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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CHATHAM COUNTY

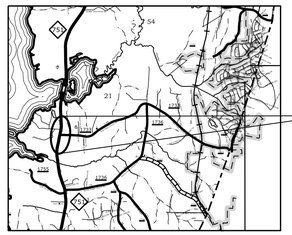
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	SS–4908AM, W–5601CL	1	

WBS ELEMENT	F.A. PROJ. NO.	DESCRIPTION
SS-4908AM		
44195.3.1		CONST.
W-5601CL		
50138.3.91		CONST.

PART I: PROJECT SS–4908AM

LOCATION: *NC 751 AT SR 1733 (NEW HOPE CH. RD.)*

TYPE OF WORK: *GRADING, PAVING, DRAINAGE, AND THEMOPLASTIC MARKINGS & MARKERS*

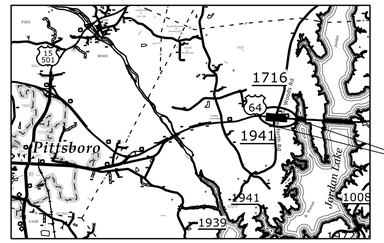


VICINITY MAP

PART II: PROJECT W–5601CL

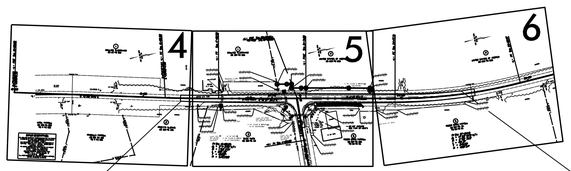
LOCATION: *US 64 AT SR 1617 (BIG WOODS RD.)*

TYPE OF WORK: *GRADING, PAVING, DRAINAGE, CONCRETE ISLANDS, AND THEMOPLASTIC MARKINGS & MARKERS*



VICINITY MAP

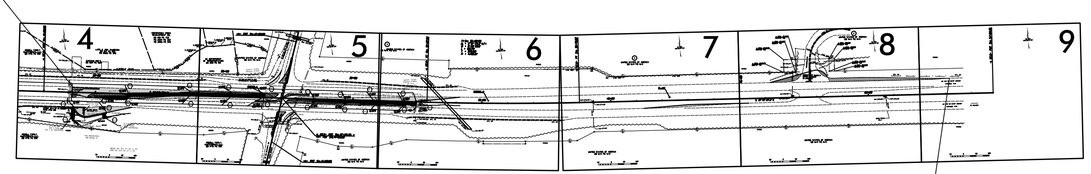
NC GRID
NAD 83 NA 2011



–L– STA. 16+45.00
BEGIN PROJECT SS–4908AM

–L– STA. 27+89.00
END PROJECT SS–4908AM

–L–MED– STA. 19+ 0.00
BEGIN PROJECT W–5601CL



–L–MED– STA. 53+15.00
END PROJECT W–5601CL

PROJECT LENGTH

LENGTH ROADWAY PROJ. SS–4908AM 0.22 MILES
LENGTH ROADWAY PROJ. W–5601CL 0.65 MILES

TOTAL: 0.87 MILES

Prepared In the Office of:
DIVISION OF HIGHWAYS

DIVISION 8
DESIGN & CONSTRUCT UNIT
902 N. SANDHILLS BLVD.
ABERDEEN NC 28315

DIVISION OF HIGHWAYS

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

LETTING DATE:

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

DIVISION DESIGN & CONSTRUCT ENGINEER

DocuSigned by:
Greg S Davis
5304785E0758F4A8...
6/21/2016
P.E.
SIGNATURE:

DIVISION DESIGN & CONSTRUCT ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S. DAVIS

TIP PROJECTS: SS–4908AM – W–5601CL PROJECTS: NC 751 & US 64

$$$$$$SYSTIME$$$$$$
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PROJECT REFERENCE NO.	SHEET NO.
SS–4908AM, W–5601CL	1–A

DocuSigned by: Greg S Davis
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NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S. DAVIS
6/21/2016
DIVISION DESIGN / CONSTRUCT ENGINEER

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET (PART I & PART II)
1–A	INDEX OF SHEETS
2	CONVENTIONAL SYMBOLS
3 THRU 3A	SUMMARY OF QUANTITIES

PART I : SS–4908AM

1	TITLE SHEET
1–A	SURVEY CONTROL SHEET
2	TYPICAL SECTIONS
3	SUMMARY OF EARTHWORKS, ETC.
3–A	LIST OF PIPES, ENDWALLS, ETC.
4 THRU 6	PLAN SHEETS
7 THRU 9	VERTICAL PROFILE SHEETS
PM–1 THRU PM–3	PAVEMENT MARKING PLANS
EC–1 THRU EC–6	EROSION CONTROL PLANS
X–A	CROSS–SECTION SUMMARY
X–1 THRU X–16	CROSS–SECTIONS –L–
X–17 THRU X–18	CROSS–SECTIONS –Y1–

PART II : W–5601CL

1	TITLE SHEET
1–A THRU 1–B	SURVEY CONTROL SHEETS
2 THRU 2–D	TYPICAL SECTIONS
2–E	DETAIL – EMERGENCY VEHICLE ACCESS FOR CONCRETE ISLAND
3	SUMMARY OF EARTHWORKS, ETC.
3–A	DRAINAGE SUMMARY
4 THRU 9	PLAN SHEETS
TMP–1 THRU TMP–2	TRAFFIC MANAGEMENT PLANS
PM–1 THRU PM–6	PAVEMENT MARKING PLANS
EC–1 THRU EC–6	EROSION CONTROL PLANS
X–A	CROSS–SECTION SUMMARY
X–1 THRU X–29	CROSS–SECTIONS –L–MED–
X–30 THRU X–35	CROSS–SECTIONS –Y1–

GENERAL NOTES

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 THE PROPER TIE–IN.

CLEARING

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

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01.

UTILITIES

ANY RELOCATION OF EXISTING UTILITIES EXCEPT AS NOTED IN PLANS, WILL BE ACCOMPLISHED BY OTHERS PRIOR TO THE DATE OF AVAILABILITY.

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 17, 2012 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
225.01	Guide for Grading Subgrade – Interstate amd Freeway
225.05	Method of Obtaining Superelevation – Divided Highway
560.01	Method of Shoulder Construction – High Side of Superelevated Curve – Method I
560.02	Method of Shoulder Construction – High Side of Superelevated Curve – Method II
654.01	Pavement Repairs
840.14	Concrete Drop Inlet
840.15	Brick Drop Inlet
840.16	Drop Inlet Frame and GratesInlet
840.18	Concrete Grated Drop Inlet Type "B"
840.20	Frame and Wide Slot Flat Grates
840.22	Frames and Wide Slot Sag Grates
840.25	Anchorage for Frames – Brick, Concrete, or Precast
840.27	Brick Grated Drop Inlet Type "B"
840.46	Traffic Bearing Drainage Structures
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter, and Curb & Gutter
846.02	Drop Inlet Installation in Expressway Gutter
852.01	Concrete Islands
852.04	Method for Placement of Drop Inlets in Grassed Median
852.01	Concrete Islands
852.06	Method for Placement of Drop Inlets in Concrete Islands
862.03	Structural Anchor Unit
876.02	Guide for Rip Rap at Pipe Outlets

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PROJECT REFERENCE NO.	SHEET NO.
SS-4908AM, W-5601CL	2

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

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

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign — 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
- U/G Power Line LOS B (S.U.E.*) — P
- U/G Power Line LOS C (S.U.E.*) — P
- U/G Power Line LOS D (S.U.E.*) — P

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

PROJECT NO.	SHEET NO.	TOTAL NO.
44195.3.1 (SS-4908AM)	**3**	
50138.3.91 (W-5601CL)		

SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH MI	WIDTH FT	CONSTRUCTION SURVEYING LS	GRADING LS	GEOTEXTILE FOR SOIL STABILIZATION SY	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES TON	FOUNDATION CONDITIONING GEOTEXTILE SY	15" DRAINAGE PIPE LF	15" DRAINAGE PIPE ELBOWS EA	15" RC PIPE CULVERT, CLASS III LF	18" RC PIPE CULVERT, CLASS III LF	15" RC PIPE CULVERT, CLASS IV LF	PIPE REMOVAL LF	PIPE CLEAN-OUT EA	SHALLOW UNDERCUT CY	CLASS IV SUBGRADE STABILIZATION TON	INCIDENTAL STONE BASE TONS	1.5" MILLING SY	INCIDENTAL MILLING SY
44195.3.1 (SS-4908AM)	Chatham	1	NC 751	INTERSECTION IMPROVEMENTS AT SR 1733 (NEW HOPE CHURCH RD)	1,2	2	2WU	NO		0.22	24-36	1	1	50	25	80			180	42		104	4	50	85	50		200
TOTAL FOR MAP NO. 1										**0.22**		**1**	**1**	**50**	**25**	**80**			**180**	**42**		**104**	**4**	**50**	**85**	**50**		**200**
TOTAL FOR PROJ NO. 44195.3.1 (SS-4908AM)										**0.22**		**1**	**1**	**50**	**25**	**80**			**180**	**42**		**104**	**4**	**50**	**85**	**50**		**200**
50138.3.91 (W-5601CL)	Chatham	2	US 64	INTERSECTION OF SR 1716 (BIG WOODS RD) AND SR 1941 (SEAFORTH RD)	1-19	2	MD	NO	NO	0.56	24-48	1	1		120	375	60	4			1,062	45				50	975	100
TOTAL FOR MAP NO. 2										**0.56**		**1**	**1**		**120**	**375**	**60**	**4**			**1,062**	**45**				**50**	**975**	**100**
TOTAL FOR PROJ NO. 50138.3.91 (W-5601CL)										**0.56**		**1**	**1**		**120**	**375**	**60**	**4**			**1,062**	**45**				**50**	**975**	**100**
GRAND TOTAL										**0.78**		**1**	**1**	**50**	**145**	**455**	**60**	**4**	**180**	**42**	**1,062**	**149**	**4**	**50**	**85**	**100**	**975**	**300**

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH MI	WIDTH FT	BASE COURSE, B25.0B TONS	INTERMEDIATE COURSE, I19.0B TONS	SURFACE COURSE, S9.5B TONS	ASPHALT BINDER FOR PLANT MIX TONS	PIPE COLLAR CY	MASONRY DRAINAGE STRUCTURE EA	FRAME WITH TWO GRATES, STD 840.16 EA	FRAME WITH TWO GRATES, STD 840.20 EA	FRAME WITH TWO GRATES, STD 840.22 EA	CONCRETE TRANSITIONAL SECTION FOR DROP INLET EA	CONCRETE EXPRESSWAY GUTTER LF	5" MONOLITHIC CONCRETE ISLANDS(KEYED-IN) SY	GENERIC PAVING ITEM - EMERGENCY VEHICLE ACCESS EA	STEEL BM GUARDRAIL LF	ADDITIONAL GUARDRAIL POSTS EA	GUARDRAIL ANCHOR UNIT, TYPE 350 EA
44195.3.1 (SS-4908AM)	Chatham	1	NC 751	INTERSECTION IMPROVEMENTS AT SR 1733 (NEW HOPE CHURCH RD)	1,2	2	2WU	NO		0.22	24-36	465	270	505	64	2.1850	3	3										
TOTAL FOR MAP NO. 1										**0.22**		**465**	**270**	**505**	**64**	**2.1850**	**3**	**3**										
TOTAL FOR PROJ NO. 44195.3.1 (SS-4908AM)										**0.22**		**465**	**270**	**505**	**64**	**2.1850**	**3**	**3**										
50138.3.91 (W-5601CL)	Chatham	2	US 64	INTERSECTION OF SR 1716 (BIG WOODS RD) AND SR 1941 (SEAFORTH RD)	1-19	2	MD	NO	NO	0.65	24-48	2,105	1,435	1,535	254		20	17	2	1	17	150	2,240	1	25.00	5.00	1
TOTAL FOR MAP NO. 2										**0.65**		**2,105**	**1,435**	**1,535**	**254**		**20**	**17**	**2**	**1**	**17**	**150**	**2,240**	**1**	**25.00**	**5.00**	**1**
TOTAL FOR PROJ NO. 50138.3.91 (W-5601CL)										**0.65**		**2,105**	**1,435**	**1,535**	**254**		**20**	**17**	**2**	**1**	**17**	**150**	**2,240**	**1**	**25.00**	**5.00**	**1**
GRAND TOTAL										**0.87**		**2,570**	**1,705**	**2,040**	**318**	**2.1850**	**23**	**20**	**2**	**1**	**17**	**150**	**2,240**	**1**	**25.00**	**5.00**	**1**

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH MI	WIDTH FT	REMOVE EXISTING GUARDRAIL LF	RIP RAP, CLASS B TON	GEOTEXTILE FOR DRAINAGE SY	TEMPORARY SILT FENCE LF	EROSION CONTROL STONE, CLASS A TON	EROSION CONTROL STONE, CLASS B TON	SEDIMENT CONTROL STONE TON	TEMPORARY MULCHING ACR	MATTING (EROSION CONTROL) SY	1/4" HARDWARE CLOTH LF	WATTLE LF	POLYACRYLAMIDE (PAM) LB	COIR FIBER BAFFLES LF	SEED & MULCHING AC	SEED FOR REPAIR SEEDING LB	FERTILIZER FOR REPAIR SEEDING TON
44195.3.1 (SS-4908AM)	Chatham	1	NC 751	INTERSECTION IMPROVEMENTS AT SR 1733 (NEW HOPE CHURCH RD)	1,2	2	2WU	NO		0.22	24-36		11	37	915	25	105	60	1.85	2,000	50	250	15	125	1.85	50	0.25
TOTAL FOR MAP NO. 1										**0.22**			**11**	**37**	**915**	**25**	**105**	**60**	**1.85**	**2,000**	**50**	**250**	**15**	**125**	**1.85**	**50**	**0.25**
TOTAL FOR PROJ NO. 44195.3.1 (SS-4908AM)										**0.22**			**11**	**37**	**915**	**25**	**105**	**60**	**1.85**	**2,000**	**50**	**250**	**15**	**125**	**1.85**	**50**	**0.25**
50138.3.91 (W-5601CL)	Chatham	2	US 64	INTERSECTION OF SR 1716 (BIG WOODS RD) AND SR 1941 (SEAFORTH RD)	1-19	2	MD	NO	NO	0.65	24-48	110.00	40	60	575	25	35	105	1.00	1,000	320	660	25	100	1.00	50	0.25
TOTAL FOR MAP NO. 2										**0.65**		**110.00**	**40**	**60**	**575**	**25**	**35**	**105**	**1.00**	**1,000**	**320**	**660**	**25**	**100**	**1.00**	**50**	**0.25**
TOTAL FOR PROJ NO. 50138.3.91 (W-5601CL)										**0.65**		**110.00**	**40**	**60**	**575**	**25**	**35**	**105**	**1.00**	**1,000**	**320**	**660**	**25**	**100**	**1.00**	**50**	**0.25**
GRAND TOTAL										**0.87**		**110.00**	**51**	**97**	**1,490**	**50**	**140**	**165**	**2.85**	**3,000**	**370**	**910**	**40**	**225**	**2.85**	**100**	**0.50**

PROJECT NO.	SHEET NO.	TOTAL NO.
44195.3.1 (SS-4908AM)	**3A**	
50138.3.91 (W-5601CL)		

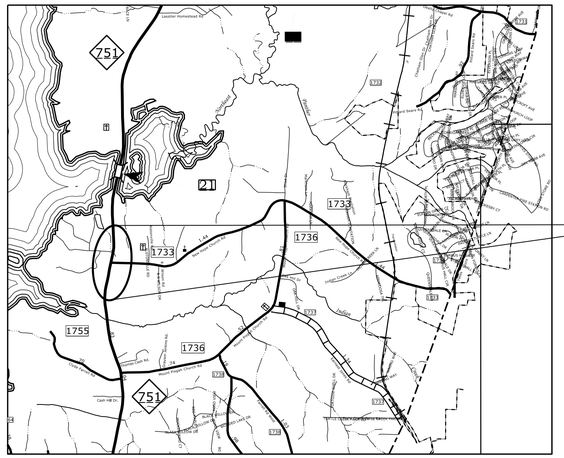
THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	WIDTH	4399000000-N TEMPORARY TRAFFIC CONTROL LS	4685000000-E 4" X 90 M WHITE THERMO LF	4685000000-E 4" X 90 M YELLOW THERMO LF	4686000000-E 4" X 120 M WHITE THERMO LF	4686000000-E 4" X 120 M YELLOW THERMO LF	4695000000-E 8" X 90 M WHITE THERMO LF	4695000000-E 8" X 90 M YELLOW THERMO LF	4700000000-E 12" X 90 M WHITE THERMO LF	4700000000-E 12" X 90 M YELLOW THERMO LF	4710000000-E 24" X 120 M WHITE THERMO LF	4725000000-E THERMO LT ARROW 90 M EA	4725000000-E THERMO STR ARROW 90 M EA	4725000000-E THERMO RT ARROW 90 M EA	4725000000-E THERMO U-TURN ARROW 90 M EA	4810000000-E 4" WHITE PAINT LF	4810000000-E 4" YELLOW PAINT LF	4850000000-E 4" LINE REMOVAL LF	4900000000-N CRYSTAL & RED MARKERS EA	4900000000-N YELLOW & YELLOW MARKERS EA	4905000000-N SNOW PLOWABLE MARKERS C & R MARKERS EA	4905000000-N SNOW PLOWABLE MARKERS Y & Y MARKERS EA
44195.3.1 (SS-4908AM)	Chatham	1	NC 751	INTERSECTION IMPROVEMENTS AT SR 1733 (NEW HOPE CHURCH RD)	1,2	2	2WU	0.22	24	1	2,945		235	3,850				215		2	2							7	48		
TOTAL FOR MAP NO. 1								**0.22**		**1**	**2,945**		**235**	**3,850**				**215**		**2**	**2**							**7**	**48**		
TOTAL FOR PROJ NO. 44195.3.1 (SS-4908AM)								**0.22**		**1**	**2,945**		**235**	**3,850**				**215**		**2**	**2**							**7**	**48**		
											2,945		**4,085**				**215**			**4**							**55**			
50138.3.91 (W-5601CL)	Chatham	2	US 64	INTERSECTION OF SR 1716 (BIG WOODS RD) AND SR 1941 (SEAFORTH RD)	1-19	2	MD	0.65	36	1	2,220	5,595	485	625	1640	35	135		35	6	8	2	6	1,000	1,500	25			90	8
TOTAL FOR MAP NO. 2								**0.65**		**1**	**2,220**	**5,595**	**485**	**625**	**1,640**	**35**	**135**		**35**	**6**	**8**	**2**	**6**	**1,000**	**1,500**	**25**			**90**	**8**
TOTAL FOR PROJ NO. 50138.3.91 (W-5601CL)								**0.65**		**1**	**2,220**	**5,595**	**485**	**625**	**1,640**	**35**	**135**		**35**	**6**	**8**	**2**	**6**	**1,000**	**1,500**	**25**			**90**	**8**
											7,815		**1,110**		**1,675**					**22**				**2,500**					**98**	
GRAND TOTAL								**0.87**		**1**	**5,165**	**5,595**	**720**	**4,475**	**1,640**	**35**	**135**	**215**	**35**	**8**	**10**	**2**	**6**	**1,000**	**1,500**	**25**	**7**	**48**	**90**	**8**
											10,760		**5,195**		**1,675**		**350**			**26**				**2,500**			**55**		**98**	

09/08/99

TIP#: SS-4908AM PROJECT: NC 751 @ SR 1733 (NEW HOPE CHURCH RD)

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



VICINITY MAP

PROJECT LOCATION

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

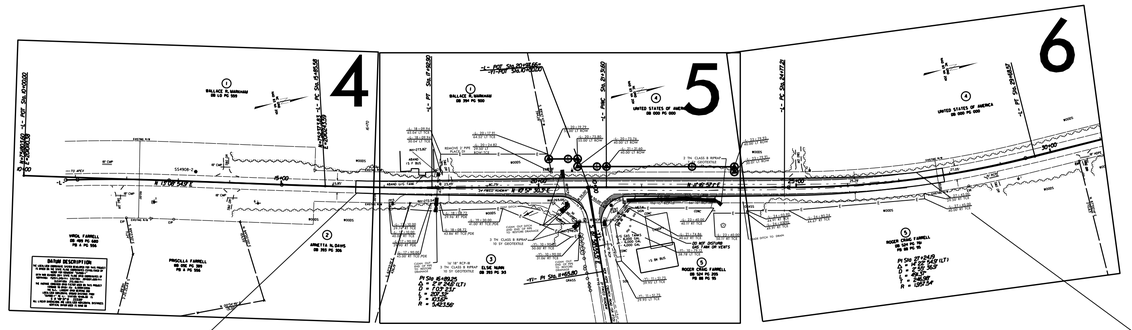
CHATHAM COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	SS-4908AM	1	

WBS ELEMENT	F.A. PROJ. NO.	DESCRIPTION
44195.1.FR1		PE
44195.2.1		R/W
44195.3.1		CONST

LOCATION: NC 751 AT SR 1733 (NEW HOPE CHURCH RD)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, PAVEMENT MARKINGS & MARKERS, AND EROSION CONTROL



–L– STA. 16+45.00
BEGIN PROJECT SS-4908AM

–L– STA. 27+89.00
END PROJECT SS-4908AM

GRAPHIC SCALES

50 0 50 100
PLANS
(SEE PLANS)

DESIGN DATA

ADT 2012 = 6,200

Prepared in the Office of:
DIVISION OF HIGHWAYS
DIVISION 8 DESIGN & CONSTRUCT UNIT
902 N. SANDHILLS BLVD.
ABERDEEN NC 28315
PLANS PREPARED BY: MRT

PROJECT LENGTH
ROADWAY: 0.22 MILES
STRUCTURE: MILES
TOTAL: 0.22 MILES

DIVISION OF HIGHWAYS

2012 STANDARD SPECIFICATIONS

LETTING DATE:

DIVISION DESIGN & CONSTRUCT ENGINEER

DocuSigned by:
Greg S Davis
33D47B5ED78F4A8...
6/20/2016
P.E.
SIGNATURE:

NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S. DAVIS

20-JUN-2016 11:23
Z:\rdy\Chatham\nc751@sr1733\psn\SS-4908AM_tsh.dgn
gsdavis AT D8CAD-270410

PROJECT REFERENCE NO.	SHEET NO.
SS–4908AM	2
R/W SHEET NO.	

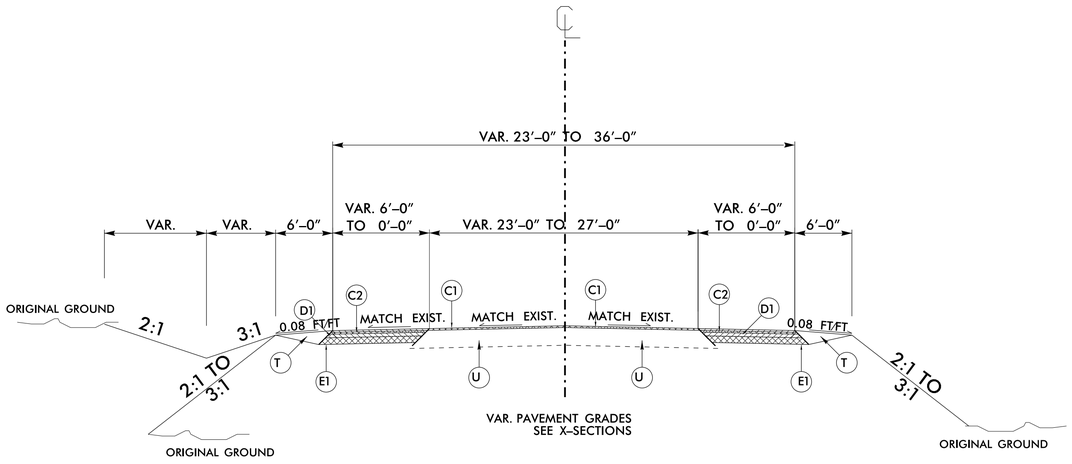
NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S. DAVIS

DocuSigned by: Greg S. Davis 33D47B5FD78F4AB

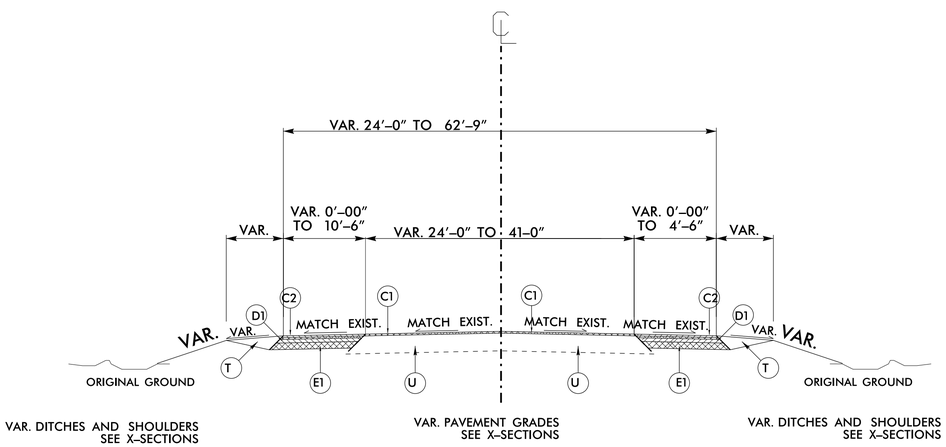
8/12/2015

DIVISION DESIGN / CONSTRUCT ENGINEER

TYPICAL SECTION NO. 1
–L– STA. 16+45 TO –L– STA. 27+89



TYPICAL SECTION NO. 2
–Y1– STA. 10+09 TO 11+71



PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1½″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. PER 1½″ DEPTH. TO BE PLACED IN TWO LAYERS.
D1	PROP. APPROX. 4″ ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 6½″ ASPHALT CONCRETE BASE COURSE, TYPE B25.B, AT AN AVERAGE RATE OF 741 LBS. PER SQ. YD. TO BE PLACED IN TWO LAYERS.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.

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

REVISIONS 8/17/99

12-AUG-2015 17:17
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dgnlib
default
ORCAD 27.0x10
gsdavis

COMPUTED BY: DDC DATE: 6/15/2015
CHECKED BY: GSD DATE: 6-17-2016

PROJECT NO.	SHEET NO.
SS-4908AM	3

D8CAD221432

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
-L- 16+60	-L-27+20	650	883	233	
-Y1- 10+60	-Y1- 11+00	1	22	21	
SUBTOTALS:		651	905	254	0
EST. 5% from Borrow Pit				13	
PROJECT TOTALS:		651		267	
GRAND TOTALS:		651		267	
SAY:		655		270	

Approximate quantities only. Unclassified excavation, borrow excavation, shoulder borrow, fine grading, clearing and grubbing, will be paid for at the lump sum price for "Grading".

RD10S01C

COMPUTED BY: DDC DATE: 6/29/2015

CHECKED BY: GSD DATE: 6/17/2016

PROJECT NO.	SHEET NO.
SS-4908AM	3-A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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

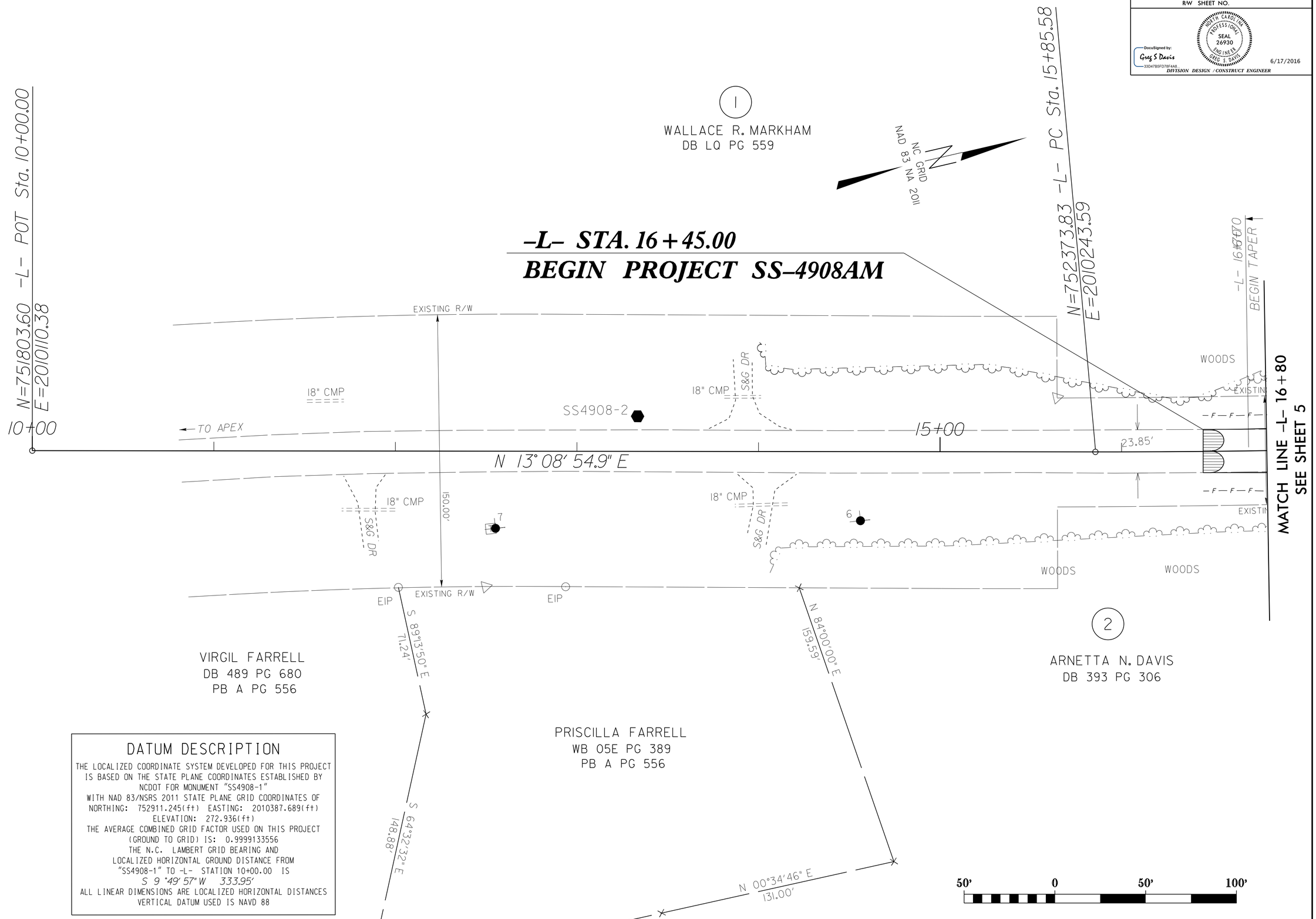
| STATION | LOCATION (LT, RT, OR CL)* | STRUCTURE NO. FROM | STRUCTURE NO. TO | TOP ELEVATION | INVERT ELEVATION | INVERT ELEVATION | SLOPE CRITICAL | CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE) SIZE 12" | 15" | 18" | 24" | 30" | 36" | 42" | 48" | BITUMINOUS COATED C.S. PIPE TYPE B (UNLESS NOTED OTHERWISE) SIZE 12" | 15" | 18" | 24" | 30" | 36" | 42" | 48" | 15" SIDE DRAIN PIPE | 18" SIDE DRAIN PIPE | 24" SIDE DRAIN PIPE | ENDWALLS STD. 838.01 OR STD. 838.11 (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 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND 2 GRATES STD. 840.16 | M.D.I. TYPE "A" STD. 840.17 OR 840.26 | M.D.I. TYPE "B" STD. 840.18 OR 840.27 | M.D.I. TYPE "D" STD. 840.19 OR 840.28 | M.D.I. FRAME WITH GRATE STD. 840.20 | M.D.I. FRAME WITH TWO GRATES STD. 840.22 | M.D.I. (N.S.) FRAME WITH GRATE STD. 840.24 | M.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24 | J.B. STD. 840.31 OR 840.32 | MANHOLE STD. 840.51 | M.H. STD. 840.51 OR 840.53 | M.H. FRAME AND COVER STD. 840.54 | CORR. STEEL ELBOWS NO. & SIZE | CONC. COLLARS CL. "B" C.Y. STD. 840.72 | CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71 | PIPE REMOVAL LIN. FT. | REMARKS |
|---|---|---

PROJECT REFERENCE NO.	SHEET NO.
SS-4908AM	4
R/W SHEET NO.	

DocuSigned by: Greg S Davis
33D47B5FD78F4A8...
NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S. DAVIS
6/17/2016
DIVISION DESIGN / CONSTRUCT ENGINEER

REVISIONS

6-17-16 ADDED SHADING TO WIDENING TO HIGHLIGHT WORK NEEDED FOR PROJECT



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "SS4908-1"
WITH NAD 83/NSRS 2011 STATE PLANE GRID COORDINATES OF
NORTHING: 752911.245(ft) EASTING: 2010387.689(ft)
ELEVATION: 272.936(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9999133556
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "SS4908-1" TO -L- STATION 10+00.00 IS
S 9 °49' 57" W 333.95'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

8/17/99

17-JUN-2016 15:49
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gsdavis AT DBCAD-270410

PROJECT REFERENCE NO.	SHEET NO.
SS-4908AM	5
R/W SHEET NO.	

NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S DAVIS

DocuSigned by: Greg S Davis 33D47B5FD78F4A8...

6/17/2016

DIVISION DESIGN / CONSTRUCT ENGINEER

REVISIONS

8/17/99

6-17-16 ADDED SHADING TO WIDENING TO HIGHLIGHT WORK NEEDED FOR PROJECT

-L- PT Sta. 17+92.90

-L- POT Sta. 20+97.66=
-Y1-POT Sta. 10+00.00

-L- PINC Sta. 21+31.60

NC GRID NAD 83 NA 2011

1
WALLACE R. MARKHAM
DB 394 PG 900

4
UNITED STATES OF AMERICA
DB 000 PG 000

SEE CROSS-SECTIONS -L- STA. 20+60 TO 21+00 FOR GRADING AROUND POWER POLE TO MINIMIZE DISTURBANCE.

S 89°47'47" W 394.28'

360.00' TAPER

125.00' STORAGE | 50.00' | 200.00'

-L- 18+09.94
65.04' LT TCE

-L- 18+09.94
30.04' LT TCE

501
REMOVE 2' PIPE
PLACE DI

-L- 20+17.91
64.52' LT TCE

-L- 20+24.82
29.50' LT
ROW\TCE

503

-L- 20+19.79
55.00' LT ROW

-L- 20+75.80
55.00' LT ROW

-L- 20+75.76
40.00' LT ROW

-L- 21+31.60
40.00' LT ROW

20+30 | 21+55 | 22+80 | 23+30

2 TN CLASS B RIPRAP
7 SY GEOTEXTILE

INV=273.82'

ABAND
IS F BUS

S&G DR

WOODS

ECMCM

ABAND U/G TANK

23.49'

NC 751

20+00

INV=271.45'

N 11° 16' 57.1" E

24' PAVED ROADWAY N 10° 57' 30.3" E

MATCH LINE -L- 16+80
SEE SHEET 4

MATCH LINE -L- 23+80
SEE SHEET 6

504 INV=269.66'

505

506

REMOVE

REMOVE

116' 15" RCP-III

56' 15" RCP-III

INV=272.54'

-L- 18+08.72
29.96' RT PDE

EXIST DITCH

-L- 19+30.00
41.00' RT TCE\PDE

-L- 17+10.00
29.76' RT TCE

-L- 17+10.00
40.00' RT TCE

-L- 17+90.00
29.90' RT PDE

-L- 17+90.00
45.00' RT TCE\PDE

-L- 18+08.72
43.86' RT TCE\PDE

CLEAN OUT DITCH AND END OF PIPE TO RESTORE DRAINAGE

INV=270.26'

3 TN CLASS B RIPRAP
10 SY GEOTEXTILE

-Y1- 10+90.00
50.00' RT TCE

-Y1- 10+90.00
31.06' RT TCE

CLEAN OUT END OF PIPE TO RESTORE DRAINAGE

CLEAN OUT END OF PIPE TO RESTORE DRAINAGE

16' 18" RCP-III
3 TN CLASS B RIPRAP
10 SY GEOTEXTILE

3
ELSIE NUNN
DB 393 PG 313

S 62°33'19" E 436.19'

PI Sta 16+89.25
△ = 2° 11' 24.6" (LT)
D = 1° 03' 23.1"
L = 207.32'
T = 103.67'
R = 5,423.56'

-Y1- PI Sta. 11+65.80

S 87° 58' 55.5" E

GRASS

NEW HOPE CHURCH ROAD (SR 1733)

2' PAVED ROADWAY

TV FO

SOIL

-Y1- 11+51.75
39.95' LT TCE

-Y1- 11+51.75
29.95' LT TCE

METAL SIGN

CONC

CANOPY

U/G GAS TANKS
- 8,000 GAL
- 6,000 GAL
- 4,000 GAL

IS BK BUS

-L- 21+74.86
40.63' RT TCE

DO NOT DISTURB GAS TANK OR VENTS

-Y1- 10+79.13
38.78' LT TCE

-L- 23+40.00
40.11' RT TCE

-L- 23+40
50.11' RT TC

5
ROGER CRAIG FARRELL
DB 524 PG 205
PB 88 PG 95

50' 0 50' 100'

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psdavis
ATRACAD 270410

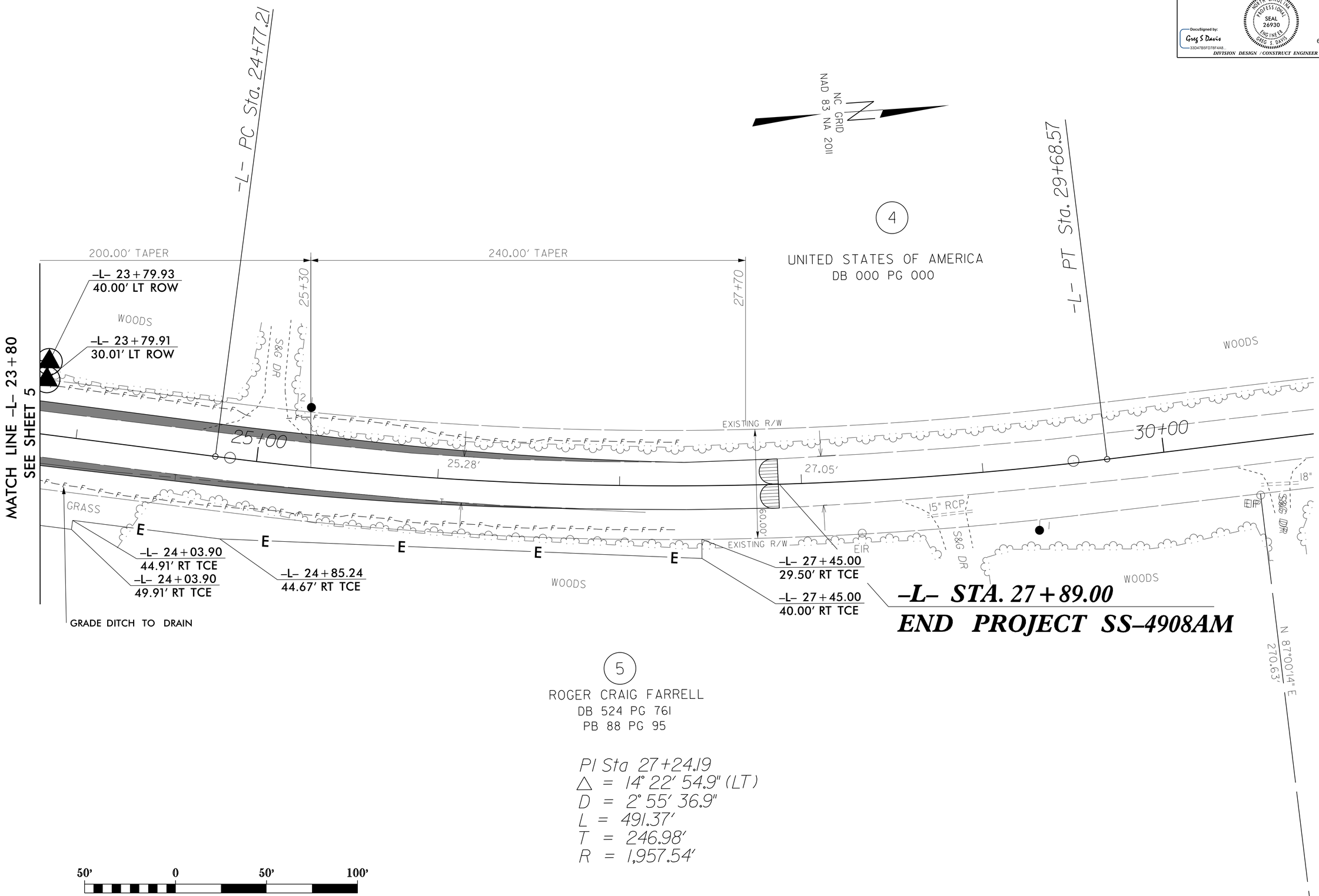
PROJECT REFERENCE NO.	SHEET NO.
SS-4908AM	6
R/W SHEET NO.	

DocuSigned by: Greg S Davis
33D47B5FD78F4A8...
NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S. DAVIS
6/17/2016
DIVISION DESIGN / CONSTRUCT ENGINEER

REVISIONS

6-16-16 ADDED SHADING TO WIDENING TO HIGHLIGHT WORK NEEDED FOR PROJECT

8/17/99



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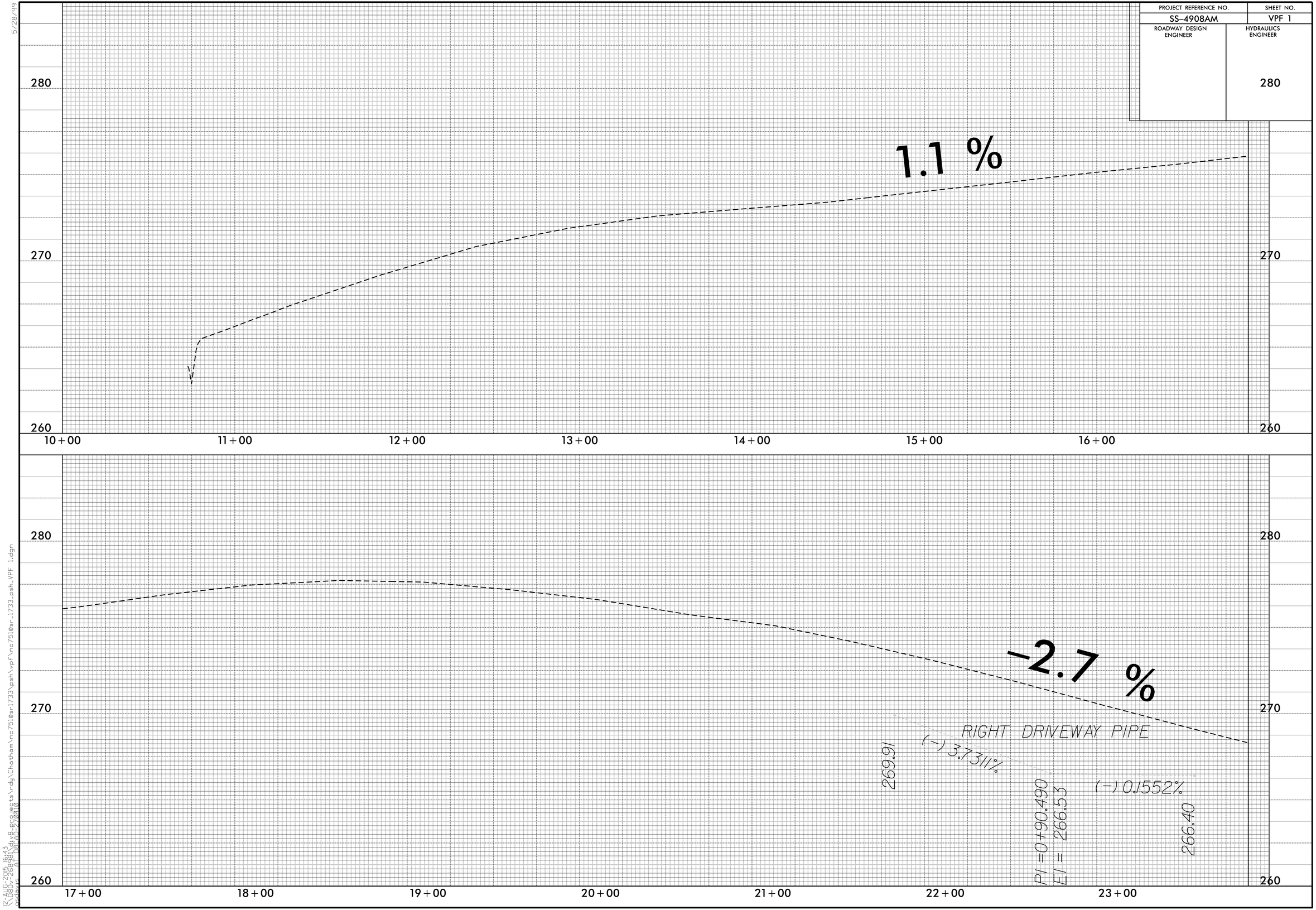
gsdavis AT DBCAD-270410

PROJECT REFERENCE NO.	SHEET NO.
SS-4908AM	VPF 1
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



5/28/99

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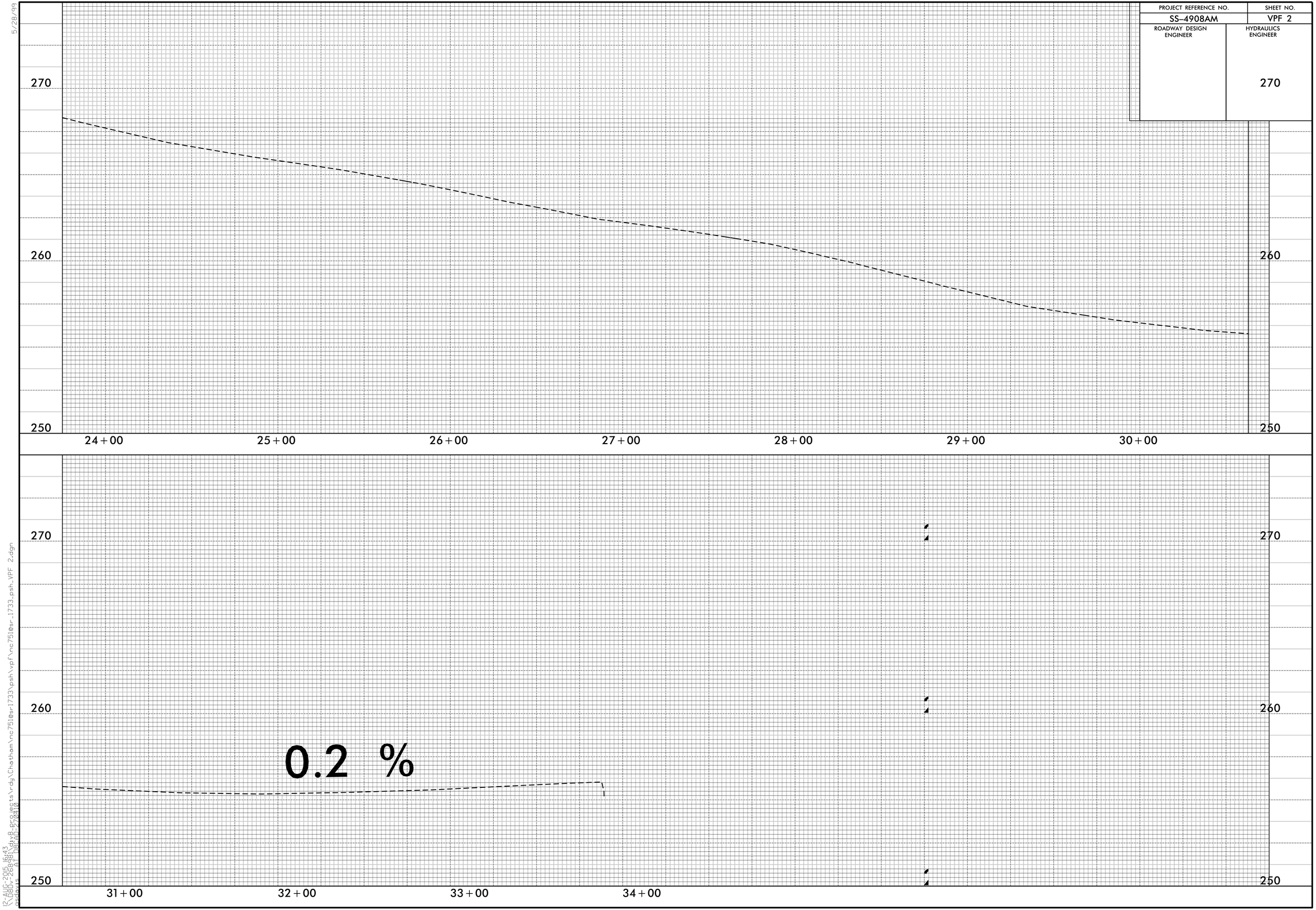
osdavis AT DBCAD-270410

PROJECT REFERENCE NO.	SHEET NO.
SS-4908AM	VPF 2
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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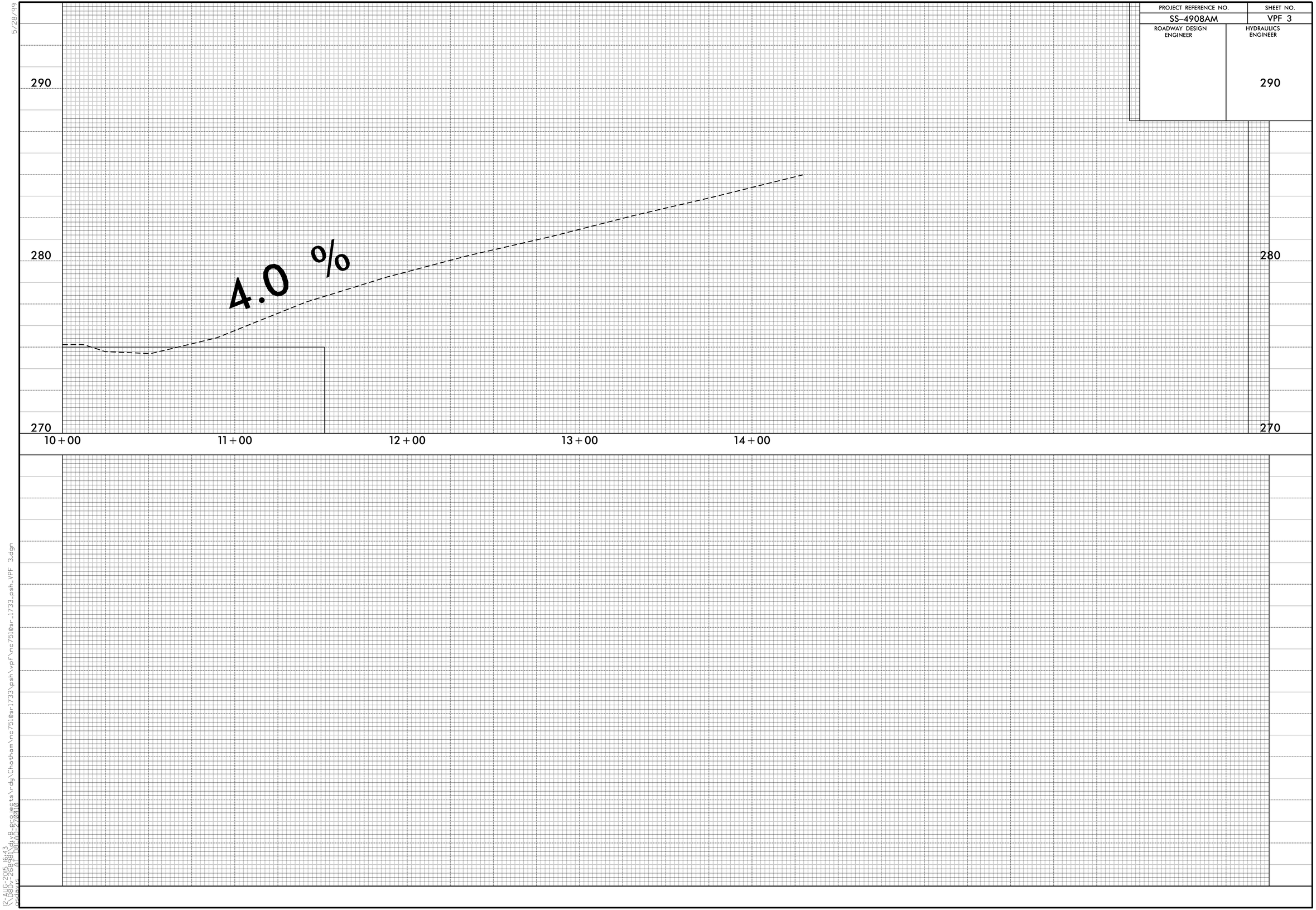
osdavis AT DBCAD-270410

PROJECT REFERENCE NO.	SHEET NO.
SS-4908AM	VPF 3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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osdavis AT DBCAD-270410

PROJECT REFERENCE NO.	SHEET NO.
SS-4908AM	PM-1
R/W SHEET NO.	

NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S DAVIS

DocuSigned by: Greg S Davis 33D47B5FD78F4A8...

6/17/2016

DIVISION DESIGN / CONSTRUCT ENGINEER

PAVEMENT MARKING LINES

T8 - THERMOPLASTIC (4"	WHITE,	120 MILS)	2' X 6' SP MINISKIP
TA - THERMOPLASTIC (4"	WHITE,	90 MILS)	EDGE LINE
TD - THERMOPLASTIC (4"	WHITE,	120 MILS)	3' X 9' SP MINISKIP
TE - THERMOPLASTIC (4"	WHITE,	120 MILS)	SOLID LANE LINE
TI - THERMOPLASTIC (4"	YELLOW,	120 MILS)	DOUBLE CENTERLINE
TP - THERMOPLASTIC (12"	YELLOW,	90 MILS)	DIAGONAL

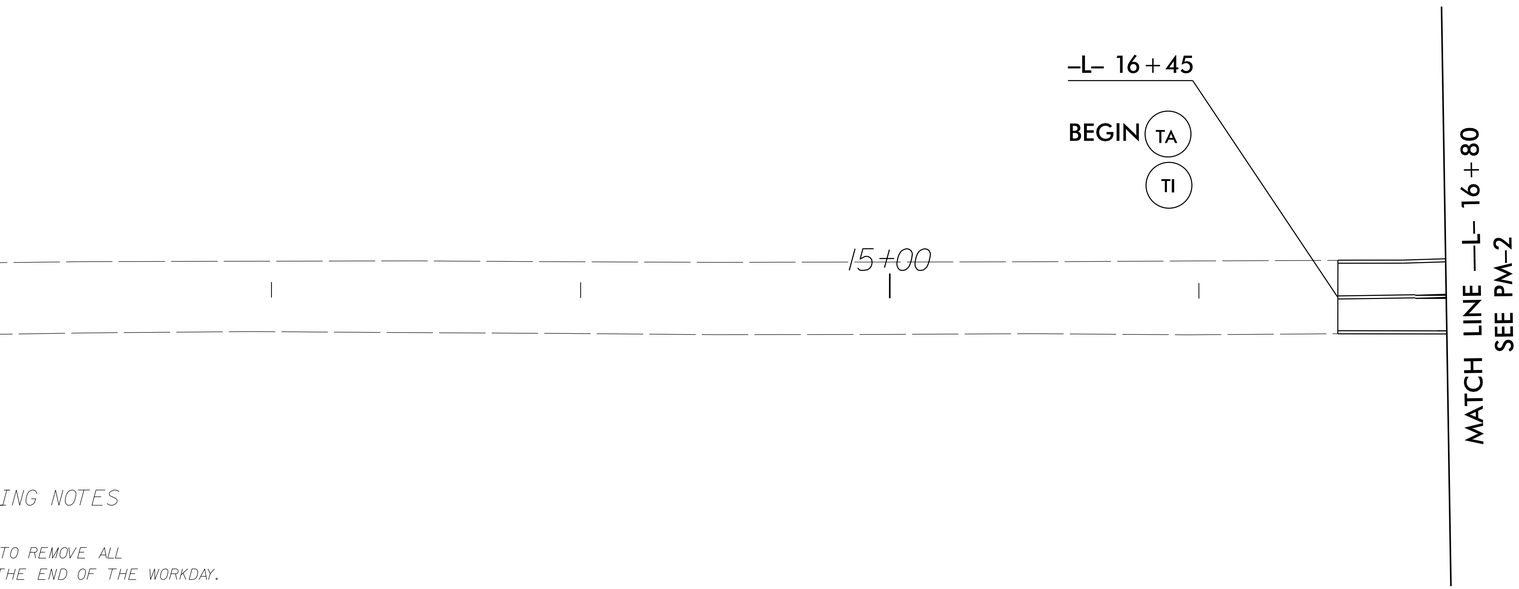
PAVEMENT MARKING SYMBOLS

UA - THERMOPLASTIC	(LEFT TURN ARROW, 90 MILS)
UC - THERMOPLASTIC	(STRAIGHT ARROW, 90 MILS)

NAD 83 NC GRID NA 2011

PAVEMENT MARKING LEGEND

- ---CRYSTAL / RED PAVEMENT MARKER
- ---YELLOW / YELLOW PAVEMENT MARKER
- ---CRYSTAL / CRYSTAL PAVEMENT MARKER



SPECIAL PAVEMENT MARKING NOTES

THE CONTRACTOR SHALL BE REQUIRED TO REMOVE ALL CONFLICTING PAVEMENT MARKINGS BY THE END OF THE WORKDAY.

THE CONTRACTOR SHALL INSTALL ALL PAVEMENT LINES AND SYMBOLS AS REQUIRED (SEE ROADWAY STANDARD DRAWINGS 1205.01 THRU 1205.12.

THE CONTRACTOR SHALL BE REQUIRED TO REPLACE ANY PAVEMENT MARKINGS, WHICH HAVE BEEN OBLITERATED BY CONSTRUCTION PROCEDURES, BY THE END OF THE WORKDAY.

THE CONTRACTOR SHALL BE REQUIRED TO COVER ALL CONFLICTING STATIONARY CONSTRUCTION SIGNING WHEN A LANE CLOSURE UTILIZING PORTABLE CONSTRUCTION SIGNS IS IN EFFECT. THE CONTRACTOR SHALL NOT HAVE AN OVERLAP IN THE SEQUENCE OF CONSTRUCTION SIGNING.

THE CONTRACTOR SHALL PLACE ALL FINAL PAVEMENT MARKING LINES AND SYMBOLS (THERMOPLASTIC ALKYD-MALEIC) USING THE EXTRUSION METHOD.

CHANGES TO PAVEMENT MARKINGS MAY AND SHALL BE MADE AT THE DIRECTION OF THE ENGINEER.

SPECIAL PAVEMENT MARKER NOTES

PAVEMENT MARKERS SHOULD NOT BE PLACED CLOSER THAN 2 INCHES TO A PAVEMENT CONSTRUCTION JOINT (AS FEASIBLE), EXCEPT WHEN PLACED BETWEEN DOUBLE YELLOW CENTER LINES, AND ALONG YELLOW SKIP LINES AND TWO-LANE, TWO-WAY ROADWAYS WHERE PASSING IS ALLOWED IN BOTH DIRECTIONS.

PAVEMENT MARKERS SHALL NOT BE PLACED DIRECTLY ON PAVEMENT MARKING LINES.

PAVEMENT MARKERS USED IN CONJUNCTION WITH DOUBLE YELLOW CENTER LINES SHALL BE PLACED MID-WAY BETWEEN THE LINES, PROVIDED WITH A GAP BETWEEN THE LINES AND THE MARKER TO REDUCE OVERSPRAYING THE MARKER DURING THE REPAINTING OPERATIONS.

MARKERS ARE NOT REQUIRED ALONG MINI-SKIP LINES IN TAPERS.

CHANGES TO PAVEMENT MARKERS MAY AND SHALL BE MADE AT THE DIRECTION OF THE ENGINEER.

REVISIONS

6-17-16 CHANGED YELLOW DIAGONALS TO 12"

8/17/99

17-JUN-2016 15:49
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dgnlib: AT D8CAD-278410
psheets:

PROJECT REFERENCE NO.	SHEET NO.
SS-4908AM	PM-2
R/W SHEET NO.	

NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S DAVIS

DocuSigned by: Greg S Davis 33D47B5FD78F4A8...

6/17/2016

DIVISION DESIGN / CONSTRUCT ENGINEER

PAVEMENT MARKING LINES

T8 - THERMOPLASTIC (4"	WHITE,	120 MILS)	2' X 6' SP MINISKIP
TA - THERMOPLASTIC (4"	WHITE,	90 MILS)	EDGE LINE
TD - THERMOPLASTIC (4"	WHITE,	120 MILS)	3' X 9' SP MINISKIP
TE - THERMOPLASTIC (4"	WHITE,	120 MILS)	SOLID LANE LINE
TI - THERMOPLASTIC (4"	YELLOW,	120 MILS)	DOUBLE CENTERLINE
TU - THERMOPLASTIC (12"	YELLOW,	90 MILS)	DIAGONAL

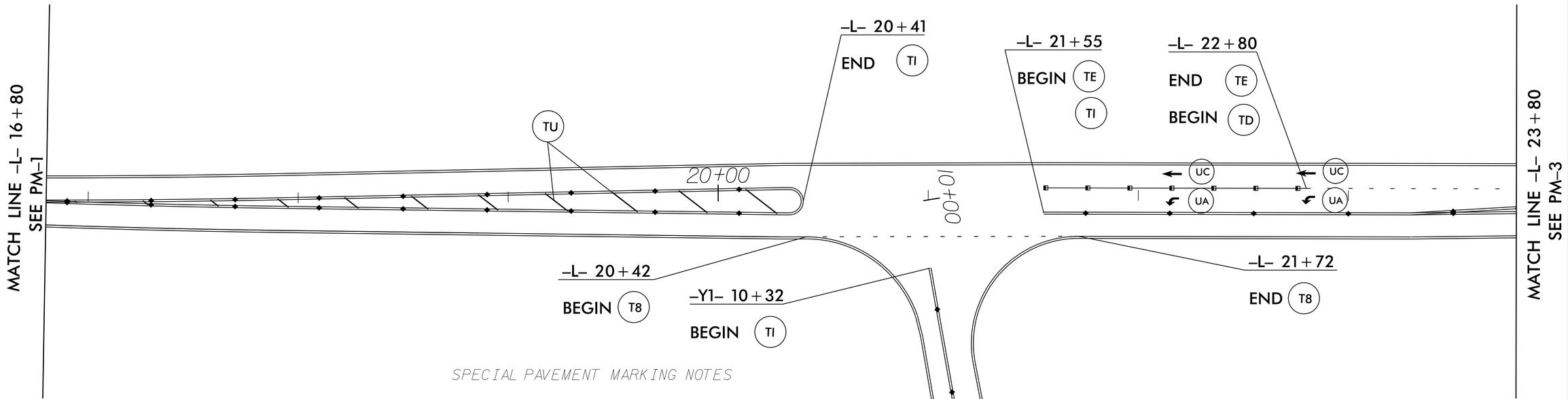
PAVEMENT MARKING SYMBOLS

UA - THERMOPLASTIC		(LEFT TURN ARROW, 90 MILS)
UC - THERMOPLASTIC		(STRAIGHT ARROW, 90 MILS)

NC GRID NAD 83 NA 2011

PAVEMENT MARKING LEGEND

- ---CRYSTAL / RED PAVEMENT MARKER
- ---YELLOW / YELLOW PAVEMENT MARKER
- ---CRYSTAL / CRYSTAL PAVEMENT MARKER



SPECIAL PAVEMENT MARKING NOTES

THE CONTRACTOR SHALL BE REQUIRED TO REMOVE ALL CONFLICTING PAVEMENT MARKINGS BY THE END OF THE WORKDAY.

THE CONTRACTOR SHALL INSTALL ALL PAVEMENT LINES AND SYMBOLS AS REQUIRED (SEE ROADWAY STANDARD DRAWINGS 1205.01 THRU 1205.12.

THE CONTRACTOR SHALL BE REQUIRED TO REPLACE ANY PAVEMENT MARKINGS, WHICH HAVE BEEN OBLITERATED BY CONSTRUCTION PROCEDURES, BY THE END OF THE WORKDAY.

THE CONTRACTOR SHALL BE REQUIRED TO COVER ALL CONFLICTING STATIONARY CONSTRUCTION SIGNING WHEN A LANE CLOSURE UTILIZING PORTABLE CONSTRUCTION SIGNS IS IN EFFECT. THE CONTRACTOR SHALL NOT HAVE AN OVERLAP IN THE SEQUENCE OF CONSTRUCTION SIGNING.

THE CONTRACTOR SHALL PLACE ALL FINAL PAVEMENT MARKING LINES AND SYMBOLS (THERMOPLASTIC ALKYD-MALEIC) USING THE EXTRUSION METHOD.
CHANGES TO PAVEMENT MARKINGS MAY AND SHALL BE MADE AT THE DIRECTION OF THE ENGINEER.

SPECIAL PAVEMENT MARKER NOTES

PAVEMENT MARKERS SHOULD NOT BE PLACED CLOSER THAN 2 INCHES TO A PAVEMENT CONSTRUCTION JOINT (AS FEASIBLE), EXCEPT WHEN PLACED BETWEEN DOUBLE YELLOW CENTER LINES, AND ALONG YELLOW SKIP LINES AND TWO-LANE, TWO-WAY ROADWAYS WHERE PASSING IS ALLOWED IN BOTH DIRECTIONS.

PAVEMENT MARKERS SHALL NOT BE PLACED DIRECTLY ON PAVEMENT MARKING LINES.

PAVEMENT MARKERS USED IN CONJUNCTION WITH DOUBLE YELLOW CENTER LINES SHALL BE PLACED MID-WAY BETWEEN THE LINES, PROVIDED WITH A GAP BETWEEN THE LINES AND THE MARKER TO REDUCE OVERSPRAYING THE MARKER DURING THE REPAINTING OPERATIONS.

MARKERS ARE NOT REQUIRED ALONG MINI-SKIP LINES IN TAPERS.
CHANGES TO PAVEMENT MARKERS MAY AND SHALL BE MADE AT THE DIRECTION OF THE ENGINEER.

REVISIONS

6-17-16 CHANGED YELLOW DIAGONALS TO 12"

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
SS-4908AM	PM-3
R/W SHEET NO.	

NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S DAVIS

DocuSigned by: Greg S Davis 33D47B5FD78F4A8...

6/17/2016

DIVISION DESIGN / CONSTRUCT ENGINEER

PAVEMENT MARKING LEGEND

- ---CRYSTAL / RED PAVEMENT MARKER
- ---YELLOW / YELLOW PAVEMENT MARKER
- ---CRYSTAL / CRYSTAL PAVEMENT MARKER

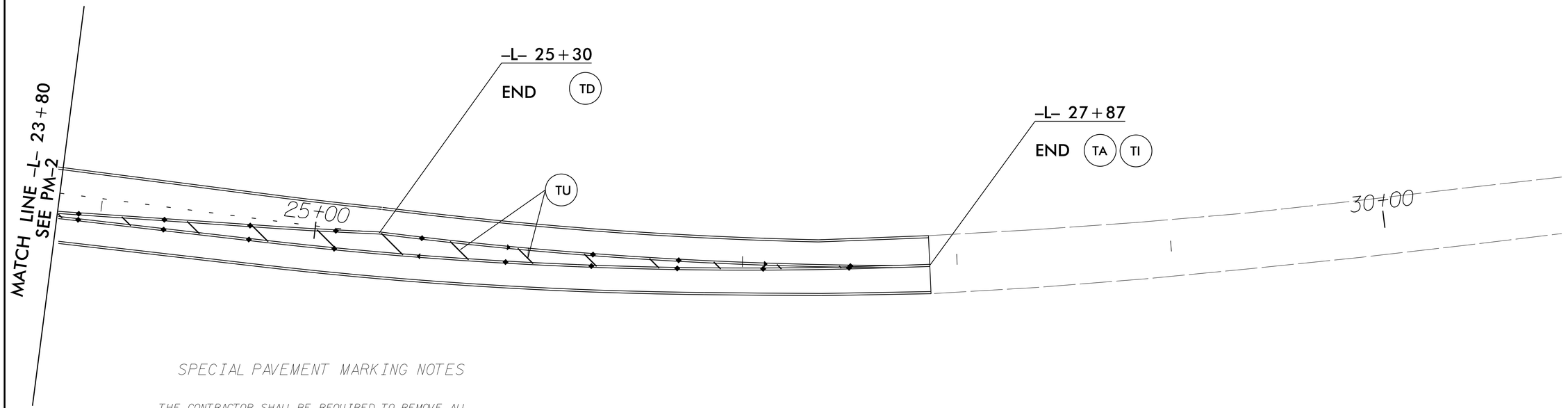
PAVEMENT MARKING LINES

T8 - THERMOPLASTIC	(4"	WHITE,	120 MILS) 2' X 6' SP MINISKIP
TA - THERMOPLASTIC	(4"	WHITE,	90 MILS) EDGE LINE
TD - THERMOPLASTIC	(4"	WHITE,	120 MILS) 3' X 9' SP MINISKIP
TE - THERMOPLASTIC	(4"	WHITE,	120 MILS) SOLID LANE LINE
TI - THERMOPLASTIC	(4"	YELLOW,	120 MILS) DOUBLE CENTERLINE
TU - THERMOPLASTIC	(12"	YELLOW,	90 MILS) DIAGONAL

PAVEMENT MARKING SYMBOLS

UA - THERMOPLASTIC (LEFT TURN ARROW, 90 MILS)
UC - THERMOPLASTIC (STRAIGHT ARROW, 90 MILS)

NC GRID NAD 83 NA 2011



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REVISIONS

6-17-16 CHANGED YELLOW DIAGONALS TO 12"

8/17/99

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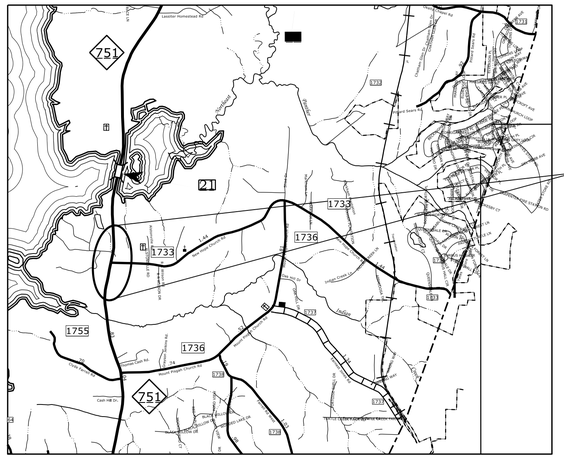
09/08/99

TIP PROJECT: SS–4908AM

CONTRACT:

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



VICINITY MAP

PROJECT LOCATION

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

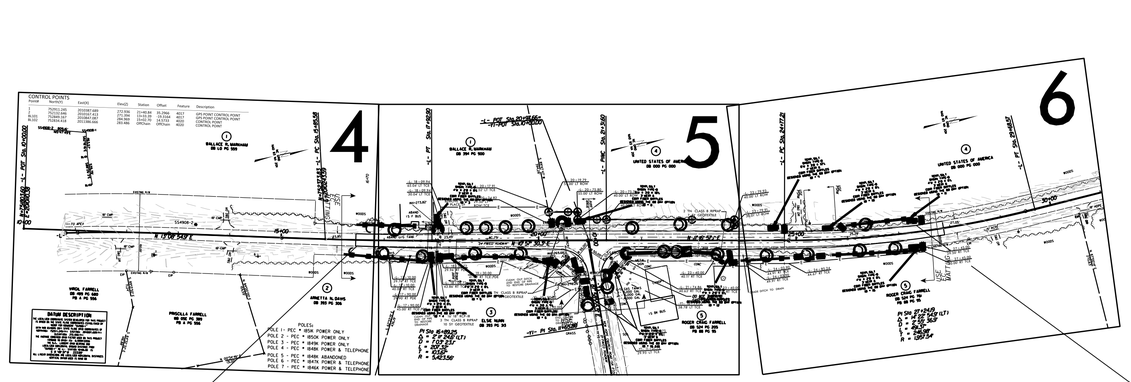
CHATHAM COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	SS–4908AM	EC-1	

WBS ELEMENT	F.A. PROJ. NO.	DESCRIPTION
44195.1.FR1		PE
44195.2.1		R/W
44195.3.FR1		CONST

LOCATION: *NC 751 AT SR 1733 (NEW HOPE CHURCH RD)*

TYPE OF WORK: *GRADING, DRAINAGE, PAVING, PAVEMENT MARKINGS & MARKERS, AND EROSION CONTROL*



–L– STA. 16+45.00
BEGIN PROJECT SS–4908AM

–L– STA. 27+89
END PROJECT SS–4908AM

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
	Streambank Reforestation	
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	
1630.01	Riser Basin	
1630.02	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
1633.02	Temporary Rock Silt Check Type-B	
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	
1636.01	Rock Silt Screen	
1630.04	Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A OR A
1632.02	Type B	B OR B
1632.03	Type C	C OR C
	Wattle	

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION ·

Prepared By:
Greg S.Davis,PE
Level III A #3088
December 31,2017

PROJECT CONTACTS:
Jeff Loflin,,PE
Design & Construct Engineer Greg S.Davis,PE
Resident Engineer Gary Phillips

PROJECT LENGTH
0.22 mi.

Prepared in the Office of:
DIVISION EIGHT
DIVISION DESIGN & CONSTRUCT UNIT
902 N Sandhills Blvd.
PO Box 1067
Aberdeen, 28315

2012 STANDARD SPECIFICATIONS

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 17, 2012 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

1605.01	Temporary Silt Fence	1632.01	Rock Inlet Sediment Trap Type A
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1622.01	Temporary Berms and Slope Drains	1633.01	Temporary Rock Silt Check Type A
1630.01	Riser Basin	1633.02	Temporary Rock Silt Check Type B
1630.02	Silt Basin Type B	1634.01	Temporary Rock Sediment Dam Type A
1630.03	Temporary Silt Ditch	1634.02	Temporary Rock Sediment Dam Type B
1630.04	Stilling Basin	1635.01	Rock Pipe Inlet Sediment Trap Type A
1630.05	Temporary Diversion	1636.01	Rock Silt Screen

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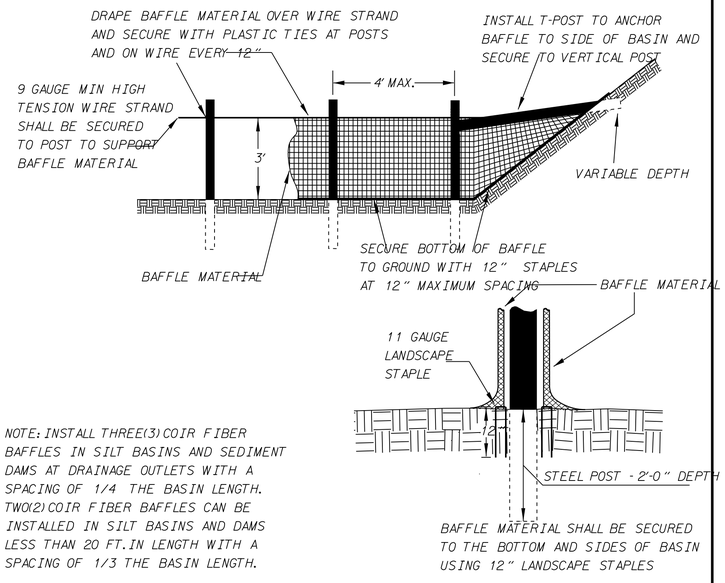
COIR FIBER BAFFLE DETAIL



NOTE: INSTALL THREE(3) COIR FIBER BAFFLES IN SILT BASINS AND SEDIMENT DAMS AT DRAINAGE OUTLETS WITH A SPACING OF 1/4 THE BASIN LENGTH. 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.

EROSION CONTROL DETAILS AND SPECIFICATIONS

STD. #	DESCRIPTION	SYMBOL
1630.03	TEMPORARY SILT DITCH	TSD
1630.05	TEMPORARY DIVERSION	TD
1605.01	TEMPORARY SILT FENCE	
1622.01	GUIDE FOR TEMPORARY BERMS & SLOPE DRAINS	
1630.01	Riser Basin	
1630.02	SILT BASIN TYPE-B	
1633.01	TEMPORARY ROCK SILT CHECK TYPE-A	
	Wattle	
1633.02	TEMPORARY ROCK SILT CHECK TYPE-B	
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	
1636.01	ROCK SILT SCREEN	
1630.04	STILLING BASIN FOR PUMPED EFFLUENT	
	ROCK INLET SEDIMENT PROTECTION	
1632.01	TRAP TYPE-A	A OR A
1632.02	TRAP TYPE-B	B OR B
1632.03	TRAP TYPE-C	C OR C

NARRATIVE

1. SOIL TYPE: X CLAY SAND _____

2. IS THE PROJECT LOCATED IN A HIGH QUALITY WATER ZONE?
YES X NO

3. ARE THERE ANY WETLANDS ADJOINING THIS PROJECT?
YES X NO

SITE DESCRIPTION

This project is located on NC 751 501 on the north of US 64 near Jordan LaKe. The area surrounding this project primarily consists of wooded areas, commercial development, and agricultural fields.
The drainage consists of roadway ditches that lead to existing ditches.

PROJECT DESCRIPTION

The project will consist of clearing, grubbing, draining, setting up the base and paving. The major land disturbing activites will consist of clearing and grading within the right of way. Temporary and permanent erosion control measures will be installed.

MAINTENANCE SCHEDULE

1. INSPECT WEEKLY AND AFTER EACH RAINFALL, USE THE DEPARTMENT OF TRANSPORTATION'S EROSION CONTROL INSPECTION REPORT.

2. MAINTAIN EROSION CONTROL DEVICES AS FOLLOWS:

A. SILT DITCH - REMOVE SEDIMENT FROM THE FLOW AREA AND REPAIR THE DIVERSION RIDGE - CAREFULLY CHECK OUTLETS AND MAKE TIMELY REPAIRS AS NEEDED.

B. SILT FENCE - REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE - AVOID UNDERMINING THE FENCE.

C. SLOPE DRAINS - INSPECT THE SLOPE DRAINS AND SUPPORTING DIVERSIONS.

D. SEDIMENT BASIN - REMOVE SEDIMENT AND RESTORE THE BASIN TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT ACCUMULATES TO ONE-HALF THE DESIGN DEPTH - CHECK THE EMBANKMENT, SPILLWAYS, AND OUTLET FOR EROSION DAMAGE, AND INSPECT THE EMBANKMENT FOR PIPING AND SETTLEMENT - REMOVE ALL TRASH AND OTHER DEBRIS FROM THE RISER AND POOL AREA.

E. CHECK DAM - REMOVE SETTLEMENT ACCUMULATED BEHIND THE DAMS AS NEEDED TO PREVENT DAMAGE TO CHANNEL VEGETATION - ADD STONE TO DAMS AS NEEDED TO MAINTAIN DESIGN HEIGHT AND CROSS SECTION.

F. ROCK DAM - REMOVE SEDIMENT AND RESTORE ORIGINAL VOLUME WHEN SEDIMENT ACCUMULATES TO ONE-HALF THE DESIGN VOLUME - CHECK THE STRUCTURE FOR EROSION, PIPING, AND ROCK DISPLACEMENT AFTER EACH SIGNIFICANT RAINSTORM AND REPAIR IMMEDIATELY.

G. DROP INLET PROTECTION (TYPE C) - REMOVE SEDIMENT FROM THE POOL AREAS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN.

H. SEDIMENT TRAP - REMOVE SEDIMENT AND RESTORE THE TRAP TO ITS ORIGINAL DIMENSIONS WHEN SETTLEMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH OF THE TRAP - CHECK THE STRUCTURE FOR DAMAGE FROM EROSION OR PIPING TO ENSURE IT IS A MINIMUM OF 1.5 FT. BELOW THE LOW POINT OF THE EMBANKMENT.

NOTE: SEDIMENT SHOULD BE PLACED IN DESIGNATED DISPOSAL AREAS AND NOT ALLOWED TO FLOW INTO STREAMS OR DRAINAGE WAYS DURING STRUCTURE REMOVAL.
NOTE: ALL SEDIMENT TRAPS/BASINS SHALL HAVE COIR FIBER BAFFLES. BASINS/TRAPS OVER 10 FT IN LENGTH SHALL HAVE TWO ROWS.
NOTE: NO PAM TO USED WITH THE LAST BMT (WATTLE) AT OUTLET OF THE PROJECT

GENERAL CONSIDERATIONS

1. THE LAW REQUIRES INSTALLATION AND MAINTENANCE OF SUFFICIENT EROSION CONTROL PRACTICES TO RETAIN SEDIMENT WITHIN THE BOUNDARIES OF THE SITE. IT ALSO REQUIRES THAT SURFACES BE NON EROSIVE AND STABLE WITHIN 14 DAYS CALENDAR DAYS AFTER THE COMPLETION OF ANY PHASE OF GRADING.

2. FIT THE DEVELOPMENT TO THE SITE - FOLLOW THE NATURAL CONTOURS AS MUCH AS POSSIBLE. PRESERVE AND USE NATURAL DRAINAGE SYSTEMS.

3. LIMIT CLEARING AND GRUBBING - CLEARLY DEFINE WORK LIMIT LINES. GRADE TO MINIMIZE CUT-AND-FILL SLOPES, PRESERVE NATURAL BUFFER AREAS, AND LIMIT THE TIME THAT BARE SOIL IS EXPOSED.

4. PROTECT THE SOIL SURFACE - LIMIT THE EXTENT OF DISTURBANCE AND STABILIZE THE SOIL SURFACE IMMEDIATELLY. ONCE THE SURFACE HAS BEEN DISTURBED, IT IS SUBJECT TO ACCELERATED EROSION AND SHOULD BE PROTECTED WITH APPROPRIATE COVER, SUCH AS MULCH OR VEGETATION IN AN EXPEDIENT MANNER.

5. SEDIMENT BASINS AND TRAPS - SELECT SITES AND INSTALL SEDIMENT BASINS AND TRAPS BEFORE OTHER CONSTRUCTION ACTIVITIES ARE STARTED. ALSO CONSIDER LOCATIONS FOR DIVERSIONS, OPEN CHANNELS, AND STORM DRAINS AT THIS TIME SO THAT ALL SEDIMENT-LADEN TO RUN OFF CAN BE DIRECTED TO AN IMPOUNDMENT STRUCTURE BEFORE LEAVING THE CONSTRUCTION SITE. INSTALL ALL MEASURES AND RELEASE POINTS PRIOR TO CLEARING AND GRUBBING.

6. ONCE AN AREA IS DISTURBED, IT IS SUBJECT TO ACCELERATED EROSION. EROSION CONSTROL CAN BE ACHIEVED BY:

- LIMITING THE SIZE OF THE CLEARING AND TIME OF EXPOSURE BY PROPER SCHEDULING,
- REDUCING THE AMOUNT OF RUNOFF OVER THE DISTURBED SURFACE,
- LIMITING GRADES AND LENGTHS OF SLOPES, AND
- RE-ESTABLISHING PROTECTIVE COVER IMMEDIATELY AFTER LAND DUSTURBING ACTIVITIES ARE COMPLETED OR WHEN CONSTRUCTION ACTIVITES ARE DELAYED FOR THIRTY (30) OR MORE WORKING DAYS

7. STABILIZE CONSTRUCTION ACCESS AREAS, CONSTRUCTION ROADS, AND PARKING AREA DURING INITIAL ACTIVITIES. TRY TO KEEP ROAD GRADES TO A MINIMUM GENERALLY NEVER EXCEEDING 12%.

8. CLEAR BORROW AND WASTE DISPOSAL AREAS AS NEEDED AND PROTECT THEM FROM SURFACE RUNOFF. SLOPE ALL AREAS TO PROVIDE POSITIVE DRAINAGE, AND STABILIZE BARE SOIL SURFACES WITH PERMANENT VEGETATION OR MULCH AS SOON AS FINAL GRADES ARE PREPARED. DIRECT ALL RUNOFF THAT CONTAINS SEDIMENT TO A SEDIMENT-TRAPPING DEVICE. IN LARGE BORROW AND DISPOSAL SITES, SHAPE AND DEEPEN THE LOWER END TO FORM AN IN-PLACE SEDIMENT TRAP.

9. ONLY SEDIMENT-FREE RUNOFF MAY BE DISCHARGED FROM CONSTRUCTION SITES DIRECTLY INTO STREAMS. ENSURE THAT ALL OTHER FLOWS ENTER FROM DESILTING POOLS FORMED BY SEDIMENT TRAPS OR BARRIERS.

10. AREAS ADJOINING STREAMS SHOULD BE LEFT UNDISTURBED AS BUFFERS. WHERE NATURAL BUFFERS ARE NOT AVAILABLE, PROVIDE ARTIFICIAL BUFFERS. WHERE WORK IS REQUIRED ALONG A STREAM, PROVIDE MECHANICAL OR ARTIFICIAL BUFFER (25 FEET MINIMUM REQUIRED).

11. BEFORE MOVING TO NEXT JOB SITE, REVIEW ALL MEASURES FOR EFFECTIVENESS; MAKE ANY ADJUSTMENTS, CLEAR-OUTS, OR REPAIR; CALL ROADSIDE ENVIRONMENTAL DEPARTMENT FOR INSTALLATION OF A DITCH LINER AND SEEDING AND MULCHING OF ALL DISTURBED AREAS.

12. CONTINUE TO CHECK AND MAINTAIN ALL MEASURES AFTER EACH SIGNIFICANT RAINFALL UNTIL ALL DISTURBED AREAS BECOME STABILIZED.

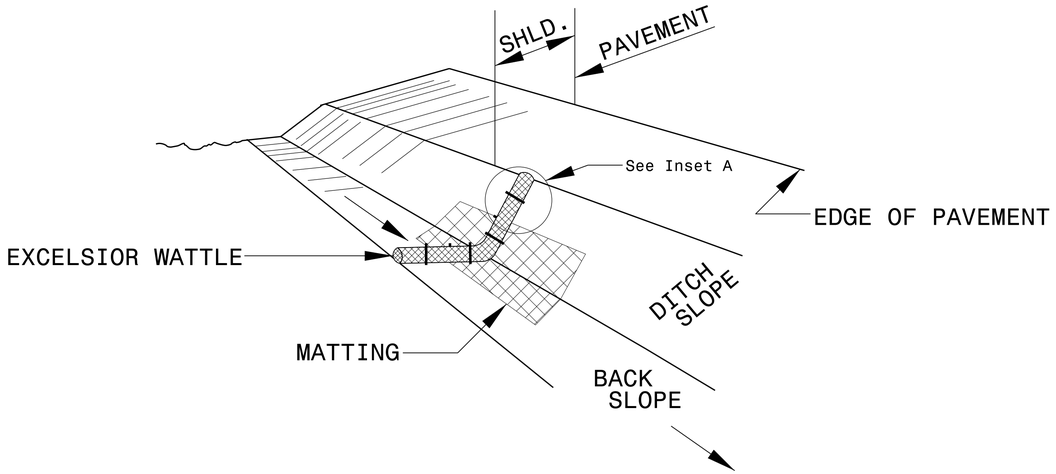
13. FILL IN ALL SILT BASINS AND SILT DITCHES, REMOVE ALL SILT FENCES AND SLOPE DRAINS, REDISTRIBUTE ALL STONE FROM SILT CHECKS, SEDIMENT DAMS, AND SILT SCREENS. SEED AND MULCH DISTURBED AREAS.

NOTE: The erosion control measures have be designed to provide a minimum of 43% of the storage calculated using the RUSLE2 analysis. These sections of disturbed area must then be permanently stabilized within 60 days from the time grading begins.

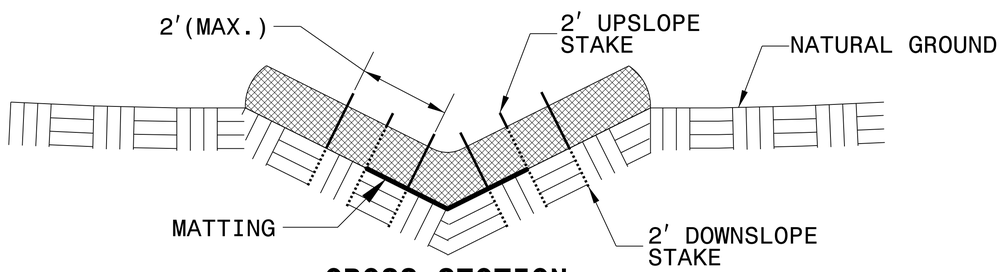
NOTE:
The erosion control measures have been designed to provide storage calculated using the RUSLE2 analysis. In areas where space will not allow full size basins, 3,600 cubicfoot per acre of disturbed area has been used to calculate the storage at these outlet points. The devices designed using these calculations have been noted, and basins have been drawn to scale.

TIP PROJECT	SHEET NO.
SS-4908AM	EC-2A

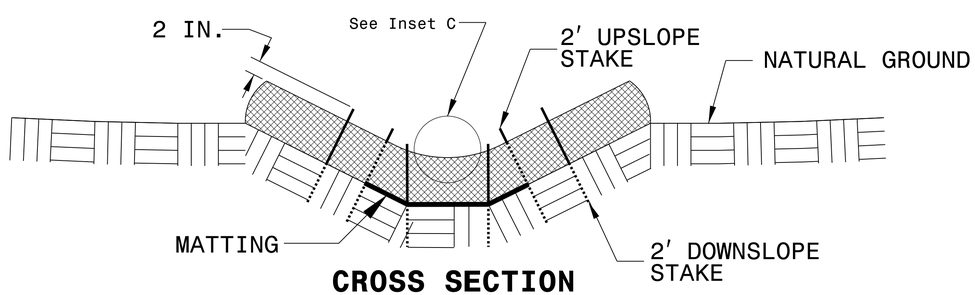
WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



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.

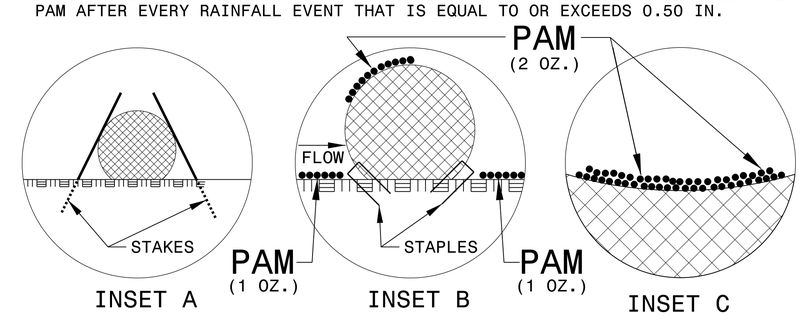
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

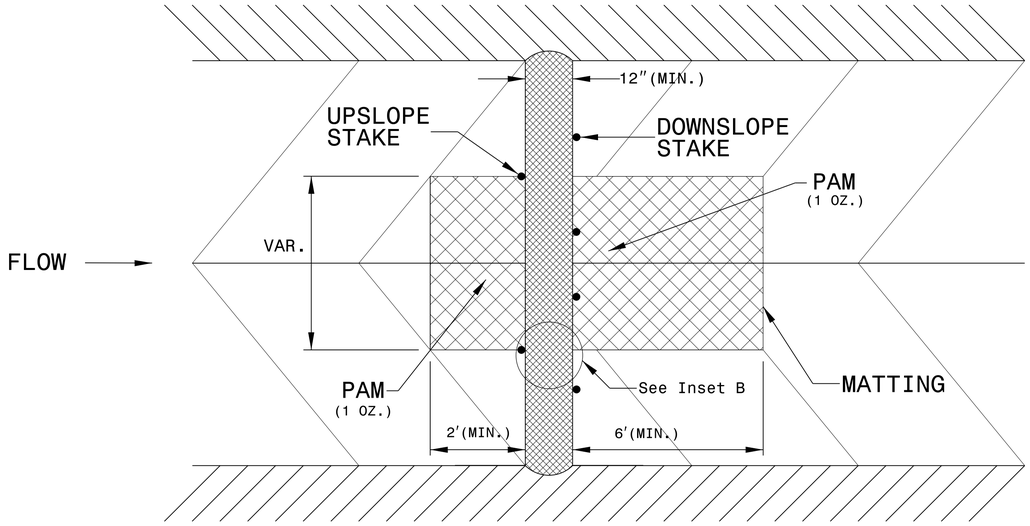
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

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

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gsdavis AT D8CAD-270410

PROJECT REFERENCE NO.	SHEET NO.
SS-4908AM	EC-3

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.

PROJECT REFERENCE NO.	SHEET NO.
SS-4908AM	EC-3A

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

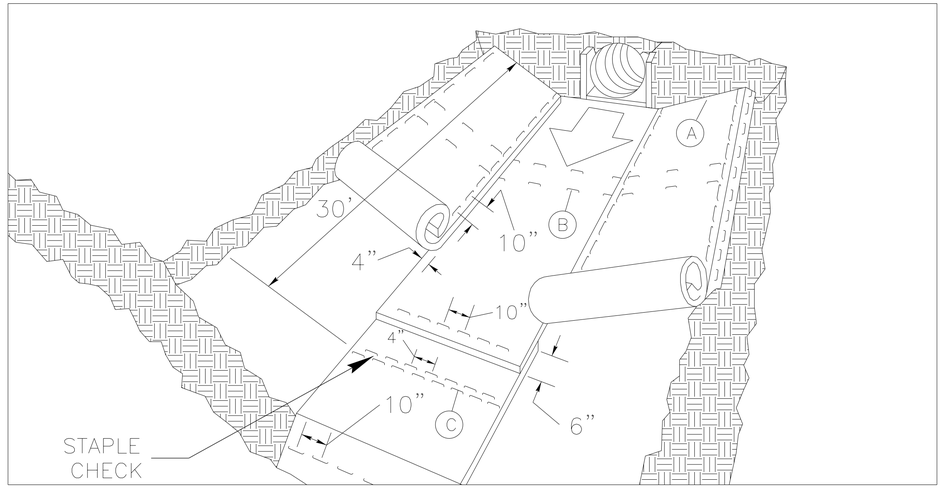
CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
5	-L-	16+60	24+80	LT	290
5	-L-	26+00	27+40	LT	55
5	-L-	16+60	17+80	RT	45
5-6	-L-	18+40	27+40	RT	305
				SUBTOTAL	695
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					300
				TOTAL	995
				SAY	1000

PERMANENT SOIL REINFORCEMENT MAT

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
6	-L-	25+20	25+80	LT	35
5	-L-	18+05	18+40	RT	15
5	-Y1-	10+40	11+20	LT	40
5	-Y1-	10+40	11+20	RT	40
			SUBTOTAL		130
	ADDITIONAL PSRM TO BE INSTALLED				
				TOTAL	130
				SAY	130

PROJECT REFERENCE NO.	SHEET NO.
SS–4908AM	EC–3B
RW SHEET NO.	

MATTING INSTALLATION DETAIL



MATTING IN DITCHES

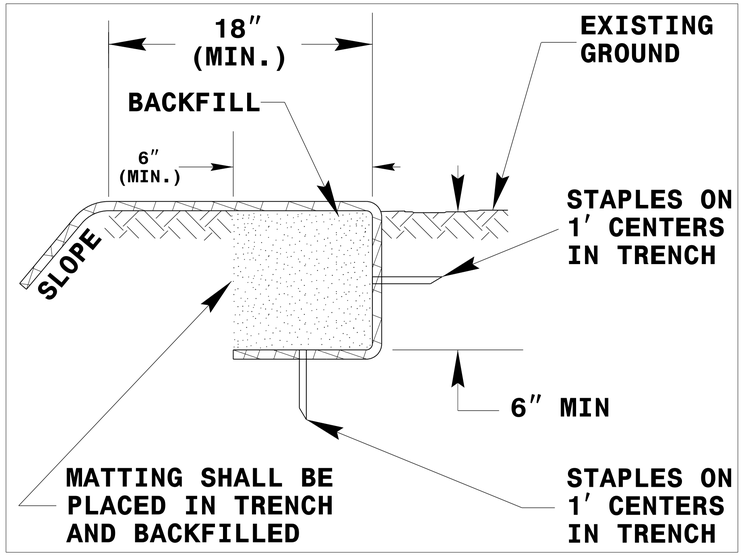
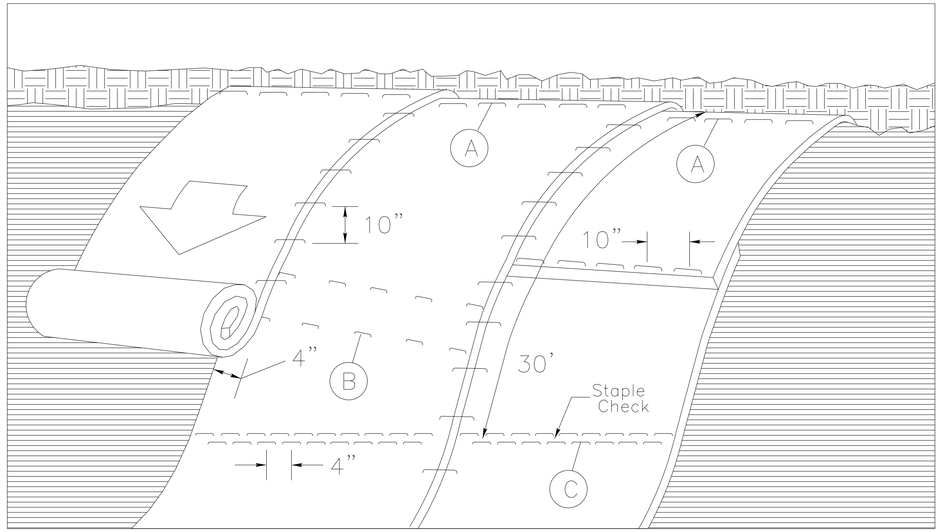


DIAGRAM (A)



MATTING ON SLOPES

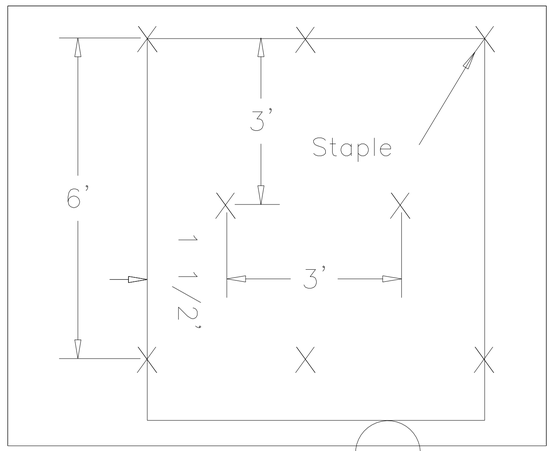


DIAGRAM (B)

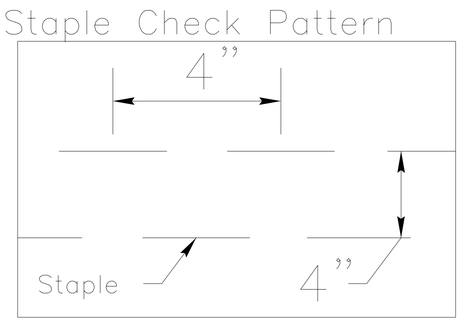


DIAGRAM (C)

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

PROJECT REFERENCE NO.	SHEET NO.
SS-4908AM	EC-4
R/W SHEET NO.	

8/17/99

REVISIONS

N=751803.60 -L- POT Sta. 10+00.00
E=2010110.38

10+00

WALLACE R. MARKHAM
DB LQ PG 559

NC GRID
NAD 83
NA 2011

N=752373.83 -L- PC Sta. 15+85.58
E=2010243.59

USE EXISTING

EXISTING R/W

18" CMP

SS4908-2

TO APEX

S&G DR

18" CMP

15+00

WOODS

23.85'

N 13° 08' 54.9" E

150.00'

18" CMP

S&G DR

18" CMP

S&G DR

7

6

WOODS

WOODS

EIP

EXISTING R/W

EIP

S 89°13'50" E
71.24'

N 84°00'00" E
159.59'

2

VIRGIL FARRELL
DB 489 PG 680
PB A PG 556

ARNETTA N. DAVIS
DB 393 PG 306

PRISCILLA FARRELL
WB 05E PG 389
PB A PG 556

S 64°32'32" E
148.88'

N 00°34'46" E
131.00'

50' 0 50' 100'

MATCH LINE -L- 16+80
SEE EC-5

12-AUG-2015 16:44
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psdavis
ATRIAD 210410

PROJECT REFERENCE NO.	SHEET NO.
SS-4908AM	EC-5
RW SHEET NO.	

REVISIONS

8/17/18

MATCH LINE -L- 16+80
SEE EC-4

MATCH LINE -L- 23+80
SEE EC-6

-L- PT Sta. 17+92.90

-L- POT Sta. 20+97.66=
-Y1-POT Sta. 10+00.00

-L- PINC Sta. 21+31.60

1
WALLACE R. MARKHAM
DB 394 PG 900

4
UNITED STATES OF AMERICA
DB 000 PG 000

NC GRID
NAD 83 NA 2011

S 89°47'47" W
394.28'

TEMP. SILT
BASIN TYPE-B
4'W X 2'D X 8'L
3' WEIR &
COIR FIBER BAFFLES
DESIGNED USING THE 60 DAY OPTION
ID # 3

TEMP. SILT
BASIN TYPE-B
5'W X 3'D X 10'L
3' WEIR &
COIR FIBER BAFFLES
DESIGNED USING THE 60 DAY OPTION
ID # 8

INV=273.82'

ABAND
IS F BUS

ABAND U/G TANK

S&G DR

WOODS

ECM

INV=271.45'

break point

20+00

10+00

NC 751

24' PAVED ROADWAY

N 10° 57' 30.3" E

N 11° 16' 57.1" E

23.49'

18" RCP

TV FO

INV=269.66'

INV=270.26'

116' 15" RCP-III

66' 15" RCP-III

BST

METAL SIGN

CONC

CANOPY

U/G GAS TANKS
- 8,000 GAL
- 6,000 GAL
- 4,000 GAL

IS BK BUS

DO NOT SMOKE
GAS STATION

TEMP. SILT
BASIN TYPE-B
4'W X 2'D X 8'L
3' WEIR &
COIR FIBER BAFFLES
DESIGNED USING THE 60 DAY OF
ID # 12

TEMP. SILT
BASIN TYPE-B
4'W X 2'D X 8'L
3' WEIR &
COIR FIBER BAFFLES
DESIGNED USING THE 60 DAY OPTION
ID # 5

TEMP. SILT
BASIN TYPE-B
4'W X 2'D X 8'L
3' WEIR &
COIR FIBER BAFFLES
DESIGNED USING THE 60 DAY OPTION
ID # 4

TEMP. SILT
BASIN TYPE-B
4'W X 3'D X 9'L
3' WEIR &
COIR FIBER BAFFLES
DESIGNED USING THE 60 DAY OPTION
ID # 6

TEMP. SILT
BASIN TYPE-B
4'W X 2'D X 8'L
3' WEIR &
COIR FIBER BAFFLES
DESIGNED USING THE 60 DAY OPTION
ID # 16 &18

3
ELSIE NUNN
DB 393 PG 313

5
ROGER CRAIG FARRELL
DB 524 PG 205
PB 88 PG 95

S 62°33'19" E
436.19'

S 87° 58' 55.5" E

USE
RCBW

-Y1- PI Sta. 11+65.80

NEW HOPE CHURCH ROAD (SR 1733)

2' PAVED ROADWAY

GRASS

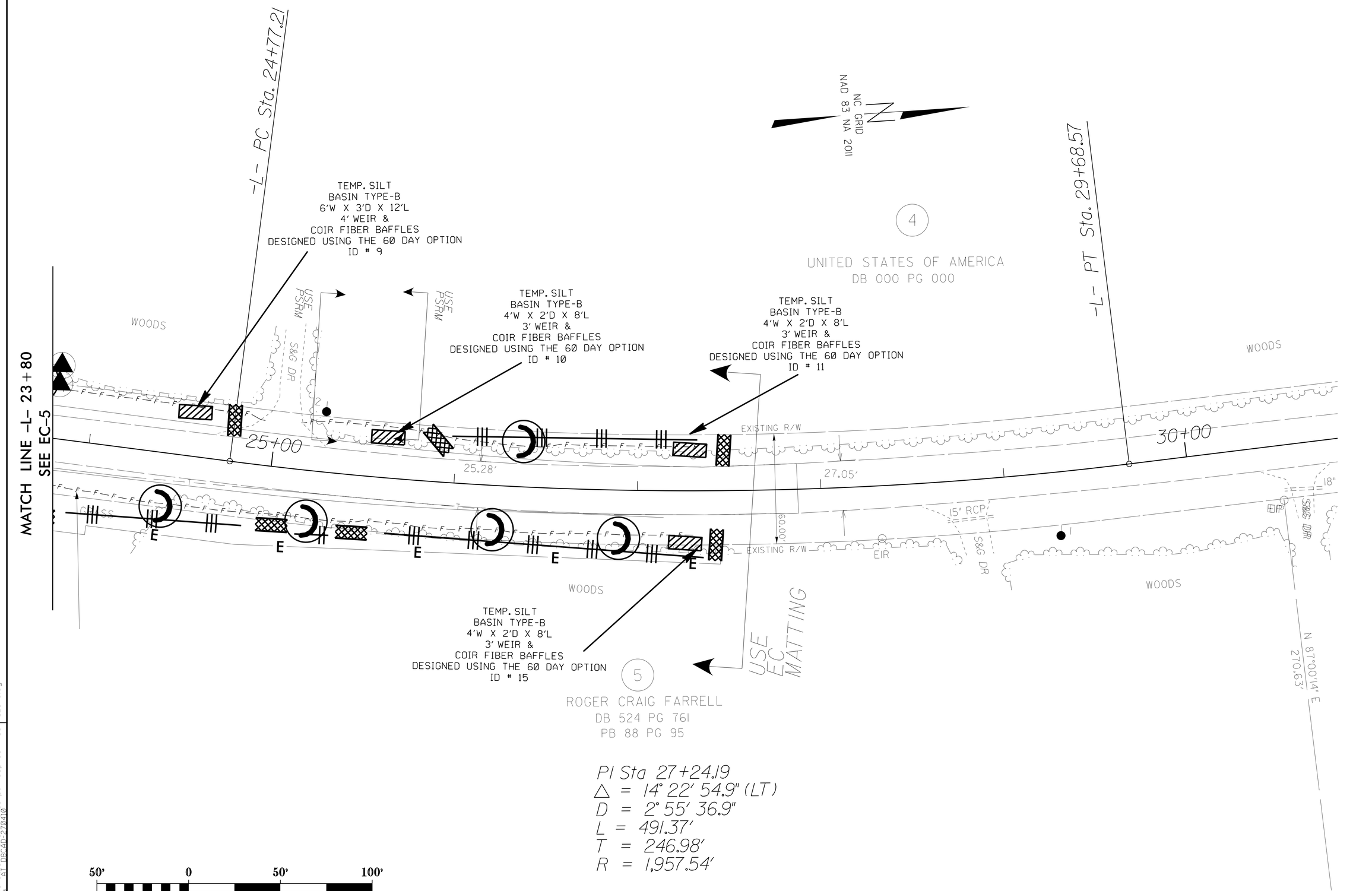
SOIL

PI Sta 16+89.25
△ = 2° 11' 24.6" (LT)
D = 1° 03' 23.1"
L = 207.32'
T = 103.67'
R = 5,423.56'

50' 0 50' 100'

12-AUG-2015 16:44
S:\Projects\nc751\ps=1733\psh\ecp\SS-4908AM_EC 5.dgn
ddavis
ATRAD 270410

PROJECT REFERENCE NO.	SHEET NO.
SS-4908AM	EC-6
R/W SHEET NO.	



REVISIONS

8/17/99

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asdavis AT DBCAD-270410

PROJ. REFERENCE NO.	SHEET NO.
SS-4908AM	X-A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CROSS-SECTION SUMMARY

NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT

Station -L-	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
16+60.00	0	0
16+80.00	1	9
17+00.00	2	8
17+20.00	2	7
17+40.00	3	6
17+60.00	3	7
17+80.00	3	7
18+00.00	4	10
18+03.50	1	3
18+20.00	6	13
18+40.00	6	11
18+60.00	14	13
18+80.00	23	16
19+00.00	27	17
19+20.00	29	17
19+40.00	30	16
19+60.00	30	17
19+80.00	32	18
20+00.00	36	19
20+20.00	39	20
20+40.00	42	20
20+50.24	56	12
20+60.00	49	10
20+80.00	17	10
21+00.00	13	5
21+20.00	13	4
21+25.32	2	1
21+40.00	5	3
21+60.00	6	7
21+80.00	6	12
22+00.00	8	9
22+20.00	10	4
22+40.00	9	10
22+60.00	8	17
22+80.00	9	20
22+87.25	3	8
23+00.00	6	9
23+20.00	10	10
23+40.00	9	12
23+60.00	7	17
23+80.00	6	19
24+00.00	5	19
24+20.00	4	22
24+40.00	4	23
24+60.00	4	22
24+80.00	5	20
25+00.00	6	16
25+20.00	6	14
25+40.00	5	17
25+60.00	4	20
25+80.00	4	20
26+00.00	4	18
26+20.00	4	15

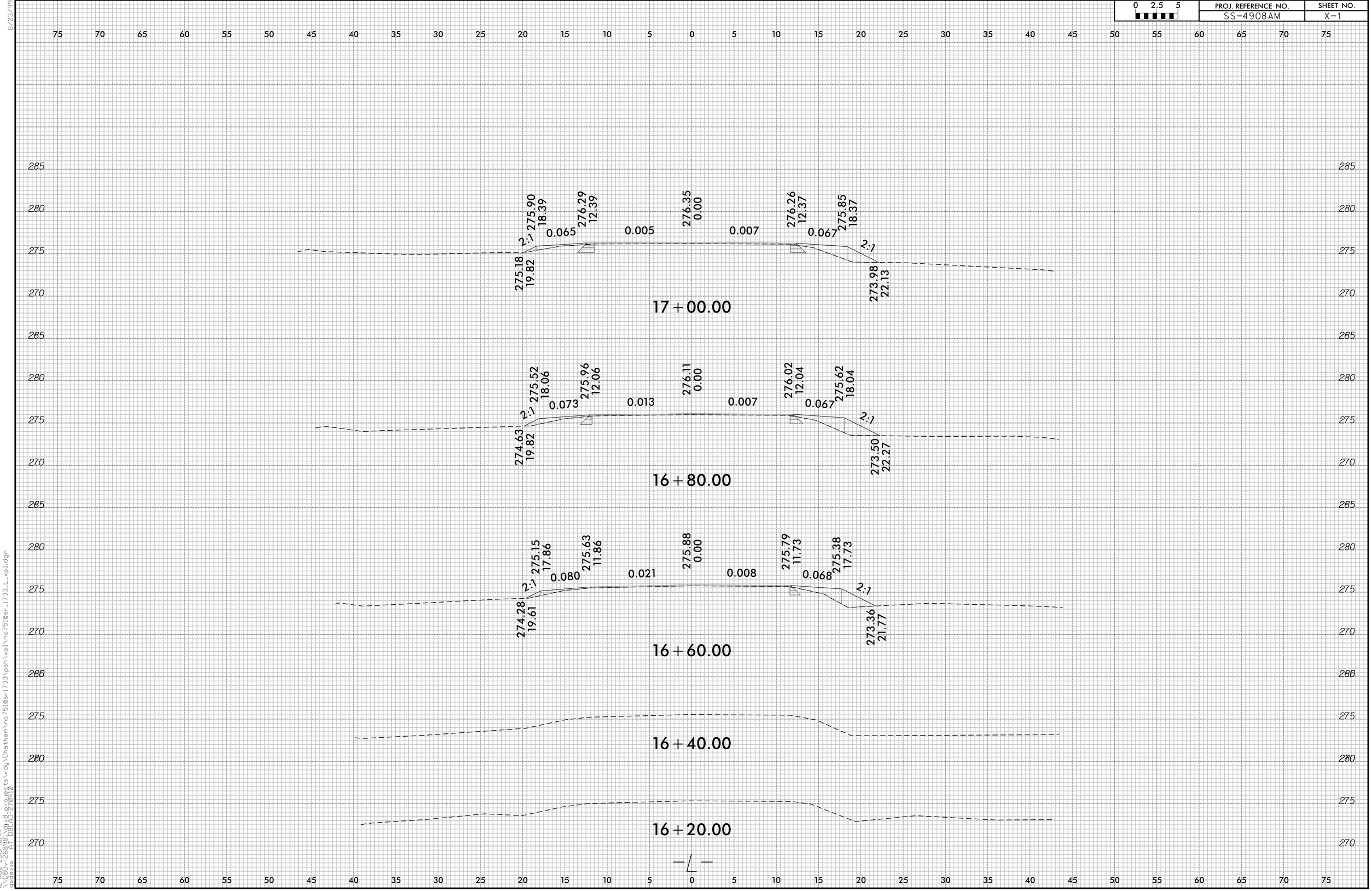
Station -L-	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
26+40.00	3	13
26+60.00	3	13
26+80.00	2	12
27+00.00	1	11
27+20.00	1	11

Station -Y1-	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
10+40.00	0	0
10+60.00	1	10
10+69.31	0	5
10+80.00	0	3
11+00.00	0	0

Approximate quantities only. Unclassified excavation, borrow excavation, shoulder borrow, fine grading, clearing and grubbing, will be paid for at the lump sum price for "Grading".

NOTE:
Shoulder Material included in Embankment quantities listed

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	SS-4908AM	X-1



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gsdavis
AT DBCAD 270410

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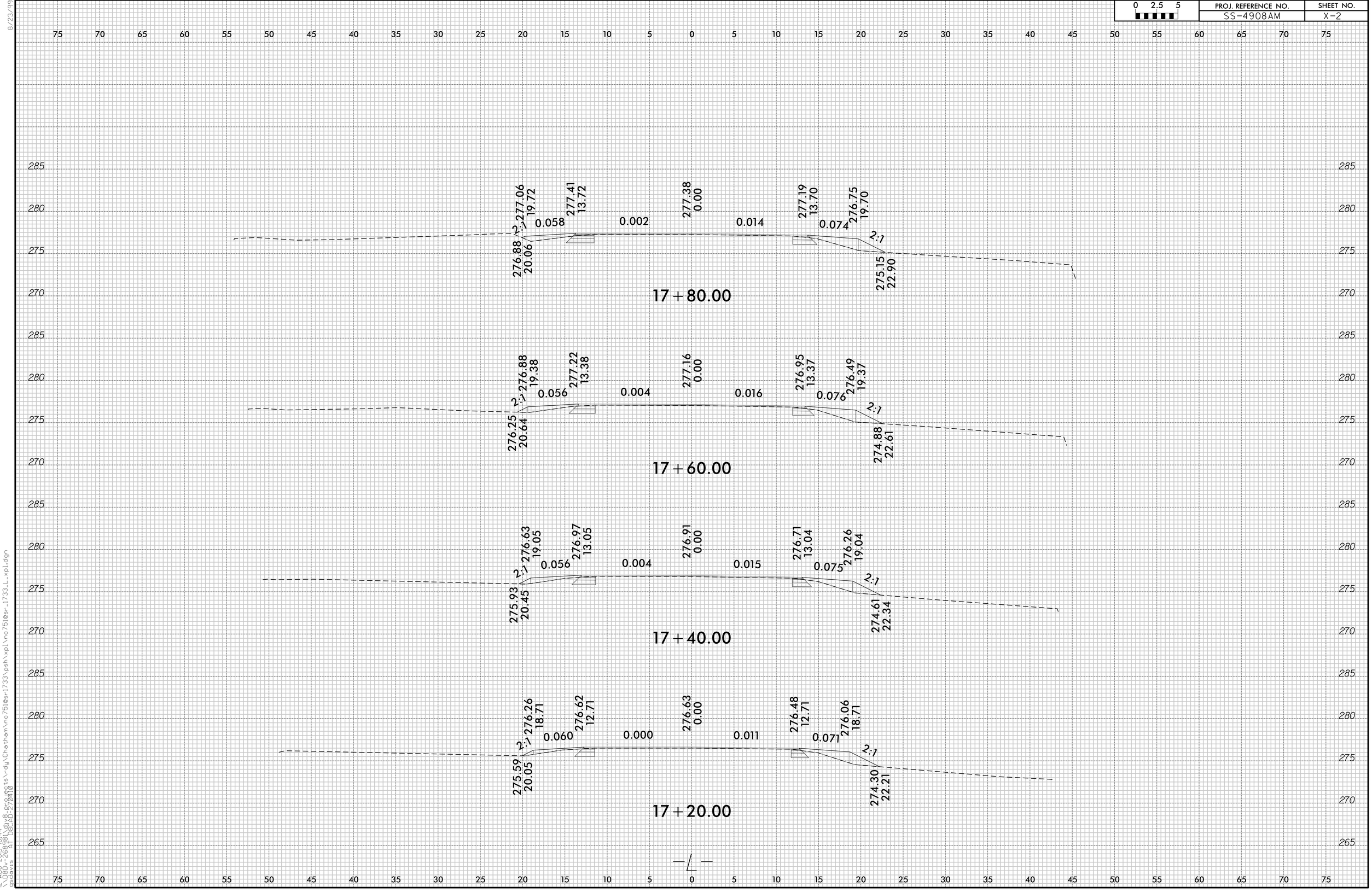

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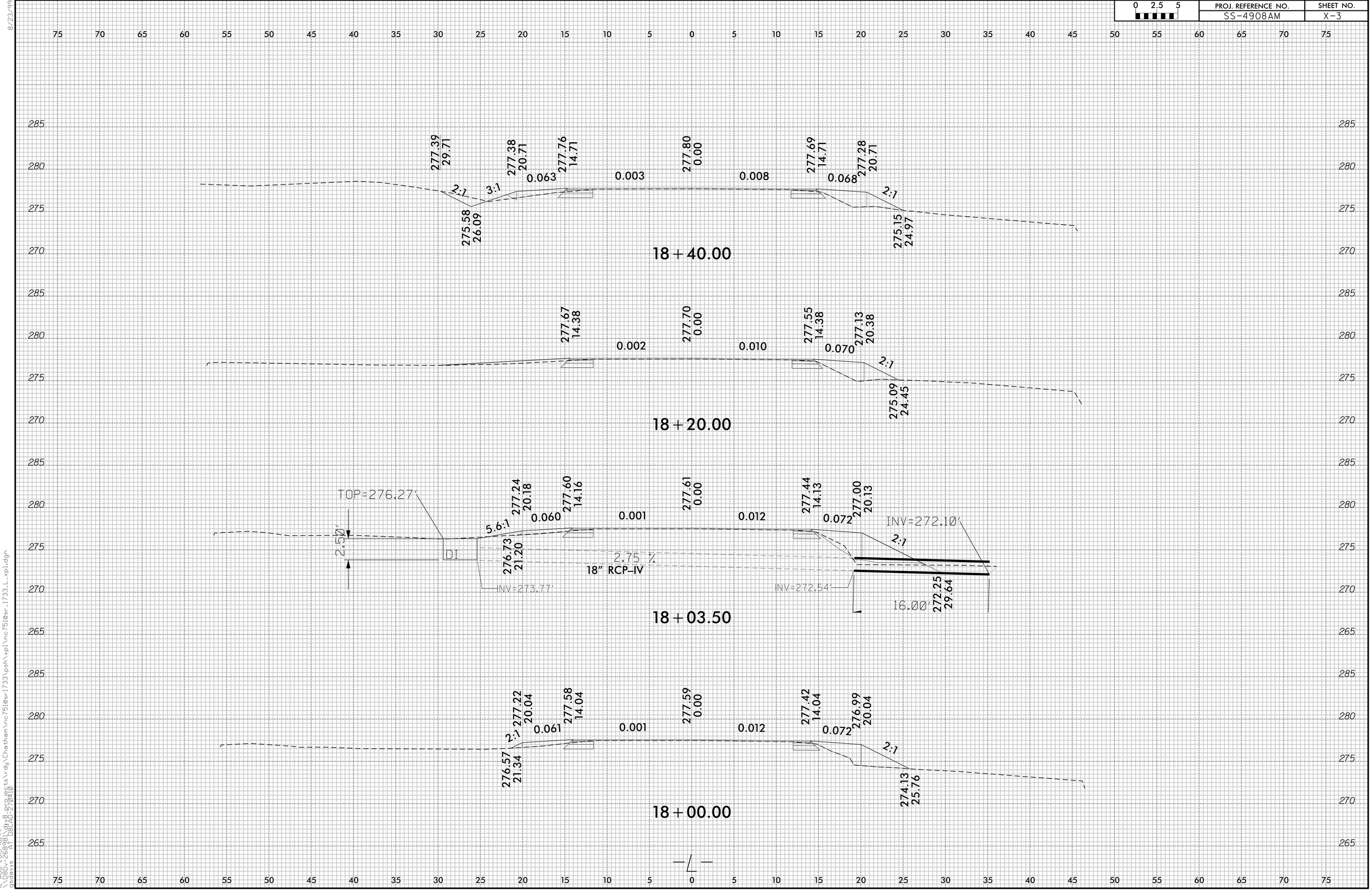

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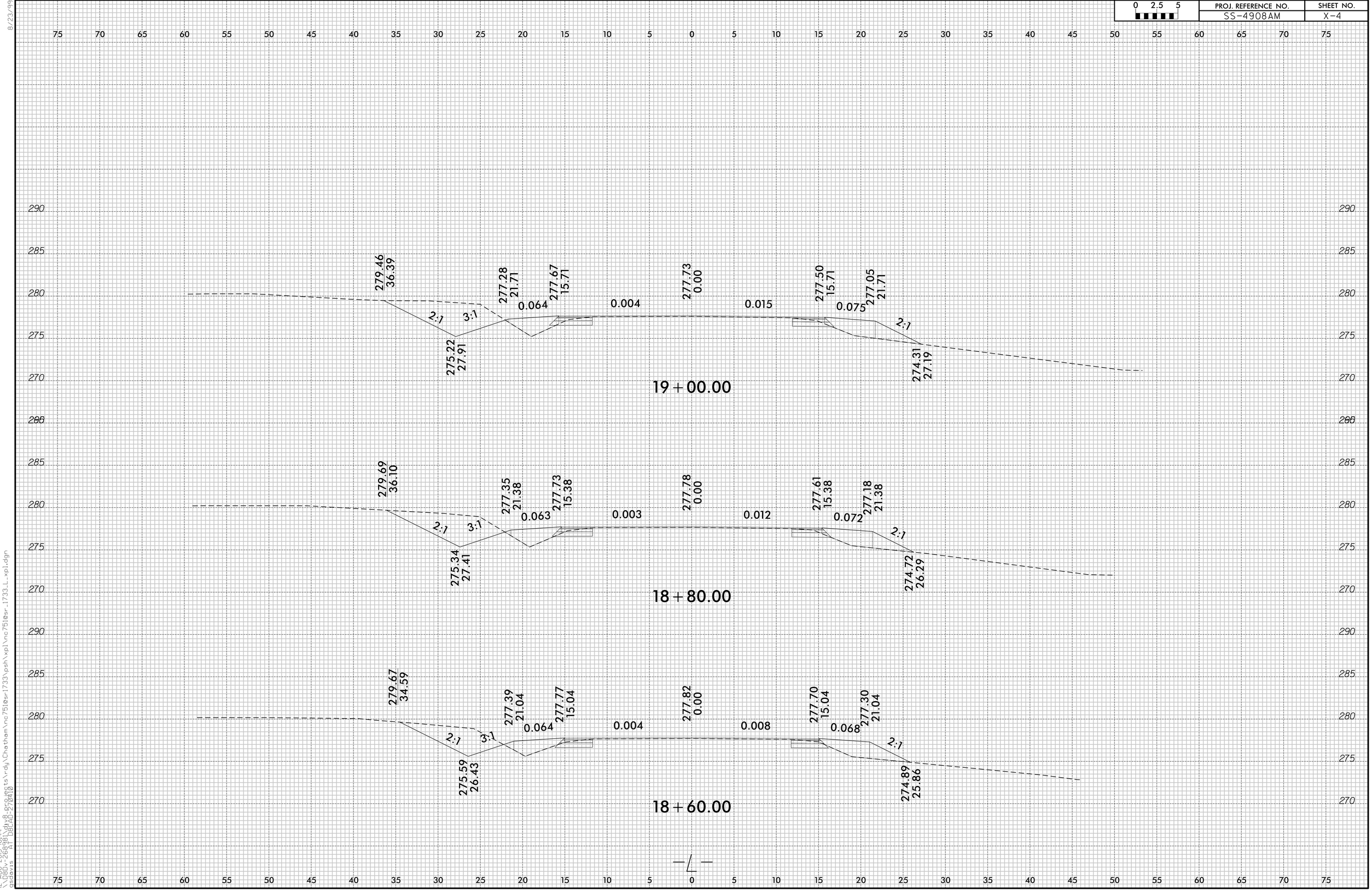

0 2.5 5
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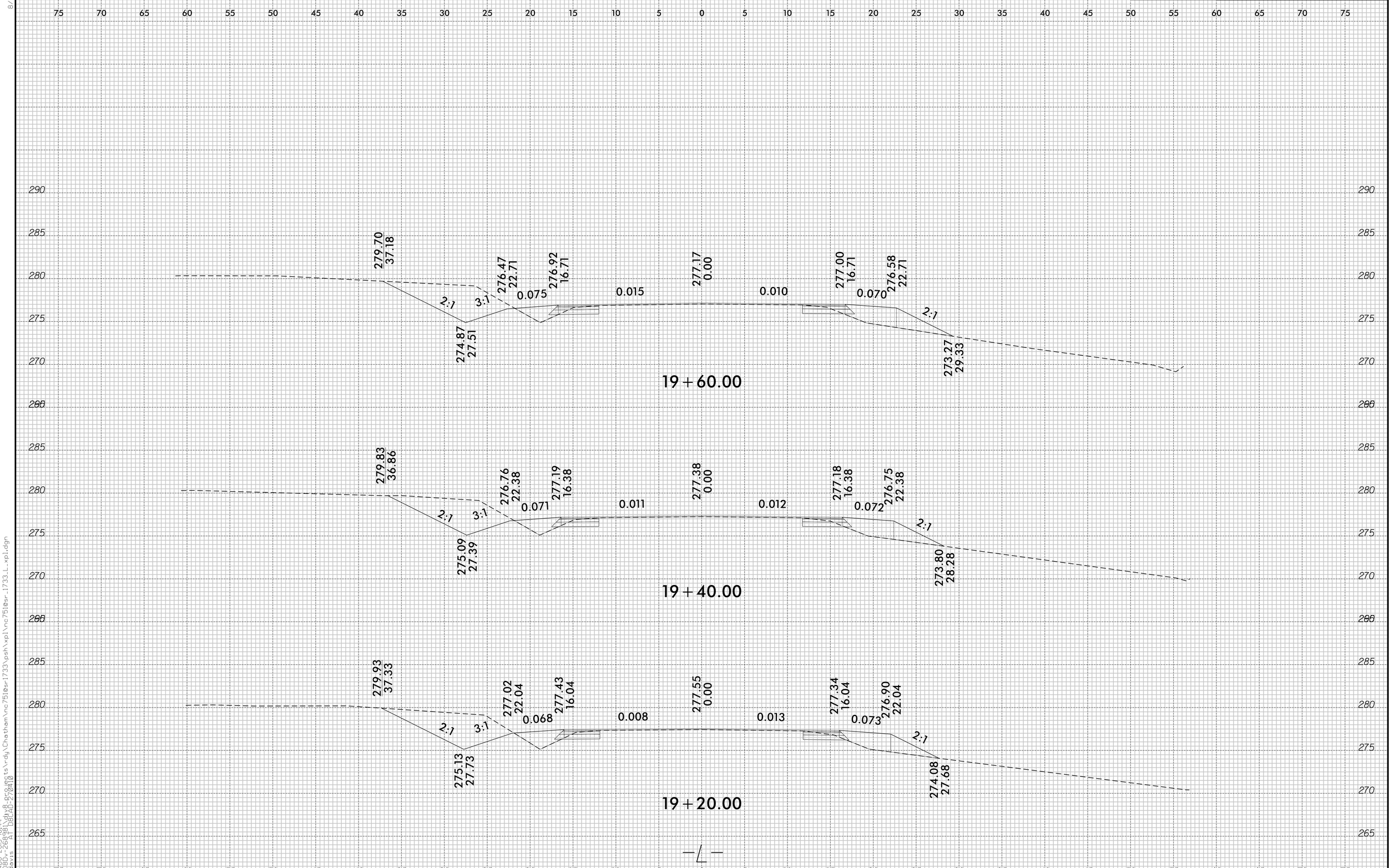
SS-4908AM
SHEET NO.
X-4
279.46
36.39
277.28
21.71
277.67
15.71
277.73
0.00
277.50
15.71
277.05
21.71
0.064
0.004
0.015
0.075
2:1
3:1
275.22
27.91
274.31
27.19
19+00.00
279.69
36.10
277.35
21.38
277.73
15.38
277.78
0.00
277.61
15.38
277.18
21.38
0.063
0.003
0.012
0.072
275.34
27.41
274.72
26.29
18+80.00
279.67
34.59
277.39
21.04
277.77
15.04
277.82
0.00
277.70
15.04
277.30
21.04
0.064
0.004
0.008
0.068
275.59
26.43
274.89
25.86
18+60.00
-L-

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	SS-4908AM	X-5



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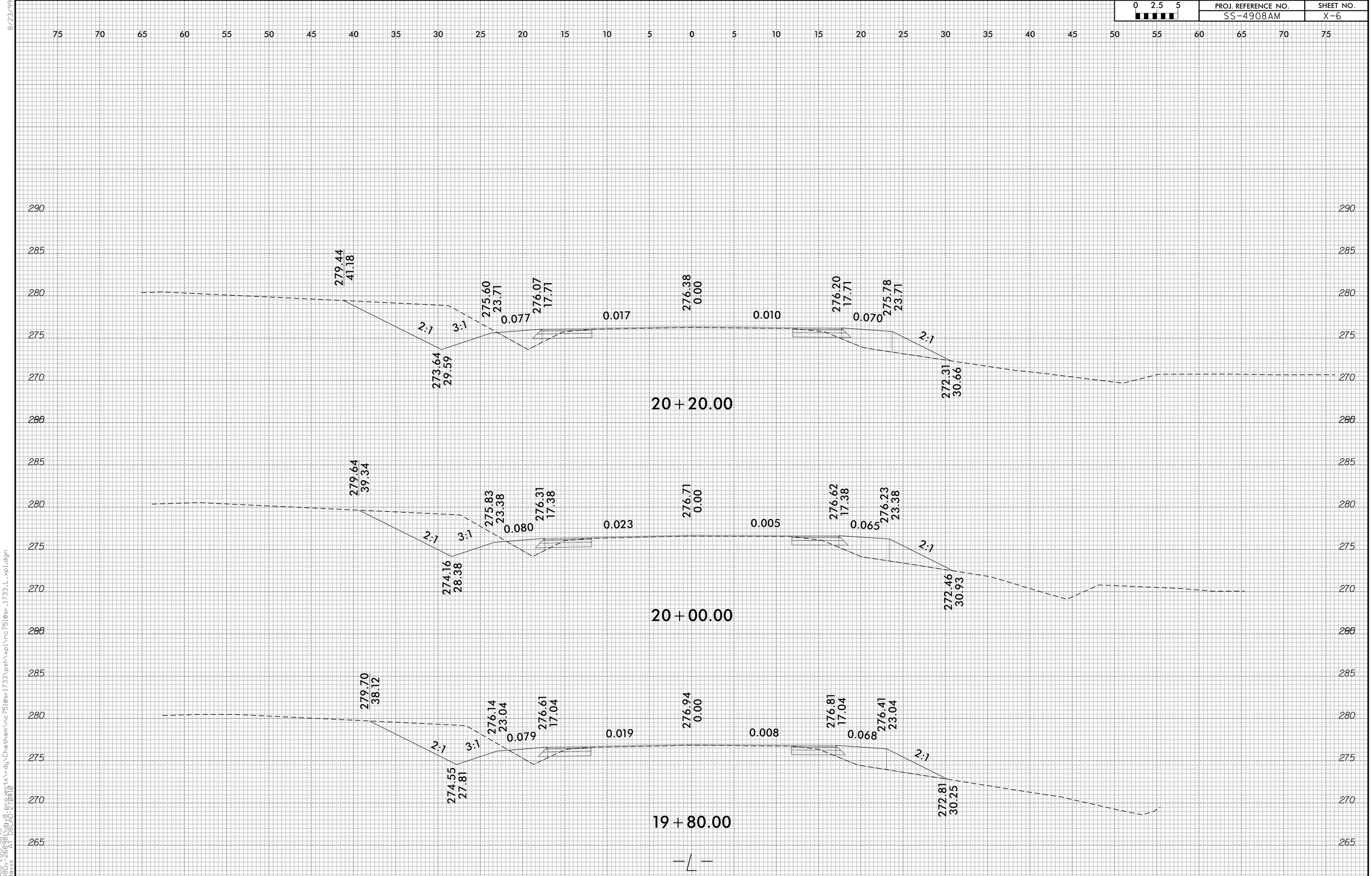

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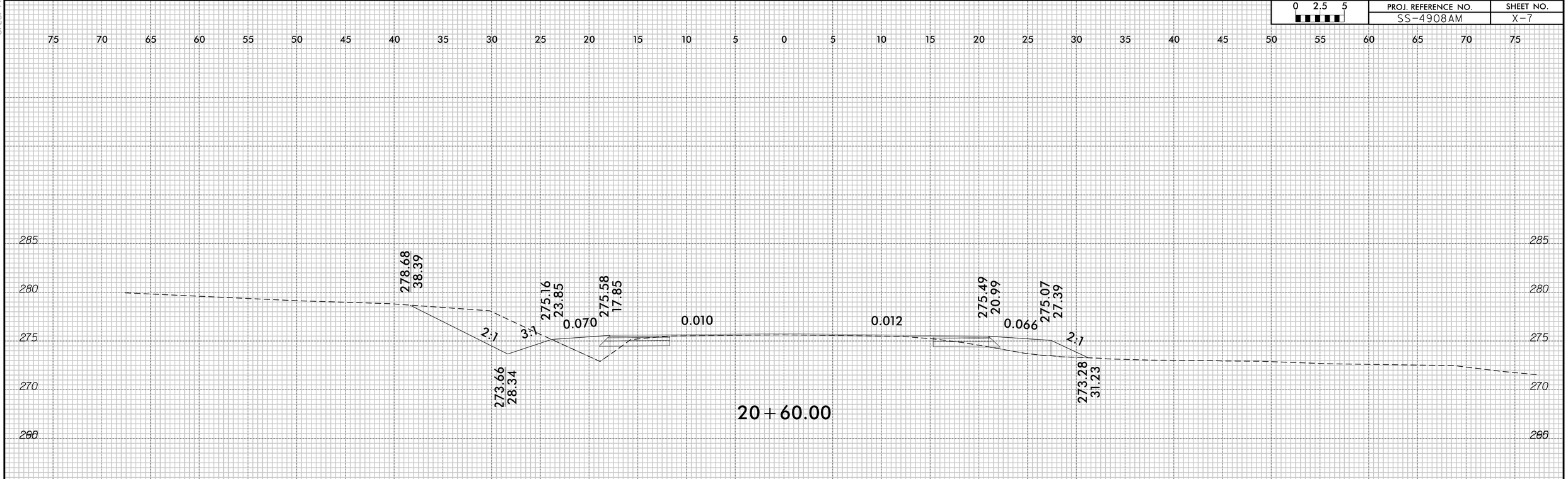

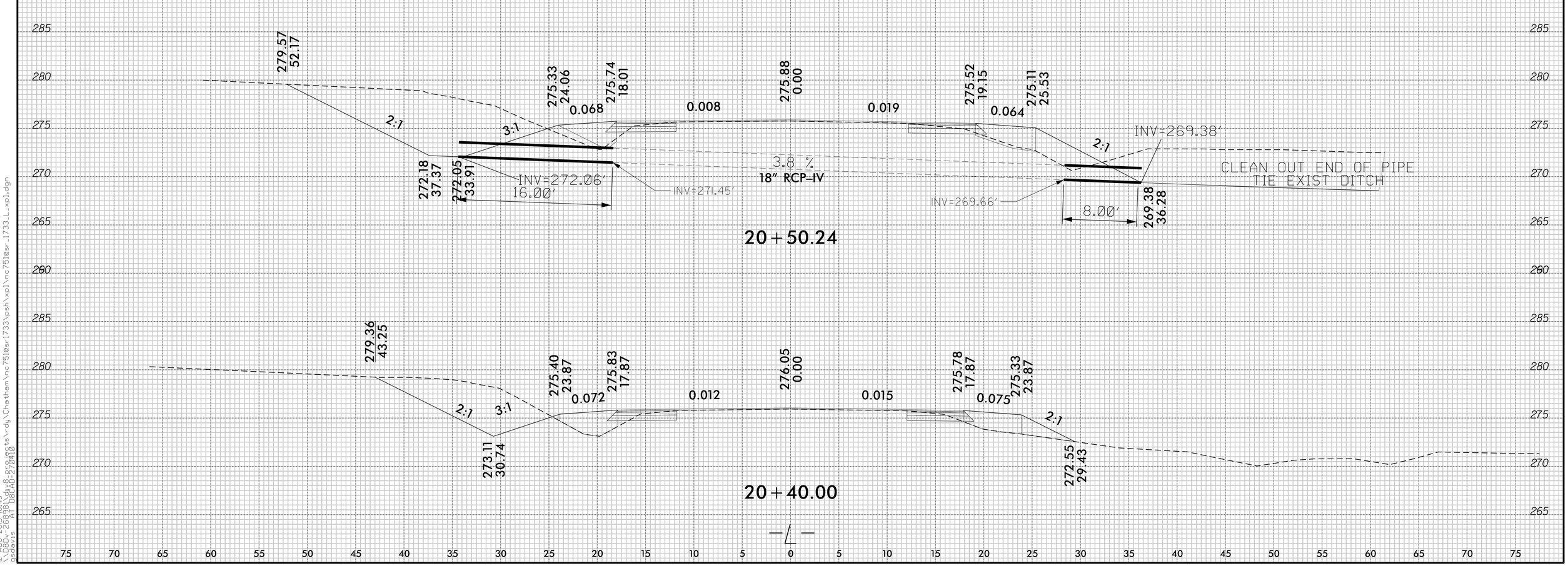

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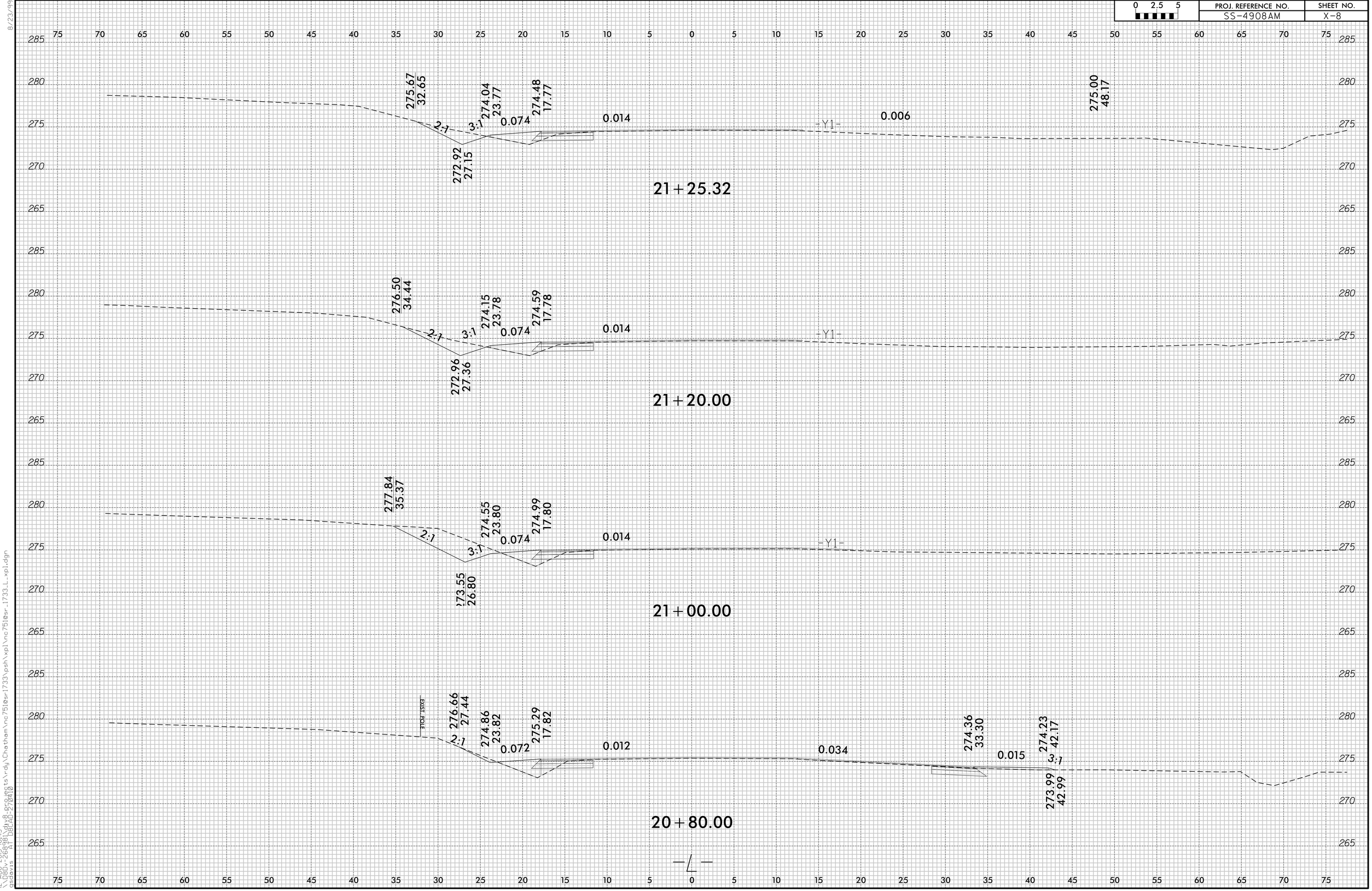

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8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	SS-4908AM	X-9

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

280 275 270 265

272.76 29.03 — 2:1 — 272.43 23.87 — 3:1 — 272.85 17.87 — 0.070 — 0.010 — 273.03 0.00 — 0.006 — 272.92 17.87

271.53 26.58

268.81 24.96

22+00.00

280 275 270 265

273.13 28.23 — 2:1 — 272.87 23.87 — 3:1 — 273.30 17.87 — 0.071 — 0.011 — 273.51 0.00 — 0.006 — 273.40 17.87 — 0.030 — 272.79 38.16

272.10 26.19

269.56 25.52

21+80.00

286 280 275 270 265

273.60 28.17 — 2:1 — 273.31 23.87 — 3:1 — 273.74 17.87 — 0.073 — 0.013 — 273.97 0.00 — 0.007 — 273.84 19.27 — 0.067 — 273.00 31.75

272.57 26.09

21+60.00

285 280 275 270 265

274.57 30.31 — 2:1 — 273.73 23.81 — 3:1 — 274.18 17.81 — 0.074 — 0.014 — 0.002 — -Y1-

272.77 26.70

21+40.00

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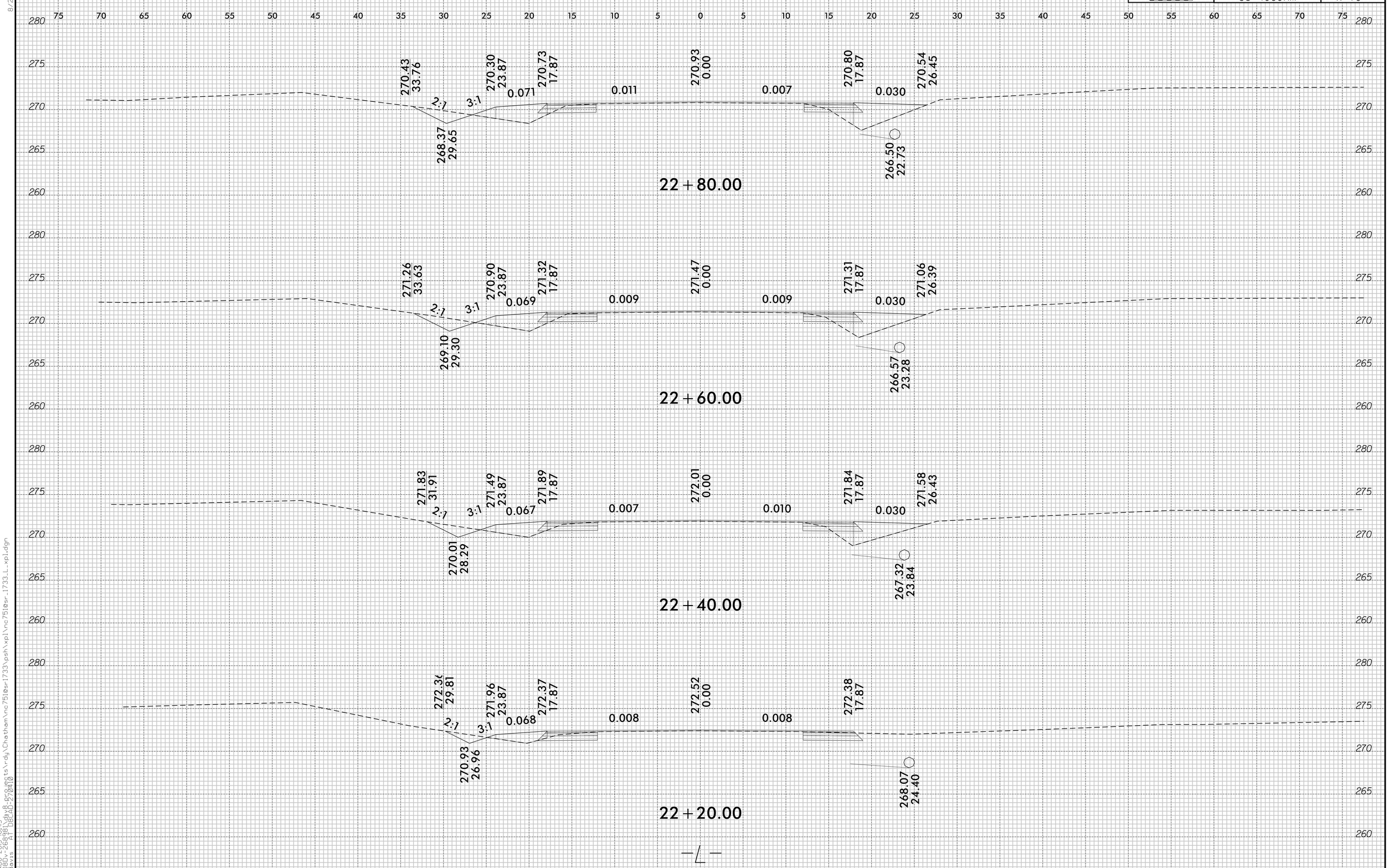

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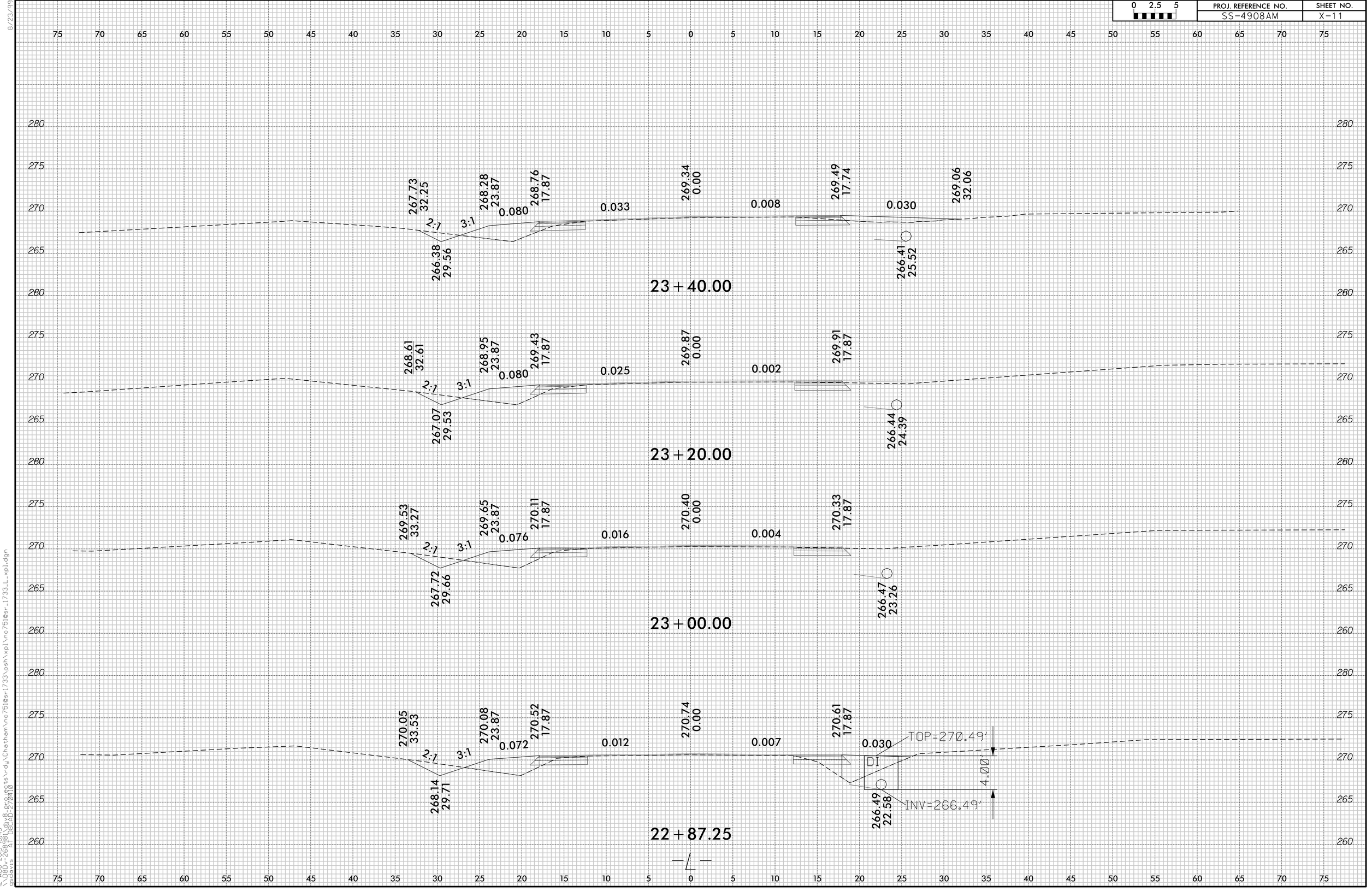

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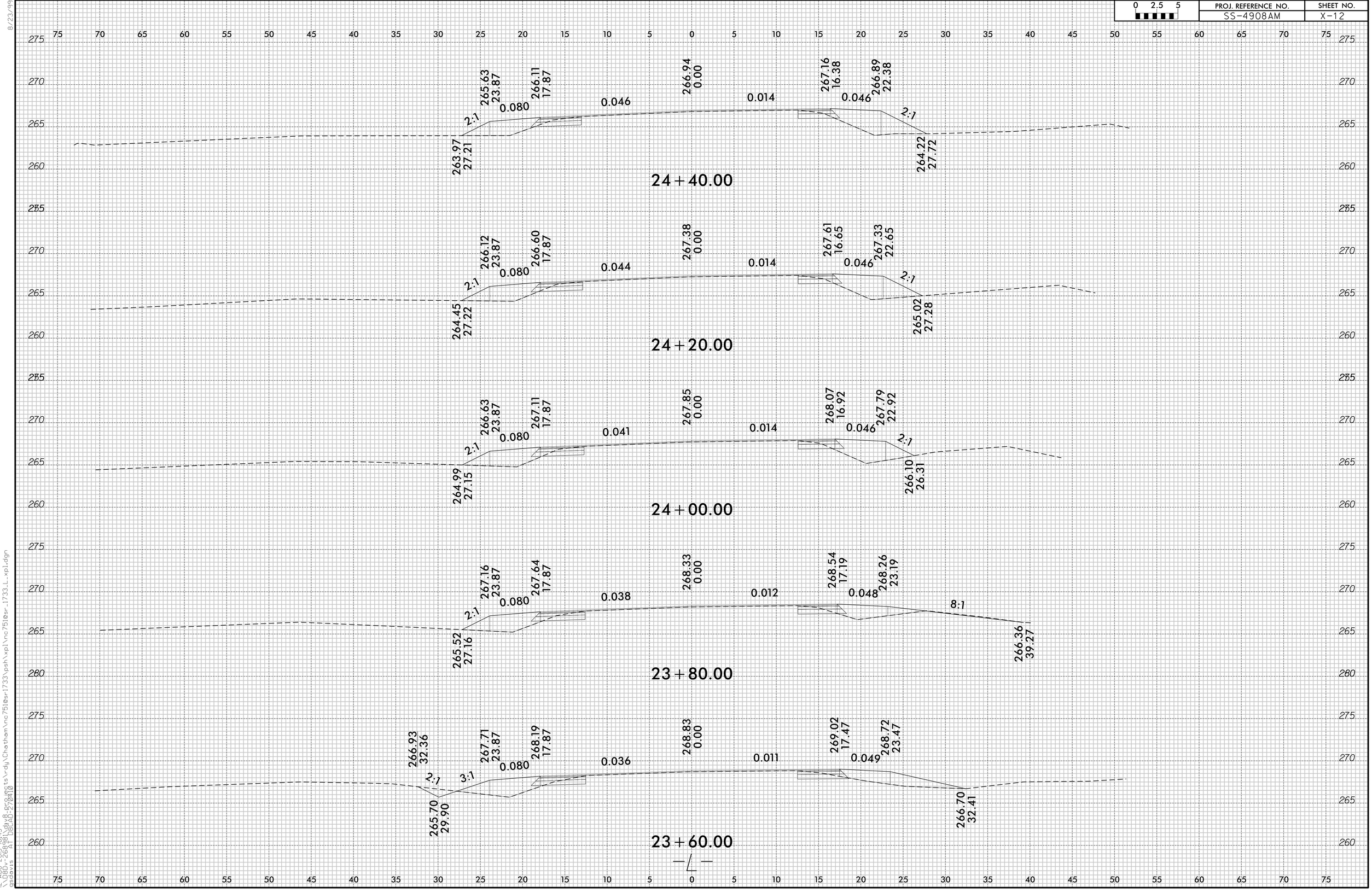

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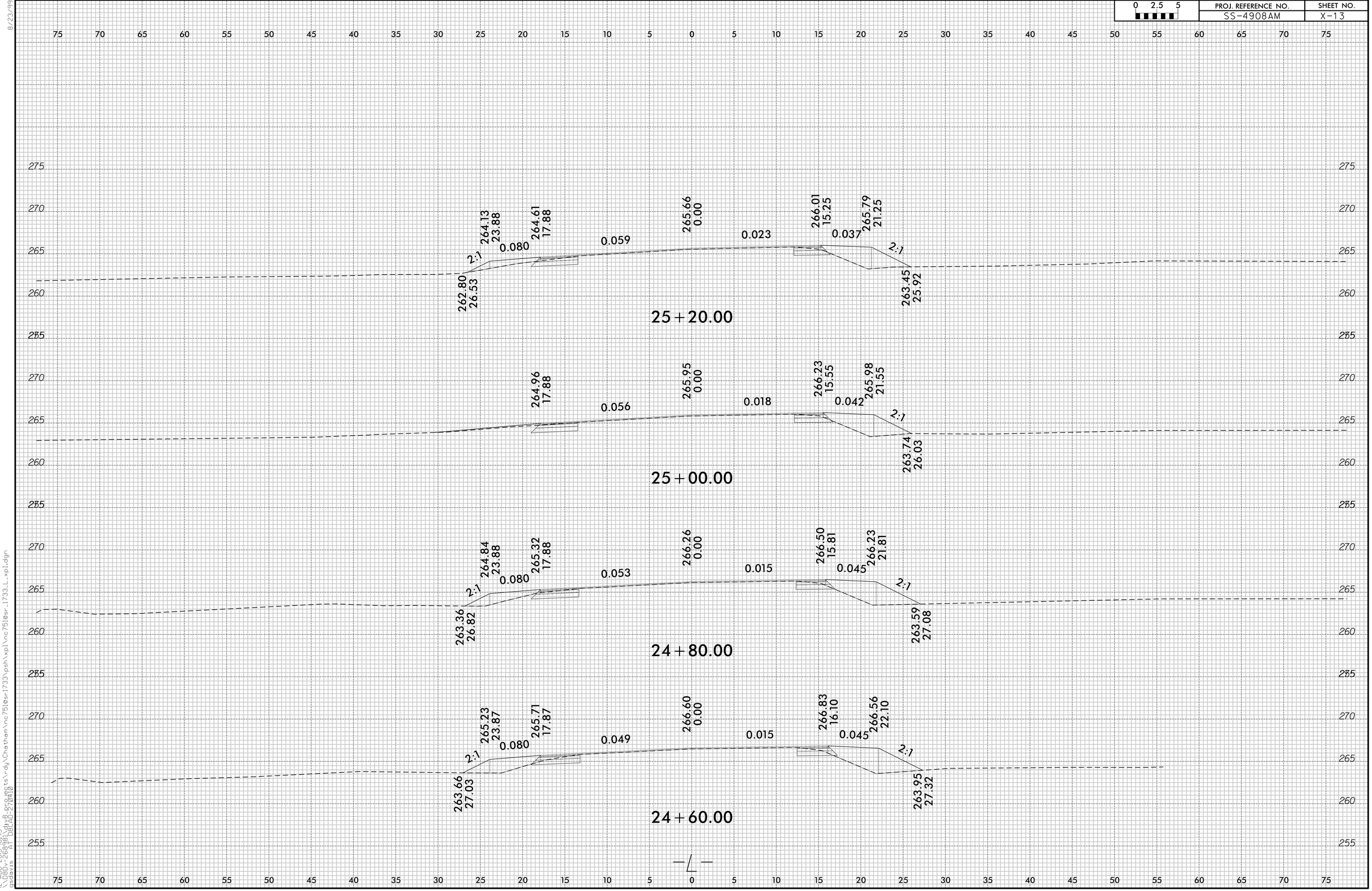

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AT D8CAD 270410

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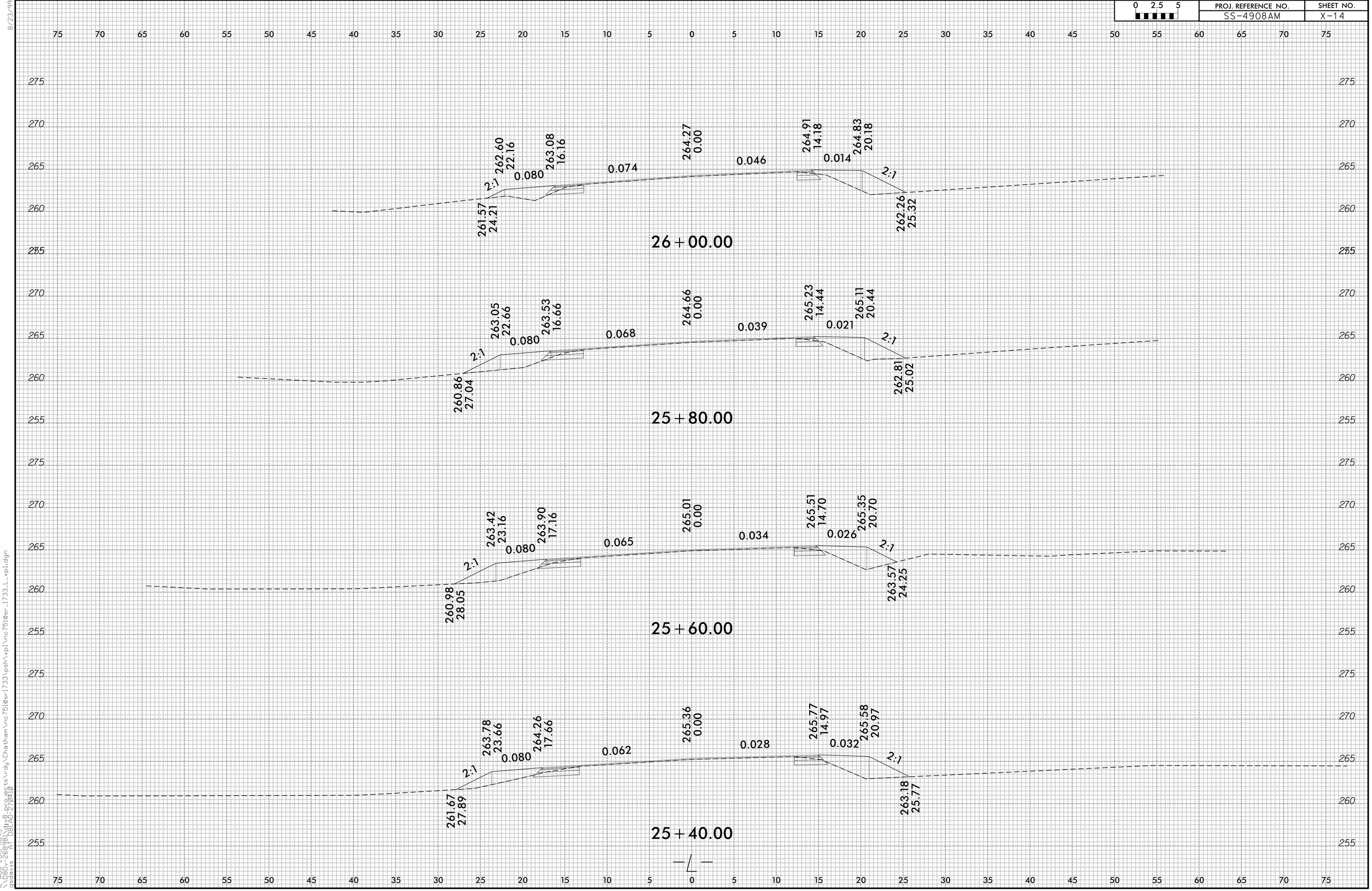

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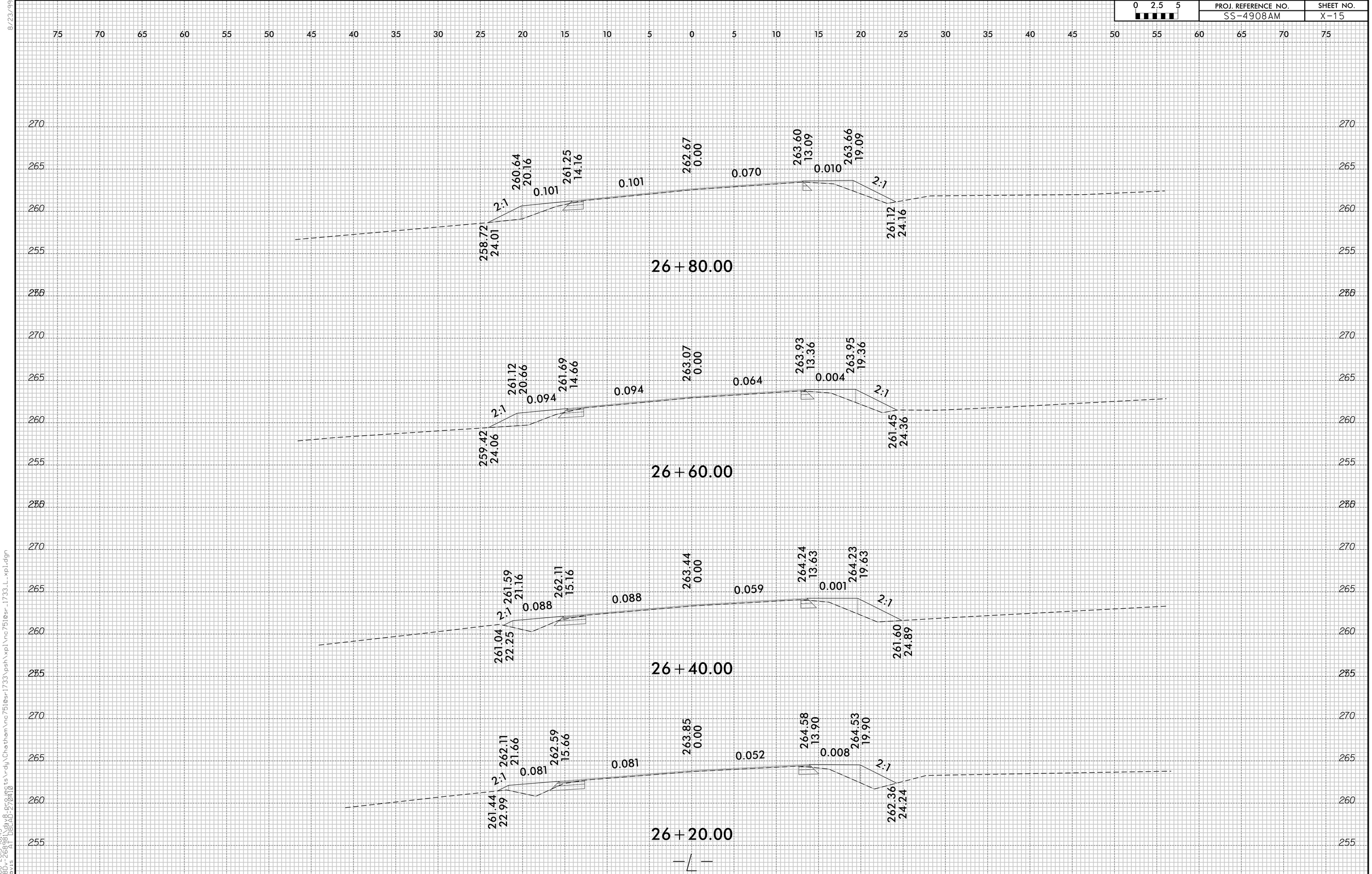


0 2.5 5
PROJ. REFERENCE NO.
SS-4908AM
SHEET NO.
X-15
26+80.00
258.72
24.01
260.64
20.16
0.101
261.25
14.16
0.101
262.67
0.00
0.070
263.60
13.09
0.010
263.66
19.09
2:1
261.12
24.16
26+60.00
259.42
24.06
261.12
20.66
0.094
261.69
14.66
0.094
263.07
0.00
0.064
263.93
13.36
0.004
263.95
19.36
2:1
261.45
24.36
26+40.00
261.04
22.25
261.59
21.16
0.088
262.11
15.16
0.088
263.44
0.00
0.059
264.24
13.63
0.001
264.23
19.63
2:1
261.60
24.89
26+20.00
261.44
22.99
262.11
21.66
0.081
262.59
15.66
0.081
263.85
0.00
0.052
264.58
13.90
0.008
264.53
19.90
2:1
262.36
24.24

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	SS-4908AM	X-16

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

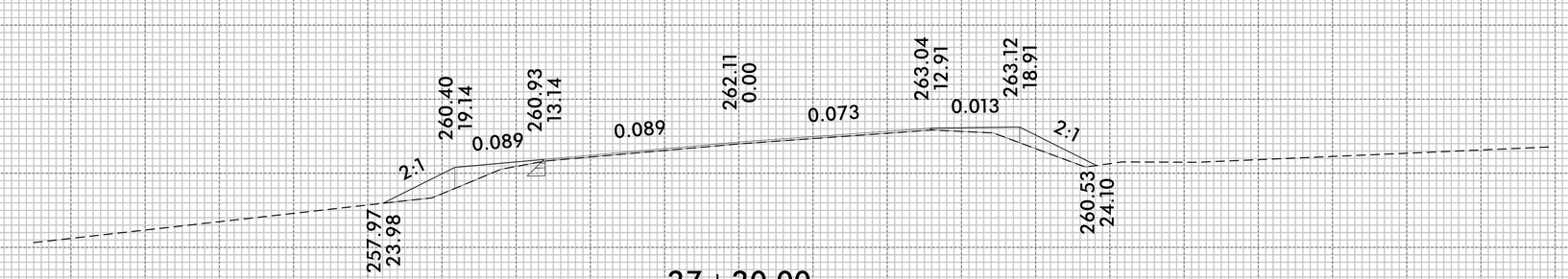
265 260 255 250

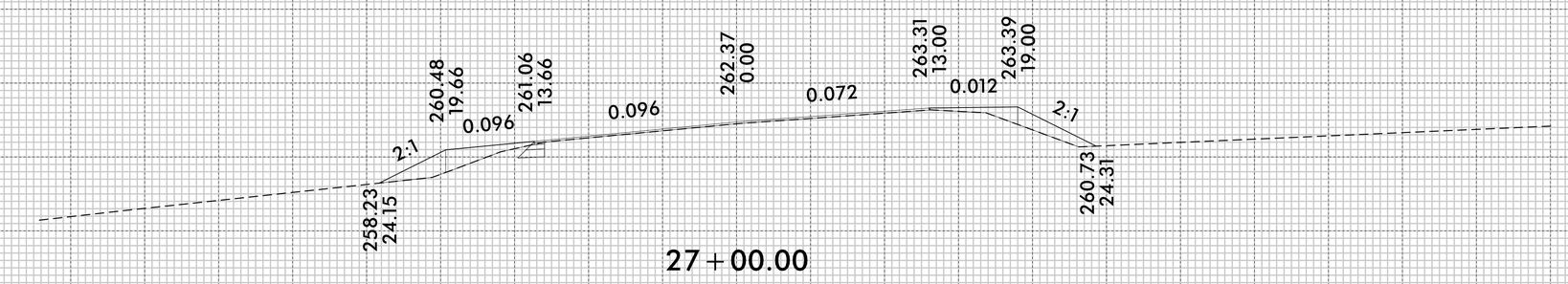
27+80.00

27+60.00

27+40.00

27+20.00





27+00.00

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	SS-4908AM	X-17

8/23/99

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

285 280 275 270 265

274.93 11.83 | 275.44 0.00 | 275.16 11.27 | 274.85 16.97

0.043 | 0.025 | 0.055

274.72 14.00 | 274.85 16.97

10+80.00

274.90 12.70 | 275.18 0.00 | 274.77 11.57 | 274.57 18.86

TOP=273.91'

DI

0.16 | 0.023 | 0.022 | 0.035 | 0.027

274.10 31.24

INV=271.62'

2.00'

INV=271.28'

2.2 %

18" RCP-IV

INV=270.26'

10+69.31

273.39 30.10 | 274.96 15.65 | 274.96 11.35 | 274.96 0.00 | 274.61 11.78

0.108 | 0.000 | 0.029 | 0.019

274.46 19.44

10+60.00

272.84 40.22 | 274.55 36.42 | 274.77 30.41 | 274.83 0.63 | 274.46 16.68 | 274.27 23.40

0.016 | 0.009 | 0.023 | 0.028

274.01 23.98

10+40.00

—Y/—

12-AUG-2015 16:45
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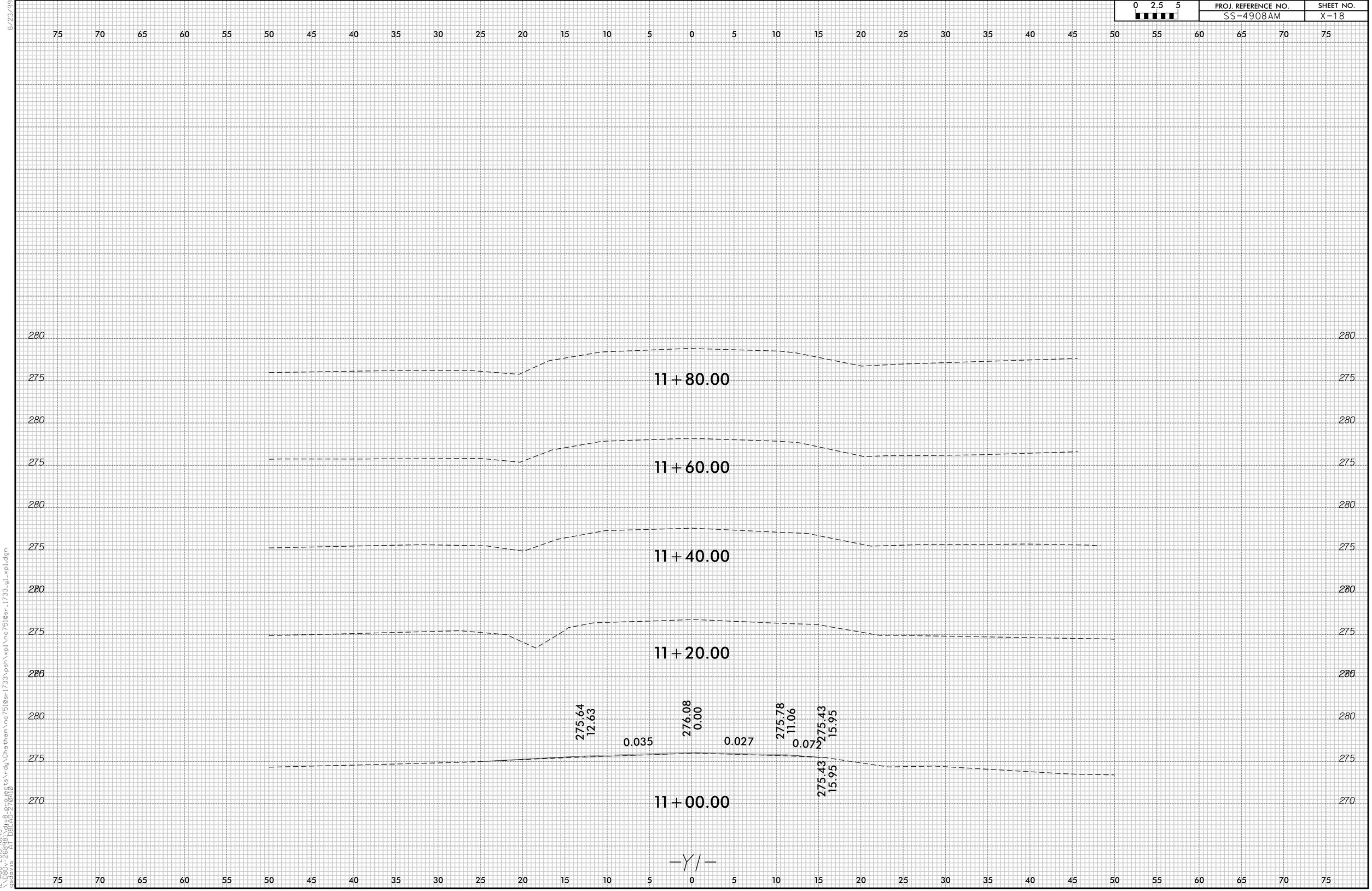
AT D8CAD-270410

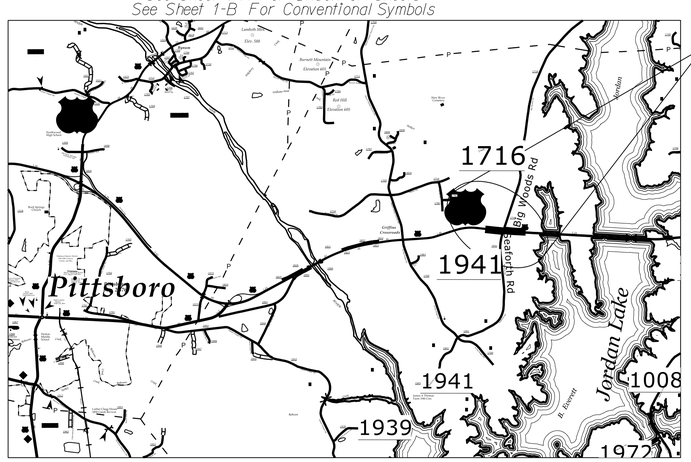


0 2.5 5
PROJ. REFERENCE NO.
SS-4908AM
SHEET NO.
X-18
11+80.00
11+60.00
11+40.00
11+20.00
11+00.00
275.64
12.63
0.035
276.08
0.00
0.027
275.78
11.06
0.072
275.43
15.95
275.43
15.95
-Y/-

09/08/99

TIP PROJECT: W-5601CL PROJECT: US 64 @ SR 1716 (BIG WOODS RD)

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



VICINITY MAP

PROJECT LOCATION

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CHATHAM COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5601CL	1	

WBS ELEMENT	F.A. PROJ. NO.	DESCRIPTION
50138.1.91	HSIP-0064(184)	PE
50138.2.91	HSIP-0064(184)	R/W
50138.3.91	HSIP-0064(184)	CONST.

LOCATION: AT THE INTERSECTION OF US 64 AND SR 1716 APPROX. 7 MI. EAST OF PITTSBORO NEAR JORDAN LAKE.

TYPE OF WORK: GRADING, DRAINAGE, PAVING, CONCRETE ISLANDS, PAVEMENT MARKINGS & MARKERS, AND EROSION CONTROL

NC GRID
NAD 83 NA 2011

-L-MED- STA. 19+00.00
BEGIN PROJECT W-5601CL

-L-MED- STA. 53+15.00
END PROJECT W-5601CL

GRAPHIC SCALES

25 0 25 50
PLANS

DESIGN DATA

ADT 2013 = 19,000

DHV = 2.4 %
D = 50 %
T = 10 % *
V = 60 MPH

* TTST 5% DUAL 5%

Prepared in the Office of:
DIVISION OF HIGHWAYS
DIVISION 8 DESIGN & CONSTRUCT UNIT
902 N. SANDHILLS BLVD.
ABERDEEN NC 28315
PLANS PREPARED BY: DDC

PROJECT LENGTH
ROADWAY: 0.65 MILES
STRUCTURE: _____ MILES
TOTAL: 0.65 MILES

DIVISION OF HIGHWAYS

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

LETTING DATE:

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION ·

DIVISION DESIGN & CONSTRUCT ENGINEER

DocuSigned by:
Greg S Davis
32DA7B6F5D184A8...
6/21/2016 *P.E.*
SIGNATURE:

DIVISION DESIGN & CONSTRUCT ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S. DAVIS

16-JUN-2016 16:50
Z:\rdy\Chatham\us64@sr_1716_(big_woods_rd)\psh\W-5601CL_tsh.dgn
gsdavis AT D8CAD-27040

SURVEY CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
W-5601CL	1-A
RW SHEET NO.	

NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S DAVIS

DocuSigned by: Greg S Davis 33D47B5FD78F4A8...

6/21/2016

DIVISION DESIGN / CONSTRUCT ENGINEER

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "W5601CL-1" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 723843.6000(ft) EASTING: 1982841.2930(ft) ELEVATION: 293.2710(ft)

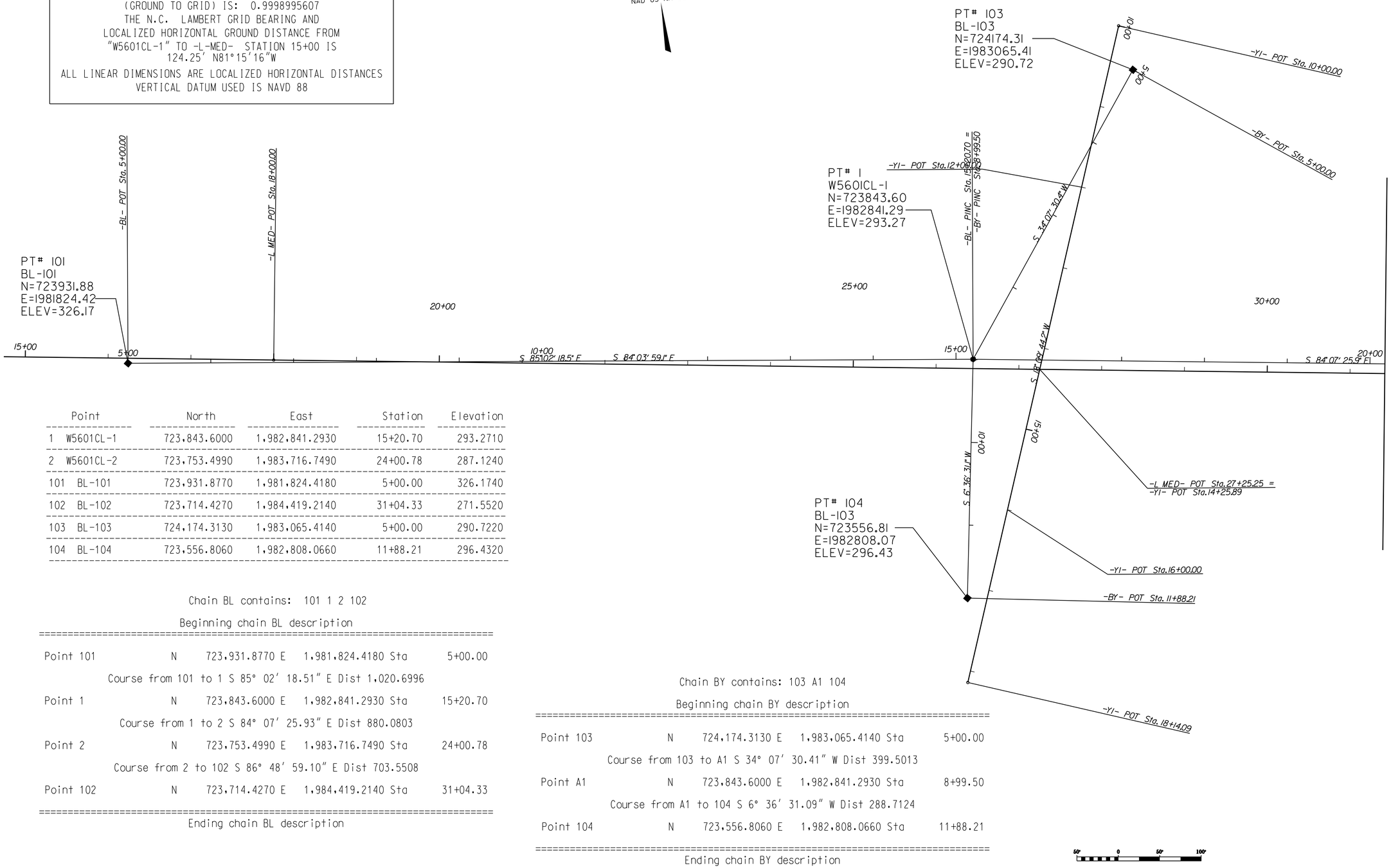
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998995607

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "W5601CL-1" TO -L-MED- STATION 15+00 IS 124.25' N81°15'16"W

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES

VERTICAL DATUM USED IS NAVD 88

NC GRID
NAD 83 NA 2011



MATCH LINE -L-MED- 20+18
SEE SHEET 1-B

Point		North	East	Station	Elevation
1	W5601CL-1	723,843.6000	1,982,841.2930	15+20.70	293.2710
2	W5601CL-2	723,753.4990	1,983,716.7490	24+00.78	287.1240
101	BL-101	723,931.8770	1,981,824.4180	5+00.00	326.1740
102	BL-102	723,714.4270	1,984,419.2140	31+04.33	271.5520
103	BL-103	724,174.3130	1,983,065.4140	5+00.00	290.7220
104	BL-104	723,556.8060	1,982,808.0660	11+88.21	296.4320

Chain BL contains: 101 1 2 102

Beginning chain BL description

Point 101	N	723,931.8770	E 1,981,824.4180	Sta	5+00.00
Course from 101 to 1 S 85° 02' 18.51" E Dist 1,020.6996					
Point 1	N	723,843.6000	E 1,982,841.2930	Sta	15+20.70
Course from 1 to 2 S 84° 07' 25.93" E Dist 880.0803					
Point 2	N	723,753.4990	E 1,983,716.7490	Sta	24+00.78
Course from 2 to 102 S 86° 48' 59.10" E Dist 703.5508					
Point 102	N	723,714.4270	E 1,984,419.2140	Sta	31+04.33

Ending chain BL description

Chain BY contains: 103 A1 104

Beginning chain BY description

Point 103	N	724,174.3130	E 1,983,065.4140	Sta	5+00.00
Course from 103 to A1 S 34° 07' 30.41" W Dist 399.5013					
Point A1	N	723,843.6000	E 1,982,841.2930	Sta	8+99.50
Course from A1 to 104 S 6° 36' 31.09" W Dist 288.7124					
Point 104	N	723,556.8060	E 1,982,808.0660	Sta	11+88.21

Ending chain BY description

REVISIONS

8/17/99

17-JUN-2016 16:53
C:\Projects\Projects\us64\per_1716.tbig_woods_rd\psht_bln\W-5601CL_SC_1A.dgn
Bridges
A1 DGN 270410

SURVEY CONTROL SHEET

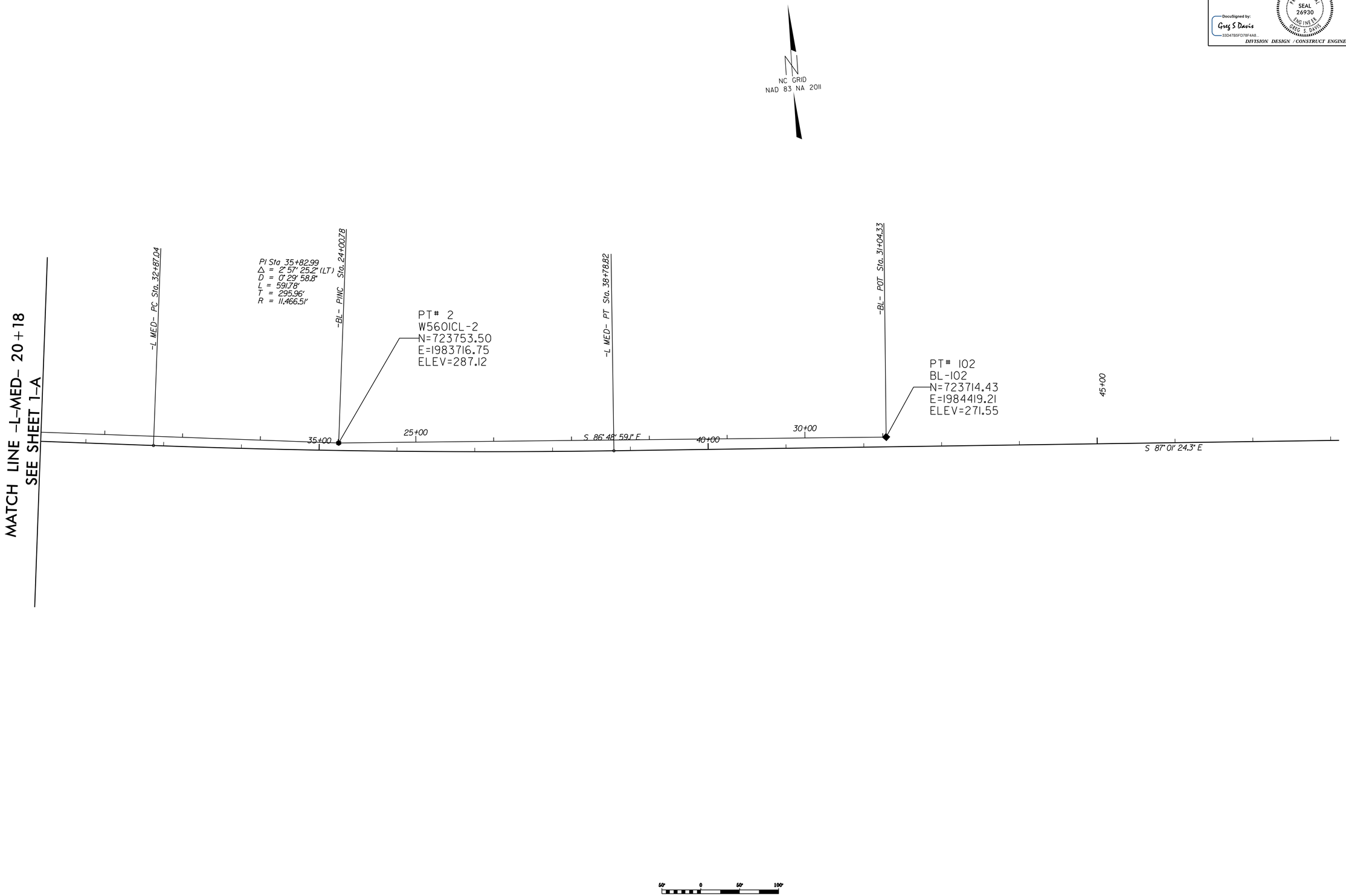
PROJECT REFERENCE NO.	SHEET NO.
W-5601CL	1-B
R/W SHEET NO.	

DocuSigned by:
Greg S Davis
33D47B5FD78F4A8...

NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S. DAVIS

6/21/2016

DIVISION DESIGN / CONSTRUCT ENGINEER



REVISIONS

8/17/99

17-JUN-2016 16:53
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gsdavis AT D8CAD-270410

PROJECT REFERENCE NO.	SHEET NO.
W-5601CL	2
R/W SHEET NO.	

NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S DAVIS

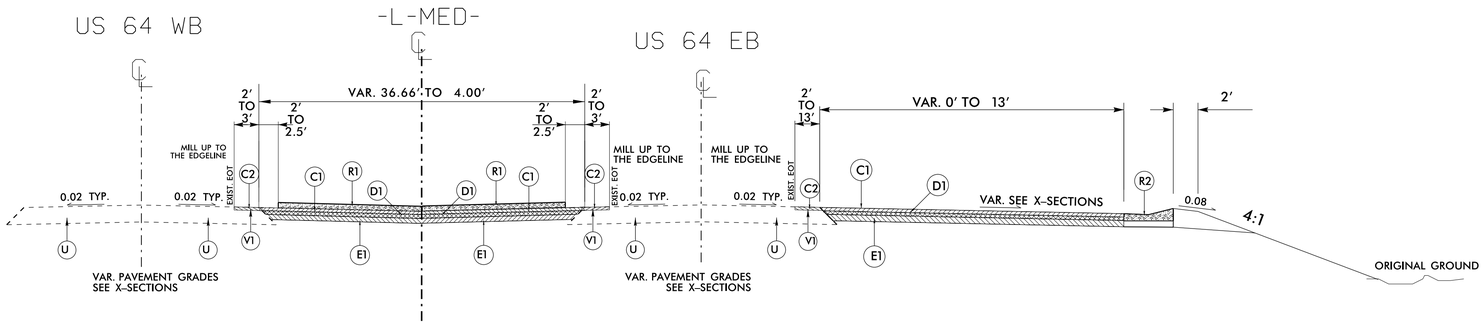
DocuSigned by: Greg S Davis 33D47B5FD78F4A8...

6/21/2016

DIVISION DESIGN / CONSTRUCT ENGINEER

TYPICAL SECTION NO. 1

–L–MED– STA. 19+10.00 TO 19+25.00



TYPICAL SECTION NO. 2

–L–MED– STA. 19+25.00 TO 19+69.60

TYPICAL SECTION NO. 3

–L–MED– STA. 19+69.60 TO 20+15.00

PAVEMENT SCHEDULE

C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. PER 1½" DEPTH. TO BE PLACED IN TWO LAYERS.
C2	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
R1	5" MONOLITHIC CONCRETE ISLAND. (KEYED IN)
R2	EXPRESSWAY GUTTER (STD 846.01)
T_	EARTH MATERIAL.
U_	EXISTING PAVEMENT.
V1	1.5" MILLING

REVISIONS

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
W-5601CL	2-A
RW SHEET NO.	

NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S DAVIS

DocuSigned by: Greg S Davis 33D47B5FD78F4AB...

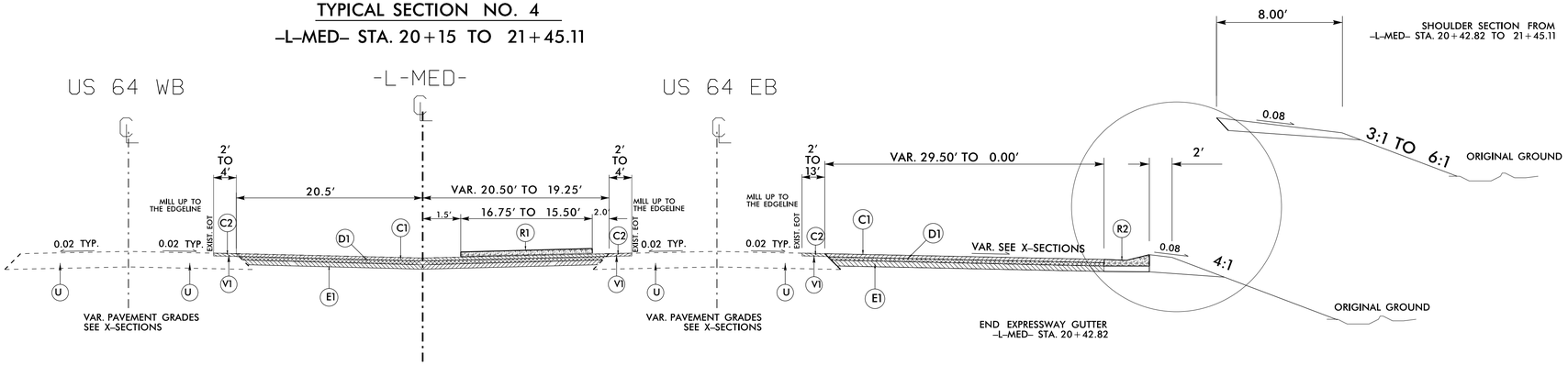
6/21/2016

DIVISION DESIGN / CONSTRUCT ENGINEER

REVISIONS 8/17/99

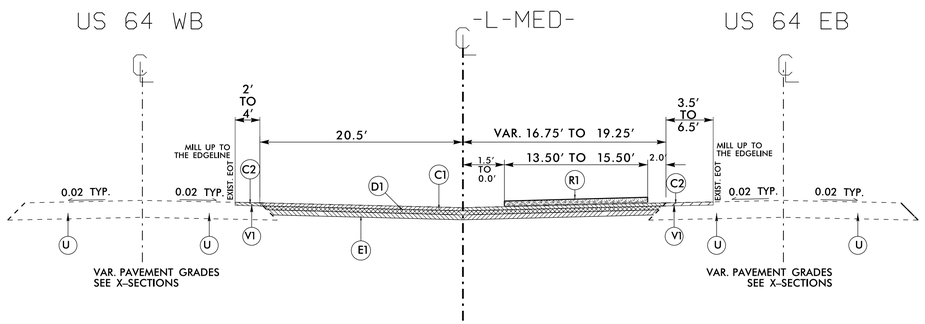
TYPICAL SECTION NO. 4

-L-MED- STA. 20+15 TO 21+45.11



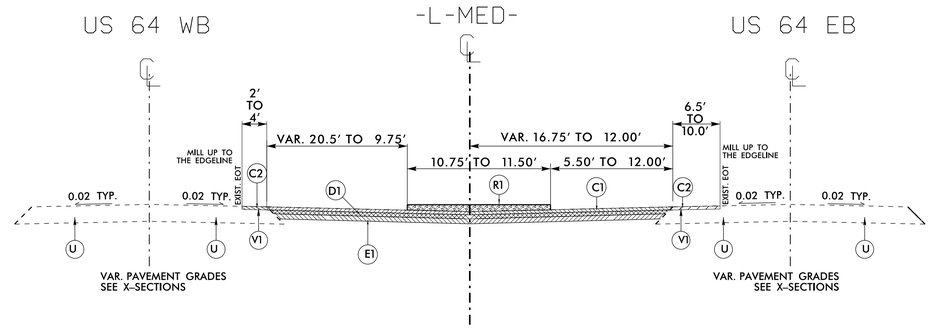
TYPICAL SECTION NO. 5

-L-MED- STA. 21+45.11 TO 22+18.12



TYPICAL SECTION NO. 6

-L-MED- STA. 22+18.12 TO 23+33.94



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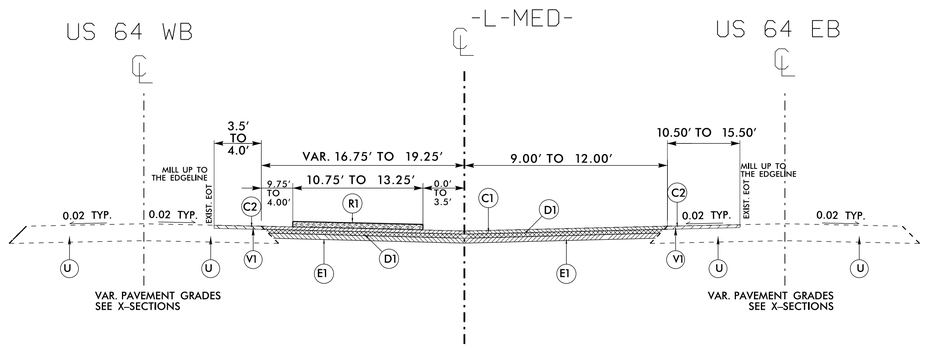
-L-MED- STA. 23+33.94 TO 26+20.00



PAVEMENT SCHEDULE	
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. PER 1½" DEPTH. TO BE PLACED IN TWO LAYERS.
C2	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
R1	5" MONOLITHIC CONCRETE ISLAND. (KEYED IN)
R2	EXPRESSWAY GUTTER (STD 846.01)
T_	EARTH MATERIAL.
U_	EXISTING PAVEMENT.
V1	1.5" MILLING

PROJECT REFERENCE NO.	SHEET NO.
W-5601CL	2-B
RW SHEET NO.	

NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S DAVIS

DocuSigned by: Greg S Davis 33D47B5FD78F4A8...

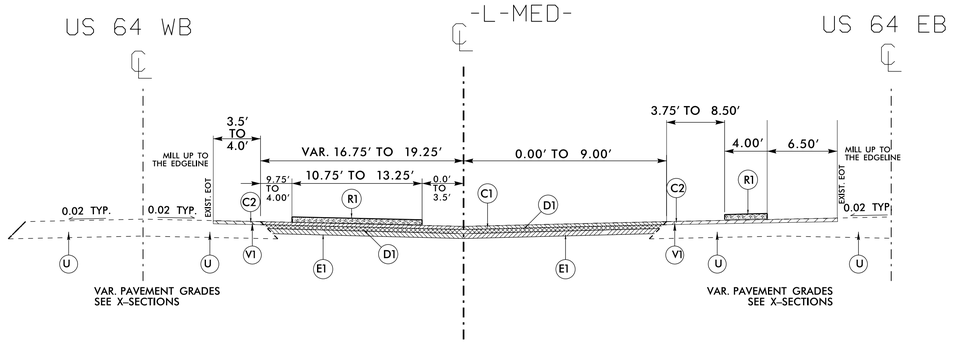
6/21/2016

DIVISION DESIGN / CONSTRUCT ENGINEER

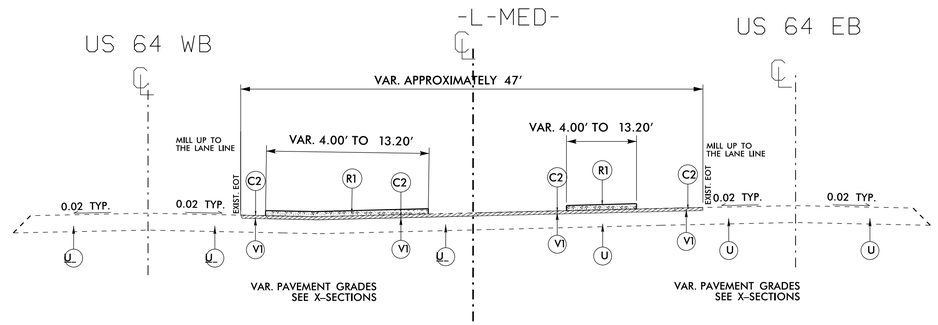
REVISIONS

8/17/99

TYPICAL SECTION NO. 8
-L-MED- STA. 26+20.00 TO 26+87.47



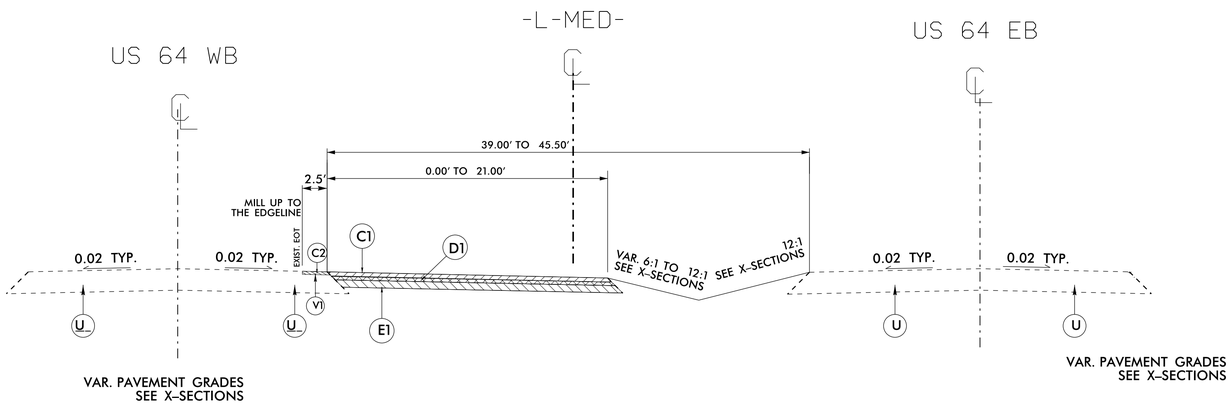
TYPICAL SECTION NO. 9
-L-MED- STA. 26+87.47 TO 27+62.56



TYPICAL SECTION NO. 10
-L-MED- STA. 27+62.56 TO 28+30.25

TYPICAL SECTION NO. 11
-L-MED- STA. 28+30.25 TO 32+05.25

TYPICAL SECTION NO. 12
-L-MED- STA. 32+05.25 TO 34+16.04



PAVEMENT SCHEDULE	
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. PER 1½" DEPTH. TO BE PLACED IN TWO LAYERS.
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D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
R1	5" MONOLITHIC CONCRETE ISLAND. (KEYED IN)
R2	EXPRESSWAY GUTTER (STD 846.01)
T_	EARTH MATERIAL.
U_	EXISTING PAVEMENT.
V1	1.5" MILLING

PROJECT REFERENCE NO.	SHEET NO.
W-5601CL	2-C
RW SHEET NO.	___

NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S DAVIS

DocuSigned by: Greg S Davis 33D47B5FD78F4A8...

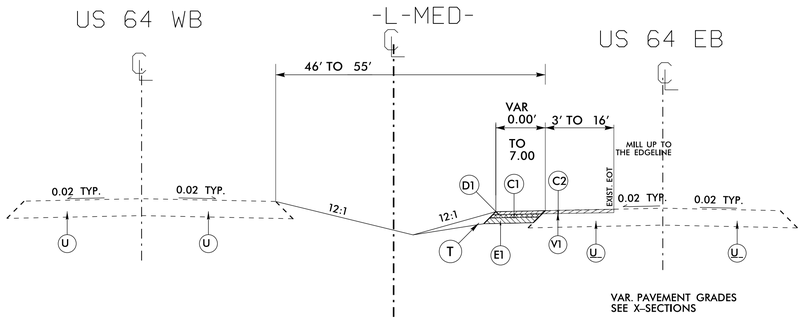
6/21/2016

DIVISION DESIGN / CONSTRUCT ENGINEER

REVISIONS 8/17/99

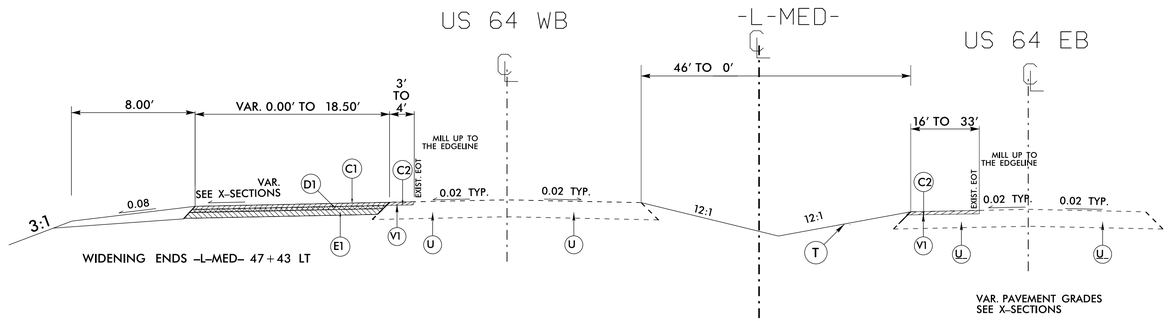
TYPICAL SECTION NO. 13

-L-MED- STA. 41+27.93 TO 45+37.48



TYPICAL SECTION NO. 14

-L-MED- STA. 45+37.48 TO 47+33.52

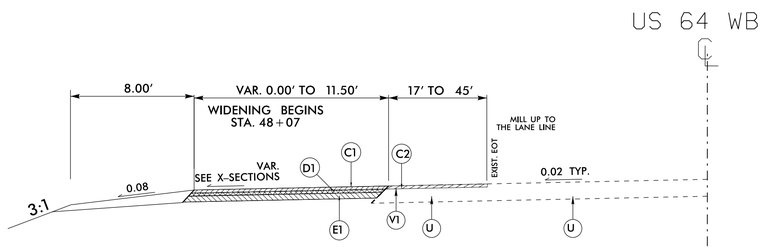


TYPICAL SECTION NO. 15

-L-MED- STA. 47+33.52 TO 48+12 (EXISTING CROSSOVER)

TYPICAL SECTION NO. 16

-L-MED- STA. 47+33.52 TO 48+30



PAVEMENT SCHEDULE	
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. PER 1½" DEPTH. TO BE PLACED IN TWO LAYERS.
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E1	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
R1	5" MONOLITHIC CONCRETE ISLAND. (KEYED IN)
R2	EXPRESSWAY GUTTER (STD 846.01)
T_	EARTH MATERIAL.
U_	EXISTING PAVEMENT.
V1	1.5" MILLING

PROJECT REFERENCE NO.	SHEET NO.
W-5601CL	2-D
R/W SHEET NO.	___

NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S DAVIS

DocuSigned by: Greg S Davis 33D47B5FD78F4A8...

6/21/2016

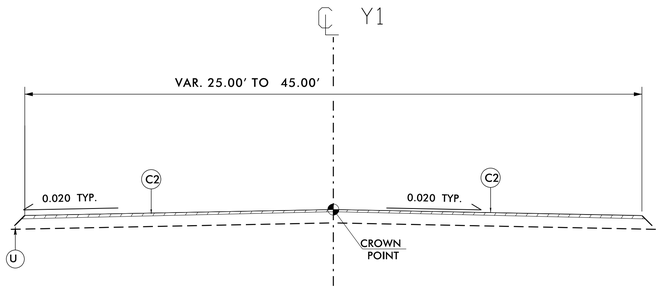
DIVISION DESIGN / CONSTRUCT ENGINEER

8/17/99

REVISIONS

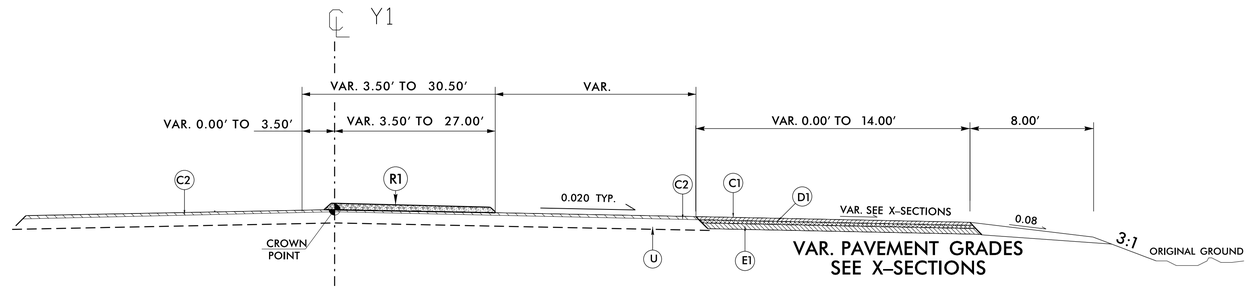
TYPICAL SECTION NO. 17

–Y1– STA 11+80 TO 12+68.54
–Y1– STA 15+80 TO 16+84



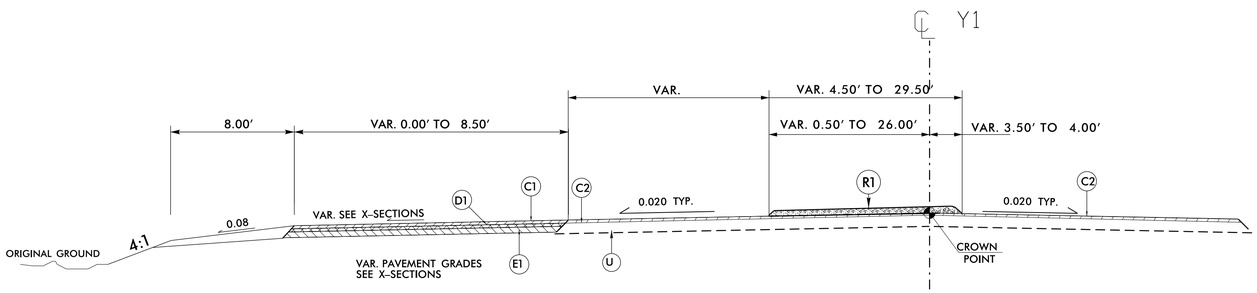
TYPICAL SECTION NO. 18

–Y1– STA 12+68.54 TO 13+66.27



TYPICAL SECTION NO. 19

–Y1– STA 14+80.00 TO 15+80.00



PAVEMENT SCHEDULE	
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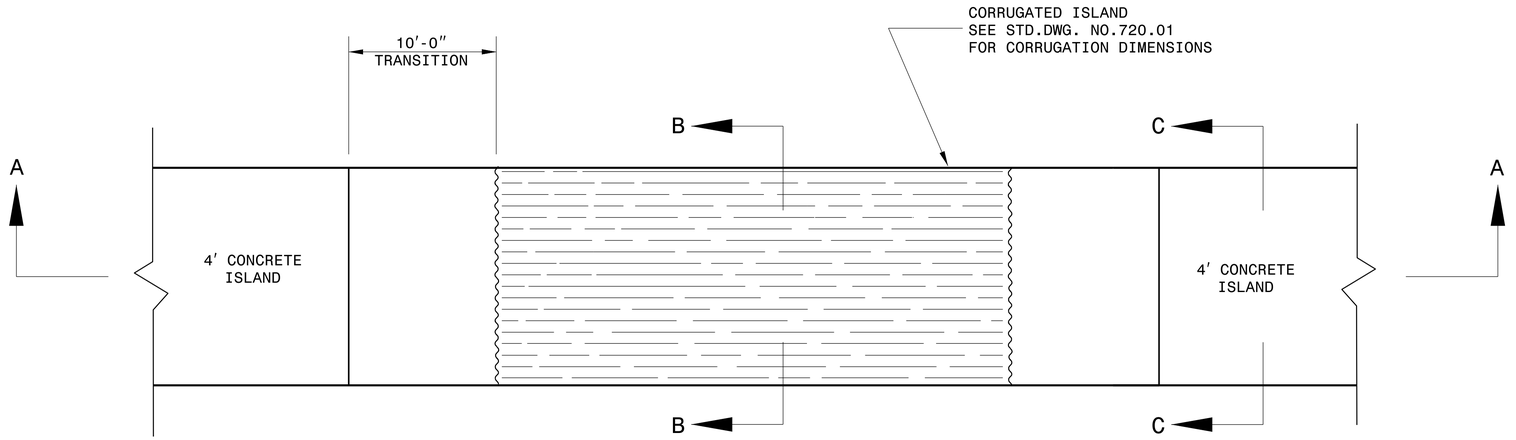
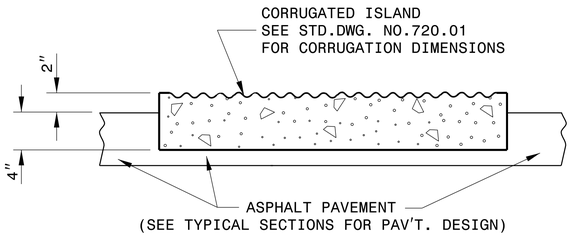
E1	PROP. APPROX. 5.5″ ASPHALT CONCRETE BASE COURSE, TYPE B25.B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
R1	5″ MONOLITHIC CONCRETE ISLAND. (KEYED IN)
R2	EXPRESSWAY GUTTER (STD 846.01)
T_	EARTH MATERIAL.
U_	EXISTING PAVEMENT.
V1	1.5″ MILLING

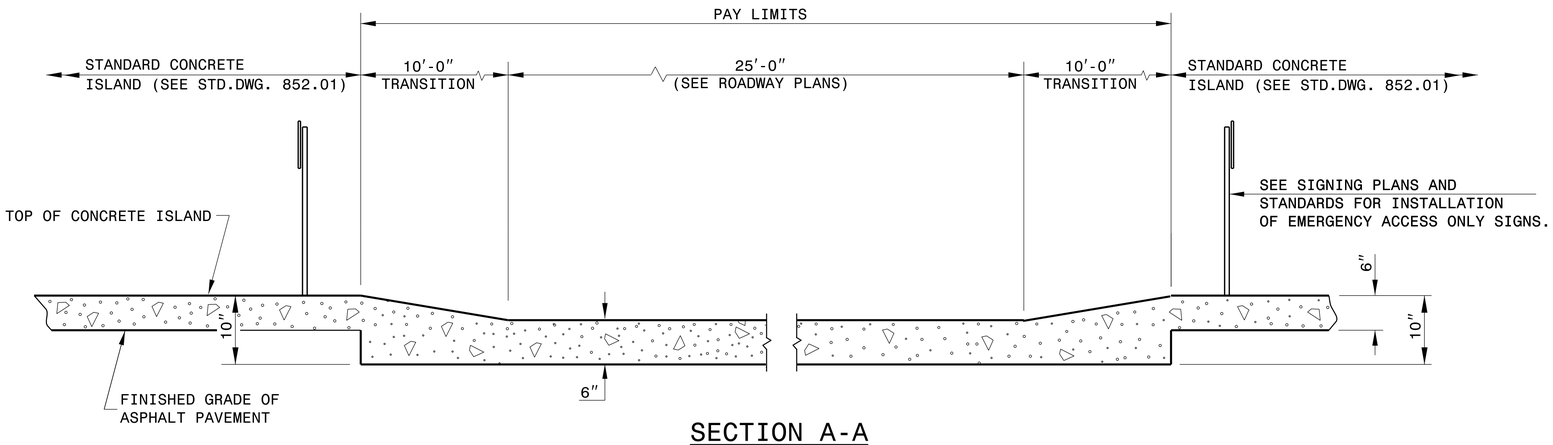
PROJECT REFERENCE NO.	SHEET NO.
W-5601CL	2-E



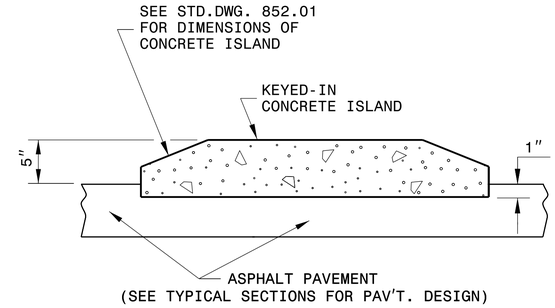
TOP VIEW



SECTION B-B



SECTION A-A



SECTION C-C

DETAIL OF EMERGENCY VEHICLE ACCESS

NOTES:

REFER TO SECTION 852 OF STANDARD SPECIFICATIONS FOR CONCRETE ISLANDS.

REFER TO STANDARD DRAWING 852.01 FOR CONTRACTION/EXPANSION JOINTS.

PLACE W6xW6 REINFORCING WIRE MESH IN THE BOTTOM 3RD OF THE EMERGENCY VEHICLE ACCESS PORTION OF THE CONCRETE ISLAND THAT MEETS SECTION 1070 OF THE STANDARD SPECIFICATIONS.

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER Joel S. Howerton

DocuSigned by:
Joel S. Howerton 6/21/2016
873F3D17DCDC45F...

CONTRACT STANDARDS & DEVELOPMENT UNIT
STANDARDS AND SPECIAL DESIGN
Office 919-250-4128 FAX 919-250-4119

EMERGENCY VEHICLE ACCESS FOR CONCRETE ISLAND

ORIGINAL BY:	E.E. WARD	DATE:	12-99
MODIFIED BY:	T.S.SPELL	DATE:	12-05
CHECKED BY:		DATE:	
FILE SPEC.:	nbritt\metric\murban\u3613b_emergency access.dgn		

16-JUN-2016 16:32
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gsdavis AT DBCAD-270410

COMPUTED BY: DDC DATE: 6-6-16
CHECKED BY: GSD DATE: 6-13-16

PROJECT NO.	SHEET NO.
W-5601CL	3

D8CAD221432

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
-L-MED- 19+00	-L-MED- 27+00	327	1787	1460	
-L-MED- 27+80	-L-MED- 34+00	105	357	252	
-L-MED- 41+50	-L-MED- 48+41	80	308	228	
-Y1- 13+22.42	-Y1- 13+86.72	10	21	11	
-Y1- 14+68.01	-Y1- 15+21.33	8	42	34	
SUBTOTALS:		530	2515	1985	
EST. 5% TO REPLACE TOPSOIL ON BORROW PITS				99.25	
GRAND TOTALS:		530		2084	
SAY:		**535**		**2085**	

SUMMARY OF EXISTING CONCRETE REMOVAL

LINE	Station	Station	LOC LT/RT/CL	SF
-Y1-	12+68	13+65	CL	436.81
-Y1-	14+80	15+80	CL	444.47
DW			LT	119.62
-L-MED-	19+15	19+63	RT	154.62
		TOTAL:		1155.52
		SAY:		**1160**

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

LINE	BEG. STA.	END STA.	LOC.	LENGTH			WARRANT POINT		"N" DIST FROM E.O.L.	TOTAL SHLDR WIDTH	FLAIR LENGTH		W		ANCHORS							IMP. ATTEN. TYPE 350			REMOVE EXISTING GRDRAIL		REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPR. END	TRAIL. END			APPR. END	TRAIL. END	APPR. END	TRAIL. END	XI MOD	XI	GRAU 350	M-350	XII	CAT-1	VI MOD	EA	G	NG			
-L MED-	18+63	19+13	RT	50													1								110		
		SUBTOTAL		50													1								110		
DEDUCTIONS		GRAU 350@ 50' x 1		-50																							
		TOTAL		0													**1**								**110**		
		SAY		**25**	* TOKEN AMOUNT IF NEEDED.																						

COMPUTED BY: DDC DATE: 6/13/2016

CHECKED BY: GSD / WGC DATE: 6/17/2016

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.

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

| STATION | 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 | C.S. PIPE 12" | 15" | 18" | 24" | 30" | 36" | 42" | 48" | R.C. PIPE CLASS III 12" | 15" | 18" | 24" | 30" | 36" | 42" | 48" | R.C. PIPE CLASS IV 12" | 15" | 18" | 24" | 30" | 36" | 42" | 48" | ** R.C. PIPE (CLASS V) | **** RC PIPE CULVERTS, CONTRACTOR DESIGN | **** RC PIPE CULVERTS, CONTRACTOR DESIGN | 15" SIDE DRAIN PIPE | 18" SIDE DRAIN PIPE | ENDWALLS STD. 838.01 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P. | ENDWALLS CU. YARDS 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' | LIN. FT. 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 DROP INLET | CATCH BASIN | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME WITH TWO GRATES STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR 840.26 | G.D.I. TYPE "B" STD. 840.18 OR 840.27 | G.D.I. TYPE "D" STD. 840.19 OR 840.28 | G.D.I. FRAME WITH GRATE STD. 840.20 | G.D.I. FRAME WITH TWO GRATES STD. 840.22 | G.D.I. (N.S.) FRAME WITH GRATE STD. 840.24 | G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24 | J.B. STD. 840.31 OR 840.32 | G.D.I. FRAME (N.S. FLAT) W/2 GRATES STD. 840.29 | T.B.D.I. STD. 840.35 | 15" DRAINAGE PIPE ELBOW | SIDE DRAIN PIPE ELBOWS NO. & SIZE | CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71 | CONC. COLLARS CL. "B" C.Y. STD. 840.72 | PIPE REMOVAL LIN. FT. | REMARKS |
|---|---|---

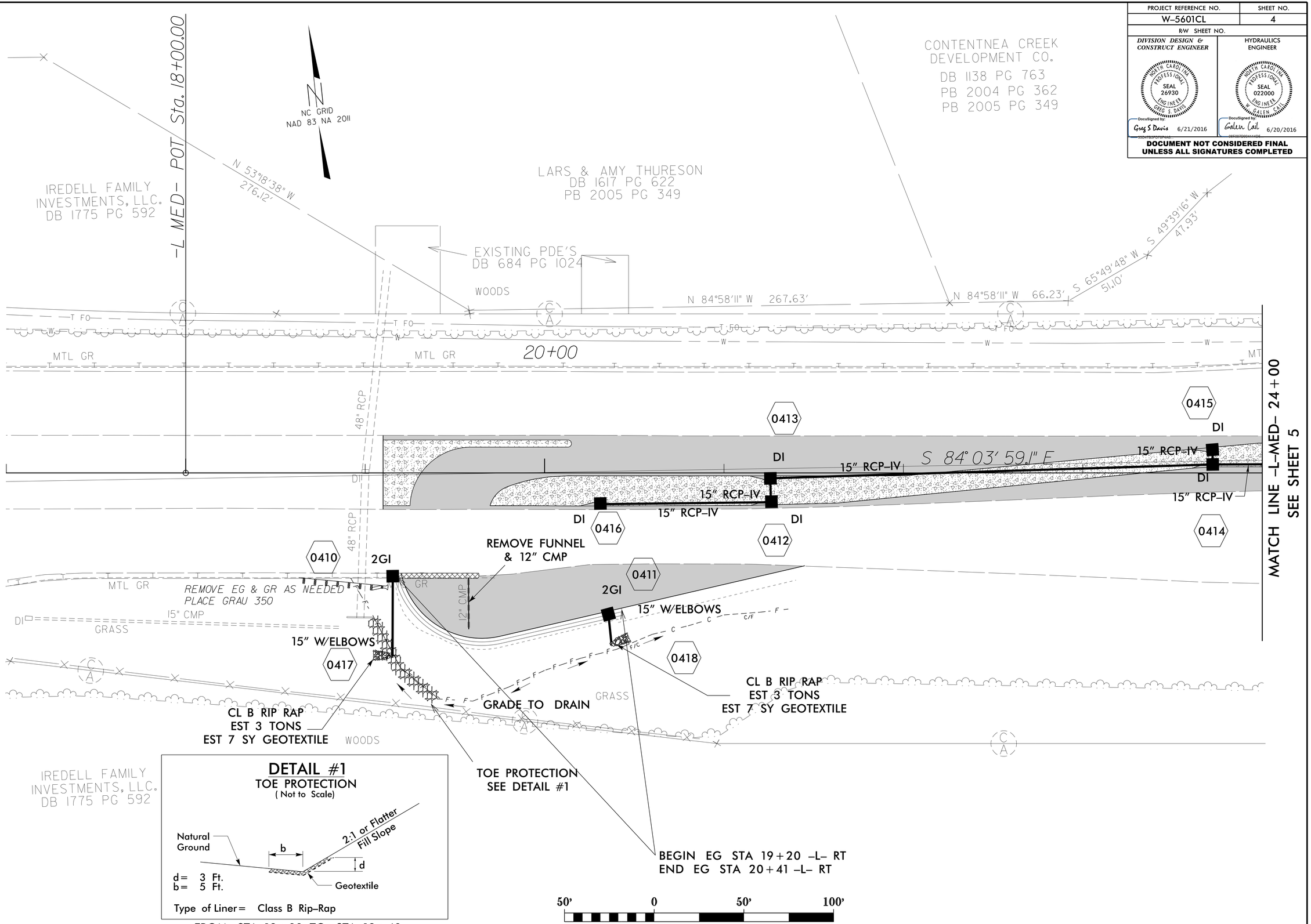
| | | |

PROJECT REFERENCE NO.	SHEET NO.
W-5601CL	4
R/W SHEET NO.	

DIVISION DESIGN & CONSTRUCT ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S. DAVIS — DocuSigned by: Greg S Davis 6/21/2016

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 022000 ENGINEER W. GALEN CAIL — DocuSigned by: Galen Cail 6/20/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



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gsdavis AT DBCAD-270410

PROJECT REFERENCE NO.	SHEET NO.
W-5601CL	4-A
R/W SHEET NO.	

NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S. DAVIS

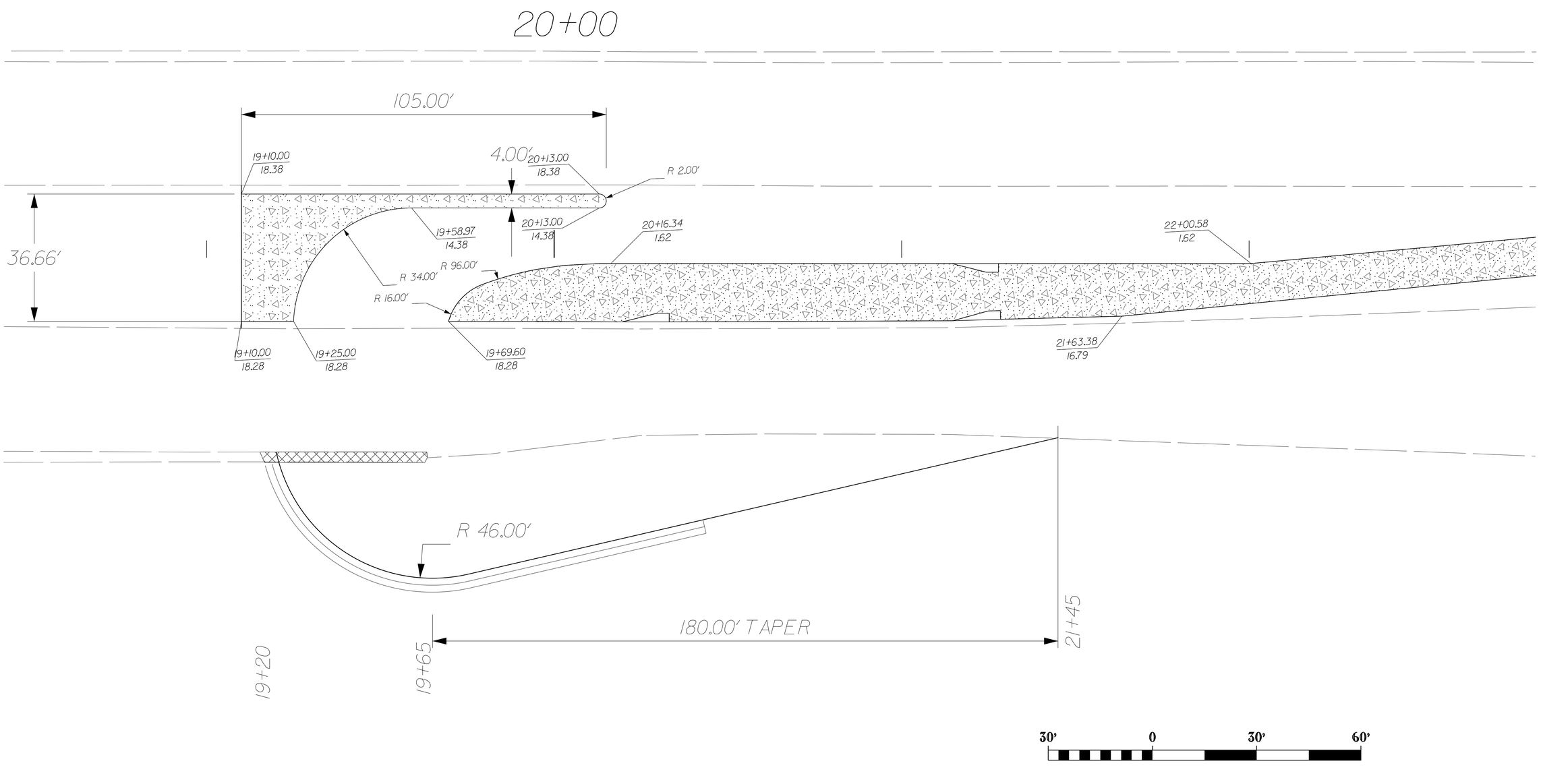
DocuSigned by: Greg S Davis 33D47B5FD78F4A8...

6/21/2016

DIVISION DESIGN / CONSTRUCT ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NOTE: CONTRACTOR SHALL COORDINATE THE INSTALLATION OF SIGN POST HOLES IN CONCRETE ISLANDS WITH DIVISION 8 TRAFFIC SERVICES UNIT. REFER TO ROADWAY STANDARDS NOs. 901 THRU 904. SIGN HOLES SHALL EXTEND THROUGH PAVEMENT TO NATURAL GROUND.



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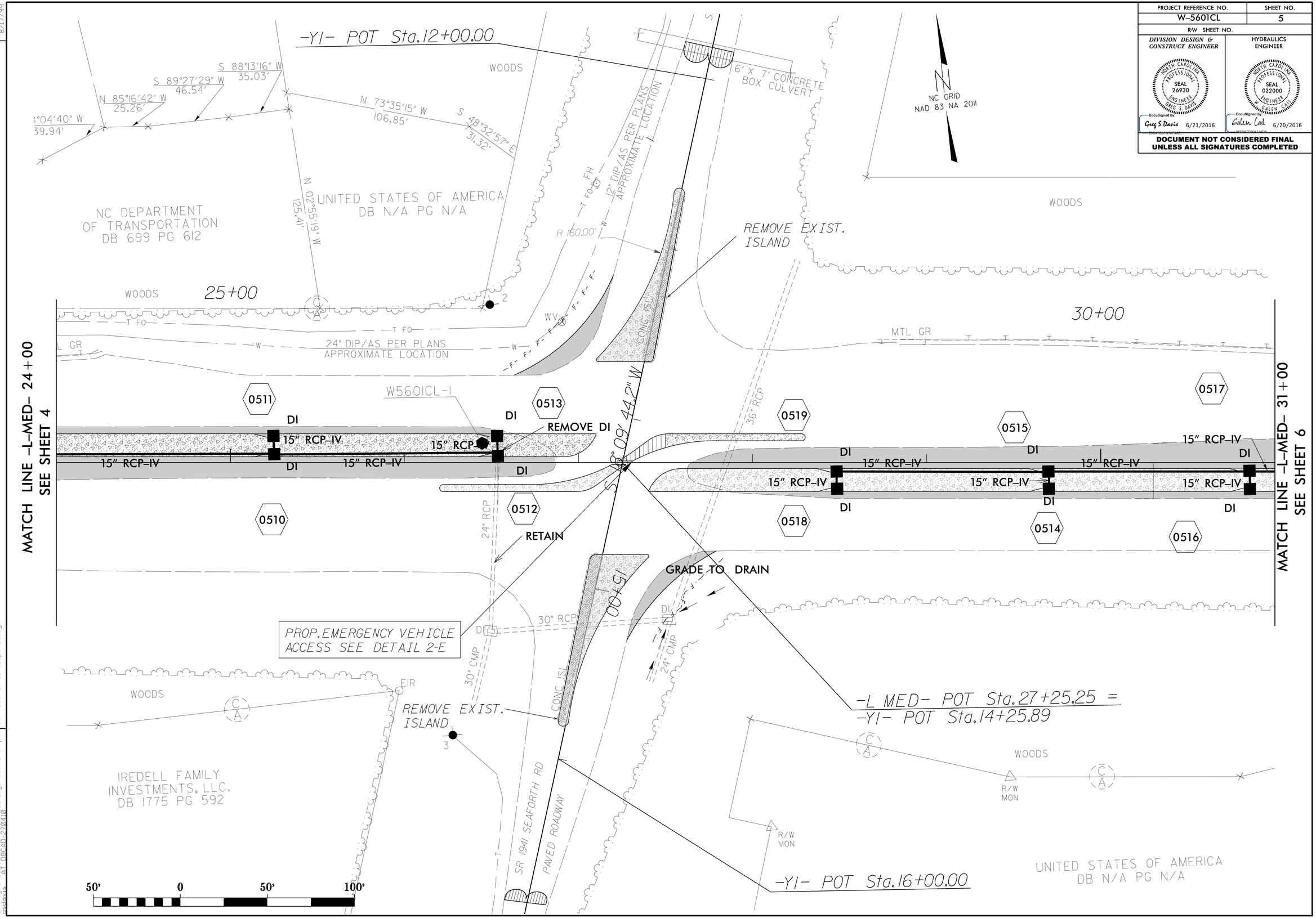
PROJECT REFERENCE NO.	SHEET NO.
W-5601CL	5
R/W SHEET NO.	

DIVISION DESIGN & CONSTRUCT ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S. DAVIS — DocuSigned by: Greg S Davis 6/21/2016

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 022000 ENGINEER W. GALEN CAIL — DocuSigned by: Galen Cail 6/20/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



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gsdavis AT DBCAD-270410

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REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
W-5601CL	5-A
RW SHEET NO.	

NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S DAVIS

DocuSigned by: Greg S Davis 33D47B5FD78F4A8...

6/21/2016

DIVISION DESIGN / CONSTRUCT ENGINEER

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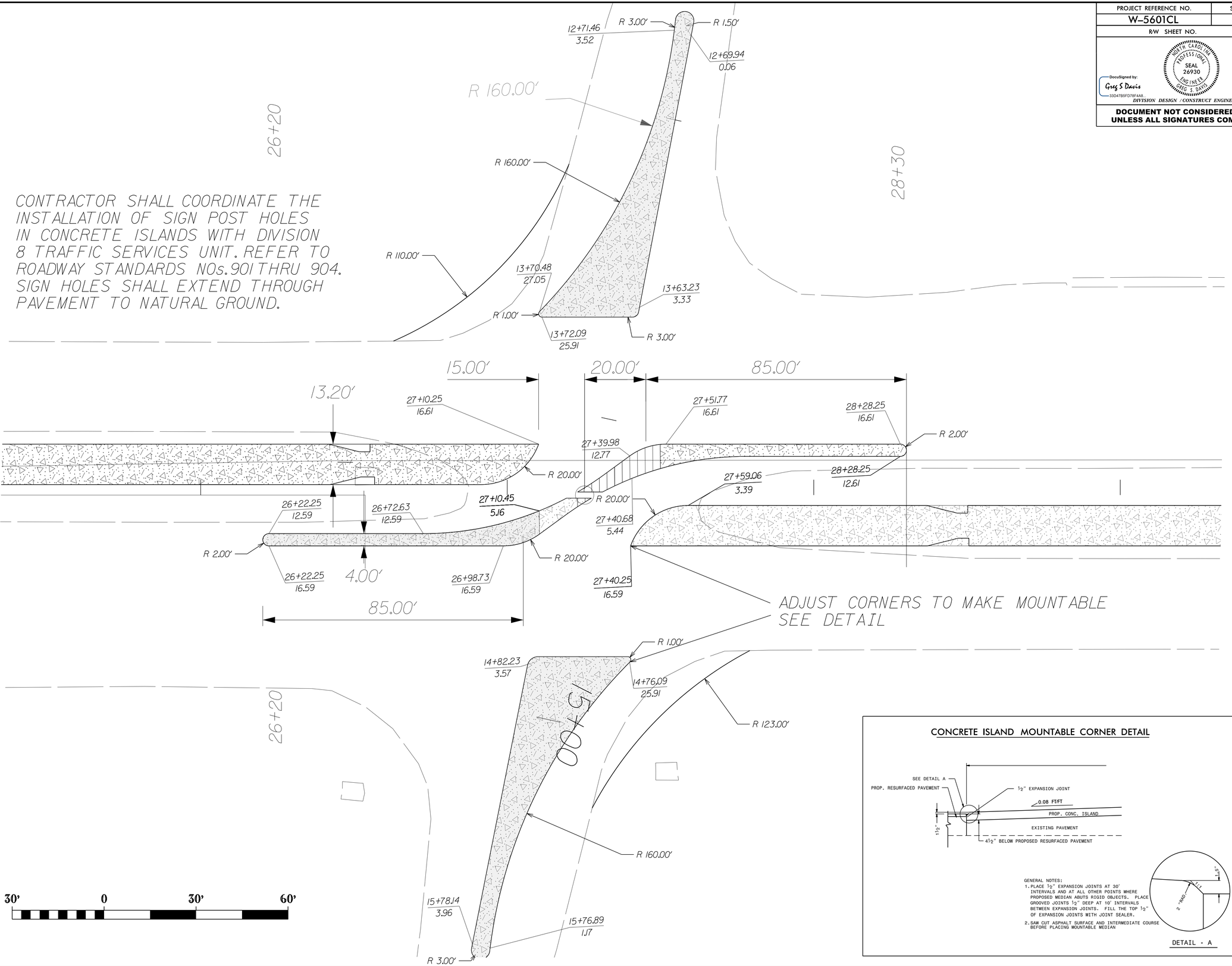

CONCRETE ISLAND MOUNTABLE CORNER DETAIL

GENERAL NOTES:

1. PLACE ½" EXPANSION JOINTS AT 30' INTERVALS AND AT ALL OTHER POINTS WHERE PROPOSED MEDIAN ABUTS RIGID OBJECTS. PLACE GROOVED JOINTS ½" DEEP AT 10' INTERVALS BETWEEN EXPANSION JOINTS. FILL THE TOP ½" OF EXPANSION JOINTS WITH JOINT SEALER.
2. SAW CUT ASPHALT SURFACE AND INTERMEDIATE COURSE BEFORE PLACING MOUNTABLE MEDIAN

DETAIL - A

PROJECT REFERENCE NO.	SHEET NO.
W-5601CL	6
R/W SHEET NO.	

DIVISION DESIGN & CONSTRUCT ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S. DAVIS

DocuSigned by: Greg S Davis 6/21/2016

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022000 ENGINEER W. GALEN CAIL

DocuSigned by: Galen Cail 6/20/2016

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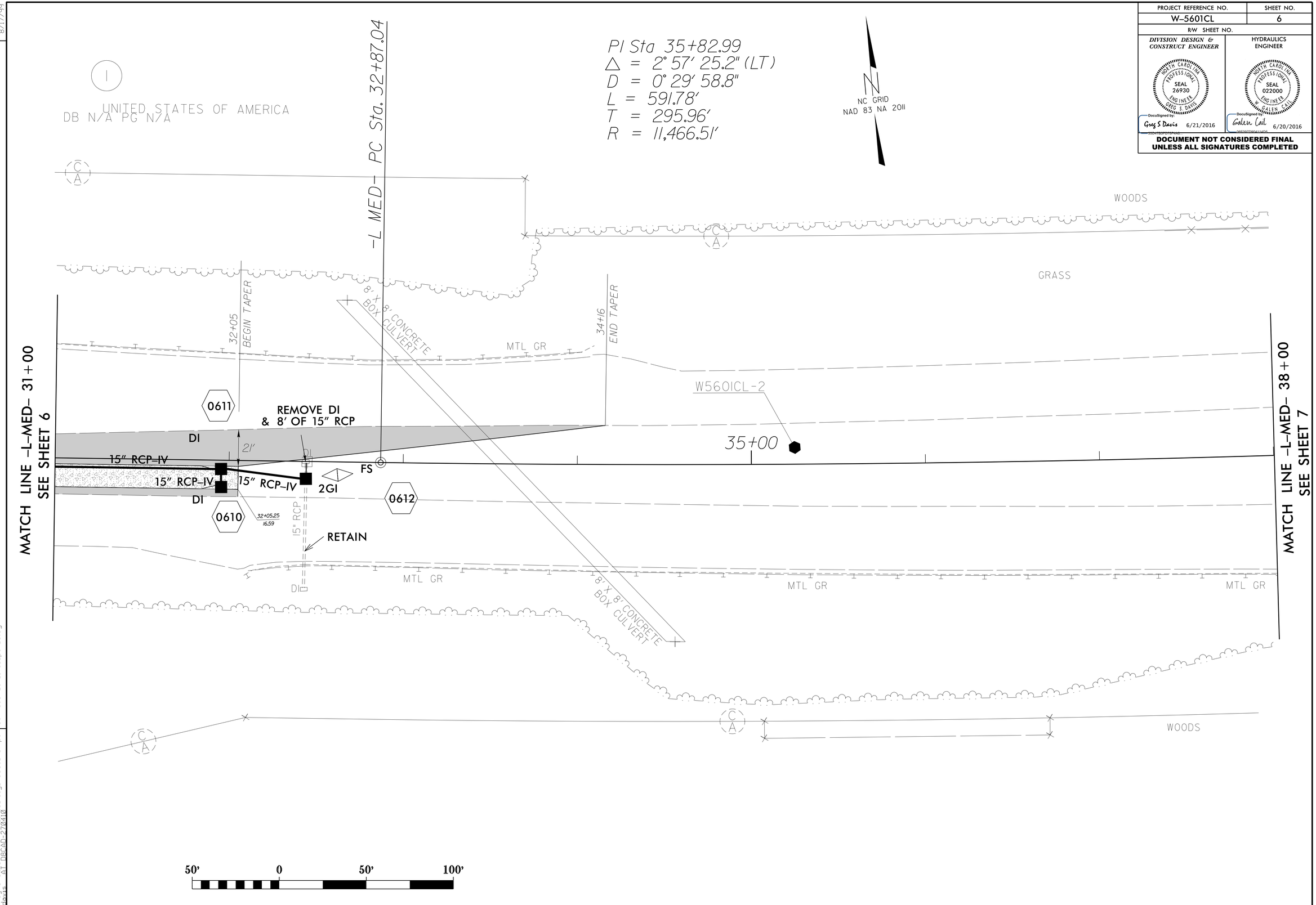

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gsdavis AT D8CAD-270410

PROJECT REFERENCE NO.	SHEET NO.
W-5601CL	7
R/W SHEET NO.	

DIVISION DESIGN & CONSTRUCT ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S. DAVIS

DocuSigned by: Greg S Davis 6/21/2016

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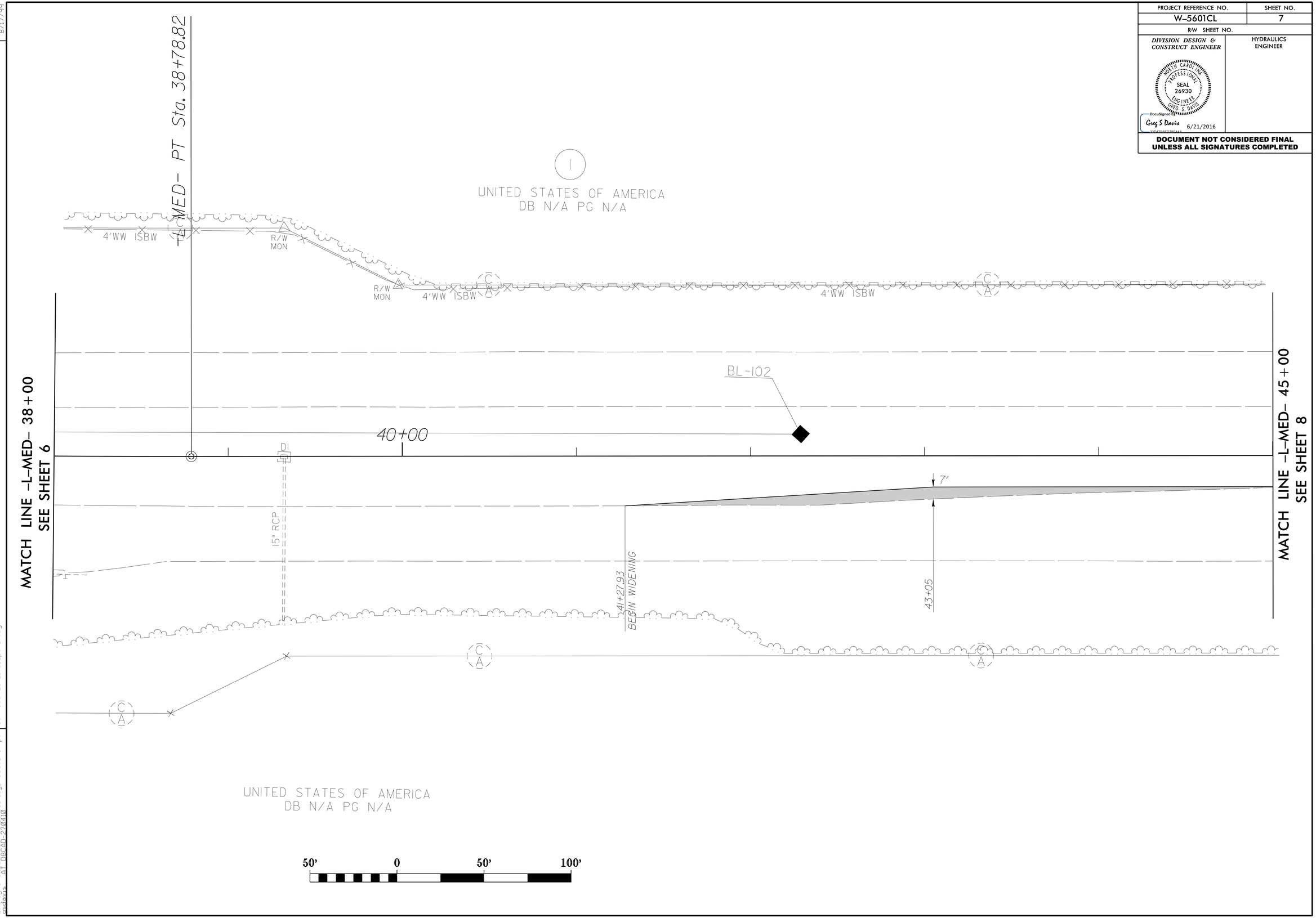

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gsdavis AT DBCAD-270410

PROJECT REFERENCE NO.	SHEET NO.
W-5601CL	8
R/W SHEET NO.	
DIVISION DESIGN & CONSTRUCT ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S. DAVIS	NORTH CAROLINA PROFESSIONAL SEAL 022000 ENGINEER W. GALEN CAIL

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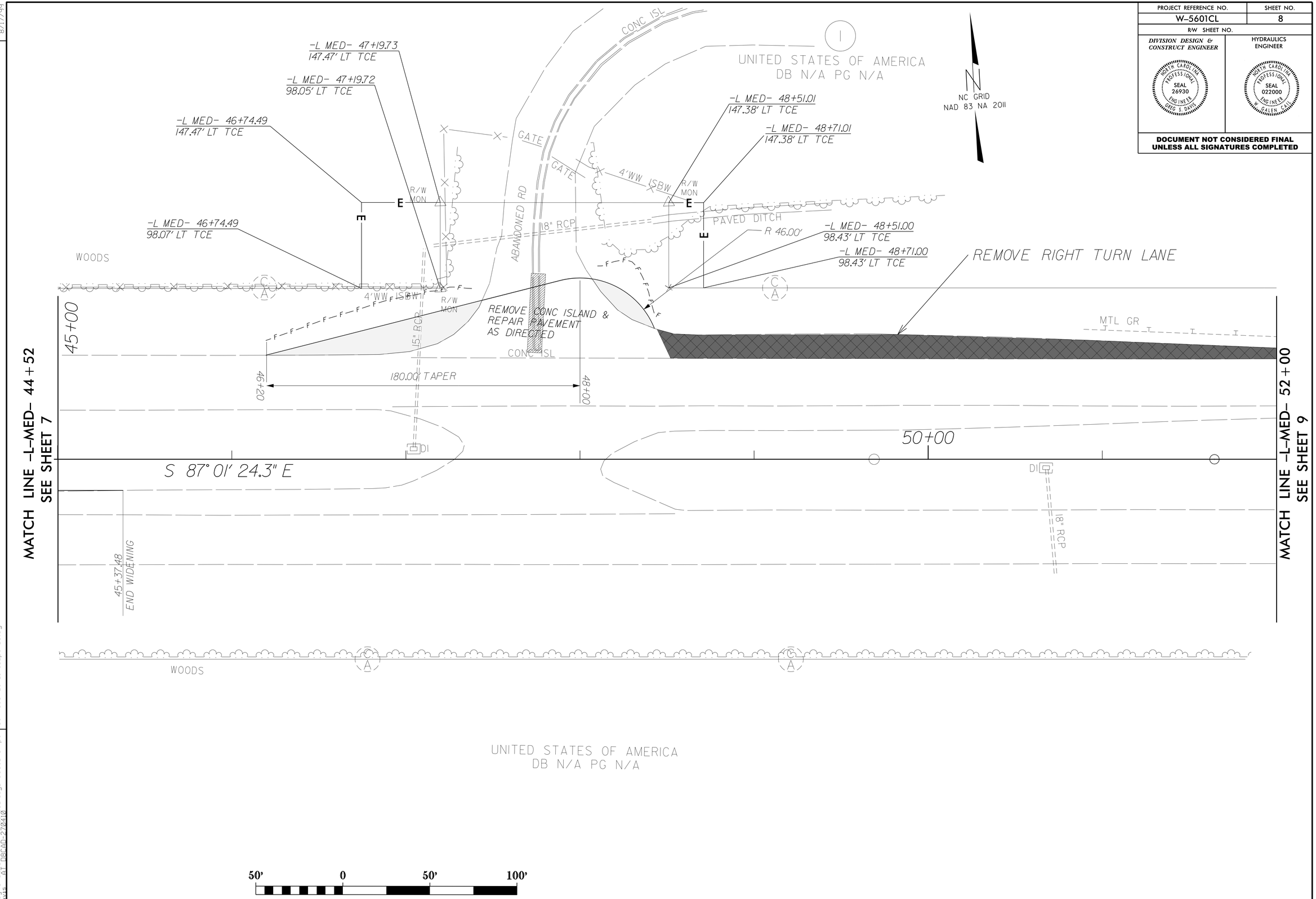

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PROJECT REFERENCE NO.	SHEET NO.
W-5601CL	9
R/W SHEET NO.	

DIVISION DESIGN & CONSTRUCT ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S. DAVIS

DocuSigned by: Greg S Davis 6/21/2016

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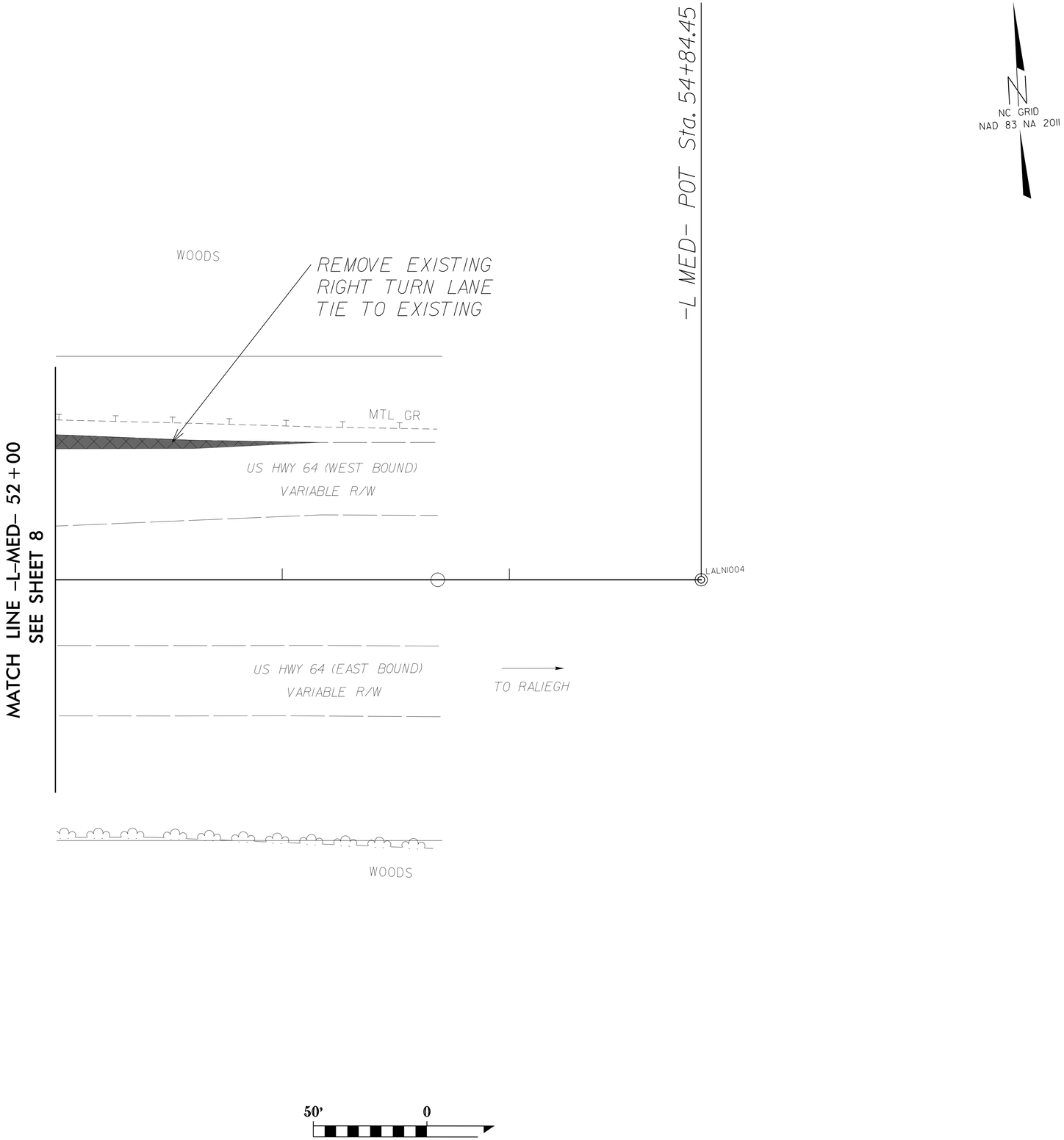

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gsdavis AT DBCAD-270410

PROJ. REFERENCE NO.	SHEET NO.
W-5601CL	TMP-1

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS, OR RESULT IN DUPLICATE, OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING OR REMOVAL OF DEVICES, AS DIRECTED BY THE ENGINEER.

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.

TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTION
US 64 & SR 1716 (BIG WOODS RD)	MONDAY THRU FRIDAY 7:00 AM - 9:00 AM 4:00 PM - 6:00 PM

B) DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

ROAD NAME

US 64 & SR 1716 (BIG WOOD RD)

HOLIDAY

1. FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
2. FOR NEW YEAR'S, BETWEEN THE HOURS OF 7:00 A.M. DECEMBER 31st TO 6:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 6:00 P.M. THE FOLLOWING TUESDAY.
3. FOR EASTER, BETWEEN THE HOURS OF 7:00 A.M. THURSDAY AND 6:00 P.M. MONDAY.
4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 7:00 A.M. FRIDAY TO 6:00 P.M. TUESDAY.
5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 7:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 6:00 P.M. THE DAY AFTER INDEPENDENCE DAY.

   IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 7:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 6:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
6. FOR LABOR DAY, BETWEEN THE HOURS OF 7:00 A.M. FRIDAY AND 6:00 P.M. TUESDAY.
7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 7:00 A.M. TUESDAY TO 6:00 P.M. MONDAY.
8. FOR CHRISTMAS, BETWEEN THE HOURS OF 7:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 6:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

C) DO NOT CONDUCT ANY HAULING OPERATIONS AGAINST THE FLOW OF TRAFFIC OF AN OPEN TRAVELWAY UNLESS THE HAULING OPERATION IS PROTECTED BY BARRIER OR GUARDRAIL OR AS DIRECTED BY THE ENGINEER.

LANE AND SHOULDER CLOSURE REQUIREMENTS

D) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED, OR AS DIRECTED BY THE ENGINEER.

E) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.

F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

G) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

H) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

PAVEMENT EDGE DROP OFF REQUIREMENTS

I) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:

BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.

BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.

J) DO NOT EXCEED A DIFFERNCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING " UNEVEN LANES" SIGNS (W8-1) 500 FT IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THOUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

K) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

L) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

M) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

N) SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH), EXCEPT 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY, WHEN LANE CLOSURES ARE NOT IN EFFECT. WHEN SKINNY DRUMS ARE ALLOWED, REFER TO SECTION 1180 OF STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES OR AS SHOWN IN THE PLANS.

O) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES (DRUMS, CONES OR SKINNY DRUMS) PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME	MARKING	MARKER
WB US 64	THERMO	SNOWPLOWABLE
EB US 64	THERMO	SNOWPLOWABLE
SR 1716	THERMO	SNOWPLOWABLE
SR 1941	THERMO	SNOWPLOWABLE

Q) INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

ROAD NAME	MARKING	MARKER
WB US 64	PAINT	N/A
EB US 64	PAINT	N/A

R) PLACE ONE APPLICATION OF PAINT FOR TEMPORARY TRAFFIC PATTERNS. PLACE A SECOND APPLICATION OF PAINT SIX (6) MONTHS AFTER THE INITIAL APPLICATION AND EVERY SIX MONTHS AS DIRECTED BY THE ENGINEER.

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

T) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

U) TRACE THE EXISTING AND PROPOSED MONOLITHIC ISLAND LOCATIONS WITH PROPER COLOR PAVEMENT MARKINGS PRIOR TO REMOVAL AND INSTALLATION. PLACE DRUMS TO DELINEATE ANY AN EXISTING AND PROPOSED MONOLITHIC ISLANDS AFTER REMOVAL AND BEFORE INSTALLATION

MISCELLANEOUS

V) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR

APPROVED: DocuSigned by: Greg S Davis DATE: 6/21/2016

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S. DAVIS

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN

GENERAL NOTES

16-JUN-2016 16:32
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gsdavis AT DBCAD-21040

PROJ. REFERENCE NO.	SHEET NO.
W-5601CL	TMP-2

MANAGEMENT STRATEGIES

– US 64 TRAFFIC WILL BE MAINTAINED THROUGH LANE CLOSURES.

– TRAFFIC WILL BE MAINTAINED IN THE EXISTING PATTERN UNTIL THE U–TURN LOCATIONS ARE CONSTRUCTED. ONCE TRAFFIC IS SHIFTED TO THE UTILIZE THE U–TURN BULBS, THE EXISTING LEFT TURN LANES AND CROSSOVER WILL BE CLOSED FOR THE CONSTRUCTION OF THE CROSSOVER CONCRETE ISLANDS AND FINAL SURFACE AND MARKINGS.

PHASING

STEP 1:
INSTALL WORK ZONE ADVANCE WARNING SIGNS IN ACCORDANCE WITH NCDOT ROADWAY STANDARD DRAWING NO. 1101.01. WHEN NO WORK IS BEING CONDUCTED FOR A PERIOD LONGER THAN ONE WEEK, REMOVE OR COVER ALL ADVANCE WORK ZONE SIGNS, AS DIRECTED BY THE ENGINEER.

STEP 2:

USING NCDOT STANDARD DRAWING NO. 1101.02 (SHEET 3 OF 15), BEGIN CONSTRUCTION FROM –L–MED STA. 19+00 TO –L–MED STA. 26+85, –L–MED STA. 27+62 TO –L–MED STA. 34+16, –L–MED– STA. 41+27 TO 53+15 AND/OR WIDENING OF RADIUSES ON –Y1–, UP TO AND INCLUDING THE FINAL LAYER OF SURFACE COURSE AND MARKINGS.

CONCRETE ISLANDS SHALL BE CONSTRUCTED IN THE MEDIAN TO A LOCATION DETERMINED BY THE ENGINEER SO AS NOT TO IMPACT TRAFFIC AT THE MEDIAN CROSSOVER AT SR 1716 /SR1941.

NOTE:
AT THE END OF EACH WORK DAY, CONTRACTOR SHALL SAFE–UP MEDIAN WIDENING AND CLOSE MEDIAN SHOULDER USING NCDOT STANDARD DRAWING NO. 1101.04.

STEP 3:

UPON COMPLETION OF STEP 2, CONTRACTOR SHALL SWITCH TRAFFIC TO RIGHT TURNS ONLY ON SR 1716 /SR 1941 TO UTILIZE U–TURN BULBOUTS ON US 64. CLOSE MEDIAN CROSSOVER AT SR 1716 /SR 1941 AND CONSTRUCT CONCRETE MEDIAN ISLANDS IN THE EXISTING CROSSOVER AND ALONG –Y1–

STEP 4:

COMPLETE FINAL LAYER OF SURFACE COURSE AND FINAL PAVEMENT MARKINGS AND MARKERS ON EXISTING MEDIAN, CROSSOVER, AND –Y1–

STEP 5:

REMOVE ALL WORK ZONE TRAFFIC CONTROL DEVICES AND
OPEN US 64 (–L–MED–) AND SR 1716 /SR 1941 (–Y1–) TO FINAL TRAFFIC PATTERN.

APPROVED: DocuSigned by: Greg S Davis DATE: 6/21/2016

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S. DAVIS

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

TEMPORARY TRAFFIC CONTROL PHASING

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gsdavis AT DBCAD-27040

PROJECT REFERENCE NO.	SHEET NO.
W-5601CL	PM-1
RW SHEET NO.	

NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S DAVIS

DocuSigned by: Greg S Davis 33D47B5FD78F4A8...

6/21/2016

DIVISION DESIGN / CONSTRUCT ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PAVEMENT MARKING LEGEND

- ---CRYSTAL / RED PAVEMENT MARKER
- ---YELLOW / YELLOW PAVEMENT MARKER
- ---CRYSTAL / CRYSTAL PAVEMENT MARKER

PAVEMENT MARKING LINES

T2	THERMOPLASTIC (24"	WHITE,	120 MILS)	STOPBAR
T8	THERMOPLASTIC (4"	WHITE,	120 MILS)	2' X 6' SP MINISKIP
T9	THERMOPLASTIC (4"	YELLOW,	120 MILS)	2' X 6' SP MINISKIP
TA	THERMOPLASTIC (4"	WHITE,	90 MILS)	EDGE LINE
TB	THERMOPLASTIC (4"	YELLOW,	90 MILS)	EDGE LINE
TC	THERMOPLASTIC (4"	WHITE,	120 MILS)	10' SKIP
TD	THERMOPLASTIC (4"	WHITE,	120 MILS)	3' X 9' SP MINISKIP
TE	THERMOPLASTIC (4"	WHITE,	120 MILS)	SOLID LANE LINE
TI	THERMOPLASTIC (4"	YELLOW,	120 MILS)	DOUBLE CENTERLINE
TN	THERMOPLASTIC (8"	WHITE,	90 MILS)	GORELINE
TP	THERMOPLASTIC (8"	YELLOW,	90 MILS)	DIAGONAL
TU	THERMOPLASTIC (12"	WHITE,	90 MILS)	DIAGONAL

PAVEMENT MARKING SYMBOLS

UA	THERMOPLASTIC	(LEFT TURN ARROW, 90 MILS)
UB	THERMOPLASTIC	(RIGHT TURN ARROW, 90 MILS)
UC	THERMOPLASTIC	(STRAIGHT ARROW, 90 MILS)
UG	THERMOPLASTIC	(LEFT/STRAIGHT/RIGHT ARROW, 90 MILS)
UT	THERMOPLASTIC	(U-TURN ARROW, 90 MILS)

NC GRID
NAD 83 NA 2011

18+00

20+00

–L MED– 20+13
END TB TA
BEGIN TN

–L MED– 22+00
END TN
BEGIN TD

–L MED– 18+10
BEGIN TB

–L MED– 18+10
BEGIN TB

–L MED– 18+44
BEGIN TB

–L MED– 19+26
END TB
BEGIN T9 TA

–L MED– 19+23
BEGIN TA
END TB

–L MED– 19+65
BEGIN TB
END T9

–L MED– 21+40
END TA
BEGIN TB

–L MED– 21+69
BEGIN TD

–L MED– 22+09
END TB

–L MED– 23+69
END TD
BEGIN TN

50' 0 50' 100'

MATCH LINE –L–MED– 24+00
SEE PM-2

REVISIONS

8/17/99

DATE/TIME PLOTTED: 27-JUN-2016 15:05
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ORIGINAL SHEET SIZE: ANSI D 22.00 x 34.00

PROJECT REFERENCE NO.	SHEET NO.
W-5601CL	PM-2
R/W SHEET NO.	

NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S DAVIS

DocuSigned by: Greg S Davis 33D47B5FD78F4A8...

6/21/2016

DIVISION DESIGN / CONSTRUCT ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PAVEMENT MARKING LEGEND

- ---CRYSTAL / RED PAVEMENT MARKER
- ---YELLOW / YELLOW PAVEMENT MARKER
- ---CRYSTAL / CRYSTAL PAVEMENT MARKER

REVISIONS

8/17/99

MATCH LINE –L–MED– 24+00 SEE PM–1

MATCH LINE –L–MED– 31+00 SEE PM–3

NC GRID NAD 83 NA 2011

25+00

30+00

–Y1– 11+60
END TA
TIE TO EXISTING. REMOVE MINISKIPS AS DIRECTED AND PLACE EDGELINE

–Y1– 11+82
BEGIN TA TI

–Y1– 12+68
END TI
BEGIN TB

–L MED– 24+12
END T8

–L MED– 27+15
END TB
BEGIN T9

–L MED– 27+46
BEGIN TB
END T9 TA

–L MED– 26+64
BEGIN T8 TA

–L MED– 27+64
END T8
BEGIN TE

–L MED– 28+28
END TA TB TE
BEGIN TN

–L MED– 26+22
END TN
BEGIN TA TB TE

–L MED– 26+52
END TE
BEGIN T8

–L MED– 27+05
END TB
BEGIN T9 TA

–L MED– 27+35
END T9
BEGIN TB

–L MED– 27+76
END T8 TA

–Y1– 15+82
END TA

–Y1– 16+84
END TA TI

50' 0 50' 100'

PAVEMENT MARKING LINES

T2 -	THERMOPLASTIC (24"	WHITE, 120 MILS)	STOPBAR
T8 -	THERMOPLASTIC (4"	WHITE, 120 MILS)	2' X 6' SP MINISKIP
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PAVEMENT MARKING SYMBOLS

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UG -	THERMOPLASTIC	(LEFT/STRAIGHT/RIGHT ARROW, 90 MILS)
UT -	THERMOPLASTIC	(U-TURN ARROW, 90 MILS)

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PROJECT REFERENCE NO.	SHEET NO.
W-5601CL	PM-3
R/W SHEET NO.	

DocuSigned by: Greg S Davis 33D47B5FD78E4A8

NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S. DAVIS

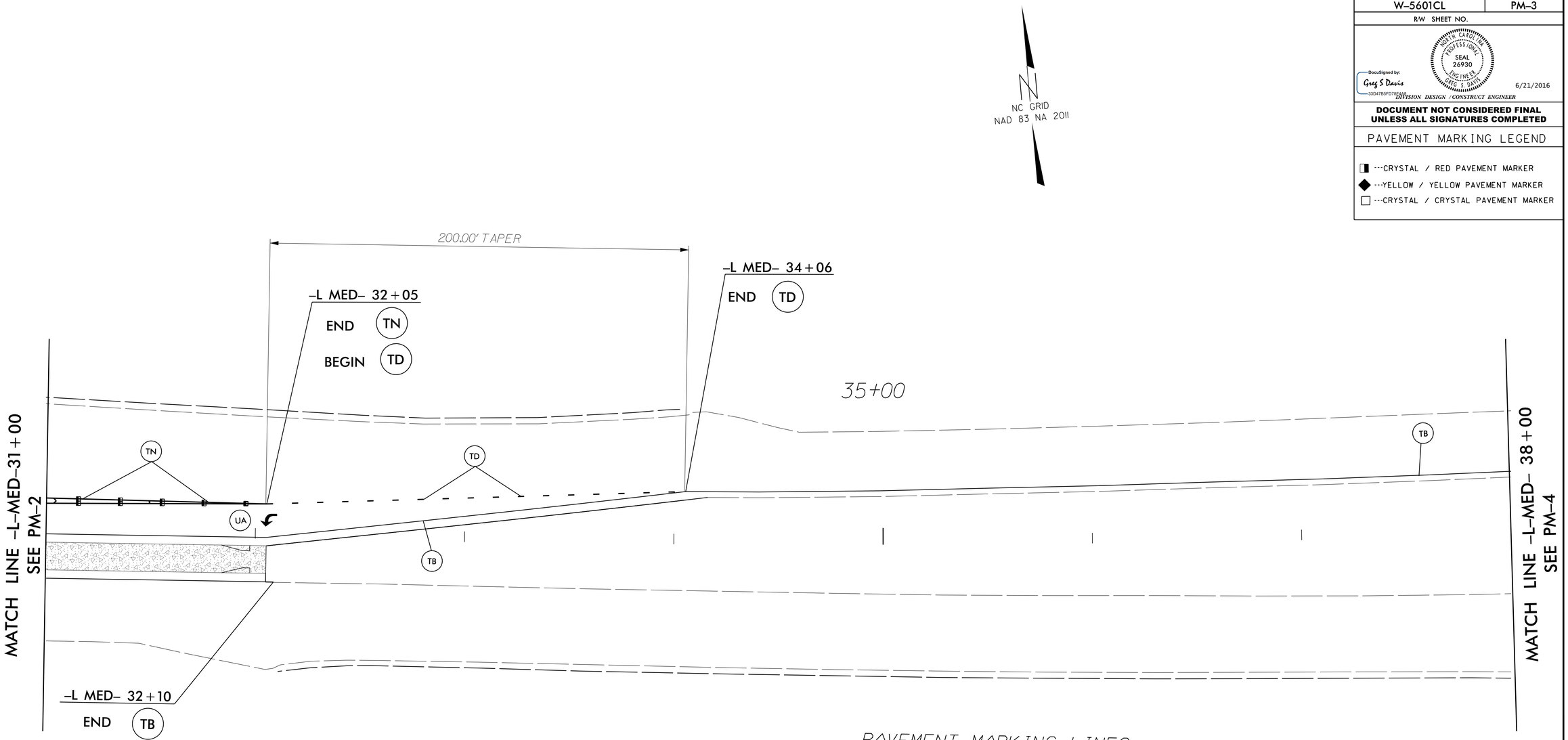
6/21/2016

DIVISION DESIGN / CONSTRUCT ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PAVEMENT MARKING LEGEND

- ---CRYSTAL / RED PAVEMENT MARKER
- ---YELLOW / YELLOW PAVEMENT MARKER
- ---CRYSTAL / CRYSTAL PAVEMENT MARKER



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50' 0 50' 100'

REVISIONS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
W-5601CL	PM-4
R/W SHEET NO.	

NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S DAVIS

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6/21/2016

DIVISION DESIGN / CONSTRUCT ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

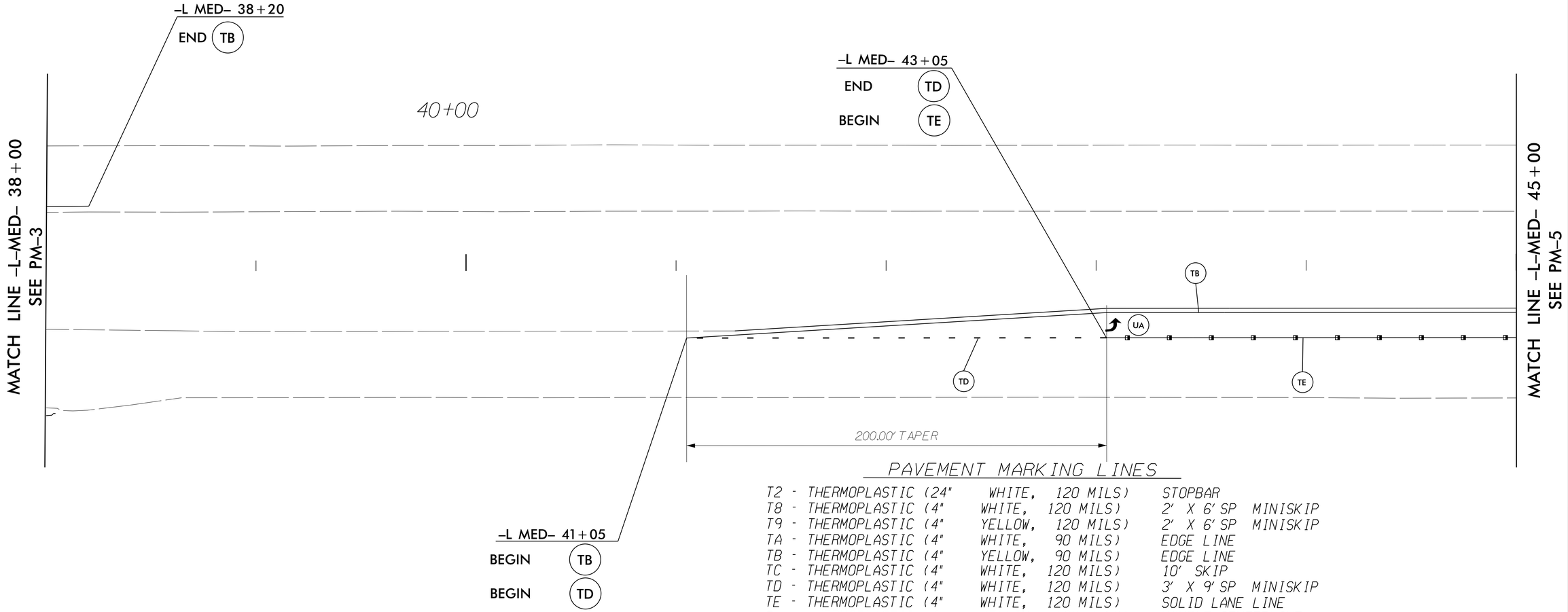
PAVEMENT MARKING LEGEND

- ---CRYSTAL / RED PAVEMENT MARKER
- ---YELLOW / YELLOW PAVEMENT MARKER
- ---CRYSTAL / CRYSTAL PAVEMENT MARKER

NC GRID
NAD 83 NA 2011

8/17/99

REVISIONS



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50' 0 50' 100'

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PROJECT REFERENCE NO.	SHEET NO.
W-5601CL	PM-5
R/W SHEET NO.	

NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S DAVIS

DocuSigned by: Greg S Davis 33D47B5FD78F4A8...

6/21/2016

DIVISION DESIGN / CONSTRUCT ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PAVEMENT MARKING LEGEND

- ---CRYSTAL / RED PAVEMENT MARKER
- ---YELLOW / YELLOW PAVEMENT MARKER
- ---CRYSTAL / CRYSTAL PAVEMENT MARKER

NC GRID
NAD 83 NA 2011

–L MED– 48+42
END TA
BEGIN TB

–L MED– 46+31
BEGIN TA

50+00

MATCH LINE –L–MED– 45+00
SEE PM-4

–L MED– 46+92
END TB

–L MED– 47+34
END TE

50' 0 50' 100'

PAVEMENT MARKING LINES

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UT -	THERMOPLASTIC	(U-TURN ARROW, 90 MILS)

REVISIONS 8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
W-5601CL	PM-6
R/W SHEET NO.	

DocuSigned by: Greg S Davis
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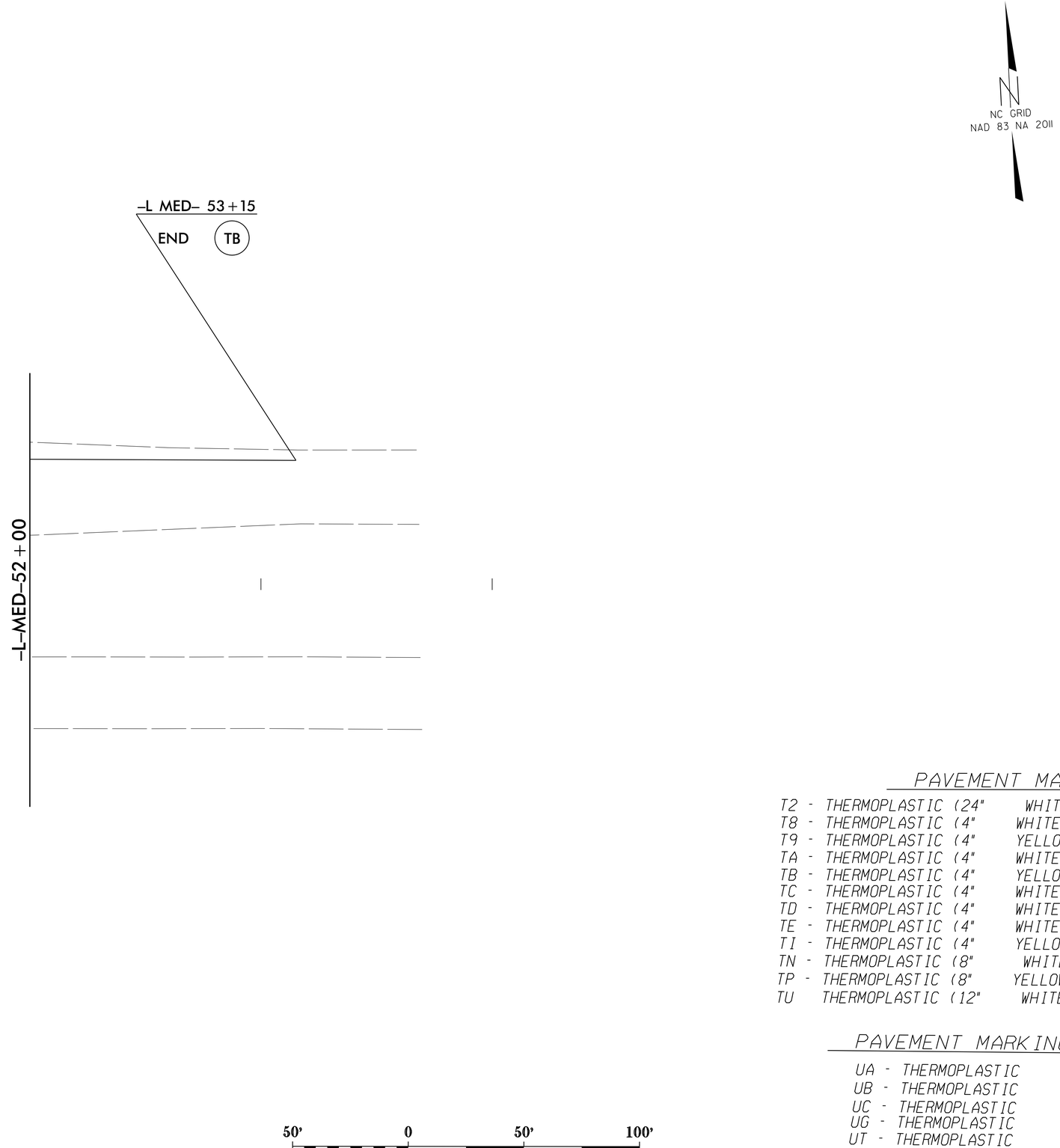
NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S. DAVIS
6/21/2016
DIVISION DESIGN / CONSTRUCT ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PAVEMENT MARKING LEGEND

- ---CRYSTAL / RED PAVEMENT MARKER
- ---YELLOW / YELLOW PAVEMENT MARKER
- ---CRYSTAL / CRYSTAL PAVEMENT MARKER



PAVEMENT MARKING LINES

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REVISIONS

8/17/99

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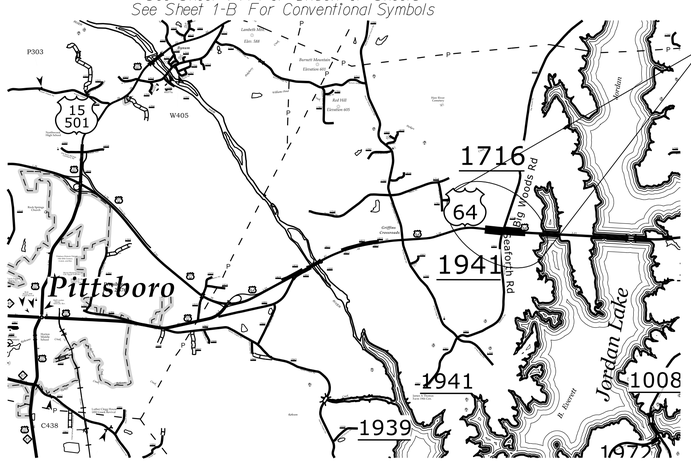
asdavis AT D8CAD-270410

09/08/99

TIP NO. = W-5601CL PROJECT: US 64 @ SR 1716 (BIG WOODS RD)

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



VICINITY MAP

PROJECT LOCATION

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

CHATHAM COUNTY

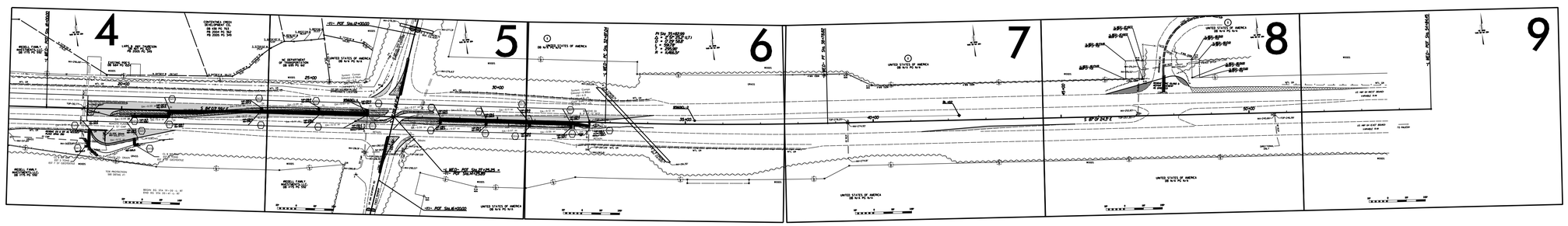
LOCATION: AT THE INTERSECTION OF US 64 AND SR 1716 APPROX. 7 MI. EAST OF PITTSBORO NEAR JORDAN LAKE.

NC GRID
NAD 83 NA 2011

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5601CL	1	

WBS ELEMENT	F.A. PROJ. NO.	DESCRIPTION
50138.1.91		PE
50138.2.91		R/W
50138.3.91		CONST

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
1630.06	Special Stilling Basin	
1632.03	Rock Inlet Sediment Trap Type C	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
	Temporary Rock Silt Check Type-B	
	Wattle	
	Wattle with Polyacrylamide (PAM)	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	



These Erosion and Sediment Control Plans comply with the regulations set forth by the NCG010000 general construction permit effective August 3, 2011 issued by the North Carolina Department of Environment and Natural Resources Division of Water Quality.

Prepared By:
Michael Trotter
Level III A #3149
December 31,2017

PROJECT CONTACTS:
District Engineer Marty Tillman,PE
Design & Construct Engineer Greg S.Davis,PE
Resident Engineer Gary Phillips

PROJECT LENGTH
0.7 mi.

Prepared In the Office of:
DIVISION EIGHT
DIVISION DESIGN & CONSTRUCT UNIT
902 N Sandhills Blvd.
PO Box 1067
Aberdeen, 28315

2012 STANDARD SPECIFICATIONS

Roadway Standard Drawings

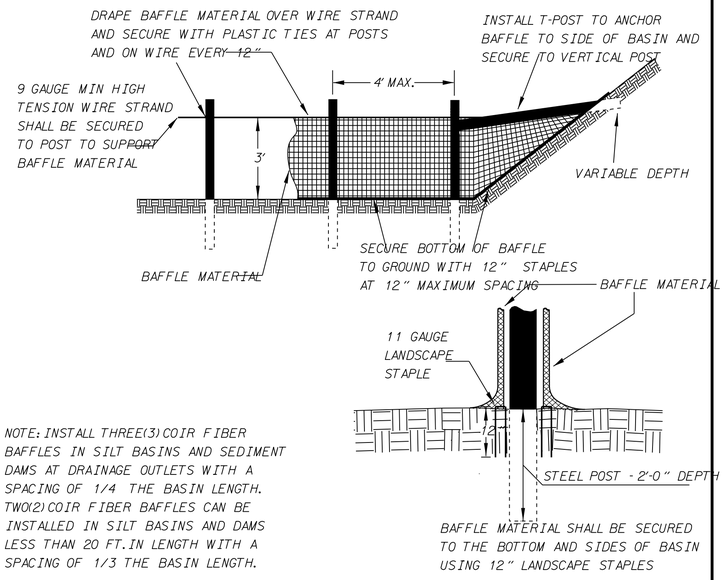
The following roadway english standards as appear in "Roadway Standard Drawings"– Roadway Design Unit – N. C. Department of Transportation – Raleigh, N. C., dated January 17, 2012 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

1605.01	Temporary Silt Fence	1632.01	Rock Inlet Sediment Trap Type A
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1622.01	Temporary Berms and Slope Drains	1633.01	Temporary Rock Silt Check Type A
1630.01	Riser Basin	1633.02	Temporary Rock Silt Check Type B
1630.02	Silt Basin Type B	1634.01	Temporary Rock Sediment Dam Type A
1630.03	Temporary Silt Ditch	1634.02	Temporary Rock Sediment Dam Type B
1630.04	Stilling Basin	1635.01	Rock Pipe Inlet Sediment Trap Type A
1630.05	Temporary Diversion	1636.01	Rock Silt Screen

$$$$$$$$SYSTIME$$$$$$$$
$$$$$$$$DGN$$$$$$$$$$$$$$$$
$$$$$$$$USERNAME$$$$$$$$

TIP PROJECT	SHEET NO.
W-5601CL	EC-2

COIR FIBER BAFFLE DETAIL



NOTE: INSTALL THREE(3) COIR FIBER BAFFLES IN SILT BASINS AND SEDIMENT DAMS AT DRAINAGE OUTLETS WITH A SPACING OF 1/4 THE BASIN LENGTH. 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.

NARRATIVE

1. SOIL TYPE: X CLAY SAND

2. IS THE PROJECT LOCATED IN A HIGH QUALITY WATER ZONE?
YES X NO

3. ARE THERE ANY WETLANDS ADJOINING THIS PROJECT?
_____X____ YES _____ NO

SITE DESCRIPTION

PROJECT DESCRIPTION

The project will consist of clearing, grubbing, draining, setting up the base and paving. The major land disturbing activites will consist of clearing and grading within the right of way. Temporary and permanent erosion control measures will be installed.

MAINTENANCE SCHEDULE

1. INSPECT WEEKLY AND AFTER EACH RAINFALL, USE THE DEPARTMENT OF TRANSPORTATION'S EROSION CONTROL INSPECTION REPORT.

2. MAINTAIN EROSION CONTROL DEVICES AS FOLLOWS:

A. SILT DITCH - REMOVE SEDIMENT FROM THE FLOW AREA AND REPAIR THE DIVERSION RIDGE - CAREFULLY CHECK OUTLETS AND MAKE TIMELY REPAIRS AS NEEDED.

B. SILT FENCE - REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE - AVOID UNDERMINING THE FENCE.

C. SLOPE DRAINS - INSPECT THE SLOPE DRAINS AND SUPPORTING DIVERSIONS.

D. SEDIMENT BASIN - REMOVE SEDIMENT AND RESTORE THE BASIN TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT ACCUMULATES TO ONE-HALF THE DESIGN DEPTH - CHECK THE EMBANKMENT, SPILLWAYS, AND OUTLET FOR EROSION DAMAGE, AND INSPECT THE EMBANKMENT FOR PIPING AND SETTLEMENT - REMOVE ALL TRASH AND OTHER DEBRIS FROM THE RISER AND POOL AREA.

E. CHECK DAM - REMOVE SETTLEMENT ACCUMULATED BEHIND THE DAMS AS NEEDED TO PREVENT DAMAGE TO CHANNEL VEGETATION - ADD STONE TO DAMS AS NEEDED TO MAINTAIN DESIGN HEIGHT AND CROSS SECTION.

F. ROCK DAM - REMOVE SEDIMENT AND RESTORE ORIGINAL VOLUME WHEN SEDIMENT ACCUMULATES TO ONE-HALF THE DESIGN VOLUME - CHECK THE STRUCTURE FOR EROSION, PIPING, AND ROCK DISPLACEMENT AFTER EACH SIGNIFICANT RAINSTORM AND REPAIR IMMEDIATELY.

G. DROP INLET PROTECTION (TYPE C) - REMOVE SEDIMENT FROM THE POOL AREAS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN.

H. SEDIMENT TRAP - REMOVE SEDIMENT AND RESTORE THE TRAP TO ITS ORIGINAL DIMENSIONS WHEN SETTLEMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH OF THE TRAP - CHECK THE STRUCTURE FOR DAMAGE FROM EROSION OR PIPING TO ENSURE IT IS A MINIMUM OF 1.5 FT. BELOW THE LOW POINT OF THE EMBANKMENT.

NOTE: SEDIMENT SHOULD BE PLACED IN DESIGNATED DISPOSAL AREAS AND NOT ALLOWED TO FLOW INTO STREAMS OR DRAINAGE WAYS DURING STRUCTURE REMOVAL.
NOTE: ALL SEDIMENT TRAPS/BASINS SHALL HAVE COIR FIBER BAFFLES. BASINS/TRAPS OVER 10 FT IN LENGTH SHALL HAVE TWO ROWS.
NOTE: NO PAM TO USED WITH THE LAST BMT (WATTLE) AT OUTLET OF THE PROJECT

GENERAL CONSIDERATIONS

1. THE LAW REQUIRES INSTALLATION AND MAINTENANCE OF SUFFICIENT EROSION CONTROL PRACTICES TO RETAIN SEDIMENT WITHIN THE BOUNDARIES OF THE SITE. IT ALSO REQUIRES THAT SURFACES BE NON EROSIVE AND STABLE WITHIN 14 DAYS CALENDAR DAYS AFTER THE COMPLETION OF ANY PHASE OF GRADING.

2. FIT THE DEVELOPMENT TO THE SITE - FOLLOW THE NATURAL CONTOURS AS MUCH AS POSSIBLE. PRESERVE AND USE NATURAL DRAINAGE SYSTEMS.

3. LIMIT CLEARING AND GRUBBING - CLEARLY DEFINE WORK LIMIT LINES. GRADE TO MINIMIZE CUT-AND-FILL SLOPES, PRESERVE NATURAL BUFFER AREAS, AND LIMIT THE TIME THAT BARE SOIL IS EXPOSED.

4. PROTECT THE SOIL SURFACE - LIMIT THE EXTENT OF DISTURBANCE AND STABILIZE THE SOIL SURFACE IMMEDIATELLY. ONCE THE SURFACE HAS BEEN DISTURBED, IT IS SUBJECT TO ACCELERATED EROSION AND SHOULD BE PROTECTED WITH APPROPRIATE COVER, SUCH AS MULCH OR VEGETATION IN AN EXPEDIENT MANNER.

5. SEDIMENT BASINS AND TRAPS - SELECT SITES AND INSTALL SEDIMENT BASINS AND TRAPS BEFORE OTHER CONSTRUCTION ACTIVITIES ARE STARTED. ALSO CONSIDER LOCATIONS FOR DIVERSIONS, OPEN CHANNELS, AND STORM DRAINS AT THIS TIME SO THAT ALL SEDIMENT-LADEN TO RUN OFF CAN BE DIRECTED TO AN IMPOUNDMENT STRUCTURE BEFORE LEAVING THE CONSTRUCTION SITE. INSTALL ALL MEASURES AND RELEASE POINTS PRIOR TO CLEARING AND GRUBBING.

6. ONCE AN AREA IS DISTURBED, IT IS SUBJECT TO ACCELERATED EROSION. EROSION CONSTROL CAN BE ACHIEVED BY:

   - LIMITING THE SIZE OF THE CLEARING AND TIME OF EXPOSURE BY PROPER SCHEDULING,
   - REDUCING THE AMOUNT OF RUNOFF OVER THE DISTURBED SURFACE,
   - LIMITING GRADES AND LENGTHS OF SLOPES, AND
   - RE-ESTABLISHING PROTECTIVE COVER IMMEDIATELY AFTER LAND DUSTURBING ACTIVITIES ARE COMPLETED OR WHEN CONSTRUCTION ACTIVITES ARE DELAYED FOR THIRTY (30) OR MORE WORKING DAYS

7. STABILIZE CONSTRUCTION ACCESS AREAS, CONSTRUCTION ROADS, AND PARKING AREA DURING INITIAL ACTIVITIES. TRY TO KEEP ROAD GRADES TO A MINIMUM GENERALLY NEVER EXCEEDING 12%.

8. CLEAR BORROW AND WASTE DISPOSAL AREAS AS NEEDED AND PROTECT THEM FROM SURFACE RUNOFF. SLOPE ALL AREAS TO PROVIDE POSITIVE DRAINAGE, AND STABILIZE BARE SOIL SURFACES WITH PERMANENT VEGETATION OR MULCH AS SOON AS FINAL GRADES ARE PREPARED. DIRECT ALL RUNOFF THAT CONTAINS SEDIMENT TO A SEDIMENT-TRAPPING DEVICE. IN LARGE BORROW AND DISPOSAL SITES, SHAPE AND DEEPEN THE LOWER END TO FORM AN IN-PLACE SEDIMENT TRAP.

9. ONLY SEDIMENT-FREE RUNOFF MAY BE DISCHARGED FROM CONSTRUCTION SITES DIRECTLY INTO STREAMS. ENSURE THAT ALL OTHER FLOWS ENTER FROM DESILTING POOLS FORMED BY SEDIMENT TRAPS OR BARRIERS.

10. AREAS ADJOINING STREAMS SHOULD BE LEFT UNDISTURBED AS BUFFERS. WHERE NATURAL BUFFERS ARE NOT AVAILABLE, PROVIDE ARTIFICIAL BUFFERS. WHERE WORK IS REQUIRED ALONG A STREAM, PROVIDE MECHANICAL OR ARTIFICIAL BUFFER (25 FEET MINIMUM REQUIRED).

11. BEFORE MOVING TO NEXT JOB SITE, REVIEW ALL MEASURES FOR EFFECTIVENESS; MAKE ANY ADJUSTMENTS, CLEAR-OUTS, OR REPAIR; CALL ROADSIDE ENVIRONMENTAL DEPARTMENT FOR INSTALLATION OF A DITCH LINER AND SEEDING AND MULCHING OF ALL DISTURBED AREAS.

12. CONTINUE TO CHECK AND MAINTAIN ALL MEASURES AFTER EACH SIGNIFICANT RAINFALL UNTIL ALL DISTURBED AREAS BECOME STABILIZED.

13. 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.

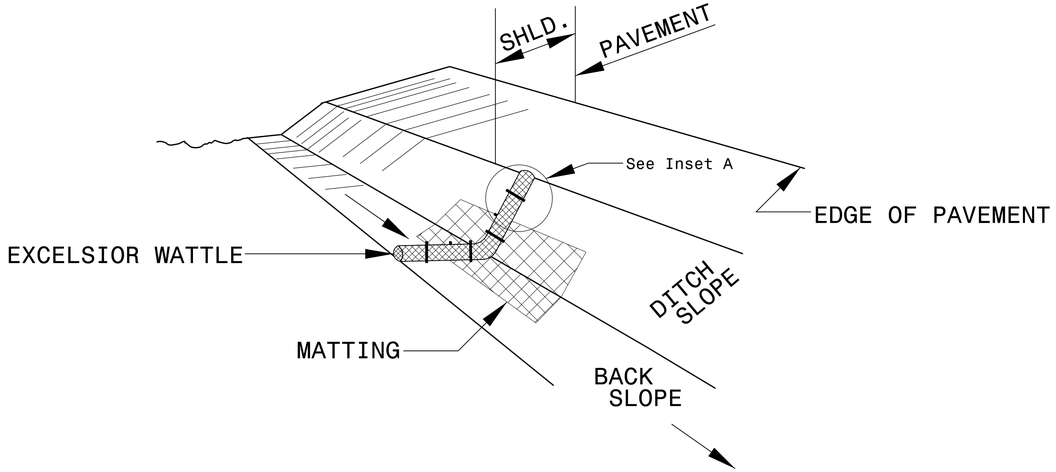
NOTE: The erosion control measures have be designed to provide a minimum of 21% of the storage calculated using the RUSLE2 analysis. These sections of disturbed area must then be permanently stabilized within 30 days from the time grading begins:
OR
The erosion control measures have be designed to provide a minimum of 43% of the storage calculated using the RUSLE2 analysis. These sections of disturbed area must then be permanently stabilized within 60 days from the time grading begins.
Erosion control measures have been labled 30 days or 60 days to note which design.

NOTE:
The erosion control measures have been designed to provide storage calculated using the RUSLE2 analysis. In areas where space will not allow full size basins, 3,600 cubicfoot per acre of disturbed area has been used to calculate the storage at these outlet points. The devices designed using these calculations have been noted, and basins have been drawn to scale.

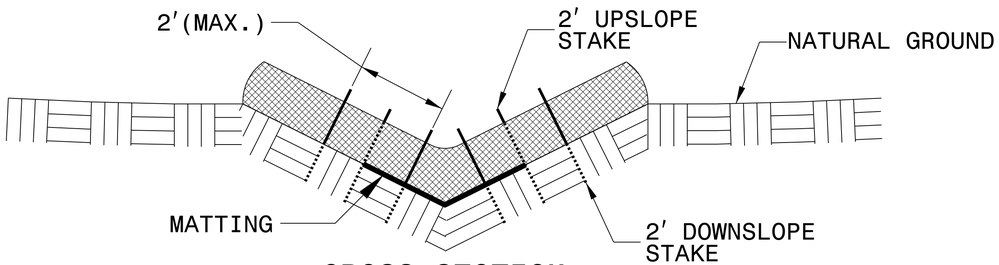
$$$$$$SYST_TIME$$$$$
$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$
$$$$USER_NAME_$$$$

TIP PROJECT	SHEET NO.
W-5601CL	EC-2A

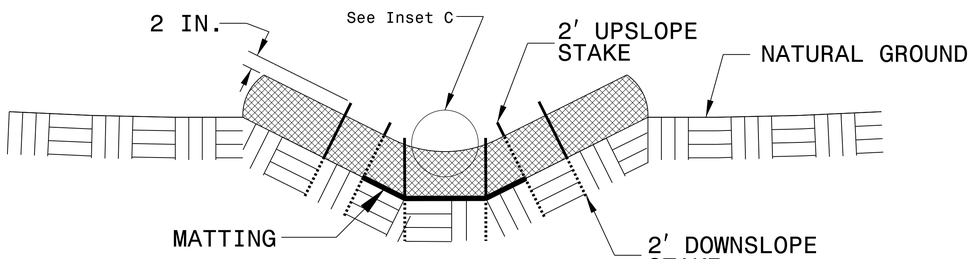
WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



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.

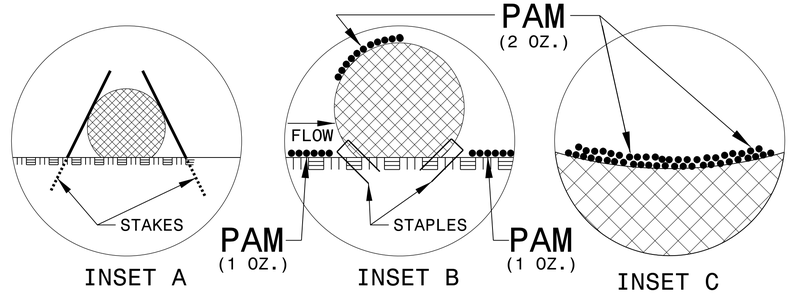
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

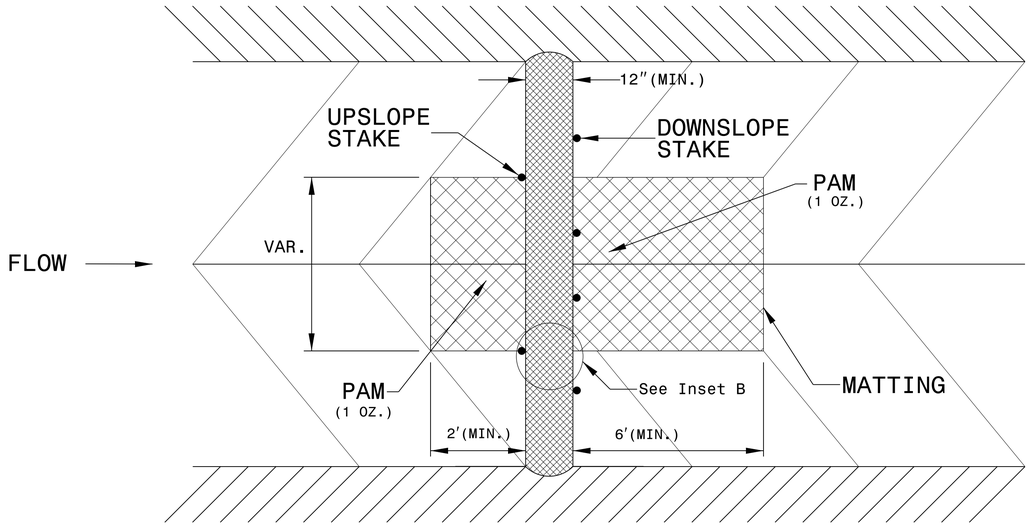
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

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

$$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
W-5601CL	EC-3

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.

PROJECT REFERENCE NO.	SHEET NO.
W-5601CL	EC-3A

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

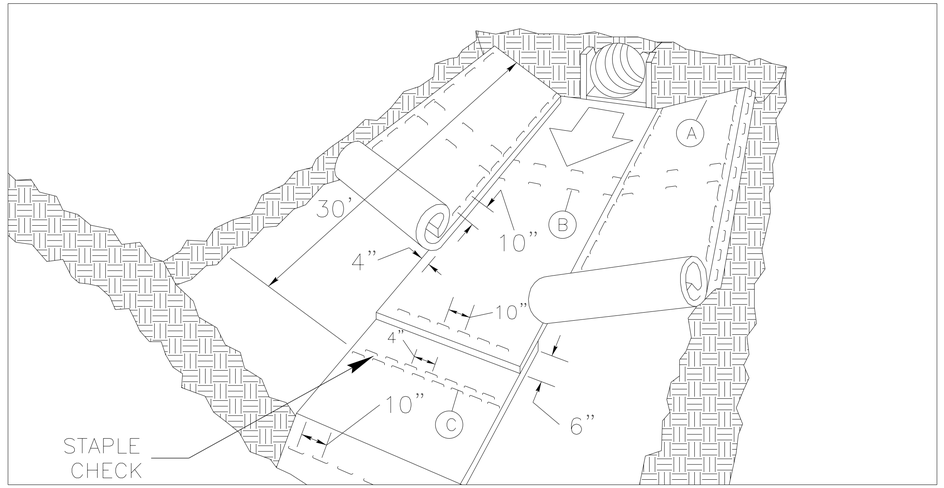
SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

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

PROJECT REFERENCE NO.	SHEET NO.
W-5601CL	EC-3B
RW SHEET NO.	

MATTING INSTALLATION DETAIL



MATTING IN DITCHES

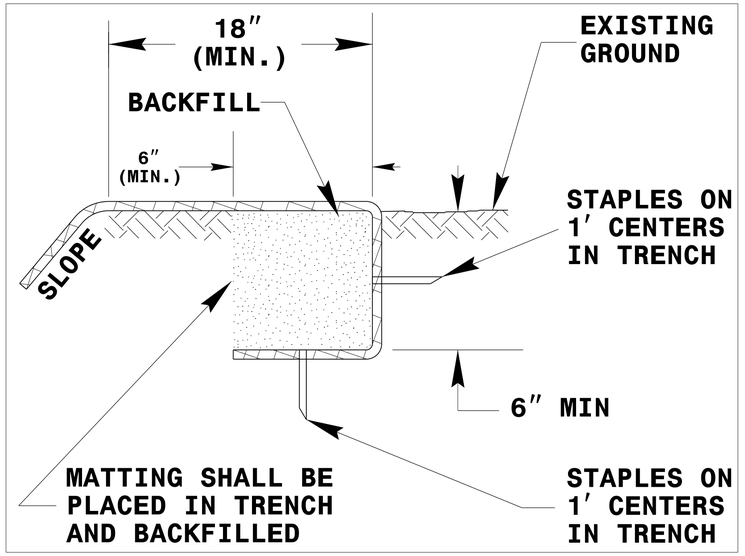
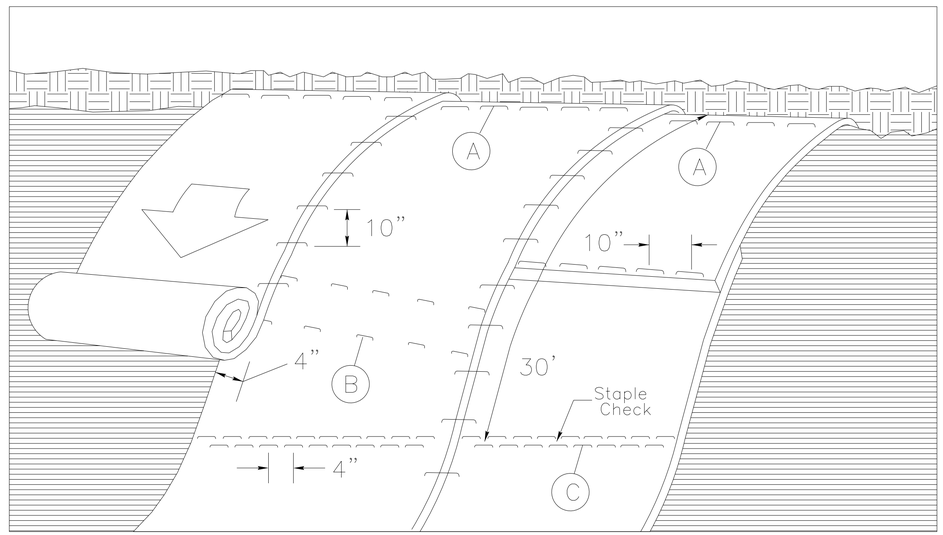


DIAGRAM (A)



MATTING ON SLOPES

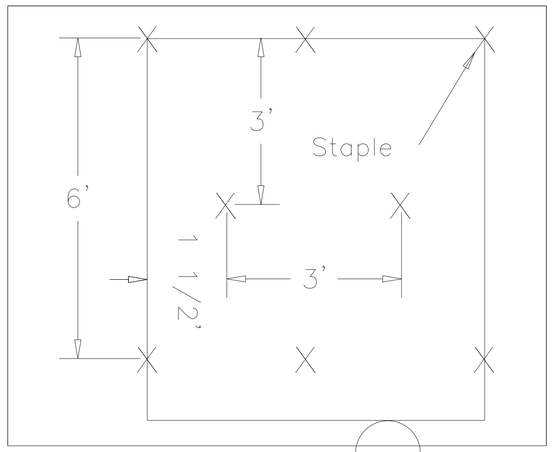


DIAGRAM (B)

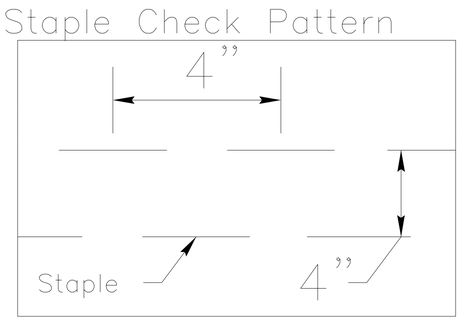


DIAGRAM (C)

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

PROJECT REFERENCE NO.	SHEET NO.
W-5601CL	EC-4
RW SHEET NO.	

8/17/99

REVISIONS

-L MED- POT Sta. 18+00.00

NC GRID
NAD 83 NA 2011

IREDELL FAMILY
INVESTMENTS, LLC.
DB 1775 PG 592

N 53°18'38" W
276.12'

LARS & AMY THURESON
DB 1617 PG 622
PB 2005 PG 349

CONTENTNEA CREEK
DEVELOPMENT CO.
DB 1138 PG 763
PB 2004 PG 362
PB 2005 PG 349

EXISTING PDE'S
DB 684 PG 1024

WOODS

N 84°58'11" W 267.63'

N 84°58'11" W 66.23'

S 65°49'48" W
51.10'

S 49°39'16" W
47.93'

S 57°59'02" W
29.14'

S 68°04'
39.9'

S 84°03'59" E

20+00

MTL GR

T FO

W

C A

48" RCP

15" RCP-IV

DI

2GI

FLOW

REMOVE FUNNEL
& 12" CMP

12" CMP

15" CMP

15" W/ELBOWS

break point

GRADE TO DRAIN

GRASS

CL B RIP RAP
EST 3 TONS
EST 7 SY GEOTEXTILE

TEMP. SED. BASIN TYPE-B
5' WEIR &
COIR FIBER BAFFLES
DESIGNED USING THE 60 DAY OPTION
ID. #1

TOE PROTECTION
SEE DETAIL #1

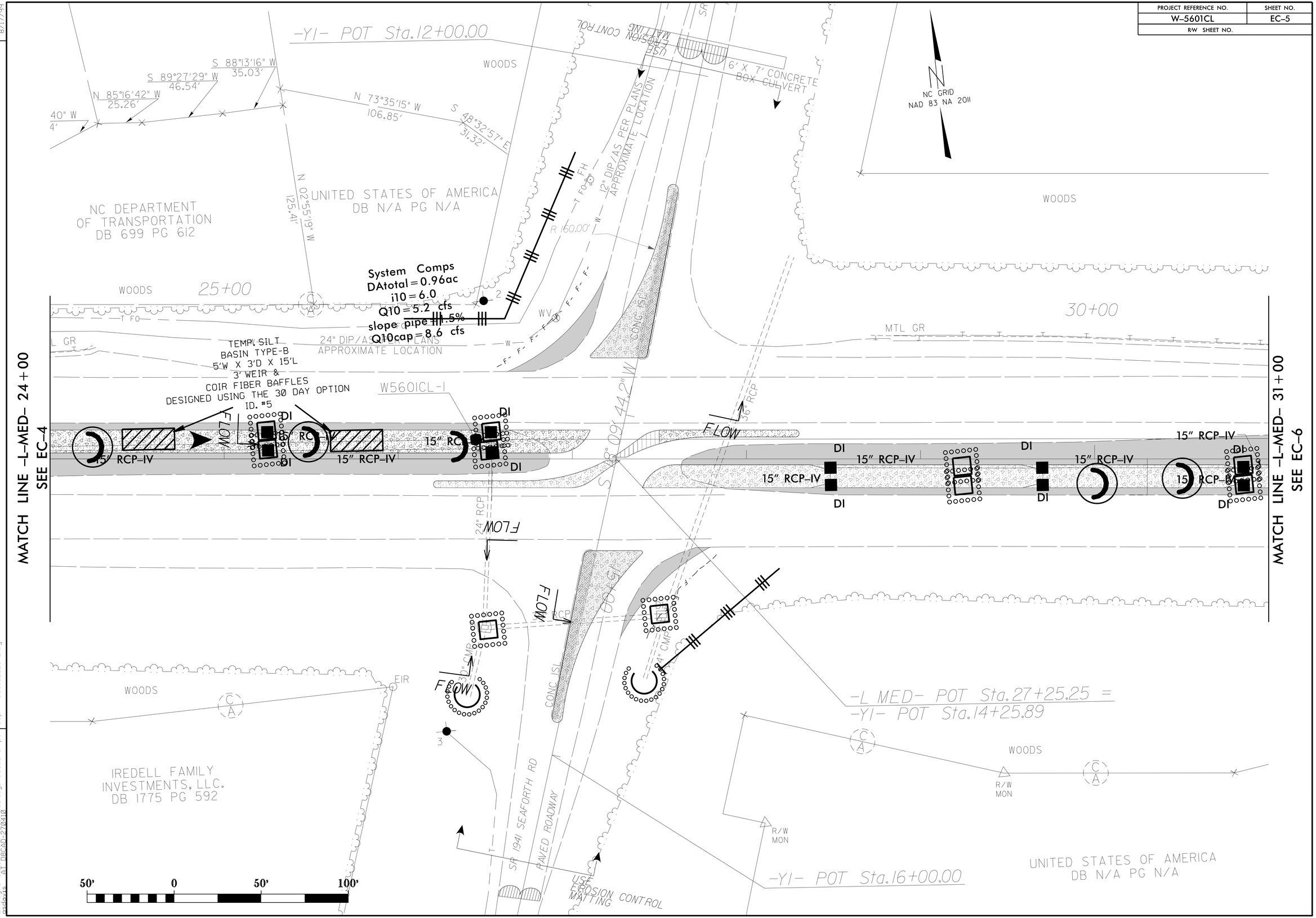
USE EROSION MAT'ING CONTROL

MATCH LINE -L-MED- 24+00
SEE EC 5

50' 0 50' 100'

17-JUN-2016 15:07
C:\Projects\Contentnea Creek\Roadway\sheets\sheet_files\w5601cl_ec-1_woods_rdl\psh\ecpW-5601CL_EC-1.dgn
preparedby AT DAVID 27010

PROJECT REFERENCE NO.	SHEET NO.
W-5601CL	EC-5
R/W SHEET NO.	



REVISIONS

8/17/99

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gsdavis AT DRCAD-270410

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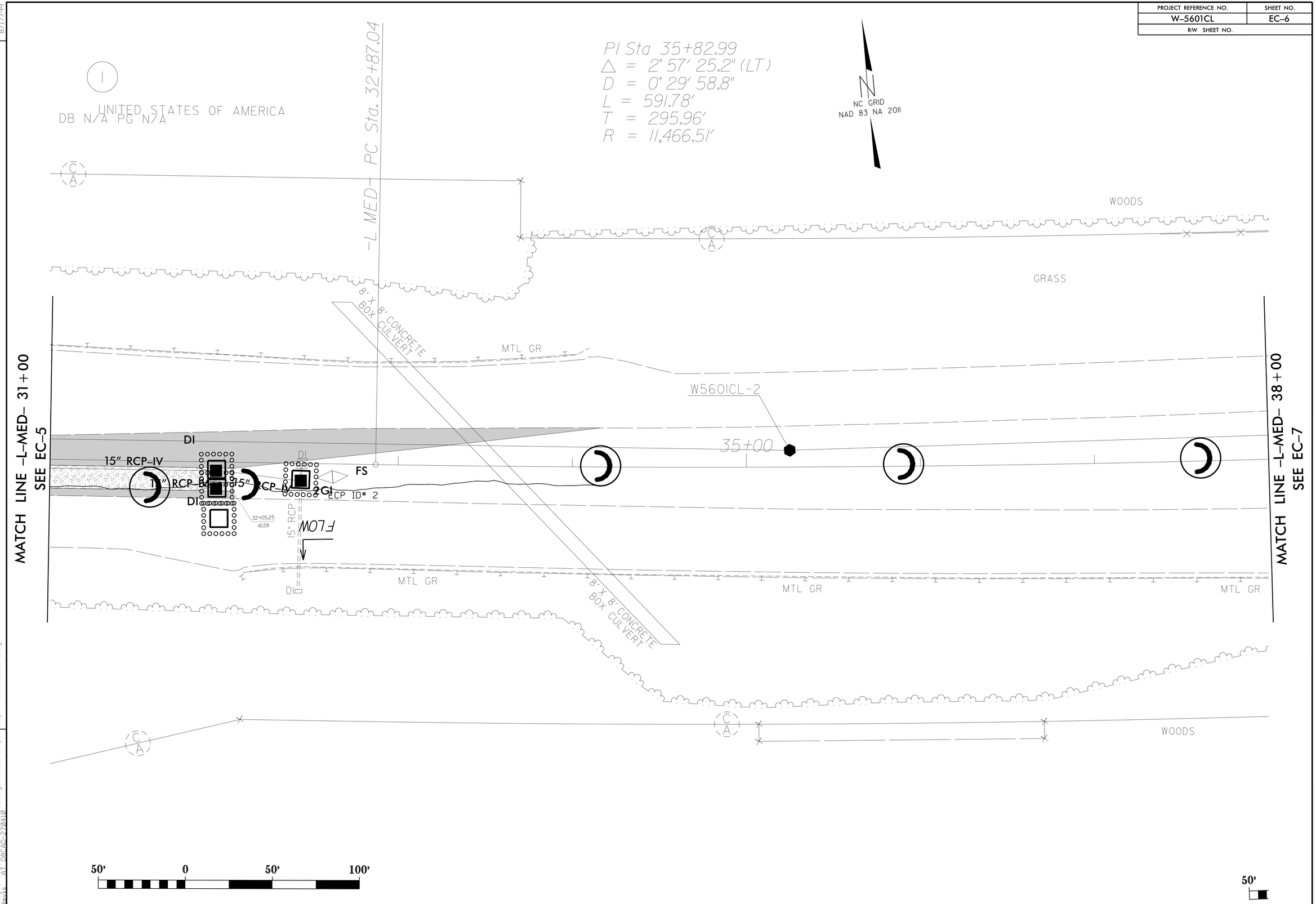
R/W SHEET NO.	



REVISIONS

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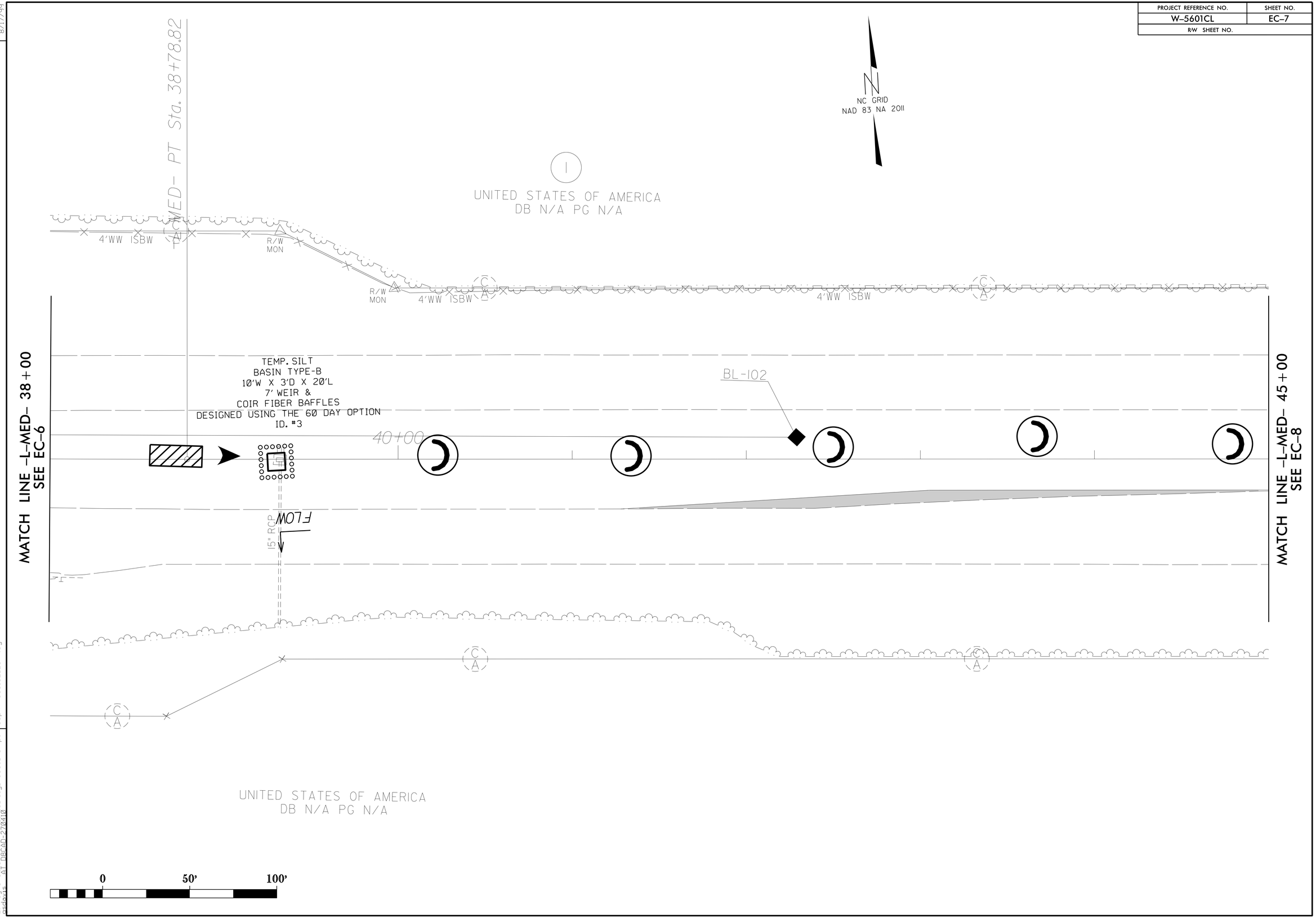
W-5601CL	EC-7
R/W SHEET NO.	



REVISIONS

8/17/99

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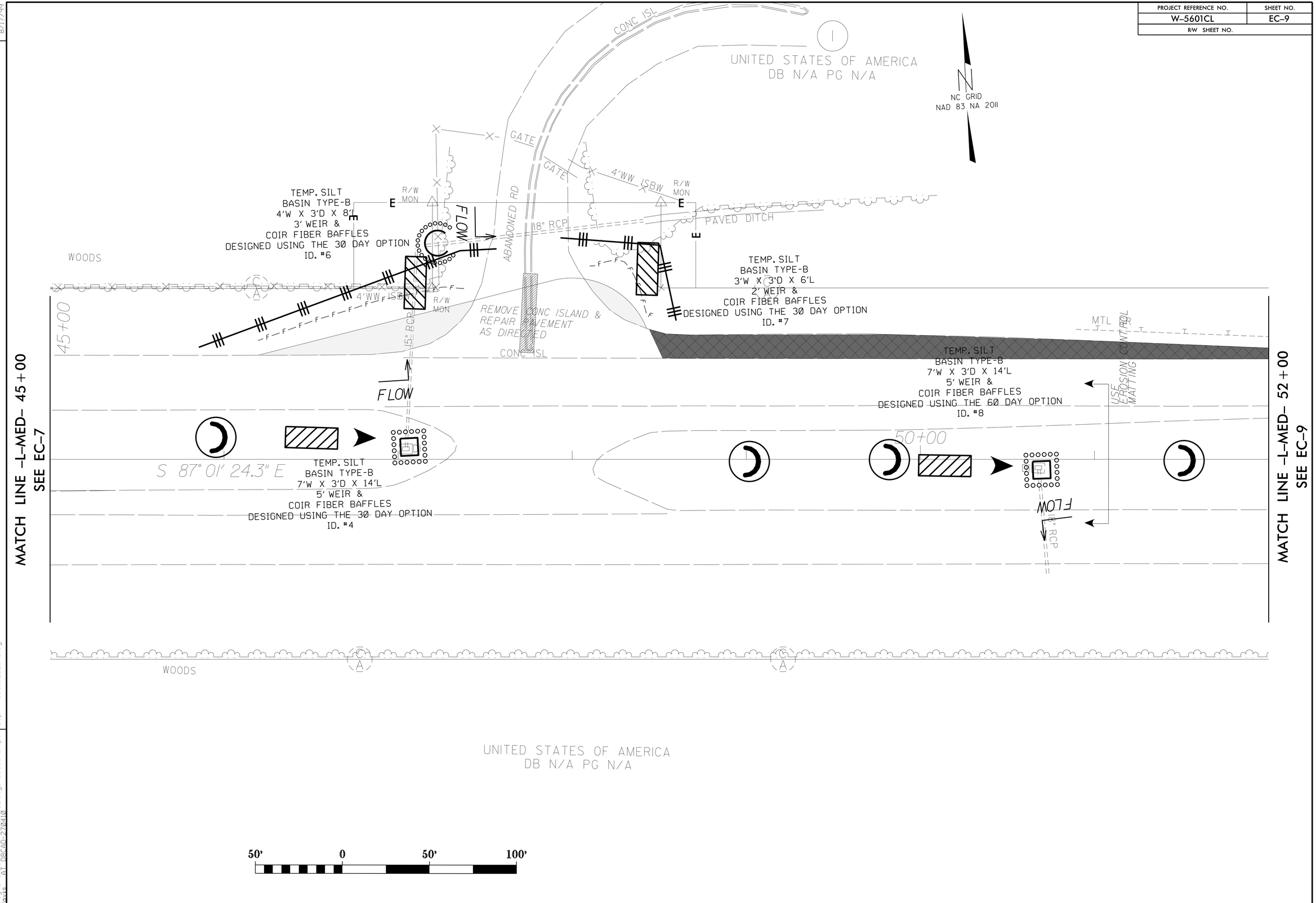
W-5601CL	EC-9
R/W SHEET NO.	



REVISIONS

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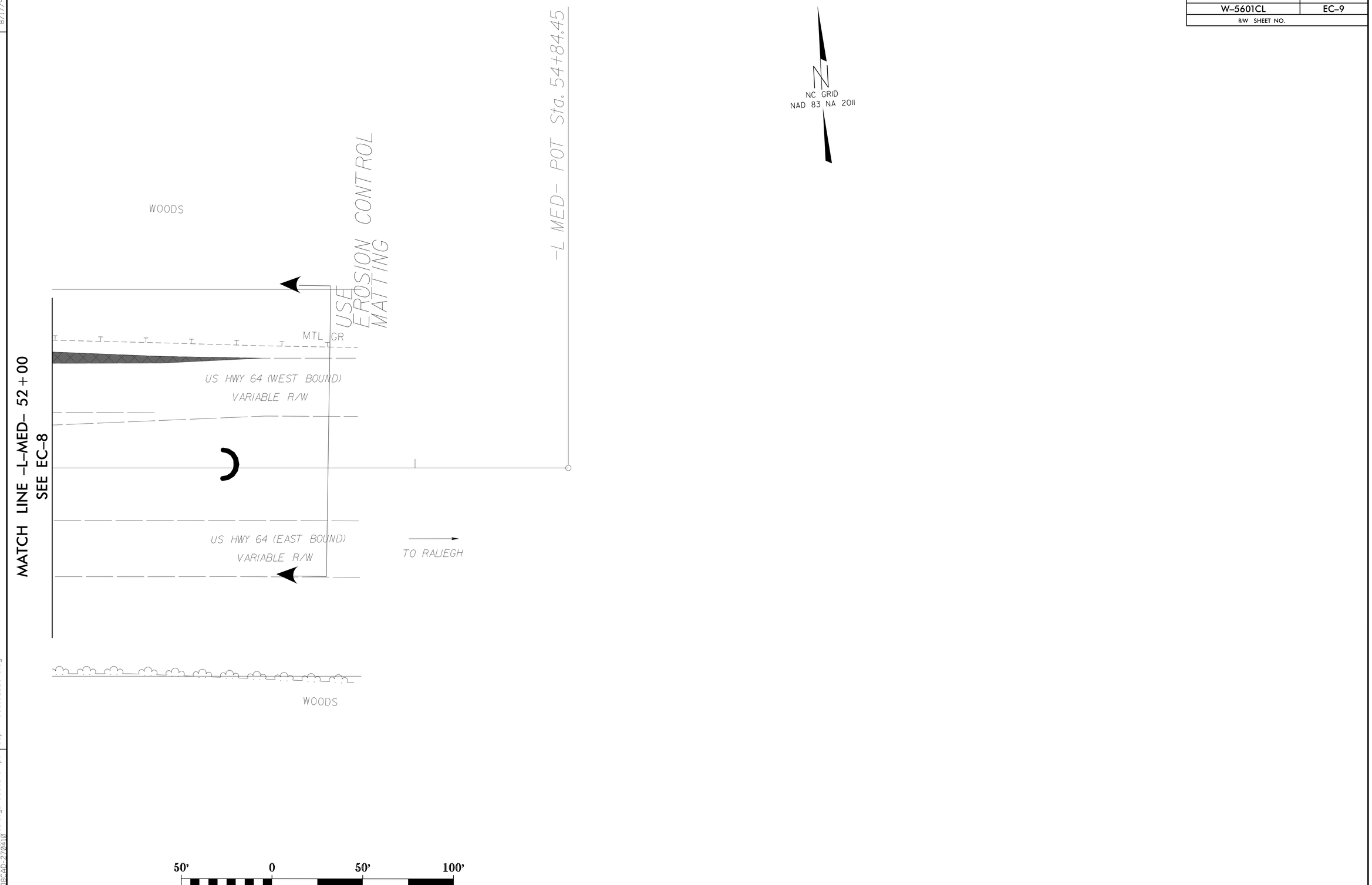
W-5601CL	EC-9
R/W SHEET NO.	



REVISIONS

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asdavis AT D8CAD-270410

PROJ. REFERENCE NO.	SHEET NO.
W-5601CL	X-A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CROSS-SECTION SUMMARY

NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT

Station L-MED-	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
19+00.00	0	0
19+20.00	5	74
19+40.00	12	189
19+60.00	13	232
19+80.00	12	205
20+00.00	13	151
20+20.00	16	104
20+40.00	18	74
20+60.00	17	52
20+80.00	16	35
21+00.00	15	29
21+20.00	12	27
21+35.83	6	21
21+40.00	1	5
21+60.00	6	25
21+80.00	6	22
22+00.00	6	21
22+20.00	6	19
22+40.00	6	17
22+60.00	6	15
22+80.00	6	14
23+00.00	6	13
23+20.00	6	12
23+40.00	7	11
23+60.00	7	10
23+80.00	7	9
24+00.00	7	9
24+20.00	7	9
24+40.00	6	9
24+60.00	6	9
24+80.00	6	8
25+00.00	7	7
25+20.00	7	6
25+40.00	7	6
25+60.00	7	6
25+80.00	6	6
26+00.00	6	6
26+15.00	4	5
26+20.00	1	2
26+40.00	6	7
26+53.68	4	5
26+60.00	1	2
26+80.00	5	3
27+00.00	3	0

Station L-MED-	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
27+80.00	0	0
28+00.00	4	4
28+20.00	4	5
28+40.00	5	5
28+60.00	6	4

Station L-MED-	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
28+80.00	6	4
29+00.00	5	6
29+20.00	4	8
29+40.00	3	8
29+60.00	3	6
29+80.00	3	6
30+00.00	4	7
30+20.00	3	10
30+30.25	1	6
30+40.00	2	5
30+60.00	4	10
30+80.00	4	10
31+00.00	4	9
31+20.00	4	9
31+40.00	4	11
31+60.00	3	13
31+80.00	4	14
32+00.00	4	14
32+20.00	3	17
32+40.00	2	20
32+44.35	0	4
32+60.00	3	11
32+80.00	4	12
33+00.00	1	16
33+20.00	2	14
33+40.00	2	11
33+60.00	2	7
33+80.00	1	5
34+00.00	1	7

Station L-MED-	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
41+50.00	0	0
41+60.00	1	2
41+80.00	2	5
42+00.00	3	6
42+20.00	3	9
42+40.00	3	11
42+60.00	3	11
42+80.00	3	9
43+00.00	2	10
43+20.00	2	13
43+40.00	2	13
43+60.00	2	13
43+80.00	2	12
44+00.00	2	11
44+20.00	2	8
44+40.00	2	5
44+60.00	2	6
44+80.00	1	6
45+00.00	1	4
45+20.00	1	3

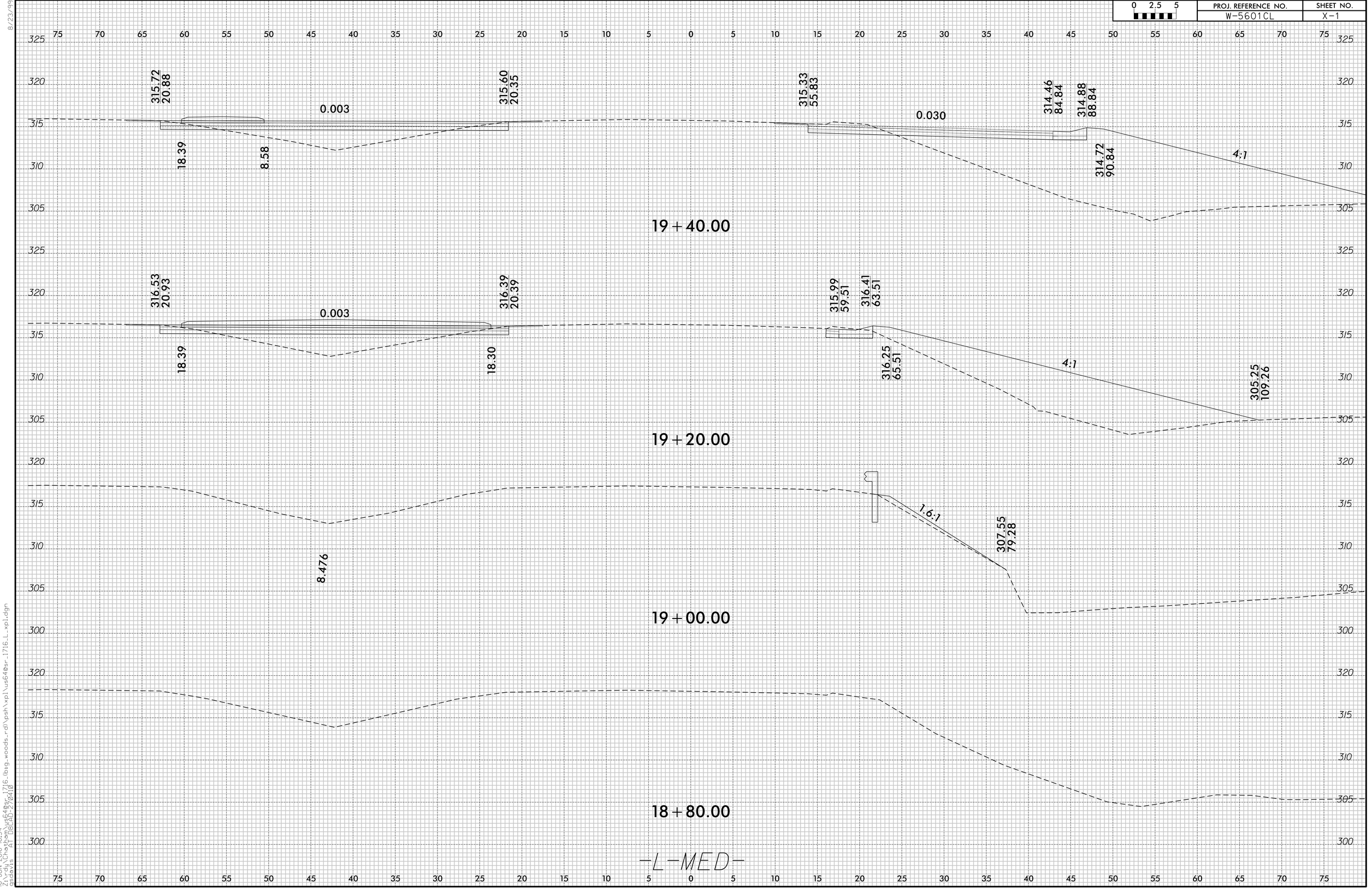
Station L-MED-	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
45+40.00	0	2
45+60.00	0	2
45+80.00	0	3
46+00.00	0	5
46+10.00	0	3
46+20.00	0	3
46+40.00	2	9
46+60.00	4	13
46+80.00	5	17
47+00.00	6	18
47+04.78	2	3
47+20.00	6	8
47+40.00	6	5
47+60.00	2	0
48+20.00	3	3
48+41.00	5	5

Station Y1	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
13+22.42	0	0
13+40.00	1	3
13+54.07	2	4
13+60.00	1	2
13+68.91	1	4
13+80.00	3	4
13+86.72	2	1

Station Y1	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
14+68.01	0	0
14+76.03	2	1
14+80.00	1	1
14+91.41	2	7
15+00.00	1	10
15+08.52	1	8
15+20.00	1	7
15+21.33	0	1

Approximate quantities only. Unclassified excavation, borrow excavation, shoulder borrow, fine grading, clearing and grubbing, and removal of existing pavement will be paid for at the lump sum price for "Grading".

NOTE:
Shoulder Material included in Embankment quantities listed



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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
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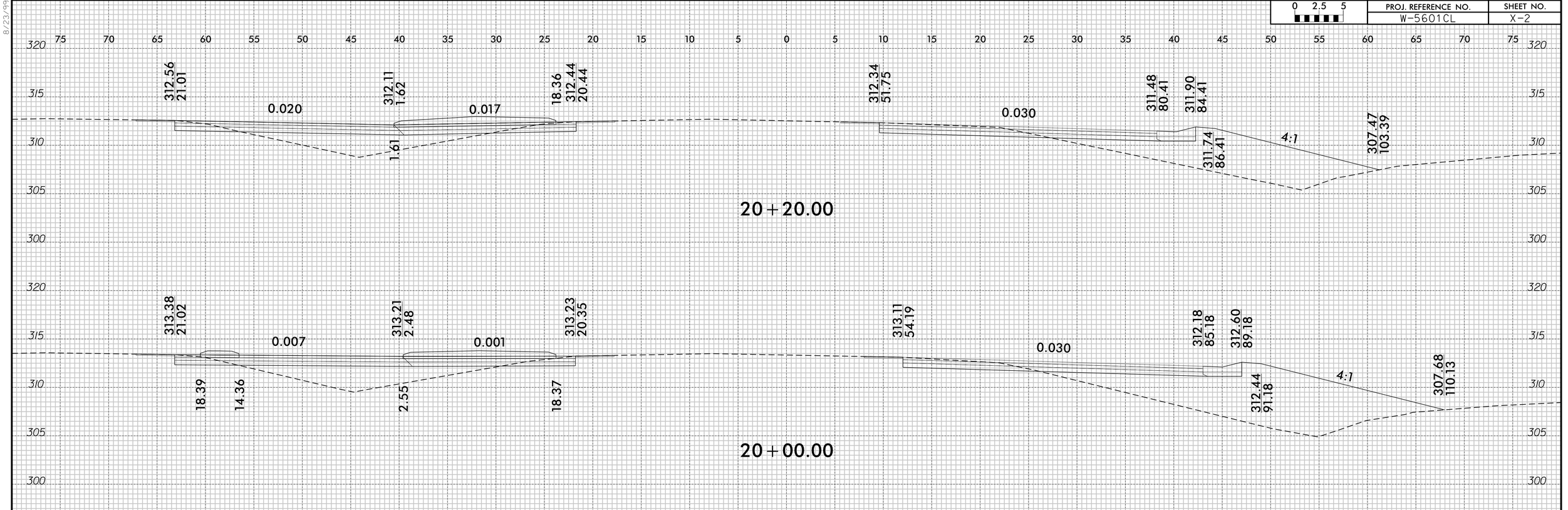

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	W-5601CL	X-3

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

320 315 310 305

309.32 20.64 | 0.020 | 308.88 1.62 | 0.030 | 18.18 309.43 20.16 | 1.61

309.43 50.78 | 0.030 | 309.12 61.35 | 0.080 | 308.48 69.35 | 3:1 | 305.80 77.38 | 306.40 79.19

21+00.00

310.12 20.66 | 0.020 | 309.67 1.62 | 0.028 | 18.27 310.19 20.25 | 1.61

310.17 50.74 | 0.030 | 309.70 66.11 | 0.080 | 309.06 74.11 | 3:1 | 305.87 83.70 | 306.39 85.27

20+80.00

310.93 20.79 | 0.020 | 310.48 1.62 | 0.025 | 18.35 310.95 20.34 | 1.61

310.90 50.70 | 0.030 | 310.29 70.88 | 0.080 | 309.65 78.88 | 4:1 | 305.94 90.02

20+60.00

311.75 20.92 | 0.020 | 311.30 1.62 | 0.021 | 18.42 311.69 20.41 | 1.61

311.61 50.93 | 0.030 | 310.87 75.64 | 311.29 79.64 | 4:1 | 311.13 81.64 | 306.91 98.42

20+40.00

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75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

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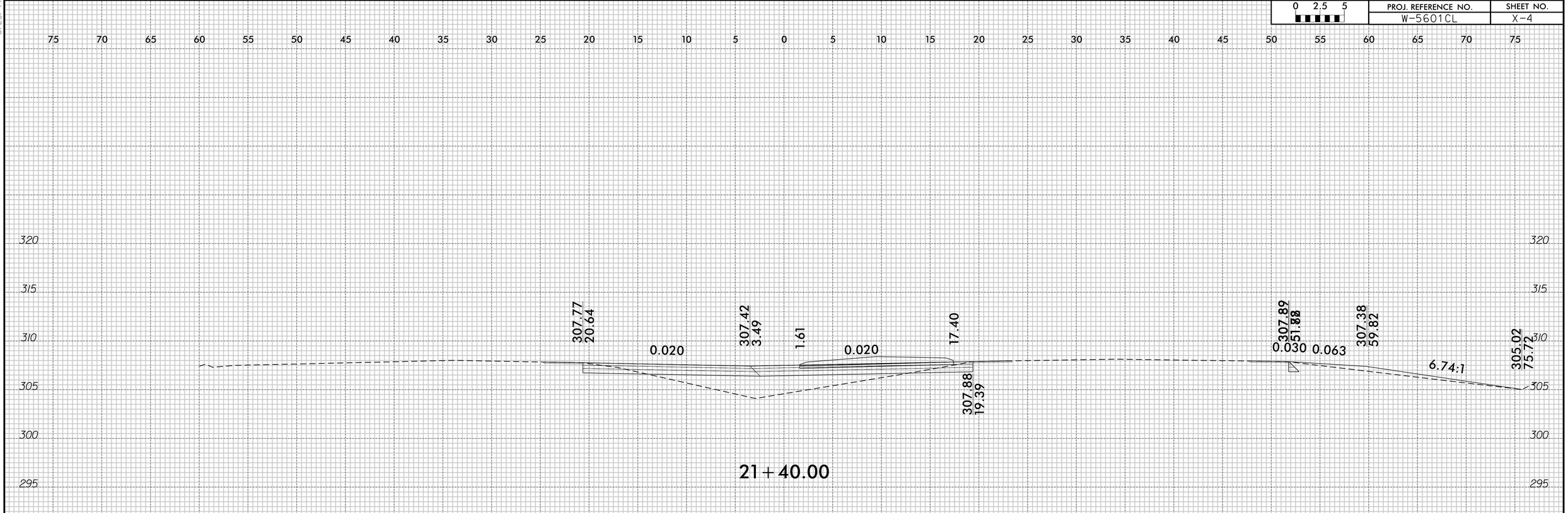
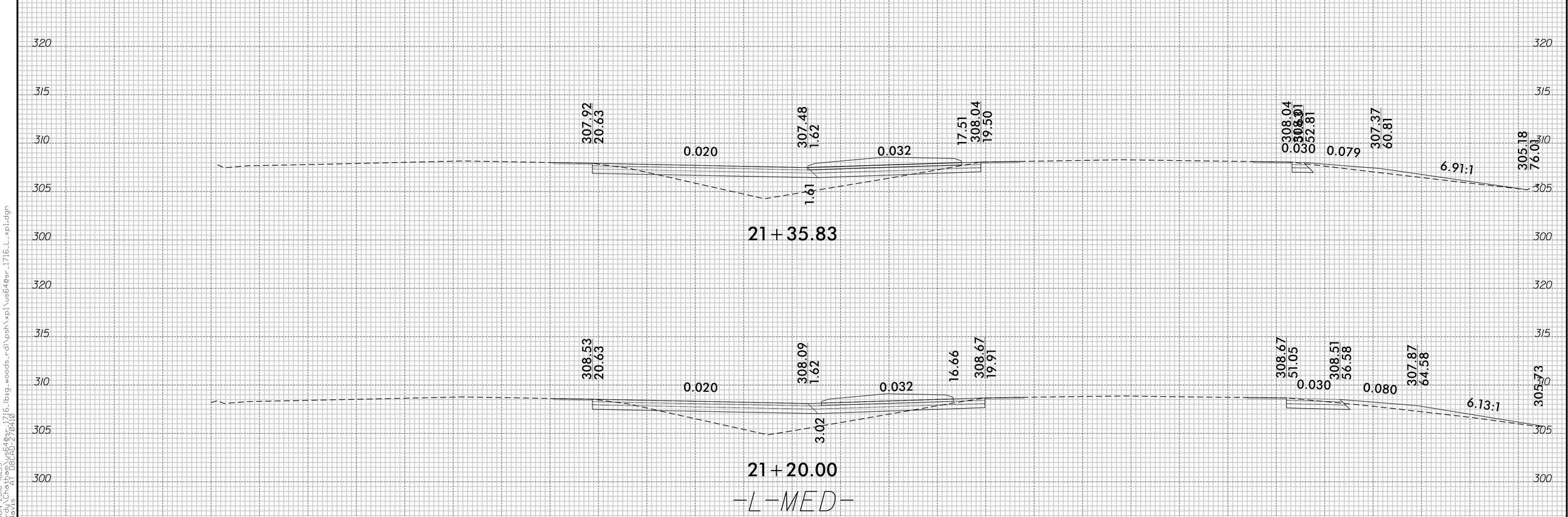
gsdavis
AT DBCAD 270410

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	W-5601CL	X-4





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AT D8CAD_270410

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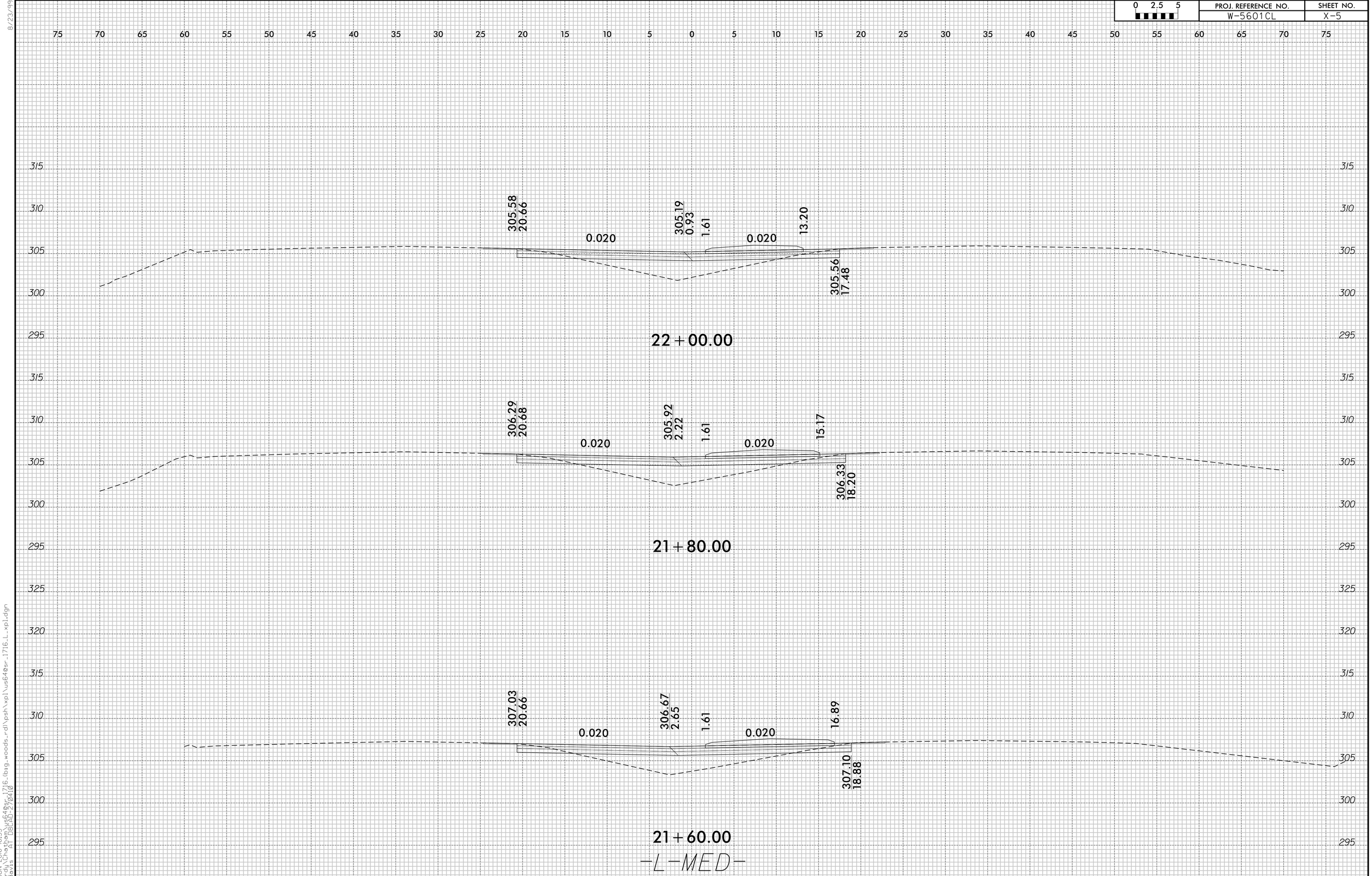
	W-5601CL	X-5



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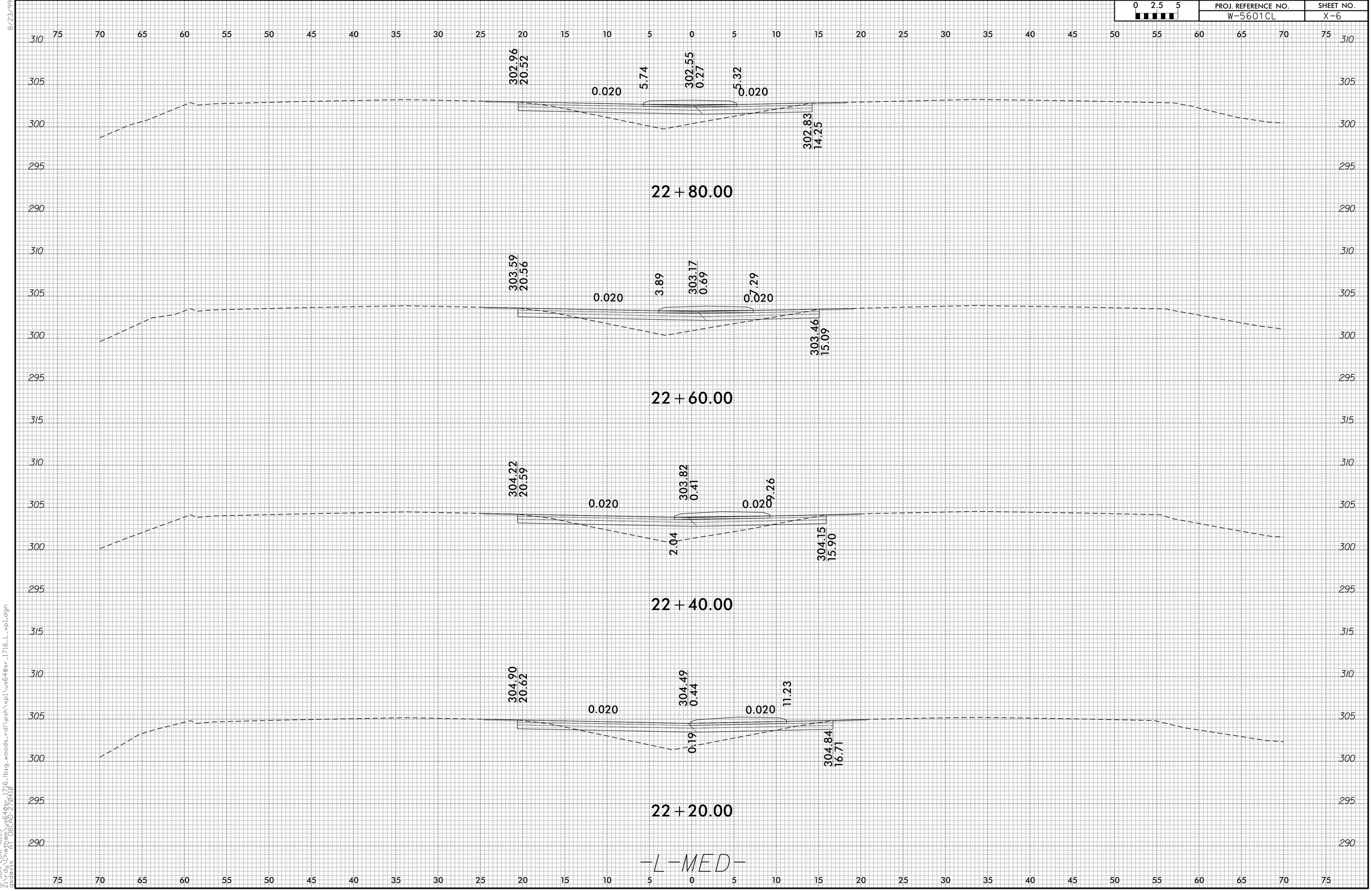
asdavis
AT D8CAD 07.04.10

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	W-5601CL	X-6



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AT D8\AD_270410

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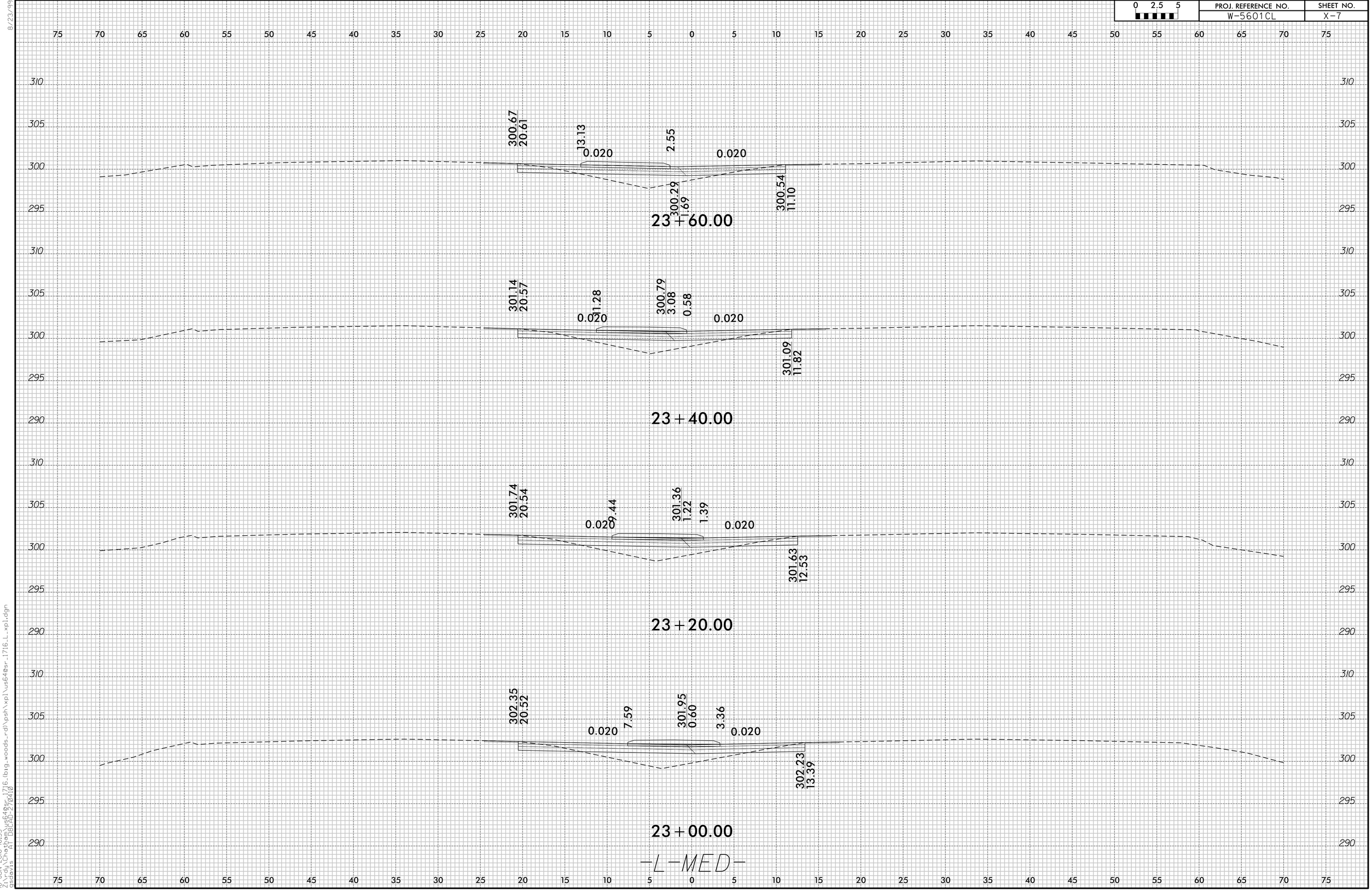
	W-5601CL	X-7



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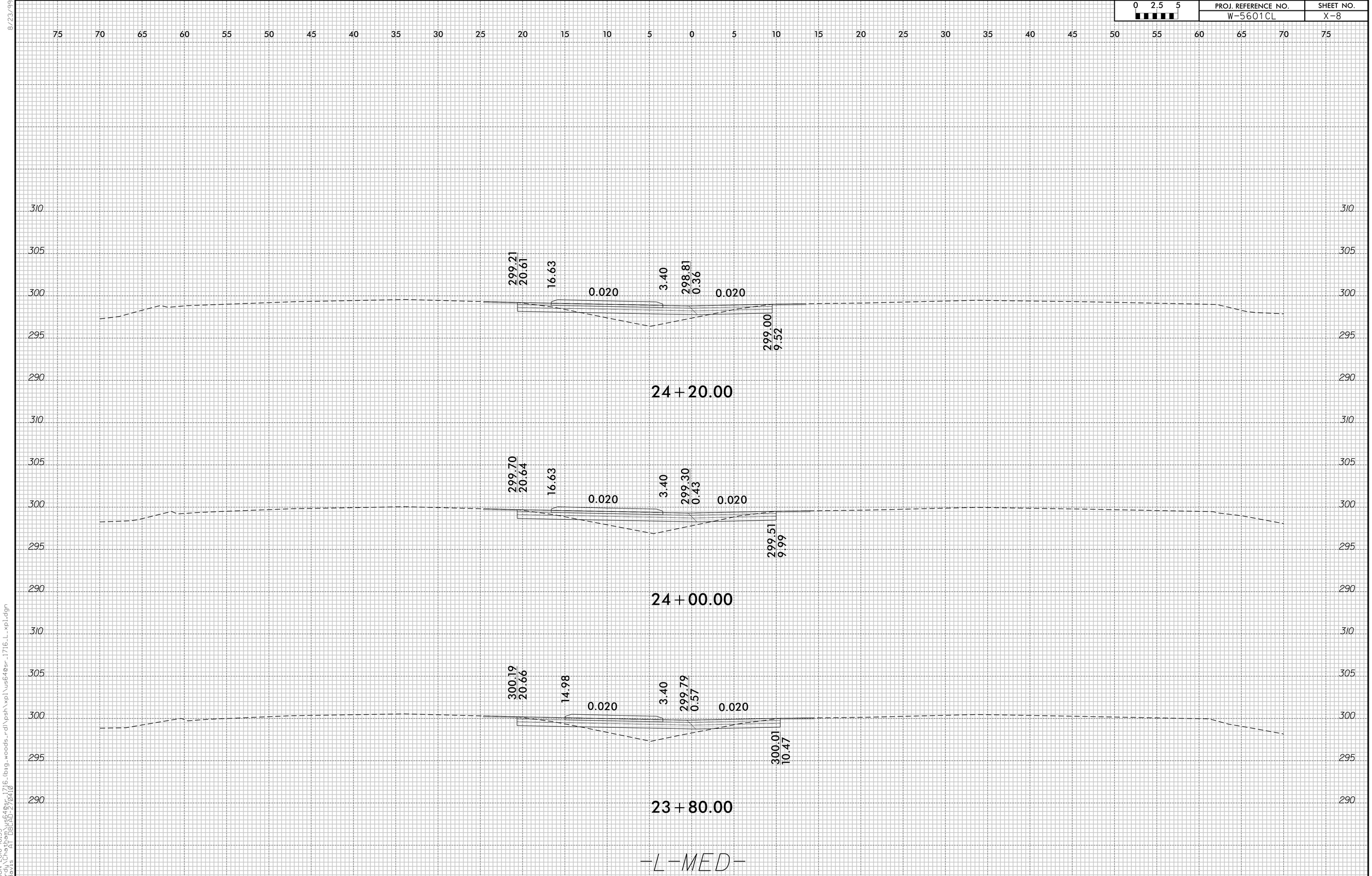
qsdavis

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	W-5601CL	X-8



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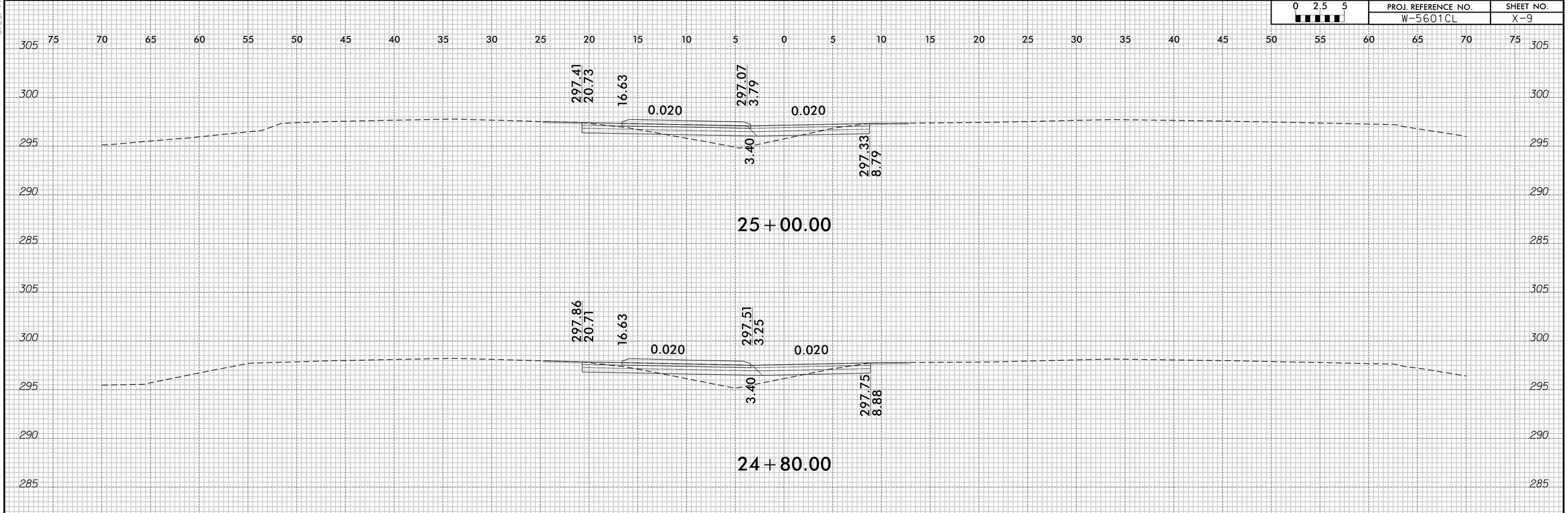
AT D8\AD_270410

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	W-5601CL	X-9





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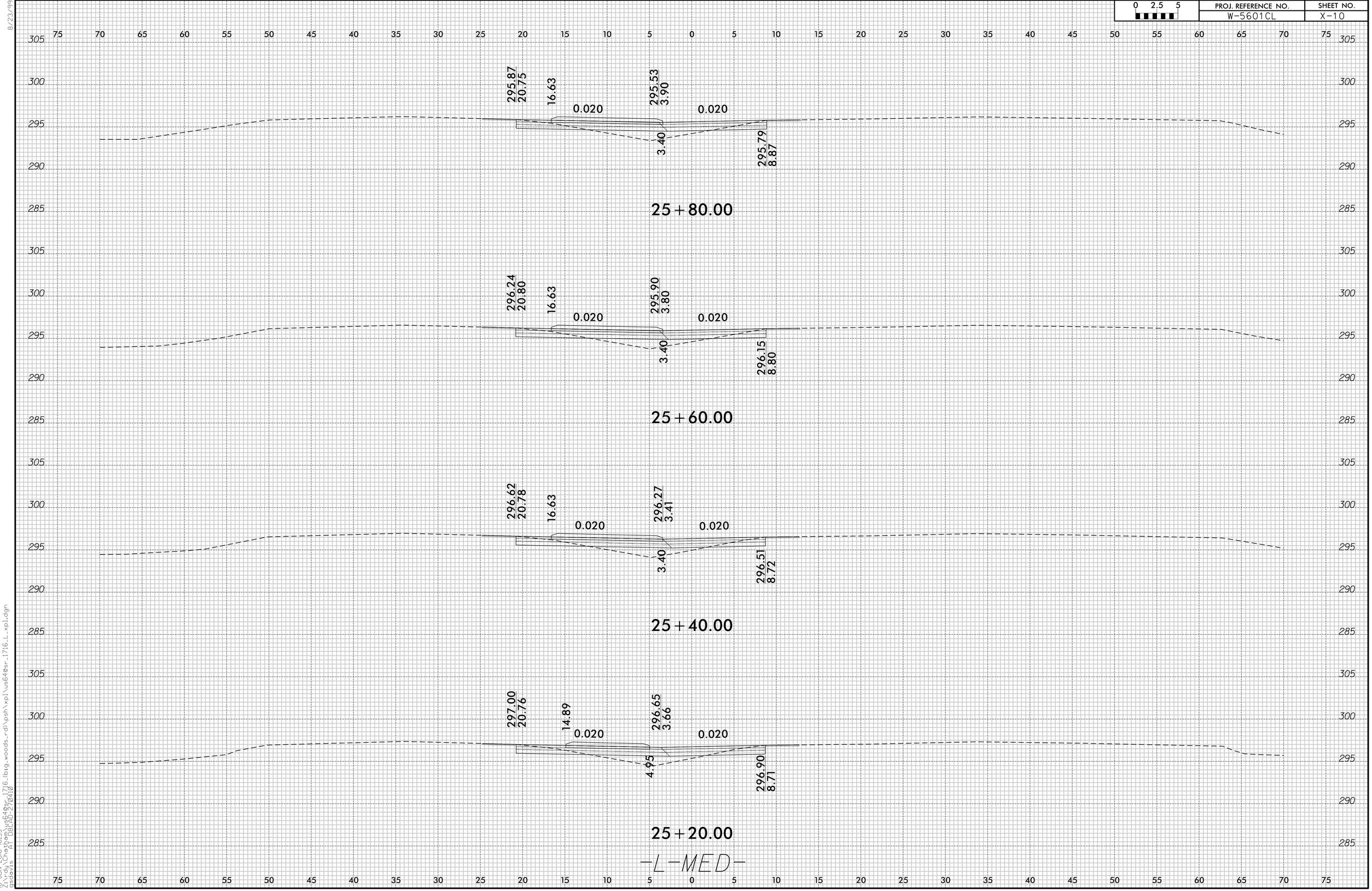
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	W-5601CL	X-10



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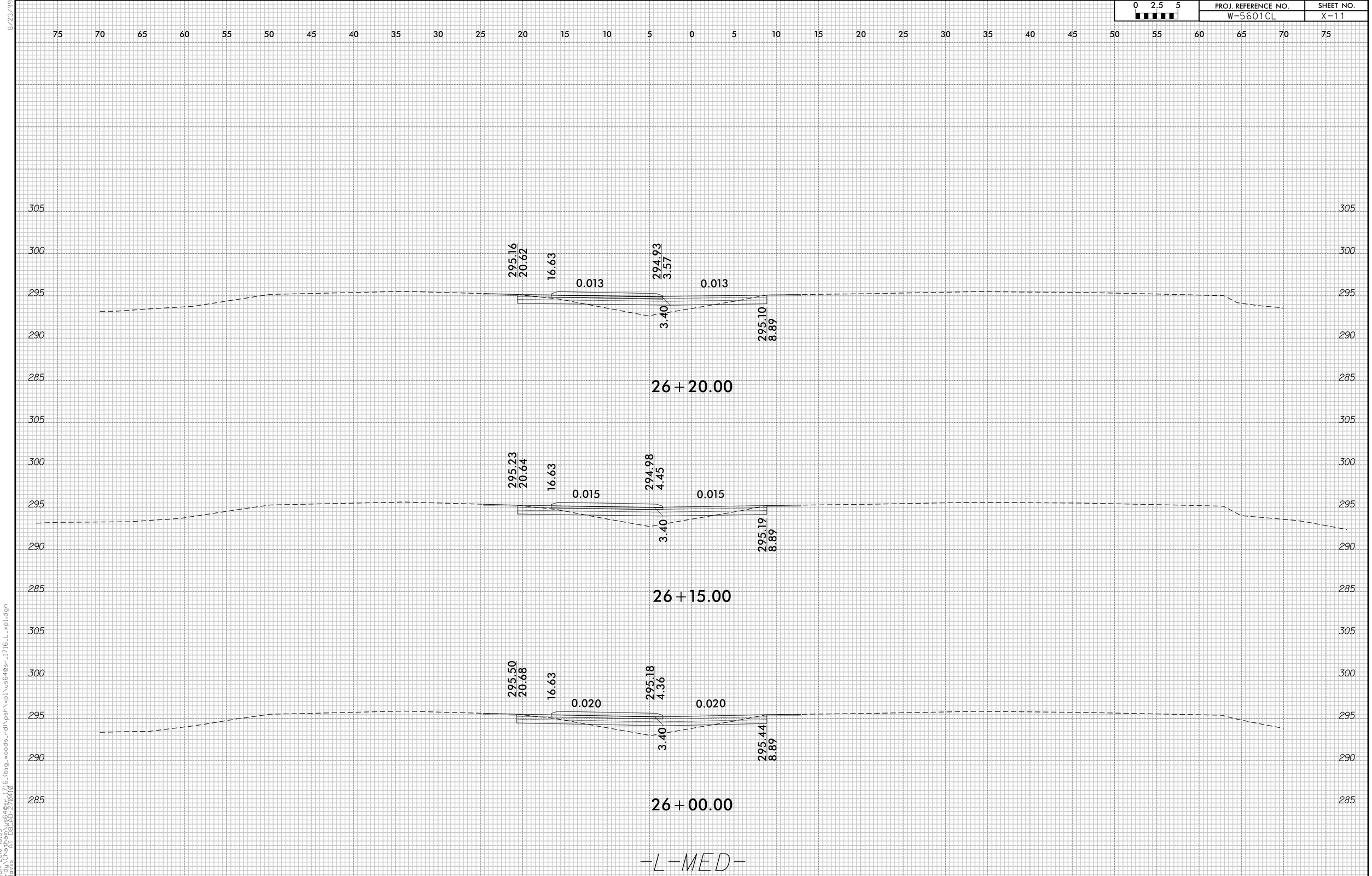

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	W-5601CL	X-12

8/23/99

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

305 300 295 290 285

294.05 10.18 | 294.19 6.13 | 0.009 | 0.010 | 16.63 | 3.40 | 12.30 | 16.60 | 294.34 21.16

26 + 80.00

294.56 17.35 | 294.49 8.10 | 0.003 | 0.011 | 16.63 | 3.40 | 12.57 | 16.60 | 294.64 21.16

26 + 60.00

294.68 18.59 | 294.59 8.29 | 0.003 | 0.012 | 14.13 | 5.90 | 12.57 | 16.60 | 294.73 21.16

26 + 53.68

294.90 20.57 | 294.64 3.41 | 294.79 8.69 | 0.004 | 0.012 | 16.63 | 3.40 | 12.57 | 16.60 | 294.94 21.16

26 + 40.00

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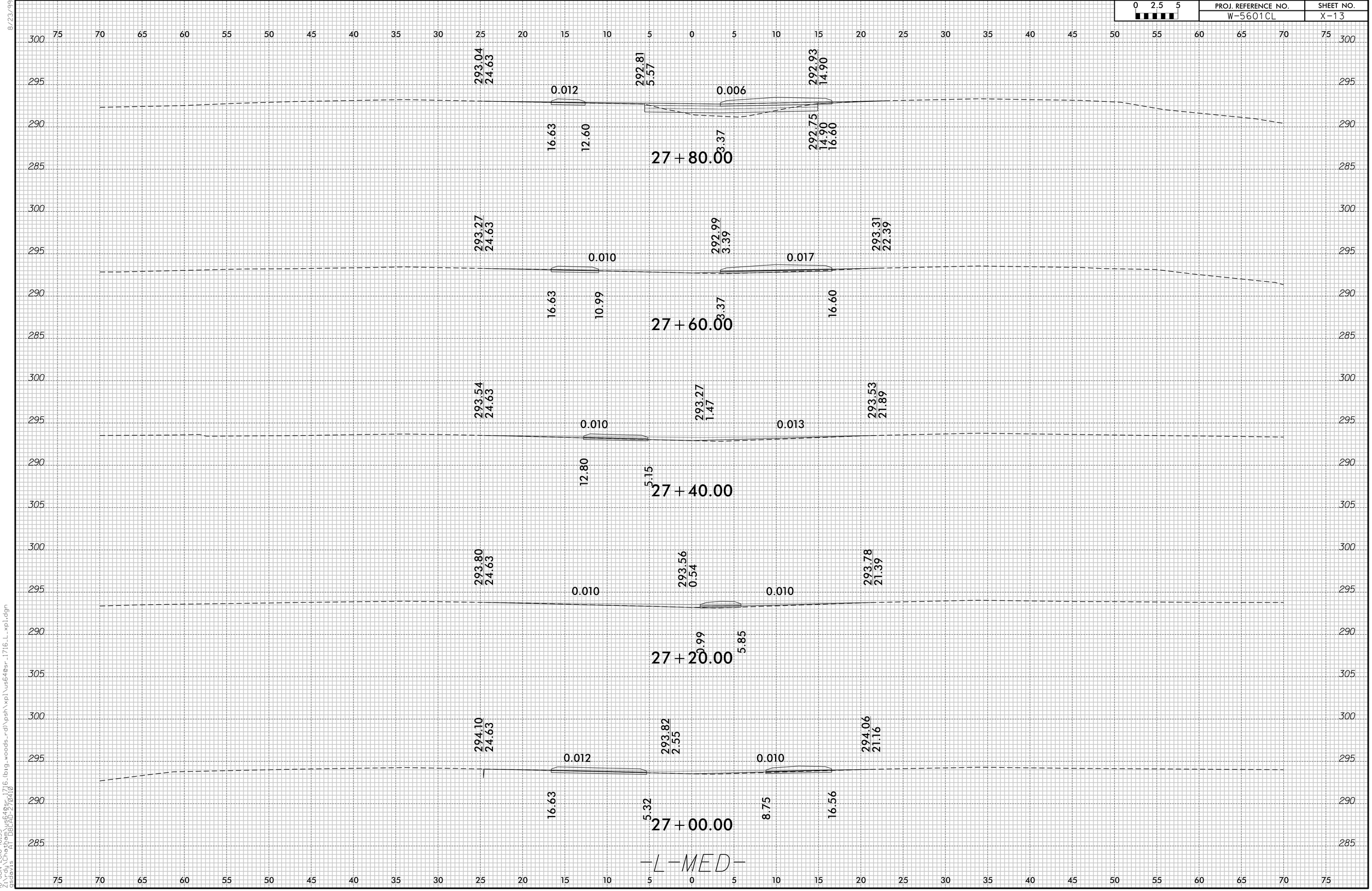
AT D8CAD 270410

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	W-5601CL	X-13

8/23/99



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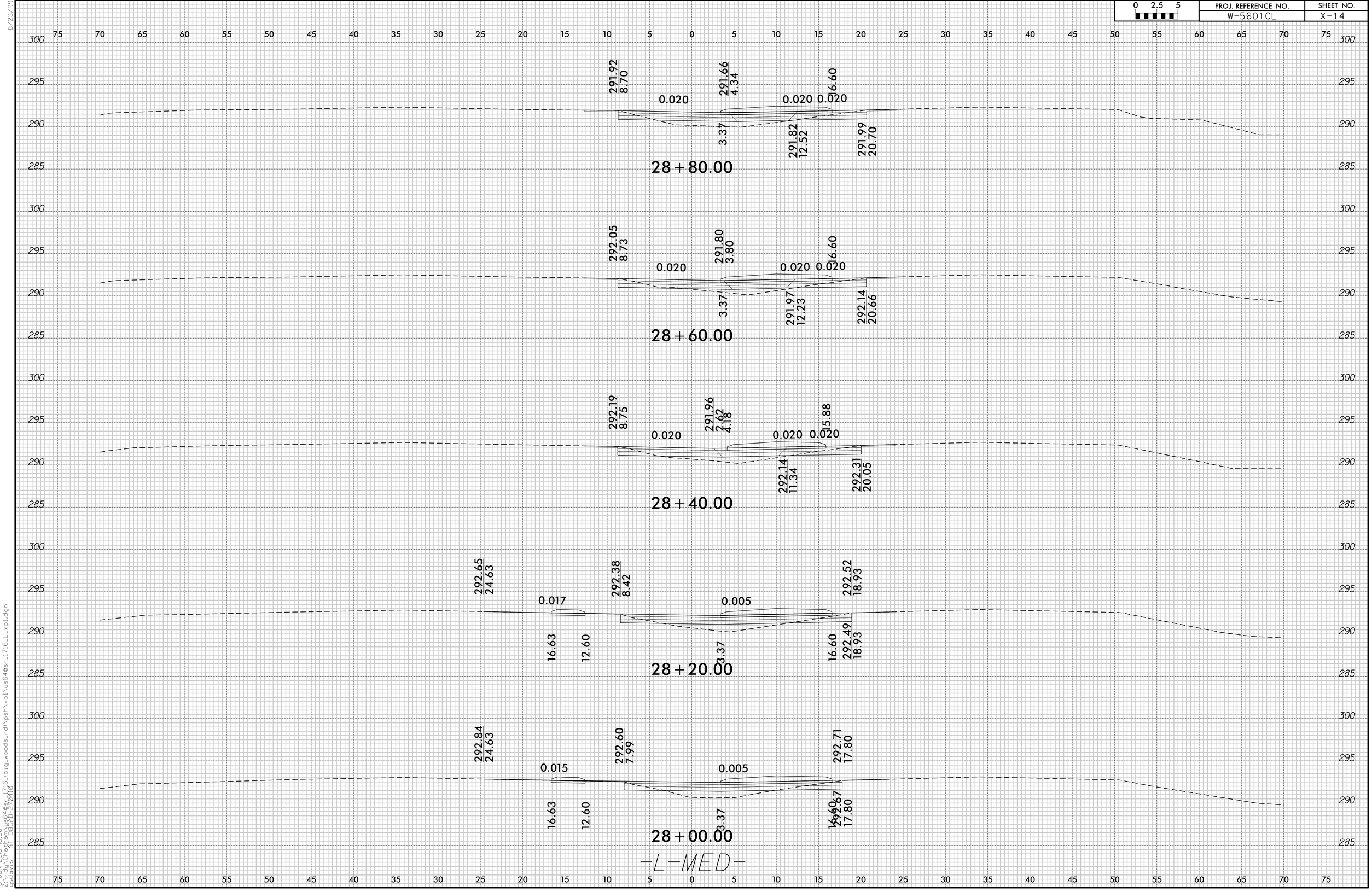
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	W-5601CL	X-14



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gasdavis
AT D&LCAD 270410

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	W-5601CL	X-15

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

300 295 290 285

291.48
9.28

291.20
4.31

16.29

0.020 0.020 0.020

3.77

291.37
12.54

291.53
20.77

29+60.00

291.56
9.06

291.30
3.90

16.60

0.020 0.020 0.020

3.37

291.47
12.32

291.64
20.74

29+40.00

291.66
8.88

291.41
3.99

16.60

0.020 0.020 0.020

3.37

291.57
12.36

291.74
20.73

29+20.00

291.79
8.76

3.37
291.52
4.95

16.60

0.020 0.020 0.020

291.67
12.84

291.83
20.74

29+00.00

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gsdavis AT DBCAD 270410

0 2.5 5

PROJ. REFERENCE NO.	SHEET NO.
W-5601CL	X-16

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

300 295 290 285

291.18
11.14

290.88
3.97

16.60

291.22
20.69

0.020 0.020

3.37

30+30.25

291.22
10.78

290.93
3.85

16.60

0.020 0.020 0.020

3.37

291.10
12.28

291.27
20.71

30+20.00

291.31
10.07

291.02
4.17

16.60

0.020 0.020 0.020

3.37

291.19
12.46

291.35
20.74

30+00.00

291.39
9.50

291.11
4.48

16.60

0.020 0.020 0.020

3.37

291.27
12.63

291.43
20.78

29+80.00

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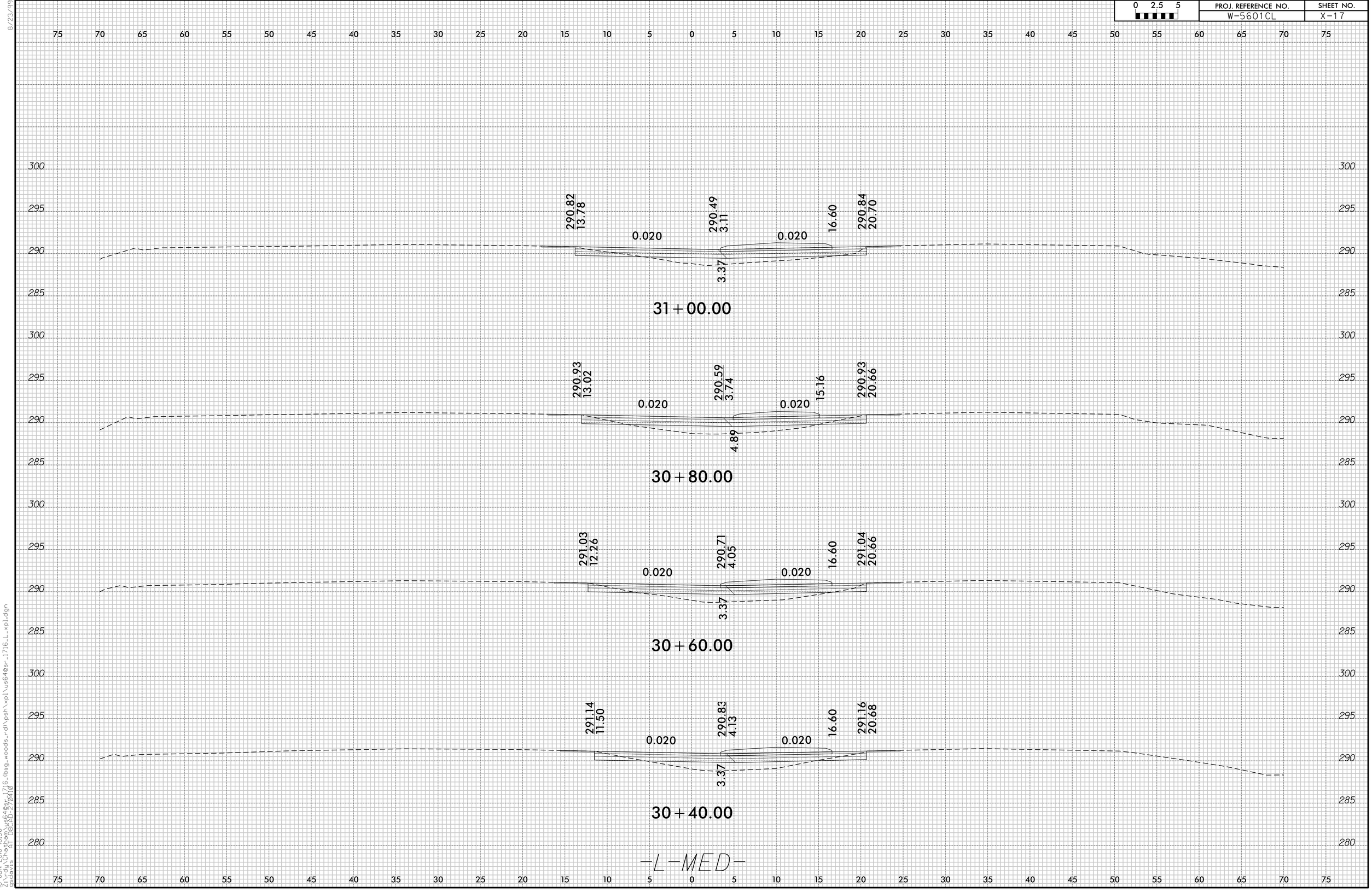
gsdavis
AT D8(CAD-270410

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	W-5601CL	X-17



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asdavis
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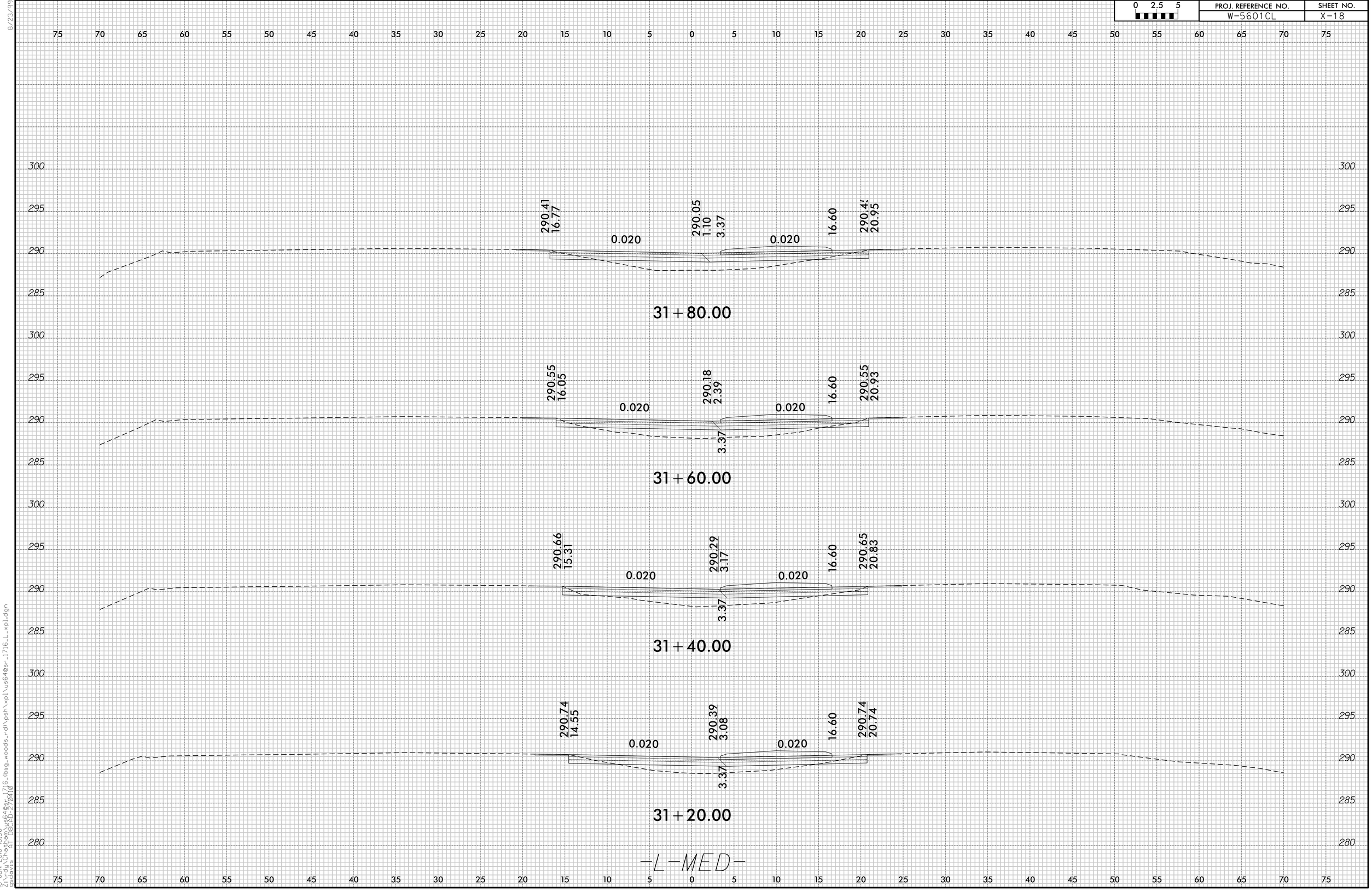
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	W-5601CL	X-18



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AT DBCAD 270410

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	W-5601CL	X-19

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

300 295 290 285

290.31
19.44

0.020

289.95
1.38

0.079

6:1

6:1

288.76
13.65

32+44.35

290.31
19.25

0.020

289.94
0.85

0.079

288.36
10.43

290.08
20.77

6:1

6:1

288.81
13.47

32+40.00

290.30
18.38

0.020

289.90
1.61

0.082

288.46
10.25

290.22
20.80

6:1

6:1

288.93
13.76

32+20.00

290.28
17.50

0.020

289.93
0.33

3.37

0.020

16.60

290.34
20.86

32+00.00

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280

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

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gsdavis
AT D8CAD 270410

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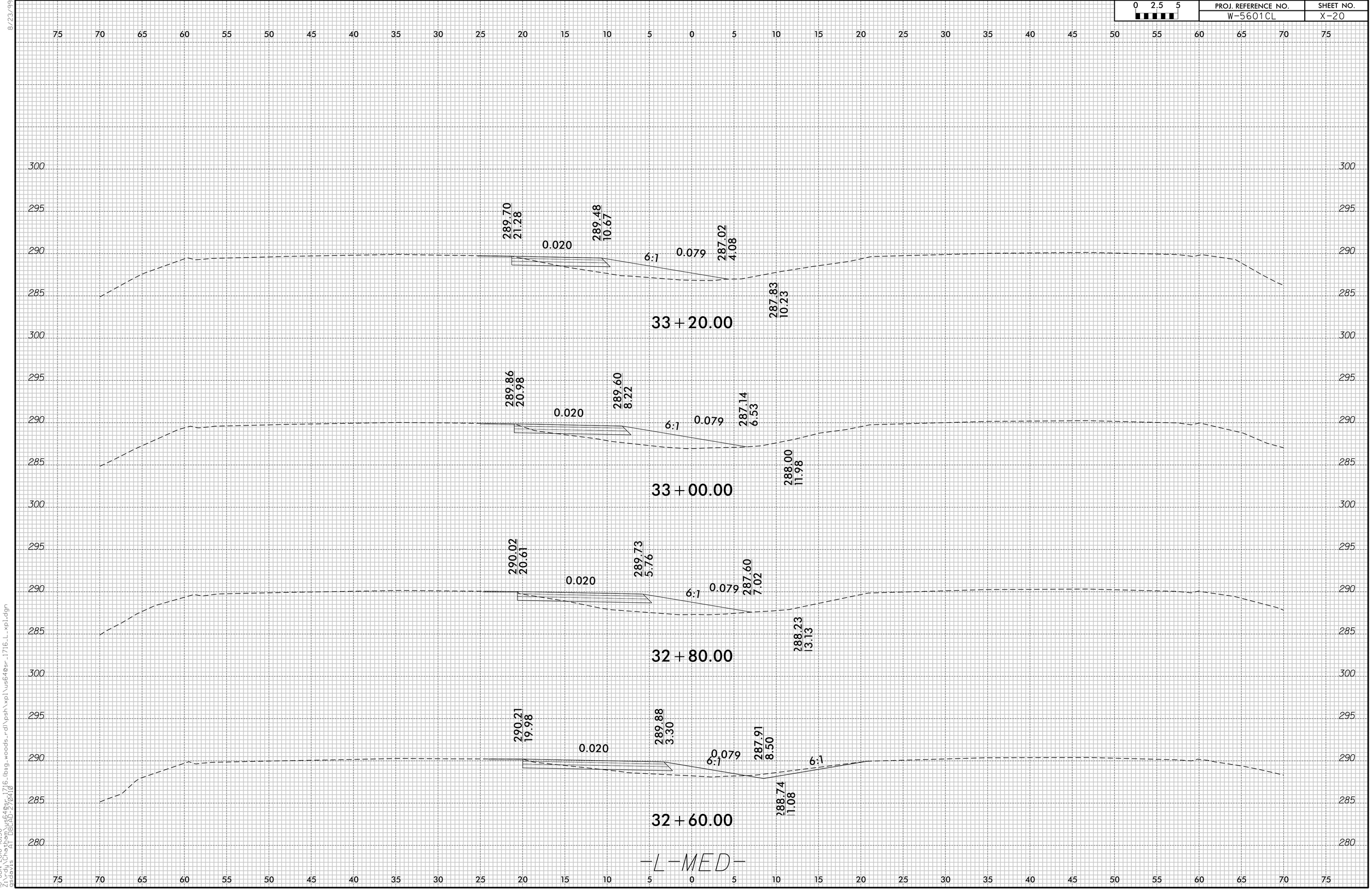

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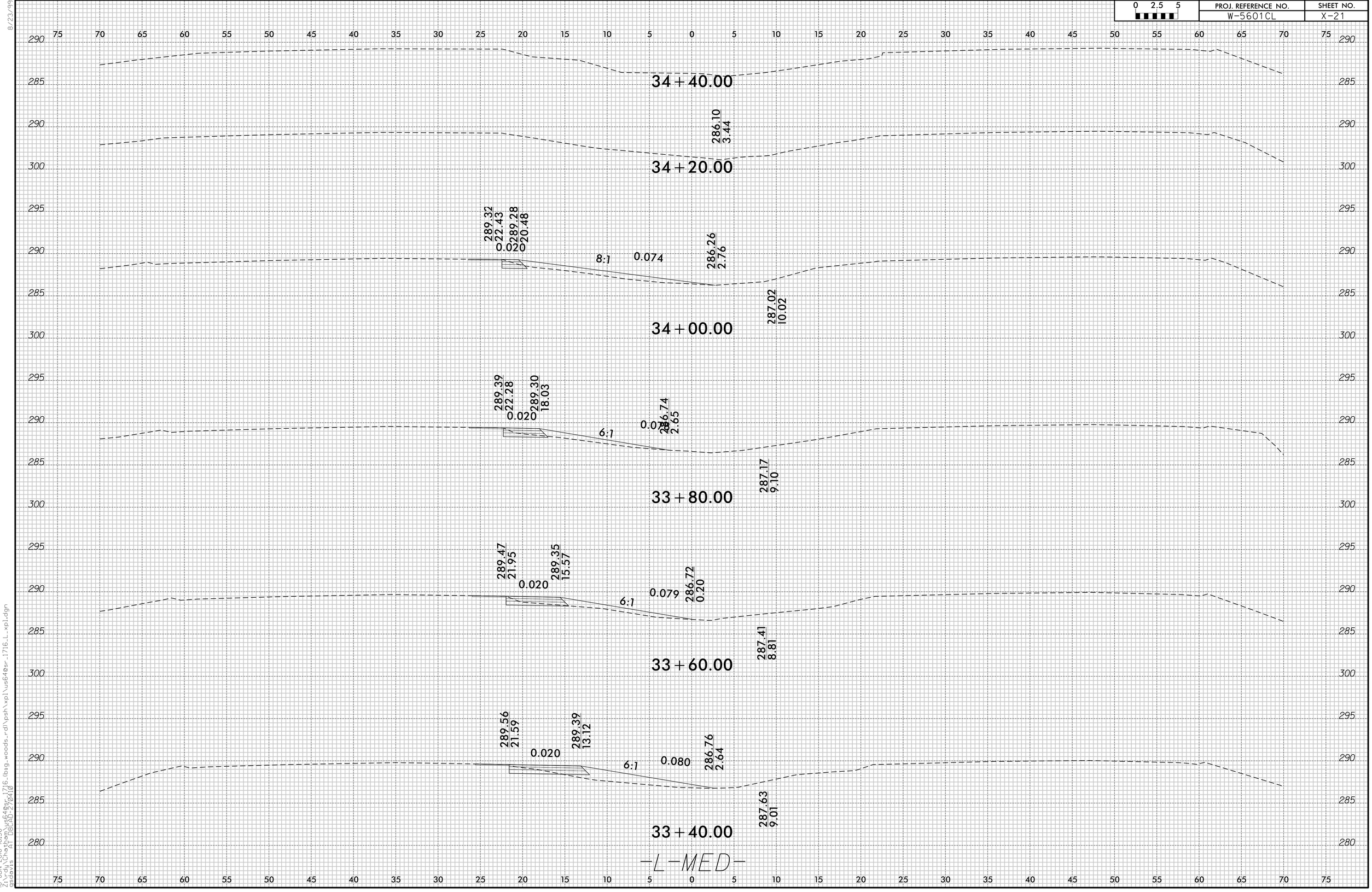
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	W-5601CL	X-21



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qsdavis
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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	W-5601CL	X-22

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

285 280 275 270

271.64
4.83
0.079
273.92
24.25
0.019
273.99
28.23

42+00.00

272.15
3.88
0.080
274.50
25.46
0.020
274.55
28.28

41+80.00

272.97
0.35
0.080
275.13
26.66
0.020
275.16
28.42

41+60.00

273.26
0.33
0.079
275.44
27.27
0.019
275.47
28.49

41+50.00

41+00.00

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qsdavis
AT D8CAD 270410

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	W-5601CL	X-23

8/23/99

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

280
275
270

268.73
8.47

0.080

270.86
18.22

0.021

271.01
25.06

43+00.00

269.32
7.43

0.080

271.47
19.43

0.022

271.61
26.02

42+80.00

270.10
5.20

0.079

272.15
20.63

0.019

272.28
27.16

42+60.00

270.63
7.99

0.075

272.85
21.84

0.015

272.95
28.29

42+40.00

271.16
7.06

0.074

273.40
23.05

0.014

273.47
28.28

42+20.00

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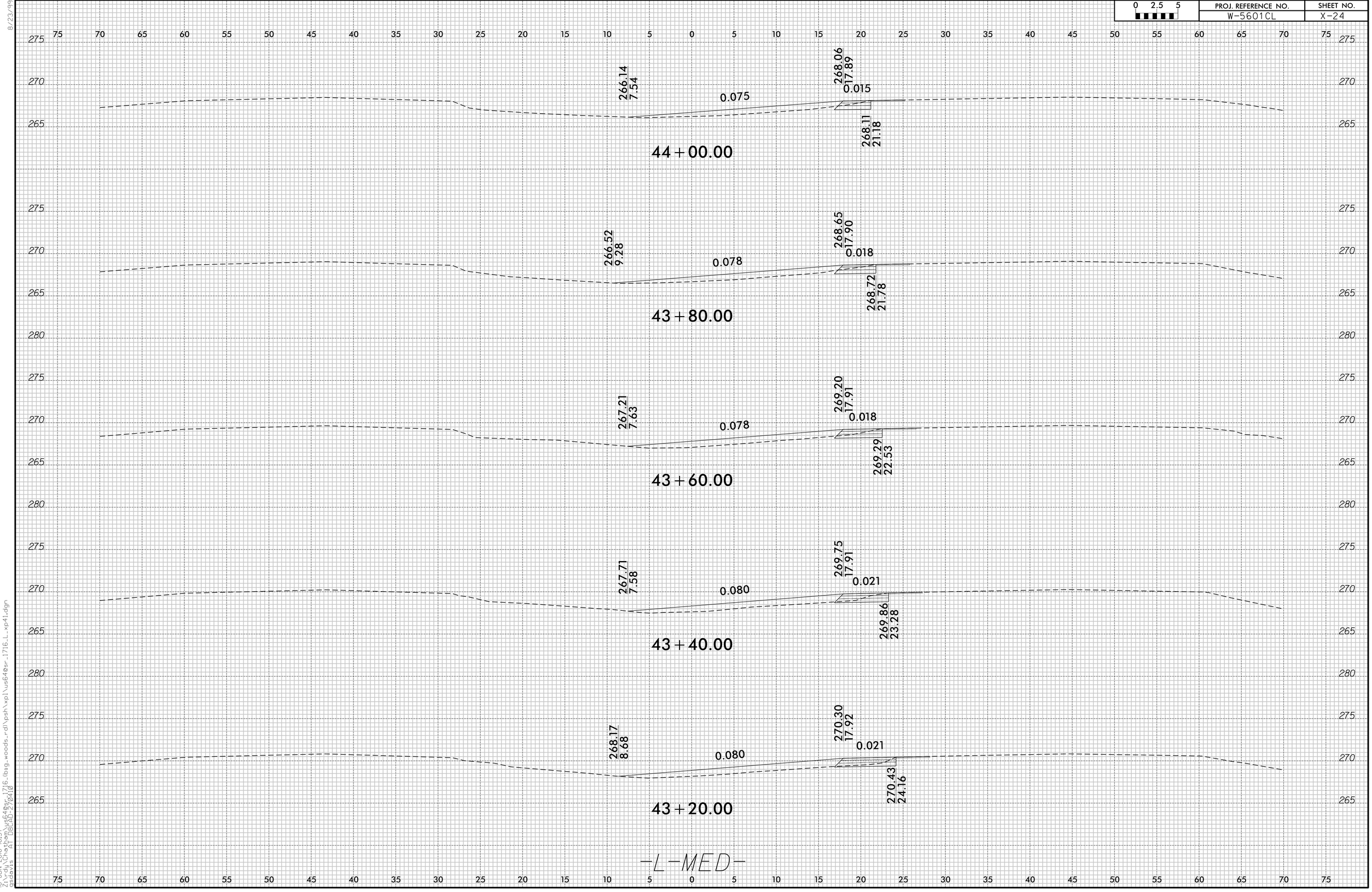
gasdavis AT D8CAD 270410



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gsdavis AT D8CAD-270410

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	W-5601CL	X-25

8/23/99

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

275 270 265 260

263.44
2.46
0.079
265.05
17.86
0.019
265.07
18.44

45+00.00

264.05
1.87
0.080
265.63
17.87
0.023
265.66
18.99

44+80.00

264.43
4.41
0.080
266.21
17.88
0.023
266.25
19.62

44+60.00

265.07
3.60
0.080
266.79
17.88
0.026
266.85
20.22

44+40.00

265.65
4.07
0.080
267.41
17.89
0.026
267.48
20.70

44+20.00

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gsdavis AT D8LCAD 270410

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	W-5601CL	X-26

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

270 265 260

260.17
6.47

0.080

262.09
17.46
0.022

262.09
17.47

46+00.00

260.94
4.14

0.080

262.67
17.56
0.022

262.67
17.57

45+80.00

261.65
2.62

0.080

263.27
17.66
0.020

263.27
17.67

45+60.00

275 270 265 260

262.29
1.96

0.080

263.87
17.80
0.020

263.87
17.81

45+40.00

275 270 265 260

262.99
0.54

0.080

264.46
17.86
0.020

264.47
18.13

45+20.00

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gsdavis
AT D8CAD 270410

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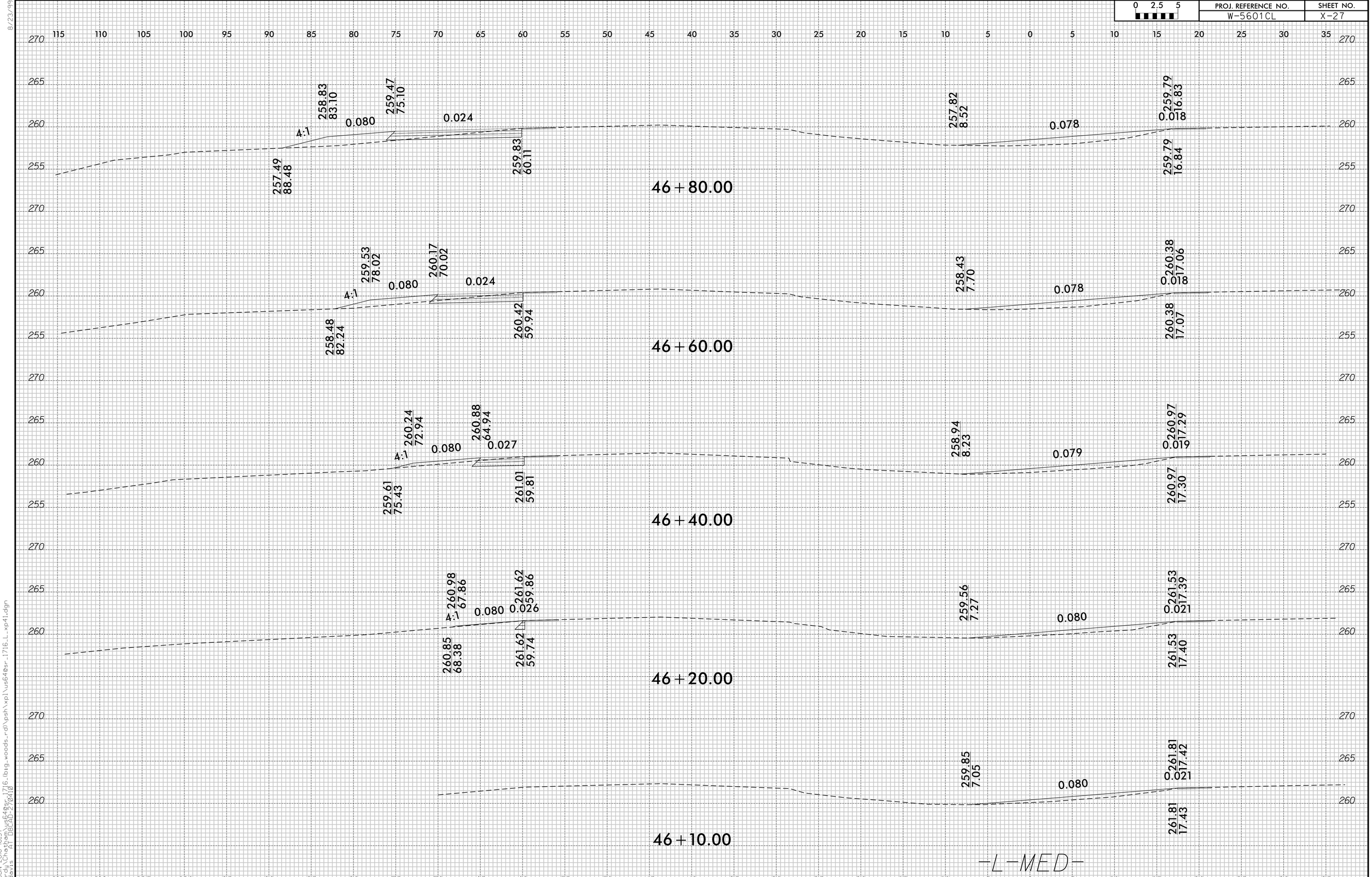
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	W-5601CL	X-27



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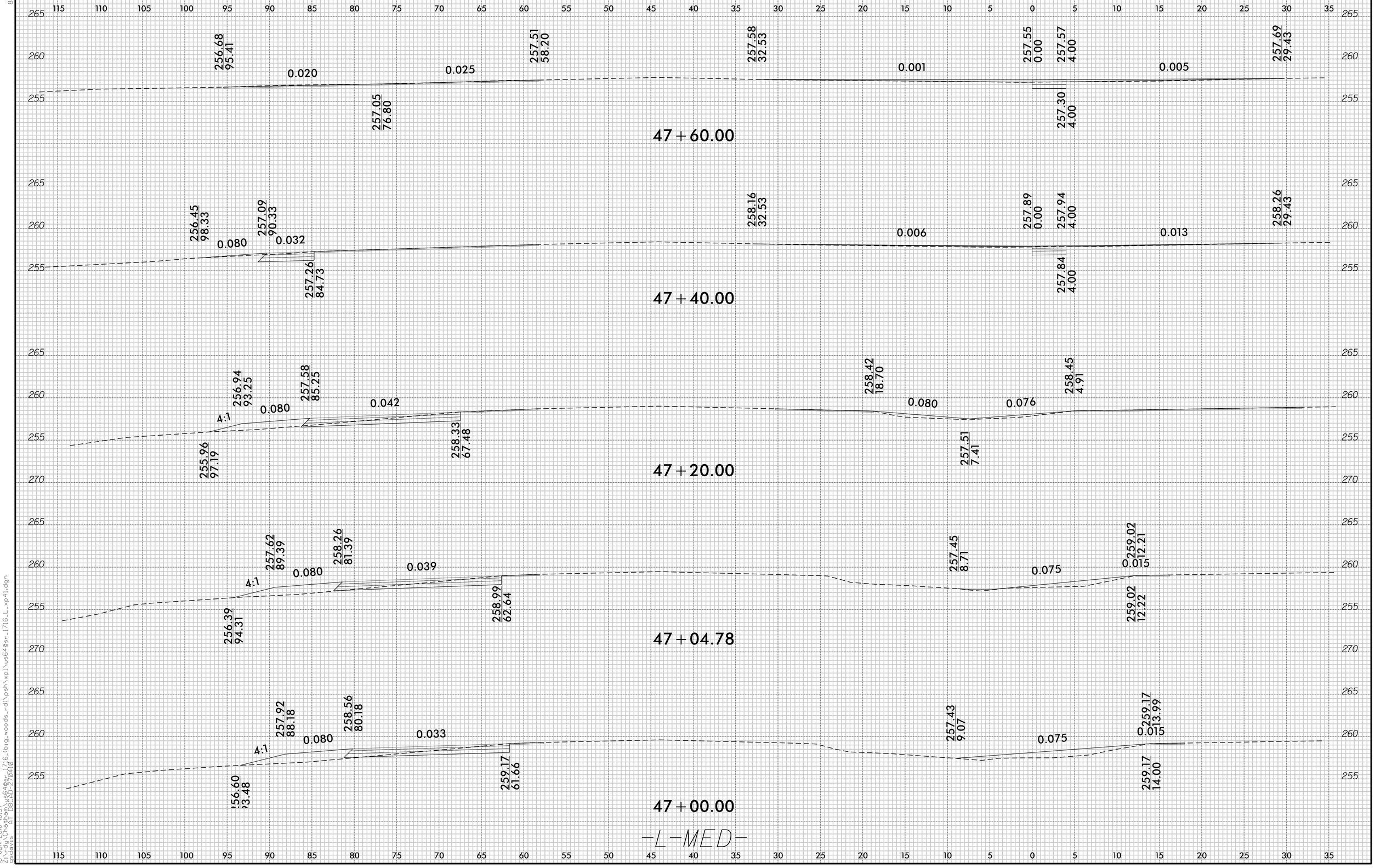
gsdavis
AT DBCAD 270410

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	W-5601CL	X-28



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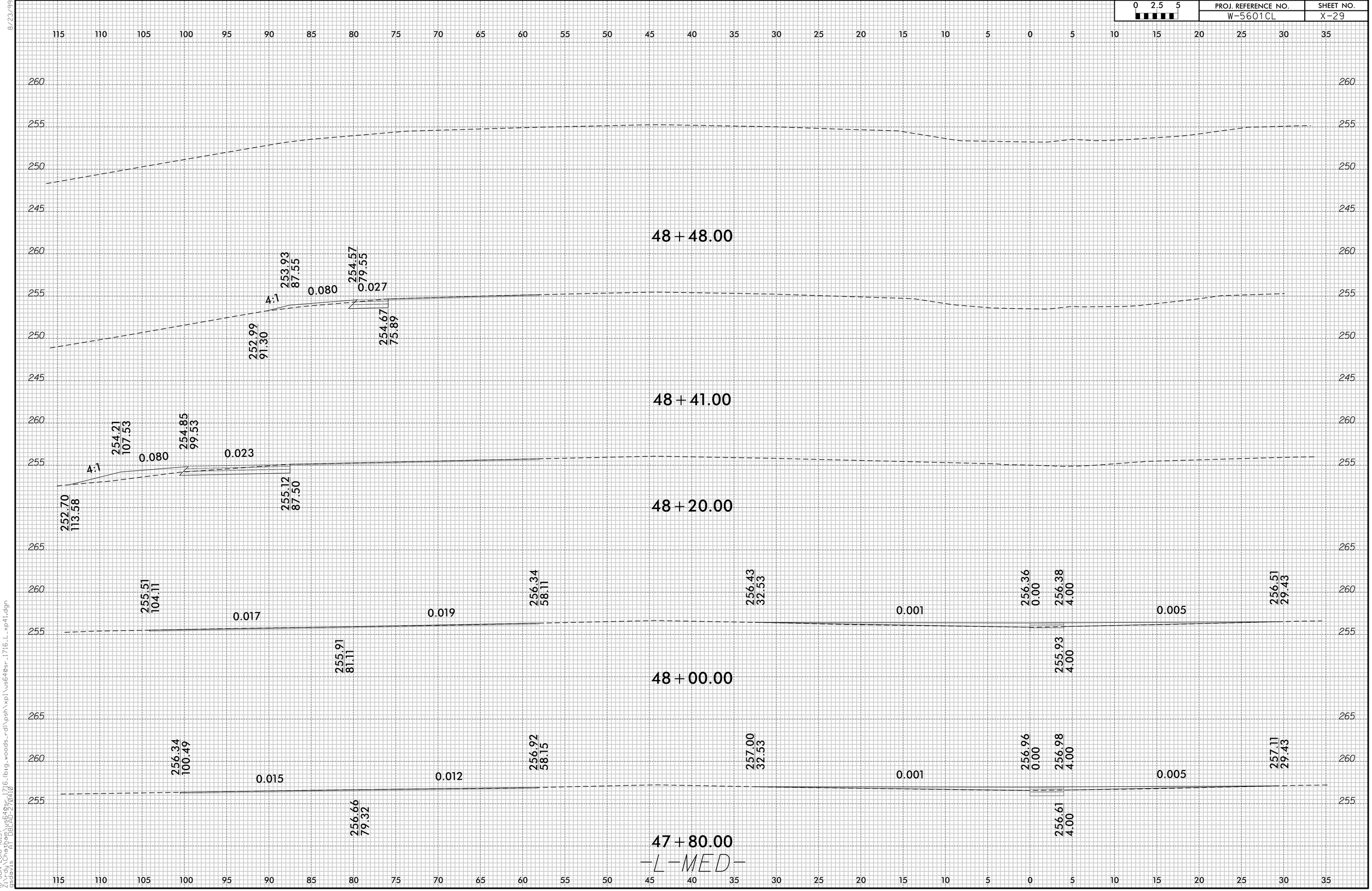

0 2.5 5
PROJ. REFERENCE NO.
W-5601CL
SHEET NO.
X-29
48+48.00
253.93
87.55
254.57
79.55
0.080
0.027
4:1
252.99
91.30
254.67
75.89
48+41.00
254.21
107.53
254.85
99.53
0.080
0.023
4:1
252.70
113.58
255.12
87.50
48+20.00
255.51
104.11
0.017
0.019
256.34
58.11
256.43
32.53
0.001
256.36
0.00
256.38
4.00
0.005
256.51
29.43
255.91
81.11
255.93
4.00
48+00.00
256.34
100.49
0.015
0.012
256.92
58.15
257.00
32.53
0.001
256.96
0.00
256.98
4.00
0.005
257.11
29.43
256.66
79.32
256.61
4.00
47+80.00
-L-MED-

0 2.5 5

PROJ. REFERENCE NO.	SHEET NO.
W-5601CL	X-30

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

295 290 285 280

2.42 2.98

12+80.00

295 290 285 280

2.17 3.67

12+69.94

295 290 285 280

12+60.00

295 290 285 280

12+40.00

275

—Y/—

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

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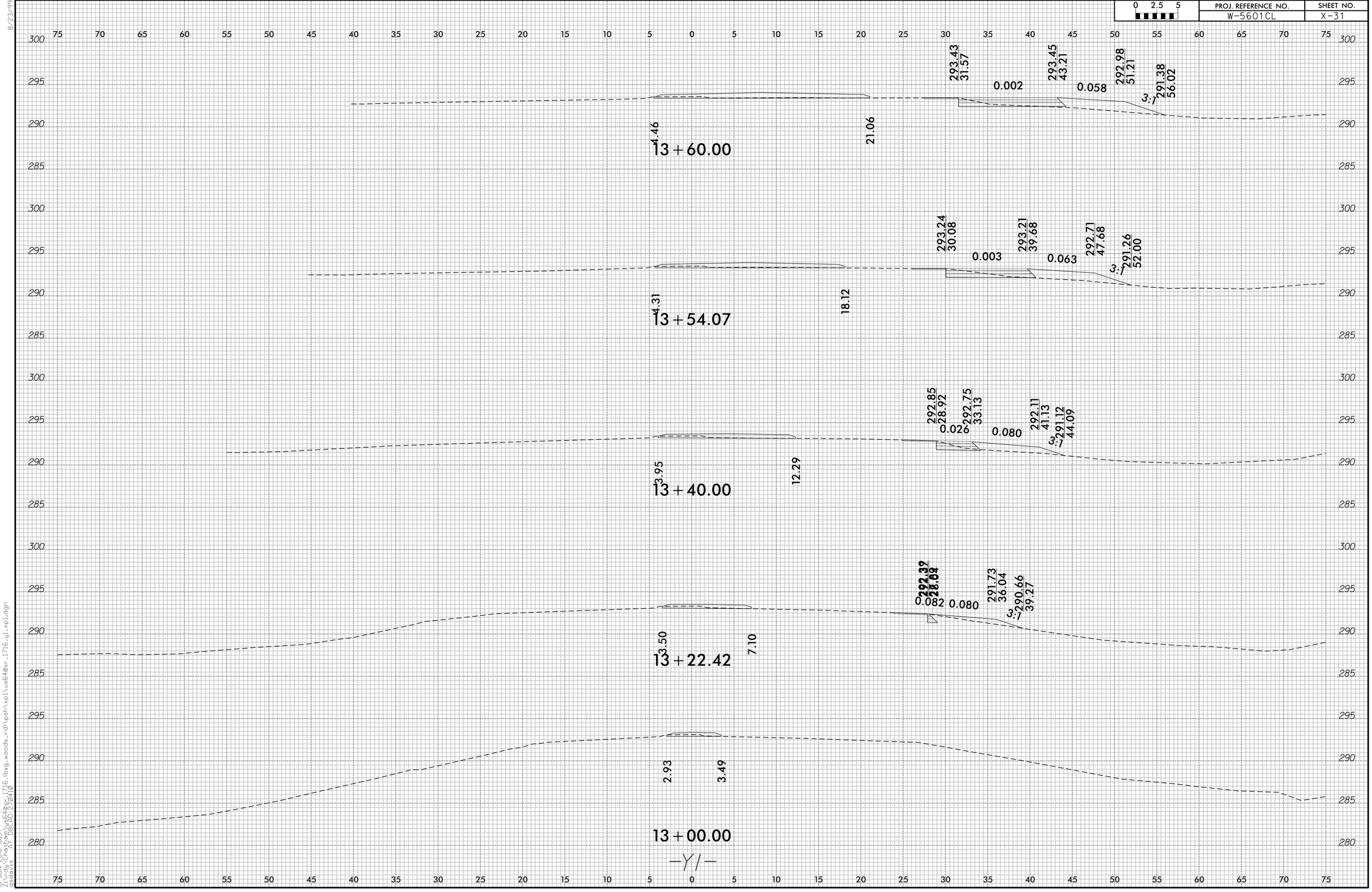
8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	W-5601CL	X-31



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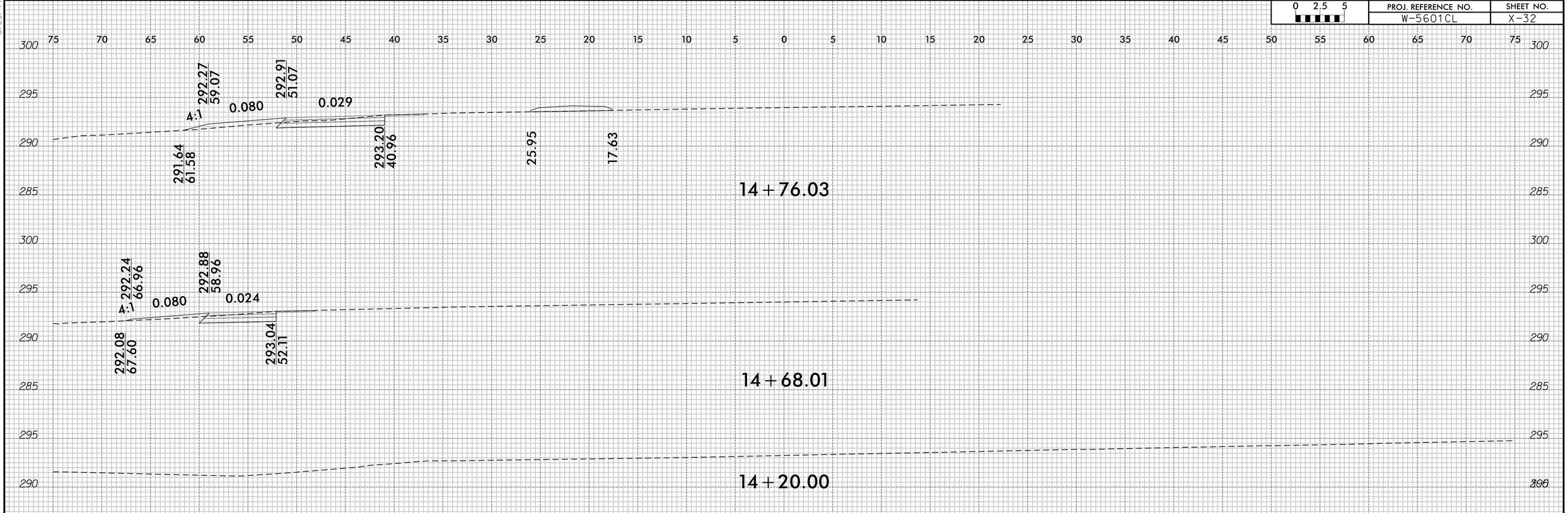
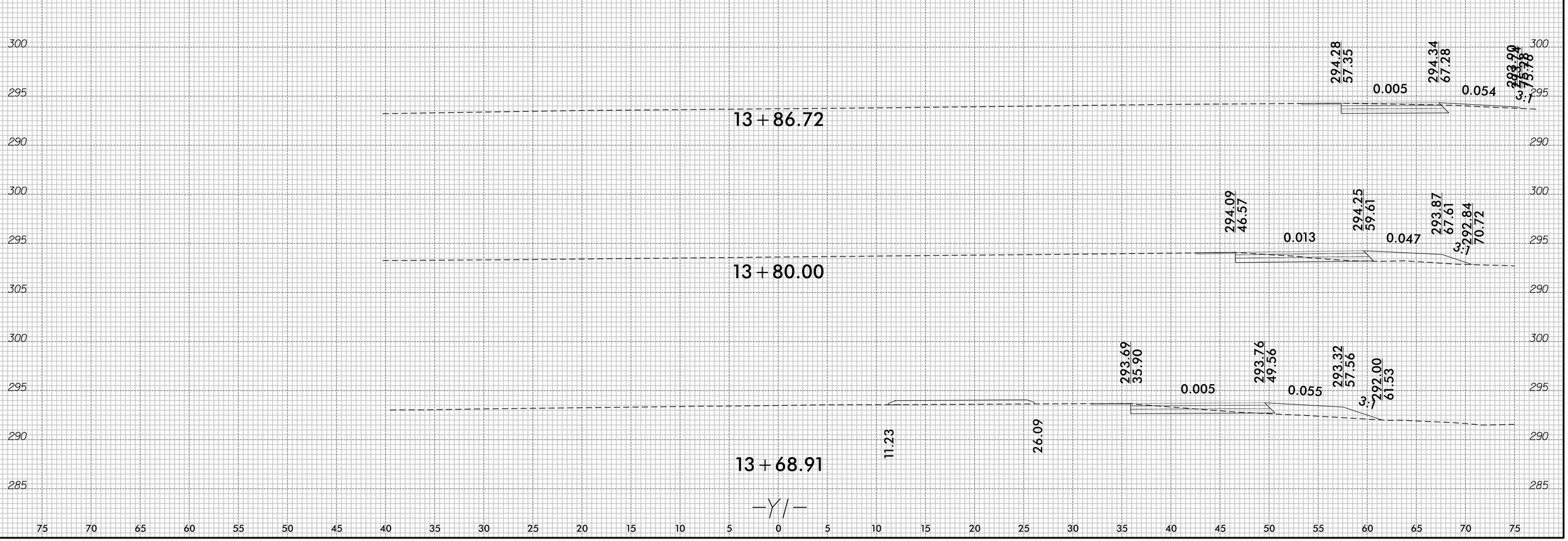
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	W-5601CL	X-32

8/23/99





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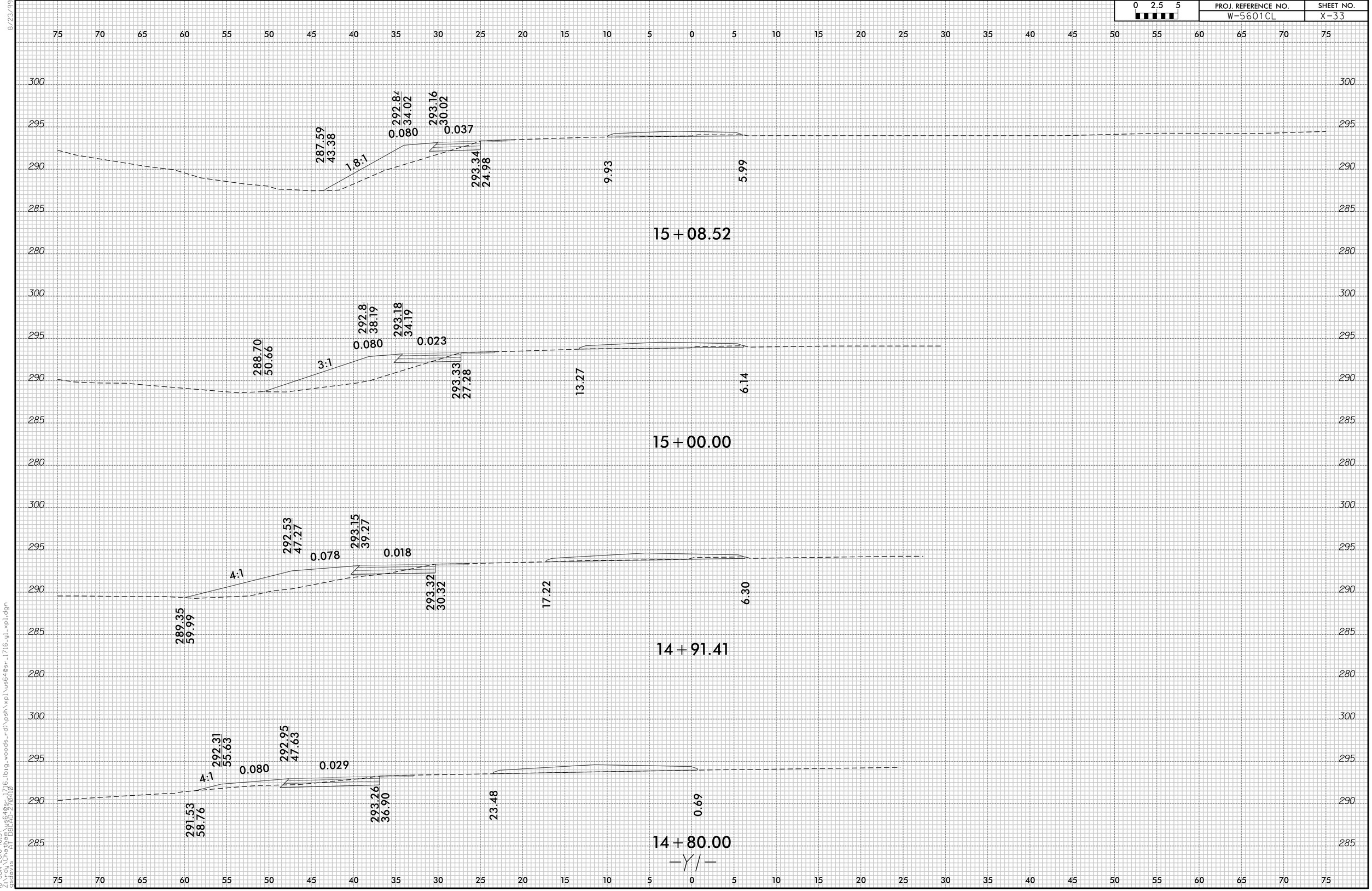
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	W-5601CL	X-33



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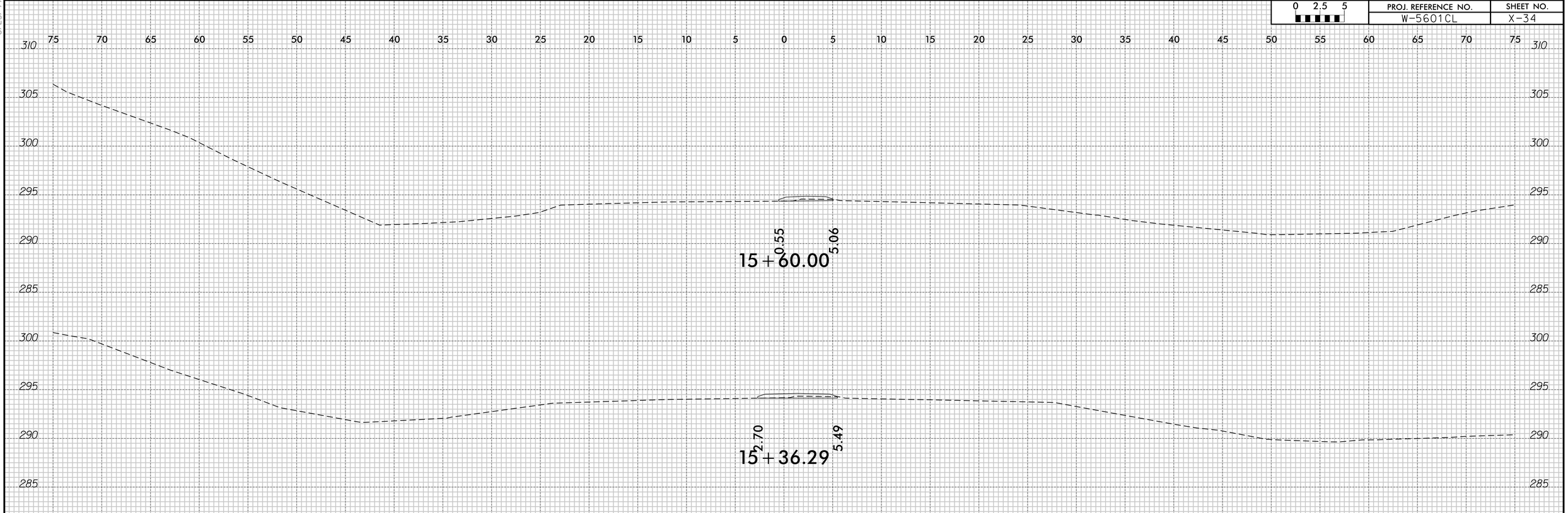
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	W-5601CL	X-34



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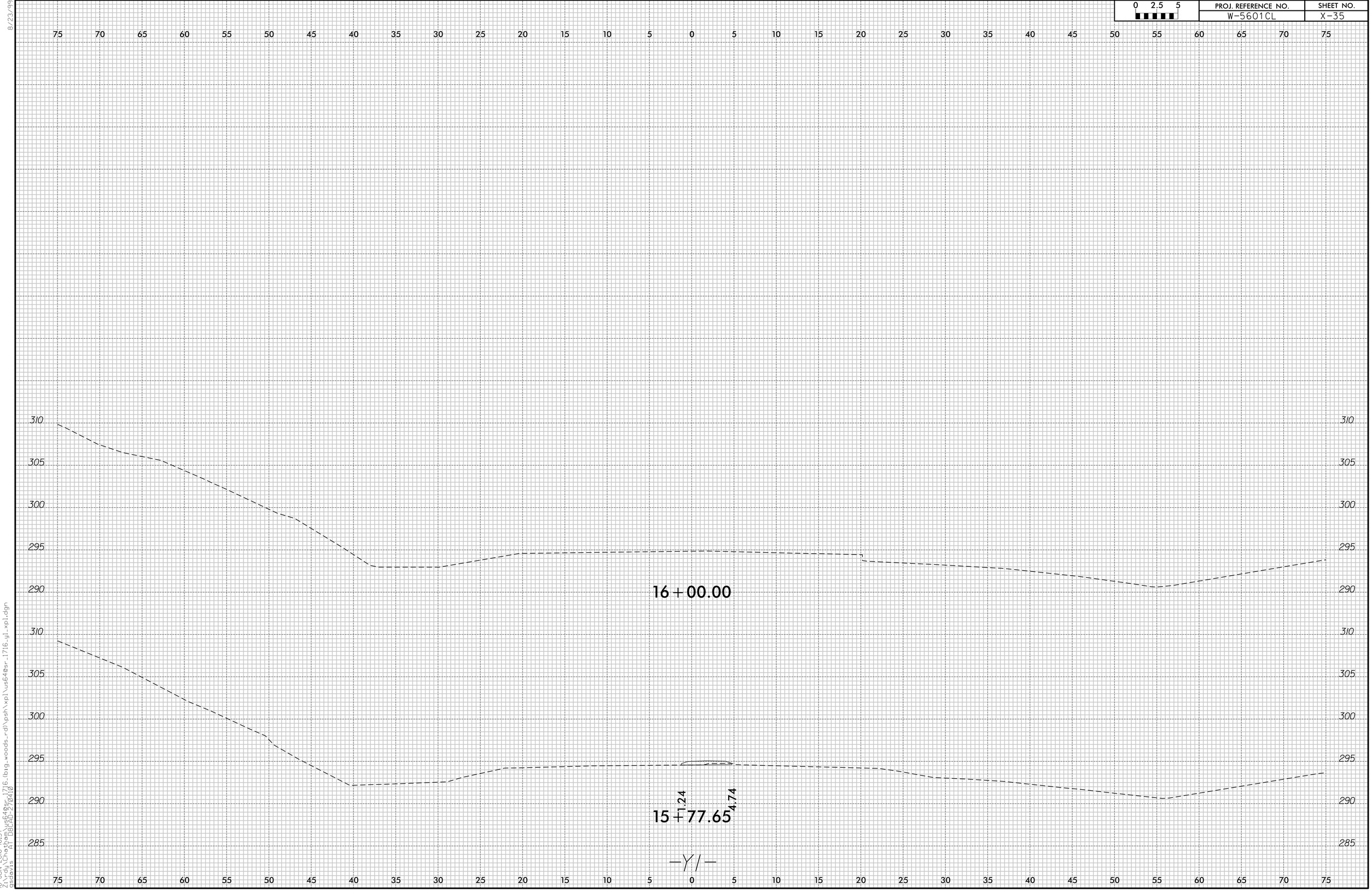

0 2.5 5
PROJ. REFERENCE NO.
W-5601CL
SHEET NO.
X-35
16+00.00
15+77.65
1.24
4.74
-Y/-