09/08/99

TIP PROJECT: W-5202E

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5202E	1	

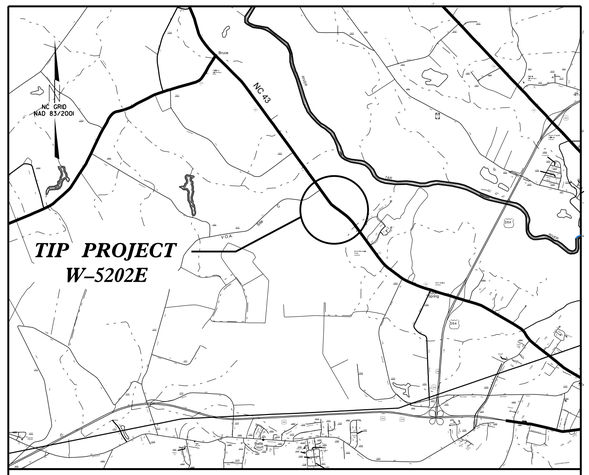
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
45332.1.5	HSIP-0043(19)	PE
45332.3.5	HSIP-0043(19)	CONST

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PITT COUNTY

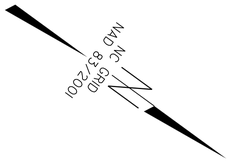
LOCATION: NC 43 FROM BLUE BANKS FARM RD TO AARON CIRCLE

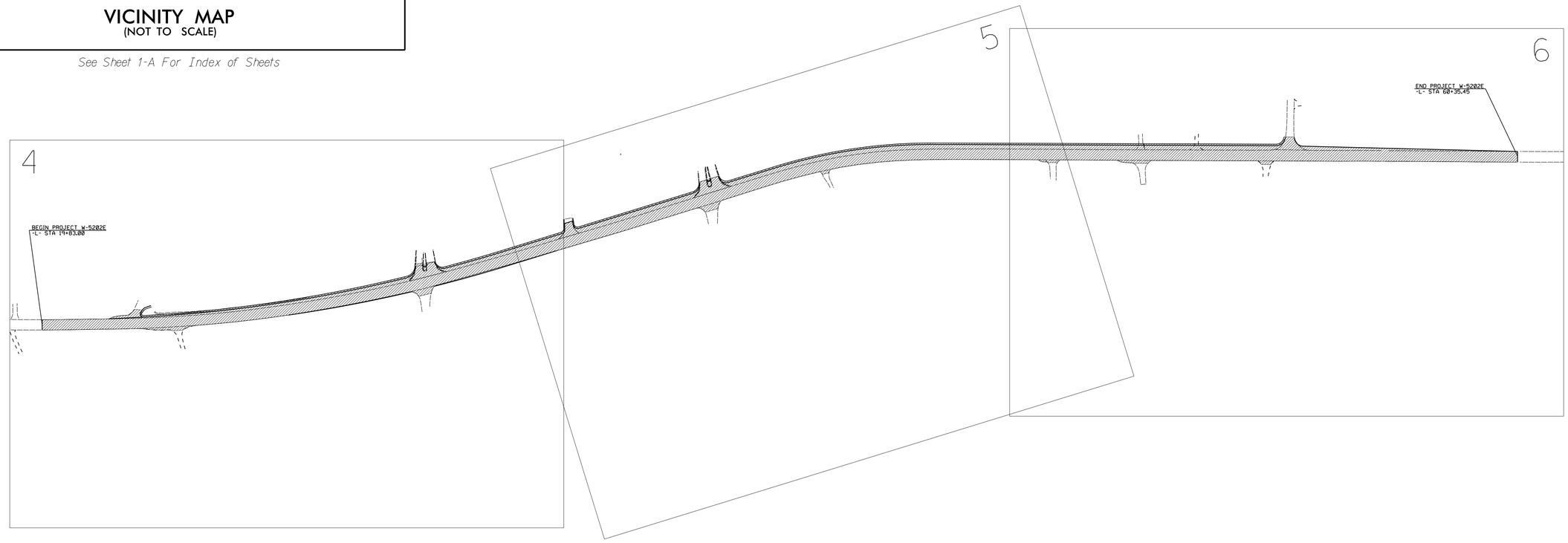
TYPE OF WORK: WIDENING, GRADING, PAVING, DRAINAGE



VICINITY MAP
(NOT TO SCALE)

See Sheet 1-A For Index of Sheets





CONTRACT:

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

PROJECT LENGTH

TOTAL LENGTH PROJECT W-5202E = 0.768 MILES

Prepared in the Office of:
DIVISION OF HIGHWAYS
1704 N. Greene Street, Greenville NC, 27835

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

LETTING DATE:
SEPTEMBER 2014

DWAYNE ALLIGOOD
PROJECT ENGINEER

LANG JONES
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAYNE H. ALLIGOOD
Dwayne H. Alligood P.E.
SIGNATURE: 09/24/2014

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAYNE H. ALLIGOOD
Dwayne H. Alligood P.E.
SIGNATURE: 09/24/2014

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

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PROJECT REFERENCE NO.	SHEET NO.
W-5202E	1A

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2, 2A	TYPICAL SECTIONS
3	SUMMARY OF QUANTITIES
3A, 3B	SUMMARY OF DRAINAGE QUANTITIES
3C	SUMMARY OF EARTHWORK QUANTITIES
4-6	PLAN SHEETS
EC1-EC5	EROSION CONTROL SHEETS
PM1-PM3	PAVEMENT MARKINGS
UC1-UC5	UTILITY CONSTRUCTION - WATER MAIN RELOCATION
X1A	CROSS-SECTION SUMMARY
X1-X6	CROSS-SECTIONS

GENERAL NOTES:

2012 SPECIFICATIONS
EFFECTIVE: 01-17-2012
REVISED: 07-30-2012

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 II.

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04
SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

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.

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 USING 3' RADII OR RADII AS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

RIGHT-OF-WAY MARKERS:

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

RIGHT-OF-WAY MARKERS:

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

EFF. 01-17-2012
REV. 10-30-2012

2012 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2012 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 II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
310.10	Driveway Pipe Construction
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
838.01	Concrete Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
840.14	Concrete Drop Inlet - 12" thru 30" Pipe
840.15	Brick Drop Inlet - 12" thru 30" Pipe
840.24	Frames and Narrow Slot Sag Grates
840.31	Concrete Junction Box - 12" thru 66" Pipe
840.32	Brick Junction Box - 12" thru 66" Pipe
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.54	Manhole Frame and Cover
846.01	Concrete Curb, Gutter and Curb & Gutter
846.02	Drop Inlet Installation in Expressway Gutter
876.02	Guide for Rip Rap at Pipe Outlets

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12/05/11

PROJECT REFERENCE NO.	SHEET NO.
W-5202E	1B

Note: Not to Scale

****S.U.E. = Subsurface Utility Engineering***

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- 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
- Known Soil Contamination: Area or Site
- Potential Soil Contamination: Area or Site

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:

- Baseline Control Point
- Existing Right of Way Marker
- Existing Right of Way Line
- Proposed Right of Way Line — RW
- Proposed Right of Way Line with Iron Pin and Cap Marker — RW
- Proposed Right of Way Line with Concrete or Granite R/W Marker — RW
- Proposed Control of Access Line with Concrete C/A Marker — CA
- Existing Control of Access — CA
- Proposed Control of Access — CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage / Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE
- Proposed Permanent Easement with Iron Pin and Cap Marker

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
- Recorded U/G Power Line — P
- Designated U/G Power Line (S.U.E.*) — P

TELEPHONE:

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

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- Recorded U/G Water Line — W
- Designated U/G Water Line (S.U.E.*) — W
- Above Ground Water Line — A/G Water

TV:

- TV Satellite Dish
- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- Recorded U/G TV Cable — TV
- Designated U/G TV Cable (S.U.E.*) — TV
- Recorded U/G Fiber Optic Cable — TV FO
- Designated U/G Fiber Optic Cable (S.U.E.*) — TV FO

GAS:

- Gas Valve
- Gas Meter
- Recorded U/G Gas Line — G
- Designated U/G Gas Line (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
- Recorded SS Forced Main Line — FSS
- Designated SS Forced Main Line (S.U.E.*) — FSS

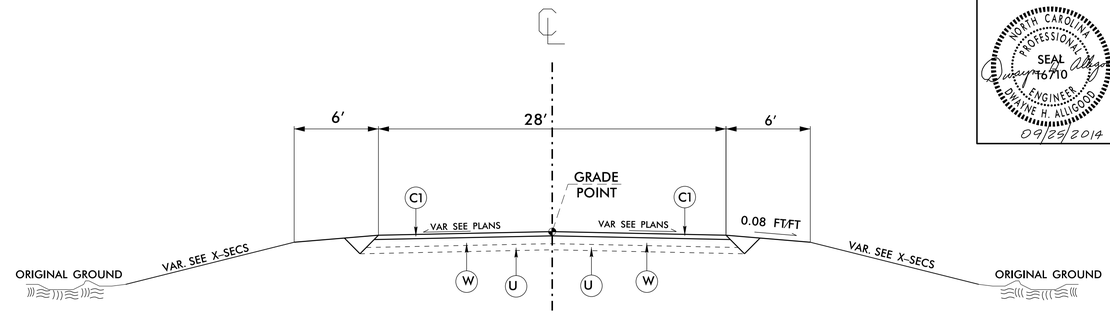
MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line — ?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 (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

PROJECT REFERENCE NO.	SHEET NO.
W-5202E	2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAYNE H. ALLIGOOD 09/25/2014	NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAYNE H. ALLIGOOD 09/25/2014

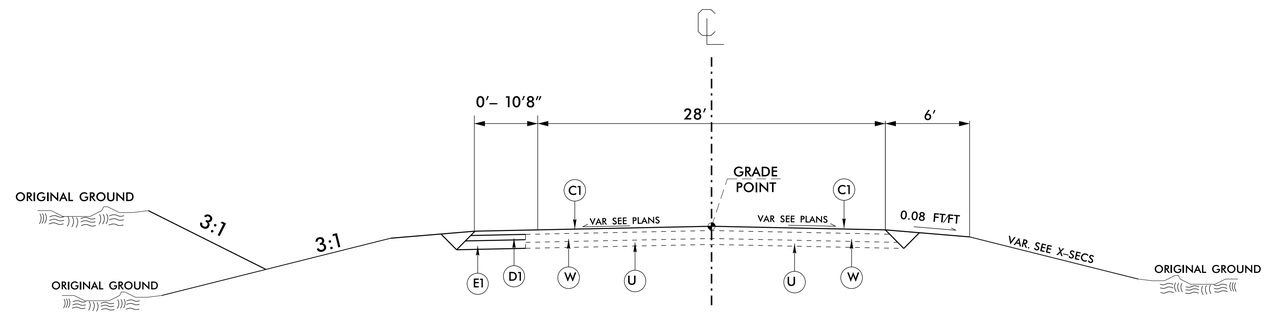
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ.YD. 1.5 INCHES IN EACH OF TWO LAYERS
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	PROPOSED VARIABLE DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, TO BE PLACED IN LAYERS NOT LESS THAN 2.5" OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
R1	PROPOSED CONCRETE EXPRESSWAY GUTTER
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)
AA	PROPOSED 6" WHITE EDGE LINE (90 MILS)
AD	PROPOSED 6" SOLID DOUBLE YELLOW CENTER LINE (120 MILS)
ASB	AGGREGATE SHOULDER BASE

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



USE TYPICAL SECTION #1 (NTS)

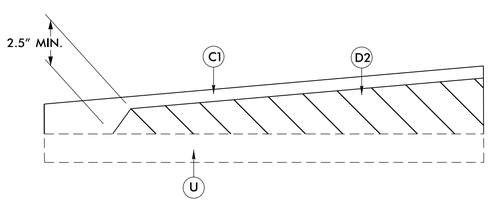
-L- STA 19+83.00 TO STA 21+64.27



USE TYPICAL SECTION #2 (NTS)

-L- STA 21+64.27 - STA 22+58.05

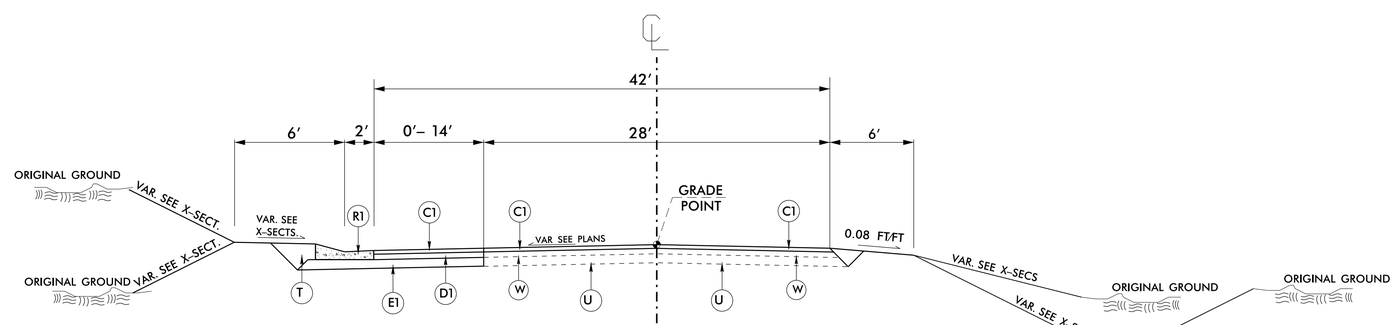
-L- STA 54+02.69 - STA 60+35.45



WEDGING DETAIL

NOT TO SCALE

NOTE: USE VARIABLE DEPTH BASE COURSE WHERE WEDGING IS GREATER THAN 4".



USE TYPICAL SECTION #3 (NTS)

-L- STA 22+58.05 TO STA 54+02.69

(SEE TYPICAL SECTION #4 FOR ADDITIONAL INFORMATION FOR STA 26+50.00 - 33+95.55)

REVISIONS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
W-5202E	2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAYNE H. ALLIGOOD 09/29/2014	NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAYNE H. ALLIGOOD 09/29/2014

C1	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ.YD. 1.5 INCHES IN EACH OF TWO LAYERS
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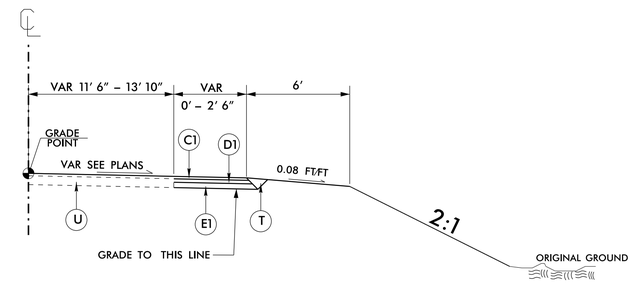
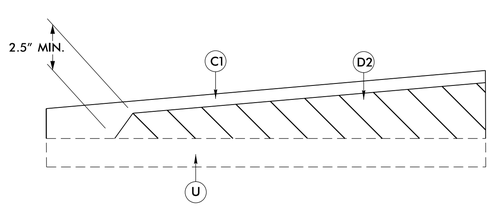
E1	PROP. APPROX. 5″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
R1	PROPOSED CONCRETE EXPRESSWAY GUTTER
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)
AA	PROPOSED 6″ WHITE EDGE LINE (90 MILS)
AD	PROPOSED 6″ SOLID DOUBLE YELLOW CENTER LINE (120 MILS)
ASB	AGGREGATE SHOULDER BASE

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



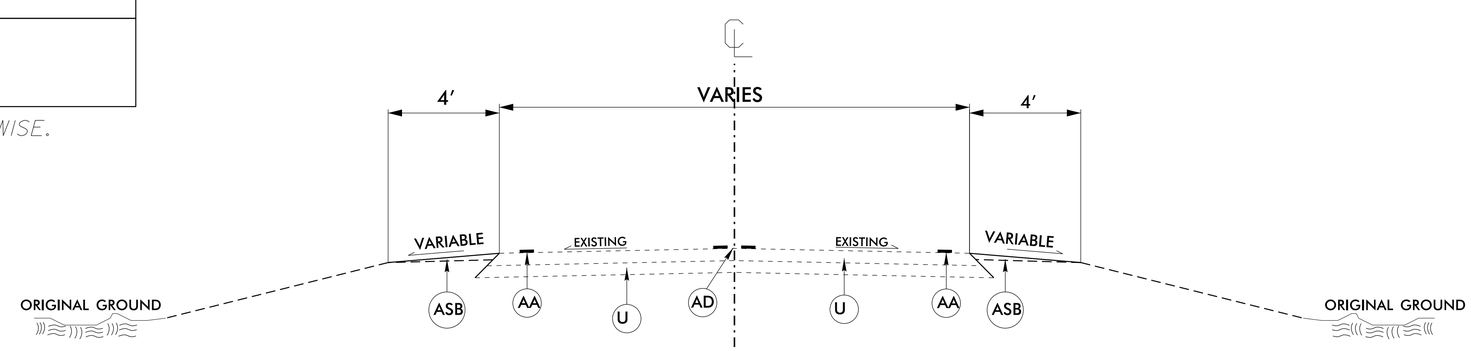
USE TYPICAL SECTION #4 (NTS)

-L- 26+50.00 – 33+95.55



WEDGING DETAIL
NOT TO SCALE

NOTE: USE VARIABLE DEPTH BASE COURSE WHERE WEDGING IS GREATER THAN 4″.



USE TYPICAL SECTION #5 (NTS)

ALONG HWY 43 BEGINNING AT US 264 TO -L- STATION 19+83.00, THEN BEGINNING AT -L- STATION 60+35.45 AND ENDING AT FALKLAND CITY LIMITS

REVISIONS

8/17/99

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COMPUTED BY: JM DATE: 5/12/14
CHECKED BY: CP DATE: 5/12/14

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
W-5202E	3A

NOTE: Invert Elevations 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" & UNDER)

STATION / SIZE / THICKNESS OR GAUGE	LOCATION (LT, RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	CORRUGATED ALUMINUM PIPE 12" .064	15" .064	18" .064	24" .064	30" .079	36" .109	42" .109	48"	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"	*** R. C. PIPE (CLASS V)	*** R. C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE	*** R. C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL. B') PER EACH (0' THRU 5.0')	LIN. *FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION CATCH BASIN	DROP INLET	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH GRATE STD. 840.29	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.35	G.D.I. FRAME WITH TWO GRATES STD. 840.29	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
-L- 54+00		613	614		79.8	78.3																														28																																	
-L- 53+80	LT	614		81.4	78.3																																																										1	1					
		614	608		78.3	77.6	X																													110																																	
-L- 52+63	LT	608		81.4	77.6																																																									1	1					
		608	605		77.6	77.1	X																													80																																	
-L- 51+83		604	605		78.5	77.4																																15																															
	LT	605		81.3	76.4																																																									1	1					
		605	612		76.4	76.1	X																																55																														
-L- 46+25	LT	510		82.5	79.3																																																									1	1					
		510	606		79.3	78.8																														125																																	
-L- 47+50	LT	606		82.0	78.4																																																									1	1					
	LT	611		80.9	78.7																																																						1	1									
		611	606		78.7	78.4			18																																																												
		606	607		78.4	77.8	X																														125																																
-L- 48+75	LT	607		81.5	77.8																																																									1	1					
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-L- 49+55	LT	610		81.3	77.4																																																									1	1					
		610	602		77.4	77.0																															48																																
-L- 50+03	LT	602		81.2	77.0																																																									1	1					
	LT	601		79.9	77.7																																																					1	1									
		601	602		77.7	77.6			18																																																												
		602	603		77.1	77.0	X																															33																															
-L- 50+36	LT	603		81.2	77.0																																																									1	1					
		603	609		77.0	76.7	X																															70																															
-L- 51+06	LT	609		81.2	76.7																																																									1	1					
		609	605		76.7	76.4	X																															77																															
-L- 36+50	LT	509		83.7	80.6																																																									1	1					
		509	502		80.6	80.1																														135																																	
-L- 38+03		501	502		80.4	80.1			28																																																												
-L- 37+85	LT	502		83.3	80.1																																																									1	1					
		502	503		80.1	78.9	X																													115																																	
-L- 38+95		512	503		80.1	79.7			20																																																												
-L- 39+00	LT	503		82.9	78.9																																																									1	1					
		503	511		78.9	78.7	X																														22																																
-L- 39+22	LT	511		82.8	78.7																																																									1	1					
		511	504		78.7	78.4	X																														28																																
-L- 39+50	LT	504		83.0	78.4																																																									1	1					
		504	506		78.4	77.8	X																														230																																
-L- 41+80		505	506		78.1	77.8	X																																	18																													
	LT	506		83.5	77.8																																																									1	1					
		506	507		77.8	76.7																																		58																													
-L- 34+80	LT	515		83.9	80.7																																																									1	1					
		515	513		80.7	79.8																														23																																	
-L- 34+65	LT	513		82.0	79.8																																																					1	1									
		513	514		79.8	79.6	X																													40																																	
-L- 34+25	LT	514		82.0	79.6																																																					1	1									
		514	508		79.6	79.5	X																													30																																	
-L- 34+00	LT	508		83.6	79.5																																																									1	1					
		508	413		79.5	78.8																														146																																	
SHEET TOTALS									84																											832	533	195	55	76																			4	4			18	18					

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

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COMPUTED BY: JM DATE: 5/12/14
CHECKED BY: CP DATE: 5/12/14

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
W-5202E	3B

NOTE: Invert Elevations 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" & UNDER)

STATION / SIZE / THICKNESS OR GAUGE	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	CORRUGATED ALUMINUM PIPE 12"	15"	18"	24"	36"	42"	48"		R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"	**" R. C. PIPE (CLASS V)	**" R. C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE	**" R. C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL. B') LIN. *FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION CATCH BASIN	DROP INLET	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH GRATE STD. 840.29	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.35	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
THICKNESS OR GAUGE																				.064	.064	.064	.064	.079	.109	.109																																											
-L- 32+54	LT	413		82.3	78.8																																																									1	1					
		413	411		78.8	77.7																														104																																		
-L- 31+50	LT	412		81.4	78.2																																																						1	1									
		412	411		78.2	77.7			12																																																												
	LT	411		80.8	77.7																																																									1	1					
		411	409		77.7	76.6																														55																																		
-L- 30+85	LT	410		78.2	76.0																																																					1	1									
		410	409		76.0	75.9	X		24																																																												
-L- 30+95	LT	409		79.8	75.9																																																									1	1					
		409	407		75.9	73.3																														115																																		
-L- 30+03	LT	408		78.0	75.8																																																					1	1									
		408	407		75.8	73.3			36																																																												
-L- 29+80	LT	407		76.5	73.1																																																									1	1					
		407	405		73.1	63.5																															230																																	
-L- 27+50	LT	406		68.8	65.6																																																					1	1									
		406	405		65.6	63.7			10																																																												
	LT	405		66.9	63.5																																																									1	1					
		405	403		63.5	52.6																															250																																	
-L- 25+00	LT	404		56.7	53.5																																																					1	1									
		404	403		53.5	52.9			14																																																												
	LT	403		56.0	52.6																																																									1	1					
		403	402		52.6	45.7																															160																																	
-L- 23+40	LT	402		49.1	45.7																																																									1	1					
		402	401		45.7	42.2																															50																																	
-L- 22+90	LT	401		45.5	42.2																																																																JUNCTION BOX
SHEET TOTALS									96																											274	690																							5	5			7	7					
PROJECT TOTALS									180																											1106	1223	195	55	76																					9	9			25	25					

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

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SUMMARY OF EARTHWORK
IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT+%	BORROW	WASTE
–L– 19+83.00 – 61+00.00	403	0	4667	4264	0
SUB TOTAL	403	0	4667	4264	0
SAY	405	0	4670	4265	0

PAVEMENT REMOVAL SUMMARY
IN SQUARE YARDS

LINE	STATION – STATION	LOCATION	REMOVAL (SY)
–L–	29+89.95 – 30+93.13	LT	271
–L–	34+11.61 – 34+66.72	LT	135
–L–	37+90.48 – 38+97.14	LT	288
TOTAL			694
SAY			700

NOTE:

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

REVISIONS

8/17/99

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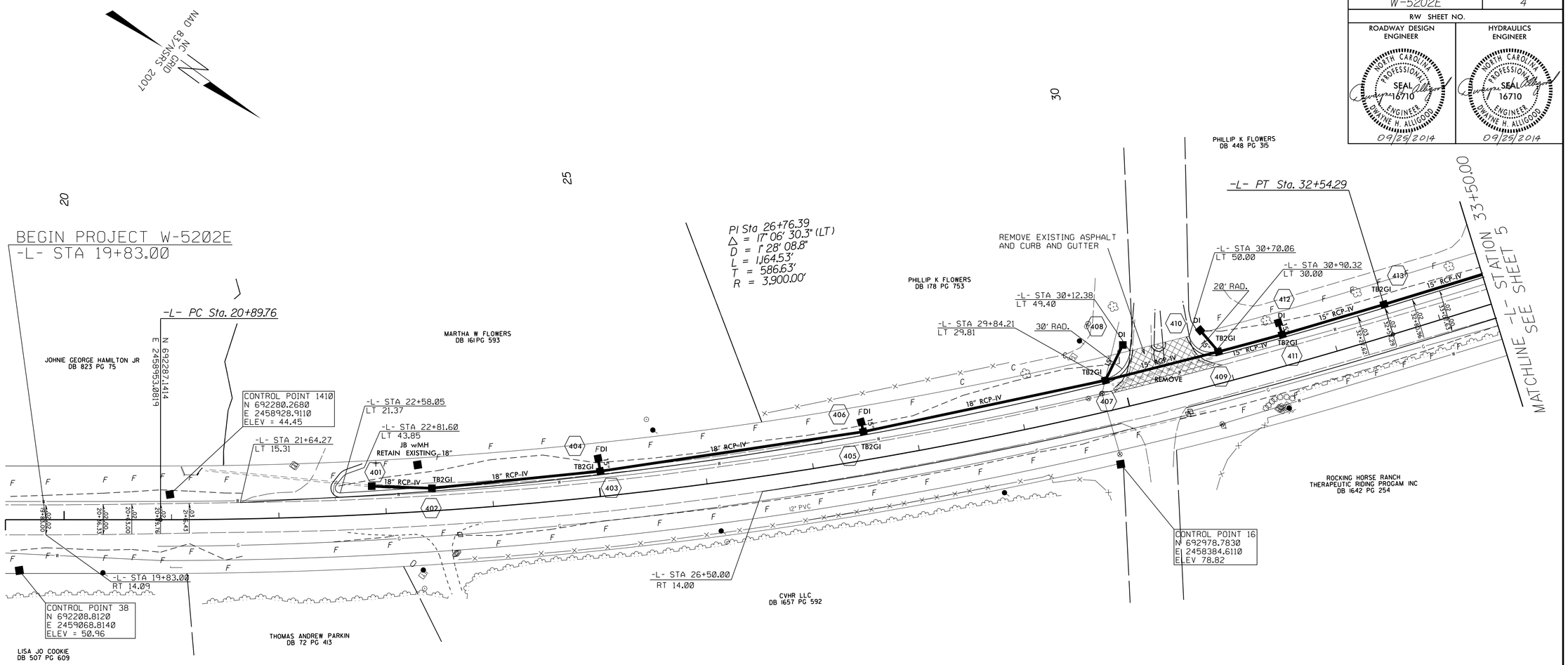
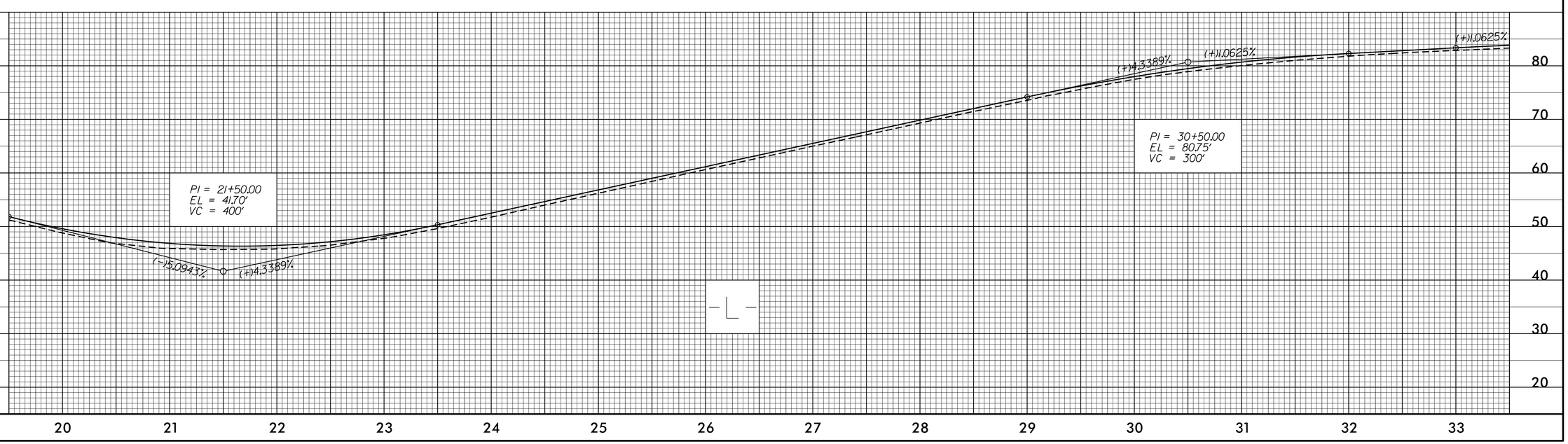
PROJECT REFERENCE NO.	SHEET NO.
W-5202E	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DUWAINE H. ALLIGOOD 09/29/2014	NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DUWAINE H. ALLIGOOD 09/29/2014





REVISIONS

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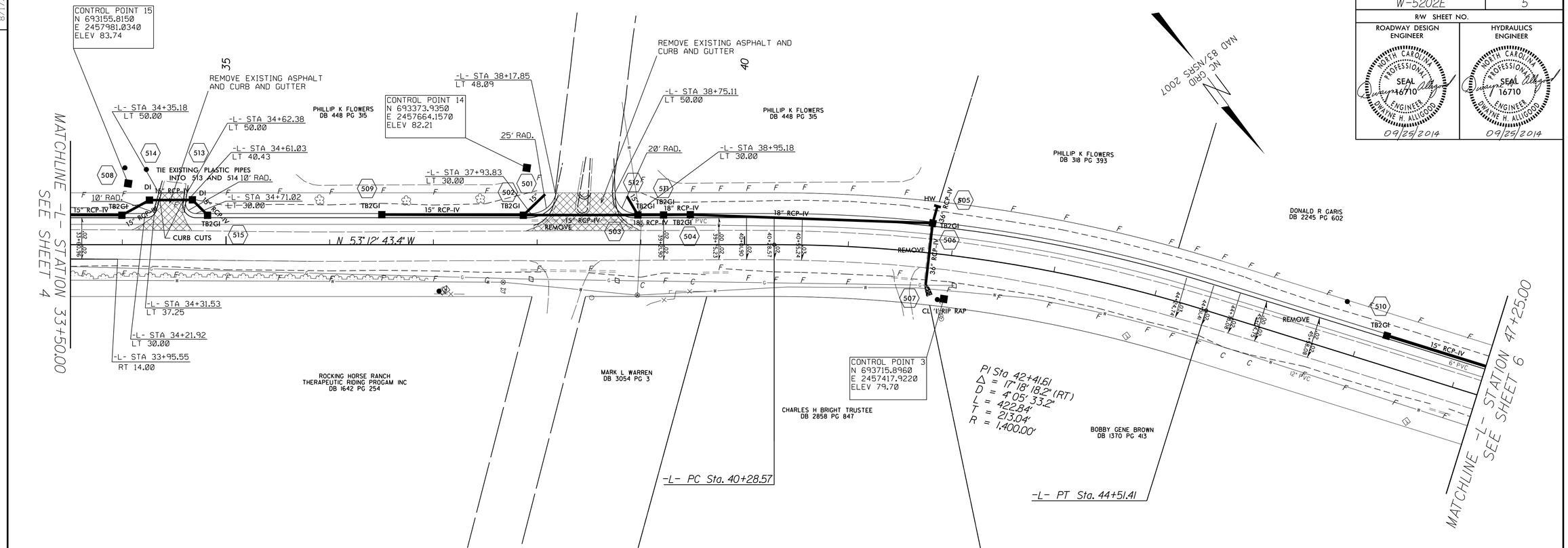
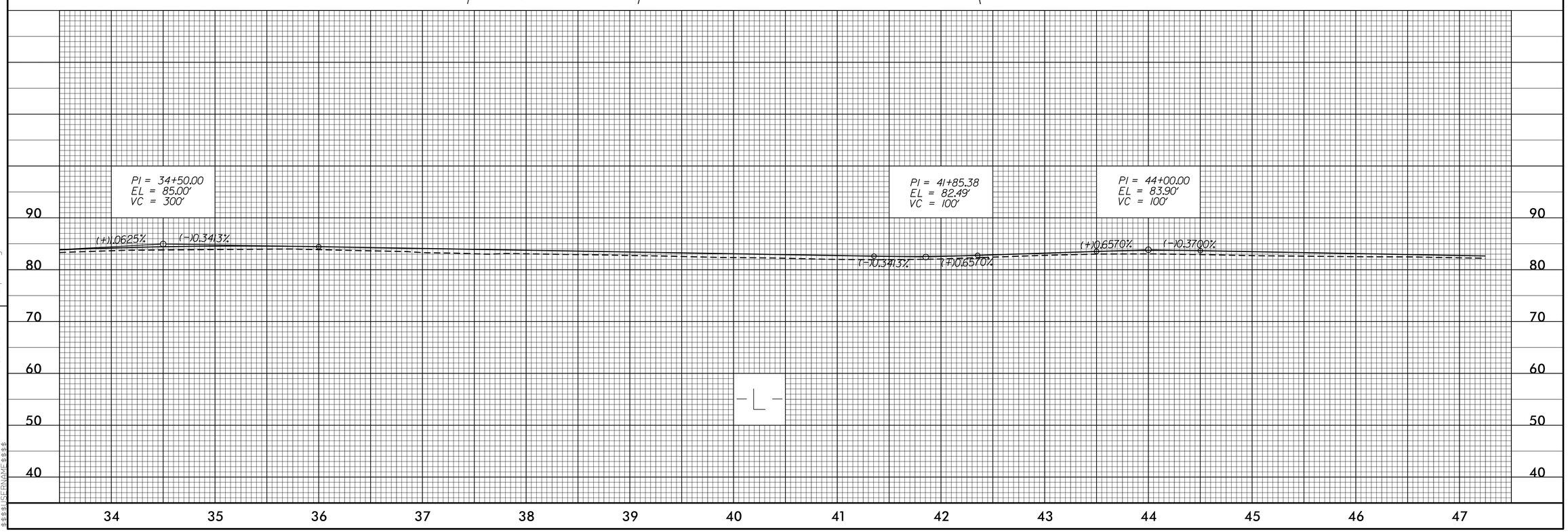
PROJECT REFERENCE NO.	SHEET NO.
W-5202E	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAYNE H. ALLIGOOD 09/25/2014	NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAYNE H. ALLIGOOD 09/25/2014





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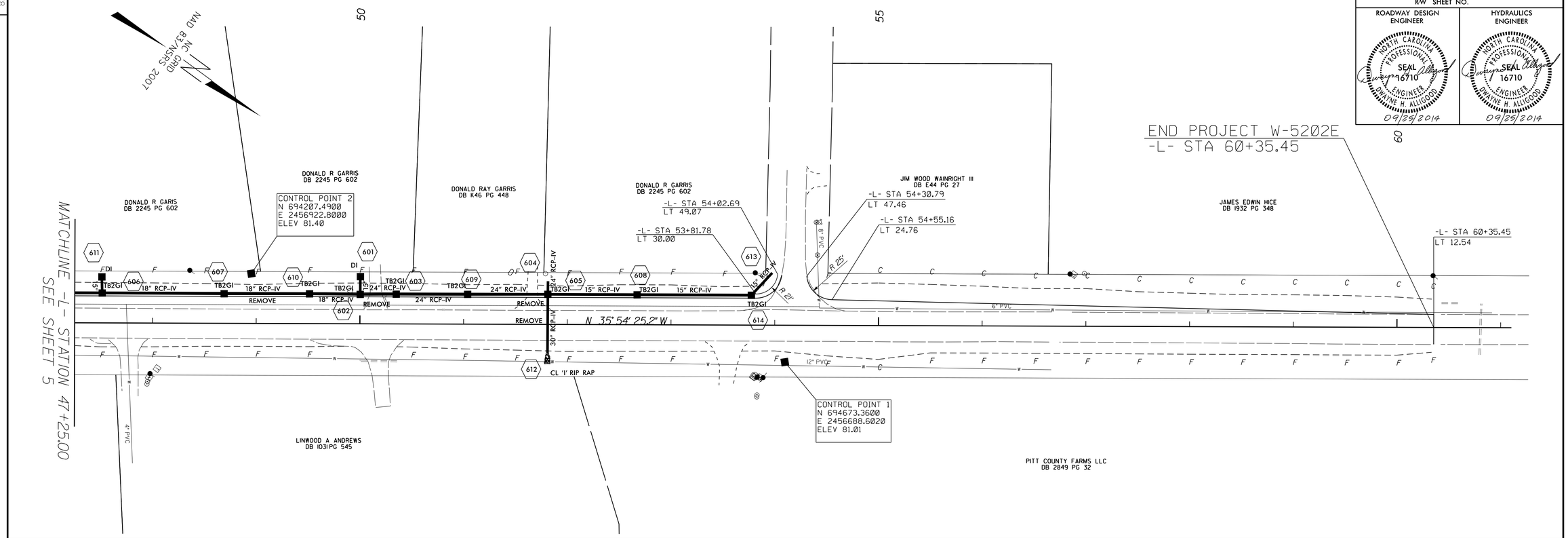
PROJECT REFERENCE NO.	SHEET NO.
W-5202E	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAINE H. ALLIGOOD 09/29/2014	NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAINE H. ALLIGOOD 09/29/2014



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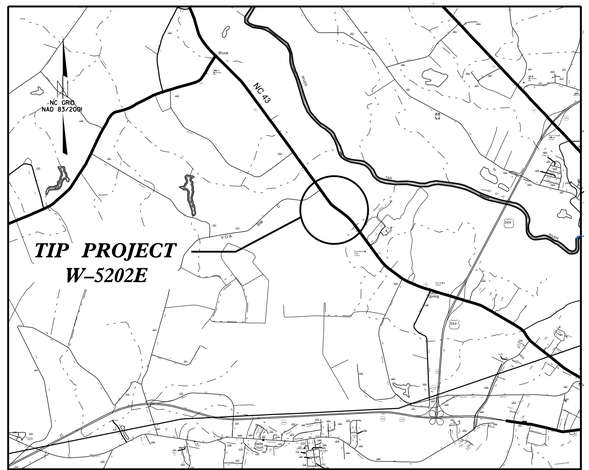
PROJECT: W-5202E

TIP

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5202E	EC-1	

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



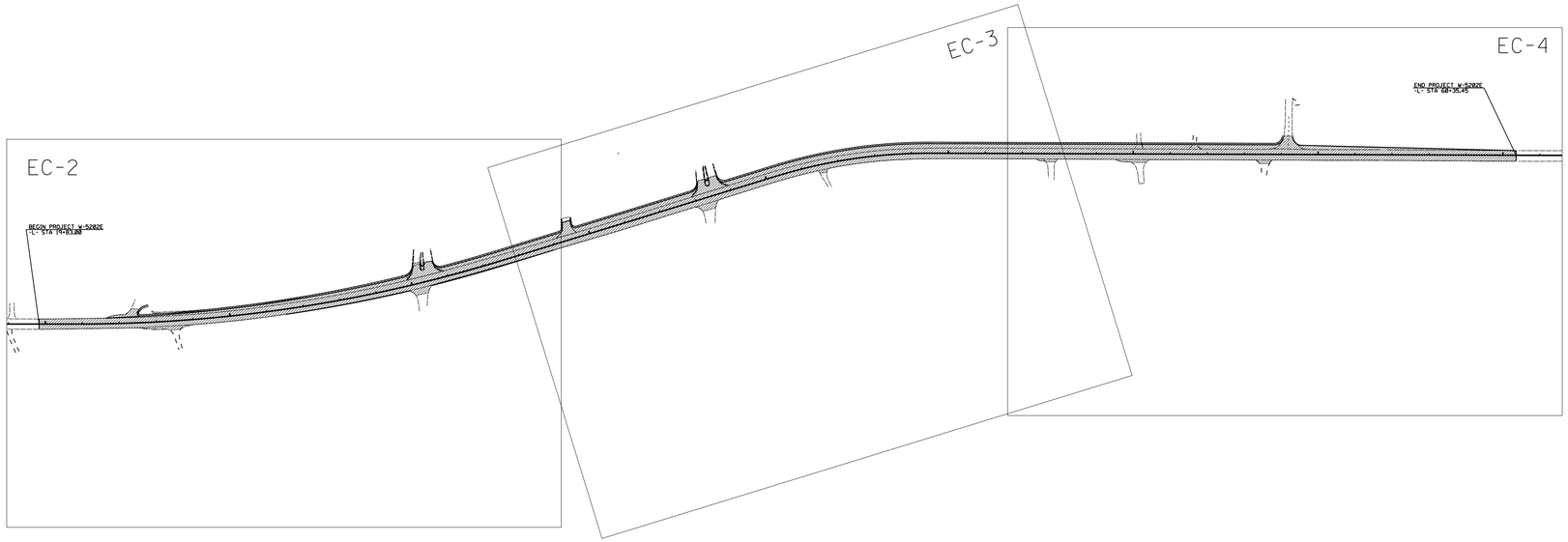
VICINITY MAP
(NOT TO SCALE)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

LOCATION: NC 43 FROM BLUE BANKS FARM RD TO AARON CIRLE

NAD 83/NSRS 2007
NC GRID



EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
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.

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

GRAPHIC SCALE

25 0 50

PLANS

ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.

2012 STANDARD SPECIFICATIONS

Prepared in the Office of:

DIVISION 2 DDC
1704 NORTH GREENE STREET
GREENVILLE, NC 27835

Josh Wilder
Level III
Certification #3332

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 2012 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		

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PROJECT REFERENCE NO.	SHEET NO.
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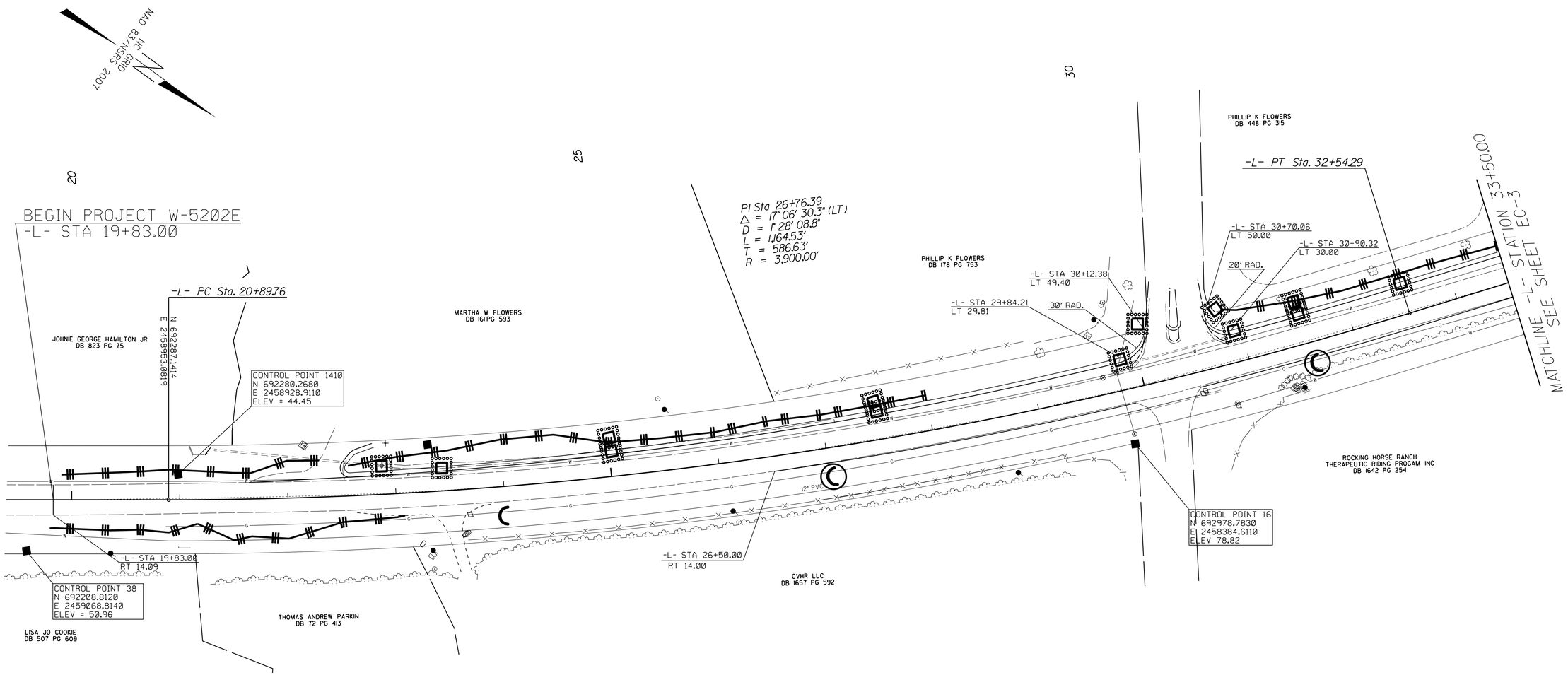

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PLANS

NOTE: THE CONTRACTOR SHALL INSTALL WATTLES IN LOW AREAS OF SILT FENCE AS NEEDED OR AS DIRECTED BY THE ENGINEER.

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.

Std. #	Description	Symbol
1605.01	High Vis Temporary Silt Fence	
1632.03	Rock Inlet Sediment Trap Type C	
SP	Wattle with Polyacrylamide	
SP	Wattle	
	Ditch Flow Line	

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

CONTRACTOR SHALL INSTALL SPECIAL SEDIMENT CONTROL FENCE OR WATTLES IN LOW AREAS OF SILT FENCE AS NEEDED OR AS DIRECTED BY THE ENGINEER.

REVISIONS

8/17/99

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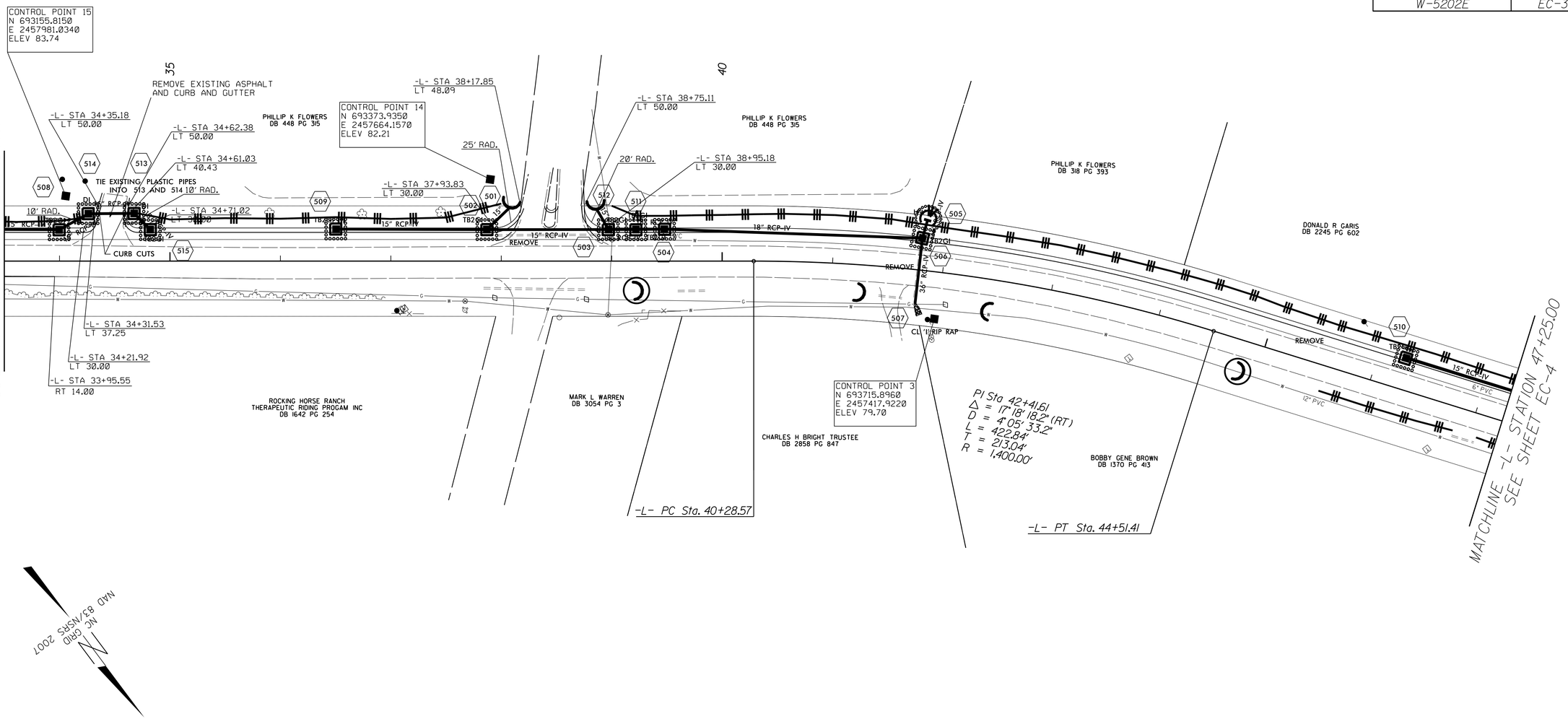
PROJECT REFERENCE NO.	SHEET NO.
W-5202E	EC-3



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PLANS

NOTE: THE CONTRACTOR SHALL INSTALL WATTLES IN LOW AREAS OF SILT FENCE AS NEEDED OR AS DIRECTED BY THE ENGINEER.

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.

Std. #	Description	Symbol
1605.01	High Vis Temporary Silt Fence	
1632.03	Rock Inlet Sediment Trap Type C	
SP	Wattle with Polyacrylamide	
SP	Wattle	
	Ditch Flow Line	

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

CONTRACTOR SHALL INSTALL SPECIAL SEDIMENT CONTROL FENCE OR WATTLES IN LOW AREAS OF SILT FENCE AS NEEDED OR DIRECTED BY THE ENGINEER.

REVISIONS

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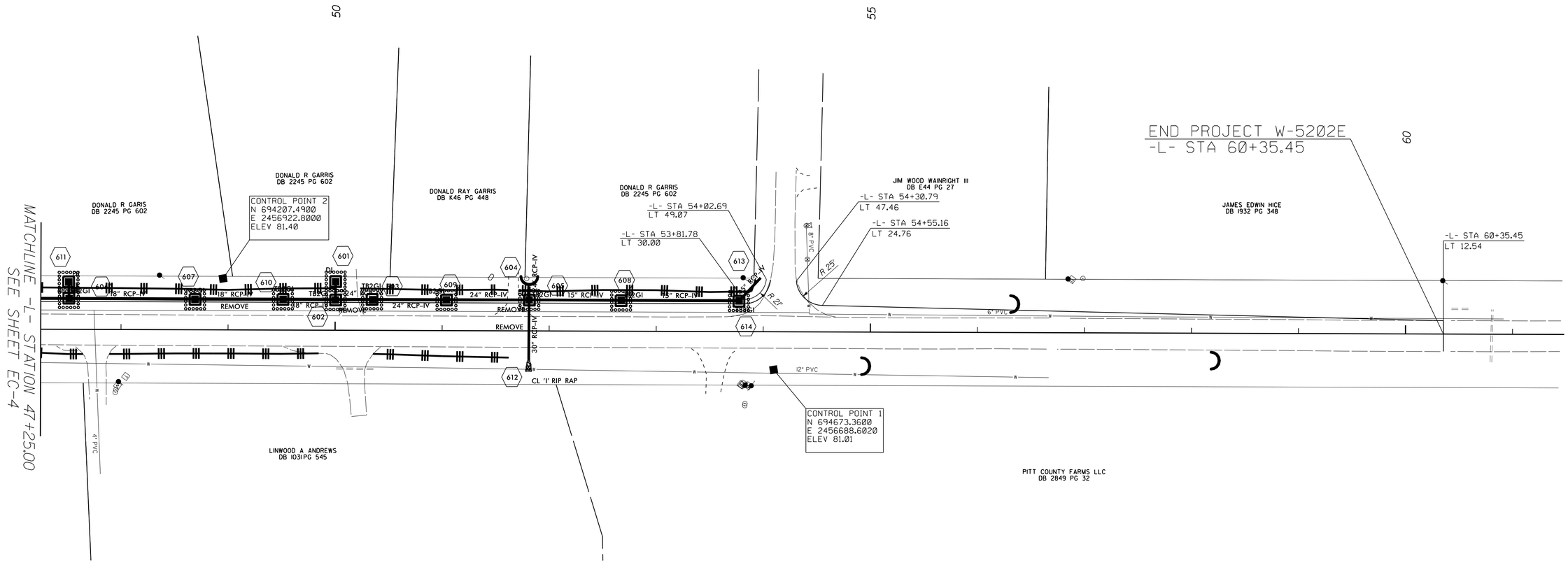

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PLANS

NOTE: THE CONTRACTOR SHALL INSTALL WATTLES IN LOW AREAS OF SILT FENCE AS NEEDED OR AS DIRECTED BY THE ENGINEER.

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.

Std. #	Description	Symbol
1605.01	High Vis Temporary Silt Fence	
1632.03	Rock Inlet Sediment Trap Type C	
SP	Wattle with Polyacrylamide	
SP	Wattle	
	Ditch Flow Line	

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

CONTRACTOR SHALL INSTALL SPECIAL SEDIMENT CONTROL FENCE OR WATTLES IN LOW AREAS OF SILT FENCE AS NEEDED OR DIRECTED BY THE ENGINEER.

REVISIONS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
W-5202E	EC-5

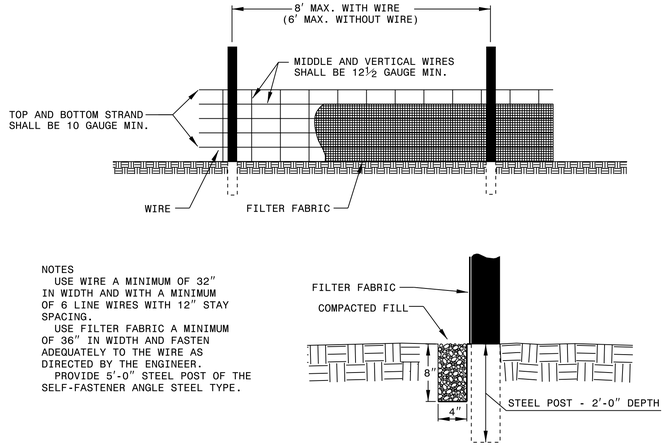
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR

TEMPORARY SILT FENCE

SHEET 1 OF 1

1605.01



NOTES
USE WIRE A MINIMUM OF 32" IN WIDTH AND WITH A MINIMUM OF 6 LINE WIRES WITH 12" STAY SPACING.
USE FILTER FABRIC A MINIMUM OF 36" IN WIDTH AND FASTEN ADEQUATELY TO THE WIRE AS DIRECTED BY THE ENGINEER.
PROVIDE 5'-0" STEEL POST OF THE SELF-FASTENER ANGLE STEEL TYPE.

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

ENGLISH STANDARD DRAWING FOR

TEMPORARY SILT FENCE

SHEET 1 OF 1

1605.01

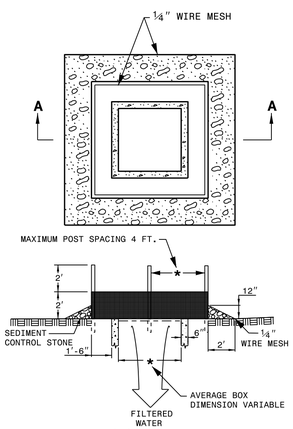
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR

ROCK INLET SEDIMENT TRAP TYPE 'C'

SHEET 1 OF 1

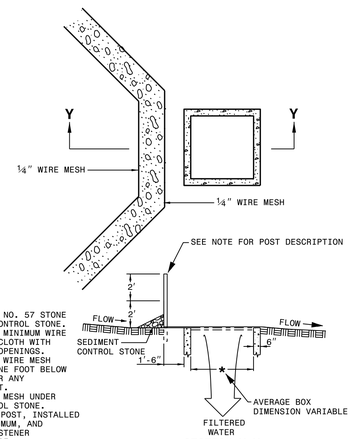
1632.03



SECTION A-A

MULTI-DIRECTIONAL FLOW

NOTE
USE NO. 5 OR NO. 57 STONE FOR SEDIMENT CONTROL STONE.
USE 24 GAUGE MINIMUM WIRE MESH HARDWARE CLOTH WITH 1/4 INCH MESH OPENINGS.
PLACE TOP OF WIRE MESH A MINIMUM OF ONE FOOT BELOW THE SHOULDER OR ANY DIVERSION POINT.
INSTALL WIRE MESH UNDER SEDIMENT CONTROL STONE.
USE 5' STEEL POST, INSTALLED 1.5' DEEP MINIMUM, AND OF THE SELF-FASTENER ANGLE STEEL TYPE.
SPACE POST A MAXIMUM OF 4'.



SECTION Y-Y

SINGLE-DIRECTIONAL FLOW

NOT TO SCALE

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

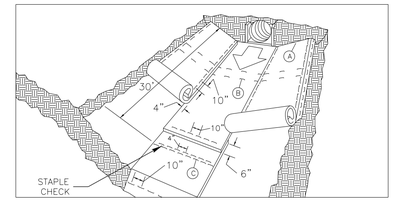
ENGLISH STANDARD DRAWING FOR

ROCK INLET SEDIMENT TRAP TYPE 'C'

SHEET 1 OF 1

1632.03

MATTING INSTALLATION DETAIL



MATTING IN DITCHES

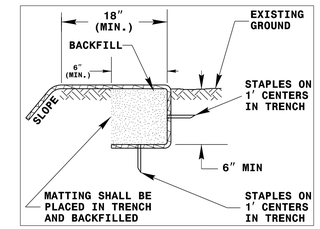
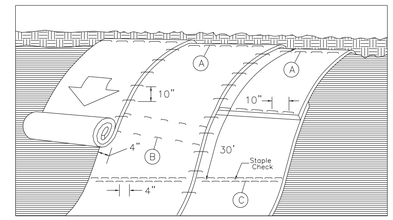


DIAGRAM (A)



MATTING ON SLOPES

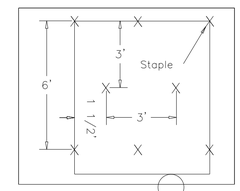


DIAGRAM (B)

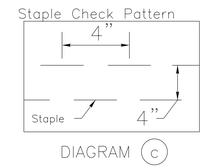


DIAGRAM (C)

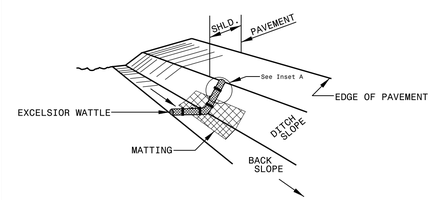
NOTES:

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

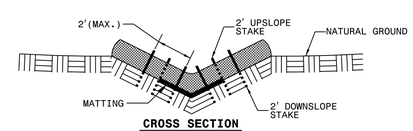
STAPLES SHALL BE NO. 11 GAUGE STEEL WIRE FORMED INTO A "U" SHAPE WITH A MINIMUM THROAT WIDTH OF 1 INCH AND NOT LESS THAN 6 INCHES IN LENGTH.

NOT TO SCALE

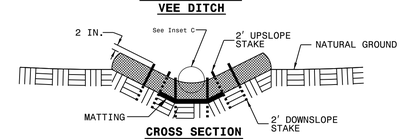
WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



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.

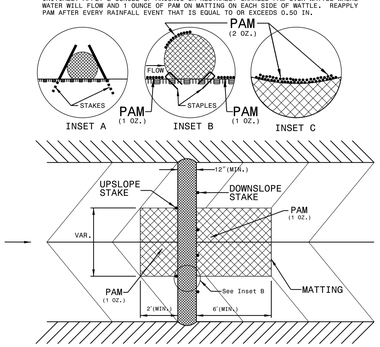
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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.

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.

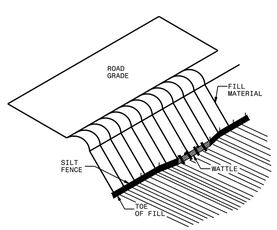
INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.



TOP VIEW

NOT TO SCALE

SILT FENCE WATTLE BREAK DETAIL



ISOMETRIC VIEW

NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE AND LENGTH OF 10 FT.

EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE WATTLE ON TOE OF SLOPE.

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

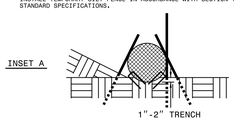
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.

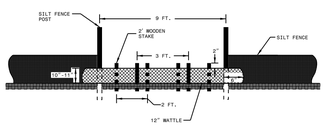
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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

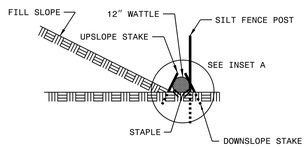
WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.

INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.





VIEW FROM SLOPE



SIDE VIEW

NOT TO SCALE

REVISIONS

8/17/99

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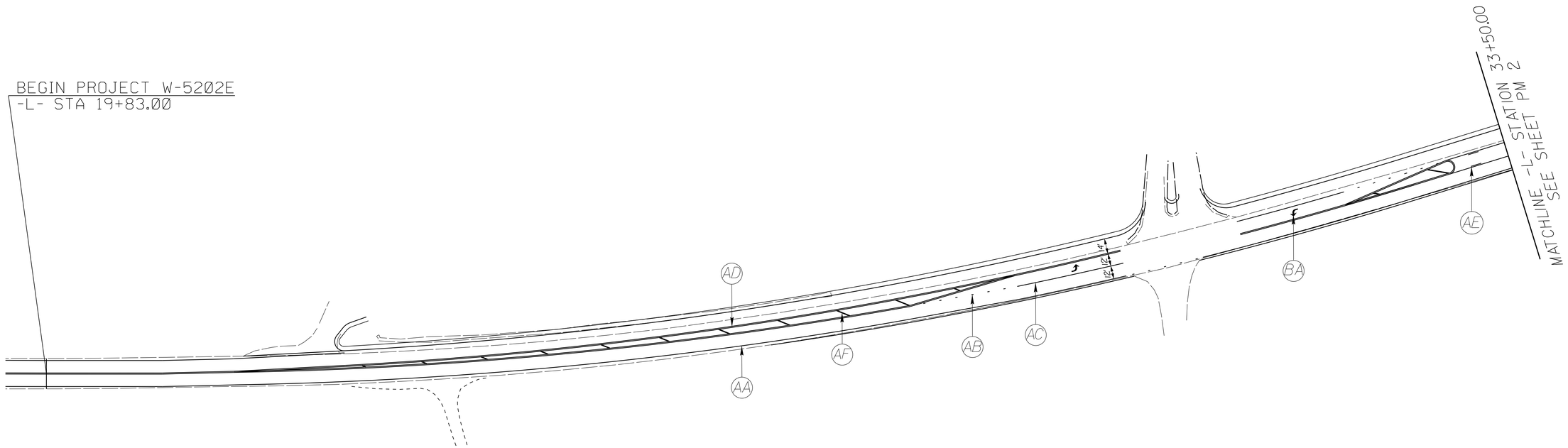
PROJECT REFERENCE NO.	SHEET NO.
W-5202E	PM-1
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAINE H. ALLIGOOD 09/26/2014	NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAINE H. ALLIGOOD 09/26/2014



PAVEMENT MARKING SCHEDULE

PAVEMENT MARKING LINES

AA - THERMOPLASTIC	(6" WHITE,	90 MILS)	EDGE LINE
AB - THERMOPLASTIC	(6" WHITE,	120 MILS)	13' MINI SKIP
AC - THERMOPLASTIC	(6" WHITE,	120 MILS)	SOLID LANE LINE
AD - THERMOPLASTIC	(6" YELLOW,	120 MILS)	SOLID DOUBLE YELLOW
AE - THERMOPLASTIC	(6" YELLOW,	120 MILS)	SOLID YELLOW SKIP
AF - THERMOPLASTIC	(12" YELLOW,	90 MILS)	SOLID YELLOW DIAGONAL LINE

PAVEMENT MARKING SYMBOLS

BA - THERMOPLASTIC (LEFT ARROW, 90 MILS)

NOTE

PAINT MARKINGS AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, NCDOT ROADWAY STANDARD DRAWINGS, AND THE CURRENT EDITON OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). QUANTITIES FOR THESE ITEMS HAVE BEEN ACCOUNTED FOR IN THE CONTRACT BID FORM. ALL EDGE LINES SHALL BE 2' OFF EOP.

REVISIONS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
W-5202E	PM-2
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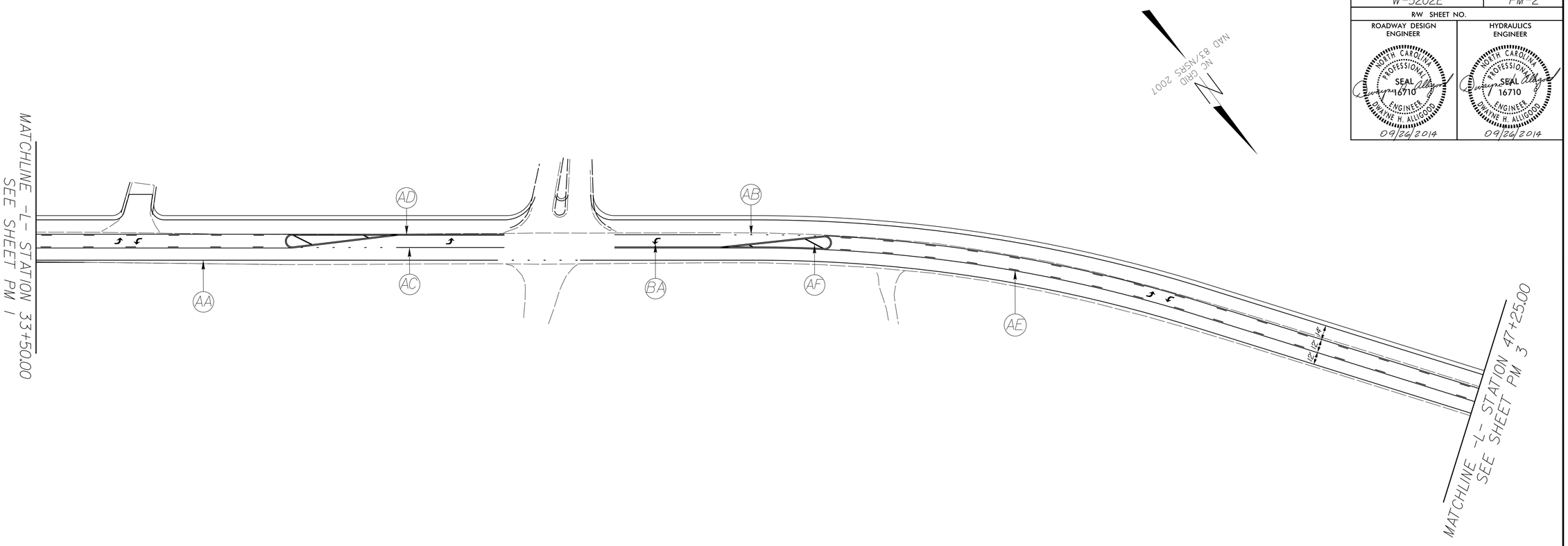
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAYNE H. ALLIGOOD 09/26/2014	NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAYNE H. ALLIGOOD 09/26/2014



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REVISIONS

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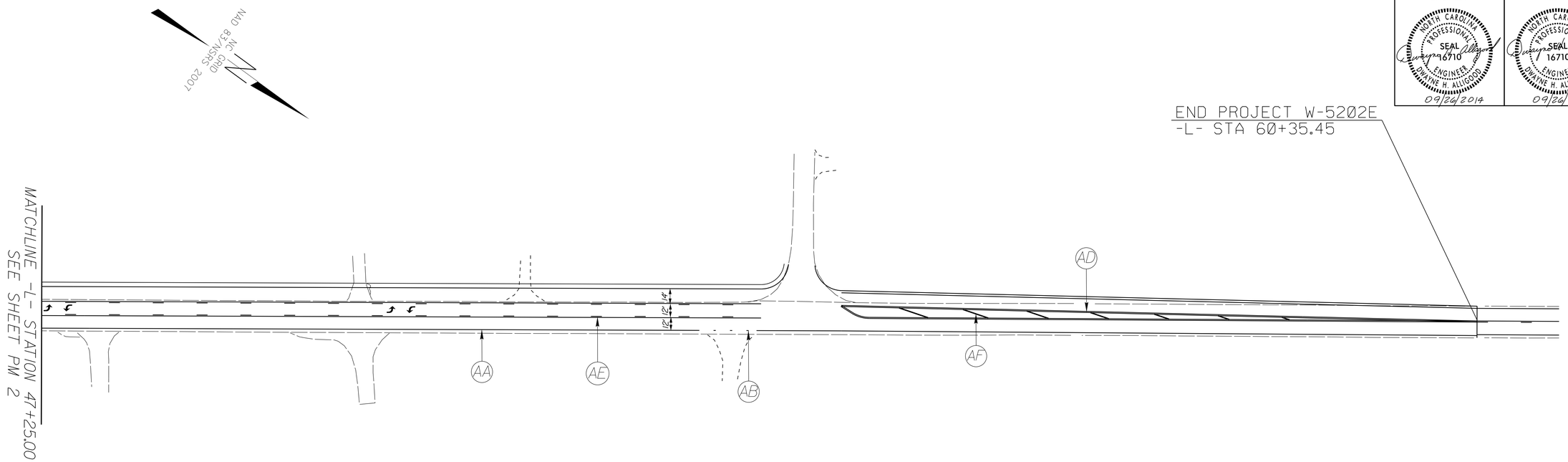
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAINE H. ALLIGOOD 09/26/2014	NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAINE H. ALLIGOOD 09/26/2014



PAVEMENT MARKING SCHEDULE

PAVEMENT MARKING LINES

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REVISIONS

8/17/99

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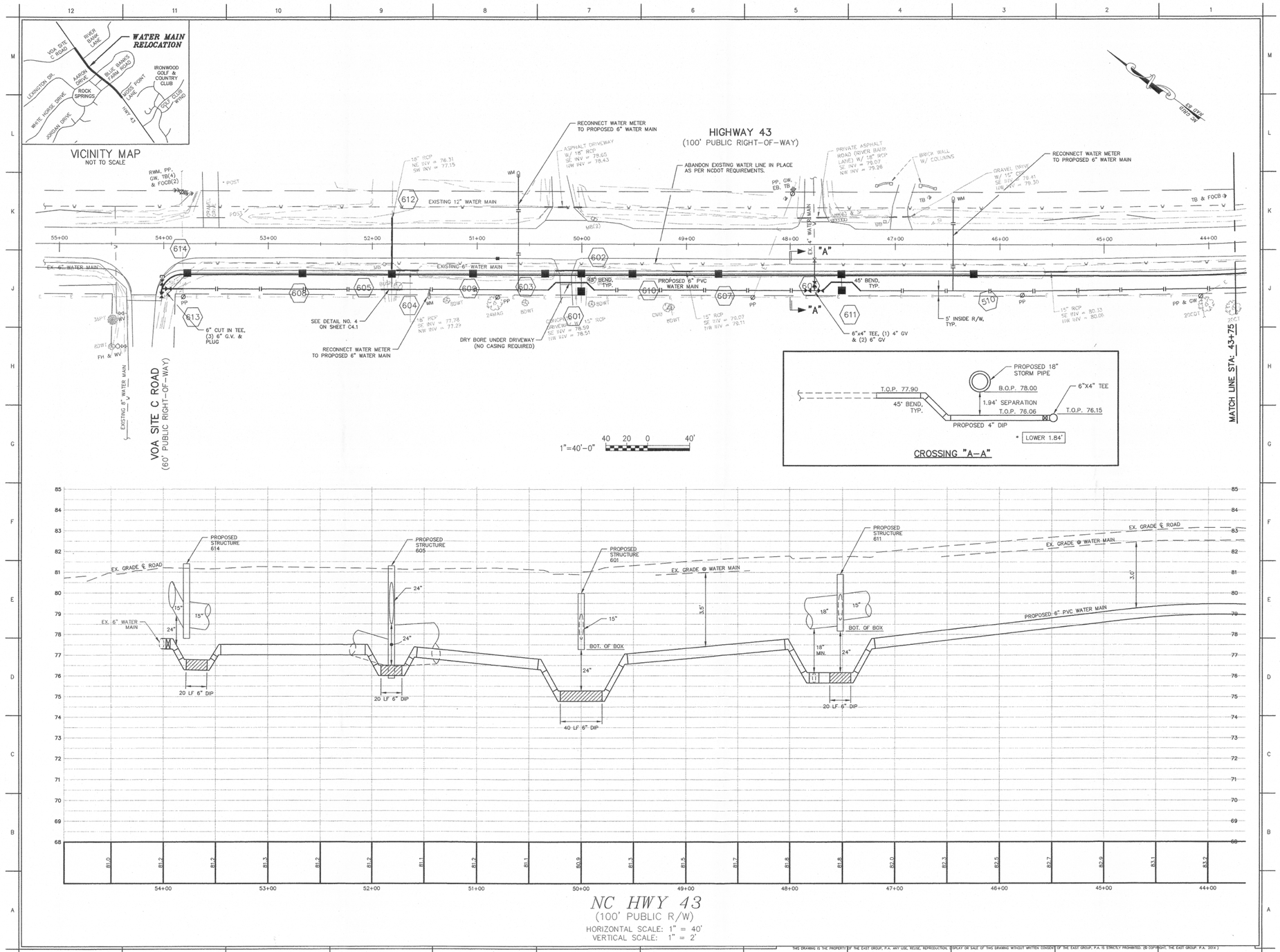
REVISIONS



SEAL

NORTH CAROLINA PROFESSIONAL SEAL 019863 ENGINEER WILLIAM E. FENNER, JR.

SEAL

PRELIMINARY
NOT FOR CONSTRUCTION

LEGEND:

70	EX. CONTOUR
x 70.00	SPOT ELEVATION
PP	POWER POLE
TB	TELEPHONE BOX
WM	WATER METER
FH	FIRE HYDRANT
WV	WATER VALVE
SI	SIGN
MB	MAIL BOX
EX.	EXISTING
RCP	REINFORCED CONCRETE PIPE
CMP	CORRUGATED METAL PIPE
INV.	INVERT
W	EX. WATER MAIN
UG	EX. GAS MAIN
	PROPOSED WATER MAIN
	EX. STORM PIPE
GAS	EX. NATURAL GAS LINE

UTILITY NOTES:

1. ALL WATER MAIN CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL CODES.
2. LOCATIONS OF EXISTING UTILITIES AS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY LOCATIONS AND COORDINATE CONNECTION WITH PROPER AUTHORITIES. CALL NC ONE-CALL CENTER, INC. AT 811 48 HOURS BEFORE ANY EXCAVATION IS BEGUN.
3. AS OF JAN. 1, 1986, ANYONE DIGGING WITH MECHANIZED EQUIPMENT IN HIGHWAY RIGHT-OF-WAY, PRIVATE UTILITY EASEMENTS, OR PUBLIC SPACES WILL BE REQUIRED BY NORTH CAROLINA LAW TO GIVE NOTICE OF THE PROPOSED EXCAVATION TO ALL EXISTING AREA UTILITIES AT LEAST 2 WORKING DAYS BEFORE STARTING TO DIG. THE UTILITY OWNER IS TO LOCATE ITS FACILITIES IN THE AREA OF THE PROPOSED EXCAVATION. UTILITY MEMBERS OF NC ONECALL CAN BE CONTACTED AT 811.
4. CONTRACTOR SHALL NOTIFY ENGINEER 48 HOURS PRIOR TO THE BEGINNING OF CONSTRUCTION. CONTRACTOR TO COORDINATE ALL EXISTING UTILITY TIE INS.
5. WATER MAINS SHALL BE BURIED A DEPTH OF 36 INCHES UNLESS NOTED OTHERWISE.
6. CONTRACTOR SHALL MAINTAIN COMPREHENSIVE (DEPTH AND HORIZONTAL LOCATIONS) FIELD "AS-BUILTS" FOR ALL INSTALLATIONS AND SUBMIT TO THE ENGINEER.
7. ALL PERMITS AND FEES REQUIRED FOR CONSTRUCTION OF IMPROVEMENTS ARE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
8. CONTRACTOR TO CONTACT BELL ARTHUR WATER CORPORATION TO COORDINATE CONNECTION TO WATER SYSTEM AND ANY OPERATION OF EXISTING SYSTEM VALVES OR HYDRANTS.
9. ABANDON EXISTING WATER LINE IN PLACE AS PER NCDOT REQUIREMENTS.

REV. NO.	DATE	REVISIONS	BY
1	–	–	–
2	–	–	–

THE EAST GROUP, P.A.

*Engineering*Architecture*Surveying*Technology

324 Evans St., Greenville, NC 27858 (252) 758-3746 (252) 830-3904 (Fax)
4325 Lake Boone Trail, Suite 201, Raleigh, NC 27607 (919) 784-6330 (919) 784-6331 (Fax)
*NC Engineering License No. C-0206 *NC Architectural License No. 52213

PROJECT TITLE

BELL ARTHUR
WATER CORPORATION

DRAWING TITLE

Water Main Relocation
Highway 43

SCALE: AS NOTED		DEPARTMENT: CIVIL
DRAWN BY: SLJ	DATE STARTED: 5/19/14	SHEET No.
CHECKED: SLJ		DRAWING NO.
APPROVED: MSC		C1.1
PROJECT NO.: 20140074		

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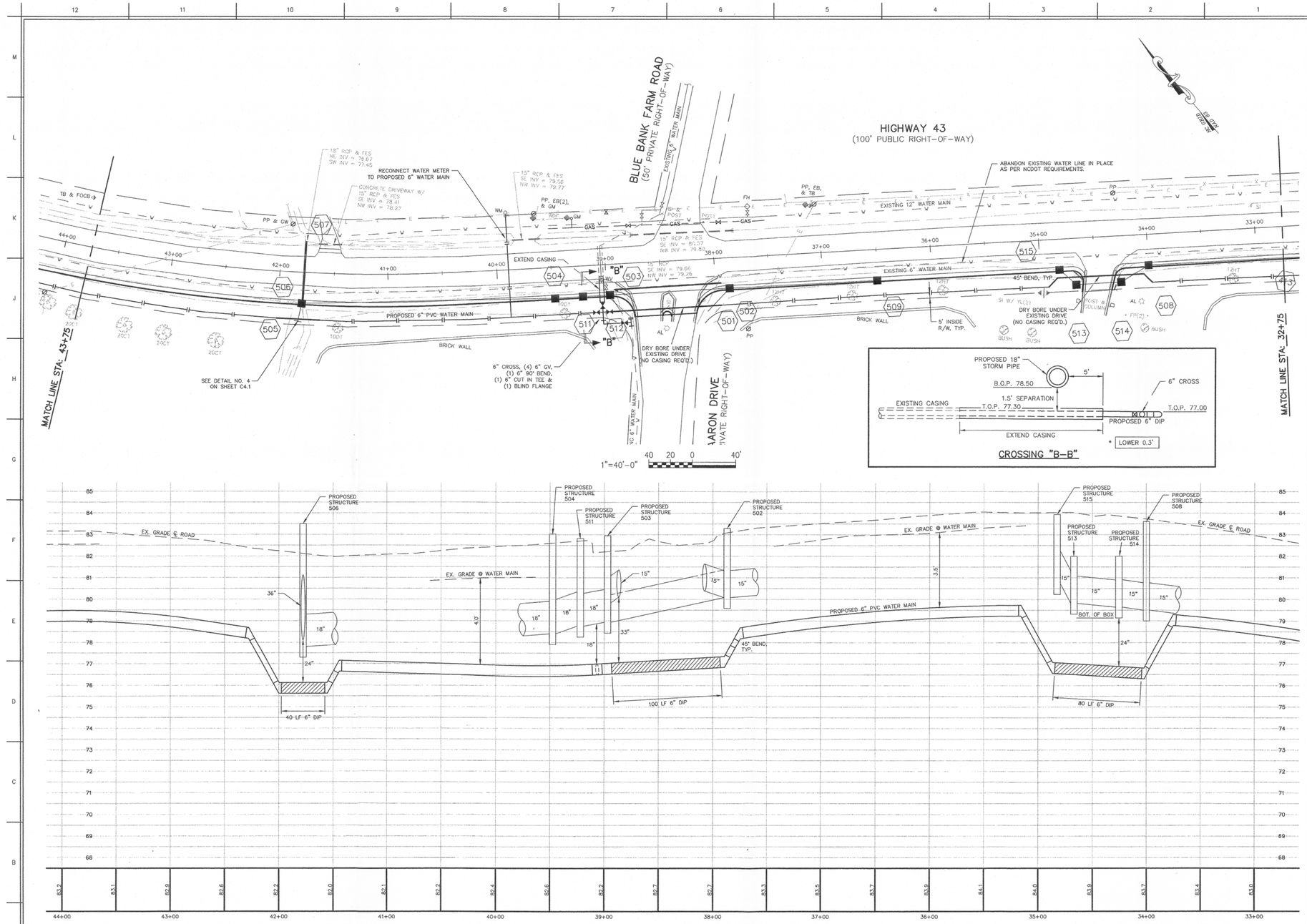
PROJECT REFERENCE NO.	SHEET NO.
W-5202E	UC2

8/17/99

REVISIONS



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SEAL

NORTH CAROLINA PROFESSIONAL SEAL 13869 ENGINEER WILLIAM E. FENNER, III

SEAL

PRELIMINARY
NOT FOR CONSTRUCTION

LEGEND:

70	EX. CONTOUR
x 70.00	SPOT ELEVATION
PP	POWER POLE
TB	TELEPHONE BOX
WM	WATER METER
FH	FIRE HYDRANT
WV	WATER VALVE
SI	SIGN
MB	MAIL BOX
EX.	EXISTING
RCP	REINFORCED CONCRETE PIPE
CMP	CORRUGATED METAL PIPE
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9. ABANDON EXISTING WATER LINE IN PLACE AS PER NCDOT REQUIREMENTS.

REV. NO.	DATE	REVISIONS	BY
1	--	--	--
2	--	--	--

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4325 Lake Boone Trail, Suite 201, Raleigh, NC 27607 (919) 784-9330 (919) 784-9331 (Fax)
• NC Engineering License No. C-0205 • NC Architectural License No. 50253

PROJECT TITLE
BELL ARTHUR WATER CORPORATION

DRAWING TITLE
Water Main Relocation Highway 43

SCALE: AS NOTED		DEPARTMENT: CIVIL
DRAWN BY: SLJ	DATE STARTED: 5/19/14	SHEET No.
CHECKED: SLJ		DRAWING NO. C2.1
APPROVED: MSC		
PROJECT NO.: 20140074		

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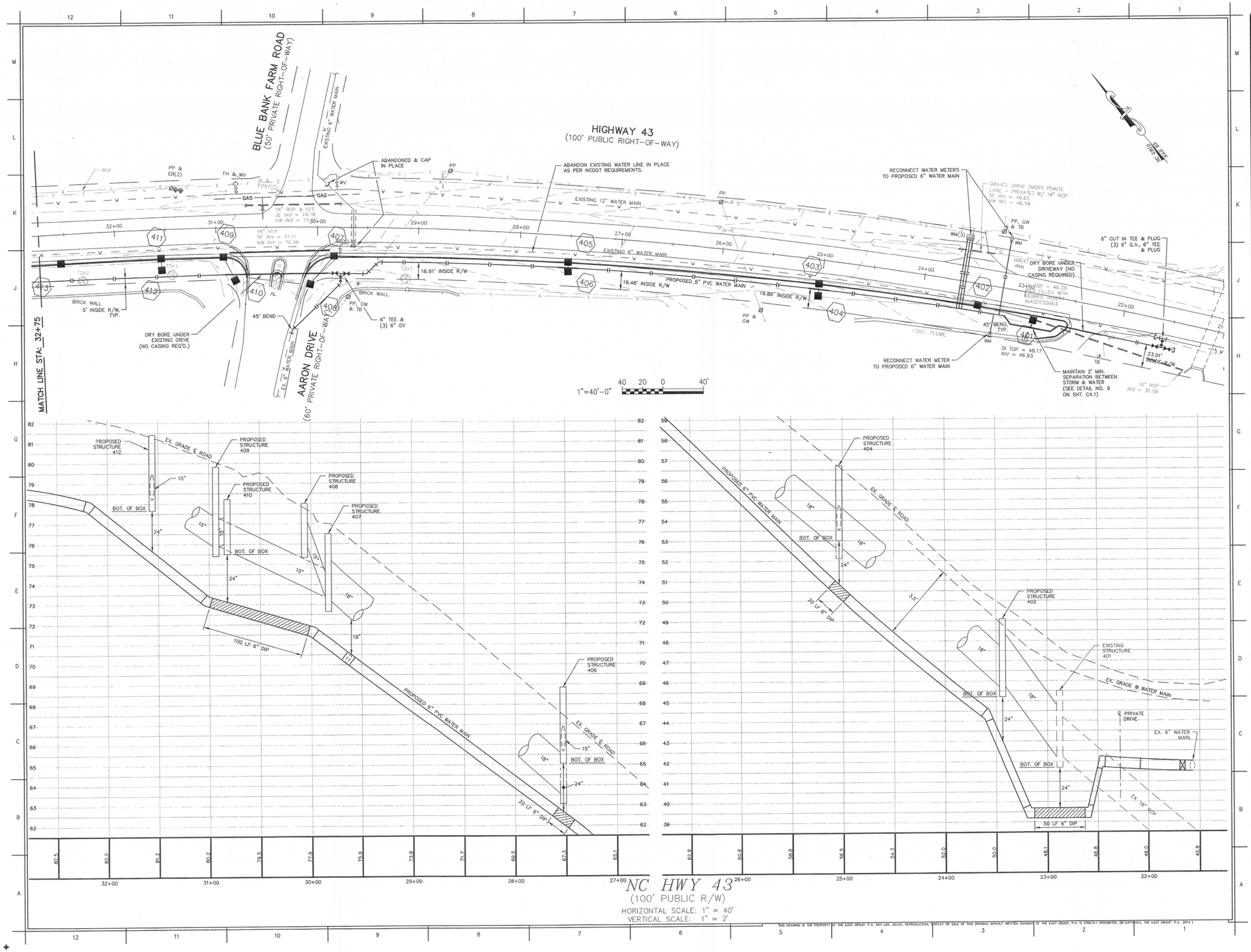
PROJECT REFERENCE NO.	SHEET NO.
W-5202E	UC3



SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 11446 WILLIAM E. FENNER 7-3-14

SEAL

PRELIMINARY NOT FOR CONSTRUCTION

LEGEND:

70	EX. CONTOUR
x 70.00	SPOT ELEVATION
PP	POWER POLE
TB	TELEPHONE BOX
WM	WATER METER
FH	FIRE HYDRANT
WV	WATER VALVE
SI	SIGN
MB	MAIL BOX
EX.	EXISTING
RCP	REINFORCED CONCRETE PIPE
CMP	CORRUGATED METAL PIPE
INV.	INVERT
W	EX. WATER MAIN
UG	EX. GAS MAIN
	PROPOSED WATER MAIN
	EX. STORM PIPE
GAS	EX. NATURAL GAS LINE

UTILITY NOTES:

1. ALL WATER MAIN CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL CODES.
2. LOCATIONS OF EXISTING UTILITIES AS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY LOCATIONS AND COORDINATE CONNECTION WITH PROPER AUTHORITIES. CALL NC ONE-CALL CENTER, INC. AT 811 48 HOURS BEFORE ANY EXCAVATION IS BEGUN.
3. AS OF JAN. 1, 1986, ANYONE DIGGING WITH MECHANIZED EQUIPMENT IN HIGHWAY RIGHT-OF-WAY, PRIVATE UTILITY EASEMENTS, OR PUBLIC SPACES WILL BE REQUIRED BY NORTH CAROLINA LAW TO GIVE NOTICE OF THE PROPOSED EXCAVATION TO ALL EXISTING AREA UTILITIES AT LEAST 2 WORKING DAYS BEFORE STARTING TO DIG. THE UTILITY OWNER IS TO LOCATE ITS FACILITIES IN THE AREA OF THE PROPOSED EXCAVATION. UTILITY MEMBERS OF NC ONECALL CAN BE CONTACTED AT 811.
4. CONTRACTOR SHALL NOTIFY ENGINEER 48 HOURS PRIOR TO THE BEGINNING OF CONSTRUCTION. CONTRACTOR TO COORDINATE ALL EXISTING UTILITY TIE INS.
5. WATER MAINS SHALL BE BURIED A DEPTH OF 36 INCHES UNLESS NOTED OTHERWISE.
6. CONTRACTOR SHALL MAINTAIN COMPREHENSIVE (DEPTH AND HORIZONTAL LOCATIONS) FIELD "AS-BUILTS" FOR ALL INSTALLATIONS AND SUBMIT TO THE ENGINEER.
7. ALL PERMITS AND FEES REQUIRED FOR CONSTRUCTION OF IMPROVEMENTS ARE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
8. CONTRACTOR TO CONTACT BELL ARTHUR WATER CORPORATION TO COORDINATE CONNECTION TO WATER SYSTEM AND ANY OPERATION OF EXISTING SYSTEM VALVES OR HYDRANTS.
9. ABANDON EXISTING WATER LINE IN PLACE AS PER NCDOT REQUIREMENTS.

REV. NO.	DATE	REVISIONS	BY
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2	--	--	--

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4325 Lake Boone Trail, Suite 201, Raleigh, NC 27607 (919) 784-9320 (919) 784-9321 (Fax)
NC Engineering License No. C-0206 NC Architectural License No. 52053

PROJECT TITLE

BELL ARTHUR WATER CORPORATION

DRAWING TITLE

Water Main Relocation Highway 43

SCALE: AS NOTED		DEPARTMENT: CIVIL
DRAWN BY: SLJ	DATE STARTED: 5/19/14	SHEET No.
CHECKED: SLJ		DRAWING NO. C3.1
APPROVED: MSC		
PROJECT NO.: 20140074		

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REVISIONS

8/17/99

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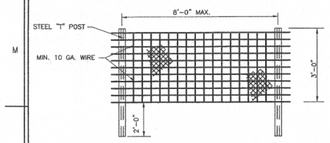
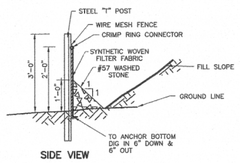


FRONT VIEW



SIDE VIEW

1 C4.1 SILT FENCE DETAIL
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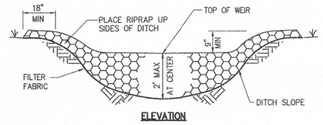
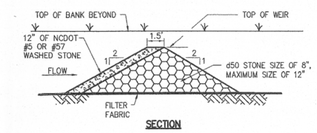


ELEVATION



SECTION

2 C4.1 ROCK SILT CHECK DAM
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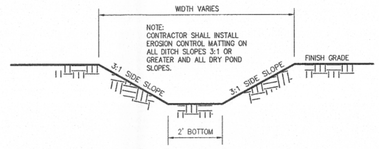
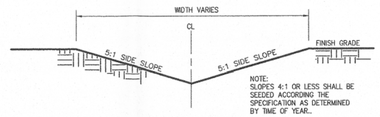


DITCH SECTION



SWALE SECTION

3 C4.1 TYPICAL DITCH/SWALE SECTIONS
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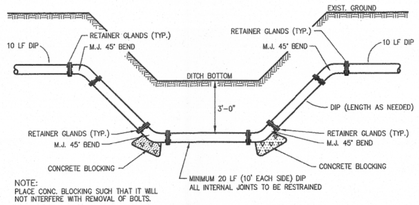

4 C4.1 WATER MAIN – DITCH CROSSING
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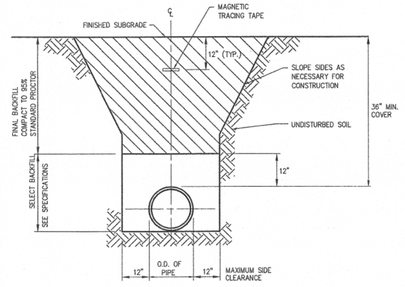
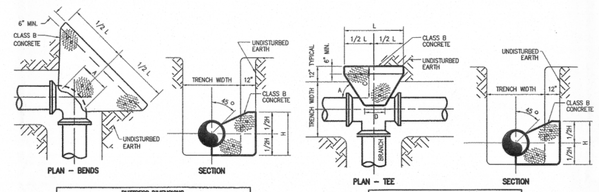


5 C4.1 WATER PIPE TRENCH DETAIL
N.T.S.



BUTTRESS DIMENSIONS						
PIPE SIZE	22 1/2 BENDS		45 BENDS		90 BENDS	
	L	H	L	H	L	H
<4"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"
4"	1'-0"	1'-0"	1'-0"	1'-0"	1'-8"	1'-8"
6"	1'-6"	1'-6"	1'-6"	1'-6"	2'-0"	2'-0"
8"	2'-0"	2'-0"	2'-0"	2'-0"	3'-0"	2'-0"
12"	2'-0"	2'-0"	3'-0"	2'-6"	4'-6"	3'-0"

NOTES:
1. DIMENSION "A" SHOULD BE AS LARGE AS POSSIBLE WITHOUT INTERFERING WITH THE MEGA JOINT BOLTS.
2. THE SHAPE OF THE BACK OF THE BUTTRESS MAY VARY AS LONG AS THE DIMENSIONS OF THE BEARING SURFACE REMAIN.
3. BUTTRESS DIMENSIONS ARE BASED UPON A SOIL RESISTANCE OF 2000 LBS. PER SQ. FT. AND A WATER PRESSURE OF 150 P.S.I.

BUTTRESS DIMENSIONS				
B. D.	L	H	C	D
<4"	1'-0"	1'-0"	SEE NOTE NO. 1	SEE NOTE NO. 2
4"	1'-6"	1'-6"		
6"	2'-0"	2'-0"		
8"	3'-0"	2'-0"		
12"	4'-6"	3'-0"		

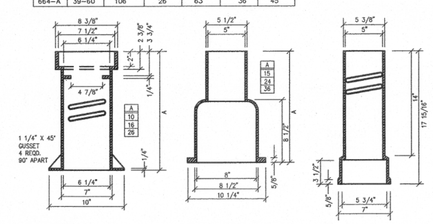
B. D. = BRANCH DIAMETER

NOTES:
1. DIMENSION "C" SHOULD BE LARGE ENOUGH TO MAKE ANGLE "A" EQUAL TO OR GREATER THAN 45°.
2. DIMENSION "D" SHOULD BE AS LARGE AS POSSIBLE WITHOUT INTERFERING WITH THE MECHANICAL JOINTS.
3. BUTTRESS DIMENSIONS ARE BASED UPON A SOIL RESISTANCE OF 2000 LBS. PER SQ. FT. AND A WATER PRESSURE OF 150 P.S.I.

6 C4.1 THRUST BLOCKING
N.T.S.

SLIP TYPE	EXTENSION INCHES	COMPLETE LBS WT.	TOP & COVER INS. LGTH.	TOP & COVER LBS. WT.	BOTTOM INS. LGTH.	BOTTOM LBS. WT.
461-A	18-24	60	10	35	15	25
562-A	24-36	80	16	45	24	35
564-A	36-48	92	16	47	36	45
664-A	39-60	106	26	63	36	45

NOTE:
VALVE BOX SHALL BE CHARLOTTE UTL-274, VALVE BOX EXTENSION SHALL BE CHARLOTTE UTL-261 SCREW TYPE.



7 C4.1 VALVE BOX DETAIL
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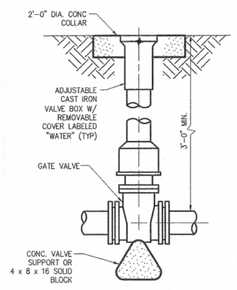
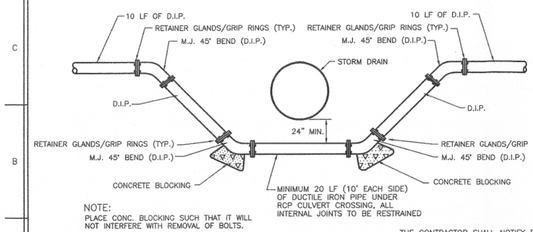
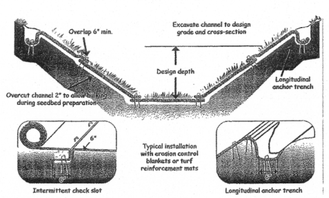


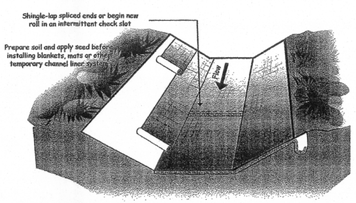
8 C4.1 GATE VALVE DETAIL
N.T.S.



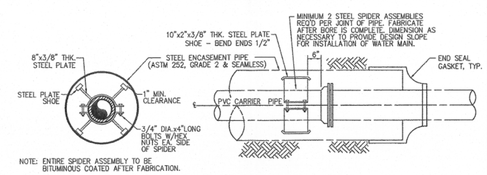
THE CONTRACTOR SHALL NOTIFY ENGINEER FOR INSPECTION OF ALL SUCH CROSSINGS PRIOR TO BACKFILLING. FAILURE TO DO SO WILL RESULT IN CONTRACTOR HAVING TO UNCOVER WATERLINE FOR CROSSING INSPECTION. 24 HOUR ADVANCE NOTICE IS REQUIRED FOR ALL INSPECTIONS.

9 C4.1 STORM / WATER CROSSING
N.T.S.





10 C4.1 ROLLED EROSION CONTROL BLANKET DETAIL
N.T.S.



NOTE: ENTIRE SPIDER ASSEMBLY TO BE BITUMINOUS COATED AFTER FABRICATION.

END ELEVATION

CASING SECTION

NOTE:
ENDS OF CASING CAN BE SEALED USING MODEL AC PULL-ON END SEAL GASKET, AS MANUFACTURED BY ADVANCE PRODUCT SYSTEMS, INC., OR APPROVED EQUAL IN LIEU OF CONCRETE FILL.

11 C4.1 STEEL ENCASEMENT DETAIL
N.T.S.

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 19404 ENGINEER WILLIAM E. FENNER III 7-29-14

SEAL

PRELIMINARY NOT FOR CONSTRUCTION

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PROJECT TITLE
BELL ARTHUR WATER CORPORATION

DRAWING TITLE
Grading, Drainage, Erosion & Sedimentation Control and Water Details

SCALE: AS NOTED	DEPARTMENT: CIVIL
DRAWN BY: SLJ	DATE STARTED: 5/19/14
CHECKED: SLJ	SHEET No.
APPROVED: MSC	DRAWING NO. C4.1
PROJECT NO.: 20140074	

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UTILITY CONSTRUCTION

SUMMARY OF QUANTITIES

Item No.	Description	Unit	Estimate Quantity
1	Mobilization (3%)	LS	1
2	6" C900 PVC Water Main	LF	2740
3	4" C900 PVC Water Main	LF	30
4	6" DI Water Main	LF	510
5	6" Gate Valve & Box	EA	16
6	4" Gate Valve & Box	EA	1
7	Extend 12 inch Casing	LF	30
8	Driveway Dry Bore - No Casing	LF	370
9	Water Service Reconnection (less than 25 lf)	EA	2
10	Water Service Reconnection (greater than 25 lf)	EA	7
11	DI Fitting - 6x6 cut in Tee	EA	2
12	DI Fitting - 6x6 Tee	EA	2
13	DI Fitting - 45° El	EA	53
14	DI Fitting - 6x4 Tee	EA	1
15	DI Fitting - 6x6 Cross	EA	1
16	Plug and Abandon Existing Water Main	LS	1
17	Erosion Control	LS	1
18	Clean-Up and Seeding	LF	3250

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PROJ. REFERENCE NO.	SHEET NO.
W-5202E	X-1A

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

CROSS-SECTION SUMMARY

IN CUBIC YARDS

LOCATION (-L-)	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBANKMENT
19+50.00	0		0
19+83.00	0		19
20+36.33	0		37
20+63.00	0		25
20+89.76	0		28
21+16.43	0		24
21+50.00	0		28
21+66.02	0		15
22+00.00	0		23
22+50.00	0		21
23+00.00	1		23
23+50.00	2		31
24+00.00	2		43
24+50.00	2		52
25+00.00	3		37
25+50.00	3		26
26+00.00	3		25
26+50.00	5		23
27+00.00	4		27
27+50.00	2		33
28+00.00	2		30
28+50.00	9		23
29+00.00	19		20
29+50.00	35		24
30+00.00	34		18
31+00.00	22		60
31+50.00	2		45
32+00.00	4		35
32+27.62	3		17
32+54.29	3		16

LOCATION (-L-)	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBANKMENT
32+80.96	2		14
33+07.63	3		11
33+60.96	7		13
34+00.00	5		7
34+50.00	3		7
35+00.00	1		18
35+50.00	2		38
36+00.00	1		50
36+50.00	1		57
37+00.00	1		61
37+50.00	1		62
38+00.00	1		74
39+00.00	4		191
39+21.90	1		40
39+48.56	1		43
39+75.23	1		45
40+01.90	0		55
40+28.57	0		65
40+55.24	0		69
41+00.00	0		124
41+50.00	0		133
42+00.00	1		100
42+50.00	2		74
43+00.00	2		76
43+50.00	1		83
44+00.00	0		90
44+24.74	0		45
44+51.41	0		47
44+78.08	0		44
45+04.75	1		36
45+58.08	3		45

LOCATION (-L-)	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBANKMENT
46+00.00	2		31
46+50.00	2		45
47+00.00	2		42
47+50.00	2		36
48+00.00	2		35
48+50.00	2		30
49+00.00	7		19
49+50.00	7		21
50+00.00	4		31
50+50.00	3		33
51+00.00	3		35
51+50.00	1		43
52+00.00	3		41
52+50.00	4		31
53+00.00	3		30
53+50.00	3		21
54+00.00	2		12
54+50.00	3		19
55+00.00	11		37
55+50.00	14		49
56+00.00	11		51
56+50.00	10		45
57+00.00	12		37
57+50.00	13		33
58+00.00	12		29
58+50.00	12		27
59+00.00	13		26
59+50.00	15		25
60+00.00	14		21
60+33.45	6		11

NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT.

NOTE:

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

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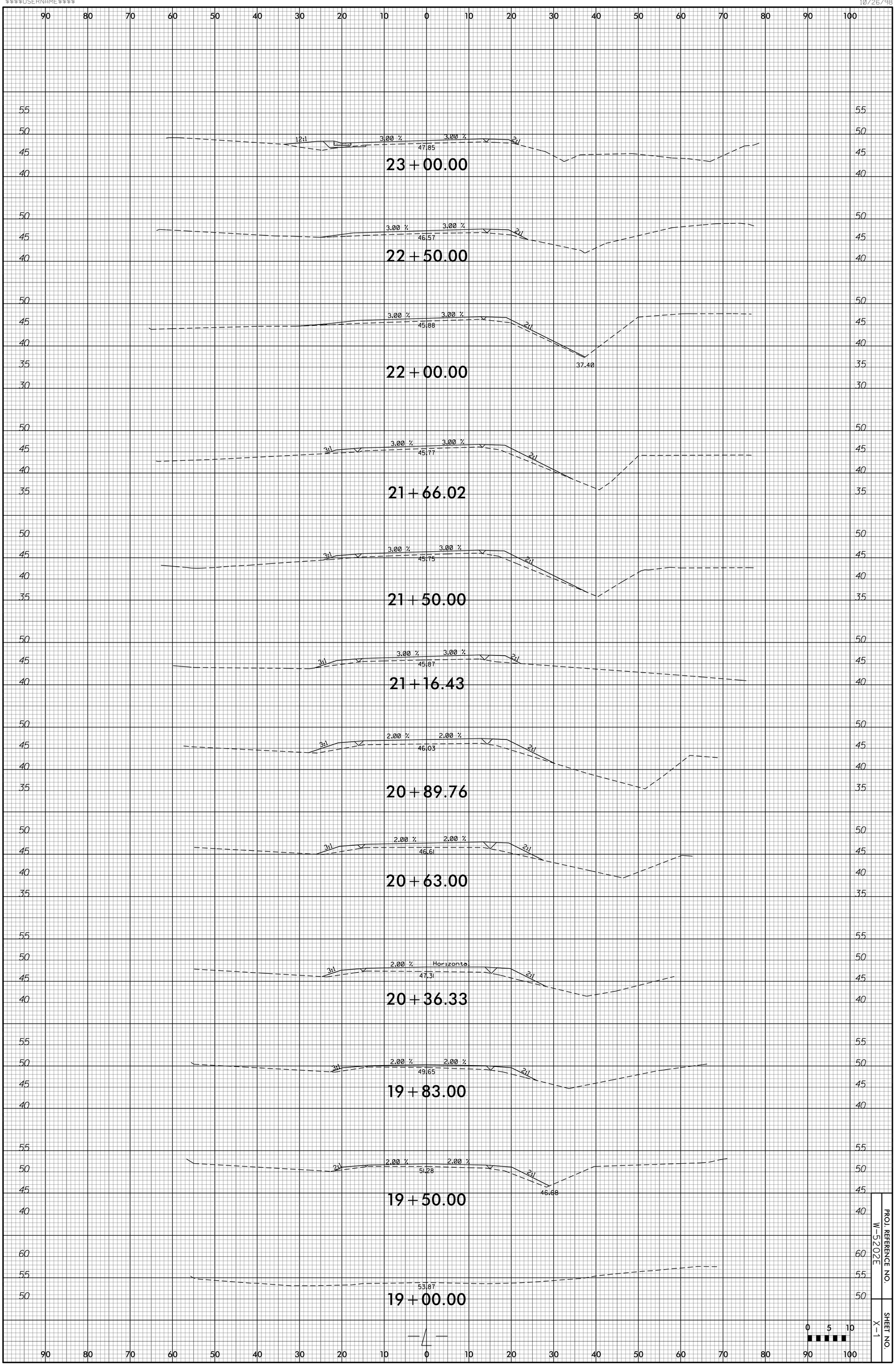

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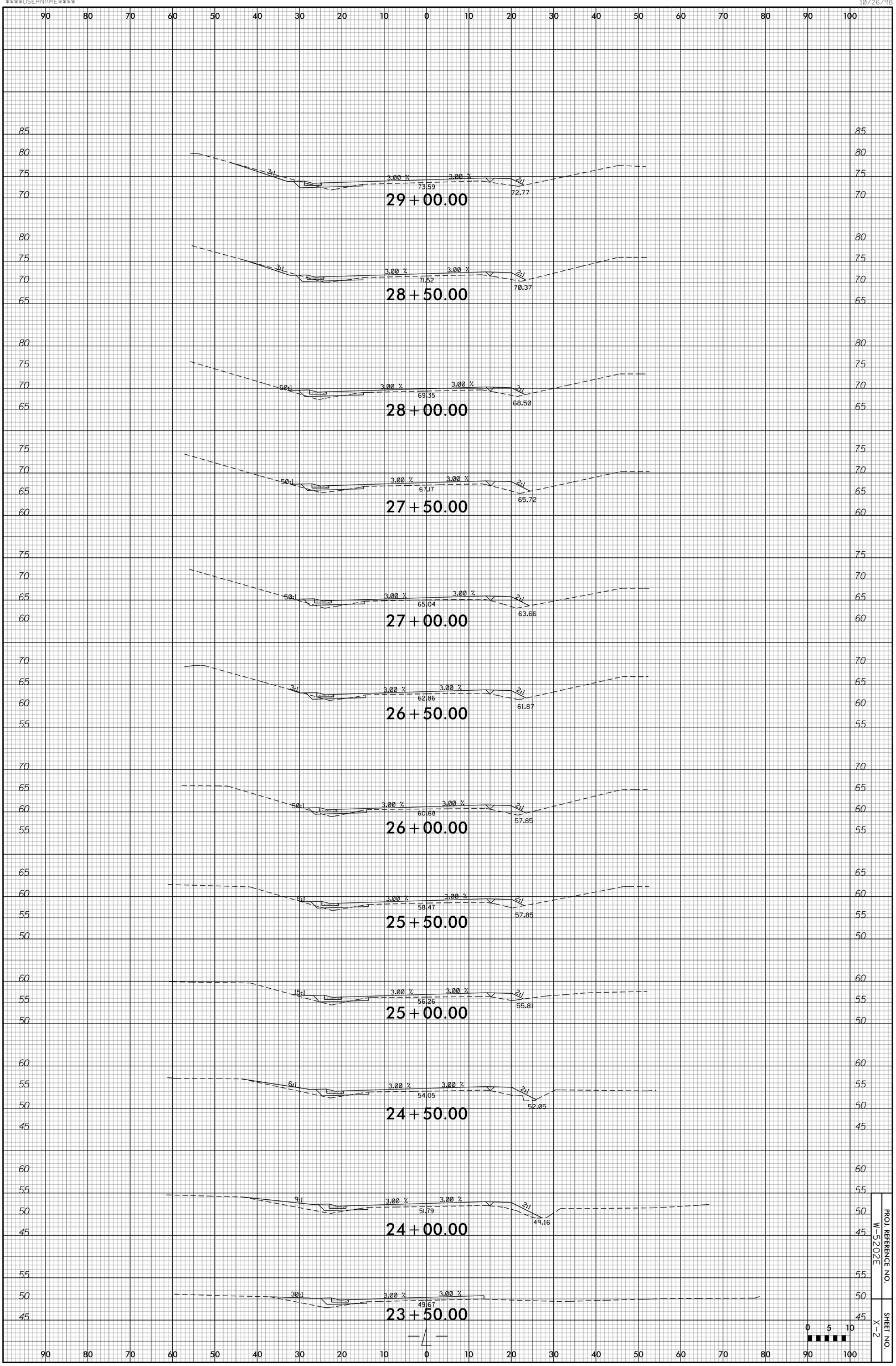

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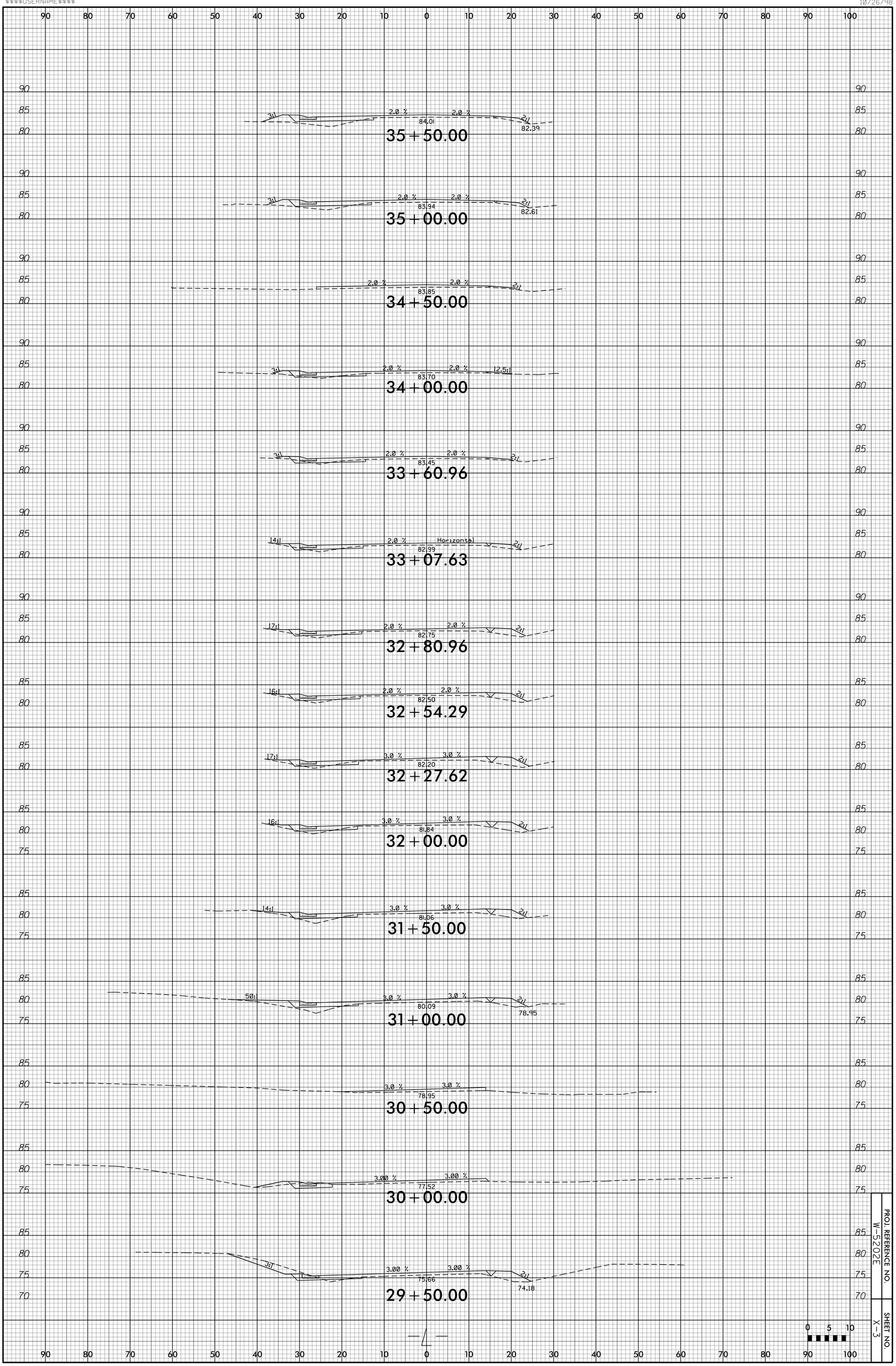

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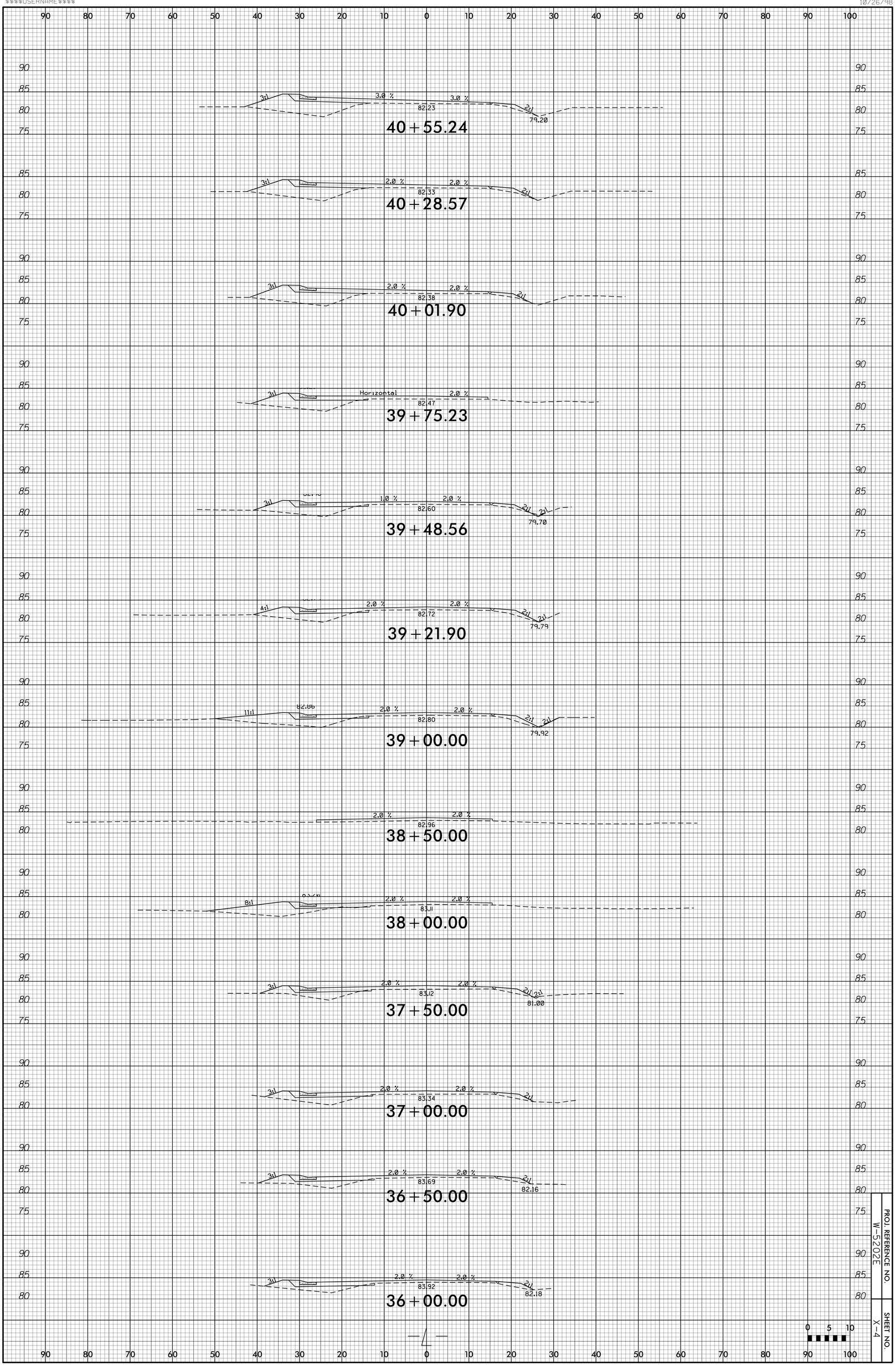

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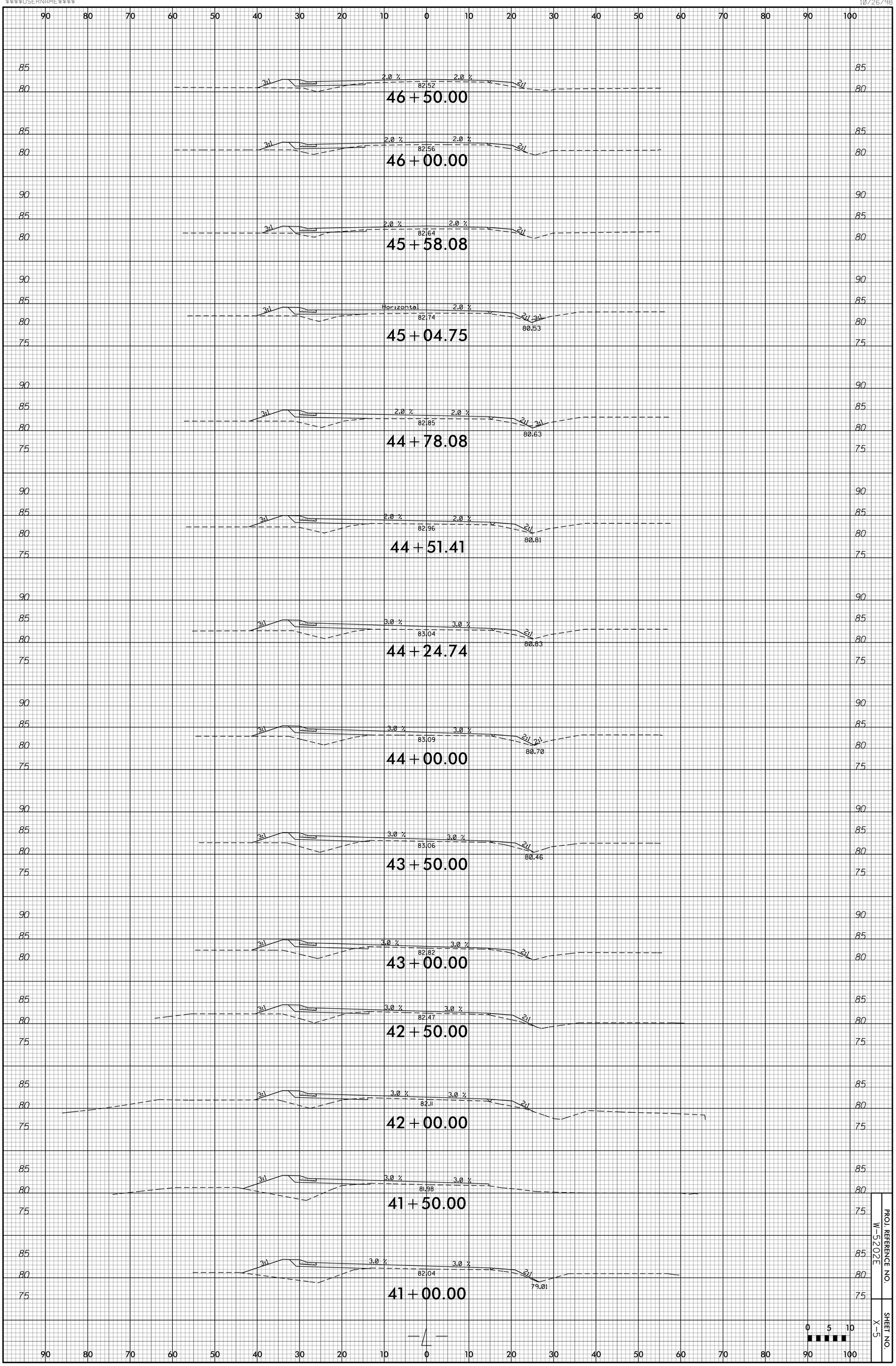
10/26/98



PROJ. REFERENCE NO. W-5202E

SHEET NO. X-5

29-SEP-2014 10:44
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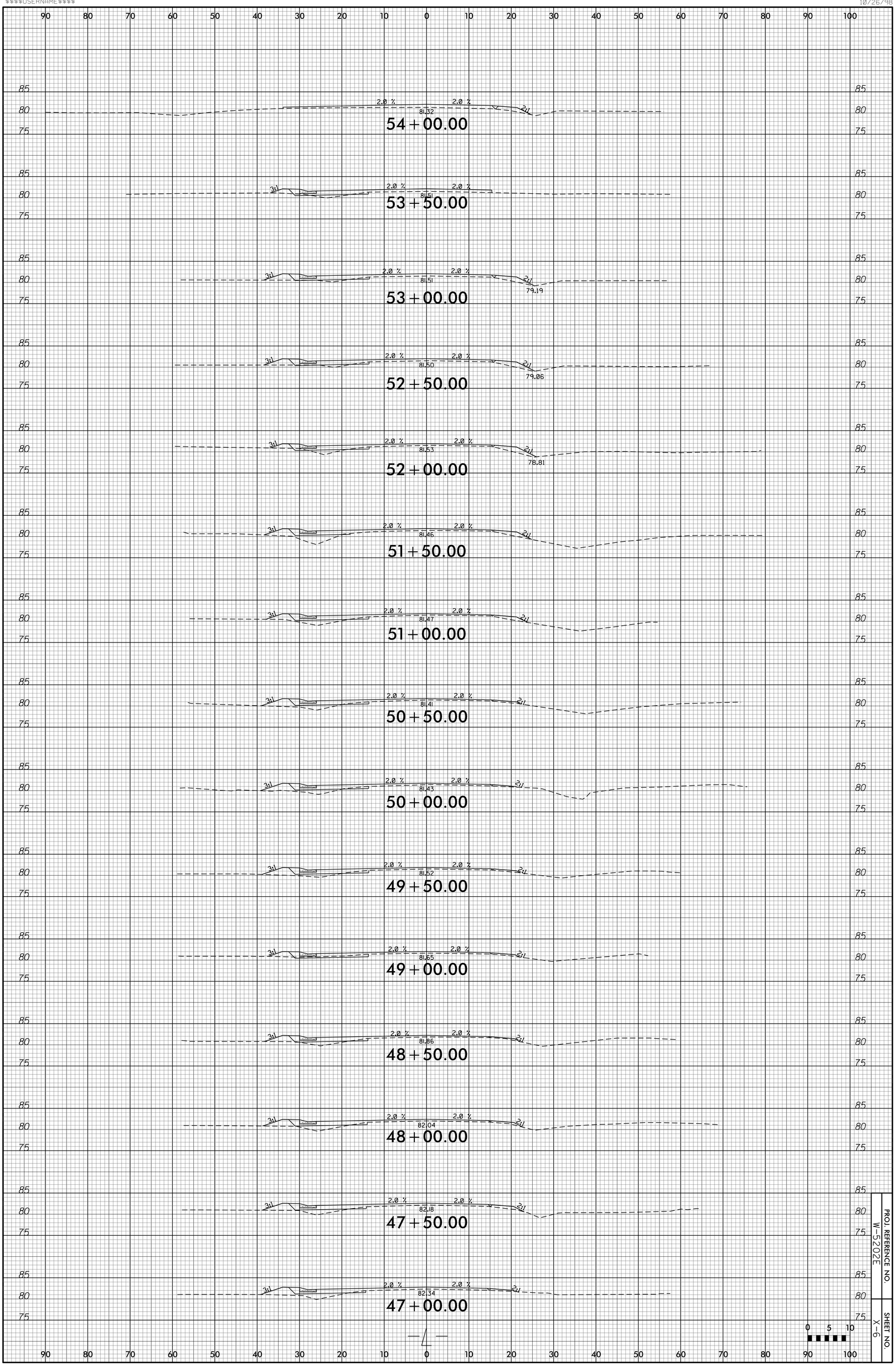

PROJ. REFERENCE NO.
W-5202E

SHEET NO.
X-6

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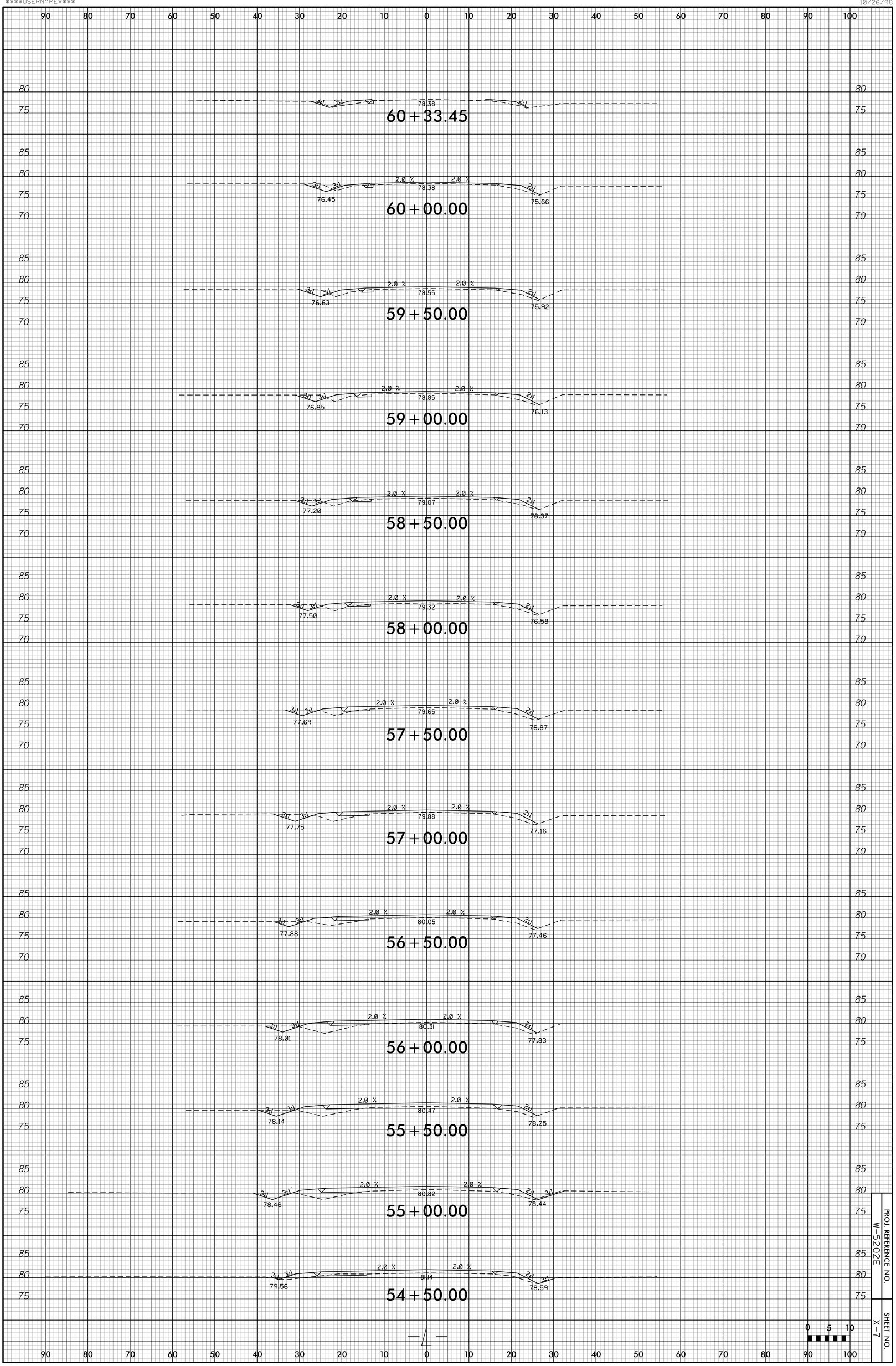
10/26/98



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SHEET NO. X-7