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08/12/2021

WBS PROJECT: 51362

CONTRACT: DG00674

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PAVEMENT MARKING PLAN

CASWELL COUNTY

LOCATION: SR 1538 (DOLL BRANCH ROAD) IMPROVEMENTS

ROADWAY STANDARD DRAWING

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

STD. NO.	TITLE
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY

GENERAL NOTES

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.

A) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKER
ALL	THERMOPLASTIC	N/A

B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.

E) UNLESS OTHERWISE SPECIFIED, HEATED-IN-PLACE THERMOPLASTIC MAY BE USED IN LIEU OF COLD APPLIED PLASTIC FOR STOP BARS, SYMBOLS, CHARACTERS AND DIAGONALS ON ASPHALT OR CONCRETE ROADWAYS. IF HEATED-IN-PLACE IS USED, IT SHALL BE PAID FOR USING THE COLD APPLIED PAY ITEM.

SUMMARY OF QUANTITIES

ITEM NO.		ITEM DESCRIPTION	QUANTITY	UNIT
DESC. NO.	SECT. NO.			
4688000000-E	1205	THERMOPLASTIC (6") YELLOW DOUBLE CENTER	12400	L.F.

PLAN PREPARED BY:

TRUNG NGUYEN, P. E. — PROJECT MANAGER

BONNIE CAUDILL — PROJECT DESIGN ENGINEER

PLAN REVIEWED BY:

DAWN McPHERSON — DIVISION TRAFFIC ENGINEER

BOJAN CVIJETIC, P.E. — DIVISION CONSTRUCTION ENGINEER

INDEX

REVISIONS

51362

PMP

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
CASWELL COUNTY

DIVISION 7

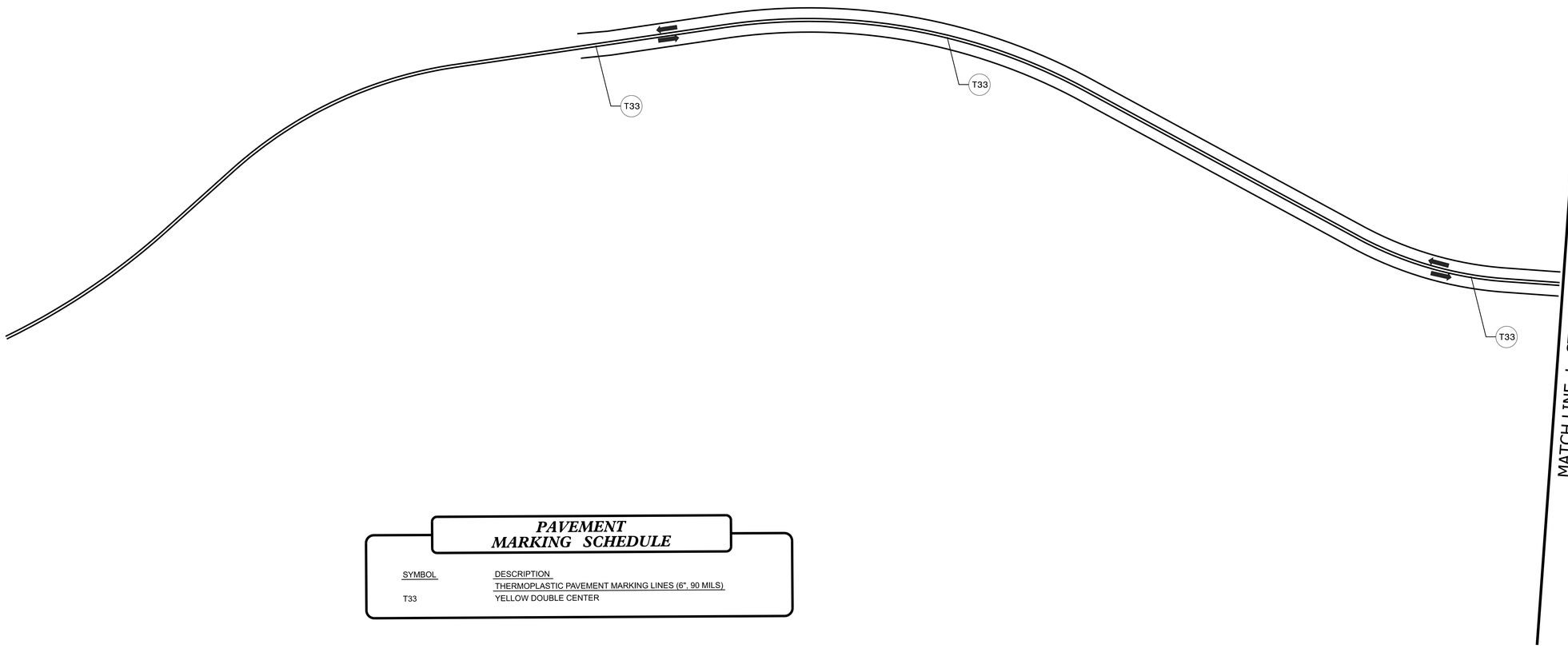
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 046766 ENGINEER TRUNG T. NGUYEN

PREPARED BY

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD
83/2001



PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION
	THERMOPLASTIC PAVEMENT MARKING LINES (6", 90 MILS)
T33	YELLOW DOUBLE CENTER

51362

PMP | 002

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
CASWELL COUNTY

DIVISION 7

ROADWAY DESIGN
ENGINEER

NORTH CAROLINA
PROFESSIONAL
SEAL
046766
ENGINEER
TUNG NGUYEN

PREPARED BY

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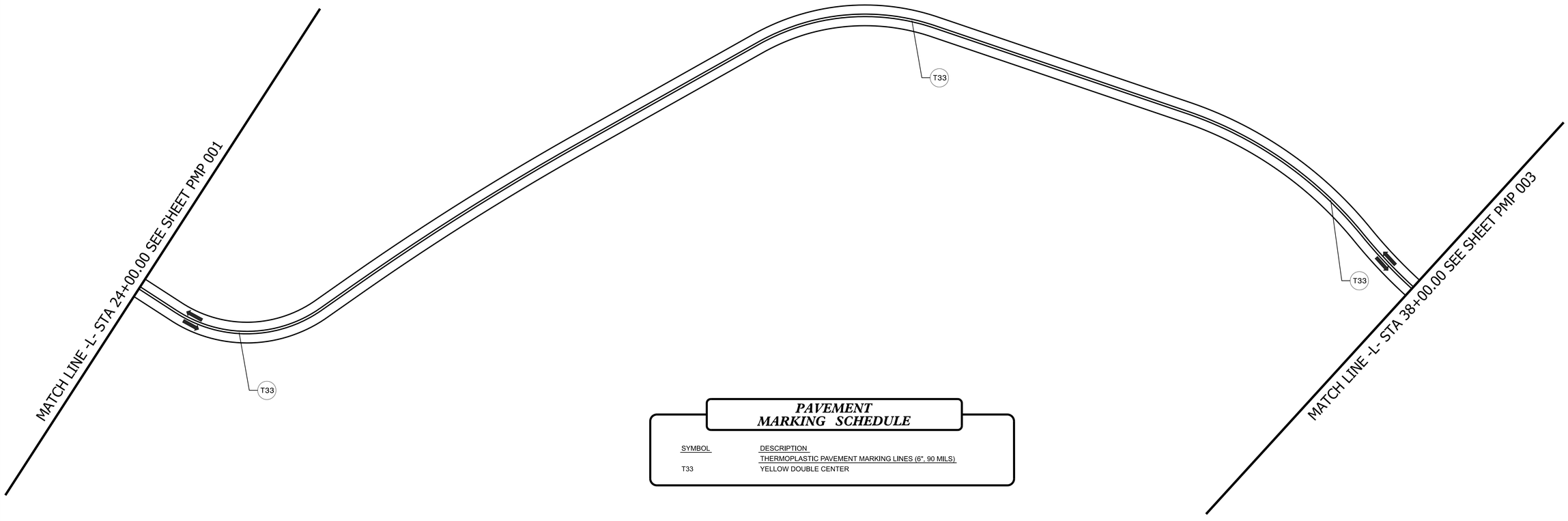
UNLESS ALL SIGNATURES COMPLETED

REVISIONS



PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION THERMOPLASTIC PAVEMENT MARKING LINES (6", 90 MILS)
T33	YELLOW DOUBLE CENTER

51362

PMP | 003

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
CASWELL COUNTY

DIVISION 7

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 046766 ENGINEER TRUONG T NGUYEN
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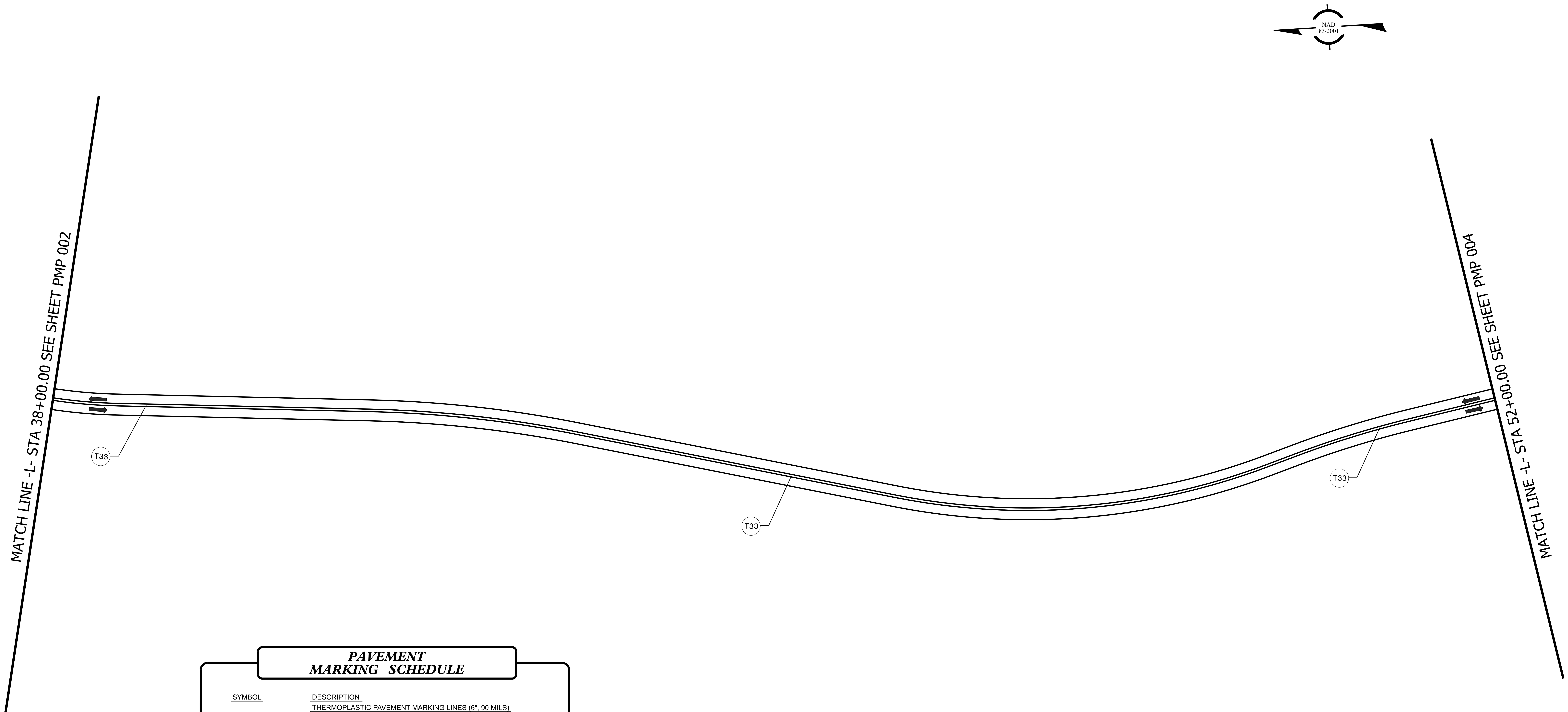
PREPARED BY

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS



PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION
	THERMOPLASTIC PAVEMENT MARKING LINES (6", 90 MILS)
T33	YELLOW DOUBLE CENTER

51362

PMP | 004

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
CASWELL COUNTY

DIVISION 7

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 046766 ENGINEER TRUNG T. NGUYEN

Signed by:
Trung Nguyen
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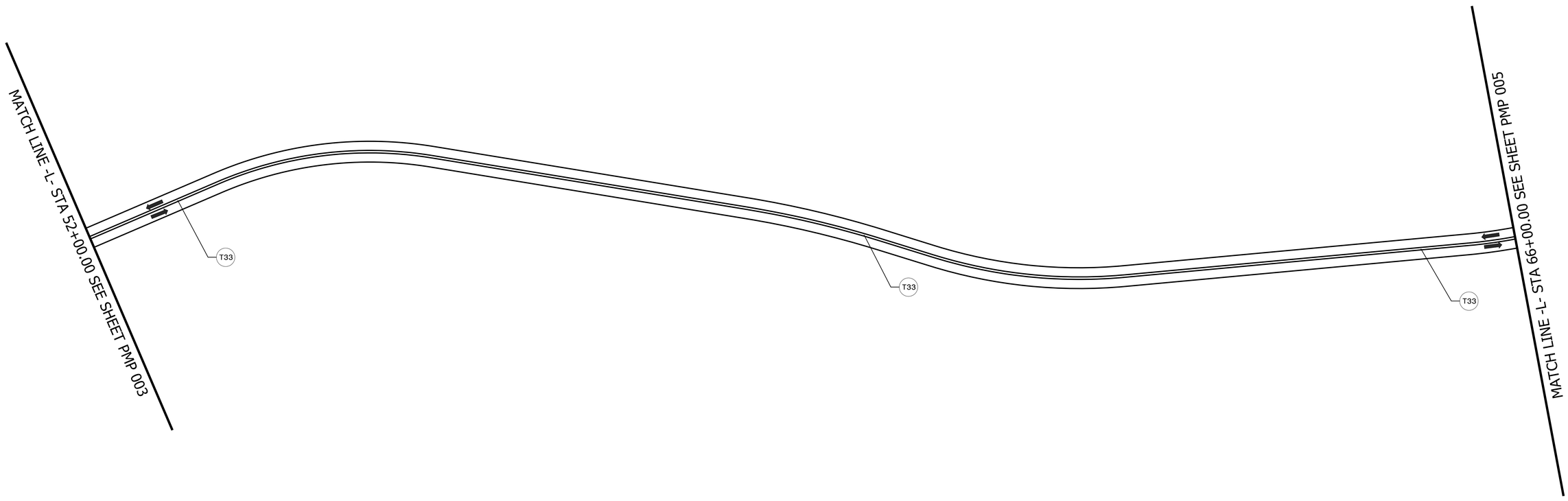
PREPARED BY

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS



PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION
	THERMOPLASTIC PAVEMENT MARKING LINES (6", 90 MILS)
T33	YELLOW DOUBLE CENTER

51362

PMP | 005

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
CASWELL COUNTY

DIVISION 7

ROADWAY DESIGN
ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 046766 ENGINEER TRINA T. NGUYEN

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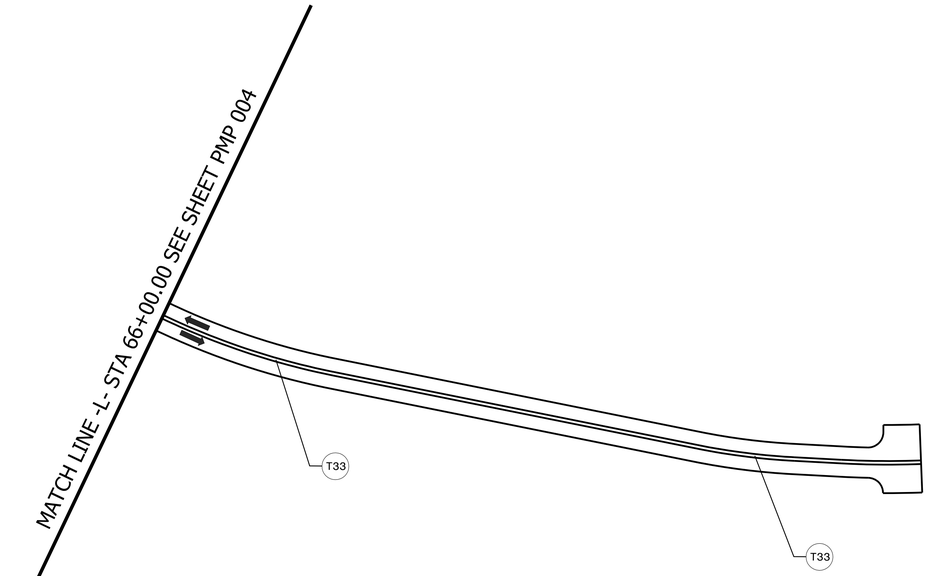
REVISIONS

NAD
83/2001



PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION
	THERMOPLASTIC PAVEMENT MARKING LINES (6", 90 MILS)
T33	YELLOW DOUBLE CENTER

51362

PMP | 006

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
CASWELL COUNTY

DIVISION 7

ROADWAY DESIGN
ENGINEER

PREPARED BY

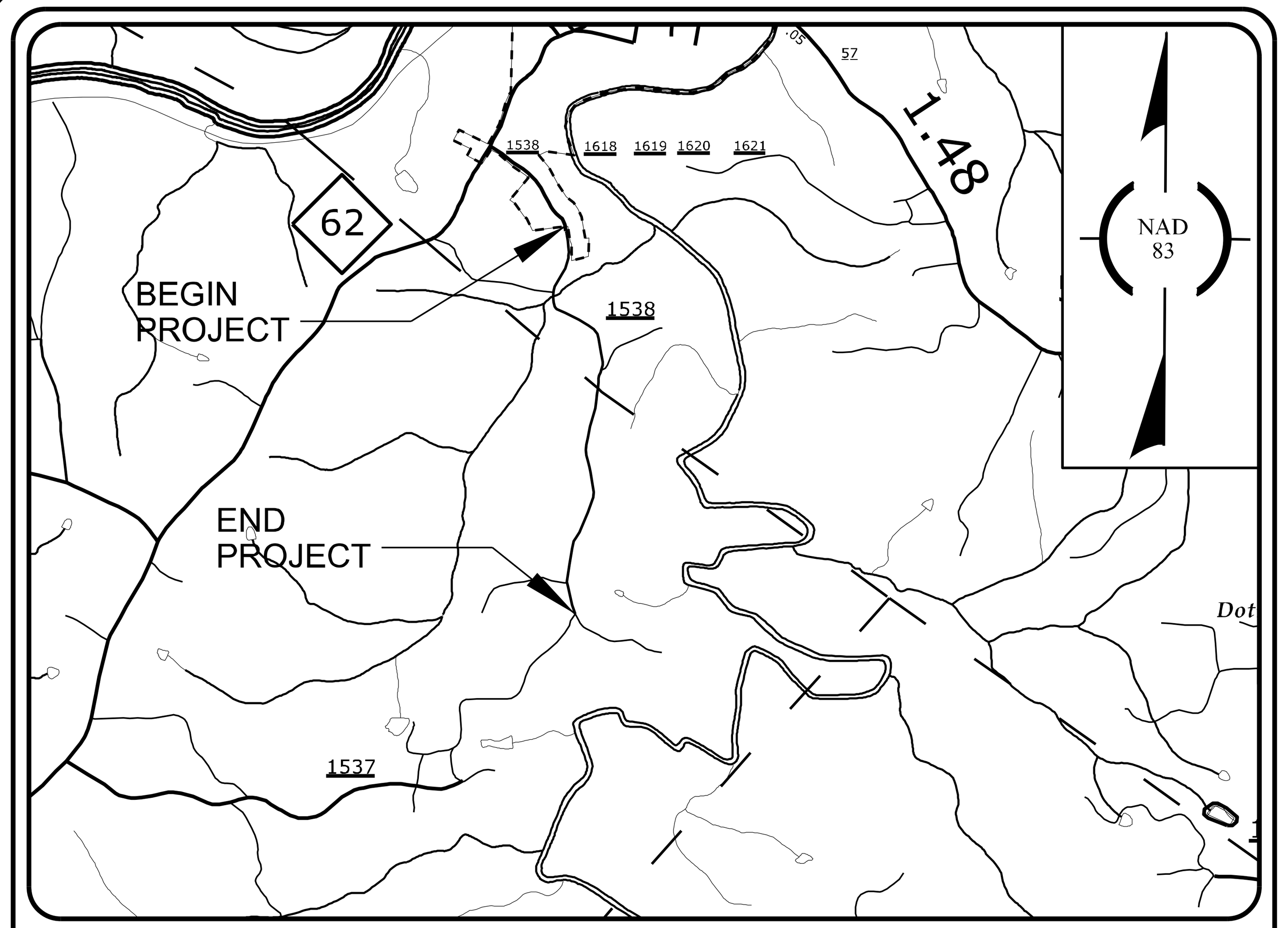
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

REVISIONS

PROJECT: 51362

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	51362	EC-1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



VICINITY MAP

NOT TO SCALE

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

PLAN FOR PROPOSED HIGHWAY EROSION CONTROL

CASWELL COUNTY – MILTON TOWNSHIP
LENGTH 1.055 MILES 60' RIGHT OF WAY
UTILITIES: DUKE ENERGY TRANSMISSION, DUKE ENERGY DISTRIBUTION, BRIGHTSPEED, AND SPECTRUM

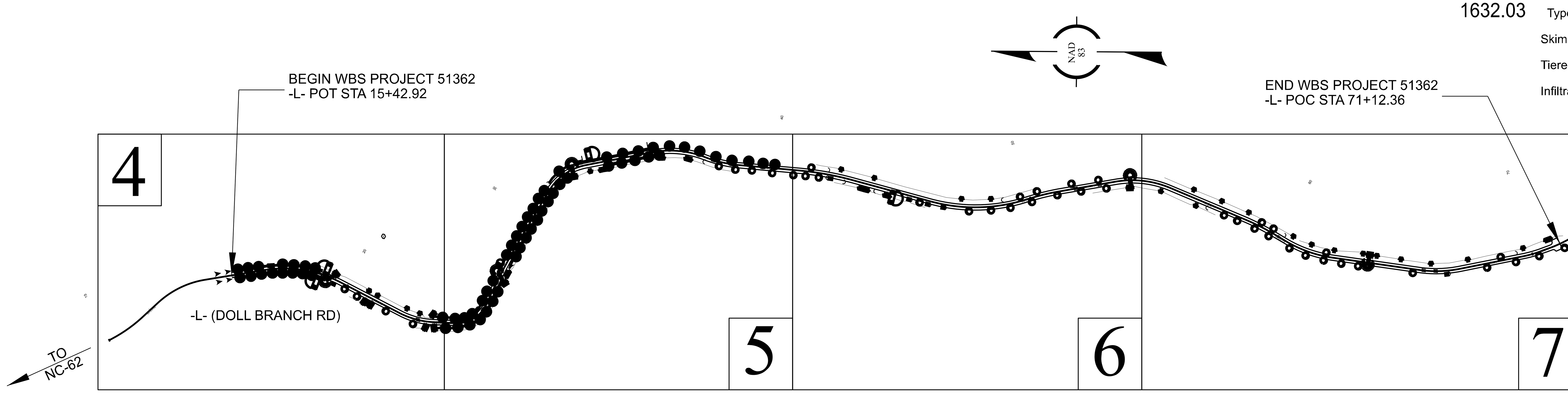
LOCATION: SR 11538 – DOLL BRANCH ROAD IMPROVEMENTS

TYPE OF WORK: GRADING, DRAINAGE, AND BASE

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	
1630.05	Temporary Diversion	
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
1633.02	Temporary Rock Silt Check Type-B	
	Wattle/Coir Fiber Wattle	
	Wattle/Coir Fiber Wattle with Polyacrylamide (PAM)	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
1630.06	Special Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	

THIS PROJECT CONTAINS EROSION CONTROL PLANS FOR CLEARING AND GRUBBING PHASE OF CONSTRUCTION.



GRAPHIC SCALE

50 25 0 50 100

PLANS

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL STORMWATER CONSTRUCTION PERMIT ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF ENERGY, MINERAL, AND LAND RESOURCES.

Prepared in the Office of:

DIVISION 7 DDC
1584 Yanceyville St.
Greensboro, NC 27405

2024 STANDARD SPECIFICATIONS

Designed by:

JAMES B. YATES, MS, PE	***4523***
NAME	LEVEL III CERTIFICATION NO.

Roadway Standard Drawings

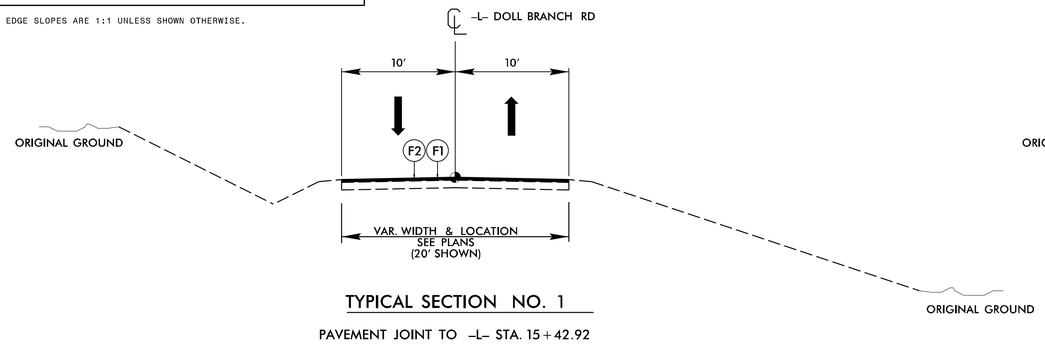
The following roadway english standards as appear in "Roadway Standard Drawings"– Roadway Design Unit – N. C. Department of Transportation – Raleigh, N. C., dated January 2024 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type B
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Check Type A
1622.01	Temporary Berms and Slope Drains	1633.02	Temporary Rock Silt Check Type B
1630.01	Riser Basin	1634.01	Temporary Rock Sediment Dam Type A
1630.02	Silt Basin Type B	1634.02	Temporary Rock Sediment Dam Type B
1630.03	Temporary Silt Ditch	1635.01	Rock Pipe Inlet Sediment Trap Type A
1630.04	Stilling Basin	1635.02	Rock Pipe Inlet Sediment Trap Type B
1630.05	Temporary Diversion	1640.01	Coir Fiber Baffle
1630.06	Special Stilling Basin	1645.01	Temporary Stream Crossing
1631.01	Matting Installation		

PROJECT REFERENCE NO.	SHEET NO.
51362	EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

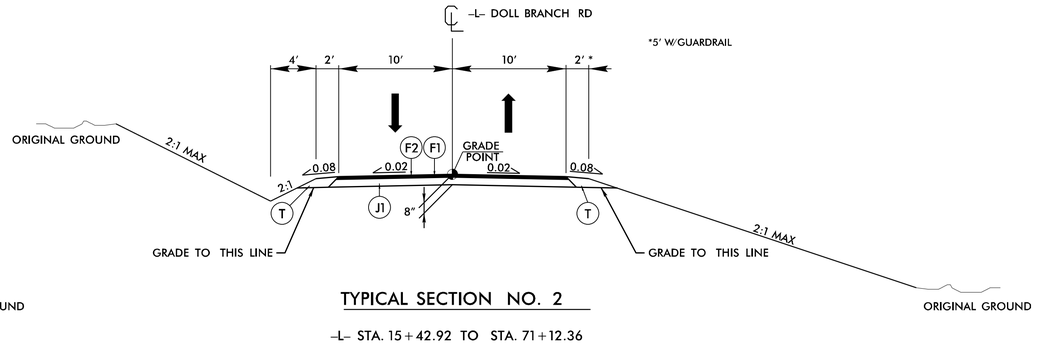
PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
F1	PROPOSED ASPHALT SURFACE TREATMENT, TRIPLE SEAL
F2	PROPOSED FOG SEAL
J1	PROP. 8" AGGREGATE BASE COURSE.
T	EARTH MATERIAL

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



TYPICAL SECTION NO. 1

PAVEMENT JOINT TO –L– STA. 15+42.92



TYPICAL SECTION NO. 2

–L– STA. 15+42.92 TO STA. 71+12.36

EROSION CONTROL – SEQUENCE OF OPERATIONS

1. Review Erosion Control Plans and Standards. Identify all release points (outlets of crossline pipes, tail ditches, roadway ditches, fill slopes, etc.).
2. Install all measures @ release points prior to clearing & grubbing. See Erosion Control Standards for proper installation.
3. Begin grading operations install all other measures as grading progresses and monitor their effectiveness. If any measures need to be changed, consult Engineer. Show changes on Erosion Control Plans.
4. No matting required for grades of 0% - 1.49%, Matting to be applied to grades of 1.5% - 3.99%, PSRM to be applied to grades of 4.00% - 5.00%, Stone liner to be applied to grades of 5.01% and above.
5. Install slope drains in problem areas as needed during construction.
6. Locate all borrow pits and waste areas with their erosion control measures on Erosion Control Plans or attach a separate sheet showing same.
7. Before moving to next phase, review all erosion control measures for effectiveness; make any adjustments, clean-outs, or repair.
8. Continue to check and maintain all measures after each significant rainfall until all disturbed areas become stabilized.
9. Fill in all silt basins and silt ditches; remove all silt fences and slope drains; redistribute all stone from silt checks, sediment dams, and silt screens. Seed and mulch disturbed areas.

GENERAL NOTES:

1. COIR FIBER BAFFLES are required in type B sediment dams, skimmers, and type B basins that are located at drainage turnouts. if the device is greater than 20' in length, it will require 3 baffles. If it is 10'-20' in length , it will require 2 baffles. If it is less than 10', it will require 1 baffle. (SEE SECTION 6.65 OF "THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL".)
2. All Erosion Control Design based on 30 day construction period.
3. Seeding and Mulching to be completed in all disturbed areas within 30 days of beginning of clearing and grubbing.
4. Due to length of project, phase construction recommended to meet stabilization requirements.

PHASING:

Stabilization of each phase must be established before moving to next phase.

1. BEGINNING OF PROJECT TO -L- STA. 32+50
2. -L- STA. 32+50 TO -L- STA. 54+00
3. STA. 54+00 TO END OF PROJECT

Modifications can be made to phasing limits but must be approved by the Engineer. 30 day construction requirement still applies.

SPECIAL SEDIMENT CONTROL FENCE:

Description

This work consists of furnishing materials, and the construction, maintenance, and removal of *Special Sediment Control Fence.* Place special sediment control fence as shown on the plans or as directed.

Materials

(A) Posts

Steel posts shall be at least 5 ft. in length, approximately 1 3/8" wide measured parallel to the fence, and have a minimum weight of 1.25 lb/ft of length. The post shall be equipped with an anchor plate having a minimum area of 14.0 square inches, and shall have a means of retaining wire in the desired position without displacement.

(B) ¼" Hardware Cloth

Hardware cloth shall have ¼" openings constructed from #24 gauge wire. Install hardware cloth in accordance with Standard Drawing No. 1606.01.

(C) Sediment Control Stone

Sediment Control Stone shall meet the requirements of Section 1005 of the *Standard Specifications.* Install stone in accordance with Standard Drawing No. 1606.01.

Construction Methods

The Contractor shall maintain the special sediment control fence until the project is accepted or until the fence is removed, and shall remove and dispose of silt accumulations at the fence when so directed in accordance with the requirements of Section 1630 of the *Standard Specifications.*

Measurement and Payment

¼"Hardware Cloth will be measured and paid for in accordance with Article 1632-5 of the *Standard Specifications.*

Sediment Control Stone will be measured and paid for in accordance with Article 1610-4 of the *Standard Specifications.*

COIR FIBER BAFFLE:

Description

Furnish material, install and maintain coir fiber baffles according to the details in the plans or in locations as directed. Coir Fiber Baffles shall be installed in silt basins and sediment dams at drainage outlets. Work includes providing all materials, placing, securing, excavating and backfilling of *Coir Fiber Baffles.*

Materials

(A) Coir Fiber Mat

Matting: Provide matting to meet the following requirements:

100% coconut fiber (coir) twine woven into high strength matrix
Thickness - 0.30 in. minimum
Tensile Strength 1348 x 626 lb/ft minimum
Elongation 34% x 38% maximum
Flexibility (mg-cm) 65030 x 29590
Flow Velocity Observed 11 ft/sec
Weight 20 oz/SY
Size 6.6 x 164 ft (120 SY)
"C"Factor 0.002
Open Area (measured) 50%

(B) Staples

Provide staples made of 0.125 in. diameter new steel wire formed into a *u* shape not less than 12" in length with a throat of 1" in width.

(C) Posts

Steel posts shall be at least 5 ft. in length, approximately 1 3/8" wide measured parallel to the fence, and have a minimum weight of 1.25 lb/ft of length. The post shall be equipped with an anchor plate having a minimum area of 14.0 square inches, and shall be of the self-fastener angle steel type to have a means of retaining wire and coir fiber mat in the desired position without displacement.

(D) Wire

Provide 9-gauge high tension wire strand of variable lengths.

Construction Methods

Place the coir fiber baffles immediately upon excavation of basins. Install three (3) baffles in basins with a spacing of one fourth (1/4) the basin length and according to the detail sheets. Two (2) coir fiber baffles shall be installed in basins less than 20 ft. in length with a spacing of one third (1/3) the basin length.

Steel posts shall be placed at a depth of 2 ft. below the basin surface, with a maximum spacing of 4 ft. The top height of the coir fiber baffles shall not be below the elevation of the emergency spillway base of dams and basins. Attach a 9-gauge high-tension wire strand to the steel posts at a height of 3 ft. with plastic ties or wire fasteners. Install a steel post into side of the basin at a variable depth and a height of 3 ft. from the bottom of the basIn to anchor coir fiber mat. Secure anchor post to the upright steel post in basin with wire fasteners.

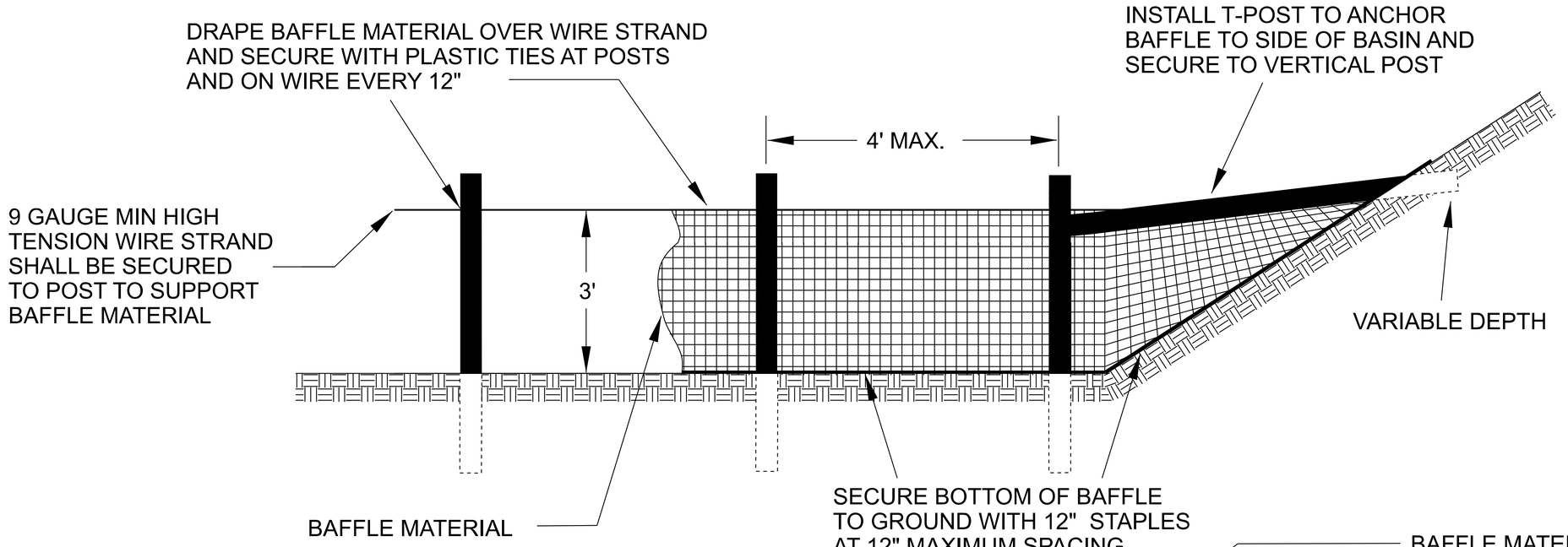
The coir fiber mat shall be draped over the wire strand to a minimum of 3 ft. of material on each side of the strand. Secure the coir fiber mat to the wire strand with plastic ties or wire fasteners. Place staples across the matting at ends and junctions approximately 1 ft. apart at the bottom and side slopes of basin. Overlap matting at least 6" where 2 or more widths of matting are installed side by side. Refer to details in the plan sheets. The Engineer may require adjustments in the stapling requirements to fit individual site conditions.

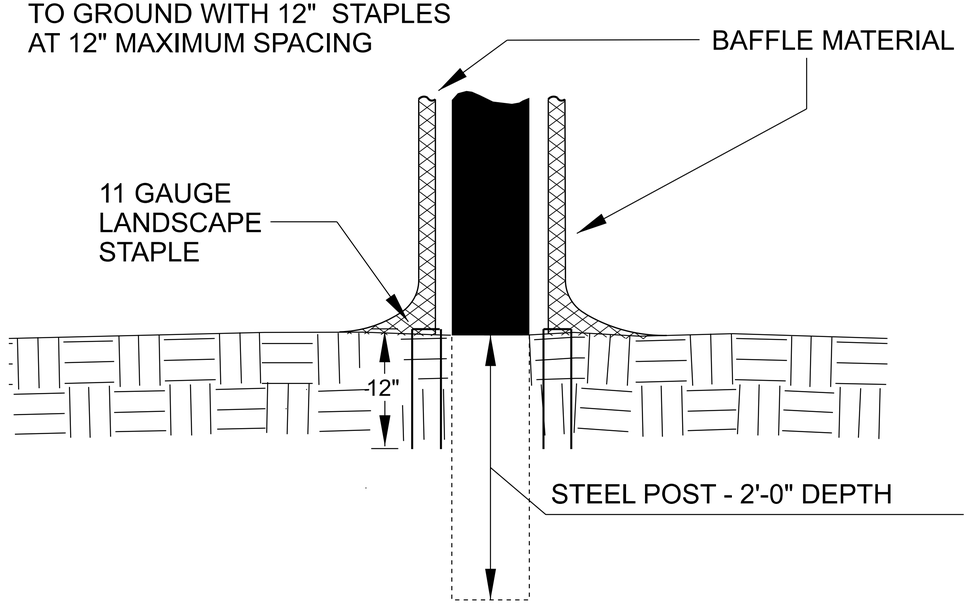
Measurement and Payment

Coir Fiber Baffles will be measured and paid for by the actual number of linear feet of coir fiber baffles which are installed and accepted. Such price and payment will be full compensation for all work covered by this section, including, but not limited to, furnishing all materials, labor, equipment and incidentals necessary to install the coir fiber baffles.

PROJECT REFERENCE NO.	SHEET NO.
51362	EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

COIR FIBER BAFFLE DETAIL





BAFFLE MATERIAL SHALL BE SECURED
TO THE BOTTOM AND SIDES OF BASIN
USING 12" LANDSCAPE STAPLES

NOTES:

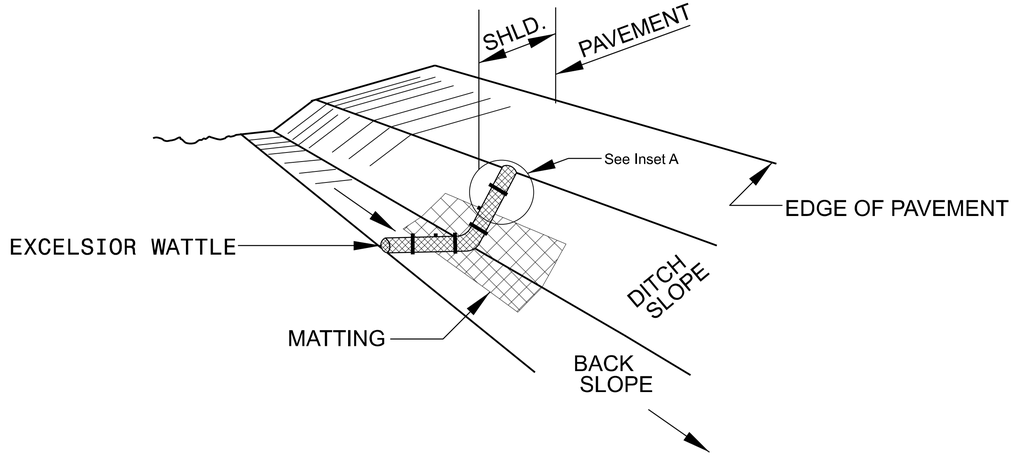
1. INSTALL THREE(3) COIR FIBER BAFFLES IN SILT BASINS AND SEDIMENT DAMS AT DRAINAGE OUTLETS WITH A SPACING OF ¼ THE BASIN LENGTH.

2. TWO(2) COIR FIBER BAFFLES CAN BE INSTALLED IN SILT BASINS AND DAMS LESS THAN 20 FT. IN LENGTH WITH A SPACING OF 1/3 THE BASIN LENGTH.

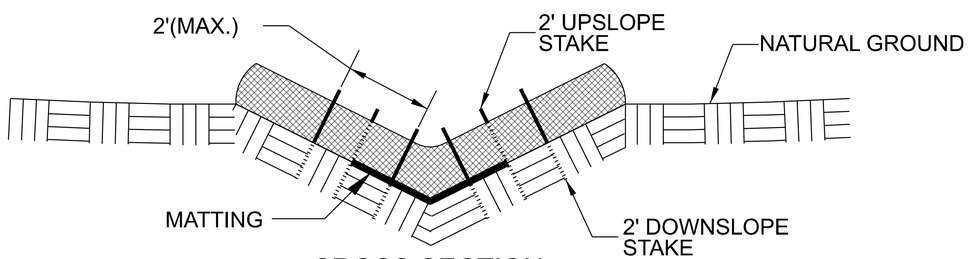
3. TOP HEIGHT OF COIR FIBER BAFFLES SHALL NOT BE BELOW BASE OF EMERGENCY SPILLWAY ELEVATION.

PROJECT REFERENCE NO.	SHEET NO.
51362	EC-2B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

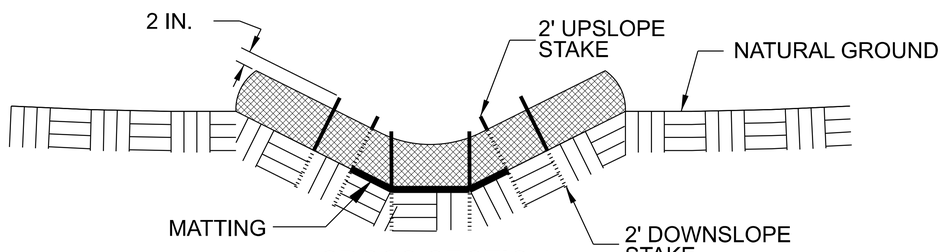
WATTLE DETAIL



ISOMETRIC VIEW



CROSS SECTION
VEE DITCH



CROSS SECTION
TRAPEZOIDAL DITCH

NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

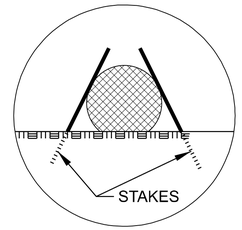
ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

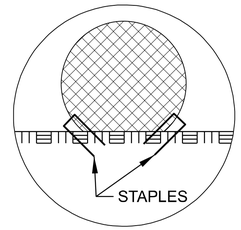
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

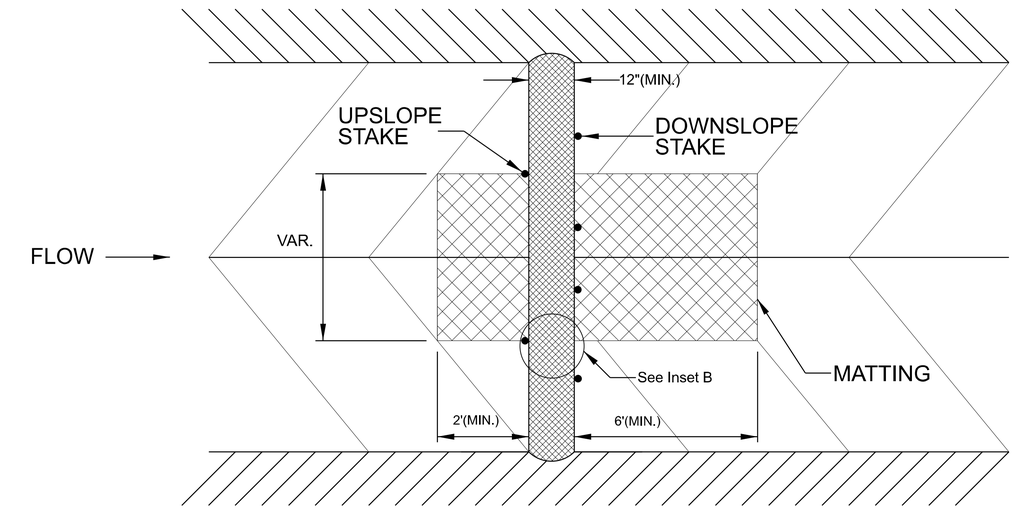
INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.



INSET A



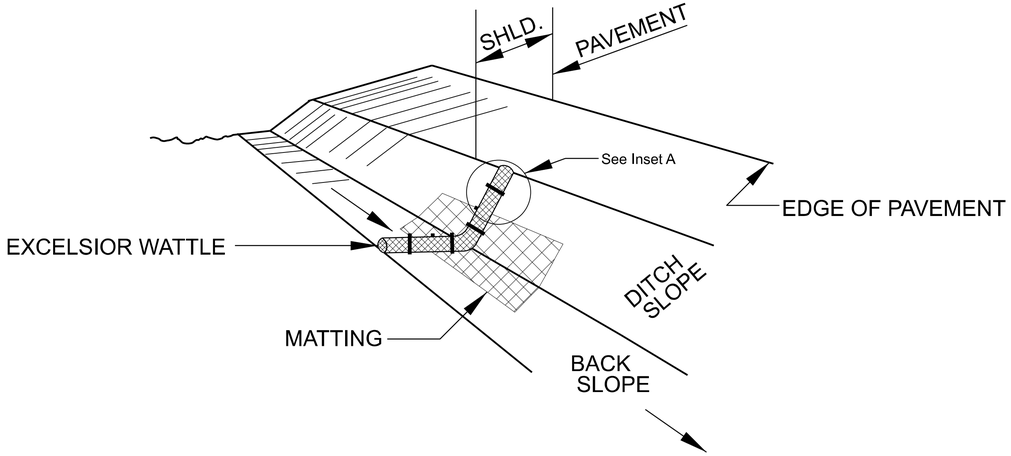
INSET B



TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
51362	EC-2C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



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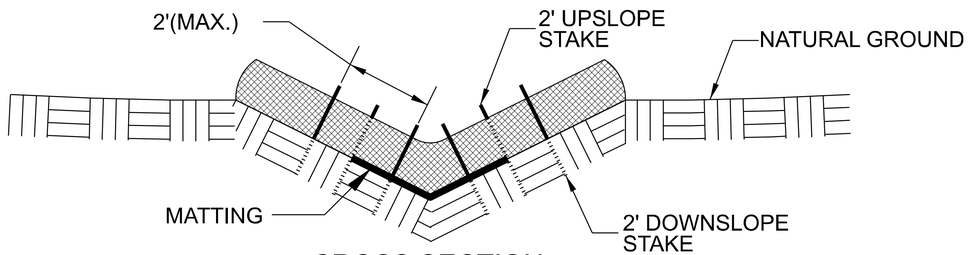
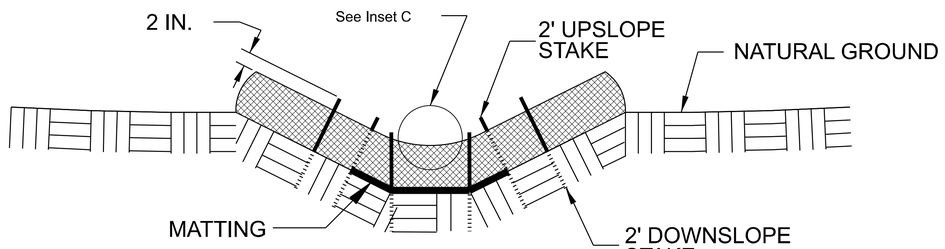


CROSS SECTION
VEE DITCH



CROSS SECTION
TRAPEZOIDAL DITCH

NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

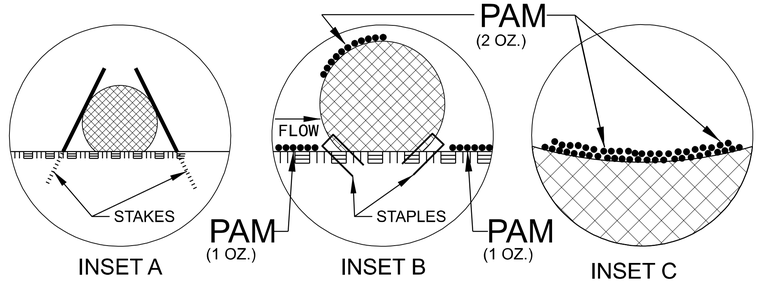
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

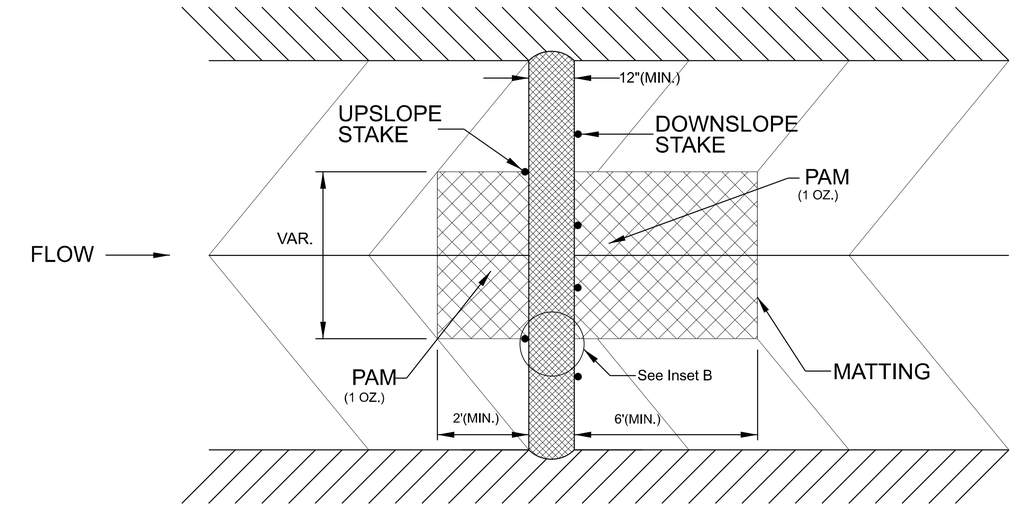
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.

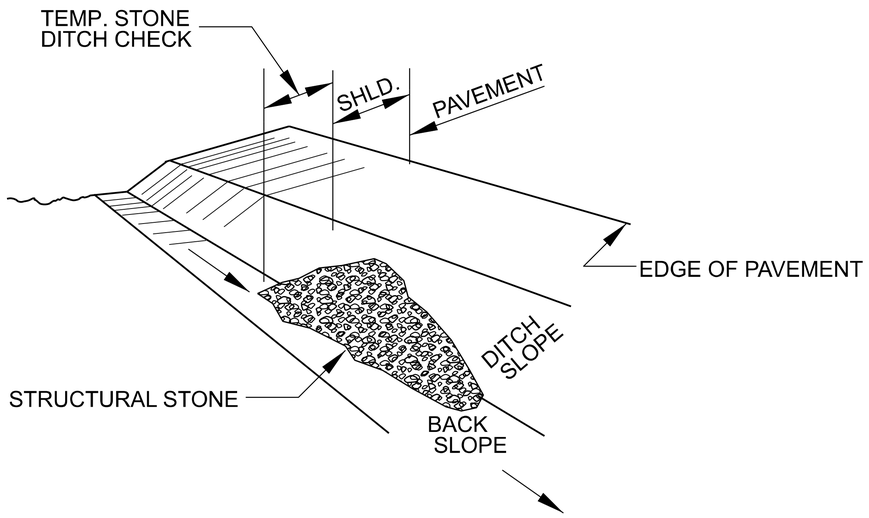




TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
51362	EC-2D
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TEMPORARY ROCK SILT CHECK TYPE 'B' DETAIL

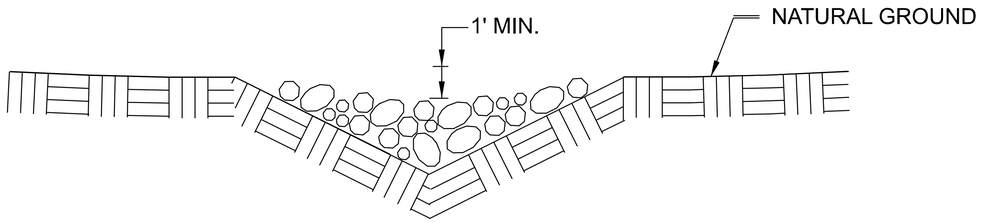


ISOMETRIC VIEW

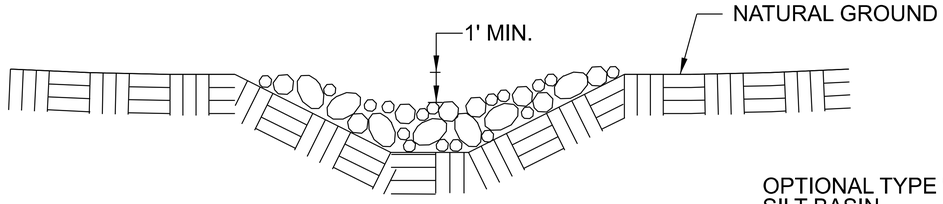
NOTES:

USE CLASS 'B' EROSION CONTROL STONE FOR STRUCTURAL STONE.

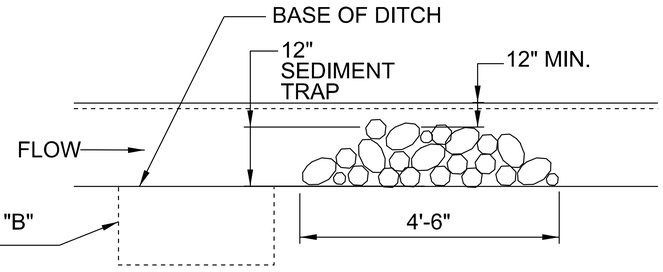
THE ENGINEER MAY DIRECT THE OPTION OF CLASS "A" STONE FOR SITES HAVING LESS THAN ONE (1) ACRE DRAINAGE AREA AND A DITCH GRADE LESS THAN 3%.



CROSS SECTION
VEE DITCH



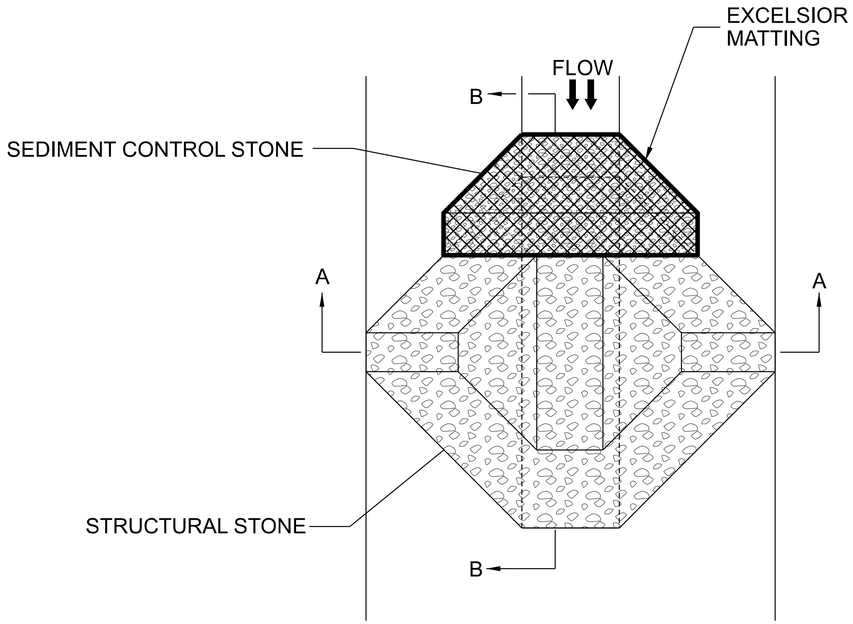
CROSS SECTION
TRAPEZOIDAL DITCH



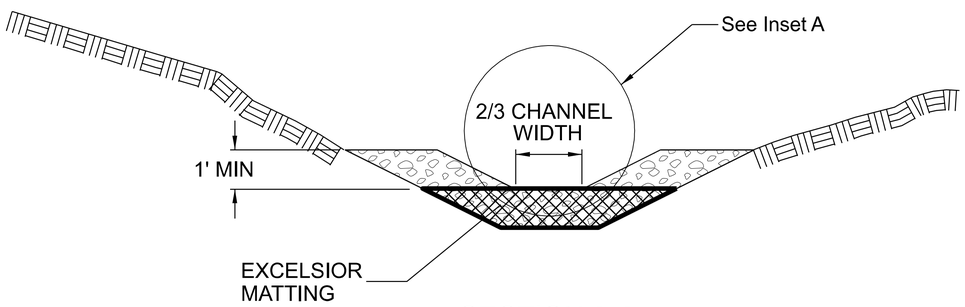
ELEVATION VIEW

PROJECT REFERENCE NO.	SHEET NO.
51362	EC-2E
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)



PLAN



SECTION A-A

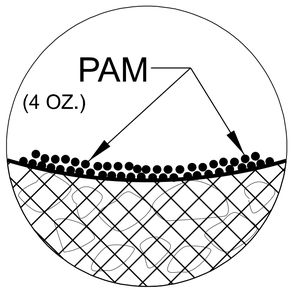
NOTES:

INSTALL TEMPORARY ROCK SILT CHECK TYPE A IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1633.01.

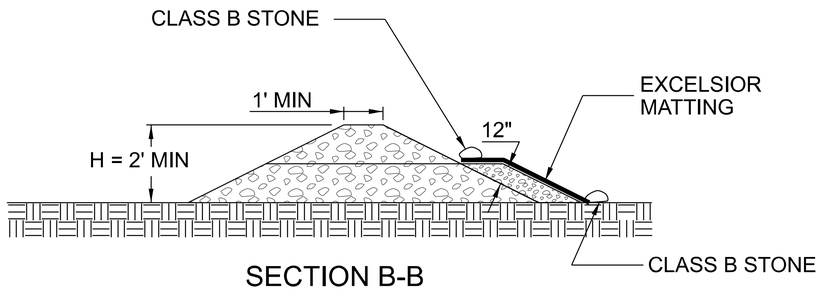
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH ROCK SILT CHECK.

INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A

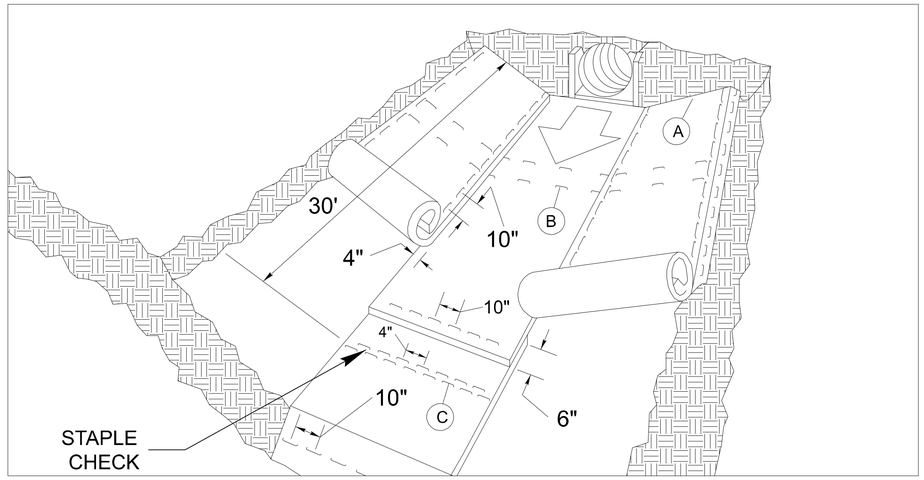


SECTION B-B

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
51362	EC-2F
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

MATTING INSTALLATION DETAIL



MATTING IN DITCHES

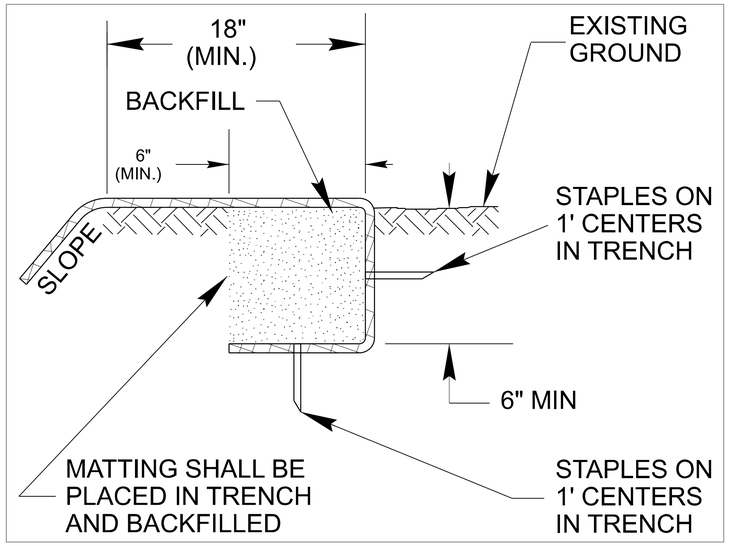
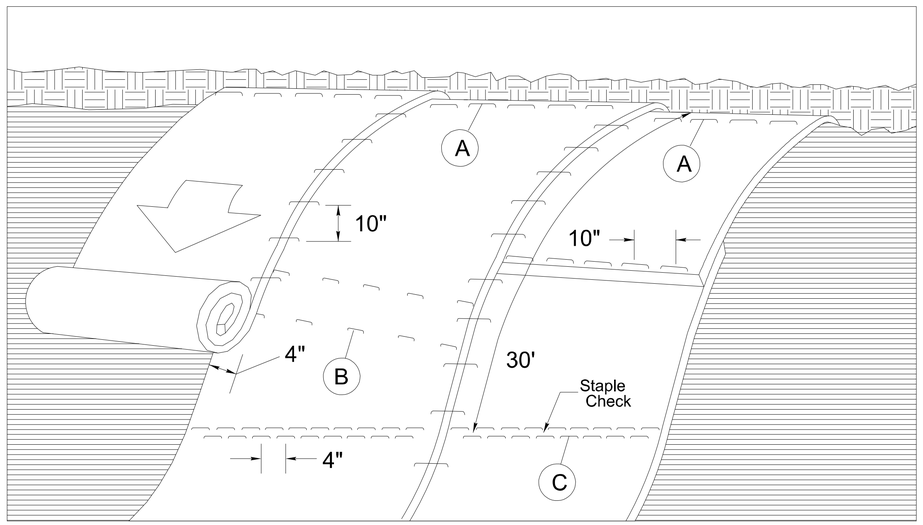


DIAGRAM (A)



MATTING ON SLOPES

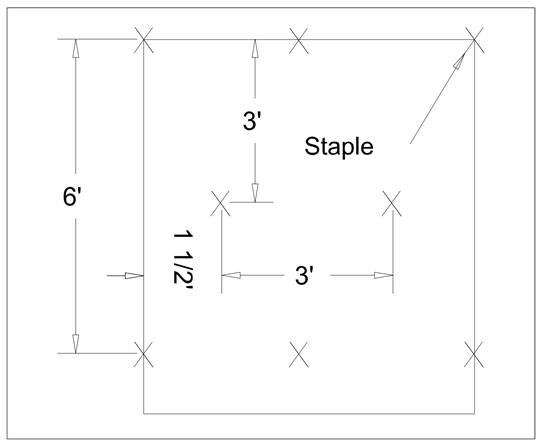


DIAGRAM (B)

Staple Check Pattern

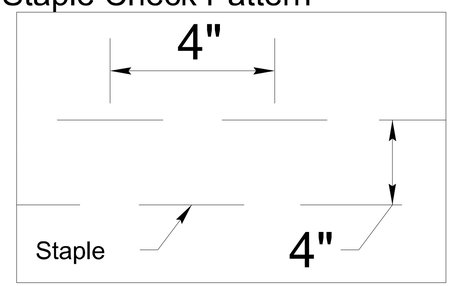


DIAGRAM (c)

NOTES:

THIS DETAIL APPLIES TO STRAW, EXCELSIOR, AND PERMANENT SOIL REINFORCEMENT MAT (PSRM) INSTALLATION.

STAPLES SHALL BE NO. 11 GAUGE STEEL WIRE FORMED INTO A "U" SHAPE WITH A MINIMUM THROAT WIDTH OF 1 INCH AND NOT LESS THAN 6 INCHES IN LENGTH.

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
51362	EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL (EXCELSIOR)

EC SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	19+65	20+80	RT	65
5	-L-	35+20	39+95	LT	260
5	-L-	37+10	40+00	RT	160
6	-L-	40+70	42+80	RT	115
6	-L-	48+75	50+60	LT	105
7	-L-	56+90	59+70	RT	155
7	-L-	59+00	59+75	LT	45
7	-L-	60+60	63+60	RT	165
				SUBTOTAL	1070
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					150
				TOTAL	1220
				SAY	1250

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)

PROJECT REFERENCE NO.	SHEET NO.
51362	EC-3A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

11/14/23

51362
EC | 004

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
CASWELL COUNTY

DIVISION 7

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REVISIONS

NAD 83

Type A and B Rock Silt Checks
Spacing 40'
Sta. 15+00LT to Sta. 18+60LT

CLASS B RIP RAP
15+57LT TO 16+83LT
EST 63 TONS
EST 175 SY GEOTEXTILE

CLASS B RIP RAP
17+10LT TO 18+90LT
EST 90 TONS
EST 251 SY GEOTEXTILE

CLASS B RIP RAP
EST 2 TONS
EST 7 SY GEOTEXTILE

CLASS B RIP RAP
23+64LT TO 25+34LT
EST 76 TONS
EST 212 SY GEOTEXTILE

8 x 16 x3
ID 4.2

8 x 16 x 3
ID 4.1

Place Matting for Erosion Control
on Slope as Needed.
Sta. 20+90 to Sta. 21+21

BEGIN WBS PROJECT 51362
-L- POT STA.15+42.92

BEGIN CONSTRUCTION
(PAVEMENT JOINT AT NC 62 INTERSECTION)

CLASS B RIP RAP
15+57RT TP 19+12RT
EST 166 TONS
EST 463 SY GEOTEXTILE

For "Paving Only Section"
install Erosion Control
Measures as directed.

Type A and B Rock Silt Checks
Spacing 40'
Sta. 15+00RT to Sta. 18+60RT

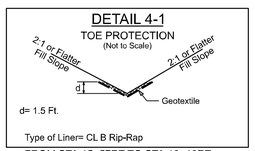
Place Excelsior for Erosion Control
on Slope as Work Allows.
Sta. 19+65RT to Sta. 20+80RT

CLASS B RIP RAP
23+54RT TO 26+95RT
EST 164 TONS
EST 456 SY GEOTEXTILE

Place Matting for Erosion Control
on Slope as Needed.
Sta. 23+14 to Sta. 23+62

MATCH LINE -L- STA 24+00.00 SEE SHEET 005

DETAIL 4-1
TOE PROTECTION
(Not to Scale)



d= 1.5 Ft.

Type of Liner= CL B Rip-Rap

FROM STA.15+57RT TO STA.19+12RT
FROM STA.15+57LT TO STA.16+83LT
FROM STA.17+10LT TO STA.18+90LT
FROM STA.23+54RT TO STA.26+95RT
FROM STA.23+64LT TO STA.25+34LT

11/14/23

51362
EC | 005

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
CASWELL COUNTY

DIVISION 7

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REVISIONS

MATCH LINE -L- STA 24+00.00 SEE SHEET 004

MATCH LINE -L- STA 41+20.00 SEE SHEET EC006

CLASS B RIP RAP
32+54LT TO 35+20LT
EST 127 TONS
EST 354 SY GEOTEXTILE

CLASS B RIP RAP
27+18LT TO 30+93LT
EST 182 TONS
EST 507 SY GEOTEXTILE

Type A and B Rock Silt Check
Spacing 40'
Sta. 33+54LT to Sta. 39+90LT

10 x 20 x 3
ID 5.2

Place Excelsior for Erosion Control
For Ditch Liner as Work Allows.
Sta. 35+20LT to Sta. 39+95LT

Type A and B Rock Silt Check
Spacing 40'
Sta. 27+94LT to Sta. 31+65LT

Type A and B Rock Silt Check
Spacing 40'
Sta. 24+00LT to Sta. 26+86LT

9 x 18 x 3
ID 5.1

CLASS B RIP RAP
25+64LT TO 26+50LT
EST 40 TONS
EST 111 SY GEOTEXTILE

Type A and B Rock Silt Checks
Spacing 40'
Sta. 27+54RT to Sta. 31+76RT

CLASS B RIP RAP
27+54RT TO 30+76RT
EST 154 TONS
EST 428 SY GEOTEXTILE

CLASS B RIP RAP
EST 2 TONS
EST 7 SY GEOTEXTILE

CLASS B RIP RAP
23+54RT TO 26+95RT
EST 164 TONS
EST 456 SY GEOTEXTILE

Type A and B Rock Silt Checks
Spacing 40'
Sta. 23+60RT to Sta. 26+87RT

CLASS B RIP RAP
EST 2 TONS
EST 7 SY GEOTEXTILE

CLASS B RIP RAP
33+40RT TO 35+70RT
EST 110 TONS
EST 304 SY GEOTEXTILE

Type A and B Rock Silt Check
Spacing 40'
Sta. 27+94LT to Sta. 31+65LT

WATTLE SPACING 60'
Sta. 37+30RT to Sta. 39+90RT

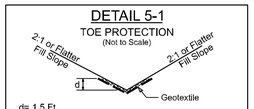
Place Excelsior for Erosion Control
For Ditch Liner as Work Allows.
Sta. 37+10RT to Sta. 40+00RT

WATTLE SPACING 50'
Sta. 40+78RT to Sta. 42+80RT

Place Excelsior for Erosion Control
For Ditch Liner as Work Allows.
Sta. 40+70RT to Sta. 42+80RT

-L- PT 32+62.23
-L- PC 35+18.75
-L- PRC 37+29.21
-L- PT 38+61.07
-L- PC 41+02.86
-L- PC 30+86.17
-L- PT 28+88.47
-L- PC 26+29.53
-L- PT 25+90.97
-L- PC 24+42.70

DETAIL 5-1
TOE PROTECTION
(Not to Scale)



d= 1.5 Ft.

Type of Liner= CL B Rip-Rap

FROM STA.23+54RT TO STA.26+95RT
FROM STA.23+64LT TO STA.25+34LT
FROM STA.25+64LT TO STA.26+50LT
FROM STA.27+54RT TO STA.30+76RT
FROM STA.27+18LT TO STA.30+93LT
FROM STA.33+40RT TO STA.35+70RT
FROM STA.32+54LT TO STA.65+20LT

NAD
83

11/14/23

NAD 83

WATTLE SPACING 65'
Sta. 48+85LT to Sta. 50+30LT

Place Excelsior for Erosion Control
For Ditch Liner as Work Allows.
Sta. 48+75LT to Sta. 50+60LT

7 x 14 x 3
ID 7.1

WATTLE SPACING 100'
Sta. 44+95RT to Sta. 50+00RT

WATTLE SPACING 100'
Sta. 51+05RT to Sta. 53+04RT

WATTLE SPACING 50'
Sta. 40+78RT to Sta. 42+80RT

Place Excelsior for Erosion Control
For Ditch Liner as Work Allows.
Sta. 40+70RT to Sta. 42+80RT

CLASS B RIP RAP
EST 2 TONS
EST 7 SY GEOTEXTILE

MATCH LINE -L- STA 42+20.00 SEE SHEET EC005

MATCH LINE -L- 55+55.00 SEE SHEET 007

16 W MAYNARD & DELOIS D GREGORY
Deed Book/Page 529/659
Map Book/Page 16/63

19 MINNIE OWEN C/O THOMAS HOUGHTON
Deed Book/Page 67/50

20 HENRY PHELPS C/O THOMAS HOUGHTON
Deed Book/Page 62/232

26 L WILSON
Page 320/609
Page 12/721

25 RONNIE & CLORISTINE P WILSON
Deed Book/Page 323/434
Deed Book/Page 261/538
Deed Book/Page 239/4

21 ELIZABETH THOMAS PRESSLEY
Deed Book/Page 552/662
Deed Book/Page 261/547
Map Book/Page 6/183

24 JAMES L POINTER
Deed Book/Page 289/864
Deed Book/Page 261/519
Map Book/Page 6/188

23 MARY TINA JOHNSON
Deed Book/Page 609/507
Deed Book/Page 261/542
Map Book/Page 9/182

22 KATE J HOPE
Deed Book/Page 373/235
Deed Book/Page 214/804
Deed Book/Page 261/510

BOUNDARY LINE
AS SHOWN PER GIS

-L- PT 43+01.54
-L- PC 46+12.19
-L- PT 49+72.89
-L- PC 50+01.82
-L- PT 51+15.04
-L- PC 53+34.05

S15°14'08"W 30.12'
S74°10'08"E 30.00'
S71°14'08"E 426.56'
S71°03'10"E 414.22'
S71°52'10"E 408.63'
S81°46'10"E 405.32'
S86°42'10"E 412.58'
S86°42'10"E 30.17'
S16°35'27"E
S09°45'45"E
N82°54'42"W 205.49'
N85°54'42"W 28.57'
N82°25'45"W 749.68'
N71°14'29"W 177.20'
N87°52'25"W 320.29'
119.98' N12°38'18"

EXISTING RW PER PLAT (BM 12 PG 721)
EXISTING RW PER AGREEMENT (DB 261 PG 538)
EXISTING RW PER AGREEMENT (DB 261 PG 547)
EXISTING RW PER AGREEMENT (DB 261 PG 519)
EXISTING RW PER AGREEMENT (DB 261 PG 542)
EXISTING RW PER AGREEMENT (DB 261 PG 510)
EXISTING RW PER AGREEMENT (DB 261 PG 547)
EXISTING RW PER PLAT (BM 16 PG 63)

(EIP TO RW) 0.28'
(EIP TO RW) 1.22'
(EIP TO RW) 0.70'
(EIP TO RW) 13.05'
(EIP TO RW) 0.70'

15" GUM
WOODS
465.0'
470.0'
480.0'
EIP
CMP
RCP
Duke Energy Progress

51362
EC | 006

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
CASWELL COUNTY

DIVISION 7

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REVISIONS

11/14/23

NAD 83

WATTLE SPACING 50'
Sta. 59+15LT to Sta. 59+65LT

Place Excelsior for Erosion Control For Ditch Liner as Work Allows.
Sta. 59+00LT to Sta. 59+75LT

CLASS B RIP RAP
EST 2 TONS
EST 7 SY GEOTEXTILE

WATTLE SPACING 70'
Sta. 60+60RT to Sta. 63+37RT

Place Excelsior for Erosion Control For Ditch Liner as Work Allows.
Sta. 60+60RT to Sta. 63+60RT

WATTLE SPACING 90'
Sta. 56+90RT to Sta. 59+70RT

Place Excelsior for Erosion Control For Ditch Liner as Work Allows.
Sta. 56+90RT to Sta. 59+70RT

WATTLE SPACING 90'
Sta. 68+25RT to Sta. 70+30RT

END WBS PROJECT 51362
-L- POC STA. 71+12.36

MATCH LINE -L- STA 55+55.00 SEE SHEET 006

GEORGE LEA SCOTT III & WILSON CHANDLER SCOTT
Deed Book/Page 563/580
Deed Book/Page 261/540

TONY HAMLETT
Deed Book/Page 534/295
Deed Book/Page 238/730

GEORGE H & PAUL H MYERS
Deed Book/Page 200/368
Deed Book/Page 261/529

DALE MICHAEL LIPSCOMB
Deed Book/Page 257/812
Plat Book/Page 009/069

51362
EC | 007

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
CASWELL COUNTY

DIVISION 7

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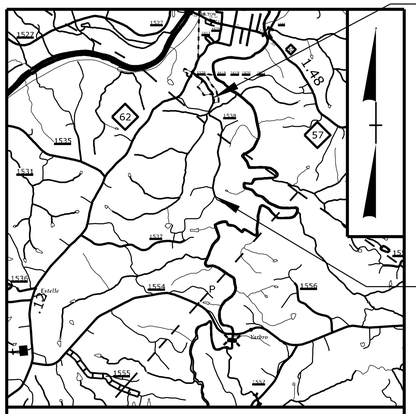
REVISIONS

03/07/25

PROJECT: 51362



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

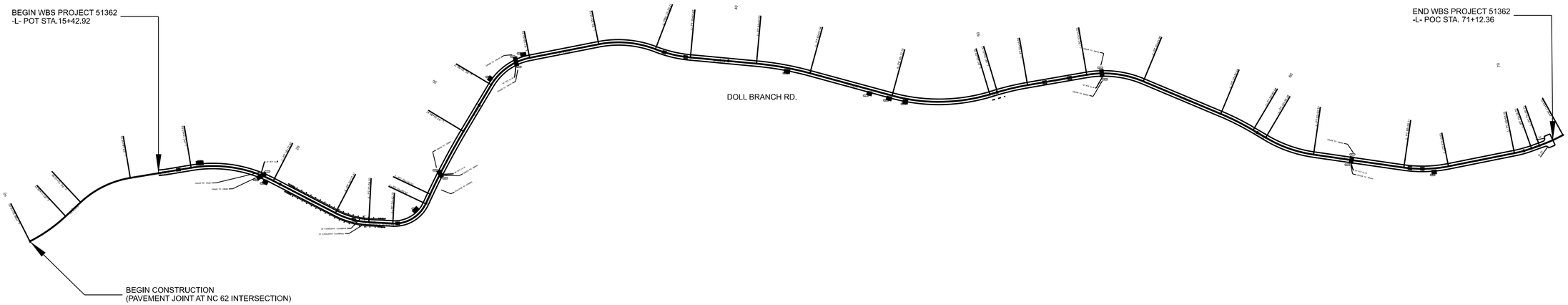
UTILITIES BY OTHERS PLANS
COUNTY

WBS NO.	SHEET NO.
51362	UO-1

NOTE:
ALL UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS.
NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR UTILITY WORK SHOWN ON THIS SHEET.

LOCATION: SR 1538 (DOLL BRANCH ROAD) IMPROVEMENTS

TYPE OF WORK: GRADING, DRAINAGE, AND BASE



NOT TO SCALE

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

INDEX OF SHEETS

UTILITY OWNERS WITH CONFLICTS

(A) BRIGHTSPEED
(B) SPECTRUM

PREPARED IN THE OFFICE OF

DIVISION 7 DDC
AND UTILITIES UNIT

1584 YANCEYVILLE ST.
GREENSBORO NC 27405
PHONE (336) 487-0000

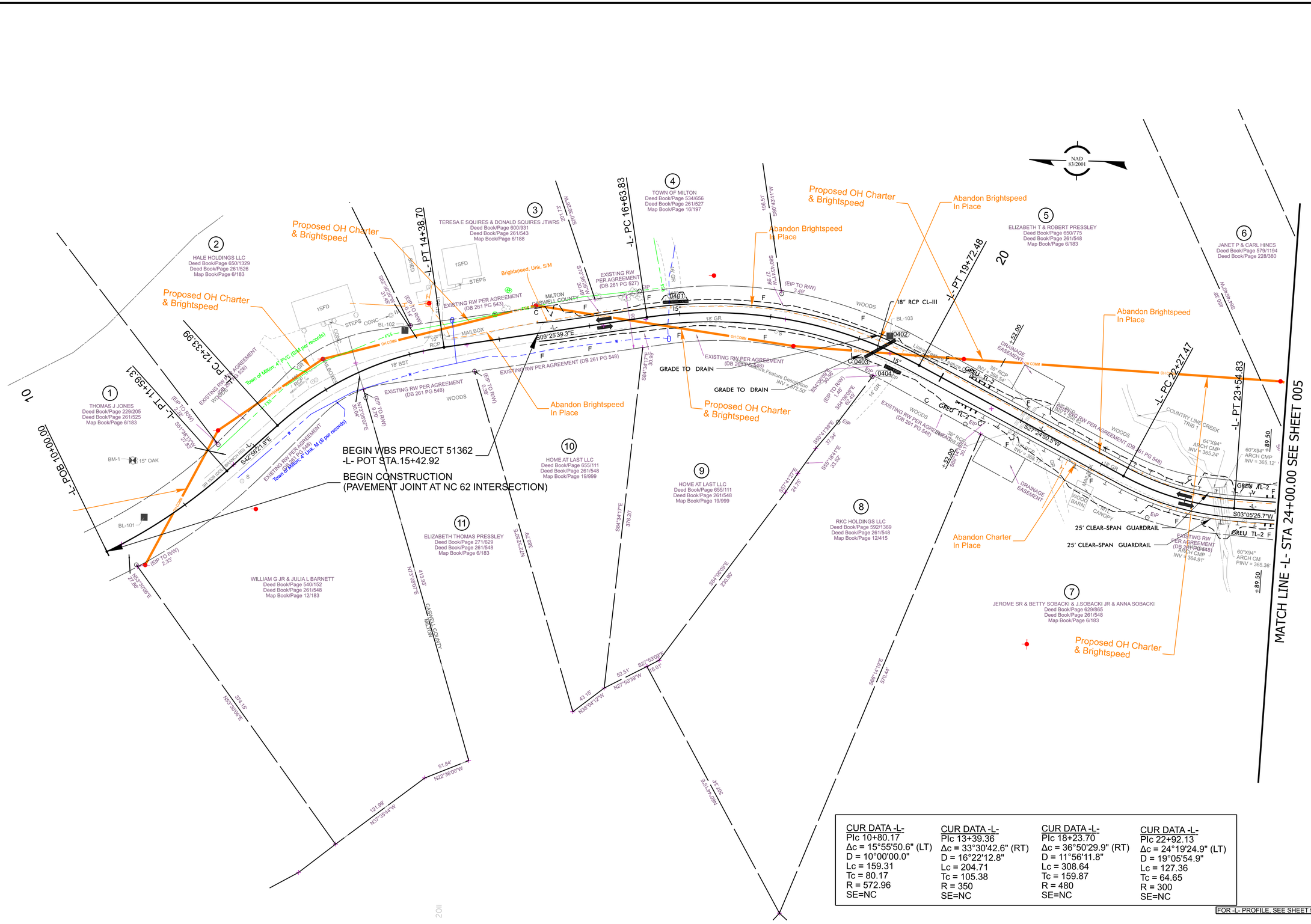
JAMES B. YATES, MS, PE	CONTACT #1
CURTIS YORK	CONTACT #2
TRUNG NGUYEN, MS, PE	CONTACT #3

DIVISION OF HIGHWAYS
DIVISION 7 UTILITIES UNIT

1584 YANCEYVILLE ST.
GREENSBORO NC 27405
PHONE (336) 487-0000

BRIAN KETNER, PE	PROJECT DEVELOMPNET ENGINEER
JAMES YATES, MS, PE	DIVISION UTILITIES ENGINEER
CURTIS YORK	ASSISTANT DIVISION UTILITES ENGINEER
CODY LUNGRIN	DIVISION UTILITIES COORDINATOR

11/14/23



51362

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CASWELL COUNTY

DIVISION 7

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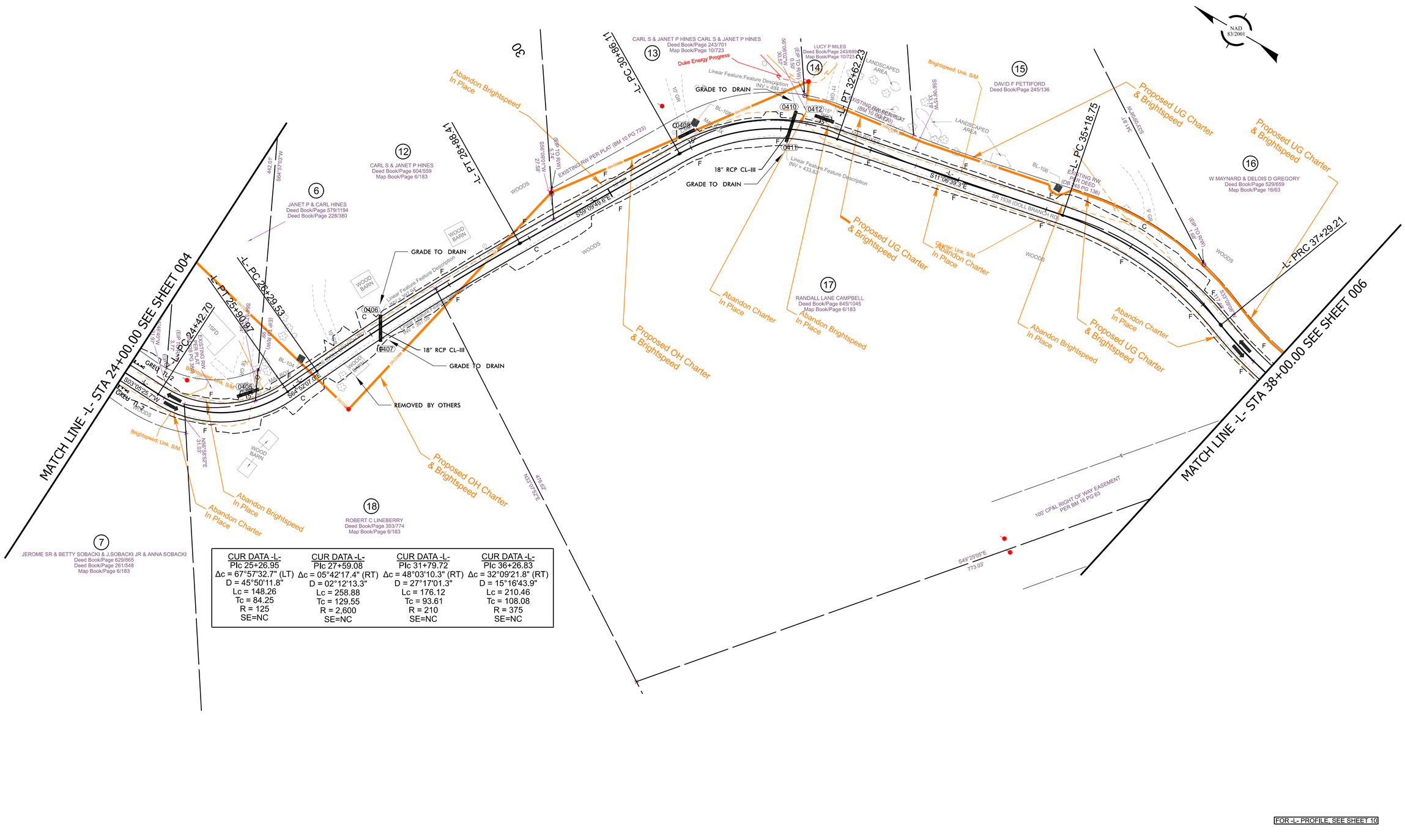
11/14/23



CUR DATA -L-	CUR DATA -L-	CUR DATA -L-	CUR DATA -L-
PIc 25+26.95	PIc 27+59.08	PIc 31+79.72	PIc 36+26.83
Δc = 67°57'32.7" (LT)	Δc = 05°42'17.4" (RT)	Δc = 48°03'10.3" (RT)	Δc = 32°09'21.8" (RT)
D = 45°50'11.8"	D = 02°12'13.3"	D = 27°17'01.3"	D = 15°16'43.9"
Lc = 148.26	Lc = 258.88	Lc = 176.12	Lc = 210.46
Tc = 84.25	Tc = 129.55	Tc = 93.61	Tc = 108.08
R = 125	R = 2,600	R = 210	R = 375
SE=NC	SE=NC	SE=NC	SE=NC

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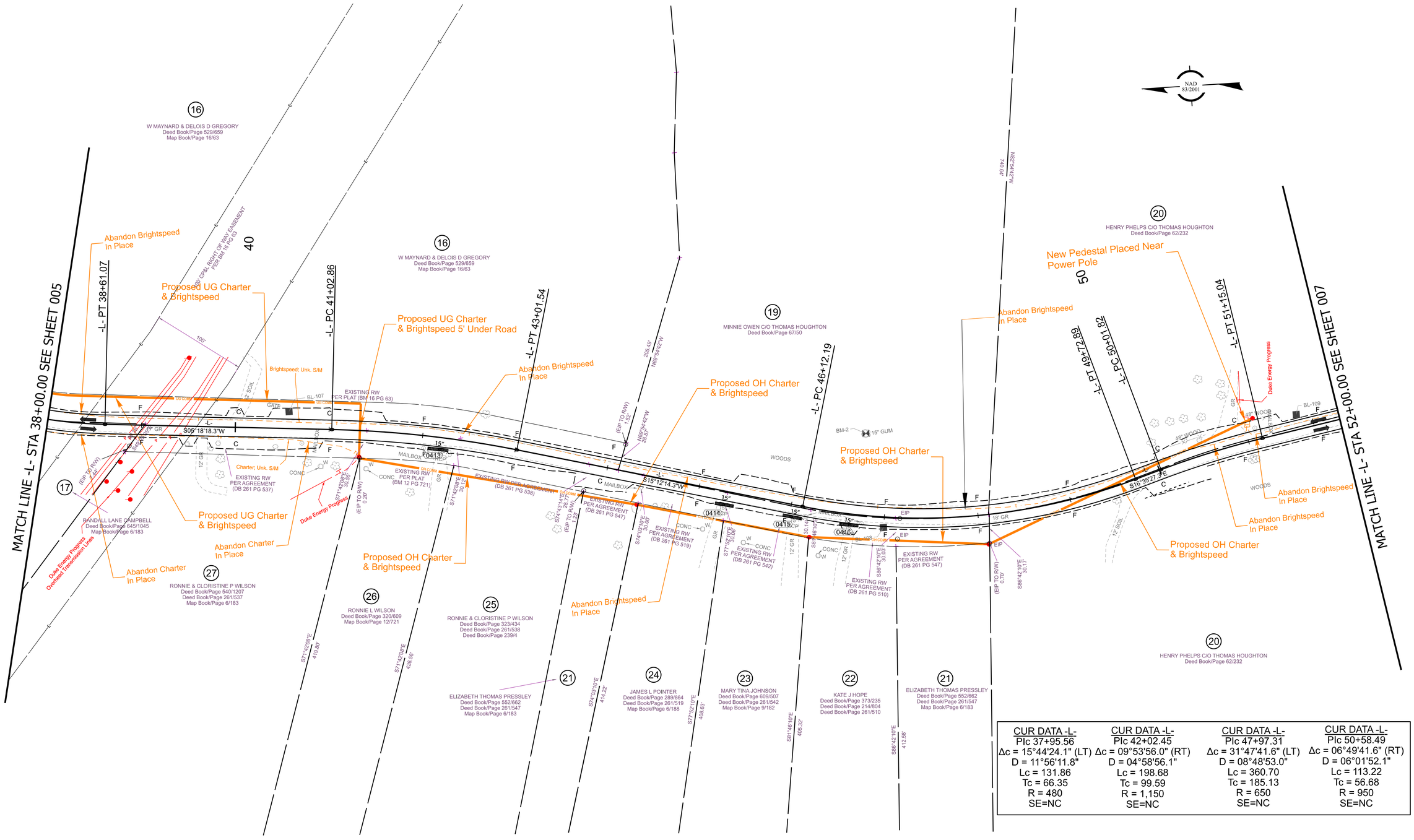

CUR DATA -L-	CUR DATA -L-	CUR DATA -L-	CUR DATA -L-
Plc 37+95.56	Plc 42+02.45	Plc 47+97.31	Plc 50+58.49
Δc = 15°44'24.1" (LT)	Δc = 09°53'56.0" (RT)	Δc = 31°47'41.6" (LT)	Δc = 06°49'41.6" (RT)
D = 11°56'11.8"	D = 04°58'56.1"	D = 08°48'53.0"	D = 06°01'52.1"
Lc = 131.86	Lc = 198.68	Lc = 360.70	Lc = 113.22
Tc = 66.35	Tc = 99.59	Tc = 185.13	Tc = 56.68
R = 480	R = 1,150	R = 650	R = 950
SE=NC	SE=NC	SE=NC	SE=NC

FOR -L- PROFILE, SEE SHEET 11

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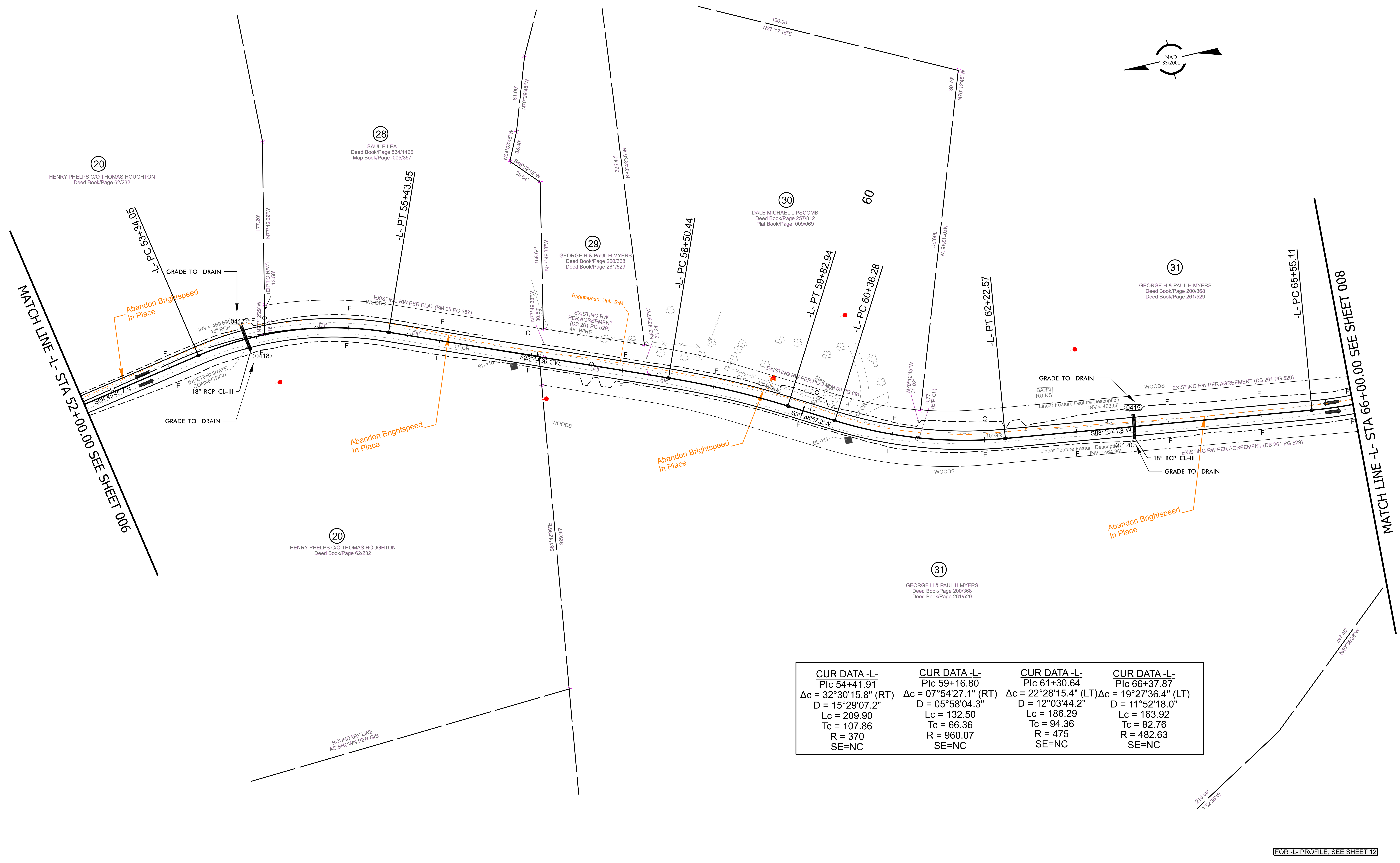
MATCH LINE -L- STA 52+00.00 SEE SHEET 006
MATCH LINE -L- STA 66+00.00 SEE SHEET 008
NAD 83/2001
20
HENRY PHELPS C/O THOMAS HOUGHTON
Deed Book/Page 62/232
28
SAUL E LEA
Deed Book/Page 534/1426
Map Book/Page 005/357
29
GEORGE H & PAUL H MYERS
Deed Book/Page 200/368
Deed Book/Page 261/529
30
DALE MICHAEL LIPSCOMB
Deed Book/Page 257/812
Plat Book/Page 009/069
31
GEORGE H & PAUL H MYERS
Deed Book/Page 200/368
Deed Book/Page 261/529
-L- PC 53+34.05
-L- PT 55+43.95
-L- PC 58+50.44
-L- PT 59+82.94
-L- PC 60+36.28
-L- PT 62+22.57
-L- PC 65+55.11
GRADE TO DRAIN
Abandon Brightspeed In Place
18" RCP CL-III
INDETERMINATE CONNECTION
EXISTING RW PER PLAT (BM 05 PG 357)
EXISTING RW PER AGREEMENT (DB 261 PG 529) 48" WIRE
EXISTING RW PER AGREEMENT (DB 261 PG 529)
Brightspeed: Unk. S/M
S09°45'45.7"E
S22°44'30.1"W
S30°38'57.2"W
S08°10'41.8"W
WOODS
BARN RUINS
BOUNDARY LINE AS SHOWN PER GIS
400.00'
N27°17'15"E
FOR -L- PROFILE, SEE SHEET 12

CUR DATA -L-	CUR DATA -L-	CUR DATA -L-	CUR DATA -L-
PI= 54+41.91	PI= 59+16.80	PI= 61+30.64	PI= 66+37.87
Δc = 32°30'15.8" (RT)	Δc = 07°54'27.1" (RT)	Δc = 22°28'15.4" (LT)	Δc = 19°27'36.4" (LT)
D = 15°29'07.2"	D = 05°58'04.3"	D = 12°03'44.2"	D = 11°52'18.0"
Lc = 209.90	Lc = 132.50	Lc = 186.29	Lc = 163.92
Tc = 107.86	Tc = 66.36	Tc = 94.36	Tc = 82.76
R = 370	R = 960.07	R = 475	R = 482.63
SE=NC	SE=NC	SE=NC	SE=NC

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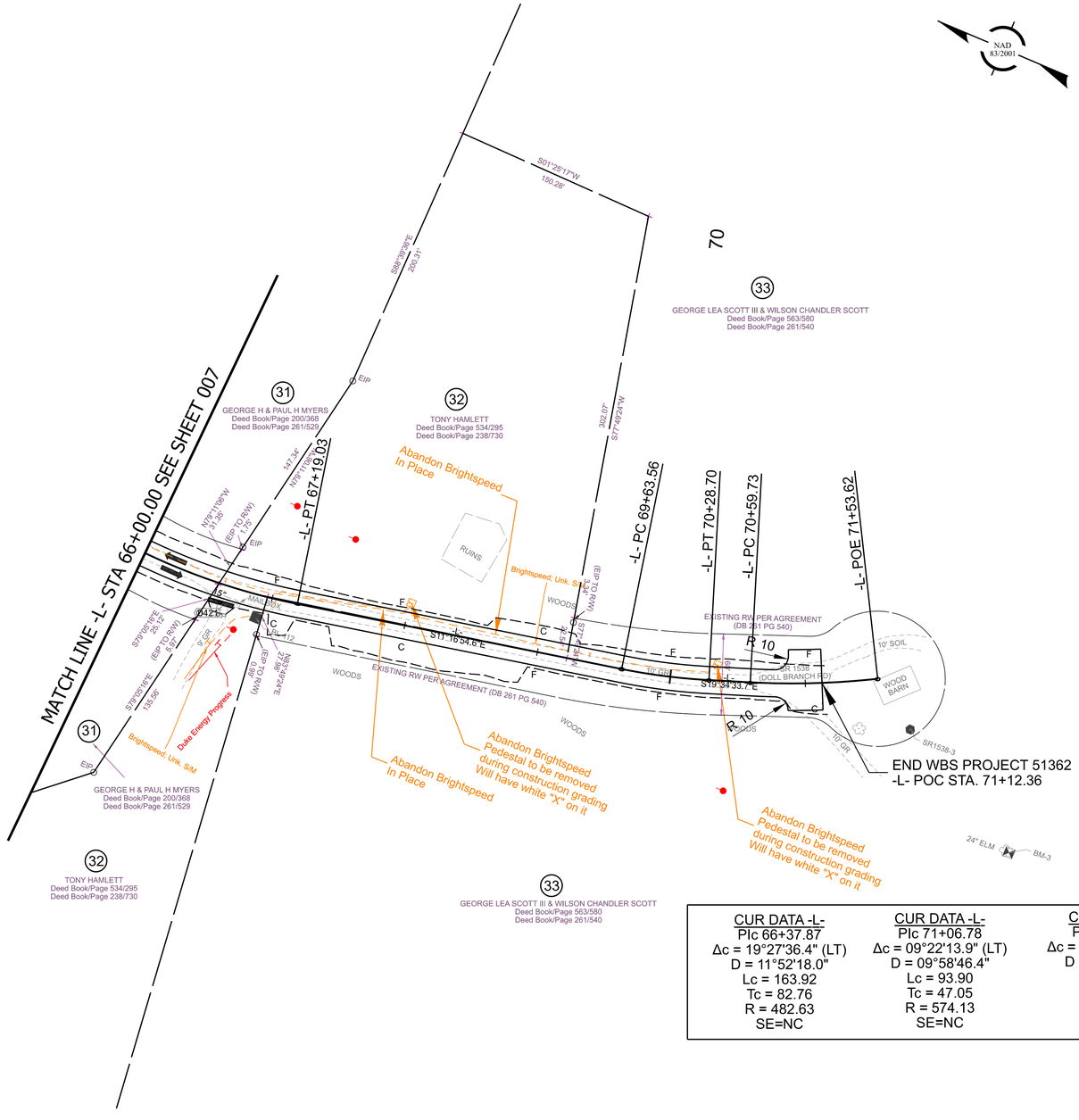

CUR DATA -L-	CUR DATA -L-	CUR DATA -L-
PIc 66+37.87	PIc 71+06.78	PIc 69+96.19
Δc = 19°27'36.4" (LT)	Δc = 09°22'13.9" (LT)	Δc = 08°17'39.2" (LT)
D = 11°52'18.0"	D = 09°58'46.4"	D = 12°43'56.6"
Lc = 163.92	Lc = 93.90	Lc = 65.14
Tc = 82.76	Tc = 47.05	Tc = 32.63
R = 482.63	R = 574.13	R = 450
SE=NC	SE=NC	SE=NC

FOR -L- PROFILE, SEE SHEET 13

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