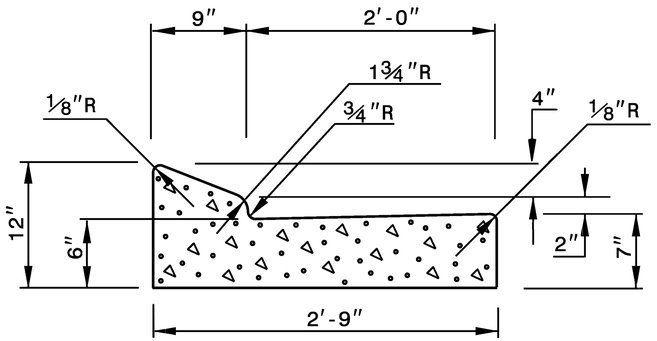
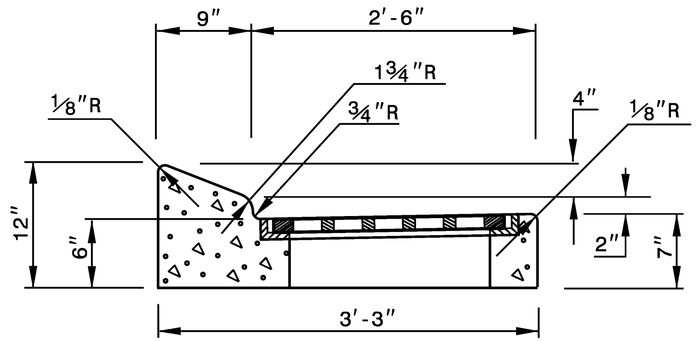
5/14/99

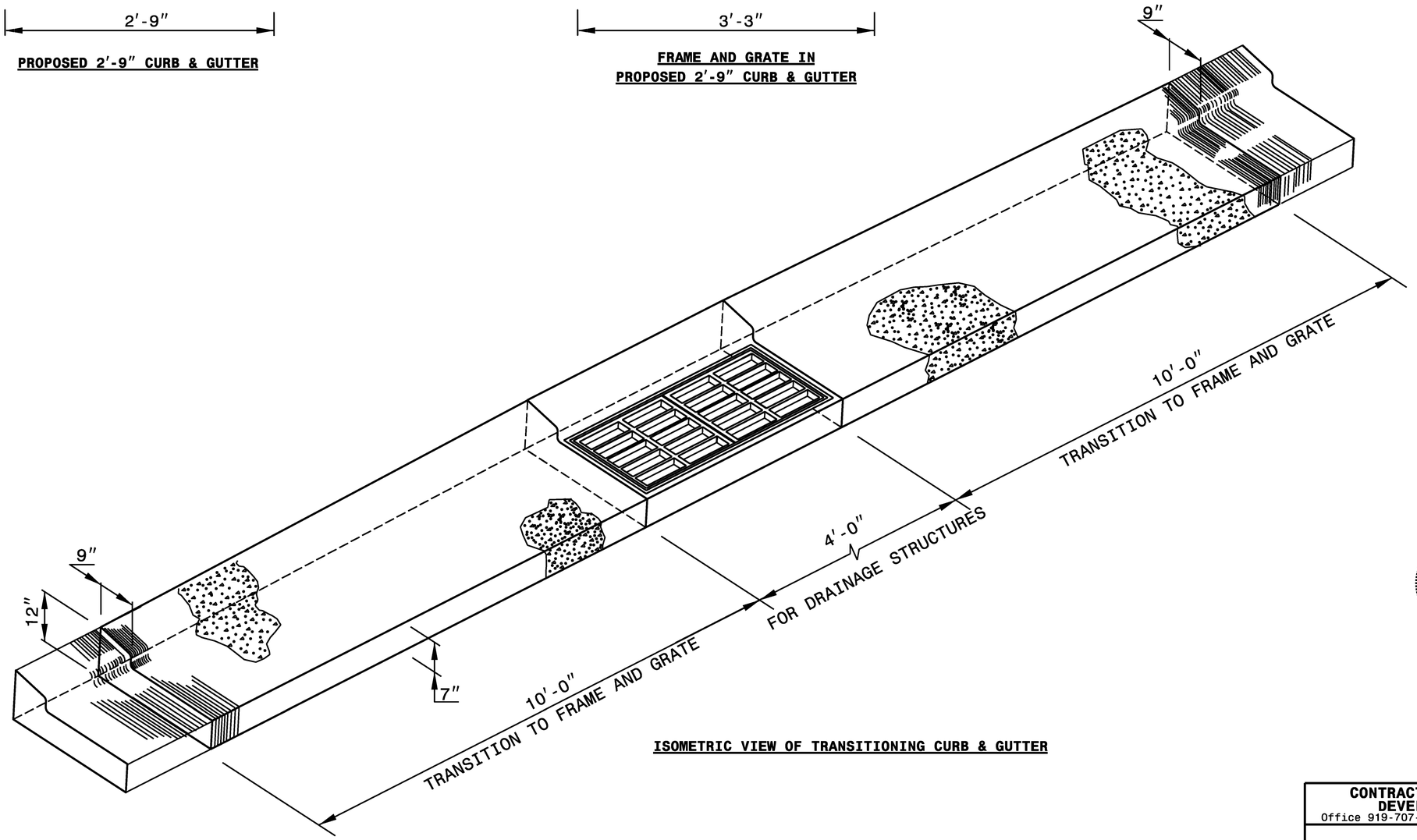
PROJECT REFERENCE NO.	SHEET NO.
R-5705A	2C-4



PROPOSED 2′-9″ CURB & GUTTER



FRAME AND GRATE IN PROPOSED 2′-9″ CURB & GUTTER



ISOMETRIC VIEW OF TRANSITIONING CURB & GUTTER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 33144 KYLE M. KEMPF

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

DETAIL OF 2′-9″ TO FRAME AND GRATE

ORIGINAL BY: _____ DATE: _____
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: kkempf/english/curb gutter transition.dgn

01-MAR-2018 07:39
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jhowerton AT CSD-292595

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

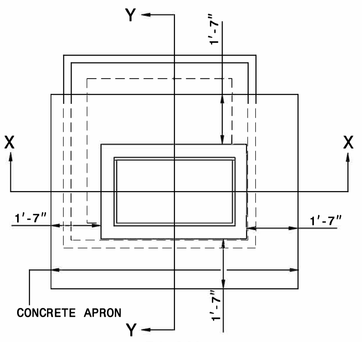
ENGLISH DETAIL DRAWING FOR

CONCRETE MEDIAN DROP INLE TYPE 'A' EXTRA DEPTH OVER 12' TO 25'

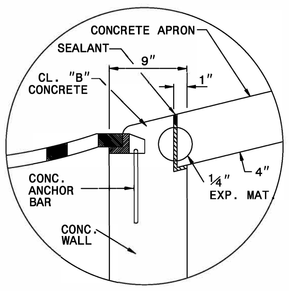
12" THRU 72" PIPE

SHEET 1 OF 2

840D17



PLAN



DETAIL

(APRON SUPPORT NOTCH)

GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE DROP INLETS WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.

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

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

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

WHEN PAYMENT FOR THE DROP INLET IS MADE ON A PER EACH BASIS, THE CONCRETE APRON WILL BE CONSIDERED PART OF THE DROP INLET.

CONSTRUCT WITH PIPE CROWNS MATCHING.

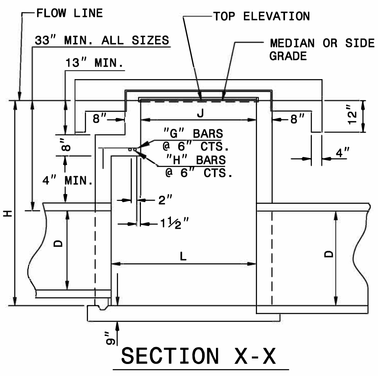
USE STANDARD FRAMES AND GRATES 840.22 (SHOWN), 840.24(SHOWN), 840.20, 840.29, AND 840.33.

SEE STANDARD DRAWING 840.25 FOR ATTACHMENT OF FRAMES AND GRATES NOT SHOWN.

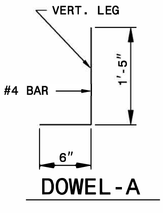
CHAMFER ALL EXPOSED CORNERS 1".

DRAWING NOT TO SCALE.

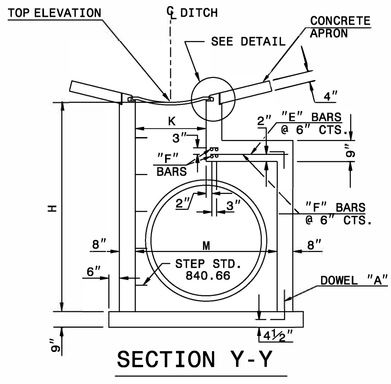
MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 25 FEET.



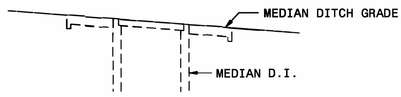
SECTION X-X



DOWEL-A



SECTION Y-Y



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

ENGLISH DETAIL DRAWING FOR

CONCRETE MEDIAN DROP INLET TYPE 'A' EXTRA DEPTH OVER 12' TO 25'

12" THRU 72" PIPE

SHEET 1 OF 2

840D17

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

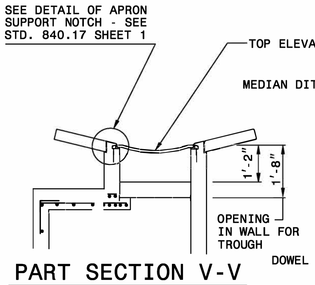
ENGLISH DETAIL DRAWING FOR

CONCRETE MEDIAN DROP INLET TYPE 'A' EXTRA DEPTH OVER 12' TO 25'

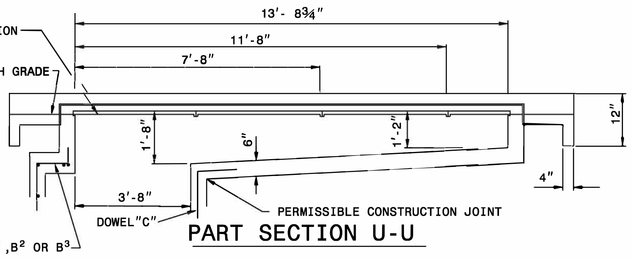
12" THRU 72" PIPE

SHEET 2 OF 2

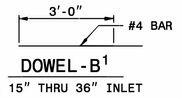
840D17



PART SECTION V-V

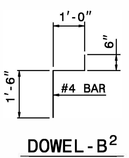


PART SECTION U-U



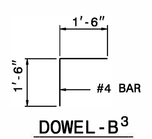
DOWEL-B¹

FOR 15" THRU 36" INLET

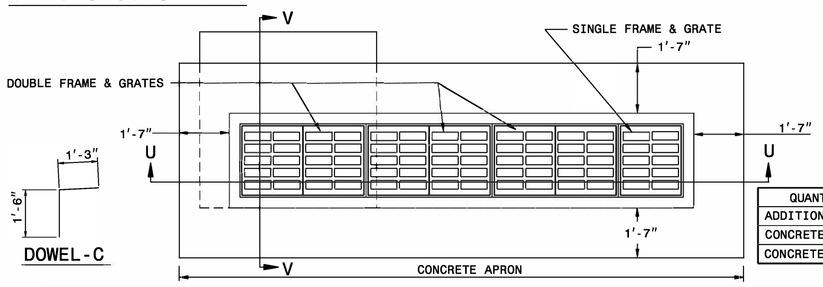


DOWEL-B²

FOR 42" INLET



DOWEL-B³



DOWEL-C

QUANTITY TO BE ADDED FOR EACH 2' INCREMENT INLET OPENING						
ADDITIONAL INLETS	2'-0"	4'-0"	6'-0"	8'-0"	10'-0"	12'-0"
CONCRETE CU. YDS.	0.191	0.417	0.665	0.897	1.145	1.380
CONCRETE APRON CU. YDS.	0.074	0.148	0.222	0.296	0.370	0.444

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

DIMENSIONS OF BOX AND PIPE						REINFORCING STEEL - NO. 4 BARS									CU YDS CONC. IN BOX					DEDUCTIONS FOR ONE PIPE	
PIPE	SPAN	WIDTH	SPAN	WIDTH	HEIGHT	BARS E		BARS F		BARS G		BARS H		TOTAL	BOTTOM SLAB	H TOTAL	H PER FT HT	APRON	TOTAL		
D	J	K	L	M	H	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	LBS.						C.S.	R.C.
12"	3'-8"	2'-0"	3'-8"	2'-0"	3'-9"	—	—	—	—	—	—	—	—	—	0.362	0.926	0.247	0.395	1.683	0.015	0.024
15"	3'-8"	2'-0"	3'-8"	2'-0"	4'-0"	—	—	—	—	—	—	—	—	—	0.362	0.988	0.247	0.395	1.745	0.023	0.036
18"				2'-0"	4'-3"	—	—	—	—	—	—	—	—	—	0.362	1.050	0.247		1.807	0.033	0.049
24"				2'-10"	4'-9"	8	1'-5"	6	4'-9"	—	—	—	—	27	0.444	1.362	0.278		2.201	0.059	0.085
30"			3'-8"	3'-5"	5'-3"	8	2'-0"	7	4'-9"	—	—	—	—	33	0.502	1.644	0.288		2.541	0.092	0.127
36"			4'-0"	4'-0"	5'-9"	8	2'-5"	8	4'-11"	4	0'-9"	2	4'-11"	47	0.560	1.931	0.321		2.920	0.132	0.178
42"			4'-10"	4'-10"	6'-3"	10	3'-1"	9	5'-7"		1'-5"	3	5'-7"	67	0.704	2.500	0.370		3.677	0.180	0.243
48"			5'-4"	5'-4"	6'-9"	11	3'-7"	10	6'-1"		1'-11"	4	6'-1"	87	0.823	3.013	0.407		4.315	0.235	0.317
54"			6'-0"	6'-0"	7'-3"	12	4'-1"	11	6'-7"		2'-5"	5	6'-7"	107	0.951	3.589	0.444		5.072	0.297	0.401
60"			6'-6"	6'-6"	7'-9"	13	4'-9"	12	7'-3"		3'-1"	6	7'-3"	135	1.311	4.539	0.494		6.170	0.367	0.495
66"			7'-2"	7'-2"	8'-3"	14	5'-4"	14	7'-10"		3'-7"	7	7'-10"	168	1.136	5.061	0.537		6.901	0.444	0.599
72"	3'-8"	2'-0"	7'-8"	7'-8"	8'-9"	15	5'-11"	15	8'-5"	4	4'-3"	8	8'-5"	199	1.500	5.860	0.580	0.395	7.868	0.528	0.713

CONTRACT STANDARDS AND DEVELOPMENT UNIT
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ORIGINAL BY: 2002 STD.840.1 DATE:
MODIFIED BY: K.A. KEMPF DATE: 07-06-09
CHECKED BY:
FILE SPEC.: /stand/840d17 Extra Depth 26I.dgn

SEE PLATE FOR TITLE

PROJECT REFERENCE NO. R-5705A

SHEET NO. 2C-5

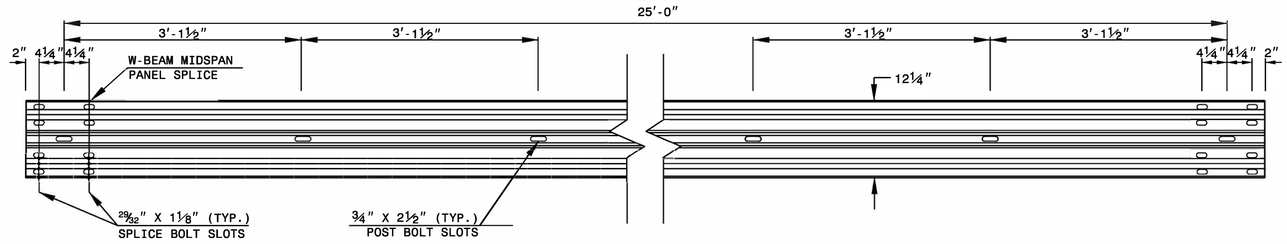
PROJECT REFERENCE NO.	SHEET NO.
R-5705A	2C-6

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

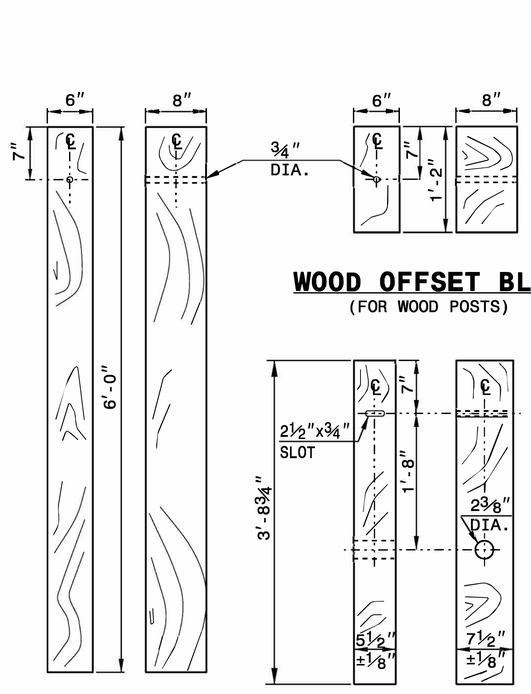
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02



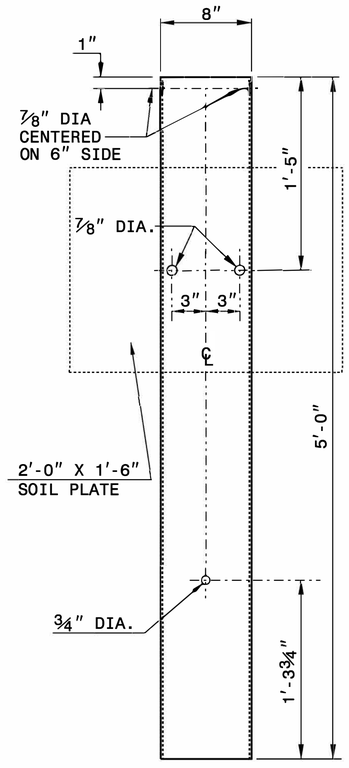
STANDARD W-BEAM GUARDRAIL



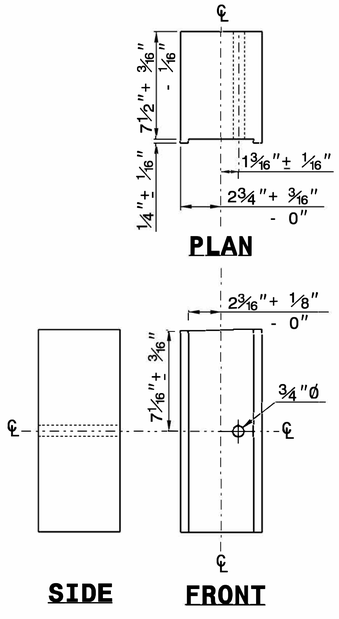
STANDARD LINE POST

SHORT WOOD BREAKAWAY POST

WOOD OFFSET BLOCK
(FOR WOOD POSTS)



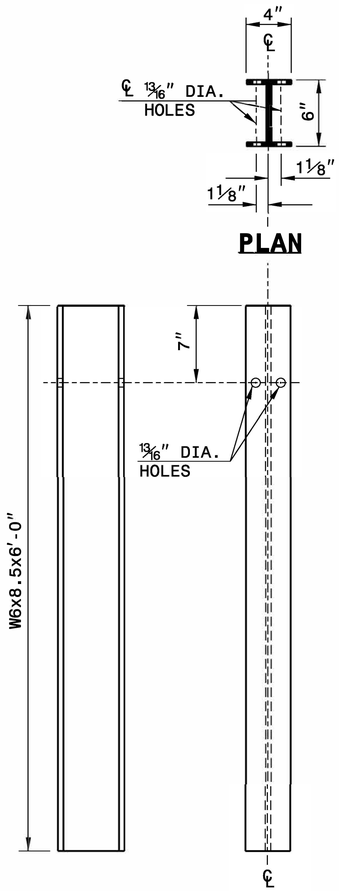
STEEL TUBE
TS 6"x8"x0.1875"



PLAN

SIDE **FRONT**

ROUTED OFFSET BLOCK



"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

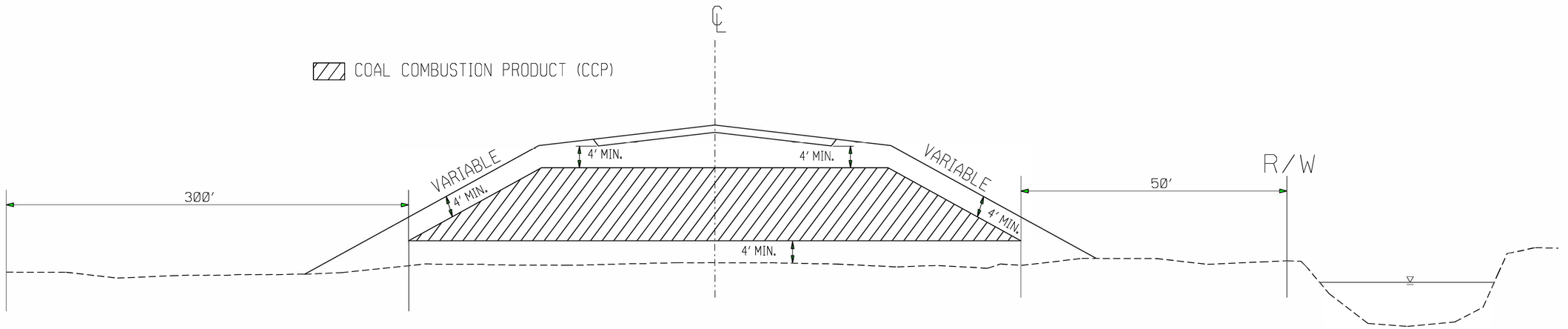
CONTRACTS STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

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

PROJECT REFERENCE NO.	SHEET NO.
R-5705A	2C-7

COAL COMBUSTION PRODUCT PLACEMENT



*(OBTAIN PERMISSION FROM ARMY CORPS OF ENGINEERS)

PLACE CCP IN HATCHED AREA IN ACCORDANCE WITH THE PROJECT SPECIAL PROVISIONS

PLACE CCP A MINIMUM OF 5' ABOVE SEASONAL HIGH GROUND WATER

PLACE AT LOCATIONS AS APPROVED BY THE ENGINEER

PLACE SOIL BORROW MATERIAL ON THE OUTSIDE OF CCP AS EACH LIFT OF CCP IS PLACED

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

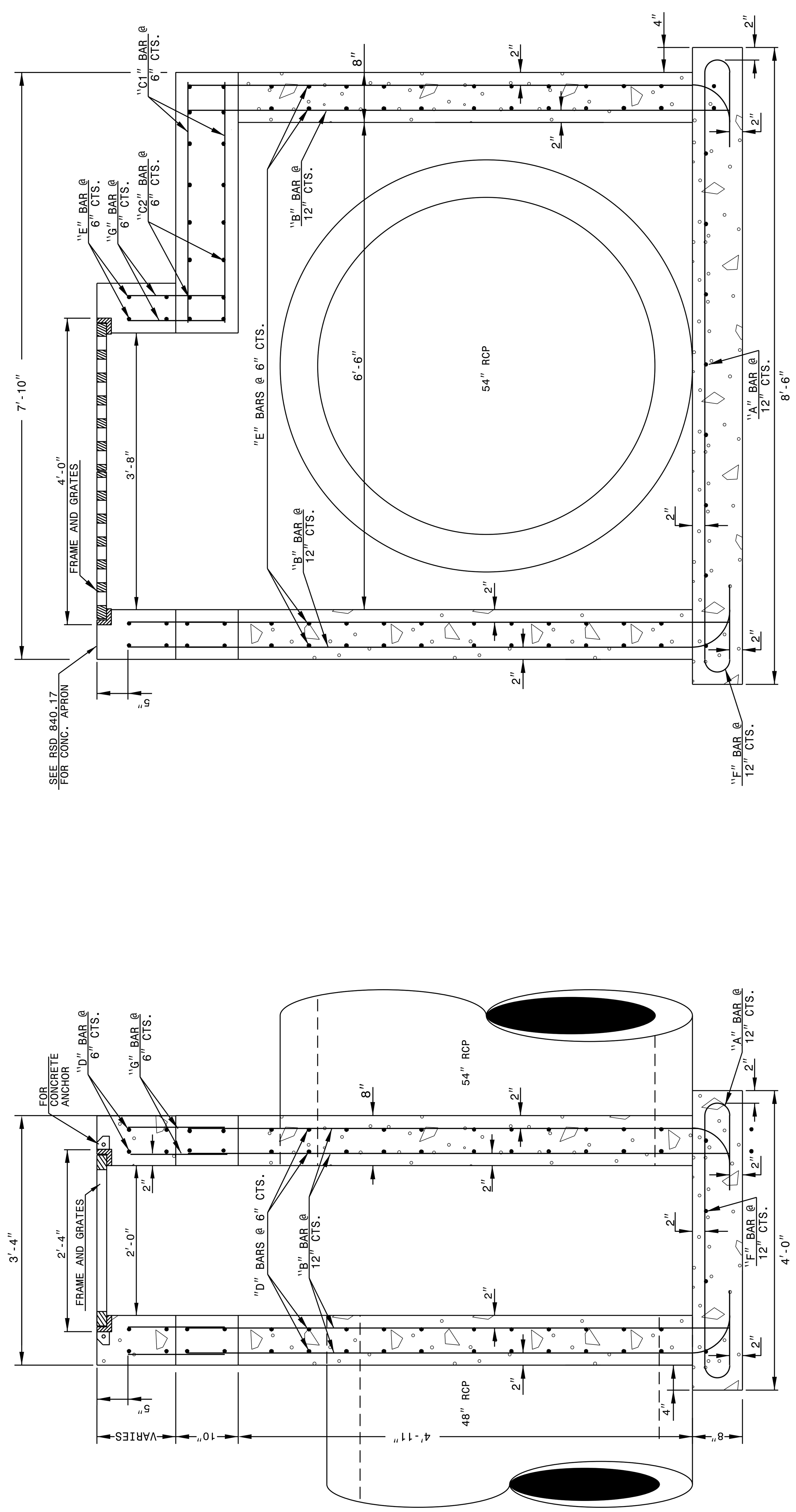
CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

COAL COMBUSTION PRODUCT PLACEMENT DETAIL

ORIGINAL BY: J.S.H. DATE: 3/16/15
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: joel/coal combustion material detail.dgn

07-SEP-2017 08:21
S:\Contracts\Special Details\Jhowerton\Coal Combustion Product Detail.dgn
Jhowerton AT CSD-2192995

PROJECT REFERENCE NO.	SHEET NO.
R-5705A	2C-8



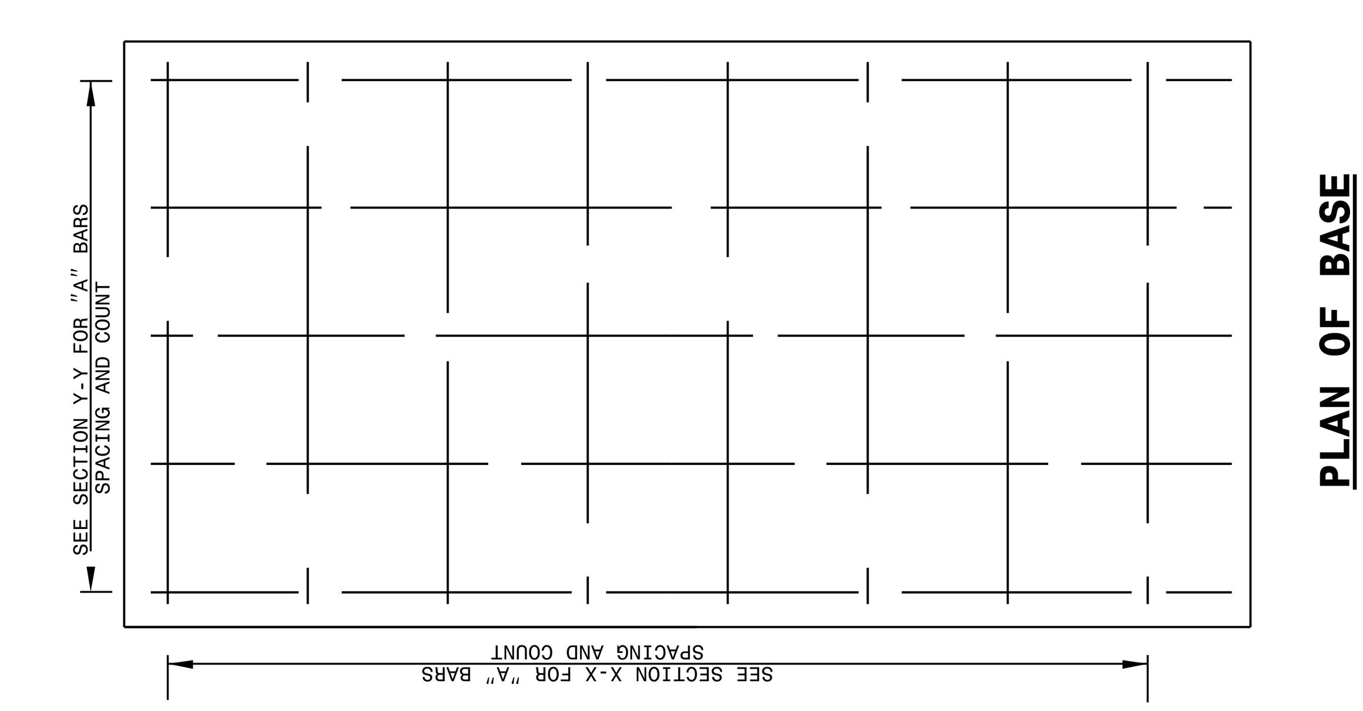
GENERAL NOTES:
- BUILD WITH CLASS 'AA' CONCRETE
- CHAMFER ALL EXPOSED CONCRETE CORNERS 3".
- USE FORMS TO CONSTRUCT THE BOTTOM SLAB.
- IF PIPES ARE SET IN THE BASE, FOLLOW CONSTRUCTION PROCEDURES SHOWN BY STD. DWG. 840.00.
- PRECAST UNITS CONCRETE MAY BE USED IN LIEU CAST IN PLACE CONCRETE.
- REFERENCE STD. DWG. 840.25 FOR FRAME ANCHORAGE.
- PROVIDE DROP INLETS OVER 3'-6" DEEP WITH STEPS AS DIRECTED BY STD. DWG. 840.66.
- FRAME AND GRATES ARE SEPARATE CONTRACT ITEM.

NOTES:
- HORIZONTAL (UP TO 10' MAX. IN BOTH DIRECTIONS) AND VERTICAL (UP TO 20' MAX.) DIMENSIONS MAY BE ADJUSTED AS THE FIELD CONDITIONS AND/OR ALTERNATE DESIGNS REQUIRE.
- ALL ADJUSTMENTS ARE TO BE MADE AS DIRECTED BY THE ENGINEER.

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

ENGLISH DETAIL DRAWING FOR
TRAFFIC BEARING GRATED INLET
FOR PIPES UP TO 54"

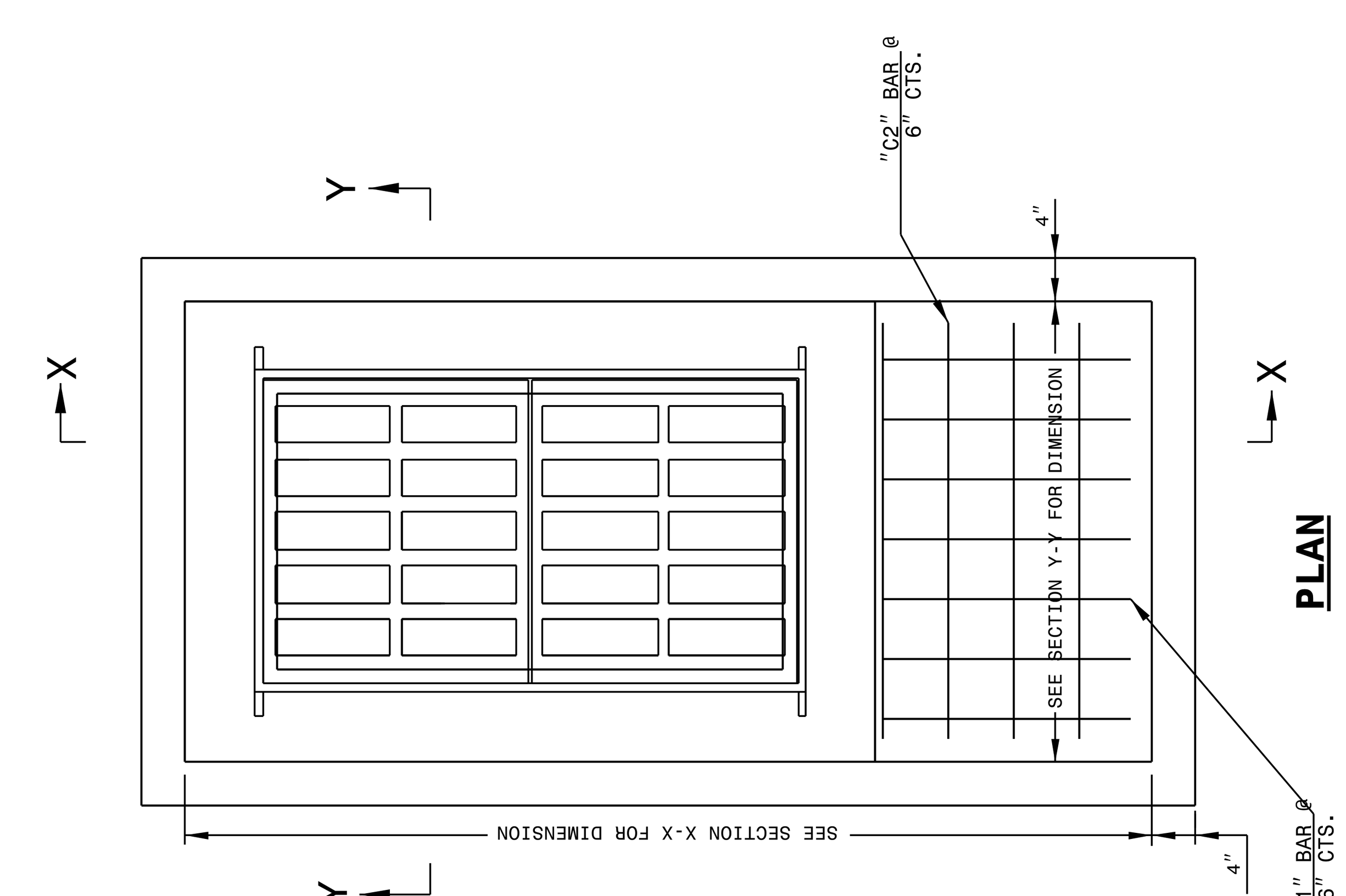
SHEET 1 OF 2 — 840D35

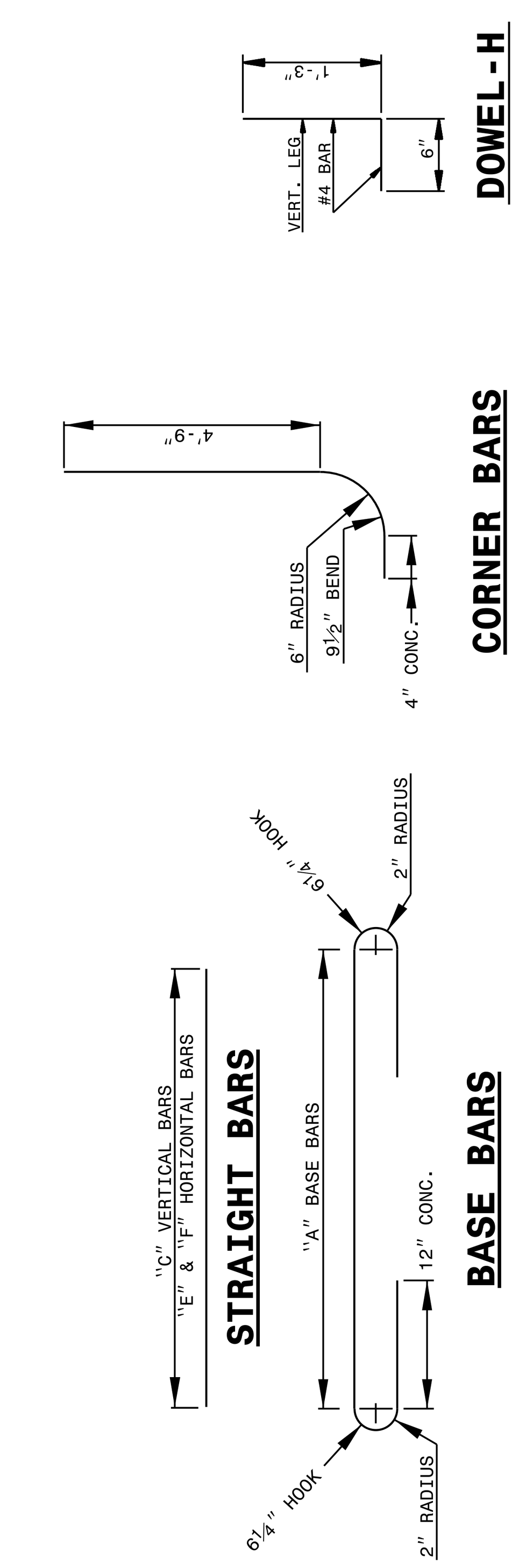


BILL OF MATERIALS

BAR	SIZE	LENGTH	QUANTITY	WEIGHT
A	#5	5'-0"	42	47
B	#5	7'-6"	104	780
C1	#5	3'-4"	9	32
C2	#5	3'-0"	6	19
D	#5	7'-6"	48	376
E	#5	3'-0"	48	151
F	#5	10'-0"	4	42
G	#5	1'-8"	104	181
REINF. STEEL (TOTAL WEIGHT LBS.)				1628
CONCRETE TOTAL (CU.YDS.) CLASS 'AA'				5.1
NO DEDUCTIONS HAVE BEEN MADE TO ACCOMMODATE PIPES				

FOR EVERY 1 FOOT OF RISER USE 0.41 CU.YDS CONCRETE AND 390 LBS STEEL.





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

ENGLISH DETAIL DRAWING FOR
TRAFFIC BEARING GRATED INLET
FOR PIPES UP TO 54"

SHEET 2 OF 2 — 840D35

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

SEE PLATE FOR TITLE

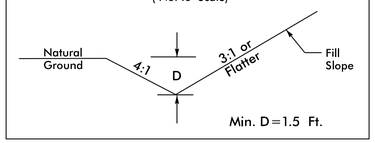
ORIGINAL BY: K. KEMPF DATE: 03-03-2015
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: jhowerton/840d35 TBDI Up to 54in.dgn

5/14/99

REVISIONS

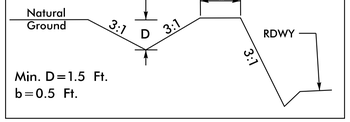
8/8/2023

DETAIL 1
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



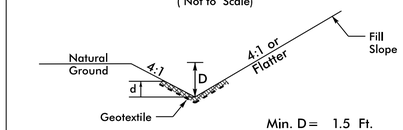
FROM STA. 21+00 TO STA. 23+00 –L– RT
FROM STA. 26+85 TO STA. 28+75 –L– LT
FROM STA. 26+70 TO STA. 31+00 –L– RT
FROM STA. 53+50 TO STA. 59+30 –L– RT
FROM STA. 53+09 TO STA. 57+00 –L– LT
FROM STA. 63+30 TO STA. 64+81 –L– RT
FROM STA. 68+50 TO STA. 72+50 –L– RT
FROM STA. 76+00 TO STA. 77+20 –L– RT
FROM STA. 74+50 TO STA. 76+75 –L– LT
FROM STA. 78+50 TO STA. 80+50 –L– RT
FROM STA. 91+50 TO STA. 94+50 –L– RT
FROM STA. 93+00 TO STA. 96+00 –L– LT
FROM STA. 104+50 TO STA. 109+50 –L– RT
FROM STA. 108+40 TO STA. 110+00 –L– LT
FROM STA. 123+18 TO STA. 124+85 –L– LT
FROM STA. 132+50 TO STA. 133+50 –L– LT
FROM STA. 133+00 TO STA. 134+80 –L– RT
FROM STA. 134+58 TO STA. 140+00 –L– LT
FROM STA. 136+20 TO STA. 142+50 –L– RT
FROM STA. 151+00 TO STA. 153+20 –L– LT
FROM STA. 164+00 TO STA. 164+80 –L– RT
FROM STA. 178+50 TO STA. 180+50 –L– RT
FROM STA. 182+50 TO STA. 186+20 –L– LT
FROM STA. 198+25 TO STA. 201+50 –L– LT
FROM STA. 233+35 TO STA. 234+40 –L– LT
FROM STA. 233+90 TO STA. 235+00 –L– RT
FROM STA. 216+74 TO STA. 221+50 –L– RT
FROM STA. 224+50 TO STA. 227+30 –L– RT
FROM STA. 13+55 TO STA. 14+05 –Y1– LT
FROM STA. 10+70 TO STA. 13+50 –Y2– RT
FROM STA. 19+76 TO STA. 21+73 –Y5– LT
FROM STA. 13+50 TO STA. 15+40 –Y6– LT
FROM STA. 24+70 TO STA. 27+45 –Y7– RT
FROM STA. 29+00 TO STA. 31+95 –Y7– LT

DETAIL 3
BERM 'V' DITCH
(Not to Scale)



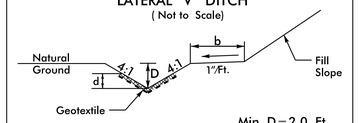
FROM STA. 16+28 TO STA. 17+55 –L– RT
FROM STA. 186+50 TO STA. 189+80 –L– RT

DETAIL 4
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



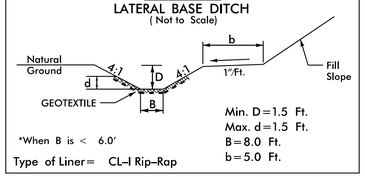
FROM STA. 90+50 TO STA. 91+50 –L– RT
FROM STA. 27+45 TO STA. 29+00 –Y7– LT

DETAIL 5
LATERAL 'V' DITCH
(Not to Scale)



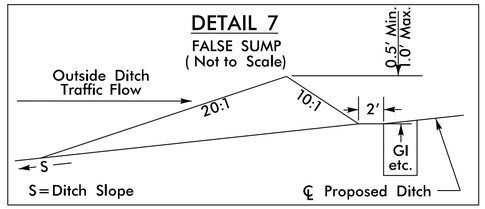
FROM STA. 24+06 TO STA. 26+30 –L– LT.

DETAIL 6
LATERAL BASE DITCH
(Not to Scale)



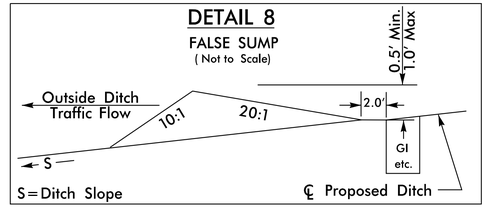
FROM STA. 23+00 TO STA. 24+88 –L– RT.

DETAIL 7
FALSE SUMP
(Not to Scale)



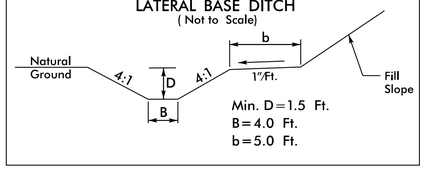
FROM STA. 47+33 TO STA. 47+48 –L– RT
FROM STA. 51+40 TO STA. 51+55 –L– RT
FROM STA. 50+00 TO STA. 50+15 –L– RT
FROM STA. 81+54 TO STA. 81+69 –L– LT
FROM STA. 83+54 TO STA. 83+69 –L– LT
FROM STA. 84+02 TO STA. 84+17 –L– LT
FROM STA. 86+04 TO STA. 86+19 –L– LT
FROM STA. 183+83 TO STA. 183+98 –L– RT

DETAIL 8
FALSE SUMP
(Not to Scale)



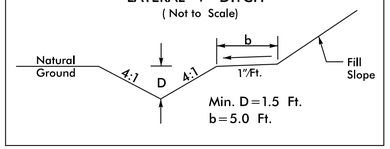
FROM STA. 192+53 TO STA. 192+68 –L– RT
FROM STA. 194+52 TO STA. 194+67 –L– RT
FROM STA. 207+33 TO STA. 207+48 –L– LT
FROM STA. 204+83 TO STA. 204+98 –L– LT
FROM STA. 11+24 TO STA. 11+39 –Y2– LT
FROM STA. 12+00 TO STA. 12+15 –Y2– LT

DETAIL 9
LATERAL BASE DITCH
(Not to Scale)



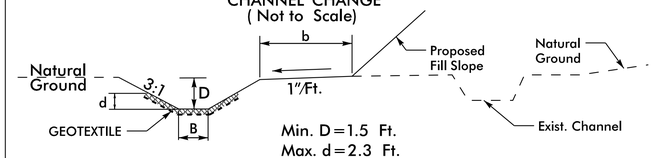
FROM STA. 25+75 TO STA. 26+70 –L– RT.

DETAIL 10
LATERAL 'V' DITCH
(Not to Scale)



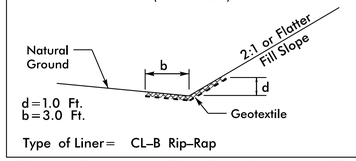
FROM STA. 153+20 TO STA. 154+75 –L– RT.

DETAIL 11
CHANNEL CHANGE
(Not to Scale)



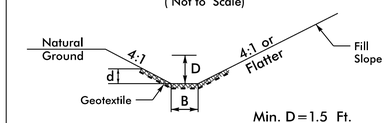
FROM STA. 42+50 TO STA. 43+50 –L– RT

DETAIL 12
TOE PROTECTION
(Not to Scale)



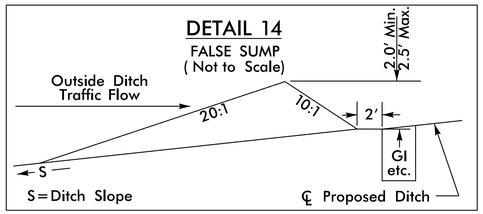
FROM STA. 44+00 TO STA. 45+68 –L– RT.
FROM STA. 161+07 TO STA. 162+43 –L– LT
FROM STA. 196+65 TO STA. 197+50 –L– RT
FROM STA. 227+95 TO STA. 230+45 –L– RT

DETAIL 13
SPECIAL LATERAL BASE DITCH
(Not to Scale)



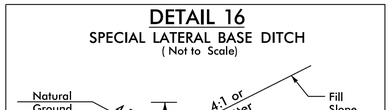
FROM STA. 72+00 TO STA. 73+02 –L– LT.

DETAIL 14
FALSE SUMP
(Not to Scale)



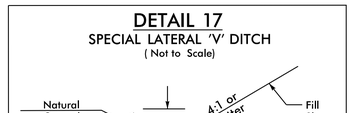
FROM STA. 77+22 TO STA. 77+82 –L– LT
FROM STA. 122+18 TO STA. 122+78 –L– LT
FROM STA. 124+85 TO STA. 125+45 –L– LT
FROM STA. 126+00 TO STA. 126+60 –L– LT

DETAIL 16
SPECIAL LATERAL BASE DITCH
(Not to Scale)



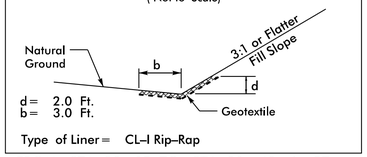
FROM STA. 72+50 TO STA. 73+25 –L– RT
FROM STA. 151+50 TO STA. 153+75 –L– RT
FROM STA. 154+05 TO STA. 156+50 –L– RT
FROM STA. 178+00 TO STA. 179+00 –L– LT

DETAIL 17
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



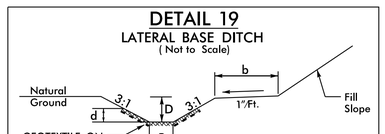
FROM STA. 82+50 TO STA. 85+00 –L– LT.
FROM STA. 146+50 TO STA. 148+50 –L– LT

DETAIL 18
TOE PROTECTION
(Not to Scale)



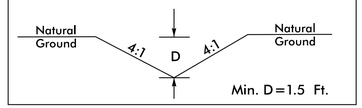
FROM STA. 88+15 TO STA. 90+40 –L– RT.
FROM STA. 90+48 TO STA. 90+58 –L– RT.

DETAIL 19
LATERAL BASE DITCH
(Not to Scale)



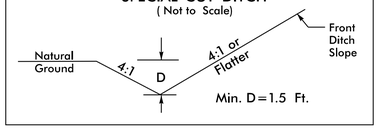
FROM STA. 85+50 TO STA. 88+05 –L– RT

DETAIL 20
STANDARD 'V' DITCH
(Not to Scale)



FROM STA. 100+25 TO 101+50 –L– RT
AT STA. 64+81 RT

DETAIL 21
SPECIAL CUT DITCH
(Not to Scale)



FROM STA. 103+50 TO STA. 104+50 –L– RT
FROM STA. 159+50 TO STA. 160+50 –L– RT
FROM STA. 177+50 TO STA. 178+50 –L– RT
FROM STA. 209+65 TO STA. 211+00 –L– RT
FROM STA. 212+34 TO STA. 212+50 –L– LT
FROM STA. 23+50 TO STA. 24+50 –Y4– LT
FROM STA. 10+30 TO STA. 11+00 –Y6A– RT
FROM STA. 34+00 TO STA. 36+00 –Y7– LT

Kimley»Horn
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PROJECT REFERENCE NO.	SHEET NO.
R-5705A	2D-1
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024436 8/8/2023 ENGINEER JEFFREY W. MOORE

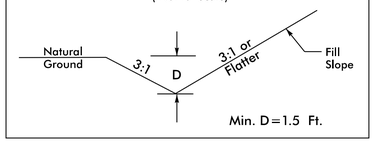
HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 052128 8/8/2023 ENGINEER JORDAN BENTL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

5/14/99

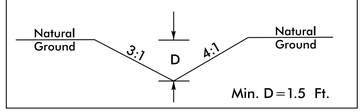
REVISIONS

DETAIL 22
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



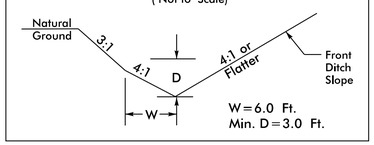
FROM STA. 130+09 TO STA. 132+50 –L– LT
FROM STA. 10+88 TO STA. 12+85 –Y3– RT
FROM STA. 10+88 TO STA. 12+95 –Y3– LT
FROM STA. 13+13 TO STA. 15+00 –Y4– LT
FROM STA. 16+00 TO STA. 16+63 –Y4B– LT
FROM STA. 10+65 TO STA. 13+50 –Y5A– RT
FROM STA. 17+65 TO STA. 22+44 –Y6– RT
FROM STA. 17+50 TO STA. 22+00 –Y6– LT
FROM STA. 13+94 TO STA. 14+80 –Y7C– LT
FROM STA. 15+00 TO STA. 17+00 –Y7C– LT
FROM STA. 13+88 TO STA. 14+70 –Y7C– LT
FROM STA. 13+50 TO STA. 16+00 –Y7D– LT

DETAIL 23
STANDARD 'V' DITCH
(Not to Scale)



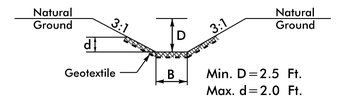
FROM STA. 15+15 TO 16+63 –Y4B– LT.

DETAIL 25
SPECIAL CUT DITCH
(Not to Scale)



FROM STA. 112+85 TO STA. 118+75 –L– LT.
FROM STA. 121+00 TO STA. 123+18 –L– LT.
FROM STA. 190+40 TO STA. 192+50 –L– RT.
FROM STA. 211+00 TO STA. 212+00 –L– RT.

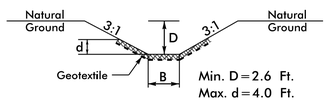
DETAIL 26
STANDARD BASE DITCH
(Not to Scale)



Type of Liner= CL–I Rip–Rap

AT STA. 45+00 –L– LT (EST. 70 L.F.)
AT STA. 108+30 –L– LT (EST. 90 L.F.)

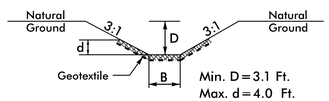
DETAIL 27
STANDARD BASE DITCH
(Not to Scale)



Type of Liner= CL–I Rip–Rap

AT STA. 22+30 –Y4– RT. (EST. 50 L.F.)

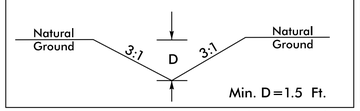
DETAIL 28
STANDARD BASE DITCH
(Not to Scale)



Type of Liner= CL–II Rip–Rap

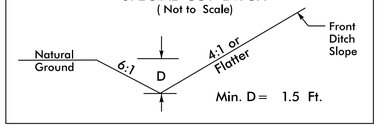
AT STA. 19+25 –Y4A– RT. (EST. 50 L.F.)

DETAIL 29
STANDARD 'V' DITCH
(Not to Scale)



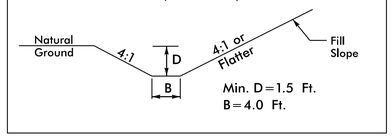
AT STA. 143+50 –L– LT (EST. 55 L.F)
AT STA. 18+50 –Y6A– LT (EST. 50 L.F)

DETAIL 30
SPECIAL CUT DITCH
(Not to Scale)



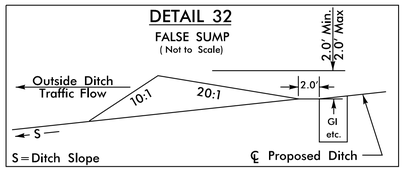
FROM STA. 145+50 TO STA. 146+50 –L– LT.

DETAIL 31
SPECIAL LATERAL BASE DITCH
(Not to Scale)



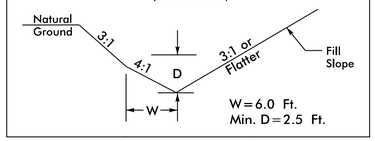
FROM STA. 45+00 TO STA. 46+00 –L– LT
FROM STA. 92+25 TO STA. 93+00 –L– LT
FROM STA. 160+50 TO STA. 161+80 –L– RT
FROM STA. 161+80 TO STA. 164+00 –L– RT
FROM STA. 173+00 TO STA. 173+65 –L– RT
FROM STA. 202+50 TO STA. 203+80 –L– LT
FROM STA. 203+80 TO STA. 205+00 –L– LT
FROM STA. 10+50 TO STA. 13+15 –Y1– LT
FROM STA. 22+00 TO STA. 23+50 –Y4– LT

DETAIL 32
FALSE SUMP
(Not to Scale)



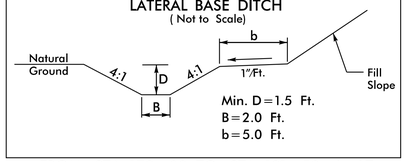
FROM STA. 17+15 TO STA.17+50 –Y6– LT

DETAIL 33
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



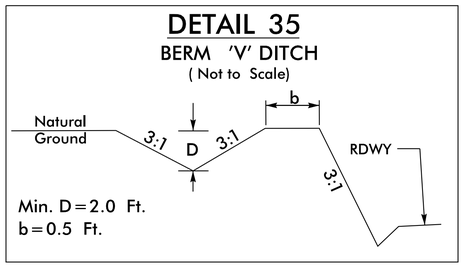
FROM STA. 166+10 TO STA. 170+00 –L– RT
FROM STA. 194+50 TO STA. 195+50 –L– RT

DETAIL 34
LATERAL BASE DITCH
(Not to Scale)



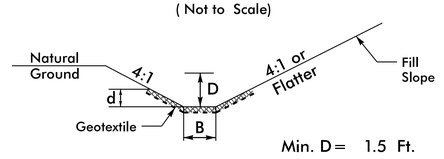
FROM STA. 179+00 TO STA. 181+50 –L– LT.

DETAIL 35
BERM 'V' DITCH
(Not to Scale)



FROM STA. 190+30 TO STA. 192+50 –L– RT.

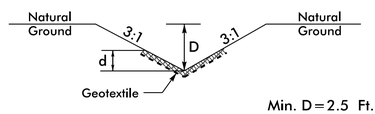
DETAIL 36
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Type of Liner= CL–B Rip–Rap

FROM STA. 20+00 TO STA. 22+00 –Y4– LT

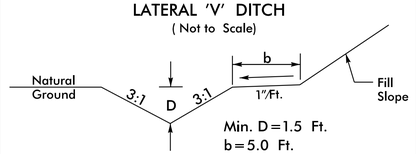
DETAIL 37
STANDARD 'V' DITCH
(Not to Scale)



Type of Liner= CL–B Rip–Rap

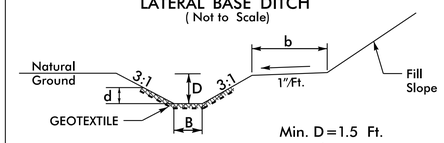
FROM –L– STA. 132+50 LT. TO
–Y5B– STA. 13+90 LT. (EST. 64 L.F,
HEAD DITCH THROUGH –Y5B–)

DETAIL 38
LATERAL 'V' DITCH
(Not to Scale)



FROM STA. 132+10 TO STA. 133+00 –L– RT

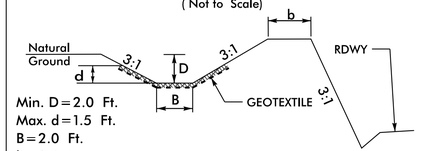
DETAIL 39
LATERAL BASE DITCH
(Not to Scale)



Type of Liner= CL–I Rip–Rap

FROM STA. 197+50 TO STA. 198+90 –L– RT

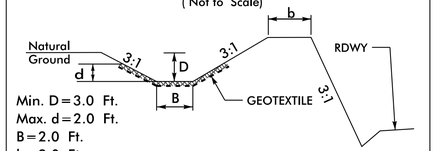
DETAIL 40
BERM BASE DITCH
(Not to Scale)



Type of Liner= CL–B Rip–Rap

FROM STA. 205+00 TO STA. 205+50 –L– LT.
FROM STA. 208+50 TO STA. 211+30 –L– LT.

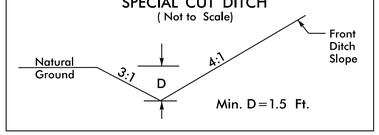
DETAIL 41
BERM BASE DITCH
(Not to Scale)



Type of Liner= CL–B Rip–Rap

FROM STA. 207+50 TO STA. 208+50 –L– LT.

DETAIL 42
SPECIAL CUT DITCH
(Not to Scale)



FROM STA. 16+50 TO STA. 17+30 –Y7D– LT
FROM STA. 15+00 TO STA. 19+20 –Y7D– RT
FROM STA. 17+76 TO STA. 19+20 –Y7D– LT

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PROJECT REFERENCE NO.	SHEET NO.
R–5705A	2D–2
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024436 JEFFREY W. MOOR 8/9/2023 ENGINEER

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 052928 JORDAN BENTIL 8/9/2023 ENGINEER

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PROJECT REFERENCE NO.	SHEET NO.
R-5705A	2D-3
RW SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 024436 ENGINEER JEFFREY W. MOORE 8/9/2023

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 053128 ENGINEER JORDAN BENDL 8/9/2023

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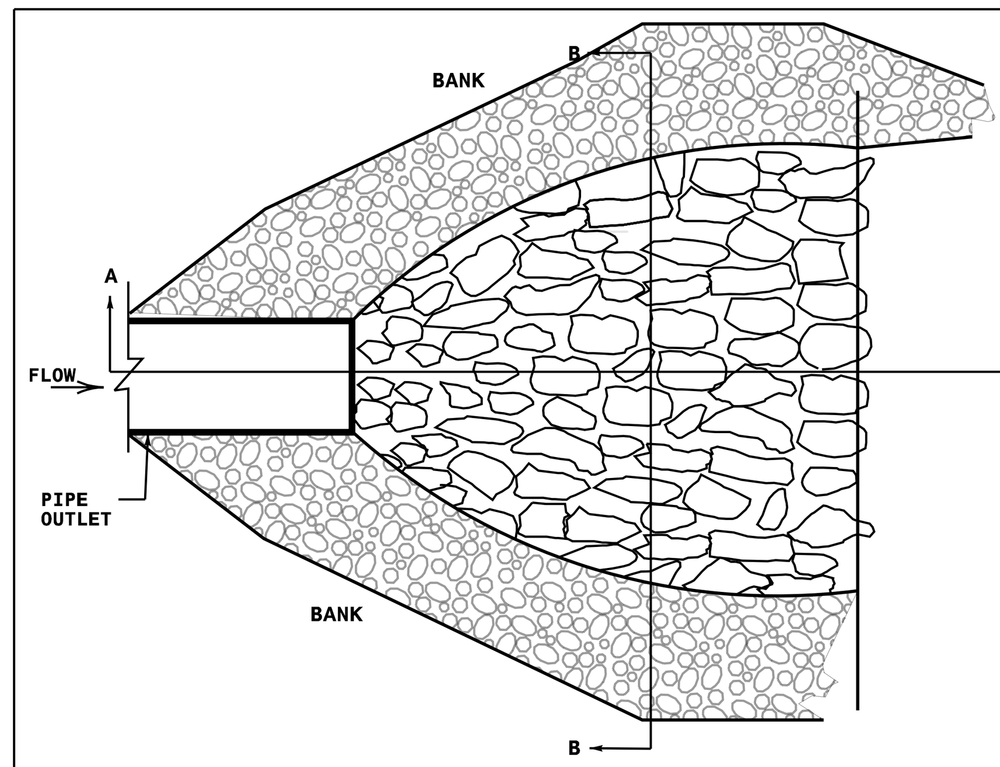
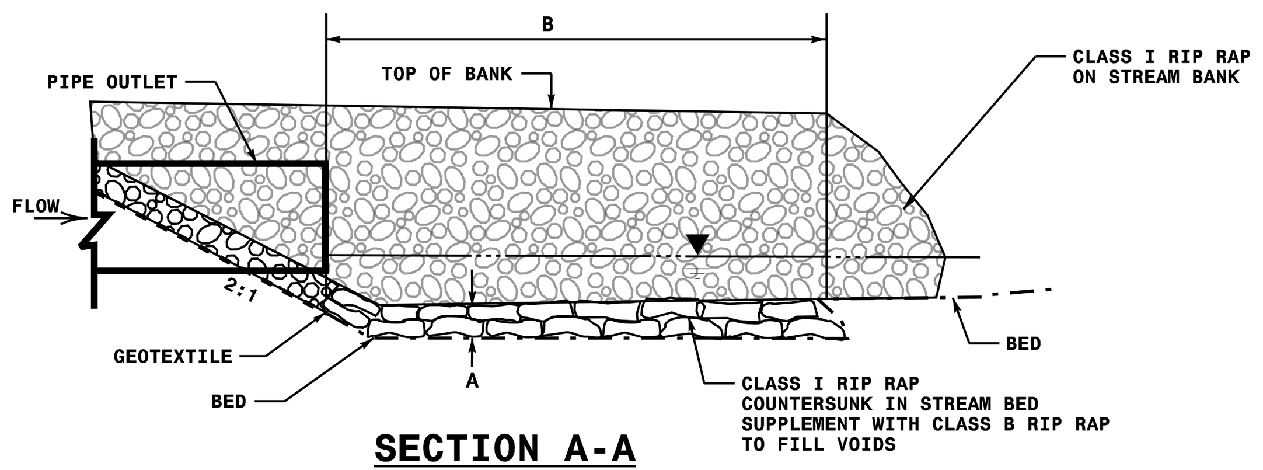
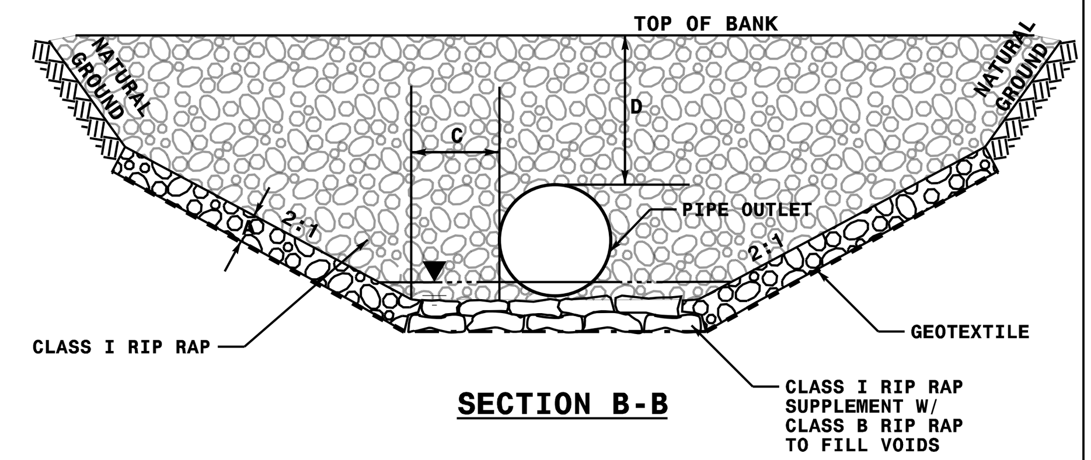


PLAN VIEW



SECTION A-A



SECTION B-B

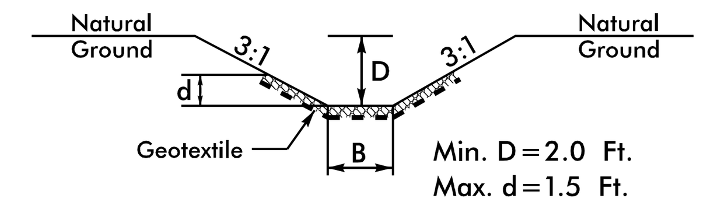
BASIN NUMBER	STATION	CULVERT SIZE	RIP RAP BASIN A	B	C	D
1	154+77 -L-	66"	1.5'	13'	0'	0.5'

ALL DIMENSIONS ARE APPROXIMATE

NOTE:
USE CLASS I RIP RAP IN STREAM BED AND SUPPLEMENT WITH CLASS B TO FILL VOIDS AS NECESSARY

DETAIL 46
SPECIAL OUTLET PROTECTION
(NOT TO SCALE)
AT STA. 154+77 -L- LT

DETAIL 49
STANDARD BASE DITCH
(Not to Scale)



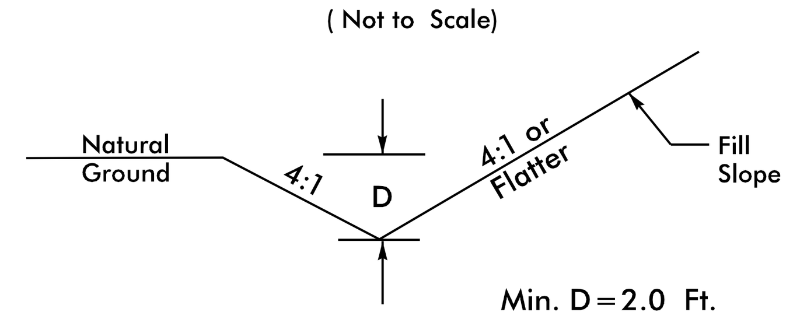
Min. D=2.0 Ft.
Max. d=1.5 Ft.
B=3.0 Ft.

*When B is < 6.0'

Type of Liner= CL-B Rip-Rap

AT -Y7- STA. 27+45 LT. (EST. 60 L.F)

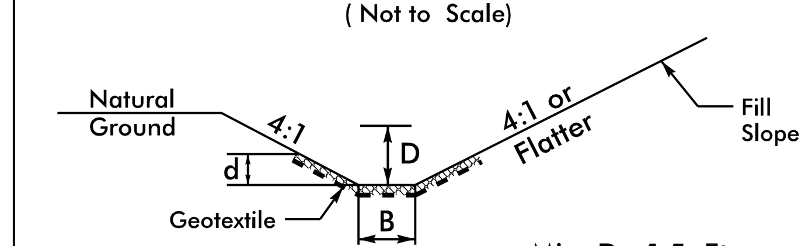
DETAIL 50
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Min. D=2.0 Ft.

FROM STA. 170+00 TO STA. 173+00 -L- RT

DETAIL 51
SPECIAL LATERAL BASE DITCH
(Not to Scale)

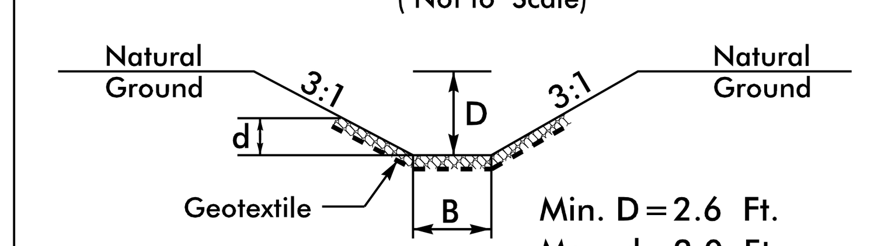


Min. D=1.5 Ft.
Max. d=1.0 Ft.
B=6.0 Ft.

Type of Liner= CL-B Rip-Rap

FROM STA. 21+00 TO STA. 22+50 -L- LT

DETAIL 52
STANDARD BASE DITCH
(Not to Scale)



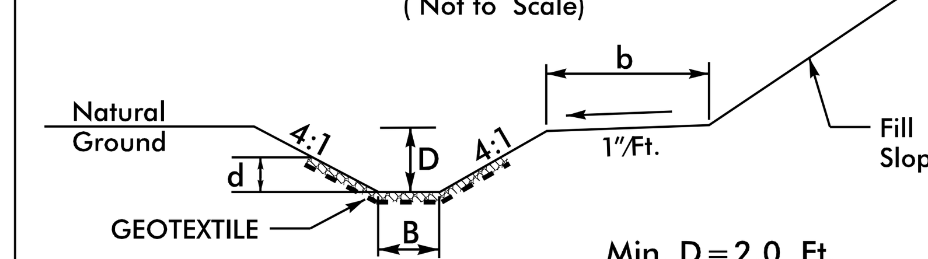
Min. D=2.6 Ft.
Max. d=2.0 Ft.
B=8.0 Ft.

*When B is < 6.0'

Type of Liner= CL-I Rip-Rap

FROM STA. 15+95 TO STA. 19+17 -Y4A- LT.

DETAIL 53
LATERAL BASE DITCH
(Not to Scale)



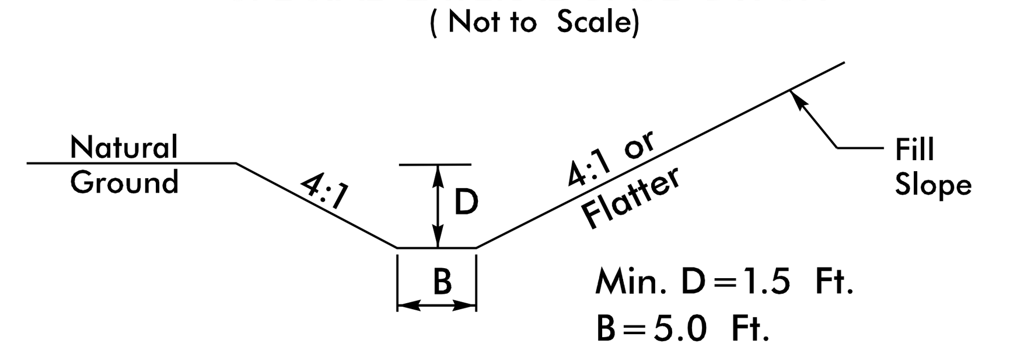
Min. D=2.0 Ft.
Max. d=1.5 Ft.
B=4.0 Ft.
b=5.0 Ft.

*When B is < 6.0'

Type of Liner= CL-B Rip-Rap

FROM STA. 25+10 TO STA. 25+50 -L- RT

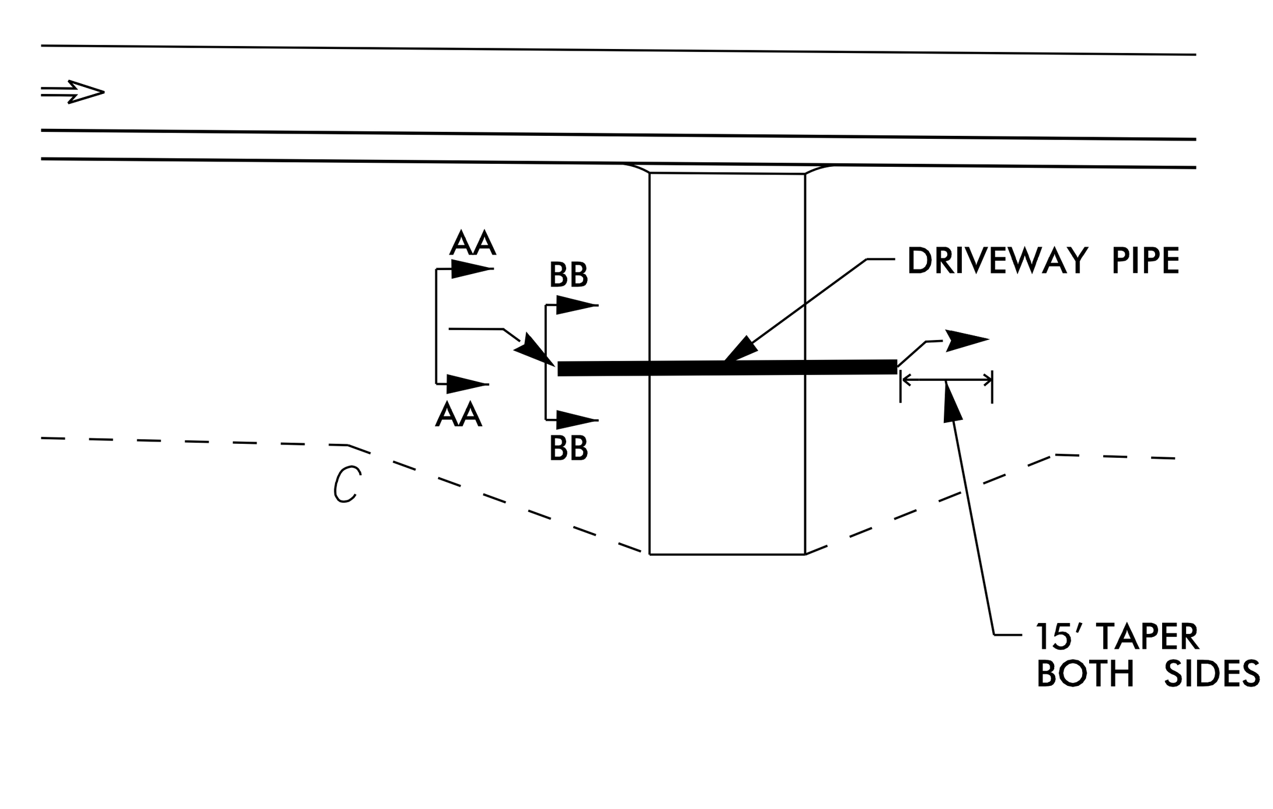
DETAIL 54
SPECIAL LATERAL BASE DITCH
(Not to Scale)



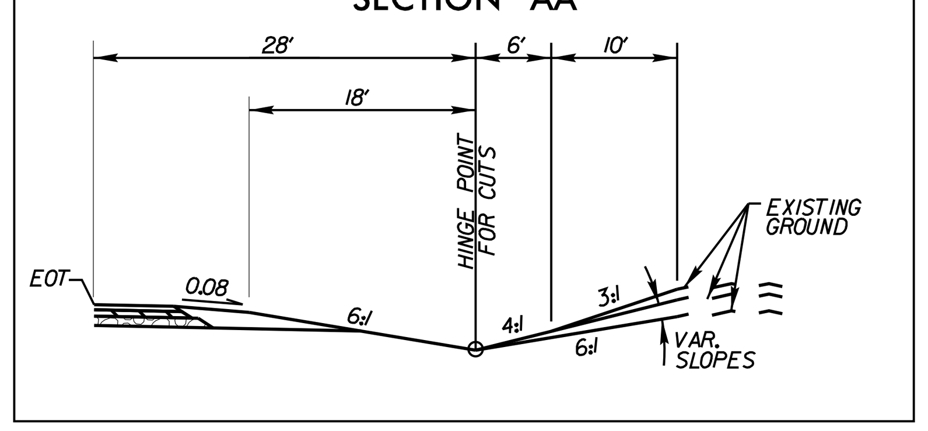
Min. D=1.5 Ft.
B=5.0 Ft.

FROM STA. 80+50 TO STA. 81+82 -L- RT.
FROM STA. 88+64 TO STA. 90+50 -L- LT

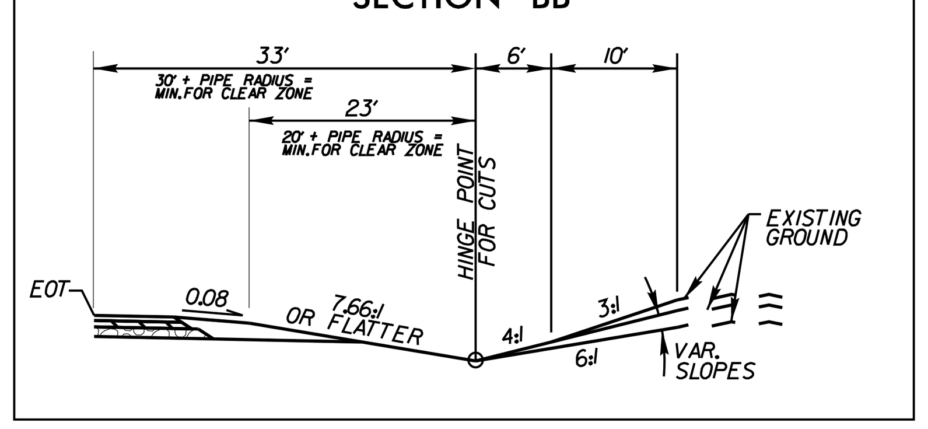
DETAIL 55 – PIPE FLARE OUT



SECTION AA



SECTION BB

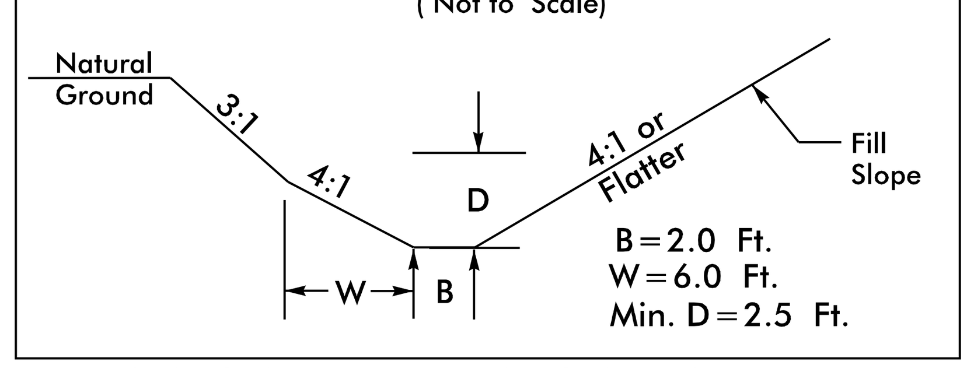


AT STA. 95+06 -L- RT
AT STA. 98+24 -L- LT
AT STA. 104+45 -L- LT
AT STA. 119+50 -L- LT

AT STA. 147+00 -L- RT
AT STA. 157+55 -L- RT
AT STA. 177+08 -L- RT
AT STA. 186+69 -L- LT

AT STA. 235+90 -L- RT

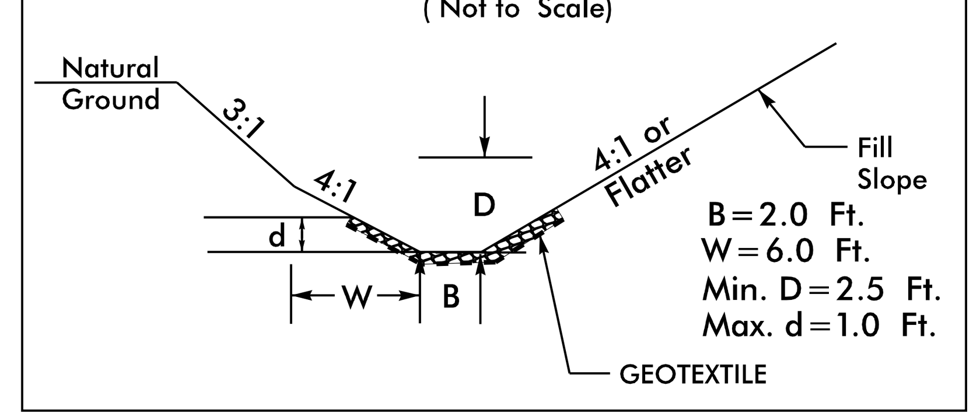
DETAIL 56
SPECIAL LATERAL BASE DITCH
(Not to Scale)



B=2.0 Ft.
W=6.0 Ft.
Min. D=2.5 Ft.

FROM STA. 105+50 TO STA. 106+30 -L- LT

DETAIL 57
SPECIAL LATERAL BASE DITCH
(Not to Scale)



B=2.0 Ft.
W=6.0 Ft.
Min. D=2.5 Ft.
Max. d=1.0 Ft.

FROM STA. 106+30 TO STA. 108+40 -L- LT

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PROJECT REFERENCE NO.	SHEET NO.
R-5705A	2D-4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 024436 ENGINEER JEFFREY W. MOORE 8/9/2023

NORTH CAROLINA PROFESSIONAL SEAL 052328 ENGINEER JORDAN BENDL 8/9/2023

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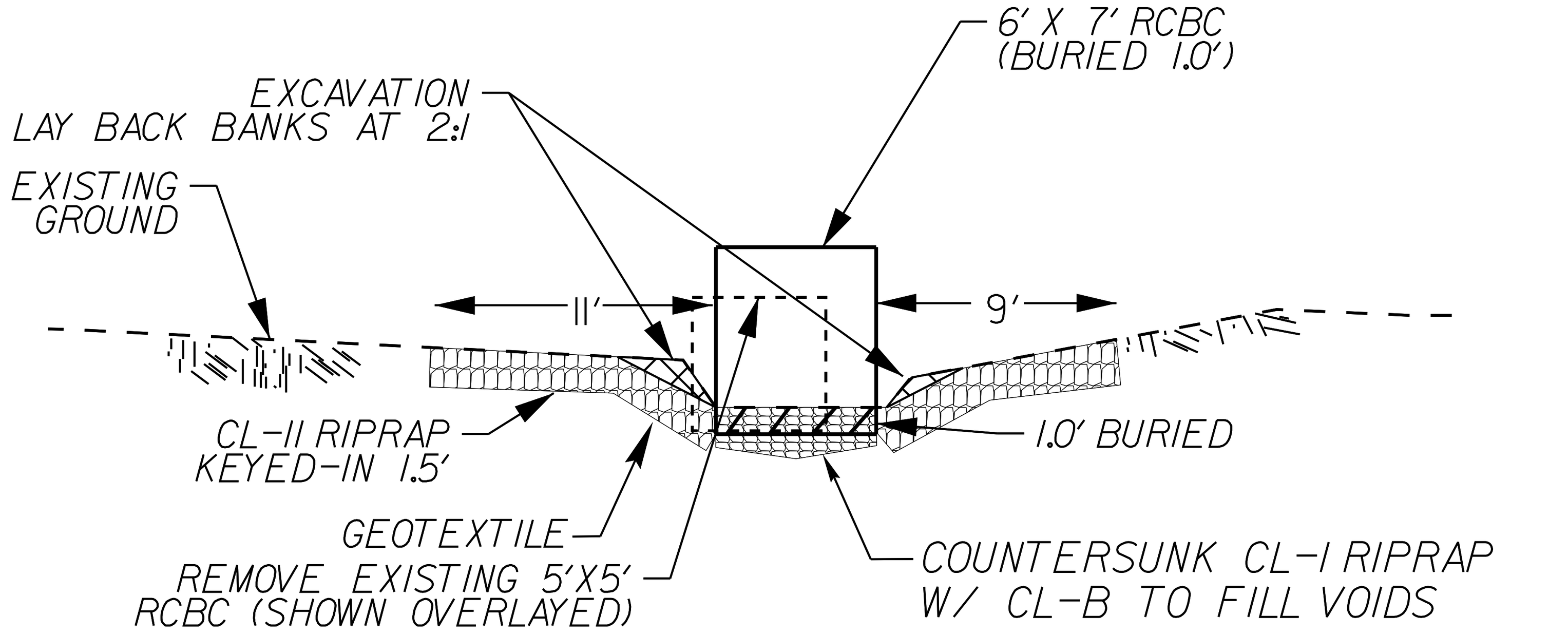
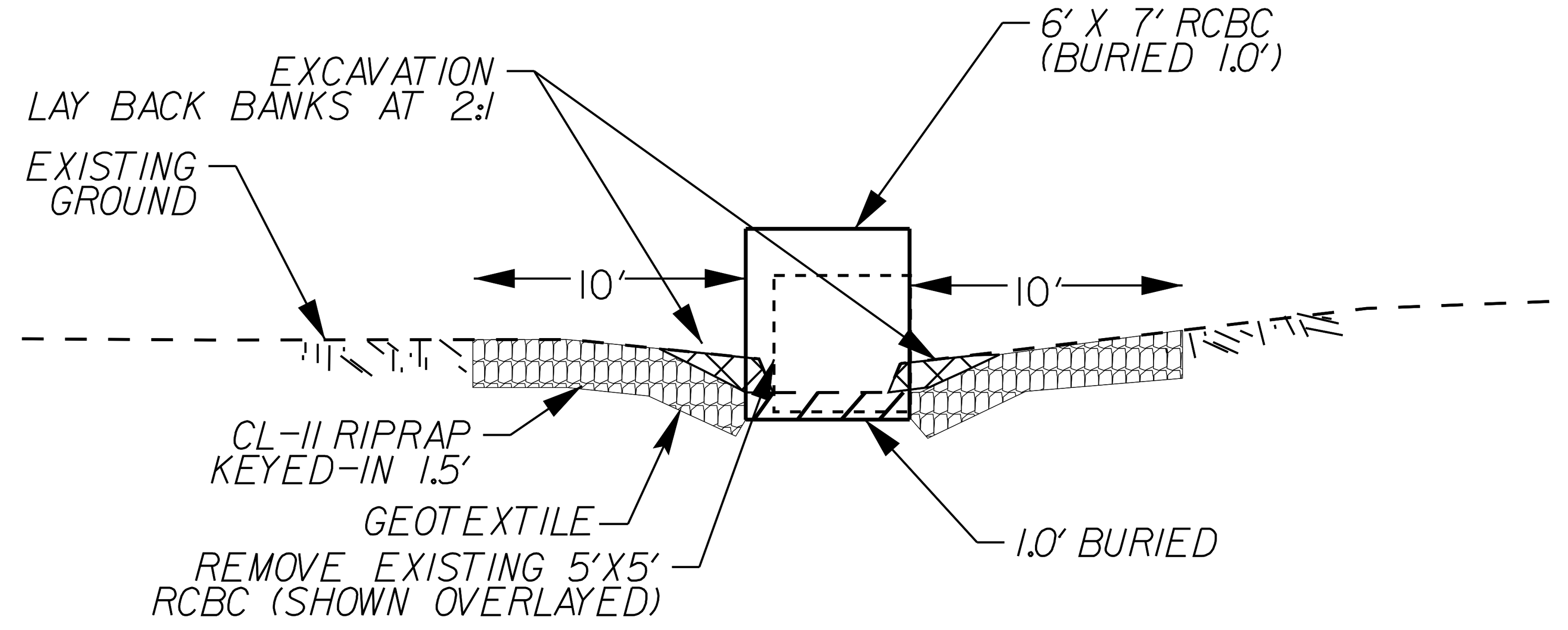
DETAIL 58 TYPICAL OUTLET CHANNEL IMPROVEMENTS
LOOKING DOWNSTREAM
NOT TO SCALE



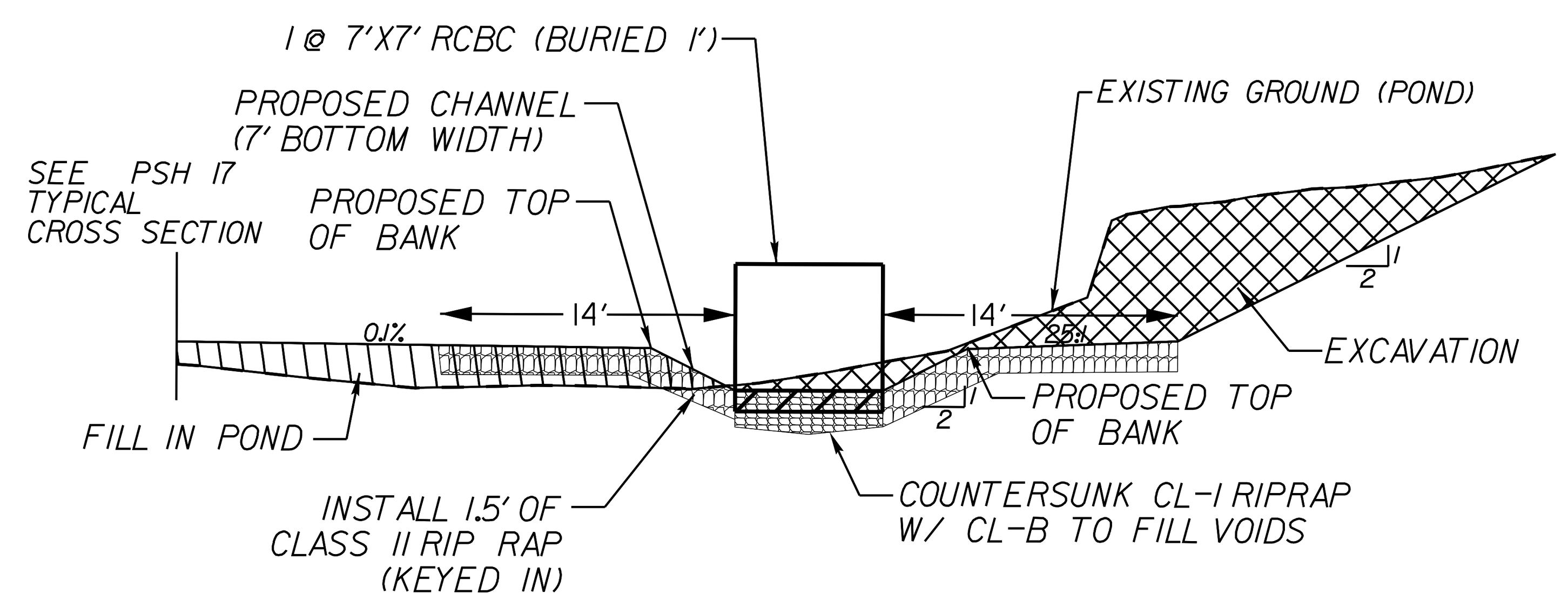
APPROX. STA. 24+10 -L- LT

DETAIL 59 TYPICAL - INLET CHANNEL IMPROVEMENTS
LOOKING DOWNSTREAM
NOT TO SCALE

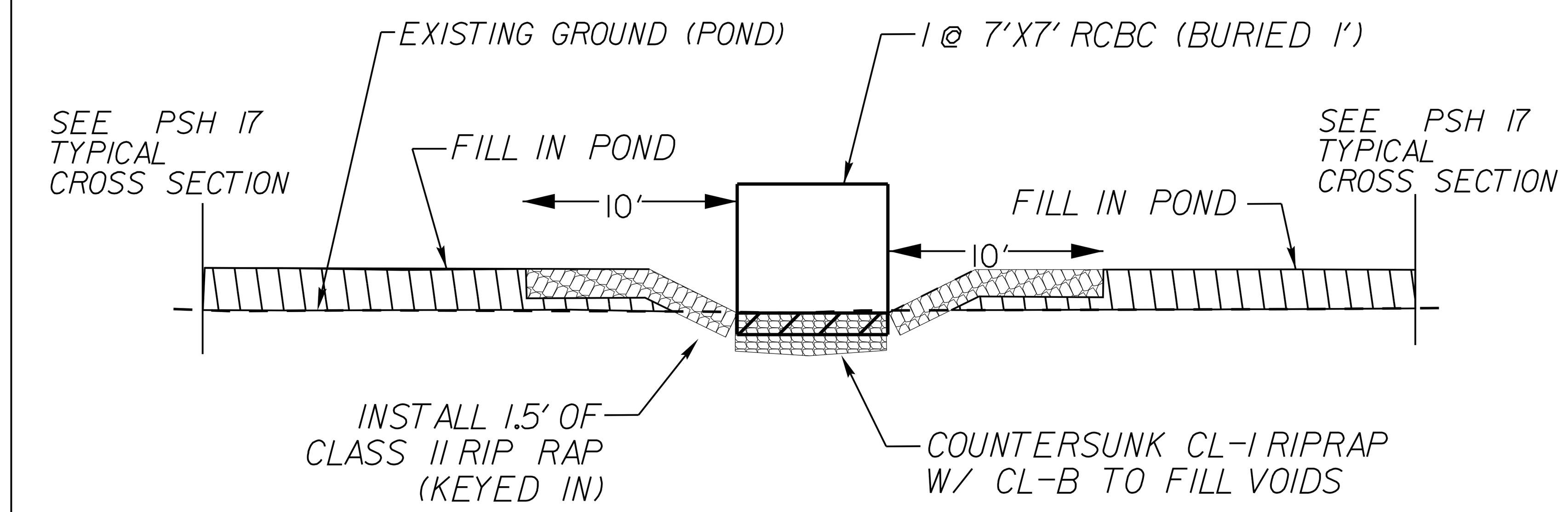


APPROX. STA. 24+70 TO 25+00 -L- RT

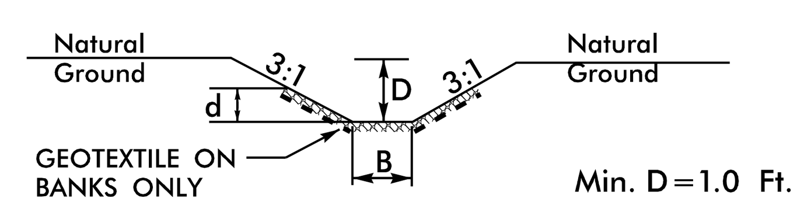
DETAIL 60 TYPICAL OUTLET CHANNEL IMPROVEMENTS
LOOKING DOWNSTREAM
NOT TO SCALE



DETAIL 61 TYPICAL - INLET CHANNEL IMPROVEMENTS
LOOKING DOWNSTREAM
NOT TO SCALE



DETAIL 62
STANDARD BASE DITCH
(Not to Scale)



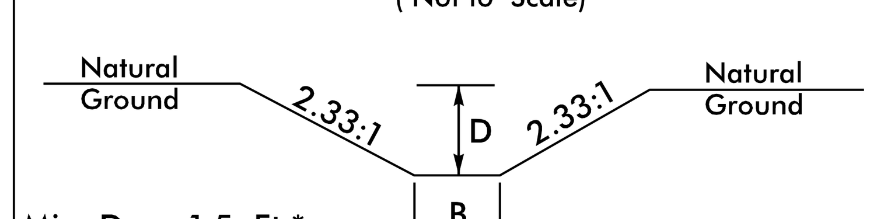
Min. D = 1.0 Ft.
Max. d = 1.0 Ft.
B = 4.0 Ft.

*When B is < 6.0'

Type of Liner = CL-I Rip-Rap

FROM STA. 86+50 TO STA. 86+87 -L- RT

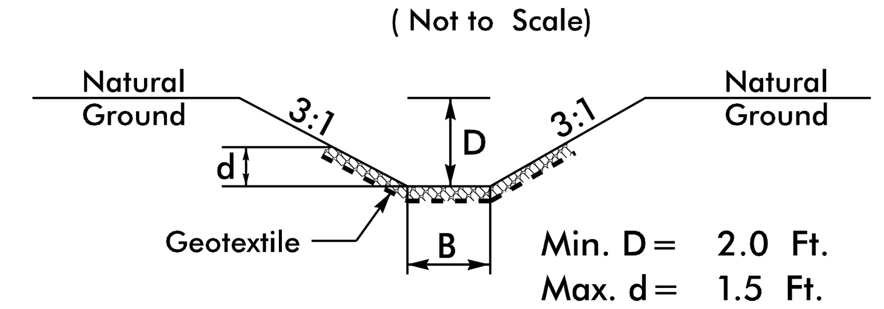
DETAIL 63
STANDARD BASE DITCH
(Not to Scale)



Min. D = 1.5 Ft.*
B = 5 Ft.
*MATCH EXIST DITCH INV.

STA. 174+10 -L- LT (EST. 78 L.F.)

DETAIL 64
STANDARD BASE DITCH
(Not to Scale)

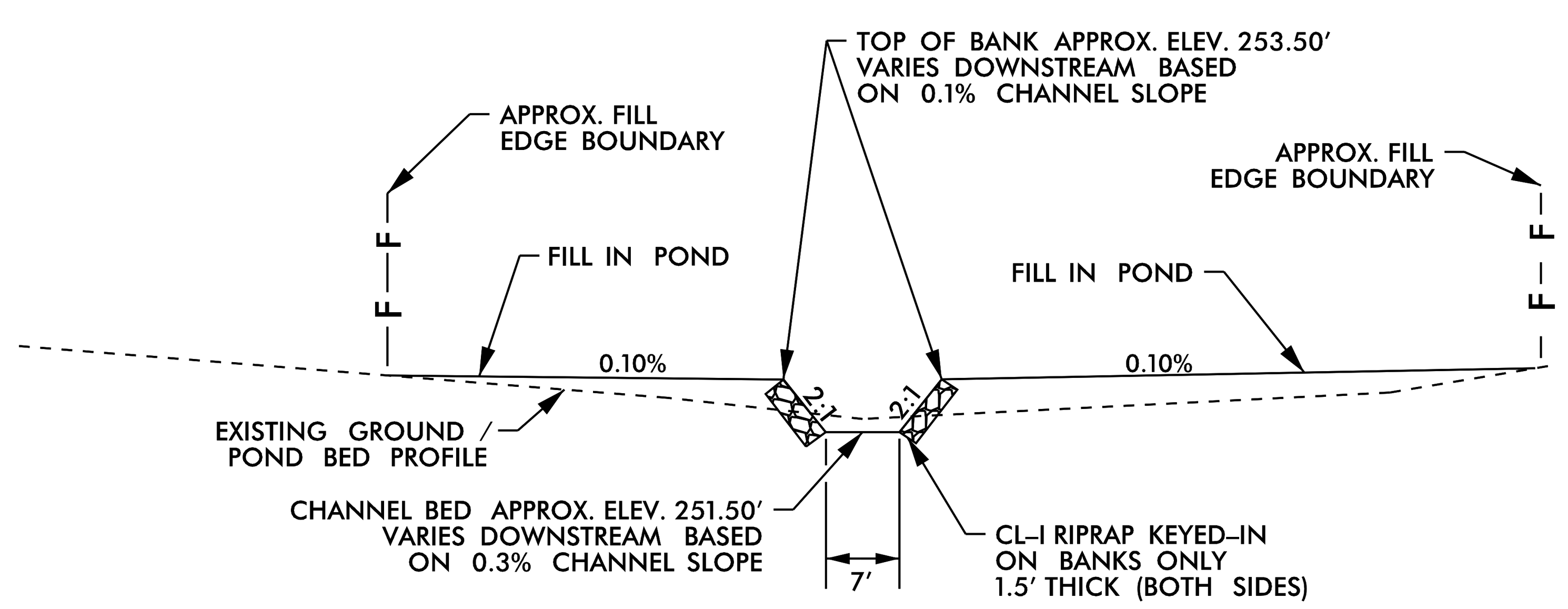


Min. D = 2.0 Ft.
Max. d = 1.5 Ft.
B = 6 Ft.

Type of Liner = Class I Rip-Rap

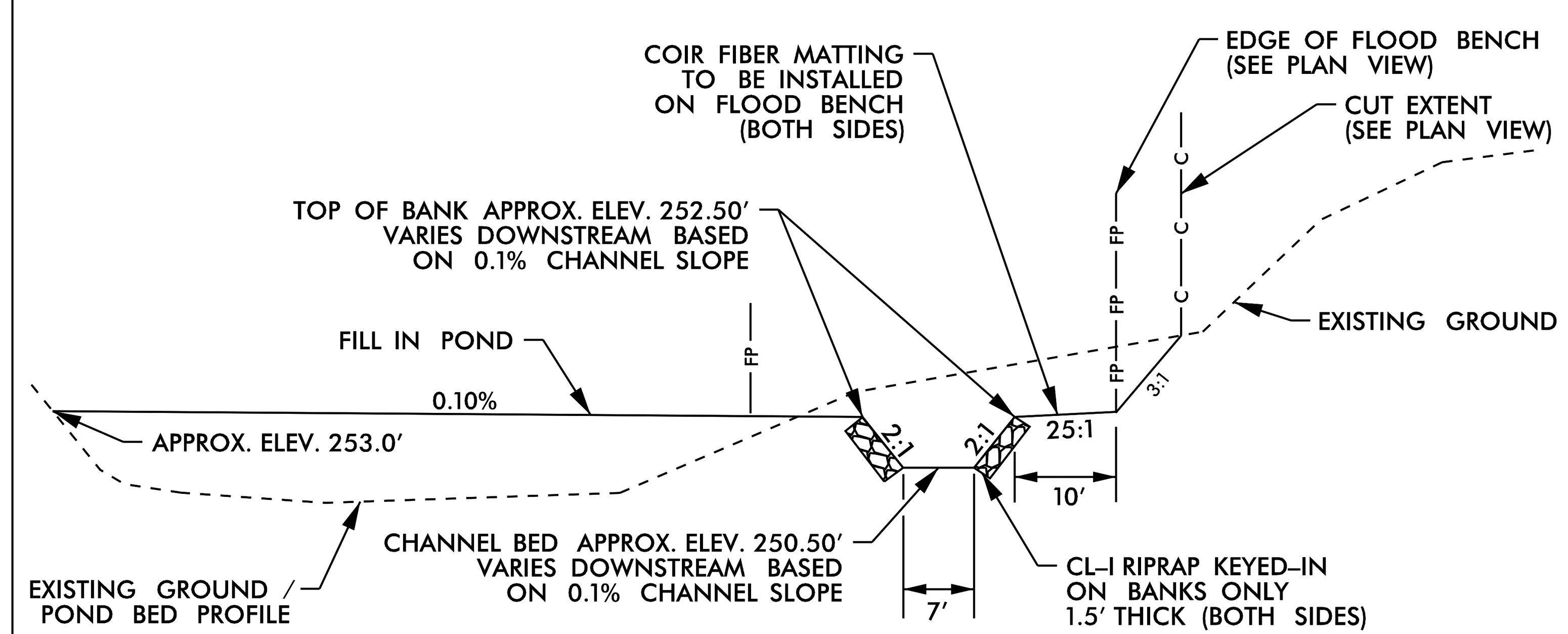
STA. 162+53 -L- LT (EST. 73 L.F.)

DETAIL TYPICAL SECTION P1



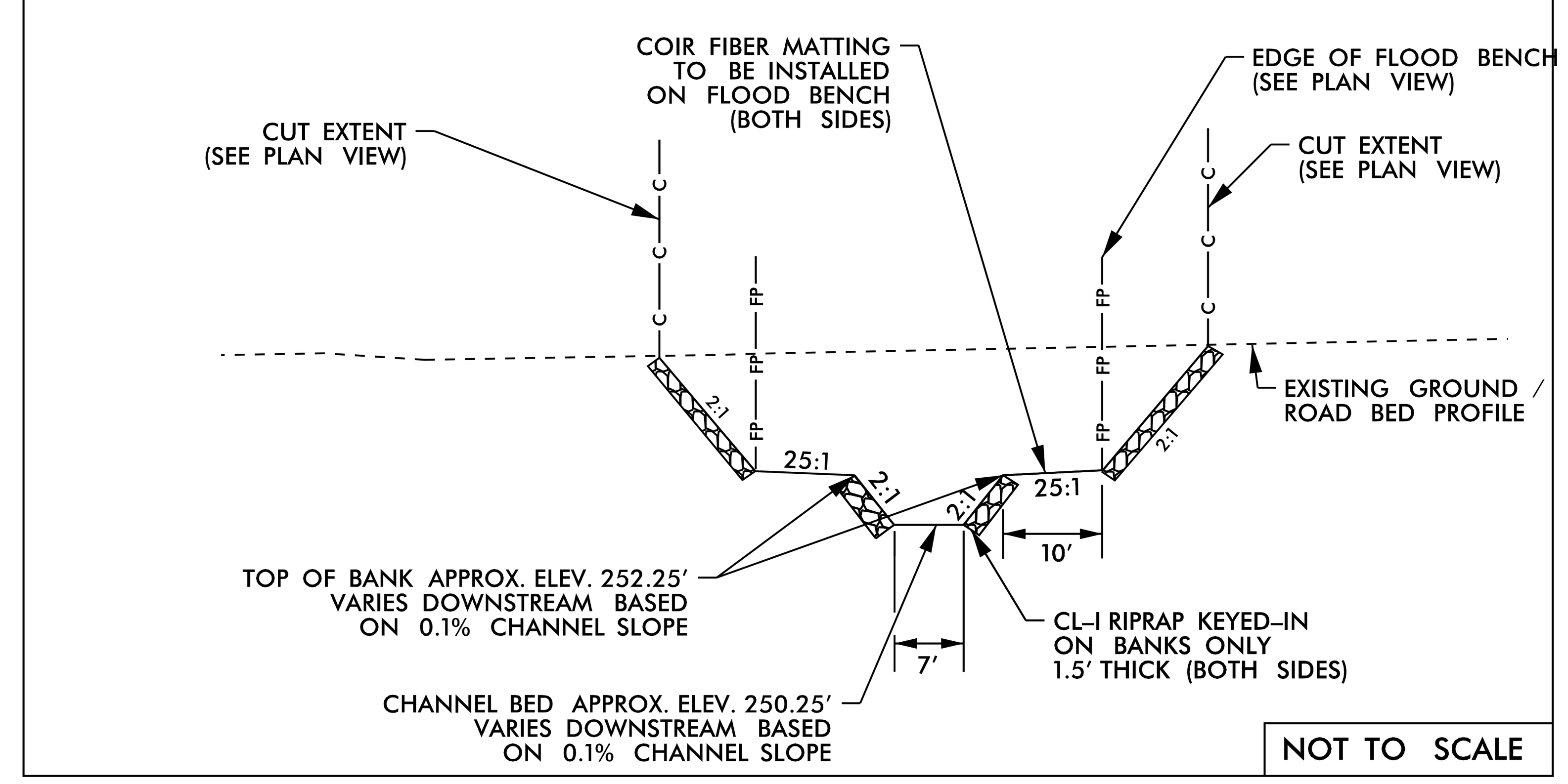
NOT TO SCALE

DETAIL TYPICAL SECTION P2



NOT TO SCALE

DETAIL TYPICAL SECTION P3



NOT TO SCALE

8/8/2023

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REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
R-5705A	2D-5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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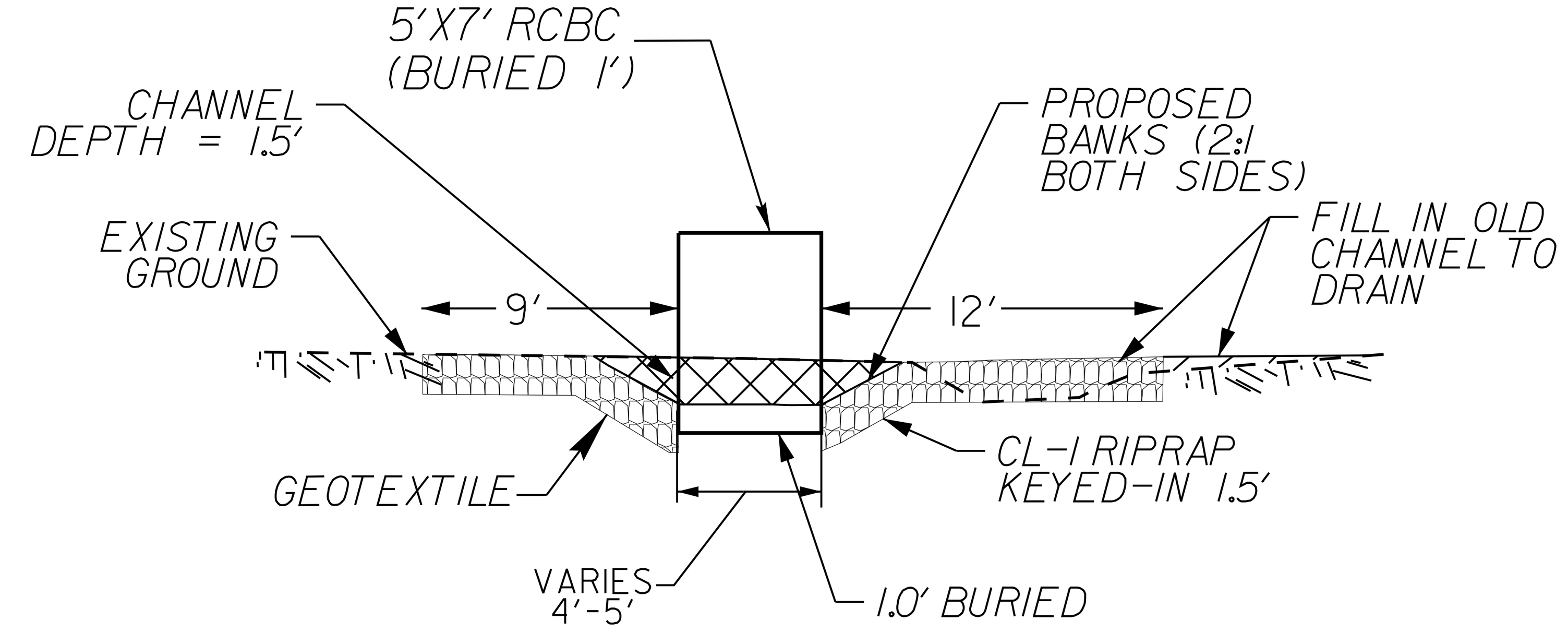
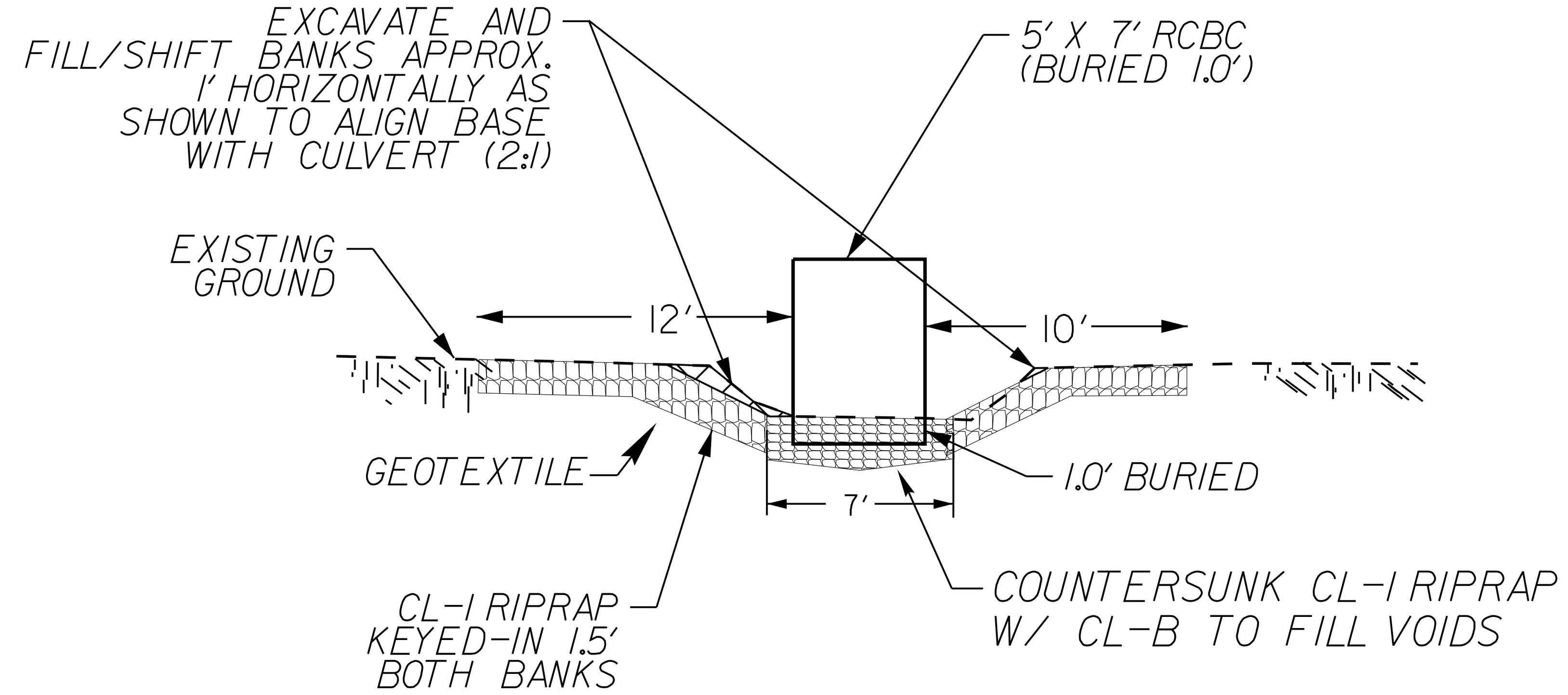
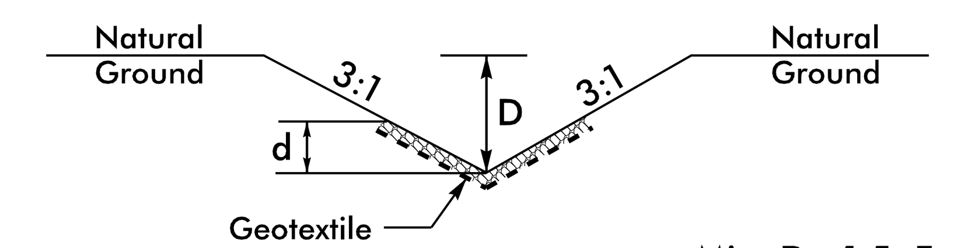
DETAIL 67 TYPICAL - INLET CHANNEL IMPROVEMENTS
LOOKING DOWNSTREAM
NOT TO SCALE



DETAIL 68 TYPICAL OUTLET CHANNEL IMPROVEMENTS
LOOKING DOWNSTREAM
NOT TO SCALE



DETAIL 69
STANDARD 'V' DITCH
(Not to Scale)



Min. D=1.5 Ft.
Max. d=1.0 Ft.
Type of Liner= CL-I Rip-Rap

FROM STA. 20+80 TO STA. 23+30 -Y7B- LT
(EQUATES TO: -L- LT. STA. 195+00 TO STA. 197+26)

8/8/2023

PROJECT REFERENCE NO.	SHEET NO.
R-5705A	2G-1

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022246 ENGINEER SCOTT A. HIDDEN

DocuSigned by: Scott A. Hidden 10/22/2018
F760CAE8... SIGNATURE DATE

ENGINEER

SIGNATURE DATE

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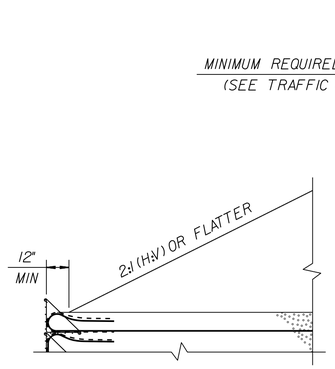
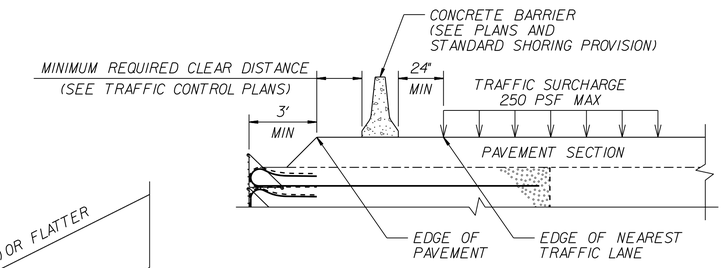
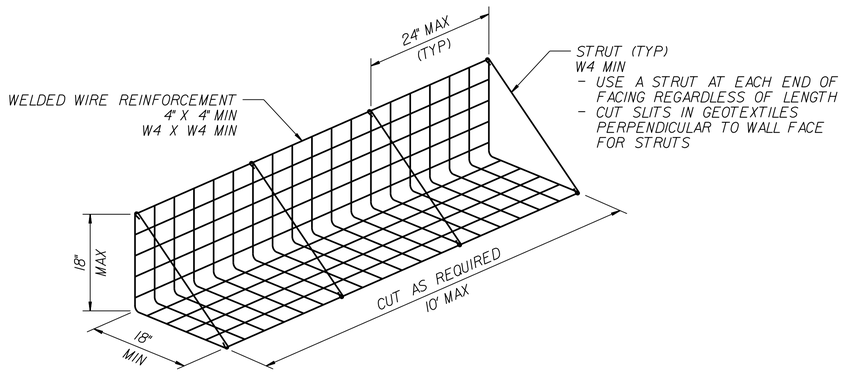


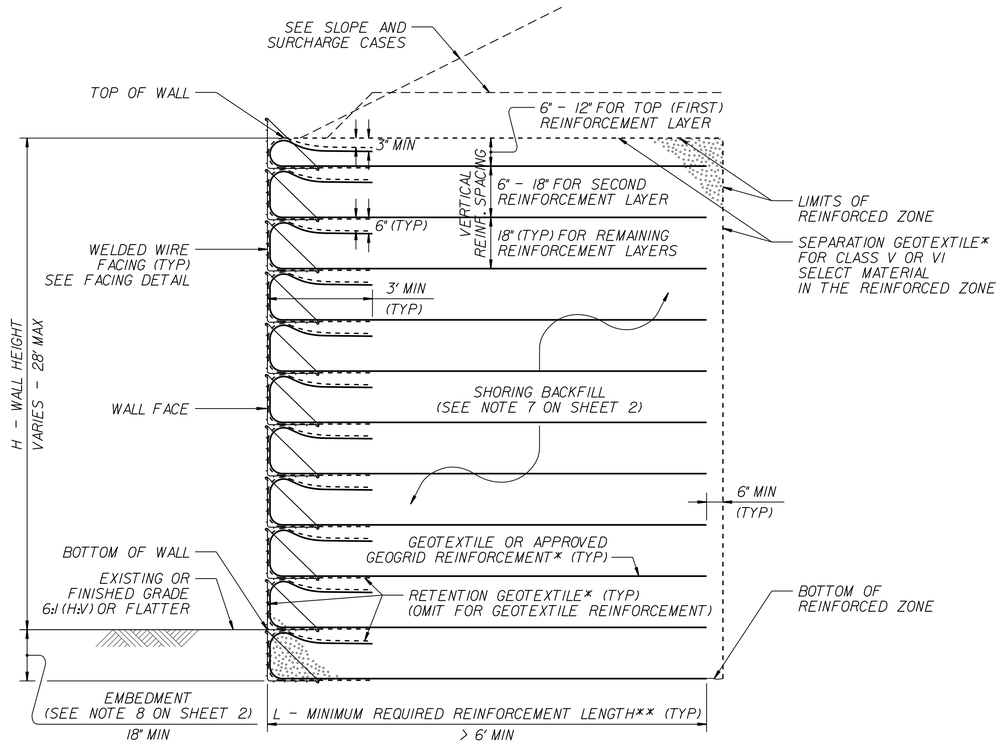


SURCHARGE CASE

SLOPE CASE

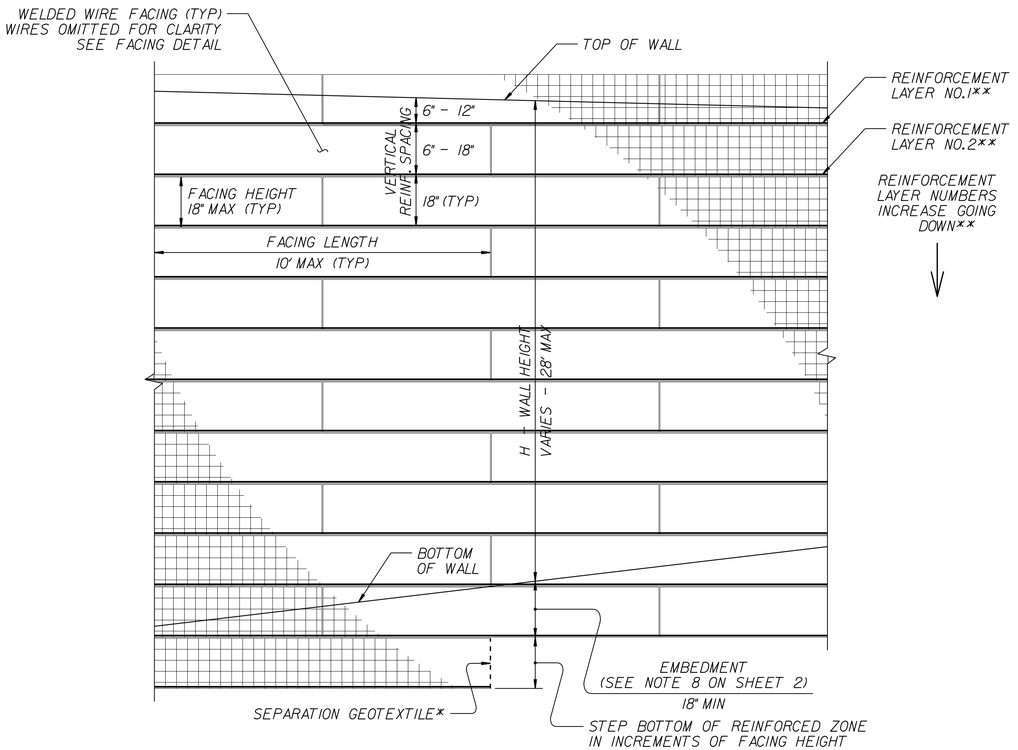


FACING DETAIL



STANDARD TEMPORARY WALL

(FOR STANDARD TEMPORARY WALLS ON STRUCTURES, SEE TEMPORARY WALL ON STRUCTURE DETAIL ON SHEET 2.)
*SEE GEOSYNTHETIC PLACEMENT DETAILS ON SHEET 2.
**SEE REINFORCEMENT TABLES ON SHEET 3.



STANDARD TEMPORARY WALL – PARTIAL ELEVATION

*SEE GEOSYNTHETIC PLACEMENT DETAILS ON SHEET 2.
**SEE REINFORCEMENT TABLES ON SHEET 3.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

STANDARD DETAIL NO. 1801.02

STANDARD TEMPORARY WALL SHEET 1 OF 3

DATE: 11-19-13

PROJECT REFERENCE NO.	SHEET NO.
R-5705A	2G-2

GEOTECHNICAL ENGINEER — SEAL 022246, NORTH CAROLINA PROFESSIONAL ENGINEER, SCOTT A. HIDDEN — DocuSigned by: Scott A. Hidden 10/22/2018 — SIGNATURE / DATE

ENGINEER — SIGNATURE / DATE

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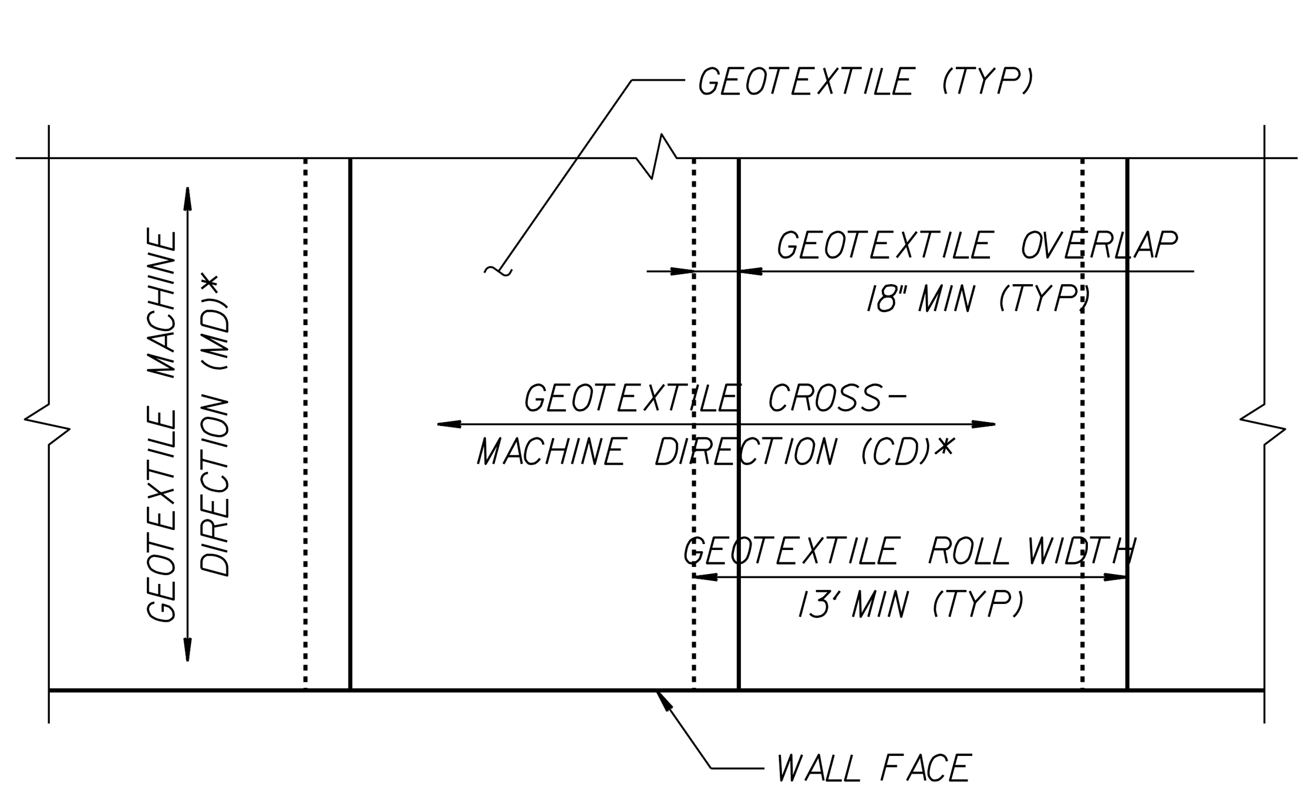
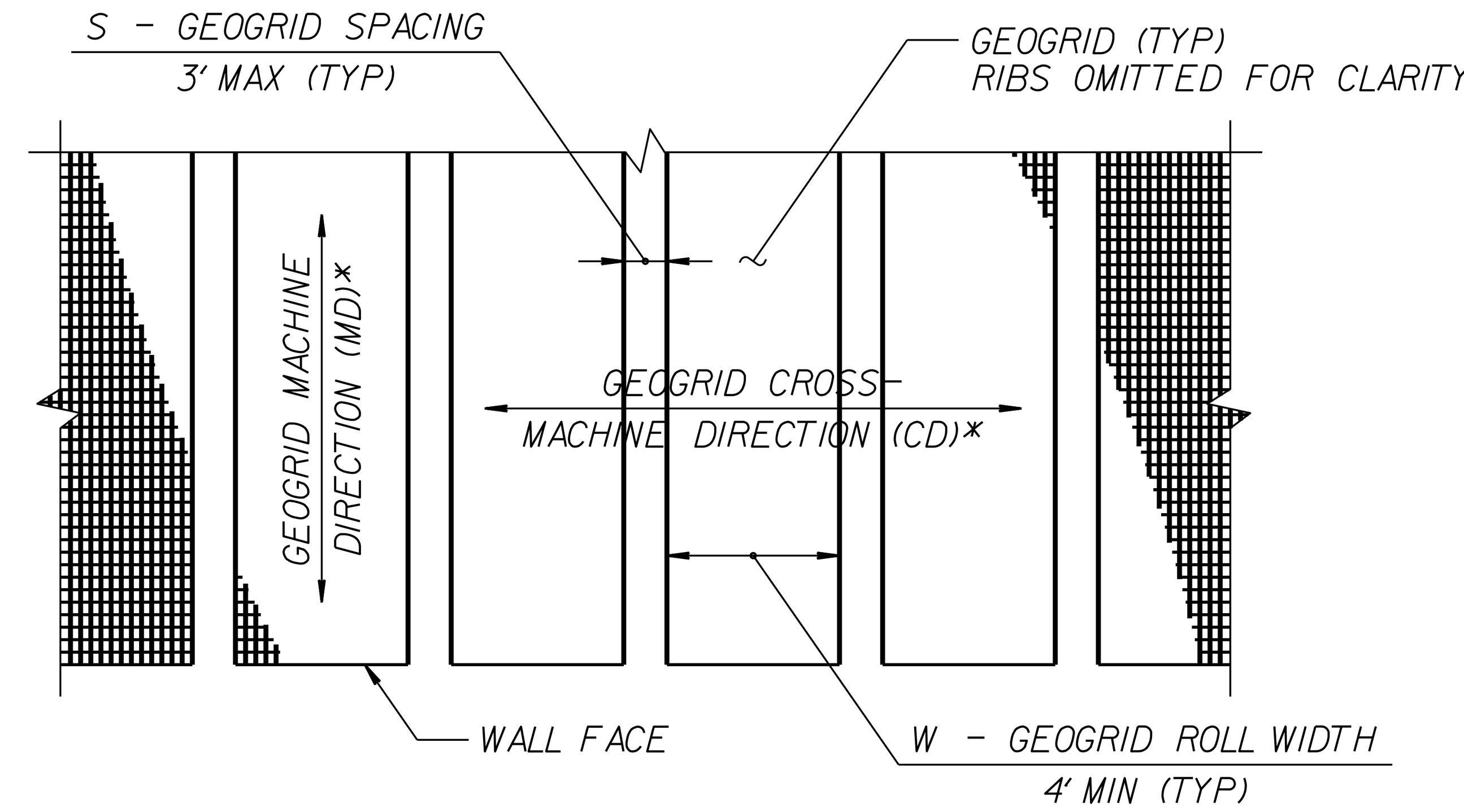


GEOTEXTILE PLACEMENT

(100% COVERAGE MIN FOR GEOTEXTILE REINFORCEMENT)



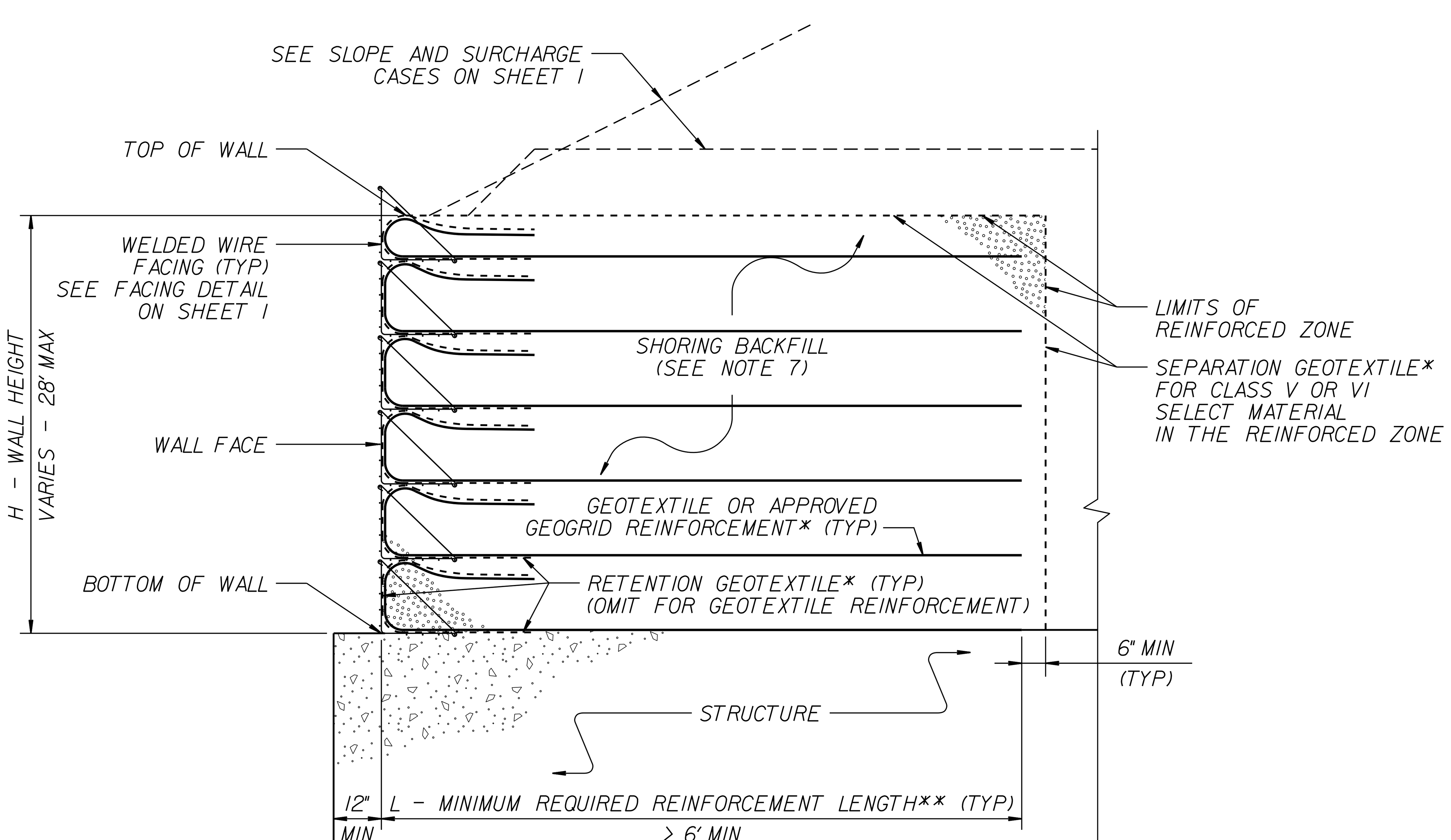
GEOGRID PLACEMENT

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

GEOSYNTHETIC PLACEMENT DETAILS

(PLAN VIEW)

*SEE NOTE 12.



TEMPORARY WALL ON STRUCTURE DETAIL

*SEE GEOSYNTHETIC PLACEMENT DETAILS.

**SEE REINFORCEMENT TABLES ON SHEET 3.

NOTES:

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

MATERIAL TYPE	SHORING BACKFILL
BORROW	A-2-4 SOIL
FINE AGGREGATE	CLASS II, TYPE 1 OR CLASS III SELECT MATERIAL
COARSE AGGREGATE	CLASS V OR VI SELECT MATERIAL

    IF THE WEBSITE DOES NOT LIST A SHORT-TERM DESIGN STRENGTH FOR AN APPROVED GEOGRID, USE A SHORT-TERM DESIGN STRENGTH EQUAL TO THE ULTIMATE TENSILE STRENGTH DIVIDED BY 3.5 FOR THE GEOGRID REINFORCEMENT.
11. FOR GEOGRID REINFORCEMENT WITH LESS THAN 100% COVERAGE, STAGGER REINFORCEMENT SO GEOGRIDS ARE CENTERED OVER GAPS IN THE REINFORCEMENT LAYER BELOW.
12. AT THE CONTRACTOR'S OPTION, REINFORCEMENT MAY BE INSTALLED WITH THE MD PARALLEL TO THE WALL FACE IF BOTH OF THE FOLLOWING CONDITIONS OCCUR:
    - W (REINFORCEMENT ROLL WIDTH) ≥ (MINIMUM REQUIRED REINFORCEMENT LENGTH) + 4.5' AND
    - REINFORCEMENT STRENGTH IN CD ≥ MINIMUM REQUIRED REINFORCEMENT STRENGTH IN MD.
13. SUBMIT A "STANDARD TEMPORARY WALL SELECTION FORM" AT LEAST 7 DAYS BEFORE STARTING TEMPORARY WALL CONSTRUCTION. STANDARD SHORING SELECTION FORMS ARE AVAILABLE FROM:
    connect.ncdot.gov/resources/Geological/Pages/Geotech_Forms_Details.aspx
14. DO NOT PLACE SHORING BACKFILL OR REINFORCEMENT UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.
15. FOR STANDARD TEMPORARY WALLS WITH PILE FOUNDATIONS IN THE REINFORCED ZONE, DRIVE PILES THROUGH REINFORCEMENT AFTER CONSTRUCTING TEMPORARY WALLS.
16. DO NOT SPLICE OR OVERLAP REINFORCEMENT SO SEAMS ARE PARALLEL TO THE WALL FACE.
17. CONTACT THE ENGINEER WHEN EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, PAVEMENTS, PIPES, INLETS OR UTILITIES WILL INTERFERE WITH REINFORCEMENT.
18. FOR STANDARD TEMPORARY WALLS WITH INTERIOR ANGLES LESS THAN 90 DEGREES, WRAP GEOSYNTHETICS AT ACUTE CORNERS AS DIRECTED BY THE ENGINEER.
19. FOR STANDARD TEMPORARY WALLS WITH TOP OF WALL WITHIN 5' OF FINISHED GRADE, REMOVE TOP FACING AND INCORPORATE TOP REINFORCEMENT LAYER INTO FILL WHEN PLACING FILL IN FRONT OF WALL.

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

STANDARD DETAIL NO. 1801.02

STANDARD TEMPORARY WALL
SHEET 2 OF 3

DATE: 11-19-13

PROJECT REFERENCE NO.	SHEET NO.
R-5705A	2G-3

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022246 ENGINEER SCOTT A. HIDDEN

DocuSigned by: Scott A. Hidden 10/22/2018
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ENGINEER

SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SLOPE OR SURCHARGE CASE	GROUNDWATER DEPTH BELOW BOTTOM OF REINFORCED ZONE (SEE NOTE 6 ON SHEET 2) (FT)	SHORING BACKFILL TYPE IN THE REINFORCED ZONE (SEE NOTE 7 ON SHEET 2)	H - WALL HEIGHT (FT)																								
			< 4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
SLOPE CASE	> 0	CLASS II,TYPE I, CLASS III,CLASS V OR CLASS VI SELECT MATERIAL	6	6	7	8	9	11	12	13	13	14	15	16	17	18	19	20	21	22	23	24	24	25	26	27	27
SURCHARGE CASE	> 0 TO 7 FOR H < 20' > 0 TO 10 FOR H ≥ 20'	ALL SHORING BACKFILL TYPES	6	7	7	8	8	9	9	10	11	11	12	12	13	14	14	15	16	17	17	18	19	19	20	21	22
	> 7 FOR H < 20' > 10 FOR H ≥ 20'	A-2-4 SOIL	6	6	7	8	8	9	9	10	11	11	12	12	13	14	14	15	16	16	17	18	18	19	20	20	21
		CLASS II,TYPE I OR CLASS III SELECT MATERIAL	6	6	7	7	8	8	9	10	10	11	11	12	12	13	14	15	15	16	16	17	17	18	18	19	20
		CLASS V OR CLASS VI SELECT MATERIAL	6	6	7	7	7	8	8	9	9	10	10	11	12	13	13	14	14	15	15	16	17	17	18	19	19

L – MINIMUM REQUIRED REINFORCEMENT LENGTH (FT)

(FOR ALL REINFORCEMENT TYPES)

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

GEOTEXTILE REINFORCEMENT
ULTIMATE TENSILE STRENGTH (LB/FT)

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

GEOGRID REINFORCEMENT
SHORT–TERM DESIGN STRENGTH (LB/FT)

(SEE NOTE 10 ON SHEET 2.)

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

*BASED ON VERTICAL REINFORCEMENT SPACING SHOWN ON SHEET 1.

MINIMUM REQUIRED REINFORCEMENT STRENGTH IN MD

(SEE NOTE 9 ON SHEET 2.)
*SEE PARTIAL ELEVATION ON SHEET 1
FOR REINFORCEMENT LAYER NUMBERING.

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

STANDARD DETAIL NO. 1801.02

STANDARD TEMPORARY WALL
SHEET 3 OF 3

DATE: 11-19-13

COMPUTED BY: MTH DATE: 08/04/2022
CHECKED BY: JWM DATE: 08/04/2022

PROJECT REFERENCE NO.	SHEET NO.
R-5705A	3B-1

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REVISIONS

SUMMARY OF EARTHWORK

IN CUBIC YARDS

LOCATION	EXCAVATION		EMBANKMENT	BORROW	TOTAL WASTE
	TOTAL UNCLASSIFIED	UNDERCUT			
PHASE I					
SECTION 1 (PHASE I)					
–L– 21+21.92 TO –L– 26+55.00 (TEMP PVMT)	56		484	428	
SUBTOTAL	56		484	428	
SECTION 2 (PHASE I)					
–L– 15+58.00 (RT) TO 24+50.00 (RT)	2,816		3,929	1,763	650
SUBTOTAL	2,816		3,929	1,763	650
SECTION 3 (PHASE I)					
–L– 24+50.00 (RT) TO 52+50.00 (RT)	3,990		30,810	26,820	
SUBTOTAL	3,990		30,810	26,820	
SECTION 4 (PHASE I)					
–L– 52+50.00 (RT) TO 82+50.00 (RT)	3,122		13,553	10,431	
–Y2– 10+38.01 TO 13+49.88	310		373	63	
SUBTOTAL	3,432		13,925	10,493	
SECTION 5 (PHASE I)					
–L– 82+50.00 (RT) TO 94+50.00 (RT)	962		13,503	12,541	
SUBTOTAL	962		13,503	12,541	
SECTION 6 (PHASE I)					
–LDET– 94+50.58 TO 100+14.37	664		268		397
SUBTOTAL	664		268		397
SECTION 7 (PHASE I)					
–L– 106+00.00 TO 136+00.00	16,128	8039	50,241	36,523	10,449
POND AT –L– 110+50.00			525	525	
–Y4– 13+61.00 (LT) TO 18+42.99 (LT)	727		153		575
–Y4– 19+20.49 (LT) TO 25+77.00 (LT)	1,423		7,559	6,136	
–Y4A– 19+50.00 (LT) TO 20+08.00 (LT)			851	851	
–Y4B– 15+50.00 (RT) TO 17+00.00 (RT)	19		45	26	
–Y5– 19+76.00 TO 22+22.97	108		206	98	
–Y5A– 10+42.91 TO 13+64.00	68		1,228	1,160	
–Y5DET– 11+69.18 TO 12+94.56	9		75	66	
–Y5DET– 14+10.49 TO 15+88.94	56		204	148	
SUBTOTAL	18,538	8,039	61,086	45,533	11,024
SECTION 8 (PHASE I)					
–L– 136+00.00 TO 165+00.00	9,988	10,071	59,039	50,731	11,751
SUBTOTAL	9,988	10,071	59,039	50,731	11,751
SECTION 9 (PHASE I)					
–Y7DET1– 12+46.51 TO 27+86.59	233		649	416	
–Y7– 23+30.00 (LT) TO 32+60.28 (LT)	1,294		4,149	4,015	1,160
–Y7– 33+40.63 (LT) TO 37+60.00 (LT)	1,142		283		860
–Y7A– 46+91.77 TO 47+90.00	5		74	69	
SUBTOTAL	2,674		5,154	4,499	2,020
PHASE II					
SECTION 10 (PHASE II)					
–L– 15+58.00 (LT) TO 24+50 (LT)	1,311		930		381
SUBTOTAL	1,311		930		381
SECTION 11 (PHASE II)					
–L– 24+50.00 (LT) TO 52+50.00 (LT)	4,509		1,001		3,508
–Y1– 10+50.00 TO 14+50.00	224		240	16	
SUBTOTAL	4,733		1,241	16	3,508

QUANTITIES ARE APPROXIMATE ONLY. THE RESIDENT ENGINEER WILL RE–CROSS SECTION THE WORK ACCURATELY WHEN THE PROJECT IS STAKED OUT. THESE CROSS SECTION NOTES WILL BE USED IN COMPUTING THE FINAL QUANTITIES FOR WHICH THE CONTRACTOR WILL BE PAID.

SUMMARY OF EARTHWORK

IN CUBIC YARDS

LOCATION	EXCAVATION		EMBANKMENT	BORROW	TOTAL WASTE
	TOTAL UNCLASSIFIED	UNDERCUT			
PHASE I					
SECTION 12 (PHASE II)					
–L– 52+50.00 (LT) TO 82+50.00 (LT)	3,727		2,033		1,695
SUBTOTAL	3,727		2,033		1,695
SECTION 13 (PHASE II)					
–L 82+50.00 (LT) TO 94+50.00 (LT)	1,164		2,391	1,227	
–Y3– 10+88.00 TO 13+36.74	240		524	284	
SUBTOTAL	1,404		2,915	1,511	
SECTION 14 (PHASE II)					
–L– 94+50.00 TO 100+00.00	2,110		1,013		1,098
–Y4B– TURN 10+02.00 TO 11+10.00	64				64
SUBTOTAL	2,174		1,013		1,162
SECTION 15 (PHASE II)					
–L– 100+00.00 TO 106+00.00	7,012	3,201	4,545		5,668
SUBTOTAL	7,012	3,201	4,545		5,668
SECTION 16 (PHASE II)					
–L– 165+00.00 TO 181+00.00	5,078	1,752	36,389	32,671	3,112
POND AT –L– 180+50.00			1,288	1,288	
–Y6– 13+41.00 TO 16+16.60	58		1,631	1,573	
–Y6– 16+95.86 TO 22+44.00	854		161		693
–Y6A– 10+12.69 TO 11+17.00	81		3		79
–DRW2– 10+43.00 TO 12+00.00	15		634	619	
SUBTOTAL	6,086	1,752	40,105	36,150	3,883
SECTION 17 (PHASE II)					
–L– 184+00.00 TO 198+50.00	21,055	3,142	27,804	11,549	7,942
POND AT –L– 197+00.00			3,875	3,875	
–DRW5– 10+43.00 TO 11+07.00	313				313
–DRW7– 10+43.00 TO 11+45.00	32		351	319	
SUBTOTAL	21,400	3,142	32,030	15,743	8,255
SECTION 18 (PHASE II)					
–L– 198+50.00 TO 233+00.00	19,939	5,175	91,571	76,992	10,535
–Y7– 25+50.00 (RT) TO 37+60.00 (RT)	40		5,466	5,426	
–Y7C– 13+73.45 TO 16+50.00	473		56		417
–Y7C– TURN 19+84.00 TO 20+84.00	18		20	2	
–Y7D– 13+30.00 TO 19+66.00	5,517		163		5,355
–DRW8– 10+28.00 TO 10+75.00	8		113	105	
–DRW10– 10+22.00 TO 10+85.00	9		93	84	
SUBTOTAL	26,004	5,175	97,481	82,609	16,306
SECTION 19 (PHASE II)					
–L– 233+00.00 TO 246+00.00	7,282	3,432	18,924	13,462	5,252
SUBTOTAL	7,282	3,432	18,924	13,462	5,252

1/3/2023

COMPUTED BY: MTH DATE: 08/04/2022
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PROJECT REFERENCE NO.	SHEET NO.
R-5705A	3B-2

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REVISIONS

SUMMARY OF EARTHWORK

IN CUBIC YARDS

LOCATION	EXCAVATION		EMBANKMENT	BORROW	TOTAL WASTE
	TOTAL UNCLASSIFIED	UNDERCUT			
PHASE III					
SECTION 20 (PHASE III)					
–L– 94+50.00 TO 103+50.00	634		475		159
SUBTOTAL	634		475		159
SECTION 21 (PHASE III)					
–L– 172+00.00 TO 181+00.00	2,240		10,999	8,759	
–Y6A– TURN 16+66.00 TO 18+19.00	38		25		13
–DRW3– 10+43.00 TO 12+38.00	100		303	203	
–DRW4– 10+43.00 TO 11+26.90	164		1		163
SUBTOTAL	2,542		11,328	8,961	176
SECTION 22 (PHASE III)					
–L– 181+00.00 TO 193+50.00	1,614		7,040	5,426	
–Y7B– TURN 18+00.00 TO 19+00.00	36		20		16
SUBTOTAL	1,650		7,060	5,426	16
SECTION 23 (PHASE III)					
–Y4– 13+61.00 (RT) TO 15+00.00 (RT)	20		13		8
–Y4– 23+00.00 (RT) TO 25+77.00 (RT)	7		531	524	
–Y4A– 17+50.00 (RT) TO 19+50.00 (RT)			458	458	
–Y4A– TURN 11+40.00 TO 12+90.74	72		25		47
–Y4B– 15+50.00 (LT) TO 16+50.00 (LT)	34				34
SUBTOTAL	133		1,026	982	89
SECTION 24 (PHASE III)					
–Y5– 21+00.00 TO 21+78.82	28		1		27
–Y5B– TURN 12+15.00 TO 13+19.00	75				75
SUBTOTAL	103		1		102
PHASE IV					
SECTION 25 (PHASE IV)					
–Y5– 21+00.00 (LT) TO 22+00.00 (LT)	48				48
–Y5A– 10+50 (RT) TO 12+00.00 (RT)	91				91
SUBTOTAL	139				139
SECTION 26 (PHASE IV)					
–Y7– 23+30.00 (LT) TO 24+50.00 (LT)	125				125
SUBTOTAL	125				125
TOTAL	129,579	34,812	409,305	317,668	72,758
MATERIAL FOR SHOULDER CONSTRUCTION			16,438	16,438	
LOSS DUE TO CLEARING AND GRUBBING	–12,000			12,000	
ADD'L UNDERCUT FROM GEOTECH RECS		2,250	2,813	2,813	2,250
SELECT GRANULAR MATERIAL IN LIEU OF BORROW			–58,750	–58,750	
WASTE IN LIEU OF BORROW				–17,686	–17,686
PROJECT TOTAL	117,579	37,062	369,805	272,482	57,322
EST 5% TO REPLACE TOP SOIL ON BORROW PIT				13,624	
GRAND TOTAL	117,579	37,062	369,805	286,106	57,322
SAY	118,000	37,500		286,500	

ESTIMATED DDE = 3,390 CY
ESTIMATED SHALLOW UNDERCUT = 1,120 CY
PAVEMENT STRUCTURE VOLUME = 6,600 SY
ACCEPTABLE UNCLASSIFIED EXCAVATION NOT TO BE USED IN TOP 3FT OF EMBANKMENT OR BACKFILL = 8,000 CY

QUANTITIES ARE APPROXIMATE ONLY. THE RESIDENT ENGINEER WILL RE–CROSS SECTION THE WORK ACCURATELY WHEN THE PROJECT IS STAKED OUT. THESE CROSS SECTION NOTES WILL BE USED IN COMPUTING THE FINAL QUANTITIES FOR WHICH THE CONTRACTOR WILL BE PAID.

1/3/2023

COMPUTED BY: MTH DATE: 08/04/2022
CHECKED BY: JWM DATE: 08/04/2022

PROJECT REFERENCE NO.	SHEET NO.
R-5705A	3B-3

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REVISIONS

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
GUARDRAIL SUMMARY

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

G = GATING IMPACT ATTENUATOR TL-3 or TL-2
NG = NON-GATING IMPACT ATTENUATOR TL-3 or TL-2

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH (L.F.)			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOULDER WIDTH	FLARE LENGTH (L.F.)		W		ANCHORS								IMPACT ATTENUATOR		REMOVE EXISTING GUARDRAIL (L.F.)			TERMINAL END SECTION (EA.)	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	Type III	B-77	GREU, TL-3	GREU, TL-2	CAT-1	AT-1	Type III SC	B-77 SC	IA-MASH TL-3	G	NG	SINGLE FACED CONCRETE BARRIER	REMOVE EXISTING GUARDRAIL	REMOVE & STOCKPILE EXISTING GUARDRAIL		
-L-	179+06.00	182+12.25	RT	306.25			181+61.00		10'	10'	50	6.25	1				1		1											
-L-	181+13.75	184+45.00	LT	331.25			191+57.00		10'	10'	50	6.25	1				1		1											
-L-	196+63.00	199+19.25	RT	256.25			198+85.00		10'	10'	50	6.25	1				1		1											
-L-	198+06.75	201+63.00	LT	356.25			198+37.00		10'	10'	50	6.25	1				1		1											
-Y4A-	11+35.00		LT/RT	25.00																								2	
-Y4B-	09+97.00		LT/RT	25.00																								2	
-Y5B-	13+24.00		LT/RT	25.00																								2	
-Y6A-	18+24.00		LT/RT	25.00																								2	
-Y7B-	19+05.00		LT/RT	25.00																								2	
-Y7B-	19+83.94	23+46.04	RT																							428			
-Y7B-	19+85.24	23+46.04	LT																							428			
-Y7C-	16+05.00		LT/RT	25.00																								2	
-Y7C-	19+79.00		LT/RT	25.00																								2	
			SUBTOTAL	1425.00										SUBTOTAL			4		4							SUBTOTAL	856		14	
	LESS ANCHOR DEDUCTIONS																												
	GREU, TL-3	4 @ 50'	=	200.00																									
	CAT-1	4 @ 6.25'	=	25.00																									
			TOTAL	1200.00										TOTAL			4		4							TOTAL	856		14	
			SAY	1200										SAY			4		4							SAY	860		14	

ADDITIONAL GUARDRAIL POSTS = 10 EA

REMOVAL OF EXISTING ASPHALT PAVEMENT				
LINE	STATION	STATION	LOCATION	SQUARE YARDS
-L-	63+85.00	65+85.00	RT	62
-L-	98+75.91	105+97.91	LT/RT	2679
-L-	131+96.57	137+32.98	LT/RT	2453
-L-	165+53.61	165+74.84	LT/RT	97
-L-	172+70.79	180+00.00	RT	1537
-L-	183+50.00	198+60.81	LT	3596
-Y4-	21+53.43	24+43.02	RT	677
-Y4-	14+21.25	16+38.64	LT	413
-Y6-	17+33.00	18+71.70	LT	182
-Y6-	18+91.88	21+68.91	LT	265
-Y6A-	17+76.03	18+02.59	LT	4
-Y7-	26+25.00	26+50.00	LT/RT	80
-Y7-	28+50.00	30+00.00	LT/RT	401
-Y7D-	13+30.00	17+86.19	LT/RT	969
-Y7C-	15+45.17	15+71.19	RT	7
-Y7C-	15+95.01	19+84.01	LT/RT	796
-LDET-	97+90.12	100+14.37	RT	46
-Y5DET-	11+69.18	12+94.56	LT	90
-Y5DET-	14+10.49	1588.94	LT	146
-Y7DET1-	12+46.51	2199.03	RT	683
-Y7DET1-	23+81.61	2786.59	RT	265
-Y7DET2-	22+52.23	2386.08	LT	73
TOTAL				15521
SAY				15600

BREAKING OF EXISTING PAVEMENT				
LINE	STATION	STATION	LOCATION	SQUARE YARDS
-L-	180+00	183+50	L/R	776
-Y6-	15+25	16+55	L/R	296
-Y7-	26+50	28+50	L/R	643
-Y7-	29+00	29+50	L/R	89
-Y7-	30+00	34+25	L/R	1484
TOTAL				3289
SAY				3300

8/3/2023

LL23352

COMPUTED BY: JCB DATE: 2022-01-03

CHECKED BY: LDR DATE: 2023-01-03

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
R-5705A	3D-1

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 | OFFSET | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | Drainage Pipe (RCP, CSP, CAAP, HDPE, PVC, or PP PIPE) SIZE 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 | DO NOT USE PP PIPE | C. S. PIPE THICKNESS OR GAUGE 12 | 15 | 18 | 24 | R. C. PIPE CLASS IV 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | 54 | 60 | 66 | 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) A: 0' THRU 5' EACH | B: 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 | 2'-9" FRAME & GRATE (SHT. 2C-4) | 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 | 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 | J.B. STD. 840.31 OR STD. 840.32 | SPECIAL T.B.D.I. 840035 (SHEET 2C-8) | 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 | G.D.I. TYPE "A" STD. 840D17 (SPECIAL DETAIL) | T.B.J.B. STD. 840.34 | M.H. FRAME AND COVER STD. 840.54 | EXTRA DEPTH DROP INLET TYPE A 840D17 | CONVERT EXISTING C.B. TO J.B. | CONVERT EXISTING C.B. TO D.I. | CONVERT EXISTING D.I. TO J.B. | CONVERT EXISTING J.B. TO D.I. | ADJUST C.B. | ADJUST D.I. | | | 15" C.S. ELBOW | 18" C.S. ELBOW | 24" C.S. ELBOW | B.D.O STD. 850.10 (4" CONC PAVE DITCH SY) | B.D.O STD. 850.11 (4" CONC PAVE DITCH SY) | | FLOWABLE FILL CY | CONCRETE COLLARS CL. "B" STD. 840.72 CY | PIPE REMOVAL LIN. FT. | REMARKS |
|---|---|---

LL22352

COMPUTED BY:	JCB	DATE:	2022-01-03
CHECKED BY:	LDR	DATE:	2023-01-03

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
R-5705A	3D-2

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 %	Drainage Pipe (RCP, CSP, CAAP, HDPE, PVC, or PP PIPE) 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	DO NOT USE PP PIPE	C. S. PIPE 12 .064	15 .064	18 .064	24 .064	R. C. PIPE CLASS IV 12	15	18	24	30	36	42	48	54	60	66
L 47+68	64	LT	0621			305.5	304.2			56										x	x	x															
L 38+50	64	LT	0622			291.1	290.5				56									x	x	x															
L 53+50	73	RT	0701		315.4																																
			0701	0706		311.9	309.4	0.4																						188							
Y2 11+40	34	LT	0702		316.9																																
			0702	0701		313.9	312.4	1.0			48									x	x	x															
Y2 12+17	32	LT	0703		317.4																																
			0703	0702		314.4	313.9				76									x	x	x															
L 51+59	8	RT	0704		318.6																																
			0704	0708		310.5	310.4																						16								
L 53+09	8	RT	0705		320.4																																
			0705	0704		312.0	310.5																						148								
L 51+59	76	RT	0706		314.3																																
			0706	0614		309.4	306.7					136								x	x	x															
L 53+09	74	LT	0707		315.9																																
			0707	0705		312.9	312.0																						80								
L 51+59	8	LT	0708		318.9																																
			0708	0604		310.4	305.2																						408								
L 54+29	83	LT	0709			316.3	316.2			52										x	x	x															
L 63+53	8	LT	0710		325.2																																
			0710	0711		322.0	319.4																					84									
L 56+32	80	LT	0713			319.6	318.6			48										x	x	x															
Y2 11+50	43	RT	0712			315.7	315.6			36										x	x	x															
L 66+88	65	LT	0801			318.1	317.2			56										x	x	x															
			0802	0803		300.5	298.5																							148							
L 69+35	64	LT	0804			313.1	311.6			56										x	x	x															
L 75+49	8	LT	0806		300.5																																
			0806	0805		297.3	295.5																					60									
			0808	0809		294.1	293.0																							140							
L 70+91	64	LT	0813			308.6	307.1			48										x	x	x															
L 71+04	87	RT	0814			304.2	302.6			52										x	x	x															
L 72+02	88	RT	0815			300.7	299.3			44										x	x	x															
L 81+50	64	LT	0902		289.5																																
			0902	0903		286.7	283.3	0.8		200										x	x	x															
L 83+50	68	LT	0903		286.0																																
			0903	0904		283.0	282.5	0.6			48									x	x	x															
L 84+00	68	LT	0904		285.7																																
			0904	0905		282.0	280.0	0.3				200								x	x	x															
L 86+00	64	LT	0905		284.0																																
			0905	0913		280.0	278.5	0.5				144								x	x	x															
L 88+06	8	LT	0908		286.4																																
			0908	0909		283.2	282.1																					56									
L 88+13	66	LT	0909		285.3																																
			0909	0914		277.9	275.3	0.8																						248							
			0910	0912		282.9	282.6																					36									
L 89+93	12	RT	0910		286.0																																
			0911	0906		279.0	278.2	0.4																				64									
L 91+28	11	RT	0911		286.1																																
			0912	0906		282.6	282.1																					32									
L 90+30	11	RT	0912		286.0																																
								SHEET TOTALS		648	228	480																332	652	724							

LINE & STATION	STRUCTURE NUMBER FROM	STRUCTURE NUMBER 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	5' THRU 10' (A) LIN. FT.	10' AND ABOVE (B) 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	2'-9" FRAME & GRATE (SHT. 2C-4)	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	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	J.B. STD. 840.31 OR STD. 840.32	SPECIAL T.B.D.I. 840D35 (SHEET 2C-8)	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	G.D.I. TYPE "A" STD. 840D17 (SPECIAL DETAIL)	T.B.J.B. STD. 840.34	M.H. FRAME AND COVER STD. 840.54	EXTRA DEPTH DROP INLET TYPE A 840D17	CONVERT EXISTING C.B. TO J.B.	CONVERT EXISTING C.B. TO D.I.	CONVERT EXISTING D.I. TO J.B.	CONVERT EXISTING J.B. TO D.I.	ADJUST C.B.	ADJUST D.I.			15" C.S. ELBOW	18" C.S. ELBOW	24" C.S. ELBOW	B.D.O STD. 850.10 (4" CONC PAVE DITCH SY)	B.D.O STD. 850.11 (4" CONC PAVE DITCH SY)		FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	PIPE REMOVAL LIN. FT.	REMARKS
L 47+68	0621																																																								
L 38+50	0622																																																								
L 53+50	0701					1																						1								1																					
	0701	0706																																																							
Y2 11+40	0702					1															1							1																													
	0702	0701																																																							
Y2 12+17	0703					1															1							1																													
	0703	0702																																																							
L 51+59	0704					1	3.0							1																				1	1																						
	0704	0708																																																							
L 53+09	0705					1	3.3							1																				1	1																						
	0705	0704																																																							
L 51+59	0706					1														1								1																													
	0706	0614																																																							
L 53+09	0707					1															1							1																													
	0707	0705																																																							
L 51+59	0708					1	3.5							1																				1	1																						
	0708	0604																																																							
L 54+29	0709																																																								
L 63+53	0710					1								1																				1	1																						
	0710	0711																																																							
L 56+32	0713																																																								
Y2 11+50	0712																																																								
L 66+88	0801																																																								
	0802	0803																																																								
L 69+35	0804																																																								
L 75+49	0806					1								1																				1	1																						
	0806	0805																																																							
	0808	0809																																																								
L 70+91	0813																																																								
L 71+04	0814																																																								
L 72+02	0815																																																								
L 81+50	0902					1															1							1																													
	0902	0903																																																							
L 83+50	0903					1															1							1																													
	0903	0904																																																							
L 84+00	0904					1																						1								1																					
	0904	0905																																																							
L 86+00	0905					1																						1								1																					
	0905	0913																																																							
L 88+06	0908					1								1																				1	1																						
	0908	0909																																																							
L 88+13	0909					1	2.5																														1	1																			
	0909	0914																																																							
	0910	0912																																																							
L 89+93	0910					1									1															1			1																								
	0911	0906																																																							
L 91+28	0911					1	2.1								1															1			1																								
	0912	0906																																																							
L 90+30	0912					1									1															1			1																								
SHEET TOTALS						19	14.4							6	3					1	5							9		3			3	6	6	3	1	1																			

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

LL22352

COMPUTED BY: JCB DATE: 2022-01-03

CHECKED BY: LDR DATE: 2023-01-03

PROJECT NO.	SHEET NO.
R-5705A	3D-3

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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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 %	Drainage Pipe (RCP, CSP, CAAP, HDPE, PVC, or PP PIPE) 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	DO NOT USE PP PIPE	C. S. PIPE 12 .064	15 .064	18 .064	24 .064	R. C. PIPE CLASS IV 12	15	18	24	30	36	42	48	54	60	66	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.
L 87+47	71 LT	0913		282.9																																				1		
		0913	0909		278.5	277.9	0.8																						64													
L 80+64	63 LT	0915			291.0	290.2			60										x	x	x																					
L 79+29	72 RT	0916			291.7	290.1			60										x	x	x																					
		1001	0911		280.2	279.0	0.3																				120															
L 92+50	11 RT	1001		286.5																																				1	1.3	
		1002	1001		281.7	280.2																					148															
L 94+00	13 RT	1002		287.4																																				1	0.7	
		1003	1002		284.2	281.7																					248															
L 96+50	15 RT	1003		289.3																																				1	0.1	
L 93+36	72 RT	1004			283.8	282.9				52									x	x	x																					
L 95+07	73 RT	1005			286.0	285.7			40										x	x	x																					
		1006	1003		286.7	284.2																					248															
L 99+00	15 RT	1006		291.2																																				1		
		1007	1006		288.7	286.7																					192															
L 100+93	15 RT	1007		292.7																																				1		
L 101+32	9 LT	1008		292.4																																				1		
		1008	1007		289.1	288.7																					44															
L 98+48	71 LT	1009			286.2	285.8				56									x	x	x																					
L 101+79	13 RT	1010		293.2																																				1		
		1010	1008		289.7	289.1																					52															
		1011	1010		290.1	289.7																					40															
L 102+22	15 RT	1011		293.3																																				1		
L 104+56	73 LT	1013			288.4	288.1			56										x	x	x																					
		1101	1102		289.1	287.1																					156															
L 105+90	15 RT	1101		292.2																																				1		
		1102	1104		287.1	285.4																					148															
L 107+46	3 RT	1102		290.3																																				1		
		1104	1108		281.0	280.2																											108									
L 108+95	3 RT	1104		289.4																																				1	3.4	
		1105	1104		285.2	284.6																					56															
L 109+52	1 RT	1105		289.3																																				1		
L 108+40	78 LT	1106		285.5																																	6.000					
		1106	1104		281.5	281.0																											96									
		1110	1105		286.8	285.2																					160															
L 111+12	2 LT	1110		290.0																																				1		
L 111+22	13 RT	1111		290.4																																				1		
		1111	1110		287.0	286.8																					20															
L 111+91	13 RT	1112		290.9																																				1		
		1112	1111		287.4	287.0																					68															
L 112+39	7 LT	1113		290.8																																				1		
		1113	1112		287.7	287.4																					52															
L 112+85	13 RT	1114		291.7																																				1	2.2	
		1114	1109		284.5	283.0																								96												
		1115	1114		287.9	287.6																					36															
L 113+22	15 RT	1115		291.9																																				1		
		1116	1115		290.0	287.9																					208															
L 115+30	15 RT	1116		293.2																																				1		
		1117	1114		285.8	284.5																								84												
		1118	1201		289.3	287.8																					148															
SHEET TOTALS									216	108																	2144		64	180			204				6.000			20	7.7	

LINE & STATION	FROM	TO	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	2'-9" FRAME & GRATE (SHT. 2C-4)	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	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	J.B. STD. 840.31 OR STD. 840.32	SPECIAL T.B.D.I. 840D35 (SHEET 2C-8)	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	G.D.I. TYPE "A" STD. 840D17 (SPECIAL DETAIL)	T.B.J.B. STD. 840.34	M.H. FRAME AND COVER STD. 840.54	EXTRA DEPTH DROP INLET TYPE A 840D17	CONVERT EXISTING C.B. TO J.B.	CONVERT EXISTING C.B. TO D.I.	CONVERT EXISTING D.I. TO J.B.	CONVERT EXISTING J.B. TO D.I.	ADJUST C.B.	ADJUST D.I.			15" C.S. ELBOW	18" C.S. ELBOW	24" C.S. ELBOW	B.D.O STD. 850.10 (4" CONC PAVE DITCH SY)	B.D.O STD. 850.11 (4" CONC PAVE DITCH SY)		FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	PIPE REMOVAL LIN. FT.	REMARKS
L 87+47	0913																					1								1																					
	0913	0909																																																	
L 80+64	0915																																																		
L 79+29	0916																																																		
	1001	0911																																																	
L 92+50	1001								1															1			1																								
	1002	1001																																																	
L 94+00	1002								1															1			1																								
	1003	1002																																																	
L 96+50	1003								1															1			1																								
L 93+36	1004																																																		
L 95+07	1005																																																		
	1006	1003																																																	
L 99+00	1006								1															1			1																								
	1007	1006																																																	
L 100+93	1007								1															1			1																								
L 101+32	1008							1				1	1																																						
	1008	1007																																																	
L 98+48	1009																																																		
L 101+79	1010							1																				1	1																						
	1010	1008																																																	
	1011	1010																																																	
L 102+22	1011								1															1			1																								
L 104+56	1013																																																		
	1101	1102																																																	
L 105+90	1101								1															1			1																								
	1102	1104																																																	
L 107+46	1102								1															1			1																								
	1104	1108																																																	
L 108+95	1104								1															1		1																									
	1105	1104																																																	
L 109+52	1105								1															1			1																								
L 108+40	1106																																																		
	1106	1104																																																	
	1110	1105																																																	
L 111+12	1110								1															1			1																								
L 111+22	1111							1																				1	1																						
	1111	1110																																																	
L 111+91	1112							1				1	1																																						
	1112	1111																																																	
L 112+39	1113							1				1	1																																						
	1113	1112																																																	
L 112+85	1114							1																				1	1																						
	1114	1109																																																	
	1115	1114																																																	
L 113+22	1115								1															1			1																								
	1116	1115																																																	
L 115+30	1116								1															1			1																								
	1117	1114																																																	
	1118	1201																																																	
SHEET TOTALS								6	13			3	3									1		13		1	12	3	3	1																					

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

LL23352

COMPUTED BY:	JCB	DATE:	2022-01-03
CHECKED BY:	LDR	DATE:	2023-01-03

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
R-5705A	3D-4

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 | OFFSET | | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION | INVERT ELEVATION | INVERT ELEVATION | MINIMUM REQUIRED SLOPE | Drainage Pipe (RCP, CSP, CAAP, HDPE, PVC, or PP PIPE) SIZE: 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | Drainage Pipe THICKNESS OR GAUGE: DO NOT USE RCP | DO NOT USE CSP | DO NOT USE CAAP | DO NOT USE HDPE | DO NOT USE PVC | DO NOT USE PP PIPE | C. S. PIPE: 12 | 15 | 18 | 24 | R. C. PIPE CLASS IV: 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | 54 | 60 | 66 | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) | REINFORCED ENDWALLS | DRAINAGE STRUCTURE MASONRY | QUANTITIES FOR DRAINAGE STRUCTURES NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B) A: 0' THRU 5' | B: 5' THRU 10' | 10' AND ABOVE | 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 | 2'-9" FRAME & GRATE (SHT. 2C-4) | 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 | 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 | J.B. STD. 840.31 OR STD. 840.32 | SPECIAL T.B.D.I. 840035 (SHEET 2C-8) | 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 | G.D.I. TYPE "A" STD. 840D17 (SPECIAL DETAIL) | T.B.J.B. STD. 840.34 | M.H. FRAME AND COVER STD. 840.54 | EXTRA DEPTH DROP INLET TYPE A 840D17 | CONVERT EXISTING C.B. TO J.B. | CONVERT EXISTING C.B. TO D.I. | CONVERT EXISTING D.I. TO J.B. | CONVERT EXISTING J.B. TO D.I. | ADJUST C.B. | ADJUST D.I. | | | 15" C.S. ELBOW | 18" C.S. ELBOW | 24" C.S. ELBOW | B.D.O STD. 850.10 (4" CONC PAVE DITCH SY) | B.D.O STD. 850.11 (4" CONC PAVE DITCH SY) | | FLOWABLE FILL | CONCRETE COLLARS CL. "B" STD. 840.72 | PIPE REMOVAL | REMARKS |
|---|---|---|---

LL23352

COMPUTED BY: JCB **DATE:** 2022-01-03

CHECKED BY: LDR **DATE:** 2023-01-03

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
R-5705A	3D-5

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 | OFFSET | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | Drainage Pipe (RCP, CSP, CAAP, HDPE, PVC, or PP PIPE) SIZE: 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | Drainage Pipe THICKNESS OR GAUGE: DO NOT USE RCP | DO NOT USE CSP | DO NOT USE CAAP | DO NOT USE HDPE | DO NOT USE PVC | DO NOT USE PP PIPE | C. S. PIPE THICKNESS OR GAUGE: 12 | 15 | 18 | 24 | R. C. PIPE CLASS IV: 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | 54 | 60 | 66 | 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) A: 0' THRU 5' EACH | B: 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 | 2'-9" FRAME & GRATE (SHT. 2C-4) | 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 | 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 | J.B. STD. 840.31 OR STD. 840.32 | SPECIAL T.B.D.I. 840035 (SHEET 2C-8) | 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 | G.D.I. TYPE "A" STD. 840D17 (SPECIAL DETAIL) | T.B.J.B. STD. 840.34 | M.H. FRAME AND COVER STD. 840.54 | EXTRA DEPTH DROP INLET TYPE A 840D17 | CONVERT EXISTING C.B. TO J.B. | CONVERT EXISTING C.B. TO D.I. | CONVERT EXISTING D.I. TO J.B. | CONVERT EXISTING J.B. TO D.I. | ADJUST C.B. | ADJUST D.I. | | | 15" C.S. ELBOW | 18" C.S. ELBOW | 24" C.S. ELBOW | B.D.O STD. 850.10 (4" CONC PAVE DITCH SY) | B.D.O STD. 850.11 (4" CONC PAVE DITCH SY) | | FLOWABLE FILL CY | CONCRETE COLLARS CL. "B" STD. 840.72 CY | PIPE REMOVAL LIN. FT. | REMARKS |
|---|---|---

LL22352

COMPUTED BY:	JCB	**DATE:**	2022-01-03
CHECKED BY:	LDR	**DATE:**	2023-01-03

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
R-5705A	3D-6

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	OFFSET		STRUCTURE NUMBER FROM	STRUCTURE NUMBER TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	Drainage Pipe (RCP, CSP, CAAP, HDPE, PVC, or PP PIPE) SIZE: 12	15	18	24	30	36	42	48
Y6A 17+18	23	LT	1523			275.1	274.4									
L 175+87	13	LT	1602		272.6											
			1602	1603		269.4	266.6									
L 176+47	1	LT	1603		269.8											
			1603	1609		266.6	261.2									
			1604	1605		256.1	254.6									
L 180+00	15	LT	1604		259.3											
			1605	1617		254.6	247.3									
L 181+00	15	LT	1605		257.8											
			1606	1616		253.6	250.4	0.4								
L 182+59	15	LT	1606		256.9											
			1607	1606		254.0	253.6									
L 183+50	15	LT	1607		257.2											
			1608	1607		257.9	254.0									
L 186+00	15	LT	1608		261.0											
			1609	1604		261.2	256.1									
L 178+00	15	LT	1609		264.4											
L 184+00	61	RT	1613		252.5											
			1613	1611		250.4	249.9	0.6				100				
			1614	1615		267.3	254.5	2.0								
L 186+50	67	RT	1615		257.2											
			1615	1613		254.2	250.4	0.4				244				
L 178+29	77	RT	1618			258.0	255.4			48						
L 178+86	86	LT	1620			257.6	254.2			48						
L 185+23	79	LT	1622			256.2	254.2			52						
L 186+57	71	LT	1623			260.8	259.7			48						
DRW4 10+72	8	LT	1624			265.2	262.0			84						
			1701	1702		261.2	258.8									
L 193+85	15	LT	1701		264.4											
			1702	1705		258.8	252.1									
L 195+00	15	LT	1702		262.9											
			1703	1704		268.1	258.5	0.3								
L 192+50	67	RT	1704		261.3											
			1704	1707		258.5	256.2	0.3		196						
			1706	1707		259.4	254.9	0.4					48			
L 194+50	67	RT	1707		258.8											
			1707	1708		254.9	252.7	0.5					96			
L 195+50	70	RT	1708		257.4											
			1708	1709		253.6	252.0	0.5					200			
Y7B 18+50	22	LT	1710			263.7	262.2				64					
L 203+80	86	LT	1801		264.5											
			1801	1802		260.2	259.3									
L 205+00	67	LT	1803		271.1											
			1803	1801		266.4	261.2	1.0				120				
			1804	1803		272.3	266.9	0.6								
			1805	1806		280.2	272.1	0.4								
L 207+50	67	LT	1806		276.9											
			1806	1803		272.1	266.4	0.5				248				
L 211+24	11	RT	1807		289.6											
			1807	1808		286.4	284.3									
					SHEET TOTALS					476	408	368	344			

| Drainage Pipe (RCP, CSP, CAAP, HDPE, PVC, or PP PIPE) | | | | | | | | | | | | | | | |

LL22352

COMPUTED BY:	JCB	DATE:	2022-01-03
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
R-5705A	3D-7

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	TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	Drainage Pipe (RCP, CSP, CAAP, HDPE, PVC, or PP PIPE) 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	DO NOT USE PP PIPE	C. S. PIPE 12 (.064)	15 (.064)	18 (.064)	24 (.064)
Y7D 19+20	1	RT	1809			288.7	286.7																			
Y7C 13+93	2	RT	1810			294.0	292.5																			
Y7C 15+55	18	LT	1811			297.0	296.4			32										x	x	x				
L 223+50	11	RT	1901		301.7																					
			1901	1903		296.2	294.9																			
			1902	1905		293.7	291.7	0.3																		
L 226+00	6	LT	1902		302.9																					
			1903	1902		294.9	293.7																			
L 224+75	7	RT	1903		302.1																					
L 221+65	14	RT	1906		301.2																					
			1906	1909		298.0	297.2																			
L 222+50	13	RT	1909		301.5																					
			1909	1901		297.2	296.2																			
			1913	1914		293.8	292.8																			
Y7C 20+37	24	LT	1915			295.6	295.2			64										x	x	x				
L 231+95	13	LT	2001		311.4																					
			2001	1905		305.0	298.8																			
L 231+95	12	RT	2002		310.4																					
			2002	2001		305.2	305.0																			
L 233+61	5	RT	2003		315.9																					
			2003	2002		306.9	305.2																			
			2004	2003		307.2	306.9																			
L 233+94	2	RT	2004		316.8																					
			2005	2004		308.0	307.2																			
L 235+90	74	RT	2006			315.2	314.7			48										x	x	x				
			2101	2102		309.4	307.8																			
L 243+33	15	LT	2101		312.1																					
L 243+67	13	LT	2102		311.0																					
			2102	2103		307.8	305.2																			
L 244+28	1	RT	2103		308.3																					
			2103	2104		305.2	303.2																			
			2104	2105		303.2	299.7																			
L 245+00	15	LT	2104		306.3																					
Y7 27+45	63	LT	2401		294.5																					
			2401	2402		294.5	292.0																			
Y7 26+48	69	LT	2404			296.4	295.4					76								x	x	x				
L 38+18	24	LT																								
Y7B 20+59	1	RT																								
L 44+77	16	LT																								
L 45+64	78	RT																								
Y7C 14+84	20	LT																								
Y7C 15+25	18	LT																								
L 44+96	87	LT																								
Y7 34+68	26	RT																								
L 26+63	52	LT																								
L 28+96	49	LT																								
L 32+17	49	LT																								
L 21+26	23	RT																								
L 20+54	24	LT																								
L 38+52	51	LT																								
SHEET TOTALS										144		76														

LINE & STATION	FROM	TO	R. C. PIPE CLASS IV 12	15	18	24	30	36	42	48	54	60	66	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY	REINFORCED ENDWALLS CY	DRAINAGE STRUCTURE MASONRY CY	QUANTITIES FOR DRAINAGE STRUCTURES 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	
Y7D 19+20	1809				72																			
Y7C 13+93	1810			48																				
Y7C 15+55	1811																							
L 223+50	1901																1	0.5						
	1901	1903		124																				
	1902	1905		192																				
L 226+00	1902																1	4.3						
	1903	1902		124																				
L 224+75	1903																1	2.1						
L 221+65	1906																1							
	1906	1909		84																				
L 222+50	1909																1							
	1909	1901		100																				
	1913	1914					172																	
Y7C 20+37	1915																							
L 231+95	2001																1	1.4						
	2001	1905					400																	
L 231+95	2002																1	0.2						
	2002	2001					24																	
L 233+61	2003																1	4.0						
	2003	2002					164																	
	2004	2003					32																	
L 233+94	2004																1	4.6						
	2005	2004					80																	
L 235+90	2006																							
	2101	2102		32																				
L 243+33	2101																1							
L 243+67	2102																1							
	2102	2103		60																				
L 244+28	2103																1							
	2103	2104		72																				
	2104	2105		96																				
L 245+00	2104																1							
Y7 27+45	2401													3.400										
	2401	2402						124																
Y7 26+48	2404																							
L 38+18																								
Y7B 20+59																								
L 44+77																								
L 45+64																								
Y7C 14+84																								
Y7C 15+25																								
L 44+96																								
Y7 34+68																								
L 26+63																								
L 28+96																								
L 32+17																								
L 21+26																								
L 20+54																								
L 38+52																								
SHEET TOTALS				932	72		872	124						3.400			13	17.1						

NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)

LINE & STATION	FROM	TO	CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06	2'-9" FRAME & GRATE (SHT. 2C-4)	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	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	J.B. STD. 840.31 OR STD. 840.32	SPECIAL T.B.D.I. 840D35 (SHEET 2C-8)	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	G.D.I. TYPE "A" STD. 840D17 (SPECIAL DETAIL)	T.B.J.B. STD. 840.34	M.H. FRAME AND COVER STD. 840.54	EXTRA DEPTH DROP INLET TYPE A 840D17	CONVERT EXISTING C.B. TO J.B.	CONVERT EXISTING C.B. TO D.I.	CONVERT EXISTING D.I. TO J.B.	CONVERT EXISTING J.B. TO D.I.	ADJUST C.B.	ADJUST D.I.			15" C.S. ELBOW	18" C.S. ELBOW	24" C.S. ELBOW	B.D.O STD. 850.10 (4" CONC PAVE DITCH SY)	B.D.O STD. 850.11 (4" CONC PAVE DITCH SY)		FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	PIPE REMOVAL LIN. FT.	REMARKS
Y7D 19+20	1809																																													
Y7C 13+93	1810																																													
Y7C 15+55	1811																																													
L 223+50	1901		1				1	1																																						
	1901	1903																																												
	1902	1905																																												
L 226+00	1902			1															1			1																								
	1903	1902																																												
L 224+75	1903			1															1			1																								
L 221+65	1906		1																				1	1																						
	1906	1909																																												
L 222+50	1909		1				1	1																																						
	1909	1901																																												
	1913	1914																																												
Y7C 20+37	1915																																													
L 231+95	2001		1				1	1																																						
	2001	1905																																												
L 231+95	2002		1																				1	1																						
	2002	2001																																												
L 233+61	2003		1																				1	1																						
	2003	2002																																												
	2004	2003																																												
L 233+94	2004			1															1			1																								
	2005	2004																																												
L 235+90	2006																																													
	2101	2102																																												
L 243+33	2101			1															1			1																								
L 243+67	2102		1				1	1																																						
	2102	2103																																												
L 244+28	2103		1				1	1																																						
	2103	2104																																												
	2104	2105																																												
L 245+00	2104			1															1			1																								
Y7 27+45	2401																																													
	2401	2402																																												
Y7 26+48	2404																																													
L 38+18																																													51	
Y7B 20+59																																													41	
L 44+77																																													84	
L 45+64																																													118	
Y7C 14+84																																													20	
Y7C 15+25																																													17	
L 44+96																																													56	
Y7 34+68																																													22	
L 26+63																																													19	
L 28+96																																													49	
L 32+17																																													24	
L 21+26																																													22	
L 20+54																																													25	
L 38+52																																													26	
SHEET TOTALS			8	5			5	5											5			5	3	3																					574	

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

LL22352

COMPUTED BY:	JCB	DATE:	2022-01-03
CHECKED BY:	LDR	DATE:	2023-01-03

PROJECT NO.	SHEET NO.
R-5705A	3D-8

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

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

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 %	Drainage Pipe (RCP, CSP, CAAP, HDPE, PVC, or PP PIPE) 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	DO NOT USE PP PIPE	C. S. PIPE 12 .064	15 .064	18 .064	24 .064	R. C. PIPE CLASS IV 12	15	18	24	30	36	42	48	54	60	66	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	2'-9" FRAME & GRATE (SHT. 2C-4)	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	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	J.B. STD. 840.31 OR STD. 840.32	SPECIAL T.B.D.I. 840D35 (SHEET 2C-8)	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	G.D.I. TYPE "A" STD. 840D17 (SPECIAL DETAIL)	T.B.J.B. STD. 840.34	M.H. FRAME AND COVER STD. 840.54	EXTRA DEPTH DROP INLET TYPE A 840D17	CONVERT EXISTING C.B. TO J.B.	CONVERT EXISTING C.B. TO D.I.	CONVERT EXISTING D.I. TO J.B.	CONVERT EXISTING J.B. TO D.I.	ADJUST C.B.	ADJUST D.I.			15" C.S. ELBOW	18" C.S. ELBOW	24" C.S. ELBOW	B.D.O STD. 850.10 (4" CONC PAVE DITCH SY)	B.D.O STD. 850.11 (4" CONC PAVE DITCH SY)		FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	PIPE REMOVAL LIN. FT.	REMARKS
L 40+32	50	LT																																																																																									43	
L 41+44	49	LT																																																																																									20	
L 41+91	48	LT																																																																																									20	
L 42+99	47	LT																																																																																									25	
L 47+08	3	RT																																																																																									22	
L 50+77	4	RT																																																																																									53	
L 51+92	5	RT																																																																																									32	
L 66+90	52	LT																																																																																									22	
L 67+76	51	LT																																																																																									21	
L 66+82	1	RT																																																																																									22	
L 67+17	1	RT																																																																																									21	
L 69+03	3	RT																																																																																									20	
L 69+38	52	LT																																																																																									28	
L 70+02	4	RT																																																																																									41	
L 70+92	54	LT																																																																																									21	
L 70+95	3	RT																																																																																									42	
Y3 13+12	2	RT																																																																																									58	
L 78+88	4	RT																																																																																									24	
L 79+13	50	LT																																																																																									22	
L 93+57	9	RT																																																																																									22	
L 92+25	7	RT																																																																																									21	
L 95+14	20	RT																																																																																									25	
L 96+90	35	RT																																																																																										23	
L 96+91	20	LT																																																																																										19	
L 68+54	2	RT																																																																																										22	
L 76+80	21	LT																																																																																									61	
L 162+11	53	RT																																																																																									22	
L 132+69	117	LT																																																																																									59	
DRW3 11+14	17	LT																																																																																									46	
Y4A 19+04	13	RT																																																																																									63	
L 165+64	31	RT																																																																																									45	
L 165+38	35	RT																																																																																									27	
Y6A 10+41	1	LT																																																																																									53	
L 154+48	14	RT																																																																																								20	
L 178+28	63	RT																																																																																								26	
L 178+68	17	RT																																																																																								47	
L 183+87	8	RT																																																																																								27	
L 185+13	56	LT																																																																																								26	
L 186+25	21	LT																																																																																								27	
L 193+95	106	LT																																																																																								49	
L 193+65	79	LT																																																																																								28	
Y7 27+30	3	LT																																																																																						2.2		48	
L 194+63	92	RT																																																																																								35	
Y7C 19+37	21	LT																																																																																								39	
L 232+91	1	LT																																																																																								50	
DRW10 10+26	2	LT																																																																																								22	
L 175+83	79	RT																																																																																								25	
L 133+53	26	LT																																																																																								19	
SHEET TOTALS																																																																																											2.2		1553	
PROJECT TOTALS										2132	1540	1068	468	132		148								64	16	32		7976	1312	1356	1368	604	156	428				32.700			129	79.7							45	54			23	23	7	10	1					2	28		54	1	1	52	22	22	10	1	2	1									4	2	2	33	31		2.2		2127	

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

LL22352

COMPUTED BY:	JCB	DATE:	2022-01-03
CHECKED BY:	LDR	DATE:	2023-01-03

PROJECT NO.	SHEET NO.
R-5705A	3D-9

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	STRUCTURE NUMBER TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	R. C. PIPE CLASS IV 48	54	60	66	72	78	84		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.
			0906	0914		275.9	275.1	0.3		76												
L 90+62	11	RT	0906		286.1														6.920			
L 90+44	63	RT	0907		281.6													5.000				
			0907	0906		276.4	275.9	0.3		56												
L 90+64	65	LT	0914		281.5														3.685			
			0914	0901		275.1	274.9	0.4		24												
			1401	1408		261.6	260.0					84										
L 154+43	3	LT	1401		273.5														7.640			
L 154+04	71	RT	1407		263.1													6.300				
			1407	1401		263.1	261.6					84										
			1905	1908		288.4	286.8			92												
L 227+93	17	LT	1905		304.0														6.912			
L 227+84	85	RT	1907		288.0													5.000				
			1907	1905		290.1	288.4			100												
SHEET TOTALS										348		168						16.300	25.157			
PROJECT TOTALS										348		168						16.300	25.157			

STRUCTURE FROM	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	2'-9" FRAME & GRATE (SHT. 2C-4)	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	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	SPECIAL T.B.D.I. 840D35 (SHEET 2C-8)	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	EXTRA DEPTH DROP INLET TYPE A 840D17	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54
0906							1															1					1									
0914																									1											1
1401 (to 1408)							1																													
1401																						1					1									
1905							1															1												1		
SHEET TOTALS							3															3			1		2							1		1
PROJECT TOTALS							3															3			1		2							1		1

			CONVERT EXISTING C.B. TO J.B.	CONVERT EXISTING C.B. TO D.I.	CONVERT EXISTING D.I. TO J.B.	CONVERT EXISTING J.B. TO D.I.	ADJUST C.B.	ADJUST D.I.			15" C.S. ELBOW	18" C.S. ELBOW	24" C.S. ELBOW	30" C.S. ELBOW	36" C.S. ELBOW		BERM DITCH OUTLET STD. 850.10 (PER EACH)	BERM DITCH OUTLET STD. 850.11 (PER EACH)			MODIFIED CONC. FLUME	PREFORMED SCOUR HOLE (PER EACH)	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

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: WPA DATE: 7/2023
CHECKED BY: _____ DATE: _____

(2-3-23)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
R-5705A	3G-1

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
CONTINGENCY				SD	2000
				TOTAL LF:	2000

*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
L	16+75	21+75	ASU (1)	12	390	1370	2200		
L	70+25	72+25	ASU (1)	12	55	220	350		
Y7	23+75	25+75	ASU (1)	12	20	235	380		
Y7	28+25	29+25	ASU (1)	12	50	100	170		
Y7	33+45	36+75	ASU (1)	12	105	875	1400		
CONTINGENCY			ASU (1)	12	500	1000	1000		
CONTINGENCY			AST	3					250
			TOTAL CY/TONS/SY:		1120	3800**	5500**	0	250

*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.

PROJ. REFERENCE NO.	SHEET NO.
R-5705A	3P-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PARCEL INDEX SHEET

PARCEL No.	SHEET No.	PROPERTY OWNER NAME	DEED BOOK
1A	4	JAMES JOHNSON	DB 615 PG 21 PB 2016 PG 364
1	4	JAMES JOHNSON	DB 731 PG 732
2	4,5	JAMES JOHNSON	DB 730 PG 223
3	4	TONY WARREN	DB 3271 PG 355
4	4	HOWARD BRIDGES	DB 1754 PG 517
5	4,5	DANNY HEDGEPETH	DB 926 PG 126 PC # E PG 76A
6	5,6	JESSE MABRY	DB 915 PG 464
7	5	JEFFREY WALTERS	DB 968 PG 612
8	5	DANNY HEDGEPETH	DB 1241 PG 820 MB 2014 PG 9
9	5	CHARLES GRAY	DB 3252 PG 220
10	5,6	CHARLES GRAY	DB 1442 PG 909 MB 2004 PG 19
11	6	NANCY SILVERS	DB 1101 PG 767
12	6	CHARLES GRAY	DB 2830 PG 173
13	6	SHERRY OATES	DB 1822 PG 69 DB 2007 PG 518
14	6	SHERRILL MCLAMB	DB 786 PG 810
15	6	NANCY SILVERS	DB 1101 PG 767
15	6,7	NANCY SILVERS	DB 1101 PG 767
15	6	NANCY SILVERS	DB 1101 PG 767
18	6	SHERRILL MCLAMB	DB 738 PG 754
19	6	SHERRILL MCLAMB	DB 839 PG 291
20	6	VIRGINIA HOLLIDAY	DB 635 PG 530
21	6,7	SHERRILL MCLAMB	DB 738 PG 754
22	6,7	NANCY SILVERS	DB 1159 PG 680
23	7	NANCY SILVERS	DB 1229 PG 887
24	7	A AND L PROPERTIES LLC	DB 3350 PG 890
25	7	TONI GAINES	DB 3183 PG 524 MB 2013 PG 217
26	7	JEAN SMITH	DB 3175 PG 397 MB 2013 PG 271
27	7	CARRIE BULLARD	DB 502 PG 121
28	7,8	CAROL BLALOCK	DB 88E PG 258
29	7	CARRIE BULLARD	DB 695 PG 318
30	7	LUCILLE PATE	DB 634 PG 613
31	7,8	CURTIS ADAMS	DB 508 PG 169
32	8	DANIEL MORTON	DB 3441 PG 835 MB 2008 PG 1042
33	8	MARIO HERNANDEZ	DB 2857 PG 342 MB 2011 PG 303
34	8	JAMES GARNER	DB 1145 PG 360

PARCEL No.	SHEET No.	PROPERTY OWNER NAME	DEED BOOK
35	8	JAMES GARNER	DB 1602 PG 219 MB 2002 PG 303
35	8	JAMES GARNER	DB 1071 PG 120
36	8	BARBARA HENRIES	DB 2007 PG 3
37	8	D&Q MOTOR SPORTS LLC	DB 2803 PG 711
39	8	SYLVIA THOMPSON	NO DEED INFO PC # F PG 326C
40	8	JIMMY WALTERS	DB 1102 PG 980 PC # F PG 326C
41	8	BUCKEYE GAS PRODUCTS	DB 817 PG 394
42	8,9	JIMMY WALTERS	DB 606 PG 222
43	8	LYNN MUCHINSON	DB 1508 PG 838
44	8,9	DONALD GREGORY	DB 1665 PG 80 MB 2001 PG 1260
45	8,9	JEANETTE STRICKLAND	DB 1405 PG 740 MB 2000 PG 84
46	8,9	WADE BURT	DB 2967 PG 15 MB 2011 PG 317
47	9	MR CURRIN	DB 1315 PG 641
48	8,9	JRT MANAGING PROPERTIES, LLC	DB 2458 PG 329 MB 2006 PG 930
49	9,10	CLAY E. GARDNER & DENISE P. GARDNER	DB 3677 PG 997
50	9	FRANK D'ALESIO	DB 3604 PG 42 MB 2017 PG 390
51	9,10	ISABEL LOREDO	DB 3258 PG 986 MB 2014 PG 313
52	9,10	W E COLLIER	DB 2768 PG 34
53	10	RILDA COLLIER LIFE ESTATE	DB 3278 PG 600
54	10	RILDA COLLIER LIFE ESTATE	DB 3278 PG 598
55	10,11	CLAY E. GARDNER & DENISE P. GARDNER	DB 3636 PG 222 MB 2009 PG 275
56	10	JERRY TUCKER	DB 2208 PG 537 MB 2001 PG 641
57	10,11	RIVER RUN DEVELOPERS	DB 3454 PG 424
58	10,11	CLAY GARDNER	DB 3454 PG 422 MB 2009 PG 275
59	11	CLAY GARDNER	DB 3454 PG 424 MB 2009 PG 277
60	11,12	HERMAN WOOD	DB 904 PG 981
60	12	HERMAN WOOD	DB 612 PG 58
61	12	JAMES BURGIN	DB 1880 PG 98 MB 2000 PG 565
61A	12	JAMES BURGIN	DB 1321 PG 0296
62	12,13	TONY MABRY	DB 1417 PG 6 MB 2000 PG 279
63	13	CHRISTY JORDAN	DB 3524 PG 729 MB 2000 PG 466
64	13	JOSEPH LIPSCOMB	DB 1903 PG 67
65	13	LORI MCVEIGH PERRY & LAYTON ANDREW PERRY	DB 3743 PG 300
66	13,14	WILLIAM HAWLEY	DB 1889 PG 108 MB 2016 PG 67
67	13,14	DANIEL HONEYCUTT	DB 3182 PG 966

PROJ. REFERENCE NO.	SHEET NO.
R-5705A	3P-2

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PARCEL INDEX SHEET

PARCEL No.	SHEET No.	PROPERTY OWNER NAME	DEED BOOK
68	14,15	SUNFLIGHT LLC	DB 1690 PG 178
69	14	STEVEN WICKER	DB 1889 PG 51 MB 2004 PG 81
70	14,15	NORDAN FARMS INC	DB 1690 PG 178
71	15	JAMIE MASON	DB 2721 PG 84
73	15	SUNFLIGHT LLC	DB 1690 PG 178
74	15,16	DOUGLAS WILLIAMS	DB 2663 PG 491
75	16	MIRANDA GUALBERTO	DB 3403 PG 599 MB 2000 PG 477
76	16	WILLIAM TYSON	DB 1446 PG 986
77	16	JERRY GREGORY	DB 1684 PG 453 MB 2000 PG 477
78	16	DAVID GARDNER	DB 1085 PG 714
79	16	DAVID ADAMS	DB 1635 PG 609
80	16	DAVID GARDNER	DB 1085 PG 714 MB 2003 PG 1243
81	15, 16	CLINTON ADAMS	DB 1291 PG 300
81	16	CLINTON ADAMS	DB 528 PG 185
82	16	JAMES ALLEN	DB 3355 PG 413
83	16,17	RICHARD HALL	DB 982 PG 219
84	16	JEREMY SKOLOZYNSKI	DB 3258 PG 306 PC # C PG 118D
85	16,17	MICHAEL ANTHONY	DB 1286 PG 579 PC # F PG 26B
86	17	EVERETT BLAKE	DB 1327 PG 119 PC # F PG 26B
87	17	KBNK HOLDINGSLLC	DB 2441 PG 803 MB 2004 PG 1274
88	17	WILLIAM ARMENTROUT	DB 1061 PG 509 PC # F PG 26B
89	17,18	ROBERT COHEN	DB 2725 PG 684 MB 2004 PG 688
90	17,18,22	CLAY GARDNER	DB 2983 PG 694 MB 2005 PG 923
91	18,19	CLAY GARDNER	DB 3363 PG 296
92	18,19,23	REBECCA PARTIN	DB 693 PG 508
93	19	CUTTS CHAPEL FWB CHURCH	DB 2124 PG 562 MB 2002 PG 1391
94	19,20	DEBORAH MATTHEWS	DB 903 PG 584
95	19,20	WILBERT AMERSON	DB 3190 PG 648 MB 2014 PG 323
96	20	LAMCO CUSTOM BUILDERS LLC	DB 3549 PG 267
97	20,21,23	HUGH SURLES	DB 1107 PG 399
98	20,21	ROY GARDNER	DB 814 PG 991
99	7	KMB BUILDING, LLC	DB 2609 PG 517 MB 2009 PG 136
100	6,7	NANCY SILVERS	DB 1101 PG 767
101	11	LINDA SEALE	DB 3454 PG 424
102	11	CLAY E. GARDNER & DENISE P. GARDNER	DB 3636 PG 222 MB 2009 PG 275

PARCEL No.	SHEET No.	PROPERTY OWNER NAME	DEED BOOK
103	13	BENNIE MANGUM	DB 799 PG 611
104	12,13	DAVID FELDMANN	DB 3586 PG 623 PC # F PG 620A
105	13	STEPHEN YEO	DB 3359 PG 962 MB 2000 PG 466
106	15	CONNIE ADAMS	DB 950 PG 790
107	15	GILBERT RITTER	DB 1183 PG 808
108	23	NCD CONTRACTING LLC	DB 3852 PG 423 MB 2021 PG 563
109	23	NCD CONTRACTING LLC	DB 4062 PG 344
111	23	ROBERT SURLES	DB 537 PG 126
112	20,23	DILLARD ENTERPRISES INC	DB 875 PG 308
113	19,20	WALLACE DUNCAN	DB 1615 PG 136 MB 2002 PG 431
114	20	HANLON FAMILY TRUST	DB 1612 PG 643 MB 2006 PG 892
115	20	LAMCO CUSTOM BUILDERS LLC	DB 3549 PG 267
116	17, 22	GORDAN SARTIN	DB 2321 PG 153 MB 2005 PG 923
117	18, 22	DAVID GARDER	DB 3103 PG 553
118	18	CLAY GARDNER	DB 408 PG 607
119	22	GORDON SARTIN	DB 568 PG 60 MB 2005 PG 924

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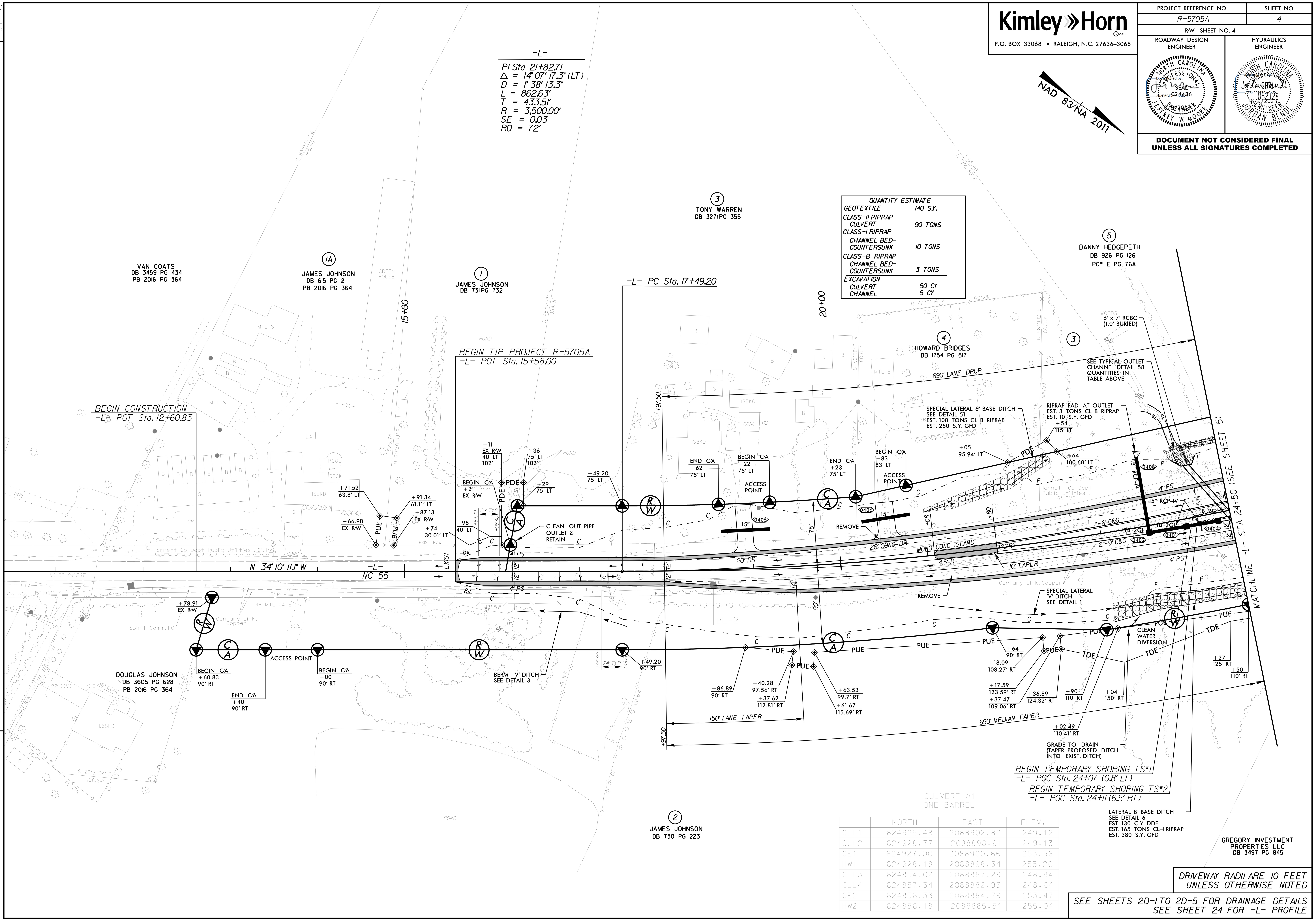
PROJECT REFERENCE NO.	SHEET NO.
R-5705A	4
R/W SHEET NO. 4	

ROADWAY DESIGN ENGINEER — HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NA 2011

REVISIONS



QUANTITY ESTIMATE	
GEOTEXTILE	140 SY.
CLASS-II RIPRAP	
CULVERT	90 TONS
CLASS-I RIPRAP	
CHANNEL BED-COUNTERSUNK	10 TONS
CLASS-B RIPRAP	
CHANNEL BED-COUNTERSUNK	3 TONS
EXCAVATION	
CULVERT	50 CY
CHANNEL	5 CY

CULVERT #1
ONE BARREL

	NORTH	EAST	ELEV.
CUL1	624925.48	2088902.82	249.12
CUL2	624928.77	2088898.61	249.13
CE1	624927.00	2088900.66	253.56
HW1	624928.18	2088898.34	255.20
CUL3	624854.02	2088887.29	248.84
CUL4	624857.34	2088882.93	248.64
CE2	624856.33	2088884.79	253.47
HW2	624856.18	2088885.51	255.04

DRIVEWAY RADII ARE 10 FEET UNLESS OTHERWISE NOTED

SEE SHEETS 2D-1 TO 2D-5 FOR DRAINAGE DETAILS
SEE SHEET 24 FOR -L- PROFILE

8/8/2023

5/14/99

REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
R-5705A	5
R/W SHEET NO. 5	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

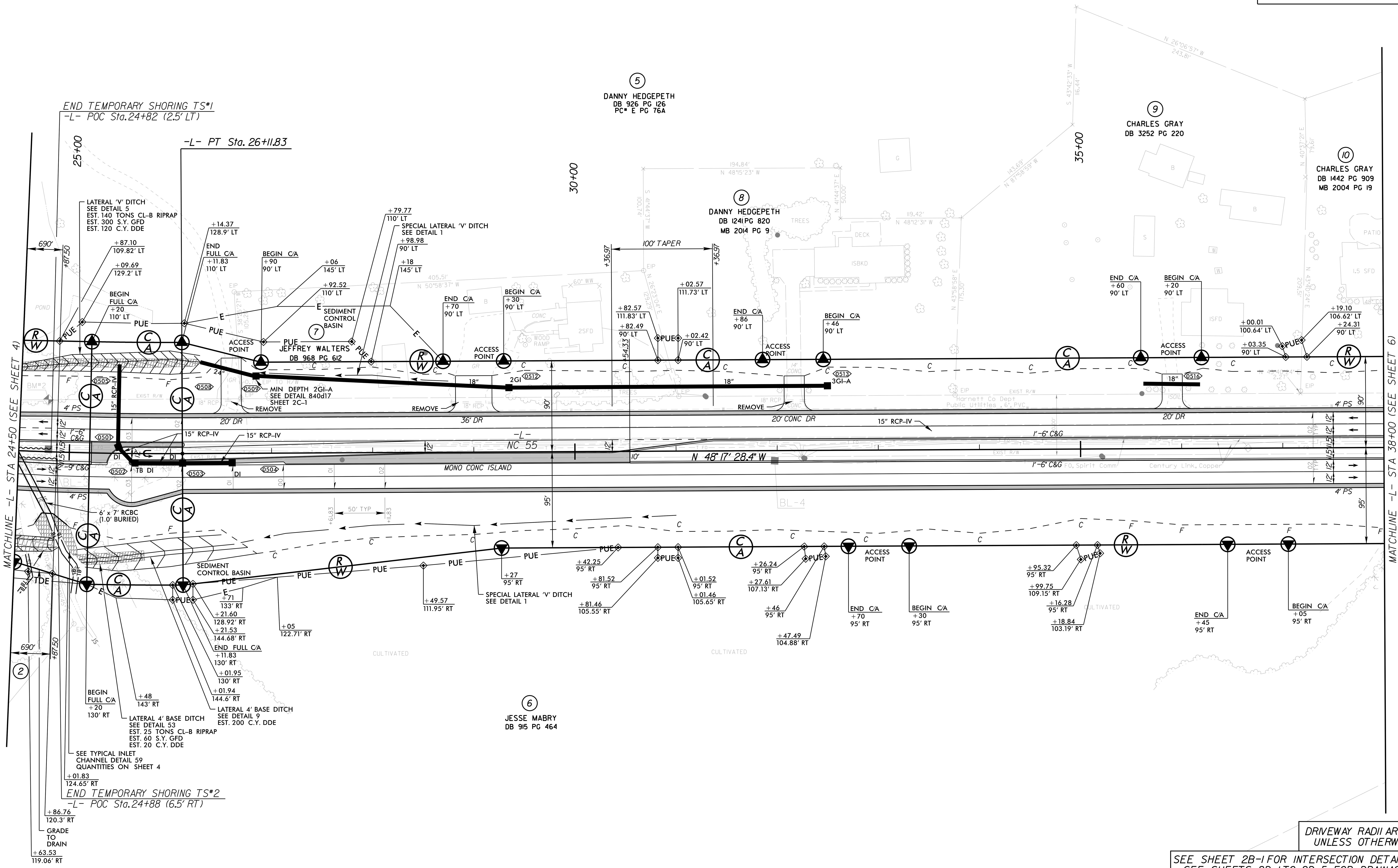
NORTH CAROLINA PROFESSIONAL SEAL 024436 ENGINEER JEFFREY W. MOORE 8/9/2023

NORTH CAROLINA PROFESSIONAL SEAL 052128 ENGINEER JORDAN BENOIT 8/7/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NA 2011

-L-
PI Sta 21+82.71
Δ = 14° 07' 17.3" (LT)
D = 1° 38' 13.3"
L = 862.63'
T = 433.51'
R = 3,500.00'
SE = 0.03
RO = 150'



8/8/2023

DRIVEWAY RADII ARE 10 FEET
UNLESS OTHERWISE NOTED

SEE SHEET 2B-1 FOR INTERSECTION DETAILS 1 AND 2
SEE SHEETS 2D-1 TO 2D-5 FOR DRAINAGE DETAILS
SEE SHEET 24 FOR -L- PROFILE