STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

August 5, 2005

N.C. Division of Water Quality
1650 Mail Service Center
Raleigh, NC 27699-1650

ATTN.: Mr. John Hennessy
Transportation Permitting Unit Supervisor

Dear Sir:

Subject: **Application Resubmittal for an Individual 401 Water Quality Certification** for Improvements to US 17 From South of SR 1127 (Possum Track Road) to North of SR 1418 (Roberson Road). Beaufort County. State Project No. 8.T150601. Federal Aid Project MAF-75-3 (26). WBS 34440.1.1. Debit Work Order No. 34440.1.1. TIP No. R-2510. USACE Action ID 199301143.

Reference: Original application dated May 3, 2005.

As you are aware, the North Carolina Department of Transportation (NCDOT), Division of Highways, in consultation with the Federal Highway Administration (FHWA) proposes to improve US 17 in Beaufort County, 0.5 mile south of SR 1127 (Possum Track Road) near Hackney to 0.2 mile north of SR 1418 (Roberson Road) near Old Ford. The proposed project is approximately 15 miles in length.

Summary of Impacts to Waters of the U.S.: Proposed impacts to jurisdictional areas of R-2510 consist of a total of 12.41 acres of permanent wetland impacts (8.53 acres of riverine, 3.88 acres of non-riverine), 0.15 acre of fill in surface waters, and 4,244.4 linear feet of stream channels. Table 1 summarizes the jurisdictional impacts associated with the R-2510 project by Sections A, B, and C. Wetland impacts have been reduced by bridging the wetland associated with the Tar-Pamlico River.

- Proposed impacts to jurisdictional areas of Section R-2510A consist of 4.83 acres of wetlands, 0.06 acre of surface water impacts, and 478.0 linear feet of stream channel impacts. Wetland impacts are further broken down into 1.34 acres of riverine and 3.49 acres of non-riverine.

- Estimated impacts associated with preliminary design of section R-2510B consist of 6.09 acres of wetland impacts, 0.38 acre of surface water impacts, and 2,417.3 linear feet of stream channel impacts. The riverine and non-riverine wetland impacts include 5.70 acres and 0.39 acre, respectively.

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
1548 MAIL SERVICE CENTER
RALEIGH NC 27699-1548

TELEPHONE: 919-733-3141
FAX: 919-733-9794

WEBSITE: WWW.NCDOT.ORG

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC

- Estimated impacts associated with the preliminary design of section R-2510C consist of 1.49 acres of riverine wetland impacts, 0.33 acre of surface water impacts, and 1,349.1 linear feet of stream channel impacts.

Table 1. Summary of Jurisdictional Impacts

Section	Permanent Wetland Impacts (ac)* Riverine/non-riverine	Existing Channel Impacts (ft)	Surface Water (ac)
R-2510A	1.34/3.49	478.0	0.06
R-2510B	5.70/0.39	2,417.3	0.38
R-2510C	1.49/0	1,349.1	0.33
TOTAL	**8.53/3.88**	**4,244.4**	**0.77**

*includes fill, excavation, and mechanized clearing

Purpose and Need: The purpose of this project is to increase traffic capacity and safety by widening US 17 from the existing two-lane facility to a four-lane roadway and to route traffic around the major urban centers in the project area. Currently, traffic is heavy and the level of service (LOS) for the majority of US 17 within the project area range between D and E; accident rates for both the urban and rural segments are currently above the statewide accident rates for similar types of roadways; the posted speed limit (35 mph) within Chocowinity and Washington inhibits the flow of regional traffic. In addition, US 17 is designated as part of the North Carolina Intrastate System and is a Strategic Highway Network (STRAHNET) route.

Typical Section: A description for each typical section for the entire project is as follows:
From 0.5 mile south of SR 1127 (Possum Track Road) to SR 1149 (Price Road) [length = 4.2 miles] - Widen existing roadway to a four-lane divided expressway facility with a 46-foot median and partial control of access.

From SR 1149 (Price Road) to south of existing US 17 north of SR 1142 (Bragaw Lane) [length = 1.8 miles] - Four-lane freeway on new location with a 46-foot median and full control of access. An interchange is provided at NC 33 near SR 1142 (Bragaw Lane) east of Chocowinity.

From south of existing US 17 north of SR 1142 (Bragaw Lane) to north of the Tar River [length = 2.8 miles] - Four-lane freeway bridge on new location with a 10-foot median divided by a barrier and full control of access. The bridge will span existing US 17, the Norfolk-Southern Railway, SR 1165 (Sand Hole Road), the Tar River, Kennedy Creek, and the wetlands adjacent to the Tar/Pamlico River.

From north of the Tar River to existing US 17 north of SR 1404 (Whispering Pines Road) [length = 1 mile] – Four-lane freeway on new location with a 46-foot median and full control of access. An interchange is provided at US 264 west of SR 1404 (Whispering Pines Road). An at-grade intersection is provided at existing US 17 north of SR 1404. A grade separation is provided at 15th Street.

From north of SR 1404 (Whispering Pines Road) to 0.2 mile north of SR 1418 (Roberson Road) [length = 5.2 miles] – Widen the existing roadway to a four-lane divided expressway facility with a 46-foot median and partial control of access.

Summary of Utility Impacts: It will be necessary to relocate several utilities because of road widening activities. There are three utilities located on the west side of US 17 that are in the project's footprint: a water main, a gas main, and underground telephone cables. NCDOT will relocate these and use directional bore so as not to impact environmentally sensitive areas. Progress Energy has power lines on both sides of US 17. NCDOT plans to relocate the lines to the east side of US 17. Of the 1.18 acres of mechanized clearing shown below in Table 3, 0.45 acre is due to proposed utility impacts that will occur outside of proposed impact areas resulting from roadway activities. These proposed impacts are shown on the attached utility plans.

Summary of Mitigation: Throughout the NEPA and design process this project has been designed to avoid and minimize impacts to jurisdictional areas. Specific strategies are detailed elsewhere in this document. Highlights include widening NC 17 along the existing roadway in some areas, using 3:1 slopes within wetland limits, and bridging the wetlands associated with the Tar-Pamlico River.

NCDOT has proposed to restore approximately 7,000.0 feet of stream utilizing natural stream design and approximately 14.1 acres of buffer reforestation (Sections A, B, & C). Currently, feasibility studies are being conducted for all five sites and final designs are incomplete. When the designs are completed and the sites are approved, NCDOT may use some or all of these sites as a portion of the required mitigation for R-2510. The remaining compensatory mitigation for permanent impacts to wetlands and existing stream channels will come from the North Carolina Ecosystem Enhancement Program (EEP).

Summary of Tar-Pamlico Buffer Impacts: The total Tar-Pamlico River riparian buffer impacts associated with R-2510 consist of 7.84 acres (341,425.9 sqft) in Zone 1 with 6.88 acres (299,893.6 sqft) allowable with mitigation and 4.95 acres (215,392.1 sqft) in Zone 2 with 4.33 acres (188,553.0 sqft) allowable with mitigation.

PROJECT SCHEDULE

Construction of this project will be divided into three sections as detailed in Table 2. Permit drawings for all three sections are included in this application. The attached permit drawings are complete in detailing all proposed impacts occurring within section R-2510A, which is at 100 percent design completion. However, permit drawings for sections R-2510B and R-2510C detail the current best preliminary alignment and maximum potential impacts. Design for these latter sections is at 30 percent. The impacts associated with sections R-2510B and R-2510C are expected to decrease once final design is completed. Final permit drawings for R-2510B and R-2510C will be provided under separate cover in the form of a permit modification request. NCDOT understands that no construction will occur on Sections B and C until final design and resulting impacts have been approved by all regulatory agencies.

Table 2. Project Sections and Scheduling

Section	Project Limits	Scheduled Let Date
R-2510A	South of SR 1127 to South of SR 1149	March 2007
R-2510B	South of SR 1149 to South of 1536	December 2005 DB
R-2510C	South of SR 1536 to North of NC 171	June 2007 (est.)

DB – " Design Build" – Final design, right-of-way acquisition, permit acquisition, and construction will be provided by a private engineering firm.

NEPA DOCUMENT STATUS

Improvements to US 17 were first recommended in the US 17 Corridor Study in 1982. The project was first added to the Transportation Improvement Program (T.I.P.) in November 1989 and the environmental study began in 1992. A Purpose and Need Statement documenting the need for the project and potential benefits was completed in January 1999. A Preliminary Build Alternatives Analysis was completed in February 1999 which evaluated ten (10) preliminary build alternatives. An eleventh Preliminary Build Alternative was evaluated in November 1999. The Draft Environmental Impact Statement (DEIS) which assessed three Build Alternatives (Alternatives B, C and I-G) was completed and signed in June 2002. The project went on public notice on October 3, 2002 (USACE Action ID 199301143). The Final Environmental Impact Statement (FEIS) was completed and signed in August 2005. Copies of the project

documents have been provided to regulatory review agencies involved in the approval process. Additional copies will be provided upon request.

This project was developed through the NEPA/404 Merger process. All concurrence points have been reached for the A section of this project. The B and C sections have both reached 4A. A Design Build Private Engineering Firm will conduct the 4B and 4C concurrence meetings for the B section. It is unknown as of the date of this permit application if the C section will be administered through the Design Build process.

Logical Termini: R-2510 is in compliance with 23 CFR Part 771.111(f) which lists the FHWA characteristics of the independent utility of a project:

(1) The project connects logical termini and is of sufficient length to address environmental matters on a broad scope;
(2) The project is usable and a reasonable expenditure, even if no additional transportation improvements are made in the area; and
(3) The project does not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

RESOURCE STATUS

Wetland and Stream Delineations:

Wetland delineations were conducted using the criteria specified in the 1987 Corps of Engineers Wetland Delineation Manual. Wetlands and streams were delineated between December 1999 and February 2000. Mr. Mike Bell of the USACE Wilmington Regulatory Field Office verified the delineations in the field on February 28, 2000. The wetland verification will be updated prior to the permitting of this project.

Stream classification, delineations, and buffer sites were field verified by Mr. Mike Bell and Mr. Mike Thomas [NC Division of Water Quality (NCDWQ)] in March and April 2004.

The attached permit application package consists of drawings depicting jurisdictional impacts. As previously mentioned, the construction of R-2510A will involve 4.83 acres of permanent wetland impacts, 0.06 acres of fill within surface waters, 2.29 acres (100,097.9 square feet) of Tar-Pamlico Buffer impacts, and 478.0 linear feet of impacts to jurisdictional streams. Impacts associated with section R-2510B consist of 6.09 acre of wetland impacts, 0.38 acre of surface water impacts, 7.03 acres (306,112.1 square feet) of Tar-Pamlico Buffer impacts (allowable and mitigable), and 2,417.3 linear feet of stream channel impacts. Impacts associated with section R-2510C consist of 1.49 acre of wetland impacts, 0.33 acre of surface water impacts, 3.17 acres (138,295.6 square feet) of Tar-Pamlico Buffer impacts (allowable and mitigable), and 1,349.1 linear feet of stream channel impacts. All impacts for sections B and C of this project are preliminary estimates. These impacts are projected to decrease with further avoidance and minimization efforts. However, it should be noted that the proposed mitigation is based on the maximum potential jurisdictional impacts.

R-2510A: Characterization of Jurisdictional Sites:

Wetlands

This section will have 4.83 acres of proposed permanent wetland impacts and 0.06 acres of surface water impacts (Table 3). The major wetland type (approximately 70%) associated with section R-2510A can be characterized as palustrine forested, mixed broad-leaved deciduous and flooded (PFO6F, Cowardin, *et*

al.). This wetland classification specifically refers to the tidal bottomland hardwood and cypress-gum communities associated with the Tar River floodplain and Old Ford Swamp.

Wetlands associated with streams can be characterized as Coastal Plain bottomland hardwood wetlands (Schafale and Weakley, 1990) (riverine wetlands). Hydrology for this system is provided by overbank flooding of the associated stream. Dominant canopy vegetation includes bald cypress (*Taxodium distichum*), blackgum (*Nyssa sylvatica*), green ash (*Fraxinus pennsylvanica*), yellow poplar (*Liriodendron tulipifera*), sweetgum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), water oak (*Quercus nigra*), and river birch (*Betula nigra*). Understory and herbaceous species include saplings of canopy species, ironwood (*Carpinus caroliniana*), redbay (*Persea borbonia*), privet (*Ligustrum sinense*), doghobble (*Leucothoe axillaris*), giant cane (*Arundinaria gigantea*), cinnamon fern (*Osmunda cinnamomea*), chain fern (*Woodwardia virginiana*), royal fern (*Osmunda regalis*), and rush (*Juncus* sp.). Riverine wetlands within section R-2510A occur in association with tributaries to Chocowinity Creek (Sites 3, 6, 12, 13, 14, 15, & 17; permit drawing sheets 7, 9, 10, 14, 15, 17, 20, & 21; utility sheets 5, 7, 8, 9, 10, 11, 13, 15, 17, 20, & 21).

Hydrology for depressional wetlands (non-riverine) is provided by rainfall, surface water run-off and groundwater discharge. These systems are found on the broad flat interstream areas. Dominant canopy vegetation includes loblolly pine (*Pinus taeda*), water oak (*Quercus nigra*), and red maple (*Acer rubrum*). Understory and herbaceous species include saplings of canopy species, giant cane (*Arundinaria gigantea*), chain fern (*Woodwardia virginiana*), royal fern (*Osmunda regalis)*, and rush (*Juncus* sp.).

Table 3. Jurisdictional Impacts within R-2510A

Site	Station	Fill in Wetland (ac)	Excavation in Wetlands (ac)	Mechanized Clearing (Method III) (ac)	Surface Water Impacts (ac)	Existing Channel Impacted (ft)
1	29+50 Rt	0.08	0.04	0.02		
2	33+50 Rt		0.02	0.05		
3	57+50	0.01	0.01	0.01	0.01	113
4	63+50 to 67+00 Rt	0.30	0.33	0.17		
5	85+00 to 90+20 Lt	0.03	0.09	0.07		
6	86+10 to 93+60 Rt	1.05		0.40		
7	103+15 to 105+20 Lt	0.15		0.01		
8	107+20 to 110+20 Rt	0.25	0.01	0.09		
9	117+15 to 120+50 Lt	0.12	0.09	0.03		
10	132+00 to 134+60 Rt	0.42	0.17	0.12		
11	136+90 to 138+20 Lt		0.04	0.01		
12	155+20 Rt	0.02			0.01	88
13	162+35				0.01	52
14	185+82				0.01	122
15	223+50 to 225+30	0.18	0.02	0.11	0.02	103
16	230+40 to 234+00 Rt	0.20		0.08		
17	241+30 to 241+65 Rt	0.01	0.01	0.01		
TOTAL		**2.82**	**0.83**	**1.18**	**0.06**	**478**

Streams

Within section R-2510A five stream channels are traversed: Horse Branch, White Branch and associated canals, and an unnamed tributary to Maple Branch. Jurisdictional stream information is presented in Table 4. Horse Branch is approximately 4 feet in width and maintains a moderate flow for the majority of the year. White Branch and its associated canals are approximately 4 feet in width and maintain a moderate flow year round. The unnamed tributary to Maple Branch is approximately 6 feet in width and maintains a moderate flow for the majority of the year. Each channel can be characterized as having adequate aquatic habitat and associated faunal assemblages. R-2510A will impact a total of 478 linear feet of stream channel to the previously listed streams.

Table 4. Jurisdictional Stream Information on R-2510A

Site	Station Number (From/ To)	Stream Name	DWQ Index No.	DWQ Rating	Status	Impact (ft)	Required Mitigation 2:1 (ft)
3	57+50	Horse Branch	29-6-2-1-6-2	C NSW	I	113	113(1:1)
12	155+20 Rt	White Branch	29-6-2-1-6-2	C NSW	P	88	176
13	162+35	White Branch	29-6-2-1-6-2	C NSW	P	52	104
14	185+82	White Branch	29-6-2-1-6-2	C NSW	P	122	244
15	223+50/ 225+30	Ut to Maple Branch	29-6-2-1-7	C Sw NSW	P	103	206
TOTAL						**478**	**843**

Note: The 1:1 mitigation ratio for site 3 was determined by the USACE in March and April 2004

R-2510B and R-2510C: Characterization of Jurisdictional Sites:

Wetlands

Proposed impacts to jurisdictional areas within Sections B and C have been calculated, but are preliminary at this time. These values are the result of minimization and avoidance measures and represent the maximum possible impacts foreseen at this time. Table 5 shows the estimated, site by site, impacts for R-2510B and R-2510C.

Wetland delineations were completed for the entire project, as stated previously. Wetlands occurring within Sections B and C are characterized in a similar manner as those in Section A. These systems exhibit the same position within the landscape, hydrologic sources and vegetative species. Riverine wetlands are present in Section B and are associated with tributaries to Chocowinity Creek and the Tar-Pamlico River (Sites 1, 2, 3, 4, 6, 7, & 9; permit drawing sheets 4, 6, 7, 12-23, 25, 26, & 32). Riverine wetlands are present in Section C and are associated with tributaries to Cherry Run and Old Ford Swamp (Sites 1A, 1B, 1C, 3, & 4; permit drawing sheets 7, 11, & 18).

At the present time, due to the sequencing of the project, Sections B & C permit drawings detailing the exact nature and location of jurisdictional impacts are preliminary (approximately 30 percent design).

NCDOT will continue to explore every avenue to reduce these projected impacts. Proposed changes will be coordinated with the relevant natural resource agencies.

Table 5. Estimated Jurisdictional Impacts on R-2510B and R-2510C

Site	Station From/To	Fill in Wetland (ac)	Excavation in Wetlands (ac)	Mechanized Clearing (ac) (Method III)	Surface Water Impacts (ac)
R-2510B					
1	-L-228+25	0.09		0.01	0.01
2	-BY9-30+40		0.02	0.01	0.01
3	-L-250+50	0.43		0.04	0.76
4	-L-270+00	3.03		0.15	
5	-L-315+25	0.12		0.01	
6	-L-324+50-476+60	0.22			0.07
7	-L-495+00-499+50	1.55			0.13
8	-L-508+00	0.04			
9	-L-515+50	0.13		0.02	0.051
10	-L-525+50	0.22			
TOTAL R-2510B		**5.83**	**0.02**	**0.24**	**1.03**

Site	Station From/To	Fill in Wetland (ac)	Excavation in Wetlands (ac)	Mechanized Clearing (ac) (Method III)	Surface Water Impacts (ac)
R-2510C					
1A	-L-582+75-585+75 LT/RT	0.02		0.03	
1B	-L-590+70-592+70 RT		0.07	0.02	
1C	-Y26-15+30-16+75 RT		0.06	0.02	
2	-L-634+10-634+85 RT				0.01
3	-L-648+50-650+15 LT/RT	0.09		0.03	0.02
4	-L-743+50-761+90 LT/RT	1.04		0.11	0.29
5A	-L-786+20-788+05 LT/RT				0.01
5B	-L-792+40-794+15 LT/RT				0.01
5C	-Y31-13+15-14+60 LT/RT				0.01
TOTAL R-2510C		**1.15**	**0.13**	**0.21**	**0.35**

Streams

Jurisdictional stream information for sections R-2510B and R-2510C is presented in Table 6. There are 11 stream channels that may be impacted by construction activity on Sections B and C. The unnamed tributaries to Maple Branch are approximately 6 feet in width and maintain a moderate flow for the majority of the year. Maple Branch is approximately 6 feet in width and maintains a moderate flow for the majority of the year. The unnamed tributaries to Cherry Run are approximately 4 feet in width and maintain a moderate flow for the majority of the year. Cherry Run is approximately 15 feet in width and maintains a moderate flow for the majority of the year. Old Ford swamp is approximately 15 feet in width and maintains a moderate flow for the majority of the year. The unnamed tributaries to Latham

Creek are approximately 5 feet in width and maintain a moderate flow for the majority of the year. A total of 3,763.4 linear feet of stream channels may be impacted and will require mitigation in these latter two Sections. Please note, these are rough estimates and will likely decrease.

Table 6. Estimated Jurisdictional Stream Information, Sections R-2510B and R-2510C

Site	Station Number (From/To)	Structure	Stream Name	DWQ Index No.	DWQ Rating	Status	Impact (ft)	Required Mitigation 2:1 (ft)
	R-2510B							
1	-L-228+25	Roadway Fill	Ut to Maple Branch	29-6-2-1-7	C Sw NSW	P	121.6	243.2
2	-BY9-30+40	Roadway Fill	Ut to Maple Branch	29-6-2-1-7	C Sw NSW	P	72.7	143.4
4	-L-270+00	Roadway Fill	Maple Branch	29-6-2-1-7	C Sw NSW	P	826.1	1652.2
7	-L-495+00-499+50	Roadway Fill	Ut to Cherry Run	28-103-17	C Sw NSW	I	1,118	1,118(1:1)
10	-L-525+50	Roadway Fill	Cherry Run	28-103-17	C Sw NSW	P	278.9	557.8
TOTAL R-2510B							**2,417.3**	**3,714.6**

Site	Station Number (From/To)	Structure	Stream Name	DWQ Index No.	DWQ Rating	Status	Impact (ft)	Required Mitigation 2:1 (ft)
	R-2410C							
2	-L-634+10-634+85 RT	Roadway Fill	Ut to Cherry Run	28-103-17	C Sw NSW	P	113.8	227.6
3	-L-648+50-650+15 LT/RT	Roadway Fill	Ut to Cherry Run	28-103-17	C Sw NSW	P	159.3	318.6
4	-L-743+50-761+90 LT/RT	Roadway Fill	Old Ford Swamp	28-103-14-1	C Sw NSW	P	841.6	1683.2
5A	-L-786+20-788+05 LT/RT	Roadway Fill	Ut to Latham Creek	28-103-14-2	C Sw NSW	P	107.5	215.0
5B	-L-792+40-794+15 LT/RT	Roadway Fill	Ut to Latham Creek	28-103-14-2	C Sw NSW	P	72.5	145
5C	-Y31-13+15-14+60 LT/RT	Roadway Fill	Ut to Latham Creek	28-103-14-2	C Sw NSW	P	54.4	108.8
TOTAL R-2510C							**1,349.1**	**2,698.2**

PROTECTED SPECIES

Plants and animals with federal classification of Endangered (E), Threatened (T), Proposed Endangered (PE), and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. The United States Fish and Wildlife Service (USFWS) lists seven federally protected species for Beaufort County as of the January 29, 2003 listing (Table 7).

In a letter dated, December 7, 2001, the USFWS concurs that the project will have "No Effect" for the red-cockaded woodpecker, bald eagle, and rough-leaved loosestrife and that the project "May Affect, Not Likely to Adversely Affect" (MANLTAA) sensitive joint-vetch. The USFWS Concurrence letter is included as an attachment.

NCDOT will resurvey areas of potential habitat in the entire construction corridor for sensitive-joint vetch in August 2005, as requested by the USFWS.

Table 7. Federally Protected Species

Common Name	Scientific Name	Federal Status	Determination
Red-cockaded woodpecker	*Picoides borealis*	E	No Effect
Kemp's ridley sea turtle	*Lepidochelys kempii*	E	No Effect
Manatee	*Trichechus manatus*	E	No Effect
Rough-leaved loosestrife	*Lysimachia asperulaefolia*	E	No Effect
Bald eagle	*Haliaeetus leucocephalus*	T	No Effect
Sensitive-joint vetch	*Aeschynomene virginica*	T	MANLTAA
Red wolf	*Canis rufus*	EXP	No Effect

"E" denotes Endangered (a species that is in danger of extinction throughout all or a significant portion of its range).

"T" denotes Threatened (a species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range).

"EXP" denotes Experimental (a species that is treated as threatened on public lands and proposed for listing on private land).

CULTURAL RESOURCES

The potential of the US 17 Improvements to impact cultural resources was evaluated in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended. Potential effects were determined using Criteria for Effect and Adverse Effect (36 CFR 800.9) developed by the Advisory Council on Historic Preservation. Concurrence on the eligibility of each property with respect to inclusion on the National Register of Historic Places and the final determination of effects were made by the State Historic Preservation Office (SHPO). Copies of all SHPO correspondence and concurrence forms are found in Appendix B of the DEIS.

- An underwater archaeology survey will be conducted prior to construction of the project (**R-2510B**). Fieldwork for an underwater archaeology survey has been completed. A revised draft is currently under review by the State Historic Preservation Office.

- An intensive archaeological survey was conducted for the preferred corridor for Alternative B. Site 31BF340, a Middle Woodland limited activity location was determined eligible for listing in the National Register under Criterion D – Data. Data recovery will be conducted at this site prior to construction (**R-2510B**). Construction activities shall not take place within this location until all data recovery efforts have been completed by either the NCDOT Archaeology Unit or one of their

consultants. Once ROW has been acquired, the NCDOT Archaeology Unit must be notified in order to initiate data recovery efforts. A minimum of six (6) months will be required for said data recovery efforts.

- Six archaeological sites (cemeteries) located within the proposed right of way (31BF327, 31BF329, 31BF362, 31BF365, 31BF367, and 31BF378) are not considered eligible for the National Register but contain burials that shall be avoided during construction activities. Sites 31BF327 and 31BF329 are located on **R-2510A**. Sites 31BF362, 31BF365, 31BF367, and 31BF378 are located on **R-2510C**, with Site 31BF362 specifically located at the juncture of the **R-2510B** and **R-2510C** segments. Site 31BF337 (historic cemetery), located on **R-2510B**, shall be avoided during construction activities.

- Since approval of the original archaeological survey report, the Study Corridor for R-2510B has been expanded. Therefore, additional archaeological investigations are required for two specific locations along the corridor: 1) extension of the Study Corridor along US 17 south of the unnamed tributary of Maple Branch, and 2) expansion of the Study Corridor where existing US 17 and proposed US 17 intersect (Taylor Property). This additional work will be prepared as an addendum to the original survey report, and will be conducted prior to construction activities. Ownership of ROW will not be required in order to complete this portion of the work.

FEMA COMPLIANCE

The project has been coordinated with appropriate state and local officials and the Federal Emergency Management Agency (FEMA) to assure compliance with FEMA, state, and local floodway regulations.

MITIGATION OPTIONS

The Corps of Engineers had adopted, through the Council on Environmental Quality (CEQ), a wetland mitigation policy that embraces the concept of "no net loss of wetlands" and sequencing. The purpose of this policy is to restore and maintain the chemical, biological, and physical integrity of the Waters of the United States. Mitigation of wetland and surface water impacts has been defined by the CEQ to include: avoiding impacts, minimizing impacts, rectifying impacts, reducing impacts over time and compensating for impacts (40 CFR 1508.20). Executive Order 11990 (Protection of Wetlands) and Department of Transportation Order 5660.1A (Preservation of the Nations Wetlands), emphasize protection of the functions and values provided by wetlands. These directives require that new construction in wetlands be avoided as much as possible and that all practicable measures are taken to minimize or mitigate impacts to wetlands.

The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize wetland impacts, and to provide full compensatory mitigation of all remaining wetland impacts. Avoidance measures were taken during the planning and documentation phases; minimization measures were incorporated as part of the project design.

AVOIDANCE: Delineated, field verified and surveyed per GPS methodology all jurisdictional features (wetlands, streams, riparian buffers) within the study corridor for the selected alternative. The study corridor was approximately 1,000 feet in width along new location and 500-feet in width along upgrading existing. Using these surveyed features, preliminary designs were adjusted to avoid and/or minimize impacts to jurisdictional areas. All wetland areas not affected by the project will be protected from unnecessary encroachment. In direct consultation with the U.S. Army Corps of Engineers (COE) and the State Historic Preservation Office, decisions were made to shift the alignment of widening the existing roadway to minimize wetland impacts where possible. Individual avoidance items are as follows:

- Bridged stream (S 46) south of SR 1001 (Cherry Run Road).

- Shifted alignment westward to utilize existing roadbed and crossing over Old Ford Swamp.

- No staging of construction equipment or storage of construction supplies will be allowed in wetlands or near surface waters.

- In-stream Moratorium: NCDOT has committed to avoiding in-stream activities during the spring migration period of anadromous fish (February 15 through June 15) per the request of the NC Wildlife Resource Commission and USFWS.

- Removed an interchange from design of existing US 17 and Alternative B south of Chocowinity; avoided relocation of several residences and reduced impacts to natural systems.

- Revised interchange with NC 33 to avoid relocations of local physicians office and pharmacy.

- Shifted Alternative B east at same interchange to avoid relocations on Jones Circle and Bragaw Lane.

- Closed Grimes Road at historic Rhem Family House to avoid impacts.

- Removed an interchange from design at existing US 17 and Alternative B north of City of Washington; avoided relocation of several residences, reduced impacts to adjacent natural systems and avoided the historic Bishop Joseph A. Beebe House.

- Terminated right of way and control of access south of the historic Bishop Joseph A. Beebe House to avoid impacts.
- Revised the design for Alternative B to avoid the relocation of Paradise Outreach Ministries located on the east side of existing US 17 approximately north of SR 1509 (Springs Road).

- Shifted SR 1409 (Wharton Station Road) north at historic Swanner-Cooper House property and terminated right of way at eastern property line to avoid impacts.

- Shifted NC 171 north and ended proposed construction at existing ditch at historic Woodmen of the World Lodge to avoid impacts.

MINIMIZATION: Minimization includes the examination of appropriate and practicable steps to reduce the adverse impacts. Minimization techniques were implemented as follows:

- This permit application presents the maximum potential impacts currently associated with the preliminary designs of Sections B and C. Avoidance and minimization measures are being considered and evaluated for these sections; therefore, actual impacts should be less than those reported in this document. Design for the latter sections will be coordinated with relevant natural resource agencies.

- Slopes: It is NCDOT's policy to use 2:1 slopes in wetlands, where it is feasible. Oftentimes, as is the case with this project, the soils will not support steeper than 3:1 slopes, or the steeper slopes would require guardrails, which would require a wider footprint to back the guardrail away from traffic. Therefore, 3:1 slopes are being used where fill slopes intersect with wetlands.

- Best Management Practices: NCDOT has committed that Sediment and Erosion Control Guidelines for BMPs for Protection of Surface Waters will be adhered to during construction to minimize

potential negative environmental impacts. (see FONSI) NCDOT's "Stream Crossing Guidelines for Anadromous Fish Passage will be adhered to for this project.

- Sediment and Erosion Control Measures: NCDOT will stipulate that sediment and erosion control measures not be placed in wetlands unless it is absolutely necessary to place silt fences on wetland boundaries to contain erosion caused by the sheet flow of water. This commitment will be incorporated into the construction contract awarded for the proposed project. "High Quality Waters (HQW) Erosion Control Guidelines" will be adhered to throughout construction.

- Drainage:
  Bridge Deck Drains – Deck drains on bridges will be directed away from open water and released into Zone 2 of the riparian buffer.
  Road Drainage - Road drainage will flow through grassed buffers before entering the streams.

- Clearing: Clearing Method III (clearing and grubbing of vegetation to 10 feet beyond the construction limits) will be used.

- Revegetation: Within 15 days of construction completion, vegetation will be reestablished on exposed areas with judicious use of pesticide and herbicide.

- Precautionary Guidelines for General Construction in Areas Which May Be Used by the West Indian Manatee in North Carolina will be utilized for this project.

- Temporary Work Bridges: Temporary work bridges and barges will be used during construction of the bridge over the Tar-Pamlico River, and adjoining wetlands, to minimize impacts to jurisdictional waters and wetlands.
- In the area south of NC 33 and east of Chocowinity, the entire alignment was shifted westward to minimize a parallel crossing through a large wetland (29) maintaining continuity of the natural system. Designed a perpendicular crossing of the northern most finger of the same wetland.

- Reduced median width from 46 feet to 10 feet for approximately 500 feet prior to beginning of bridge over Tar/Pamlico River.

- Extended Tar/Pamlico Bridge over all open water, adjacent riparian buffers and natural wetland systems.

- Additional bridging of Chocowinity Creek at the NC 33 interchange was investigated. The design of Ramp C was tightened and the culvert length was shortened to reduce impacts to Chocowinity Creek and associated wetlands.

- Compressed interchange at US 264 to minimize community cohesion and relocation impacts to Maryanna Mobile Estates. A second entrance was also provided into the community.

- Terminated proposed construction limits at existing ditch to maintain historic oak trees and minimize impacts at historic J.C. Swanner House.

COMPENSATION: The primary emphasis of the mitigation is to reestablish a condition similar to that, which would have existed if the project were not built. Mitigation is limited to reasonable expenditures and practicable considerations related to highway operation. Mitigation is generally accomplished through a combination of methods designed to replace wetland and stream functions and values lost as a result of construction of the project. These methods consist of creation of new wetlands from uplands, borrow pits, and other non-wetland areas; restoration of wetlands; enhancement of existing wetlands; and relocation and restoration of streams. NCDOT requests to use EEP for the proposed impacts R-2510. A

copy of the EEP acceptance letter dated August 4, 2005 is attached to this application. Additionally, NCDOT is currently investigating five on-site mitigation opportunities (one in section A, three in section B, and one in section C) to use for R-2510. When these sites are designed and approved for compensatory mitigation, NCDOT will send EEP a revised request letter exhibiting the modifications to the letter dated August 4, 2005.

FHWA STEP DOWN COMPLIANCE: All compensatory mitigation must be in compliance with 23 CFR Part 777.9, "Mitigation of Impacts" that describes the actions that should be followed to qualify for Federal-aid highway funding. This process is known as the FHWA "Step Down" procedures:

1. Consideration must be given to mitigation within the right-of-way and should include the enhancement of existing wetlands and the creation of new wetlands in the highway median, borrow pit areas, interchange areas and along the roadside.

2. Where mitigation within the right-of-way does not fully offset wetland losses, compensatory mitigation may be conducted outside the right-of-way including enhancement, creation, and preservation.

Compensatory Wetland Mitigation: There are 1.34 acres of proposed riverine wetlands and 3.49 acres of proposed non-riverine wetlands impacted by the construction of R-2510A. There are an estimated 7.19 acres of riverine wetlands and 0.39 acre of non riverine wetlands impacted by the construction of R-2510B&C. NCDOT proposes to use EEP to mitigate for these impacts.

Compensatory Stream Mitigation: There are 478 feet of proposed impacts to streams associated with section A. There are an estimated 3,764.8 feet of impacts to streams associated with sections B&C. NCDOT proposes to use EEP to mitigate for these impacts.

Tar-Pamlico Buffer Mitigation: Total buffer impacts for R-2510 are 488,446.6 sq.ft. (11.21 acres). Due to the fact that the 2.27 acres of Tar-Pamlico buffer have already been accounted for by the wetland impacts, NCDOT proposes to mitigate for the remaining 8.94 acres through the EEP. The square footage for each zone is summarized in Table 8.

Table 8. Summary of Tar-Pamlico Buffer Impacts

Section	Zone 1 (sq.ft.)	Zone 2 (sq.ft.)
R-2510A(final)	56,354.4	34,180.8
R-2510B(estimated)	102,571.9	69,936.5
R-2510C(estimated)	78,040.5	48,789.6
Total	236,966.8	152,906.9

On-site Mitigation: NCDOT is currently investigating five sites for onsite stream restoration for this project. One is located in section A, three in section B, and one in section C. Based on preliminary reports, these sites may provide NCDOT with the following mitigation credits (these amounts may change during the planning and design process):

Section A

- Site 18 - Approximately 1,100 feet of stream restoration and an undetermined amount of buffer reforestation credits.

Section B

- Site 13 - Approximately 760 feet of stream restoration and 2.3 acres of buffer reforestation. This site is located on city-owned property and there is a possibility this site could be dropped.

- Site 12 - Approximately 1,740 feet of stream restoration and 4.0 acres of buffer reforestation.
- Site 8 - Approximately 2,000 feet of stream restoration and 4.6 acres of buffer reforestation.

Section C
- Site 6 - Approximately 1,400 feet of stream restoration and 3.2 acres of buffer reforestation.

When these sites are designed and approved for compensatory mitigation, NCDOT will send EEP a revised request letter exhibiting the modifications to the original letter dated April 29, 2005.

Indirect and Cumulative Effects: The Qualitative Indirect and Cumulative Effects Assessment for R-2510 has been completed. State and federal environmental regulations should help minimize any other potential negative indirect impacts this project could have upon other notable features. Areas along the Tar/Pamlico River and the southwestern extent of the Growth Impact Study Area (GISA) are unfavorable for development. Furthermore, proposed access control along the alignment on new location should temper some of the cumulative effects. Impacts to AECs and other notable features will more likely be the result of direct impacts related to the construction of TIP R-2510, and less the result of indirect impacts such as the potential future development of land. Additional copies of the assessment are available upon request.

REGULATORY APPROVALS

Application is hereby made for a NCDWQ Individual 401 Major Water Quality Certification as required for the above described activities. We are providing seven copies of this application to the North Carolina Department of Environment and Natural Resources, NCDWQ, for their review.

A revised request for consistency review is being submitted under separate cover to the NC Division of Coastal Management.

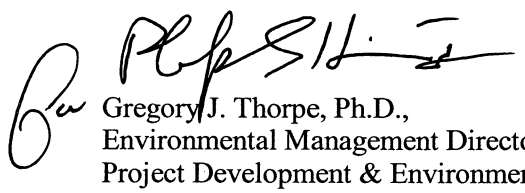
A revised Department of the Army Individual 404 Permit application is being submitted under separate cover.

A stormwater management plan and one copy of permit drawings were submitted under separate cover to the NC Division of Water Quality – Stormwater Management.

A Coast Guard permit application will be submitted to the Commander of the Fifth Coast Guard District under separate cover.

If you have any questions or need additional information please call Mr. Chris Underwood at (919) 715-1451.

Sincerely,



Gregory J. Thorpe, Ph.D.,
Environmental Management Director
Project Development & Environmental Analysis Branch

DEC 6 | 330

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

RECEIVED
DEC 12 2001
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH

December 7, 2001

Mr. William D. Gilmore, P.E., Manager
NCDOT
Project Development and Environmental Analysis Branch
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Attention: Alice Gordon

Dear Mr. Gilmore:

Thank you for your letter of November 20, 2001, providing the U.S. Fish and Wildlife Service (Service) with the Protected Species Survey Report, dated September 2001, for the Washington Bypass project, Beaufort and Pitt Counties, North Carolina (TIP No. R-2510). This report is provided in accordance with provisions of the Fish and Wildlife Coordination Act (16 U.S.C. 661-667d) and section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543).

The North Carolina Department of Transportation (NCDOT) presents the results of a consultant survey, dated September 2001, for the following federally-listed species: red-cockaded woodpecker (*Picoides borealis*), bald eagle (*Haliaeetus leucocephalus*), rough-leaved loosestrife (*Lysimachia asperulaefolia*), and sensitive joint-vetch (*Aeschynomene virginica*). Conclusions of "No Effect" were rendered for the red-cockaded woodpecker, bald eagle, and rough-leaved loosestrife.

The Service considers this report to be an accurate representation of the surveys and results for these species, and their habitats. Based on the information provided, the Service concurs that this project, implemented as described, will have "No Effect" on any of the three species listed above.

Initial surveys for the sensitive joint-vetch located several specimens in proximity to the project, but outside of the proposed work zone. Subsequently, a meeting was held at NCDOT headquarters in Raleigh, North Carolina on December 3, 2001. In attendance were the project manager, representatives of the consultant, and representatives of the Service. Based on the results of this meeting it was concluded, and the Service concurs, that this project is "Not Likely to Adversely Affect" the sensitive joint-vetch.

Note that this concurrence applies only to the referenced species up to the date of this letter. Should additional information become available relative to these, or any other listed species, these determinations may be reconsidered and additional surveys may be required.

The Service appreciates the opportunity to comment on this document. Please advise us of any changes in project plans. If you have any questions regarding these comments, contact Tom McCartney at (919) 856-4520, Ext. 32.

Sincerely,

for Dr. Garland B. Pardue
Ecological Services Supervisor

cc: COE, Washington, NC (Michael Bell)

FWS/R4:TMcCartney:TM:12/06/01:919/856-4520 extension 32:\r-2510.esp

RECEIVED
AUG 5 2005
DIVISION OF HIGHWAYS
PDEA-OFFICE OF NATURAL ENVIRONMENT

August 4, 2005

Greg Thorpe, Ph.D., Director
North Carolina Department of Transportation
Project Development & Environmental Analysis Branch
1548 Mail Service Center
Raleigh, NC 27699-1548

Project: DOT TIP # R-2510, Washington Bypass County : Beaufort
In Lieu Fee Mitigation Request

The purpose of this letter is to notify you that per your request the North Carolina Ecosystem Enhancement Program (NC EEP) will accept payment for impacts associated with the above referenced project and process the mitigation accordingly. It is your responsibility to contact the permitting agencies to determine if payment to the NC EEP In Lieu Fee Program will be approved. The mitigation will be performed in accordance with the Memorandum of Understanding between the N. C. Department of Environment and Natural Resources and the U.S. Army Corps of Engineers dated November 4, 1998.

It is your responsibility to send copies of the approved 404/401/CAMA permits to NC EEP. Upon receipt of the permits EEP will transfer funds provided in our biennial budget to the appropriate account. Based on the information supplied by you the impacts are summarized in the following table.

River Basin Cataloging Unit	Wetlands (Acres)			Stream (Linear Feet)			Buffer Zone I (Sq. Ft.)	Buffer Zone 2 (Sq. Ft.)
	Riparian	Non-Riparian	Coastal Marsh	Cold	Cool	Warm		
Tar-Pamlico 03020104	8.74	4.04	0	0	0	4,245	236,966.8	152,906.9

EEP will take responsibility for providing the compensatory mitigation for the permitted impacts up to a 2: 1 ratio, (buffers, Zone 1 at a 3:1 ratio and Zone 2 at a 1.5:1 ratio). The type and amount of mitigation will be as specified in the Section 404 Permit and/or 401 Water Quality Certification, and/or CAMA Permit.

If you have any questions or need additional information, please contact Carol Shaw at (919) 733-5205.

Sincerely,

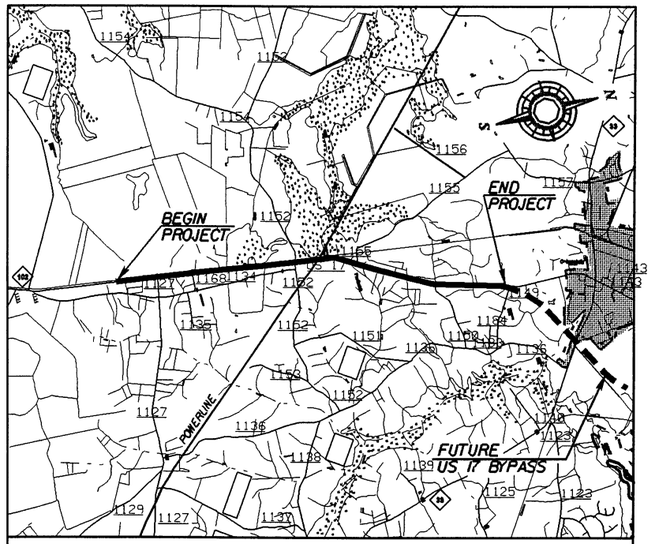
William D. Gilmore, PE
Director

cc: Cyndi Karoly, Wetlands/401 Unit
Linda Fitzpatrick, NC DOT, PDEA -Natural Environmental Unit
Doug Huggett, Division of Coastal Management
Bill Biddlecome, USACE -Washington
Scott McLendon, USACE -Wilmington
John Hennessy, DWQ Regional Office
Carol Shaw
File 080405 R-2510

9/8/05

CONTRACT: R-2510A

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



VICINITY MAP

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2510A	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34440.1.1	MAF-75-3(26)	PE	

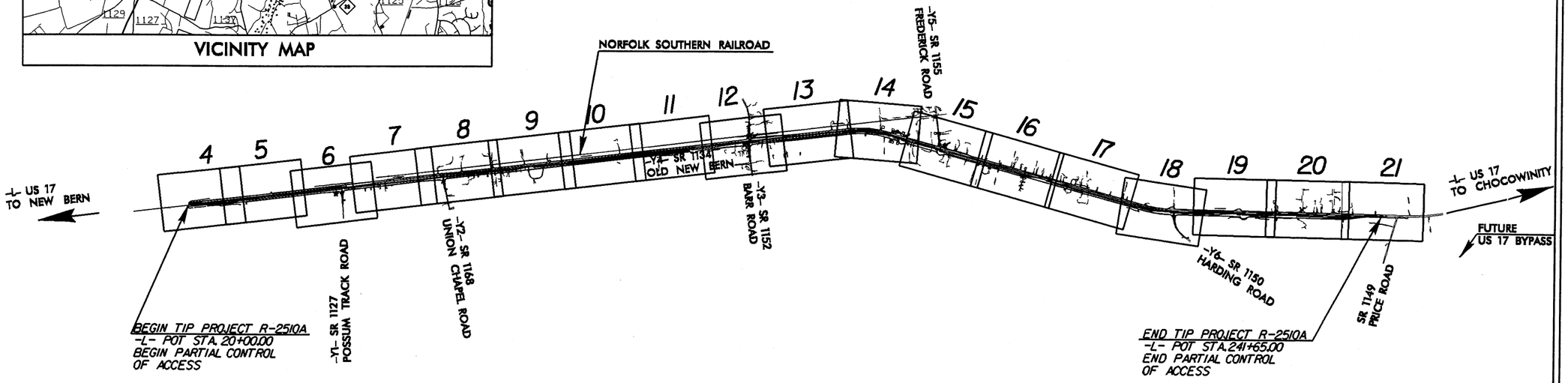
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
BEAUFORT COUNTY

LOCATION: US 17 FROM SOUTH OF SR 1127 (POSSUM TRACK ROAD) TO SR 1149 (PRICE ROAD)

TYPE OF WORK: GRADING, PAVING, DRAINAGE, AND CULVERT

Utility Plans

NAD 83/95 — NC GRID



NOTES: THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III OR TO R/W WHEN INDICATED ON PLANS.

GRAPHIC SCALES

PLANS 50 25 0 50 100

PROFILE (HORIZONTAL) 50 25 0 50 100

PROFILE (VERTICAL) 10 5 0 10 20

DESIGN DATA

ADT 2006 = 10200 VPD
ADT 2026 = 17000 VPD
DHV = 12 %
D = 60 %
T = 12 % *
V = 60 MPH

* TTST 7% DUAL 5%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2510A = 4.198 Mi
TOTAL LENGTH OF TIP PROJECT R-2510A = 4.198 Mi

Prepared In The Office Of:
Carter-Burgess
Consultants in Planning, Engineering, Architecture, Construction Management and Related Services
848 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27662

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: MARCH 18, 2005

LETTING DATE: DECEMBER 19, 2006

R. DONALD HURLBUT, PE — *ROADWAY GROUP MANAGER*

CARL L. BUSH III, PE — *PROJECT DESIGN ENGINEER*

NCDOT CONTACT: CATHY S. HOUSER, PE — *ROADWAY DESIGN PROJECT ENGINEER*

HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
SIGNATURE: P.E.

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
P.E.
STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION
APPROVED
DIVISION ADMINISTRATOR DATE

04-AUG-2005 15:00
f:\utilities\rdy\Proj\r2510a_rdy_tsh.dgn
kmail at 9924554

5/14/99

NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

SEE SHEET 2B FOR -L- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

ENGLISH

PERMANENT IMPACTS ON WETLAND

18" CONC DRIVE PIPE
-¾ FULL

PAUL A. LEE
DB 849 - PG 488
MB 14 - PG 18

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

BL-4 PINC 22+70.78=
-T2-103 POT 5+00.00
-L- STA 28+09.84
61.89 LT

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

BL-5
PINC 28+48.54
-L- STA 33+87.57
56.36 LT

NO VISIBLE PIPES

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

BL-6
PINC 33+65.12
-L- STA 39+04.15
57.94 LT

NORFOLK SOUTHERN RAILROAD

-BL- STA 29+93.73
66.03' LEFT
ELEV= 62.48'

MATCHLINE -L- STA 29+00 SEE SHEET 4

MATCHLINE -L- STA 40+00 SEE SHEET 6

N 8° 42' 06.4" E -L-

N 8° 18' 00.8" E

N 8° 18' 34.5" E

N 8° 00' 03.0" E

REMOVE 18" CONC

2GI(D)

45' WW FENCE

28+00.00
102.00

28+50.00
107.00

31+00.00
104.00

36+00.00
100.00

38+50.00
106.00

CLASS "B" RIP RAP
EST 2 TONS
EST 7 SQ YD FF

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

DRAWDOWN LIMITS

60' ACCESS BREAK

ISMTLBUS ABAND

N/C

S

ISFD ABAND

B ABAND

A=171 SQ'
=0.004 ACRES
L=54'

A=1139 SQ'
=0.026 ACRES
L=128

1 JOHN JAY WALTON
TB 6 - PG 101
MB4 - PG 38

4 REBECCA S. DAY
DB 113 - PG 164

5 JAMES A. POLLARD, et ux
DB 509 - PG 392

189.57'
S08°03'32"W

686.59'
S72°43'03"E

SITE 1
STA. 29+50

SITE 2
STA. 33+50

25 0 50
SCALE: 1" = 100'

WETLAND SITES 1 & 2

PLAN VIEW

ADDITIONAL IMPACT DUE TO DRAWDOWN
SITE 1 0.04 AC
SITE 2 0.22 AC

LEGEND
- WLB — WETLAND
- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING

04-AUG-2005 14:56
\\utilities\Proj\ALL PROJECTS\2510a_wetland\r-2510a05_wt.dgn
Level: All Levels

5/14/99

NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

SEE SHEET 2B FOR -L- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83'95

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMANENT IMPACTS ZONE 1

PERMANENT IMPACTS ZONE 2

PERMANENT IMPACTS ON WETLAND

ENGLISH

WEYERHAEUSER COMPANY
DB 1082 - PG 35
TB 11 - PG 375
MB 14 -PG 18

WILLIAM C. HADDOCK, et ux
DB 1023 - PG 125
TB 12 - PG 532
PC A - SLIDE 104

BL - 9 PINC 49+43.36=
-T3- 109 PINC 10+06.25
-L- STA 54+79.50
10.02 LT

BL - 10 PINC 54+86.94=
-L- STA 56+23.83
11.18 LT

GRASS SWALE
DA 0.40 Ac
Q2 0.3 cfs
V2 1.9 fps
Q10 1.3 cfs
V10 1.30 fps
REQUIRED LENGTH 40.2 ft
ACTUAL LENGTH 250 ft
SLOPE 0.008 ft / ft
SIDE SLOPES 6

GRASS SWALE
DA 0.13 Ac
Q2 0.3 cfs
V2 0.90 fps
Q10 0.4 cfs
V10 0.90 fps
REQUIRED LENGTH 13.5 ft
ACTUAL LENGTH 84 ft
SLOPE 0.008 ft / ft
SIDE SLOPES 6

GRASS SWALE
DA 0.69 Ac
Q2 1.5 cfs
V2 1.33 fps
Q10 2.2 cfs
V10 1.45 fps
REQUIRED LENGTH 68.9 ft
ACTUAL LENGTH 300 ft
SLOPE 0.009 ft / ft
SIDE SLOPES 8

GRASS SWALE
DA 1.63 Ac
Q2 2.7 cfs
V2 1.75 fps
Q10 3.8 cfs
V10 1.91 fps
REQUIRED LENGTH 163.5 ft
ACTUAL LENGTH 670 ft
SLOPE 0.044 ft / ft
SIDE SLOPES 4

GRASS SWALE
DA 2.44 Ac
Q2 4.0 cfs
V2 1.94 fps
Q10 5.7 cfs
V10 2.12 fps
REQUIRED LENGTH 244.3 ft
ACTUAL LENGTH 1330 ft
SLOPE 0.042 ft / ft
SIDE SLOPES 4

GRASS SWALE
DA 0.9 Ac
Q2 0.4 cfs
V2 0.84 fps
Q10 0.6 cfs
V10 0.91 fps
REQUIRED LENGTH 18.6 ft
ACTUAL LENGTH 86 ft
SLOPE 0.005 ft / ft
SIDE SLOPES 6

GRASS SWALE
DA 1.29 Ac
Q2 2.4 cfs
V2 1.83 fps
Q10 3.3 cfs
V10 0.80 fps
REQUIRED LENGTH 128.6 ft
ACTUAL LENGTH 1201 ft
SLOPE 0.005 ft / ft
SIDE SLOPES 6

GRASS SWALE
DA 9.62 Ac
Q2 15.8 cfs
V2 0.89 fps
Q10 22.3 cfs
V10 0.97 fps
REQUIRED LENGTH 962 ft
ACTUAL LENGTH 1570 ft
SLOPE 0.002 ft / ft
SIDE SLOPES 4

GRASS SWALE
DA 4.60 Ac
Q2 8.5 cfs
V2 2.09 fps
Q10 12.0 cfs
V10 2.28 fps
REQUIRED LENGTH 460.3 ft
ACTUAL LENGTH 610 ft
SLOPE 0.024 ft / ft
SIDE SLOPES 4

LEVEL SPREADER NOT USED SWALE IS IN 2.5' OF CUT, CANNOT DAYLIGHT UNTIL 57+00, INSIDE OF ZONE 1

LEVEL SPREADER NOT USED SWALE IS IN 2.0' OF CUT, CANNOT DAYLIGHT UNTIL 57+50, INSIDE OF ZONE 1

LEVEL SPREADER NOT USED SWALE IS IN 3.0' OF CUT, CANNOT DAYLIGHT UNTIL 57+50, INSIDE OF ZONE 1

LEVEL SPREADER NOT USED SWALE IS IN 4.0' OF CUT, CANNOT DAYLIGHT UNTIL CHANNEL INSIDE OF ZONE 1

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

10 LF OF CHANNEL IMPROVEMENTS EST CU YD DDE SEE INLET DETAIL E

2' BASE DITCH EST CU YD DDE SEE DITCH DETAIL J

CLASS "B" RIP RAP EST 2 TONS EST 7 SQ YD FF

A1=295 SQ' =0.0087 ACRES L=22

A2=302 SQ' =.0069 ACRES L=22'

A3=235 SQ' =.0053 ACRES L=25'

A4=54 SQ' =.001 ACRES L=26'

A=1173 SQ' =.0268 ACRES L=93'

ALL DRIVE PIPES RIGHT ARE 24" CONC W/ VARIOUS TIMBER/BLOCK HOMEWALL HEADWALLS

24" CONC WITH TIMBER (X-TIE) HW

6' CONC. PAV'T.

48" WW FENCE

FIELD OBSERVATION INDICATES WETLAND DRAWDOWN AT 25'

DRAWDOWN LIMITS

300.00' TAPER

ACCESS BREAK

FRANK R. KLINGENSMITH DB 1051 - PG 89 DB 945 - PG 306

JOHNNIE DOUGLAS CLARK, SR., et al

TERRY D. ANDREWS, et ux DB 706 - PG 432 DB 742 - PG 967

J. M. HILL, et ux DB 630 - PG 25

MATCHLINE -L- STA. 53+00 SEE SHEET 6

MATCHLINE -L- STA. 64+00 SEE SHEET 8

SITE 1 STA. 57+50

SITE 3 STA. 57+50

SITE 4

WETLAND SITES 3 & 4

PLAN VIEW

ADDITIONAL IMPACT DUE TO DRAWDOWN
SITE 4 0.03 AC

SCALE: 1" = 100'

LEGEND
WLB - RIPARIAN BUFFER - ZONE 1
RIPARIAN BUFFER IN ZONE 2
WETLAND
MITIGABLE IMPACTS ZONE 1
DENOTES DECHANNELED CLEARING
MITIGABLE IMPACTS ZONE 2

04-AUG-2005 14:26
c:\projects\r2510a_wetland\r2510a07_wt.dgn
klewis
ALL RESPONSES

5/14/99

NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

SEE SHEET 2B FOR -L- PROFILE
SEE SHEET 3A FOR -Y2- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
SEE SHEET 2D FOR INTERSECTION DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	8
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

ENGLISH

NAD 83'95

PERMANENT IMPACTS ON WETLAND

WILLIAM C. HADDOCK, et ux
DB 1023 - PG 125
TB 12 - PG 532
PC A - SLIDE 104

WILLIAM EARL LEWIS, et ux
DB 888 - PG 598

CHARLES H. PURSER, et ux
DB 852 - PG 559
PC B - SLIDE 161

MATCHLINE -L- STA.64+00 SEE SHEET 7

MATCHLINE -L- STA.77+00 SEE SHEET 9

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

NO VISIBLE PIPES @ RR

NO PIPE @ RR

-L- POT Sta.67+15.43 =
-Y2- POT Sta. 10+00.00

BL-11 PINC 62+02.20 =
BY2-45 POT 5+00.00
-L- STA 67+38.29
3.54 LT

BL - 12
PINC 67+78.86
-L- STA 73+14.90
11.16 LT

BM 2
-BL- STA 60+88.77
117.45' LEFT
ELEV.= 58.68'

NCDOT GPS
"R2510A-3"

NORFOLK SOUTHERN RAILROAD

DRIVE PIPE NEARLY FULL

A=2119 SQ'
=.0488 ACRES
L=192'

A=124 SQ'
=.0028 ACRES
L=81'

DRAWDOWN LIMITS

SITE 4 Con't
STA. 65+00

-Y2- POT Sta.13+00.00
END CONSTRUCTION
(TIE TO EXISTING)

WETLAND SITE 4
CON'T
PLAN VIEW

SCALE: 1" = 100'

LEGEND
WLB — WETLAND
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING

J. M. HILL, et ux
DB 630 - PG 25

MELINDA WRIGHT GASKINS
DB 1126 - PG 424

NORMAN WRIGHT
DB 693
PG 446

MAXINE W. ALLIGOOD
DB 693 - PG 444
DB 867 - PG 363

PATRICIA ANN EDWARDS
DB 1074 - PG 255

DON WILLIAMS
DB 1126 - PG 582

EARL D. CLARK, et ux
DB 526 - PG 310
DB 676 - PG 52

LELAND D. CLARK, et ux
DB 1019 - PG 804

JAMES WHITE
DB 738 - PG 126

DAVID E. PARAMORE, et ux
DB 991 - PG 794
PC C SLIDE 340

EDWARD PARAMORE, et ux
DB 1005 - PG 139
DB 1005 - PG 141
DB 615 - PG 84

MICHAEL

GEORGE HERBERT HILL, et ux
DB 887 - PG 930

KENNETH RAY WATERS, SR., et ux
DB 1075 - PG 824

POSSUM TRACK RD

UNION CHAPEL RD

SR 1931

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NOTE: ALL DRIVEWAY CONNECTIONS ARE 6' ABC UNLESS OTHERWISE NOTED

SEE SHEET 26 FOR -L- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

ENGLISH

PERMANENT IMPACTS ON WETLAND

CHARLES H. PURSER, et ux
DB 852 - PG 559
PC B - SLIDE 161

JOEY RANDY MAYO, et ux
DB 953 - PG 184
DB 1013 - PG 446

JOSEPH J. GODLEY, et al
DB 772 - PG 586

GEORGE F. WIGGINS, et ux
DB 1055 - PG 412

SITE 5
STA. 87+00

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

BL-13
PINC 73+14.69
-Y- STA 78+36.79
132.59 LT
NCDOT GPS "R2510A-4"

BL-14 PINC 79+01.00=
-L- STA 84+20.37
76.08 LT

CLASS "B" RIP RAP
EST 2 TONS
EST 7 SQ YD FF

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

N 14°14' 00.8" E

N 4° 23' 46.3" W

N 8° 42' 06.4" E

NORFOLK SOUTHERN RAILROAD

MP 4

CONTROL POINT

THERE IS NOT A PROPOSED DRIVEWAY TIE AT THIS LOCATION. A DRIVEWAY TIE & DRIVEWAY PIPE HAVE BEEN ADDED AS REQUESTED BY HYDRAULICS UNIT

DRIVEWAY PIPES ARE NOT SHOWN HERE BECAUSE THERE IS NOT A PROPOSED DRIVEWAY TIE AND IT APPEARS THIS PROPERTY WILL BE A TOTAL TAKE.

MATCHLINE -L- STA. 77+00 SEE SHEET 8

MATCHLINE -L- STA. 90+00 SEE SHEET 10

77+50.00 100.00

79+40.00 BEG WW FENCE

82+00.00 100.00

86+00.00 102.00

86+50.00 100.00

WILLIAM EARL CLARK, et ux
DB 748 - PG 723
DB 801 - PG 922

FRANCES C. TETTERTON
DB 911 - PG 522

DAVID D. HARDY, et ux
DB 884 - PG 190

THOMAS G. CLARK, et ux
DB 881 - PG 310
DB 911 - PG 916

D.H. BRIGHT
DB 329 - PG 140
MB 17 - PG 68

ROBERT M. KIMBLE, et ux
DB 1034 - PG 315

MICHAEL EDWARD PARAMORE, et ux
DB 1015 - PG 799
DB 1109 - PG 574
DB 665 - PG 184

A=5770 SQ'
=.1324 ACRES
L=388'

15'

15'

SITE 6
STA. 89+00

WETLAND SITES 5 & 6

PLAN VIEW

ADDITIONAL IMPACT DUE TO DRAWDOWN
SITE 5 0.01 AC

SCALE: 1" = 100'

LEGEND
- WLB — WETLAND
- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING

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PROJECT REFERENCE NO.	SHEET NO.
R-2510A	10
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Carter-Burgess
Consultants in Planning, Engineering, Architecture, Construction Management and Related Services
588 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27612

KO & ASSOCIATES, P.C.
Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606

ENGLISH

NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

SEE SHEET 26 FOR -L- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 18' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

PERMANENT IMPACTS ON WETLAND

SITE 5 CON'T

SITE 6 CON'T

WETLAND SITES 5 & 6 CON'T PLAN VIEW

MATCHLINE -L- STA. 90+00 SEE SHEET 9

MATCHLINE -L- STA. 103+00 SEE SHEET 11

MATCHLINE -L- OFFSET 440.00' SEE SHEET THIS SHEET

EXISTING CHANNEL IS SOMEWHAT SILTED & WEEDS TO BE CLEANED OUT. SCULPTCHING WILL TAKE CARE OF THIS.

A=4516 SQ' = .1036 ACRES L=290'

BL-15 PINC 84+90.90 -L- STA 90+09.85 53.75 LT

BL-16 PINC 90+84.65 -L- STA 96+03.60 55.29 LT

BL-17 PINC 96+76.84= -L- STA 101+35.67 66.66 LT

BM 3 -BL- STA 84+41.67 62.50 LEFT ELEV.= 54.67

GEORGE F. WIGGINS, et ux DB 1055 - PG 412

D. H. BRIGHT DB 229 - PG 140 MB 17 - PG 68

JOHNNIE M. SMITH, et ux DB 976 - PG 343 PG. 5 - SLIDE 88-1

ADDIE ELIZABETH F. GALLOWAY DB 78 - PG 734

ARLEY B. & E. MEEKS, et ux DB 341 - PG 234

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

4' BASE TAIL DITCH 220 LF @ 0.2% GRADE EST 260 CY DDE SEE DITCH DETAIL A

4' BASE TAIL DITCH 760 LF @ 0.2% GRADE EST 1900 CY DDE SEE DITCH DETAIL A

CLASS "B" RIP RAP EST 3 TONS EST 10 SQ YD FF

CLASS "B" RIP RAP EST 11 TONS EST 28 SQ YD FF

CLASS "B" RIP RAP EST 2 TONS EST 7 SQ YD FF

CLASS "B" RIP RAP EST 1 TONS EST 2 TONS EST 7 SQ YD FF

GRADE TO TURN

52" CMP

48" WW FENCE

12" STONE WALK

HTR

N/C

EXISTING R/W

WLB — WETLAND

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

6" PVC

SCALE: 1" = 100'

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NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

SEE SHEET 2B FOR -L- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMANENT IMPACTS ON WETLAND

ENGLISH

105 110 115

SITE 7
STA. 104+00

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

18" CONC PIPE -1/4 FULL

BL-18
PINC 102+57.71
-L- STA 107+76.47
57.25 LT

29 JOHNNIE M. SMITH, et ux
DB 976 - PG 343
PC E - SLIDE 98-7

NORFOLK SOUTHERN RAILROAD

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

BL-19
PINC 107+73.77
-L- STA 112+92.52
54.21 LT

MATCHLINE -L- STA. 103+00 SEE SHEET 10

MATCHLINE -L- STA. 116+00 SEE SHEET 12

US 17 22' BST

150' FULL LANE 175' TAPER

N 9° 37' 47.6" E

N 3° 02' 22.4" E

N 8° 43' 03.8" E

N 8° 42' 06.4" E

CONTROL POINT

48" WW FENCE

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

CLASS "B" RIP RAP EST 8 TONS EST 121 SQ. YD FF

105+00.00 123.00

107+50.00 100.00

112+53.00 100.00

112+95.00 120.00

113+53.00 121.00

114+10.00 100.00

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

30 ADDIE ELIZABETH F. GALLOWAY
DB 78 - PG 734

31 ANNIE MAE FURLOUGH
DB 78 - PG 737

32 MAUDE ELIZABETH WHITEHURST
DB 902 - PG 537

A=1409 SQ'
=.0323 ACRES
L=108'

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

POND

WLB

105.00' N05°40'E

EIP

N/C

ARLEY E. MEEKS, et ux
DB 914 - PG 251

D. H. BRIGHT
DB 229 - PG 140
MB 17 - PG 68

SITE 8
STA. 108+50

WETLAND SITES 7 & 8
PLAN VIEW

SCALE: 1" = 100'

LEGEND
- WLB — WETLAND
- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING

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NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

SEE SHEET 2B FOR -L- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 18' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83/95

PERMANENT IMPACTS ON WETLAND

MATCHLINE -L- STA. 128+00 SEE SHEET 12

MATCHLINE -L- STA. 144+00 SEE SHEET 14

S08°40'39"W 1467.75'

S08°40'39"W 1475.76'

HTR ABAND

HTR ABAND

130

135

140

R. GUY MAYO, JR., et ux
DB 976 - PG 346
PC E - SLIDE 98-7

SITE II
STA. 137+50

18" CMP (FULLY COATED)

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

BL-22
PINC 124+61.40
-L- STA 129+79.41
53.74 LT

BL-23
PINC 130+39.97
-L- STA 135+57.86
66.13 LT

CAROLINA POWER & LIGHT COMPANY
DB 633 - PG 601

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

CITY OF WASHINGTON
DB 581 - PG 181

84" CHL & SSBW

RR SIGNAL

NORFOLK SOUTHERN RAILROAD

MP 3
MILE POST #3

NORFOLK SOUTHERN RAILROAD

ENGLISH

US 17 22' BST

100.00' TAPER

165.00' TAPER

N 7° 28' 31.3" E

N 7° 26' 28.4" E

N 8° 42' 06.4" E

15" CONC RCP

18" CMP

24" CMP

42" CMP

48" WW FENCE

129+00.00
100.00

132+45.00
100.00

135+00.00
100.00

138+09.50
100.00

138+55.00
100.00

138+50.00
320.00

138+95.00
320.00

FOOTBRIDGE (MATERIAL N/C)

ISFD

WET

DRAWDOWN LIMITS

WLB

TRAVIS EARL HUDSON, et ux
DB 914 - PG 105
PC E - SLIDE 2-4

JOHNNIE R. JACKSON, et ux
DB 966 - PG 906

TRAVIS EARL HUDSON, et ux
DB 914 - PG 105

CHAD D. CLAYTON, et ux
DB 1052 - PG 655

EUGENE H. YOW, JR.
DB 996 - PG 180

J. J. COOK, et ux
DB 434 - PG 79
DB 354 - PG 636

A=2042 SQ'
=.0468 ACRES
L=257'

SITE 10
STA. 133+50

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

4' BASE TAIL DITCH
230 LF @ 0.12% GRADE
EST 60 CY DDE
SEE DITCH DETAIL A

CLASS "B" RIP RAP
EST 2 TONS
EST 14 SQ. YD FF

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

TDE

25 0 50
SCALE: 1" = 100'

WETLAND SITES 10 & 11

PLAN VIEW

ADDITIONAL IMPACT DUE TO DRAWDOWN
SITE 10 0.18 AC

LEGEND
- WLB — WETLAND
- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING

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PROJECT REFERENCE NO.	SHEET NO.
R-2510A	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SEE SHEET 2B FOR -L- PROFILE
SEE SHEET 3J FOR -Y5- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
SEE SHEET 2E FOR INTERSECTION DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

NAD 83/95

-Y5- POT Sta.11+55.09
BEGIN CONSTRUCTION

-Y5- POT Sta.13+00.00
BEGIN RESURFACING
(TIE TO EXISTING)

JOHN M. ELLIOTT
DB 886 - PG 156

LINDA B. EDWARDS, et vir
DB 858 - PG 195

BENNIE HERMAN STARKIE, JR., et al
DB 1129 - PG 936

CARRIE M. TURNER, et vir
DB 1165 - PG 710

ICELEEN W. WHITFIELD
DB 971 - PG 842
PC E - SLIDE 87-3

WILLIAM L. HULSLANDER, et ux
DB 1062 - PG 63
PC E - SLIDE 29-9

BETTIE A. STARKIE
DB 1093 - PG 147

CHARLES R. SPEIGHT, et ux
DB 967 - PG 721

SAM JASPER BOYD, JR., et ux
DB 1112 - PG 40

DANNY SMITH
DB 868 - PG 805

HARRIET CHAPMAN
DB 310 - PG 347

SITE 13
STA. 162+35

SITE 12
STA. 155+50
A2=588 SQ'
=.0135 ACRES
L=32'

SITE 3
STA. 162+35
AA1=50 SQ'
=.0011 ACRES
L=31'
AA2=76.5 SQ'
=.0017 ACRES
L=34'
AA3=158.6 SQ'
=.0036 ACRES
L=35'
AA4=157 SQ'
=.0036 ACRES
L=24'
A1=899 SQ'
=.0091 ACRES
L=21'
A3=719 SQ'
=.0165 ACRES
L=44'
A4=608 SQ'
=.0139 ACRES
L=38'

WETLANDS SITES 12 & 13

PLAN VIEW

PERMANENT IMPACTS ZONE 1
PERMANENT IMPACTS ZONE 2
PERMANENT IMPACTS ON WETLAND

MATCHLINE -L- STA. 153+00 SEE SHEET 1H

MATCHLINE -L- STA. 167+00 SEE SHEET 1G

SCALE: 1" = 100'

LEGEND
- SF AREA IN BUFFER - ZONE 1
- SF AREA IN BUFFER IN ZONE 2
- WETLANDS
- MITIGABLE IMPACTS ZONE 1 DENOTES FILL IN SURFACE WATER
- MITIGABLE IMPACTS ZONE 2 DENOTES MECHANIZED CLEARING

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PROJECT REFERENCE NO.	SHEET NO.
R-2510A	17
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

SEE SHEET 2B FOR -L- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 18' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

PERMANENT IMPACTS ZONE 1

PERMANENT IMPACTS ZONE 2

ENGLISH

MATCHLINE -L- STA. 183+00 SEE SHEET 16

MATCHLINE -L- STA. 195+00 SEE SHEET 18

88 DALTON RAY BUCK, et ux DB 1033 - PG 453

94 JAMES ARLEY BUCK, et ux DB 608 - PG 371

93 JOYCE D. BRIGHT DB 598 - PG 94

96 ERVIN RAY ARNOLD, et ux DB 580 - PG 103

98 C. DOUGLAS BRANCH, et ux DB 539 - PG 256

DALTON RAY BUCK, et ux DB 1033 - PG 453

99 MARK WAYNE OSNOE DB 1035 - PG 833

100 BARBARA HARDY BARR DB 820 - PG 776 MB 14 - PG 49

102 ERMA LEE COOKE, et ux DB 511 - PG 524 DB 530 - PG 279

103 CARL DOUGLAS BRANCH, JR., et UX DB 1105 - PG 206 DB 1226 - PG 342 MB 14 - PG 49

104 TERRY T. PATRICK DB 1095 - PG 834 PC A SLIDE 84

TERRY L. BUCK DB 1198 - PG 528 MB 14 - PG 60

105 JOHN W. RICE, et UX DB 833 - PG 117 MB 14 - PG 59

97 EDWARD A. BUCK, et ux DB 493 - PG 185

97 SALLIE BLOUNT TOLER DB 341 - PG 552

CHARLES L. TOLER, JR. DB 1133 - PG 680

101 GUY HARDING LOLLIS DB 314 - PG 392

BL-31 PINC 179+23.54
-L- STA 184+11.62
6.60 LT

PINC 185+25.34
-L- STA 190+13.37
14.06 LT

SITE 14
STA. 185+82

WETLANDS SITE 14

PLAN VIEW

SCALE: 1" = 100'

LEGEND
- RIPARIAN BUFFER - ZONE 1
- RIPARIAN BUFFER IN ZONE 2
- SURFACE WATER
- MITIGABLE IMPACTS ZONE 1
- MITIGABLE IMPACTS ZONE 2

A1=260 SQ' =.0059 ACRES L=30'

A2=158 SQ' =.0038 ACRES L=27'

A3=42 SQ' =.0009 ACRES L=24'

A4=120 SQ' =.0027 ACRES L=32'

GRASS SWALE
DA 0.46 AC
Q2 1.5 cfs
V2 0.90 fps
Q10 2.8 cfs
V10 1.20 fps
REQUIRED LENGTH 45.8 ft
ACTUAL LENGTH 285 ft
SLOPE 0.007 ft / ft
SIDE SLOPES 6

GRASS SWALE
DA 0.34 AC
Q2 0.6 cfs
V2 0.90 fps
Q10 0.9 cfs
V10 0.98 fps
REQUIRED LENGTH 33.9 ft
ACTUAL LENGTH 295 ft
SLOPE 0.005 ft / ft
SIDE SLOPES 6

GRASS SWALE
DA 0.03 AC
Q2 1.9 cfs
V2 0.53 fps
Q10 2.7 cfs
V10 0.68 fps
REQUIRED LENGTH 103.3 ft
ACTUAL LENGTH 900 ft
SLOPE 0.003 ft / ft
SIDE SLOPES 6

GRASS SWALE
DA 0.67 AC
L5 cfs
L10 fps
Q10 2.1 cfs
V10 LI fps
REQUIRED LENGTH 157.2 ft
ACTUAL LENGTH 448 ft
SLOPE 60' ACCESS BREAK 0.004 ft / ft
SIDE SLOPES 6

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

4' BASE TAIL DITCH 50 LF @ 0.98% GRADE EST 10 CY DDE SEE DITCH DETAIL A

CLASS "B" RIP RAP EST 2 TONS EST 14 SQ. YDS

LEVEL SPREADER NOT USED SWALE IS IN 2.5' OF CUT, CANNOT DAYLIGHT UNTIL CHANNEL INSIDE OF ZONE 1

LEVEL SPREADER 102' LONG

RURY INVERT 1 FOOT

60' ACCESS BREAK

72" WD PANEL

36" WD RAIL

48" WW FENCE

6' CONC. DRIVE

ASPH. DRIVE

END WW FENCE

BEG WW FENCE

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PROJECT REFERENCE NO.	SHEET NO.
R-2510A	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

ENGLISH

NAD 8395

7-27-05 DRAINAGE REVISION | STRUCTURE 7476 | 5/14/99

PERMANENT IMPACTS ZONE 1

PERMANENT IMPACTS ZONE 2

PERMANENT IMPACTS ON WETLAND

NOTE: ALL DRIVEWAY CONNECTIONS ARE 6' ABC UNLESS OTHERWISE NOTED

SEE SHEET 3OF88R-LL-PR88RUEE
SEE SHEET 3B FOR -DET2- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 18' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

MATCHLINE -L- STA. 229+00 SEE SHEET 19

MATCHLINE -L- STA. 235+00 SEE SHEET 21

-DET2- POT Sta.10+00.00 -L- POT Sta.232+10.94 35' RT.

POT Sta. 12+10.60

-DET2-

PI Sta 13+00.78	PI Sta 17+68.80
Δ = 8° 35' 43.7" (LT)	Δ = 8° 35' 43.7" (RT)
D = 4° 46' 28.7"	D = 4° 46' 28.7"
L = 180.02'	L = 180.02'
T = 90.18'	T = 90.18'
R = 1,200.00'	R = 1,200.00'
SE = 08	SE = 08
INC = 27'	INC = 27'

WETLAND IMPACTS SITES 15 & 16
PLAN VIEW

SITE 15
STA. 224+00

SITE 16
STA. 231+00

LEGEND
- WLB RIPARIAN BUFFER - ZONE 1
- RIPARIAN BUFFER - ZONE 2
- DENOTES IMPACTS ZONE 1 IN WETLAND
- DENOTES IMPACTS ZONE 2 IN WETLAND
- MITIGABLE IMPACTS ZONE
- DENOTES MECHANIZED CLEARING

SCALE: 1" = 100'

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Level: All Levels

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Carter-Burgess
Consultants in Planning, Engineering, Architecture, Construction Management and Related Services
5851 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27612

KO & ASSOCIATES, P.C.
Consulting Engineers
1011 SCHAUB DR. SUITE #202
RALEIGH, N.C. 27606

SEE SHEET 3 OF 3 FOR -L1- PROFILE
SEE SHEET 3B FOR -DET2- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

PERMANENT IMPACTS ZONE 1

PERMANENT IMPACTS ZONE 2

MATCHLINE -L- STA 235+00 SEE SHEET 2D

END TIP PROJECT R-2510A
-L- POT STA. 241+65.00
END PARTIAL CONTROL OF ACCESS

30" CONC UNDERSIZED

JOHN E. TAYLOR
DB 1167 - PG 432
PC B - SLIDE 22

ALICE ANN W. HURST
DB 528 - PG 556

RICHARD D. PEED, JR., et ux
DB 1028 - PG 643
PC E - SLIDE 57-8

W. BERNARD WINFIELD
DB 900 - PG 971
ME 1 - PG 52
PC E - PG 54-2

SCOTT ROBERT BATCHAN, et ux
DB 1411 - PG 257
PC E - SLIDE 90-7

BL-40
PINC 234+23.24
-L- STA 239+04.62
3.56 LT

BL-41PINC 239+92.71 =
BY7-58 POT 5+00.00
-L- STA 244+69.67
74.41LT

POT Sta. 246+44.48

BM #2
BL STA 244+89.15
81.88' LEFT
ELEV= 40.94'

-DET2-

PI Sta 13+00.78	PI Sta 17+68.80
Δ = 8° 35' 43.7" (LT)	Δ = 8° 35' 43.7" (RT)
D = 4° 46' 28.7"	D = 4° 46' 28.7"
L = 180.02	L = 180.02
T = 90.18	T = 90.18
R = 1,200.00'	R = 1,200.00'
SE = .08	SE = .08
INC = 27'	INC = 27'

PC Sta 11+90.62

PT Sta 13+00.62

-DET2- PT Sta 18+58.65 =
-L- POT STA 240+65.00 35.41' LT

PSC Sta 16+47.62

A1=1002 SQ'
=.023 ACRES
L=22'

A2=168 SQ'
=.0038 ACRES
L=10'

SITE 17
STA. 241+50

BIG SCOUR HOLE

GRASS SWALE

DA	0.64	AC
QZ	0.8	cfs
VZ	LT	fps
QRO	LI	cfs
VRO	L28	fps
REQUIRED LENGTH	42.5	ft
ACTUAL LENGTH	170	ft
SLOPE	0.034	ft / ft
SEE SLOPES	4	

TAPER INSIDE LANE FROM GROUND ELEV. REMOVED TO 0 FT AT 18+50
LEVEL SPREADER NOT USED 40% TOO STEEP

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

WETLANDS SITE 17

PLAN VIEW

FUTURE US 17 BYPASS

0 30 60 120
SCALE: 1"=60'

LEGEND
- WLB — RIPARIAN BUFFER - ZONE 1
- PC — DEMONSTRATION BUFFER IN ZONE 2
- WETLAND
- MITIGABLE IMPACTS ZONE 1
- DENOTES MECHANIZED CLEARING
- MITIGABLE IMPACTS ZONE 2

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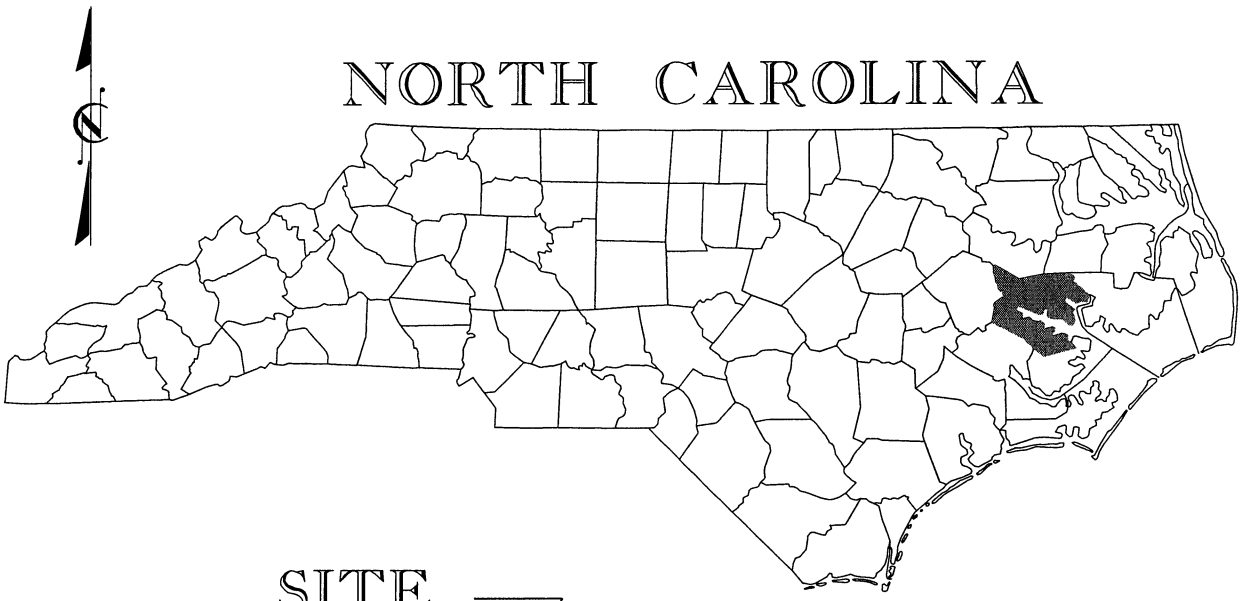
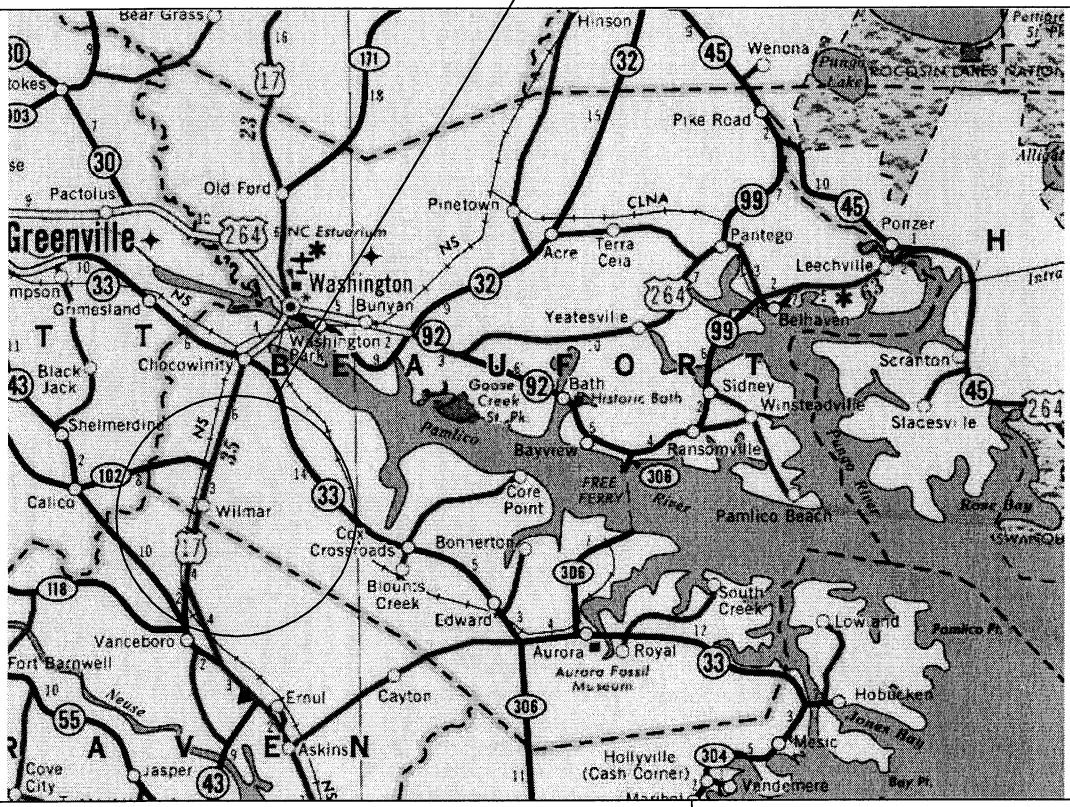
Kevin Allen (RSCHAUER)





VICINITY MAP

NORTH CAROLINA
DEPARTMENT OF HIGHWAYS

BEAUFORT COUNTY
34440.1.1 (R-2510A)

US 17 FROM SOUTH OF SR 1127 (POSSUM TRACK ROAD)
TO SR 1149 (PRICE ROAD)

NOT TO SCALE

DATE: AUG-04

SHEET ____ OF ____

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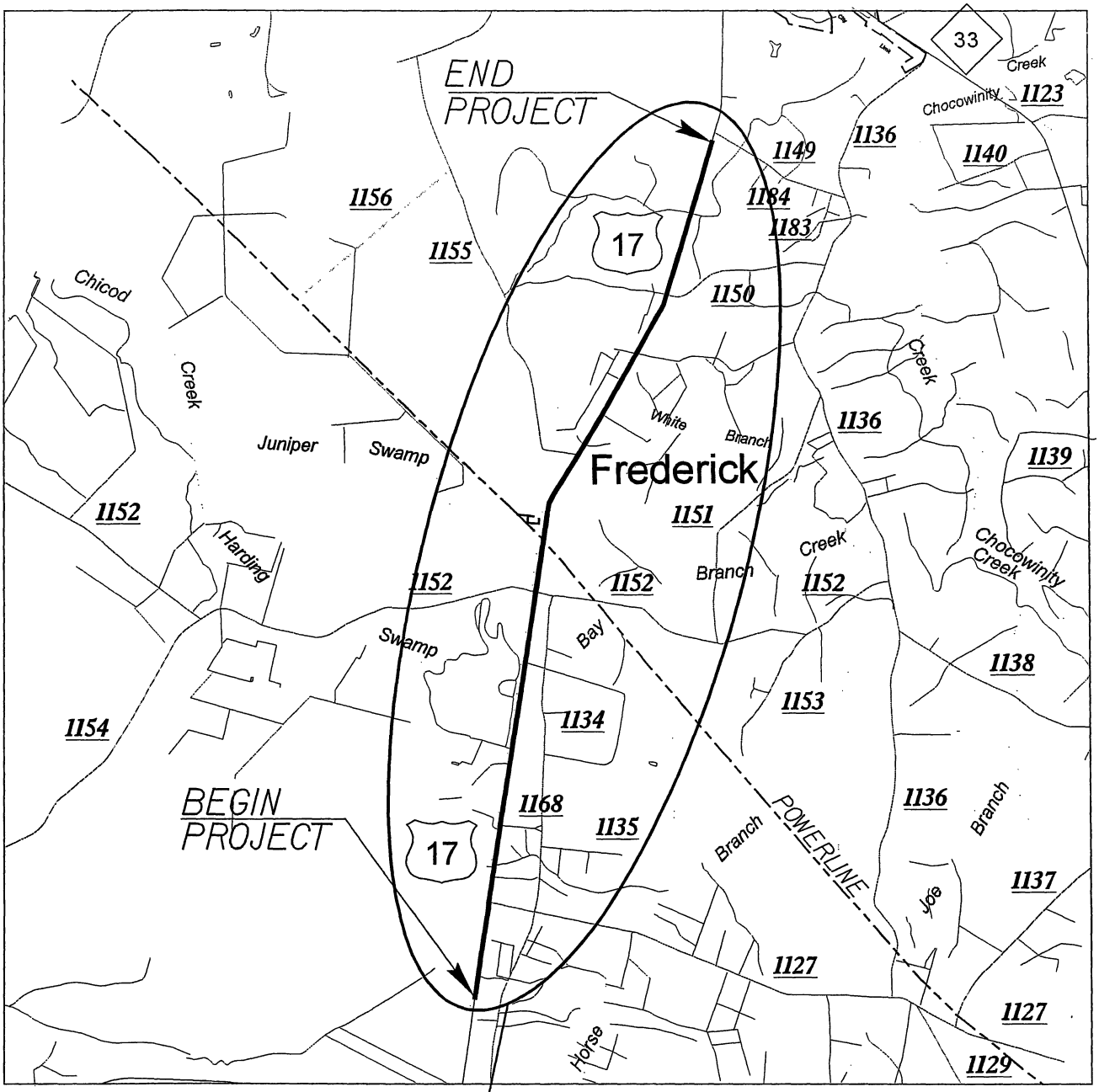
BUFFER SITE MAP



NORTH CAROLINA
DEPARTMENT OF HIGHWAYS

BEAUFORT COUNTY
34440.1.1 (R-2510A)

US 17 FROM SOUTH OF SR 1127 (POSSUM TRACK ROAD)
TO SR 1149 (PRICE ROAD)

NOT TO SCALE

DATE: AUG-04

SHEET ____ OF ____

ENGLISH

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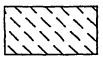
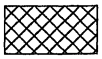
BUFFER LEGEND

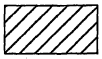
WLB — WETLAND BOUNDARY

WETLAND

ALLOWABLE IMPACTS ZONE 1


ALLOWABLE IMPACTS ZONE 2


MITIGABLE IMPACTS ZONE 1


MITIGABLE IMPACTS ZONE 2

BZ — RIPARIAN BUFFER ZONE

BZ1 — RIPARIAN BUFFER ZONE 1
30 ft (9.2m)

BZ2 — RIPARIAN BUFFER ZONE 2
20 ft (6.1m)

FLOW DIRECTION

TB — TOP OF BANK

WE — EDGE OF WATER

C — PROP. LIMIT OF CUT

F — PROP. LIMIT OF FILL

PROP. RIGHT OF WAY

NG — NATURAL GROUND

PL — PROPERTY LINE

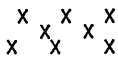
TDE — TEMP. DRAINAGE EASEMENT

PDE — PERMANENT DRAINAGE EASEMENT

EAB — EXIST. ENDANGERED ANIMAL BOUNDARY

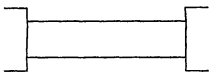
EPB — EXIST. ENDANGERED PLANT BOUNDARY

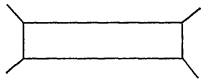
▽ — WATER SURFACE


LIVE STAKES

BOULDER

CORE FIBER ROLLS


PROPOSED BRIDGE


PROPOSED BOX CULVERT

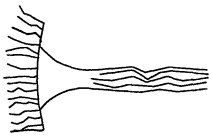
PROPOSED PIPE CULVERT
12"-48" PIPES
54" PIPES & ABOVE

(DASHED LINES DENOTE EXISTING STRUCTURES)

SINGLE TREE

WOODS LINE

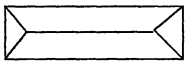
DRAINAGE INLET

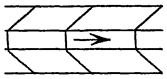

ROOTWAD

RIP RAP

ADJACENT PROPERTY OWNER OR PARCEL NUMBER IF AVAILABLE

PREFORMED SCOUR HOLE (PSH)


LEVEL SPREADER (LS)


GRASS SWALE

NORTH CAROLINA
DEPARTMENT OF HIGHWAYS

BEAUFORT COUNTY
34440.1.1 (R-2510A)

US 17 FROM SOUTH OF SR 1127 (POSSUM TRACK ROAD) TO SR 1149 (PRICE ROAD)

NOT TO SCALE

DATE: AUG-04

SHEET ____ OF ____

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SUMMARY OF AFFECTED PROPERTY OWNERS
BUFFER SITES

TRACT NO.	PROPERTY OWNER	ADDRESS	SITE NO.
12	TERRY D. ANDREWS	8059 US HWY 17 S CHOCOWINITY NC, 27817	1
13	J.M. HILL, et ux	3509 TRENT RD. NEW BERN NC, 28560	1
60	MICHAEL MIZELL, et ux	6219 US HWY 17 S CHOCOWINITY NC, 27817	2
62	BOBBY GENE WEATHINGTON	PO BOX 921 CHOCOWINITY NC, 27817	2
68	ROY MITCHELL CLARK, et ux	7450 PITT ST. GRIMESLAND NC, 27837	3
71	BETSY ROSE HADDOCK	6025 US HWY 17 S CHOCOWINITY NC, 27817	3
87	EDWARD A. BUCK, et ux	?	4
95	CHARLES L. TOLER, JR.	PO BOX 398 CHOCOWINITY NC, 27817	4
97	SALLIE BLOUNT TOLER	5613 US HWY 17 S CHOCOWINITY NC, 27817	4
108	A. FRANK RESPESS	4918 US HWY 17 S CHOCOWINITY NC, 27817	5
109	MARVIN J. HARRIS FAMILY TRUST	PO BOX 1747 WASHINGTON NC, 27889	5
107	JASON C. SHEPPARD	PO BOX 1902 WASHINGTON NC, 27889	5
110	SCOTT ROBERT BATEMAN, et ux	4892 US HWY 17 S CHOCOWINITY NC, 27817	5
118	RICHARD D. PEED, JR., et ux	410 TRANTERS CREEK DR. WASHINGTON NC, 27889	6

ENGLISH

NORTH CAROLINA
DEPARTMENT OF HIGHWAYS

BEAUFORT COUNTY
34440.1.1 (R-2510A)

US 17 FROM SOUTH OF SR 1127 (POSSUM TRACK ROAD)
TO SR 1149 (PRICE ROAD)

NOT TO SCALE

DATE: AUG-04

SHEET ___ OF ___

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BUFFER IMPACTS SUMMARY

			IMPACT								BUFFER REPLACEMENT	
			TYPE		ALLOWABLE			MITIGABLE				
SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	ROAD CROSSING	PARALLEL IMPACT	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)
1	66" RCP	56+75 to 57+80	X					12548.7	7215.0	19763.7		
2	30" RCP	154+80 to 156+00	X					7000.1	4327.3	11327.4		
3	24" RCP	161+80 to 162+90	X					10019.3	5931.8	15951.1		
4	24"RCP	184+00 to 186+30	X					13192.4	6815.4	20007.7		
5	2@ 8 ft x 7 ft	223+50 to 225+20	X					15405.0	7489.0	22894.0		
6	36" RCP	241+10 to 241+65	X					2165.1	1383.8	3548.9		
TOTAL:					0.0	0.0	0.0	60330.6	33162.2	93492.8	0.0	0.0

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

BEAUFORT COUNTY
PROJECT: 34440.1.1 (R-2510A)

4/8/2005
SHEET OF

BUFFER IMPACTS SUMMARY

		WETLANDS IN BUFFER	
Site	Station	ZONE 1 (ft^2)	ZONE 2 (ft^2)
1	56+75 to 57+80	1034.9	0.0
2	154+80 to 156+00	886.4	0.0
5	223+50 to 225+20	4051.0	2737.4
6	241+10 to 241+65	853.0	0.0
		6825.3	2737.4

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

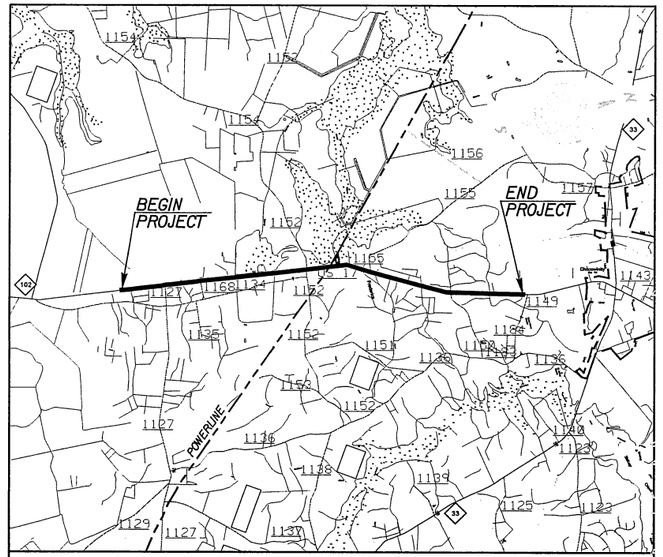
BEAUFORT COUNTY
PROJECT: 34440.1.1 (R-2510A)

4/8/2005
SHEET OF

09/08/99

R-2510A

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



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2510A	1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
34440.1.1	MAF-75-3(26)	PE	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

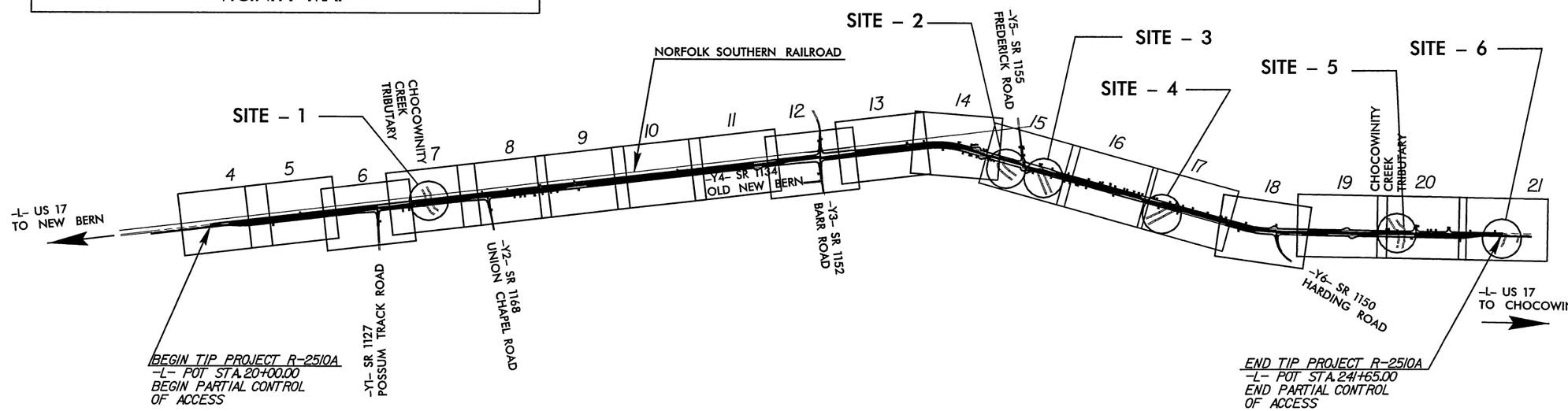
BEAUFORT COUNTY

LOCATION: *US 17 FROM SOUTH OF SR 1127 (POSSUM TRACK ROAD) TO SR 1149 (PRICE ROAD)*

NAD 83/95 NC GRID

TYPE OF WORK: *GRADING, PAVING, DRAINAGE, AND CULVERT*

R-2510A: BUFFER SITE MAP



NOTES: THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD_____.

R-2510A: BUFFER SITE MAP

PREPARED BY: KO & ASSOCIATES, PC; RALEIGH, NC

CONTRACT:

GRAPHIC SCALES

PLANS 50 25 0 50 100

PROFILE (HORIZONTAL) 50 25 0 50 100

PROFILE (VERTICAL) 10 5 0 10 20

DESIGN DATA

ADT 2006 = 10200 VPD
ADT 2026 = 17000 VPD
DHV = 12 %
D = 60 %
T = 12 % *
V = 60 MPH

* TTST 7% DUAL 5%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2510A = 4.387 Mi
TOTAL LENGTH OF TIP PROJECT R-2510A = 4.837 Mi

Prepared In The Office Of:
Carter::Burgess
Consultants in Planning, Engineering, Architecture, Construction Management and Related Services
5811 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27612

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: DECEMBER 17, 2004
LETTING DATE: DECEMBER 19, 2006

R. DONALD HURLBUT, PE
ROADWAY GROUP MANAGER

CARL L. BUSH III, PE
PROJECT DESIGN ENGINEER

NCDOT CONTACT: CATHY S. HOUSER, PE
DESIGN SERVICES PROJECT ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

P.E.
STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR *DATE*

3/15/2005
I:\R2510A\Hydraulics\Permits\R2510A_sitemaps.dgn

NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

SEE SHEET 24 FOR -L- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	7
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Carter::Burgess
Consultants in Planning, Engineering, Architecture, Construction Management and Related Services
588 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27612

KO & ASSOCIATES, P.C.
Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606

ENGLISH

WEYERHAEUSER COMPANY

WILLIAM C. HADDOCK, et ux

GRASS SWALE
DA 1.63 Ac
Q2 2.7 cfs
V2 1.75 fps
Q10 3.8 cfs
V10 1.91 fps
REQUIRED LENGTH 163.5 ft
ACTUAL LENGTH 670 ft
SLOPE 0.044 ft / ft
SIDE SLOPES 4

LEVEL SPREADER NOT USED
SWALE IS IN 2.5' OF CUT,
CANNOT DAYLIGHT UNTIL 57+00,
INSIDE OF ZONE 1

GRASS SWALE
DA 0.40 Ac
Q2 0.9 cfs
V2 1.19 fps
Q10 1.3 cfs
V10 1.30 fps
REQUIRED LENGTH 40.2 ft
ACTUAL LENGTH 250 ft
SLOPE 0.008 ft / ft
SIDE SLOPES 6

GRASS SWALE
DA 0.13 Ac
Q2 0.3 cfs
V2 0.90 fps
Q10 0.4 cfs
V10 0.98 fps
REQUIRED LENGTH 13.5 ft
ACTUAL LENGTH 84 ft
SLOPE 0.008 ft / ft
SIDE SLOPES 6

GRASS SWALE
DA 0.69 Ac
Q2 1.5 cfs
V2 1.33 fps
Q10 2.2 cfs
V10 1.45 fps
REQUIRED LENGTH 68.9 ft
ACTUAL LENGTH 300 ft
SLOPE 0.009 ft / ft
SIDE SLOPES 8

SPECIAL DITCH GRADE
(SEE PROFILES)
SEE DITCH DETAIL D

LEVEL SPREADER NOT USED
SWALE IS IN 2.0' OF CUT,
CANNOT DAYLIGHT UNTIL 57+50,
INSIDE OF ZONE 1

SPECIAL DITCH GRADE
(SEE PROFILES)
SEE DITCH DETAIL C

10 LF OF CHANNEL
IMPROVEMENTS
EST CU YD DDE
SEE INLET DETAIL E

GRASS SWALE
DA 0.97 Ac
Q2 0.4 cfs
V2 0.84 fps
Q10 0.6 cfs
V10 0.91 fps
REQUIRED LENGTH 18.6 ft
ACTUAL LENGTH 116 ft
SLOPE 0.005 ft / ft
SIDE SLOPES 6

GRASS SWALE
DA 2.44 Ac
Q2 4.0 cfs
V2 1.94 fps
Q10 5.7 cfs
V10 2.12 fps
REQUIRED LENGTH 244.3 ft
ACTUAL LENGTH 1330 ft
SLOPE 0.042 ft / ft
SIDE SLOPES 4

GRASS SWALE
DA 1.29 Ac
Q2 2.8 cfs
V2 0.74 fps
Q10 4.0 cfs
V10 0.80 fps
REQUIRED LENGTH 128.6 ft
ACTUAL LENGTH 320 ft
SLOPE 0.005 ft / ft
SIDE SLOPES 6

SPECIAL DITCH GRADE
(SEE PROFILES)
SEE DITCH DETAIL C

SPECIAL DITCH GRADE
(SEE PROFILES)
SEE DITCH DETAIL D

SEE SHEET 6 — MATCHLINE -L- STA. 53+00

SEE SHEET 8 — MATCHLINE -L- STA. 64+00

NORFOLK SOUTHERN RAILROAD

CONC RAILROAD TRESTLE

US 17 22' BST

N18°42'06.4"E 15" CONC -L- REMOVE

BURY INVERT 1 FOOT

2GI(D)

REM

EIP

24" CONC

15" CONC

55+00.00
108.00

56+50.00
113.00

59+00.00
110.00

61+00.00
105.00

CLASS "B" RIP RAP
EST 2 TONS
EST 7 SQ YD FF

2' BASE DITCH
EST CU YD DDE
SEE DITCH DETAIL J

CLASS "B" RIP RAP
EST 2 TONS
EST 7 SQ YD FF

2' BASE DITCH
EST CU YD DDE
SEE DITCH DETAIL J

40 LF OF CHANNEL
IMPROVEMENTS
W/CL "I" RIP-RAP
& FILTER FABRIC
EST TONS
EST SQ YD FF
EST CU YD DDE
SEE OUTLET DETAIL F

SPECIAL DITCH GRADE
(SEE PROFILES)
SEE DITCH DETAIL B

CLASS "B" RIP RAP
EST 2 TONS
EST 7 SQ YD FF

CLASS "B" RIP RAP
EST 2 TONS
EST 7 SQ YD FF

DRAWDOWN LIMITS

10' 12'

WLB

(10) FRANK R. KLINGENSMITH

(11) JOHNNIE DOUGLAS CLARK, SR., et al

(12) TERRY D. ANDREWS, et ux

(13) J. M. HILL, et ux

CARPORT

N/C

S08°38'18"W 263.70'

S08°38'21"W 8.00'

S45°22'06"W 28.50'

GRASS SWALE
DA 9.62 Ac
Q2 15.8 cfs
V2 0.89 fps
Q10 22.3 cfs
V10 0.97 fps
REQUIRED LENGTH 962 ft
ACTUAL LENGTH 1570 ft
SLOPE 0.002 ft / ft
SIDE SLOPES 4

LEVEL SPREADER NOT USED
SWALE IS IN 4.0' OF CUT,
CANNOT DAYLIGHT UNTIL
CHANNEL, INSIDE OF ZONE 1

GRASS SWALE
DA 4.60 Ac
Q2 8.5 cfs
V2 2.09 fps
Q10 12.0 cfs
V10 2.28 fps
REQUIRED LENGTH 460.3 ft
ACTUAL LENGTH 610 ft
SLOPE 0.024 ft / ft
SIDE SLOPES 4

LEVEL SPREADER NOT USED
SWALE IS IN 3.0' OF CUT,
CANNOT DAYLIGHT UNTIL 57+50,
INSIDE OF ZONE 1

SITE 1
STA. 57+50

BUFFER SITE 1
PLAN VIEW

25 0 50
SCALE: 1" = 100'

LEGEND
- BZ 1 — RIPARIAN BUFFER - ZONE 1
- BZ 2 — RIPARIAN BUFFER - ZONE 2
- MITIGABLE IMPACTS ZONE 1
- MITIGABLE IMPACTS ZONE 2

5/14/99

4/7/2005
...2510A\Hydraulics\Permiss\R2510A_Buffer_07.dgn
...Administrator

3-15-05 DRAINAGE REVISION,REVISED PIPE SIZE STA.155+45 AND 162+35 5/14/03

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Carter-Burgess
Consultants in Planning, Engineering, Architecture, Construction Management and Related Services
581 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27612

KO & ASSOCIATES, P.C.
Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606

SEE SHEET 28 FOR -L- PROFILE
SEE SHEET 33 FOR -Y5- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
SEE SHEET 2F FOR INTERSECTION DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

NAD 83'95

-Y5- POT Sta.11+55.09
BEGIN CONSTRUCTION

-Y5- POT Sta.13+00.00
BEGIN RESURFACING
(TIE TO EXISTING)

MATCHLINE -L- STA.153+00 SEE SHEET M

MATCHLINE -L- STA. 167+00 SEE SHEET 16

JOHN M. ELLIOTT

LINDA B. EDWARDS, et vir

ICELEEN W. WHITFIELD

BENNIE HERMAN STARKIE, JR., et al

CARRIE M. TURNER, et vir

SAM JASPER BOYD, JR., et ux

DANNY SMITH

HARRIET CHAPMAN

WILLIAM L. HULSLANDER, et ux

CHARLES R. SPEIGHT, et ux

BETTIE A. STARKIE

GRASS SWALE
DA 0.27 Ac
Q2 0.6 cfs
V2 1.16 fps
Q10 0.8 cfs
V10 1.26 fps
REQUIRED LENGTH 26.5 ft
ACTUAL LENGTH 165 ft
SLOPE 0.016 ft / ft
SIDE SLOPES 4

GRASS SWALE
DA 0.25 Ac
Q2 0.6 cfs
V2 1.16 fps
Q10 0.8 cfs
V10 1.26 fps
REQUIRED LENGTH 24.9 ft
ACTUAL LENGTH 165 ft
SLOPE 0.003 ft / ft
SIDE SLOPES 4

GRASS SWALE
DA 0.22 Ac
Q2 0.5 cfs
V2 LOT fps
Q10 0.7 cfs
V10 LI7 fps
REQUIRED LENGTH 21.7 ft
ACTUAL LENGTH 135 ft
SLOPE 0.009 ft / ft
SIDE SLOPES 6

GRASS SWALE
DA 0.18 Ac
Q2 0.4 cfs
V2 0.77 fps
Q10 0.6 cfs
V10 0.84 fps
REQUIRED LENGTH 18.5 ft
ACTUAL LENGTH 185 ft
SLOPE 0.004 ft / ft
SIDE SLOPES 6

GRASS SWALE
DA 0.41 Ac
Q2 0.8 cfs
V2 LOI fps
Q10 1.1 cfs
V10 1.10 fps
REQUIRED LENGTH 41.3 ft
ACTUAL LENGTH 110 ft
SLOPE 0.030 ft / ft
SIDE SLOPES 6

GRASS SWALE
DA 0.24 Ac
Q2 0.5 cfs
V2 L16 fps
Q10 0.8 cfs
V10 L26 fps
REQUIRED LENGTH 24.1 ft
ACTUAL LENGTH 100 ft
SLOPE 0.011 ft / ft
SIDE SLOPES 6

GRASS SWALE
DA 0.34 Ac
Q2 0.6 cfs
V2 0.75 fps
Q10 0.9 cfs
V10 0.82 fps
REQUIRED LENGTH 34.4 ft
ACTUAL LENGTH 300 ft
SLOPE 0.003 ft / ft
SIDE SLOPES 6

GRASS SWALE
DA 0.16 Ac
Q2 0.3 cfs
V2 1.44 fps
Q10 0.4 cfs
V10 1.57 fps
REQUIRED LENGTH 16.1 ft
ACTUAL LENGTH 140 ft
SLOPE 0.028 ft / ft
SIDE SLOPES 6

GRASS SWALE
DA 0.50 Ac
Q2 0.9 cfs
V2 1.43 cfs
Q10 1.3 cfs
V10 1.09 fps
REQUIRED LENGTH 50.5 ft
ACTUAL LENGTH 440 ft
SLOPE 0.005 ft / ft
SIDE SLOPES 6

2' BASE DITCH
EST CU YD DDE
SEE DITCH DETAIL J

SPECIAL DITCH GRADE
(SEE PROFILES)
SEE DITCH DETAIL C

SPECIAL DITCH GRADE
(SEE PROFILES)
SEE DITCH DETAIL E

SPECIAL DITCH GRADE
(SEE PROFILES)
SEE DITCH DETAIL D

SPECIAL DITCH GRADE
(SEE PROFILES)
SEE DITCH DETAIL B

SITE 2
STA. 155+50

SITE 3
STA. 162+35

BUFFER SITES 2 & 3
PLAN VIEW

SCALE: 1" = 100'

KENNETH A. WILLIAMS, et ux

MICHAEL MIZELL, et ux

BOBBY GENE WEATHINGTON

BILLY RAY BEASLEY

FRANCES TETTERTON

ROY MITCHELL CLARK, et ux

RONALD LEE HUSS

WILLIAM R. COWARD, et ux

BILLY J. HADDOCK, et ux

BETSY ROSE HADDOCK

BETSY H. LEWIS

LEVEL SPREADER 14' LONG

LEVEL SPREADER 19' LONG

LEVEL SPREADER NOT USED
SWALE IS IN 2.0' OF CUT, CANNOT DAYLIGHT UNTIL CHANNEL, INSIDE OF ZONE 1

LEGEND
BZ 1 — RIPARIAN BUFFER - ZONE 1
BZ 2 — RIPARIAN BUFFER - ZONE 2
MITIGABLE IMPACTS ZONE 1
MITIGABLE IMPACTS ZONE 2

FREDERICK RD
ADT 2006 2026
580 970
460 765
4,565 7,555
100 100
5,025 8,420
4,685 7,860
120 205

4/7/2005
...\Hydraulics\Permits\R2510A Buffer 15.dgn

NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

SEE SHEET 29 FOR -L- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

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KO & ASSOCIATES, P.C.
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1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

ENGLISH

3-15-05 DRAINAGE REVISION, REVISED PIPE SIZE, STA. 185+82

5/13/99

MATCHLINE -L- STA. 181+00 SEE SHEET 16

MATCHLINE -L- STA. 195+00 SEE SHEET 18

185

190

88 DALTON RAY BUCK, et ux

93 JOYCE D. BRIGHT

94 JAMES ARLEY BUCK, et ux

96 ERVIN RAY ARNOLD, et ux

98 C. DOUGLAS BRANCH, et ux

99 MARK WAYNE OSNOE

100 BARBARA HARDY BARR

102 ERMA LEE COOKE, et vir

103 CARL DOUGLAS BRANCH, JR., et ux

104 TERRY T. PATRICK
TERRY L. BUCK

105 JOHN W. RICE, et ux

95 CHARLES L. TOLER, JR. DB 1213 - PG 680

97 SALLIE BLOUNT TOLER

87 EDWARD A. BUCK, et ux

101 GUY HARDING LOLLIS

GRASS SWALE

DA	0.46	Ac
Q2	L0	cfs
V2	L14	fps
Q10	L4	cfs
V10	L25	fps
REQUIRED LENGTH	45.8	ft
ACTUAL LENGTH	285	ft
SLOPE	0.007	ft / ft
SIDE SLOPES	6	

GRASS SWALE

DA	0.51	Ac
Q2	L1	cfs
V2	L10	fps
Q10	L6	cfs
V10	L20	fps
REQUIRED LENGTH	50.9	ft
ACTUAL LENGTH	317	ft
SLOPE	0.006	ft / ft
SIDE SLOPES	6	

GRASS SWALE

DA	0.67	Ac
Q2	L5	cfs
V2	L02	fps
Q10	2.1	cfs
V10	L9	fps
REQUIRED LENGTH	67.2	ft
ACTUAL LENGTH	418	ft
SLOPE	0.004	ft / ft
SIDE SLOPES	6	

GRASS SWALE

DA	0.34	Ac
Q2	0.6	cfs
V2	0.90	fps
Q10	0.9	cfs
V10	0.98	fps
REQUIRED LENGTH	33.9	ft
ACTUAL LENGTH	295	ft
SLOPE	0.005	ft / ft
SIDE SLOPES	6	

GRASS SWALE

DA	L03	Ac
Q2	L9	cfs
V2	0.53	fps
Q10	2.1	cfs
V10	0.58	fps
REQUIRED LENGTH	103.3	ft
ACTUAL LENGTH	900	ft
SLOPE	0.003	ft / ft
SIDE SLOPES	6	

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

CLASS "B" RIP RAP EST 5 TONS EST 14 SQ YD EF

4' BASE TAIL DITCH 50 LF @ 0.98% GRADE EST 10 CY DDE SEE DITCH DETAIL A

LEVEL SPREADER NOT USED SWALE IS IN 2.5' OF CUT, CANNOT DAYLIGHT UNTIL CHANNEL, INSIDE OF ZONE 1

LEVEL SPREADER /12' LONG

BURY INVERT 1 FOOT

ASPH. DRIVE

6" CONC. DRIVE

181+50.00 94.00

181+47.00 100.00

183+92.00 108.00

184+40.00 102.53

184+24.00 116.00

184+47.50 143.00

184+50.00 96.00

184+91.00 105.21

185+06.00 106.00

186+50.00 103.00

186+69.90 100.00

187+40.00 91.00

189+00.00 95.00

191+65.00 89.00

193+50.00 100.00

SITE 4
STA. 185+82

BUFFER SITE 4
PLAN VIEW

SCALE: 1" = 100'

LEGEND

- BZ 1 — RIPARIAN BUFFER - ZONE 1
- BZ 2 — RIPARIAN BUFFER - ZONE 2
- MITIGABLE IMPACTS ZONE 1
- MITIGABLE IMPACTS ZONE 2

4/1/2005
3510A\Hydraulics\Permits\R2510A_Buffer_17.dgn

I-27-05 DRAINAGE REVISION | STRUCTURE 7476 | 5/14/09

NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

SEE SHEET 30 FOR -L- PROFILE
SEE SHEET 34 FOR -DET2- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

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RALEIGH, N.C. 27606

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

ENGLISH

NAD 8395

GRASS SWALE
DA 0.64 Ac
Q2 1.4 cfs
V2 0.78 fps
Q10 2.0 cfs
V10 0.85 fps
REQUIRED LENGTH 64.3 ft
ACTUAL LENGTH 400 ft
SLOPE 0.009 ft / ft
SIDE SLOPES 5

GRASS SWALE
DA 1.95 Ac
Q2 2.8 cfs
V2 1.42 fps
Q10 4.0 cfs
V10 1.55 fps
REQUIRED LENGTH 194.8 ft
ACTUAL LENGTH 1000 ft
SLOPE 0.032 ft / ft
SIDE SLOPES 6

GRASS SWALE
DA 0.79 Ac
Q2 cfs
V2 fps
Q10 cfs
V10 fps
REQUIRED LENGTH 78.7 ft
ACTUAL LENGTH 570 ft
SLOPE 0.026 ft / ft
SIDE SLOPES 5

GRASS SWALE
DA 0.56 Ac
Q2 cfs
V2 0.75 fps
Q10 cfs
V10 0.82 fps
REQUIRED LENGTH 56.2 ft
ACTUAL LENGTH 350 ft
SLOPE 0.008 ft / ft
SIDE SLOPES 4

GRASS SWALE
DA 0.49 Ac
Q2 0.9 cfs
V2 L84 fps
Q10 L3 cfs
V10 2.01 fps
REQUIRED LENGTH 49.4 ft
ACTUAL LENGTH 190 ft
SLOPE 0.025 ft / ft
SIDE SLOPES 6

GRASS SWALE
DA 0.18 Ac
Q2 0.4 cfs
V2 0.39 fps
Q10 0.6 cfs
V10 0.42 fps
REQUIRED LENGTH 17.7 ft
ACTUAL LENGTH 110 ft
SLOPE 0.001 ft / ft
SIDE SLOPES 4

GRASS SWALE
DA 0.48 Ac
Q2 0.9 cfs
V2 L26 fps
Q10 L3 cfs
V10 L38 fps
REQUIRED LENGTH 48.2 ft
ACTUAL LENGTH 120 ft
SLOPE 0.009 ft / ft
SIDE SLOPES 6

LEGEND
BZ 1 — RIPARIAN BUFFER - ZONE 1
BZ 2 — RIPARIAN BUFFER - ZONE 2
MITIGABLE IMPACTS ZONE 1
MITIGABLE IMPACTS ZONE 2

BUFFER SITE 5
PLAN VIEW

SITE 5
STA. 224+00

-L- POT Sta.10+00.00 = -DET2- POT Sta.232+10.94 35' RT.

-DET2-
PI Sta 13+00.78
Δ = 8° 35' 43.7" (LT)
D = 4° 46' 28.7"
L = 180.02'
T = 90.18'
R = 1,200.00'
SE = 08
INC = 27'

PI Sta 17+68.80
Δ = 8° 35' 43.7" (RT)
D = 4° 46' 28.7"
L = 180.02'
T = 90.18'
R = 1,200.00'
SE = 08
INC = 27'

SCALE: 1" = 100'

4/7/2005
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PROJECT REFERENCE NO.	SHEET NO.
R-2510A	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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RALEIGH, N.C. 27606

SEE SHEET 31 FOR -L- PROFILE
SEE SHEET 34 FOR -DET2- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

NAD 83/95

ENGLISH

MATCHLINE -L- STA. 235+00 SEE SHEET 20

END TIP PROJECT R-2510A
-L- POT STA. 241+65.00
END PARTIAL CONTROL OF ACCESS

POT Sta. 246+44.18

JOHN E. TAYLOR

RAYMOND J. ANDREWS

ALICE ANN W. HURST

W. BERNARD WINFIELD

RICHARD D. PEED, JR., et ux

SCOTT ROBERT BATEMAN, et ux

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

LEVEL SPREADER NOT USED USED, GROUND SLOPE OF 10% TOO STEEP

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

PT Sta. 13+99.62

PC Sta. 16+78.62

-DET2- PT Sta. 18+58.65
-L- POT STA 240+65.00 35' LT.

N 7° 57' 19.0" E
-DET2-

N 16° 33' 02.7" E -L-

SITE 6
STA. 241+50

BUFFER SITE 6
PLAN VIEW

SCALE: 1" = 100'

-DET2-

PI Sta 13+00.78	PI Sta 17+68.80
Δ = 8° 35' 43.7" (LT)	Δ = 8° 35' 43.7" (RT)
D = 4° 46' 28.7"	D = 4° 46' 28.7"
L = 180.02'	L = 180.02'
T = 90.18'	T = 90.18'
R = 1,200.00'	R = 1,200.00'
SE = 08	SE = 08
INC = 27'	INC = 27'

GRASS SWALE

DA	0.64	AC
Q2	0.8	cfs
V2	1.17	fps
Q10	1.1	cfs
V10	1.28	fps
REQUIRED LENGTH	42.5	ft
ACTUAL LENGTH	170	ft
SLOPE	0.034	ft / ft
SIDE SLOPES	4	

LEGEND
- BZ 1 — RIPARIAN BUFFER - ZONE 1
- BZ 2 — RIPARIAN BUFFER - ZONE 2
- MITIGABLE IMPACTS ZONE 1
- MITIGABLE IMPACTS ZONE 2

5/14/99

4/7/2005
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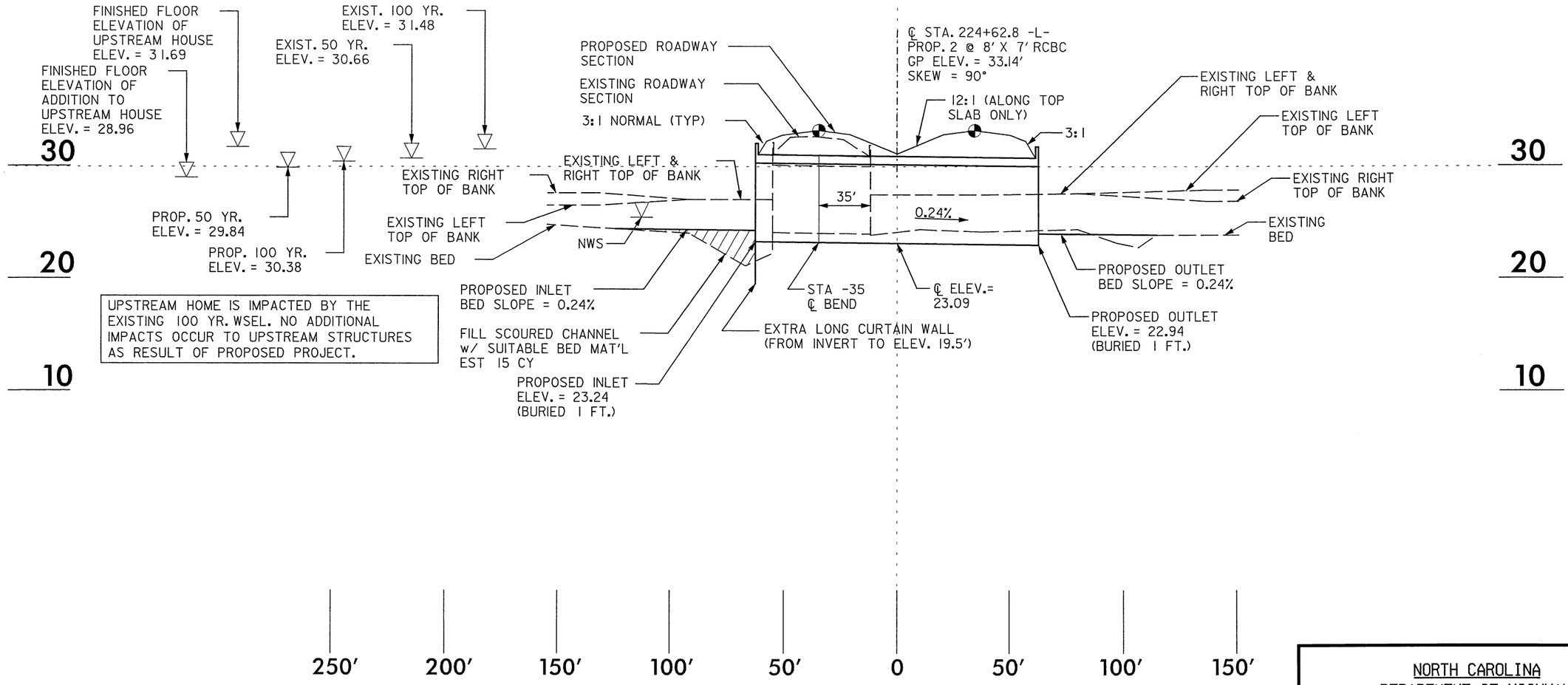
PROJECT REFERENCE NO.	SHEET NO.
R-2510A	BUF S5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



UPSTREAM HOME IS IMPACTED BY THE EXISTING 100 YR. WSEL. NO ADDITIONAL IMPACTS OCCUR TO UPSTREAM STRUCTURES AS RESULT OF PROPOSED PROJECT.

PROFILE ALONG STRUCTURE
BUFFER SITE 5
STA 224+00

NORTH CAROLINA
DEPARTMENT OF HIGHWAYS

BEAUFORT COUNTY
34440.1.1 (R-2510A)

US 17 FROM SOUTH OF SR 1127 (POSSUM TRACK ROAD) TO SR 1149 (PRICE ROAD)

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'

DATE: AUG-04 SHEET ____ OF ____

3/15/2005
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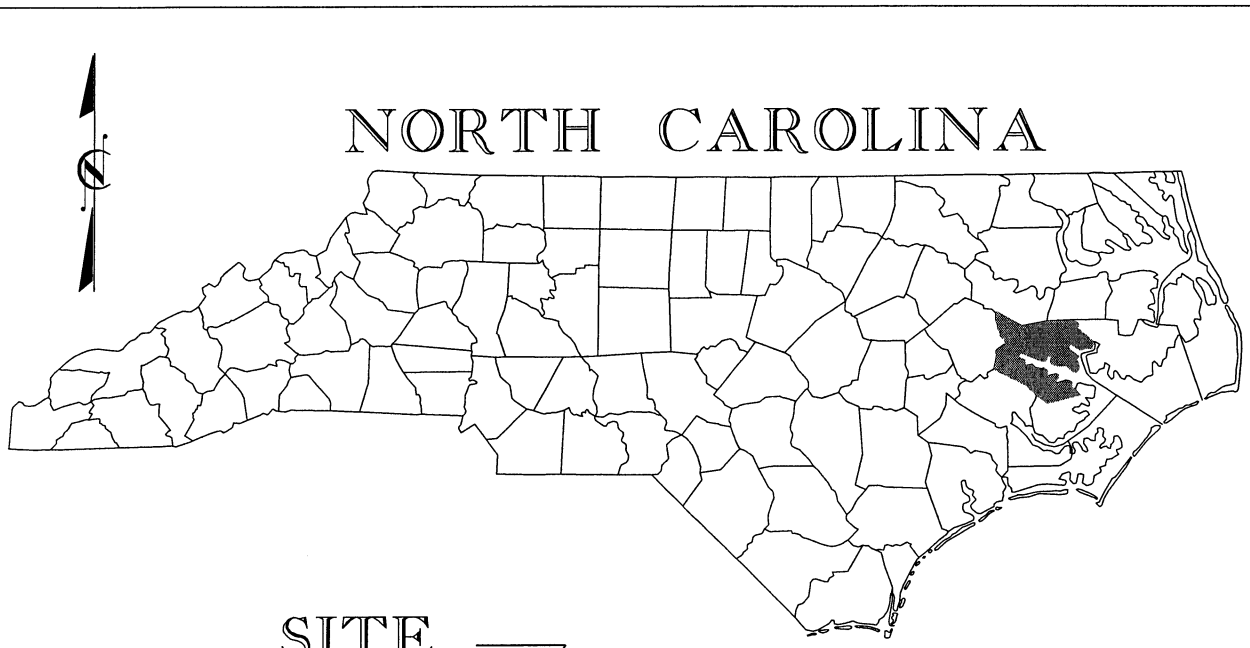
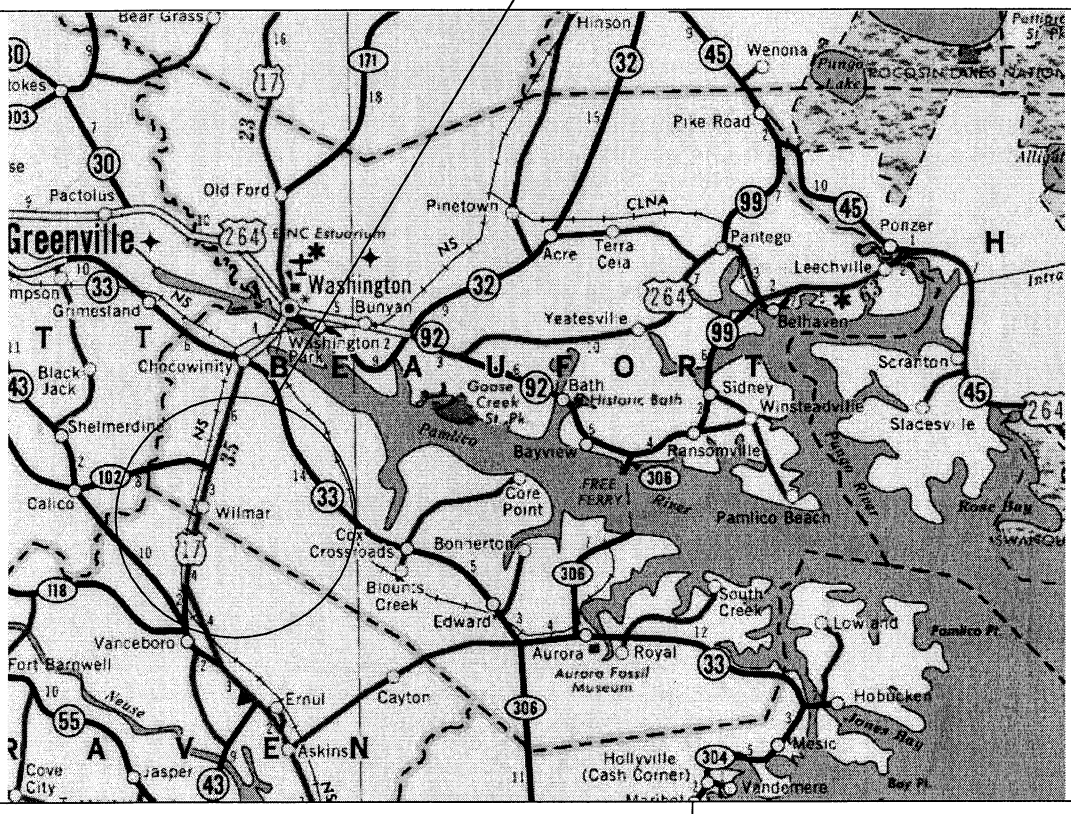
k.p. & Associates, P.A.





VICINITY MAP

NORTH CAROLINA
DEPARTMENT OF HIGHWAYS

BEAUFORT COUNTY
34440.1.1 (R-2510A)

US 17 FROM SOUTH OF SR 1127 (POSSUM TRACK ROAD) TO SR 1149 (PRICE ROAD)

NOT TO SCALE

DATE: AUG-04

SHEET 1 OF 12

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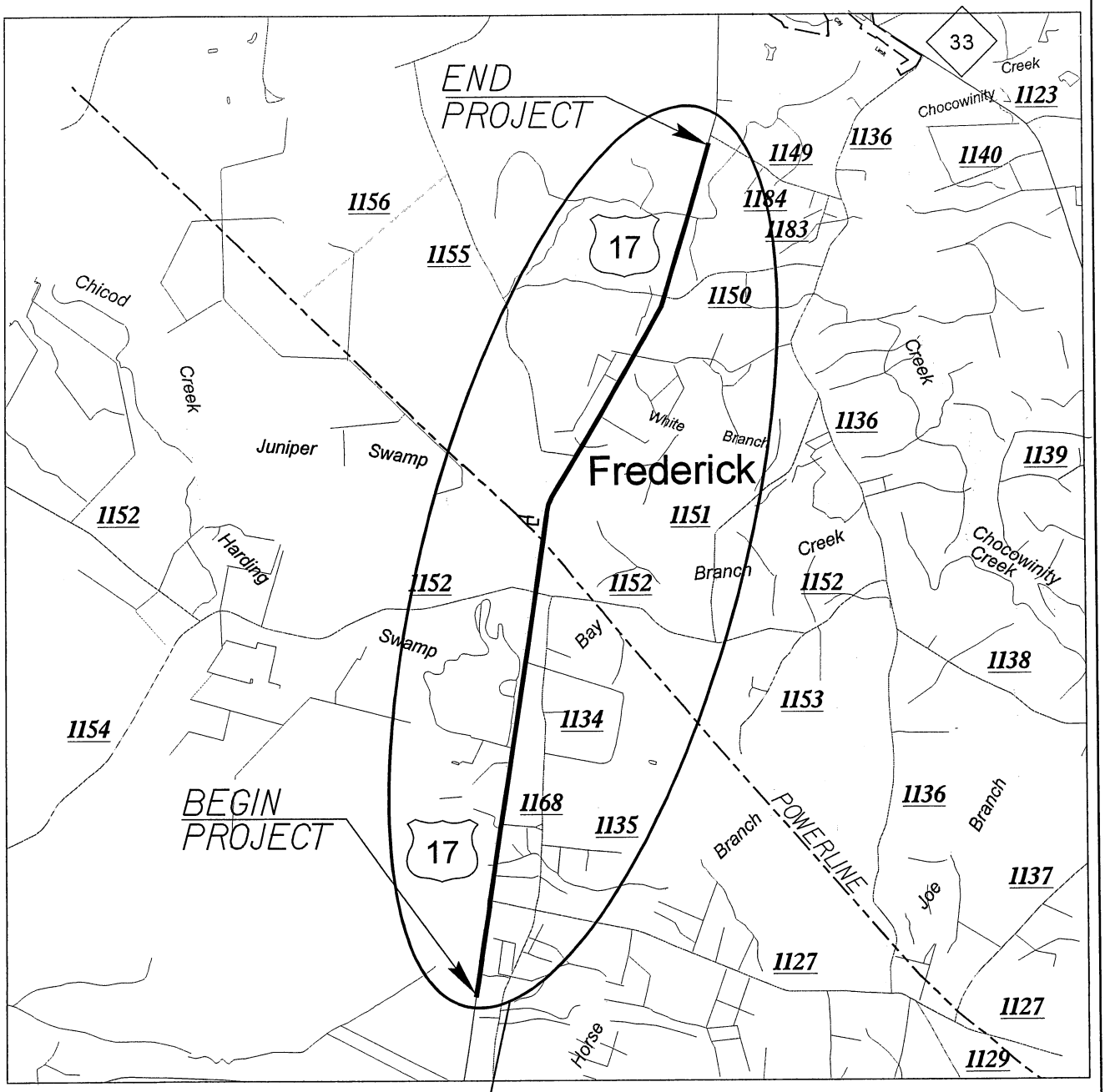
WETLAND SITE MAP



NORTH CAROLINA
DEPARTMENT OF HIGHWAYS

BEAUFORT COUNTY
34440.1.1 (R-2510A)

US 17 FROM SOUTH OF SR 1127 (POSSUM TRACK ROAD)
TO SR 1149 (PRICE ROAD)

NOT TO SCALE

DATE: AUG-04

SHEET 2 OF 6

ENGLISH

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WETLAND LEGEND

WLB — WETLAND BOUNDARY

WLB / WLB — WETLAND

F F — DENOTES FILL IN WETLAND

S S — DENOTES FILL IN SURFACE WATER

P P — DENOTES FILL IN SURFACE WATER (POND)

T T — DENOTES TEMPORARY FILL IN WETLAND

E E — DENOTES EXCAVATION IN WETLAND

TS TS — DENOTES TEMPORARY FILL IN SURFACE WATER

DENOTES MECHANIZED CLEARING

FLOW DIRECTION

TB — TOP OF BANK

WE — EDGE OF WATER

C — PROP. LIMIT OF CUT

F — PROP. LIMIT OF FILL

PROP. RIGHT OF WAY

NG — NATURAL GROUND

PL — PROPERTY LINE

TDE — TEMP. DRAINAGE EASEMENT

PDE — PERMANENT DRAINAGE EASEMENT

EAB — EXIST. ENDANGERED ANIMAL BOUNDARY

EPB — EXIST. ENDANGERED PLANT BOUNDARY

WATER SURFACE

LIVE STAKES

BOULDER

CORE FIBER ROLLS

PROPOSED BRIDGE

PROPOSED BOX CULVERT

PROPOSED PIPE CULVERT
12"-48" PIPES
54" PIPES & ABOVE

(DASHED LINES DENOTE EXISTNG STRUCTURES)

SINGLE TREE

WOODS LINE

DRAINAGE INLET

ROOTWAD

RIP RAP

5 — ADJACENT PROPERTY OWNER OR PARCEL NUMBER (IF AVAILABLE)

PREFORMED SCOUR HOLE

LEVEL SPREADER (LS)

DITCH / GRASS SWALE

ENGLISH

NORTH CAROLINA
DEPARTMENT OF HIGHWAYS

BEAUFORT COUNTY
34440.1.1 (R-2510A)

US 17 FROM SOUTH OF SR 1127 (POSSUM TRACK ROAD) TO SR 1149 (PRICE ROAD)

NOT TO SCALE

DATE: AUG-04

SHEET 3 OF 6

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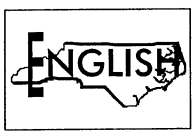
SUMMARY OF AFFECTED PROPERTY OWNERS
WETLAND SITES

TRACT NO.	PROPERTY OWNER	ADDRESS	SITE NO.
1	JOHN JAY WALTON	2314 NC 33 CHOCOWINITY NC, 27817	1
4	REBECCA S. DAY	QUARTERDECK #13 RIVERBEND NEW BERN NC, 28562	1
5	JAMES A. POLLARD, et ux	1255 WARES CHAPEL LN. WASHINGTON NC, 27889	2
12	TERRY D. ANDREWS	8059 US HWY 17 S CHOCOWINITY NC, 27817	3
13	J.M. HILL, et ux	3509 TRENT RD. NEW BERN NC, 28560	3,4
28	D.H. BRIGHT	?	6
32	MAUDE ELIZABETH WHITEHURST	6851 US HWY 17 S CHOCOWINITY NC, 27817	8
48	J.J. COOK, et ux	236 E. MAIN ST. WASHINGTON NC, 27889	10
60	MICHAEL MIZELL, et ux	6219 US HWY 17 S CHOCOWINITY NC, 27817	12
62	BOBBY GENE WEATHINGTON	PO BOX 921 CHOCOWINITY NC, 27817	12
70	DANNY SMITH	PO BOX 623 CHOCOWINITY NC, 27817	13
68	ROY MITCHELL CLARK, et ux	7450 PITT ST. GRIMESLAND NC, 27837	13
71	BETSY ROSE HADDOCK	6025 US HWY 17 S CHOCOWINITY NC, 27817	13



NORTH CAROLINA
DEPARTMENT OF HIGHWAYS

BEAUFORT COUNTY
34440.1.1 (R-2510A)

US 17 FROM SOUTH OF SR 1127 (POSSUM TRACK ROAD)
TO SR 1149 (PRICE ROAD)

NOT TO SCALE

DATE: AUG-04

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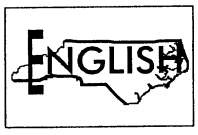
3/15/2005 10:13:44 AM

SUMMARY OF AFFECTED PROPERTY OWNERS
WETLAND SITES

TRACT NO.	PROPERTY OWNER	ADDRESS	SITE NO.
69	CARRIE M. TURNER, et ux	1014 VAN NORDEN ST. WASHINGTON NC, 27889	13
97	SALLIE BLOUNT TOLER	5613 US HWY 17 S CHOCOWINITY NC, 27817	14
107	JASON C. SHEPPARD	PO BOX 1902 CHOCOWINITY NC, 27889	15
110	SCOTT ROBERT BATEMAN, et ux	4829 US HWY 17 S CHOCOWINITY NC, 27817	15,16
109	MARVIN J. HARRIS FAMILY TRUST	PO BOX 1747 WASHINGTON NC, 27889	15
108	A. FRANK RESPESS	4918 US HWY 17 S CHOCOWINITY NC, 27817	15
118	RICHARD D. PEED, JR., et ux	410 TRANTERS CREEK DR. WASHINGTON NC, 27889	17
	NORFOLK SOUTHERN RAILROAD		3,5,7,9,11
98	C. DOUGLAS BRANCH, et ux	5614 US HWY 17 S CHOCOWINITY NC, 27817	14



NORTH CAROLINA
DEPARTMENT OF HIGHWAYS

BEAUFORT COUNTY
34440.1.1 (R-2510A)

US 17 FROM SOUTH OF SR 1127 (POSSUM TRACK ROAD)
TO SR 1149 (PRICE ROAD)

NOT TO SCALE

DATE: AUG-04

SHEET 5 OF 6

r:\R2510A\Hydraulics\Permits\R2510A_permit_tsh.dgn
3/15/2005 10:53:28 AM

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS				SURFACE WATER IMPACTS				
			Fill In Wetlands (Ac)	Temp. Fill In Wetlands (Ac)	Excavation In Wetlands (Ac)	Mechanized Clearing (Method III) (Ac)	Fill In SW (Natural) (Ac)	Fill In SW (Pond) (Ac)	Temp. Fill In SW (Ac)	Existing Channel Impacted (ft)	Natural Stream Design (ft)
1	29+50 Rt		0.0784		0.0441	0.0142					
2	33+50 Rt				0.0214	0.0238					
3	57+50	66" RCP	0.0108		0.0072	0.0058	0.0105		0.0061	113	
4	63+50 to 67+00 Rt		0.3014		0.3302	0.1425					
5	85+00 to 90+20 Lt		0.0304		0.0877	0.0676					
6	86+10 to 93+60 Rt		1.0470			0.1639					
7	103+15 to 105+20 Lt		0.1491			0.0051					
8	107+20 to 110+20 Rt		0.2530		0.0128	0.0646					
9	117+15 to 120+50 Lt		0.1186		0.0873	0.0276					
10	132+00 to 134+60 Rt		0.4161		0.1659	0.0655					
11	136+90 to 138+20 Lt				0.0359	0.0079					
12	155+20 Rt	30" RCP	0.0171				0.0140		0.0019	88	
13	162+35	24" RCP					0.0087		0.0036	52	
14	185+82	24" RCP					0.0119		0.0080	122	
15	223+50 to 225+30	2@ 8 ft x 7 ft	0.1766		0.0154	0.0789	0.0219		0.0310	103	
16	230+40 to 234+00 Rt		0.2049			0.0475					
17	241+30 to 241+65 Rt		0.0047		0.0093	0.0055					
TOTALS:			2.8080	0.0000	0.8171	0.7204	0.0670	0.0000	0.0506	478	0

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

BEAUFORT COUNTY
PROJECT: 34440.1.1 (R-2510A)

4/20/2005
SHEET 6 OF 6

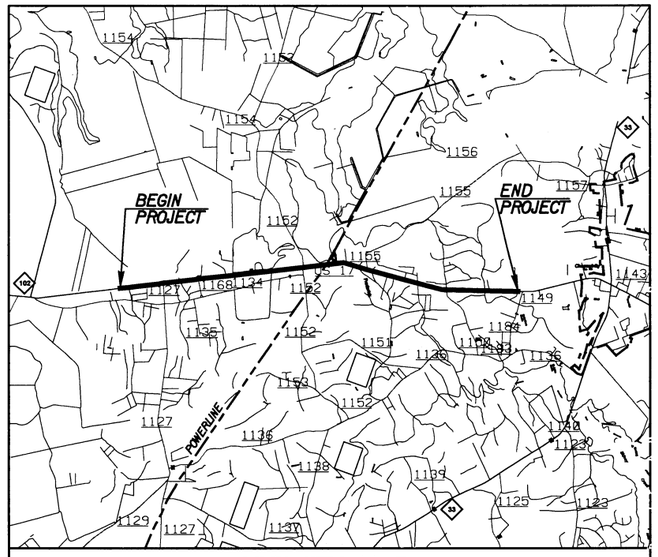
Form Revised 3/22/01

09/08/99

R-2510A

CONTRACT:

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



VICINITY MAP

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2510A	1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
34440.1.1	MAF-75-3(26)	PE	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

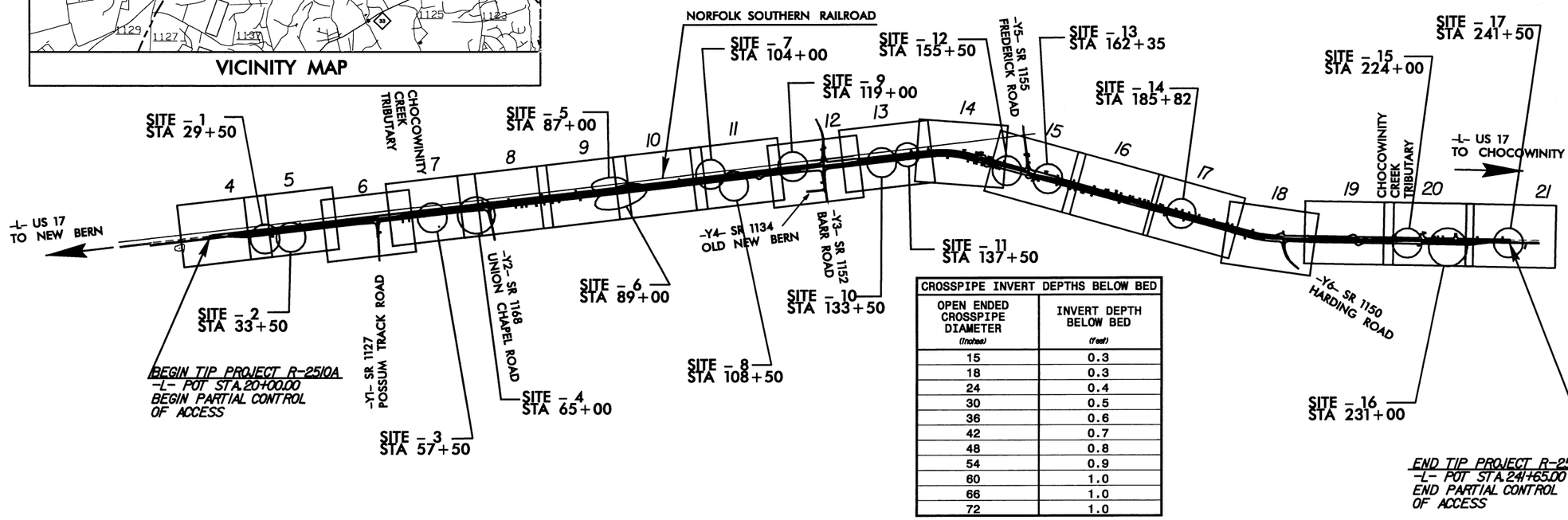
BEAUFORT COUNTY

LOCATION: US 17 FROM SOUTH OF SR 1127 (POSSUM TRACK ROAD) TO SR 1149 (PRICE ROAD)

TYPE OF WORK: GRADING, PAVING, DRAINAGE, AND CULVERT

NAD 83/95 NC GRID

R-2510A: PERMIT SITE MAP



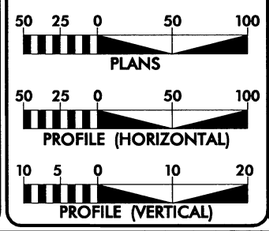
CROSSPIPE INVERT DEPTHS BELOW BED	
OPEN ENDED CROSSPIPE DIAMETER (inches)	INVERT DEPTH BELOW BED (feet)
15	0.3
18	0.3
24	0.4
30	0.5
36	0.6
42	0.7
48	0.8
54	0.9
60	1.0
66	1.0
72	1.0

NOTES: THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD_____.

R-2510A: PERMIT SITE MAP

PREPARED BY: KO & ASSOCIATES, PC; RALEIGH, NC

GRAPHIC SCALES



DESIGN DATA

ADT 2006 = 10200 VPD
ADT 2026 = 17000 VPD
DHV = 12 %
D = 60 %
T = 12 % *
V = 60 MPH

* TTST 7% DUAL 5%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2510A = 4.387 Mi
TOTAL LENGTH OF TIP PROJECT R-2510A = 4.837 Mi

Prepared In The Office Of:
Carter-Burgess
Consultants in Planning, Engineering, Architecture, Construction Management and Related Services
588 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27612

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: DECEMBER 17, 2004
LETTING DATE: DECEMBER 19, 2006

R. DONALD HURLBUT, PE — *ROADWAY GROUP MANAGER*
CARL L. BUSH III, PE — *PROJECT DESIGN ENGINEER*
NCDOT CONTACT: CATHY S. HOUSER, PE — *DESIGN SERVICES PROJECT ENGINEER*

HYDRAULICS ENGINEER
P.E.
SIGNATURE:
ROADWAY DESIGN ENGINEER

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA
P.E.
STATE DESIGN ENGINEER
DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION
APPROVED
DIVISION ADMINISTRATOR *DATE*

8/1/2005
R:\R2510A\Hydraulics\Permits\R2510A_sitemaps.dgn
KO & Associates, P.C.

NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

SEE SHEET 23 FOR -L- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	5
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Carter::Burgess
Consultants in Planning, Engineering, Architecture, Construction Management and Related Services
5811 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27612

KO & ASSOCIATES, P.C.
Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606

ENGLISH

30 35 40

PAUL A. LEE

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

MATCHLINE -L- STA. 28+00 SEE SHEET 4

MATCHLINE -L- STA. 40+00 SEE SHEET 6

NORFOLK SOUTHERN RAILROAD

US 17 22' BST

N 8°42'06.4" E -L-

REMOVE 18" CONC

2GI(D)

2S(D)

18" CONC

CLASS "B" RIP RAP EST 2 TONS EST 7 SQ YD FF

28+00.00 102.00

28+50.00 101.00

31+00.00 104.00

36+00.00 100.00

38+50.00 106.00

CLASS "B" RIP RAP EST 2 TONS EST 7 SQ YD FF

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

1 JOHN JAY WALTON

4 REBECCA S. DAY

5 JAMES A. POLLARD, et ux

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

DRAWDOWN LIMITS

ISMTLBUS ABAND

ISFD ABAND

S

N/C

SITE 1
STA. 29+50

SITE 2
STA. 33+50

POT Sta. 18+58.65

S75°41'01"E 658.59'

S08°03'32"W 189.57'

25 0 50
SCALE: 1" = 100'

WETLAND SITES 1 & 2

PLAN VIEW

ADDITIONAL IMPACT DUE TO DRAWDOWN
SITE 1 0.04 AC
SITE 2 0.22 AC

LEGEND

- WLB — WETLAND
- DENOTES FILL IN WETLAND
- DENOTES EXCAVATION IN WETLAND
- DENOTES MECHANIZED CLEARING

5/12/99

4/7/2005
3102A\Hydraulics\Permits\R2510A Permit 05.dgn
Engineering Alternatives, PC

5/14/99

NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

SEE SHEET 24 FOR -L- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

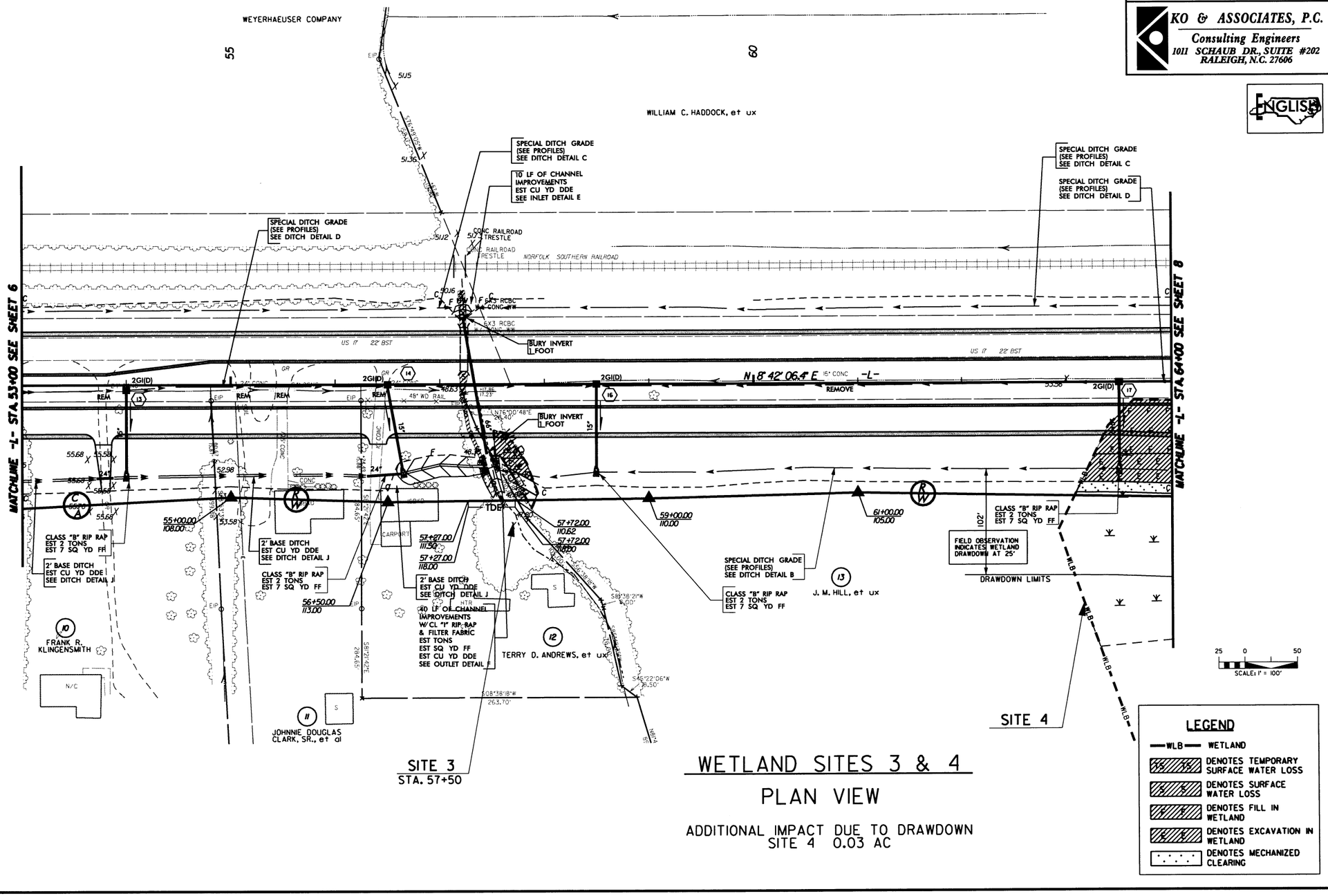
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Carter::Burgess
Consultants in Planning, Engineering, Architecture, Construction Management and Related Services
5811 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27612

KO & ASSOCIATES, P.C.
Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606

ENGLISH



WETLAND SITES 3 & 4

PLAN VIEW

ADDITIONAL IMPACT DUE TO DRAWDOWN
SITE 4 0.03 AC

LEGEND

- WLB — WETLAND
- DENOTES TEMPORARY SURFACE WATER LOSS
- DENOTES SURFACE WATER LOSS
- DENOTES FILL IN WETLAND
- DENOTES EXCAVATION IN WETLAND
- DENOTES MECHANIZED CLEARING

4/7/2005
5102A\hydraulics\Permits\R2510A_Permit_07.dgn

NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

SEE SHEET 24 FOR -L- PROFILE
SEE SHEET 32 FOR -Y2- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
SEE SHEET 2D FOR INTERSECTION DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

Carter::Burgess
Consultants in Planning, Engineering, Architecture, Construction Management and Related Services
588 Glenwood Avenue, Suite 300
Raleigh, North Carolina 2762

KO & ASSOCIATES, P.C.
Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

NAD 83/95

ENGLISH

WILLIAM C. HADDOCK, et ux

WILLIAM EARL LEWIS, et ux
DB 888 - PG 598

CHARLES H. PURSER, et ux
DB 852 - PG 559
PC B - SLIDE 161

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

-L- POT Sta.67+15.43 =
-Y2- POT Sta. 10+00.00

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

NORFOLK SOUTHERN RAILROAD

MATCHLINE -L- STA 64+00 SEE SHEET 7

MATCHLINE -L- STA 77+00 SEE SHEET 9

CLASS "B" RIP RAP EST 3 TONS EST 10 SQ YD FF

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

DRAWDOWN LIMITS

SITE 4 Con't
STA. 65+00

J. M. HILL, et ux

-Y2- POT Sta.13+00.00
END CONSTRUCTION
(TIE TO EXISTING)

GEORGE HERBERT HILL, et ux
DB 887 - PG 930

KENNETH RAY WATERS, SR., et ux
DB 1075 - PG 824

MELINDA WRIGHT GASKINS
DB 1126 - PG 424

NORMAN WRIGHT
DB 693
PG 446

MAXINE W. ALLIGOOD
DB 693 - PG 444
DB 867 - PG 863

PATRICIA ANN EDWARDS
DB 1074 - PG 253

DON WILLIAMS
DB 1126 - PG 582

EARL D. CLARK, et ux
DB 526 - PG 310
DB 676 - PG 52

LELOND D. CLARK, et ux
DB 1019 - PG 804

JAMES WHITE
DB 738 - PG 126

WARD PARAMORE, et ux
DB 1055 - PG 574
DB 3 615 - PG 114

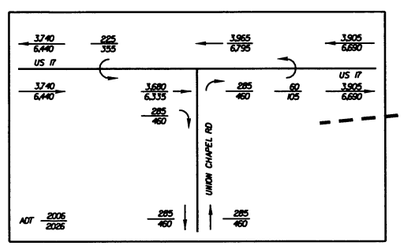
SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

CLASS "B" RIP RAP EST 2 TONS EST 7 SQ YD FF

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

CLASS "B" RIP RAP EST 2 TONS EST 7 SQ YD FF

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B



WETLAND SITE 4 CON'T PLAN VIEW

LEGEND
- WLB — WETLAND
- DENOTES FILL IN WETLAND
- DENOTES EXCAVATION IN WETLAND
- DENOTES MECHANIZED CLEARING

SCALE: 1" = 100'

4/7/2005
3:\0A\Projects\Permits\R2510A_Permit_08.dgn

NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

SEE SHEET 25 FOR -L- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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Consultants in Planning, Engineering, Architecture, Construction Management and Related Services
5811 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27612

KO & ASSOCIATES, P.C.
Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606

ENGLISH

CHARLES H. PURSER, et ux
DB 852 - PG 559
PC B - SLIDE 161

JOEY RANDY MAYO, et ux
DB 953 - PG 184
DB 1013 - PG 446

JOSEPH J. [illegible]LEY, et al
DB 77[illegible] PG 586

GEORGE F. WIGGINS, et ux
DB 1055 - PG 412

SITE 5
STA. 87+00

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

CLASS "B" RIP RAP EST 2 TONS EST 7 SQ YD FF

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

MATCHLINE -L- STA 77+00 SEE SHEET 8

MATCHLINE -L- STA 90+00 SEE SHEET 10

N 8°42'06.4" E

77+50.00 100.00

82+00.00 100.00

86+00.00 102.00

86+50.00 100.00

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

CLASS "B" RIP RAP EST 2 TONS EST 7 SQ YD FF

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

CLASS "B" RIP RAP EST 15 TONS EST 37 SQ YD FF

22 MICHAEL EDWARD PARAMORE, et ux
DB 1015 - PG 799
DB 1109 - PG 574
DB 615 - PG 114

23 ROBERT M. KIMBLE, et al
DB 1034 - PG 315

24 WILLIAM EARL CLARK, et ux
DB 748 - PG 723
DB 801 - PG 922

25 FRANCES C. TETTERTON
DB 911 - PG 522

26 DAVID D. HARDY, et ux
DB 884 - PG 190

27 THOMAS G. CLARK, et ux
DB 881 - PG 310
DB 911 - PG 916

28 D. H. BRIGHT
DB 229 - PG 140
MB 17 - PG 68

WETLAND SITES 5 & 6

PLAN VIEW

ADDITIONAL IMPACT DUE TO DRAWDOWN
SITE 5 0.01 AC

SITE 6
STA. 89+00

SCALE: 1" = 100'

LEGEND

- WLB — WETLAND
- DENOTES FILL IN WETLAND
- DENOTES EXCAVATION IN WETLAND
- DENOTES MECHANIZED CLEARING

4/7/2005
3:\0ANHOrders\Projects\R2510A_Permits\R2510A_Permit_09.dgn

NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

SEE SHEET 25 FOR -L- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Carter-Burgess
Consultants in Planning, Engineering, Architecture, Construction Management and Related Services
581 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27612

KO & ASSOCIATES, P.C.
Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606

ENGLISH

MATCHLINE -L- STA 90+00 SEE SHEET 9

MATCHLINE -L- STA 103+00 SEE SHEET 11

SITE 5 CON'T

GEORGE F. WIGGINS, et ux
DB 1055 - PG 412

JOHNNIE M. SMITH, et ux

NORFOLK SOUTHERN RAILROAD

US 17 22' BST

-L- N 8°42'06.4" E

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

GRADE TO DRAIN (SEE PROFILES) SEE DITCH DETAIL D

4' BASE TAIL DITCH
220 LF @ 0.2% GRADE
EST 260 CY DDE
SEE DITCH DETAIL A

4' BASE TAIL DITCH
760 LF @ 0.2% GRADE
EST 1900 CY DDE
SEE DITCH DETAIL A

CLASS "B" RIP RAP
EST 3 TONS
EST 10 SQ YD FF

CLASS "B" RIP RAP
EST 11 TONS
EST 28 SQ YD FF

CLASS "B" RIP RAP
EST 2 TONS
EST 7 SQ YD FF

CLASS "B" RIP RAP
EST 2 TONS
EST 7 SQ YD FF

CLASS "B" RIP RAP
EST 2 TONS
EST 7 SQ YD FF

92+71.00 100.00
92+80.00 100.00
93+50.00 109.00
93+36.67 107.00
94+00.00 100.00
97+40.00 100.00
98+86.00 124.81
99+46.00 135.00
91+50.00 200.00
91+80.00 250.00
99+63.00 471.98
100+24.00 468.23
99+77.00 531.24
100+37.50 521.52

28 D. H. BRIGHT
DB 229 - PG 140
MB 17 - PG 68

29

30 ADDIE ELIZABETH F. GALLOWAY

ARLEY E. MEEKS, et ux

MATCHLINE -L- OFFSET 440.00' SEE SHEET THIS SHEET

MATCHLINE -L- OFFSET 440.00' SEE SHEET THIS SHEET

NAD 83/95

100+50.00 845.50

101+08.00 833.00

WETLAND SITES 5 & 6 CON'T PLAN VIEW

SCALE: 1" = 100'

LEGEND

- WLB — WETLAND
- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING

5/14/98

4/8/2005
5310A Highway 210\Plans\VP permits\R2510A Permit 10.dgn
D. Ashley Smith, P.E.

5/14/99

NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

SEE SHEET 26 FOR -L- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Carter::Burgess
Consultants in Planning, Engineering, Architecture, Construction Management and Related Services
5811 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27612

KO & ASSOCIATES, P.C.
Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606

ENGLISH

105 110 115

MATCHLINE -L- STA. 103+00 SEE SHEET 10

MATCHLINE -L- STA. 115+00 SEE SHEET 12

(29) JOHNNIE M. SMITH, et ux

SITE 7
STA. 104+00

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

NORFOLK SOUTHERN RAILROAD

US 17 22' BST

18" CONC REM 2GI(D)

18" CONC 24" REM

N 8°42'06.4" E

-L-

18" CONC 15" REM 2GI(D)

48" SSW

CONC HW

CLASS "B" RIP RAP EST 8 TONS EST 121 SQ YD FF

105+00.00 123.00

107+80.00 100.00

112+53.00 100.00

112+95.00 120.00

113+53.00 121.00

114+10.00 100.00

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

(30) ADDIE ELIZABETH F. GALLOWAY

(31) ANNIE MAE FURLOUGH

(32) MAUDE ELIZABETH WHITEHURST

POND

WLB

105.00' N05°11'01"E

N/C

EIP

N 81°55'16" E 210.00'

ARLEY E. MEEKS, et ux

D. H. BRIGHT
DB 229 - PG 140
MB 17 - PG 68

SITE 8
STA. 109+00

WETLAND SITES 7 & 8
PLAN VIEW

25 0 50
SCALE: 1" = 100'

LEGEND

- WLB — WETLAND
- DENOTES FILL IN WETLAND
- DENOTES EXCAVATION IN WETLAND
- DENOTES MECHANIZED CLEARING

4/7/2005
5100\Highways\Permits\R2510A_Permit_11.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DATE	REVISION	Y3 @ RR CROSSING
3-15-05	Y3 PROFILE REVISION	PARCELS 32,34,35,36 & 42
1-27-05	DRAINAGE REVISION, ADDED EASEMENTS	

Carter::Burgess
Consultants in Planning, Engineering, Architecture, Construction Management and Related Services
5811 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27612

KO & ASSOCIATES, P.C.
Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606

NAD 83/95

ENGLISH

WETLAND SITE 9
PLAN VIEW

SITE 9
STA. 119+00

-Y3- POT Sta. 11+00.00
BEG. CONSTRUCTION
(TIE TO EXISTING)

-Y3-
PI Sta 11+14.71
Δ = 21° 38' 46.6" (RT)
D = 9° 32' 57.5"
L = 226.68'
T = 114.71'
R = 600.00'
SE = 08
INC = 23.75'

-Y3- POT Sta. 12+78.95
BEG. PAVING
(TIE TO EXISTING)

-Y3- POT Sta. 20+00.00
END CONSTRUCTION
(TIE TO EXISTING)

-Y3- POT Sta. 19+82.97
END PAVING
(TIE TO EXISTING)

-L- POT Sta. 124+13.56 =
-Y3- POT Sta. 16+33.04

PC Sta. 16+56.77

PT Sta. 12+26.68

PI Sta 17+75.34
Δ = 7° 32' 16.8" (LT)
D = 3° 10' 59.2"
L = 236.81'
T = 118.58'
R = 1,800.00'
SE = RC
INC = 25'
PT Sta. 18+93.58

-Y4- S 10° 00' 46.0" W

-Y3- S 82° 22' 13.0" E

-Y3- S 74° 49' 56.2" E

N 8° 42' 06.4" E

MATCHLINE -Y3- STA 12+00 SEE INSET

MATCHLINE -Y3- STA 12+00 SEE THIS SHEET

MATCHLINE -L- STA 16+00 SEE SHEET 11

MATCHLINE -L- STA 129+00 SEE SHEET 13

JOYCE CAMPBELL BAKER

JOHNNIE M. SMITH, et ux

R. GUY MAYO, JR., et ux

STEVEN MARK BUCK
DB 977 - PG 481

J. M. SMITH, et ux

JOHNNIE M. SMITH, et ux

R. GUY MAYO, JR., et ux

STEVEN MARK BUCK

MAUDE N. WHITEHURST

MAUDE ELIZABETH WHITEHURST

TOMMY WHITEHURST, et ux

WILLIAM R. HARDING, et ux

LUCY B. TAYLOR

WILLIAM R. HARDING

ANTHONY DWAYNE BUCK

TRAVIS EARL HUDSON, et ux

ARLEY EUGENE MEEKS, et ux

JACOB F. ROWE, JR., et ux

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

CLASS "B" RIP RAP EST 3 TONS EST 10 SQ YD FF

CLASS "B" RIP RAP EST 2 TONS EST 7 SQ YD FF

NORFOLK SOUTHERN RAILROAD

US 17 22' BST

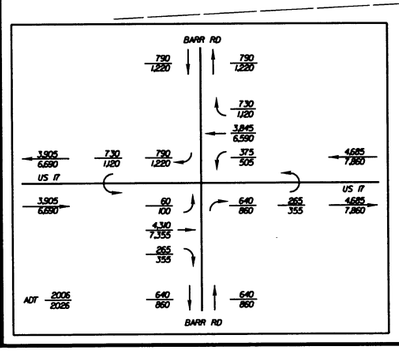
SR 1134 (OLD NEW BERN RD) 25' BST

BARR RD

SCALE: 1" = 100'

LEGEND

- WLB — WETLAND
- DENOTES FILL IN WETLAND
- DENOTES EXCAVATION IN WETLAND
- DENOTES MECHANIZED CLEARING



SEE SHEET 26 FOR -L- PROFILE
SEE SHEET 32 FOR -Y3- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
SEE SHEET 2E FOR INTERSECTION DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

4/7/2005
R2510A_Hydraulics\Permits\R2510A_Permit_12.dgn

NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

SEE SHEET 27 FOR -L- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	13
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Carter::Burgess
Consultants in Planning, Engineering, Architecture, Construction Management and Related Services
588 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27612

KO & ASSOCIATES, P.C.
Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606

ENGLISH

NAD 83/95

MATCHLINE -L- STA. 129+00 SEE SHEET 12

MATCHLINE -L- STA. 141+00 SEE SHEET 14

S08°40'39"W 1467.75'

S08°40'39"W 1475.76'

130

135

140

R. GUY MAYO, JR., et ux

SITE II
STA. 137+50

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

CAROLINA POWER & LIGHT COMPANY

CITY OF WASHINGTON

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

NORFOLK SOUTHERN RAILROAD

MP 3

SEE POST #3

-L- 15"

N 8°42'06.4"E

2GI(D)

REM

TRAVIS EARL HUDSON, et ux

JOHNNIE R. JACKSON, et ux

CHAD D. CLAYTON, et ux

EUGENE H. YOW, JR.

J. J. COOK, et ux

DRAWDOWN LIMITS

WLB

SITE 10
STA. 133+50

129+00.00 100.00

132+50.00 100.00

135+00.00 100.00

138+09.50 100.00

138+55.00 100.00

138+50.00 320.00

138+95.00 320.00

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

4' BASE TAIL DITCH
230 LF @ 0.12% GRADE
EST 60 CY DDE
SEE DITCH DETAIL A

CLASS "B" RIP RAP
EST 5 TONS
EST 14 SQ YD FF

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

TDE

SCALE: 1" = 100'

WETLAND SITES 10 & 11

PLAN VIEW

ADDITIONAL IMPACT DUE TO DRAWDOWN
SITE 10 0.18 AC

LEGEND

- WLB — WETLAND
- DENOTES FILL IN WETLAND
- DENOTES EXCAVATION IN WETLAND
- DENOTES MECHANIZED CLEARING

5/14/49

4/1/2005
3510A\Hydraulics\Permits\R2510A_Permit_13.dgn
& Associates, P.A.

3-15-05 DRAINAGE REVISION,REVISED PIPE SIZE STA.155+45 AND 162+35

SEE SHEET 28 FOR -L- PROFILE
SEE SHEET 33 FOR -Y5- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
SEE SHEET 2F FOR INTERSECTION DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Carter-Burgess
Consultants in Planning, Engineering, Architecture, Construction Management and Related Services
581 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27612

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Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606

NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

NAD 83'95

JOHN M. ELLIOTT
-Y5- POT Sta.11+55.09
BEGIN CONSTRUCTION
-Y5- POT Sta.13+00.00
BEGIN RESURFACING (TIE TO EXISTING)
LINDA B. EDWARDS, et vir
ICELEEN W. WHITFIELD
BENNIE HERMAN STARKIE, JR., et al
CARRIE M. TURNER, et vir
WILLIAM L. HULSLANDER, et ux
CHARLES R. SPEIGHT, et ux
BETTIE A. STARKIE
SAM JASPER BOYD, JR., et ux
DANNY SMITH
HARRIET CHAPMAN
SITE 13
STA. 162+35
SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C
SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D
SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B
2' BASE DITCH EST CU YD DDE SEE DITCH DETAIL J
BURY INVERT 1 FOOT
LEVEL SPREADER 14' LONG
LEVEL SPREADER 19' LONG
KENNETH A. WILLIAMS, et ux
MICHAEL MIZELL, et ux
BOBBY GENE WEATHINGTON
BILLY RAY BEASLEY
FRANCES TETTERTON
ROY MITCHELL CLARK, et ux
BILLY J. HADDOCK, et ux
BETSY ROSE HADDOCK
BETSY H. LEWIS
SITE 12
STA. 155+50
RONALD LEE HUSS
WILLIAM R. COWARD, et ux
WETLAND SITES 12 & 13
PLAN VIEW
MATCHLINE -L- STA.153+00 SEE SHEET 14
MATCHLINE -L- STA. 167+00 SEE SHEET 16

SCALE: 1" = 100'

FREDERICK RD
ADT 2005 / 2025
US 17 22' BST

LEGEND
- WLB — WETLAND
- DENOTES TEMPORARY SURFACE WATER LOSS
- DENOTES SURFACE WATER LOSS
- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING

4/7/2005
C:\Projects\R2510A\Permits\R2510A_Permit_15.dgn

5/14/99

3-15-05 DRAINAGE REVISION, REVISED PIPE SIZE, STA. 185+82

NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

SEE SHEET 29 FOR -L- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

Carter::Burgess
Consultants in Planning, Engineering, Architecture, Construction Management and Related Services
528 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27603

KO & ASSOCIATES, P.C.
Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606

ENGLISH

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

MATCHLINE -L- STA. 181+00 SEE SHEET 16

MATCHLINE -L- STA. 195+00 SEE SHEET 18

185

190

88 DALTON RAY BUCK, et ux

93 JOYCE D. BRIGHT

94 JAMES ARLEY BUCK, et ux

95 ERVIN RAY ARNOLD, et ux

98 C. DOUGLAS BRANCH, et ux

99 MARK WAYNE OSNOE

100 BARBARA HARDY BARR

102 ERMA LEE COOKE, et vir

103 CARL DOUGLAS BRANCH, JR., et ux

104 TERRY T. PATRICK

TERRY L. BUCK

105 JOHN W. RICE, et ux

87 EDWARD A. BUCK, et ux

97 SALLIE BLOUNT TOLER

101 GUY HARDING LOLLIS

CHARLES L. TOLER, JR.
DB 1213 - PG 680

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

4' BASE TAIL DITCH
50 LF @ 0.98% GRADE
EST 10 CY DDE
SEE DITCH DETAIL A

CLASS "B" RIP RAP
EST 5 TONS
EST 14 SQ YD FF

LEVEL SPREADER
12' LONG

BURY INVERT 1 FOOT

ASPH. DRIVE

6" CONC. DRIVE

US 17 22' BST

2GI(D) N 30° 53' 10.5" E -L-

181+47.00 100.00
181+50.00 94.00
183+92.00 100.00
184+10.00 102.53
184+24.00 116.00
184+41.50 143.00
184+50.00 96.00
185+06.00 106.00
184+91.00 105.21
185+09.80 100.00
186+50.00 103.00
187+40.00 91.00
189+00.00 95.00
191+65.00 89.00
193+50.00 100.00

SITE 14
STA. 185+82

WETLAND SITE 14
PLAN VIEW

SCALE: 1" = 100'

LEGEND
- WLB — WETLAND
- DENOTES TEMPORARY FILL IN SURFACE WATER
- DENOTES FILL IN SURFACE WATER

4/7/2005
...510A\Hydraulics\Permits\R2510A_Permit_17.dgn
...& Associates, P.C.

R-2510A | 20

NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

SEE SHEET 30 FOR -L- PROFILE
SEE SHEET 34 FOR -DET2- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

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Consultants in Planning, Engineering, Architecture, Construction Management and Related Services
588 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27602

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Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

ENGLISH

NAD 8395

MATCHLINE -L- STA. 221+00 SEE SHEET 19

MATCHLINE -L- STA. 235+00 SEE SHEET 21

TERRY T. PATRICK

A. FRANK RESPESS

STEVEN KARLE

ENGLEWOOD C. FELTON

MARVIN J. HARRIS FAMILY TRUST

LOIS ANN GRAY O'NEAL

JIMMY EARL HAWKINS, et ux

MARVI

WALTER B. O'NEAL, et ux

CHESTER L. CRAIG, SR., et ux

LAUREL CRAIG, et ux

MARVIN J. HARRIS FAMILY TRUST

MARVIN J. HARRIS FAMILY TRUST

RAYMOND J. ANDREWS

TERRY T. PATRICK

JASON C. SHEPPARD

SCOTT ROBERT BATEMAN, et ux

60 LF OF CHANNEL IMPROVEMENTS
EST CU YD DDE
SEE OUTLET DETAIL G

SPECIAL DITCH GRADE (SEE PROFILES)
SEE DITCH DETAIL C

CLASS "B" RIP RAP
EST 7 SQ YD FF

LEVEL SPREADER
21' LONG

TDE

PROP. 2@ 8' x 7' RCBC

SPECIAL DITCH GRADE (SEE PROFILES)
SEE DITCH DETAIL B

CLASS "B" RIP RAP
EST 2 TONS
EST 7 SQ YD FF

PREFORMED SCOUR HOLE
SEE DETAIL I

LEVEL SPREADER
16' LONG

75 LF OF CHANNEL IMPROVEMENTS
W/CL 3" RIP RAP & FILTER FABRIC
EST SQ YD FF
EST CU YD DDE
SEE OUTLET DETAIL H

SPECIAL DITCH GRADE (SEE PROFILES)
SEE DITCH DETAIL D

SPECIAL DITCH GRADE (SEE PROFILES)
SEE DITCH DETAIL C

SPECIAL DITCH GRADE (SEE PROFILES)
SEE DITCH DETAIL C

CLASS "B" RIP RAP
EST 1 TONS
EST 5 SQ YD FF

PREFORMED SCOUR HOLE
SEE DETAIL I

SPECIAL DITCH GRADE (SEE PROFILES)
SEE DITCH DETAIL B

SITE 15
STA. 224+00

SITE 16
STA. 231+00

-DET2- POT Sta.10+00.00 = -L- POT Sta.232+10.94 35' RT.

PCSta.12+10.60

-DET2-

PI Sta 13+00.78	PI Sta 17+68.80
Δ = 8° 35' 43.7" (LT)	Δ = 8° 35' 43.7" (RT)
D = 4° 46' 28.7"	D = 4° 46' 28.7"
L = 180.02'	L = 180.02'
T = 90.18'	T = 90.18'
R = 1,200.00'	R = 1,200.00'
SE = 08	SE = 08
INC = 27'	INC = 27'

SCALE: 1" = 100'

WETLAND SITES 15 & 16
PLAN VIEW

LEGEND
- WLB — WETLAND
- DENOTES TEMPORARY SURFACE WATER LOSS
- DENOTES SURFACE WATER LOSS
- DENOTES FILL IN WETLAND
- DENOTES EXCAVATION IN WETLAND
- DENOTES MECHANIZED CLEARING

4/1/2005
2510A_Roadbuilder\Permits\R2510A_Permit_20.dgn

I-27-05 DRAINAGE REVISION | STRUCTURE 7425 | 6/14/05

SEE SHEET 31 FOR -L- PROFILE
SEE SHEET 34 FOR -DET2- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

ENGLISH

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Carter::Burgess
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Raleigh, North Carolina 27612

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Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606

NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

END TIP PROJECT R-2510A
-L- POT STA. 241+65.00
END PARTIAL CONTROL OF ACCESS

POT Sta. 246+44.18

MATCHLINE -L- STA. 235+00 SEE SHEET 20

JOHN E. TAYLOR

RAYMOND J. ANDREWS

ALICE ANN W. HURST

W. BERNARD WINFIELD

RICHARD D. PEED, JR., et ux

SCOTT ROBERT BATEMAN, et ux

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

N 7° 57' 19.0" E -DET2-

N 16° 33' 02.7" E -L-

-DET2-

PI Sta 13+00.78	PI Sta 17+68.80
Δ = 8° 35' 43.7" (LT)	Δ = 8° 35' 43.7" (RT)
D = 4° 46' 28.7"	D = 4° 46' 28.7"
L = 180.02'	L = 180.02'
T = 90.18'	T = 90.18'
R = 1,200.00'	R = 1,200.00'
SE = 08	SE = 08
INC = 27'	INC = 27'

-DET2- PT Sta. 18+58.65 = -L- POT STA 240+65.00 35' LT.

PT Sta. 13+90.62

PC Sta. 16+78.62

R=2765'

SITE 17
STA. 241+50

WETLAND SITE 17
PLAN VIEW

SCALE: 1" = 100'

LEGEND
- WLB — WETLAND
- DENOTES FILL IN WETLAND
- DENOTES EXCAVATION IN WETLAND
- DENOTES MECHANIZED CLEARING

5/14/99

4/7/2005
...\2510A\Hydraulics\Permits\R2510A_Permit_21.dgn

5/28/03

SEE SHEET 5 FOR +L- PLAN

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	23
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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Raleigh, North Carolina 27612

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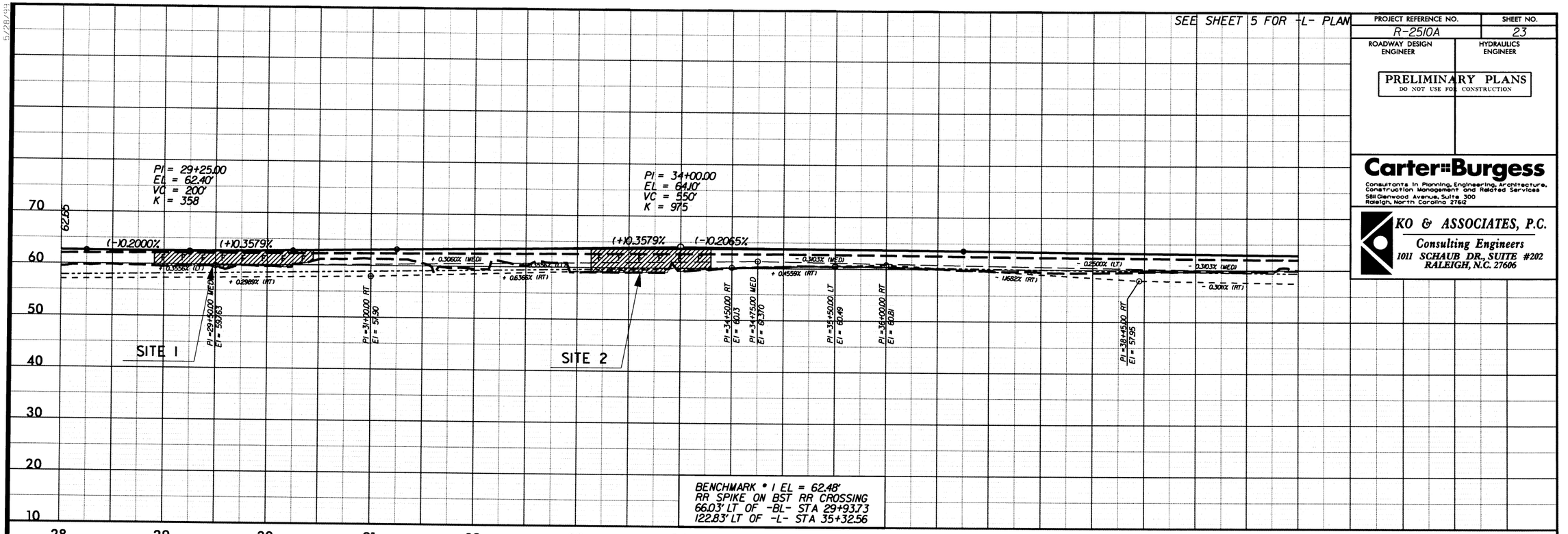
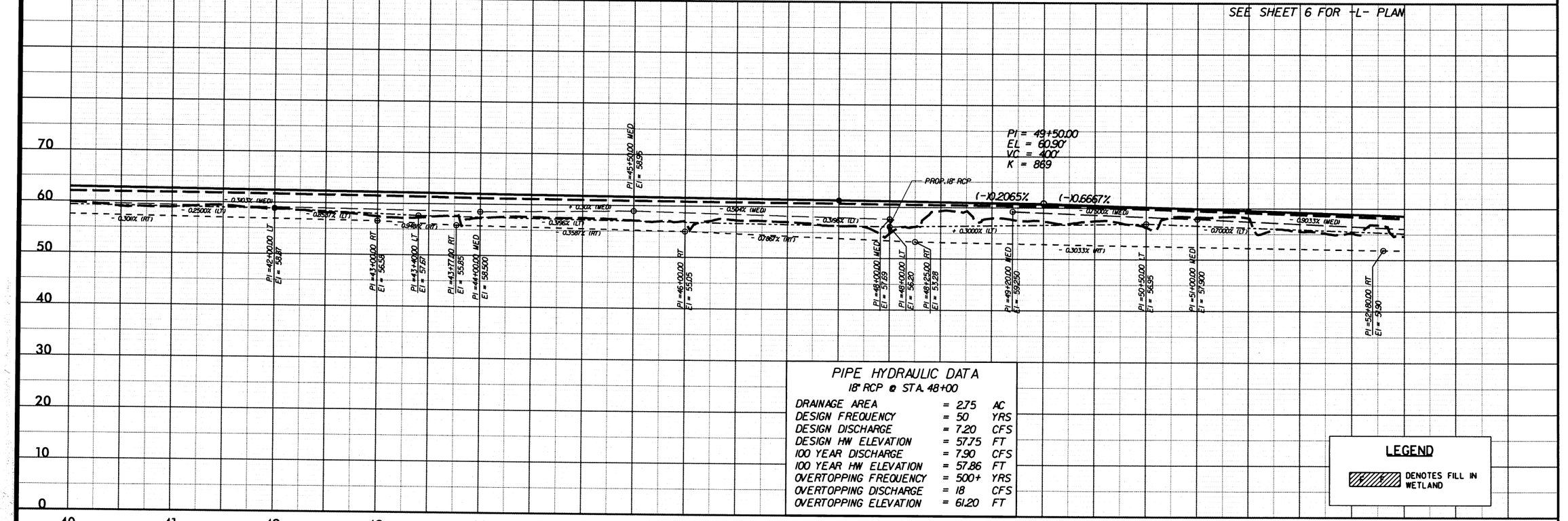
RALEIGH, N.C. 27606



SEE SHEET 6 FOR +L- PLAN



PIPE HYDRAULIC DATA
18" RCP @ STA. 48+00

DRAINAGE AREA	= 2.75	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 7.20	CFS
DESIGN HW ELEVATION	= 57.75	FT
100 YEAR DISCHARGE	= 7.90	CFS
100 YEAR HW ELEVATION	= 57.86	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 18	CFS
OVERTOPPING ELEVATION	= 61.20	FT

LEGEND

DENOTES FILL IN WETLAND

5/28/99

SEE SHEET 7 FOR -L- PLAN

STRUCTURE HYDRAULIC DATA
I@ 66" RCP STA 57+33.2 -L-

DESIGN DISCHARGE	=	70	CFS
DESIGN FREQUENCY	=	50	YRS
DESIGN HW ELEVATION	=	52.81	FT
BASE DISCHARGE	=	80	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	53.02	FT
OVERTOPPING DISCHARGE	=	170	CFS
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING ELEVATION	=	56.20	FT

PI = 57+00.00
EL = 55.90'
VC = 200'
K = 164

PROP. 66" RCP

(-)0.6667%

(+)0.5500%

PI = 61+00.00
EL = 58.10'
VC = 250'
K = 714

(+)0.5500%

(+)0.2000%

SITE 3

SITE 4

SEE SHEET 8 FOR -L- PLAN

PI = 69+50.00
EL = 59.80'
VC = 900'
K = 2149

(+)0.2000%

(-)0.2188%

SITE 4
CON'T

BENCHMARK # 2 EL = 58.68'
RR SPIKE ON BST RR CROSSING
117.45' LT OF -BL- STA 60+88.77
122.39' LT OF -L- STA 66+26.33

LEGEND

DENOTES FILL IN WETLAND

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	24

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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588 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27662

KO & ASSOCIATES, P.C.
Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606

SEE SHEET 9 FOR -L- PLAN

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	25

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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Raleigh, North Carolina 27612

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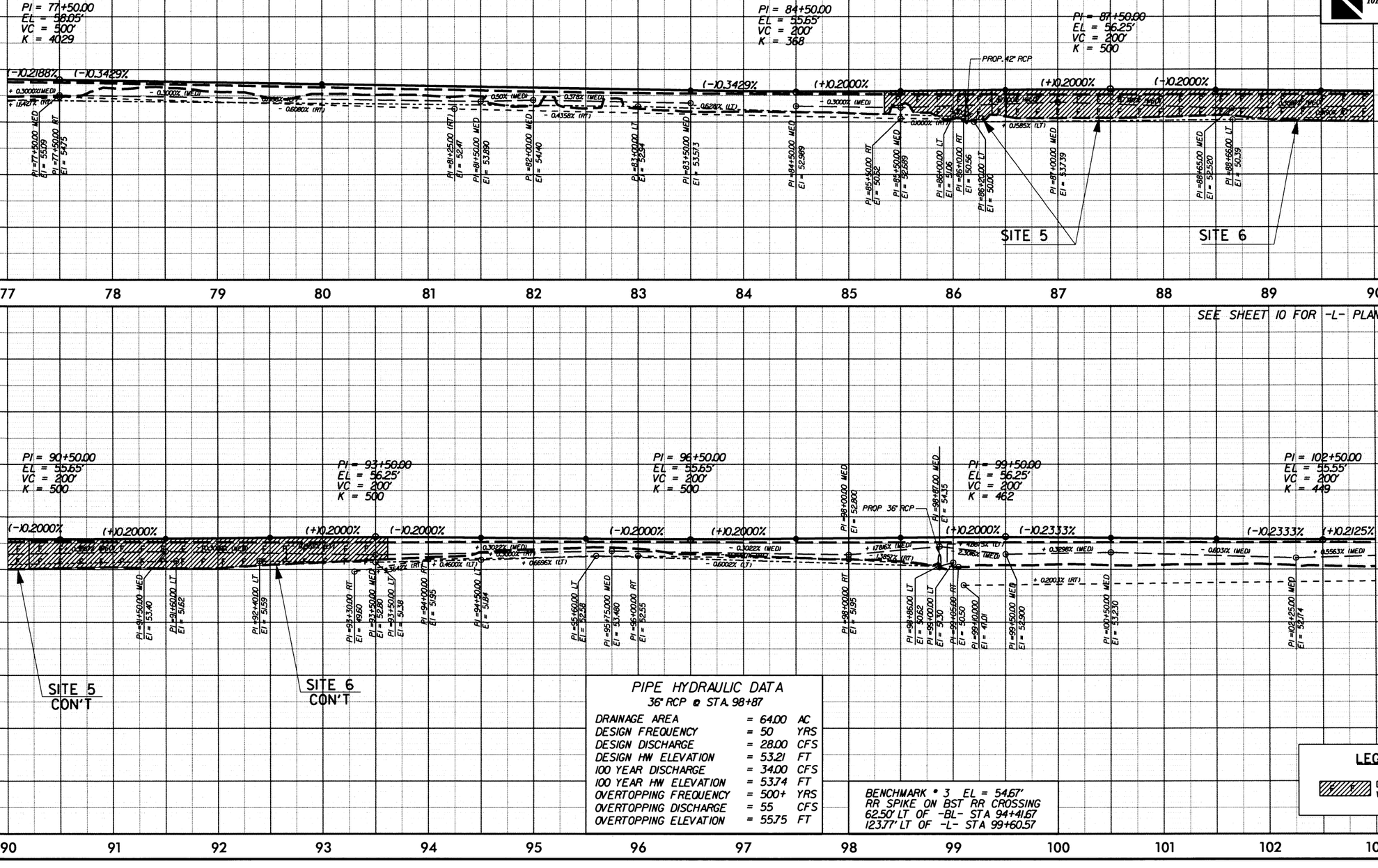
Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606

PIPE HYDRAULIC DATA
42" RCP @ STA. 86+13

DRAINAGE AREA	= 64.00	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 30.00	CFS
DESIGN HW ELEVATION	= 52.53	FT
100 YEAR DISCHARGE	= 36.00	CFS
100 YEAR HW ELEVATION	= 52.88	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 79	CFS
OVERTOPPING ELEVATION	= 55.77	FT



SEE SHEET 10 FOR -L- PLAN

PIPE HYDRAULIC DATA
36" RCP @ STA. 98+87

DRAINAGE AREA	= 64.00	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 28.00	CFS
DESIGN HW ELEVATION	= 53.21	FT
100 YEAR DISCHARGE	= 34.00	CFS
100 YEAR HW ELEVATION	= 53.74	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 55	CFS
OVERTOPPING ELEVATION	= 55.75	FT

BENCHMARK # 3 EL = 54.67'
RR SPIKE ON BST RR CROSSING
62.50' LT OF -BL- STA 94+41.67
123.77' LT OF -L- STA 99+60.57

LEGEND

DENOTES FILL IN WETLAND

5/28/99

SEE SHEET 11 FOR -L- PLAN

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	26
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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Raleigh, North Carolina 27612

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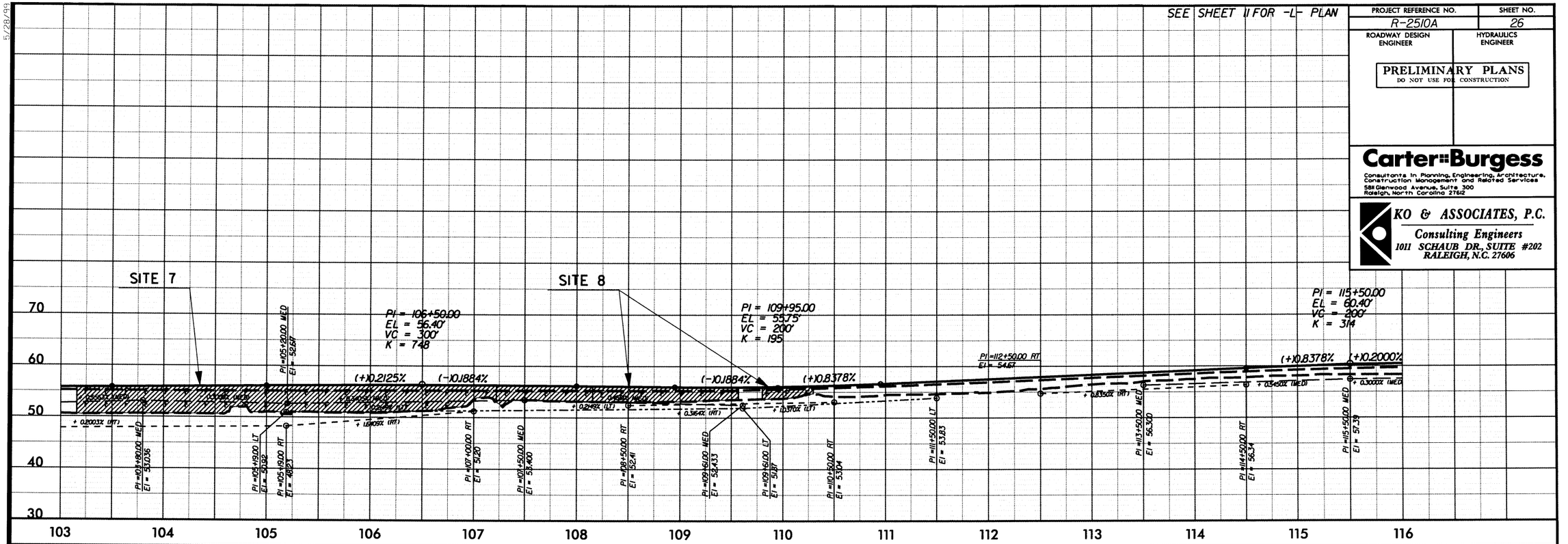
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606



SEE SHEET 12 FOR -L- PLAN

BENCHMARK • 4 EL = 61.27'
RR SPIKE ON CP&L POLE • RRC44
82.65' LT OF -BL- STA 118+81.81
157.13' LT OF -L- STA 124+03.16

LEGEND
DENOTES FILL IN WETLAND

5/28/14

SEE SHEET 13 FOR -L- PLAN

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	27

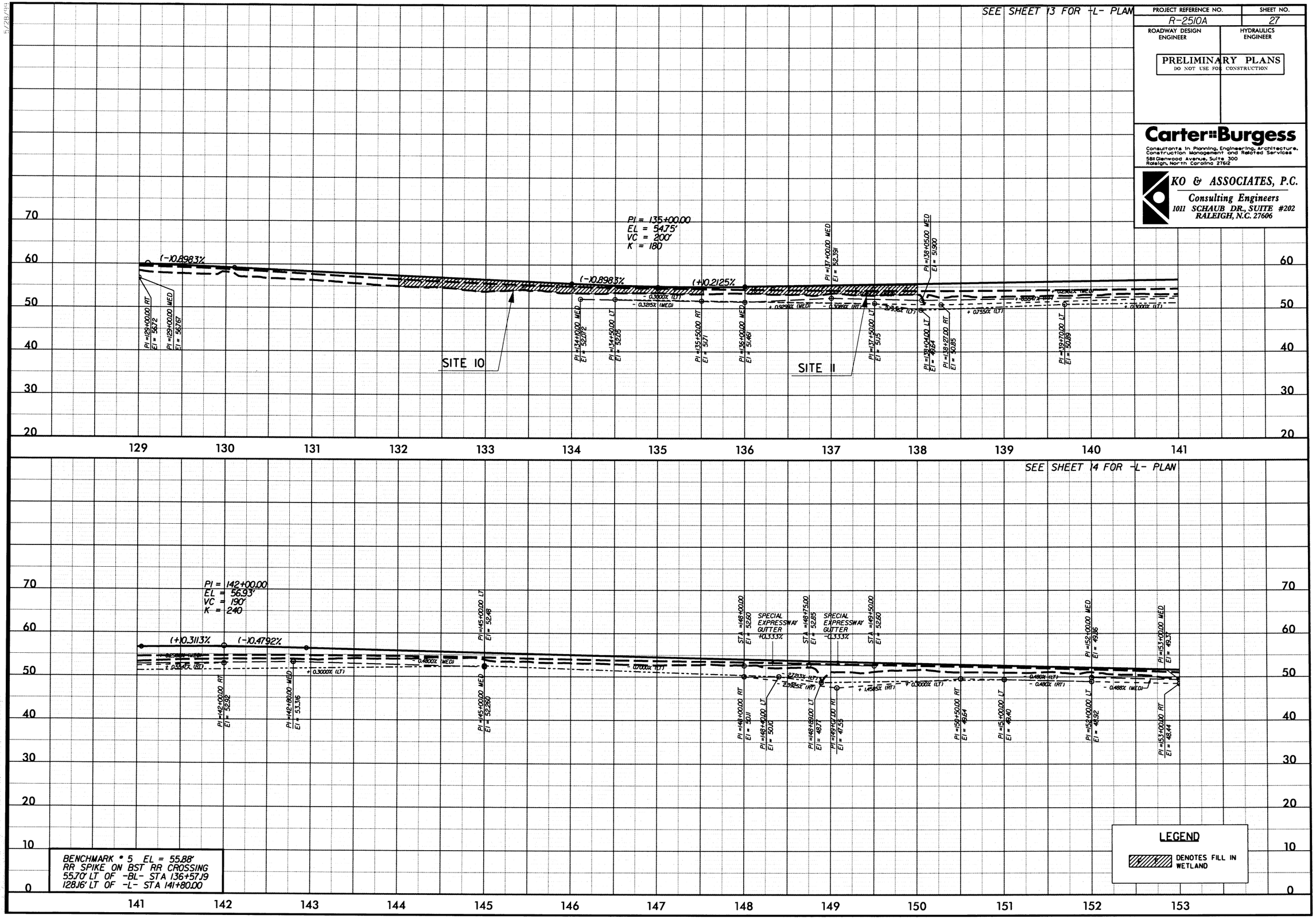
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Carter::Burgess
Consultants in Planning, Engineering, Architecture, Construction Management and Related Services
5811 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27612

KO & ASSOCIATES, P.C.
Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606



SEE SHEET 14 FOR -L- PLAN

5/28/99

PIPE HYDRAULIC DATA
36" RCP @ STA. 155+45

DRAINAGE AREA	= 54.95	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 17.00	CFS
DESIGN HW ELEVATION	= 46.55	FT
100 YEAR DISCHARGE	= 21.00	CFS
100 YEAR HW ELEVATION	= 46.58	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 57	CFS
OVERTOPPING ELEVATION	= 50.26	FT

PIPE HYDRAULIC DATA
36" RCP @ STA. 162+35

DRAINAGE AREA	= 11.80	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 8.10	CFS
DESIGN HW ELEVATION	= 45.90	FT
100 YEAR DISCHARGE	= 9.80	CFS
100 YEAR HW ELEVATION	= 46.19	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 30	CFS
OVERTOPPING ELEVATION	= 50.86	FT

SEE SHEET 15 FOR -L- PLAN

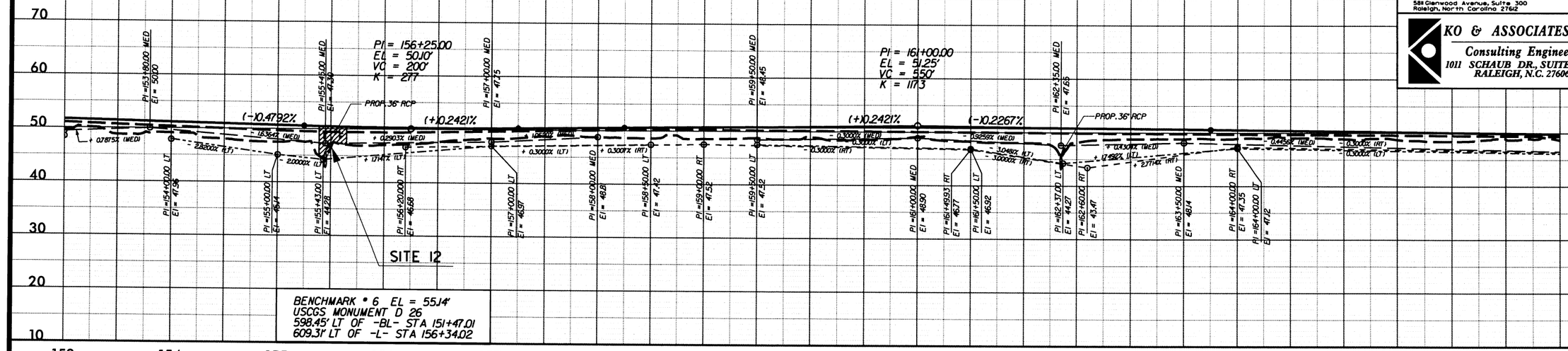
PROJECT REFERENCE NO.	SHEET NO.
R-2510A	28

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Carter-Burgess
Consultants in Planning, Engineering, Architecture, Construction Management and Related Services
588 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27662

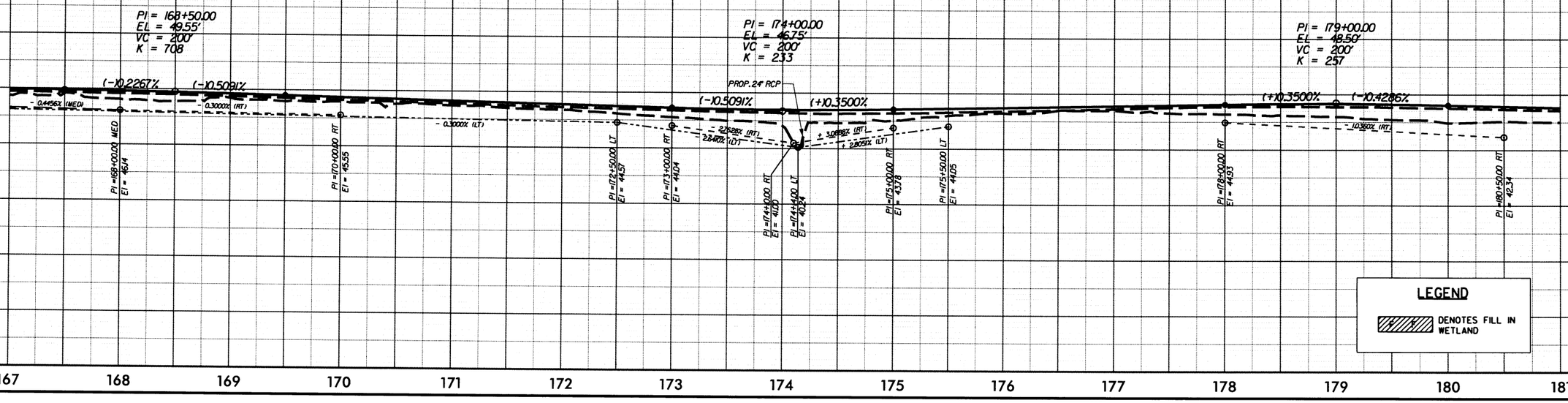
KO & ASSOCIATES, P.C.
Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606



SEE SHEET 16 FOR -L- PLAN

PIPE HYDRAULIC DATA
24" RCP @ STA. 174+18

DRAINAGE AREA	= 22.70	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 11.00	CFS
DESIGN HW ELEVATION	= 42.22	FT
100 YEAR DISCHARGE	= 13.00	CFS
100 YEAR HW ELEVATION	= 42.45	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 35	CFS
OVERTOPPING ELEVATION	= 46.96	FT



5/28/99

PIPE HYDRAULIC DATA
18" RCP @ STA. 213+40

DRAINAGE AREA	= 1.11	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 2.40	CFS
DESIGN HW ELEVATION	= 38.03	FT
100 YEAR DISCHARGE	= 2.90	CFS
100 YEAR HW ELEVATION	= 38.14	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 14	CFS
OVERTOPPING ELEVATION	= 41.51	FT

SEE SHEET 19 FOR -L- PLAN

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	30

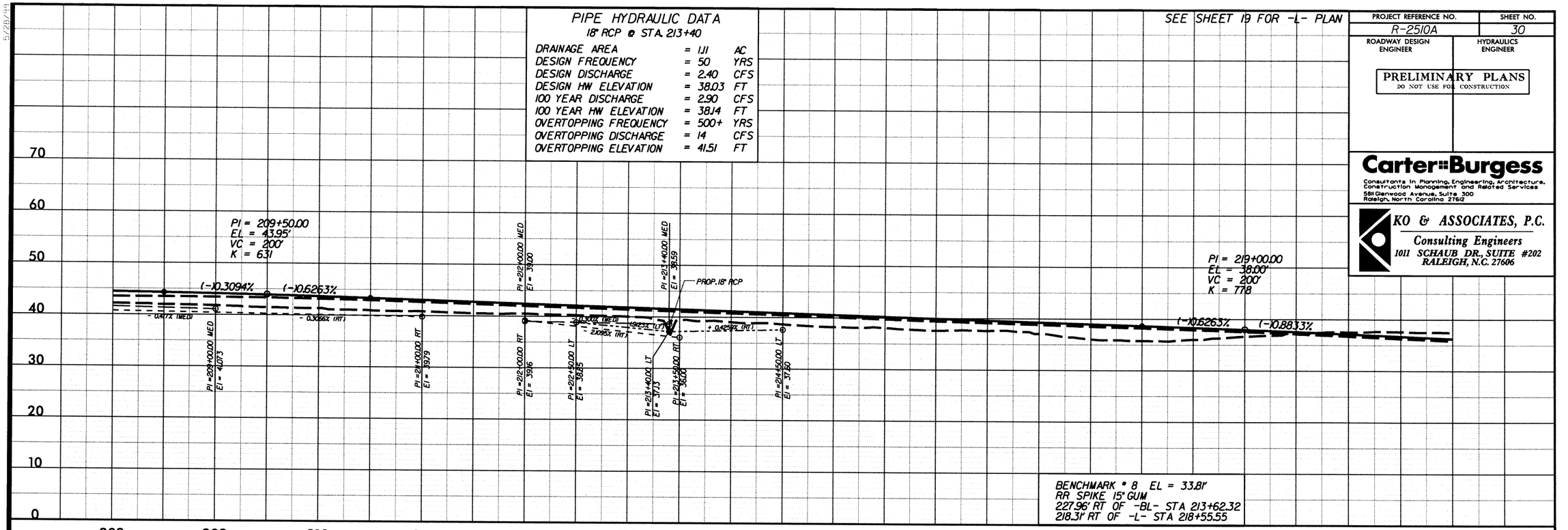
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Carter::Burgess
Consultants in Planning, Engineering, Architecture, Construction Management and Related Services
5811 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27612

KO & ASSOCIATES, P.C.
Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606



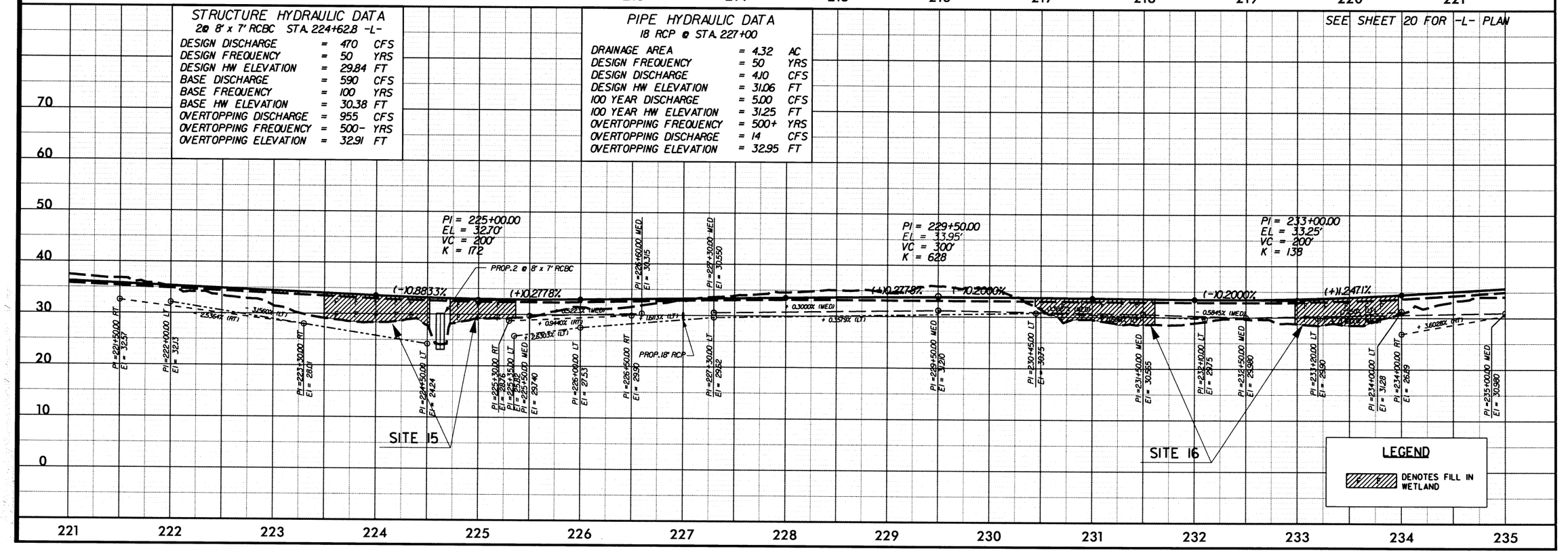
STRUCTURE HYDRAULIC DATA
2@ 8' x 7' RCBC STA. 224+62.8 -L-

DESIGN DISCHARGE	= 470	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 29.84	FT
BASE DISCHARGE	= 590	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 30.38	FT
OVERTOPPING DISCHARGE	= 955	CFS
OVERTOPPING FREQUENCY	= 500-	YRS
OVERTOPPING ELEVATION	= 32.91	FT

PIPE HYDRAULIC DATA
18 RCP @ STA. 227+00

DRAINAGE AREA	= 4.32	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 4.10	CFS
DESIGN HW ELEVATION	= 31.06	FT
100 YEAR DISCHARGE	= 5.00	CFS
100 YEAR HW ELEVATION	= 31.25	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 14	CFS
OVERTOPPING ELEVATION	= 32.95	FT

SEE SHEET 20 FOR -L- PLAN



SEE SHEET 21 FOR -L- PLAN

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	31
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Carter::Burgess
Consultants in Planning, Engineering, Architecture, Construction Management and Related Services
5811 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27612

KO & ASSOCIATES, P.C.
Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606

PI = 237+25.00
EL = 38.55'
VC = 370'
K = 153

(+)1.241%

(-)1.1745%

0.3000% (RT)

3.6108% (RT)

3.2782% (LT)

3.4814% (RT)

END GRADE
PI = 241+15.00
ELEV = 33.97'
(INCLUDES 3" OF RESURFACING)

END CONSTRUCTION
PI = 241+65.00
ELEV = 33.38'

FEATHER TO MATCH EXISTING

PI =241+65.000 LT
EL = 25.69

PI =235+00.00 MED
EL = 30.980

PI =235+50.00 RT
EL = 32.29

PI =238+00.00 RT
EL = 33.04

PI =239+50.000 RT
EL = 31.36

PI =240+00.000 RT
EL = 30.86

PI =240+00.000 LT
EL = 32.00

PI =241+70.000 RT
EL = 25.00

SITE 17

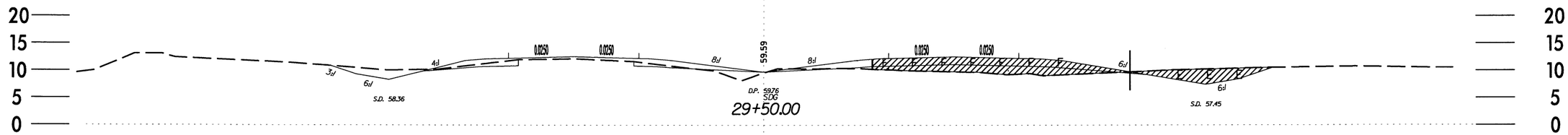
BENCHMARK # 9 EL = 40.94'
RR SPIKE IN 42" OAK
81.86' LT OF -BL- STA 241.89J5

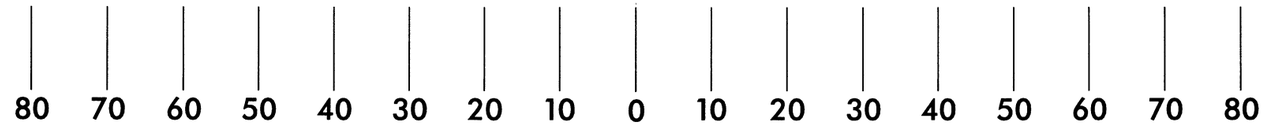
LEGEND

DENOTES FILL IN WETLAND

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	SITE 1
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION





LEGEND

F F DENOTES FILL IN WETLANDS

E E DENOTES EXCAVATION IN WETLANDS

X-SECTION

SITE 1

STA 29+50

ENGLISH

NORTH CAROLINA
DEPARTMENT OF HIGHWAYS

BEAUFORT COUNTY
34440.1.1 (R-2510A)

US 17 FROM SOUTH OF SR 1127 (POSSUM TRACK ROAD)
TO SR 1149 (PRICE ROAD)

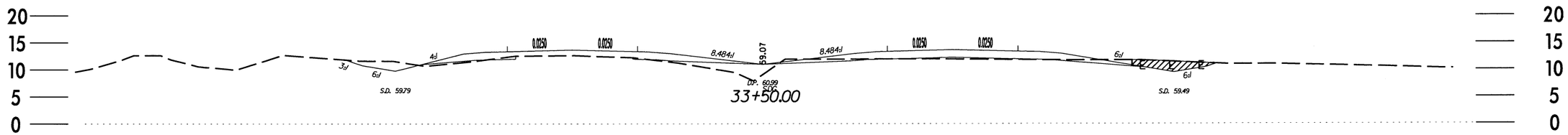
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 20'

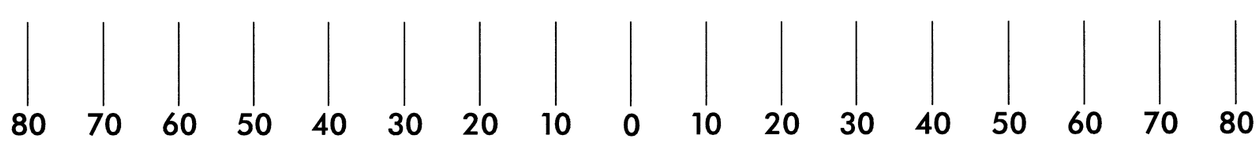
DATE: APR-05

SHEET 1 OF 14

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	SITE 2
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION





LEGEND

DENOTES EXCAVATION IN WETLANDS

X-SECTION

SITE 2

STA 33 + 50

ENGLISH

NORTH CAROLINA
DEPARTMENT OF HIGHWAYS

BEAUFORT COUNTY
34440.1.1 (R-2510A)

US 17 FROM SOUTH OF SR 1127 (POSSUM TRACK ROAD)
TO SR 1149 (PRICE ROAD)

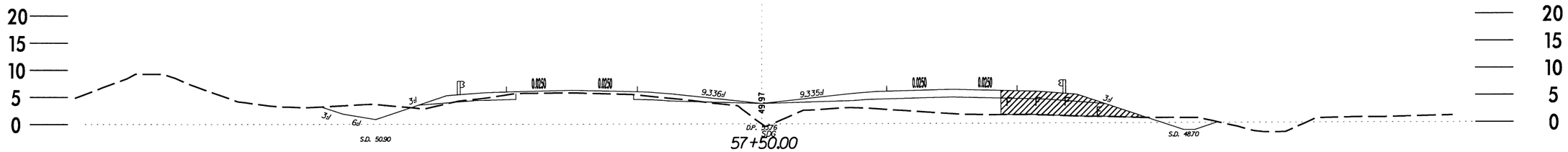
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 20'

DATE: APR-05

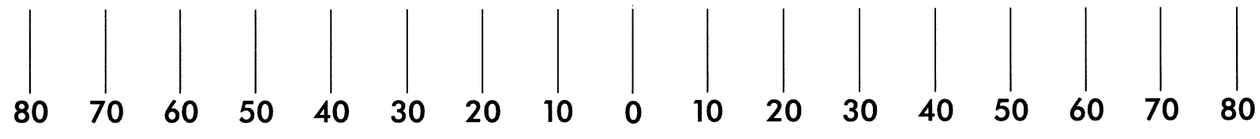
SHEET 2 OF 14

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	SITE 3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



57+50.00



LEGEND

F F DENOTES FILL IN WETLANDS

X-SECTION

SITE 3

STA 57 + 50

ENGLISH

NORTH CAROLINA
DEPARTMENT OF HIGHWAYS

BEAUFORT COUNTY
34440.1.1 (R-2510A)

US 17 FROM SOUTH OF SR 1127 (POSSUM TRACK ROAD)
TO SR 1149 (PRICE ROAD)

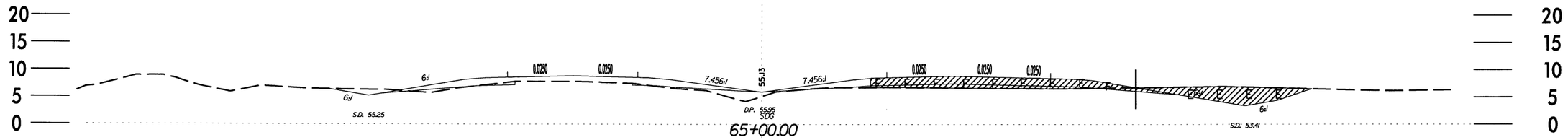
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 20'

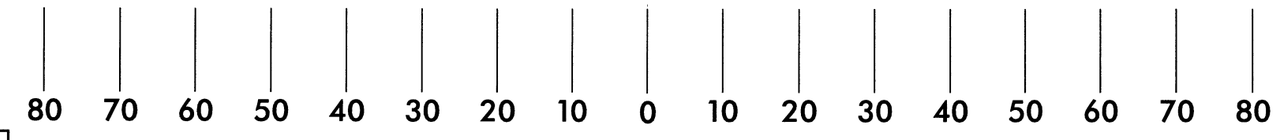
DATE: APR-05

SHEET 3 OF 14

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	SITE 4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION





LEGEND

F F DENOTES FILL IN WETLANDS

E E DENOTES EXCAVATION IN WETLANDS

X-SECTION

SITE 4

STA 65 + 00

ENGLISH

NORTH CAROLINA
DEPARTMENT OF HIGHWAYS

BEAUFORT COUNTY
34440.1.1 (R-2510A)

US 17 FROM SOUTH OF SR 1127 (POSSUM TRACK ROAD) TO SR 1149 (PRICE ROAD)

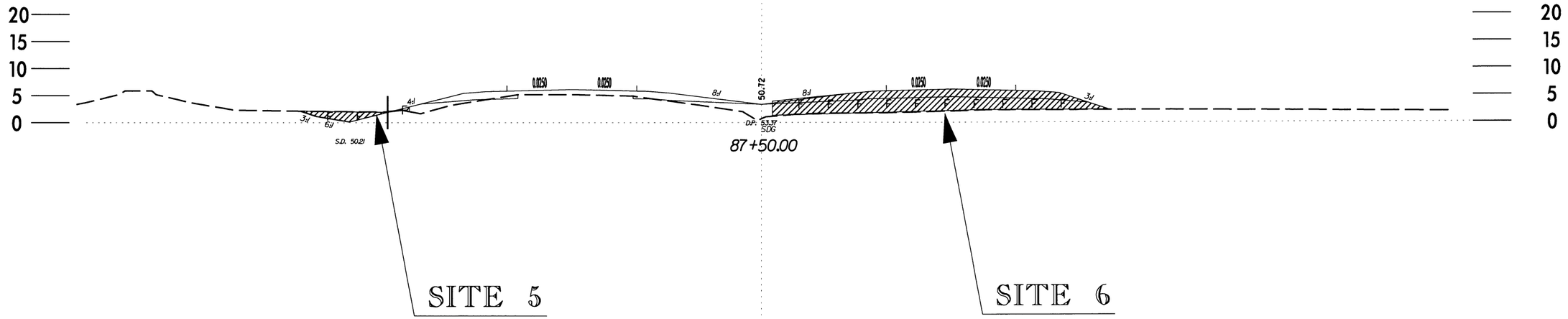
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 20'

DATE: APR-05

SHEET 4 OF 14

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	SITES 5&6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



LEGEND

FF DENOTES FILL IN WETLANDS

EE DENOTES EXCAVATION IN WETLANDS

X-SECTION

SITES 5 & 6

STA 87+00

NORTH CAROLINA
DEPARTMENT OF HIGHWAYS

BEAUFORT COUNTY
34440.1.1 (R-2510A)

US 17 FROM SOUTH OF SR 1127 (POSSUM TRACK ROAD) TO SR 1149 (PRICE ROAD)

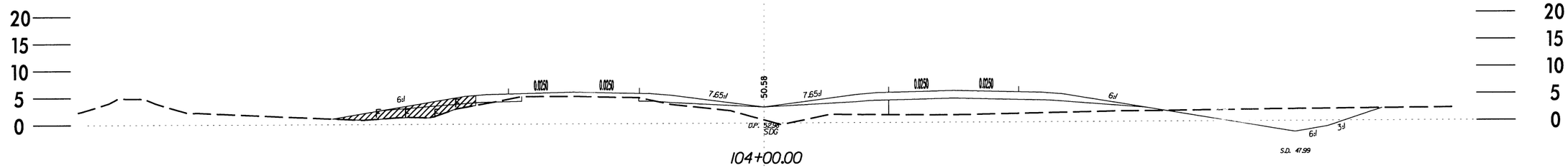
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 20'

DATE: APR-05

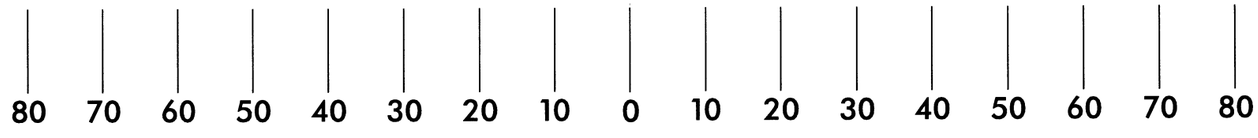
SHEET 5 OF 14

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	SITE 7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



104+00.00



LEGEND

F F DENOTES FILL IN WETLANDS

X-SECTION

SITE 7

STA 104 + 00

ENGLISH

NORTH CAROLINA
DEPARTMENT OF HIGHWAYS

BEAUFORT COUNTY
34440.1.1 (R-2510A)

US 17 FROM SOUTH OF SR 1127 (POSSUM TRACK ROAD)
TO SR 1149 (PRICE ROAD)

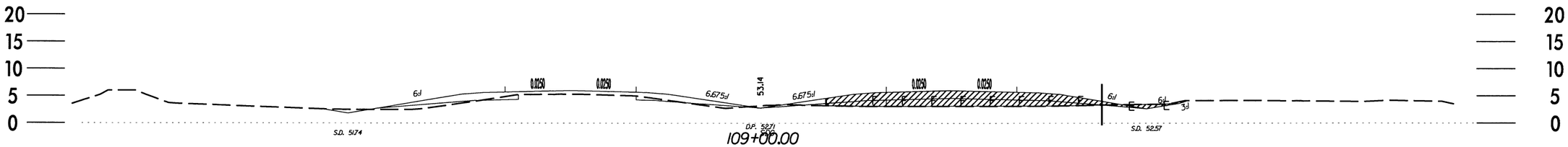
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 20'

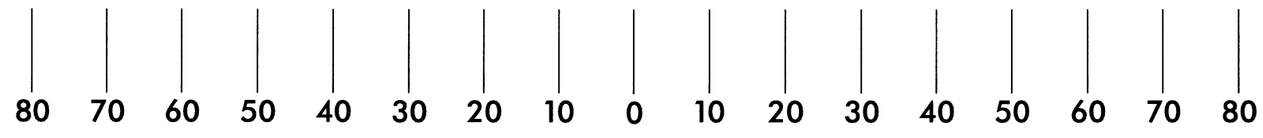
DATE: APR-05

SHEET 6 OF 14

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	SITE 8
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION





LEGEND

F F DENOTES FILL IN WETLANDS

E E DENOTES EXCAVATION IN WETLANDS

X-SECTION

SITE 8

STA 109 + 00

ENGLISH

NORTH CAROLINA
DEPARTMENT OF HIGHWAYS

BEAUFORT COUNTY
34440.1.1 (R-2510A)

US 17 FROM SOUTH OF SR 1127 (POSSUM TRACK ROAD)
TO SR 1149 (PRICE ROAD)

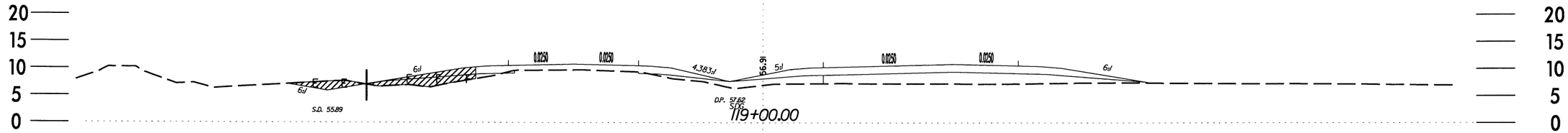
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 20'

DATE: APR-05

SHEET 7 OF 14

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	SITE 9
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

LEGEND

F F DENOTES FILL IN WETLANDS

E E DENOTES EXCAVATION IN WETLANDS

X-SECTION

SITE 9

STA 119 + 00

ENGLISH

NORTH CAROLINA
DEPARTMENT OF HIGHWAYS

BEAUFORT COUNTY
34440.1.1 (R-2510A)

US 17 FROM SOUTH OF SR 1127 (POSSUM TRACK ROAD)
TO SR 1149 (PRICE ROAD)

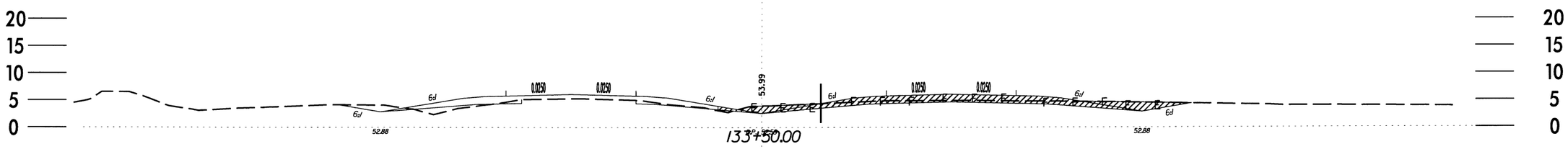
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 20'

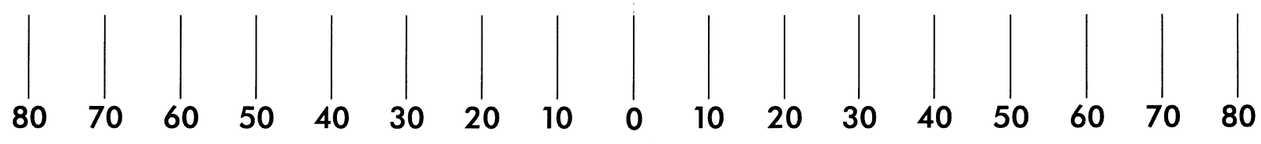
DATE: APR-05

SHEET 8 OF 14

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	SITE 10
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION





LEGEND

F F DENOTES FILL IN WETLANDS

E E DENOTES EXCAVATION IN WETLANDS

X-SECTION
SITE 10
STA 133 + 50

ENGLISH

NORTH CAROLINA
DEPARTMENT OF HIGHWAYS

BEAUFORT COUNTY
34440.1.1 (R-2510A)

US 17 FROM SOUTH OF SR 1127 (POSSUM TRACK ROAD) TO SR 1149 (PRICE ROAD)

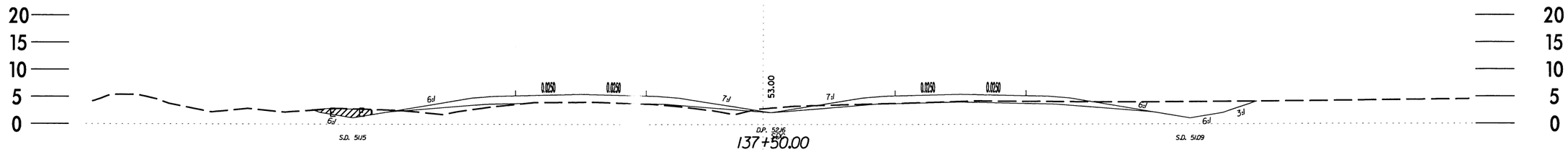
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 20'

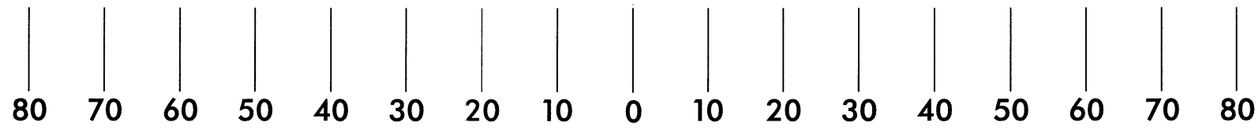
DATE: APR-05

SHEET 9 OF 14

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	SITE 11
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION





LEGEND

E E DENOTES EXCAVATION IN WETLANDS

X-SECTION

SITE 11

STA 137 + 50

ENGLISH

NORTH CAROLINA
DEPARTMENT OF HIGHWAYS

BEAUFORT COUNTY
34440.1.1 (R-2510A)

US 17 FROM SOUTH OF SR 1127 (POSSUM TRACK ROAD)
TO SR 1149 (PRICE ROAD)

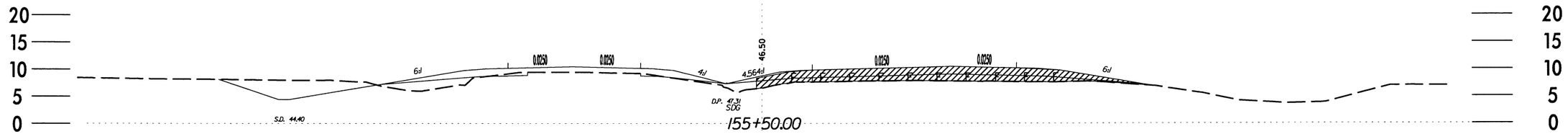
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 20'

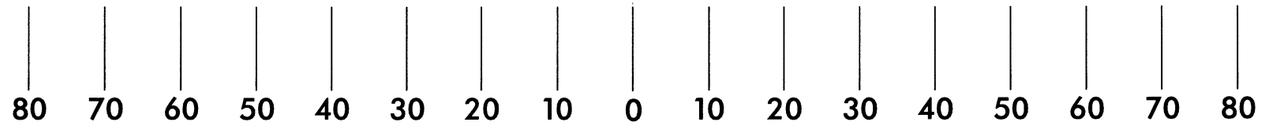
DATE: APR-05

SHEET 10 OF 14

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	SITE 12
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION





LEGEND

F F DENOTES FILL IN WETLANDS

X-SECTION

SITE 12

STA 155 + 50

NORTH CAROLINA
DEPARTMENT OF HIGHWAYS

BEAUFORT COUNTY
34440.1.1 (R-2510A)

US 17 FROM SOUTH OF SR 1127 (POSSUM TRACK ROAD) TO SR 1149 (PRICE ROAD)

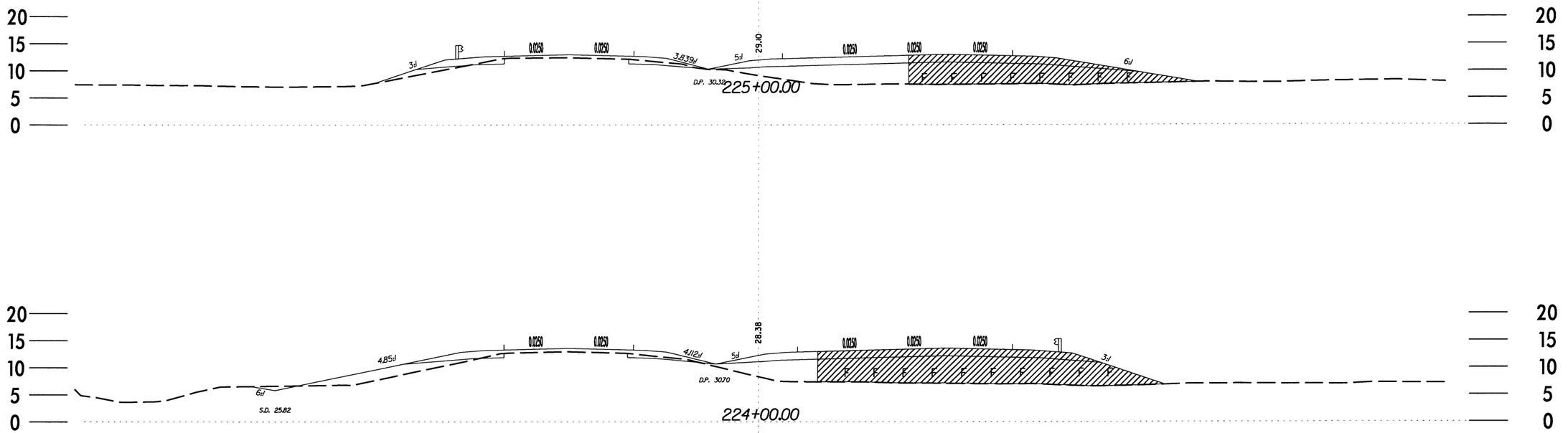
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 20'

DATE: APR-05

SHEET 11 OF 14

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	SITE 15
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



X-SECTION

SITE 15
STA 224 + 00 &
STA 225 + 00

LEGEND

F F DENOTES FILL IN WETLANDS

ENGLISH

NORTH CAROLINA
DEPARTMENT OF HIGHWAYS

BEAUFORT COUNTY
34440.1.1 (R-2510A)

US 17 FROM SOUTH OF SR 1127 (POSSUM TRACK ROAD)
TO SR 1149 (PRICE ROAD)

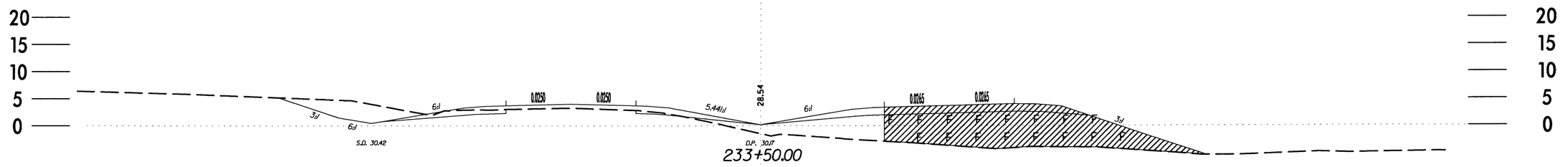
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 20'

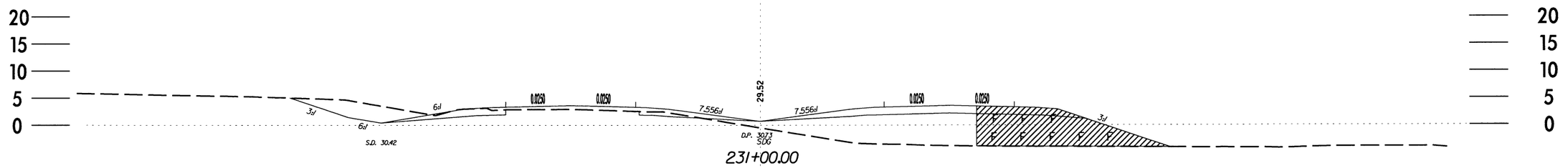
DATE: APR-05

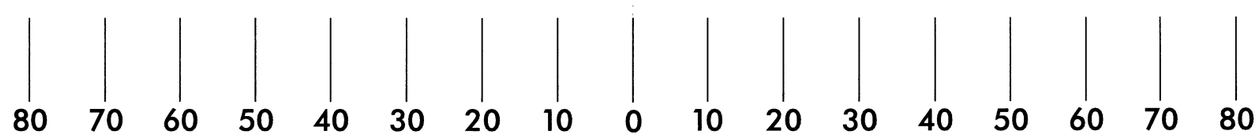
SHEET 12 OF 14

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	SITE 16
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION







LEGEND

F F DENOTES FILL IN WETLANDS

X-SECTION

SITE 16
STA 231 + 00 &
STA 233 + 50

ENGLISH

NORTH CAROLINA
DEPARTMENT OF HIGHWAYS

BEAUFORT COUNTY
34440.1.1 (R-2510A)

US 17 FROM SOUTH OF SR 1127 (POSSUM TRACK ROAD)
TO SR 1149 (PRICE ROAD)

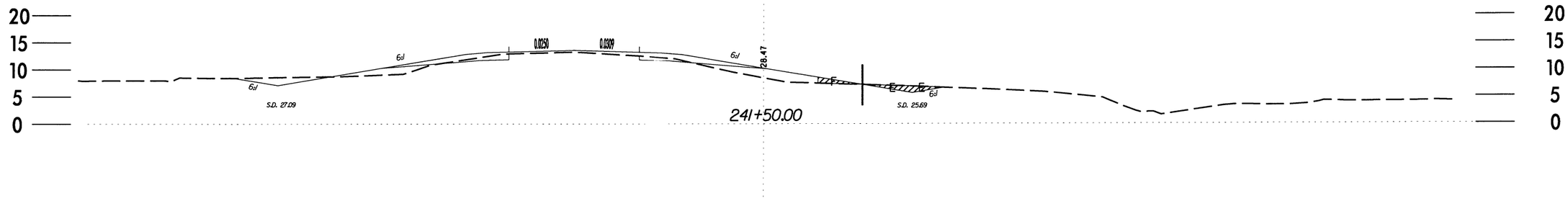
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 20'

DATE: APR-05

SHEET 13 OF 14

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	SITE 17
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

LEGEND

F F DENOTES FILL IN WETLANDS

E E DENOTES EXCAVATION IN WETLANDS

X-SECTION

SITE 17

STA 241 + 50

ENGLISH

NORTH CAROLINA
DEPARTMENT OF HIGHWAYS

BEAUFORT COUNTY
34440.1.1 (R-2510A)

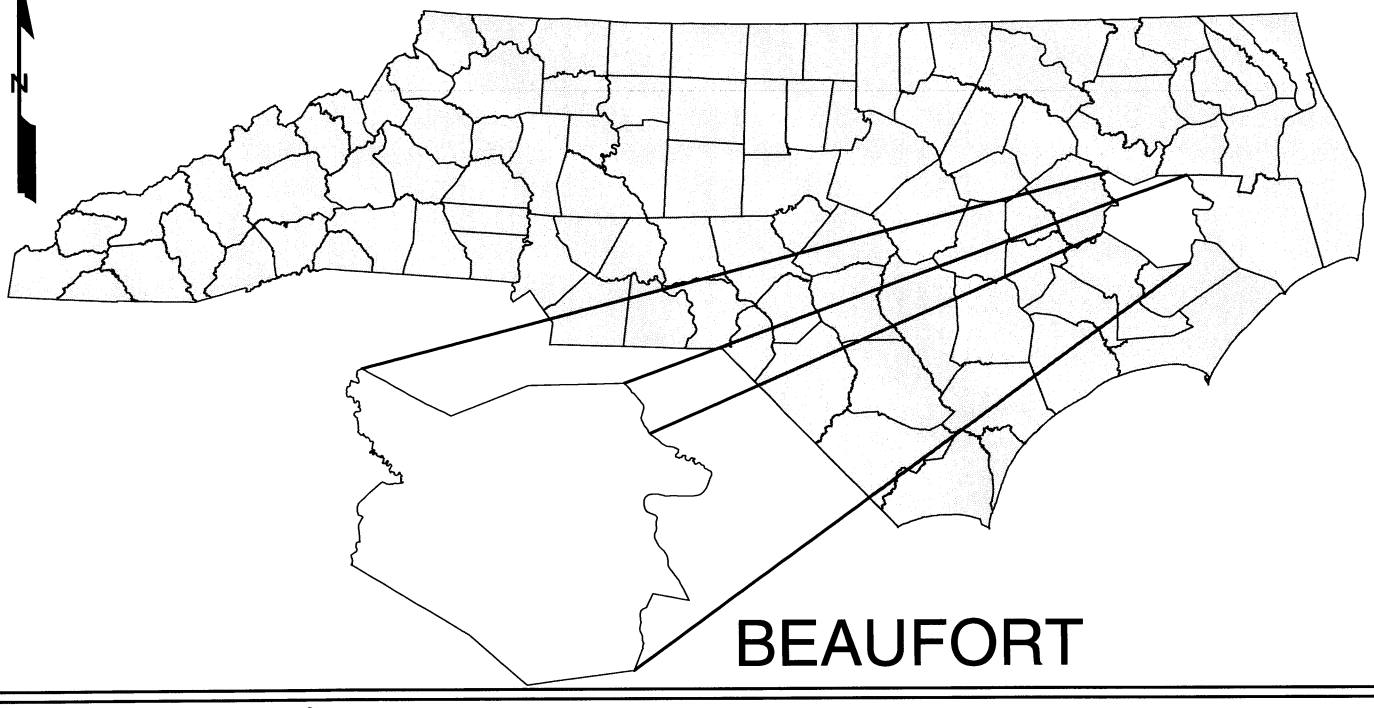
US 17 FROM SOUTH OF SR 1127 (POSSUM TRACK ROAD)
TO SR 1149 (PRICE ROAD)

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 20'

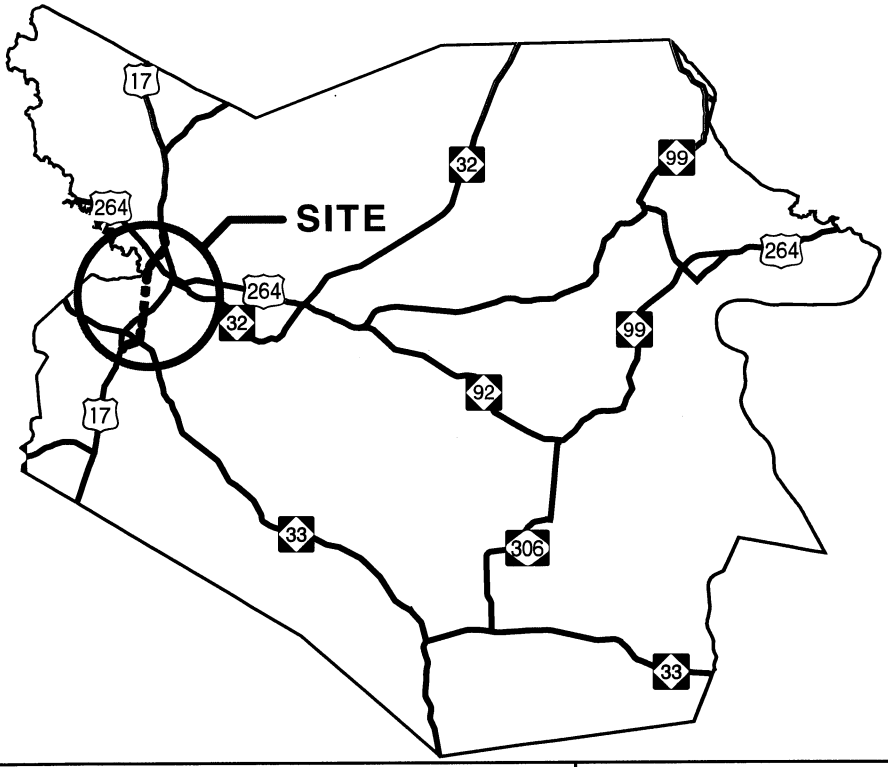
DATE: APR-05

SHEET 14 OF 14

NORTH CAROLINA



BEAUFORT

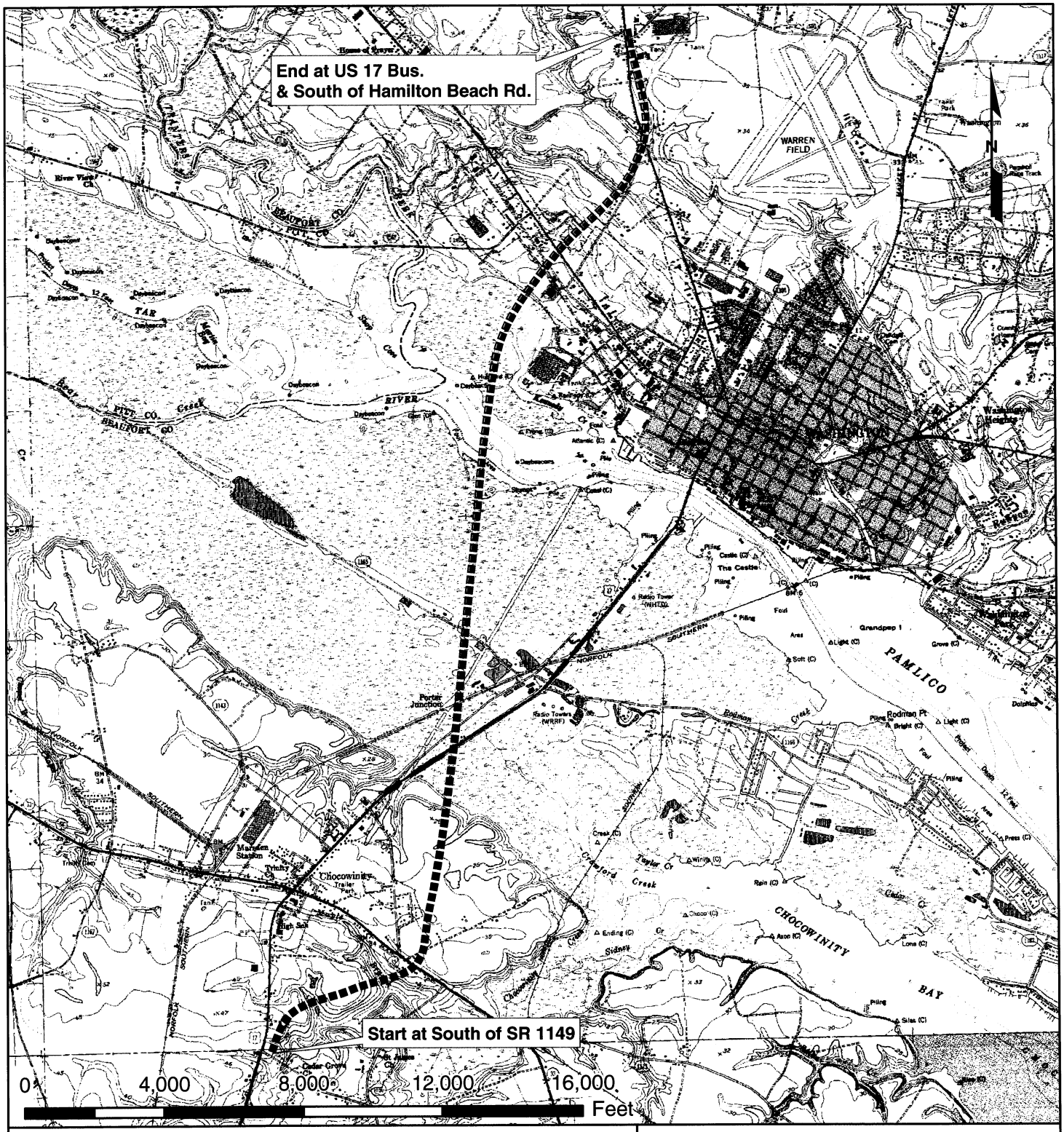


VICINITY MAPS

NCDOT

DIVISION OF HIGHWAYS
BEAUFORT COUNTY
PROJECT: 34440.1.1 (R-2510B)
US 17 BYPASS

3/11/05



1 inch equals 4,000 feet

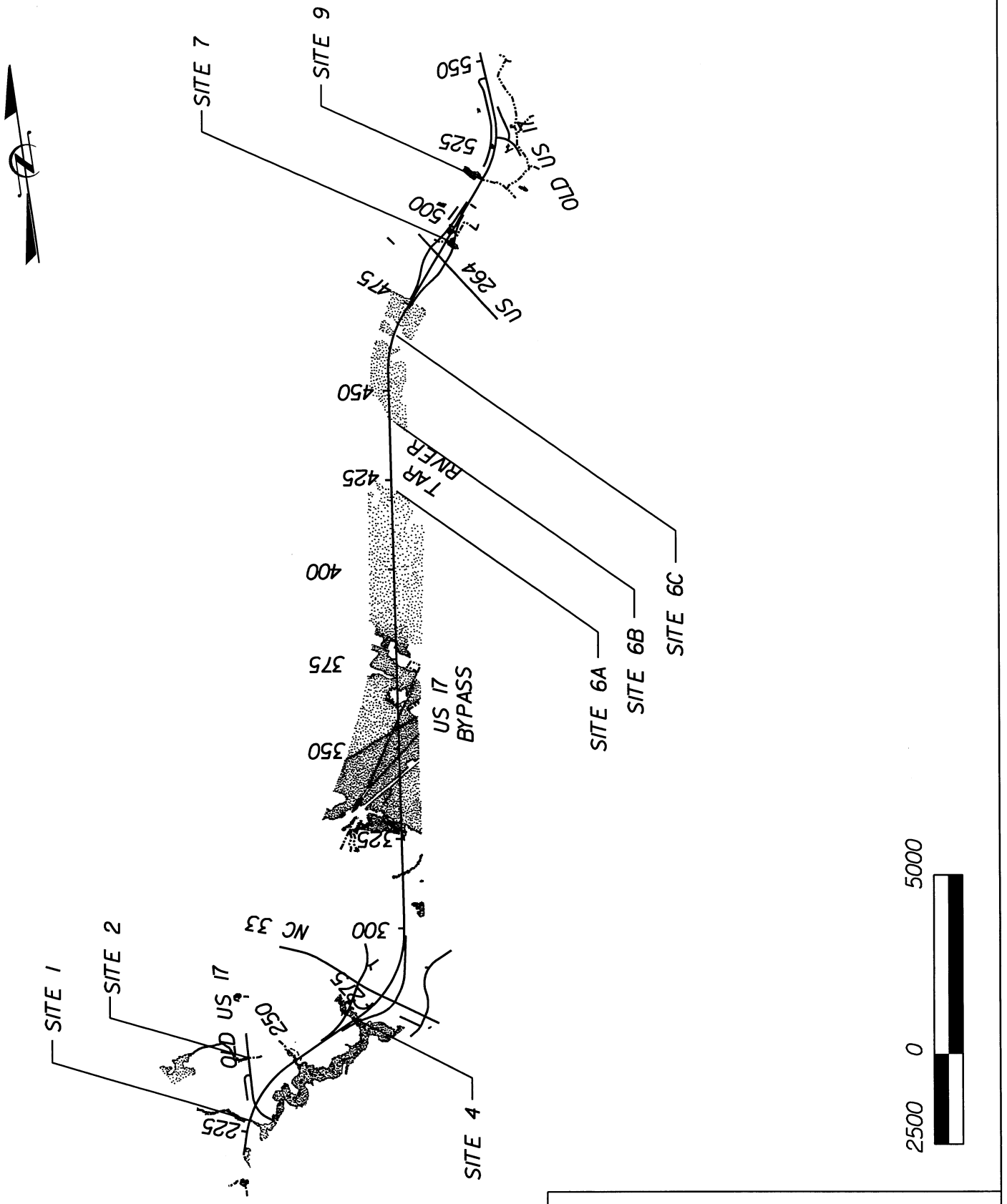
LOCATION

NCDOT

DIVISION OF HIGHWAYS
BEAUFORT COUNTY
PROJECT: 34440.1.1 (R-2510B)
US 17 BYPASS

3/11/05

Source: USGS 7.5 Minute Quadrangle, Washington and Hackney, NC



SITE MAP

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
BEAUFORT COUNTY

PROJECT 34440.1.1 (R-2510B)

US 17 BYPASS

03 / 11 / 05

R:\HYDRAULICS\SITE_BUFF.DGN

PROP. NO.	PROPERTY OWNER NAME	PROP. OWNER MAILING ADDRESS
10	PEED, RICHARD D JR & KRISTEN M	410 TRANTERS CREEK DR, WASHINGTON, NC 27889
11	WINFIELD, WILLIAM BERNARD	527 W MAIN ST, WASHINGTON, NC 27889
12	MCCROY, GEORGE MAYHEW &	NA
13	CIRICLIO, RONNIE M & RANDY J	57 HILLANDALE AVE, WHITE PLAINS, NY 10603
21	SINGLETON B E JR & MARSHALL T	920 W 3RD ST, WASHINGTON, NC 27889
25	RHEM, J DAN SR	NA
26	GODFREY, OTIS A	810 RIVER RD, WASHINGTON, NC 27889
30	BONDY, EMILY WINFIELD	527 W MAIN ST, WASHINGTON, NC 27889
31	WINFIELD, ZELMA M	627 W MAIN ST, WASHINGTON, NC 27889

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

BEAUFORT COUNTY
PROJECT: 34440.1.1 (R-2510B)

1/7/2005

R:\Z-MISC\HYDRO\BUFFPROP.XLS

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation In Wetlands (ac)	Mechanized Clearing (Method III) (ac)	SURFACE WATER IMPACTS: Fill In SW (Natural) (ac)	Fill In SW (Pond) (ac)	Temp. Fill In SW (ac)	Existing Channel Impacted (ft)	Natural Stream Design (ft)
1	-L-228+25	Roadway Fill	0.092			0.007	0.011			121.6	
2	-BY9-30+40	Roadway Fill			0.017	0.013	0.003			72.7	
3	-L-250+50	Roadway Fill	0.431			0.040	0.114	0.645			
4	-L-270+00	Roadway Fill	3.032			0.149				826.1	
5	-L-315+25	Roadway Fill	0.122			0.011					
6	-L- 324+50-476+60	Bridge Fill	0.216	0.050			0.069		0.033		
7	-L- 495+00-499+50	Roadway Fill	1.554				0.128			1118.0	
8	-L-508+00	Roadway Fill	0.042					0.074			
9	-L-515+50	Roadway Fill	0.126			0.017	0.051			278.9	
10	-L-525+50	Roadway Fill	0.223								
TOTALS:			5.839	0.050	0.017	0.237	0.376	0.719	0.033	2417.3	0

NOTE: WETLANDS IN CUT RUN PERPINDICULAR AND AWAY FROM THE ROADWAY, NOT PARALLEL. THEREFORE, DRAWDOWN EFFECT WAS NOT CALCULATED.

BRIDGE SHADING: 24.9 ac (DOES NOT INCUDE TAR RIVER OR KENNEDY'S CREEK)
AVERAGE BRIDGE HEIGHT OVER TAR RIVER: APPR. 39 ft

Form Revised 3/22/01

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

BEAUFORT COUNTY
PROJECT 3.4440.1.1 (R-2510B)

3/22/2005

BUFFER IMPACTS SUMMARY

			IMPACT								BUFFER REPLACEMENT	
			TYPE		ALLOWABLE			MITIGABLE				
SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	ROAD CROSSING	PARALLEL IMPACT	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)
1	Roadway	-L- 228+25	X		6676.6	4450.0	11126.6					
2	Roadway	-BY9- 30+40	X		2842.1	1992.6	4834.8					
4	Roadway	-L- 269+90	X					49735.4	32361.0	82096.4		
6a	Perm. Bridge	-L- 422+00	X		3985.8	2628.2	6614.0					
6a	Temp. Bridge	-L- 422+00	X		5438.9	3587.0	9025.9					
6b	Perm. Bridge	-L- 441+00	X		3933.7	2479.5	6413.2					
6b	Temp. Bridge	-L- 441+00	X		6254.7	4148.6	10403.3					
6c	Bridge	-L- 459+00-469+00	X					29045.5	19778.2	48823.7		
7	Roadway	-L- 495+50	X					60721.8	38160.8	98882.6		
9	Roadway	-L- 515+55	X					16736.8	11154.9	27891.7		
TOTAL:					22455.2	14835.8	48417.7	156239.5	101454.9	257694.4		

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

BEAUFORT COUNTY
PROJECT: 34440.1.1 (R-2510B)

3/11/2005

R:Z-MISC\HYDRO\BUFPERM_SUMMARY_ENGLISH.XLS

BUFFER IMPACTS SUMMARY

		WETLANDS IN BUFFER	
Site	Station	ZONE 1 (ft^2)	ZONE 2 (ft^2)
1	-L- 228+25	4312.9	0.0
2	-BY9- 30+40	1179.5	98.8
4	-L- 269+90	48299.0	24287.9
6a	-L- 422+00	35.5	3.0
6b	-L- 441+00	7.5	3.0
6c	-L- 459+00-469+00	35.5	41.5
7	-L- 495+50	3079.2	5244.5
9	-L- 515+55	2253.9	1944.5
		59202.9	31623.2

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

BEAUFORT COUNTY
PROJECT: 344401.1 (R-2510B)

3/22/2005

-L- PROFILE

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	PFL 1
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

8/17/99

NOTES:
-PERMANENT BRIDGE ASSUMES 90.0' BRIDGE SPANS (EXCEPT IN AREAS OF VARIATION CROSSING ROADS AND RAILROAD)
-TEMPORARY BRIDGE AND BRIDGE FINGERS ASSUME 50.0' BRIDGE SPANS (EXCEPT IN AREAS OF VARIATION CROSSING ROADS AND RAILROAD) HEIGHT AND DEPTH OF TEMPORARY STRUCTURES TO BE DETERMINED BY CONTRACTOR.

BEGIN BRIDGE -ALT-B- STA. 325+00

EXT. US 17-BY14- POT STA 18+57.72=
ALT-B- POT STA 342+30.29

SR 1171-BY15- POT STA 16+33.76=
ALT-B- POT STA 348+18.42

NORTHWESTERN RR -Y16- POT STA 21+16.95=
ALT-B- POT STA 355+86.67

SR 1165-Y17- POT STA 14+83.07=
ALT-B- POT STA 376+70.91

Super Structure Depth =6.20'

EXT. US 17 (BY14)

SR 1171 (BY15)
PACKING HOUSE RD

RAILROAD (BY16)
NORTHWESTERN

SR 1165 (Y17)
SAND HOLE ROAD

80 70 60 50 40 30 20 10 0

321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393

PI = 413+15.48
EL = 61.21'
VC = 2.500'
K = 4167

(+)0.3000%

(-)0.3000%

Super Structure Depth =6.20'

TAR RIVER

TEMP. BULKHEAD (ASSUME 4:1 SIDE SLOPES TO 6.0' WATER DEPTH

TEMP. BULKHEAD (ASSUME 4:1 SIDE SLOPES TO 6.0' WATER DEPTH

80 70 60 50 40 30 20 10 0

393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465

01/07/2005
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-L- PROFILE

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	PFL 2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NOTES:
-PERMANENT BRIDGE ASSUMES 90.0' BRIDGE SPANS (EXCEPT IN AREAS OF VARIATION CROSSING ROADS AND RAILROAD)
-TEMPORARY BRIDGE AND BRIDGE FINGERS ASSUME 50.0' BRIDGE SPANS (EXCEPT IN AREAS OF VARIATION CROSSING ROADS AND RAILROAD) HEIGHT AND DEPTH OF TEMPORARY STRUCTURES TO BE DETERMINED BY CONTRACTOR.

-BY19RPC- POT STA 10+00 (47' RT)=
-ALT-B- POT STA 474+00

-BY19RPB- TS STA 10+00 (41' LT)=
-ALT-B- POT STA 476+56.68

PI = 489+00.00
EL = 38.46'
VC = 500'
K = 833

US 264-BY19- POT STA 241+51.54=
-ALT-B- POT STA 491+08.36

PI = 497+00.00
EL = 40.86'
VC = 600'
K = 857

-BY19RPD- TS STA 10+00 (47' RT)=
-ALT-B- POT STA 504+39.43
15th STREET BY20- POT STA 23+21.19=
-ALT-B- POT STA 505+34.98

-BY19RPA-POT STA 10+00 (47' LT)=
-ALT-B- POT STA 508+00.00

PI = 524+00.00
EL = 30.06'
VC = 400'
K = 571

US17AC- POT STA 10+00=
-ALT-B- POC STA 528+00.00

(-)0.3000%
(+)0.3000%
(-)0.4000%
(+)0.4000%

US264 (BY19)
Super Structure Depth =7.218'
15th STREET (Y-20)
Super Structure Depth =7.218'

465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537

REVISIONS

8/17/99

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English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MITIGABLE IMPACTS ZONE 1

MITIGABLE IMPACTS ZONE 2

NOTE:
- SLOPE STAKES MODIFIED AT PERMIT SITES TO REFLECT 3:1 SLOPES. ORIGINAL 2:1 SLOPES ARE LEFT FOR COMPARISON.

BEGIN STATE PROJECT R-2510
-L- STA. 223+00.00

TAYLOR, JOHN ECKLIN

REWS,
MOND J

ISFD

(CHORD)

(CHORD) SITE 1

10
PEED, RICHARD D JR
&
KRISTEN M

WLB

BZ 1

BZ 2

R/W

230

MATCH LINE-SR-B21- -BY9- STA. 17+00.00

MATCH LINE -BY9- STA. 20+00.00

MATCH LINE -L- STA. 235+00.00

MATCH LINE -BY9- STA. 12+88.23

REVISIONS

8/17/99

03/4/2005
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8/17/99

REVISIONS

MITIGABLE IMPACTS ZONE 1

MITIGABLE IMPACTS ZONE 2

NOTE:
- SLOPE STAKES MODIFIED AT PERMIT SITES TO REFLECT 3:1 SLOPES. ORIGINAL 2:1 SLOPES ARE LEFT FOR COMPARISON.

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	7

R/W SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SITE 4

MATCH LINE -L- STA. 260+00.00

MATCH LINE -L- STA. 273+50.00

265

35

30

15

WLB

BZ 1

BZ 2

(12) MCROY, GEORGE MAYHEW &

(13) CIRICLIO, RONNIE M & RANDY J

03/02/2005
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jones

8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

21
SINGLETON B E JR & MARSHALL T

420

425

TAR RIVER

BZ 2
BZ 1

MATCH LINE -L- STA. 416+50.00

MATCH LINE -L- STA. 429+50.00

21
SINGLETON B E JR & MARSHALL T

SITE 6

ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2

03/4/2005
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8/17/99

REVISIONS

SITE 6

ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

430

TAR RIVER

435

440

MATCH LINE -L- STA. 429+50.00

MATCH LINE -L- STA. 442+50.00

BZ 1

BZ 2

BZ 1

BZ 2

25

RHEM, J DAN SR

03/4/2005
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mmac

8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

1

1260' ILLUMAN TAPER

25
RHEM, J DAN JR

460

C
A

BZ 1
BZ 2

MATCH LINE -L- STA. 455+50.00

MATCH LINE -L- STA. 468+00.00

SITE 6

25
RHEM, J DAN SR

KENNEDY'S CREEK

MITIGABLE IMPACTS ZONE 1

MITIGABLE IMPACTS ZONE 2

03/4/2005
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REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	23
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MITIGABLE IMPACTS ZONE 1

MITIGABLE IMPACTS ZONE 2

SITE 6

25
RHEM, J DAN SR

KNOTT, RUFUS H &

470

475

480

(CHORD)

C
A

WLB

RW

10

15

MATCH LINE -L- STA. 468+00.00

MATCH LINE -L- STA. 480+50.00

(CHORD)

(CHORD)

PA

SILOS

TR

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mgore

8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	25
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MITIGABLE IMPACTS ZONE 1

MITIGABLE IMPACTS ZONE 2

NOTE:
- SLOPE STAKES MODIFIED AT PERMIT SITES TO REFLECT 3:1 SLOPES. ORIGINAL 2:1 SLOPES ARE LEFT FOR COMPARISON.

MANNING
RUSSELL
EDWARD

UNKNOWN

MATCH LINE -L- STA. 493+50.00

MATCH LINE -L- STA. 506+50.00

SITE 7

(26)
GODFREY, OTIS A

LILLEY,
DALTON G &

ISBK BUS

PA

HTR

WLB

BZ 1

BZ 2

C A F

20 500 15 505 10

(CHORD)

03/4/2005
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mmoak

8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	26
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NOTE:
- SLOPE STAKES MODIFIED AT PERMIT SITES TO REFLECT 3:1 SLOPES. ORIGINAL 2:1 SLOPES ARE LEFT FOR COMPARISON.

MITIGABLE IMPACTS ZONE 1

MITIGABLE IMPACTS ZONE 2

13.3 BST

POND
WE 3.1

PA

LOWES
INVESTMENT
CORP #65

ISMTL BUS

PA

MTL
CANOPY

MTL CANOPY

MTL CANOPY

CONC

27

LILLEY, DALTON G &

CHERRY RUN WETLAND

WLB

POND
WE 1.7

BZ 1

BZ 2

10

PL 510 (CHORD)

F

10

(CHORD)

C
A

MATCH LINE -L- STA. 506+50.00

MATCH LINE -L- STA. 519+50.00

POND
WE 2.7

UNKNOWN

NO BUFFERS;
ONLY WETLAND

SITE 8

SITE 9

UNKNOWN

ISBK BUS

PA

ISBKD

S

ISBKD

ISBKD

ISBKD

LITTLE,
HAZEL
LEE

ISFD

R/W

SR

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8/17/99

NOTE:
- SLOPE STAKES MODIFIED AT PERMIT SITES TO REFLECT 3:1 SLOPES. ORIGINAL 2:1 SLOPES ARE LEFT FOR COMPARISON.

ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	32
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MATCH LINE
-BY9- STA. 24+00.00

(30)
BONDY, EMILY WINFIELD

720' Taper

F C
C
C
25
S
S
IS BK BUS
158Z
C
R/W
C
C
C

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MITIGABLE IMPACTS ZONE 1

MITIGABLE IMPACTS ZONE 2

NOTE:
- SLOPE STAKES MODIFIED AT PERMIT SITES TO REFLECT 3:1 SLOPES. ORIGINAL 2:1 SLOPES ARE LEFT FOR COMPARISON.

BEGIN STATE PROJECT R-2510
-L- STA. 223+00.00

TAYLOR, JOHN ECKLIN

REWS,
MOND J

ISFD

(CHORD)

(CHORD) SITE 1

10
PEED, RICHARD D JR
&
KRISTEN M

MATCH LINE-SR-B21- -BY9- STA. 17+00.00

MATCH LINE -BY9- STA. 20+00.00

MATCH LINE -L- STA. 235+00.00

MATCH LINE -BY9- STA. 12+88.23

WLB

TBM

BZ 1

BZ 2

R/W

230

REVISIONS

8/17/99

03/4/2005
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mmoss

8/17/99

REVISIONS

MITIGABLE IMPACTS ZONE 1

MITIGABLE IMPACTS ZONE 2

NOTE:
- SLOPE STAKES MODIFIED AT PERMIT SITES TO REFLECT 3:1 SLOPES. ORIGINAL 2:1 SLOPES ARE LEFT FOR COMPARISON.

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SITE 4

MATCH LINE -L- STA. 260+00.00

MATCH LINE -L- STA. 273+50.00

265

35

30

15

F

WLB

BZ 1

BZ 2

(12) MCROY, GEORGE MAYHEW &

(13) CIRICLIO, RONNIE M & RANDY J

03/4/2005
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mmoss

8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

21

SINGLETON B E JR & MARSHALL T

420

425

TAR RIVER

BZ 2

BZ 1

MATCH LINE -L- STA. 416+50.00

MATCH LINE -L- STA. 429+50.00

SITE 6

ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2

03/4/2005
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jpark

English	PROJECT REFERENCE NO.	SHEET NO.
	R-2510B	20
	R/W SHEET NO.	
	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

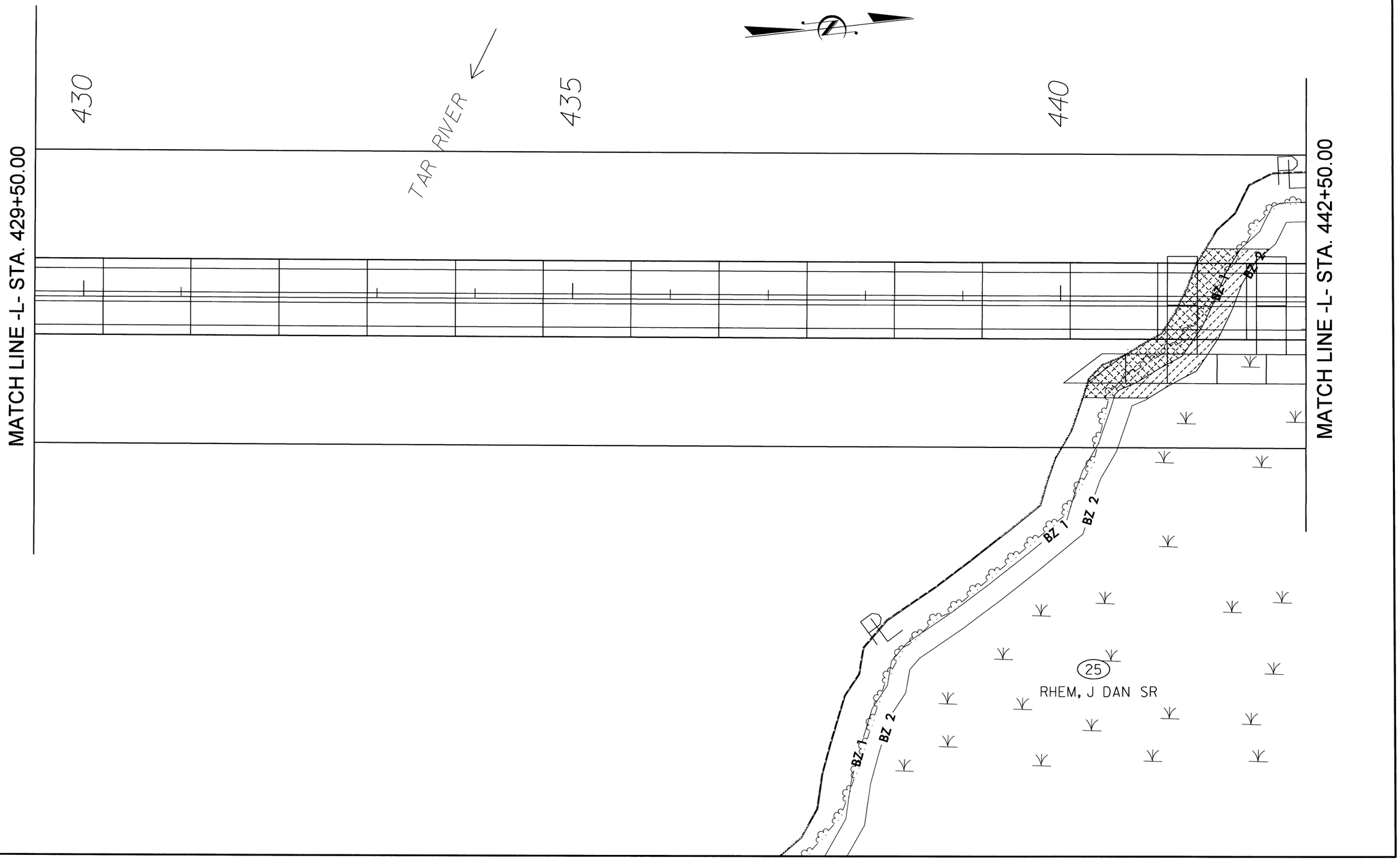
8/17/99

REVISIONS

SITE 6

ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2



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English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

1260' WILLIAM TAPER

25
RHEM, J DAN JR

460

C
A

BZ 1
BZ 2

MATCH LINE -L- STA. 455+50.00

MATCH LINE -L- STA. 468+00.00

SITE 6

25
RHEM, J DAN SR

KENNEDY'S CREEK

MITIGABLE IMPACTS ZONE 1

MITIGABLE IMPACTS ZONE 2

03/4/2005
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8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	23
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MITIGABLE IMPACTS ZONE 1

MITIGABLE IMPACTS ZONE 2

SITE 6

25
RHEM, J DAN SR

KNOTT, RUFUS H &

470

475

480

(CHORD)

C
A

R/W

WLB

10

15

MATCH LINE -L- STA. 468+00.00

MATCH LINE -L- STA. 480+50.00

(CHORD)

(CHORD)

PA

SILOS

TR

03/4/2005
I:\projects\pulfers\vacontours\v-2510_ash_23.dgn
jcook

8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	25
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MANNING
RUSSELL
EDWARD

UNKNOWN

MATCH LINE -L- STA. 493+50.00

MATCH LINE -L- STA. 506+50.00

ISBK BUS

PA

(CHORD)

LILLEY,
DALTON G &

SITE 7

26

GODFREY, OTIS A

NOTE:
- SLOPE STAKES MODIFIED AT PERMIT SITES TO REFLECT 3:1 SLOPES. ORIGINAL 2:1 SLOPES ARE LEFT FOR COMPARISON.

MITIGABLE IMPACTS ZONE 1

MITIGABLE IMPACTS ZONE 2

03/4/2005
rlmgraves\projects\roadcrafters\roadcrafters\2510_ash_25.dgn
mmoss

8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	26
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NOTE:
- SLOPE STAKES MODIFIED AT PERMIT SITES TO REFLECT 3:1 SLOPES. ORIGINAL 2:1 SLOPES ARE LEFT FOR COMPARISON.

MITIGABLE IMPACTS ZONE 1

MITIGABLE IMPACTS ZONE 2

13.3 BST

POND
WE 3.1

PA

LOWES
INVESTMENT
CORP #65

ISMTL BUS

MTL CANOPY

MTL CANOPY

MTL CANOPY

PA

CONC

27

LILLEY, DALTON G &

CHERRY RUN WBEL

WLB

POND
WE 1.7

BZ 1
BZ 2

C
A

10

RL 510 (CHORD)

F

10

RL 510 (CHORD)

MATCH LINE -L- STA. 506+50.00

MATCH LINE -L- STA. 519+50.00

POND
WE 2.7

UNKNOWN

NO BUFFERS;
ONLY WETLAND
SITE 8

SITE 9

UNKNOWN

LITTLE,
HAZEL
LEE

ISFD

ISBK BUS

PA

ISBKD

ISBKD

ISBKD

ISBKD

S

S

S

R/W

SR

03/14/2005
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mpope
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8/17/99

NOTE:
- SLOPE STAKES MODIFIED AT PERMIT SITES TO REFLECT 3:1 SLOPES. ORIGINAL 2:1 SLOPES ARE LEFT FOR COMPARISON.

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	32
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2

MATCH LINE
-BY9- STA. 24+00.00

(30) BONDY, EMILY WINFIELD

720' Taper

F C

C

C

C

S

S

IS BK BUS

158Z

C

C

25

R/W

R/W

C

A

WLB

WLB

WLB

BZ 2

BZ 1

BZ 1

BZ 2

(31) WINFIELD, ZELMA M

SITE 2

35

C

US HWY 17 25'BST

C

C

C

ISBLKBUS

ISBLKBUS

960 Ft Taper

(11) WINFIELD, WILLIAM BERNARD

BZ 2

BZ 1

BZ 1

BZ 2

(30) BONDY, EMILY WINFIELD & PHIEFFER, CATHERINE

03/4/2005
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mmoss

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

BEGIN STATE PROJECT R-2510
-L- STA. 223+00.00

F F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

S S S DENOTES FILL IN SURFACE WATER

NOTE:
- SLOPE STAKES MODIFIED AT PERMIT SITES TO REFLECT 3:1 SLOPES. ORIGINAL 2:1 SLOPES ARE LEFT FOR COMPARISON.

TAYLOR, JOHN ECKLIN

REWS,
MOND J

ISFD

WLB

230

R/W

(CHORD)

(CHORD) SITE 1

10
PEED, RICHARD D JR
&
KRISTEN M

MATCH LINE-SR-B21- -BY9- STA. 20+00.00

MATCH LINE -L- STA. 235+00.00

MATCH LINE -BY9- STA. 12+88.23

03/4/2005
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mpope

8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

P P DENOTES FILL IN SURFACE WATER (POND)

F F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

NOTE:
- SLOPE STAKES MODIFIED AT PERMIT SITES TO REFLECT 3:1 SLOPES. ORIGINAL 2:1 SLOPES ARE LEFT FOR COMPARISON.

SITE 3

MATCH LINE -L- STA. 246+00.00

MATCH LINE -L- STA. 260+00.00

WLB

C A

WINFIELD, WILLIAM BERNARD

03/4/2005
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mpark

8/17/99

REVISIONS

F F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

S S S DENOTES FILL IN SURFACE WATER

NOTE:
- SLOPE STAKES MODIFIED AT PERMIT SITES TO REFLECT 3:1 SLOPES. ORIGINAL 2:1 SLOPES ARE LEFT FOR COMPARISON.

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SITE 4

MATCH LINE -L- STA. 260+00.00

MATCH LINE -L- STA. 273+50.00

265

35

30

15

WLB

F

(12) MCROY, GEORGE MAYHEW

(13) CIRICLIO, RONNIE M & RANDY J

03/4/2005
<transcription>

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

F F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

NOTE:
- SLOPE STAKES MODIFIED AT PERMIT SITES TO REFLECT 3:1 SLOPES. ORIGINAL 2:1 SLOPES ARE LEFT FOR COMPARISON.

8/17/99

REVISIONS

MATCH LINE -L- STA. 311+00.00

MATCH LINE -L- STA. 324+50.00

SITE 5

HITT, JOHN F & SLOAN, ELIZABETH W P

315

320

WLB

F

1260' Median Taper

C
A

14

SLOAN, ELIZABETH PAUL

03/4/2005
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mpope

8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

HC DENOTES HAND CLEARING

NOTE:
-PERM. BENTS ARE 65sqft FILL PER EACH
-ALL TEMP. BRIDGE FINGERS HAVE 3 BENTS
-TEMP. BENTS ARE 3sqft TEMP. FILL PER EACH

SITE 6
UNKNOWN

POND

325 330 335

MATCH LINE -L- STA. 324+50.00

MATCH LINE -L- STA. 337+50.00

HITT, JOHN T & SLOAN, ELIZABETH W P

ERN, GARY R & ROBERT A

UNKNOWN

03/4/2005
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mpope

8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

HC DENOTES HAND CLEARING

NOTE:
-PERM. BENTS ARE 65sqft FILL PER EACH
-ALL TEMP. BRIDGE FINGERS HAVE 3 BENTS
-TEMP. BENTS ARE 3sqft TEMP. FILL PER EACH

SITE 6

MATCH LINE -L- STA. 337+50.00

MATCH LINE -L- STA. 351+00.00

17 COLE, HANIE ERNEST JR

18 PATRICK W H HRS

19 OSPREY SEAFOOD INC

20 PATRICK, JOSEPH B HRS

16 ERN, GARY R & ROBERT A

10' OPRW

15' OPRW

25' OPRW

R/W

WLB

C A

PA

S

ISF BUS

340

345

350

03/4/2005
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mpeck

8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

HC DENOTES HAND CLEARING

NOTE:
-PERM. BENTS ARE 65sqft FILL PER EACH
-ALL TEMP. BRIDGE FINGERS HAVE 3 BENTS
-TEMP. BENTS ARE 3sqft TEMP. FILL PER EACH

SITE 6

NORTH WESTERN RAILWAY

CROSS COUNTRY POWER LINE

WLB

20

PATRICK, JOSEPH B HRS

360

25

21

SINGLETON, B E JR & MARSHALL T

POND

B

MATCH LINE -L- STA. 351+00.00

MATCH LINE -L- STA. 364+00.00

03/4/2005
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mpark

8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

HC DENOTES HAND CLEARING

NOTE:
-PERM. BENTS ARE 65sqft FILL PER EACH
-ALL TEMP. BRIDGE FINGERS HAVE 3 BENTS
-TEMP. BENTS ARE 3sqft TEMP. FILL PER EACH

SITE 6

MATCH LINE -L- STA. 364+00.00

MATCH LINE -L- STA. 377+50.00

365

370

375

C A

WLB

HC

21 SINGLETON, B E JR & MARSHALL T

22 DIXIE, PATTIE MILLER

23 COWARD, TEX ALLEN

POND WE 0.8

POOL

R/W

03/4/2005
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8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NOTE:
-PERM. BENTS ARE 65sqft FILL PER EACH
-ALL TEMP. BRIDGE FINGERS HAVE 3 BENTS
-TEMP. BENTS ARE 3sqft TEMP. FILL PER EACH

HC DENOTES HAND CLEARING

SITE 6

MATCH LINE -L- STA. 377+50.00

MATCH LINE -L- STA. 390+50.00

WLB

380

385

390

COWARD, TEX ALLEN

21

SINGLETON B E JR & MARSHALL T

23

C A

HTR

DIXIE PATTIE MILLER

22

C A

24

CITY, OF WASHINGTON

03/4/2005
"I:\projects\metrocass\2510_csh_16.dgn
mmak

8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

HC DENOTES HAND CLEARING

NOTE:
-PERM. BENTS ARE 65sqft FILL PER EACH
-ALL TEMP. BRIDGE FINGERS HAVE 3 BENTS
-TEMP. BENTS ARE 3sqft TEMP. FILL PER EACH

SITE 6

21 SINGLETON B E JR & MARSHALL T

395

409

C A

MATCH LINE -L- STA. 390+50.00

MATCH LINE -L- STA. 404+50.00

21 SINGLETON B E JR & MARSHALL T

C A

03/4/2005
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tpope

8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

HC DENOTES HAND CLEARING

NOTE:
-PERM. BENTS ARE 65sqft FILL PER EACH
-ALL TEMP. BRIDGE FINGERS HAVE 3 BENTS
-TEMP. BENTS ARE 3sqft TEMP. FILL PER EACH

SITE 6

21
SINGLETON B E JR & MARSHALL T

405 410 415

C A

MATCH LINE -L- STA. 404+50.00

MATCH LINE -L- STA. 416+50.00

C A

21
SINGLETON B E JR & MARSHALL T

PL

23/4/2005
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mmack

8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

21

SINGLETON B E JR & MARSHALL T

420

425

TAR RIVER

MATCH LINE -L- STA. 416+50.00

MATCH LINE -L- STA. 429+50.00

TS

21

SINGLETON B E JR & MARSHALL T

SITE 6

NOTE:
-PERM. BENTS IN WETLAND ARE 65sqft FILL PER EACH.
-PERM. BENTS IN RIVER ARE 130sqft FILL PER EACH
-ALL TEMP. BRIDGE FINGERS HAVE 3 BENTS
-TEMP. BENTS ARE 3sqft TEMP. FILL PER EACH

TS TS — DENOTES TEMPORARY FILL IN SURFACE WATER

HC — DENOTES HAND CLEARING

03/4/2005
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jbaggett

8/17/99

REVISIONS

HC — DENOTES HAND CLEARING

TS TS — DENOTES TEMPORARY FILL IN SURFACE WATER

SITE 6

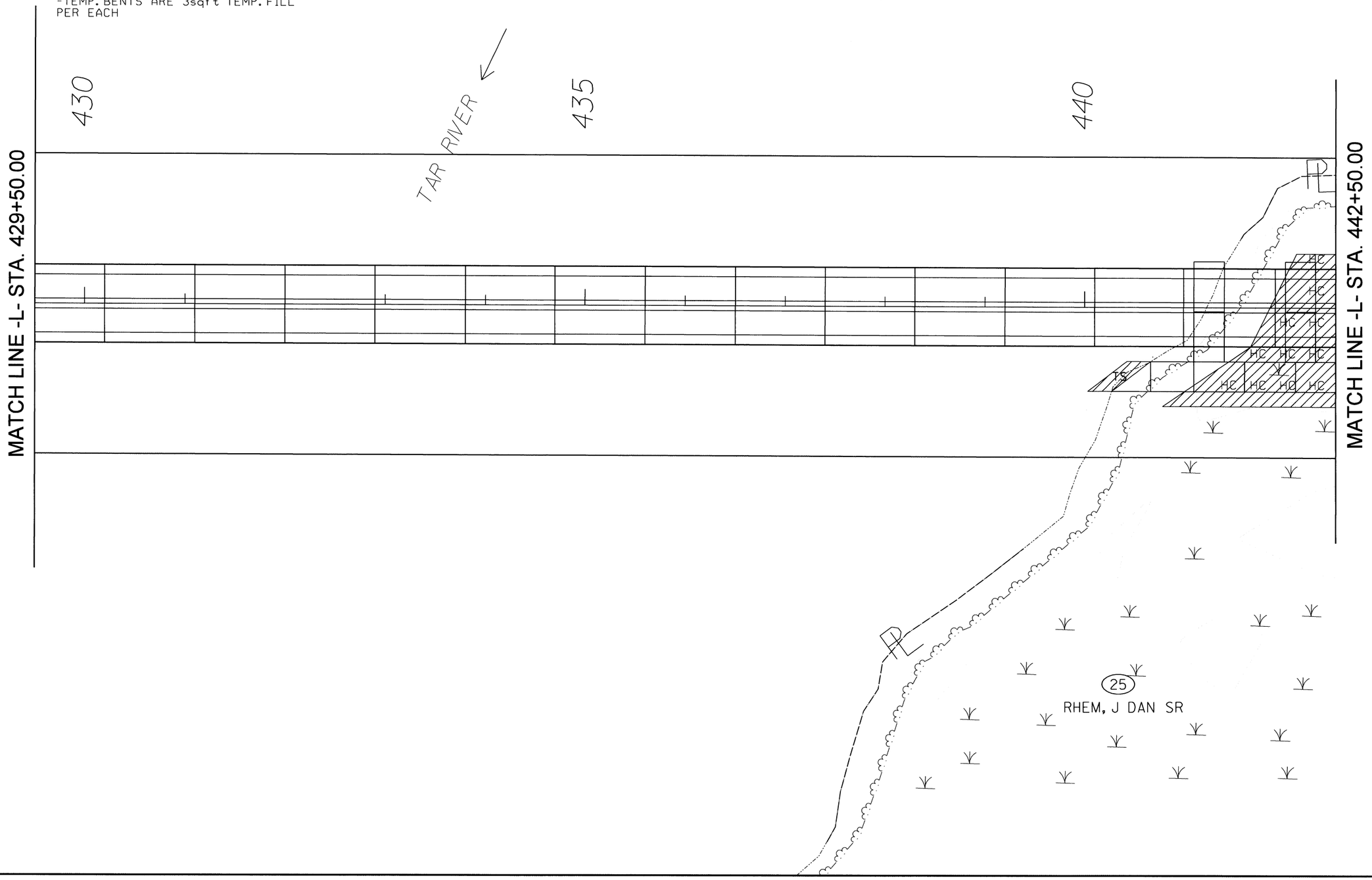
NOTE:
-PERM. BENTS IN WETLAND ARE 65sqft FILL PER EACH.
-PERM. BENTS IN RIVER ARE 130sqft FILL PER EACH
-ALL TEMP. BRIDGE FINGERS HAVE 3 BENTS
-TEMP. BENTS ARE 3sqft TEMP. FILL PER EACH

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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8/17/99

REVISIONS

HC DENOTES HAND CLEARING

NOTE:
-PERM. BENTS ARE 65sqft FILL PER EACH
-ALL TEMP. BRIDGE FINGERS HAVE 3 BENTS
-TEMP. BENTS ARE 3sqft TEMP. FILL PER EACH

SITE 6

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

TAR RIVER

PL

445

450

455

PL

C
A

MATCH LINE -L- STA. 442+50.00

MATCH LINE -L- STA. 455+50.00

250

RHEM, J DAN SR

PL

03/4/2005
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mdot

8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

1260' MEDIAN TAPER

460

465

25 RHEM, J DAN JR

25 RHEM, J DAN JR

C A

C A

-L- STA. 455+50.00 MATCH LINE

-L- STA. 468+00.00 MATCH LINE

25 RHEM, J DAN SR

25 RHEM, J DAN SR

SITE 6

HC DENOTES HAND CLEARING

NOTE:
-PERM. BENTS ARE 65sqft FILL PER EACH
-ALL TEMP. BRIDGE FINGERS BEOFRE 468+00 HAVE 3 BENTS; ALL TEMP. BRIDGE FINGERS AFTER 468+00 HAVE 4 BENTS
-TEMP. BENTS ARE 3sqft TEMP. FILL PER EACH

KENNEDY'S CREEK

03/4/2005
J:\projects\wetlands\r-2510_sht_22.dgn
jpmac

8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	23
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NOTE:
-PERM. BENTS ARE 65sqft FILL PER EACH
-ALL TEMP. BRIDGE FINGERS BEOFRE 472+00 HAVE 4 BENTS; ALL TEMP. BRIDGE FINGERS AFTER 472+00 HAVE 5 BENTS
-TEMP. BENTS ARE 3sqft TEMP. FILL PER EACH

HC DENOTES HAND CLEARING

SITE 6

25

RHEM, J DAN SR

KNOTT, RUFUS H &

470 475 480

(CHORD)

C A

WLB

R/W

MATCH LINE -L- STA. 468+00.00

MATCH LINE -L- STA. 480+50.00

PL

PA

SILOS

TR

15

01/4/2005
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mpope

8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	25
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MANNING
RUSSELL
EDWARD

UNKNOWN

MATCH LINE -L- STA. 493+50.00

MATCH LINE -L- STA. 506+50.00

ISBK BUS

PA

(CHORD)

LILLEY,
DALTON G &

SITE 7

26

GODFREY, OTIS A

NOTE:
- SLOPE STAKES MODIFIED AT PERMIT SITES TO REFLECT 3:1 SLOPES. ORIGINAL 2:1 SLOPES ARE LEFT FOR COMPARISON.

DENOTES FILL IN WETLAND

DENOTES FILL IN SURFACE WATER

03/5/2005
dlw 2005
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8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	26
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NOTE:
- SLOPE STAKES MODIFIED AT PERMIT SITES TO REFLECT 3:1 SLOPES. ORIGINAL 2:1 SLOPES ARE LEFT FOR COMPARISON.

S S S DENOTES FILL IN SURFACE WATER

P P DENOTES FILL IN SURFACE WATER (POND)

F F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

13.3 BST

POND WE 3.1

PA

LOWES INVESTMENT CORP #65

ISMTL BUS

MTL CANOPY

MTL CANOPY

MTL CANOPY

PA

CONC

27

LILLEY, DALTON G &

CHERRY RUN

WLB

POND WE 1.7

519

10

L (CHORD)

L 510

F

10

C A

C A

MATCH LINE -L- STA. 506+50.00

MATCH LINE -L- STA. 519+50.00

POND WE 2.7

UNKNOWN

UNKNOWN

SITE 8

SITE 9

ISBK BUS

PA

ISBKD

ISBKD

ISBKD

ISBKD

S

S

S

LITTLE, HAZEL LEE

ISFD

R/W

SR

03/4/2005
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mpeas

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REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	27
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

F F F DENOTES FILL IN WETLAND

NOTE:
- SLOPE STAKES MODIFIED AT PERMIT SITES TO REFLECT 3:1 SLOPES. ORIGINAL 2:1 SLOPES ARE LEFT FOR COMPARISON.

CHERRY RUN CREEK

520

15

525

20

530

SITE 10

(27) LILLEY, DALTON G &

(28) NORVELL, MARCELLA ANN

(29) STEEHLER, MALLORY K

KNOX, PAUL

MATCH LINE -L- STA. 519+50.00

MATCH LINE -L- STA. 533+00.00

MATCH LINE STA. 14+50.00

1404

R/W

ISBKD

ISFD

2SFD

ASFD

WLB

03/5/2005
...\geotics\wetlands\r-2512_esh_27.dgn
jgoins

8/17/99

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	32
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MATCH LINE
-BY9- STA. 24+00.00

30
BONDY, EMILY WINFIELD

720' Taper

F C

C

C 25

S

S

IS BK BUS

158Z

C

R/W

30

WLB

WLB

WLB

WLB

31
WINFIELD, ZELMA M

SITE 2

35 C

US HWY 17 25'BST

R/W

C

A

C

C

C

ISBLKBUS

ISBLKBUS

960 Ft Taper

WINFIELD, WILLIAM BERNARD 11

BONDY, EMILY WINFIELD & PHIEFFER, CATHERINE 30

NOTE:
SLOPE STAKES MODIFIED AT PERMIT SITES TO REFLECT 3:1 SLOPES. ORIGINAL 2:1 SLOPES ARE LEFT FOR COMPARISON.

E E E DENOTES EXCAVATION IN WETLAND

DENOTES MECHANIZED CLEARING

S S S DENOTES FILL IN SURFACE WATER

03/5/2005
dgn C:\projects\wetlands\r-2510_esr_32.dgn
mpmx

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

F F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

S S S DENOTES FILL IN SURFACE WATER

NOTE:
- SLOPE STAKES MODIFIED AT PERMIT SITES TO REFLECT 3:1 SLOPES. ORIGINAL 2:1 SLOPES ARE LEFT FOR COMPARISON.

BEGIN STATE PROJECT R-2510
-L- STA. 223+00.00

TAYLOR, JOHN ECKLIN

REWS,
MOND J

ISFD

(CHORD)

(CHORD) SITE 1

10
PEED, RICHARD D JR
&
KRISTEN M

WLB

WLP

R/W

230

MATCH LINE-SR-B21- -BY9- STA. 20+00.00

MATCH LINE -L- STA. 235+00.00

MATCH LINE -BY9- STA. 12+88.23

REVISIONS

8/17/99

03/4/2005
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8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

P P DENOTES FILL IN SURFACE WATER (POND)

F F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

NOTE:
- SLOPE STAKES MODIFIED AT PERMIT SITES TO REFLECT 3:1 SLOPES. ORIGINAL 2:1 SLOPES ARE LEFT FOR COMPARISON.

SITE 3

250

255

260

WLB

C
A

MATCH LINE -L- STA. 246+00.00

MATCH LINE -L- STA. 260+00.00

II

WINFIELD, WILLIAM BERNARD

03/4/2005
dyn_graphics\wetlands\reports\r-2510_psh_0ft.dgn

8/17/99

REVISIONS

F F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

S S S DENOTES FILL IN SURFACE WATER

NOTE:
- SLOPE STAKES MODIFIED AT PERMIT SITES TO REFLECT 3:1 SLOPES. ORIGINAL 2:1 SLOPES ARE LEFT FOR COMPARISON.

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SITE 4

MATCH LINE -L- STA. 260+00.00

MATCH LINE -L- STA. 273+50.00

12 MCROY, GEORGE MAYHEW

13 CIRICLIO, RONNIE M & RANDY J

WLB

F

03/4/2005
J:\r-2510b\wetlands\roconstr\r-2512_psh_07.dgn
jsparks

8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

F F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

NOTE:
- SLOPE STAKES MODIFIED AT PERMIT SITES TO REFLECT 3:1 SLOPES. ORIGINAL 2:1 SLOPES ARE LEFT FOR COMPARISON.

MATCH LINE -L- STA. 311+00.00

MATCH LINE -L- STA. 324+50.00

SITE 5

HITT, JOHN F & SLOAN, ELIZABETH W P

315

320

C
A

F

1260' Median Taper

WLB

14

SLOAN, ELIZABETH PAUL

03/4/2005
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mpeaks

8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

HC DENOTES HAND CLEARING

NOTE:
-PERM. BENTS ARE 65sqft FILL PER EACH
-ALL TEMP. BRIDGE FINGERS HAVE 3 BENTS
-TEMP. BENTS ARE 3sqft TEMP. FILL PER EACH

SITE 6
UNKNOWN

MATCH LINE -L- STA. 324+50.00

MATCH LINE -L- STA. 337+50.00

325

330

335

POND

WLB

HC

C
A

15

HITT, JOHN F & SLOAN, ELIZABETH W P

16

ERN, GARY R & ROBERT A

UNKNOWN

03/4/2005
c:\projects\westlanes\roadways\r-2510_psh_12.dgn

8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

HC DENOTES HAND CLEARING

NOTE:
-PERM. BENTS ARE 65sqft FILL PER EACH
-ALL TEMP. BRIDGE FINGERS HAVE 3 BENTS
-TEMP. BENTS ARE 3sqft TEMP. FILL PER EACH

SITE 6

MATCH LINE -L- STA. 337+50.00

MATCH LINE -L- STA. 351+00.00

17 COLE, HANIE ERNEST JR

18 PATRICK W H HRS

16 ERN, GARY R & ROBERT A

19 OSPREY SEAFOOD INC

20 PATRICK, JOSEPH B HRS

10' TEMP. R/W

R/W

WLB

L'INE

C A

PA

S

ISF BUS

340

345

350

15

25

03/4/2005
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mpope

8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

HC DENOTES HAND CLEARING

NOTE:
-PERM. BENTS ARE 65sqft FILL PER EACH
-ALL TEMP. BRIDGE FINGERS HAVE 3 BENTS
-TEMP. BENTS ARE 3sqft TEMP. FILL PER EACH

SITE 6

NORTH WESTERN RAILWAY

CROSS COUNTRY POWER LINE

MATCH LINE -L- STA. 351+00.00

MATCH LINE -L- STA. 364+00.00

20 PATRICK, JOSEPH B HRS

21 SINGLETON, B V E JR & MARSHALL T

POND WE 1.6

WLB

HC

03/4/2005
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mpope

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

HC DENOTES HAND CLEARING

NOTE:
-PERM. BENTS ARE 65sqft FILL PER EACH
-ALL TEMP. BRIDGE FINGERS HAVE 3 BENTS
-TEMP. BENTS ARE 3sqft TEMP. FILL PER EACH

SITE 6

MATCH LINE -L- STA. 364+00.00

MATCH LINE -L- STA. 377+50.00

365 370 375

C A

WLB WLB WLB

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

NOTE:
-PERM. BENTS ARE 65sqft FILL PER EACH
-ALL TEMP. BRIDGE FINGERS HAVE 3 BENTS
-TEMP. BENTS ARE 3sqft TEMP. FILL PER EACH

HC DENOTES HAND CLEARING

SITE 6

21

SINGLETON B E JR & MARSHALL T

380

385

390

WLB

COWARD, TEX ALLEN

23

C A

HTR

MATCH LINE -L- STA. 377+50.00

MATCH LINE -L- STA. 390+50.00

DIXIE PATTIE

MILLER

22

C A

24

CITY, OF WASHINGTON

03/4/2005
09:48:...cs\wetlands\coorta_rs\2512_psh_l0.dgn

8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

HC DENOTES HAND CLEARING

NOTE:
-PERM. BENTS ARE 65sqft FILL PER EACH
-ALL TEMP. BRIDGE FINGERS HAVE 3 BENTS
-TEMP. BENTS ARE 3sqft TEMP. FILL PER EACH

SITE 6

21

SINGLETON B E JR & MARSHALL T

395

409

C
A

MATCH LINE -L- STA. 390+50.00

MATCH LINE -L- STA. 404+50.00

21

SINGLETON B E JR & MARSHALL T

03/4/2005
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REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

HC DENOTES HAND CLEARING

NOTE:
-PERM. BENTS ARE 65sqft FILL PER EACH
-ALL TEMP. BRIDGE FINGERS HAVE 3 BENTS
-TEMP. BENTS ARE 3sqft TEMP. FILL PER EACH

SITE 6

21
SINGLETON B E JR & MARSHALL T

405 410 415

C A

MATCH LINE -L- STA. 404+50.00

MATCH LINE -L- STA. 416+50.00

C A

21
SINGLETON B E JR & MARSHALL T

PL

03/4/2005
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REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

21

SINGLETON B E JR & MARSHALL T

420

425

TAR RIVER

PL

MATCH LINE -L- STA. 416+50.00

MATCH LINE -L- STA. 429+50.00

TS

21

SINGLETON B E JR & MARSHALL T

SITE 6

NOTE:
-PERM. BENTS IN WETLAND ARE 65sqft FILL PER EACH.
-PERM. BENTS IN RIVER ARE 130sqft FILL PER EACH
-ALL TEMP. BRIDGE FINGERS HAVE 3 BENTS
-TEMP. BENTS ARE 3sqft TEMP. FILL PER EACH

TS TS — DENOTES TEMPORARY FILL IN SURFACE WATER

HC — DENOTES HAND CLEARING

03/4/2005
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8/17/99

REVISIONS

HC — DENOTES HAND CLEARING

TS TS — DENOTES TEMPORARY FILL IN SURFACE WATER

SITE 6

NOTE:
-PERM. BENTS IN WETLAND ARE 65sqft FILL PER EACH.
-PERM. BENTS IN RIVER ARE 130sqft FILL PER EACH
-ALL TEMP. BRIDGE FINGERS HAVE 3 BENTS
-TEMP. BENTS ARE 3sqft TEMP. FILL PER EACH

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

430

TAR RIVER

435

440

MATCH LINE -L- STA. 429+50.00

MATCH LINE -L- STA. 442+50.00

HC

TS

25

RHEM, J DAN SR

03/4/2005
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mpope

8/17/99

REVISIONS

HC DENOTES HAND CLEARING

NOTE:
-PERM. BENTS ARE 65sqft FILL PER EACH
-ALL TEMP. BRIDGE FINGERS HAVE 3 BENTS
-TEMP. BENTS ARE 3sqft TEMP. FILL PER EACH

SITE 6

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

TAR RIVER

PL

445

450

455

PL

C
A

MATCH LINE -L- STA. 442+50.00

MATCH LINE -L- STA. 455+50.00

25V

RHEM, J DAN SR

PL

03/14/2005
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mgaskins

8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

1260' MEDIAN TAPER

25 RHEM, J DAN JR

25 RHEM, J DAN JR

460

465

C
A

C
A

MATCH LINE -L- STA. 455+50.00

MATCH LINE -L- STA. 468+00.00

25 RHEM, J DAN SR

25 RHEM, J DAN SR

SITE 6

HC DENOTES HAND CLEARING

NOTE:
-PERM. BENTS ARE 65sqft FILL PER EACH
-ALL TEMP. BRIDGE FINGERS BEOFRE 468+00 HAVE 3 BENTS; ALL TEMP. BRIDGE FINGERS AFTER 468+00 HAVE 4 BENTS
-TEMP. BENTS ARE 3sqft TEMP. FILL PER EACH

KENNEDY'S CREEK

03/07/2005
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English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	23
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

NOTE:
-PERM. BENTS ARE 65sqft FILL PER EACH
-ALL TEMP. BRIDGE FINGERS BEOFRE 472+00 HAVE 4 BENTS; ALL TEMP. BRIDGE FINGERS AFTER 472+00 HAVE 5 BENTS
-TEMP. BENTS ARE 3sqft TEMP. FILL PER EACH

HC DENOTES HAND CLEARING

SITE 6

25

RHEM, J DAN SR

KNOTT, RUFUS H &

WLB

R/W

470

475

480

(CHORD)

C A

F

MATCH LINE -L- STA. 468+00.00

MATCH LINE -L- STA. 480+50.00

PL

PA

SILOS

TR

03/4/2005
13:40:41
T:\projects\Traffic\Highways\roadways\2510\2510_psh_23.dgn

8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	25
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MANNING
RUSSELL
EDWARD

UNKNOWN

ISBK BUS

(CHORD)

LILLEY,
DALTON G &

SITE 7

GODFREY, OTIS A

ISBK
BUS

MATCH LINE -L- STA. 493+50.00

MATCH LINE -L- STA. 506+50.00

NOTE:
- SLOPE STAKES MODIFIED AT PERMIT SITES TO REFLECT 3:1 SLOPES. ORIGINAL 2:1 SLOPES ARE LEFT FOR COMPARISON.

F F F DENOTES FILL IN WETLAND

S S S DENOTES FILL IN SURFACE WATER

03/5/2005
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8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	26
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NOTE:
- SLOPE STAKES MODIFIED AT PERMIT SITES TO REFLECT 3:1 SLOPES. ORIGINAL 2:1 SLOPES ARE LEFT FOR COMPARISON.

S S S DENOTES FILL IN SURFACE WATER

P P DENOTES FILL IN SURFACE WATER (POND)

F F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

13.3 BST

POND
WE 3.1

PA

LOWES
INVESTMENT
CORP #65

ISMTL BUS

PA

MTL CANOPY

MTL CANOPY

MTL CANOPY

CONC

27

LILLEY, DALTON G &

CHERRY RUN

WLB

POND
WE 1.7

519

RL 510 (CHORD)

F

10

C
A

(CHORD)

10

MATCH LINE -L- STA. 506+50.00

MATCH LINE -L- STA. 519+50.00

POND
WE 2.7

UNKNOWN

SITE 8

SITE 9

UNKNOWN

(CHORD)

LITTLE,
HAZEL
LEE

ISFD

ISBK BUS

PA

ISBKD

ISBKD

ISBKD

ISBKD

R/W

SR

03/4/2005
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8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	27
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

F F F DENOTES FILL IN WETLAND

NOTE:
- SLOPE STAKES MODIFIED AT PERMIT SITES TO REFLECT 3:1 SLOPES. ORIGINAL 2:1 SLOPES ARE LEFT FOR COMPARISON.

CHERRY RUN CREEK

520

15

525

20

530

SITE 10

(27) LILLEY, DALTON G &

(28) NORVELL, MARCELLA ANN

(29) STEEHLER, MALLORY K

KNOX, PAUL

MATCH LINE -L- STA. 519+50.00

MATCH LINE -L- STA. 533+00.00

MATCH LINE STA. 14+50.00

1404

R/W

ISBKD

ISFD

2SFD

WLB

ASFD

03/5/2005
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8/17/99

English

PROJECT REFERENCE NO.	SHEET NO.
R-2510B	32
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MATCH LINE
-BY9- STA. 24+00.00

30
BONDY, EMILY WINFIELD

720' Taper

F C

C

C

25

S

S

IS BK BUS

158Z

C

R/W

30

WILB

WILB

WILB

WILB

31
WINFIELD, ZELMA M

SITE 2

35 C

US HWY 17 25'BST

R/W

C

A

C

C

C

ISBLKBUS

ISBLKBUS

960 Ft Taper

11
WINFIELD, WILLIAM BERNARD

30
BONDY, EMILY WINFIELD & PHIEFFER, CATHERINE

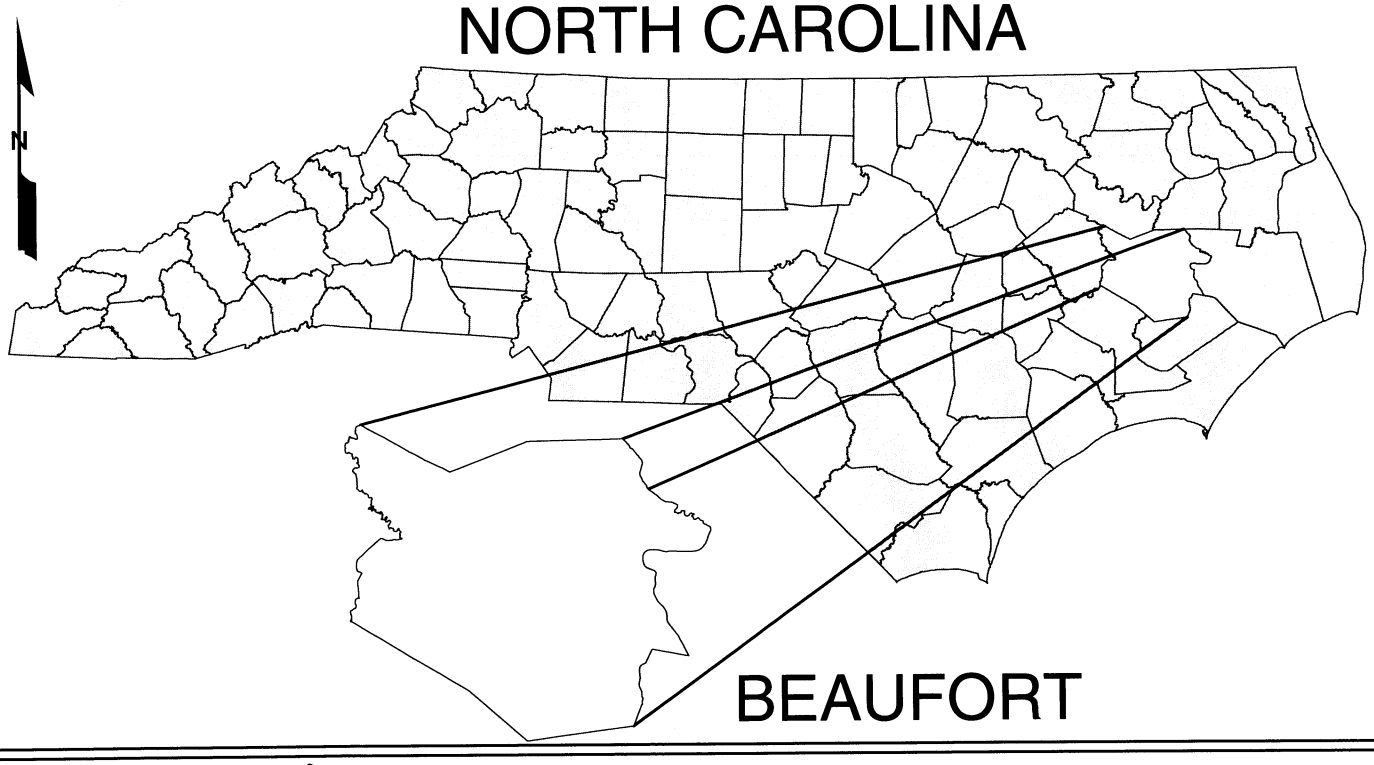
NOTE:
- SLOPE STAKES MODIFIED AT PERMIT SITES TO REFLECT 3:1 SLOPES. ORIGINAL 2:1 SLOPES ARE LEFT FOR COMPARISON.

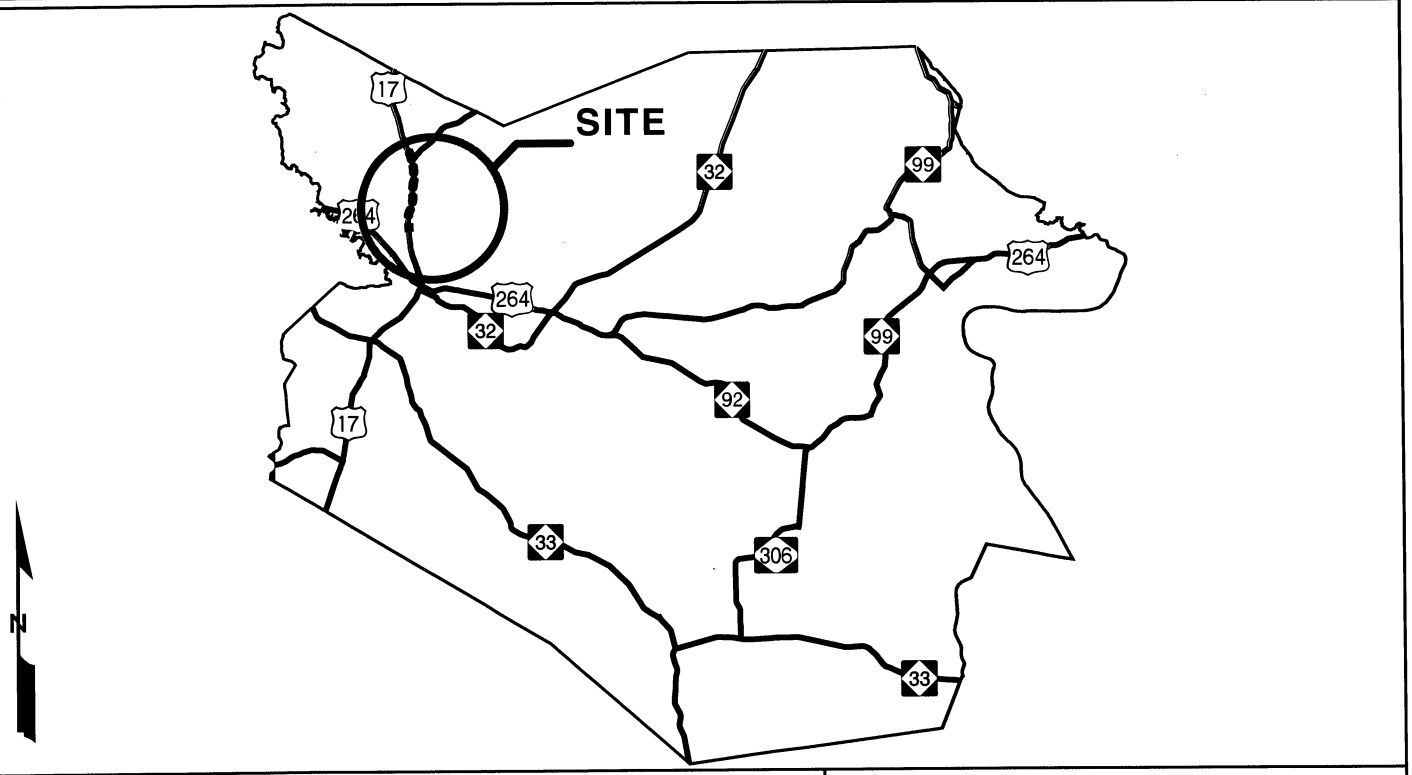
E E E DENOTES EXCAVATION IN WETLAND

DENOTES MECHANIZED CLEARING

S S S DENOTES FILL IN SURFACE WATER

03/5/2005
c:\projects\wetlands\accents\2512_psh_32.dgn
mpope



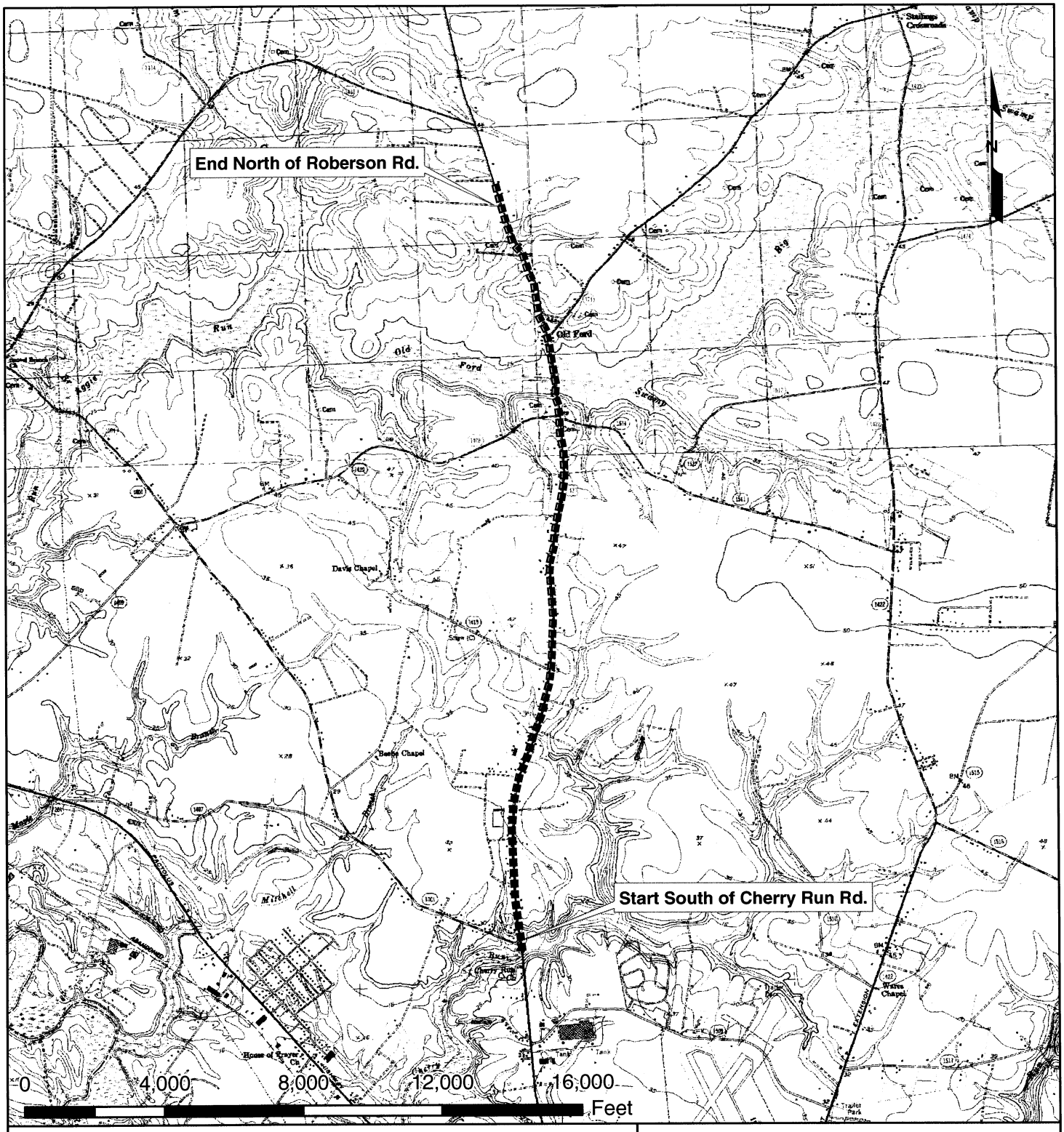


VICINITY MAPS

NCDOT

DIVISION OF HIGHWAYS
BEAUFORT COUNTY
PROJECT: 34440.1.1 (R-2510C)
US 17 BYPASS

3/11/05



1 inch equals 4,000 feet

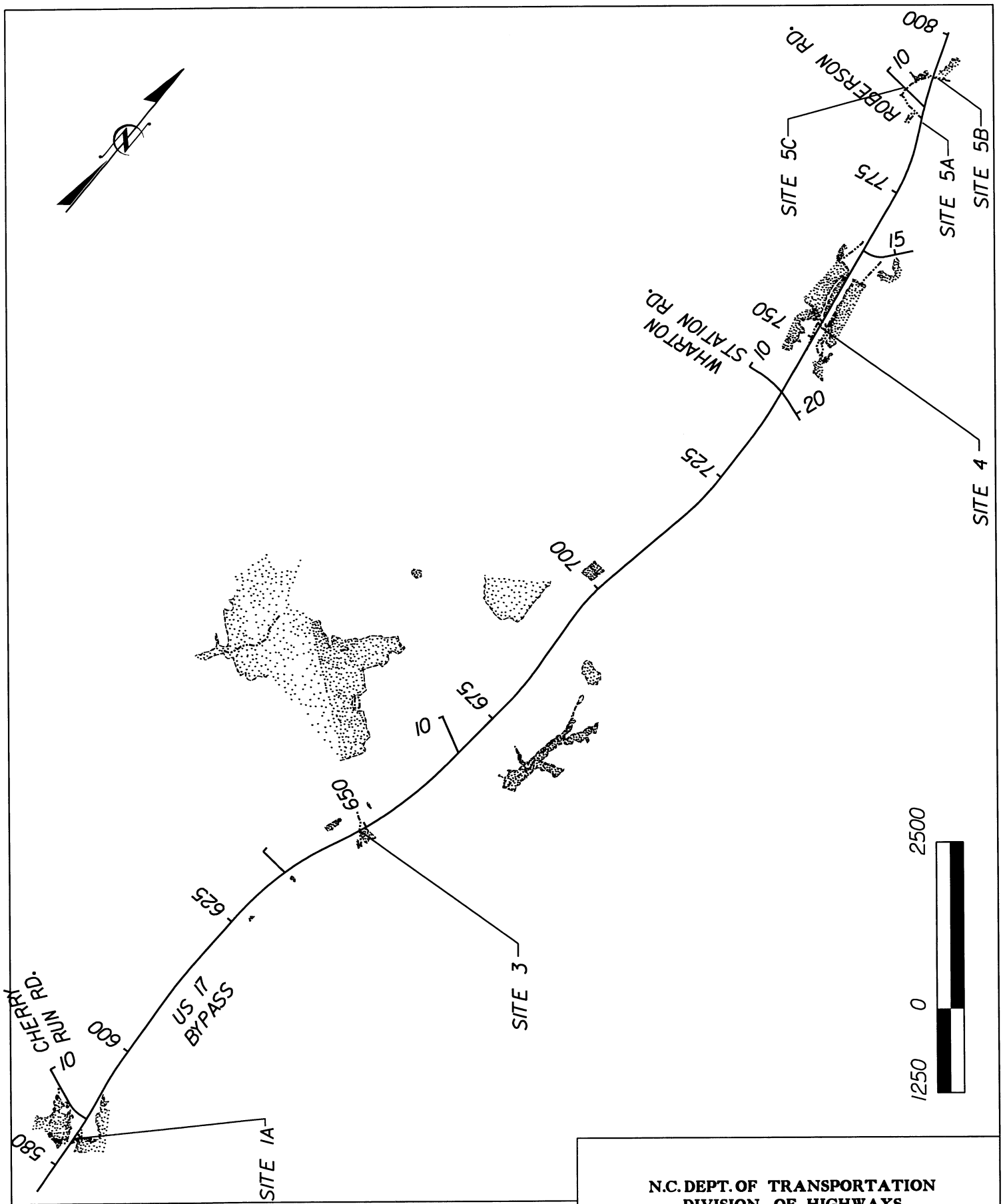
LOCATION

NCDOT

DIVISION OF HIGHWAYS
BEAUFORT COUNTY
PROJECT: 34440.1.1 (R-2510C)
US 17 BYPASS

3/11/05

Source: USGS 7.5 Minute Quadrangle, Washington and Old Ford, NC



SITE MAP

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
BEAUFORT COUNTY

PROJECT 34440.1.1 (R-2510C)

US 17 BYPASS

03 / 11 / 05

J:\COMNOS\30501I PREPERM\HYDRAULICS\SITE_BUFF.DGN

PROP. NO.	PROPERTY OWNER NAME	PROP. OWNER MAILING ADDRESS
10	ARNOLD, BILLY JOE & JOSEPH D. A& NANCY M.	2125 US 17 HWY N, WASHINGTON, NC 27889
11	CHERRY, JACK JR	707 OAKWOOD AVE SOUTH, BRANDON, FL 33511
13	HOPKINS, MARY BROWN	952 WHARTON STATION RD, WASHINGTON, NC 27889
14	BRANTLEY, MINNIE LEE	5595 HWY 17 N, WASHINGTON, NC 27889
15	BAKER, MELBER PRYOR	1160 CARROW ROAD, CHOCOWINITY, NC 27817-9790
16	PARISH, PEGGY M & H JOHN	5666 US HWY 17 N, WASHINGTON, NC 27889
17	HODGES, MILTON EUGENE & JOANNE	5548 US HWY 17 N, WASHINGTON, NC 27889
19	CARRAWAY, ARAH BELL	6361 US HWY 17 N, WASHINGTON, NC 27889

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

BEAUFORT COUNTY
PROJECT: 34440.1.1 (R-2510C)

3/8/2005

J:\COMNOS\305011 PrePerm\z-misc\Hydro\Buffprop.XLS

BUFFER IMPACTS SUMMARY

			IMPACT								BUFFER REPLACEMENT	
			TYPE		ALLOWABLE			MITIGABLE				
SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	ROAD CROSSING	PARALLEL IMPACT	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)
1A	ROADWAY FILL	-L- 582+75-585+75 LT/RT	X					14759.6	9684.9	24444.5		
1B	ROADWAY FILL	-L- 590+70-592+70 RT										
1C	ROADWAY FILL	-Y26- 15+30-16+75 RT										
3	ROADWAY FILL	-L- 648+50-650+15 LT/RT	X					10208.7	6621.8	16830.5		
4	ROADWAY FILL	-L- 743+50-761+90 LT/RT	X	X				55506.1	33873.3	89379.4		
5A	ROADWAY FILL	-L- 786+20-788+05 LT/RT	X		8114.1	5294.4	13408.5					
5B	ROADWAY FILL	-L- 792+40-794+15 LT/RT	X		6986.8	4080.4	11067.2					
5C	ROADWAY FILL	-Y31- 13+15-14+60 LT/RT	X		3976.1	2628.6	6604.7					
TOTAL:					19077.1	12003.3	31080.4	80474.4	50179.9	130654.3		

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

BEAUFORT COUNTY
PROJECT: 34440.1.1 (R-2510C)

3/15/2005

J:\COMNOS\305011 PrePerm\2-misc\Hydro\bufperm_summary_english.xls

WETLAND PERMIT IMPACT SUMMARY

			WETLAND IMPACTS				SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation In Wetlands (ac)	Mechanized Clearing (Method III) (ac)	Fill In SW (Natural) (ac)	Fill In SW (Pond) (ac)	Temp. Fill In SW (ac)	Existing Channel Impacted (ft)	Natural Stream Design (ft)
1A	-L- 582+75-585+75 LT/RT	ROADWAY FILL	0.022			0.027					
1B	-L- 590+70-592+70 RT	ROADWAY FILL			0.074	0.021					
1C	-Y26- 15+30-16+75 RT	ROADWAY FILL			0.056	0.019				*	
2	-L- 634+10-634+85 RT	ROADWAY FILL					0.003			113.8	
3	-L- 648+50-650+15 LT/RT	ROADWAY FILL	0.093			0.031	0.018			159.3	
4	-L- 743+50-761+90 LT/RT	ROADWAY FILL	1.035			0.108	0.287			841.6	
5A	-L- 786+20-788+05 LT/RT	ROADWAY FILL					0.007			107.5	
5B	-L- 792+40-794+15 LT/RT	ROADWAY FILL					0.008			72.5	
5C	-Y31- 13+15-14+60 LT/RT	ROADWAY FILL					0.006			54.4	
TOTALS:			1.150	0.000	0.130	0.206	0.329	0.000	0.000	1349.1	0.000

NOTE: WETLANDS IN CUT RUN PERPINDICULAR AND AWAY FROM THE ROADWAY, NOT PARALLEL. THEREFORE, DRAWDOWN EFFECT WAS NOT CALCULATED.

* JURISDICTIONAL STREAM NOT IN GPS FILE. APPROXIMATE IMPACT 50LF +/- (FROM PREVIOUS ENVIRONMENTAL DOCUMENTATION.)

Form Revised 3/22/01

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

BEAUFORT COUNTY
PROJECT 3.4440.1.1 (R-2510C)

3/22/2005

BUFFER IMPACTS SUMMARY

		WETLANDS IN BUFFER	
Site	Station	ZONE 1 (ft^2)	ZONE 2 (ft^2)
1A	-L- 582+75-585+75	1477.4	453.3
3	-L- 648+50-650+15	521.8	934.7
4	-L- 743+50-761+90	434.6	2.4
		2433.9	1390.3

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

BEAUFORT COUNTY
PROJECT: 344401.1 (R-2510C)

3/22/2005

English

PROJECT REFERENCE NO.	SHEET NO.
R2510C	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

MATCH LINE -L- STA. 582+00.00

MATCHLINE -L- STA. 596+00.00

SMITHWICK, S D
NO BUFFERS;
ONLY WETLANDS
SITE IC

SITE IA

SITE IB

(CHORD)

(CHORD)

ARNOLD, BILLY JOE &
JOSEPH D & NANCY M

CHERRY JACK JR

CONC

ISFD

ISBKD

HTR

WLB

BZ 1

BZ 2

585

590

595

NOTE:
- SLOPE STAKES AT PERMIT SITES: 3:1

MITIGABLE IMPACTS ZONE 1

MITIGABLE IMPACTS ZONE 2

03/5/2005
I:\CAD\PS\3252\...\R2510_HYD_PSH007.dgn

English

PROJECT REFERENCE NO.	SHEET NO.
R2510C	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

ISM

HOLY TRINITY
CHURCH OF CHRIST
DISCIPLES OF CHRIST

HTR

640

645

650

ISBKD

S

FD

WLB

POOL

G

BZ 2

BZ 1

R/W

C

MATCH LINE -L- STA. 638+00.00

MATCH LINE -L- STA. 652+00.00

(CHORD)

A

B

(13)

HOPKINS, MARY BROWN

SITE 3

NOTE:
- SLOPE STAKES AT PERMIT SITES: 3:1

MITIGABLE IMPACTS ZONE 1

MITIGABLE IMPACTS ZONE 2

03/5/2005
\\comos\3052\: creer-\hydraulics\buffers\r-2510_hyd_psh011.dgn

8/17/99

REVISIONS

NOTE:
- SLOPE STAKES AT PERMIT SITES: 3:1

MITIGABLE IMPACTS ZONE 1

MITIGABLE IMPACTS ZONE 2

English

PROJECT REFERENCE NO.	SHEET NO.
R2510C	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MATCH LINE -L- STA. 736+00.00

MATCH LINE -L- STA. 750+00.00

SITE 4

TANKS AG

ISMTL BUS

740

745

P4

HTR

ISFD

BUS

WLB

14 BRANTLEY, MINNIE LEE

15 BAKER, MELBER PRYOR

16 PARISH, PEGGY M & H JOHN

BZ 1

BZ 2

R/W

SR 1511 (WILL RD)

CEMETERY

2 SFD

S

G

03/5/2005
13:56:43
"P:\DGN\R2510_hyd_psh018.dgn"
c:\projects\r2510\hydraulics\buffers\r2510_hyd_psh018.dgn

8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R2510C	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MATCH LINE –L– STA. 750 + 00.00

MATCH LINE –L– STA. 764 + 00.00

UNKNOWN

ROBINSON, DOROTHY R & HAROLD W

(18)

BRANTLEY, MINNIE LEE

(14)

SITE 4

750

755

760

WLB

BZ 1

BZ 2

C A

2SFD

BUS

ISFD

BUS

CONC

R/W

PARISH, PEGGY M & H JOHN

(16)

SITE 4

HODGES, MILTON EUGENE & JOANNE

(17)

PA

2SBK

ISFD

S

THE ASSEMBLY OF GOD CHILDREN OF GOD CHURCH OF CHRIST

NOTE:
- SLOPE STAKES AT PERMIT SITES: 3:1

MITIGABLE IMPACTS ZONE 1

MITIGABLE IMPACTS ZONE 2

03/5/2005
Volume 3252:: pr
Time: 8:56:

pr\hydraulics\buffers\r2510_hyd_psh019.dgn

English

PROJECT REFERENCE NO.	SHEET NO.
R2510C	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

NOTE:
- SLOPE STAKES AT PERMIT SITES: 3:1

ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2

SITE 5C

SITE 5A

BZ 2
BZ 1

780

785

790

(CHORD)

ISM
BUS

CONC

2SBKD

19

CARRAWAY, ARAH BELL

ROBINSON, DOROTHY R
& HAROLD W

R/W

MATCH LINE -L- STA. 778+00.00

MATCH LINE -L- STA. 792+00.00

US 17

24'

ISBKD

ISFD

ABAND

1380' MEDIAN T

03/5/2005
13:05:32
c:\projects\r2510_hyd_psh021.dgn

English

PROJECT REFERENCE NO.	SHEET NO.
R2510C	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

MATCH LINE -L- STA. 792+00.00

HTR

795

800

SITE 5B

WLB

BZ 1

BZ 2

F

24'

C

A

R/W 720' Lane Taper

ISBKD

S

G

RANSITION

NOTE:
- SLOPE STAKES AT PERMIT SITES: 3:1

ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2

03/5/2005
13:42:03 325211 orepare\h_graphics\buffers\r-2510_hyd_pst022.dgn

8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R2510C	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MATCH LINE -L- STA. 582+00.00

MATCHLINE -L- STA. 596+00.00

SMITHWICK, S D
NO BUFFERS;
ONLY WETLANDS
SITE IC

SITE IA

SITE IB

ARNOLD, BILLY JOE &
JOSEPH D & NANCY M

CHERRY JACK JR

CONC

(CHORD)

(CHORD)

ISFD

ISBKD

HTR

WLB

BZ 1

BZ 2

585

590

595

R/W

NOTE:
- SLOPE STAKES AT PERMIT SITES: 3:1

MITIGABLE IMPACTS ZONE 1

MITIGABLE IMPACTS ZONE 2

03/5/2005
i:\projects\30521: greer-\hydraulics\buffers\mpcontours\r-2510_hyd_psh007.dgn
jhaas

English

PROJECT REFERENCE NO.	SHEET NO.
R2510C	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

ISM

HOLY TRINITY
CHURCH OF CHRIST
DISCIPLES OF CHRIST

ISBKD

640

HTR

FD

R/W

WLB

645

POOL

G

ISBKD

BZ 2

BZ 1

650

HTR

MATCH LINE -L- STA. 638+00.00

MATCH LINE -L- STA. 652+00.00

C

A

(CHORD)

B

BZ 2

BZ 1

BZ 1

BZ 2

WLB

13

HOPKINS, MARY BROWN

SITE 3

NOTE:
- SLOPE STAKES AT PERMIT SITES: 3:1

MITIGABLE IMPACTS ZONE 1

MITIGABLE IMPACTS ZONE 2

03/5/2005
jvaughn
Plotted: 03:52:11 p
e:\projects\3252\11 proj\hydraulics\buffers\hpcontours\r2510_hyd_psh011.dgn

8/17/99

REVISIONS

NOTE:
- SLOPE STAKES AT PERMIT SITES: 3:1

MITIGABLE IMPACTS ZONE 1

MITIGABLE IMPACTS ZONE 2

English

PROJECT REFERENCE NO.	SHEET NO.
R2510C	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MATCH LINE –L– STA. 736+00.00

MATCH LINE –L– STA. 750+00.00

TANKS AG

ISMTL BUS

740

745

SITE 4

CONRD

HTR

ISFD

WLB

BRANTLEY, MINNIE LEE

BAKER, MELBER PRYOR

PARISH, PEGGY M & H JOHN

BZ 1

BZ 2

R/W

SR 1511/WILL RD

CEMETERY

SG

03/5/2005
13:03:03
jmoss

c:\projects\3252_preserv\hydraulics\buffers\vpcontours\v2510_hyd_psh018.dgn

8/17/95

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R2510C	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MATCH LINE -L- STA. 750+00.00

MATCH LINE -L- STA. 764+00.00

14 BRANTLEY, MINNIE LEE

UNKNOWN

SITE 4

18 ROBINSON, DOROTHY R & HAROLD W

16 PARISH, PEGGY M & H JOHN

SITE 4

17 HODGES, MILTON EUGENE & JOANNE

THE ASSEMBLY OF CHILDREN OF GOD CHURCH OF CHRIST

2SFD

2SBK

ISFD

PA

S

BUS

ISFD

BUS

CONC

WLB

BZ 1

BZ 2

RPW

NOTE:
- SLOPE STAKES AT PERMIT SITES: 3:1

MITIGABLE IMPACTS ZONE 1

MITIGABLE IMPACTS ZONE 2

03/5/2005
J:\dgn\os\32521_preerm\hydraulics\buffers\hpcontours\r2510_hyd_psh019.dgn
jpark

8/17/99

REVISIONS

NOTE:
- SLOPE STAKES AT PERMIT SITES: 3:1

ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2

English

PROJECT REFERENCE NO.	SHEET NO.
R2510C	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SITE 5C

SITE 5A

BZ 2
BZ 1

780

785

790

795

(19) CARRAWAY, ARAH BELL

(19) ROBINSON, DOROTHY R & HAROLD W

2SBKD

ISM

BUS

(CHORD)

CONC

US 17

24'

R/W

MATCH LINE -L- STA. 778+00.00

MATCH LINE -L- STA. 792+00.00

ISBKD

ISFD

(CHORD)

ABAND

1380' MEDIAN T

03/5/2005
C:\Corros\32521; create-hydraulics\buffers\vpcontours\r2510_hyd_pst021.dgn

English

PROJECT REFERENCE NO.	SHEET NO.
R2510C	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

MATCH LINE -L- STA. 792+00.00

HTR

795

800

SITE 5B

WLB

BZ 1

BZ 2

24'

F

R/W

720' Lane Taper

ISBKD

C

A

S

G

RANSITION

NOTE:
- SLOPE STAKES AT PERMIT SITES: 3:1

ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2

23/5/2005
15:57:13
K:\Projects\3252\: p-eerm\hydraulics\buffers\hpcontours\r2510_hyd_psh022.dgn
Seek

8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R2510C	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MATCH LINE -L- STA. 582+00.00

MATCHLINE -L- STA. 596+00.00

SITE IC

SITE IA

SITE IB

(CHORD)

(CHORD)

12 SMITHWICK, S D

10 ARNOLD, BILLY JOE & JOSEPH D. & NANCY M

11 CHERRY JACK JR

CONC

R/W

WLB

ISFD

ISBKD

HTR

585

590

595

NOTE:
- SLOPE STAKES AT PERMIT SITES: 3:1

F F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

E E E DENOTES EXCAVATION IN WETLAND

03/5/2005
J:\comos\3052:: creeerm\hydrau..os\wetlands\r2510_hyd_psh007.dgn

8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R2510C	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MATCH LINE -L- STA. 624+00.00

MATCH LINE -L- STA. 638+00.00

B

625

R/W

2SFD

630

HTR

HTR

HTR

635

C

A

C

A

R/W

C

A

(CHORD)

ISBKD

ISBKD

WLB

SITE 2

(20)

MASON, MARVIN L
& EDITH A

HTR

HTR

WLB

NOTE:
- SLOPE STAKES AT PERMIT SITES: 3:1

DENOTES FILL IN SURFACE WATER

03/5/2005
J:\cc-es\32521 preer-\hydraulics\wetlands\r2510_hyd_esh010.dgn
ESRI

English

PROJECT REFERENCE NO.	SHEET NO.
R2510C	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

8/17/99

ISM

HOLY TRINITY
CHURCH OF CHRIST
DISCIPLES OF CHRIST

HTR

640

ISBKD

FD

R/W

WLB

645

POOL

G

ISBKD

HTR

650

HTR

HTR

HTR

HTR

MATCH LINE -L- STA. 638+00.00

MATCH LINE -L- STA. 652+00.00

C

C

C

C

C

C

C

C

C

C

C

C

C

A

(CHORD)

F

F F F

WLB

WLB

WLB

WLB

WLB

13

HOPKINS, MARY BROWN

SITE 3

B

NOTE:
- SLOPE STAKES AT PERMIT SITES: 3:1

F F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

S S S DENOTES FILL IN SURFACE WATER

03/5/2005
jcamps\30521: projects\wetlands\r2510_hyd_psh011.dgn
jcamps

8/17/99

REVISIONS

NOTE:
- SLOPE STAKES AT PERMIT SITES: 3:1

S/S/S DENOTES FILL IN SURFACE WATER

English

PROJECT REFERENCE NO.	SHEET NO.
R2510C	18

R/W SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MATCH LINE -L- STA. 736+00.00

MATCH LINE -L- STA. 750+00.00

SITE 4

TANKS AG

ISMTL BUS

740

745

PA

HTR

ISFD

BRANTLEY, MINNIE LEE (14)

BAKER, MELBER PRYOR (15)

PARISH, PEGGY M & H JOHN (16)

WLB

R/W

SR 1511 (WILL RD)

CEMETERY

2SFD

03/5/2005
j:\projects\3252ii preconstruction\hydraulics\wetlands\r2510_hyd_esh018.dgn
jreck

8/17/99

REVISIONS

English

PROJECT REFERENCE NO.	SHEET NO.
R2510C	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MATCH LINE -L- STA. 750+00.00

MATCH LINE -L- STA. 764+00.00

750

755

760

UNKNOWN

SITE 4

(14) BRANTLEY, MINNIE LEE

(18) ROBINSON, DOROTHY R & HAROLD W

(16) PARISH, PEGGY M & H JOHN

SITE 4

(17) HODGES, MILTON EUGENE & JOANNE

R/W

CONC

WLB

F

S

2SFD

BUS

1SFD

PA

2SBK

THE ASSEMBLY OF CHILDREN OF GOD CHURCH OF CHRIST

NOTE:
- SLOPE STAKES AT PERMIT SITES: 3:1

F F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

S S S DENOTES FILL IN SURFACE WATER

03/5/2005
\\cons\32\2:: preserv\grading\cs\wetlands\2510_hyd_psh019.dgn
jbock

8/17/99

REVISIONS

NOTE:
- SLOPE STAKES AT PERMIT SITES: 3:1

S S S DENOTES FILL IN SURFACE WATER

English

PROJECT REFERENCE NO.	SHEET NO.
R2510C	21

RW SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SITE 5C

SITE 5A

ROAD 92

780

785

2SBKD

B

(19) CARRAWAY, ARAH BELL

(19) ROBINSON, DOROTHY R & HAROLD W

L WL

ISM BUS

(CHORD)

CONC

MATCH LINE -L- STA. 778+00.00

MATCH LINE -L- STA. 792+00.00

US 17

24'

R/W

ISBKD

ISFD

(CHORD)

ABAND

1380' MEDIAN T

03/5/2005
j:\comos\32521; preen\hydraulics\wetlands\r2510_hyd_psh021.dgn
jpark

English

PROJECT REFERENCE NO.	SHEET NO.
R2510C	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/05

REVISIONS

MATCH LINE -L- STA. 792+00.00

7

HTR

795

800

S

SITE 5B

WLB

C
A

F

24'

R/W 720' Lane Taper

ISBKD

RANSITION

NOTE:
- SLOPE STAKES AT PERMIT SITES: 3:1

DENOTES FILL IN SURFACE WATER

03/5/2005
Alignments\3252i: prepern\hydraulics\wetlands\r2510_hyd_psh022.dgn

English

PROJECT REFERENCE NO.	SHEET NO.
R2510C	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS 8/17/99

MATCH LINE -L- STA. 582+00.00

MATCHLINE -L- STA. 596+00.00

SITE IC

SITE IA

SITE IB

(CHORD)

(CHORD)

SMITHWICK, S D (12)

ARNOLD, BILLY JOE & JOSEPH D & NANCY M (10)

CHERRY JACK JR (11)

CONC

R/W

ISFD

ISBKD

HTR

WLB

585

590

595

NOTE:
- SLOPE STAKES AT PERMIT SITES: 3:1

F F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

E E E DENOTES EXCAVATION IN WETLAND

03/5/2005
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English

PROJECT REFERENCE NO.	SHEET NO.
R2510C	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/05

REVISIONS

MATCH LINE -L- STA. 624+00.00

-L- STA. 638+00.00

MATCH LINE -L-

B

625

R/W

2SFD

S

B

630

HTR

HTR

HTR

635

C

A

C

A

B

HTR

S

R/W

C

A

(CHORD)

ISBKD

ISBKD

S

WLB

S

SITE 2

20

MASON, MARVIN L
& EDITH A

HTR

S

HTR

WLB

NOTE:
- SLOPE STAKES AT PERMIT SITES: 3:1

DENOTES FILL IN SURFACE WATER

03/5/2005
Accepted 3252011 p-eperm\hydraulics\wetlands\hocontours\r-2510_hyd_psh010.dgn

English

PROJECT REFERENCE NO.	SHEET NO.
R2510C	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

03/5/2005
jlarson
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MATCH LINE -L- STA. 638+00.00

MATCH LINE -L- STA. 652+00.00

ISM

HOLY TRINITY
CHURCH OF CHRIST
DISCIPLES OF CHRIST

640

645

650

655

660

HTR

ISBKD

FD

R/W

WLB

POOL

G

S

C

(CHORD)

CA

B

13

HOPKINS, MARY BROWN

SITE 3

NOTE:
- SLOPE STAKES AT PERMIT SITES: 3:1

F F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

S S S DENOTES FILL IN SURFACE WATER

NOTE:
- SLOPE STAKES AT PERMIT SITES: 3:1

S S S DENOTES FILL IN SURFACE WATER

English

PROJECT REFERENCE NO.	SHEET NO.
R2510C	18
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS 8/17/99

MATCH LINE -L- STA. 736+00.00

MATCH LINE -L- STA. 750+00.00

TANKS AG

ISMTL BUS

740

745

SITE 4

14 BRANTLEY, MINNIE LEE

15 BAKER, MELBER PRYOR

16 PARISH, PEGGY M & H JOHN

R/W

SR 1511 (WILL RD)

CEMETERY

2SFD

ISFD

HTR

WLB

03/5/2005
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English

PROJECT REFERENCE NO.	SHEET NO.
R2510C	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

MATCH LINE -L- STA. 750+00.00

MATCH LINE -L- STA. 764+00.00

UNKNOWN

(14) BRANTLEY, MINNIE LEE

(18) ROBINSON, DOROTHY R & HAROLD W

(16) PARISH, PEGGY M & H JOHN

(17) HODGES, MILTON EUGENE & JOANNE

SITE 4

SITE 4

R/W

CONC

WLB

750

755

760

C A

S

2SFD

BUS

ISFD

BUS

PA

2SBK

ISFD

S

THE ASSEMBLY OF GOD CHILDREN OF GOD CHURCH OF CHRIST

NOTE:
- SLOPE STAKES AT PERMIT SITES: 3:1

F F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

S S S DENOTES FILL IN SURFACE WATER

03/5/2005
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jfoos

8/17/99

REVISIONS

NOTE:
- SLOPE STAKES AT PERMIT SITES: 3:1

S S S DENOTES FILL IN SURFACE WATER

English

PROJECT REFERENCE NO.	SHEET NO.
R2510C	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SITE 5C

SITE 5A

B

2SBKD

780

785

790

795

(19) CARRAWAY, ARAH BELL

(19) ROBINSON, DOROTHY R & HAROLD W

ISM BUS

(CHORD)

CONC

POND 02

WE 02

L WL

R/W

MATCH LINE -L- STA. 778+00.00

MATCH LINE -L- STA. 792+00.00

US 17

24'

ISBKD

ISFD

ABAND

1380' MEDIAN T

C A

S

B

03/5/2005
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English

PROJECT REFERENCE NO.	SHEET NO.
R2510C	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

MATCH LINE -L- STA. 792+00.00

795

800

HTR

SITE 5B

WLB

WLB

C
A

F

F

F

24'

F

F

F

R/W

720' Lane Taper

C
A

ISBKD

WLB

WLB

RANSITION

NOTE:
- SLOPE STAKES AT PERMIT SITES: 3:1

S S S DENOTES FILL IN SURFACE WATER

03/5/2005
14:08:04
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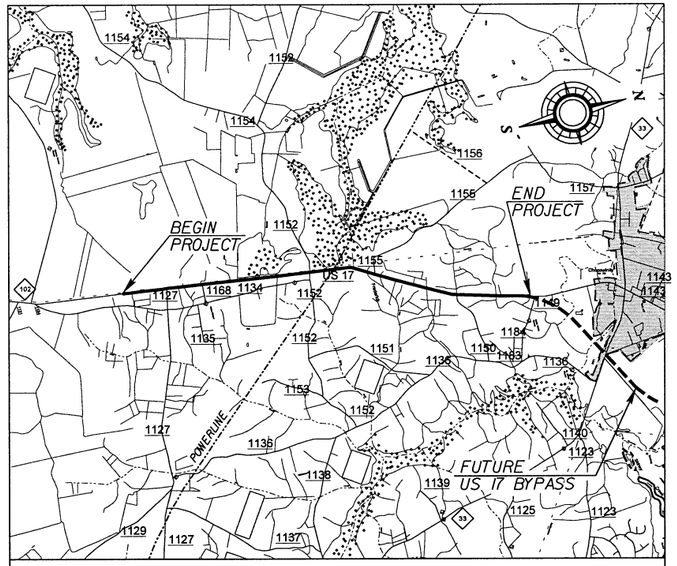
09/08/95

R-2510A

CONTRACT:

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



VICINITY MAP

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2510A	1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
34440.1.1	MAF-75-3(26)	PE	

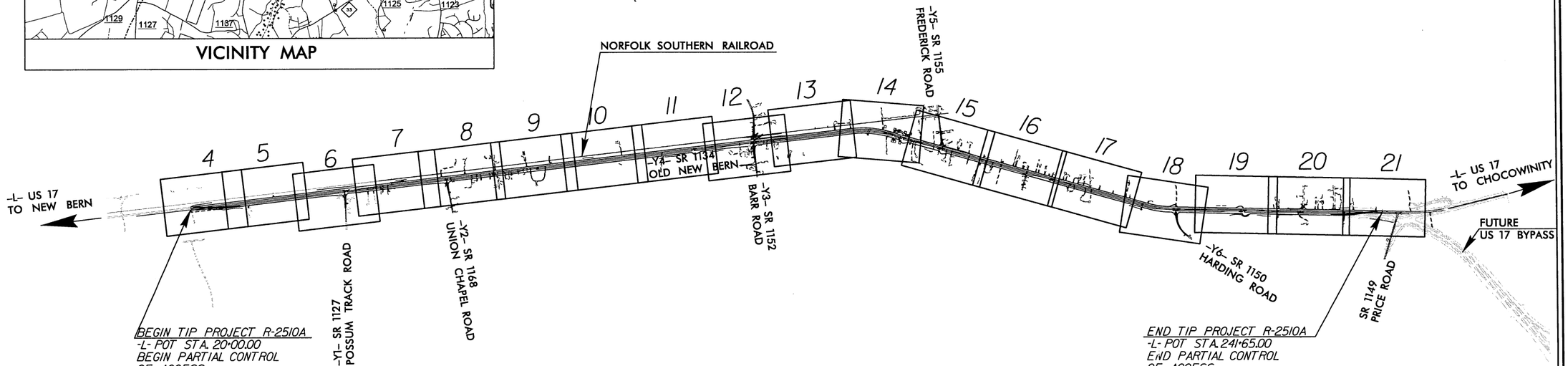
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BEAUFORT COUNTY

LOCATION: US 17 FROM SOUTH OF SR 1127 (POSSUM TRACK ROAD) TO SR 1149 (PRICE ROAD)

TYPE OF WORK: GRADING, PAVING, DRAINAGE, AND CULVERT

NAD 8395 NC GRID



NOTES: THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III OR TO R/W WHEN INDICATED ON PLANS.

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2006 = 10200 VPD
ADT 2026 = 17000 VPD
DHV = 12 %
D = 60 %
T = 12 % *
V = 60 MPH

* TTST 7% DUAL 5%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2510A = 4.198 Mi
TOTAL LENGTH OF TIP PROJECT R-2510A = 4.198 Mi

Prepared In The Office Of:
Carter-Burgess
Consultants in Planning, Engineering, Architecture, Construction Management and Related Services
5811 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27612

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: MARCH 18, 2005
LETTING DATE: DECEMBER 19, 2006

R. DONALD HURLBUT, PE
ROADWAY GROUP MANAGER

CARL L. BUSH III, PE
PROJECT DESIGN ENGINEER

NCDOT CONTACT: CATHY S. HOUSER, PE
ROADWAY DESIGN PROJECT ENGINEER

HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
P.E.
SIGNATURE:

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
P.E.
STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION
APPROVED
DIVISION ADMINISTRATOR *DATE*

03/15/2005
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PROJECT REFERENCE NO.	SHEET NO.
R-2510A	1-B

Note: Not to Scale

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary
- Proposed Wetland Boundary — WLB
- Existing High Quality Wetland Boundary
- Existing Endangered Animal Boundary
- Existing Endangered Plant Boundary

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
- River Basin Buffer — RBB
- Flow Arrow
- Disappearing Stream
- Spring
- Swamp Marsh
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

- Standard Guage
- RR Signal Milepost
- 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
- Proposed Right of Way Line with Iron Pin and Cap Marker
- Proposed Right of Way Line with Concrete or Granite Marker
- Existing Control of Access — CA
- Proposed Control of Access
- Existing Easement Line — E
- Proposed Temporary Construction Easement
- Proposed Temporary Drainage Easement
- Proposed Permanent Drainage Easement
- Proposed Permanent Utility Easement

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Wheel Chair Ramp — WCR
- Curb Cut for Future Wheel Chair Ramp — CCFR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equaility 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

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole — ?
- H-Frame Pole
- Recorded U/G Power Line
- Designated U/G Power Line (S.U.E.*)

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

- Gas Valve
- Gas Meter
- Recorded U/G Gas Line
- Designated U/G Gas Line (S.U.E.*)
- Above Ground Gas Line — A/G Gas

SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- Recorded SS Forced Main Line
- Designated SS Forced Main Line (S.U.E.*)

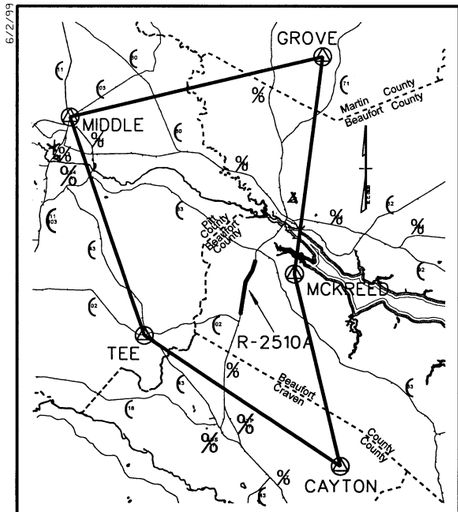
MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line
- U/G Tank; Water, Gas, Oil
- A/G Tank; Water, Gas, Oil
- U/G Test Hole (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

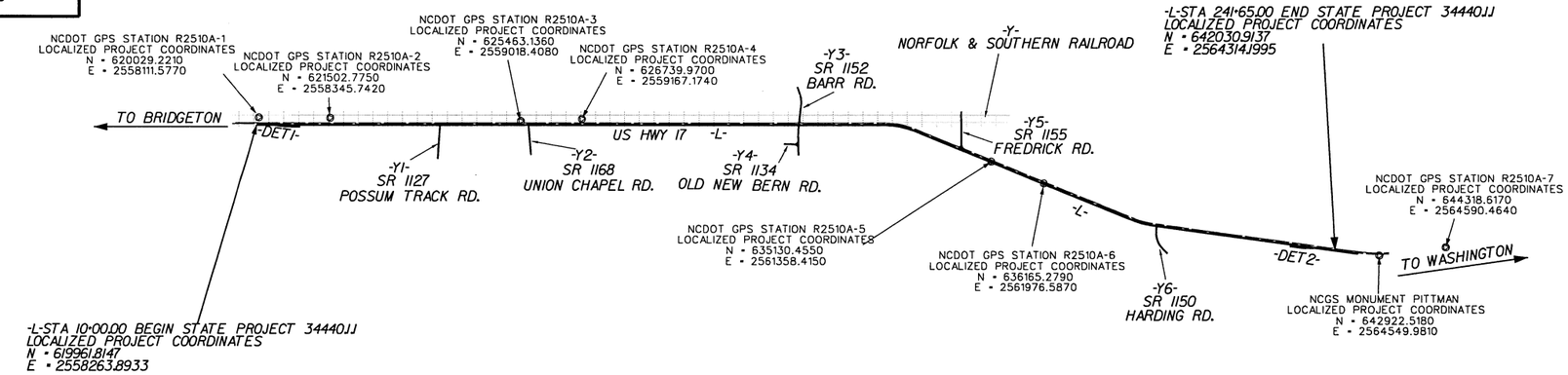
6/2/99

PROJECT REFERENCE NO.	SHEET NO.
R2510A	1C
Location and Surveys	

SURVEY CONTROL SHEET R-2510A



GPS CONTROL NETWORK MAP



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "R2510AW-2" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 665164.189(ft) EASTING: 2569499.835(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99989282 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "R2510AW-2" TO -L- STATION 10+00.00 IS S 13°57'32.7" W 46,577.903 (ft) ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

NOTES:

THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:

HTTP:\WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT

© *INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.*

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

NETWORK ESTABLISHED USING HARN MONUMENTATION.

SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

NOTE: DRAWING NOT TO SCALE

03/15/2005
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6/2/99

SURVEY CONTROL SHEET R-2510A

PROJECT REFERENCE NO.	SHEET NO.
R2510A	1D
Location and Surveys	

GPS CALIBRATION REPORT

PROJECT # 34440.1.1

TIP NUMBER	R-2510A		
USER NAME	BREIGNER	DATE & TIME	8:08:01 AM 8/14/2003
COORDINATE SYSTEM	US STATE PLANE 1983	ZONE	NORTH CAROLINA 3200
HORIZONTAL DATUM	NAD 1983 (CONUS)		
VERTICAL DATUM	NAVD88	GEOID MODEL	GEOID99 (CONUS)
COORDINATE UNITS	US SURVEY FEET		
DISTANCE UNITS	US SURVEY FEET		
HEIGHT UNITS	US SURVEY FEET		

THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION USES A LOCALIZED COORDINATE SYSTEM
WHICH IS VERY SIMILAR TO NORTH CAROLINA ZONE 3200 FROM WHICH IT IS DERIVED.
PLEASE TAKE CARE IN UTILIZING THESE COORDINATES TO ELIMINATE CONFUSION OF THE TWO SYSTEMS.
THIS FILE IS TO AID IN THE USE OF REAL TIME KINEMATIC (RTK) GPS DURING CONSTRUCTION LAYOUT.

DATUM TRANSFORMATION PARAMETERS

DATUM TRANSFORMATION COMPUTATION NOT REQUESTED

UPDATED DEFAULT PROJECTION (TRANSVERSE MERCATOR) DEFINITION

UPDATED DEFAULT PROJECTION NOT REQUESTED

HORIZONTAL ADJUSTMENT PARAMETERS

NORTHING COORDINATE OF ROTATION CENTER	638753.152SFT
EASTING COORDINATE OF ROTATION CENTER	2560248.737SFT
ROTATION ABOUT THE CENTER POINT	0°00'00"
TRANSLATION NORTH	-2.835SFT
TRANSLATION EAST	-0.989SFT
SCALE FACTOR	1.00010736

VERTICAL ADJUSTMENT PARAMETERS

NORTHING COORDINATE OF ORIGIN POINT	702368.588SFT
EASTING COORDINATE OF ORIGIN POINT	2486939.757SFT
VERTICAL SEPARATION AT ORIGIN	0.126SFT
SLOPE NORTH	-0.114PPM
SLOPE EAST	-1.080PPM

GEOID MODEL DEFINITION

GEOID99 (CONUS)

RESIDUAL DIFFERENCES BETWEEN GPS (WGS84) AND LOCAL COORDINATES

SUMMARY

	MAXIMUM ERROR	ROOT MEAN SQUARE ERROR	POINT
HORIZONTAL	0.010SFT	0.002	MCKREED - WGS84
VERTICAL	0.053SFT	0.008	R2510A-6 - WGS84
THREE-DIMENSIONAL	0.054SFT	0.008	R2510A-6 - WGS84

POINT RESIDUALS

WGS84 COORDINATES		CALCULATED POINT FOR DISPLAY ONLY		LOCAL COORDINATES	
POINT	MIDDLE - WGS84	NORTHING	702368.588SFT	POINT	MIDDLE - LOCAL
LATITUDE	35°40'07.69972"N	EASTING	2486939.757SFT	NORTHING	702368.584SFT
LONGITUDE	77°21'37.60140"W	ELEVATION	42.102SFT	EASTING	2486939.754SFT
HEIGHT	-75.377SFT	HORZ ERROR	0.004SFT	ELEVATION	42.064SFT
		VERT ERROR	0.038SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.038SFT	QUALITY	SURVEY QUALITY
POINT	GROVE - WGS84	NORTHING	727662.515SFT	POINT	GROVE - LOCAL
LATITUDE	35°43'58.69914"N	EASTING	2592422.700SFT	NORTHING	727662.517SFT
LONGITUDE	77°00'13.30912"W	ELEVATION	36.663SFT	EASTING	2592422.706SFT
HEIGHT	-82.526SFT	HORZ ERROR	0.006SFT	ELEVATION	36.674SFT
		VERT ERROR	0.011SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.013SFT	QUALITY	SURVEY QUALITY
POINT	TEE - WGS84	NORTHING	611044.350SFT	POINT	TEE - LOCAL
LATITUDE	35°24'59.40821"N	EASTING	2518048.598SFT	NORTHING	611044.343SFT
LONGITUDE	77°15'40.02676"W	ELEVATION	40.213SFT	EASTING	2518048.603SFT
HEIGHT	-79.583SFT	HORZ ERROR	0.009SFT	ELEVATION	40.237SFT
		VERT ERROR	0.024SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.026SFT	QUALITY	SURVEY QUALITY

POINT	CAYTON - WGS84	NORTHING	556029.427SFT	POINT	CAYTON - LOCAL
LATITUDE	35°15'40.10785"N	EASTING	2599879.407SFT	NORTHING	556029.426SFT
LONGITUDE	76°59'25.02715"W	ELEVATION	30.321SFT	EASTING	2599879.399SFT
HEIGHT	-91.171SFT	HORZ ERROR	0.008SFT	ELEVATION	30.286SFT
		VERT ERROR	0.035SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.036SFT	QUALITY	SURVEY QUALITY
POINT	R2510AW-2 - WGS8	NORTHING	665164.189SFT	POINT	R2510AW-2 - LOCA
LATITUDE	35°33'45.20023"N	EASTING	2569499.835SFT	NORTHING	665164.189SFT
LONGITUDE	77°05'25.91014"W	ELEVATION	3.368SFT	EASTING	2569499.835SFT
HEIGHT	-116.598SFT	HORZ ERROR	0.001SFT	ELEVATION	3.367SFT
		VERT ERROR	0.001SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.002SFT	QUALITY	SURVEY QUALITY
POINT	R2510A-7 - WGS84	NORTHING	644318.613SFT	POINT	R2510A-7 - LOCAL
LATITUDE	35°30'20.00930"N	EASTING	2564590.467SFT	NORTHING	644318.617SFT
LONGITUDE	77°06'10.14123"W	ELEVATION	38.893SFT	EASTING	2564590.464SFT
HEIGHT	-81.299SFT	HORZ ERROR	0.005SFT	ELEVATION	38.872SFT
		VERT ERROR	0.021SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.021SFT	QUALITY	SURVEY QUALITY
POINT	PITTMAN - WGS84	NORTHING	642922.518SFT	POINT	PITTMAN - LOCAL
LATITUDE	35°30'06.21209"N	EASTING	2564549.980SFT	NORTHING	642922.518SFT
LONGITUDE	77°06'10.95348"W	ELEVATION	41.233SFT	EASTING	2564549.981SFT
HEIGHT	-78.973SFT	HORZ ERROR	0.001SFT	ELEVATION	41.211SFT
		VERT ERROR	0.022SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.022SFT	QUALITY	SURVEY QUALITY
POINT	MCKREED - WGS84	NORTHING	636792.404SFT	POINT	MCKREED - LOCAL
LATITUDE	35°29'02.51477"N	EASTING	2580630.185SFT	NORTHING	636792.412SFT
LONGITUDE	77°02'57.96732"W	ELEVATION	33.448SFT	EASTING	2580630.179SFT
HEIGHT	-87.034SFT	HORZ ERROR	0.010SFT	ELEVATION	33.416SFT
		VERT ERROR	0.032SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.033SFT	QUALITY	SURVEY QUALITY
POINT	R2510A-6 - WGS84	NORTHING	636165.281SFT	POINT	R2510A-6 - LOCAL
LATITUDE	35°28'59.88014"N	EASTING	2561976.585SFT	NORTHING	636165.279SFT
LONGITUDE	77°06'43.62562"W	ELEVATION	46.389SFT	EASTING	2561976.587SFT
HEIGHT	-73.924SFT	HORZ ERROR	0.002SFT	ELEVATION	46.362SFT
		VERT ERROR	0.053SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.054SFT	QUALITY	SURVEY QUALITY
POINT	R2510A-5 - WGS84	NORTHING	635130.457SFT	POINT	R2510A-5 - LOCAL
LATITUDE	35°28'49.76373"N	EASTING	2561358.410SFT	NORTHING	635130.455SFT
LONGITUDE	77°06'51.33671"W	ELEVATION	48.173SFT	EASTING	2561358.415SFT
HEIGHT	-72.060SFT	HORZ ERROR	0.005SFT	ELEVATION	48.209SFT
		VERT ERROR	0.036SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.037SFT	QUALITY	SURVEY QUALITY
POINT	R2510AW-1 - WGS8	NORTHING	629921.299SFT	POINT	R2510AW-1 - LOCA
LATITUDE	35°27'56.77524"N	EASTING	2569177.394SFT	NORTHING	629921.302SFT
LONGITUDE	77°05'18.02592"W	ELEVATION	34.557SFT	EASTING	2569177.393SFT
HEIGHT	-85.840SFT	HORZ ERROR	0.003SFT	ELEVATION	34.558SFT
		VERT ERROR	0.031SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.033SFT	QUALITY	SURVEY QUALITY
POINT	R2510A-4 - WGS84	NORTHING	626739.970SFT	POINT	R2510A-4 - LOCAL
LATITUDE	35°27'27.20684"N	EASTING	2559167.172SFT	NORTHING	626739.970SFT
LONGITUDE	77°07'19.74574"W	ELEVATION	55.614SFT	EASTING	2559167.174SFT
HEIGHT	-64.662SFT	HORZ ERROR	0.002SFT	ELEVATION	55.640SFT
		VERT ERROR	0.026SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.026SFT	QUALITY	SURVEY QUALITY
POINT	R2510A-3 - WGS84	NORTHING	625463.139SFT	POINT	R2510A-3 - LOCAL
LATITUDE	35°27'14.60892"N	EASTING	2559018.406SFT	NORTHING	625463.136SFT
LONGITUDE	77°07'21.83552"W	ELEVATION	57.079SFT	EASTING	2559018.408SFT
HEIGHT	-63.205SFT	HORZ ERROR	0.003SFT	ELEVATION	57.067SFT
		VERT ERROR	0.012SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.012SFT	QUALITY	SURVEY QUALITY
POINT	R2510A-2 - WGS84	NORTHING	621502.775SFT	POINT	R2510A-2 - LOCAL
LATITUDE	35°26'35.57313"N	EASTING	2558345.743SFT	NORTHING	621502.775SFT
LONGITUDE	77°07'30.86874"W	ELEVATION	57.846SFT	EASTING	2558345.742SFT
HEIGHT	-62.461SFT	HORZ ERROR	0.001SFT	ELEVATION	57.832SFT
		VERT ERROR	0.014SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.014SFT	QUALITY	SURVEY QUALITY
POINT	R2510A-1 - WGS84	NORTHING	620029.220SFT	POINT	R2510A-1 - LOCAL
LATITUDE	35°26'21.04579"N	EASTING	2558111.579SFT	NORTHING	620029.221SFT
LONGITUDE	77°07'34.03443"W	ELEVATION	60.371SFT	EASTING	2558111.577SFT
HEIGHT	-59.944SFT	HORZ ERROR	0.002SFT	ELEVATION	60.394SFT
		VERT ERROR	0.023SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.023SFT	QUALITY	SURVEY QUALITY

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "R2510AW-2" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 665164.189(ft) EASTING: 2569499.835(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99989282 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "R2510AW-2" TO -L- STATION 10+00.00 IS S 13°57'32.7" W 46,577.903 (ft) ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

NOTES:

THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:

HTTP:\WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT

◎ *INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.*

NETWORK ESTABLISHED USING HARN MONUMENTATION

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

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PROJECT REFERENCE NO.	SHEET NO.
R-2510A	1E
Location and Surveys	

SURVEY CONTROL SHEET R-2510A

BASELINE DATA

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	GPS R2510A-1	620029.2210	2558111.5770	60.39	10+43.59	160.76 LT
2	BL-2	620591.7423	2558264.9030	58.48	16+22.83	94.30 LT
3	BL-3	621186.6058	2558359.3259	58.13	22+25.13	90.97 LT
4	BL-4	621760.1824	2558476.5311	59.74	28+09.84	61.89 LT
5	BL-5	622330.4312	2558569.4044	61.25	33+87.57	56.36 LT
6	BL-6	622841.2995	2558645.9934	60.26	39+04.15	57.94 LT
7	BL-7	623337.6928	2558718.7136	58.03	44+05.83	61.16 LT
8	BL-8	623811.4925	2558844.8557	59.45	48+93.26	8.15 LT
9	BL-9	624391.2694	2558931.6963	55.80	54+79.50	10.02 LT
10	BL-10	625027.6119	2559027.9207	55.87	61+23.08	11.18 LT
11	BL-11	625634.5866	2559128.5468	57.09	67+38.29	3.54 LT
12	BL-12	626205.7099	2559208.2475	56.41	73+14.90	11.16 LT
13	GPS R2510A-4	626739.9700	2559167.1740	55.64	78+36.79	132.59 LT
14	BL-14	627308.2820	2559311.3333	54.50	84+20.37	76.08 LT
15	BL-15	627887.5944	2559422.5816	53.69	90+09.85	53.75 LT
16	BL-16	628474.7429	2559510.8917	53.99	96+03.60	55.29 LT
17	BL-17	629061.7216	2559589.2285	51.94	101+95.67	66.66 LT
18	BL-18	629634.4107	2559686.3990	53.61	107+76.47	57.25 LT
19	BL-19	630144.0593	2559767.4802	56.33	112+92.52	54.21 LT
20	BL-20	630657.6962	2559846.2404	58.19	118+12.16	54.06 LT
21	NCGS HADDOCK	631239.6579	2559914.5181	59.16	123+97.75	74.62 LT
22	BL-22	631811.4640	2560023.1530	57.23	129+79.41	53.74 LT
23	BL-23	632385.1241	2560098.4258	52.65	135+57.86	66.13 LT
24	BL-24	632946.2817	2560171.7096	53.66	141+23.60	78.59 LT
25	NCGS FLEMING	633481.5555	2560318.9368	53.41	146+60.76	76.18 LT
26	BL-26	633994.4592	2560683.2467	49.91	152+78.68	9.97 LT
27	BL-27	634533.0249	2561003.5704	49.10	159+05.30	11.54 LT
28	GPS R2510A-5	635130.4550	2561358.4158	48.21	166+00.17	13.70 LT
29	BL-29	635642.5305	2561681.9385	46.24	172+05.70	1.08 RT
30	GPS R2510A-6	636165.2790	2561976.5870	46.36	178+05.57	14.40 LT
31	BL-31	636681.3819	2562294.3857	43.40	184+11.62	6.60 LT
32	BL-32	637201.6269	2562596.8855	45.32	190+13.37	14.06 LT
33	BL-33	637786.8974	2562952.1180	45.89	196+98.00	9.65 LT
34	BL-34	638330.9183	2563225.3946	43.58	203+08.20	10.42 RT
35	BL-35	638904.1446	2563382.0781	41.35	209+02.25	2.80 LT
36	BL-36	639468.3117	2563549.3500	37.81	214+90.69	3.17 LT
37	BL-37	640050.4887	2563711.0972	34.21	220+94.83	13.96 LT
38	BL-38	640640.2068	2563884.7460	31.92	227+89.58	15.50 LT
39	BL-39	641253.7097	2564002.8272	33.90	233+31.30	77.07 LT
40	BL-40	641782.3358	2564236.6161	33.95	239+84.62	3.56 LT
41	BL-41	642344.1551	2564329.6567	38.49	244+69.67	74.41 LT
42	NCGS PITTMAN	642922.5180	2564549.9810	41.21	OUTSIDE PROJECT LIMITS	

BY1

POINT	DESC.	NORTH	EAST	ELEVATION	Y1 STATION	OFFSET
43	BL-8	623811.4925	2558844.8557	59.44	OUTSIDE PROJECT LIMITS	
44	BY1-44	623628.5611	2559411.3042	57.83	OUTSIDE PROJECT LIMITS	

BY2

POINT	DESC.	NORTH	EAST	ELEVATION	Y2 STATION	OFFSET
45	BL-11	625634.5866	2559128.5468	57.09	OUTSIDE PROJECT LIMITS	
46	BY2-46	625581.5305	2559720.5716	57.83	OUTSIDE PROJECT LIMITS	

BY3

POINT	DESC.	NORTH	EAST	ELEVATION	Y3 STATION	OFFSET
47	BY3-47	631398.3273	2559330.5878	57.35	OUTSIDE PROJECT LIMITS	
48	NCGS HADDOCK	631239.6579	2559914.5181	59.16	15+60.67	24.11 RT
49	BY3-49	631146.9861	2560340.5508	56.02	19+93.59	31.02 RT
50	BY3-50	631122.9523	2560618.8161	51.08	OUTSIDE PROJECT LIMITS	

BY4

POINT	DESC.	NORTH	EAST	ELEVATION	Y4 STATION	OFFSET
52	BY3-49	631146.9861	2560340.5508	56.02	10+32.69	39.47 RT
51	BY4-51	630897.5747	2560320.6977	56.83	12+81.76	15.66 RT

BY5

POINT	DESC.	NORTH	EAST	ELEVATION	Y5 STATION	OFFSET
53	BY5-53	634617.4058	2560396.2288	53.01	10+03.68	18.69 RT
54	BL-27	634533.0249	2561003.5704	49.10	16+16.84	15.51 RT

BY6

POINT	DESC.	NORTH	EAST	ELEVATION	Y6 STATION	OFFSET
55	BL-34	638330.9918	2563225.3946	43.58	10+06.73	49.17 RT
56	BY6-56	638328.1340	2563444.7686	43.12	12+17.98	19.96 RT
57	BY6-57	638538.0415	2563816.8084	41.63	OUTSIDE PROJECT LIMITS	

BY7

POINT	DESC.	NORTH	EAST	ELEVATION	Y7 STATION	OFFSET
58	BL-41	642344.1551	2564329.6567	38.49	OUTSIDE PROJECT LIMITS	
59	BY7-59	642000.3375	2564905.0815	23.99	OUTSIDE PROJECT LIMITS	

BENCHMARK DATA

BM1 ELEVATION = 62.48
N 622484 E 2558526
L STATION 35+33 123 LEFT
RR SPIKE IN BST @ RR CROSSING

BM2 ELEVATION = 58.68
N 625542 E 2558994
L STATION 66+26 122 LEFT
RR SPIKE IN BST @ RR CROSSING

BM3 ELEVATION = 54.67
N 628837 E 2559496
L STATION 99+59 125 LEFT
RR SPIKE IN BST @ RR CROSSING

BM4 ELEVATION = 61.27
N 631257 E 2559834
L STATION 124+03 157 LEFT
RR SPIKE IN CP&L POLE*RRC44

BM5 ELEVATION = 55.88
N 633011 E 2560132
L STATION 141+80 128 LEFT
RR SPIKE IN BST @ RR CROSSING

BM6 ELEVATION = 55.14
N 634607 E 2560351
L STATION 156+34 609 LEFT
USCGS MON "D 26"

BM7 ELEVATION = 49.20
N 637378 E 2563054
L STATION 193+99 288 RIGHT
RR SPIKE IN 24" CEDAR TREE

BM8 ELEVATION = 33.81
N 639755 E 2563866
L STATION 218+56 218 RIGHT
RR SPIKE IN 15" GUM TREE

BM9 ELEVATION = 40.94
N 642557 E 2564323
L STATION 246+44
N 62° 25' 55.1" W DIST 143.96
RR SPIKE IN 42" OAK TREE

DATUM DESCRIPTION

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NOTES:

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NETWORK ESTABLISHED USING HARN MONUMENTATION.

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

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PROJECT REFERENCE NO.	SHEET NO.
R-2510A	1-F
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Disclaimer: This coordinate list is provided for the convenience of interested contractors and is intended for use during the project bidding process only. Coordinates are localized to this particular project and any conversion to state grid coordinates or other formats will be the responsibility of the recipient. While every effort has been made to provide up-to-date, accurateinformation, NCDOT makes no express guarantee as to the validity or potential for revision of this information prior to project letting.

Point #	Chain	Station	Northing(Y)	Easting(X)
1	L	10+00.00	619961.8147	2558263.8933
2	L	11+00.00	620060.6636	2558279.0225
3	L	12+00.00	620159.5125	2558294.1516
4	L	13+00.00	620258.3615	2558309.2808
5	L	14+00.00	620357.2104	2558324.4099
6	L	15+00.00	620456.0593	2558339.5391
7	L	16+00.00	620554.9082	2558354.6682
8	L	17+00.00	620653.7571	2558369.7974
9	L	18+00.00	620752.6060	2558384.9266
10	L	19+00.00	620851.4550	2558400.0557
11	L	20+00.00	620950.3039	2558415.1849
12	L	21+00.00	621049.1528	2558430.3140
13	L	22+00.00	621148.0017	2558445.4432
14	L	23+00.00	621246.8506	2558460.5723
15	L	24+00.00	621345.6996	2558475.7015
16	L	25+00.00	621444.5485	2558490.8306
17	L	26+00.00	621543.3974	2558505.9598
18	L	27+00.00	621642.2463	2558521.0890
19	L	28+00.00	621741.0952	2558536.2181
20	L	29+00.00	621839.9441	2558551.3473
21	L	30+00.00	621938.7931	2558566.4764
22	L	31+00.00	622037.6420	2558581.6056
23	L	32+00.00	622136.4909	2558596.7347
24	L	33+00.00	622235.3398	2558611.8639
25	L	34+00.00	622334.1887	2558626.9930
26	L	35+00.00	622433.0377	2558642.1222
27	L	36+00.00	622531.8866	2558657.2514
28	L	37+00.00	622630.7355	2558672.3805
29	L	38+00.00	622729.5844	2558687.5097
30	L	39+00.00	622828.4333	2558702.6388
31	L	40+00.00	622927.2823	2558717.7680
32	L	41+00.00	623026.1312	2558732.8971
33	L	42+00.00	623124.9801	2558748.0263
34	L	43+00.00	623223.8290	2558763.1554
35	L	44+00.00	623322.6779	2558778.2846
36	L	45+00.00	623421.5268	2558793.4137
37	L	46+00.00	623520.3758	2558808.5429
38	L	47+00.00	623619.2247	2558823.6721
39	L	48+00.00	623718.0736	2558838.8012
40	L	49+00.00	623816.9225	2558853.9304
41	L	50+00.00	623915.7714	2558869.0595
42	L	51+00.00	624014.6204	2558884.1887
43	L	52+00.00	624113.4693	2558899.3178
44	L	53+00.00	624212.3182	2558914.4470
45	L	54+00.00	624311.1671	2558929.5761
46	L	55+00.00	624410.0160	2558944.7053
47	L	56+00.00	624508.8649	2558959.8345
48	L	57+00.00	624607.7139	2558974.9636
49	L	58+00.00	624706.5628	2558990.0928
50	L	59+00.00	624805.4117	2559005.2219
51	L	60+00.00	624904.2606	2559020.3511
52	L	61+00.00	625003.1095	2559035.4802
53	L	62+00.00	625101.9585	2559050.6094
54	L	63+00.00	625200.8074	2559065.7385
55	L	64+00.00	625299.6563	2559080.8677
56	L	65+00.00	625398.5052	2559095.9969
57	L	66+00.00	625497.3541	2559111.1260
58	L	67+00.00	625596.2030	2559126.2552
59	L	68+00.00	625695.0520	2559141.3843
60	L	69+00.00	625793.9009	2559156.5135
61	L	70+00.00	625892.7498	2559171.6426
62	L	71+00.00	625991.5987	2559186.7718
63	L	72+00.00	626090.4476	2559201.9009
64	L	73+00.00	626189.2966	2559217.0301
65	L	74+00.00	626288.1455	2559232.1593
66	L	75+00.00	626386.9944	2559247.2884
67	L	76+00.00	626485.8433	2559262.4176
68	L	77+00.00	626584.6922	2559277.5467
69	L	78+00.00	626683.5411	2559292.6759
70	L	79+00.00	626782.3901	2559307.8050
71	L	80+00.00	626881.2390	2559322.9342
72	L	81+00.00	626980.0879	2559338.0633
73	L	82+00.00	627078.9368	2559353.1925
74	L	83+00.00	627177.7857	2559368.3217
75	L	84+00.00	627276.6347	2559383.4508
76	L	85+00.00	627375.4836	2559398.5800
77	L	86+00.00	627474.3325	2559413.7091
78	L	87+00.00	627573.1814	2559428.8383
79	L	88+00.00	627672.0303	2559443.9674
80	L	89+00.00	627770.8792	2559459.0966
81	L	90+00.00	627869.7282	2559474.2257
82	L	91+00.00	627968.5771	2559489.3549
83	L	92+00.00	628067.4260	2559504.4841
84	L	93+00.00	628166.2749	2559519.6132
85	L	94+00.00	628265.1238	2559534.7424
86	L	95+00.00	628363.9728	2559549.8715
87	L	96+00.00	628462.8217	2559565.0007
88	L	97+00.00	628561.6706	2559580.1298
89	L	98+00.00	628660.5195	2559595.2590
90	L	99+00.00	628759.3684	2559610.3881
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96	L	105+00.00	629352.4619	2559701.1631
97	L	106+00.00	629451.3109	2559716.2922
98	L	107+00.00	629550.1598	2559731.4214
99	L	108+00.00	629649.0087	2559746.5505
100	L	109+00.00	629747.8576	2559761.6797
101	L	110+00.00	629846.7065	2559776.8088
102	L	111+00.00	629945.5555	2559791.9380
103	L	112+00.00	630044.4044	2559807.0672
104	L	113+00.00	630143.2533	2559822.1963
105	L	114+00.00	630242.1022	2559837.3255
106	L	115+00.00	630340.9511	2559852.4546
107	L	116+00.00	630439.8000	2559867.5838
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111	L	120+00.00	630835.1957	2559928.1004
112	L	121+00.00	630934.0446	2559943.2296
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122	L	131+00.00	631922.5338	2560094.5211
123	L	132+00.00	632021.3827	2560109.6503
124	L	133+00.00	632120.2317	2560124.7794
125	L	134+00.00	632219.0806	2560139.9086
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132	L	141+00.00	632911.0230	2560245.8127
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135	L	144+00.00	633205.3339	2560303.0038
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237	L	246+00.00	642447.8907	2564438.1156
238	L	246+44.18	642490.2384	2564450.7004

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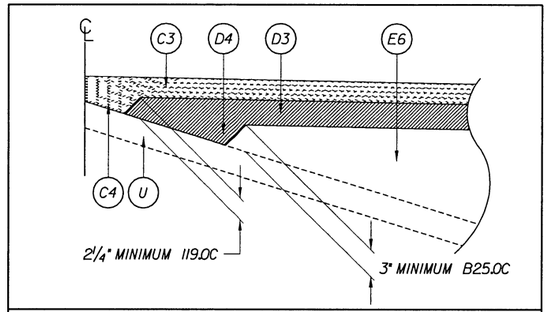
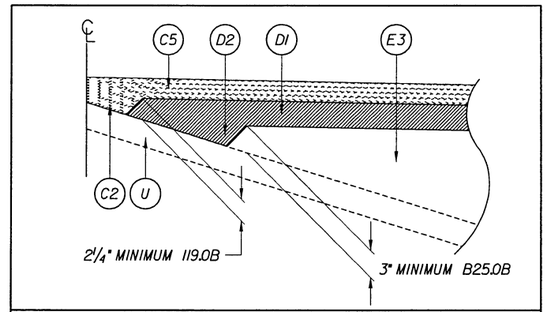
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 2½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 140 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.
C3	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.
C5	PROP. APPROX. 1¼" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 140 LBS. PER SQ. YD.
D1	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2¼" IN DEPTH OR GREATER THAN 4" IN DEPTH.
D3	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D4	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2¼" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
E2	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
E4	PROP. APPROX. 4.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.
E5	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
E6	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
J1	PROP. 10" AGGREGATE BASE COURSE.
P1	PRIME COAT AT THE RATE OF .35 GAL. PER SQ. YD.
R3	5" MONOLITHIC CONCRETE ISLAND. (KEYED IN)
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W1	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET No. 2)
W2	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET No. 2)

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



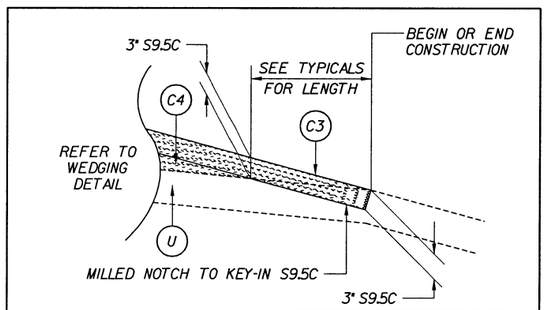
DETAIL SHOWING METHOD OF WEDGING

W1 -L-,-DET1-,-DET2-



DETAIL SHOWING METHOD OF WEDGING

W2 -Y2-,-Y3-,-Y5-,-Y6-



DETAIL SHOWING TIE-INS AT PROJECT TERMINI

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Carter-Burgess
Consultants in Planning, Engineering, Architecture, Construction Management and Related Services
5811 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27612

KO & ASSOCIATES, P.C.
Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606

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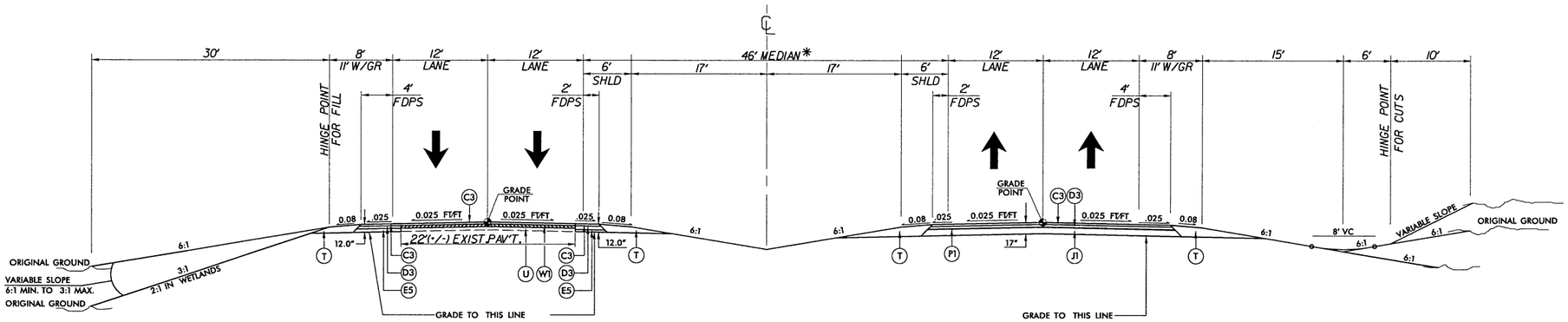
NOTE: SEE SHEET NO.2 FOR WEDGING DETAILS



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

* STA. 23+16.53 TO STA. 29+04.07 -L- LT. (MEDIAN VARIES FROM 12' TO 46')
STA. 29+04.07 TO STA. 232+10.94 -L- LT. & RT.
STA. 232+10.94 TO STA. 237+95.47 -L- LT.

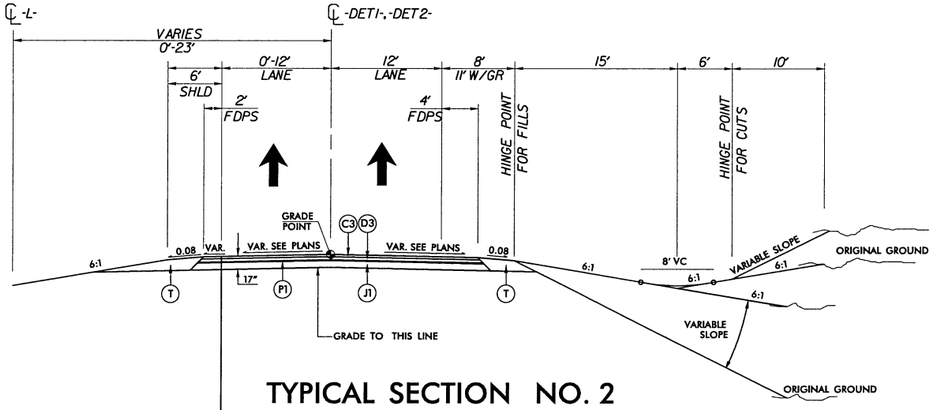
NOTE 1: EXISTING PAVEMENT WIDTH AND LOCATION VARIES

NOTE 2: SEE PLANS FOR LOCATION OF TURN LANES AND TAPERS

USE TYPICAL SECTION NO. 2

STA. 12+66.71 TO 18+58.65 -DET1-
STA. 10+00.00 TO 15+88.97 -DET2-

NOTE 1: EXISTING PAVEMENT WIDTH AND LOCATION VARIES
NOTE 2: SEE PLANS FOR LOCATION OF TAPER



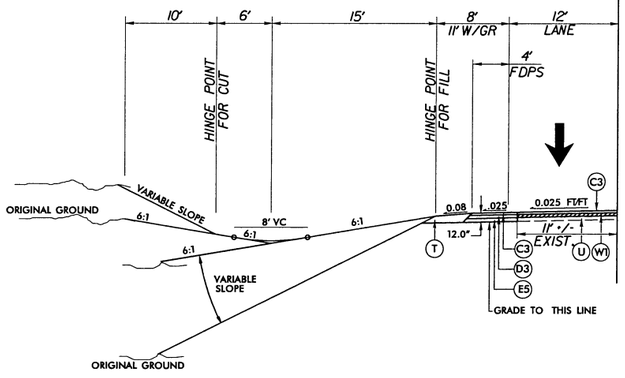
TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2A IN CONJUNCTION WITH TYPICAL SECTION 2

TRANSITION FROM EXISTING TO TYP. SECT. NO.2A FROM
STA. 20+00.00 TO STA. 20+50.00 -L- LT. & RT.
STA. 10+00.00 TO STA. 12+66.71 -DET1-
STA. 15+88.97 TO STA. 18+58.65 -DET2-
STA. 240+65.00 TO STA. 241+65.00 -L- LT.

NOTE 1: EXISTING PAVEMENT WIDTH AND LOCATION VARIES

NOTE 2: SEE PLANS FOR LOCATION OF TAPER



TYPICAL SECTION NO. 2A

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Carter-Burgess
Consultants in Planning, Engineering, Architecture, Construction Management and Related Services
5811 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27612

KO & ASSOCIATES, P.C.
Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606

PAVEMENT SCHEDULE	
C1	2½" SF9.5A
C2	VAR. DEP. SF9.5A
C3	3" S9.5C
C4	VAR. DEP. S9.5C
C5	1¼" SF9.5A
D1	2½" I19.0B
D2	VAR. DEP. I19.0B
D3	4" I19.0C
D4	VAR. DEP. I19.0C
E1	4" B25.0B
E2	5" B25.0B
E3	VAR. DEP. B25.0B
E4	4.5" B25.0C
E5	5" B25.0C
E6	VAR. DEP. B25.0C
J1	10 " ABC
P1	PRIME COAT
R3	5" MONO. ISLAND
T	EARTH MAT.
U	EXST. PVMT.
W1	WEDGING DET 1
W2	WEDGING DET 2

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

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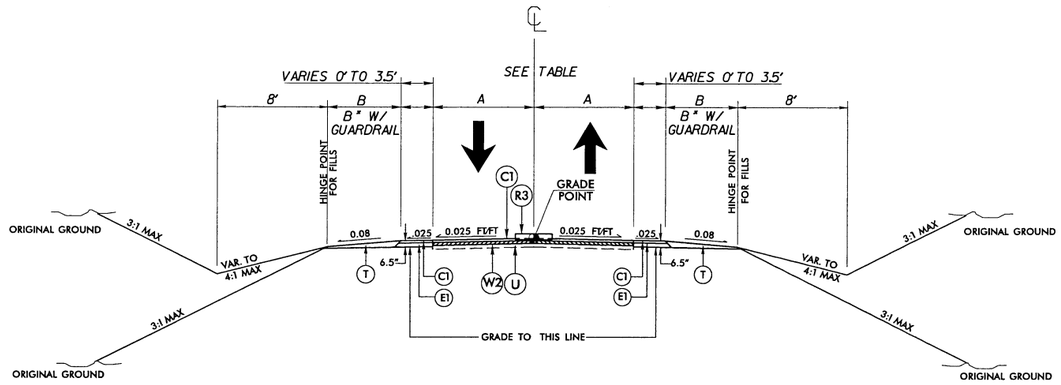
NOTE: SEE SHEET NO.2 FOR WEDGING DETAILS

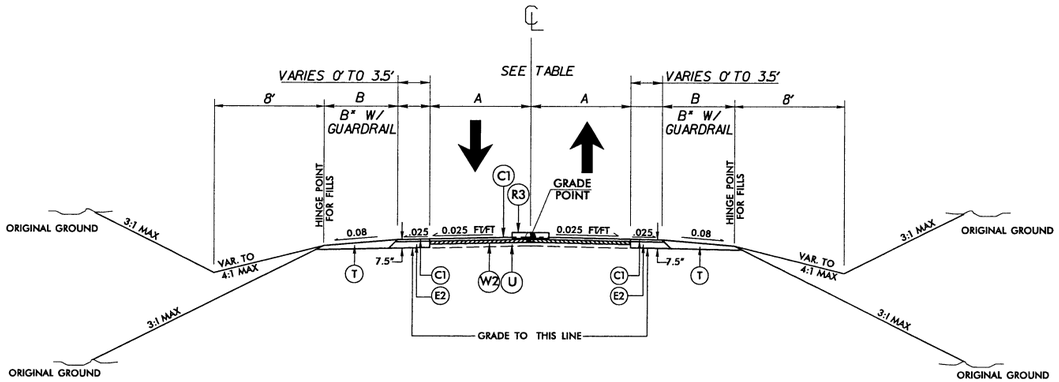


TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3 AS FOLLOWS:

LINE	ROAD NAME	STATION TO STATION	A	B	B*
-Y1-	POSSUM TRACK ROAD	STA. 11+14.04 TO STA. 13+00.00	10'	6'	9'
-Y2-	UNION CHAPEL ROAD	STA. 11+11.62 TO STA. 13+00.00	7.5'	5'	8'
-Y6-	HARDING ROAD	STA. 11+12.98 TO STA. 13+50.00	10'	5'	8'

NOTE 1: EXISTING PAVEMENT LOCATION VARIES
NOTE 2: SEE PLANS FOR LOCATION OF TURN LANES, TAPERS AND ISLANDS



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4 AS FOLLOWS:

LINE	ROAD NAME	STATION TO STATION	A	B	B*
-Y3-	BARR ROAD	STA. 12+78.95 TO STA. 14+78.00	10'	8'	11'
-Y3-	BARR ROAD	STA. 17+82.66 TO STA. 19+82.97	10'	8'	11'
-Y5-	FREDRICK ROAD	STA. 13+00.00 TO STA. 14+97.95	10'	6'	9'

NOTE 1: EXISTING PAVEMENT LOCATION VARIES
NOTE 2: SEE PLANS FOR LOCATION OF TURN LANES, TAPERS AND ISLANDS

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	2B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Carter::Burgess
Consultants in Planning, Engineering, Architecture, Construction Management and Related Services
5811 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27612

KO & ASSOCIATES, P.C.
Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606

PAVEMENT SCHEDULE	
C1	2½" SF9.5A
C2	VAR. DEP. SF9.5A
C3	3" S9.5C
C4	VAR. DEP. S9.5C
C5	1¼" SF9.5A
D1	2½" I19.0B
D2	VAR. DEP. I19.0B
D3	4" I19.0C
D4	VAR. DEP. I19.0C
E1	4" B25.0B
E2	5" B25.0B
E3	VAR. DEP. B25.0B
E4	4.5" B25.0C
E5	5" B25.0C
E6	VAR. DEP. B25.0C
J1	10 " ABC
P1	PRIME COAT
R3	5" MONO. ISLAND
T	EARTH MAT.
U	EXST. PVMT.
W1	WEDGING DET 1
W2	WEDGING DET 2

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

03/15/2005
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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	2C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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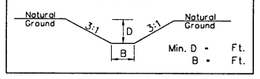
Raleigh, North Carolina 27612

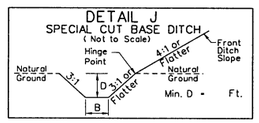
KO & ASSOCIATES, P.C.
Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606

DETAIL A
STANDARD BASE DITCH
(Not to Scale)



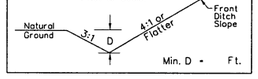
SHEET	ROADWAY	STATION - STATION	SIDE	BASE
4	-L-	20+00	RT	4
10	-L-	91+78 - 93+50	RT	4
10	-L-	99+10	RT	4
13	-L-	138+26	RT	4
14	-L-	149+07	RT	2
16	-L-	174+09	RT	4
17	-L-	184+93	RT	4

DETAIL J
SPECIAL CUT BASE DITCH
(Not to Scale)



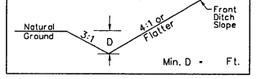
SHEET	ROADWAY	STATION - STATION	SIDE	BASE
4	-L-	20+05 - 24+28	RT	2
6	-L-	43+77 - 48+00	RT	2
6 & 7	-L-	48+90 - 57+40	RT	2
16	-L-	155+00 - 155+43	LT	2
16	-L-	155+43 - 157+00	LT	2
18	-Y6-	11+00 - 12+50	LT	2

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)



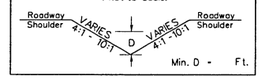
SHEET	ROADWAY	STATION - STATION	SIDE
4 & 5	-L-	24+28 - 36+00	RT
5 & 6	-L-	36+00 - 43+77	RT
6	-Y1-	11+05 - 13+50	RT
6	-Y1-	11+00 - 13+50	LT
7 & 8	-L-	57+50 - 66+65	RT
8	-L-	67+67 - 69+00	RT
8	-L-	69+00 - 75+50	RT
8 & 9	-L-	75+50 - 77+50	RT
9	-L-	77+50 - 86+10	RT
10	-L-	93+30 - 96+00	RT
10	-L-	96+00 - 99+05	RT
10 & 11	-L-	99+10 - 107+00	RT
11	-L-	108+50 - 110+50	RT
11	-L-	112+50 - 114+50	RT
12	-L-/-Y3-	121+00 - 19+59	RT
12	-Y3-	19+59 - 20+05	RT
12	-Y3-	17+30 - 21+00	LT
12	-Y3-	21+31 - 22+00	LT
12	-L-	124+75 - 129+00	RT
13	-L-	135+50 - 138+27	RT
13 & 14	-L-	138+27 - 142+00	RT
14	-L-	148+00 - 149+07	RT
14	-L-	149+07 - 150+50	RT
15	-L-	156+20 - 159+00	RT
15	-L-	159+00 - 160+98	RT
15	-L-	161+33 - 162+69	RT
15	-L-	162+69 - 164+00	RT
15 & 16	-L-	164+00 - 170+00	RT
16	-L-	173+00 - 174+10	RT
16	-L-	174+10 - 175+00	RT
16	-L-	178+00 - 180+50	RT
17	-L-	181+15 - 184+00	RT
17	-L-	184+85 - 195+00	RT
18	-L-/-Y6-	195+00 - 12+00	RT
18 & 19	-L-	205+00 - 213+50	RT
20	-L-	221+50 - 223+30	LT
20	-L-	225+30 - 226+50	RT
20 & 21	-DET2-	11+89 - 15+87	RT
21	-DET2-/-L-	15+87 - 241+70	RT

DETAIL C
SPECIAL CUT DITCH
(Not to Scale)



SHEET	ROADWAY	STATION - STATION	SIDE
4	-L-	20+00 - 24+28	LT
4 & 5	-L-	24+28 - 35+50	LT
5 & 6	-L-	35+50 - 48+30	LT
6	-L-	48+30 -50+50	LT
6	-Y1-	10+93 - 13+50	LT
6 & 7	-L-	50+50 - 58+00	LT
7 & 8	-L-	58+00 - 70+50	LT
8 & 9	-L-	71+00 - 86+00	LT
9	-L-	86+00 - 88+66	LT
9 & 10	-L-	88+66 - 91+60	LT
10	-L-	82+40 - 92+65	LT
10	-L-	92+73 - 95+60	LT
10	-L-	95+60 - 98+69	LT
10	-L-	98+69 - 99+00	LT
11	-L-	105+19 - 111+50	LT
12	-L-	117+00 - 118+26	LT
12	-L-	118+26 - 124+00	LT
12	-Y3-	11+00 - 14+50	LT
12	-Y3-	13+00 - 14+50	RT
13	-L-	134+50 - 138+04	LT
13 & 14	-L-	138+04 - 145+00	LT
14	-L-	145+00 - 151+00	LT
15	-L-	154+50 - 155+00	LT
15	-L-	157+00 - 158+50	LT
15	-L-	159+50 - 162+37	LT
15	-L-	162+37 - 164+00	LT
15	-Y5-	11+60 - 15+35	LT
15	-Y5-	12+50 - 15+35	RT
15 & 16	-L-	164+00 - 174+14	LT
16	-L-	174+14 - 175+50	LT
17	-L-	185+00 - 186+37	LT
17	-L-	186+37 - 187+50	LT
18	-L-	202+00 - 204+10	LT
18	-L-	204+10 - 206+00	LT
19	-L-	212+50 - 214+50	LT
20	-L-	222+00 - 224+49	LT
20	-L-	225+35 - 226+00	LT
20	-L-	227+80 - 230+45	LT
20	-L-	230+45 - 232+10	LT
21	-L-	240+00 - 241+50	LT

DETAIL D
SPECIAL MEDIAN DITCH
(Not to Scale)

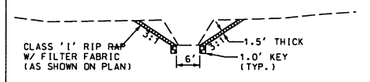


SHEET	ROADWAY	STATION - STATION	SIDE
4 & 5	-L-	29+50 - 31+00	MED
5	-L-	31+00 - 34+75	MED
5 & 6	-L-	34+75 - 44+00	MED
6	-L-	44+00 - 48+00	MED
6 & 7	-L-	49+20 - 56+50	MED
7 & 8	-L-	57+10 - 66+50	MED
8	-L-	66+50 - 68+50	MED
8	-L-	68+50 - 70+50	MED
8	-L-	70+50 - 73+50	MED
8 & 9	-L-	75+50 - 77+50	MED
9	-L-	77+50 - 83+50	MED
9	-L-	84+50 - 87+00	MED
9	-L-	87+00 - 88+65	MED
9	-L-	88+65 - 90+00	MED
10	-L-	90+00 - 92+65	MED
10	-L-	92+65 - 95+75	MED
10	-L-	95+75 - 98+00	MED
10	-L-	98+00 - 98+87	MED
10	-L-	98+87 - 99+50	MED
10	-L-	99+50 - 100+50	MED
10	-L-	100+50 - 102+40	MED
10 & 11	-L-	102+40 - 103+80	MED
11	-L-	103+80 - 105+20	MED
11	-L-	105+20 - 107+50	MED
11	-L-	107+50 - 109+61	MED
11 & 12	-L-	113+50 - 116+80	MED
12	-L-	116+80 - 118+27	MED
12	-L-	118+27 - 120+00	MED
12	-L-	120+00 - 122+00	MED
12	-L-	122+00 - 123+50	MED
12	-L-	124+50 - 126+30	MED
12	-L-	126+30 - 127+00	MED
12	-L-	127+00 - 129+00	MED
13	-L-	134+10 - 136+00	MED
13 & 14	-L-	138+04 - 142+80	MED
14	-L-	142+80 - 145+00	MED
15	-L-	157+00 - 158+50	MED
15	-L-	161+00 - 162+35	MED
15	-L-	162+35 - 163+50	MED
15 & 16	-L-	163+50 - 168+00	MED
19	-L-	212+00 - 213+40	MED
20	-L-	225+50 - 226+50	MED
20	-L-	227+30 - 229+50	MED
20	-L-	229+50 - 231+50	MED
20	-L-	232+50 - 234+50	MED

DETAIL E
APPROX. EXCAVATION +/- 8 CY

INLET CHANNEL
-L- STA 57+23 +/- LT.

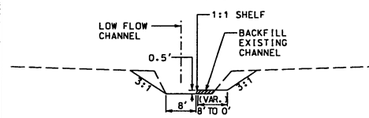
DETAIL F



NOTE: RIP RAP ONLY APPLIES TO THE FIRST 20' OF THE OUTLET CHANNEL.

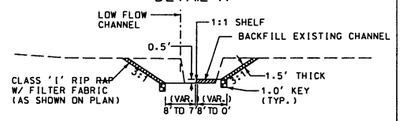
OUTLET CHANNEL
-L- STA 57+45 +/- RT.

DETAIL G



INLET CHANNEL
-L- STA 224+45 LT.

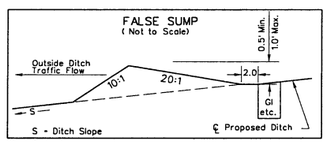
DETAIL H



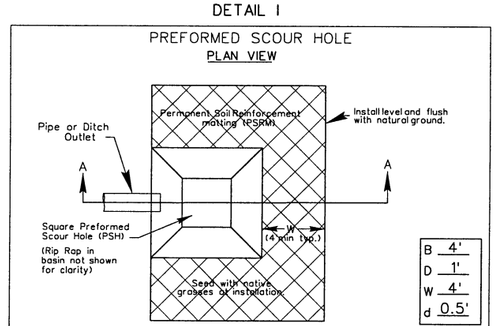
NOTE: RIP RAP ONLY APPLIES TO THE FIRST 20' OF THE OUTLET CHANNEL.

OUTLET CHANNEL
-L- STA 224+63 RT.

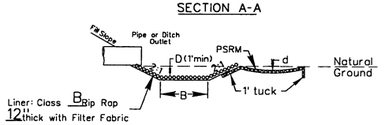
FALSE SUMP
(Not to Scale)



DETAIL I
PREFORMED SCOUR HOLE
PLAN VIEW



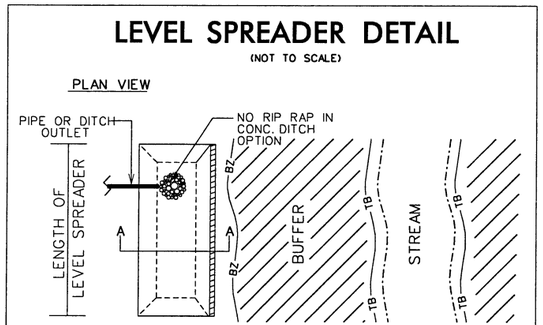
SECTION A-A



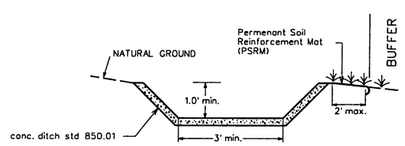
SHEET	ROADWAY	STATION	SIDE
20	-L-	223+39	RT
20	-L-	234+05	RT

LEVEL SPREADER DETAIL
(NOT TO SCALE)

PLAN VIEW



SECTION-AA CONCRETE PAVED DITCH LEVEL SPREADER



SHEET	ROADWAY	STATION	SIDE	LENGTH
15	-L-	154+70	RT	19'
15	-L-	156+20	RT	14'
17	-L-	184+00	RT	12'
20	-L-	225+35	LT	21'
20	-L-	225+30	RT	16'

03/15/2005
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(jmitchell)

5/14/99

INTERSECTION DETAILS

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	2D
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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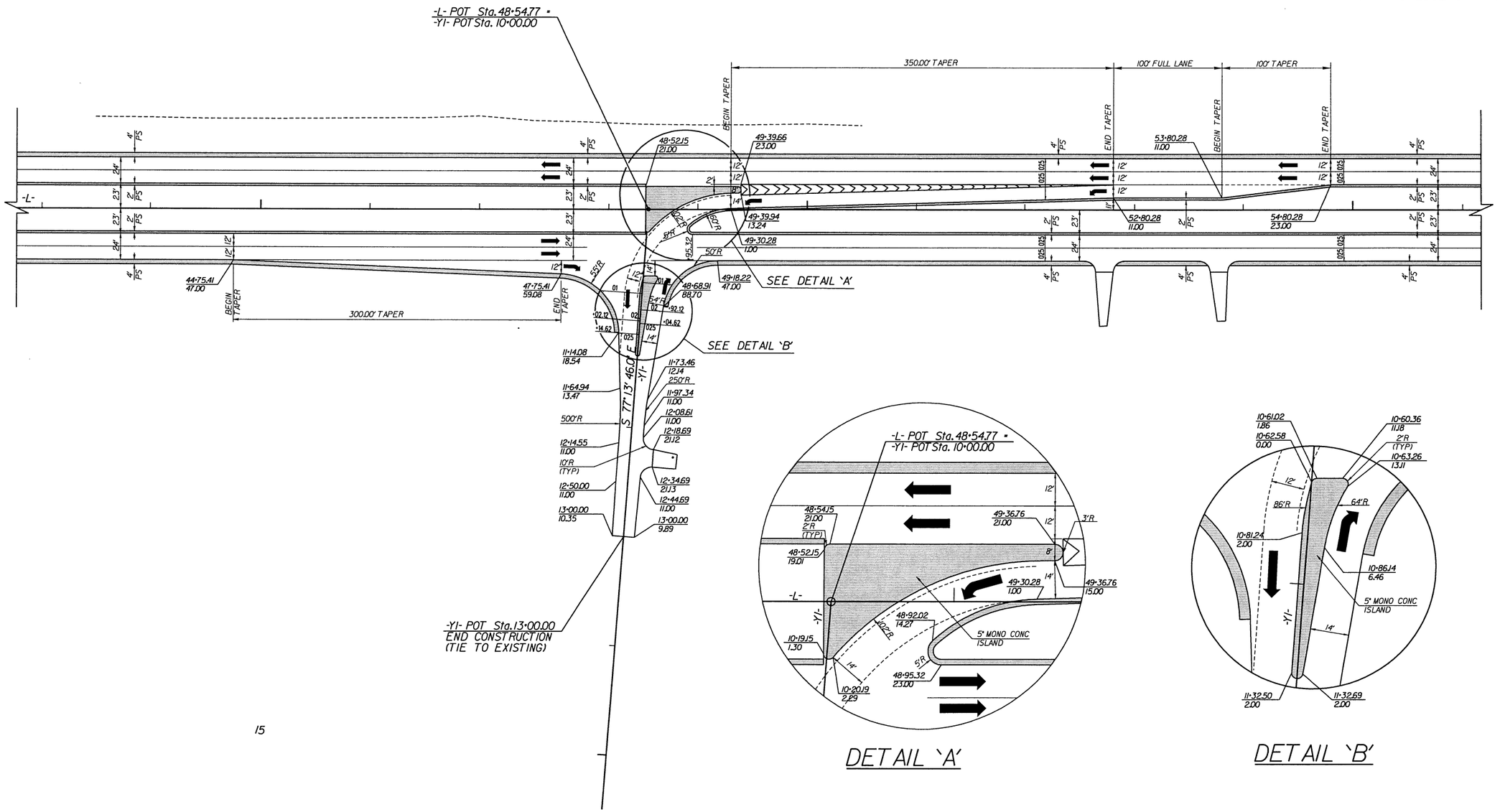
SEE SHEET 6 FOR PLAN

NAD 8395

45 50

NOTE: ALL RADII ARE MEASURED FROM THE EDGE OF TRAVEL LANE



DETAIL 'A'

DETAIL 'B'

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10:18:28 jwyatt

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INTERSECTION DETAILS

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	2E
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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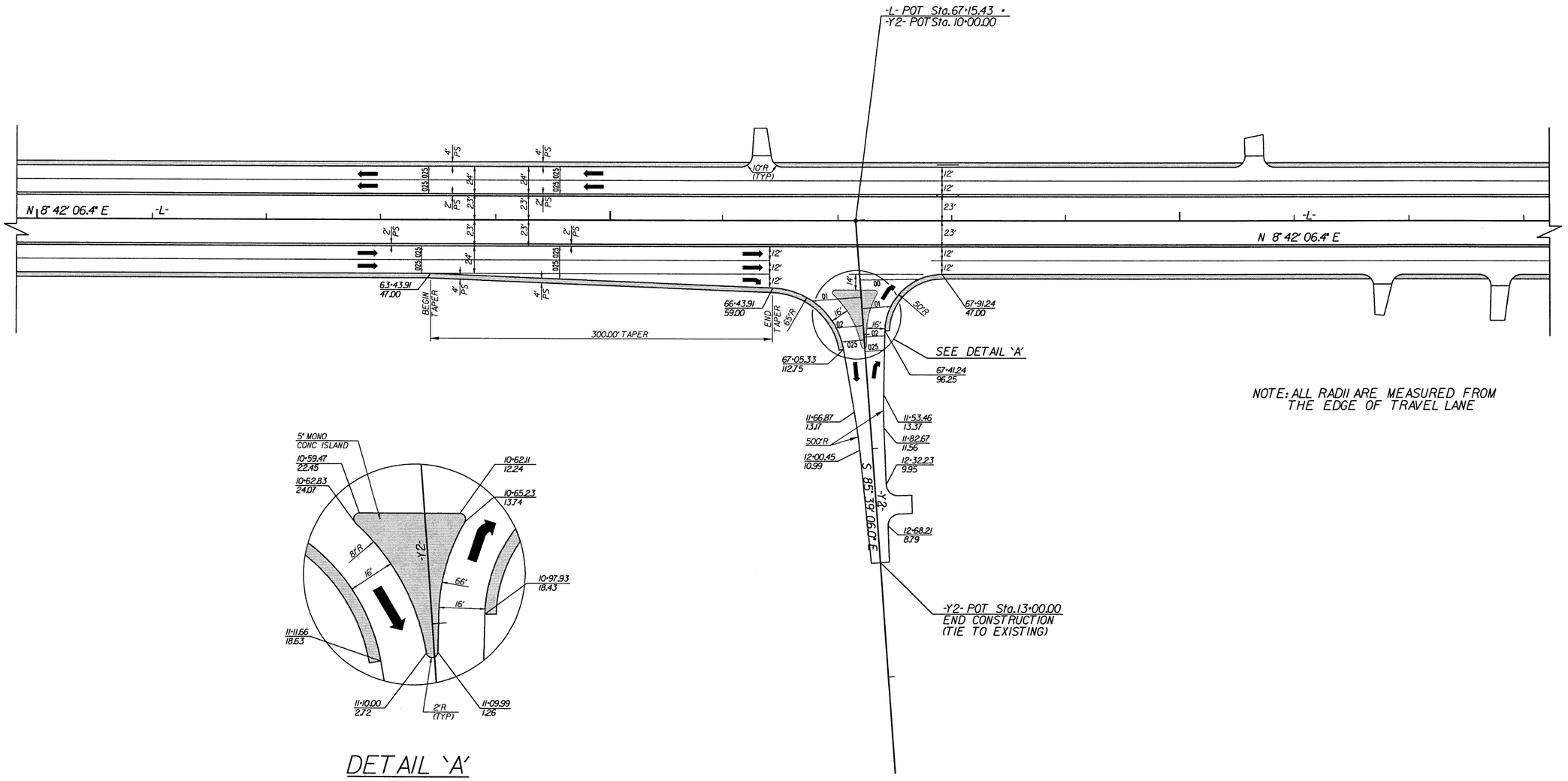
Raleigh, North Carolina 27612

60 65 70

SEE SHEET 8 FOR PLAN

NAD 83/95



NOTE: ALL RADII ARE MEASURED FROM THE EDGE OF TRAVEL LANE

DETAIL 'A'

-Y2- UNION CHAPEL RD.

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21:12:22 jwh

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INTERSECTION DETAILS

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	2F
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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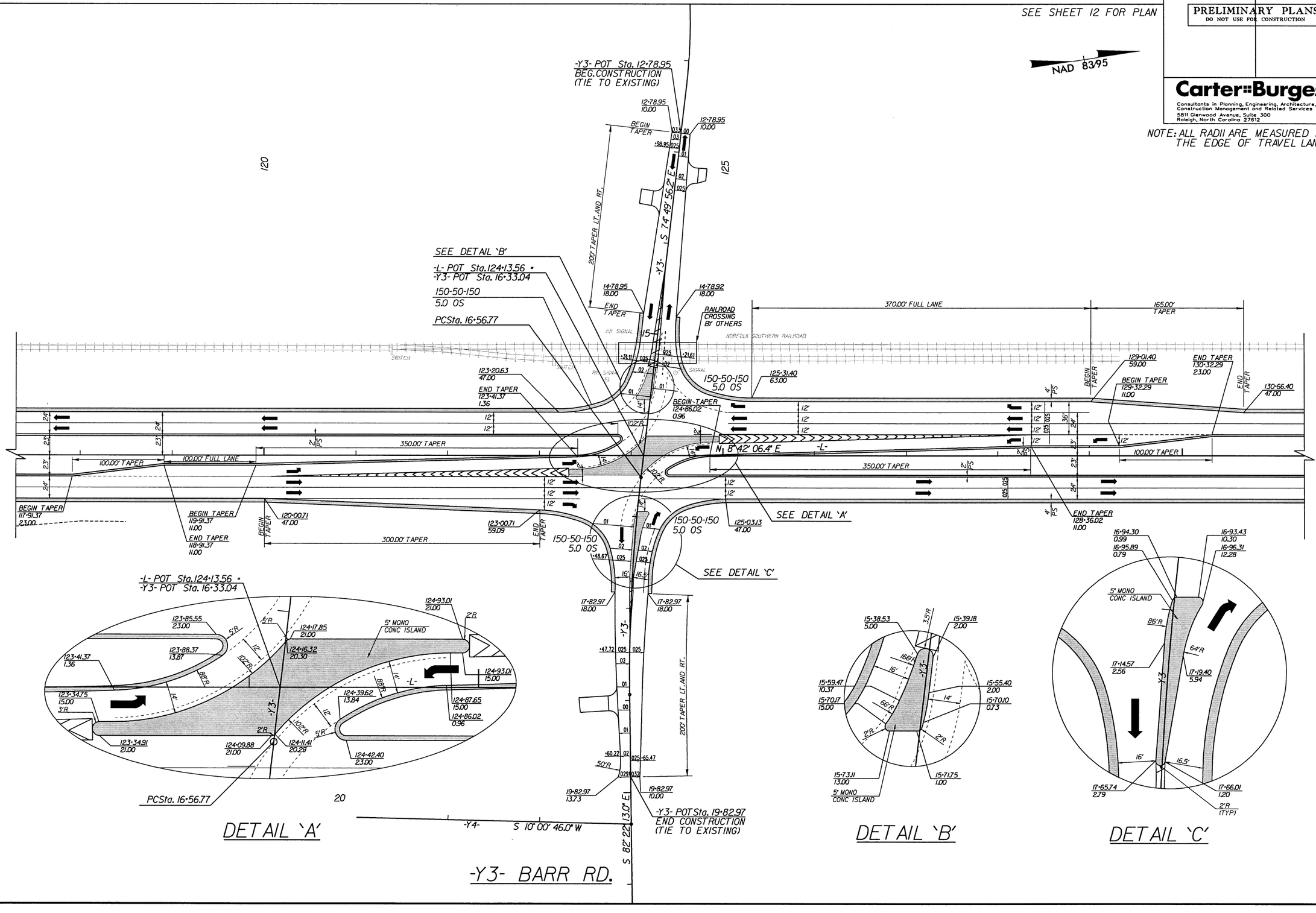
Raleigh, North Carolina 27612

SEE SHEET 12 FOR PLAN

NAD 83/95

NOTE: ALL RADII ARE MEASURED FROM THE EDGE OF TRAVEL LANE



DETAIL 'A'

DETAIL 'B'

DETAIL 'C'

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INTERSECTION DETAILS

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	2G
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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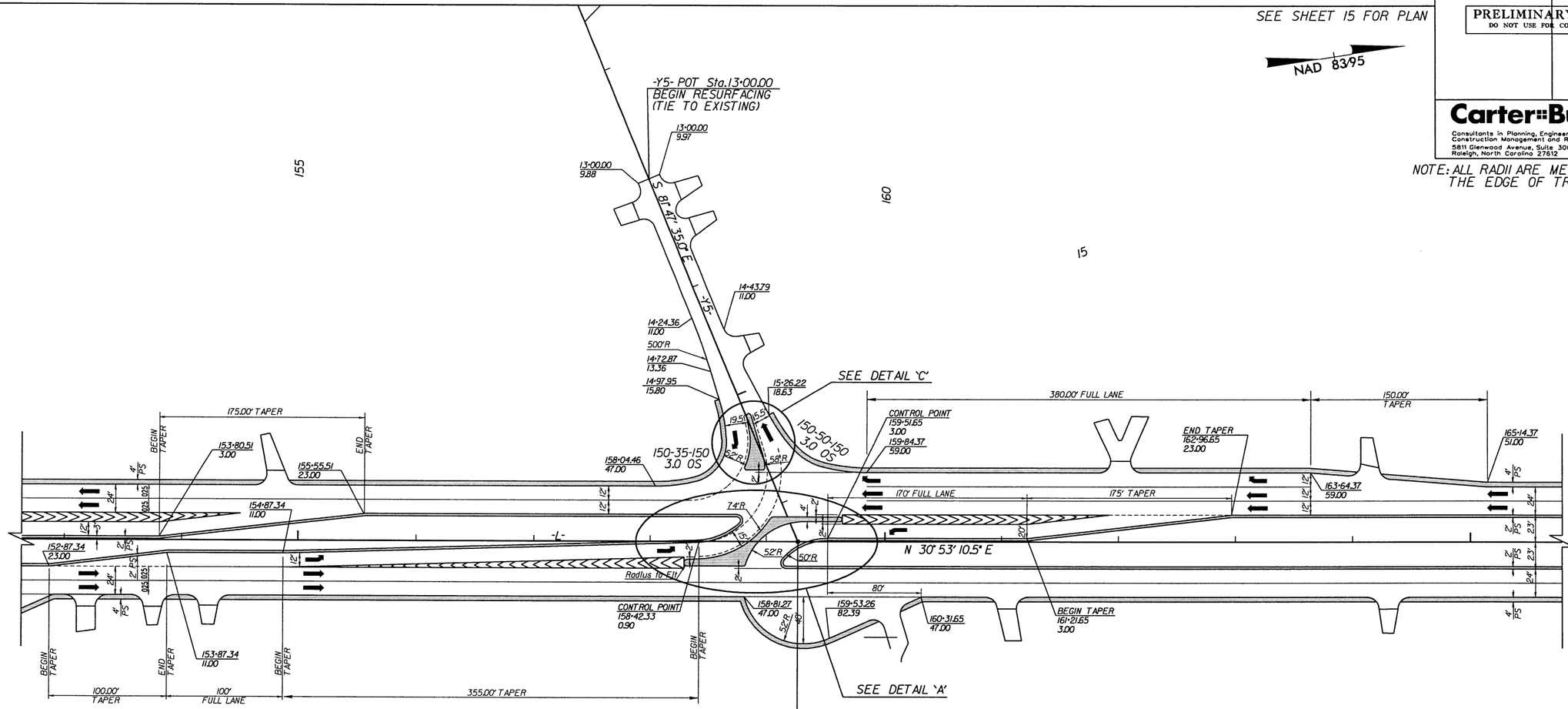
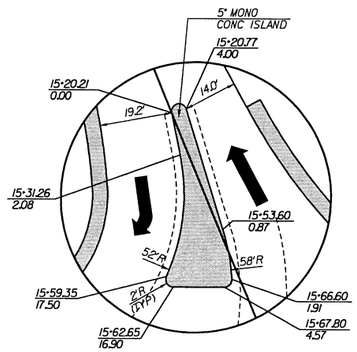
SEE SHEET 15 FOR PLAN

NAD 83/95

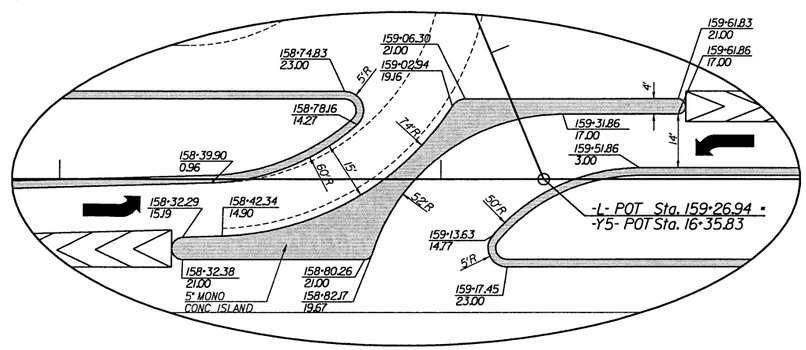
NOTE: ALL RADII ARE MEASURED FROM THE EDGE OF TRAVEL LANE





DETAIL 'B'

-Y5- FREDERICK RD.



DETAIL 'A'

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INTERSECTION DETAILS

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	2H
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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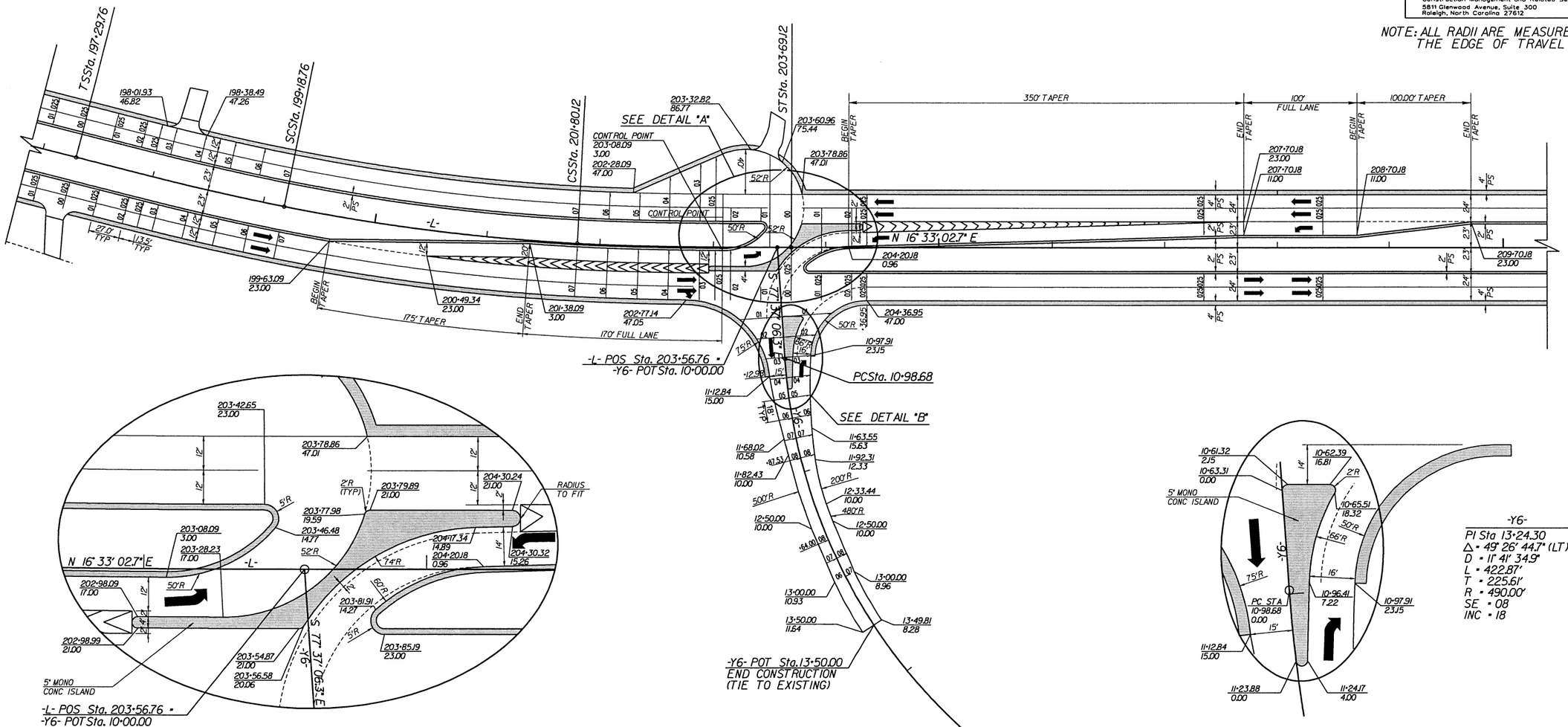
Raleigh, North Carolina 27612

SEE SHEET 18 FOR PLAN

NAD 83/95

NOTE: ALL RADII ARE MEASURED FROM THE EDGE OF TRAVEL LANE



DETAIL 'A'

-Y6- HARDING RD.

DETAIL 'B'

03/15/2005
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5/14/99

NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

SEE SHEET 22 FOR -L- PROFILE
SEE SHEET 33 FOR -DET1- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Carter::Burgess
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Raleigh, North Carolina 27612

KO & ASSOCIATES, P.C.
Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606

VANGUARD FARMS, INC.
DB 957 - PG 607
PC E - SLIDE 87-1

PAUL A. LEE
DB 849 - PG 488
MB 14 - PG 18

BEGIN TIP PROJECT R-2510A
-L- POT STA. 20+00.00

BL-3 PINC 16+85.35
-T1-100 POT 5+00.00
-L- STA 22+25.13
90.97 LT

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

NCDOT GPS "R2510A-2"

TAPER INSIDE DETOUR LANE FROM 0 FT AT 10+00.00 TO 12 FT AT 16+48.05

NORFOLK SOUTHERN RAILROAD

TRANSITION TO EXISTING

720.00' TAPER

N 9° 01' 09.6" E

N 11° 32' 56.0" E

N 11° 42' 50" E

N 8° 42' 06.4" E

REM CONC HW

REM EXIST 18"

REM CONC HW

18" CONC -L-

US 17 22 BST

19+65.00
EX R/W

TAPER SHLD WIDTH TO EXISTING
TRANSITION SUPER TO EXISTING

50' TAPER

GRADE TO DRAIN

FUTURE LANES (GRADING ONLY)

2GI(D)

28+00.00
102.00

19+65.00
106.00
BEGIN C/A
BEGIN WW FENCE RT

19+92.00
105.36

20+33.00
104.38

21+75.00
101.00

23+80.00
101.00

24+50.00
113.00

48" WW FENCE

2' BASE DITCH
EST CU YD DDE
SEE DITCH DETAIL J

CLASS "B" RIP RAP
EST 3 TONS
EST 10 SQ YD FF

CLASS "B" RIP RAP
EST 2 TONS
EST 7 SQ YD FF

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

PT Sta. 11+80.02

-DET1- PCSta. 10+00.00+
-L- POT Sta. 20+50.00 (35.00' LT)

20+09.00
227.00

4' BASE TAIL DITCH
1840 LF @ 0.3% GRADE
EST 1450 CY DDE
SEE DITCH DETAIL A

JOHN JAY WALTON
TB 6 - PG 101
MB4 - PG 38

PCSta. 14+68.02

PTSta. 16+48.05

MATCHLINE -L- STA. 28+00 SEE SHEET 5

-DET1-

PI Sta 10+90.18	PI Sta 15+58.20
Δ = 8° 35' 43.7" (RT)	Δ = 8° 35' 43.7" (LT)
D = 4° 46' 28.7"	D = 4° 46' 28.7"
L = 180.02'	L = 180.02'
T = 90.18'	T = 90.18'
R = 1,200.00'	R = 1,200.00'
SE = .08	SE = .08
INC = 27'	INC = 27'

MATCHLINE -L- OFFSET 390.00' SEE SHEET 4A

03/15/2005
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NAD 83/95

MATCHLINE -L- OFFSET 390.00' SEE SHEET 4

20+78.00
421.00

19+03.50
518.50

19+06.00
539.60

20+50.00
521.50

20+97.00
543.46

TDE

EXIST R/W

60' EST

OLD ROW BEHN RD

30"

15" CONC

REMOVE

19+12.00
599.73

EXIST. R/W

48" CLF

21+02.00
603.57

19+67.70
622.00

21+02.00
625.00

(2)

BESSIE C. CARAWAN
DB 526, PG 293

PROP. DIMENSIONS TAKEN FROM A COMBINATION OF DEED, MAP, AND TAX MAPS

BOBBY MITCHELL ADAMS, et ux
DB 665, PG 303

BOBBY MITCHELL ADAMS, et ux
DB 612, PG 383

OFFICE

CANOPY

MTL CARAGE

SEPTIC TANK

(3)

4' BASE TAIL DITCH
1840 LF @ 0.3% GRADE
EST 1450 CY DDE
SEE DITCH DETAIL A

210.18'

S10° 22'16"W

PERIPHERAL LOCATION OF DRAIN FIELD (GROUP UNKNOWN)

BOBBY M. ADAMS, et ux
DB 1172, PG 805

BOBBY M. ADAMS, et ux
DB 12, PG 421
PLAT CAB. C, SLIDE 48-6

19+62.00
855.00

19+68.00
908.00

19+89.00
985.00

20+08.00
1039.00

N19° 47' 37"E

FENCE POST

MATCHLINE -L- OFFSET 1200.00' SEE SHEET THIS SHEET

NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

MATCHLINE -L- OFFSET 1200.00' SEE SHEET THIS SHEET

20+80.00
1252.00

FENCE POST
DEIP

4' BASE TAIL DITCH
1840 LF @ 0.3% GRADE
EST 1450 CY DDE
SEE DITCH DETAIL A

21+40.00
1470.00

FENCE POST

22+07.85
1524.81

21+85.00
1606.00

22+29.00
1607.00

EXISTING POND

POND
(WAS MADE)

TIE TO EXISTING
OUTLET CHANNEL

21+81.00
1773.00

22+26.00
1774.00

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	4A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Carter::Burgess
Consultants in Planning, Engineering, Architecture, Construction Management and Related Services
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KO & ASSOCIATES, P.C.
Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606

03/15/2005
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NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

SEE SHEET 23 FOR -L- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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5/14/9

30

35

40

PAUL A. LEE
DB 849 - PG 488
MB 14 - PG 18

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

BL-4 PINC 22+70.78
-T2-103 POT 5+00.00
-L- STA 28+09.84
61.89 LT

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

BL-5
PINC 28+48.54
-L- STA 33+87.57
56.36 LT

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

BL-6
PINC 33+65.12
-L- STA 39+04.15
57.94 LT

NORFOLK SOUTHERN RAILROAD

BM 1
-BL- STA 29+93.73
66.03' LEFT
ELEV= 62.48'

MATCHLINE -L- STA 28+00 SEE SHEET 4

MATCHLINE -L- STA 40+00 SEE SHEET 6

N 9° 15' 00.8" E

N 8° 31' 34.5" E

N 8° 20' 03.8" E

US 17 22' BST

REM

18" CONC

2GI(D)

N 8° 42' 06.4" E -L-

REMOVE 18" CONC

CLASS "B" RIP RAP
EST 2 TONS
EST 7 SQ YD FF

48" WW FENCE

28+00.00
102.00

28+50.00
107.00

31+00.00
104.00

36+00.00
100.00

38+50.00
106.00

60' ACCESS BREAK

30

30

1 JOHN JAY WALTON
TB 6 - PG 101
MB4 - PG 39

4 REBECCA S. DAY
DB 1131 - PG 164

5 JAMES A. POLLARD, et ux
DB 509 - PG 392

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

POT Sta. 18+58.65

S 5° 43' 51" E 169.59

S 84° 32' 14" W 185.57

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NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

SEE SHEET 23 FOR -L- PROFILE
SEE SHEET 32 FOR -Y1- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
SEE SHEET 2D FOR INTERSECTION DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

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PROJECT REFERENCE NO.	SHEET NO.
R-2510A	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83/95

40 45 50

PAUL A. LEE
DB 849 - PG 488
MB 14 - PG 18

WEYERHAEUSER COMPANY
DB 1082 - PG 35
TB 11 - PG 375
MB 14 -PG 18

MATCHLINE -L- STA. 40+00 SEE SHEET 5

MATCHLINE -L- STA. 53+00 SEE SHEET 7

BL-8 PINC 43+57.12 =
BY1-43 POT 5+00.00
-L- STA 48+93.26
8.15 LT

-L- POT Sta. 48+54.77 =
-Y1- POT Sta. 10+00.00

BL-7
PINC 38+66.81
-L- STA 44+05.83
61.16 LT

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

350.00' TAPER

100' FULL LANE

300.00' TAPER

N 8° 20' 03.8" E

N 8° 42' 06.4" E -L-

N 14° 54' 30.0" E

N 8° 31' 06.8" E

S 77° 13' 46.0" E -Y1-

S 72° 08' 21.5" E

48" WW FENCE

2' BASE DITCH
EST CU YD DDE
SEE DITCH DETAIL J

CLASS "B" RIP RAP
EST 2 TONS
EST 7 SQ YD FF

CLASS "B" RIP RAP
EST 5 TONS
EST 14 SQ YD FF

CLASS "B" RIP RAP
EST 3 TONS
EST 10 SQ YD FF

43+50.00
108.00

47+88.00
120.00

49+05.00
122.16

48+95.00
122.00

11+80.00
46.46
BEG FENCE & CA

11+80.00
0.00

13+00.00
44.00
END WW FENCE & CA

13+00.00
EX R/W

13+00.00
52.00

13+28.07
40.00

13+28.07
EX R/W

13+00.00
0.00

51+50.00
126.00

52+42.00
END WW FENCE

-Y1- POT Sta. 13+00.00
END CONSTRUCTION
(TIE TO EXISTING)

5 JAMES A. POLLARD, et ux
DB 509 - PG 392

6 SONJA P. LANE
DB 1152 - PG 433
DB 626 - PG 43

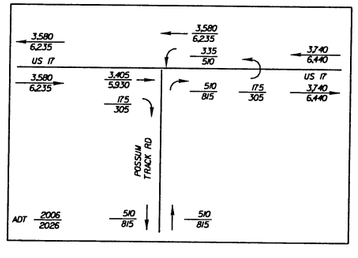
7 RICHARD D. PEED, JR., et ux
DB 1152 - PG 436
DB 626 - PG 43

8 LINDA AVERY ROWE
DB 1094 - PG 777

9 RANDY K. TYLER, et ux
DB 898 - PG 184
DB 740 - PG453

10 FRANK R. KLINGENSMITH
DB 1051 - PG 89
DB 945 - PG 306

MARK S. PEED
DB 1152 - PG 439
DB 626 - PG 43



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NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

SEE SHEET 24 FOR -L- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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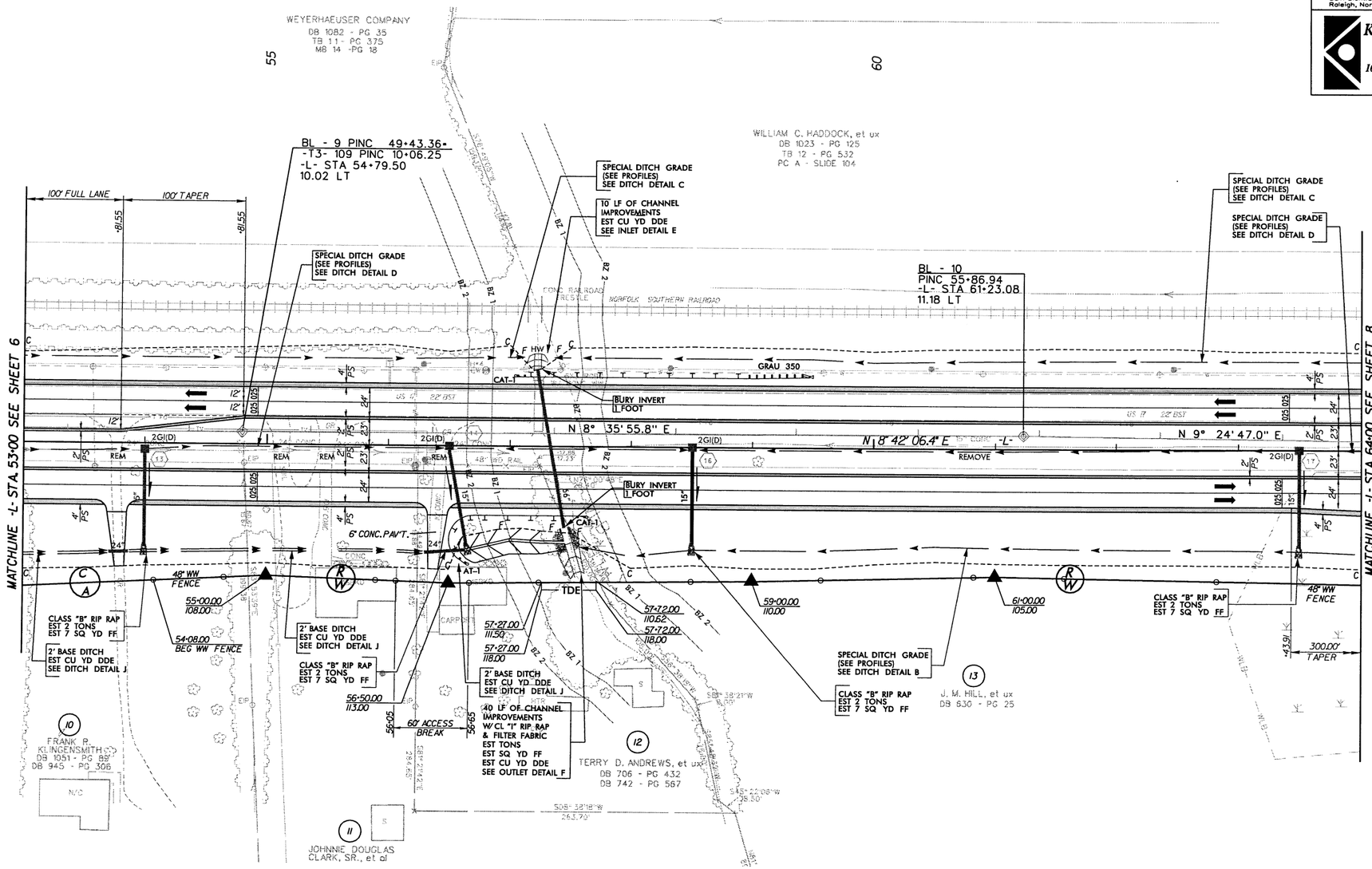

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NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

SEE SHEET 24 FOR -L- PROFILE
SEE SHEET 32 FOR -Y2- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
SEE SHEET 2D FOR INTERSECTION DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

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Consulting Engineers
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RALEIGH, N.C. 27606

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83/95

5/14/05

WILLIAM C. HADDOCK, et ux
DB 1023 - PG 125
TB 12 - PG 532
PC A - SLIDE 104

WILLIAM EARL LEWIS, et ux
DB 888 - PG 598

CHARLES H. PURSER, et ux
DB 852 - PG 559
PC B - SLIDE 151

NORFOLK SOUTHERN RAILROAD

MATCHLINE -L- STA 64+00 SEE SHEET 7

MATCHLINE -L- STA 77+00 SEE SHEET 9

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

BM 2
-BL- STA 60+88.77
117.45' LEFT
ELEV= 58.68'

NCDOT GPS "R2510A-3"

-L- POT Sta.67+15.43
-Y2- POT Sta. 10+00.00

BL-11 PINC 62+02.20
BY2-45 POT 5+00.00
-L- STA 67+38.29
3.54 LT

BL - 12
PINC 67+78.86
-L- STA 73+14.90
11.16 LT

N 9° 24' 47.0" E

N 7° 56' 39.7" E

N 4° 23' 46.3" W

N 8° 42' 06.4" E

300.00 TAPER

48" WW FENCE

CLASS "B" RIP RAP
EST 3 TONS
EST 10 SQ YD FF

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

66+65.00
115.00

11+35.00
40.00

12+00.00
43.00

12+20.00
EX R/W
END WW
FENCE & CA

13+00.00
38.00

13+00.00
EX R/W

67+83.00
108.00

11+35.00
40.00

12+00.00
43.00

12+20.00
30.00
BEG WW
FENCE & CA

13+00.00
40.00

13+00.00
EX R/W

-Y2- POT Sta.13+00.00
END CONSTRUCTION
(TIE TO EXISTING)

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

CLASS "B" RIP RAP
EST 2 TONS
EST 7 SQ YD FF

69+00.00
100.00

71+47.00
END WW FENCE

72+00.00
100.00

74+50.00
100.00

73+81.00
BEG WW
FENCE

75+00.00
108.00

74+91.00
END WW
FENCE

76+00.00
108.00

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

CLASS "B" RIP RAP
EST 2 TONS
EST 7 SQ YD FF

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

S 85° 56' 09.0" E

S 84° 52' 44.2" E

S 84° 28' 39.1" E

S 09° 31' 34" W 102.53'

S 09° 13' 46" W 155.06'

S 09° 13' 46" W 118.18'

13 J. M. HILL, et ux
DB 630 - PG 25

14 NORMAN WRIGHT
DB 593 - PG 446

15 MELINDA WRIGHT GASKINS
DB 1126 - PG 424

16 MAXINE W. ALLIGOOD
DB 593 - PG 444
DB 857 - PG 863

17 PATRICIA ANN EDWARDS
DB 1074 - PG 283

18 DON WILLIAMS
DB 1126 - PG 582

19 EARL D. CLARK, et ux
DB 526 - PG 310
DB 675 - PG 52

20 LELOND D. CLARK, et ux
DB 1019 - PG 804

21 JAMES WHITE
DB 736 - PG 126

22 DAVID E. PARAMORE, et ux
DB 981 - PG 794
PC C SLIDE 340

MICHAEL EDWARD PARAMORE, et ux
DB 1015 - PG 799
DB 1109 - PG 574
DB 615 - PG 114

GEORGE HERBERT HILL, et ux
DB 887 - PG 930

KENNETH RAY WATERS, SR., et ux
DB 1075 - PG 824

KENYON

UNION CHAPEL RD

US 17

3740 / 6440	225 / 355	3965 / 6795		3905 / 6690
3740 / 6440	3680 / 6335	285 / 460	60 / 105	3905 / 6690
	285 / 460			
ADT 2006 / 2026	285 / 460		285 / 460	

03/15/2005
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5/14/9

NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

SEE SHEET 25 FOR -L- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	9
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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Raleigh, North Carolina 27612

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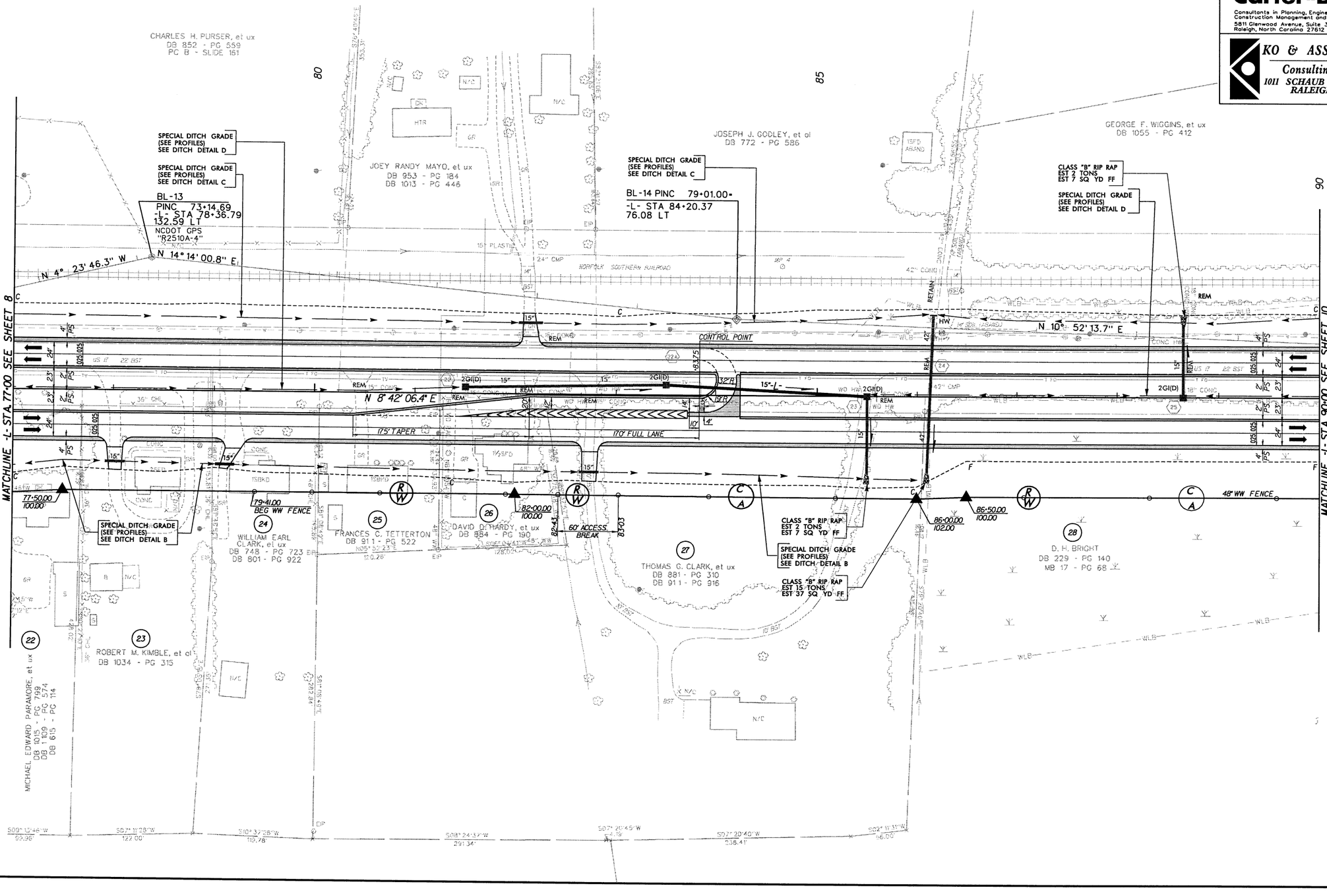

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5/14/9

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
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NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

SEE SHEET 25 FOR -L- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

90 95 100

GEORGE F. WIGGINS, et ux
DB 1055 - PG 412

BL-15
PINC 84+90.90
-L- STA 90+09.85
53.75 LT

BL-16
PINC 90+84.65
-L- STA 96+03.60
55.29 LT

BL -17 PINC 96+76.84
-L- STA 101+95.67
66.66 LT

BM 3
-BL- STA 94+41.67
62.50' LEFT
ELEV= 54.67'

JOHNNIE M. SMITH, et ux
DB 976 - PG 343
PC C - SLIDE 98-7

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

GRADE TO DRAIN

N 8° 33' 12.5" E

N 8° 42' 06.4" E

N 7° 36' 05.9" E

N 9° 37' 47.6" E

MATCHLINE -L- STA. 90+00 SEE SHEET 9

MATCHLINE -L- STA. 103+00 SEE SHEET 11

48" WW FENCE

92+71.00 100.00

92+90.00 100.00

93+50.00 109.00

93+36.67 107.00

92+93.83 100.57

94+00.00 100.00

97+40.00 100.00

98+86.00 124.81

99+46.00 135.00

91+68.00 206.00

91+80.00 250.00

99+63.00 471.98

100+24.00 468.23

99+77.00 531.24

100+37.50 527.52

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

4' BASE TAIL DITCH
220 LF @ 0.2% GRADE
EST 260 CY DDE
SEE DITCH DETAIL A

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

CLASS "B" RIP RAP
EST 3 TONS
EST 10 SQ YD FF

CLASS "B" RIP RAP
EST 11 TONS
EST 28 SQ YD FF

CLASS "B" RIP RAP
EST 2 TONS
EST 7 SQ YD FF

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

CLASS "B" RIP RAP
EST 2 TONS
EST 7 SQ YD FF

4' BASE TAIL DITCH
760 LF @ 0.2% GRADE
EST 1900 CY DDE
SEE DITCH DETAIL A

CLASS "B" RIP RAP
EST 2 TONS
EST 7 SQ YD FF

28
D. H. BRIGHT
DB 229 - PG 140
MB 17 - PG 68

29

30
ADDIE ELIZABETH F. GALLOWAY
DB 771 - PG 734

ARLEY L. MEEKS, et ux
DB 914 - PG 251

MATCHLINE -L- OFFSET 440.00' SEE SHEET THIS SHEET

INV OUT = 47.08

NAD 83/95

182.68

95.94

45.45

100+50.00
845.50

101+08.00
833.00

MATCHLINE -L- OFFSET 440.00' SEE SHEET THIS SHEET

03/15/2005
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13:14:08 BM

NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

SEE SHEET 26 FOR -L- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606

105 110 115

MATCHLINE -L- STA 103+00 SEE SHEET 10

MATCHLINE -L- STA 116+00 SEE SHEET 12

(29) JOHNNIE M. SMITH, et ux
DB 978 - PG 343
PC E - SLIDE 98-7

NORFOLK SOUTHERN RAILROAD

BL-18
PINC 102+57.71
-L- STA 107+76.47
57.25 LT

BL-19
PINC 107+73.77
-L- STA 112+92.52
54.21 LT

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

N 9° 37' 47.6" E

N 9° 02' 22.4" E

N 8° 43' 03.8" E

N 8° 42' 06.4" E

-L-

150' FULL LANE

175' TAPER

CONTROL POINT

48" WW FENCE

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

CLASS "B" RIP RAP EST 8 TONS EST 121 SQ YD FF

105+00.00 123.00

107+50.00 100.00

112+53.00 100.00

112+95.00 120.00

113+53.00 121.00

114+10.00 100.00

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

(30) ADDIE ELIZABETH F. CALLOWAY
DB 711 - PG 734

(31) ANNIE MAE FURLOUGH
DB 177 - PG 737

(32) MAUDE ELIZABETH WHITEHURST
DB 502 - PG 537

ARLEY E. MEEKS, et ux
DB 914 - PG 251

D. H. BRIGHT
DB 229 - PG 140
MB 17 - PG 68

POND

03/15/2005
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3-15-05	Y3 PROFILE REVISION	Y3 @ RR CROSSING
1-27-05	DRAINAGE REVISION, ADDED EASEMENTS	PARCELS 32,34,35,36 & 42

5/14/9

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Carter::Burgess
Consultants in Planning, Engineering, Architecture, Construction Management and Related Services
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Raleigh, North Carolina 27612

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Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606

NAD 83/95

INSET

BY3-47 POT 5+00.00

-Y3- POT Sta. 11+00.00
BEG. CONSTRUCTION
(TIE TO EXISTING)

-Y3-
PI Sta 11+14.71
Δ = 21° 38' 46.6" (RT)
D = 9° 32' 57.5"
L = 226.68'
T = 114.71'
R = 600.00'
SE = .08
INC = 23.75'

JOYCE CAMPBELL BAKER
DB 1196 - PG 502
DB 977 - PG 147
DB 981 - PG 338
DB 1026 - PG 108

JOHNNIE M. SMITH, et ux
DB 976 - PG 343

R. GUY MAYO, JR., et ux
DB 976 - PG 346

STEVEN MARK BUCK
DB 977 - PG 481

MATCHLINE -Y3- STA.12+00 SEE THIS SHEET

MATCHLINE -Y3- STA.12+00 SEE INSET

-Y3- POT Sta. 12+78.95
BEG. PAVING
(TIE TO EXISTING)

PT Sta. 12+26.68

J. M. SMITH, et ux
DB 527 - PG 432
(ALL 92-E-34)

JOHNNIE M. SMITH, et ux
DB 976 - PG 343

R. GUY MAYO, JR., et ux
DB 976 - PG 345
PC E - SLIDE 98-7

STEVEN MARK BUCK
DB 977 - PG 481

BL-21 PINC 118+79.36
BY3-48 PINC 11+05.10
-L- STA 123+97.75
74.62 LT

-L- POT Sta. 124+13.56
-Y3- POT Sta. 16+33.04

-Y3-
PI Sta 17+75.34
Δ = 7° 32' 16.8" (LT)
D = 3° 10' 59.2"
L = 236.81'
T = 118.58'
R = 1,800.00'
SE = RC
INC = 25'

PT Sta. 18+93.58

BL-20
PINC 112+93.41
-L- STA 118+12.16
54.06 LT

MATCHLINE -L- STA.116+00 SEE SHEET 11

MATCHLINE -L- STA.129+00 SEE SHEET 13

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL A

RAILROAD CROSSING BY OTHERS

CLASS "B" RIP RAP EST 3 TONS EST 10 SQ YD FF

CLASS "B" RIP RAP EST 2 TONS EST 7 SQ YD FF

MAUDE N. WHITEHURST
DB 502-PG 194

MAUDE ELIZABETH WHITEHURST
DB 502 - PG 537

TOMMY WHITEHURST, et ux
DB 920 - PG 228

ANTHONY DWAYNE BUCK
DB 932 - PG 1031

TRAVIS EARL HUDSON, et ux
DB 914 - PG 105
PC E - SLIDE 2-4

ARLEY EUGENE MEEKS, et ux
DB 800 - PG 320
DB 923 - PG 547
DB 929 - PG 896

JACOB F. ROWE, JR., et ux
DB 967 - PG 897

BY4-51 POT 7+50.20
-Y3- STA 20+07.03
280.86' RT

BY4-52 POT 5+00.00
BY3-49 PINC 15+41.10
-Y3- STA 19+93.59
31.02' RT

-EY4-

-Y4-

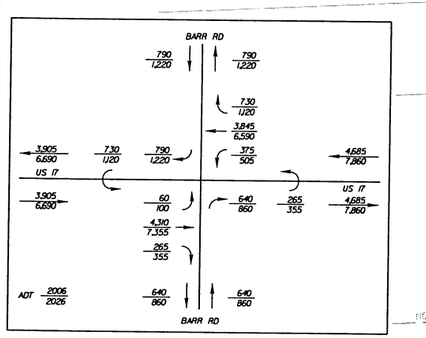
-Y3- POT Sta. 19+82.97
END PAVING
(TIE TO EXISTING)

-Y3- POT Sta. 21+00.00
END CONSTRUCTION
(TIE TO EXISTING)

WILLIAM R. HARDING, et ux
DB 781 - PG 179
DB 805 - PG 549

LUCY B. TAYLOR
DB 713 - PG 257

WILLIAM R. HARDING
DB 908 - PG 299



SEE SHEET 26 FOR -L- PROFILE
SEE SHEET 32 FOR -Y3- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
SEE SHEET 2E FOR INTERSECTION DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

03/15/2005
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NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

SEE SHEET 27 FOR -L- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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RALEIGH, N.C. 27606

S58° 40' 39"W 1467.75'

S08° 40' 39"W 1475.75'

130 135 140

HTR ABAND

HTR ABAND

41 R. GUY MAYO, JR., et ux DB 976 - PG 346 PC E - SLIDE 98-7

BL-22
PINC 124+61.40
-L- STA 129+79.41
53.74 LT

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

BL-23
PINC 130+39.97
-L- STA 135+57.86
66.13 LT

CAROLINA POWER & LIGHT COMPANY DB 633 - PG 601

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

CITY OF WASHINGTON DB 811 - PG 181

SIGNAL

NORFOLK SOUTHERN RAILROAD

MILE POST #3

MATCHLINE -L- STA. 129+00 SEE SHEET 12

MATCHLINE -L- STA. 141+00 SEE SHEET 14

165.00' TAPER

100.00' TAPER

N 7° 28' 31.3" E

N 7° 26' 25.4" E

N 8° 42' 06.4" E

-L-

48" WW FENCE

129+00.00 100.00

132+50.00 100.00

135+00.00 100.00

138+09.50 100.00

138+55.00 100.00

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

CLASS "B" RIP RAP EST 5 TONS EST 14 SQ YD FF

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

4' BASE TAIL DITCH 230 LF @ 0.12% GRADE EST 60 CY DDE SEE DITCH DETAIL A

138+50.00 320.00

138+95.00 320.00

TDE

45 TRAVIS EARL HUDSON, et ux DB 914 - PG 105 PC E - SLIDE 2-4

46 JOHNNIE R. JACKSON, et ux DB 966 - PG 906

47 TRAVIS EARL HUDSON, et ux DB 914 - PG 105

CHAD D. CLAYTON, et ux DB 1052 - PG 655

EUGENE H. YOW, JR. DB 995 - PG 180

48 J. J. COOK, et ux DB 434 - PG 79 DB 354 - PG 638

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5/14/

5/14/9

NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

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PROJECT REFERENCE NO.	SHEET NO.
R-2510A	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SEE SHEET 27 FOR -L- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

RODNEY LAMONT ALBRITTON
DB 1109 - PG 414

TIMOTHY C. MORDECAI
DB 1094 - PG 113
PC E - SLIDE 87-3

JOHN ALBRITTON
DB 1025 - PG 441

CAROLINA POWER & LIGHT COMPANY
DB 633 - PG 601

J. J. COOK, et ux
DB 434 - PG 79
DB 354 - PG 636

CHARLES R. SPEIGHT, et ux
DB 971 - PG 847
PC E - SLIDE 87-3

WILLIAM L. HULSLANDER, et ux
DB 1052 - PG 631
PC E - SLIDE 28-9

ICELEEN W. WHITFIELD
DB 971 - PG 847
PC E - SLIDE 87-3

JOSEPH M. KOLIBABEK
DB 985 - PG 329

JAMES KENNEDY GIBBS
DB 1128 - PG 16

KENNETH A. WILLIAMS, et ux
DB 1174 - PG 541

JOHN W. KOLIBABEK, et ux
DB 1000 - PG 634

BL-24
PINC 136+05.90
BM 5
-BL- STA 136+57.19
55.70' LEFT
ELEV= 55.88'

BL-25
PINC 141+61.05
-L- STA 146+60.76
76.18 LT

BL-26
PINC 147+90.17
-L- STA 152+78.68
9.97 LT

MATCHLINE -L- STA 141+00 SEE SHEET 13

MATCHLINE -L- STA 153+00 SEE SHEET 15

STA 148+00
BEGIN EXPRESSWAY GUTTER
(SEE PROFILES)

STA 149+75
END EXPRESSWAY GUTTER
(SEE PROFILES)

SPECIAL DITCH GRADE
(SEE PROFILES)
SEE DITCH DETAIL C

SPECIAL DITCH GRADE
(SEE PROFILES)
SEE DITCH DETAIL D

SPECIAL DITCH GRADE
(SEE PROFILES)
SEE DITCH DETAIL B

SPECIAL DITCH GRADE
(SEE PROFILES)
SEE DITCH DETAIL A

CLASS "B" RIP RAP
EST 3 TONS
EST 10 SQ YD FF

2' BASE TAIL DITCH
220 LF @ 0.4% GRADE
EST CY DDE
SEE DITCH DETAIL A

60' ACCESS BREAK

144+75.98
BEG WW FENCE

145+40.09
EX R/W

147+30.00
103.00

149+54.00
END WW FENCE

149+00.00
101.00

150+25.00
EX R/W

150+14.00
BEGIN WW FENCE

150+88.00
136.00

150+28.00
101.00

151+00.00
118.00

151+25.00
136.00

151+30.00
118.00

151+75.00
EX R/W
END WW FENCE

152+60.00
BEG WW FENCE

151+78.00
96.00

141+04.78
100.00

142+93.78
100.00

144+90.00
100.00

147+00.00
100.00

148+01.73
100.00

148+37.00
END WW FENCE

148+88.00
102.12

149+30.00
102.21

149+90.73
100.00

151+30.00
100.00

151+50.00
BEG WW FENCE

151+76.00
124.00

152+20.00
120.00

152+67.00
100.00

152+90.00
END WW FENCE

149+70.00
305.00

149+35.00
305.00

N 15° 22' 44.1" E

N35° 23' 08.7"E

N 30° 53' 10.5" E

-L-

Pls Sta 142+30.80	Pl Sta 145+49.46	Pls Sta 148+64.75
θs = 3° 00' 28.9"	Δ = 16° 10' 06.3" (RT)	θs = 3° 00' 28.9"
Ls = 189.00'	D = 3° 10' 59.2"	Ls = 189.00'
LT = 126.02'	L = 507.95	LT = 126.02'
ST = 63.02'	T = 255.67'	ST = 63.02'
	R = 1,800.00'	
	SE = 07	
	INC = 27'	

03/15/2005
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PROJECT REFERENCE NO.	SHEET NO.
R-2510A	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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RALEIGH, N.C. 27606

SEE SHEET 28 FOR -L- PROFILE
SEE SHEET 33 FOR -Y5- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
SEE SHEET 2F FOR INTERSECTION DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

MATCHLINE -L- STA. 153+00 SEE SHEET 14

MATCHLINE -L- STA. 167+00 SEE SHEET 16

-Y5- POT Sta.11+55.09
BEGIN CONSTRUCTION

-Y5- POT Sta.13+00.00
BEGIN RESURFACING
(TIE TO EXISTING)

BL-27 PINC 154+16.79 -
BY5-54 POT 11+13.18
-L- STA 159+05.30
11.54 LT

BL-28 PINC 161+11.66 -
-T7-126 POT 14+16.76
-L- STA 166+00.17
13.70 LT

-L- POT Sta. 159+26.94
-Y5- POT Sta. 16+35.83

JOHN M. ELLIOTT
DB 886 - PG 156

LINDA B. EDWARDS, et vir
DB 858 - PG 195

ICELEEN W. WHITFIELD
DB 971 - PG 842
PC E - SLIDE 87-3

BENNIE HERMAN STARKIE, JR., et al
DB 1129 - PG 936

WILLIAM L. HULSLANDER, et ux
DB 1062 - PG 635
PC E - SLIDE 28-9

CHARLES R. SPEIGHT, et ux
DB 967 - PG 724

BETTIE A. STARKIE
DB 1093 - PG 147

CARRIE M. TURNER, et vir
DB 1165 - PG 710

SAM JASPER BOYD, JR., et ux
DB 1372 - PG 40

DANNY SMITH
DB 868 - PG 805

HARRIET CHAPMAN
DB 310 - PG 347

KENNETH A. WILLIAMS, et ux
DB 1129 - PG 941

BOBBY GENE WEATHINGTON
DB 1200 - PG 238

BILLY RAY BEASLEY
DB 1144 - PG 597

MICHAEL MIZELL, et ux
DB 1049 - PG 107

FRANCES TETTERTON
DB 974 - PG 955

ROY MITCHELL CLARK, et ux
DB 1220 - PG 646

BILLY J. HADDOCK, et ux
DB 847 - PG 359

BETSY ROSE HADDOCK
DB 847 - PG 351

BETSY H. LEWIS
DB 101 - PG 523

RONALD LEE HUSS
DB 1139 - PG 433

WILLIAM R. COWARD, et ux
DB 1004 - PG 413

EDMUND V. LEE, JR., et ux
DB 1168 - PG 731
DB 907 - PG 631

NCDOT GPS "RP2510A-5"

FREDERICK RD

ADT	2005	2025
	580	970
	580	970
	460	765
	4,565	7,655
	4,685	7,860
	460	765
	580	970
	100	100
	5,025	8,420
US 17		
	4,685	7,860
	120	205
	5,025	8,420
US 17		

3-15-05 | DRAINAGE REVISION, REVISED PIPE SIZE | STA.155+45 AND 162+35 | 5/14/

03/15/2005
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NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

SEE SHEET 28 FOR -L- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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MATCHLINE -L- STA. 167+00 SEE SHEET 15

MATCHLINE -L- STA. 181+00 SEE SHEET 17

BL-29 PINC 167+17.37
-L- STA 172+05.70
1.08 RT

BL-30
PINC 173+17.44
-L- STA 178+05.57
14.40 LT

N 30° 53' 10.5" E

N29° 24' 28.4"E

N32° 17' 03.2"E

N 31° 37' 24.1" E
NCDOT GPS "R2510A-6" GRADE TO I DRAIN

CONTROL POINT EAST R/R

CONTROL POINT

175.00' TAPER

170.00' FULL LANE

16' ASPH. PAVT

CLASS "B" RIP RAP
EST 5 TONS
EST 14 SQ YD FF

4' BASE TAIL DITCH
120 LF @ 0.0% GRADE
EST 150 CY DDE
SEE DITCH DETAIL A

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL D

NOTE: DO NOT DISTURB GRAVE SITE AREA

60' ACCESS BREAK

48" WW FENCE

6' CONC DRIVE

75 EDWARD A. BUCK, et ux
DB 493 - PG 185

73 HARRIET CHAPMAN
DB 310 - PG 347

78 GEORGE T. BUCK, et ux
DB 1157 - PG 123
PC E - SLIDE 51-1

80 WALTER GAVIN BUCK
DB 1139 - PG 885

JULIETTE BUCK SYKES
DB 942 - PG 380

81 WENDY ANN BUCK
DB 1184 - PG 916

83 DALTON RAY BUCK, et ux
DB 1033 - PG 453
MB 14 - PG 91

86 JULIETTE BUCK SYKES
DB 942 - PG 380
PC E - SLIDE 51-1

88 DALTON RAY BUCK, et ux
DB 1033 - PG 453

89 ALBEN THOMAS LOKEY, JR., et ux
DB 1001 - PG 835

90 DALTON R. BUCK, SR.
DB 1043 - PG 493

92 CHARLES L. TOLER, JR.
DB 1213 - PG 680

93 JOYCE D. BRIGHT
DB 598 - PG 94

91 CEMETERY

76 PATTIE LEE WOOLARD
DB 932 - PG 966

74 BETSY H. LEWIS
DB 1011 - PG 523

77 BETSY ROSE HADDOCK
DB 847 - PG 361

79 MARTY THOMAS BUCK
DB 942 - PG 378

82 JULIETTE BUCK SYKES, et al
DB 942 - PG 378
DB 810 - PG 743

85 JULIETTE BUCK SYKES, et al
DB 942 - PG 378
DB 810 - PG 743

84 WALTER GLAVIN BUCK
DB 942 - PG 382
PC E - SLIDE 51-1

87 EDWARD A. BUCK, et ux
DB 493 - PG 185

EDMUND V. LEE, JR., et ux
DB 1158 - PG 73
DB 907 - PG 631

DONNA KAY MORGAN
DB 907 - PG 625

RANDY EUGENE SMITH, et ux
DB 892 - PG 973

03/15/2005
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3-15-05 | DRAINAGE REVISION, REVISED PIPE SIZE | STA. 185-82 | 5/14/05

NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

SEE SHEET 29 FOR -L- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

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PROJECT REFERENCE NO.	SHEET NO.
R-2510A	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MATCHLINE -L- STA. 181+00 SEE SHEET 16

MATCHLINE -L- STA. 195+00 SEE SHEET 18

BL-31 PINC 179+23.54
-L- STA 184+11.62
6.60 LT

BL-32
PINC 185+25.34
-L- STA 190+13.37
14.06 LT

N 31° 37' 24.1" E

N 30° 10' 34.1" E

N 30° 53' 10.5" E

N 31° 15' 21.0" E

-L-

88 DALTON RAY BUCK, et ux
DB 1033 - PG 453

93 JOYCE D. BRIGHT
DB 598 - PG 94

94 JAMES ARLEY BUCK, et ux
DB 608 - PG 371

96 ERVIN RAY ARNOLD, et ux
DB 580 - PG 103

98 C. DOUGLAS BRANCH, et ux
DB 531 - PG 256
DALTON RAY BUCK, et ux
DB 633 - PG 453

99 MARK WAYNE OSNOE
DB 1035 - PG 833

100 BARBARA HARDY BARR
DB 820 - PG 776
MB 14 - PG 49

102 ERMA LEE COOKE, et vir
DB 511 - PG 524
DB 530 - PG 279

103 CARL DOUGLAS BRANCH, JR., et ux
DB 1105 - PG 206
DB 1226 - PG 312
MB 14 - PG 49

104 TERRY T. PATRICK
DB 1095 - PG 834
PC A SLIDE 84
HTR AHEAD
TERRY L. BUCK
DB 1198 - PG 528
MB 14 - PG 60

105 JOHN W. RICE, et ux
DB 833 - PG 113
MB 14 - PG 59

87 EDWARD A. BUCK, et ux
DB 493 - PG 185

95 CHARLES L. TOLER, JR.
DB 1213 - PG 680

97 SALLIE BLOUNT TOLER
DB 341 - PG 552

101 GUY HARDING LOLLIS
DB 314 - PG 392

181+88.00 END WW FENCE
181+50.00 94.00
182+79.00 BEG WW FENCE
48" WW FENCE
184+50.00 96.00
184+57.00 END WW FENCE
ASPH. DRIVE
SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C
186+50.00 103.00
187+40.00 91.00
187+50.00 BEG WW FENCE
6" CONC. DRIVE
60' ACCESS BREAK
189+00.00 95.00
191+65.00 89.00
191+80
193+46.00 END WW FENCE
194+96.00 BEG WW FENCE
BURY INVERT 1 FOOT
LEVEL SPREADER 12' LONG
181+47.00 100.00
182+32
183+52
183+92.00 100.00
184+49.00 102.53
184+24.00 116.00
184+47.50 143.00
SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B
185+06.00 106.00
CLASS "B" RIP RAP EST 5 TONS EST 14 SQ YD FF
184+91.00 105.21
4' BASE TAIL DITCH 50 LF @ 0.98% GRADE EST 10 CY DIDE SEE DITCH DETAIL A
SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B
186+29
186+00.00 100.00
186+89
60' ACCESS BREAK
193+50.00 100.00
SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

BM 7
-BL- STA 189+13.17
298.07' RT
ELEV.= 49.20'

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NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

SEE SHEET 29 FOR -L- PROFILE
SEE SHEET 33 FOR -Y6- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
SEE SHEET 2F FOR INTERSECTION DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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RALEIGH, N.C. 27606

MATCHLINE -L- STA 195+00 SEE SHEET 17

MATCHLINE -L- STA 208+00 SEE SHEET 19

BL-33
PINC 192+09.98
-L- STA 196+98.00
9.65 LT

BL-34 PINC 198+18.78 -
BY6-55 POT 5+00.00

TSSta. 197+29.76

SCSta. 199+18.76

CSSta. 201+80.12

CSSta. 203+69.12

195+50.00
95.00

198+00.00
94.00

200+50.00
96.00

203+49.00
131.00

203+00.00
130.00

202+34.11
100.00

202+00.00
EX R/W

204+08.89
97.00

204+30.00
EX R/W

206+50.00
87.00

48" WW FENCE

BREAK
60' ACCESS

SPECIAL DITCH GRADE
(SEE PROFILES)
SEE DITCH DETAIL C

TERRY T. PATRICK
DB 1095 - PG 834
PC A SLIDE 84
PC C SLIDE 317
PC E SLIDE 65-3

104

TERRY T. PATRICK
DB 1095 - PG 834
PC A SLIDE 84

N 30° 53' 10.5" E

N 26° 40' 17.9" E

N 16° 33' 02.7" E

N 15° 17' 15.3" E

-L-

CONTROL POINT

STA 200+00
BEGIN EXPRESSWAY GUTTER

175' TAPER

170' FULL LANE

100' FULL LANE

350' TAPER

197+29.76
103.00

197+90

197+60

60' ACCESS BREAK

SPECIAL DITCH GRADE
(SEE PROFILES)
SEE DITCH DETAIL B

199+18.76
115.00

200+50.00
118.00

201+80.00
118.00

CLASS "B" RIP RAP
EST 2 TONS
EST 7 SQ YD FF

STA 203+00
END EXPRESSWAY GUTTER

202+97.00
108.00

-L- POS Sta. 203+56.76 -
-Y6- POT Sta. 10+00.00

SPECIAL DITCH GRADE
(SEE PROFILES)
SEE DITCH DETAIL B

101
GUY HARDING LOLLIS
DB 314 - PG 392

204+23.00
100.00

CLASS "B" RIP RAP
EST 3 TONS
EST 10 SQ YD FF

SPECIAL DITCH GRADE
(SEE PROFILES)
SEE DITCH DETAIL D

SPECIAL DITCH GRADE
(SEE PROFILES)
SEE DITCH DETAIL B

PCSta. 10+98.68

12+00.00
45.00

2" BASE DITCH
(SEE PROFILES)
SEE DITCH DETAIL J

104
TERRY T. PATRICK
DB 1095 - PG 834
PC A SLIDE 84

BY6-56 PINC 7+19.39
-Y6- STA 12+17.98
19.96' RT

13+00.00
36.00

13+00.00
EX R/W
BEG WW
FENCE & CA

PI Sta. 15+21.55

POT Sta. 15+64.91

BY6-57 POT 11+46.56

N 60° 34' 04.8" E

N 52° 56' 08.9" E

13+00.00
EX R/W

13+00.00
41.00
END WWW
FENCE & CA

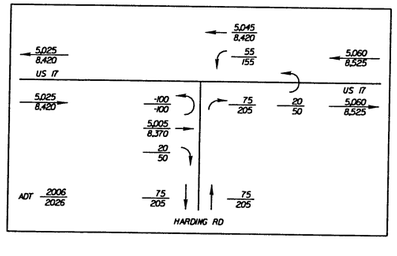
-Y6- POT Sta. 13+50.00
END CONSTRUCTION
(TIE TO EXISTING)

-L-

PIs Sta 198+55.77	PI Sta 200+49.67	PIs Sta 202+43.14
θs = 3° 00' 28.9"	Δ = 8° 19' 10.0" (LT)	θs = 3° 00' 28.9"
Ls = 189.00'	D = 3° 10' 59.2"	Ls = 189.00'
LT = 126.02'	L = 261.36	LT = 126.02'
ST = 63.02'	T = 130.91'	ST = 63.02'
	R = 1,800.00'	
	SE = 07	
	INC = 27'	

-Y6-

PI Sta 13+24.30
Δ = 49° 26' 44.7" (LT)
D = 11° 41' 34.9"
L = 422.87'
T = 225.61'
R = 490.00'
SE = 08
INC = 18



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NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

SEE SHEET 30 FOR -L- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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210

215

220

104
TERRY T. PATRICK
DB 1095 - PG 834
PC A SLIDE 84

BL-35
PINC 204+13.04
-L- STA 209+02.25
2080' RT

BL-36
PINC 210+01.48
-L- STA 214+90.69
3.17 LT

BL-37 PINC 216+05.71
-L- STA 220+94.83
13.96 LT

MATCHLINE -L- STA 208+00 SEE SHEET 18

MATCHLINE -L- STA 221+00 SEE SHEET 20

209+50.00
88.00

211+00.00
95.00

213+50.00
103.00

214+49.42
93.50

214+28.00
EX R/W

215+54.00
135.00

216+05.20
95.00

216+18.00
EX R/W

SPECIAL DITCH GRADE
(SEE PROFILES)
SEE DITCH DETAIL C

48" WW FENCE

100' FULL LANE

100.00' TAPER

170.00' FULL LANE

175.00' TAPER

100' TAPER

175' TAPER

170' FULL LANE

CONTROL POINT

N 16° 30' 53.1" E

N 16° 33' 02.7" E

N 15° 31' 37.1" E

-L-

2GI(D)

US 17 - 22' BST

RUNS

209+50.00
100.00

SPECIAL DITCH GRADE
(SEE PROFILES)
SEE DITCH DETAIL D

SPECIAL DITCH GRADE
(SEE PROFILES)
SEE DITCH DETAIL B

CLASS "B" RIP RAP
EST 3 TONS
EST 10 SQ YD FF

213+43.00
102.00

215+68.00
100.00

216+35.00
121.00

216+93.00
100.00

CLASS "B" RIP RAP
EST 1 TONS
EST 5 SQ YD FF

104
TERRY T. PATRICK
DB 1095 - PG 834
PC A SLIDE 84

BM 8
-L- STA 213+62.32
227.96' RIGHT
ELEV- 33.81'

03/15/2005
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NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

SEE SHEET 30 FOR -L- PROFILE
SEE SHEET 34 FOR -DET2- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

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PROJECT REFERENCE NO.	SHEET NO.
R-2510A	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MATCHLINE -L- STA 221+00 SEE SHEET 19

MATCHLINE -L- STA 235+00 SEE SHEET 21

-DET2- POT Sta.10+00.00 = -L- POT Sta.232+10.94 35' RT.

-DET2-

PI Sta 13+00.78	PI Sta 17+68.80
Δ = 8° 35' 43.7" (LT)	Δ = 8° 35' 43.7" (RT)
D = 4° 46' 28.7"	D = 4° 46' 28.7"
L = 180.02'	L = 180.02'
T = 90.18'	T = 90.18'
R = 1,200.00'	R = 1,200.00'
SE = 08	SE = 08
INC = 27'	INC = 27'

NAD 83/95

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PROJECT REFERENCE NO.	SHEET NO.
R-2510A	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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RALEIGH, N.C. 27606

SEE SHEET 31 FOR -L- PROFILE
SEE SHEET 34 FOR -DET2- PROFILE
SEE SHEET 2C FOR DITCH DETAILS
ALL DRIVEWAYS ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NOTE: ALL DRIVEWAY CONNECTIONS ARE 6" ABC UNLESS OTHERWISE NOTED

NAD 83/95

MATCHLINE -L- STA 235+00 SEE SHEET 20

235

245

225

230

END TIP PROJECT R-2510A
-L- POT STA. 241+65.00
END PARTIAL CONTROL OF ACCESS

POT Sta. 246+44.18

(117) RAYMOND J. ANDREWS
DB 1057 - PG 128
PC E - SLIDE 65-2

(119) JOHN E. TAYLOR
DB 1167 - PG 432
PC B - SLIDE 22

ALICE ANN W. HURST
DB 528 - PG 556

(118) RICHARD D. REED, JR., et ux
DB 1028 - PG 543
PC E - SLIDE 57-8

(110) SCOTT ROBERT BATEMAN, et ux
DB 1141 - PG 215
PC E - SLIDE 94-2

W. BERNARD WINFIELD
DB 900 - PG 971
MB 1 - PG 52
PC E - PG 54-2

BL-40
PINC 234+23.24
-L- STA 239+04.62
3.56 LT

BL-41 PINC 239+92.71 •
BY7-58 POT 5+00.00
-L- STA 244+69.67
74.41 LT

BM 9
BL- STA 241+89.15
81.86 LEFT
ELEV= 40.94'

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL C

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

SPECIAL DITCH GRADE (SEE PROFILES) SEE DITCH DETAIL B

TAPER INSIDE LANE FROM 12 FT AT 12+10.60 TO 0 FT AT 18+58.65

100' SHOULDER TAPER

60' ACCESS BREAK

48" WW FENCE

END WW FENCE

REM. CONC

36" CONC

PK NAIL

EXIST R/W

EIP

FUTURE US 17 BYPASS

N 23° 51' 28.0" E

N 7° 57' 19.0" E -DET2-

N 16° 33' 02.7" E -L-

N 9° 24' 11.4" E

N 20° 51' 14.7" E

S 59° 08' 29.7" E

R=2765'

PT Sta 13+90.62

PC Sta 16+78.62

-DET2- PT Sta 18+58.65 •
-L- POT STA 240+65.00 35' LT.

-DET2-

PI Sta 13+00.78	PI Sta 17+68.80
Δ = 8° 35' 43.7" (LT)	Δ = 8° 35' 43.7" (RT)
D = 4° 46' 28.7"	D = 4° 46' 28.7"
L = 180.02'	L = 180.02'
T = 90.18'	T = 90.18'
R = 1,200.00'	R = 1,200.00'
SE = 08	SE = 08
INC = 27'	INC = 27'

235+50.00 105.00
235+91.29 100.00
236+60.00 96.00
239+35.44 100.00
240+00.00 96.00
240+78.00 EX R/W
241+55.46 EX R/W
241+58.50 EX R/W END WW FENCE
243+67.40 160.86 END WW FENCE

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PROJECT REFERENCE NO.	SHEET NO.
R-2510A	22
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
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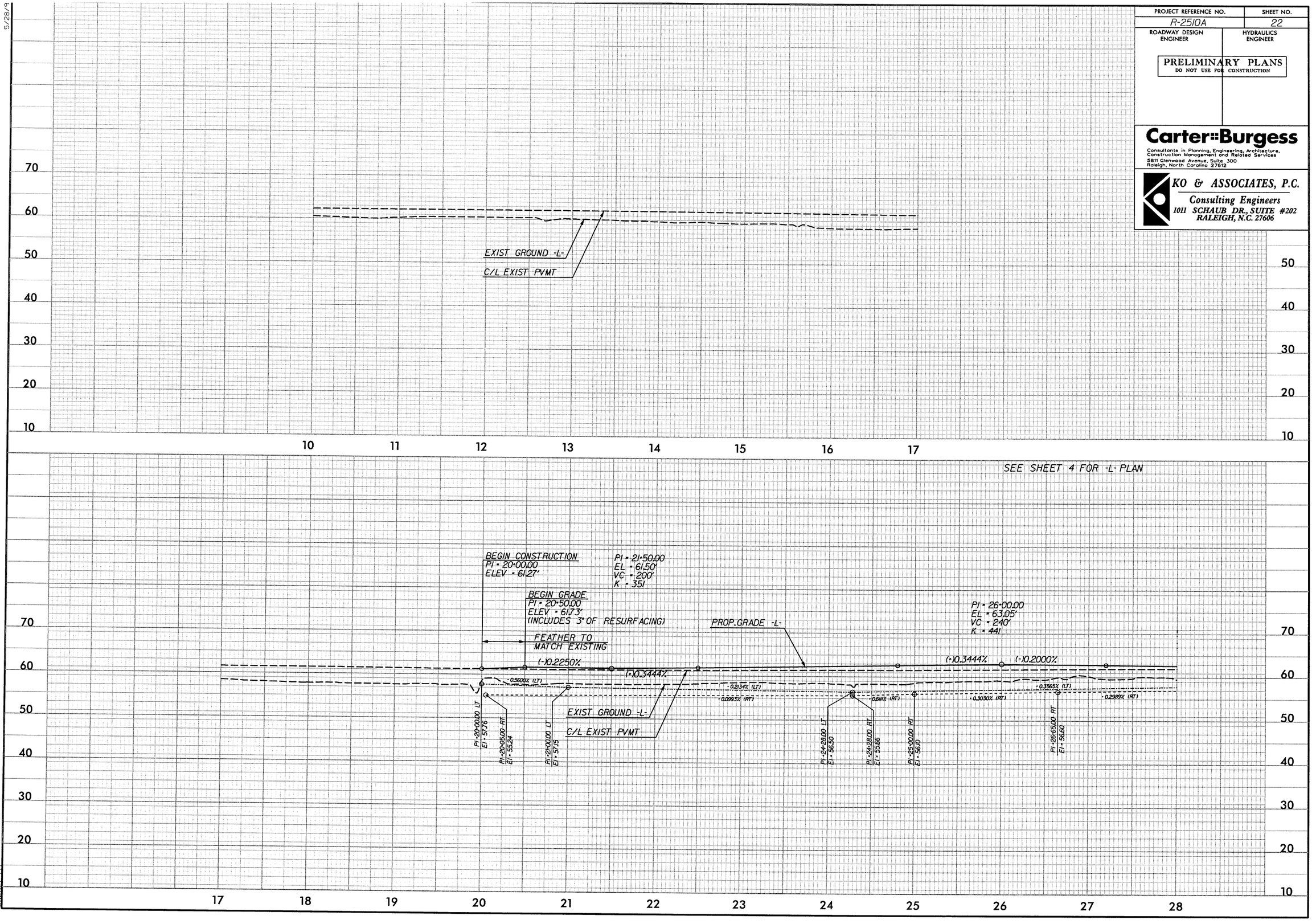

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SEE SHEET 5 FOR -L- PLAN

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	23
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
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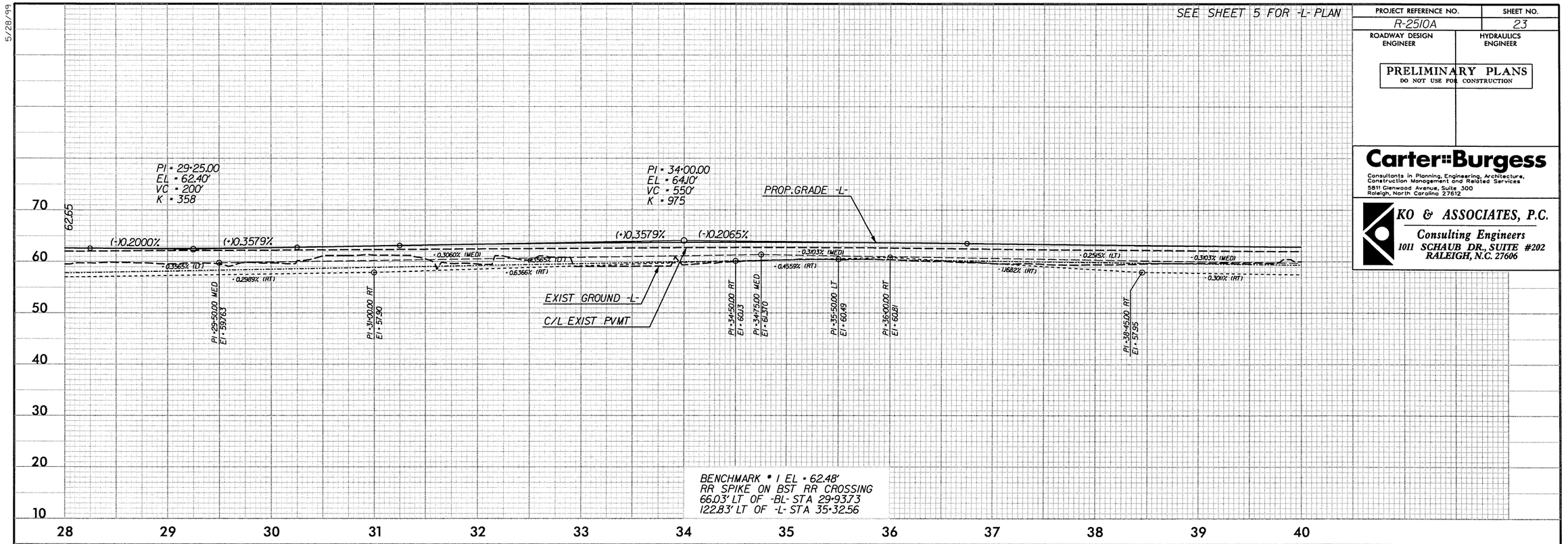
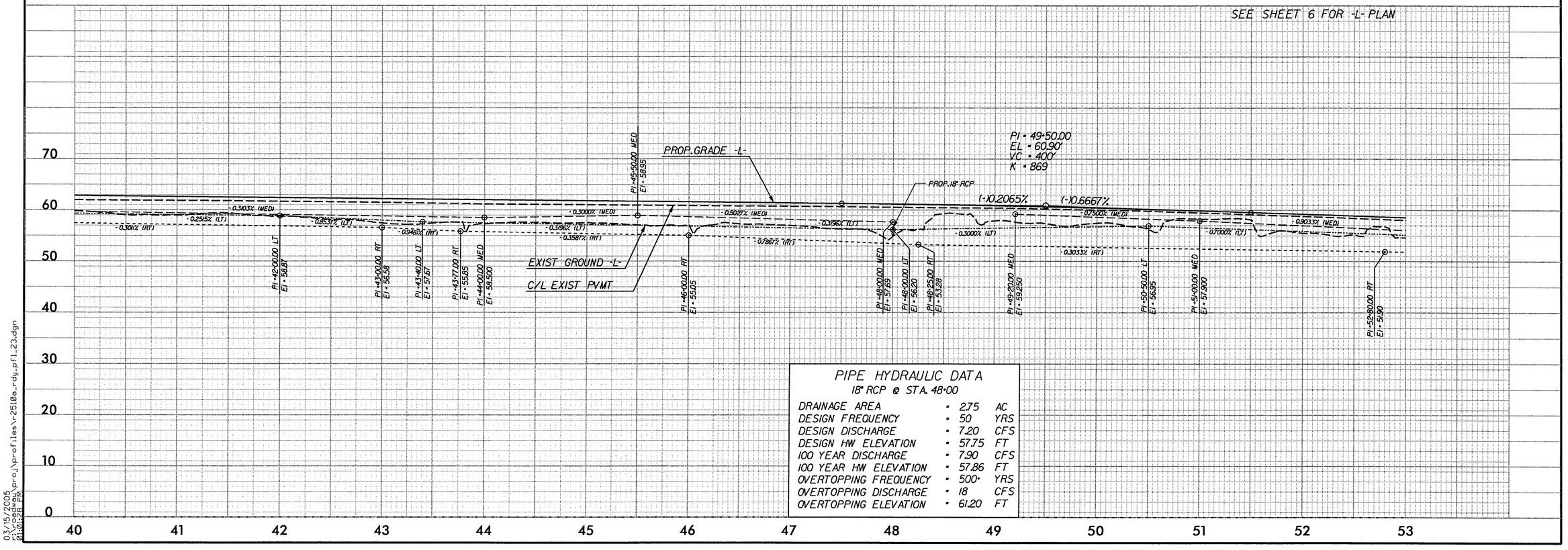


SEE SHEET 6 FOR -L- PLAN



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SEE SHEET 7 FOR -L- PLAN

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	24
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
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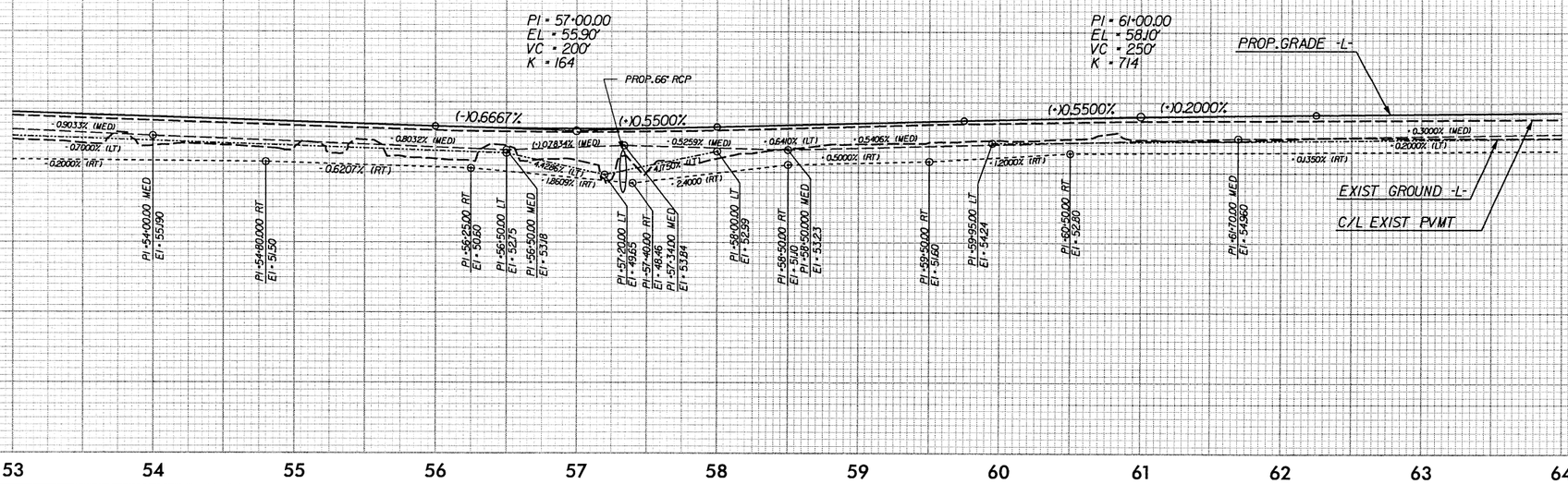
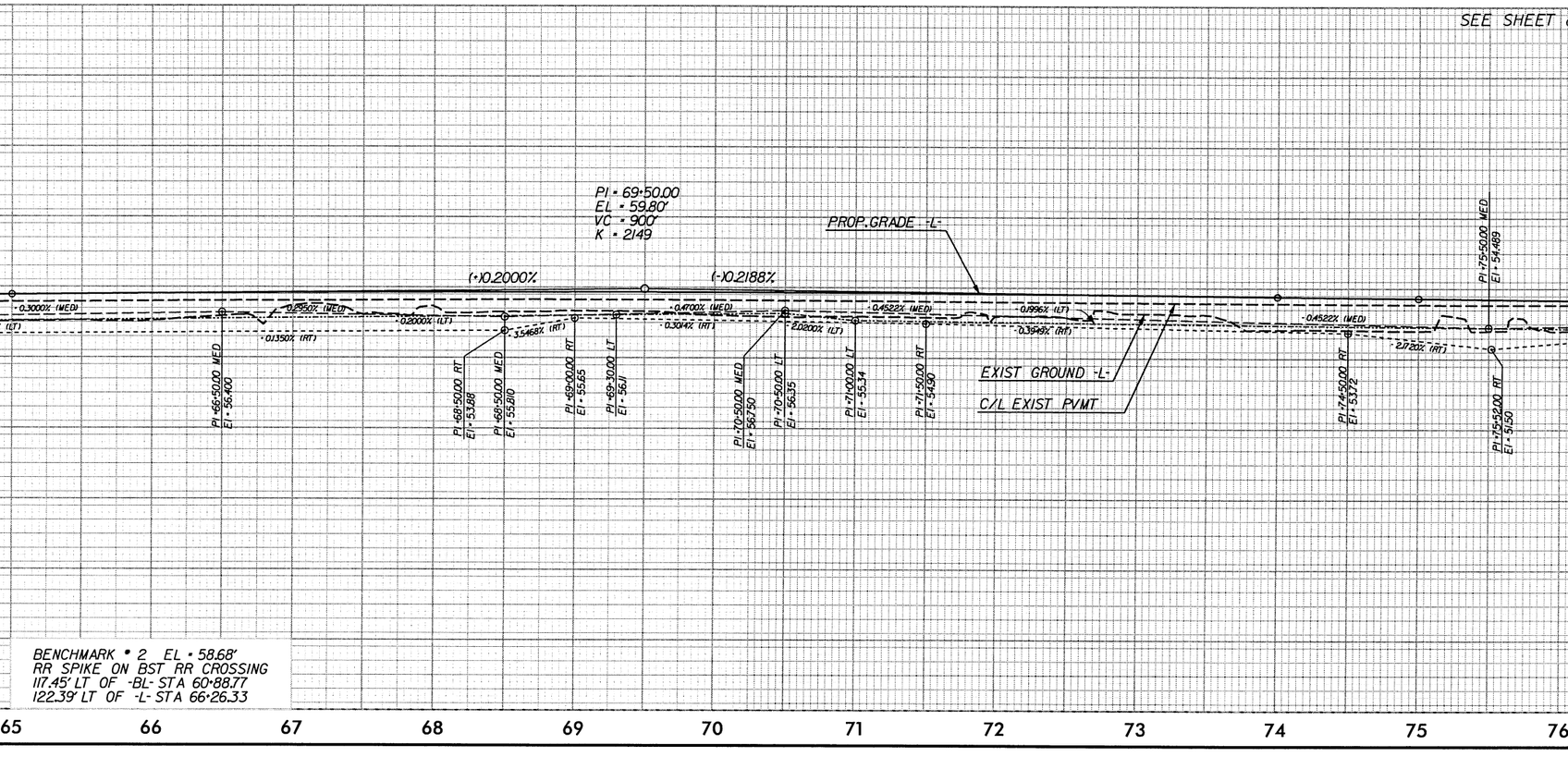
STRUCTURE HYDRAULIC DATA
l@ 72" RCP STA 57+33.2 -L-

DESIGN DISCHARGE	=	70	CFS
DESIGN FREQUENCY	=	50	YRS
DESIGN HW ELEVATION	=	52.81	FT
BASE DISCHARGE	=	80	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	53.02	FT
OVERTOPPING DISCHARGE	=	170	CFS
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING ELEVATION	=	56.20	FT



SEE SHEET 8 FOR -L- PLAN



BENCHMARK = 2 EL = 58.68'
RR SPIKE ON BST RR CROSSING
117.45' LT OF -BL- STA 60+88.77
122.39' LT OF -L- STA 66+26.33

03/15/2005
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PROJECT REFERENCE NO.	SHEET NO.
R-2510A	25
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
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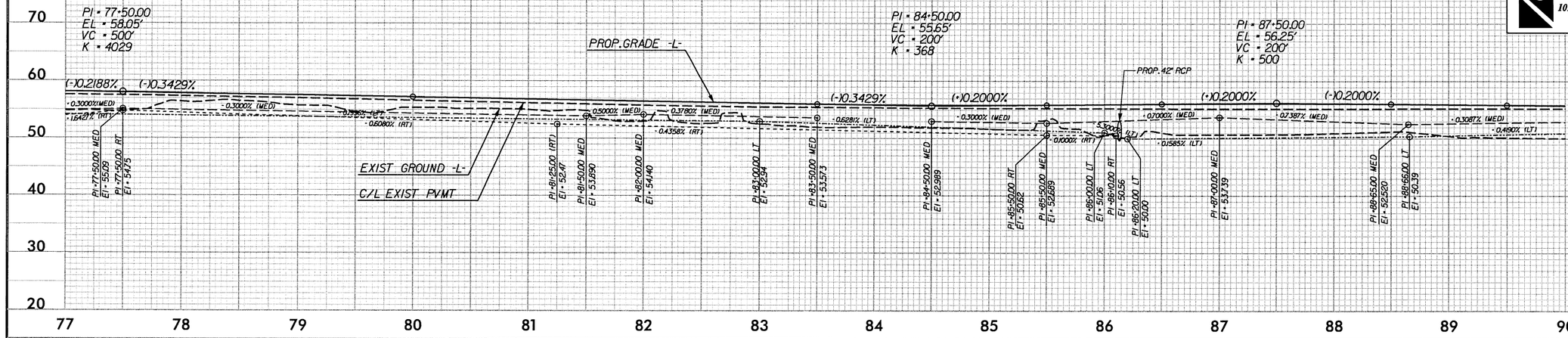
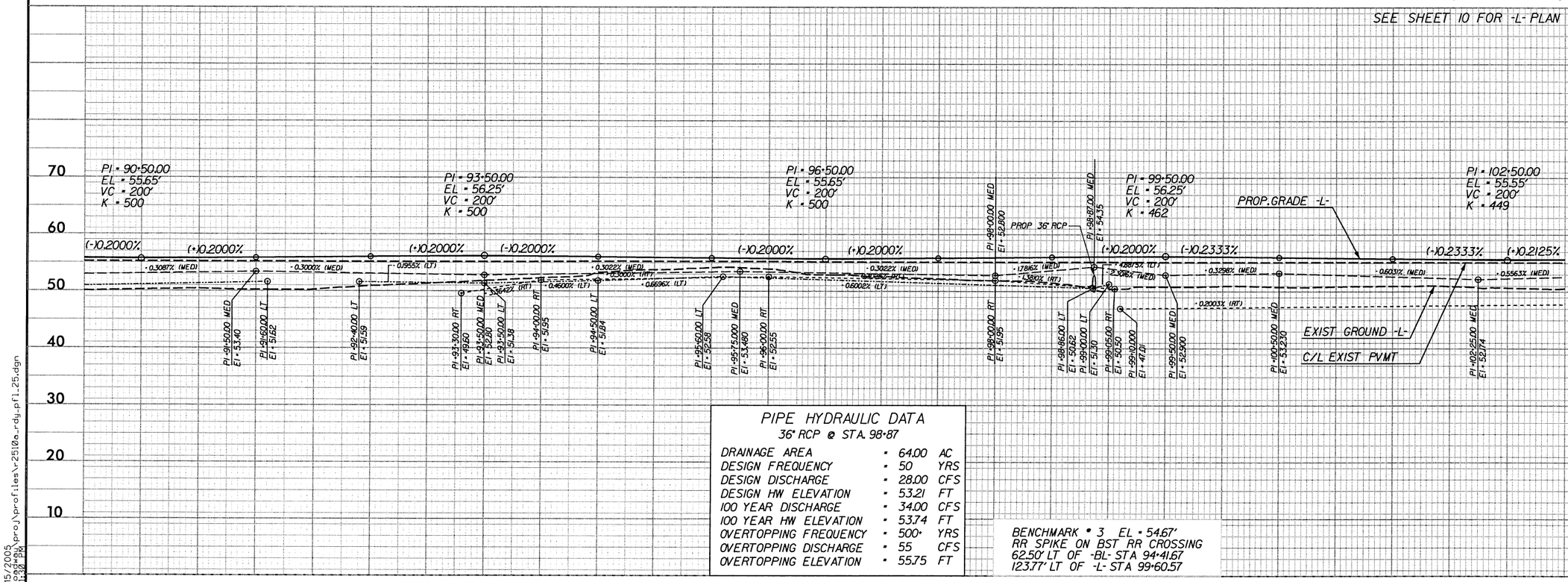
SEE SHEET 9 FOR -L- PLAN

PIPE HYDRAULIC DATA
42" RCP @ STA. 86+13

DRAINAGE AREA	= 64.00	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 30.00	CFS
DESIGN HW ELEVATION	= 52.53	FT
100 YEAR DISCHARGE	= 36.00	CFS
100 YEAR HW ELEVATION	= 52.88	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 79	CFS
OVERTOPPING ELEVATION	= 55.77	FT



SEE SHEET 10 FOR -L- PLAN



PIPE HYDRAULIC DATA
36" RCP @ STA. 98+87

DRAINAGE AREA	= 64.00	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 28.00	CFS
DESIGN HW ELEVATION	= 53.21	FT
100 YEAR DISCHARGE	= 34.00	CFS
100 YEAR HW ELEVATION	= 53.74	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 55	CFS
OVERTOPPING ELEVATION	= 55.75	FT

BENCHMARK = 3 EL = 54.67'
RR SPIKE ON BST RR CROSSING
62.50' LT OF -BL- STA 94+41.67
123.77' LT OF -L- STA 99+60.57

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SEE SHEET 11 FOR -L- PLAN

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	26
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
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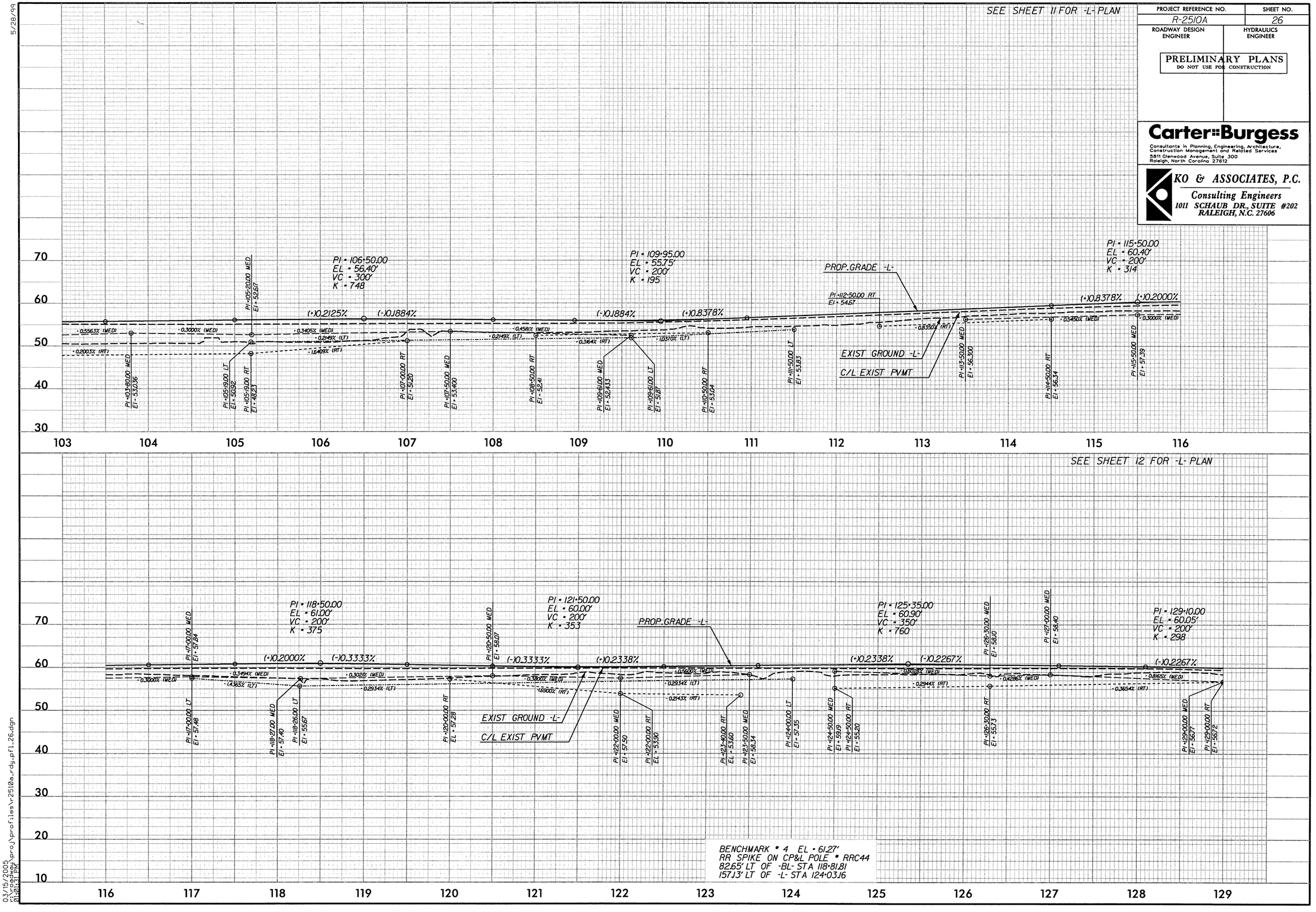

SEE SHEET 12 FOR -L- PLAN

BENCHMARK = 4 EL = 61.27'
RR SPIKE ON CP&L POLE = RRC44
82.65' LT OF -BL- STA 118+81.81
157.13' LT OF -L- STA 124+03.16

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SEE SHEET 13 FOR -L- PLAN

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	27
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
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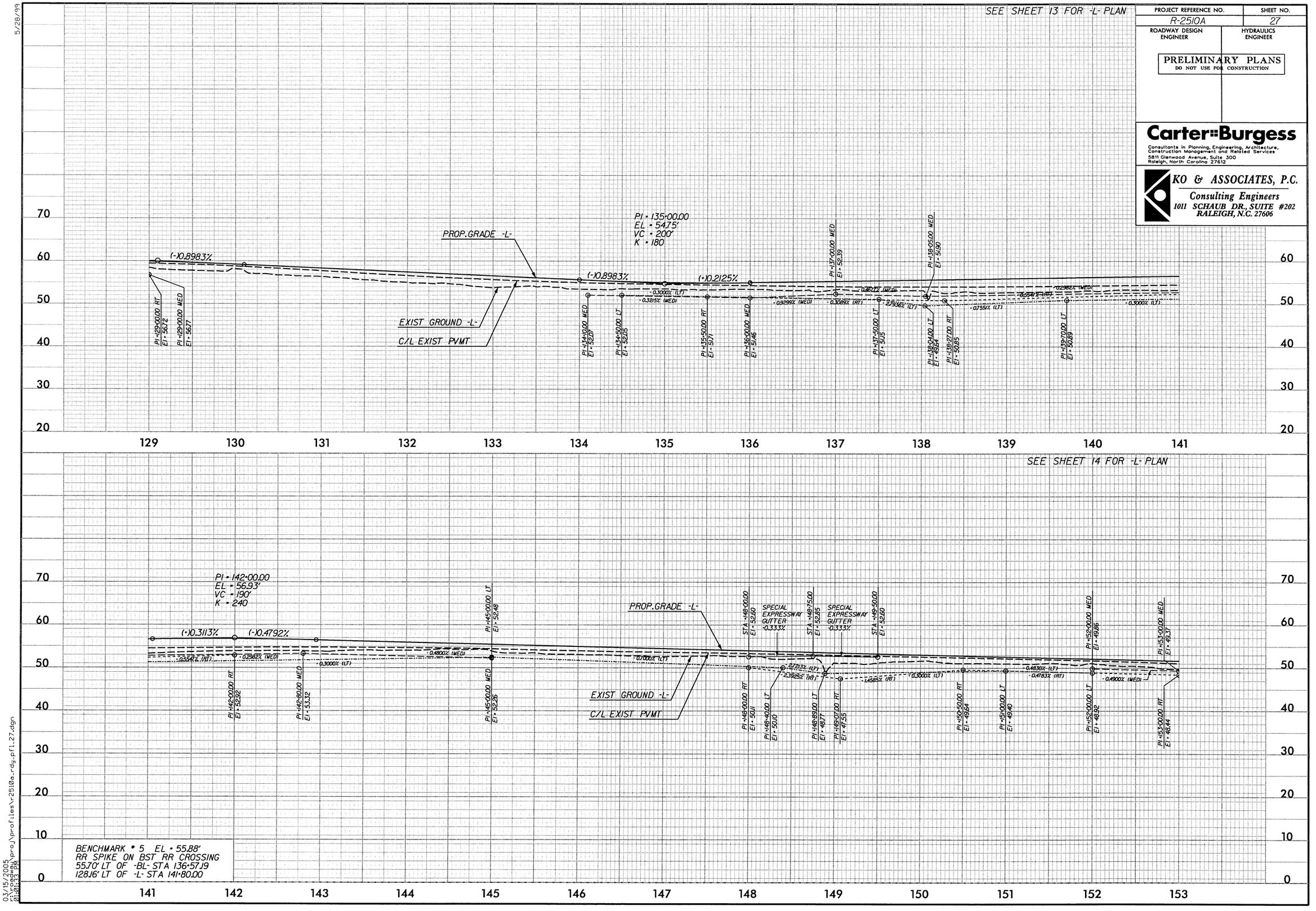

SEE SHEET 14 FOR -L- PLAN

BENCHMARK • 5 EL • 55.88'
RR SPIKE ON BST RR CROSSING
55.70' LT OF -BL- STA 136+57.19
128.16' LT OF -L- STA 141+80.00

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3-15-05 DRAINAGE REVISION, REVISED PIPE SIZE STA.155+45 AND 162-35

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	28
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
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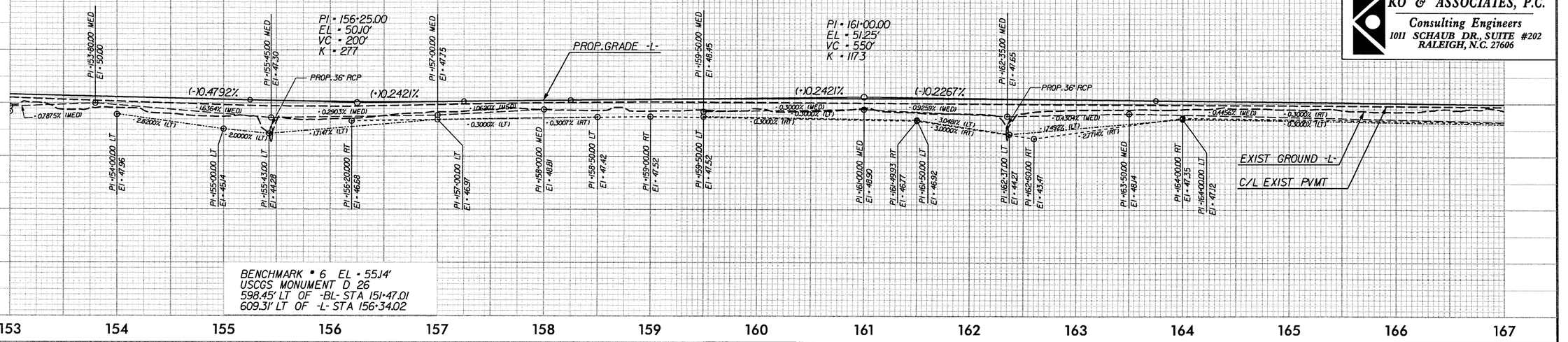
PIPE HYDRAULIC DATA
36" RCP @ STA. 155+45

DRAINAGE AREA	= 54.95	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 17.00	CFS
DESIGN HW ELEVATION	= 46.55	FT
100 YEAR DISCHARGE	= 21.00	CFS
100 YEAR HW ELEVATION	= 46.58	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 57	CFS
OVERTOPPING ELEVATION	= 50.26	FT

PIPE HYDRAULIC DATA
36" RCP @ STA. 162+35

DRAINAGE AREA	= 11.80	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 8.10	CFS
DESIGN HW ELEVATION	= 45.90	FT
100 YEAR DISCHARGE	= 9.80	CFS
100 YEAR HW ELEVATION	= 46.19	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 30	CFS
OVERTOPPING ELEVATION	= 50.86	FT

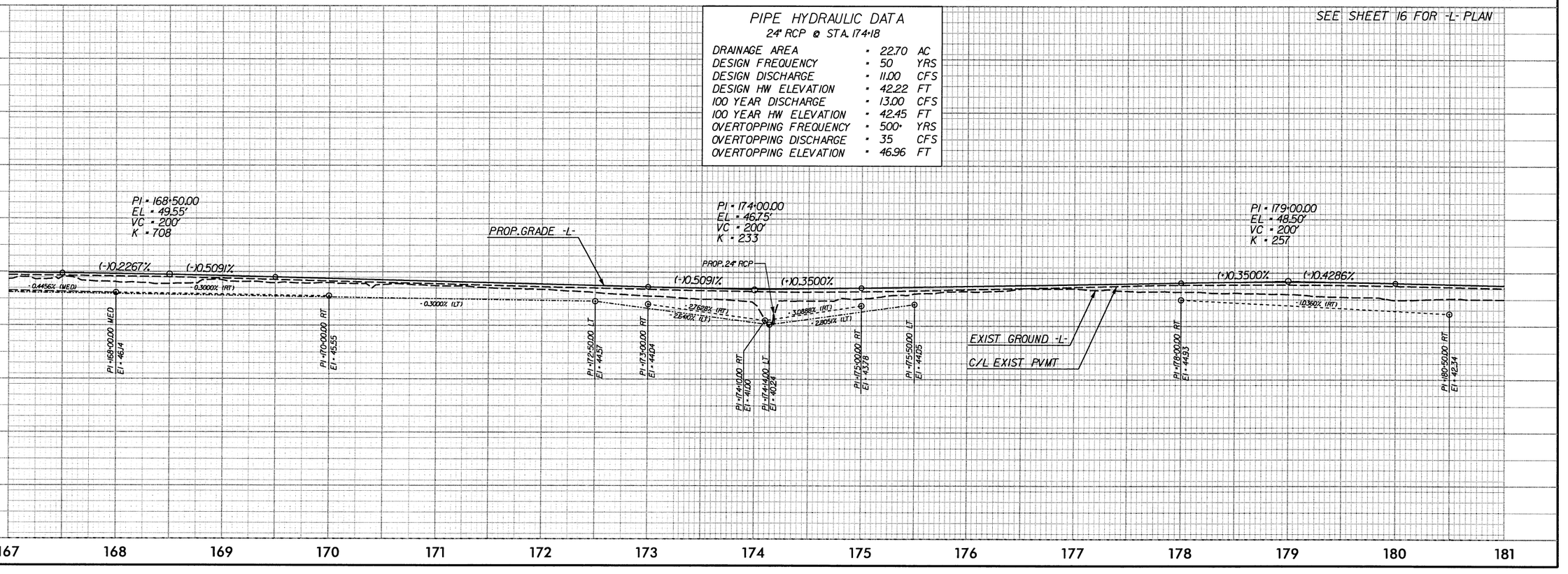
SEE SHEET 15 FOR -L- PLAN



PIPE HYDRAULIC DATA
24" RCP @ STA. 174+18

DRAINAGE AREA	= 22.70	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 11.00	CFS
DESIGN HW ELEVATION	= 42.22	FT
100 YEAR DISCHARGE	= 13.00	CFS
100 YEAR HW ELEVATION	= 42.45	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 35	CFS
OVERTOPPING ELEVATION	= 46.96	FT

SEE SHEET 16 FOR -L- PLAN



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SEE SHEET 19 FOR -L- PLAN

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	30
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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Consultants in Planning, Engineering, Architecture, Construction Management and Related Services
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Raleigh, North Carolina 27612

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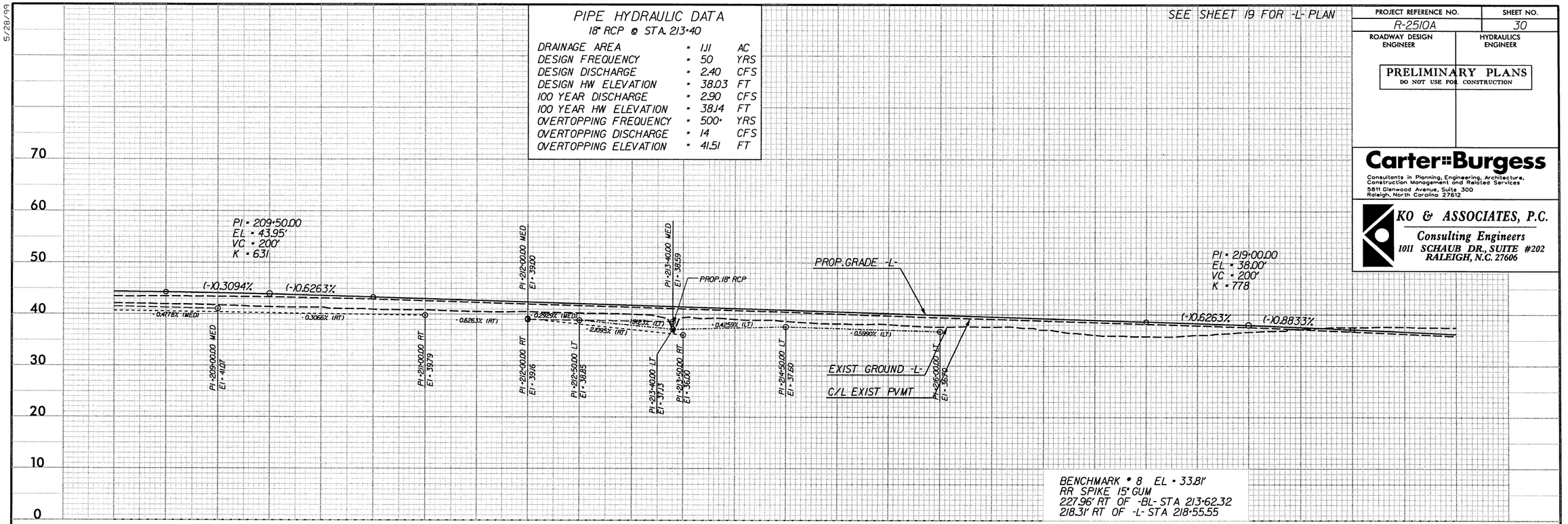
Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606

PIPE HYDRAULIC DATA
18" RCP @ STA. 213+40

DRAINAGE AREA	1.11	AC
DESIGN FREQUENCY	50	YRS
DESIGN DISCHARGE	2.40	CFS
DESIGN HW ELEVATION	38.03	FT
100 YEAR DISCHARGE	2.90	CFS
100 YEAR HW ELEVATION	38.14	FT
OVERTOPPING FREQUENCY	500+	YRS
OVERTOPPING DISCHARGE	14	CFS
OVERTOPPING ELEVATION	41.51	FT



BENCHMARK # 8 EL = 33.81'
RR SPIKE 15" GUM
227.96' RT OF -BL- STA 213+62.32
218.31' RT OF -L- STA 218+55.55

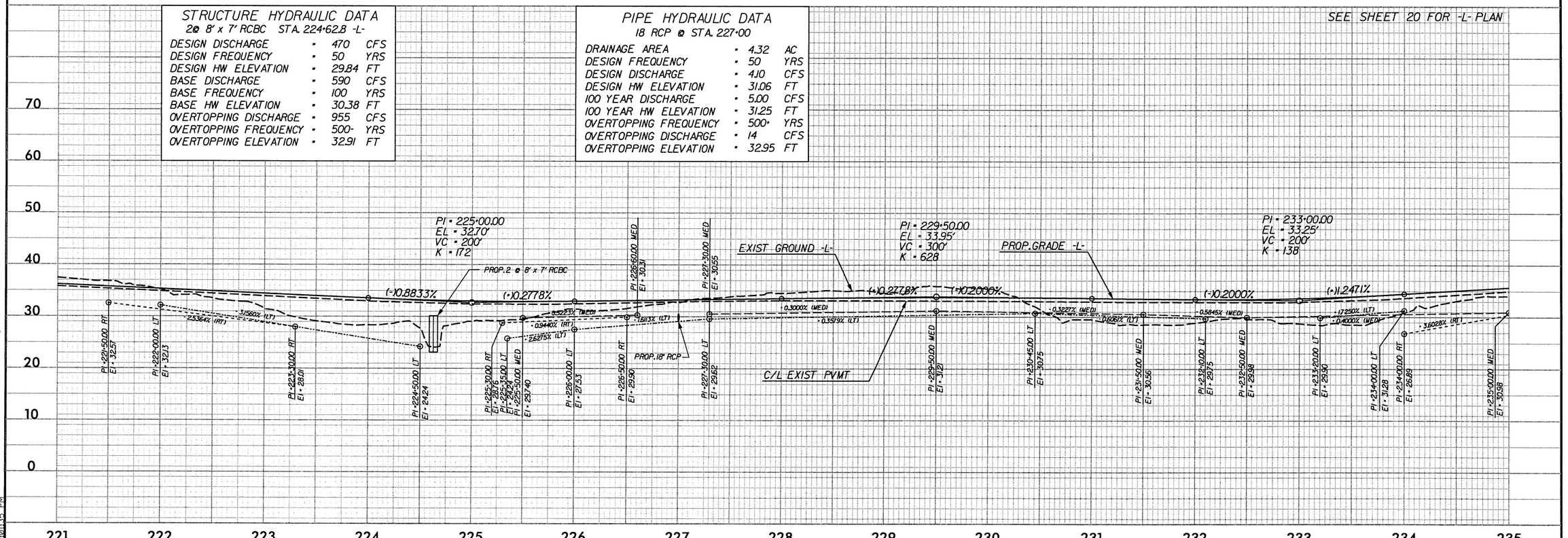
STRUCTURE HYDRAULIC DATA
2@ 8' x 7' RCBC STA. 224+62.8 -L-

DESIGN DISCHARGE	470	CFS
DESIGN FREQUENCY	50	YRS
DESIGN HW ELEVATION	29.84	FT
BASE DISCHARGE	590	CFS
BASE FREQUENCY	100	YRS
BASE HW ELEVATION	30.38	FT
OVERTOPPING DISCHARGE	955	CFS
OVERTOPPING FREQUENCY	500+	YRS
OVERTOPPING ELEVATION	32.91	FT

PIPE HYDRAULIC DATA
18 RCP @ STA. 227+00

DRAINAGE AREA	4.32	AC
DESIGN FREQUENCY	50	YRS
DESIGN DISCHARGE	4.10	CFS
DESIGN HW ELEVATION	31.06	FT
100 YEAR DISCHARGE	5.00	CFS
100 YEAR HW ELEVATION	31.25	FT
OVERTOPPING FREQUENCY	500+	YRS
OVERTOPPING DISCHARGE	14	CFS
OVERTOPPING ELEVATION	32.95	FT

SEE SHEET 20 FOR -L- PLAN



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SEE SHEET 21 FOR -L- PLAN

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	31
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
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PI = 237+25.00
EL = 38.55'
VC = 370'
K = 153

(+)1.2471%

(-)1.1745%

PROP. GRADE -L-

END GRADE
PI = 241+15.00
ELEV = 33.97'
(INCLUDES 3" OF RESURFACING)

END CONSTRUCTION
PI = 241+65.00
ELEV = 33.38'

FEATHER TO MATCH EXISTING

0.3000% (RT)

3.6028% (RT)

3.2712% (LT)

3.4411% (RT)

0.9958% (RT)

PI 241+65.000 LT
EL = 26.50

EXIST. GROUND -L-

C/L EXIST. PVMT.

PI = 235+00.00 MED
EL = 30.98

PI = 235+50.00 RT
EL = 32.29

PI = 238+00.00 RT
EL = 33.04

PI = 239+50.00 RT
EL = 31.36

PI = 240+00.00 RT
EL = 30.86

PI = 240+00.00 LT
EL = 32.00

PI = 241+70.00 RT
EL = 25.00

BENCHMARK # 9 EL = 40.94'
RR SPIKE IN 42" OAK
81.86' LT OF -BL- STA 241+89.15

70 60 50 40 30 20 10 0

235 236 237 238 239 240 241 242 243 244 245 246 247

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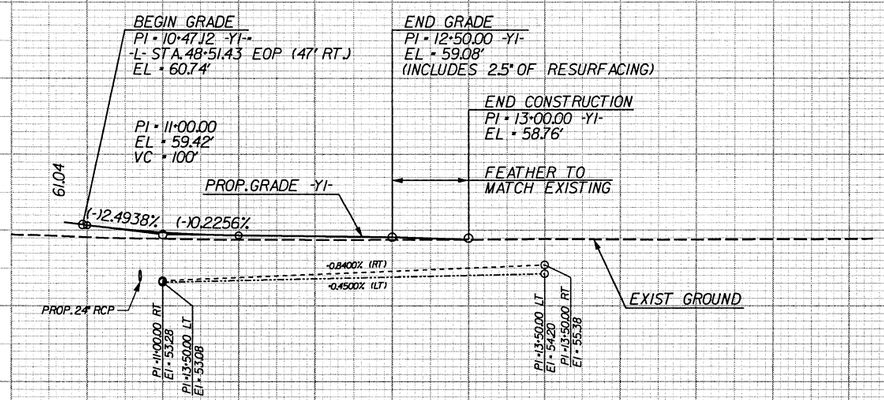
	Y3 @ RR CROSSING
	Y3 - LT & RT DITCH
	Y3 PROFILE REVISION
3-15-05	SPECIAL DITCH REVISION
1-27-05	

SEE SHEET 6 FOR -Y1- PLAN

PIPE HYDRAULIC DATA
24" RCP @ STA. 10+85

DRAINAGE AREA	7.84	AC
DESIGN FREQUENCY	50	YRS
DESIGN DISCHARGE	18.00	CFS
DESIGN HW ELEVATION	55.99	FT
100 YEAR DISCHARGE	23.00	CFS
100 YEAR HW ELEVATION	56.86	FT
OVERTOPPING FREQUENCY	500+	YRS
OVERTOPPING DISCHARGE	51.00	CFS
OVERTOPPING ELEVATION	58.97	FT

-Y1-

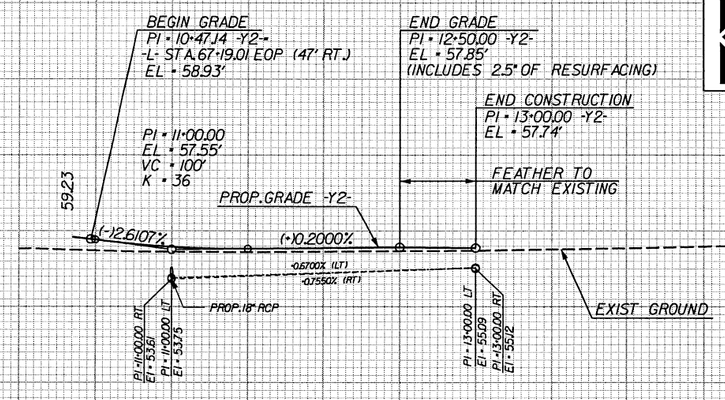


SEE SHEET 8 FOR -Y2- PLAN

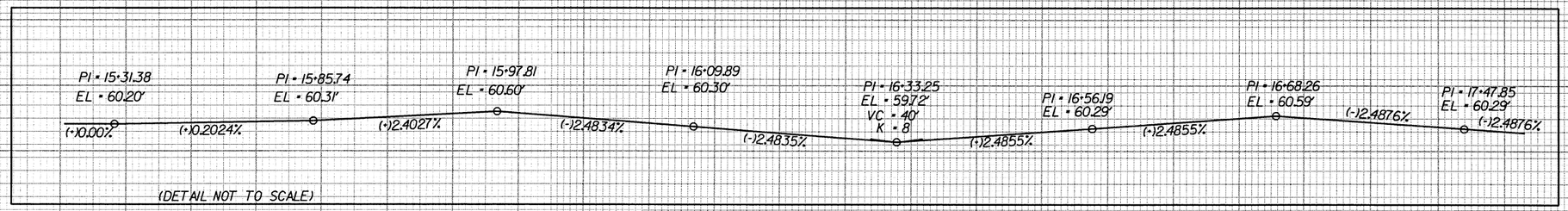
PIPE HYDRAULIC DATA
18" RCP @ STA. 11+00

DRAINAGE AREA	1.50	AC
DESIGN FREQUENCY	50	YRS
DESIGN DISCHARGE	5.50	CFS
DESIGN HW ELEVATION	55.36	FT
100 YEAR DISCHARGE	6.00	CFS
100 YEAR HW ELEVATION	55.47	FT
OVERTOPPING FREQUENCY	500+	YRS
OVERTOPPING DISCHARGE	14	CFS
OVERTOPPING ELEVATION	57.64	FT

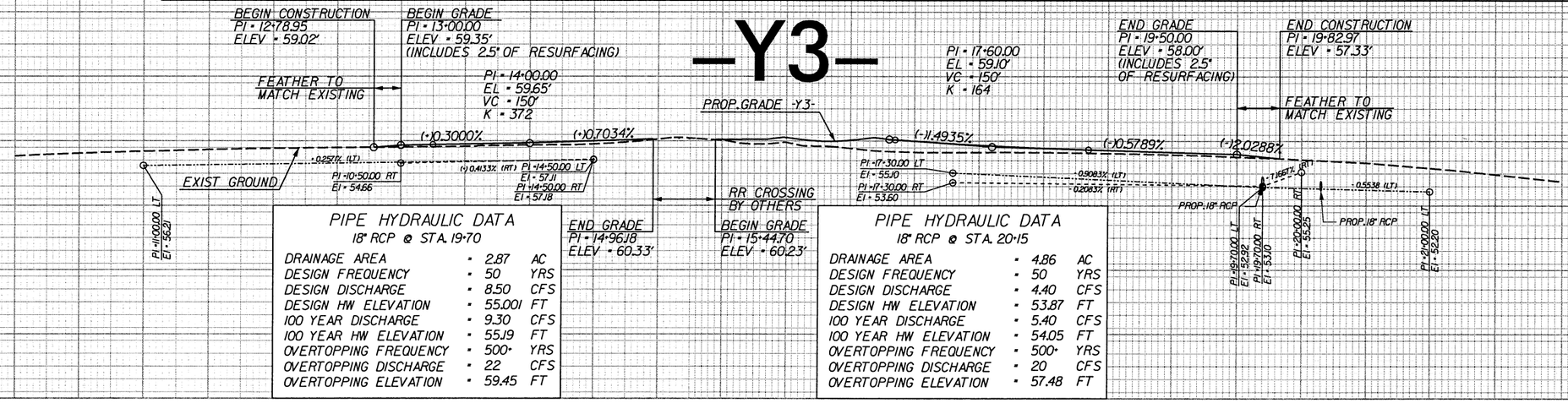
-Y2-



SEE SHEET 12 FOR -Y3- PLAN



-Y3-



PIPE HYDRAULIC DATA
18" RCP @ STA. 19+70

DRAINAGE AREA	2.87	AC
DESIGN FREQUENCY	50	YRS
DESIGN DISCHARGE	8.50	CFS
DESIGN HW ELEVATION	55.001	FT
100 YEAR DISCHARGE	9.30	CFS
100 YEAR HW ELEVATION	55.19	FT
OVERTOPPING FREQUENCY	500+	YRS
OVERTOPPING DISCHARGE	22	CFS
OVERTOPPING ELEVATION	59.45	FT

PIPE HYDRAULIC DATA
18" RCP @ STA. 20+15

DRAINAGE AREA	4.86	AC
DESIGN FREQUENCY	50	YRS
DESIGN DISCHARGE	4.40	CFS
DESIGN HW ELEVATION	53.87	FT
100 YEAR DISCHARGE	5.40	CFS
100 YEAR HW ELEVATION	54.05	FT
OVERTOPPING FREQUENCY	500+	YRS
OVERTOPPING DISCHARGE	20	CFS
OVERTOPPING ELEVATION	57.48	FT

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	32
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
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PROJECT REFERENCE NO.	SHEET NO.
R-2510A	33

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

PRELIMINARY PLANS
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RALEIGH, N.C. 27606

SEE SHEET 15 FOR -L- PLAN

-Y5-

END GRADE
STA.15+84.89 -Y5- =
STA.159+07.30 -L- EOP.(47.00' LT)
EL = 50.45'

BEGIN CONSTRUCTION
STA.13+00.00 -Y5-
EL = 51.62

BEGIN GRADE
STA.13+50.00 -Y5-
EL = 51.59
(INCLUDES 2.5" OF RESURFACING)

FEATHER TO MATCH EXISTING

PROP.GRADE -Y5-

(-)0.4844%

(+)2.3828%

-0.4800% (RT)
-0.3000% (LT)

EXIST GROUND

PI -11+60.00 RT
El = 46.42

PI -12+50.00 LT
El = 46.48

PI -15+35.00 LT
El = 48.25

PI -15+35.00 RT
El = 48.26

SEE SHEET 18 FOR -L- PLAN

-Y6-

BEGIN GRADE
STA.10+47.13 -Y6- =
STA.203+59.32 -L- EOP.(47.00' RT)
EL = 45.82'

PI = 12+50.00
EL = 43.35'
VC = 100'
K = 98

END -Y6- GRADE
STA.13+00.00
EL = 43.25'
(INCLUDES 2.5" OF RESURFACING)

END -Y6- CONSTRUCTION
STA.13+50.00
EL = 43.03'

FEATHER TO MATCH EXISTING

PROP.GRADE -Y6-

(-)1.2175%

(-)0.2000%

-2.300% (LT)
-3.000% (RT)

EXIST GROUND

PI -11+00.00 LT
El = 40.40

PI -11+00.00 RT
El = 40.05

PI -12+00.00 RT
El = 39.75

PI -12+50.00 LT
El = 40.05

SEE SHEET 4 & 5 FOR -L- PLAN

-DET1-

BEGIN GRADE
STA.10+00.00 -DET1-
ELEV = 61.27'
(INCLUDES 3" OF RESURFACING)

PI = 12+00.00
EL = 61.70'
VC = 240'
K = 57.8

PROP.GRADE -DET1-

PI = 15+25.00
EL = 61.05'
VC = 300'
K = 46.6

(-)0.2150%

(-)0.2000%

(-)0.2000%

(-)0.4436%

EXIST GROUND

END GRADE
STA.18+58.65 -DET1-
STA.29+04.07 -L- 35.00' RT
ELEV = 62.53'

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SEE SHEET 20 & 21 FOR -L- PLAN

-DET2-

BEGIN GRADE
STA.10+00.00 -DET2-
STA.232+10.94 -L-, 35.00' RT
ELEV = 33.43
(INCLUDES 3" OF RESURFACING)

PI = 13+00.00
EL = 34.00'
VC = 180'
K = 192

PI = 15+50.00
EL = 36.82'
VC = 280'
K = 151

PROP.GRADE -DET2-

END GRADE
STA.18+58.65 -DET2-
ELEV = 34.56'
(INCLUDES 3" OF RESURFACING)

(+)1.1261%

(-)0.7306%

(+)0.1899%

(-)1.1261%

EXIST GROUND

40
30
20
10
0

10 11 12 13 14 15 16 17 18

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	34
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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Raleigh, North Carolina 27612

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RALEIGH, N.C. 27606

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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-0

INDEX OF SHEETS

-L-	X-1	TO X-78
-Y1-	X-79	
-Y2-	X-80	
-Y3-	X-81	TO X-84
-Y4-	N/A	
-Y5-	X-85	
-Y6-	X-86	

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	R-2510A	X-1

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

80 70 60

DET 11+00.12

0.025 0.060 4:1 6:1 6:1 57.92 FUTURE LANES 3:1

S.D. 57.09 57.62

21+50.00

80 70 60

DET 10+50.01

0.025 0.060 4:1 6:1 6:1 58.02 FUTURE LANES 3:1

S.D. 57.20 57.54 S.D. 55.33

21+00.00

60

0.025 0.050 4:1 6:1 6:1 57.74 FUTURE LANES 3:1 3:1

S.D. 57.48 S.D. 55.28

20+50.00

60

0.025 0.040 58.45

20+00.00

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

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-2

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

80 70 60

DET. 13+02.44

0.0259 0.0259 0.0086 0.0076

52.38

4J 6J 6J 3J 6J

FUTURE LANES

6J 3J

D.P. 61.26

S.D. 56.67 S.D. 55.58

23+50.00

DET. 12+51.48

0.0259 0.0259 0.0269 0.0260

58.54

4J 6J 3J 6J

FUTURE LANES

D.P. 60.994

S.D. 56.77 S.D. 55.53

23+00.00

DET. 12+00.91

0.0259 0.0453 0.0444

56.14

4J 6J 3J 6J

FUTURE LANES

S.D. 56.88 S.D. 55.48

22+50.00

DET. 11+50.39

0.0259 0.0600

57.96

4J 6J 6J 3J

FUTURE LANES

S.D. 56.99 S.D. 55.43

22+00.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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	R-2510A	X-3

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

80 70 60

DET 15+04.24

58.95

0.0250 0.0250 0.0600 0.0600

4:1 3:1 6:1 6:1 6:1 6:1 6:1 6:1

D.P. 58.87

S.D. 56.93 S.D. 56.25

25+50.00

DET 14+53.75

58.57

0.0250 0.0250 0.0470 0.0481

4:1 3:1 6:1 6:1 6:1 6:1 6:1 6:1

D.P. 59.41

S.D. 56.76 S.D. 56.10

25+00.00

DET 14+03.18

58.34

0.0250 0.0250 0.0224 0.0224

4:1 3:1 6:1 6:1 6:1 6:1 6:1 6:1

FUTURE LANES

D.P. 60.04

S.D. 56.58 S.D. 55.79

24+50.00

DET 13+52.61

58.21

0.0250 0.0250 0.0098 0.0108

4:1 3:1 6:1 6:1 6:1 6:1 3:1

FUTURE LANES

D.P. 60.04

S.D. 56.56 S.D. 55.63

24+00.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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	R-2510A	X-4

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

80
70
60

DET. 17+04.58

0.0250 0.0250 59.73 0.0220 0.0220

4:1 1.432:1 6:1 6:1

3:1 6:1 6:1

S.D. 57.55 D.P. 58.24 S.D. 56.85

27+50.00

80
70

DET. 16+54.58

0.0250 0.0250 60.17 0.0506 0.0506

4:1 4:1 6.353:1 6:1 3:1

3:1 6:1

S.D. 57.47 D.P. 57.93 S.D. 56.70

27+00.00

80
70
60

DET. 16+04.57

0.0250 0.0250 59.45 0.0600 0.0600

4:1 4.226:1 8:1 6:1 6:1

3:1 6:1

S.D. 57.29 D.P. 58.20 S.D. 56.55

26+50.00

80
70
60

DET. 15+54.49

0.0250 0.0250 59.17 0.0600 0.0600

4:1 6:1 6:1 6:1 6:1

3:1 6:1

S.D. 57.11 D.P. 58.56 S.D. 56.40

26+00.00

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	R-2510A	X-5

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

60

0.025 0.025 0.025 0.025

4:1 3:1 6:1 9.13:1 8.13:1 6:1 6:1

59.70

D.P. 59.92
SDG

S.D. 59.54 S.D. 57.60

30+00.00

60

0.025 0.025 0.025 0.025

4:1 3:1 6:1 8:1 8:1 6:1 6:1

59.59

D.P. 59.76
SDG

S.D. 58.36 S.D. 57.45

29+50.00

DET 18+54.58

80 70 60

0.025 0.025 0.025 0.035

4:1 3:1 6:1 5.965:1 6:1 6:1 6:1

59.54

D.P. 59.01

S.D. 58.18 S.D. 57.30

29+00.00

DET 18+04.58

80 70 60

0.025 0.025 0.025 0.025

4:1 3:1 6:1 5.481:1 6:1 6:1 6:1

59.83

D.P. 58.79

S.D. 58.00 S.D. 57.15

28+50.00

DET 17+54.58

80 70 60

0.025 0.025 0.025 0.035

4:1 3:1 6:1 4.978:1 6:1 6:1 6:1

59.53

D.P. 58.57

S.D. 57.83 S.D. 57.00

28+00.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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	R-2510A	X-6

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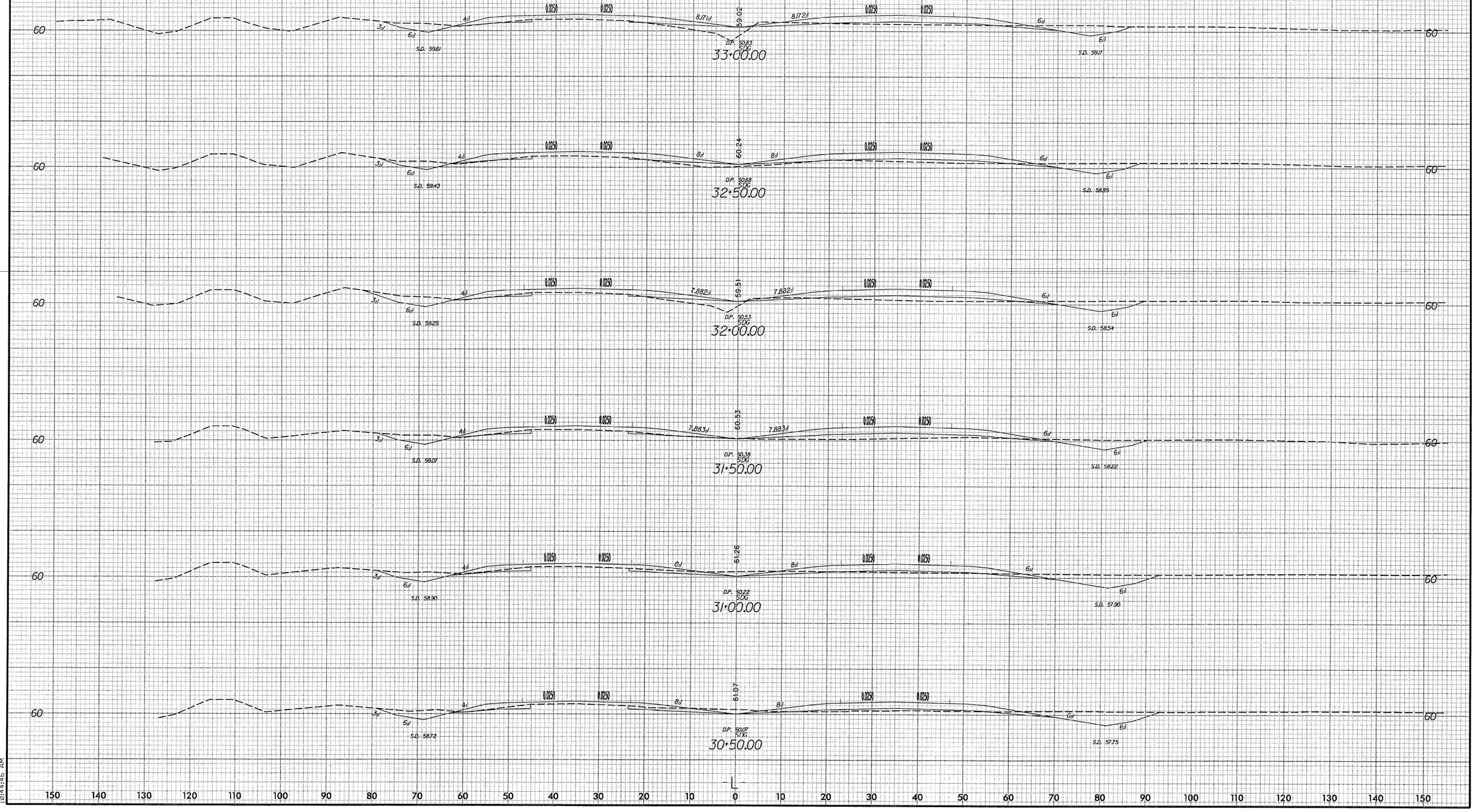

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	R-2510A	X-7

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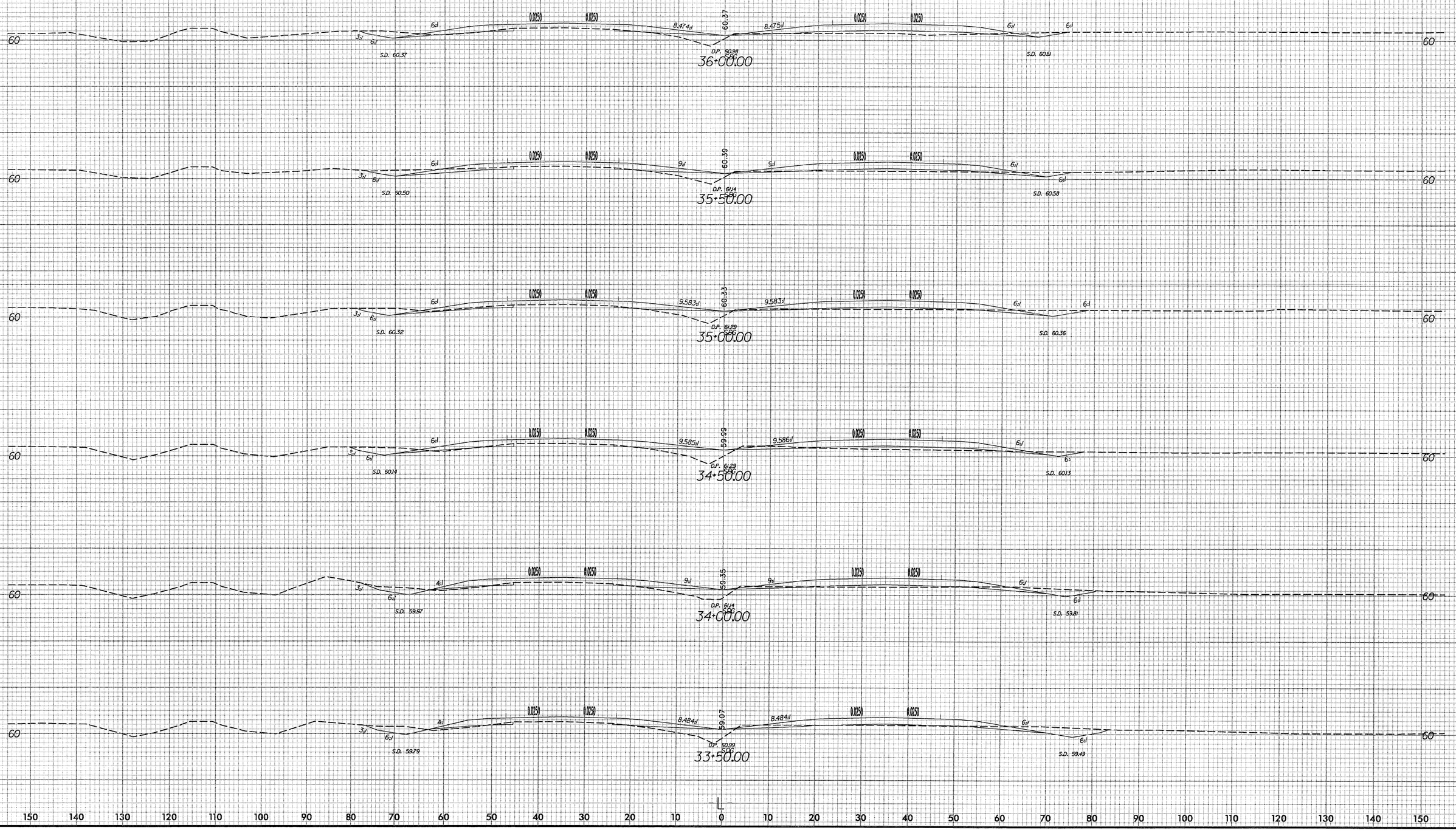

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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-8

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

60

6:1 0.025 0.025 7.245:1 59.70 7.246:1 0.025 0.025 6:1

S.D. 59.62 — D.P. 60.05 S.D.G. — S.D. 57.76

39+00.00

60

6:1 0.025 0.025 7.4:1 59.62 7.4:1 0.025 0.025 6:1

3:1 6:1 — S.D. 59.75 — D.P. 60.21 S.D.G. — S.D. 57.93

38+50.00

60

6:1 0.025 0.025 7.58:1 59.42 7.58:1 0.025 0.025 6:1

3:1 6:1 — S.D. 59.87 — D.P. 60.36 S.D.G. — S.D. 58.48

38+00.00

60

6:1 0.025 0.025 7.76:1 59.52 7.76:1 0.025 0.025 6:1

3:1 6:1 — S.D. 60.00 — D.P. 60.52 S.D.G. — S.D. 59.06

37+50.00

60

6:1 0.025 0.025 8:1 59.65 8:1 0.025 0.025 6:1

3:1 6:1 — S.D. 60.12 — D.P. 60.67 S.D.G. — S.D. 59.64

37+00.00

60

6:1 0.025 0.025 8.159:1 60.06 8.159:1 0.025 0.025 6:1

3:1 6:1 — S.D. 60.25 — D.P. 60.83 S.D.G. — S.D. 60.23

36+50.00

-L-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-9

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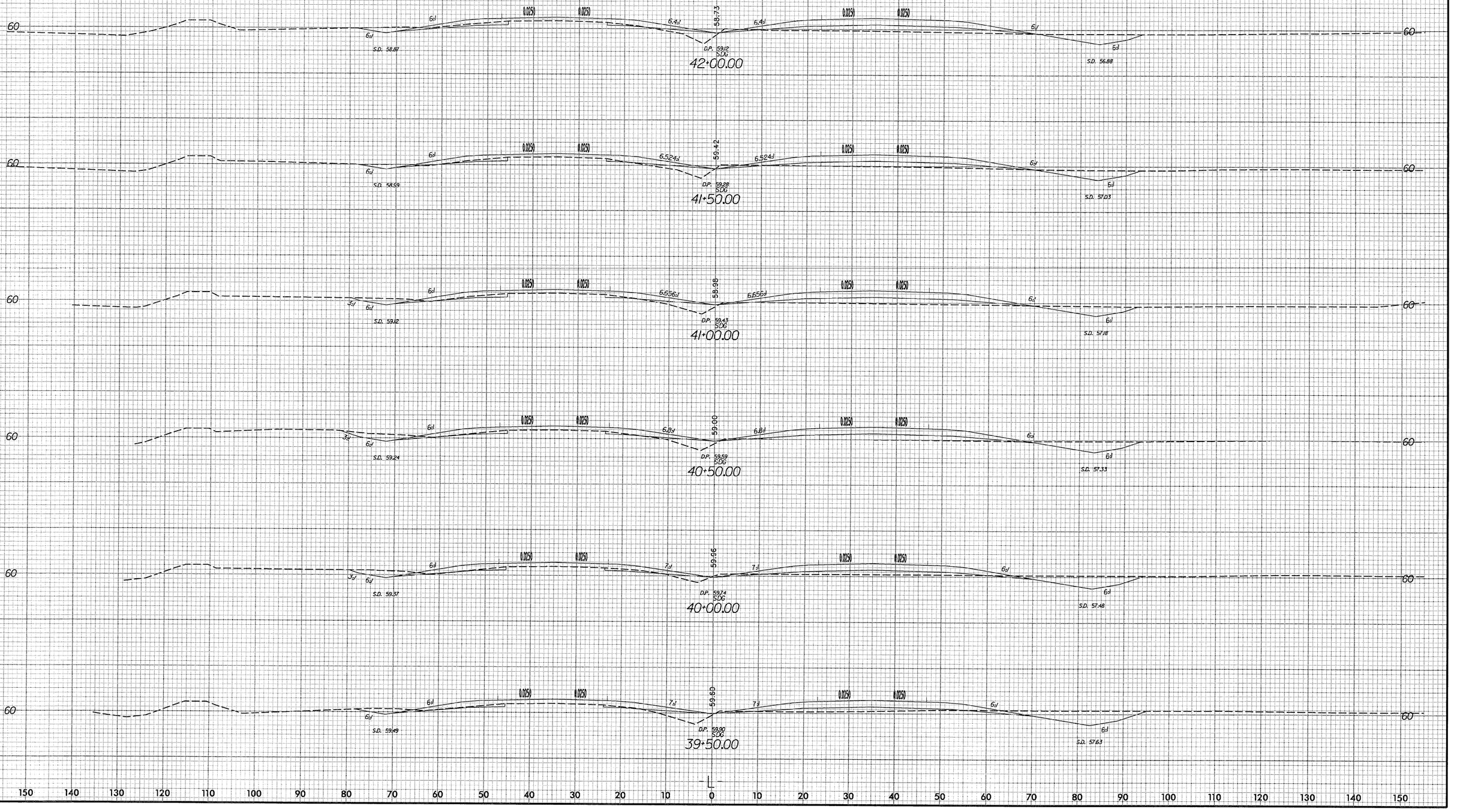

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03/05/2008
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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-10

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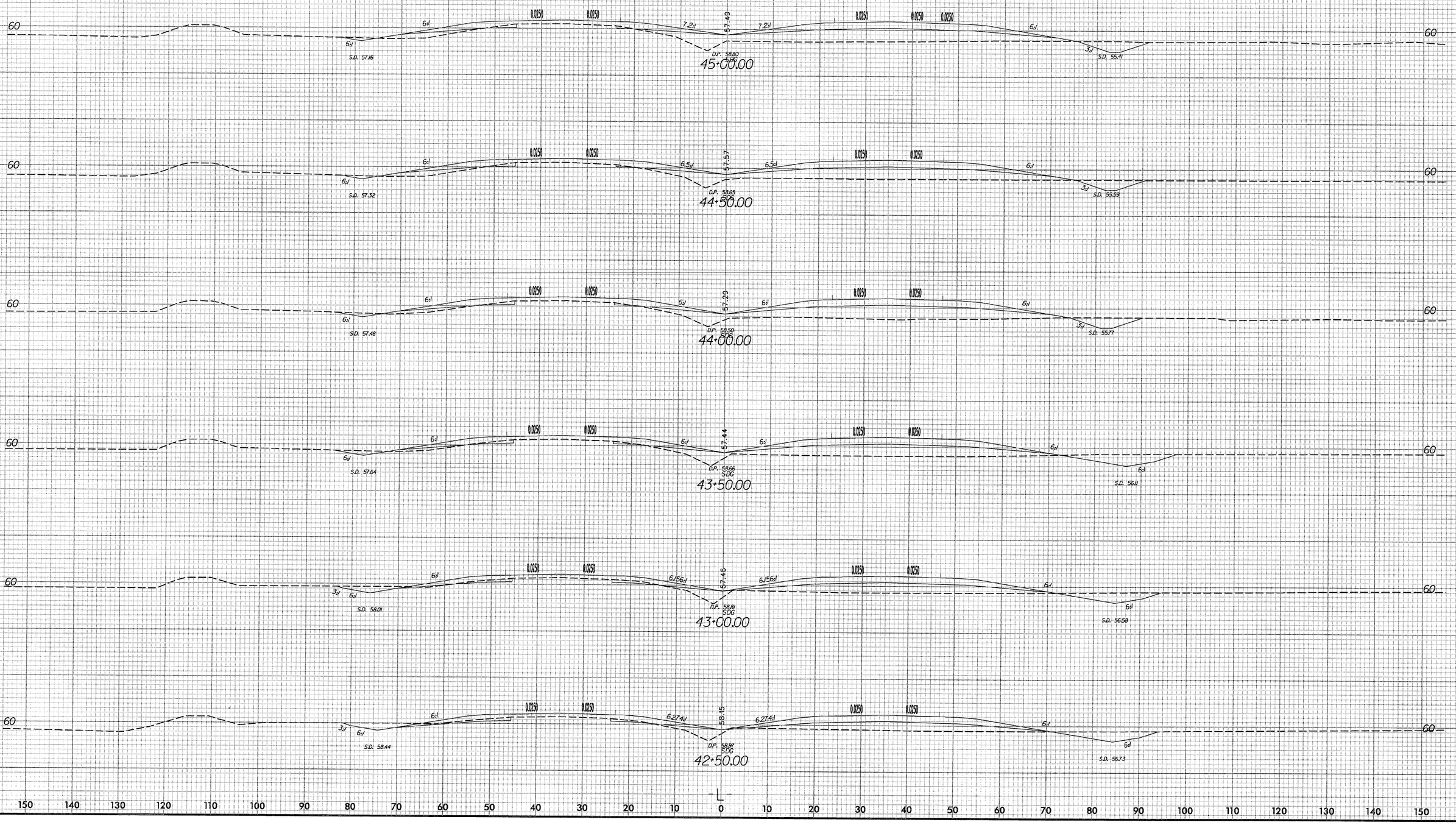

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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02/15/2000
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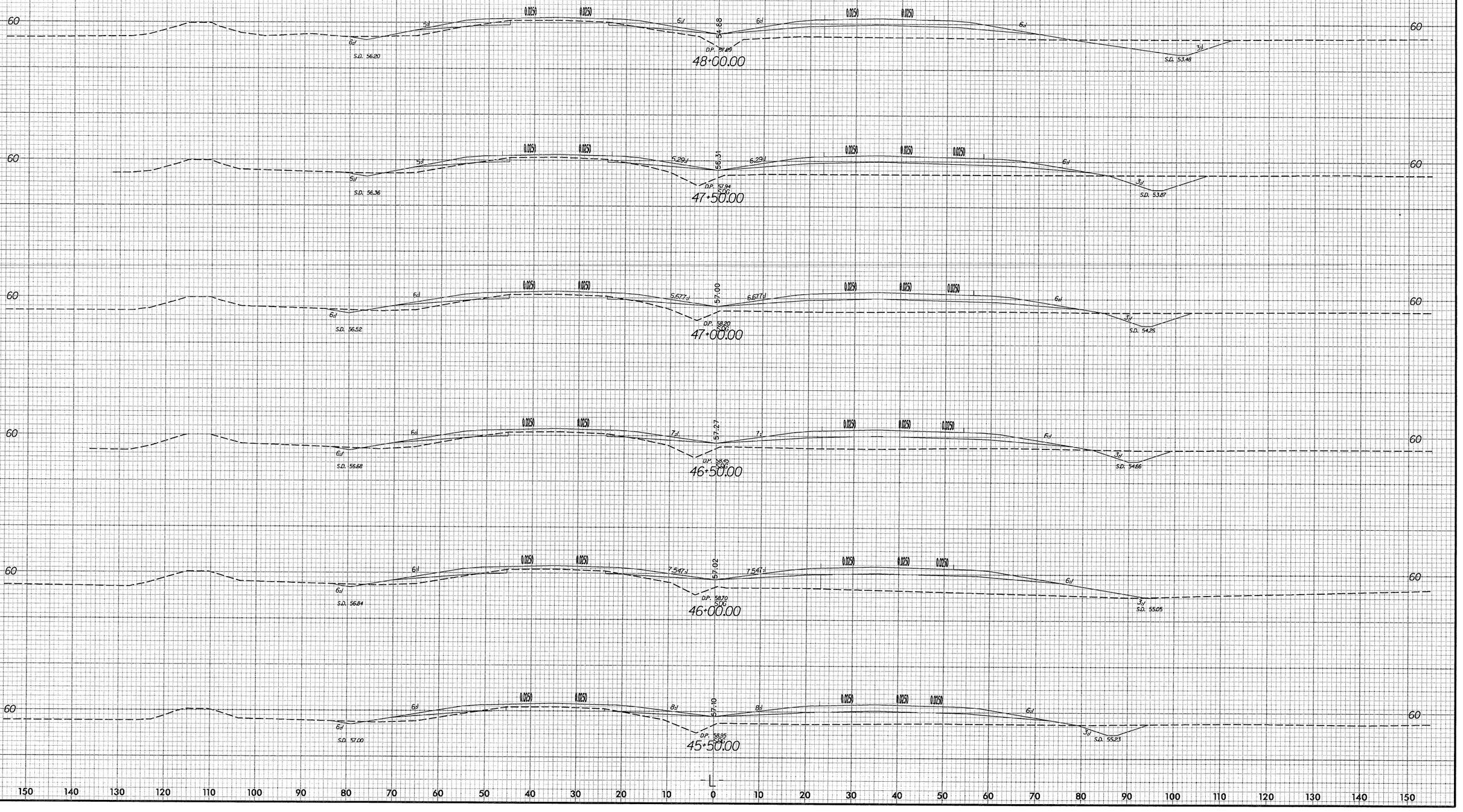
8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-11

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



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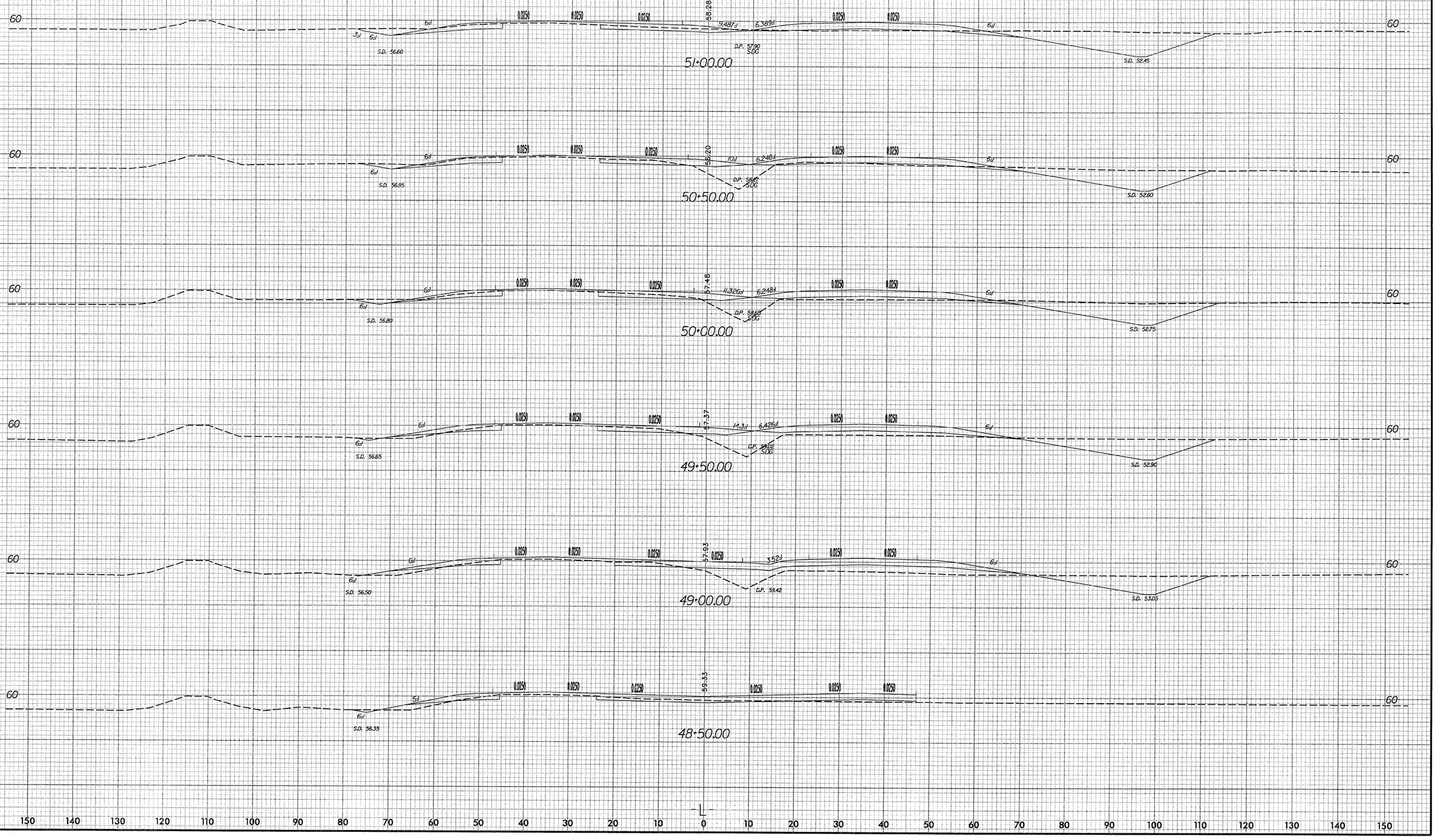
0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-12

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-13

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

60 50

6:1 3:1 0.025 6.748:1 6.78 D.P. 56.49 SDG S.D. 54.50 S.D. 51.66

54+00.00

60

6:1 0.025 6.725:1 6.77 D.P. 65.64 SDG S.D. 54.85 S.D. 51.76

53+50.00

60

6:1 0.025 7.366:1 7.65 D.P. 66.08 SDG S.D. 55.20 S.D. 51.86

53+00.00

60

6:1 0.025 6.435:1 6.20 D.P. 56.55 SDG S.D. 53.55 S.D. 51.99

52+50.00

60

6:1 3:1 0.025 8.141:1 6.279:1 5.53 D.P. 57.06 SDG S.D. 55.90 S.D. 52.14

52+00.00

60

6:1 3:1 0.025 8.648:1 6.3:1 5.14 D.P. 57.45 SDG S.D. 56.25 S.D. 52.29

51+50.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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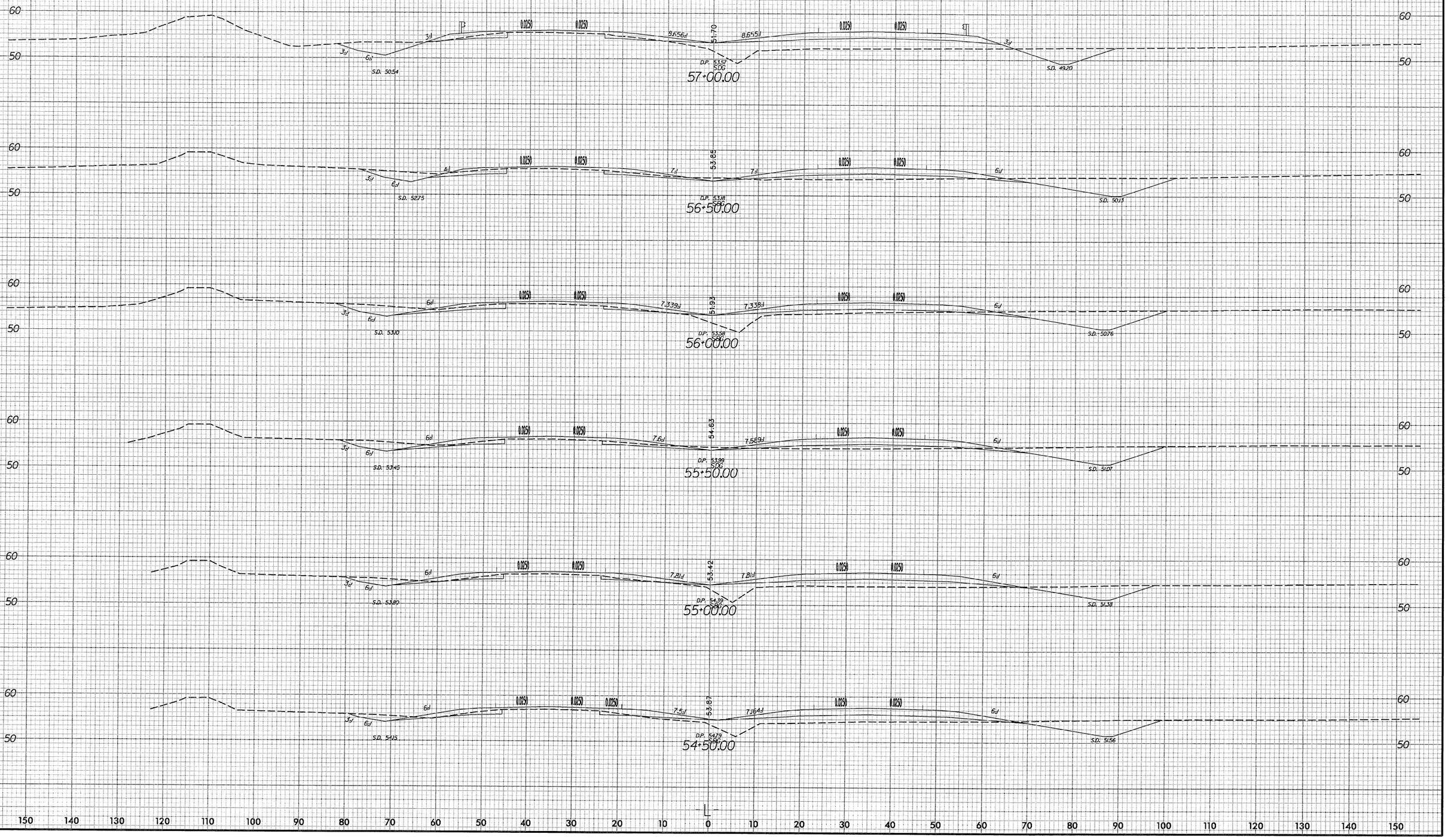
10:44:48.82

8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-14

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-15

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

60 50

3:1 6:1 0.025 0.025 6:1 54.08 6:1 0.025 0.025 6:1

S.D. 53.63 — DP. 53.50 SDG — S.D. 51.35

59+00.00

3:1 6:1 0.025 0.025 6:1 53.37 6:1 0.025 0.025 6:1

S.D. 53.31 — DP. 53.23 SDG — S.D. 51.10

58+50.00

3:1 6:1 0.025 0.025 7.425:1 51.95 7.424:1 0.025 0.025 6:1

S.D. 52.99 — DP. 53.49 SDG — S.D. 49.90

58+00.00

3:1 6:1 0.025 0.025 9.336:1 49.97 9.335:1 0.025 0.025 3:1

S.D. 50.90 — DP. 53.78 SDG — S.D. 48.70

57+50.00

3:1 6:1 0.025 0.025 9.658:1 49.55 9.657:1 0.025 0.025 3:1

S.D. 49.93 — DP. 52.78 SDG — S.D. 48.71

57+26.66

3:1 6:1 0.025 0.025 9.424:1 49.15 9.423:1 0.025 0.025 3:1

S.D. 49.68 — DP. 52.13 SDG — S.D. 48.85

57+19.33

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-16

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

60 50

3:1 6:1 S.D. 54.55

0.025 0.025 6:1 6.6:1 54.83 D.P. 55.05 SDG

62+00.00

6:1 6:1 S.D. 53.00

3:1 6:1 S.D. 54.55

0.025 0.025 6:1 6.439:1 54.59 D.P. 54.85 SDG

61+50.00

6:1 6:1 S.D. 52.94

3:1 6:1 S.D. 54.45

0.025 0.025 6:1 6.2:1 54.72 D.P. 54.58 SDG

61+00.00

6:1 6:1 S.D. 52.87

3:1 6:1 S.D. 54.35

0.025 0.025 6:1 6:1 54.79 D.P. 54.31 SDG

60+50.00

6:1 6:1 S.D. 52.80

3:1 6:1 S.D. 54.25

0.025 0.025 6:1 6:1 54.63 D.P. 54.04 SDG

60+00.00

6:1 6:1 S.D. 52.20

3:1 6:1 S.D. 53.95

0.025 0.025 6:1 6:1 54.31 D.P. 53.77 SDG

59+50.00

6:1 6:1 S.D. 51.60

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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-17

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

60 50

6:1 0.025 0.025 7.456:1 55.13 7.456:1 0.025 0.025 0.025 6:1

S.D. 55.25 D.P. 55.95 SDG S.D. 53.41

65+00.00

60 50

3:1 6:1 6:1 0.025 0.025 7.3:1 55.09 7.3:1 0.025 0.025 0.025 6:1

S.D. 55.15 D.P. 55.80 SDG S.D. 53.34

64+50.00

60 50

3:1 6:1 6:1 0.025 0.025 7.143:1 55.03 7.143:1 0.025 0.025 0.025 6:1

S.D. 55.05 D.P. 55.65 SDG S.D. 53.27

64+00.00

60 50

3:1 6:1 6:1 0.025 0.025 7:1 55.01 7:1 0.025 0.025 0.025 6:1

S.D. 54.95 D.P. 55.50 SDG S.D. 53.21

63+50.00

60 50

3:1 6:1 6:1 0.025 0.025 5.856:1 55.03 5.856:1 0.025 0.025 6:1

S.D. 54.85 D.P. 55.35 SDG S.D. 53.14

63+00.00

60 50

3:1 6:1 6:1 0.025 0.025 5.72:1 55.12 5.72:1 0.025 0.025 6:1

S.D. 54.75 D.P. 55.20 SDG S.D. 53.07

62+50.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-18

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

60 50

57.27
0.025 0.025 6d 6.39d 6.39d 0.025 0.025 6d 3d
6d
S.D. 55.85
D.P. 55.96 SDG
S.D. 53.81
68+00.00

60

56.09
0.025 0.025 3d 6d 6d 6.87d 6.87d 0.025 0.025
S.D. 55.75
D.P. 56.11 SDG
67+50.00

60

57.40
0.025 0.025 6d 7.434d 7.434d 0.025 0.025 6d
S.D. 55.65
D.P. 56.25 SDG
67+00.00

60 50

55.91
0.025 0.025 3d 6d 6d 8.183d 8.183d 0.025 0.025 6d 3d
S.D. 55.55
D.P. 55.40 SDG
S.D. 53.9
66+50.00

60 50

55.25
0.025 0.025 3d 6d 6d 7.882d 7.882d 0.025 0.025 0.025 6d 6d 3d
S.D. 55.45
D.P. 55.25 SDG
S.D. 53.54
66+00.00

60 50

55.28
0.025 0.025 3d 6d 6d 7.544d 7.544d 0.025 0.025 0.025 6d 6d
S.D. 55.35
D.P. 56.10 SDG
S.D. 53.48
65+50.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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08/23/2005
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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-19

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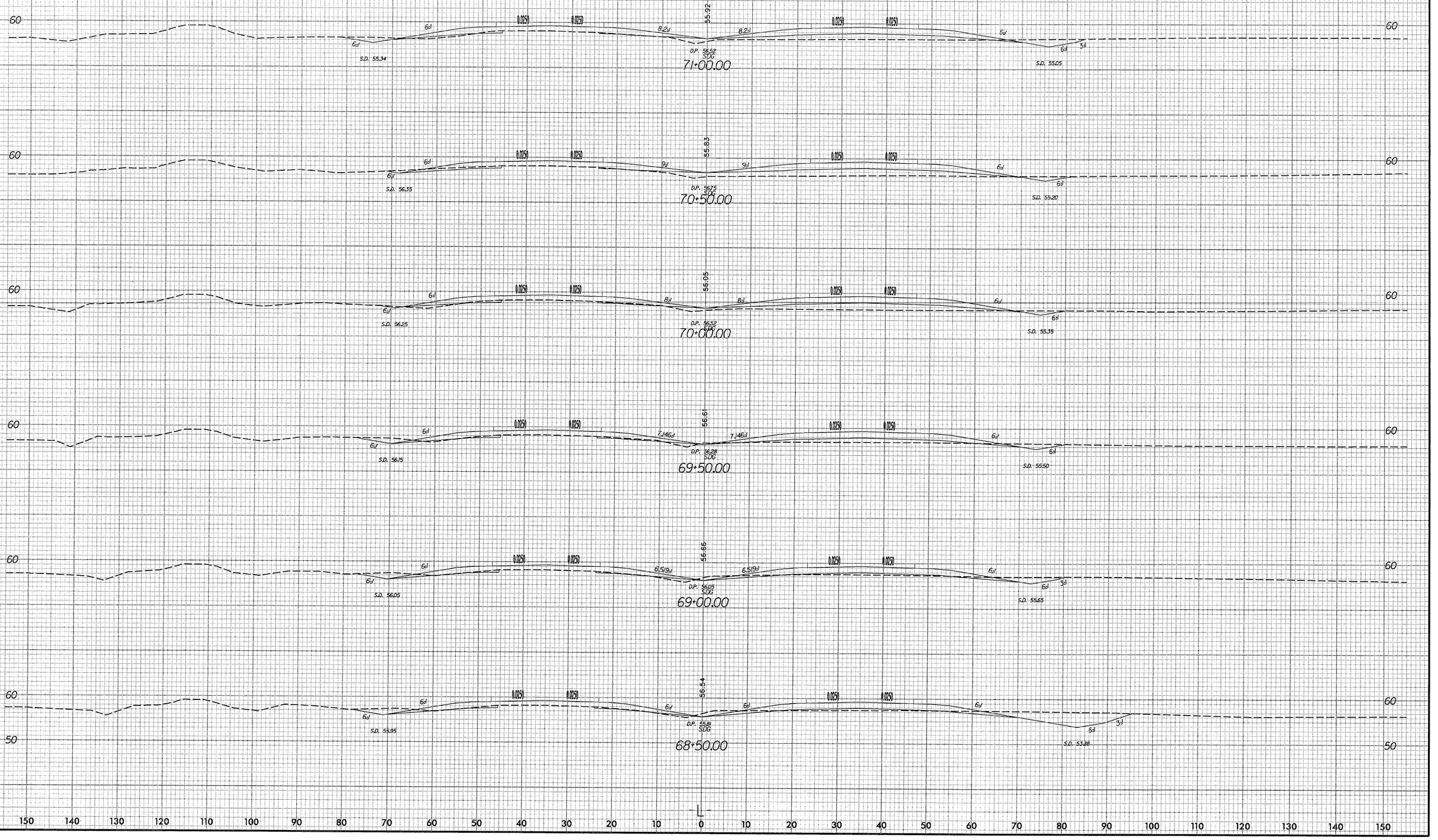

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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-20

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

60 50

0.025 0.025 6.0↓ 5.7↓ 54.13 5.7↓ 0.025 0.025 6.0↓ 3.0↓ 6.0↓ S.D. 54.74 D.P. 55.17 SDG 74+00.00 S.D. 53.91

60 50

0.025 0.025 6.0↓ 6.0↓ 56.21 6.0↓ 0.025 0.025 6.0↓ 3.0↓ 6.0↓ 3.0↓ 6.0↓ S.D. 54.84 D.P. 55.39 SDG 73+50.00 S.D. 5411

60 50

0.025 0.025 6.0↓ 6.248↓ 56.34 6.248↓ 0.025 0.025 6.0↓ 3.0↓ 6.0↓ 3.0↓ 6.0↓ S.D. 54.94 D.P. 55.62 SDG 73+00.00 S.D. 54.31

60

0.025 0.025 6.0↓ 6.61↓ 55.80 6.61↓ 0.025 0.025 6.0↓ 3.0↓ 6.0↓ 3.0↓ 6.0↓ S.D. 55.04 D.P. 55.85 SDG 72+50.00 S.D. 54.51

60

0.025 0.025 6.0↓ 7.↓ 55.93 7.↓ 0.025 0.025 6.0↓ 3.0↓ 6.0↓ 3.0↓ 6.0↓ S.D. 55.14 D.P. 56.07 SDG 72+00.00 S.D. 5470

60

0.025 0.025 6.0↓ 7.566↓ 55.79 7.565↓ 0.025 0.025 6.0↓ 6.0↓ S.D. 55.24 D.P. 56.30 SDG 71+50.00 S.D. 5490

-L-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-21

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

60 / 50

6:1 | 3:1 | 6:1 | S.D. 54.14 | 0.025 | 0.025 | 6.8:1 | 54.79 | D.P. 54.94 S.D.6 | 77+00.00 | 6.8:1 | 0.025 | 0.025 | 6:1 | 6:1 | 3:1 | S.D. 53.91

6:1 | 3:1 | 6:1 | S.D. 54.24 | 0.025 | 0.025 | 6.11/4:1 | 54.59 | D.P. 54.79 S.D.6 | 76+50.00 | 6.1/3:1 | 0.025 | 0.025 | 6:1 | 6:1 | 3:1 | S.D. 53.11

6:1 | 3:1 | 6:1 | S.D. 54.34 | 0.025 | 0.025 | 5.56:1 | 53.94 | D.P. 54.64 S.D.6 | 76+00.00 | 5.56:1 | 0.025 | 0.025 | 6:1 | 6:1 | 3:1 | S.D. 52.29

6:1 | 3:1 | 6:1 | S.D. 54.44 | 0.025 | 0.025 | 5.11:1 | 54.00 | D.P. 54.49 S.D.6 | 75+50.00 | 5.11:1 | 0.025 | 0.025 | 6:1 | 6:1 | S.D. 51.54

6:1 | 6:1 | S.D. 54.54 | 0.025 | 0.025 | 5.3:1 | 53.99 | D.P. 54.78 S.D.6 | 75+00.00 | 5.3:1 | 0.025 | 0.025 | 6:1 | 6:1 | 3:1 | S.D. 52.63

6:1 | 6:1 | S.D. 54.64 | 0.025 | 0.025 | 5.5:1 | 54.11 | D.P. 54.94 S.D.6 | 74+50.00 | 5.49:1 | 0.025 | 0.025 | 6:1 | 6:1 | S.D. 53.72

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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-22

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

60 / 50

6:1 3:1 6:1 S.D. 5354 0.025 0.025 7.785:1 55.34 7.785:1 0.025 0.025 6:1 6:1 S.D. 5323

D.P. 54.34 SSD

80+00.00

60 / 50

6:1 3:1 6:1 S.D. 5364 0.025 0.025 7.72:1 54.62 7.72:1 0.025 0.025 6:1 6:1 3:1 S.D. 5354

D.P. 54.49 SSD

79+50.00

60 / 50

6:1 3:1 6:1 S.D. 5374 0.025 0.025 7.676:1 55.73 7.678:1 0.025 0.025 6:1 6:1 S.D. 5384

D.P. 54.64 SSD

79+00.00

60 / 50

6:1 3:1 6:1 S.D. 5384 0.025 0.025 7.657:1 56.52 7.657:1 0.025 0.025 6:1 6:1 3:1 S.D. 5414

D.P. 54.79 SSD

78+50.00

60 / 50

6:1 3:1 6:1 S.D. 5394 0.025 0.025 7.663:1 56.41 7.66:1 0.025 0.025 6:1 6:1 3:1 S.D. 5445

D.P. 54.94 SSD

78+00.00

60 / 50

6:1 3:1 6:1 S.D. 5404 0.025 0.025 7.685:1 54.75 7.683:1 0.025 0.025 6:1 6:1 3:1 S.D. 5475

D.P. 55.09 SSD

77+50.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-23

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

60 50

0.025 0.025 6:1 3:1 6:1 6:1 4:1 5.67:1 52.51 0.025 0.025 6:1 6:1 3:1

S.D. 52.94 D.P. 5376 SDG S.D. 5171

83+00.00

0.025 0.025 6:1 3:1 6:1 6:1 4:1 5.757:1 50.56 0.025 0.025 6:1 6:1 3:1

S.D. 53.04 D.P. 5395 SDG S.D. 5193

82+50.00

0.025 0.025 6:1 3:1 6:1 6:1 4.588:1 6.3:1 52.99 0.025 0.025 6:1 6:1 3:1

S.D. 53.14 D.P. 5414 SDG S.D. 52.15

82+00.00

0.025 0.025 6:1 3:1 6:1 6:1 5:1 54.84 0.025 0.025 6:1 6:1 3:1

S.D. 53.24 D.P. 5389 SDG S.D. 52.36

81+50.00

0.025 0.025 6:1 3:1 6:1 6:1 6.3:1 5.87:1 55.02 0.025 0.025 6:1 6:1 3:1

S.D. 53.34 D.P. 5404 SDG S.D. 52.62

81+00.00

0.025 0.025 6:1 3:1 6:1 6:1 7.569:1 7.663:1 55.15 0.025 0.025 6:1 6:1 3:1

S.D. 53.44 D.P. 5418 SDG S.D. 52.93

80+50.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-24

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

60 / 50

0.025 0.025 7.586sl 50.53 7.586sl 0.025 0.025

5sl 3sl 6sl S.D. 51.06

D.P. 52.14M SDG

86+00.00

6sl S.D. 50.57

0.025 0.025 6.825sl 53.26 6.825sl 0.025 0.025

6sl 3sl 6sl S.D. 51.37

D.P. 52.69 SDG

85+50.00

6sl 3sl S.D. 50.62

0.025 0.025 7.473sl 51.65 7.473sl 0.025 0.025

6sl 3sl 6sl S.D. 51.69

D.P. 52.84 SDG

85+00.00

6sl 3sl S.D. 50.84

0.025 0.025 8sl 51.85 8sl 0.025 0.025

6sl 3sl 6sl S.D. 52.00

D.P. 52.99 SDG

84+50.00

6sl 3sl 6sl S.D. 51.06

0.025 0.025 0.025 51.97 0.025 0.025

6sl 3sl 6sl S.D. 52.32

84+00.00

6sl 3sl 6sl S.D. 51.27

0.025 0.025 4sl 5.601sl 51.96 0.025 0.025

6sl 3sl 6sl S.D. 52.63

D.P. 53.57 SDG

83+50.00

6sl 3sl 6sl S.D. 51.49

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8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-25

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

60 / 50

0.025 0.025 6.41%-J 50.44 6.41%-J 0.025 0.025 3%-J

6%-J

S.D. 50.53

D.P. 52.63 SDG

89+00.00

0.025 0.025 6.18%-J 51.22 6.18%-J 0.025 0.025 3%-J

4%-J 3%-J 6%-J

S.D. 50.36

D.P. 52.63 SDG

88+50.00

0.025 0.025 7%-J 50.93 7%-J 0.025 0.025 3%-J

4%-J 3%-J 5%-J

S.D. 50.29

D.P. 53.00 SDG

88+00.00

0.025 0.025 8%-J 50.72 8%-J 0.025 0.025 3%-J

4%-J 3%-J 6%-J

S.D. 50.21

D.P. 53.37 SDG

87+50.00

0.025 0.025 10%-J 50.70 10%-J 0.025 0.025 3%-J

4%-J 3%-J 6%-J

S.D. 50.13

D.P. 53.74 SDG

87+00.00

0.025 0.025 8.53%-J 51.03 8.53%-J 0.025 0.025 3%-J

4%-J 3%-J 6%-J

S.D. 50.05

D.P. 53.39 SDG

86+50.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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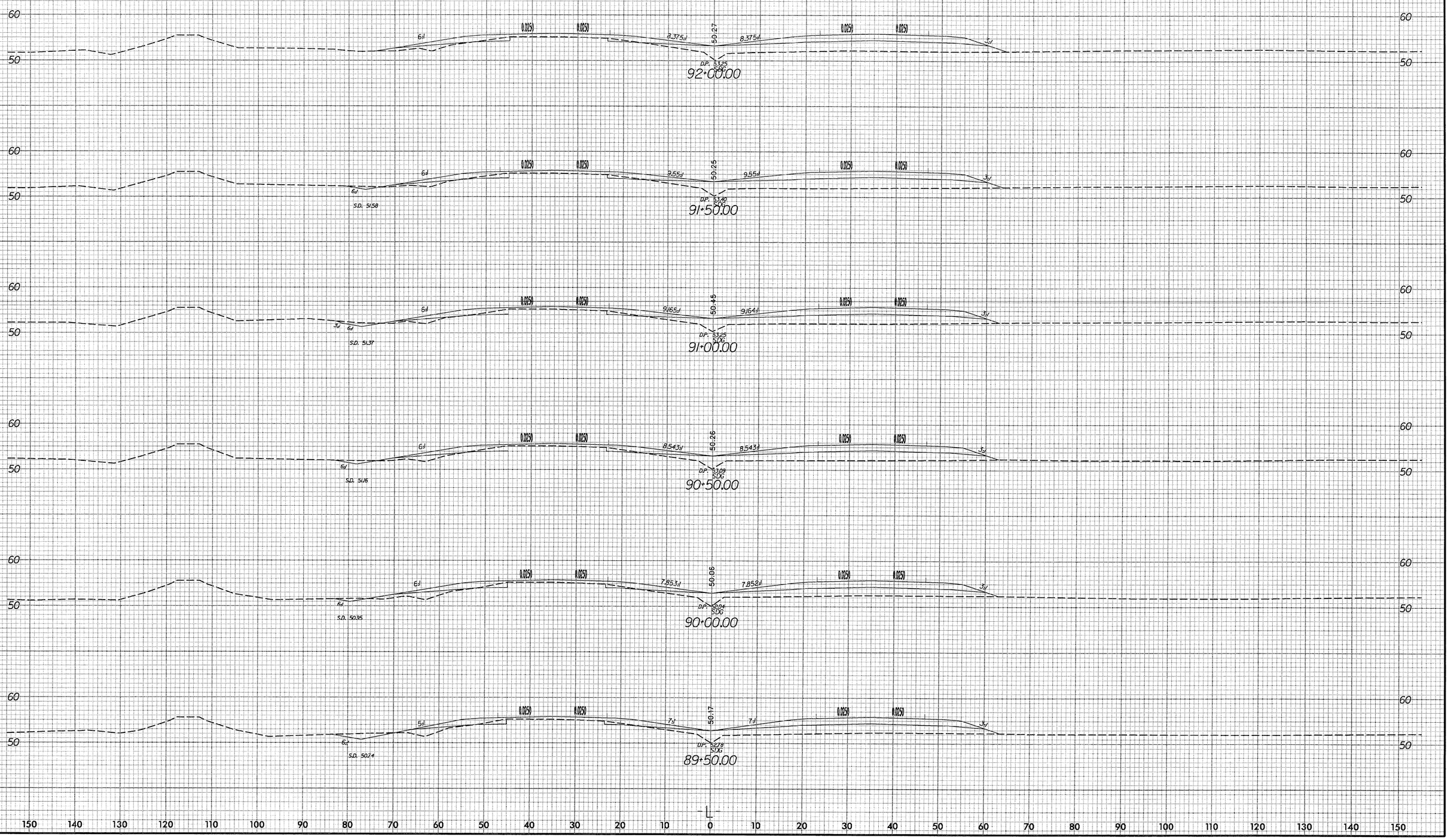
8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-26

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



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8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-27

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

60 / 50

6:1 | 0.025 | 0.025 | 8.4:1 | 53.77 | 8.4:1 | 0.025 | 0.025 | 6:1 | 6:1 | 3:1

S.D. 52.11 — DP. 53.25 SDG — 95+00.00 — S.D. 52.25

6:1 | 0.025 | 0.025 | 7.473:1 | 53.31 | 7.473:1 | 0.025 | 0.025 | 6:1 | 6:1 | 3:1

S.D. 51.84 — DP. 53.10 SDG — 94+50.00 — S.D. 52.10

6:1 | 0.025 | 0.025 | 6.8:1 | 52.32 | 6.8:1 | 0.025 | 0.025 | 6:1 | 6:1 | 3:1

S.D. 51.61 — DP. 52.95 SDG — 94+00.00 — S.D. 51.95

6:1 | 0.025 | 0.025 | 6.356:1 | 51.85 | 6.355:1 | 0.025 | 0.025 | 6:1 | 6:1 | 3:1

S.D. 51.38 — DP. 52.80 SDG — 93+50.00 — S.D. 50.27

6:1 | 0.025 | 0.025 | 6.787:1 | 51.33 | 6.787:1 | 0.025 | 0.025 | 3:1

S.D. 51.48 — DP. 52.95 SDG — 93+00.00

6:1 | 0.025 | 0.025 | 7.456:1 | 50.92 | 7.456:1 | 0.025 | 0.025 | 3:1

S.D. 51.58 — DP. 53.10 SDG — 92+50.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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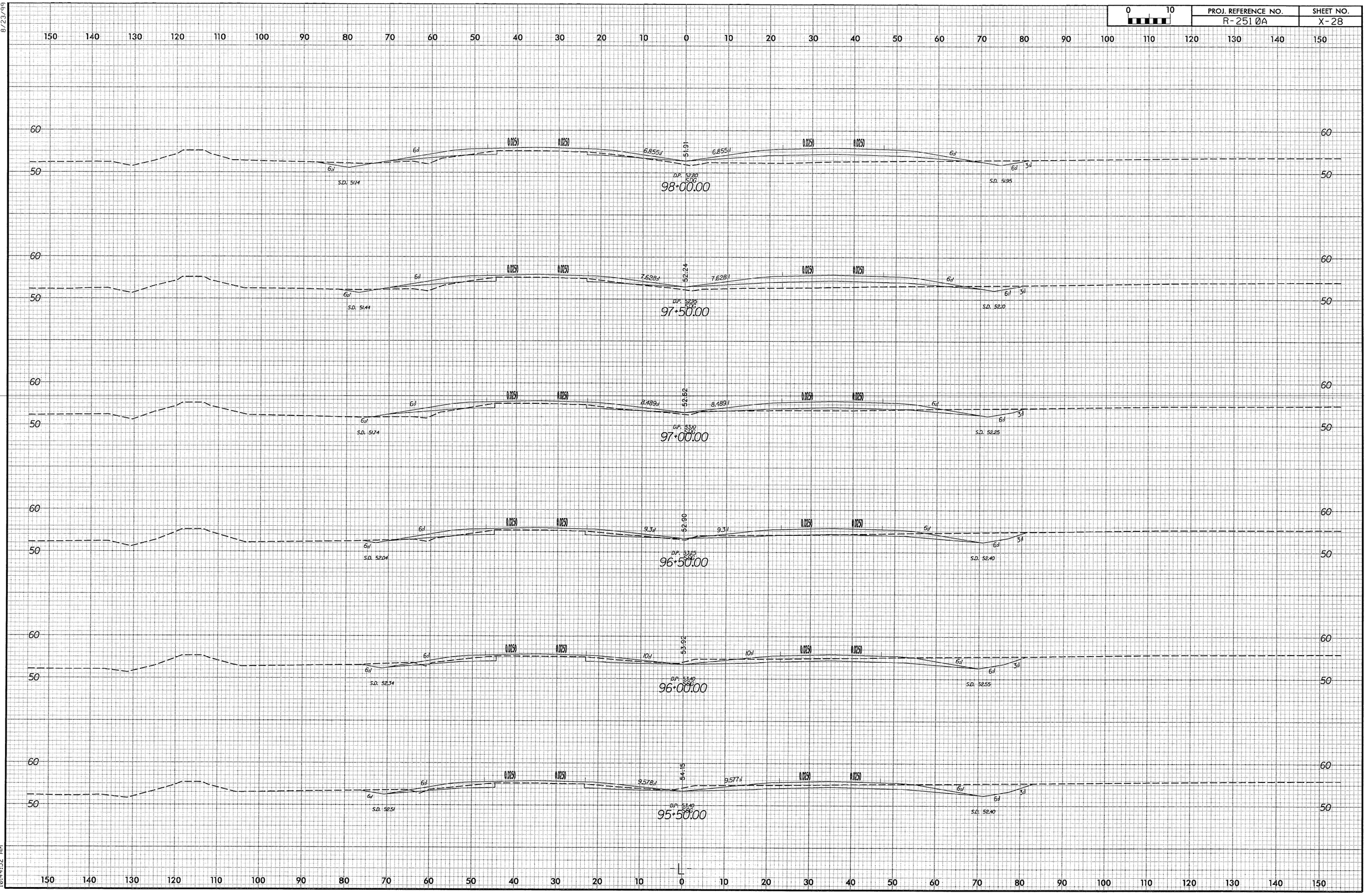
8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-28



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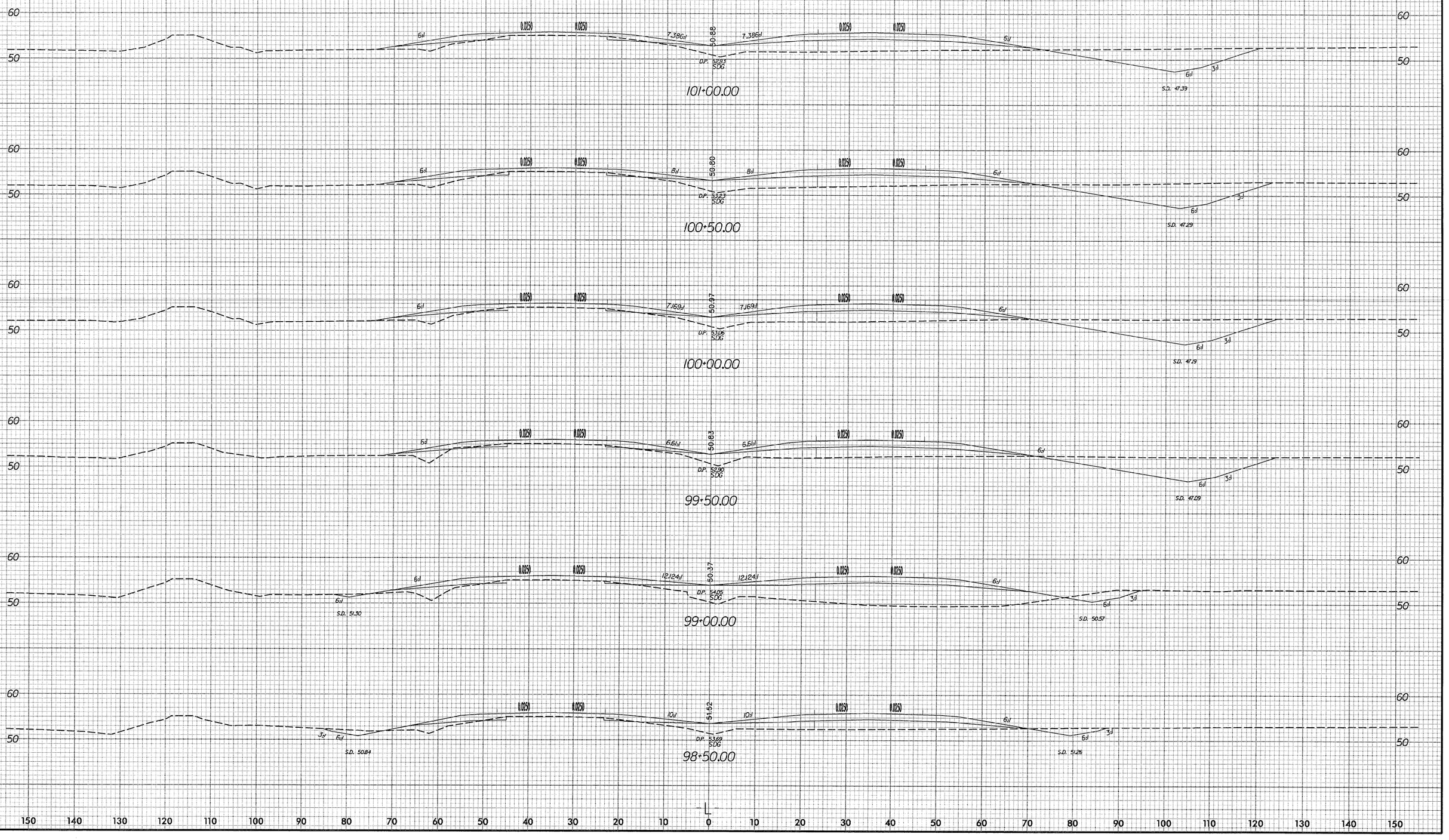
8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-29

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



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03/15/2005
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8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-30

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

60
50

0.025 0.025 6:1 7.65:1 50.58 7.65:1 0.025 0.025 6:1 6:1 3:1
D.P. 52.58 SDG
S.D. 47.58

104+00.00

0.025 0.025 6:1 7.648:1 50.51 7.648:1 0.025 0.025 6:1 6:1 3:1
D.P. 52.51 SDG
S.D. 47.89

103+50.00

0.025 0.025 6:1 7:1 50.54 7:1 0.025 0.025 6:1 6:1 3:1
D.P. 52.59 SDG
S.D. 47.79

103+00.00

0.025 0.025 6:1 6.348:1 50.68 6.346:1 0.025 0.025 6:1 6:1 3:1
D.P. 52.74 SDG
S.D. 47.59

102+50.00

0.025 0.025 6:1 6.3:1 50.96 6.3:1 0.025 0.025 6:1 6:1 3:1
D.P. 52.93 SDG
S.D. 47.59

102+00.00

0.025 0.025 6:1 5.837:1 50.99 6.837:1 0.025 0.025 5:1 6:1 3:1
D.P. 52.63 SDG
S.D. 47.49

101+50.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

r:\roadway\xsc\r2510a_rdy_xpl_1.dgn
07/15/2005
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8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-31

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

60 50

0.025 0.025 6:1 7.26?:1 6:1 6:1 S.D. 51.37 DP: 53.23 SDG 53.36 0.025 0.025 7.26?:1 6:1 6:1 S.D. 51.20

107+00.00

60 50

0.025 0.025 6:1 6.745:1 3:1 S.D. 51.20 DP: 53.06 SDG 51.25 0.025 0.025 6.745:1 6:1 6:1 3:1 S.D. 50.38

106+50.00

60 50

0.025 0.025 6:1 6.372:1 S.D. 51.28 DP: 52.89 SDG 50.84 0.025 0.025 6.372:1 6:1 6:1 3:1 S.D. 49.56

106+00.00

60 50

0.025 0.025 6:1 6.11?:1 6:1 S.D. 50.99 DP: 52.72 SDG 50.95 0.025 0.025 6.11?:1 6:1 6:1 3:1 S.D. 48.74

105+50.00

60 50

0.025 0.025 6:1 5.21?:1 DP: 52.68 SDG 51.00 0.025 0.025 6.21?:1 6:1 6:1 3:1 S.D. 48.19

105+00.00

60 50

0.025 0.025 6:1 6.859:1 DP: 52.23 SDG 50.58 0.025 0.025 6.859:1 6:1 6:1 3:1 S.D. 48.09

104+50.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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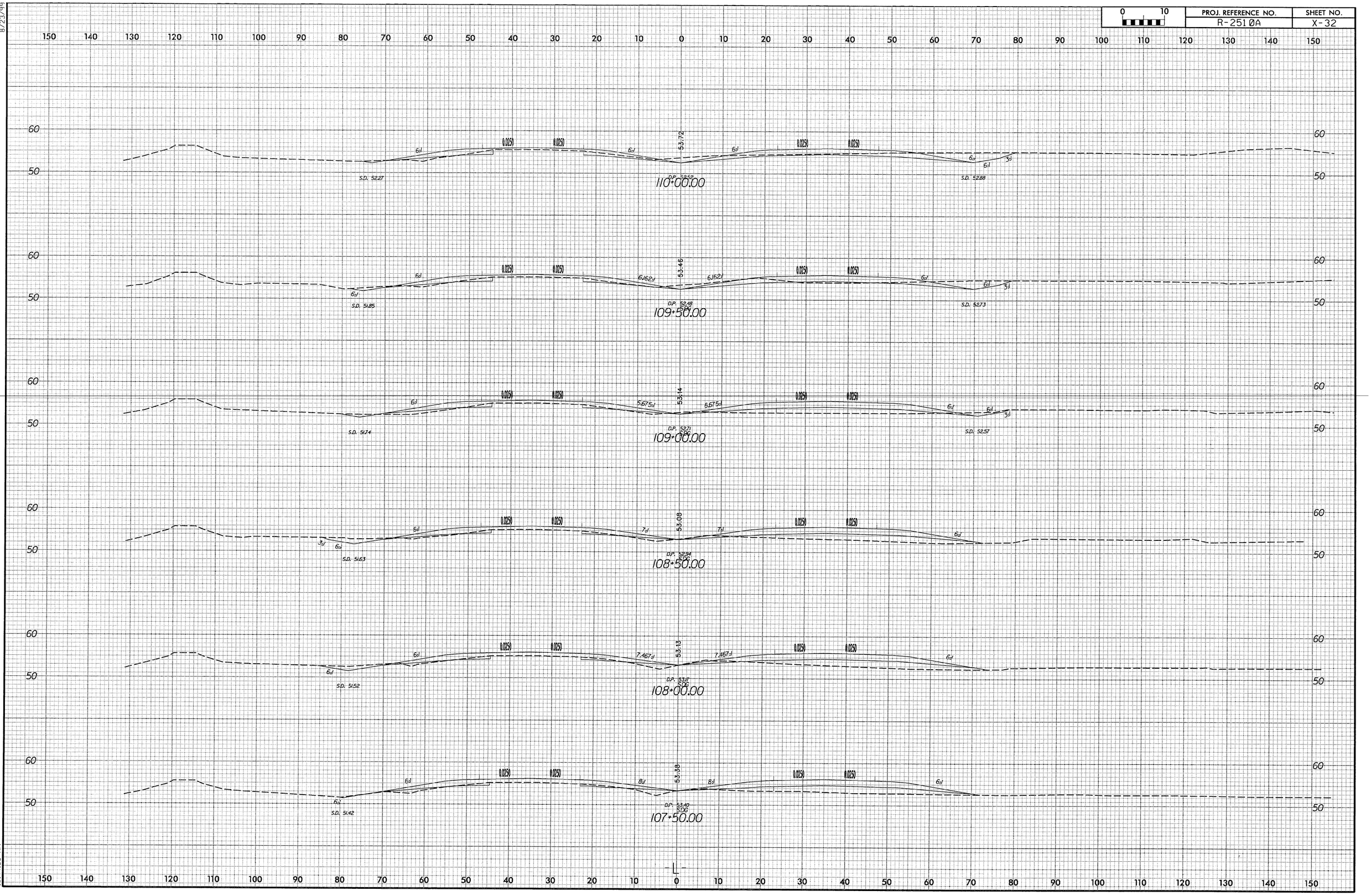
8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-32



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02:45:20 MS
08/25/2005
10:45:53 AM

8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-33

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

60

6:1 6:1 0.025 0.025 0.025 56.43 0.025 0.025 0.025 6:1 6:1 3:1

5509 S.D. 5509

113+00.00

60

6:1 6:1 0.025 0.025 6:1 55.54 6:1 0.025 0.025 6:1 6:1

5467 S.D. 5467 5467

112+50.00

60

50

6:1 6:1 0.025 0.025 6:1 54.65 6:1 0.025 0.025 6:1 6:1

5425 S.D. 5425 5425

112+00.00

60

50

6:1 6:1 0.025 0.025 6:1 54.59 6:1 0.025 0.025 6:1 6:1

S.D. 5383 S.D. 5383 5383

111+50.00

60

50

6:1 6:1 0.025 0.025 6:1 54.43 6:1 0.025 0.025 6:1 6:1

S.D. 5331 S.D. 5331 5314

111+00.00

60

50

6:1 6:1 0.025 0.025 6:1 54.13 6:1 0.025 0.025 6:1 6:1

S.D. 5279 S.D. 5279 5304

110+50.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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08/23/99 MK

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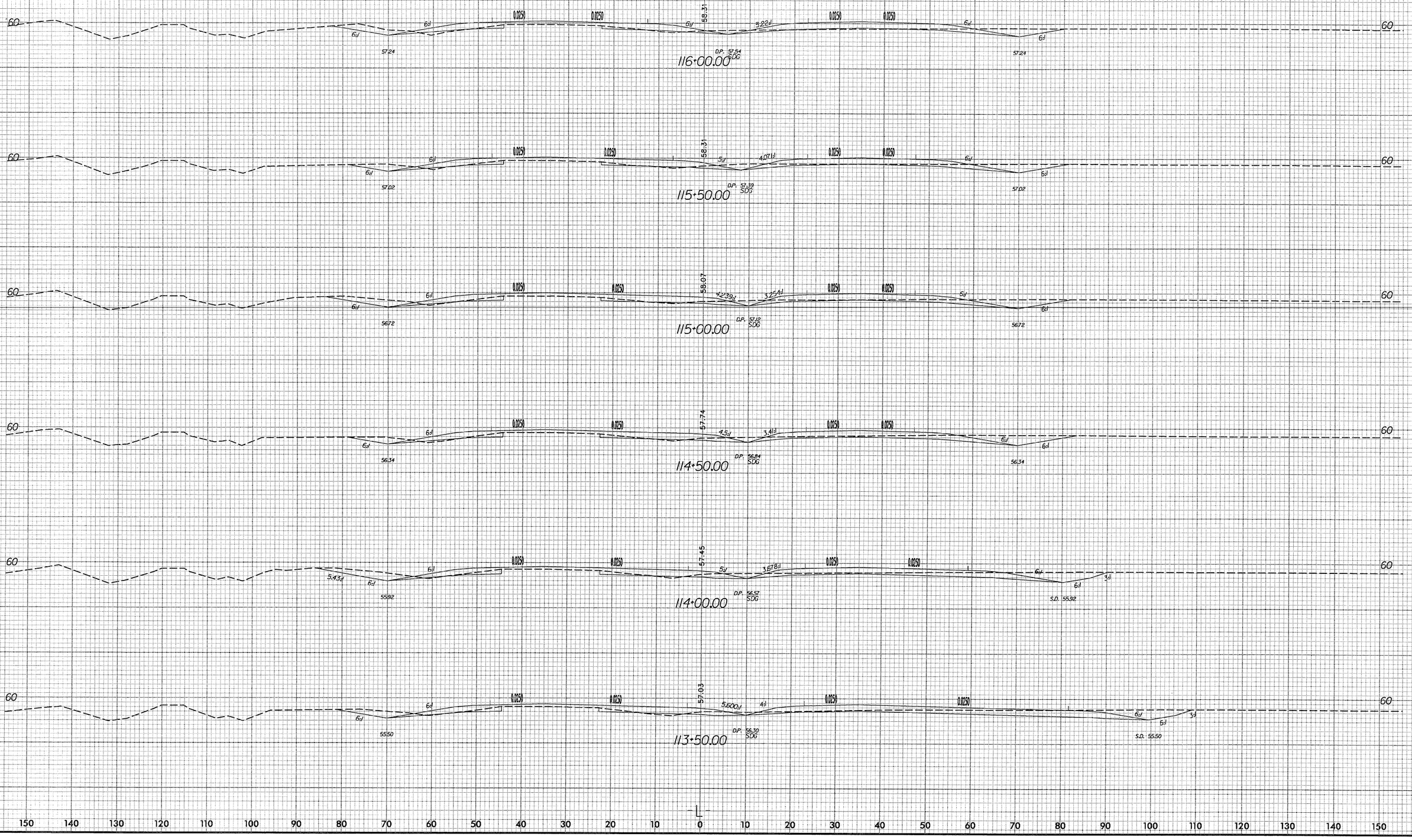
0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-34

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



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03/15/2005
08:44:53 AM

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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-35

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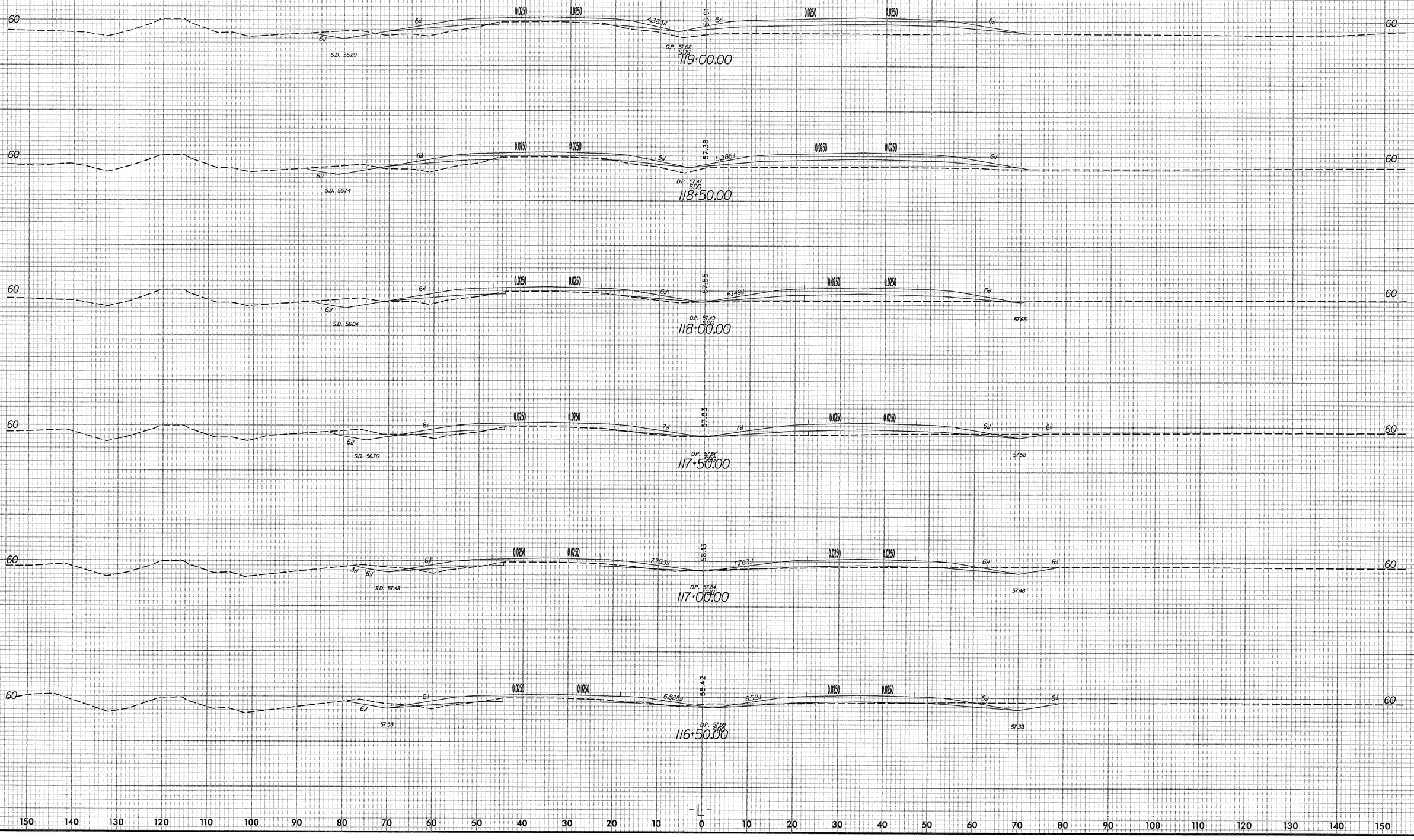

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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-36

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

60 50

122+00.00

58.33

6:1 6:1 0.0250 0.0250 1:1 5.28 2:1 0.0250 0.0250 0.0250 6:1 6:1 3:1

S.D. 56.77 D.P. 57.50 SDG S.D. 53.90

121+50.00

58.73

6:1 6:1 0.0250 0.0250 5:1 6.42 3:1 0.0250 0.0250 0.0250 6:1 6:1 3:1

S.D. 56.62 D.P. 57.69 SDG S.D. 54.75

121+00.00

58.29

6:1 6:1 0.0250 0.0250 5.75 3:1 7.44:1 0.0250 0.0250 0.0250 6:1 6:1 3:1

S.D. 56.47 D.P. 57.88 SDG S.D. 55.59

120+50.00

57.97

6:1 6:1 0.0250 0.0250 6:1 8.13 5:3 0.0250 0.0250 0.0250 6:1 6:1 3:1

S.D. 56.33 D.P. 58.07 SDG S.D. 56.44

120+00.00

57.50

6:1 6:1 0.0250 0.0250 5:1 6.78 4:1 0.0250 0.0250 6:1 6:1

S.D. 56.18 D.P. 57.98 SDG 57.28

119+50.00

57.17

6:1 6:1 0.0250 0.0250 5:1 5:1 0.0250 0.0250 6:1

S.D. 56.03 D.P. 57.71 SDG

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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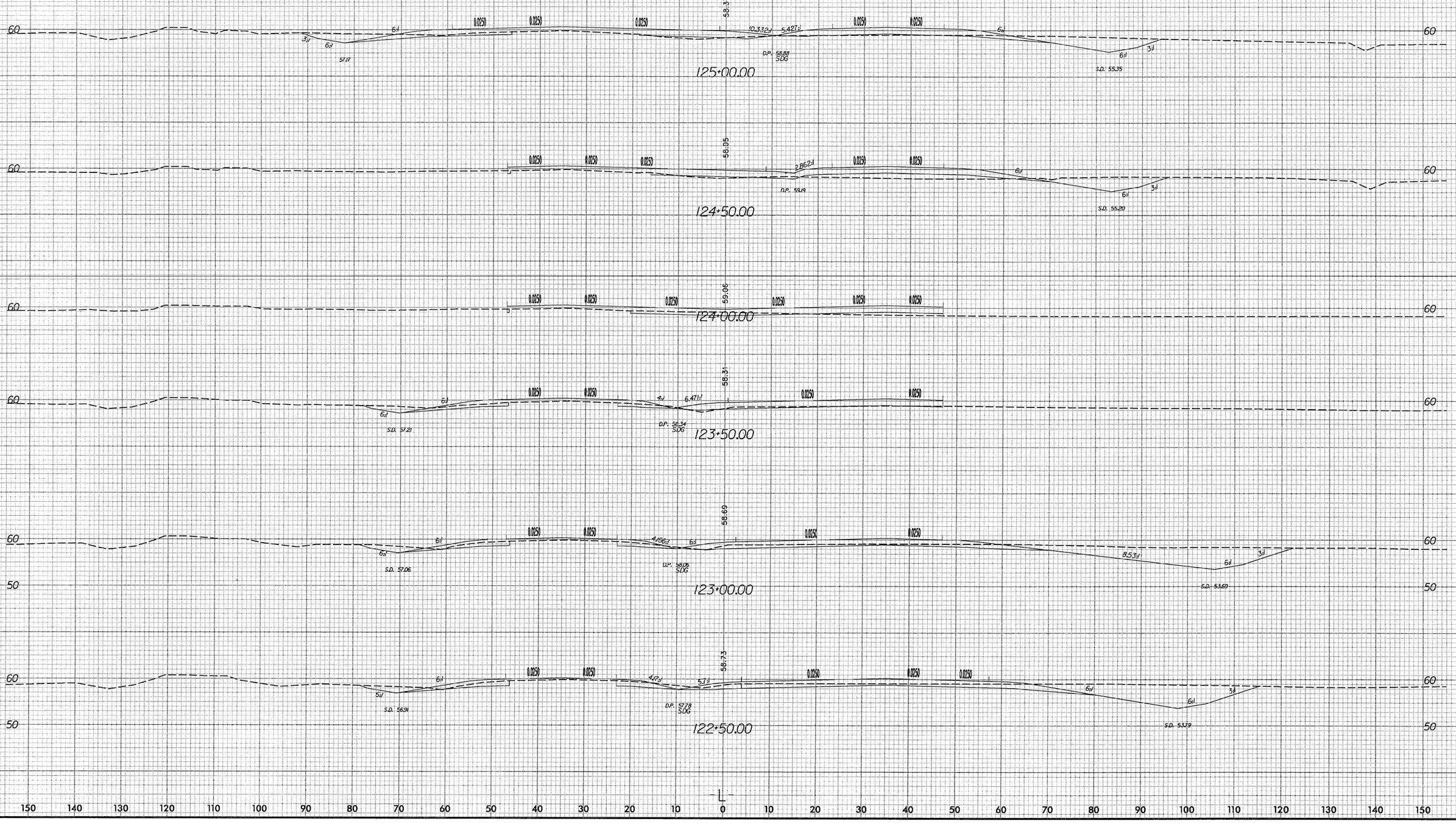
0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-37

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



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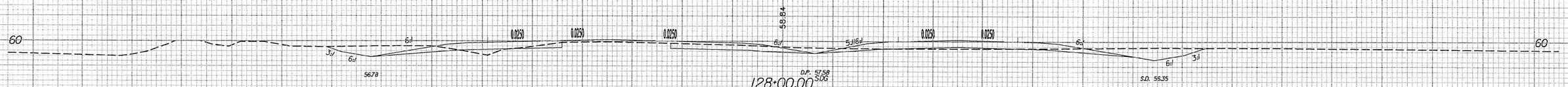
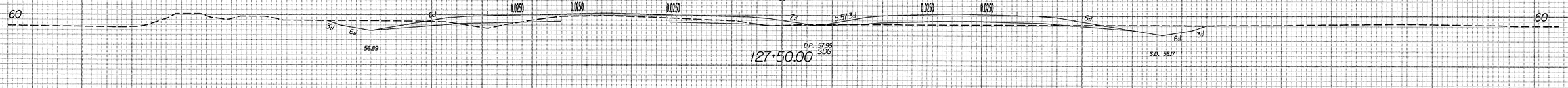
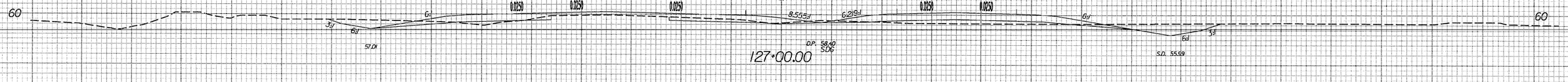
8/23/99

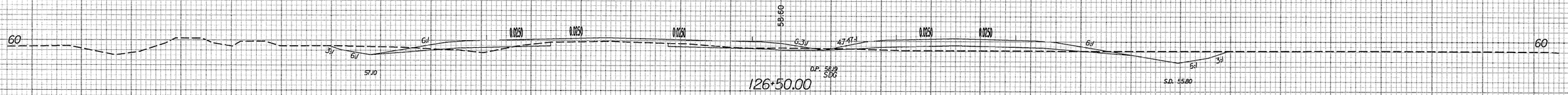
0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-38

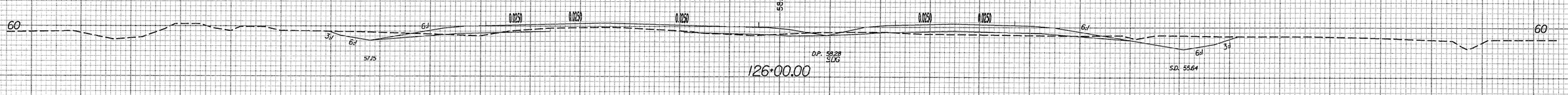
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

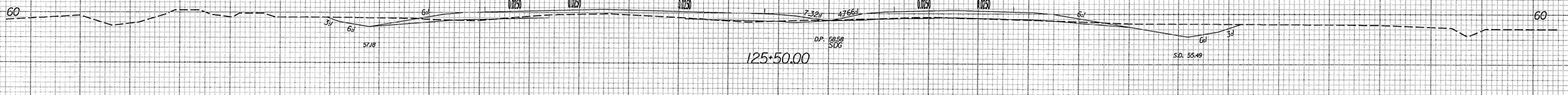












150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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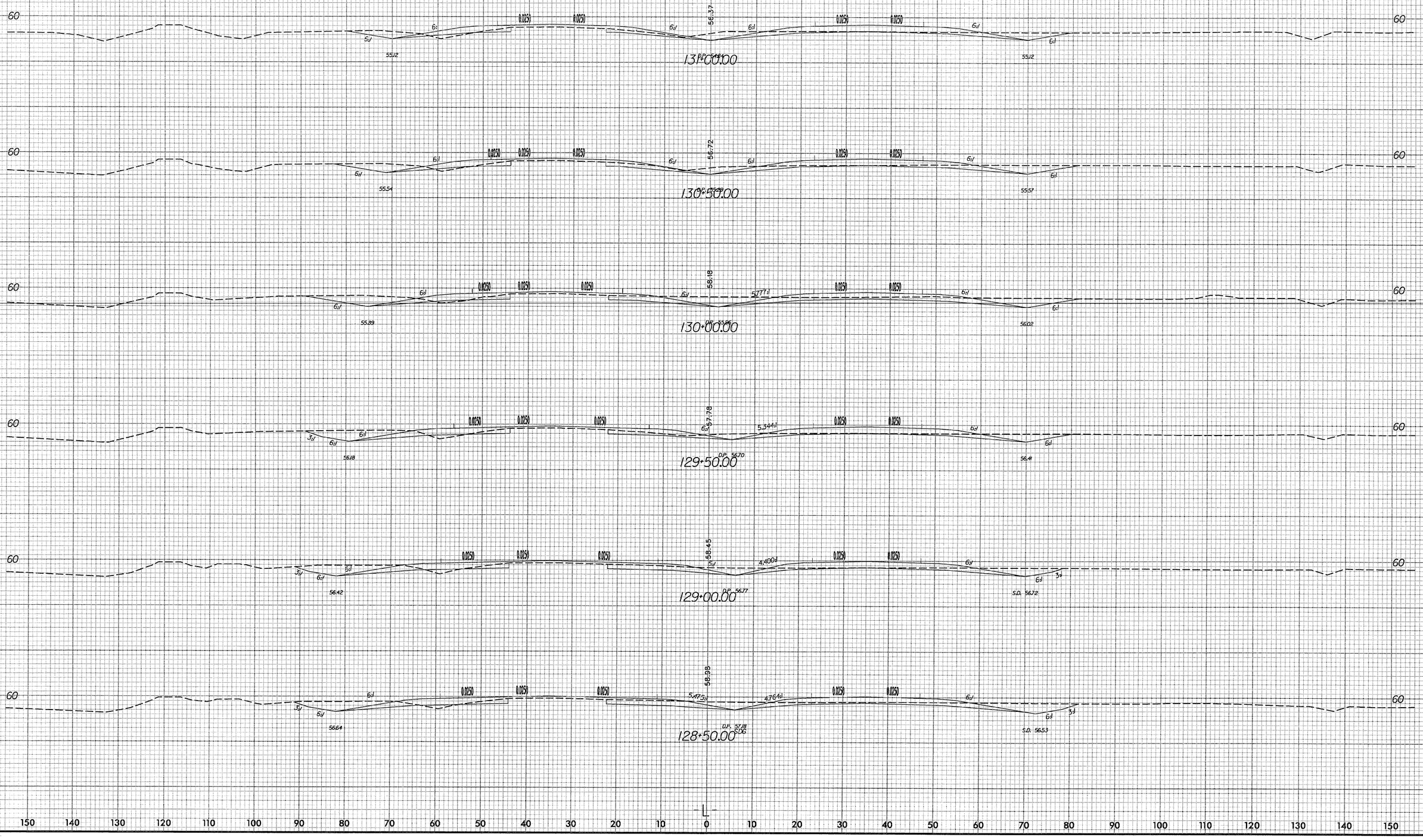
10:44:25 AM

8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-39

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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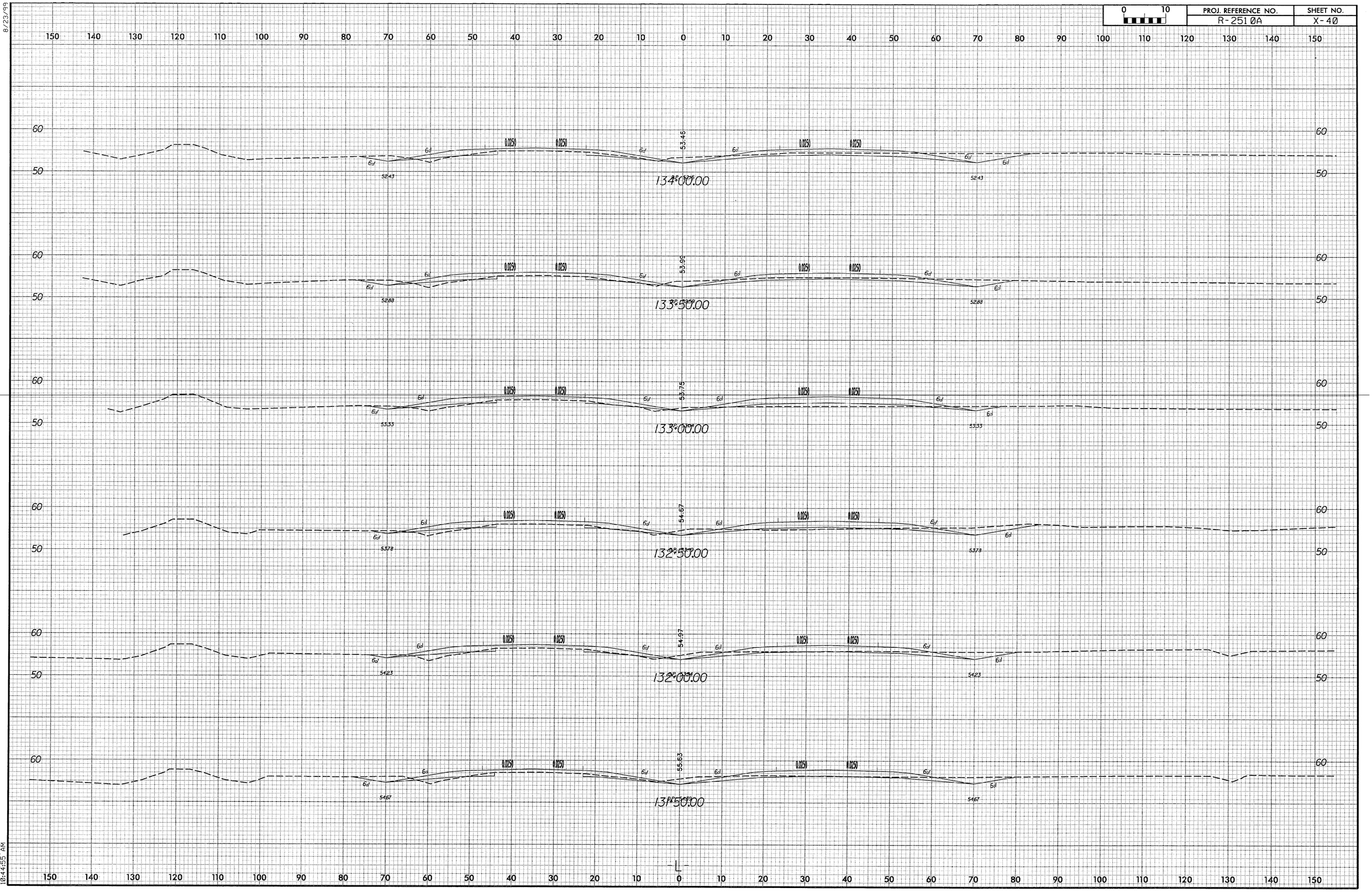
8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-40



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03/15/2005
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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-41

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

60 50

0.025 0.025 6:1 6:1 7.362:1 7.362:1 0.025 0.025 6:1 6:1 3:1

53.43

S.D. 51.30 D.P. 52.39 SPC 137+00.00 S.D. 51.24

60 50

0.025 0.025 6:1 6:1 6.478:1 6.478:1 0.025 0.025 6:1 6:1 3:1

53.19

S.D. 51.45 D.P. 51.93 SPC 136+50.00 S.D. 51.40

60 50

0.025 0.025 6:1 6:1 5.8:1 5.8:1 0.025 0.025 6:1 6:1 3:1

53.44

S.D. 51.60 D.P. 51.46 SPC 136+00.00 S.D. 51.55

60 50

0.025 0.025 3:1 6:1 6:1 6.324:1 6.324:1 0.025 0.025 6:1 6:1 3:1

53.28

S.D. 51.75 D.P. 51.62 SPC 135+50.00 S.D. 51.71

60 50

0.025 0.025 6:1 6:1 6.545:1 6.544:1 0.025 0.025 6:1 6:1 5:1

53.54

S.D. 51.90 D.P. 51.78 SPC 135+00.00 51.93

60 50

0.025 0.025 6:1 6:1 6.4:1 6.4:1 0.025 0.025 6:1 6:1

53.56

S.D. 52.05 D.P. 51.94 SPC 134+50.00 52.05

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

r:\roadway\xsc\\r2510a_rdy_xpl_1.dgn
03/15/2005
10:44:55 AM

8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-42

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

60 / 50

0.025 0.025 5:1 6:1 5.39:1 5.39:1 6:1 0.025 0.025 6:1 6:1 3:1

52.12

S.D. 50.98

D.P. 52.48 S.D.6

140+00.00

S.D. 51.8

60 / 50

0.025 0.025 5:1 6:1 5.4:1 5.4:1 6:1 0.025 0.025 6:1 6:1 3:1

52.69

S.D. 50.74

D.P. 52.33 S.D.6

139+50.00

S.D. 51.53

60 / 50

0.025 0.025 4:1 6:1 5.4:1 5.4:1 6:1 0.025 0.025 6:1 6:1 3:1

52.72

S.D. 50.36

D.P. 52.18 S.D.6

139+00.00

S.D. 51.25

60 / 50

0.025 0.025 4:1 6:1 6:1 6:1 6:1 0.025 0.025 6:1 6:1 3:1

52.91

S.D. 49.99

D.P. 52.03 S.D.6

138+50.00

S.D. 50.98

60 / 50

0.025 0.025 4:1 6:1 5.5:1 5.5:1 6:1 0.025 0.025 6:1 6:1 3:1

53.19

S.D. 49.75

D.P. 51.82 S.D.6

138+00.00

S.D. 50.93

60 / 50

0.025 0.025 6:1 6:1 7:1 7:1 6:1 0.025 0.025 6:1 6:1 3:1

53.00

S.D. 51.5

D.P. 52.16 S.D.6

137+50.00

S.D. 51.09

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

c:\roadway\xsc\vr2510a_rdy_xpl_1.dgn
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10:44:26 AM

8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-43

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

60 50

0.0700 0.0700 6:1 8.8:1 4:1 0.0700 0.0700 6:1 6:1 6:1
53.86
S.D. 5128
DP: 53.88
SDG
143+00.00
S.D. 5252

0.0538 0.0538 6:1 7.25:1 4:1 0.0538 0.0538 6:1 6:1 6:1
53.98
S.D. 5173
DP: 53.23
SDG
142+50.00
S.D. 5296

0.0053 0.0053 4:1 6:1 4.2:1 0.0053 0.0053 6:1 6:1 3:1
53.90
S.D. 5158
DP: 53.08
SDG
142+00.00
S.D. 5292

0.0167 0.0250 4:1 5.429:1 4:1 0.0167 0.0250 6:1 6:1 3:1
53.71
S.D. 5143
DP: 53.93
SDG
141+50.00
S.D. 5264

0.0018 0.0250 6:1 5.367:1 4.768:1 0.0018 0.0250 6:1 6:1 3:1
53.28
S.D. 5128
DP: 5278
SDG
141+00.00
S.D. 5236

0.0208 0.0250 5:1 5.376:1 5.266:1 0.0208 0.0250 6:1 6:1 3:1
53.30
S.D. 5113
DP: 5263
SDG
140+50.00
S.D. 5209

L

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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07/15/2008
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	R-2510A	X-44

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

60
50

6:1 0.070 0.070 8.8:1 4:1 0.070 0.070 6:1 6:1

S.D. 51.78 — 53.15 — D.P. 51.78 — 146+00.00 — 51.07

60
50

6:1 0.070 0.070 8.8:1 4:1 0.070 0.070 6:1 6:1 5.42:1

S.D. 52.13 — 53.47 — D.P. 52.02 — 145+50.00 — 51.31

60
50

6:1 0.070 0.070 8.8:1 4:1 0.070 0.070 6:1 6:1

S.D. 52.48 — 53.91 — D.P. 52.26 — 145+00.00 — 51.55

60
50

6:1 0.070 0.070 8.8:1 4:1 0.070 0.070 6:1 6:1 5.54:1

S.D. 52.33 — 54.36 — D.P. 52.50 — 144+50.00 — 51.79

60
50

6:1 0.070 0.070 8.8:1 4:1 0.070 0.070 6:1 6:1

S.D. 52.18 — 54.06 — D.P. 52.74 — 144+00.00 — 52.23

60
50

6:1 0.070 0.070 8.8:1 4:1 0.070 0.070 6:1 6:1

S.D. 52.03 — 54.14 — D.P. 52.98 — 143+50.00 — 52.270

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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	R-2510A	X-45

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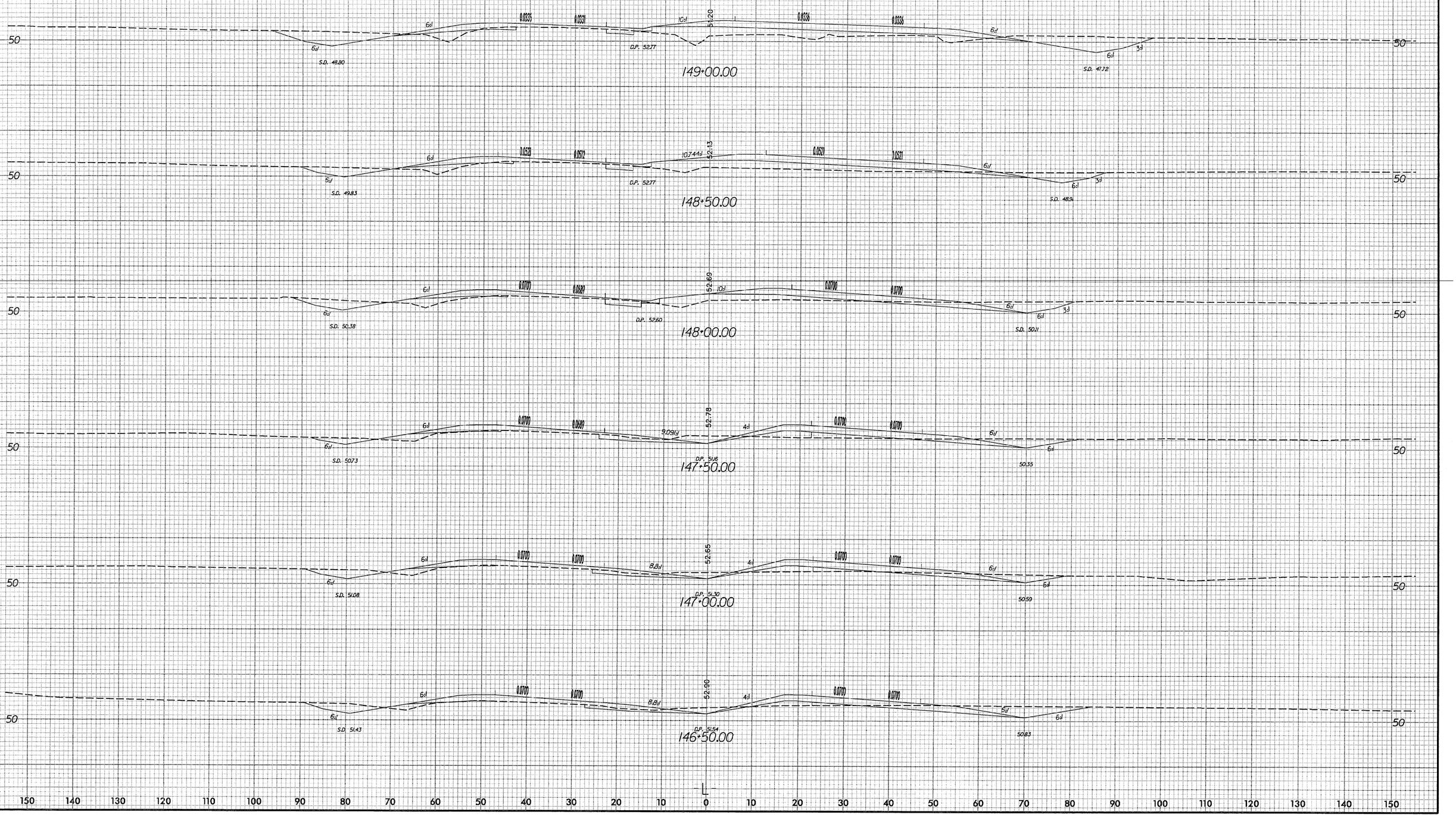

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-46

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

50

0.0250 0.0250 51.09 0.0250 0.0250

3.88% 6:1 6:1 48.92

D.P. 49.86 S.D.G.

4:1 5.97% 6:1 6:1 3:1 S.D. 48.92

152+00.00

50

0.0250 0.0250 51.12 0.0250 0.0250

3:1 6:1 S.D. 49.16

6:1 6:1 3:1 S.D. 49.16

151+50.00

50

0.0250 0.0250 51.00 0.0250 0.0250

3:1 6:1 S.D. 49.40

4:1 6.16% 6:1 D.P. 50.40

6:1 6:1 3:1 S.D. 49.40

151+00.00

50

0.0220 0.0250 51.09 0.0220 0.0250

3:1 6:1 S.D. 49.25

4:1 5.72% 6:1 D.P. 50.44

6:1 6:1 3:1 S.D. 49.64

150+50.00

50

0.0333 0.0250 51.67 0.0333 0.0250

3:1 6:1 S.D. 49.10

5:1 4:1 3:1 D.P. 51.03

6:1 6:1 3:1 S.D. 48.91

150+00.00

50

0.015 0.0250 51.22 0.015 0.0250

3:1 6:1 S.D. 48.95

9.38% 4:1 D.P. 51.92

6:1 6:1 3:1 S.D. 48.18

149+50.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-47

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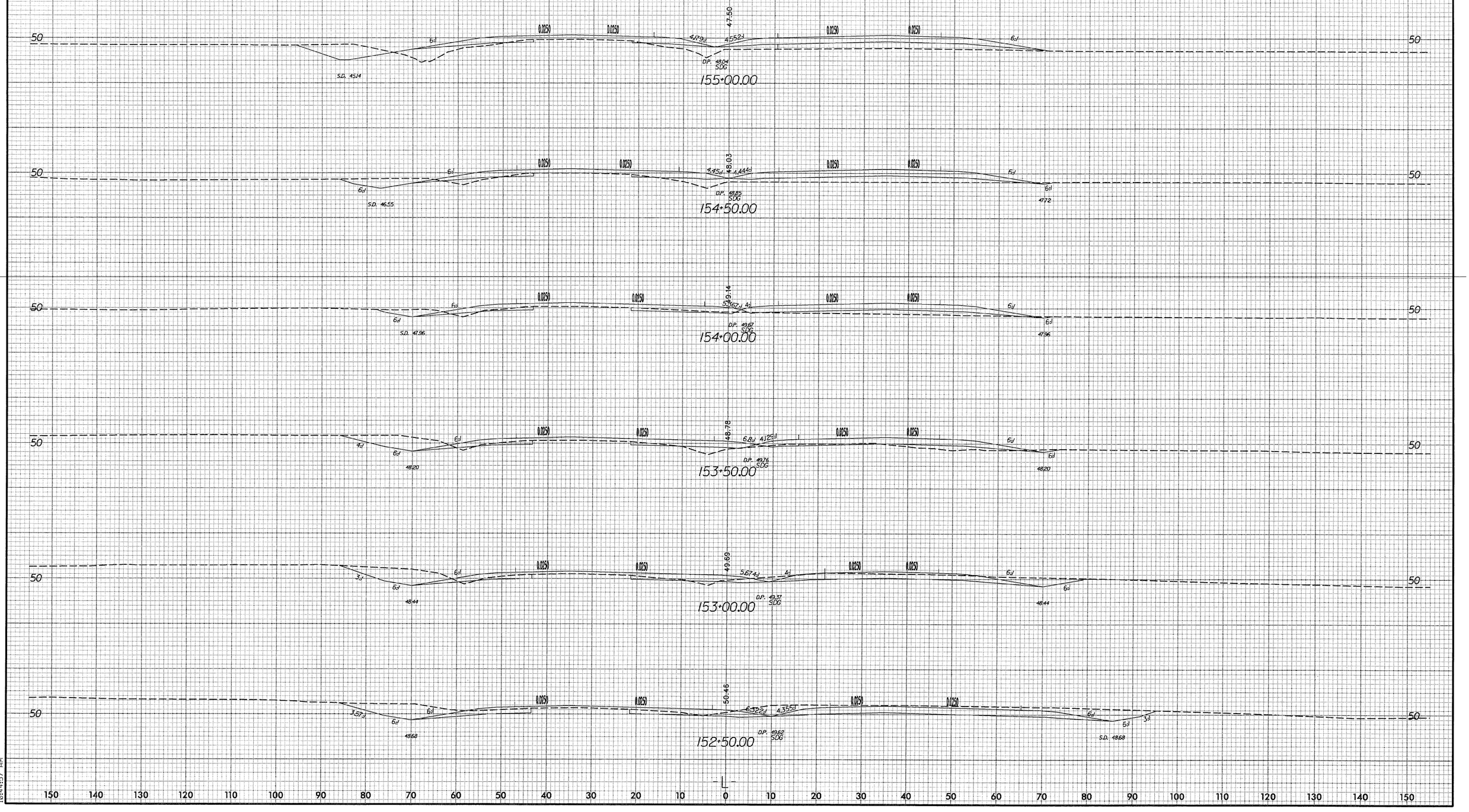

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-48

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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03/15/2005
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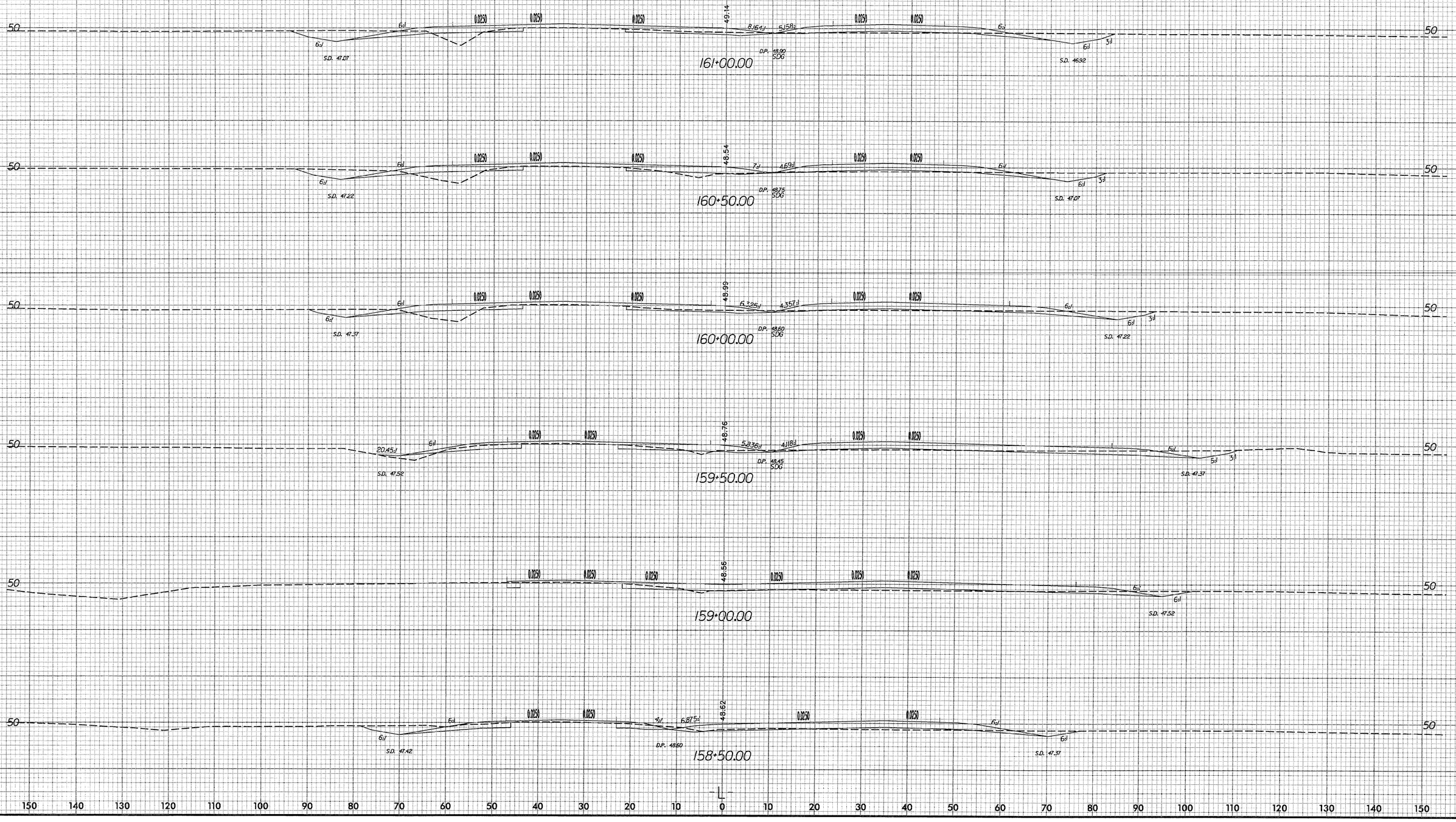
8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-49

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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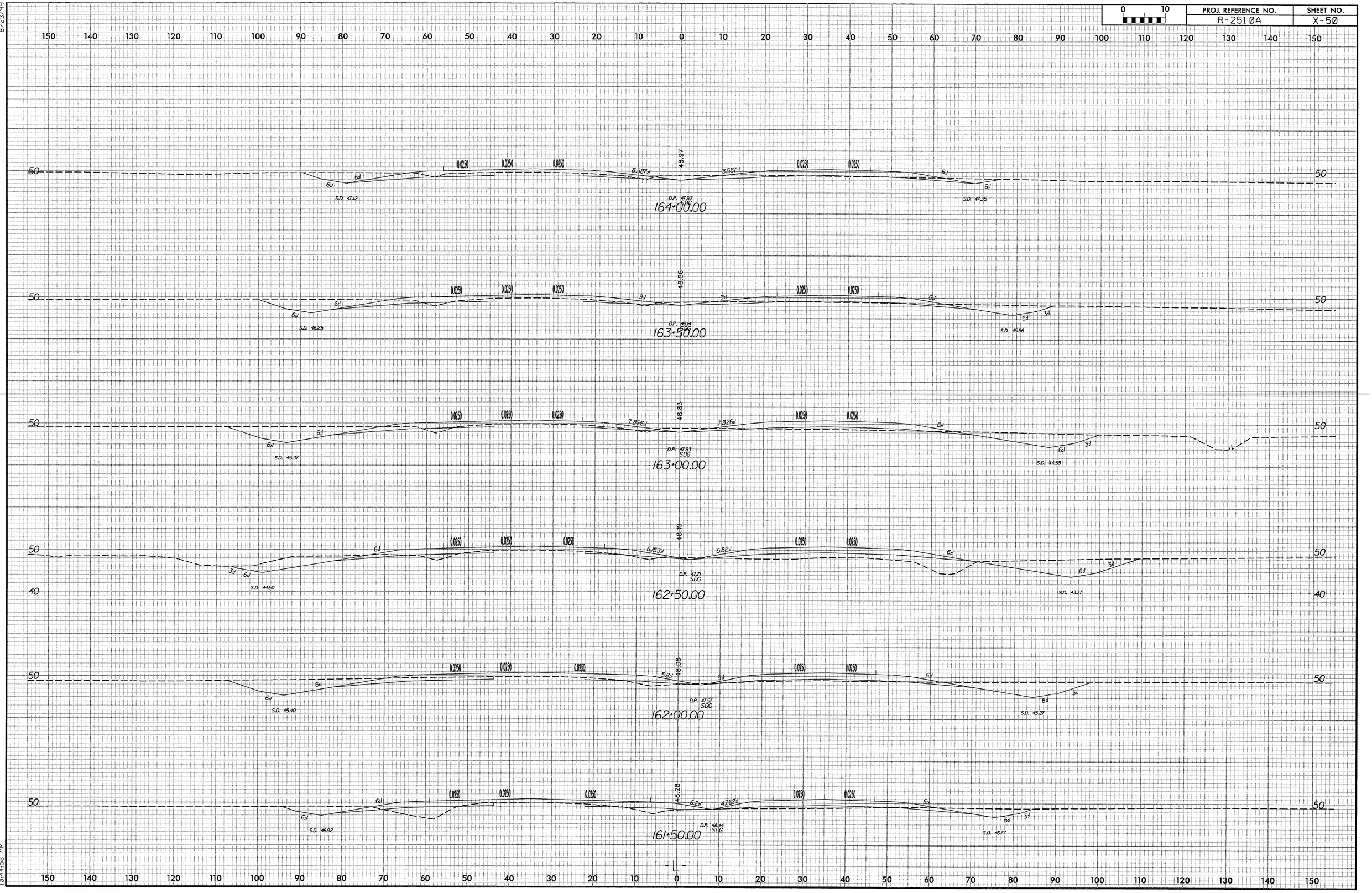
0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-50



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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-51

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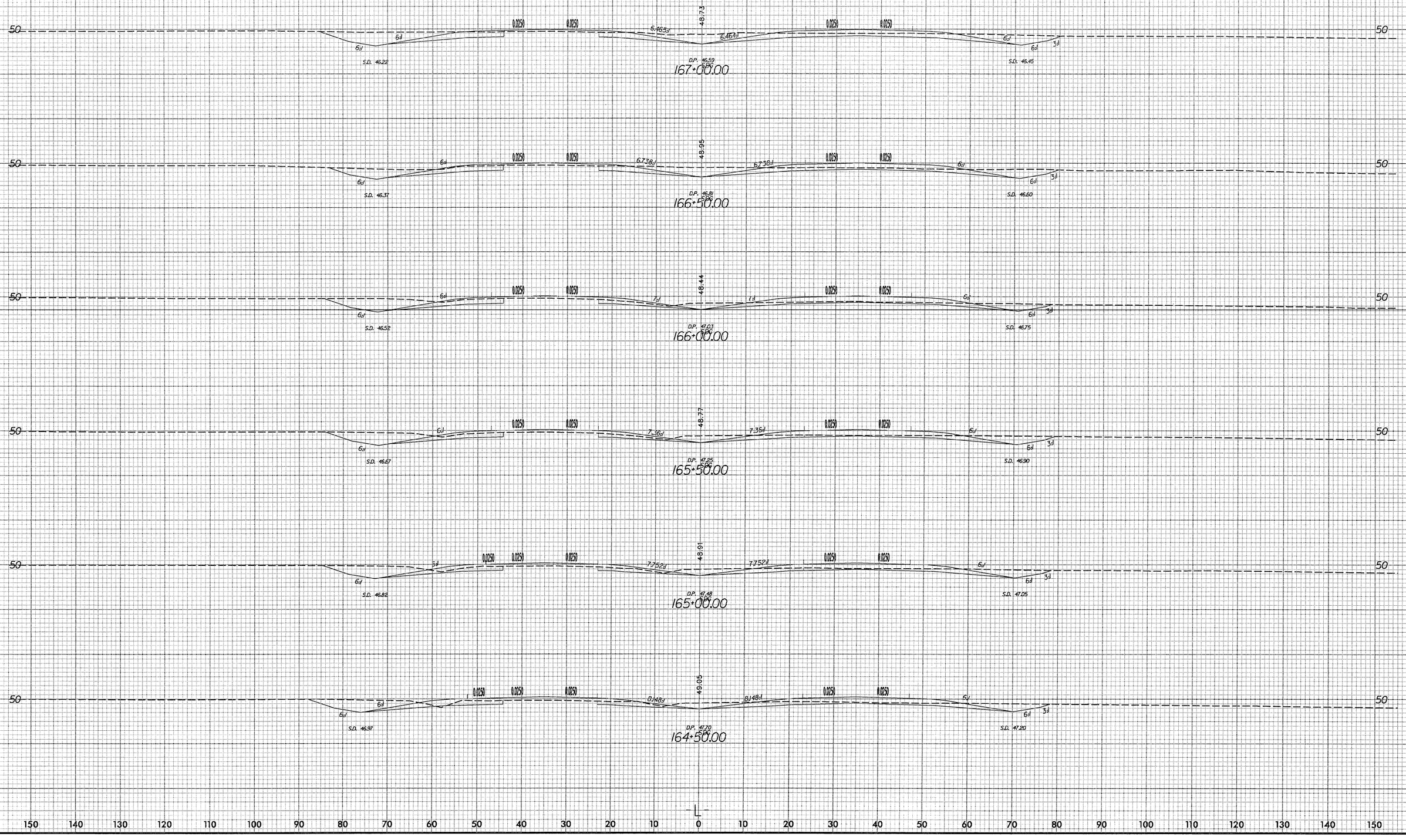

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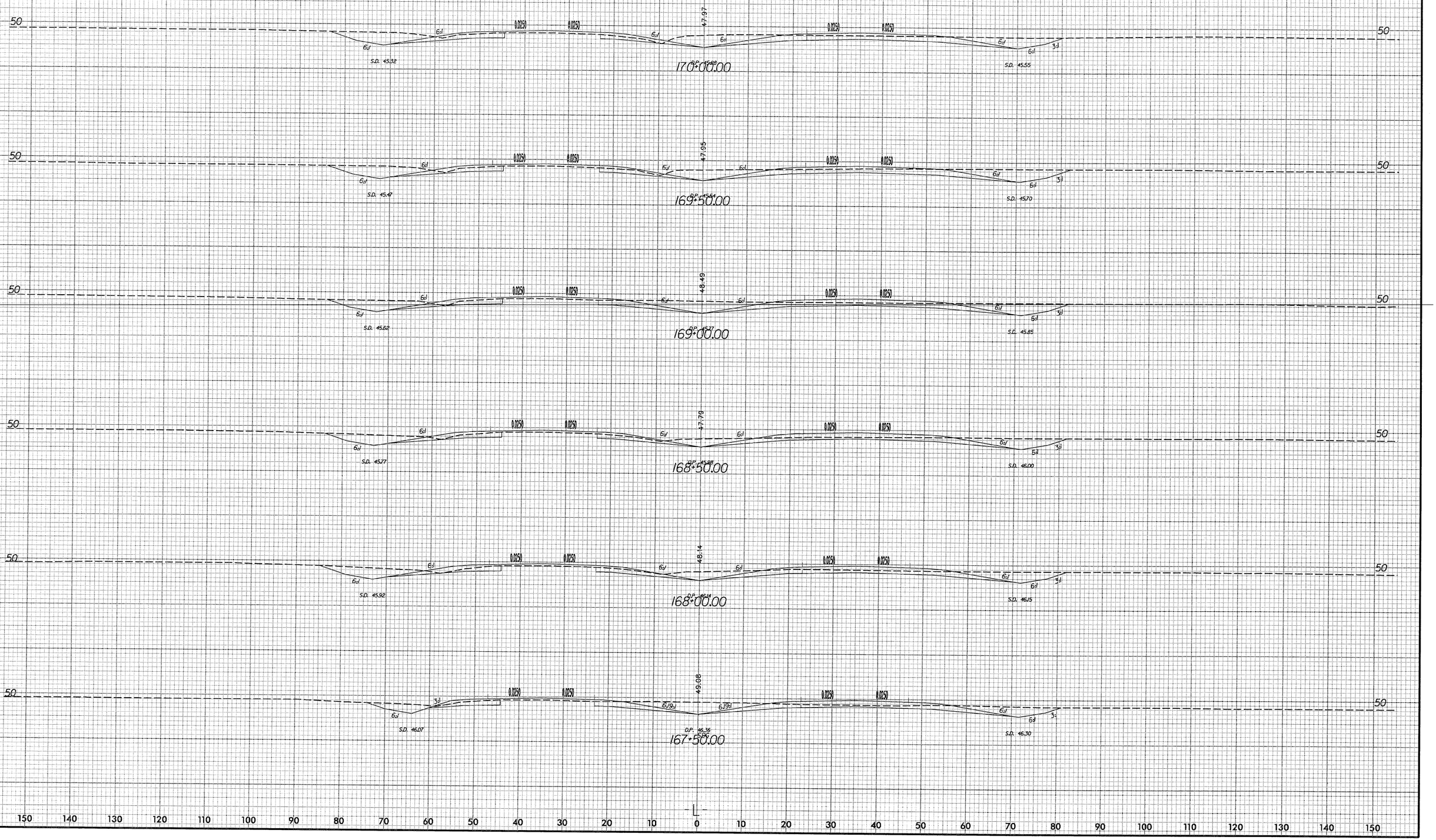
8/23/95

0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-52

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-53

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

50 40

0.025 0.025 6:1 6:1 6:1 6:1 6:1 6:1 3:1

S.D. 4325 — 45.57 — D.P. 4176 — S.D. 4404

173+00.00

50 40

0.025 0.025 6:1 6:1 6:1 6:1 6:1 6:1 6:1

S.D. 4457 — 46.19 — D.P. 4289 — 4429

172+50.00

50 40

0.025 0.025 6:1 6:1 6:1 6:1 6:1 6:1 6:1

S.D. 4472 — 46.75 — D.P. 4437 — 4455

172+00.00

50

0.025 0.025 6:1 6:1 6:1 6:1 6:1 6:1 5:1

S.D. 4487 — 47.05 — D.P. 4458 — 4480

171+50.00

50

0.025 0.025 6:1 6:1 6:1 6:1 6:1 6:1 5.5:1

S.D. 4502 — 47.44 — D.P. 4477 — 4506

171+00.00

50

0.025 0.025 6:1 6:1 6:1 6:1 6:1 6:1 5.63:1

S.D. 4517 — 47.64 — D.P. 4493 — 4531

170+50.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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02-27-2008
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8/23/94

0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-54

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

50 40

0.025 0.025 0.025 0.025

6:1 6:1 6:1 6:1 6:1 6:1 6:1 6:1 3:1

46+48

S.D. 44.23 — D.P. 13.55 — S.D. 44.23

178+00.00

46+01

S.D. 44.05 — D.P. 13.55 — S.D. 44.06

175+50.00

45+10

S.D. 42.65 — D.P. 13.60 — S.D. 43.78

175+00.00

44+63

S.D. 41.25 — D.P. 13.18 — S.D. 42.24

174+50.00

44+11

S.D. 40.61 — D.P. 13.16 — S.D. 41.28

174+00.00

43+94

S.D. 41.93 — D.P. 13.56 — S.D. 42.86

173+50.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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12/05/2008
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8/23/95

0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-55

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

50 40

6:1 6:1 0.025 0.025 4:1 5.60:1 46.00 0.025 0.025 6:1 6:1 3:1

4509 D.P. 45.89 S.D. 43.89

179+00.00

50

5.41:1 6:1 6:1 0.025 0.025 4:1 5.60:1 46.26 0.025 0.025 6:1 6:1 3:1

4506 D.P. 45.86 S.D. 44.41

178+50.00

50

6:1 6:1 0.025 0.025 4:1 5.60:1 46.41 0.025 0.025 6:1 6:1 3:1

4493 D.P. 45.73 S.D. 44.93

178+00.00

50

5.40:1 6:1 6:1 0.025 0.025 4:202:1 5:1 46.57 0.025 0.025 6:1 6:1 3:1

4476 D.P. 45.04 4476

177+50.00

50

5.60:1 6:1 6:1 0.025 0.025 5.41:1 6:1 47.04 0.025 0.025 6:1 6:1 3:1

4458 D.P. 44.82 4459

177+00.00

50

5.63:1 6:1 6:1 0.025 0.025 5.81:1 6:1 47.01 0.025 0.025 6:1 6:1 3:1

4441 D.P. 44.41 4441

176+50.00

50

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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8/23/91

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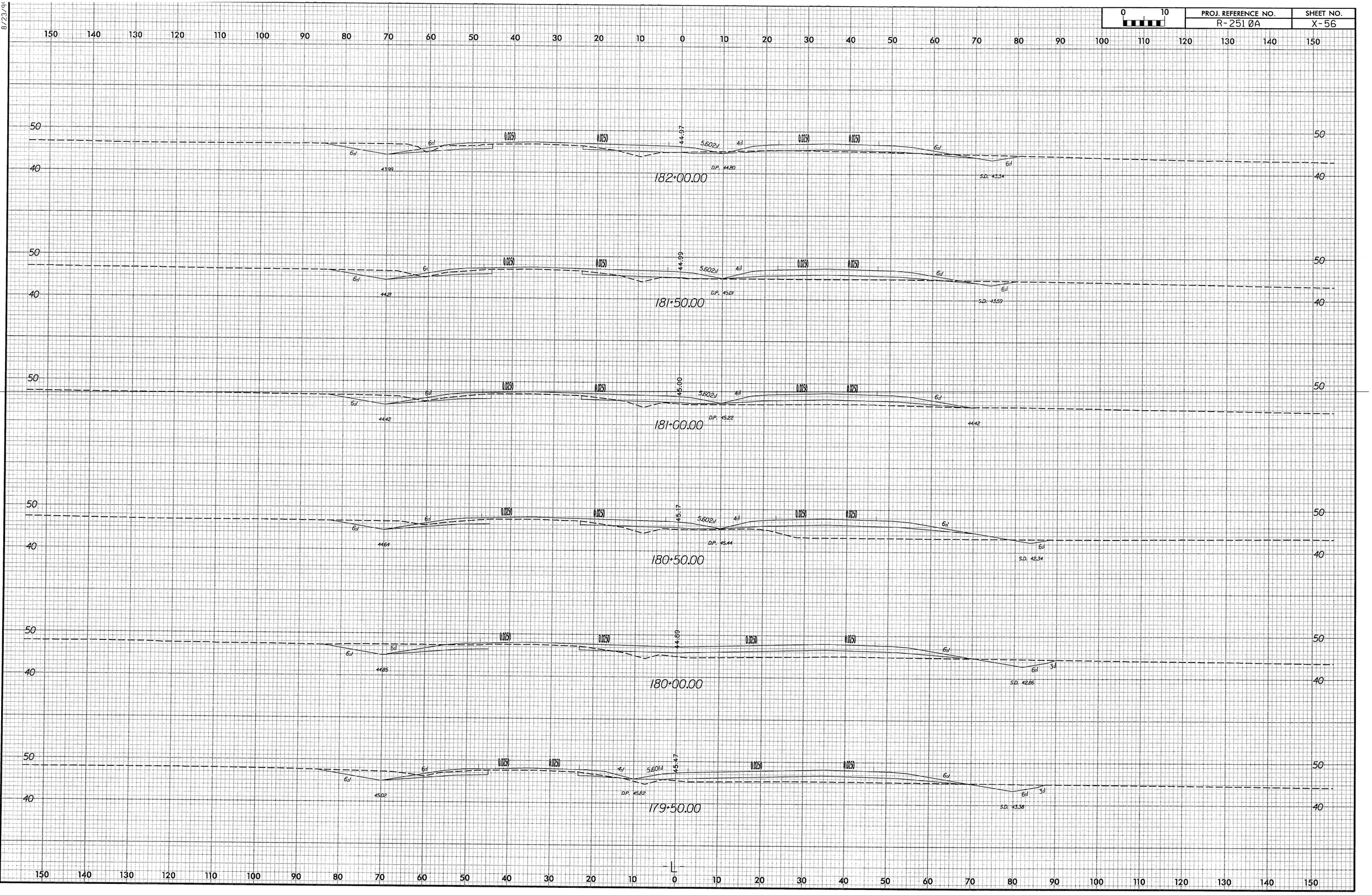
	R-2510A	X-56



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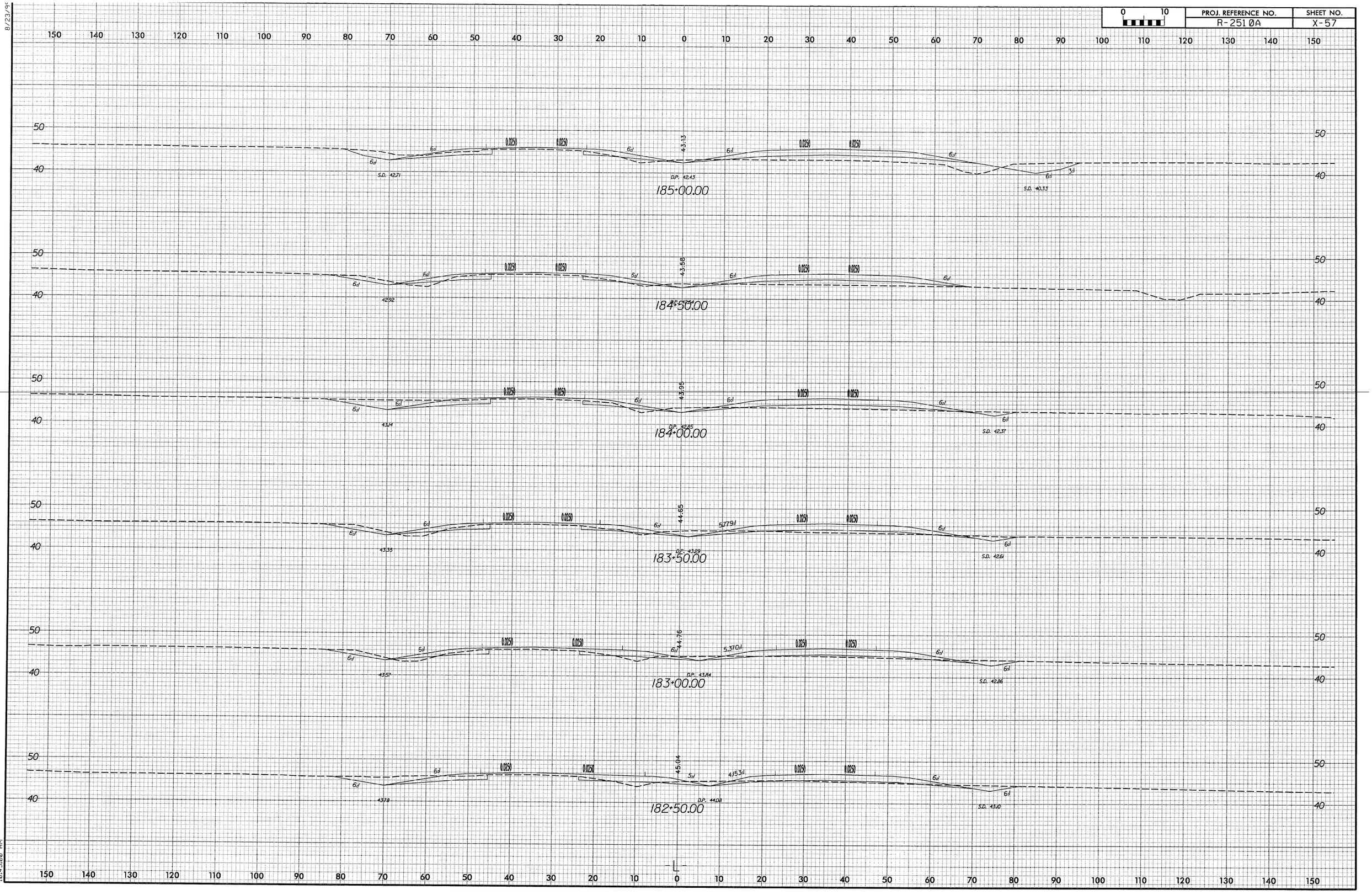
0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-57



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8/23/9

0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-58

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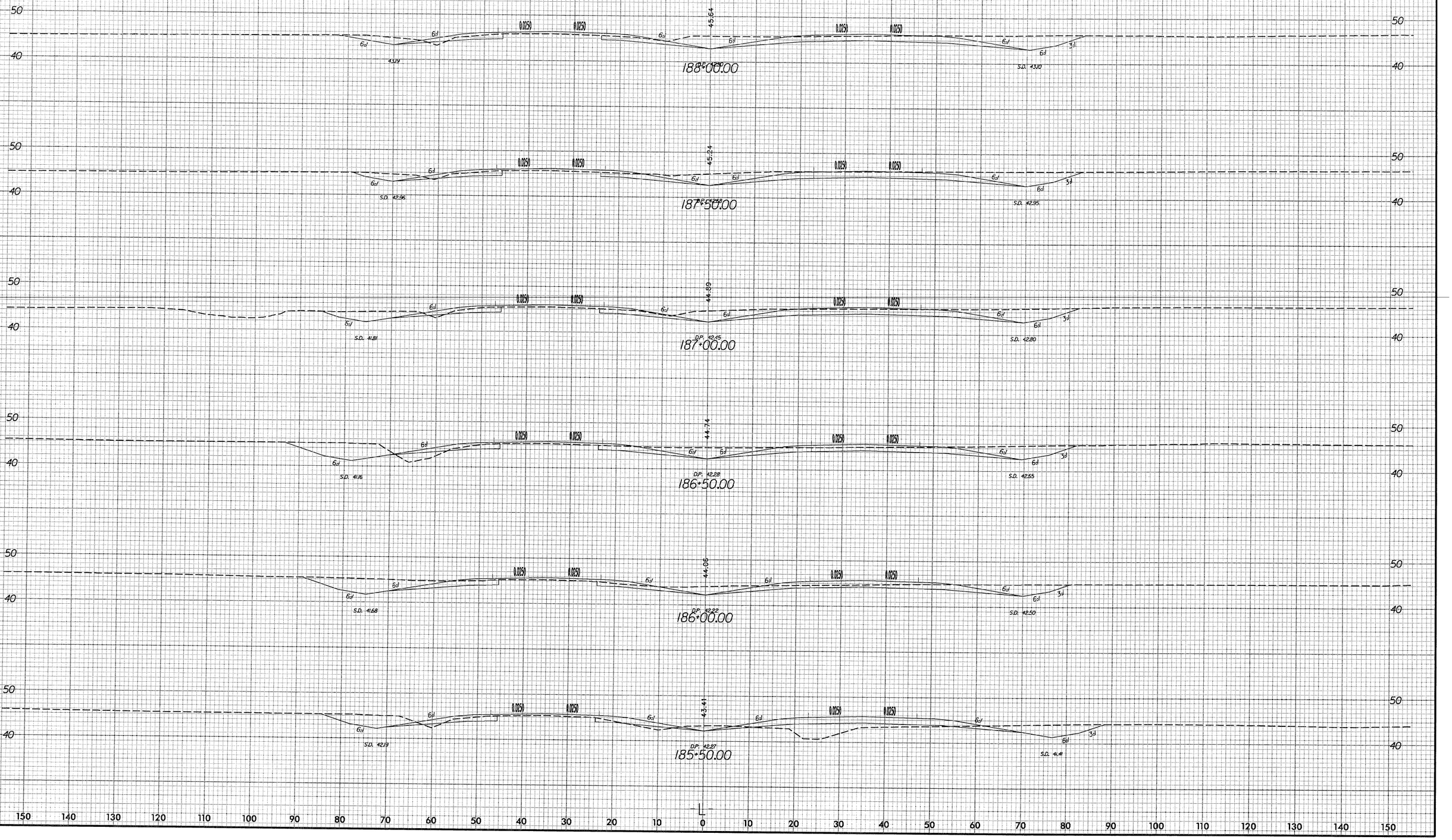

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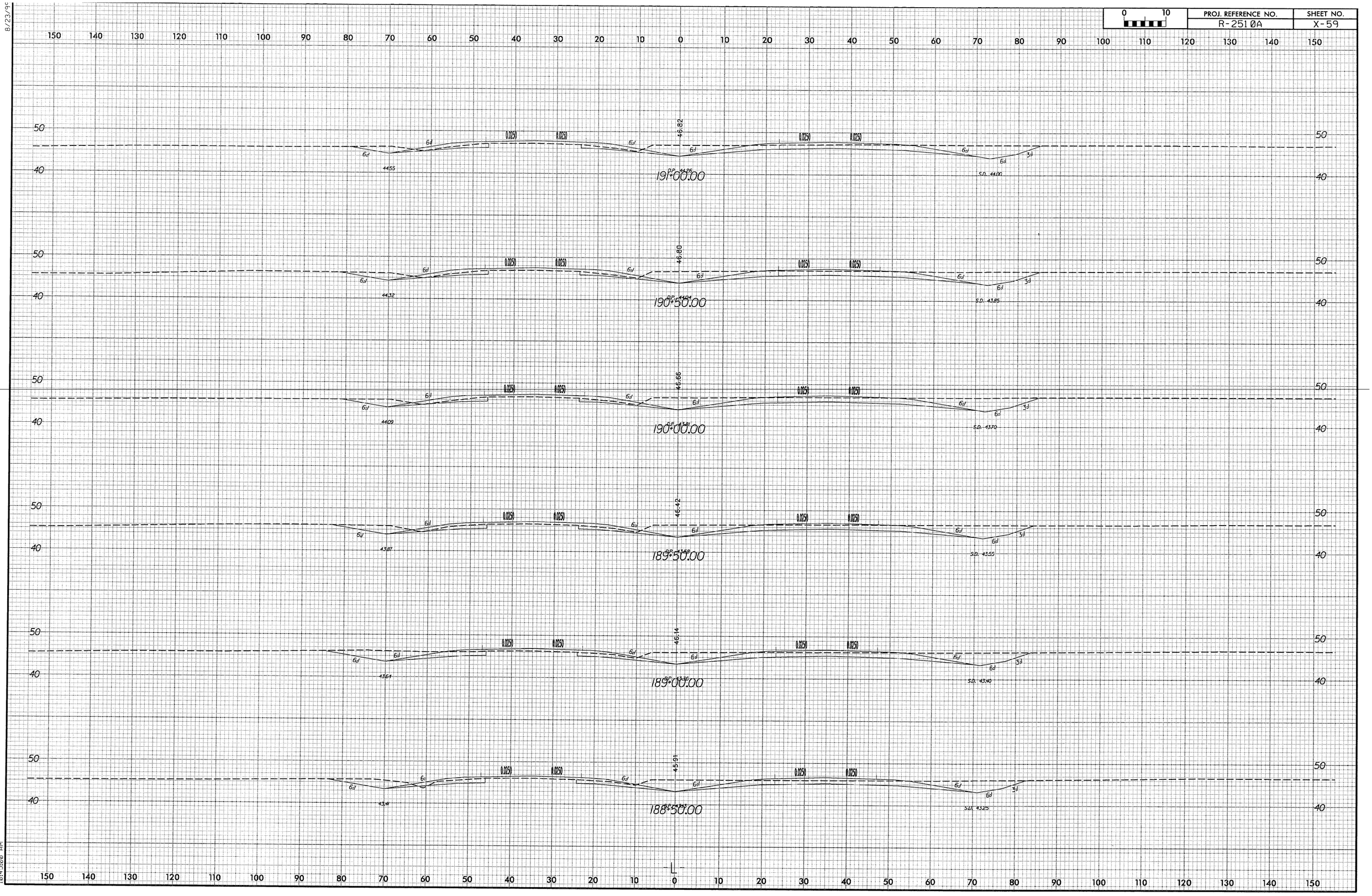
	R-2510A	X-59



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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-60

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

50

6:1 6:1 0.025 0.025 6:1 6:1 0.025 0.025 6:1 6:1 3:1

47.24

4548

DP. 4520

194+00.00

S.D. 4490

50

50

6:1 6:1 0.025 0.025 6:1 6:1 0.025 0.025 6:1 6:1 3:1

47.04

4549

DP. 4521

193+50.00

S.D. 4475

50

50

6:1 6:1 0.025 0.025 6:1 6:1 0.025 0.025 6:1 6:1 3:1

47.16

4541

DP. 4513

193+00.00

S.D. 4460

50

50

6:1 6:1 0.025 0.025 6:1 6:1 0.025 0.025 6:1 6:1 3:1

47.00

4523

DP. 4494

192+50.00

S.D. 4445

50

50

6:1 6:1 0.025 0.025 6:1 6:1 0.025 0.025 6:1 6:1 3:1

45.86

4500

DP. 4472

192+00.00

S.D. 4430

40

40

6:1 6:1 0.025 0.025 6:1 6:1 0.025 0.025 6:1 6:1 3:1

46.89

4477

DP. 4449

191+50.00

S.D. 4415

50

50

40

40

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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	R-2510A	X-61

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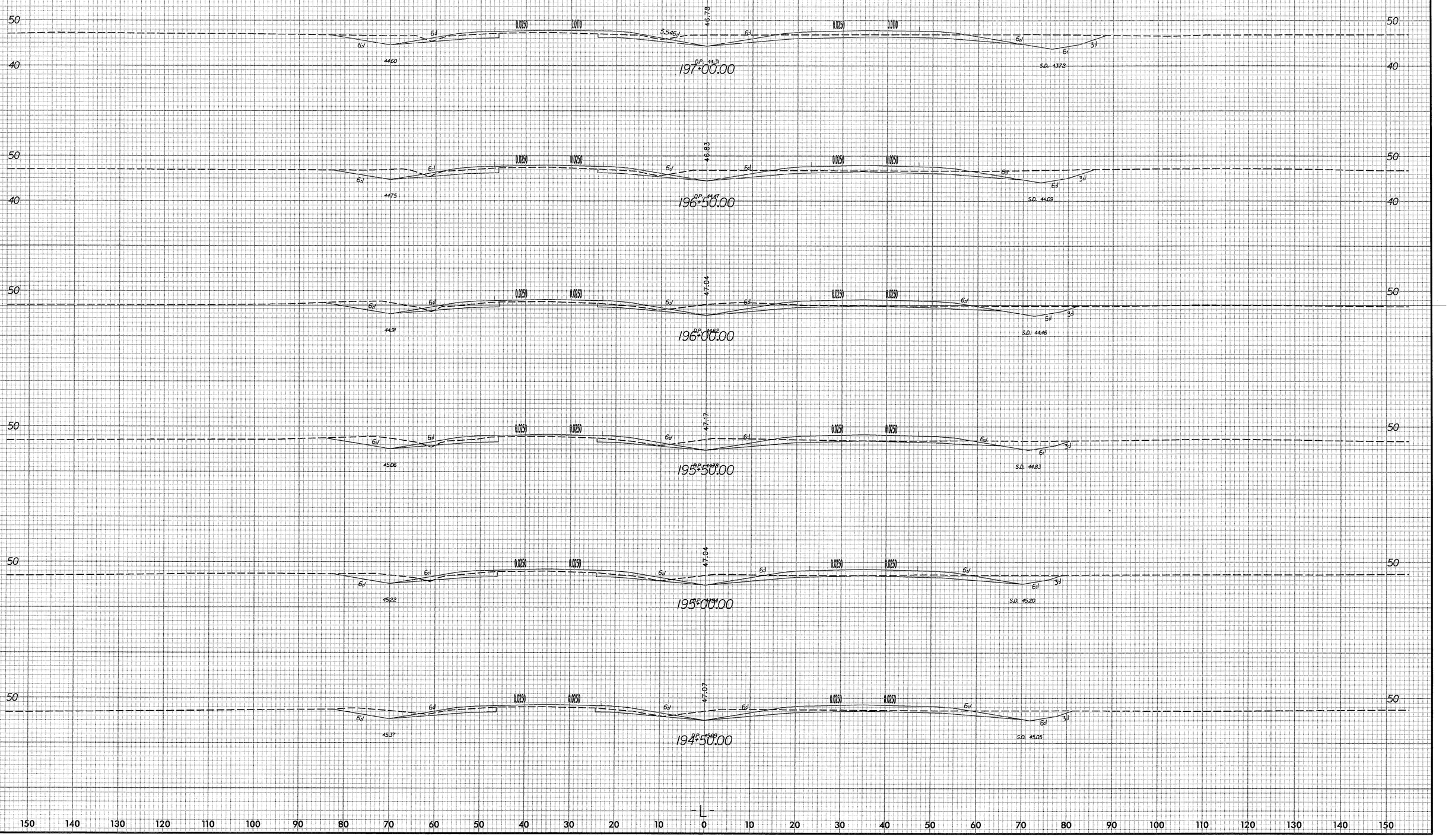

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	R-2510A	X-62

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

50 40

45.16
0.0700 0.0700 0.0700 0.0700
6:1 6:1 6:1 6:1 3:1
4.34:1
42.95
D.P. 43.01
S.D. 41.50
200+00.00

45.81
0.0700 0.0700 0.0700 0.0700
6:1 4:1 6:1 6:1 3:1
4.23:1 8.89
43.10
D.P. 43.81
S.D. 41.87
199+50.00

45.89
0.0630 0.0630 0.0630 0.0630
6:1 6:1 4:1 6:1 6:1 3:1
3.84:1 7.89:1
43.37
D.P. 43.84
S.D. 42.24
199+00.00

45.96
0.0445 0.0445 0.0445 0.0445
6:1 6:1 4:1 6:1 6:1 3:1
4.55:1 6.96:1
43.82
D.P. 43.67
S.D. 42.61
198+50.00

46.14
0.0260 0.0260 0.0260 0.0260
6:1 6:1 6:1 6:1 3:1
4.53:1
44.27
D.P. 43.99
S.D. 42.98
198+00.00

46.54
0.0250 0.0075 0.0250 0.0075
6:1 6:1 5:1 6:1 6:1 6:1 3:1
44.44
D.P. 44.16
S.D. 43.55
197+50.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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0 10	PROJ. REFERENCE NO.	SHEET NO.
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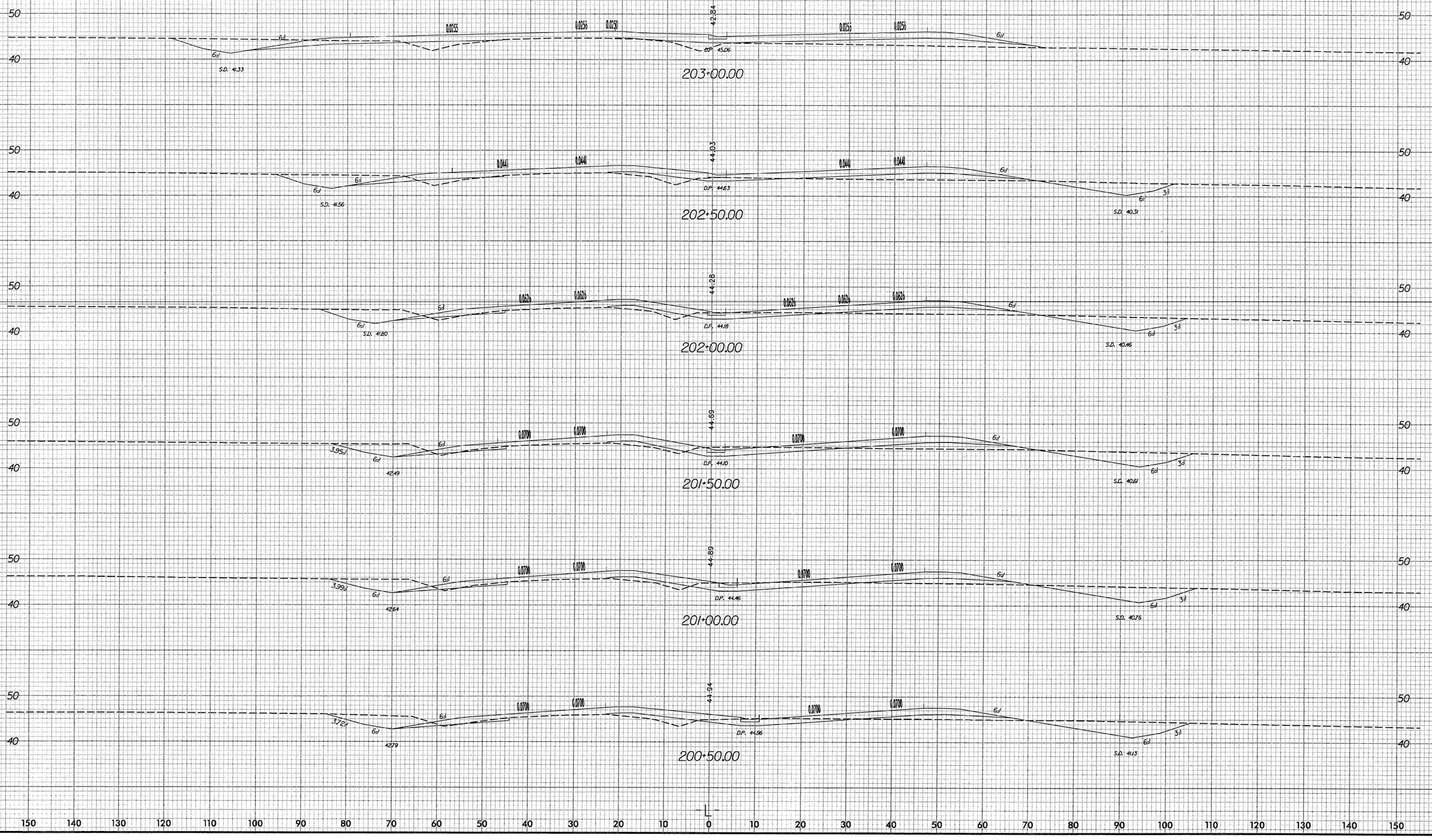

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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-64

206+00.00

D.P. 4250 SDG

S.D. 41.43 — S.D. 41.32

205+50.00

D.P. 4274 SDG

S.D. 41.28 — S.D. 41.49

205+00.00

D.P. 4258 SDG

S.D. 41.14 — S.D. 41.63

204+50.00

D.P. 4322 SDG

S.D. 40.99

204+00.00

D.P. 4320

S.D. 40.850

203+50.00

S.D. 41.09

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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-65

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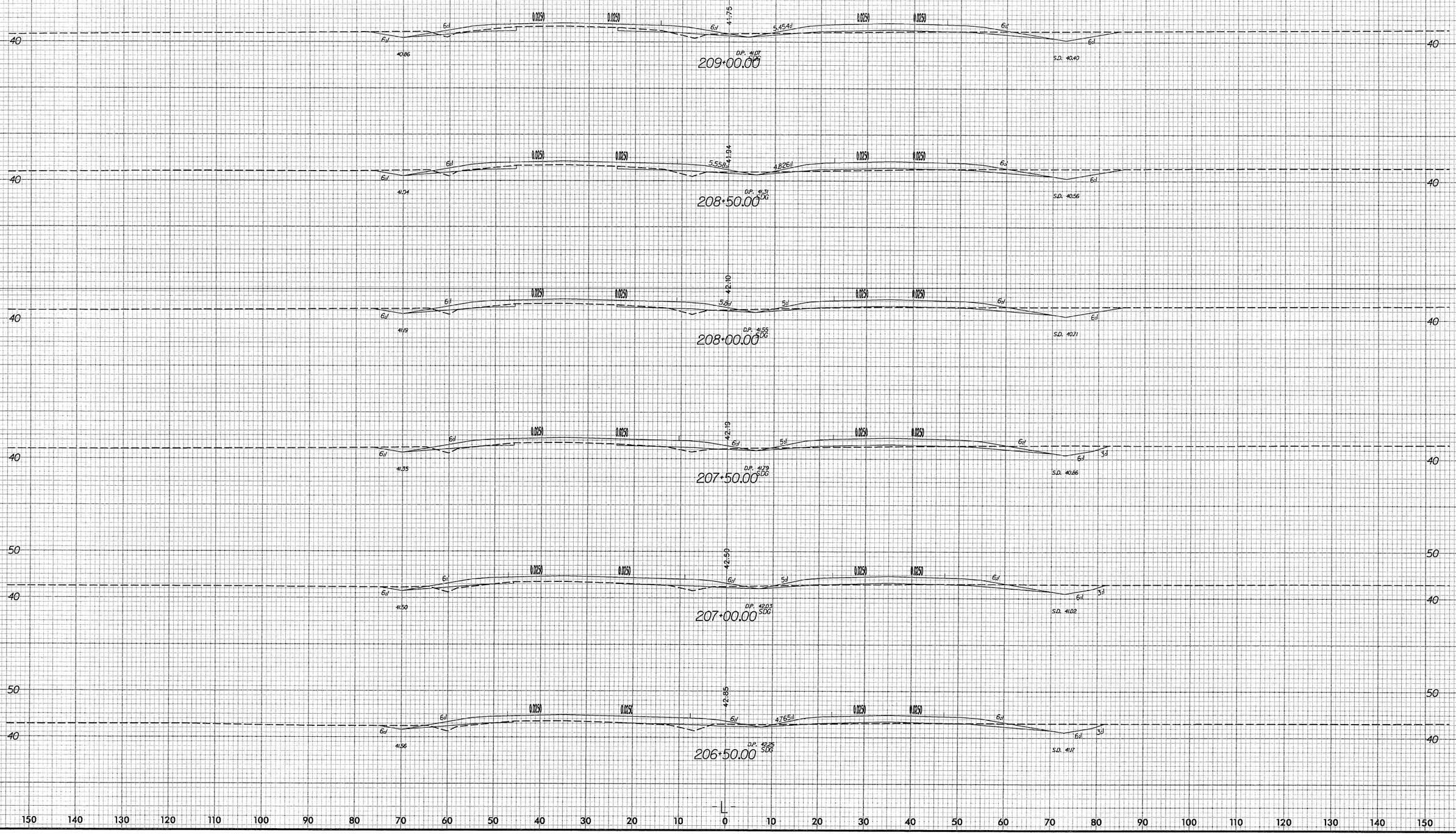

-L-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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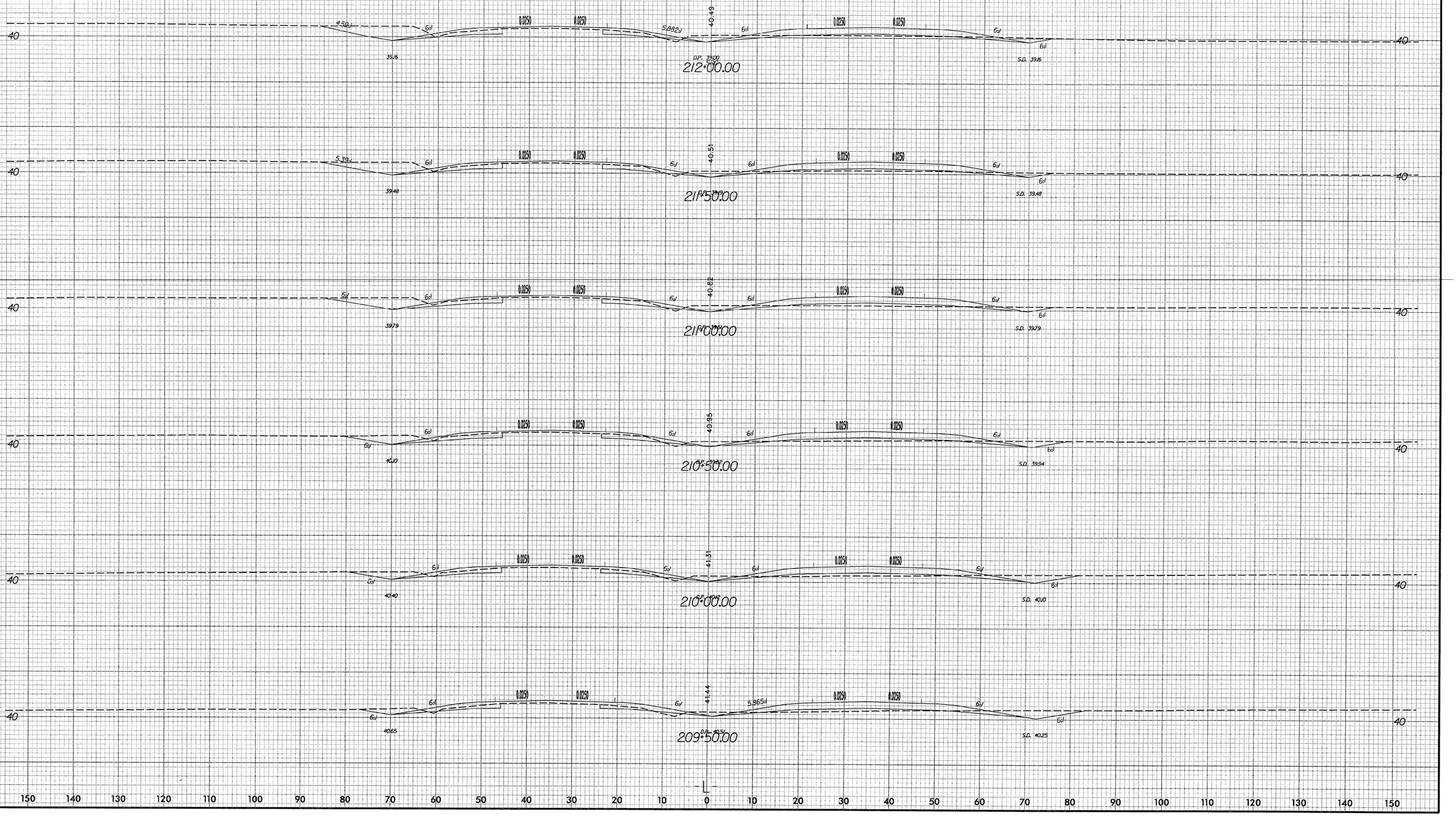
0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-66

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



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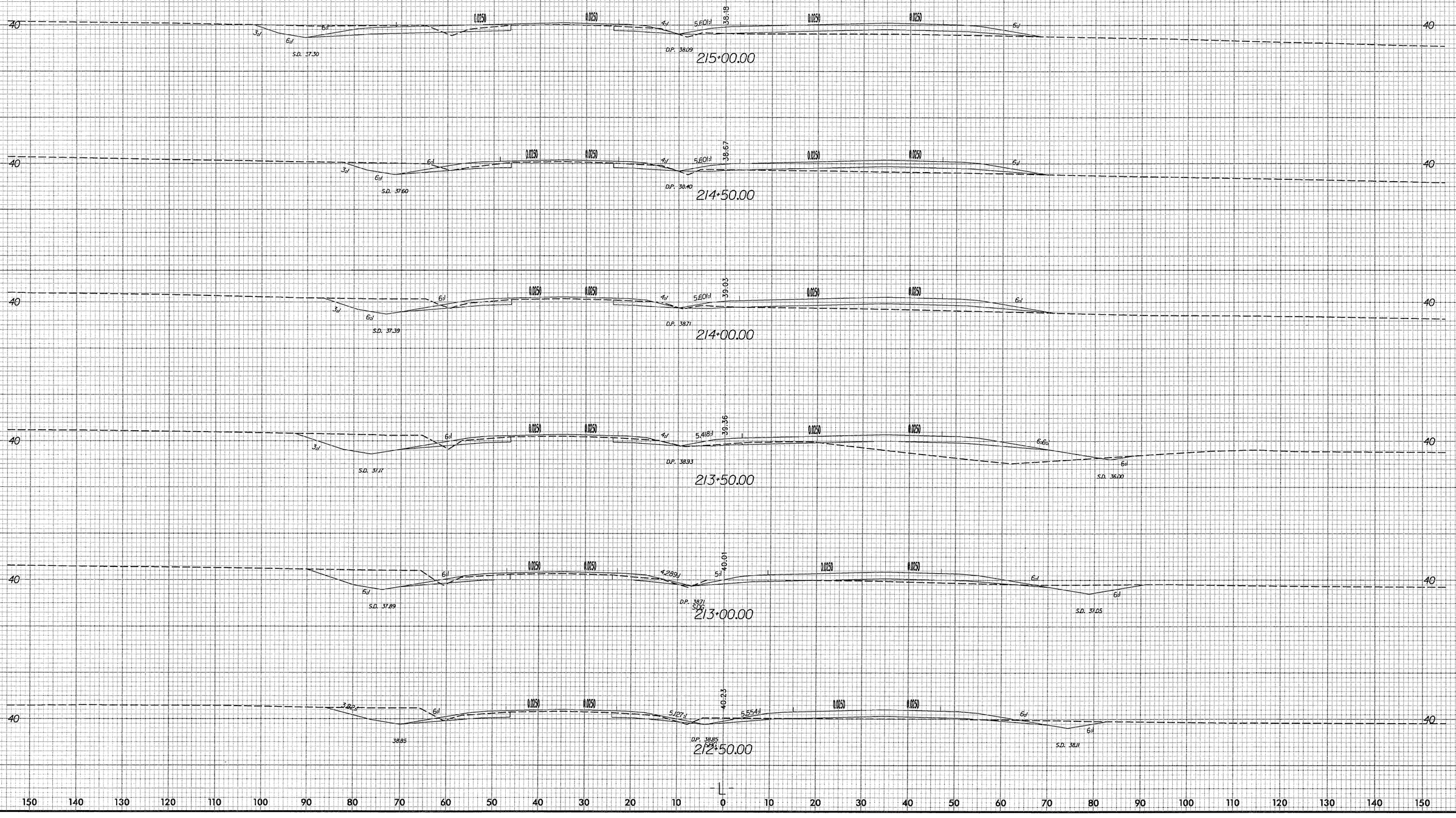
0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-67

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



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8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-68

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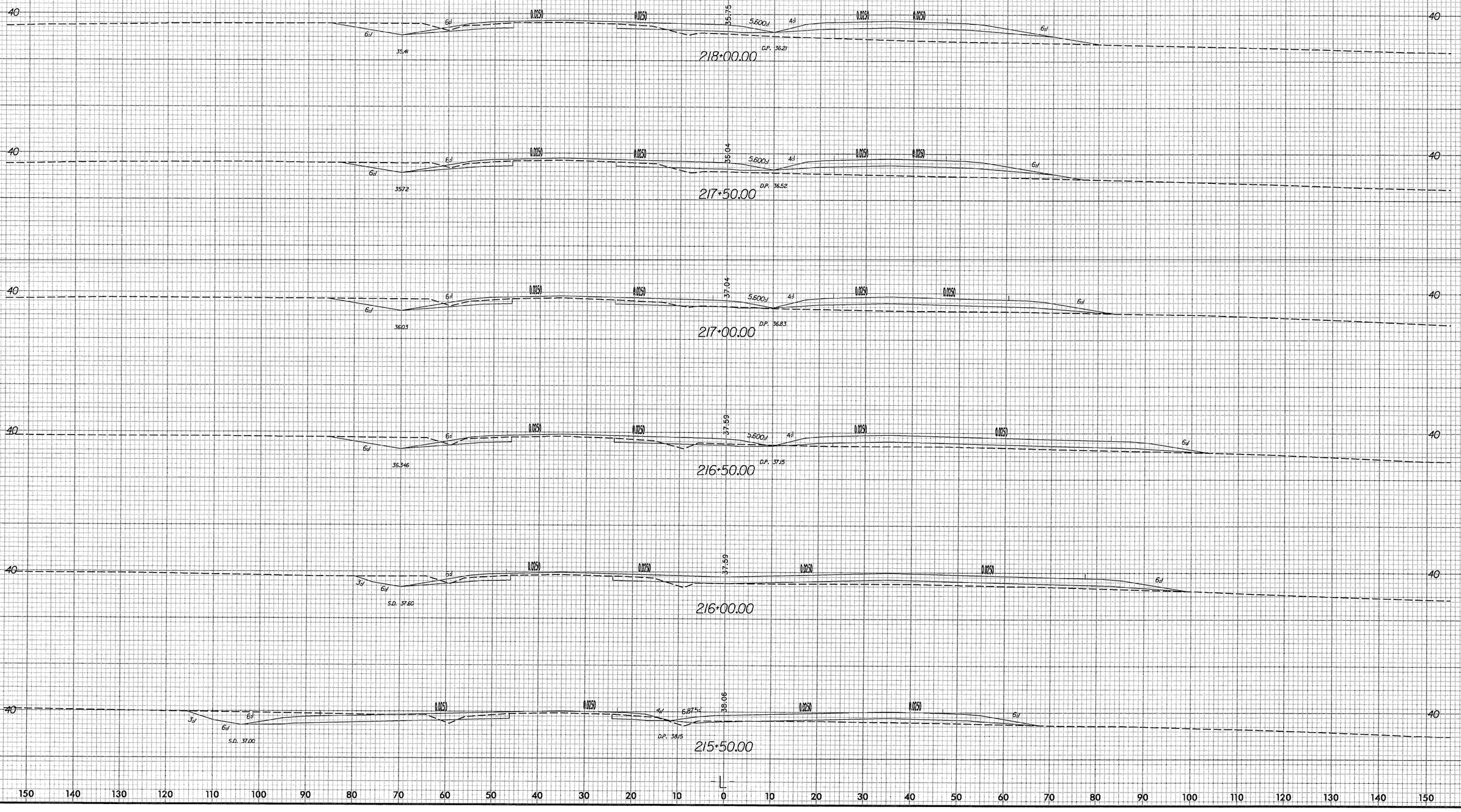

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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-69

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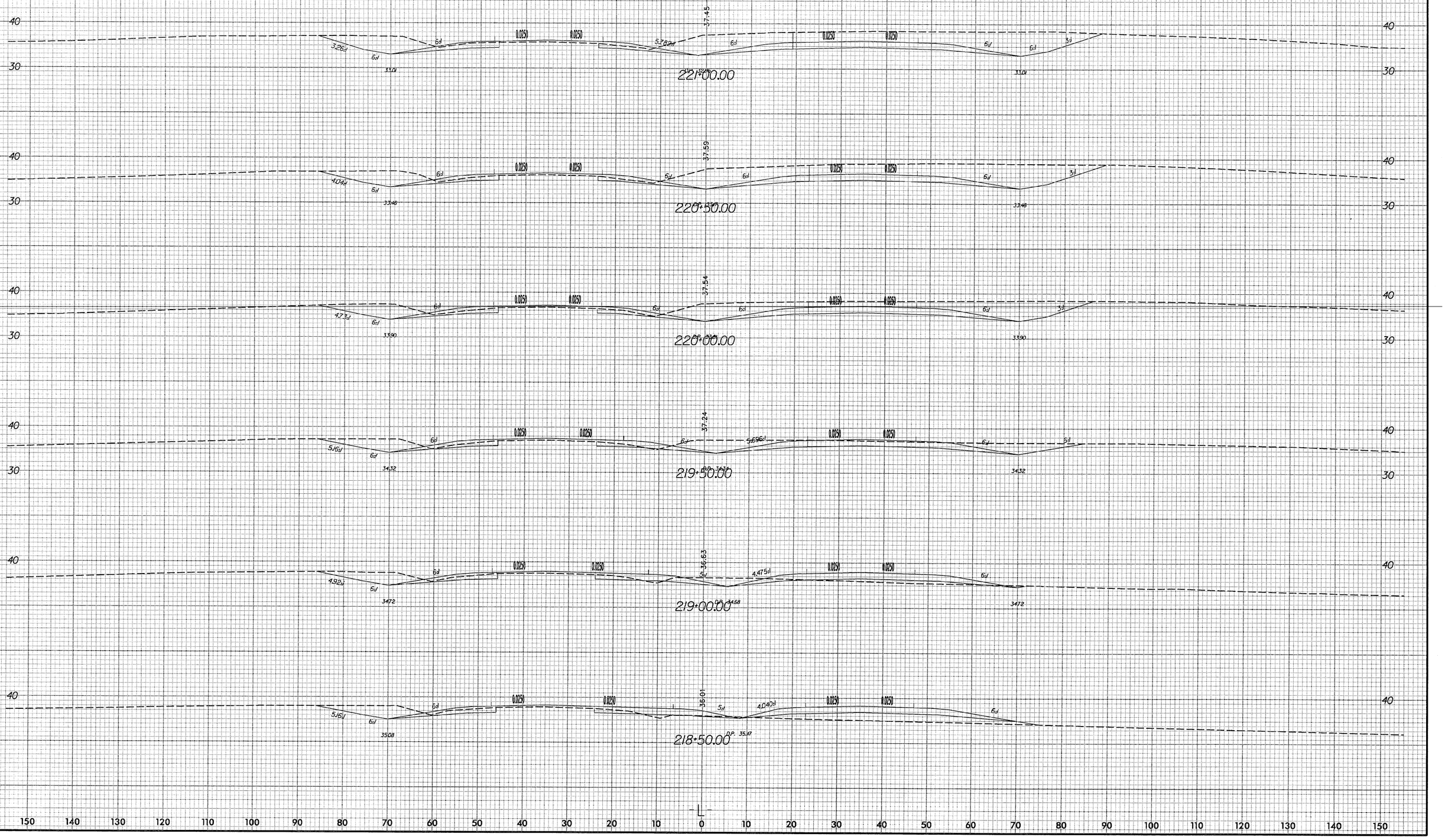

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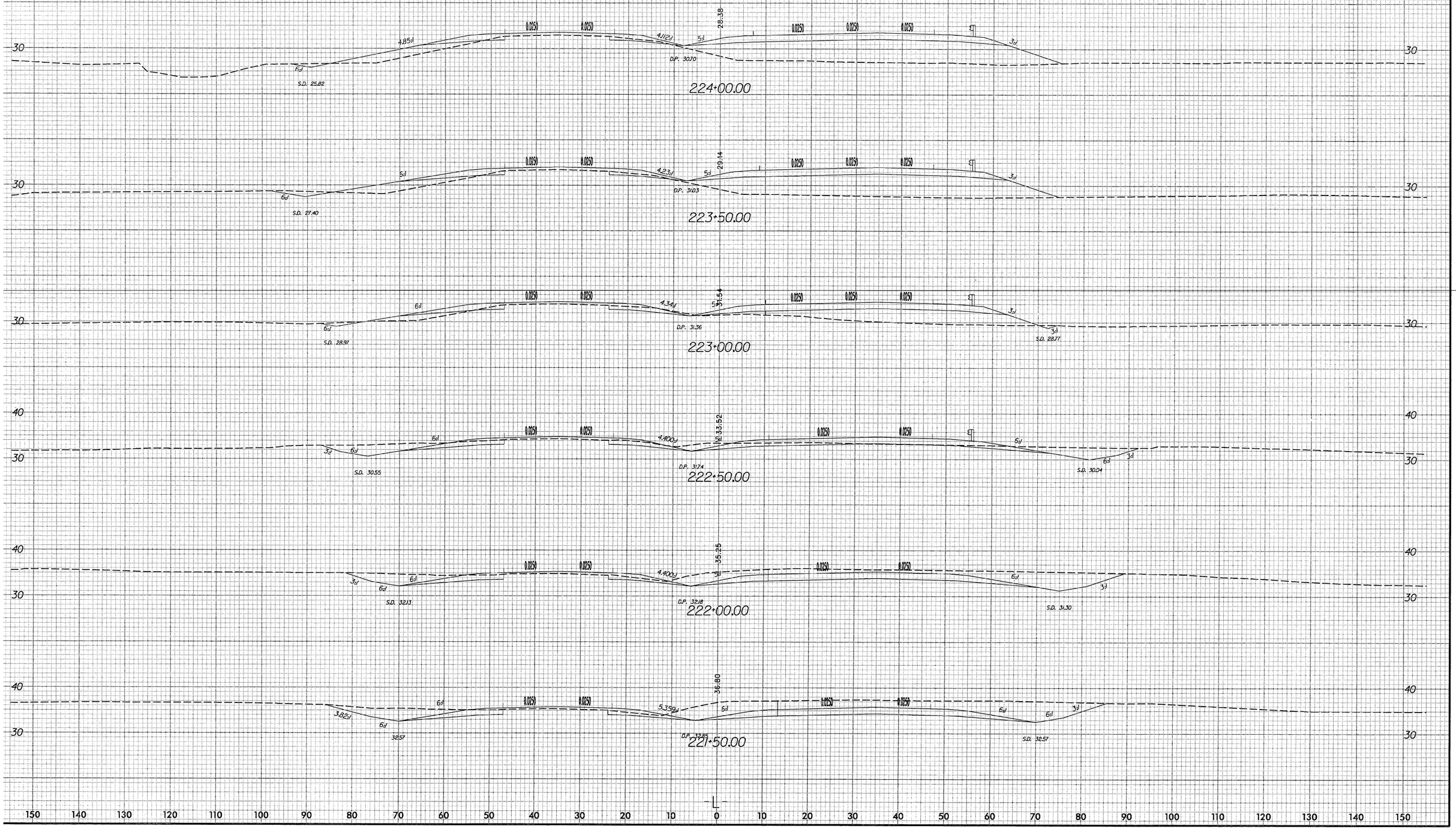

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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-71

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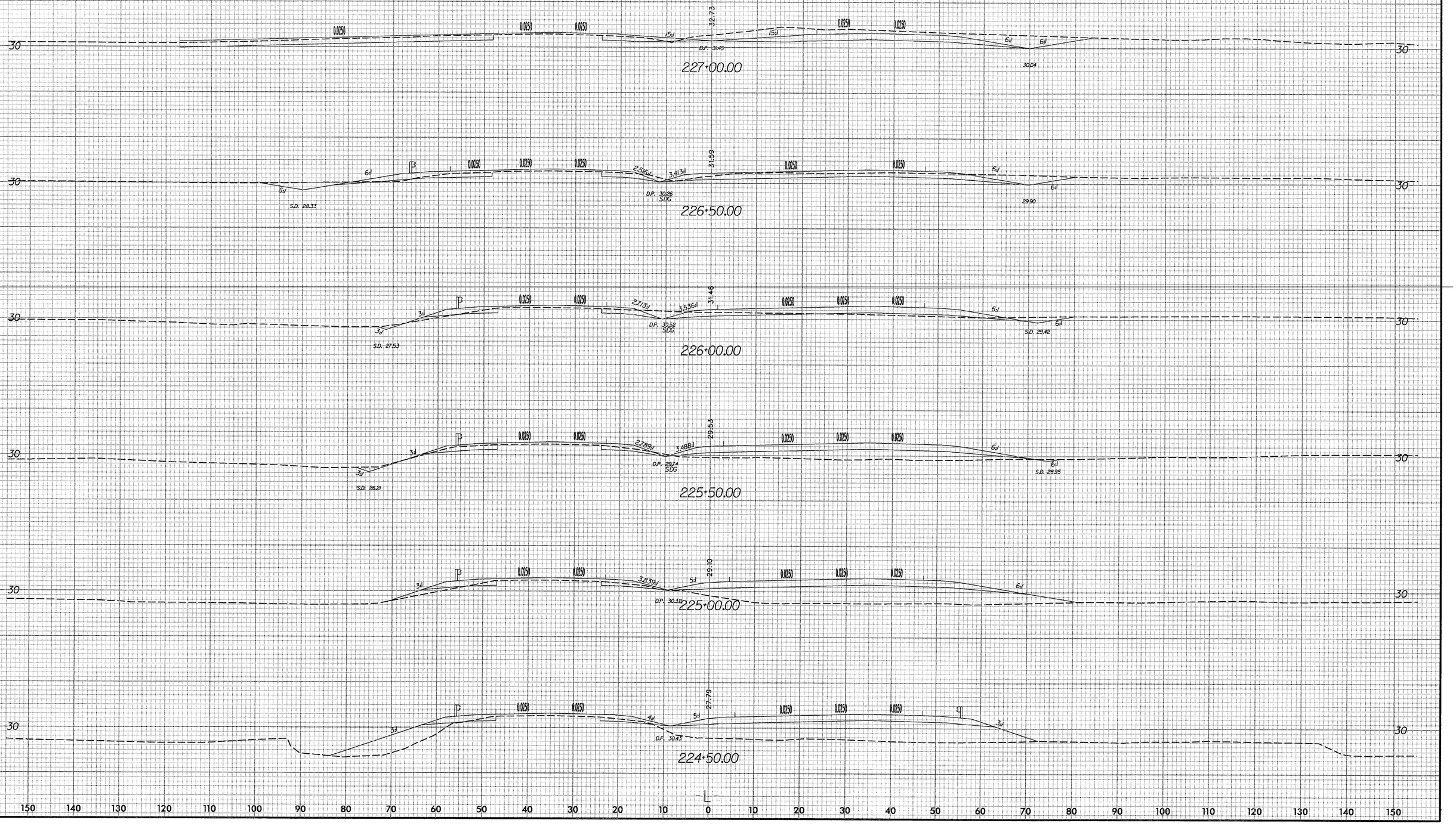

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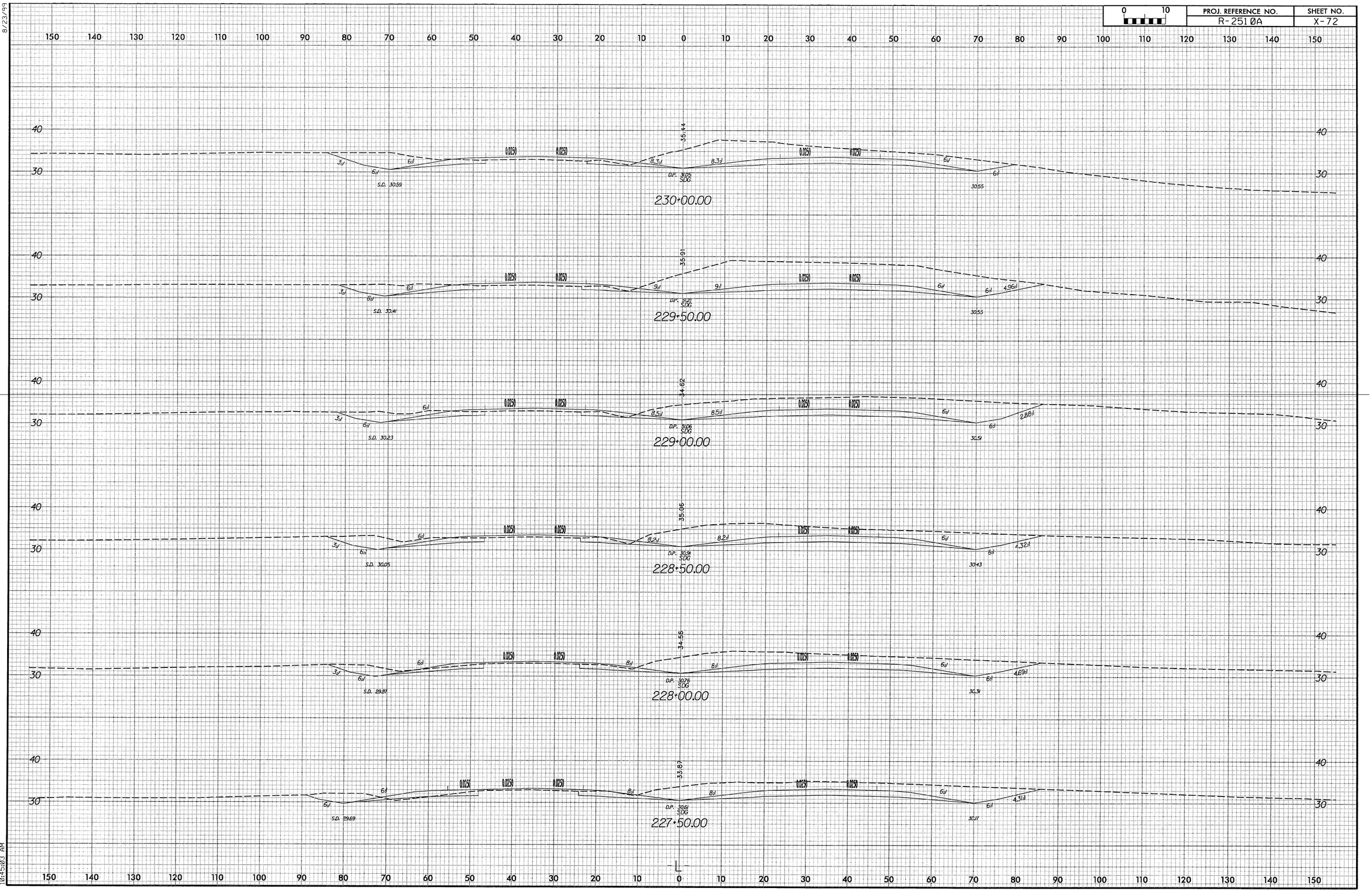
	R-2510A	X-72



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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-73

232+50.00

DET2 10 = 29.06

29.67

0.0054 0.0059 0.0050 6:1 5.668:1 0.0059 0.0105 3:1

D.P. 29.94

232+10.94

29.16

3.01d:1 6:1 6:1 0.0054 0.0059 0.0050 6:1 6:1 0.0059 0.0050 3:1

30.50

D.P. 29.93

232+00.00

28.91

3:1 6:1 6:1 0.0054 0.0059 0.0050 6:1 6:1 0.0059 0.0050 3:1

S.D. 29.81

D.P. 29.95

231+50.00

28.57

3:1 6:1 6:1 0.0059 0.0050 6:1 6:1 0.0059 0.0050 3:1

S.D. 30.11

D.P. 30.05

231+00.00

29.52

3:1 6:1 6:1 0.0059 0.0050 7.556d:1 7.556d:1 0.0059 0.0050 3:1

S.D. 30.42

D.P. 30.73 SDG

230+50.00

31.48

3:1 6:1 6:1 0.0059 0.0050 7.834d:1 7.834d:1 0.0059 0.0050 3:1

S.D. 30.72

D.P. 30.89 SDG

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

50 40 30

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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-74

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

50
40
30

3:1 6:1 3.90 0.0259 0.0259 4.422:1 33.13 7.842:1 0.0600 0.0600 6:1 6:1 3:1 S.D. 29.59 DET2 12+39.07 D.P. 30.59

234+50.00

50
40
30

3:1 6:1 3.28 0.0259 0.0259 4.448:1 30.87 6:1 0.0450 0.0450 3:1 DET2 11+89.06 D.P. 30.87

234+00.00

50
40
30

3:1 6:1 S.D. 30.42 0.0259 0.0259 5.441:1 28.54 6:1 0.0265 0.0265 3:1 DET2 11+39.06 D.P. 30.17

233+50.00

50
40
30

0.0354 0.0259 0.0259 5.973:1 28.78 6:1 0.0259 0.0280 3:1 DET2 10+89.06 D.P. 30.10

233+00.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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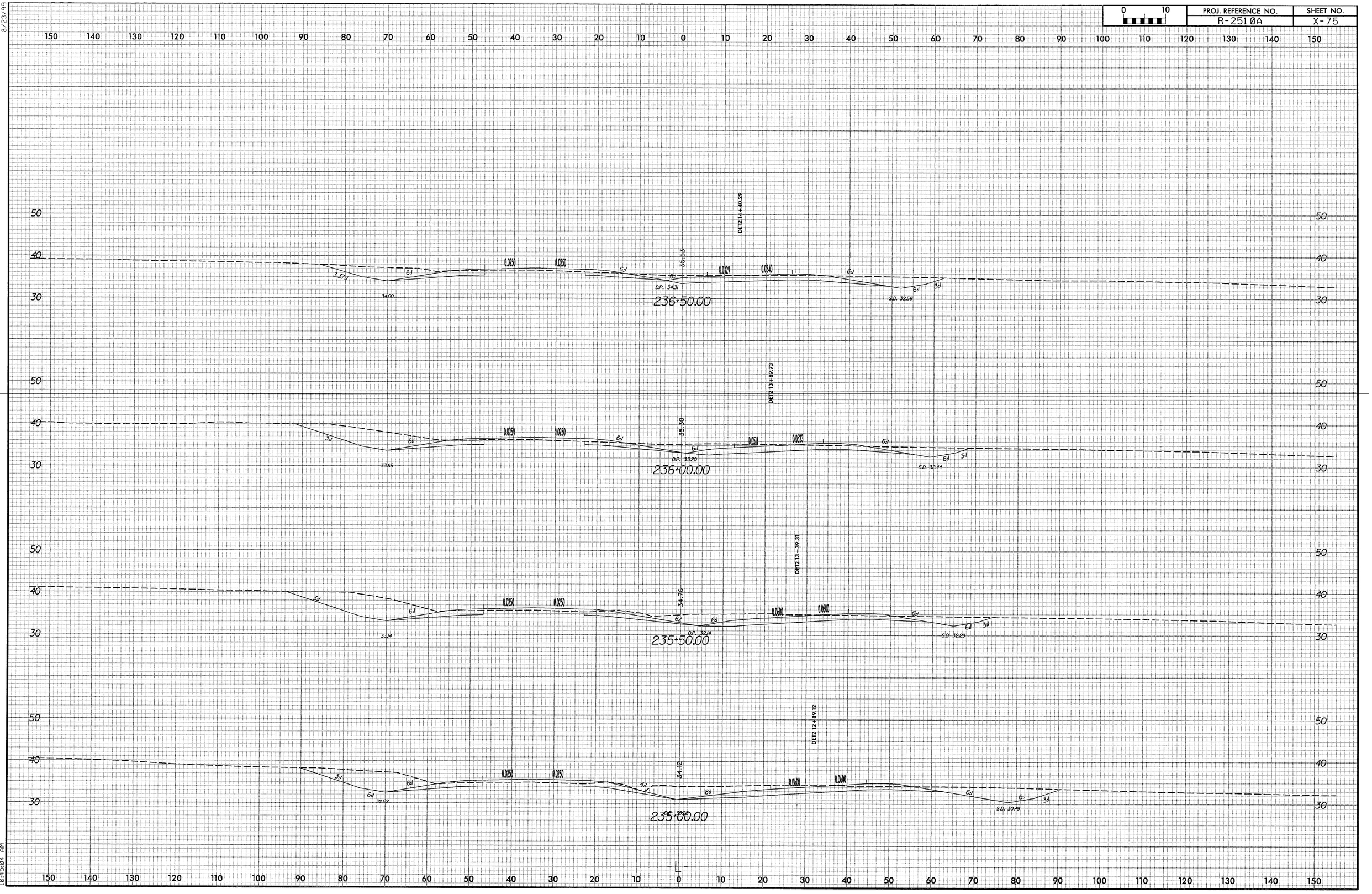
0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-75



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8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-76

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

50 40 30

DET2 16+42.57

0.025 0.025 0.0084 35.20

6:1 6:1 6:1 6:1

3.33:1 3374 3262

238+50.00

50 40 30

DET2 15+92.00

0.025 0.025 0.0215 0.0208 35.45

6:1 6:1 6:1 6:1

3.56:1 3405 3304

238+00.00

50 40 30

DET2 15+41.43

36.34

0.025 0.025 0.0022 0.0022

6:1 6:1 6:1 6:1 6:1 3:1

3.59:1 3420 D.P. 3565 S.D. 32.89

237+50.00

50 40 30

DET2 14+90.86

36.47

0.025 0.025 0.0148 0.0157

6:1 6:1 6:1 6:1 6:1 3:1

3.56:1 3418 D.P. 35.26 S.D. 3274

237+00.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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03/15/2005
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8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-77

240+65.00

S.D. 29.87 — 6:1 — 3:1 — 0.0250 — 0.0530 — 6:1 — 6:1 — 3:1 — S.D. 28.59 — 32.01

DET2.18+43.65

240+50.00

S.D. 30.36 — 6:1 — 3:1 — 0.0250 — 0.0584 — 6:1 — 6:1 — 3:1 — S.D. 29.14 — 32.35

DET2.17+93.61

240+00.00

S.D. 32.00 — 6:1 — 3:1 — 0.0250 — 0.0600 — 6:1 — 6:1 — S.D. 30.86 — 31.56 — 35.32

DET2.17+43.47

239+50.00

32.69 — 6:1 — 3:1 — 0.0250 — 0.0600 — 6:1 — 6:1 — 32.36 — 32.24

DET2.16+93.12

239+00.00

33.27 — 6:1 — 3:1 — 0.0250 — 0.0598 — 6:1 — 6:1 — 32.03 — 34.07

L

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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-78

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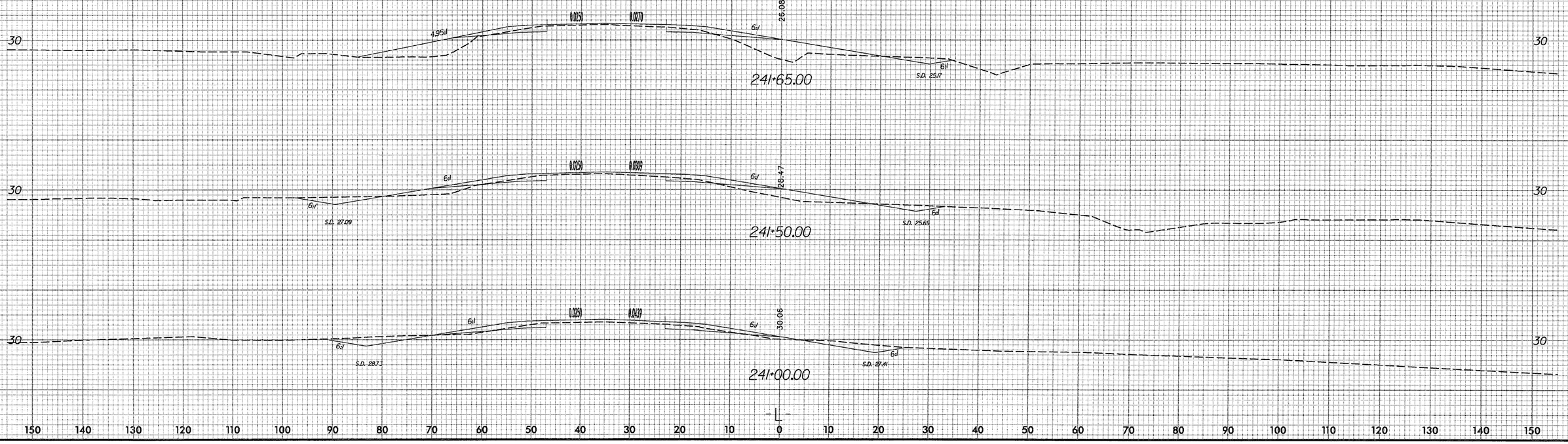

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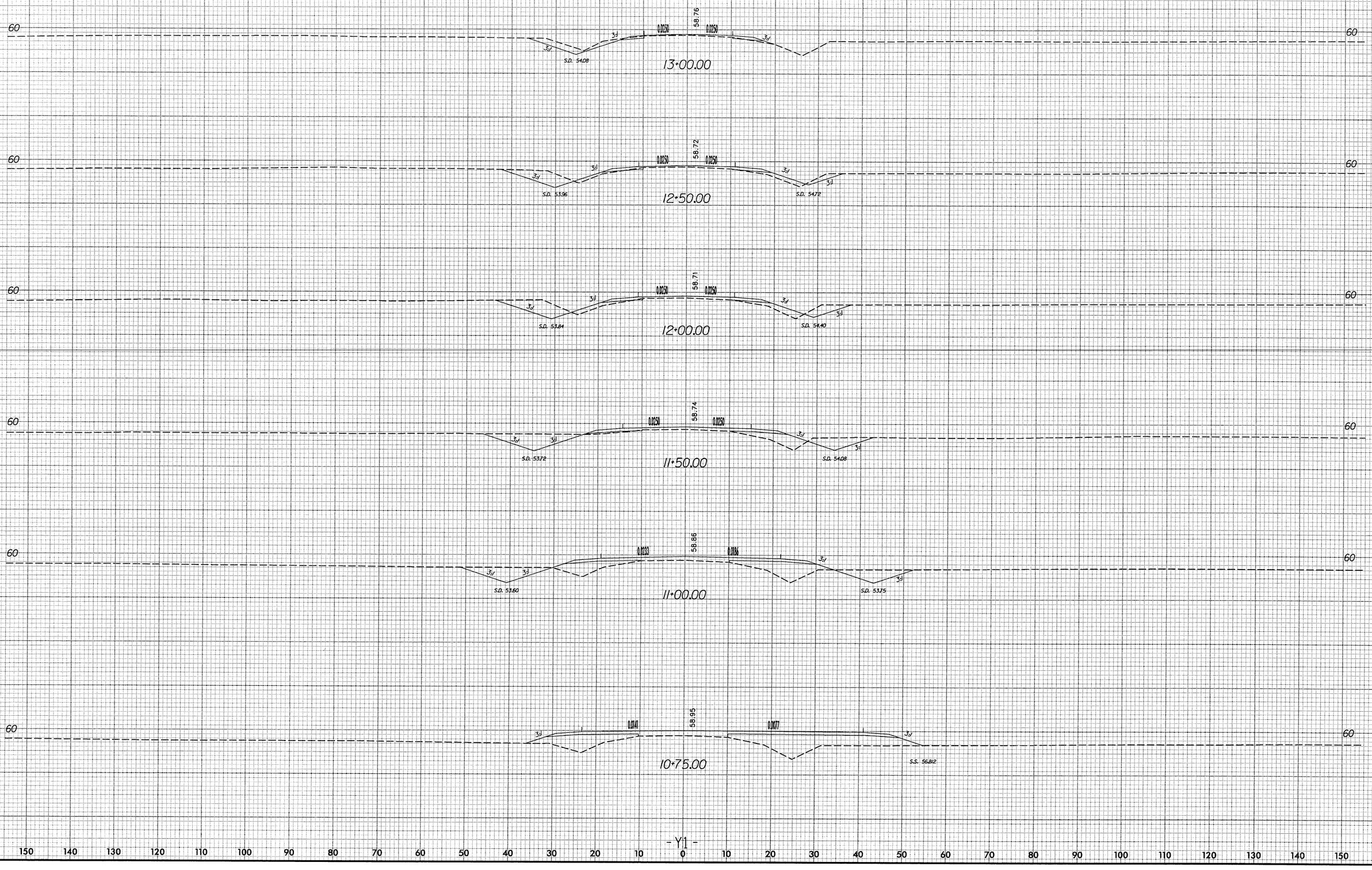
	R-2510	X-79



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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-80

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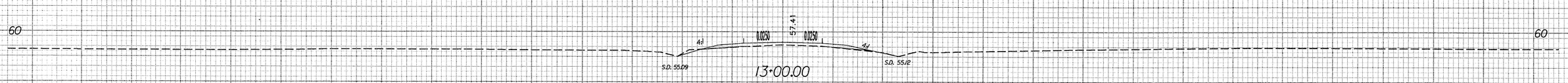

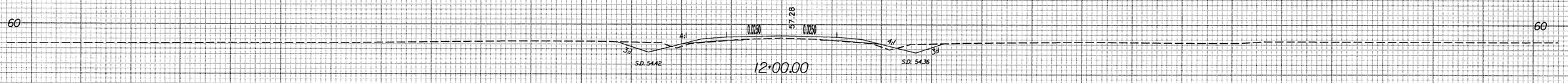

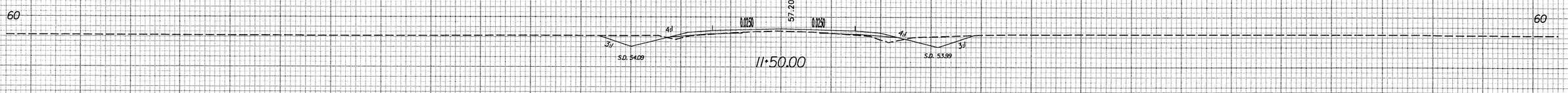

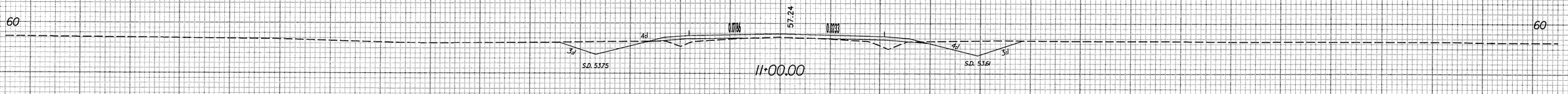

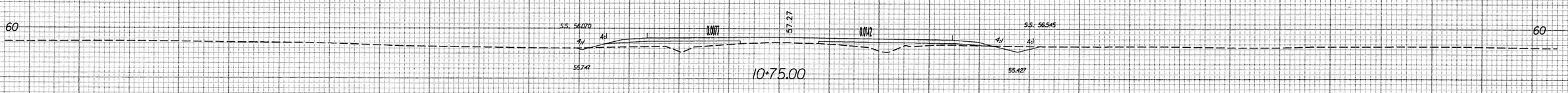

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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510	X-81

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

60

59.19

0.025Ø 0.025Ø

4:1 4:1 3:1 3:1

S.D. 56.85 S.D. 56.77

13+50.00

60

59.06

0.025Ø 0.025Ø

4:1 4:1 3:1 3:1

S.D. 56.72 S.D. 56.56

13+00.00

60

59.97

4:1 4:1 3:1

S.D. 56.50

12+50.00

60

58.86

DRIVEWAY

S.D. 56.47

12+00.00

60

58.67

DRIVEWAY

S.D. 56.14

11+50.00

60

58.40

S.D. 56.21

11+00.00

-Y3-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510	X-82

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

60

58.29

17+00.00

60

58.89

16+50.00

60

59.80

16+00.00

60

60.13

0.0126 0.0185

4:1 3:1 4:1 3:1

57.10 57.16

15+50.00

60

60.30

0.0250 0.0250

4:1 3:1 4:1 3:1

57.24 57.24

15+00.00

60

59.55

0.0250 0.0250

4:1 3:1 4:1 3:1

S.D. 57.11 S.D. 57.18

14+50.00

60

59.36

0.0250 0.0250

4:1 3:1 4:1 3:1

S.D. 56.98 S.D. 56.97

14+00.00

-Y3-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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	R-2510	X-83

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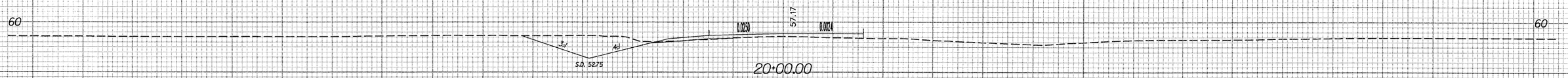

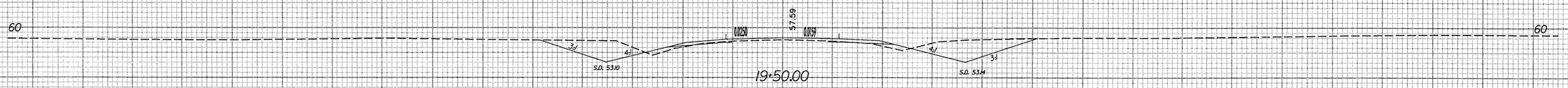

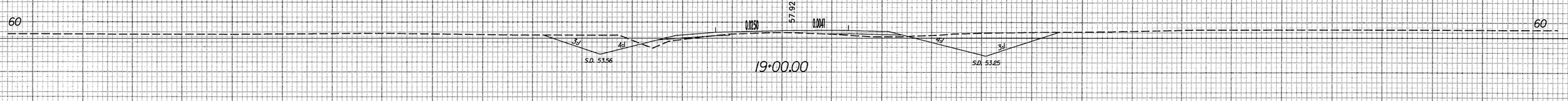

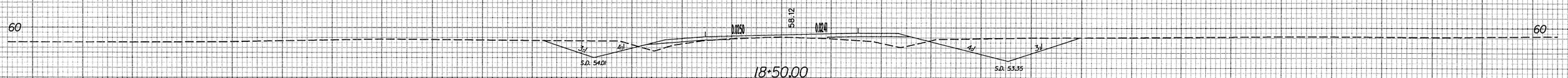

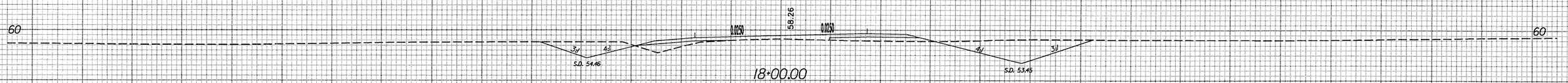

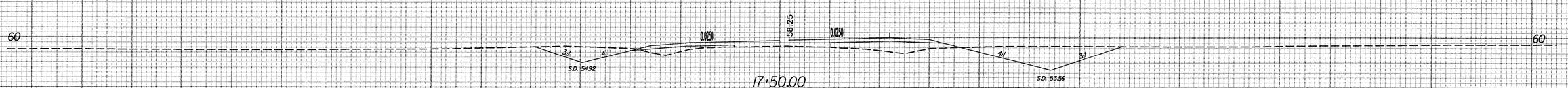

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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510	X-84

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

60

60

55.82

S.D. 52.20

21+00.00

60

60

56.65

0.0250

0.0217

3:1

4:1

S.D. 52.18

20+50.00

-Y3-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	X-85

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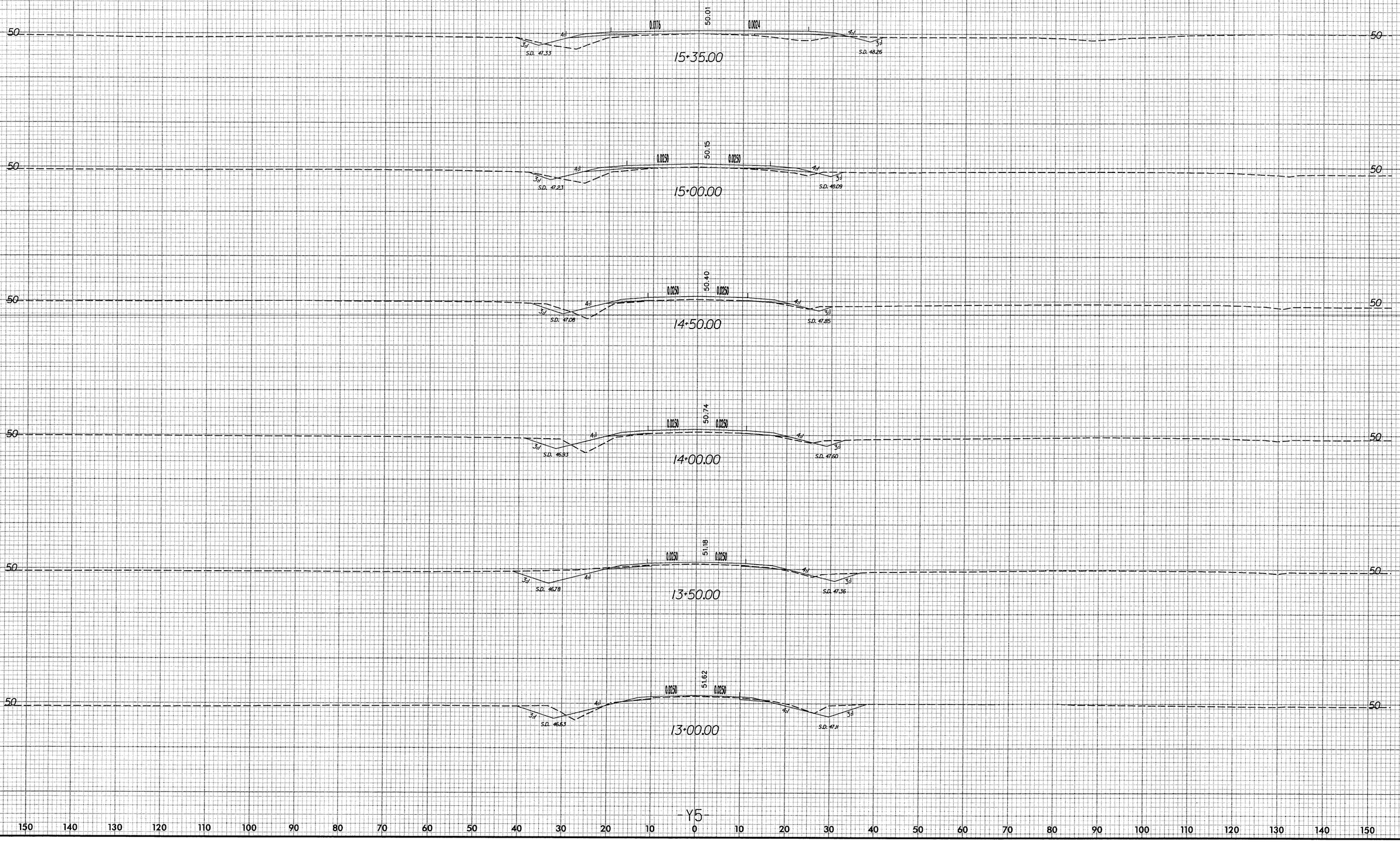

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150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510	X-86

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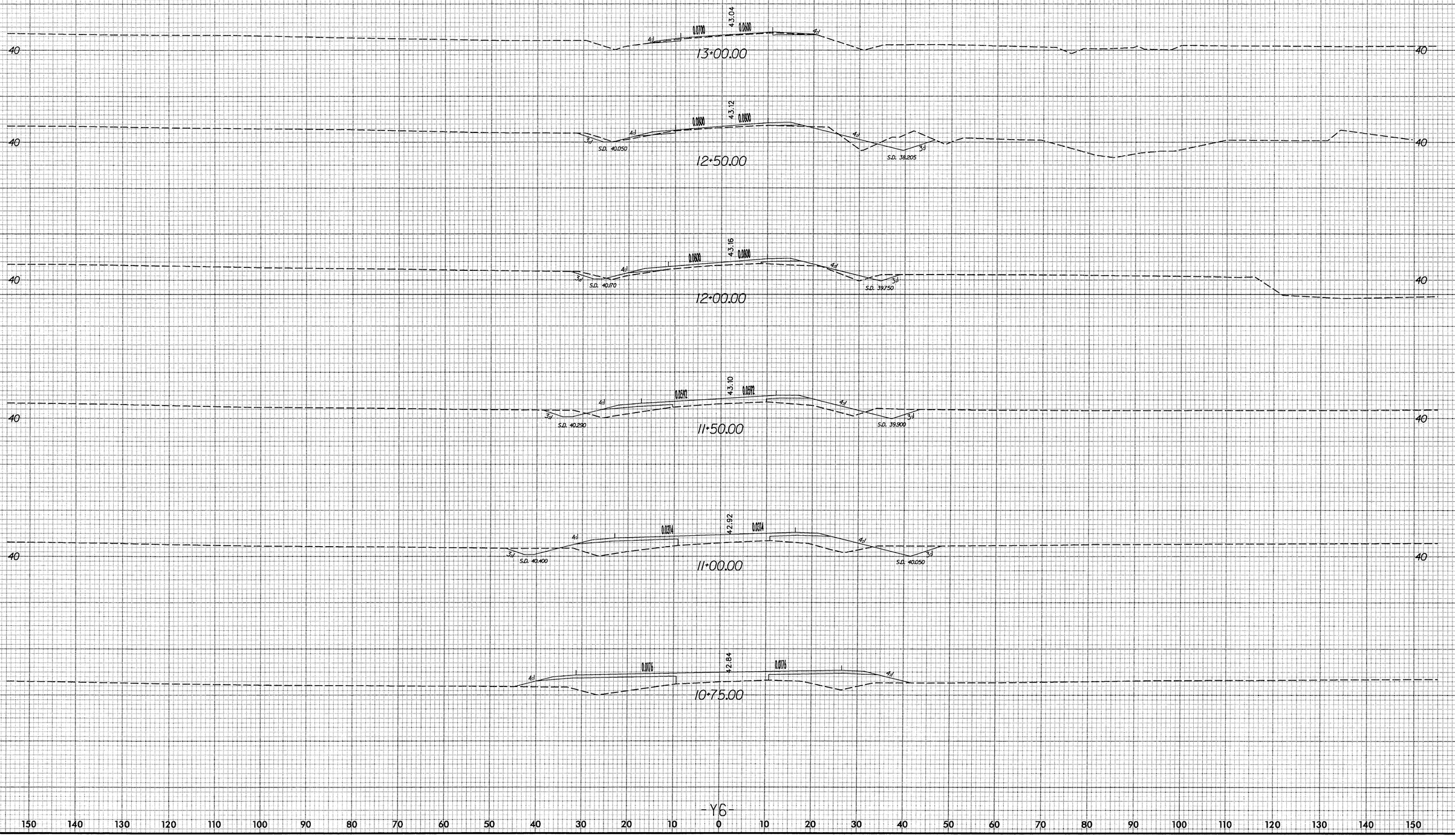

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150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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