

Restoring the Pre-Development Hydrologic Regime in the Picayune Strand Restoration Project Area

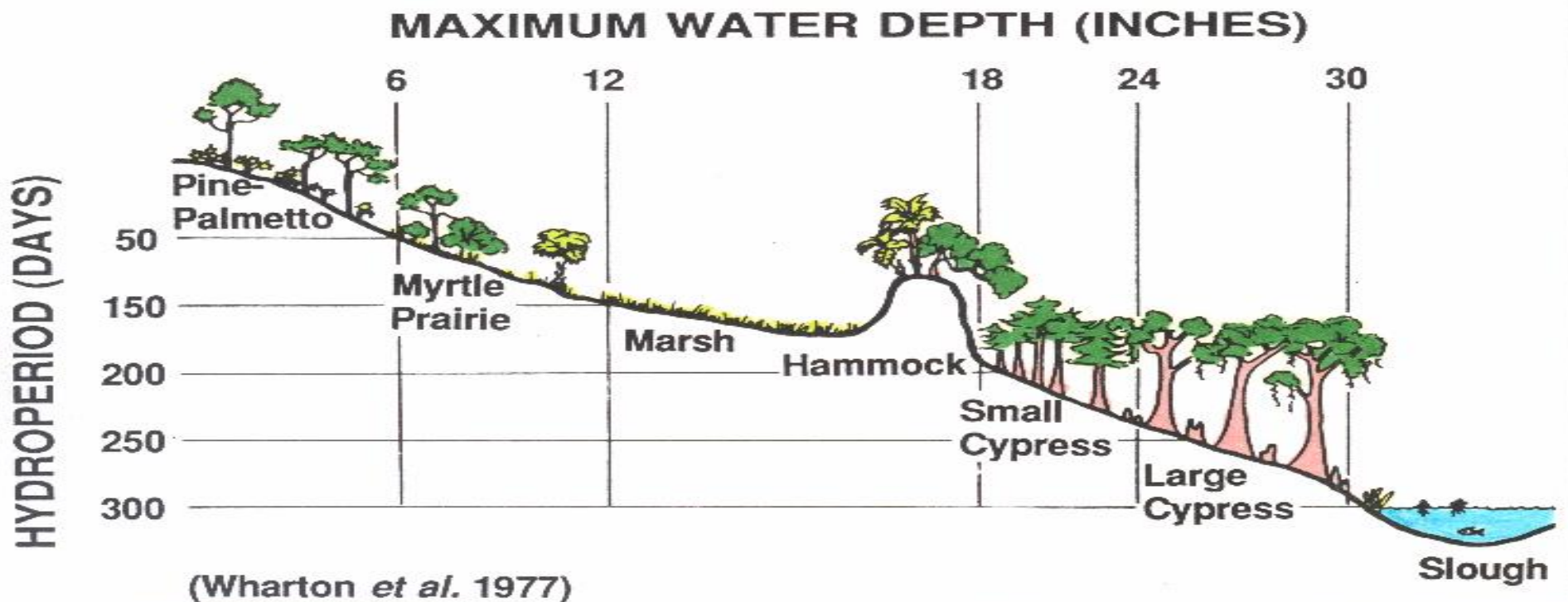
**Michael Duever
Natural Ecosystems**



Ecological Criteria for Picayune Restoration

- Full Range of Wetland Communities Exists Over a 24 in Topographic Gradient

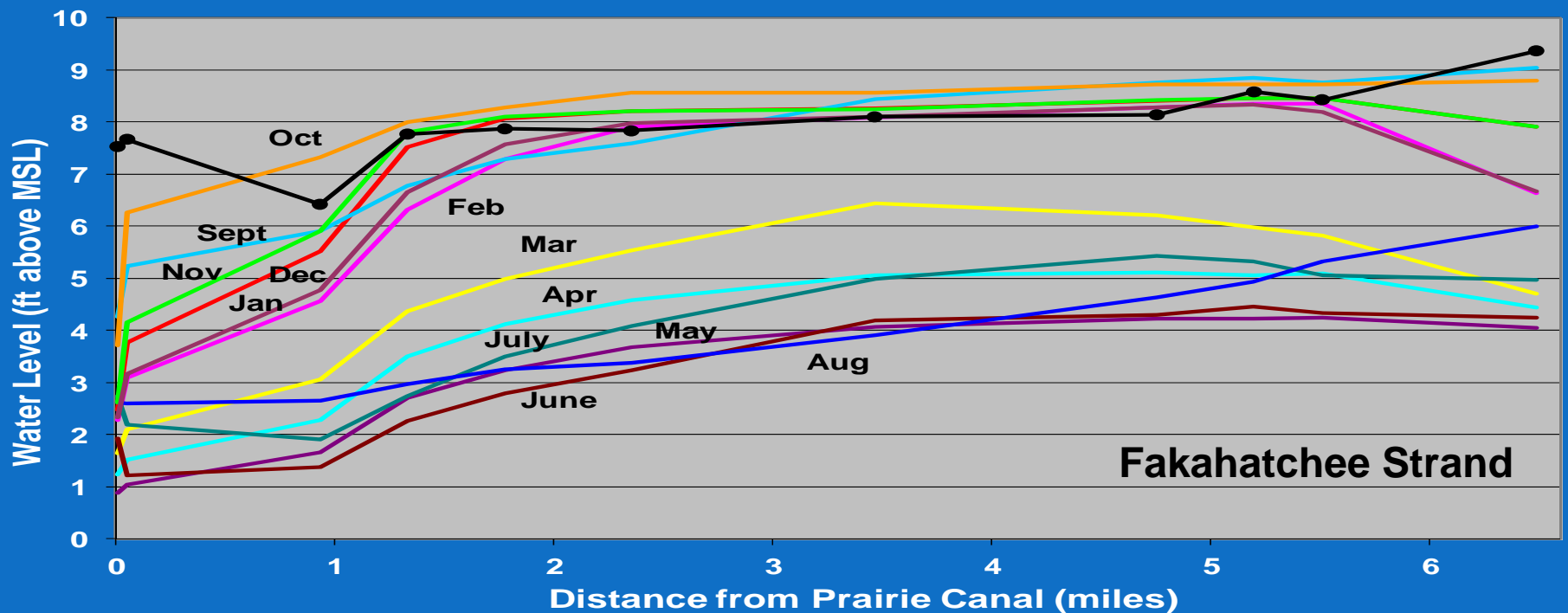
HYDROPERIODS AND MAXIMUM WATER DEPTHS



Ecological Criteria for Picayune Restoration

- Substrates are Very Porous with 2-5 ft Water Table Drawdowns Extending Miles from Canal

2000 Monthly Water Table Profiles - North Transect Wells



Hydrologic Restoration

- **Sheet flow is Key to Restoration**
 - **Remove All Unnaturally Elevated Substrates**
 - Roads
 - Logging Trams
 - Home Sites
 - Spoil Associated with Roads and Canals
 - **Eliminate Wet Season Surface Water Drainage**
 - Plug Canals
 - **Eliminate Dry Season Groundwater Drainage**
 - Fill Most of Length of Canals

Strategy To Restore Sheetflow

- Remove Vegetation from Roads, Logging Trams, and Canals to Expose Elevated Spoil
- Degrade Spoil and Place Excess Above-Natural-Grade Spoil Material in Canals
- **Minimal Area Has Been Impacted**

Contract Documents

- **Develop Specifications That Allow for Realistic Cost Estimates**
- **Spoil Covered with 40 Years Growth of Vegetation**
 - **What is Spoil and What is Vegetation**





Road







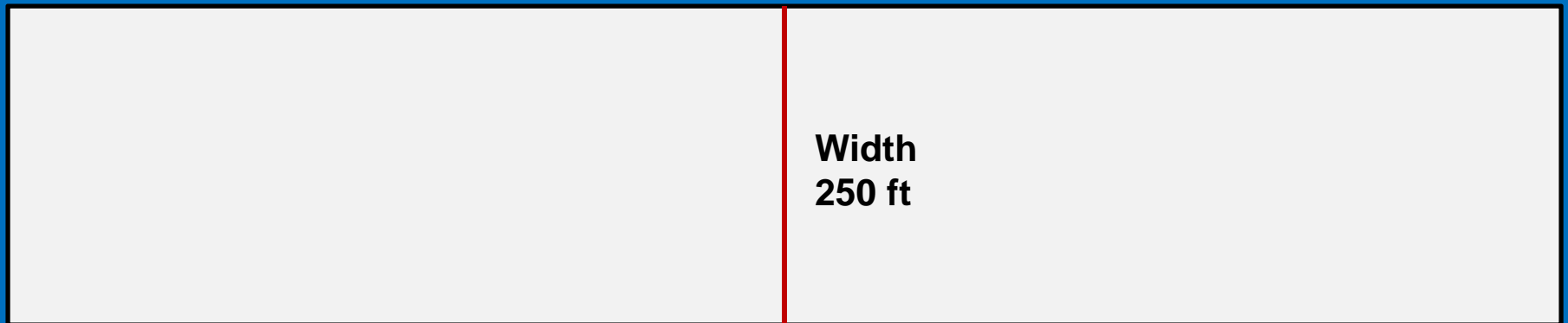
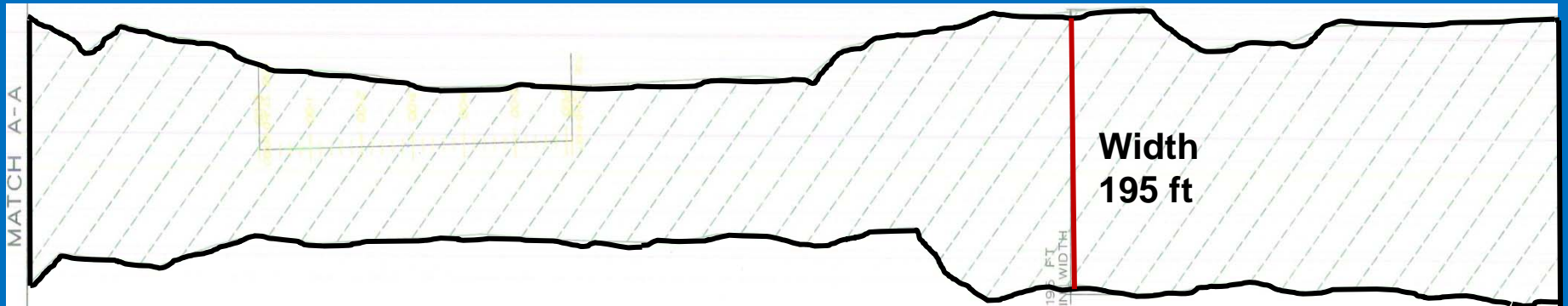
Contract Documents

- Originally Surveyed for Spoil Only 75 ft from Road Centerline
 - Subsequently Agreed to **Approximately** 250 ft Width of Clearing, But Clearing Should not Extend Beyond Where the Spoil Ended
 - Also, Clearing Was not Necessarily Based on the Road Centerline

**Width of Clearing - To Outside Edge of Spoil
Approximately 250 ft**

First Contractor – Paid by the Linear Foot of Road

Second Contractor – Paid by the Acre of Cleared Area

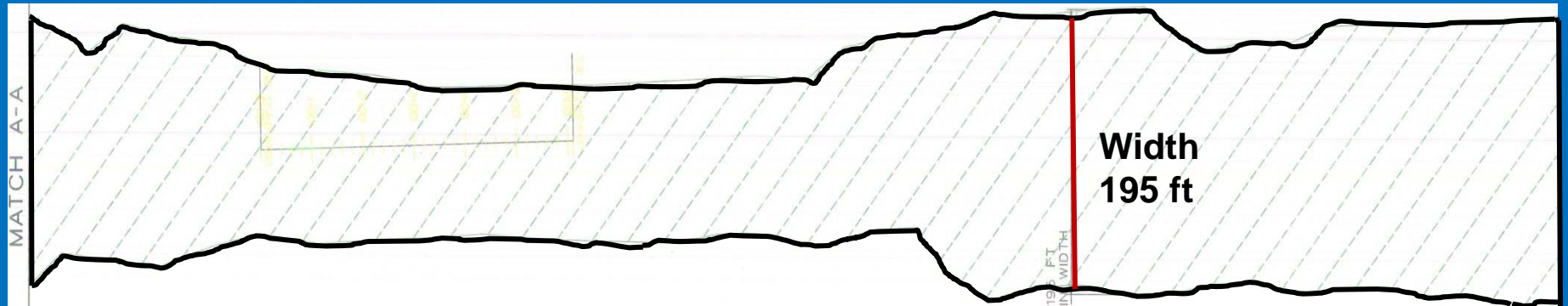


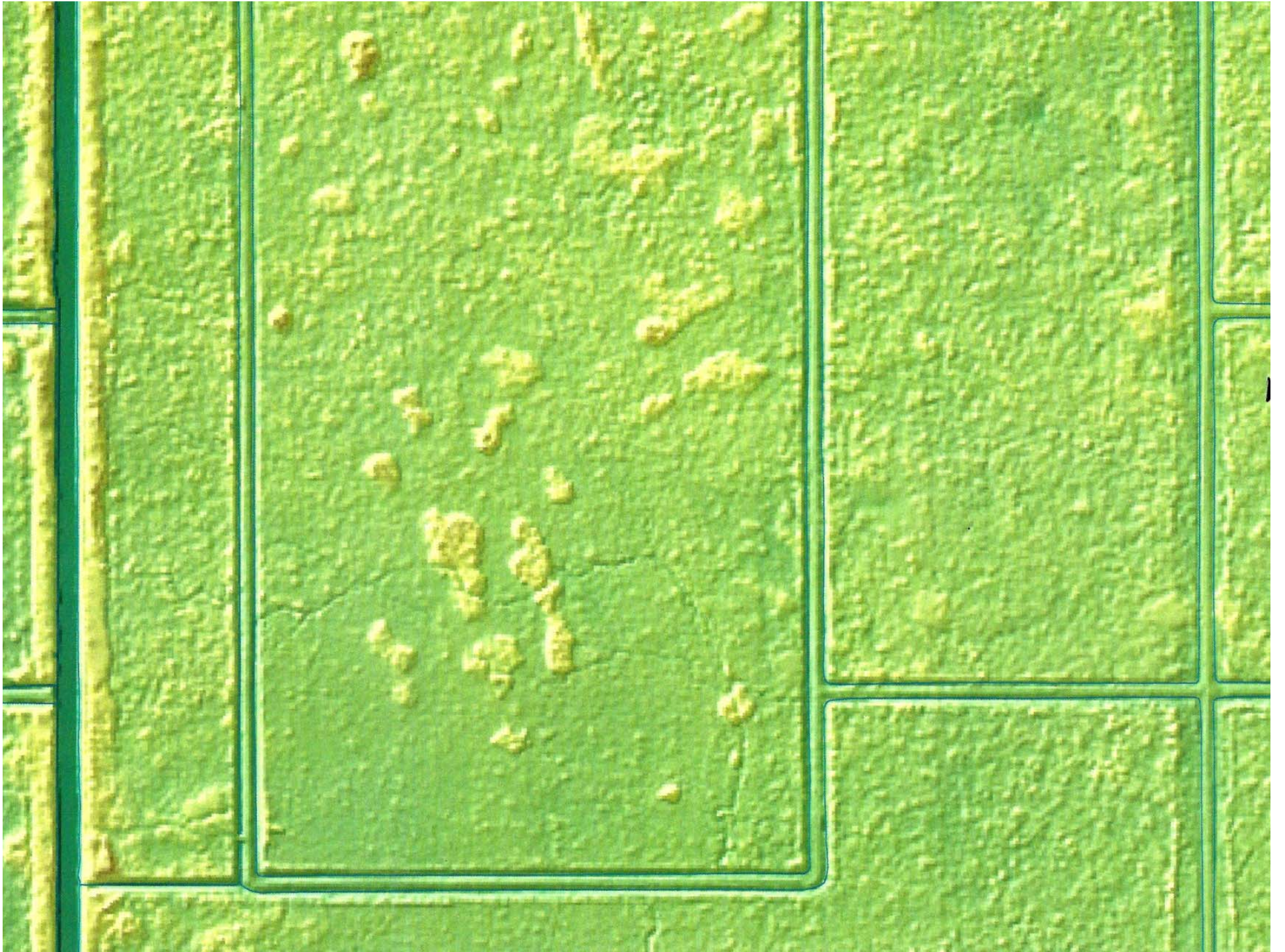


Width of Clearing - To Outside Edge of Spoil Approximately 250 ft

First Contractor – Paid by the Linear Foot of Road

Second Contractor – Paid by the Acre of Cleared Area







115 ft

140 ft

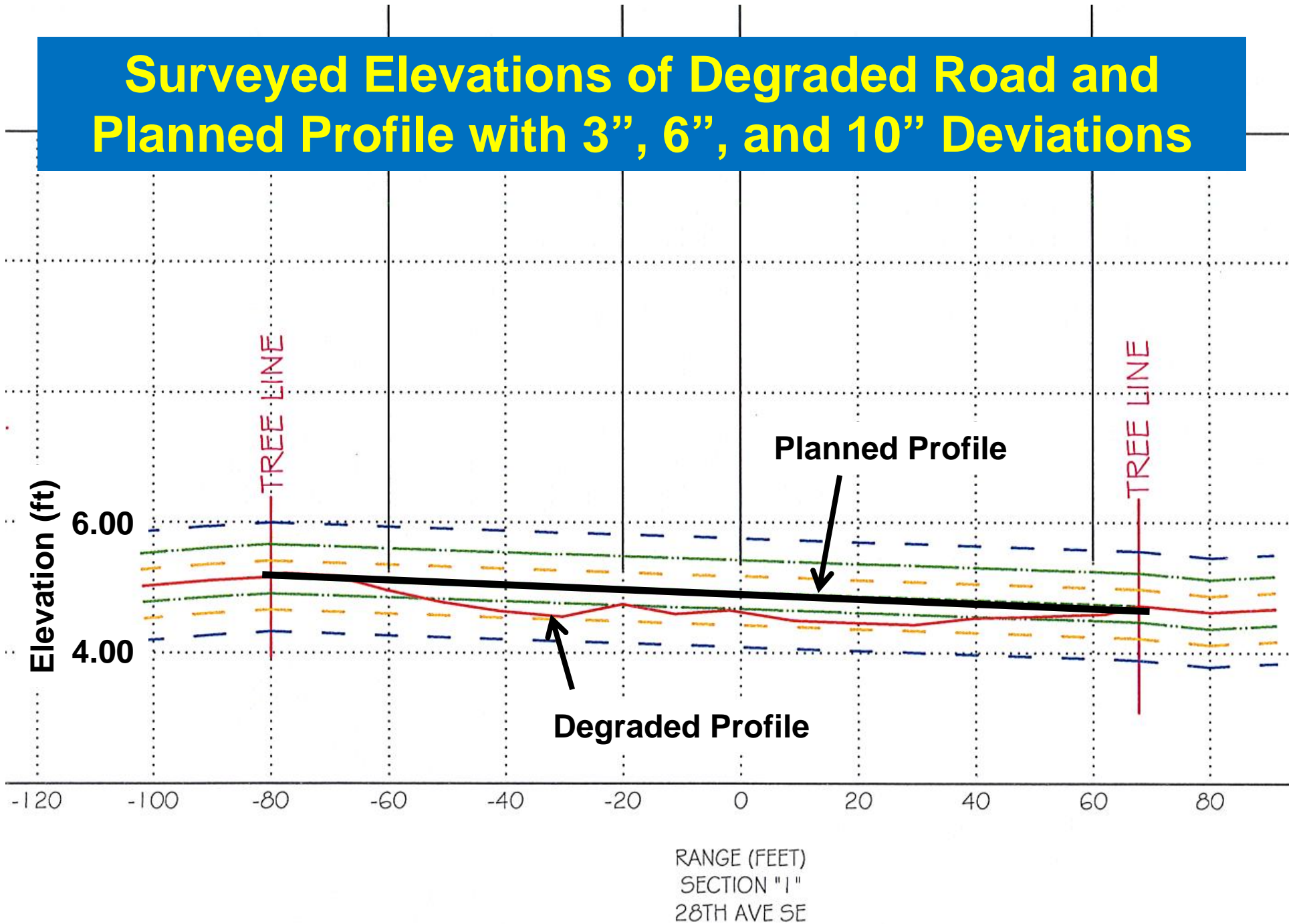
200 ft

245 ft

Contract Documents

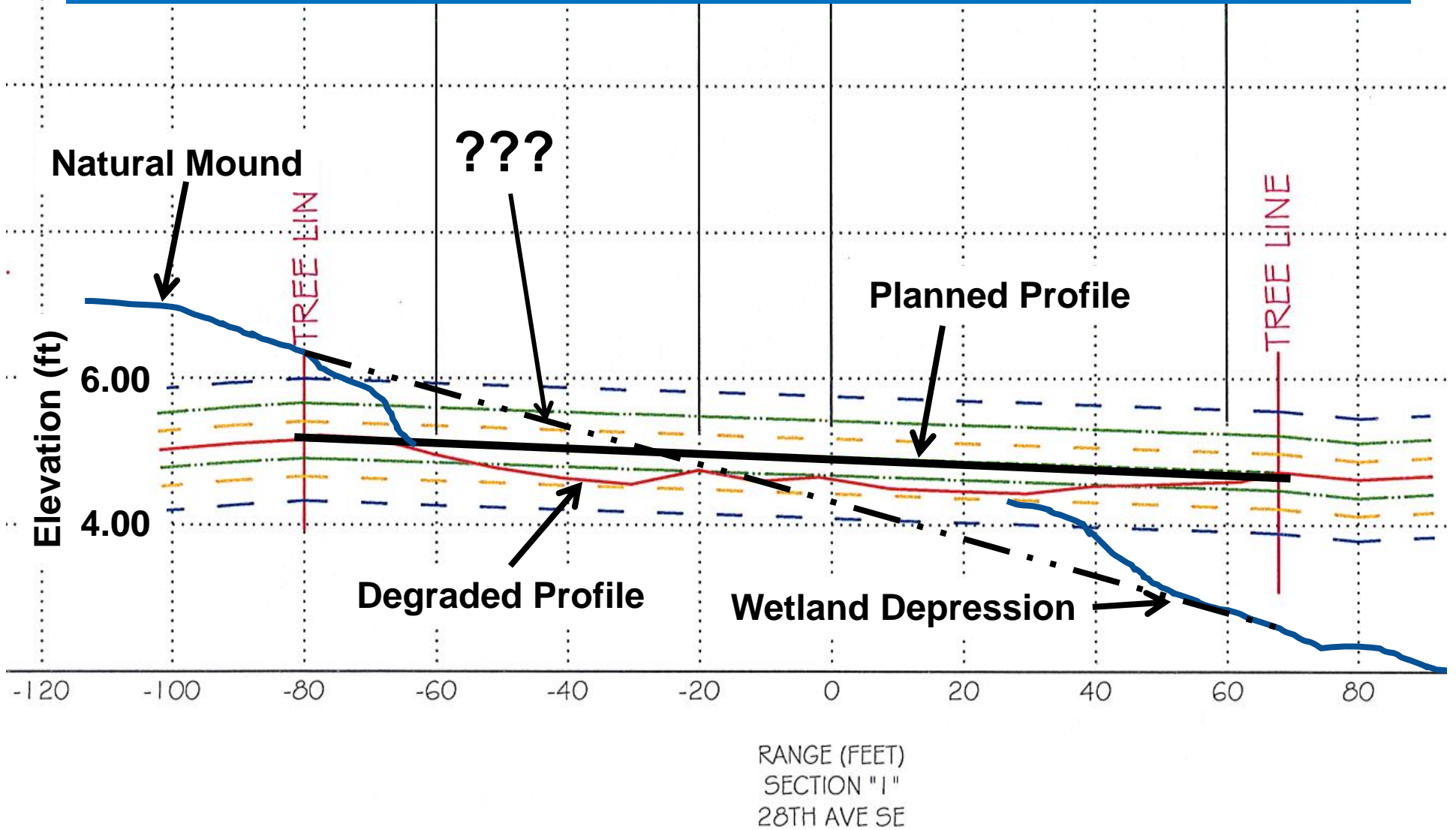
- Specified the Roads would be Graded to Between ± 3 and ± 10 inches along a Straight Line Between Natural Grade on the Two Sides of Cleared Footprint

Surveyed Elevations of Degraded Road and Planned Profile with 3", 6", and 10" Deviations

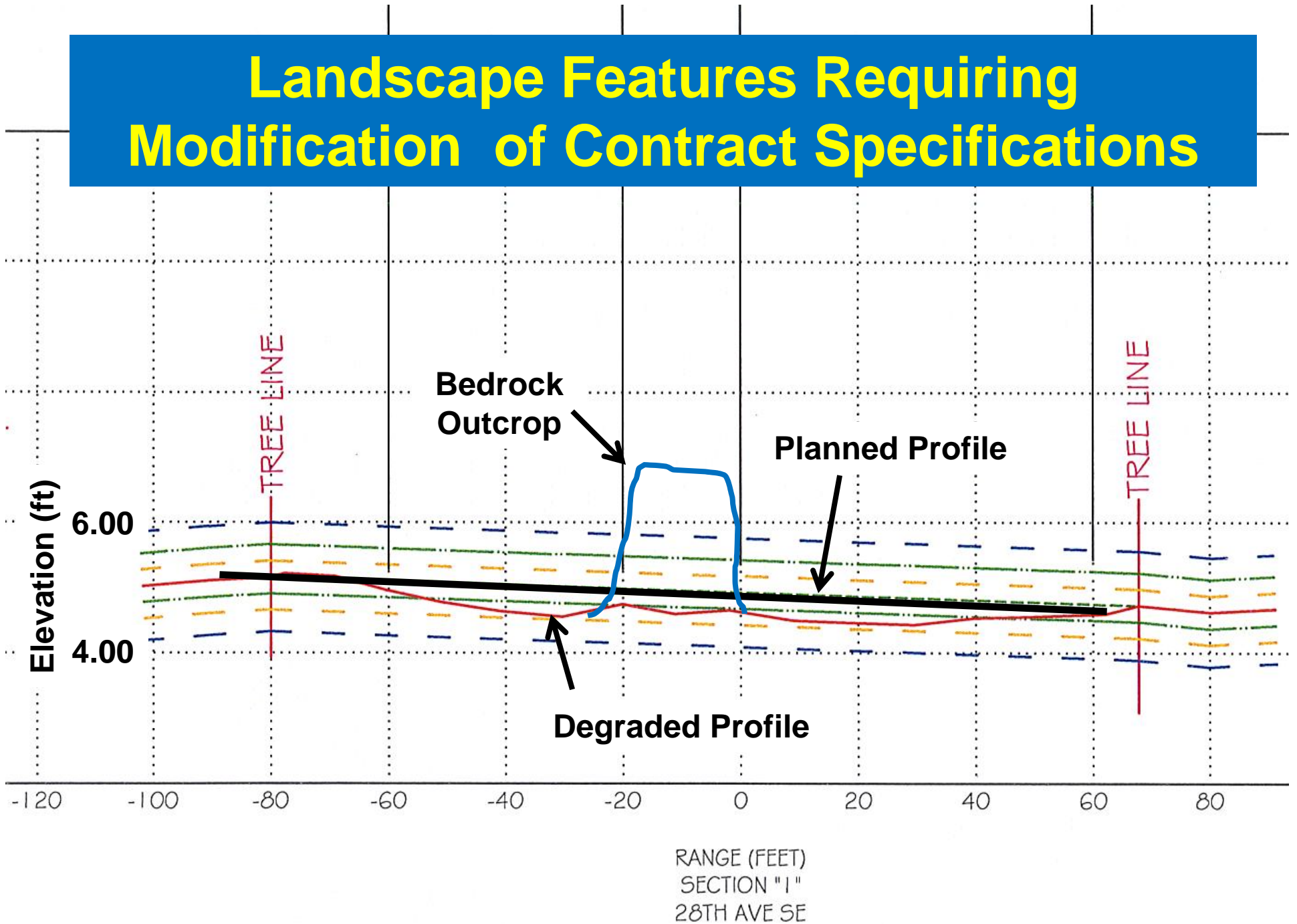




Landscape Features Requiring Modification of Contract Specifications



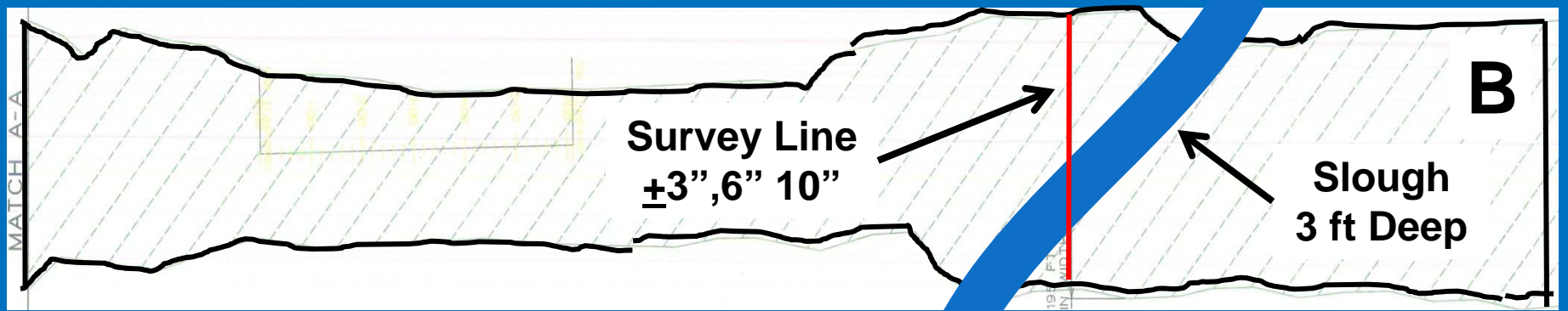
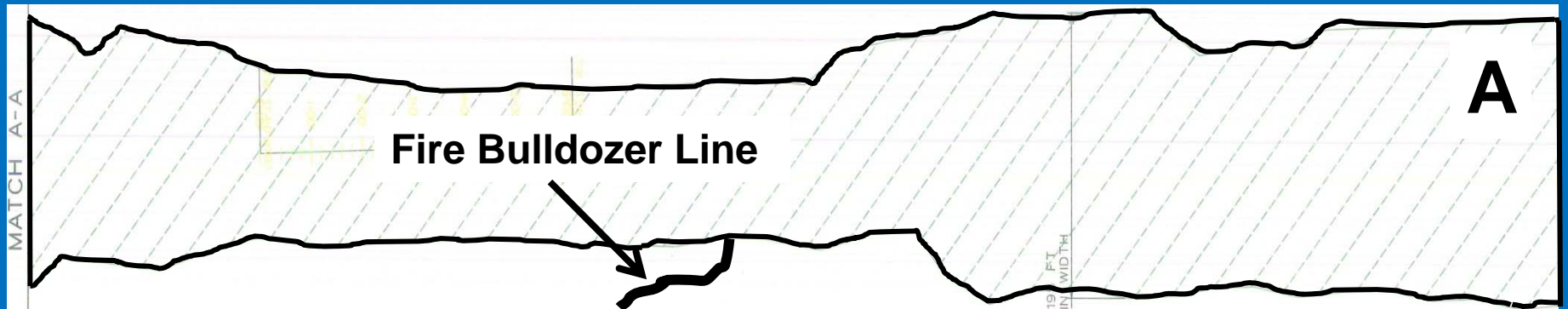
Landscape Features Requiring Modification of Contract Specifications



Landscape Features Requiring Modification of Contract Specifications

A. Fire Dozer Line Spoil Berm Not Part of Project

B. Wetland Slough Crossing the Road



Merritt Canal





1.6 PLUG CANALS

INSTALL CANAL PLUGS ON MERRITT CANAL AT THE FOLLOWING LOCATIONS:

56TH AVE. S.E.	92ND AVE. S.E.	126TH AVE. S.E. & PATTERSON BLVD
58TH AVE. S.E.	94TH AVE. S.E.	126TH AVE. S.E./PRARIE CANAL(1)
60ND AVE. S.E.	96TH AVE. S.E.	126TH AVE. S.E./PRARIE CANAL(2)
62ND AVE. S.E.	98TH AVE. S.E.	128TH AVE. S.E./LYNCH BLVD
64TH AVE. S.E.	100TH AVE. S.E.	130TH AVE. S.E.
66TH AVE. S.E.	102ND AVE. S.E.	132ND AVE. S.E.
68TH AVE. S.E.	104TH AVE. S.E.	134TH AVE. S.E.
69TH AVE. S.E.	106TH AVE. S.E.	N: 603478.47 E: 493803.74
70TH AVE. S.E.	108TH AVE. S.E.	N: 603457.48 E: 491921.80
72ND AVE. S.E.	110TH AVE. S.E.	N: 603426.67 E: 490043.69
74TH AVE. S.E.	112TH AVE. S.E.	N: 614014.77 E: 504592.97
76TH AVE. S.E.	114ND AVE. S.E.	N: 614002.40 E: 503271.06
78TH AVE. S.E.	116TH AVE. S.E.	N: 613978.88 E: 501951.59
80TH AVE. S.E.	118TH AVE. S.E.	N: 613965.90 E: 500669.94
82ND AVE. S.E.	120TH AVE. S.E.	N: 612906.48 E: 500552.51
84TH AVE. S.E.	122ND AVE. S.E.	N: 611577.30 E: 500550.47
86TH AVE. S.E.	124TH AVE. S.E.	N: 610266.35 E: 500534.88
88TH AVE. S.E.	126TH AVE. S.E.	N: 608860.73 E: 500530.30
90TH AVE. S.E.		

FILL FOR CANAL PLUGS SHALL BE OBTAINED FROM BERM AND ROAD DEGRADING. SEE CONSTRUCTION DRAWINGS FOR PLUG DETAILS AND ACTUAL GRID LOCATIONS.

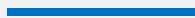
CONTRACTOR SHALL DEGRADE ALL SPOIL PILES ALONG CANAL. THIS MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CANAL PLUGS.

Picayune Logging Trams (~40 Miles)

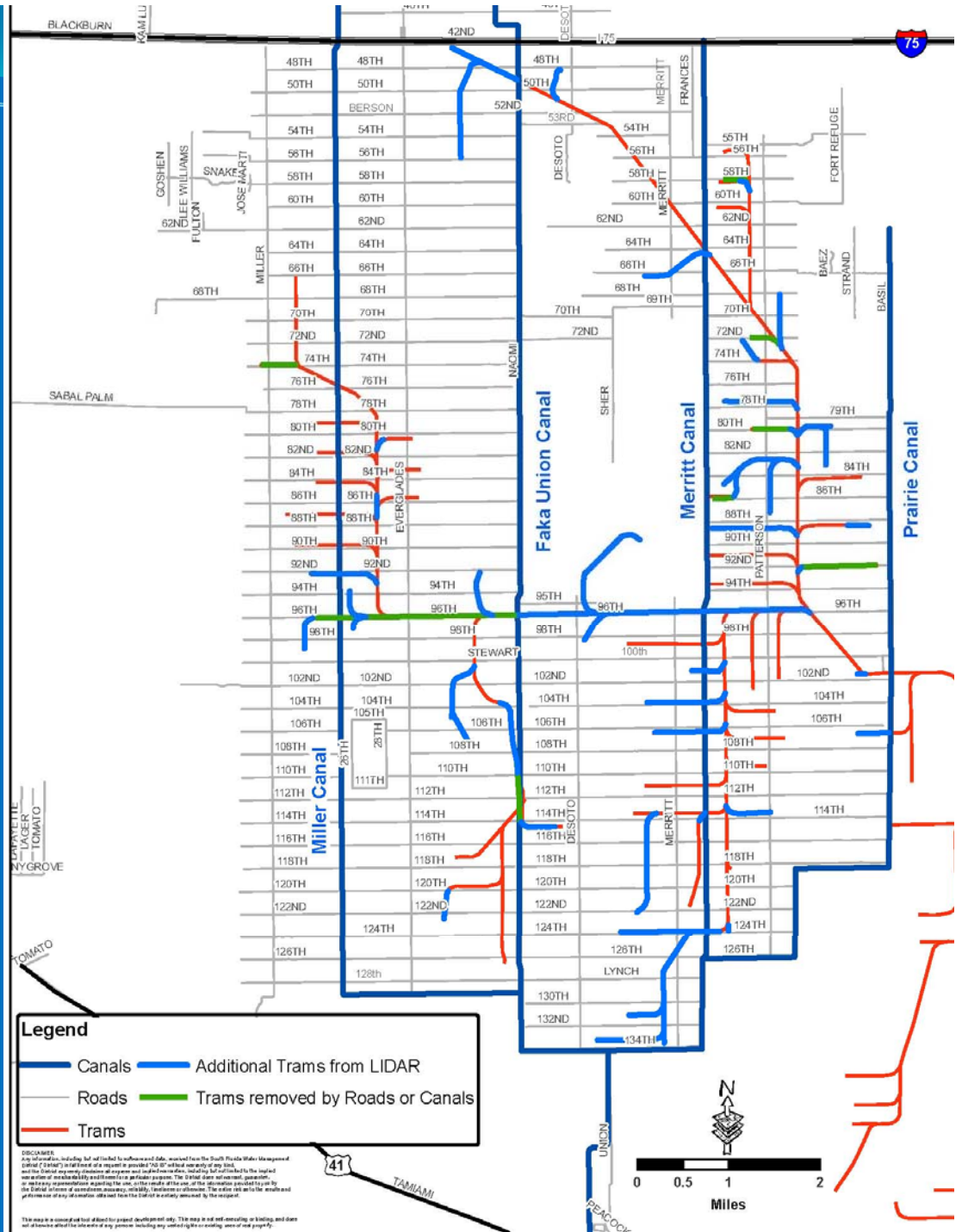
Found by Contractor



I Located Them



Eliminated by Road or Canal Construction



Knowledgeable Staff

- **Know Natural Characteristics and Processes Being Restored**
- **Understand Project Goals and Design**
- **Regular and Consistent Involvement in Construction Activities**
- **Can Handle Working in Remote Areas and Sometimes Very Uncomfortable Conditions**



Need to Think Long Term