

PLAN SYMBOLS

STATE LINE	---
COUNTY LINE	---
TOWNSHIP OR RANGE LINE	---
SECTION LINE	---
QUARTER LINE	---
SIXTEENTH LINE	---
EXISTING RIGHT OF WAY LINE	---
PROPOSED RIGHT OF WAY LINE	---
PROPERTY LINE	---
CORPORATE OR CITY LIMITS	---
RAILROAD	---
RAILROAD RIGHT-OF-WAY	---
RIVER OR CREEK	---
CULVERT	---
GUARDRAIL	---
WOOD FENCE	---
BARBED WIRE FENCE	---
WOVEN WIRE FENCE	---
CHAIN LINK FENCE	---
TIMBER WALL	---
STONE WALL	---
HEDGE	---
RAILROAD CROSSING SIGN	---
CROSSING GATE	---
MEANDER CORNER	---
SLOPE EASEMENT (CONST. LIMITS)	---
MARSH	---
DECIDUOUS TREE	---
CONIFEROUS TREE	---
BUSH OR SHRUB	---
WOODS	---
CATCH BASIN	---
BRIDGE	---
IRON PIPE OR ROD	---
MONUMENT (STONE, CONCRETE OR METAL)	---
WOODEN HUB	---

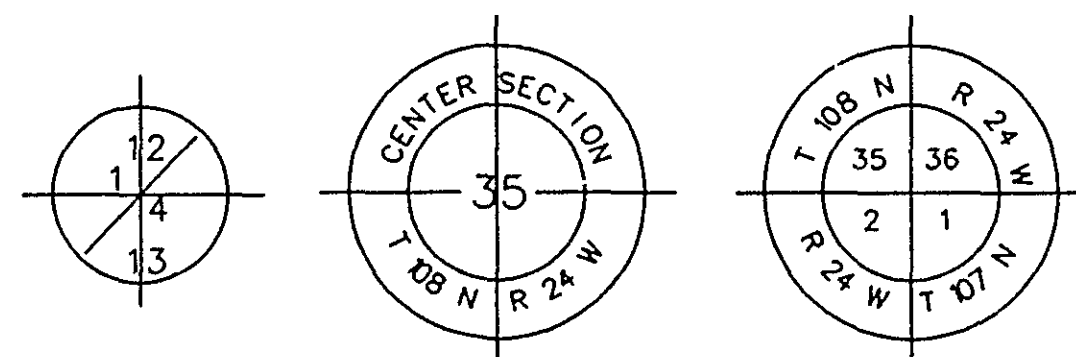
UTILITY SYMBOLS

UTILITY POLE	---
GUY OR ANCHOR	---
STREET LIGHT	---
TELEPHONE PEDESTAL	---
GAS MAIN	---
WATER MAIN	---
TELEPHONE VAULT	---
ELECTRIC VAULT	---
TELEPHONE CABLE	---
ELECTRIC CABLE	---
STORM SEWER	---
SANITARY SEWER	---
SEWER MANHOLE	---
GATE VALVE	---
CONTROLLER CABINET	---
EXISTING HYDRANT	---
CABLE TELEVISION-BURIED	---
FIBER OPTIC CABLE	---
TRAFFIC SIGNAL LINE	---
TRAFFIC SIGNAL HAND HOLE	---

FOR PLANS AND UTILITIES SYMBOLS SEE
MN/DOT TECHNICAL MANUAL.

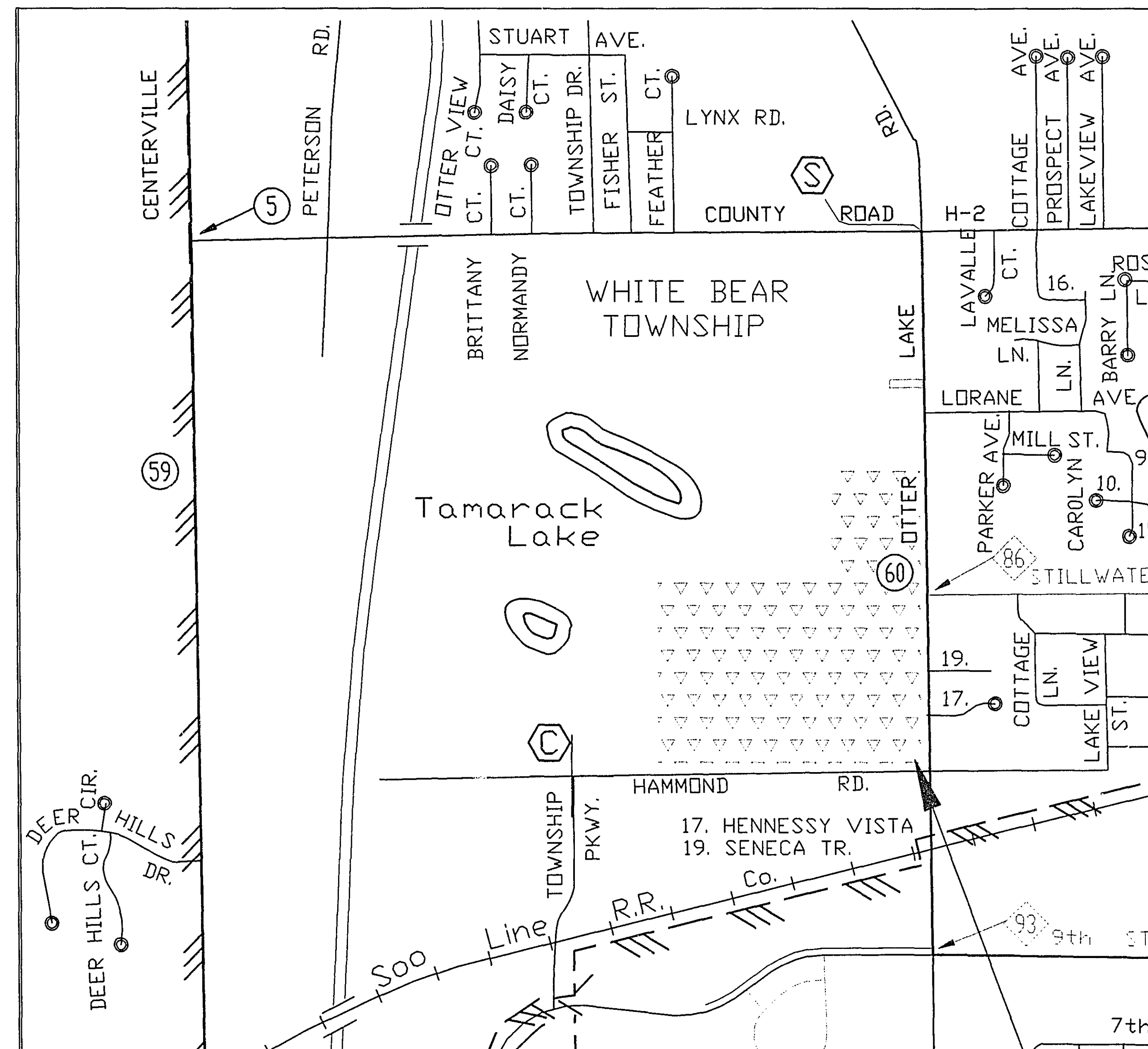
-GOVERNING SPECIFICATIONS-

THE 1988 EDITION OF THE MINNESOTA DEPARTMENT
OF TRANSPORTATION "STANDARD SPECIFICATION
FOR CONSTRUCTION" AS AMENDED BY THE MAY
2, 1994 "SUPPLEMENTAL SPECIFICATIONS" SHALL
GOVERN. ALL TRAFFIC CONTROL DEVICES AND SIGNING
SHALL CONFORM TO THE MMUTCD, INCLUDING FIELD
MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE
LAYOUTS, APRIL 1995.

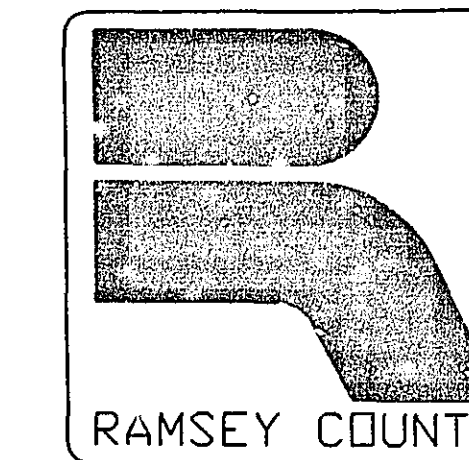


SCALES IN FEET

PLAN	0 20 40 60
PROFILE HORIZ.	0 20 40 60
PROFILE VERT.	0 5 10
CROSS SECTIONS	0 10 20



PROJECT AREA LOCATION



RAMSEY COUNTY

DEPARTMENT OF PUBLIC WORKS
CONSTRUCTION PLAN FOR: GRADING, & STORM SEWER,
AND PATH

TAMARACK NATURE CENTER

WETLAND RESTORATION PROJECT

S.A.P. 62-030-02

BETWEEN: HAMMOND ROAD AND COUNTY ROAD H2
IN THE TOWNSHIP OF WHITE BEAR LAKE
LOCATED IN THE SOUTHWEST QUARTER OF
SECTION 10, TOWNSHIP 30, RANGE 22

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STATEMENT OF ESTIMATED QUANTITIES
3	DETAIL SHEET
4-5	PLAN SHEETS
6	PROFILE
7-8	CROSS SECTIONS

THIS PLAN CONTAINS 8 SHEETS

DESIGN SQUAD _____ DATE _____
DRAWN BY _____ DATE _____
CHECKED BY _____ DATE _____

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT
SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE
LAWS OF THE STATE OF MINNESOTA.

Kathy Jaselska REG. NO. 21804 DATE 10/5/96

APPROVED Paul K. M. DATE 10/3/96
RAMSEY COUNTY ENGINEER

APPROVED John H. H. DATE 12/10/96
CHAIRMAN OF THE RAMSEY COUNTY BOARD

APPROVED John H. H. DATE 10-10-96
WHITE BEAR LAKE TOWNSHIP

APPROVED John H. H. DATE 10-10-96
PARKS & RECREATION

RECOMMENDED FOR APPROVAL John H. H. DATE 11-5-96
METRO-ASSISTANT DIVISION ENGINEER-STATE AID

RECOMMENDED FOR APPROVAL _____ DATE _____

10 APPROVED John H. H. DATE 11-21-96
STATE AID ENGINEER

PLAN REVISIONS

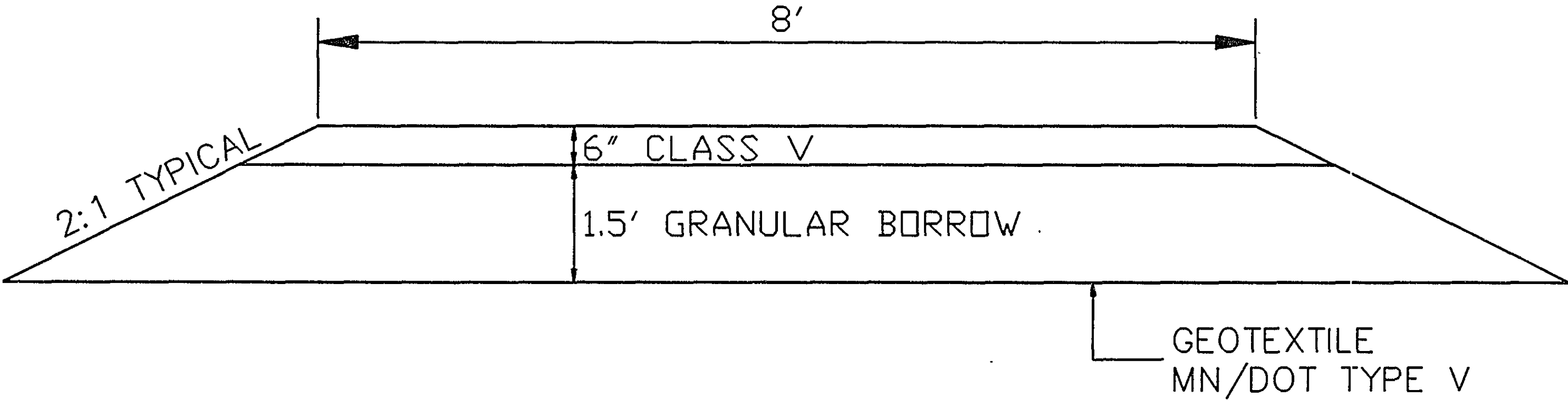
DATE	SHEET NO. & DESCRIPTION	BY

S.A.P. 62-030-02

Sheet No. 1 of 8 Sheets

STATEMENT OF ESTIMATED QUANTITIES								
ITEM NO. ITEM DESCRIPTION		UNIT	TOTAL ESTIMATED QUANTITIES	TOTAL FINAL QUANTITIES	GROUP 1 100% STATE AID		GROUP 2 100% LOCAL FUNDS	
					ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES
2021.501	MOBILIZATION	LS	1		1			
2101.501	CLEARING	AC	9		8		1	
2101.506	GRUBBING	AC	9		8		1	
2105.521	BERM	CY	1265		1265			
0412.601	WEIR	LS	1		1			
2105.501	COMMON EXCAVATION	CY	5000		5000			
2105.521	GRANULAR BORROW (LV)	CY	2379				2379	
2211.502	CLASS V	CY	639				639	
2501.511	36" PVC PIPE CULVERT	LF	24				24	
2501.511	24" CMP PIPE CULVERT	LF	6				6	
2501.511	30" PVC PIPE CULVERT	LF	144		144			
2501.515	30" CMP PIPE APRON	EACH	4		4			
2501.515	36" CMP PIPE APRON	EACH	2				2	
2511.501	RANDOM RIPRAP, CLASS III	CY	16.8		16.8			
2511.511	GRANULAR FILTER	CY	8.4		8.4			
2511.515	GEOTEXTILE FILTER, TYPE V	SY	3616				3616	
2511.515	GEOTEXTILE FILTER, TYPE SPECIAL	SY	178		178			
2573.503	SILT FENCE, PREASSEMBLED	LF	2205		930		1275	
2575.501	SEEDING	AC	0.97		0.57		0.40	
2575.502	SEED, MIXTURE 150	LB	10		10			
2575.502	SEED, MIXTURE 500	LB	20		9		11	

STANDARD DETAIL PLATES	
THE FOLLOWING STANDARD PLATES, APPROVED BY THE DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT.	
PLATE NO.	DESCRIPTION
0005 A	SPECIFICATION REFERENCE TO STANDARD PLATES
3124 B	METAL APRON CONNECTION
3129 A	METAL APRON FOR CORRUGATED POLYETHYLENE PIPE
3134 B	RIPRAP AT CMP OUTLETS



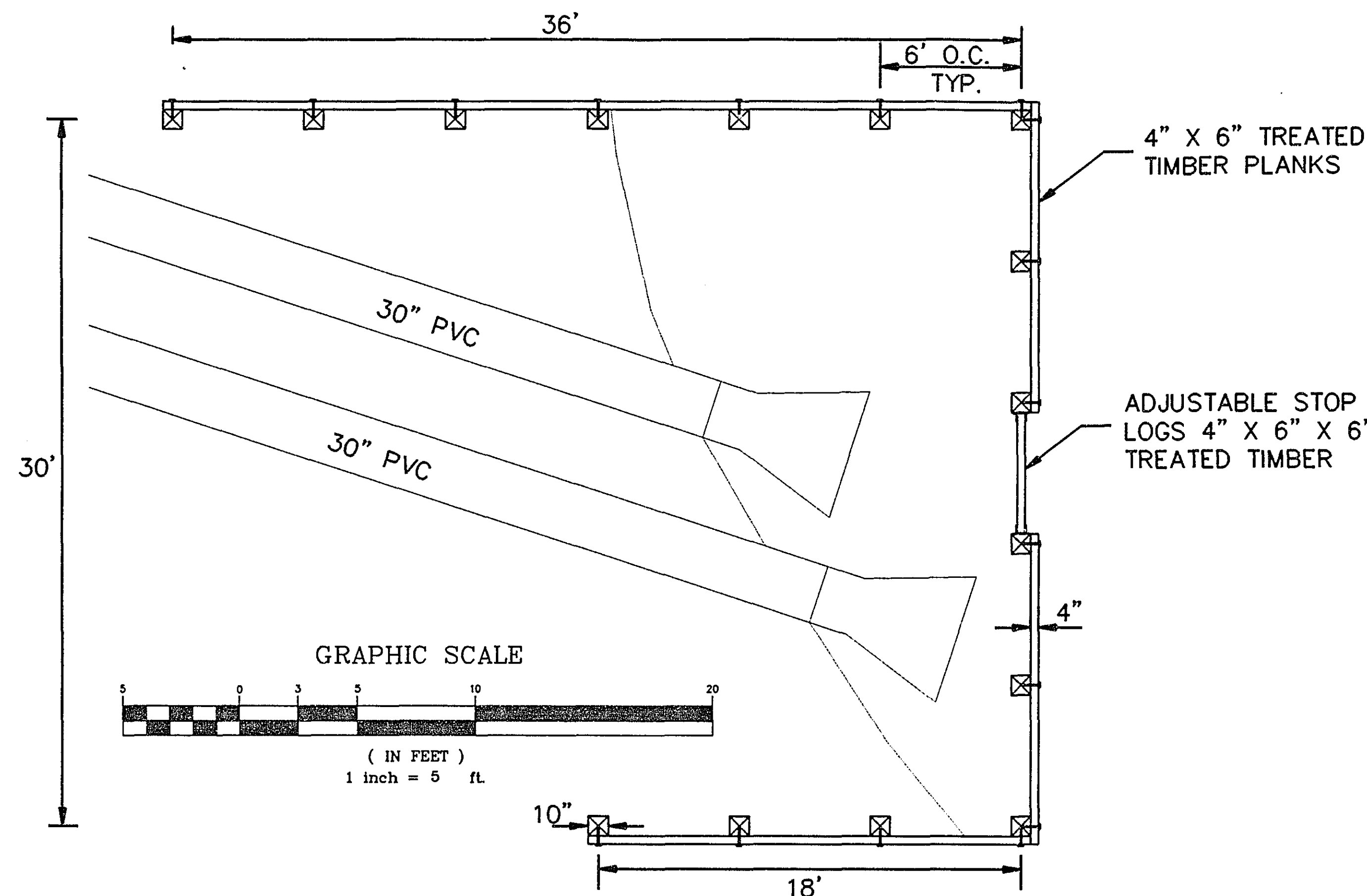
PATH TYPICAL SECTION
NOT TO SCALE

EARTHWORK TABULATION				
	PROPOSED POND	OTTER LAKE ROAD PATH	NEW PATH	PATH - WIDEN AND RAISE
COMMON EXCAVATION (CY)	5000			
GRANULAR BORROW (CY)		1695		684
CLASS V (CY)		327	156	156
GEOTEXTILE FILTER, TYPE V (SY)		2450		1166

TURF ESTABLISHMENT TABULATION					
	PROPOSED POND	OTTER LAKE ROAD PATH	NEW PATH	PATH - WIDEN AND RAISE	BERM
SEEDING (AC)	0.20	0.20	0.10	0.10	0.37
MN/DOT 150 (LB)	10				
MN/DOT 500 (LB)		5	3	3	9

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Kathy Jarshke
REG. NO. 21864 DATE 10/5/96

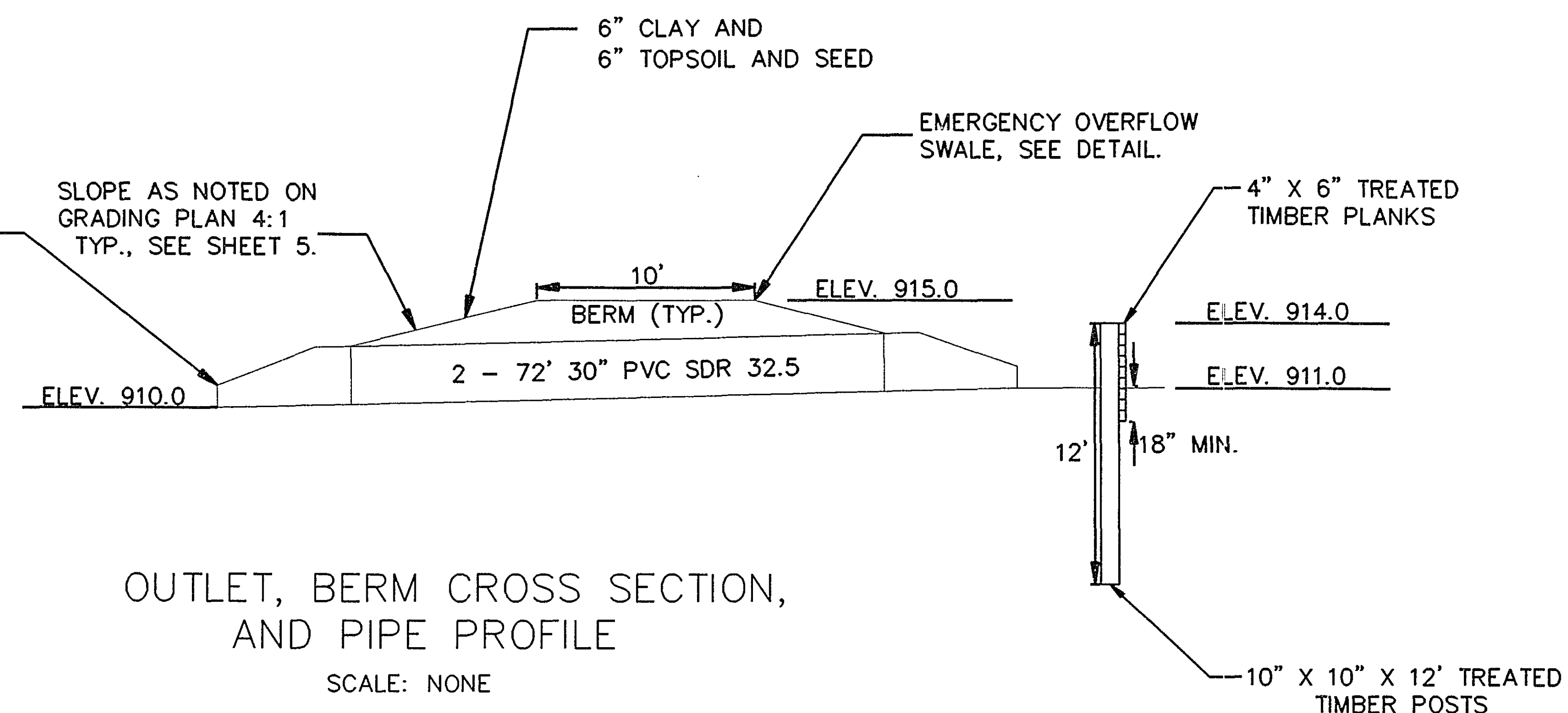
G:\DWGS\TAMARACK\QUANT 8/6/96



WEIR DETAIL - PLAN VIEW

16.8 C.Y. CLASS III RIPRAP AND 8.4 C.Y. GRANULAR FILTER AT OUTLET. SEE STANDARD PLATE 3134B.

SLOPE AS NOTED ON GRADING PLAN 4:1 TYP., SEE SHEET 5.



OUTLET, BERM CROSS SECTION, AND PIPE PROFILE

SCALE: NONE

ESTIMATED QUANTITIES - WEIR

ITEM	ESTIMATED QUANTITY	UNIT
10" X 10" X 12' TREATED POSTS	15	EACH
4" X 6" TREATED PLANKS	783	L.F.
3/8" DIA. X 2" GALV. BOLTS WITH ANCHOR	16	EACH
3/8" DIA. X 8" LAG SCREWS WITH 1-1/2" O.D. WASHERS	306	EACH
NEENAH R-7500 TYPE L 4" X 4"	9	L.F.

NOTES:

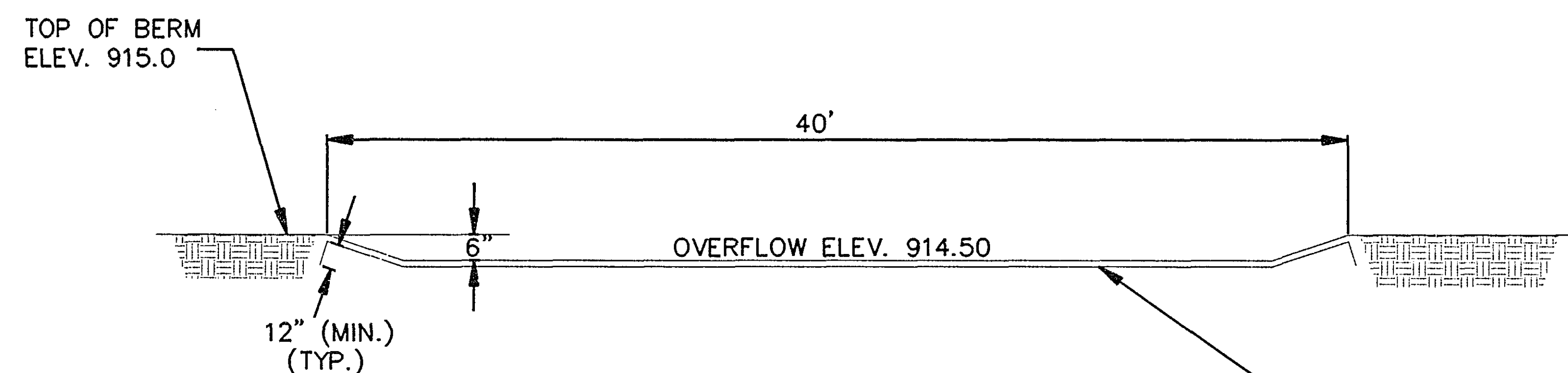
PRESERVATIVE TREATMENT OF POSTS AND PLANKS SHALL BE CREOSOTE OIL IN ACCORDANCE WITH THE PROVISIONS OF 3491. PLANKS SHALL BE ROUGH SAWN LUMBER.

LAG SCREWS AND WASHERS SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH THE PROVISIONS OF 3392.

ONE 1-1/2" O.D. WASHERS PER LAG SCREW.

2 LAG SCREWS PER PLANK, PER POST.

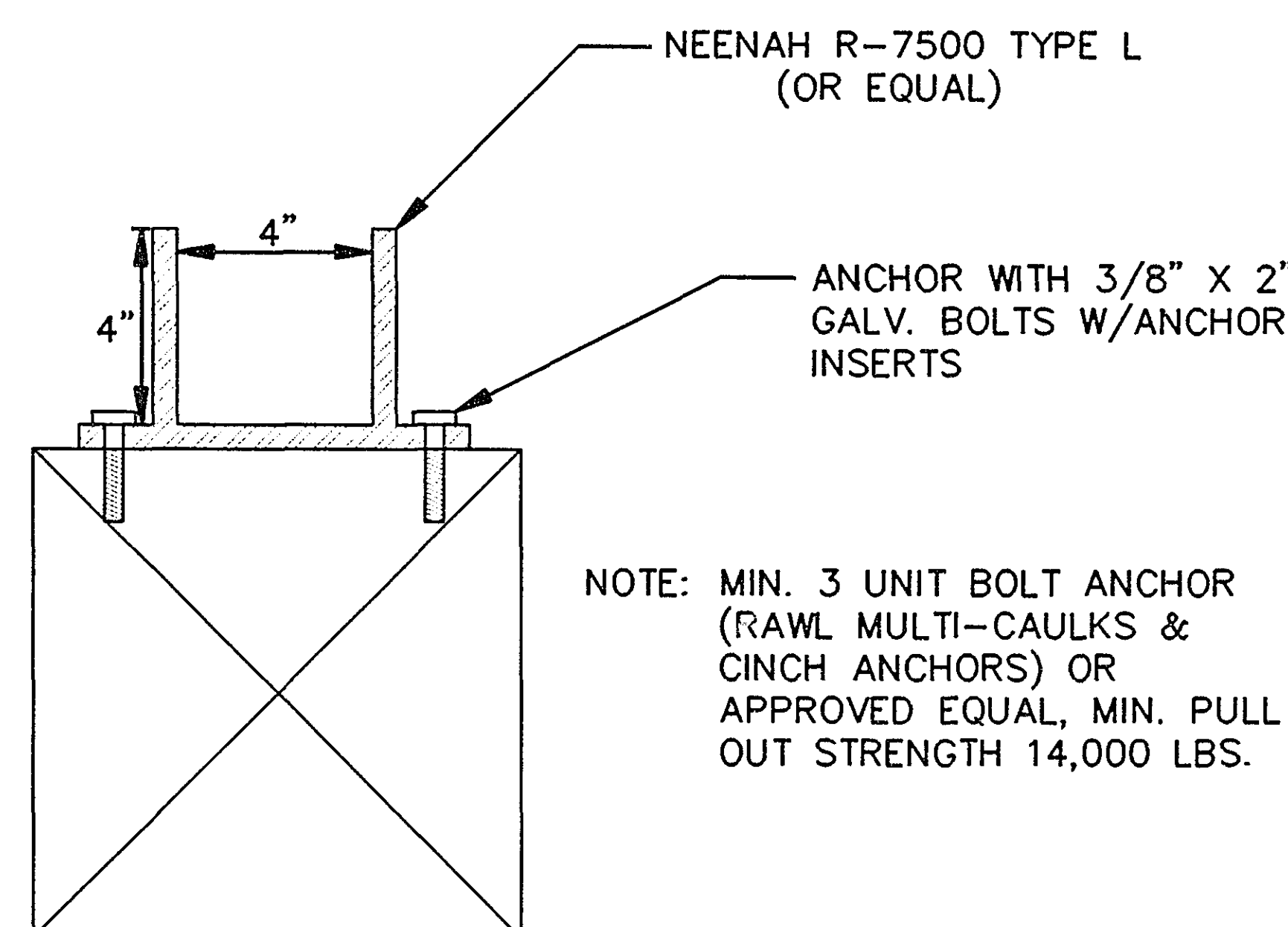
THE SUMMARY OF QUANTITIES IS FOR THE CONTRACTOR'S CONVENIENCE ONLY. ANY ADDITIONAL ITEMS REQUIRED SHALL BE FURNISHED BY THE CONTRACTOR WITH NO ADDITIONAL COMPENSATION, PAID FOR AS ITEM 0412.601, TIMBER WEIR.



- NOTES:
1. INSTALL 178 S.Y. OF GEOTEXTILE FILTER TYPE SPECIAL (ENKAMAT OR EQUAL) AS PER MANUFACTURERS SPECIFICATIONS.
 2. BEGIN GEOTEXTILE FILTER TYPE SPECIAL SWALE AT ELEVATION 913.0 ON UPSTREAM SIDE OF BERM.
 3. END GEOTEXTILE FILTER TYPE SPECIAL SWALE AT ELEVATION 910.0 ON DOWNSTREAM SIDE OF BERM.
 4. EMERGENCY OVERFLOW SWALE LOCATION SHALL BE STAKED IN THE FIELD BY ENGINEER.

DETAIL - EMERGENCY OVERFLOW SWALE

SCALE: NONE



STOP PLANK GROOVES

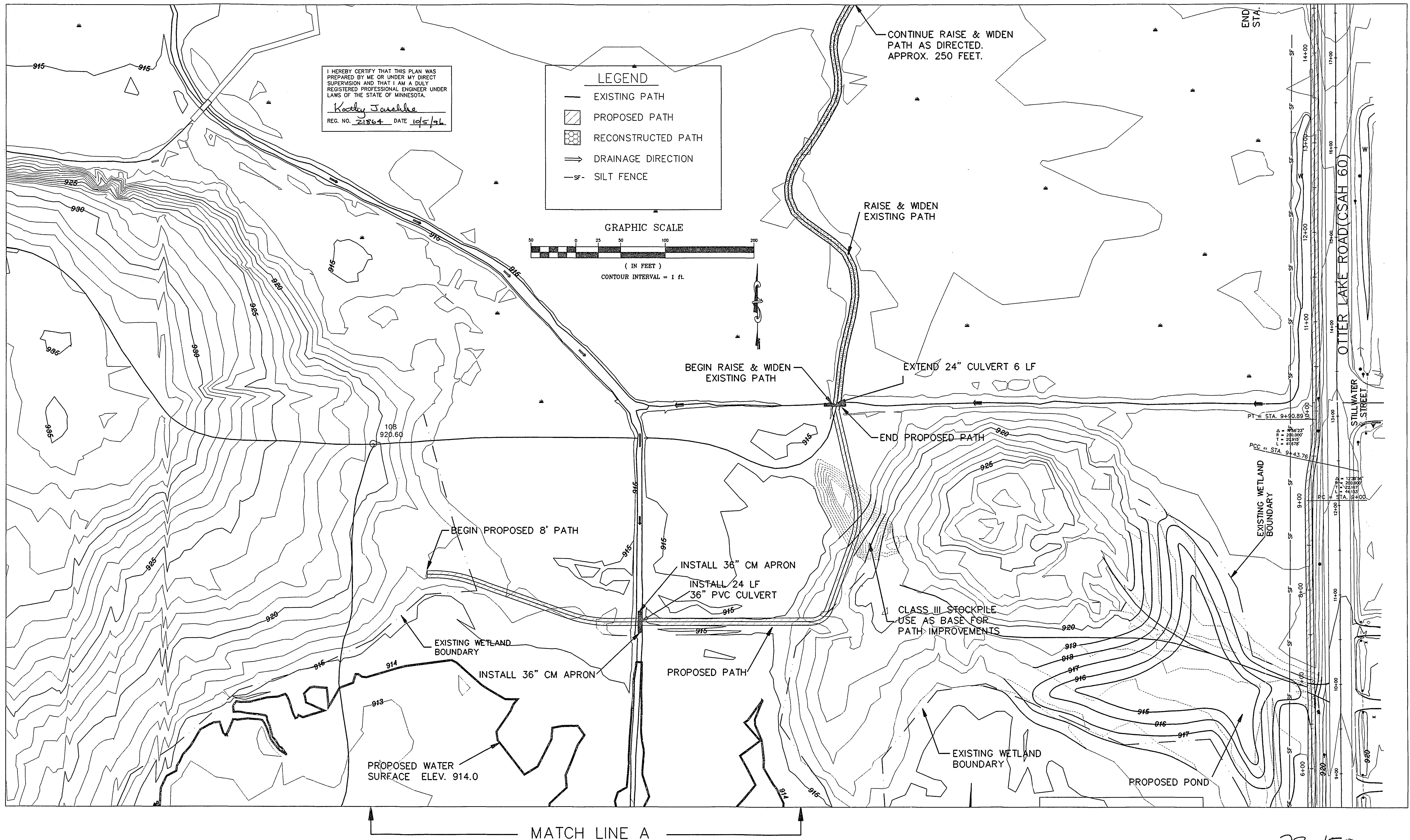
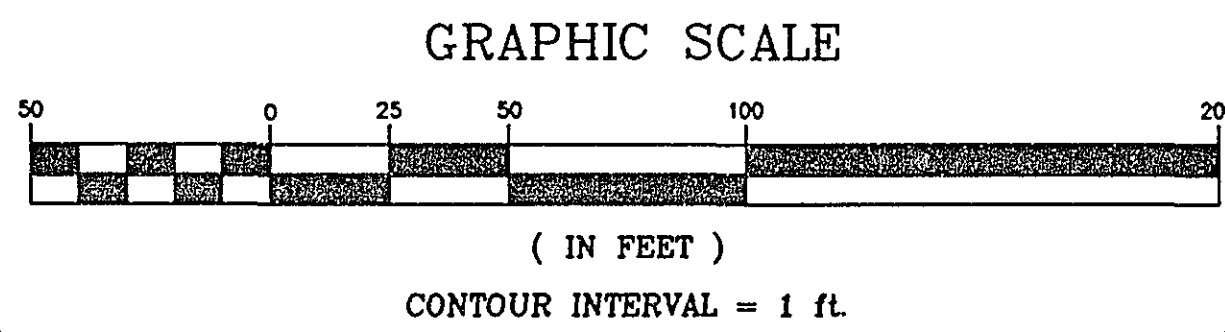
SCALE: NONE

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Kathy Jassikha
REG. NO. 21864 DATE 10/5/96

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Kathy Jarosha
REG. NO. 21864 DATE 10/5/96

LEGEND

- EXISTING PATH
- PROPOSED PATH
- RECONSTRUCTED PATH
- DRAINAGE DIRECTION
- SILT FENCE



28-150

MATCH LINE A

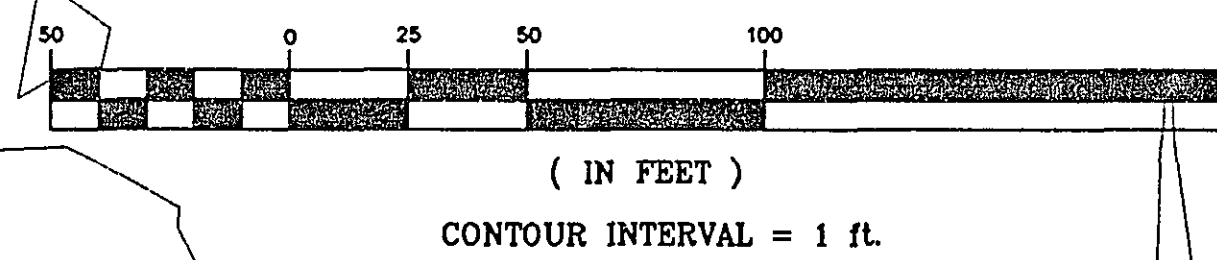
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Kathy J. Jarell
REG. NO. 21864 DATE 10/5/96

PROPOSED WATER
SURFACE ELEV. 914.0

PROPOSED WATER
SURFACE ELEV. 914.0

AREA ELEV. 914 = 16.0 ACRES

GRAPHIC SCALE



CLEAR AND GRUB 8 AC. TO BE
STACKED IN THE FIELD.

EXISTING WETLAND
BOUNDARY

CONSTRUCT WOOD WEIR
SEE DETAIL

PROPOSED WATER
SURFACE ELEV. 914.0

EMERGENCY
OVERFLOW

CONSTRUCT BERM
SEE DETAIL

SF SILT FENCE

HAMMOND ROAD

SF SILT FENCE

BEGIN 8' PATH
STA. 0+00
OTTER LAKE RD.
STA. 3+05.6

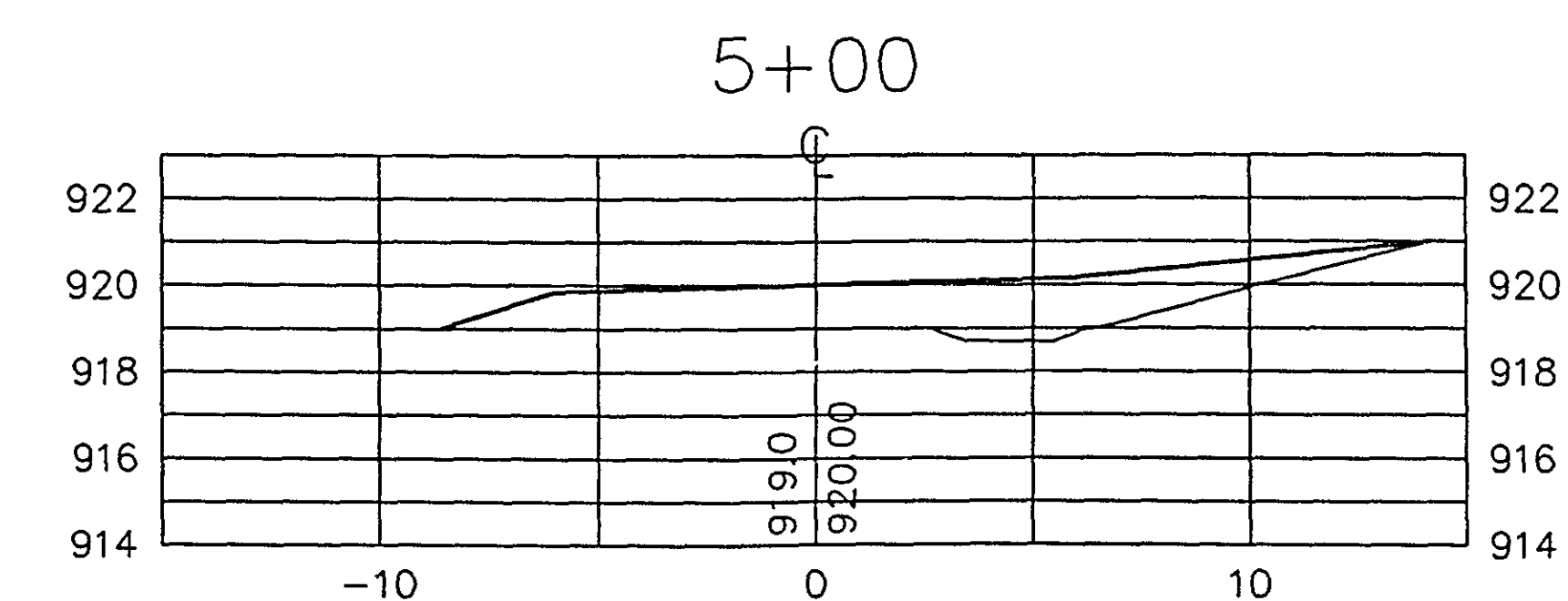
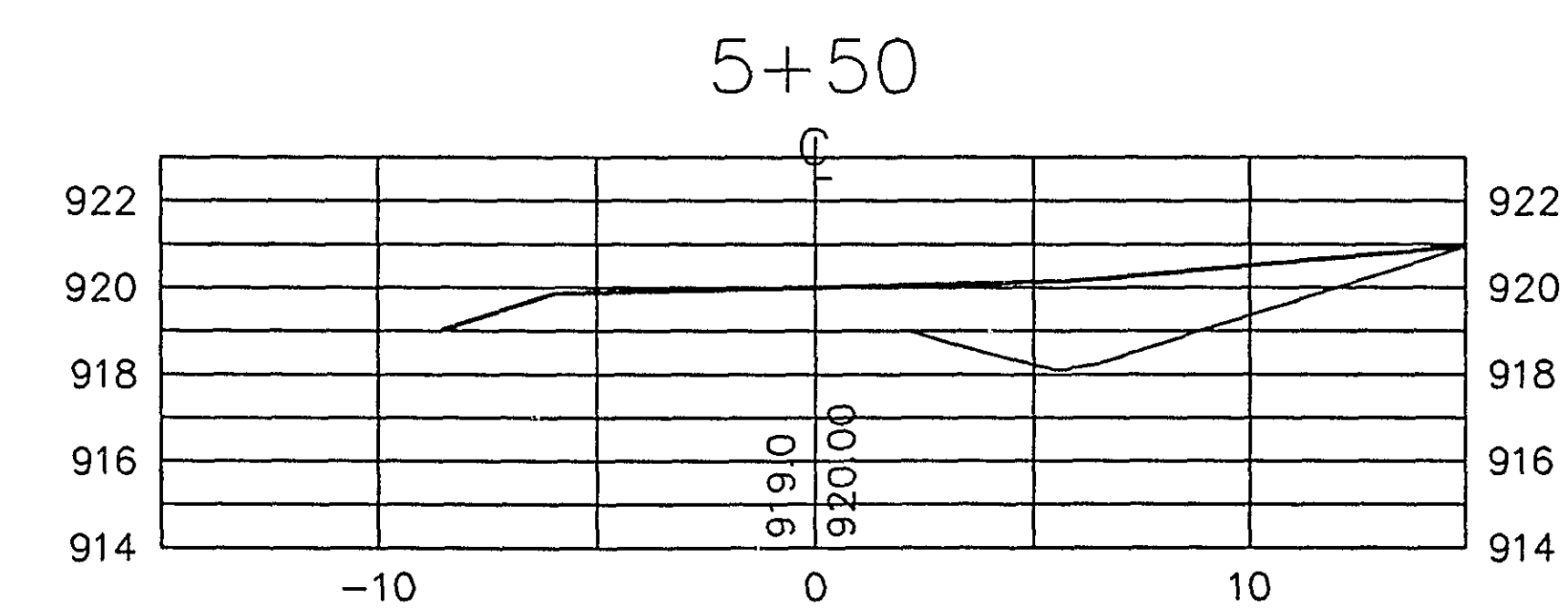
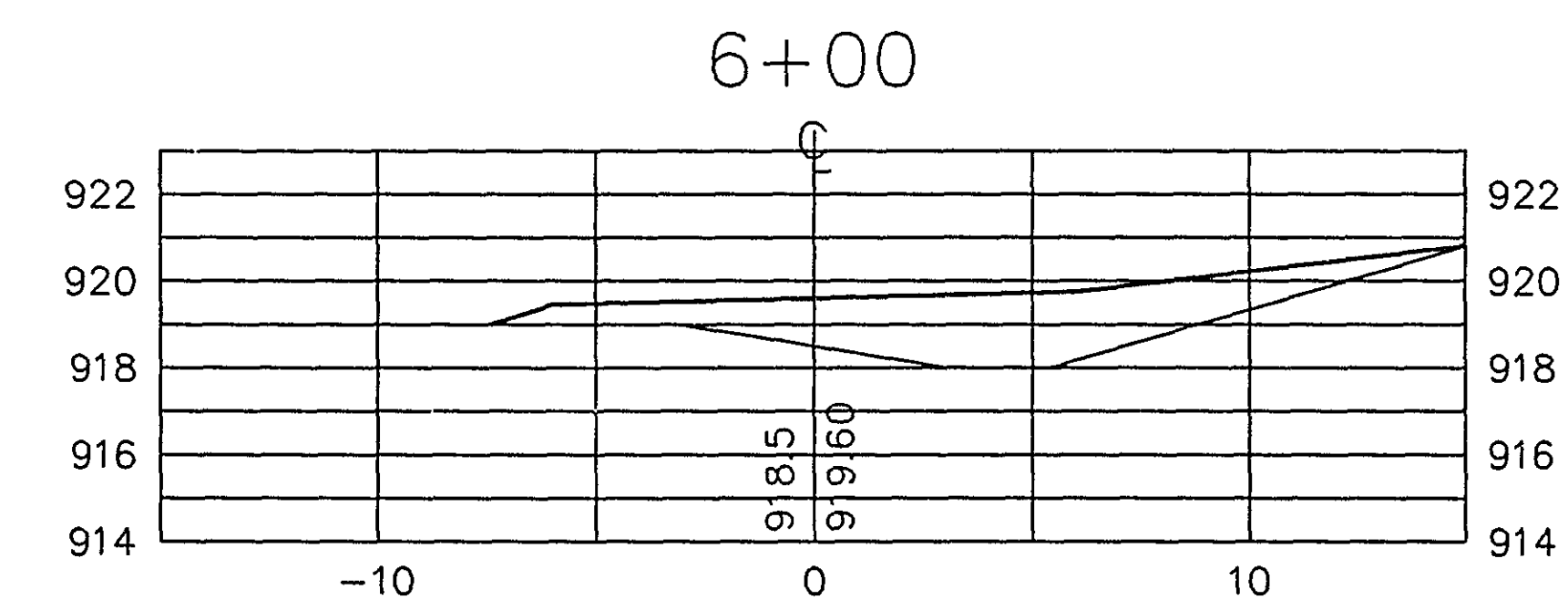
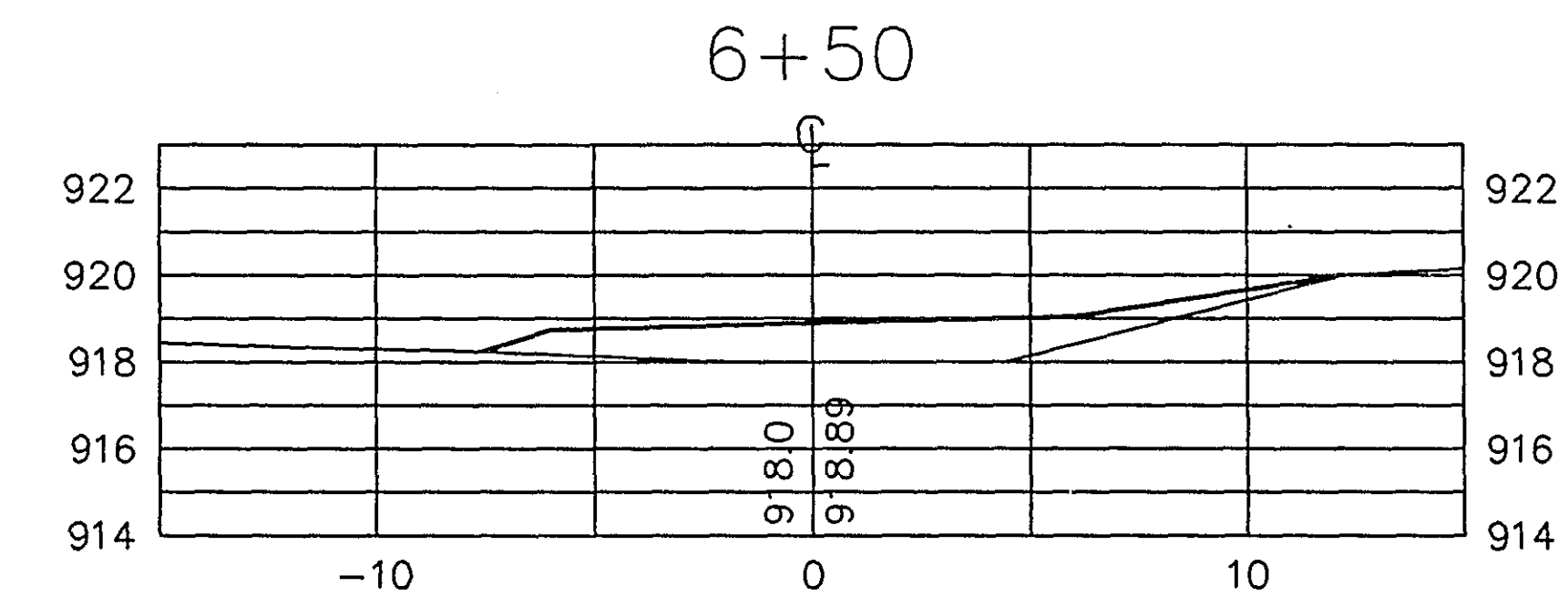
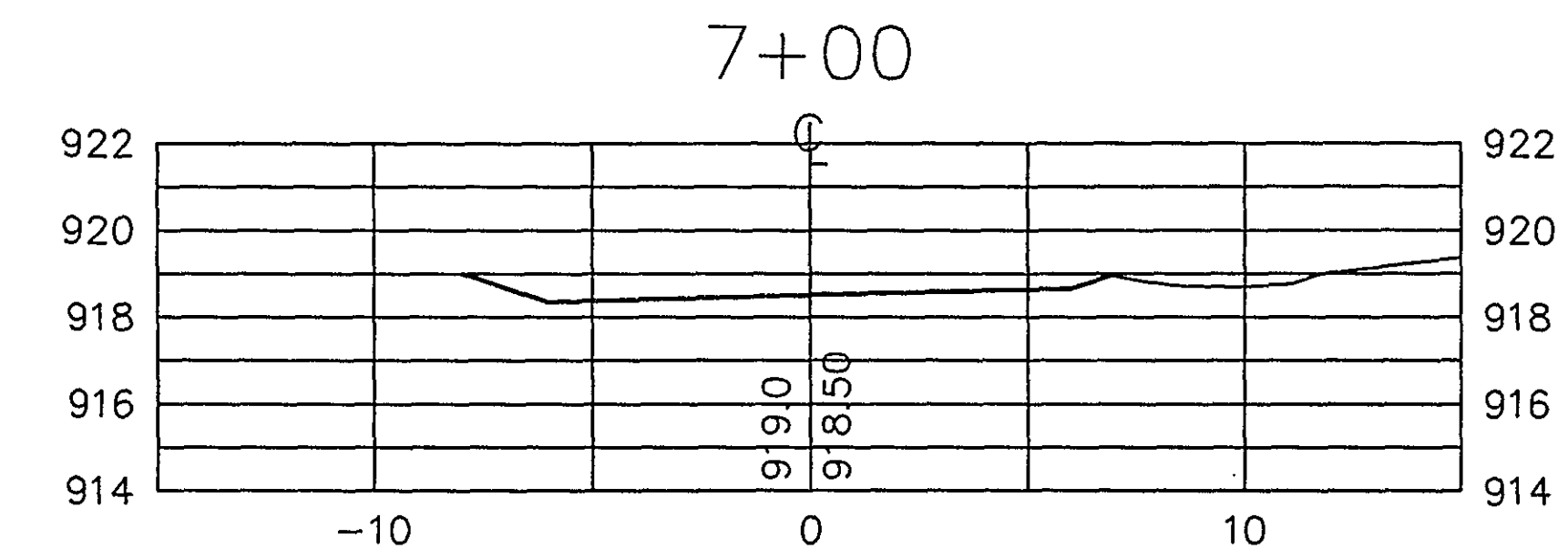
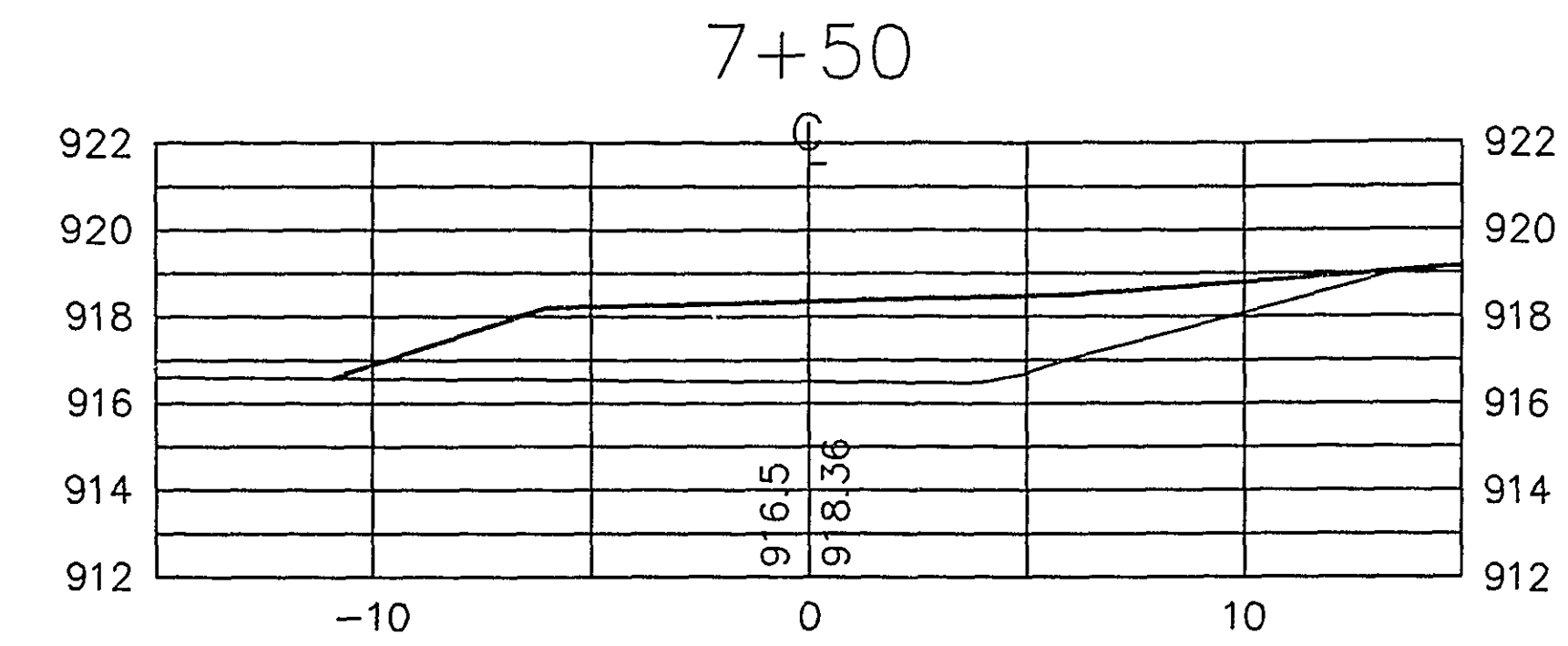
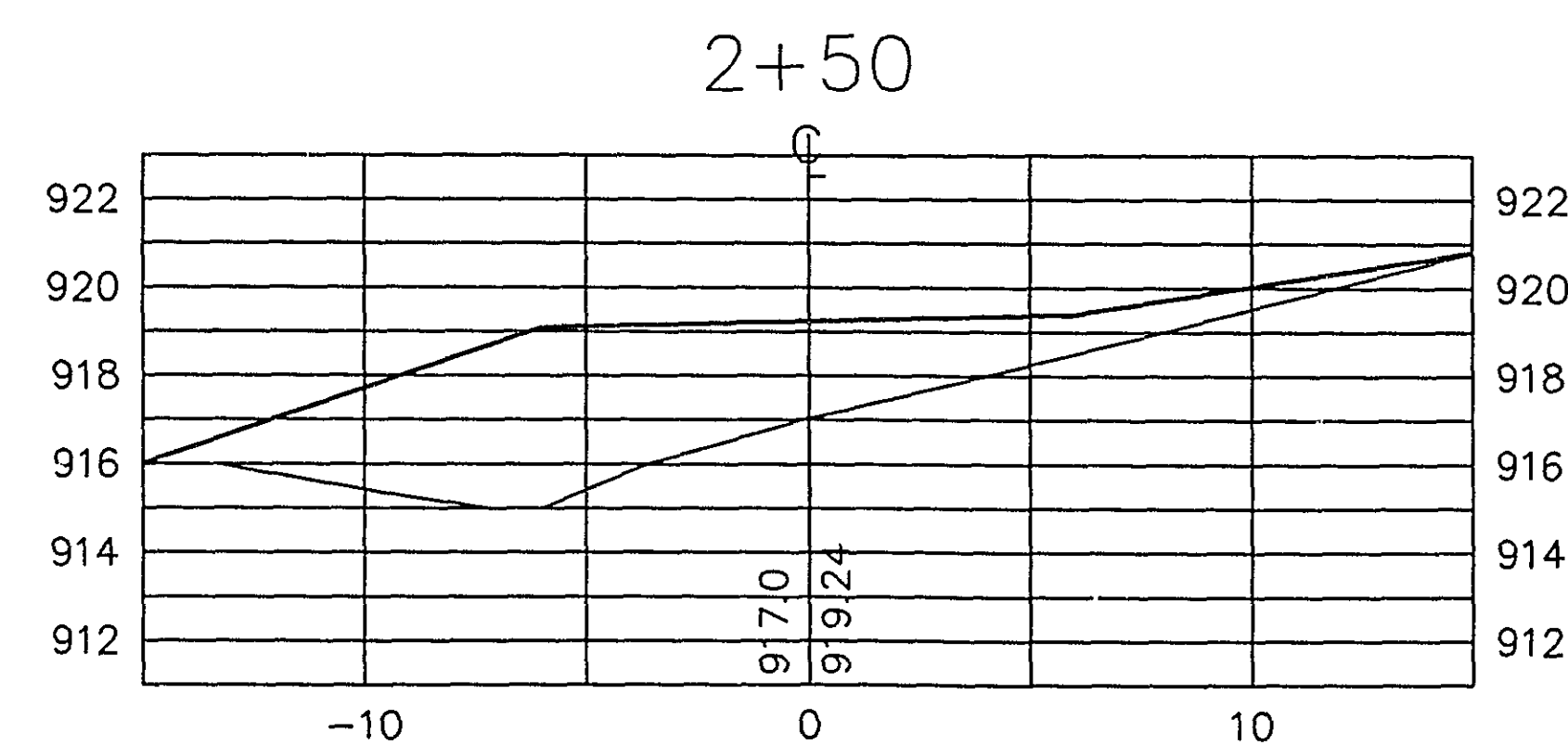
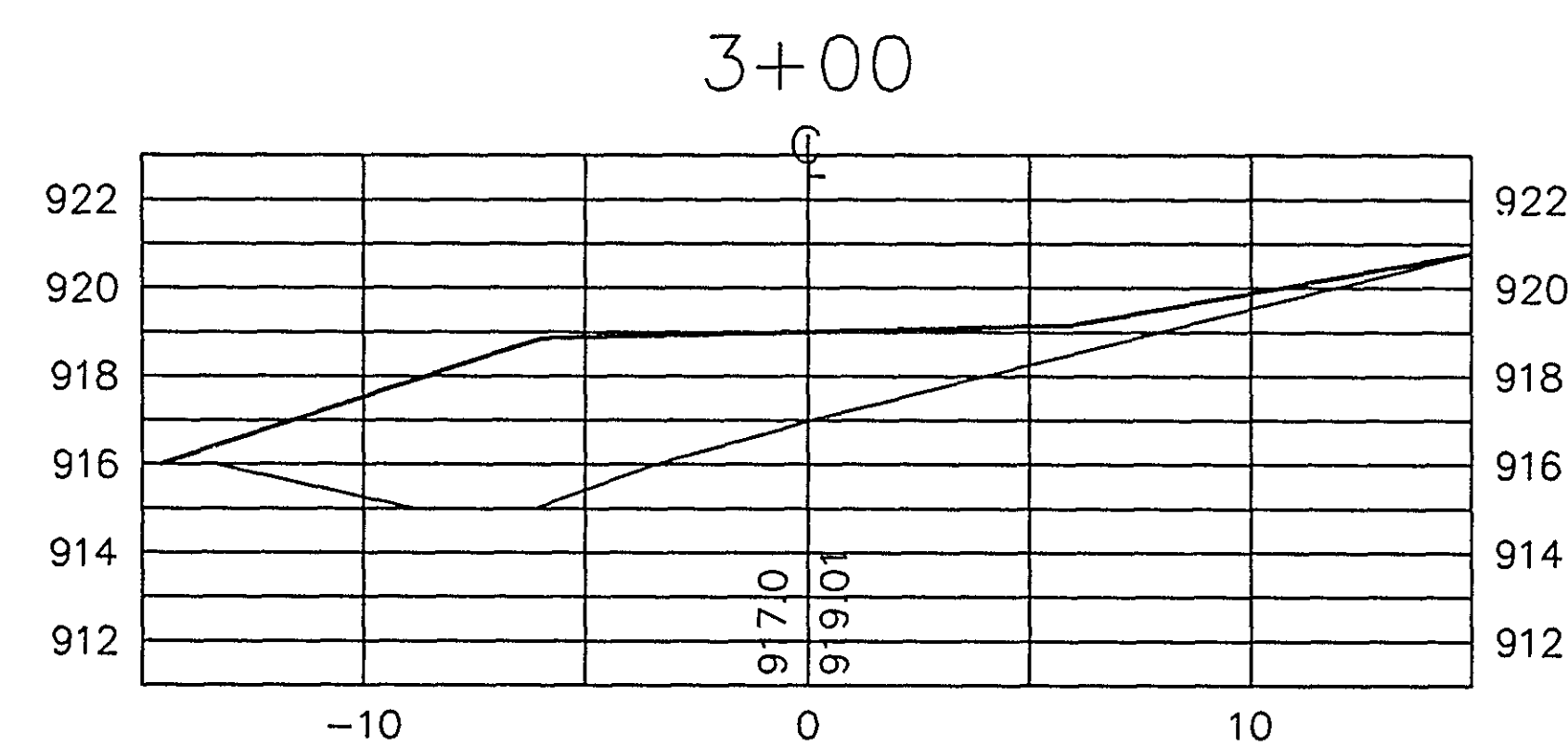
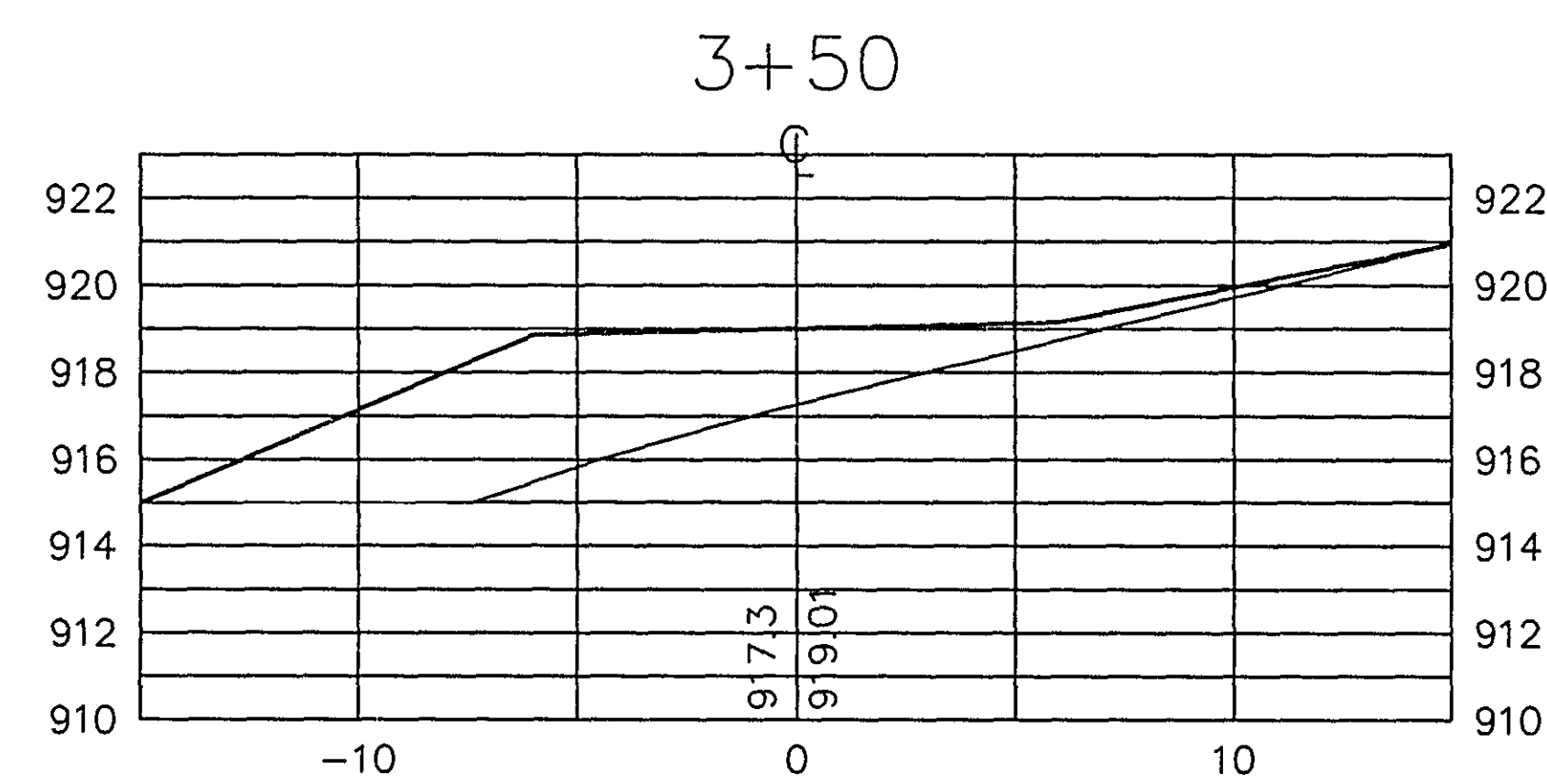
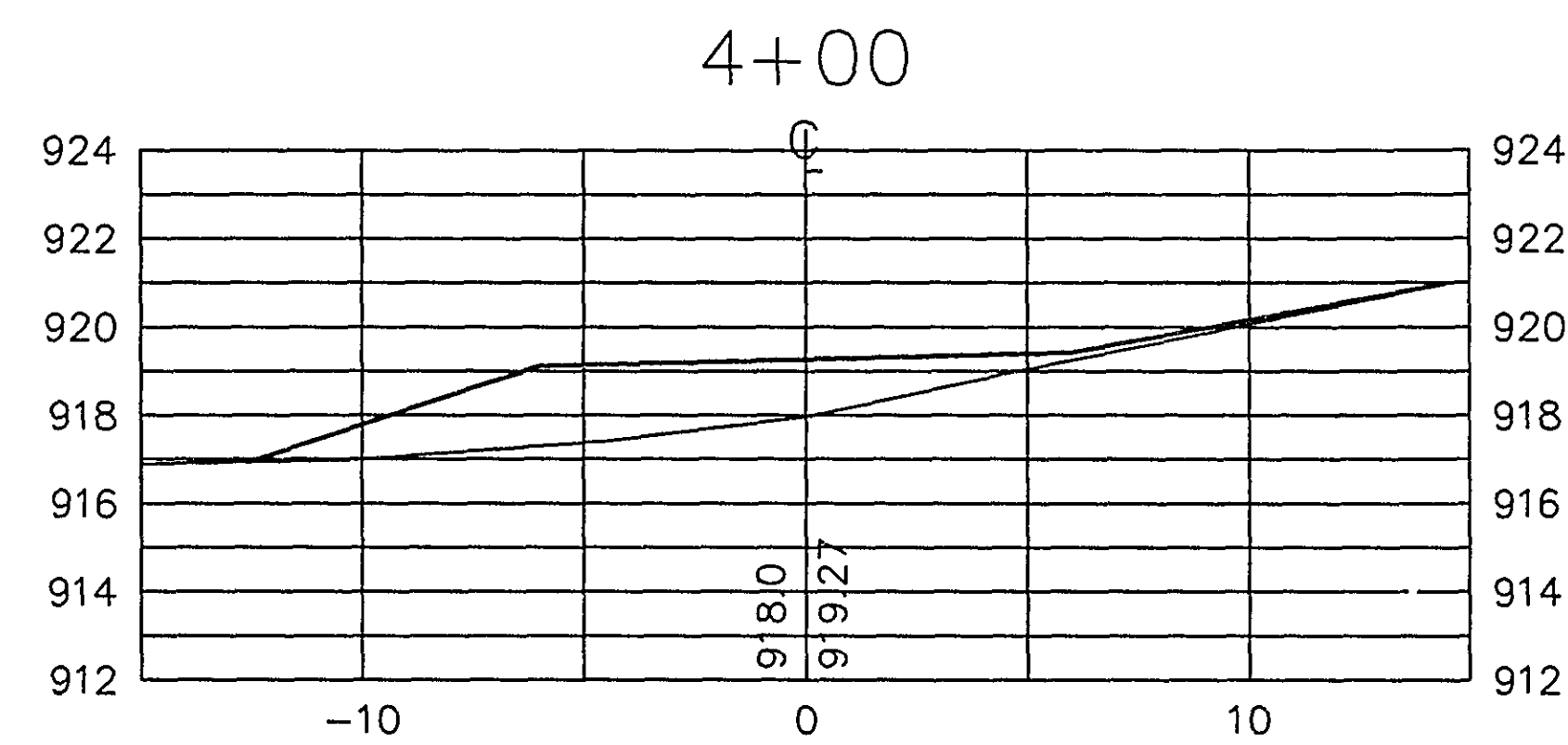
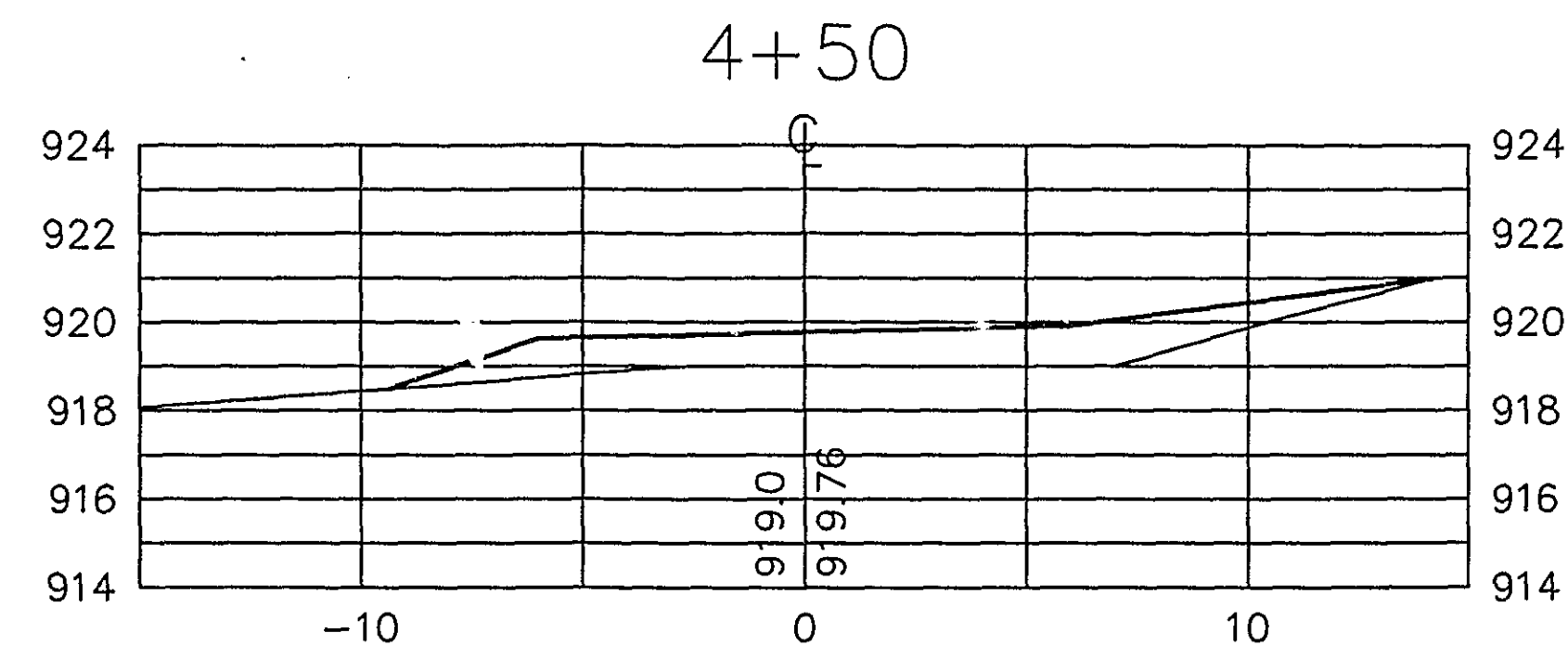
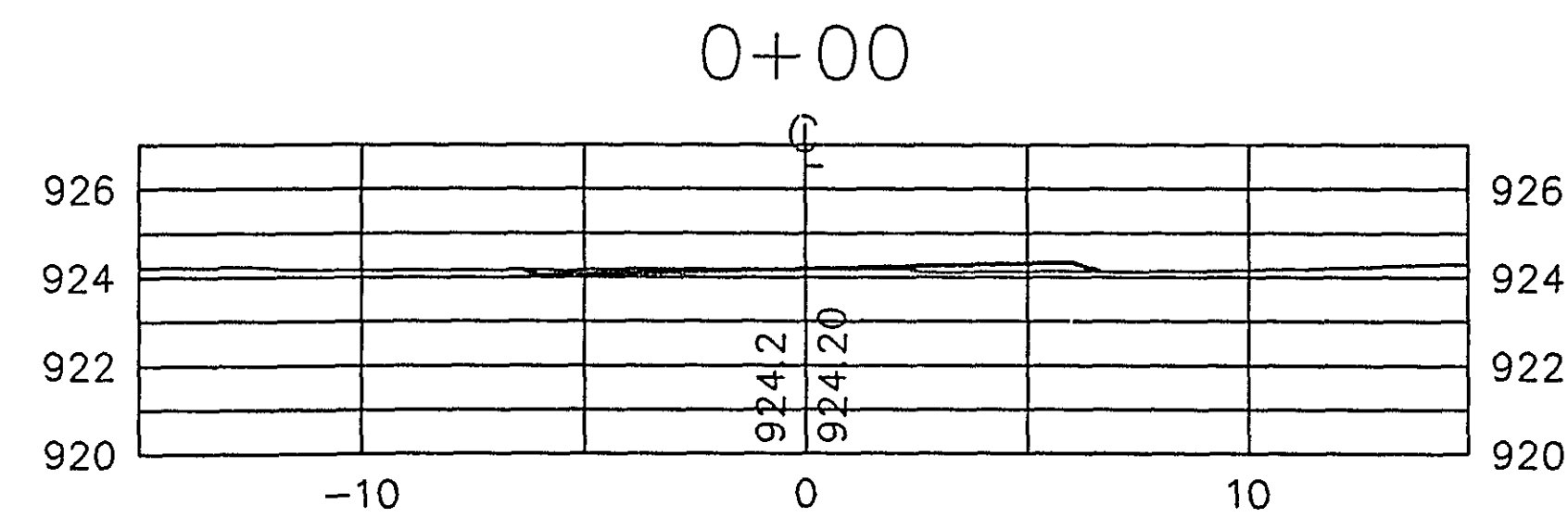
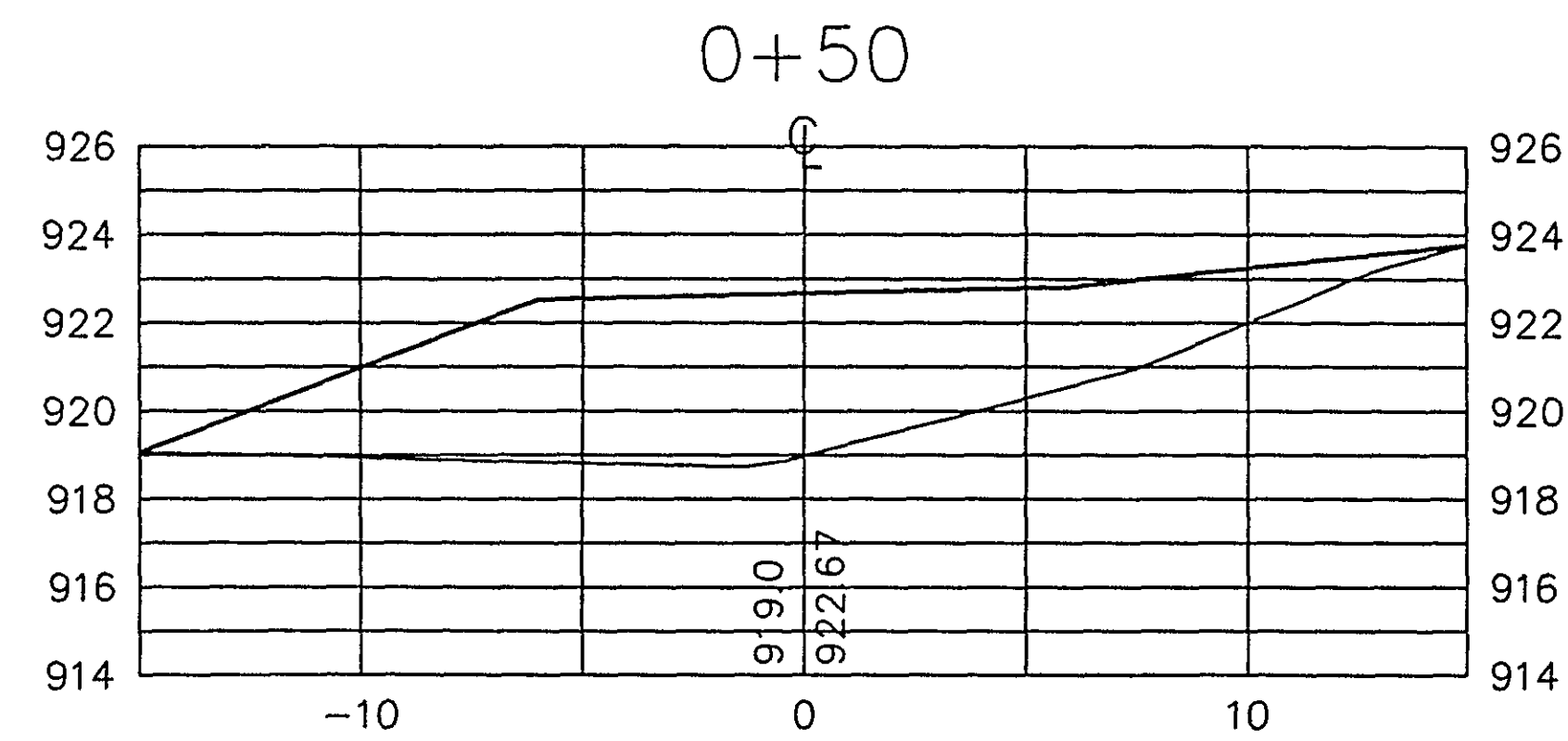
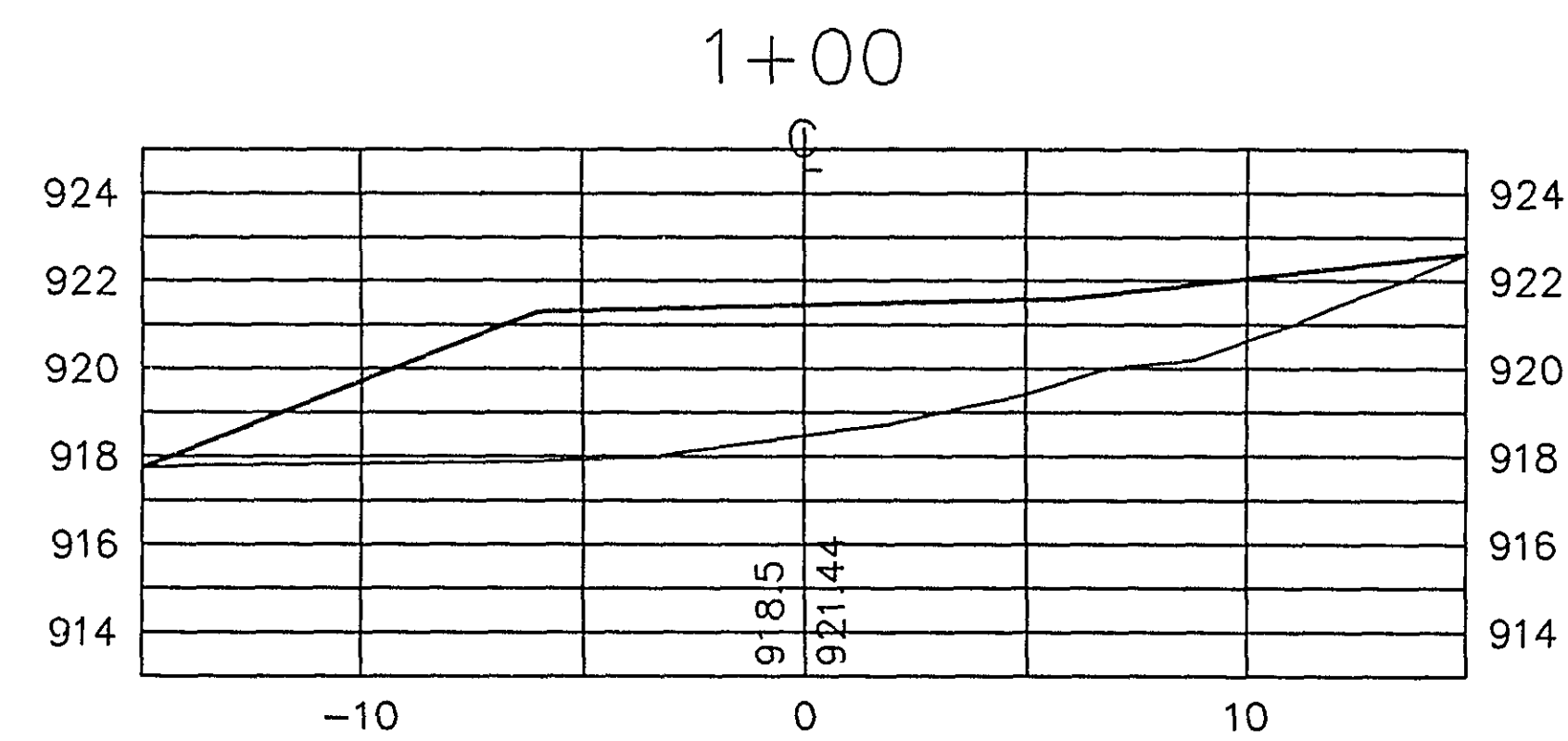
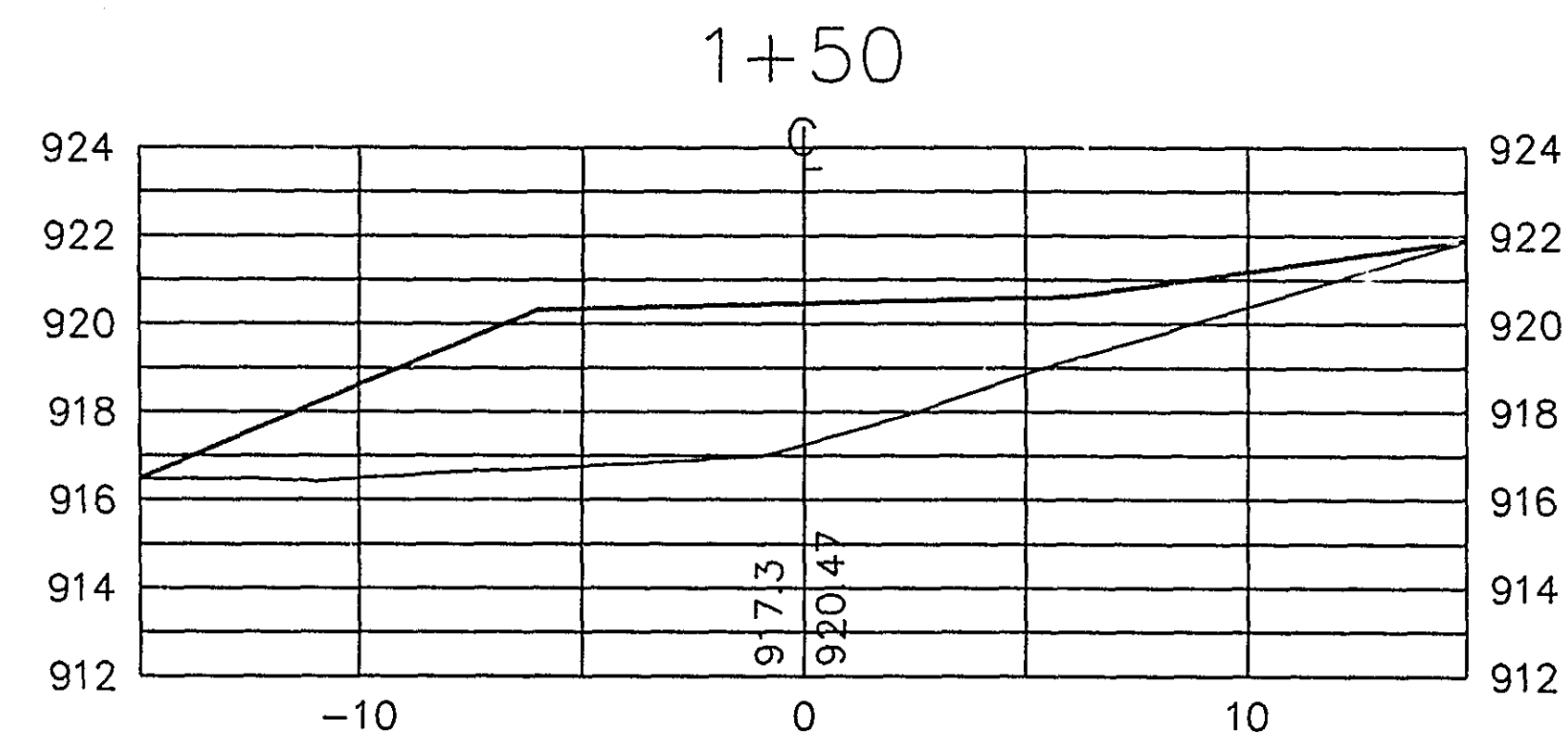
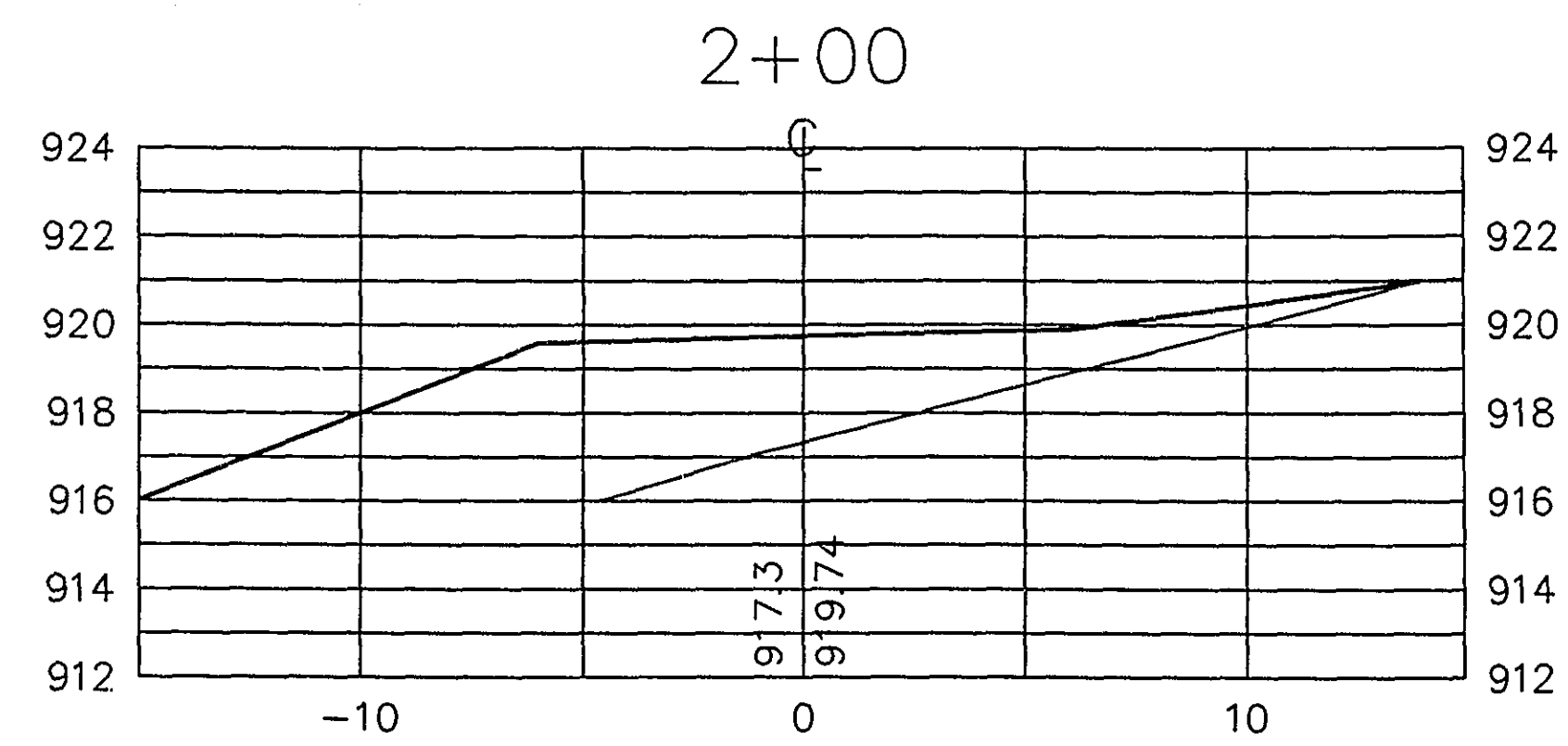
OTTER LAKE ROAD (CSAH 60)

SENECA
TRAIL

HENESSY
VISTA

S.A.P. 62-030-02

SHEET NO. 5 OF 8 SHEETS



28-150

