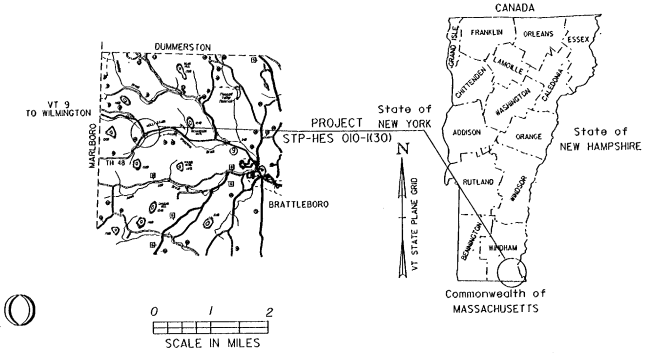
INDEX OF SHEETS

SEE SHEET # 2

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PROPOSED IMPROVEMENT
TOWN OF BRATTLEBORO
COUNTY OF WINDHAM
VT RTE 9 (F.A.P.)



BEGINNING AT A POINT ON VT 9 IN BRATTLEBORO APPROXIMATELY 1.201 MILES EASTERLY OF THE MARLBORO-BRATTLEBORO TOWN LINE AND EXTENDING EASTERLY FOR 0.454 MILES

LENGTH OF ROADWAY = 2399.20 FEET= 0.454 MILES.
LENGTH OF PROJECT = 2399.20 FEET = 0.454 MILES

WORK TO BE DONE UNDER THIS PROJECT INCLUDES RELOCATION OF A SECTION OF VT RTE 9 WITH GRADING, DRAINAGE, SUBBASE AND PAVEMENT.

RECORD PLANS

CONTRACTOR: UNITED CONST. CORP. - NEWPORT, N.H.

RESIDENT ENGINEER: LEON TESSIER

CONSTRUCTION BEGAN: 6-03-94
CONSTRUCTION COMPLETED: 7-21-95

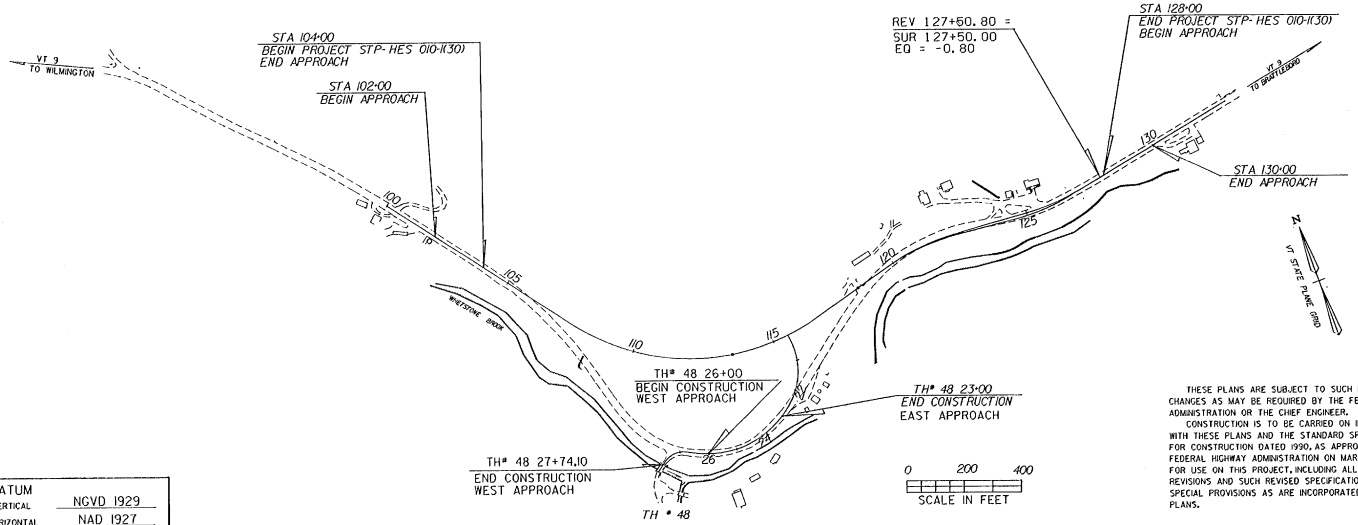
RECORD PLANS BY: CONSTRUCTION CADD - L. DOUGLAS SWANSON

I HEREBY CERTIFY THAT ALL THE CONSTRUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.

BY Leon P. Tessier RESIDENT ENGINEER
DATE 1/26/98 by Mark W. Haughwout

NOTE: Any further information concerning final quantities, amounts or other details relative to this project may be found on microfilm in Central Files.

TRAFFIC DATA		
1993	ADT	6730
2013	ADT	9560
2013	DHV	1095
D	%	53
T	%	7
V		50



CONVENTIONAL SIGNS

COUNTY LINE
TOWN LINE
LIMITS OF ACCESS
POINT OF ACCESS X
FENCE LINE
STONE WALL
TRAVELED WAY
GUARD RAIL
RAILROAD
SURVEY LINE
CULVERT
POWER POLE
TELEPHONE POLE
TREES
CONTROL OF ACCESS
PROPERTY LINE
R.O.W. TAKING LINE
SLOPE RIGHTS SR
TOP OF CUT
TOE OF SLOPE

DATUM	
VERTICAL	NGVD 1929
HORIZONTAL	NAD 1927

THESE PLANS ARE SUBJECT TO SUCH ENGINEERING CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY ADMINISTRATION OR THE CHIEF ENGINEER.

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 1990, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON MARCH 15, 1990 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

15-SEP-1993

84E070TI

SUBMITTED BY ORDER OF THE STATE TRANSPORTATION BOARD

APPROVED Gordon R. McArthur DATE 11/28/95
DIRECTOR OF ENGINEERING

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED [signature] DATE 2-17-94
for DIVISION ADMINISTRATOR

PROJECT BRATTLEBORO
STP-HES 010-1(30)

SHEET 1 OF 122 SHEETS

INDEX OF SHEETS

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2.	INDEX SHEET
3-4.	TYPICAL SHEET
5-7.	QUANTITY SHEETS
8.	ITEM DETAIL AND DRAINAGE SHEET
9-10.	GRADE AND EARTHWORK SHEET
11.	DEER YARD SHEET
12-17.	ROW DETAIL SHEETS
18-21.	PLAN AND PROFILE SHEETS
22.	TIES SHEET
23-26.	TRAFFIC SIGN AND PAVEMENT MARKING SHEETS
27.	TRAFFIC NOTE SHEET
28.	MAILBOX SUPPORT SHEET
29-30.	TEMPORARY EROSION CONTROL SHEETS
31.	BLANK
32-83.	CROSS SECTION SHEETS
84.	BLANK

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86.	A-61	SLOPES IN SOLID ROCK EXCAVATION (UNDER 50 MPH)	04-02-86
87.	B-5	SLOPE GRADING, EMBANKMENTS, MUCK	12-06-71
88.	B-11	UNDERDRAIN - ROCK SUBGRADE, SLOPE STABILIZ.	12-12-74 R
89.	B-17	GUARD RAIL, BRIDGES, REST AREA, TURNOUTS	10-25-85 R
90.	B-71	RESIDENTIAL DRIVES	12-11-92 R
91.	D-2	C.R.M. HEADWALLS, UNDERDRAIN	10-30-85 R
92.	D-3	TREATED GUTTERS	04-02-86
93.	D-4	FLUSHING BASINS, END SECTION, ELBOWS	10-30-85 R
94.	D-6	REINF. CONCRETE DROP INLET W/GRATE (DITCHES)	04-04-73
95.	D-11	GRATES & COVERS	08-24-81 R
96.	D-16	PRECAST CURB DI, GRATE, RCP END SECTION, ETC.	10-30-85 R
97.	E-10	APPROACH SIGNS, MINOR MAINTENANCE	02-03-86 R
98.	E-100	CONSTRUCTION APPROACH SIGNS	10-21-92 R
99.	E-101	CONSTRUCTION SIGN DETAILS	10-21-92 R
100.	E-102	CONSTRUCTION SIGN DETAILS	10-21-92 R
101.	E-106	TRAFFIC CONTROL - MISCELLANEOUS DETAILS	09-20-93
102.	E-107	DELINEATION, BARRICADES AND DETOURS FOR CONSTRUCTION AREAS	09-20-93
103.	E-107A	BREAKAWAY BARRICADE DETAILS	09-20-93
104.	E-110	MAJOR MAINTENANCE OPERATION LANE CLOSURE	09-20-93 R
105.	E-121	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD	01-23-89
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108.	E-142	REGULATORY SIGN DETAILS	10-30-87
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110.	E-151	WARNING SIGN DETAILS	10-30-87
111.	E-152	WARNING SIGN DETAILS	10-21-92
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115.	G-1D	STEEL BEAM GUARDRAIL (40MPH & LESS)	10-31-85 R
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117.	G-14	BREAKAWAY CABLE TERMINAL W/WOOD POSTS	11-01-88 R
118.	G-16	STEEL BEAM GUARD RAIL ATTACHMENTS TO EXISTING BRIDGE	11-25-80R
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120.	SB-R6-82	BRIDGE RAILING, HEAVY DUTY STEEL BEAM	11-13-91 R
121.	T-1	TEMPORARY EROSION CONTROL DETAILS	12-07-76 R
122.	T-2	TEMPORARY EROSION CONTROL DETAILS	07-05-72

Archived On CADD

DATUM
VERTICAL _____
HORIZONTAL _____

SURVEYED BY _____ DATE _____
DRAWN BY MEUNIER DATE 4/08/93
SQUAD LEADER LJUNGVALL
DESIGN FILE NO. sqdc/84e070/de070.dgn
IPARM FILE 84e070ind.i DATE PLOTTED 14-DEC-1993
PROJ. NAME BRATTLEBORO
PROJ. NO. STP-HES 010-1(30)
SHEET 2 OF 122 SHEETS

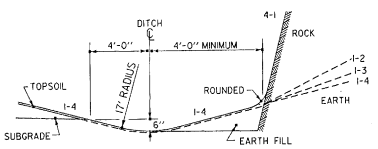
CLIMBING LANE
TYPICAL SECTIONS

FOR SEEDING FORMULA & GENERAL NOTES, SEE SHEET 4

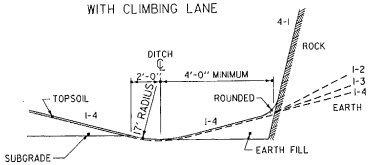
3½" BITUMINOUS CONCRETE PAVEMENT (1½" TYPE III OVER 2" TYPE II)
5" BITUMINOUS CONC. PAV'T. (2-2½" LIFTS TYPE I)
SHOULDERS : 3½" BITUMINOUS CONCRETE PAVEMENT (1½" TYPE III OVER 2" TYPE II)
12" SAND BORROW (ONLY 3' REQUIRED IN LEDGE CUTS)
24" SUBBASE OF CRUSHED GRAVEL (COARSE GRADED)

* THE MINIMUM CLEAR ZONE EXTENDS FROM THE EDGE OF THE TRAVEL WAY TO A POINT 4 FEET BEYOND THE INTERSECTION POINT OF THE 1-4 SLOPE AND THE BACK SLOPE.

MATERIAL ITEM	THICKNESS TOLERANCE
PAVEMENT	± 1/4"
SUBBASE	± 1"
SAND BORROW	± 1"

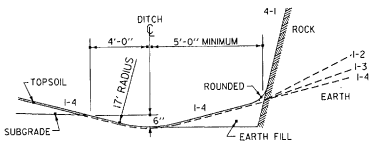


DETAILS OF DITCH AND BACKSLOPE FOR LOW SIDE OF BANK < 0.042 FT/FT WITH CLIMBING LANE

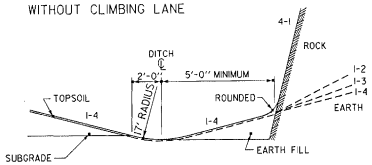


DETAILS OF DITCH AND BACKSLOPE FOR LOW SIDE OF BANK ≥ 0.042 FT/FT WITH CLIMBING LANE

FOR SLOPES IN SOLID ROCK EXCAVATION AND DRILLING AND BLASTING OF SOLID ROCK SUBGRADE, SEE STANDARD SHEET A-60.



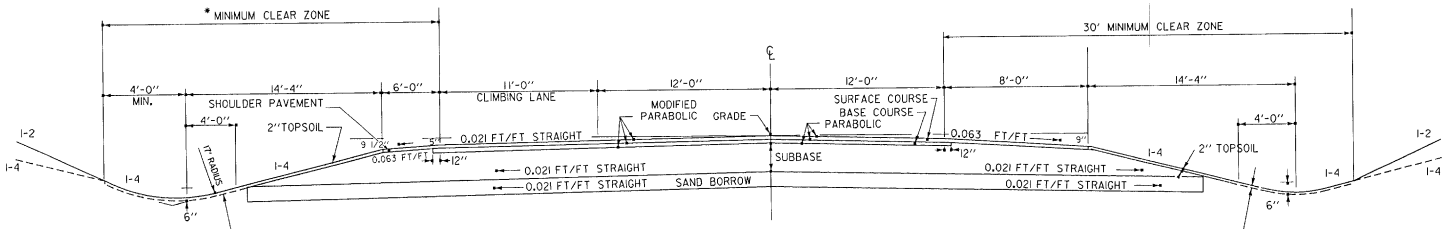
DETAILS OF DITCH AND BACKSLOPE FOR LOW SIDE OF BANK < 0.042 FT/FT WITHOUT CLIMBING LANE



DETAILS OF DITCH AND BACKSLOPE FOR LOW SIDE OF BANK ≥ 0.042 FT/FT WITHOUT CLIMBING LANE

FOR SLOPES IN SOLID ROCK EXCAVATION AND DRILLING AND BLASTING OF SOLID ROCK SUBGRADE, SEE STANDARD SHEET A-60.

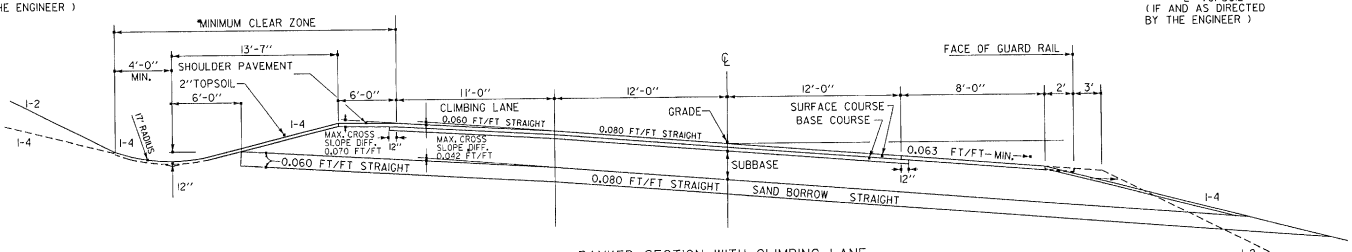
DATUM	
VERTICAL	NGVD 1929
HORIZONTAL	NAD 1927



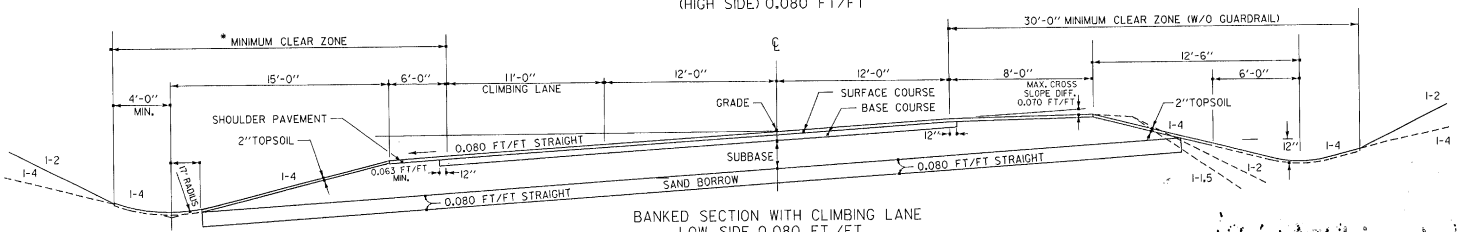
2" TOPSOIL (IF AND AS DIRECTED BY THE ENGINEER)

NORMAL SECTION WITH CLIMBING LANE IN CUT

2" TOPSOIL (IF AND AS DIRECTED BY THE ENGINEER)

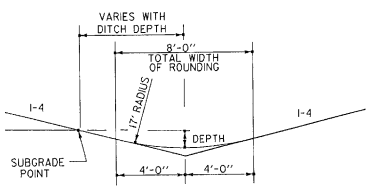


BANKED SECTION WITH CLIMBING LANE (HIGH SIDE) 0.080 FT/FT

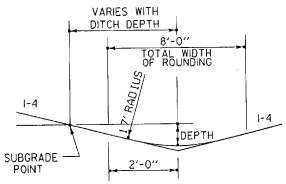


BANKED SECTION WITH CLIMBING LANE LOW SIDE 0.080 FT./FT.

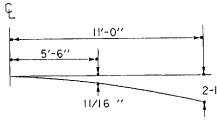
Archived on CADD



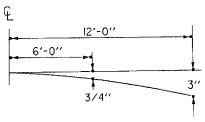
TYPICAL DITCH DETAILS W/ CLIMBING LANE



TYPICAL DITCH DETAILS W/O CLIMBING LANE



CLIMBING LANE MODIFIED PARABOLIC DETAILS



PARABOLIC DETAILS

SURVEYED BY	DATE
DRAWN BY MEUNIER	DATE 9/89
SQUAD LEADER LJUNGVALL	
DESIGN FILE NO.	ZGO:153,S0384E070.DGN
PRF FILE 84E070TYI	DATE PLOTTED 02-DEC-1993
PROJ. NAME	BRATTLEBORO
PROJ. NO.	STP-HES 010-1(30)
SHEET 3 OF 122 SHEETS	

TYPICAL SECTIONS
TH 48 CONNECTOR

MATERIAL ITEM	THICKNESS TOLERANCE
PAVEMENT	± 1/4"
SUBBASE	± 1"
GRANULAR BORROW	± 1"
SAND BORROW	± 1"

2 - 1/2" BITUMINOUS CONCRETE PAVEMENT (2 LIFTS 1¼" TYPE III)

SHOULDERS : 1 - 1/4" BITUMINOUS CONCRETE PAVEMENT, TYPE III

18" SUBBASE OF CRUSHED GRAVEL (COARSE GRADED)

0" TO 12" GRANULAR BORROW (IN FILLS)
0" TO 12" SAND BORROW (IN CUTS) } AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER

• THE MINIMUM CLEAR ZONE EXTENDS FROM THE EDGE OF THE TRAVEL WAY TO THE BACK OF DITCH.

SEEDING FORMULA
RURAL AREAS

% WT.	LBS./A.	NAME	PUR %	GERM %
37.5	22.5	CREEPING RED FESCUE	98	85
37.5	22.5	TALL FESCUE	95	90
5.0	3.0	RED TOP	95	90
15.0	9.0	BIRDSFOOT TREFOIL	98	85
5.0	3.0	ANNUAL RYEGRASS	95	85
100.0	60.0			

THE SEED MIXTURE SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS WEED SEED.

SEED- TO BE APPLIED PER SEEDING FORMULA DIRECTED BY THE ENGINEER.

FERTILIZER- FORMULA 10-20-10 TO BE USED WITH SEED, APPLIED AT THE RATE OF 500 LBS./ACRE. (HYDRO SEEDERS MAY USE 19-19-19 FORMULA)

AGRICULTURAL LIMESTONE- TO BE APPLIED AT THE RATE OF 2 TONS/ACRE OR AS DIRECTED BY THE ENGINEER.

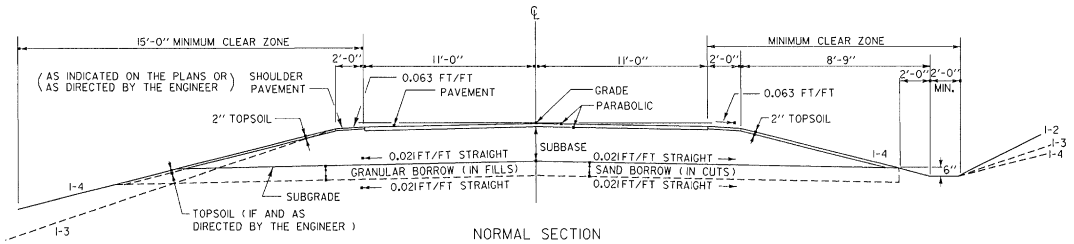
HAY MULCH- TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, OR AS DIRECTED BY THE ENGINEER.

TOPSOIL- TO BE USED WITH SEED AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.

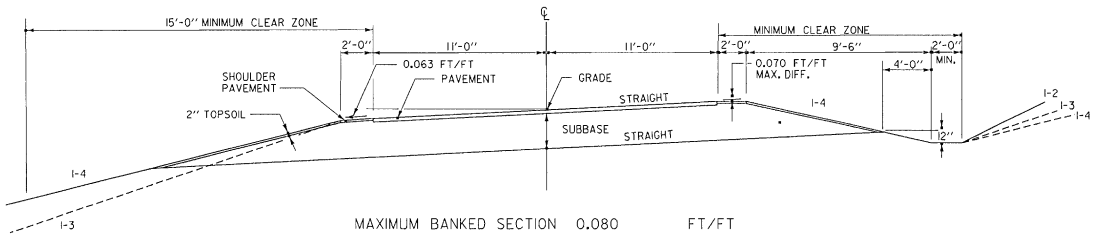
MARKER POSTS- TO BE PLACED AS DIRECTED BY THE ENGINEER.

SLOPE ROUNDING- ALL CUT SLOPES TO BE ROUNDED IN ACCORDANCE WITH STANDARD SHEET B-5.

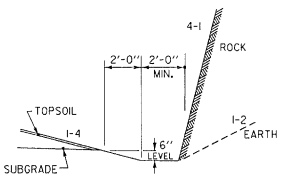
PAY LIMITS OF SAND BORROW WHEN USED IN CONJUNCTION WITH UNDERDRAIN- SEE STANDARD SHEET D-2.



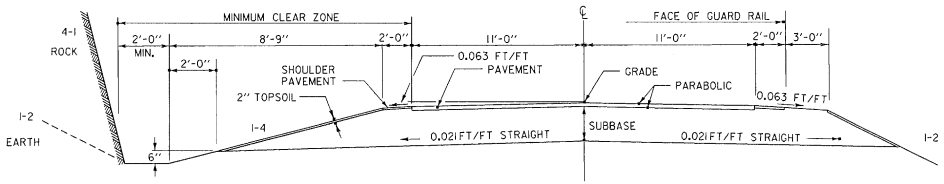
NORMAL SECTION



MAXIMUM BANKED SECTION 0.080 FT/FT

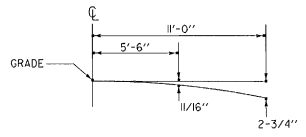


DETAILS OF DITCH AND BACKSLOPE FOR LOW SIDE OF BANK < 0.042 FT/FT



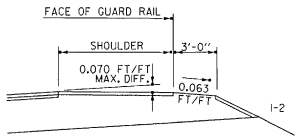
NORMAL SECTION IN ROCK CUT

NORMAL SECTION WITH GUARD RAIL

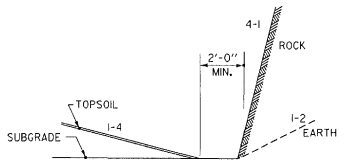


PARABOLIC DETAIL

FOR SLOPES IN SOLID ROCK EXCAVATION AND DRILLING AND BLASTING OF SOLID ROCK SUBGRADE, SEE STANDARD SHEET A-6i.



DETAIL OF GUARD RAIL ON HIGH SIDE OF BANKED SECTION



DETAILS OF DITCH AND BACKSLOPE FOR LOW SIDE OF BANK ≥ 0.042 FT/FT

Archived On CADD

SURVEYED BY	DATE
DRAWN BY MEUNIER	DATE 9/89
SQUAD LEADER LJUNGVALL	
DESIGN FILE NO. ZG01S53,S01B4E070.DGN	
PRF FILE 84E070TY2	DATE PLOTTED 06-DEC-1993
PROJ. NAME BRATTLEBORO	
PROJ. NO. STP-HES 010-1(30)	
SHEET 4 OF 122 SHEETS	

DATUM	
VERTICAL	NGVD 1929
HORIZONTAL	NAD 1927

QUANTITY SHEET

STATE OF VERMONT
AGENCY OF TRANSPORTATION

APPROXIMATE SUMMARY OF QUANTITIES

EROSION CONTROL	R.O.W.				BRIDGE	ROADWAY	QUANTITIES GRAND TOTAL	UNIT	ITEMS	ITEM NO.	ROUNDING
						1	1	LS	CLEARING AND GRUBBING (PLUS INDIDIDUAL TREES AND STUMPS)	201.10	EST.
						1	1	EA	DEMOLITION & DISPOSAL OF BUILDING #1 - TRAILER @ STA 119+20 LT	202.10	
						137000	137000	CY	COMMON EXCAVATION	203.15	516
						179000	179000	CY	SOLID ROCK EXCAVATION	203.16	45
						600	600	CY	EXCAVATION OF SURFACES AND PAVEMENT	203.28	22
						50	50	CY	EARTH BORROW	203.30	EST.
						4550	4550	CY	SAND BORROW	203.31	35
						500	500	CY	GRANULAR BORROW	203.32	EST.
						22300	22300	SY	FINE GRADING-SUBGRADE	203.40	18
60						2400	2460	CY	TRENCH EXCAVATION OF EARTH	204.20	29
						1310	1310	CY	TRENCH EXCAVATION OF ROCK	204.21	6
						70	70	CY	GRANULAR BACKFILL FOR STRUCTURES	204.30	4
						7300	7300	SY	DRILLING AND BLASTING OF SOLID ROCK SUBGRADE	205.20	30
						1300	1300	SY	SCARIFYING PAVEMENT	212.20	43
						190	190	CY	SUBBASE OF GRAVEL	301.15	6
						12700	12700	CY	SUBBASE OF CRUSHED GRAVEL (COARSE GRADED)	301.25	
						5800	5800	TON	BITUMINOUS CONCRETE PAVEMENT	406.25	60
						1	1	LS	ASPHALT PRICE ADJUSTMENT (N.A.B.I)	406.50	
						22	22	CY	CONCRETE, CLASS B	501.25	
						1850	1850	LB	REINFORCING STEEL	507.15	4
									•• BEGIN OPTION ITEMS ••		
								LF	15'' CAAP .060	601.0210	
						44	44	LF	15'' PCCSP .064	601.0410	
								LF	15'' RCP CL III	601.0810	
								LF	18'' CAAP .060	601.0215	
						644	644	LF	18'' PCCSP .064	601.0415	
								LF	18'' RCP CL III	601.0815	
								LF	18'' CPEP(SL)	601.0915	
								LF	18'' CAAP .060	601.0215	
						266	266	LF	18'' PCCSP .064	601.0415	
								LF	18'' CPEP(SL)	601.0915	
								LF	24'' CAAP .060	601.0225	
						348	348	LF	24'' PCCSP .064	601.0425	
								LF	24'' RCP CL III	601.0825	
								LF	24'' CPEP(SL)	601.0920	
								LF	30'' CAAP .075	601.0236	
						220	220	LF	30'' PCCSP .079	601.0436	
								LF	30'' RCP CL III	601.0835	
								LF	30'' CPEP(SL)	601.0925	
						1	1	EA	18'' CSPES (.064)	601.6015	
							1	EA	18'' CAAPES	601.6215	
							1	EA	18'' RCPES	601.6815	
							1	EA	18'' CPEPES	601.7015	
									•• END OPTION ITEMS		

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS
		COMMON EXCAVATION
133062	CY	MAINLINE (INCL. DESIGNED SAND BORROW)
2755	CY	TOWN HIGHWAY # 48 (INCL. EST. SAND BORROW)
667	CY	DRIVES
516	CY	ROUNDING
137000	CY	TOTAL
		SOLID ROCK EXCAVATION
175073	CY	MAINLINE
416	CY	TOWN HIGHWAY # 48 (INCL. E.&W. APPROACHES
3500	CY	OVERBREAKAGE
11	CY	ROUNDING
179000	CY	TOTAL
		SUBBASE DENSE GRADED CRUSHED STONE
11809	CY	MAINLINE
810	CY	TOWN HIGHWAY # 48 (INCL. E.&W. APPROACHES
31	CY	ROUNDING
12650	CY	TOTAL
		BITUMINOUS CONCRETE PAVEMENT
5465	TON	MAINLINE
261	TON	TOWN HIGHWAY # 48 (INCL. E.&W. APPROACHES & OVERLAY 23+00 ~ 26+00)
8	TON	DRIVES
6	TON	PAVED DITCH
60	TON	ROUNDING
5800	TON	TOTAL
		FINE GRADING
19929	SY	MAINLINE
1918	SY	TOWN HIGHWAY # 48 (INCL. E.&W. APPROACHES)
420	SY	DRIVES
33	SY	ROUNDING
22300	SY	TOTAL

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS
		TRENCH EXCAVATION OF EARTH
1278	CY	DESIGNED DRAINAGE
1093	CY	UNDERDRAIN (INCS. ESTIMATED)
29	CY	ROUNDING
2400	CY	TOTAL
		TEMPORARY EROSION CONTROL (INC. IN EROSION CONTROL)
30	CY	STONE FILL TYPE I
500	SY	GEOTEXTILE FABRIC FOR SILT FENCE
36	LB	SEED WINTER RYE
.6	TON	HAY MULCH
120	SY	EROSION MATTING
60	CY	TRENCH EARTH
		TRENCH EXCAVATION OF ROCK
584	CY	DESIGNED DRAINAGE
720	CY	UNDERDRAIN
6	CY	ROUNDING
1310	CY	TOTAL

FINAL QUANTITIES ARE ARCHIVED WITH THE FIELD BOOKS

STATIONS FROM	STATIONS TO	PAVEMENT WIDTHS			EQUATIONS +	EQUATIONS -	FEET	MILES	REMARKS
		24'-35'	35' 24'						
104+00	109+50	550					500	0.104	CLIMBING LANE TAPER
109+50	122+25		1275				1275	0.241	CLIMBING LANE
122+25	125+00	275					275	0.052	CLIMBING LANE TAPER
125+00	128+00			300		0.80	299.20	0.057	ROADWAY
TOTALS		825	1275	300			2399.20	0.454	

PROJECT NAME BRATTLEBORO
PROJECT NUMBER STP-HES 010-1(30)

84e070qsl

QUANTITY SHEET

STATE OF VERMONT
AGENCY OF TRANSPORTATION

APPROXIMATE SUMMARY OF QUANTITIES

EROSION CONTROL	R.O.W.				BRIDGE	ROADWAY	QUANTITIES GRAND TOTAL	UNIT	ITEMS	ITEM NO.	ROUNDING
						100	100	LF	RELAYING PIPE CULVERTS	601.99	EST.
						8	8	CY	CEMENT RUBBLE MASONRY	602.15	.9
						9	9	EA	CAST IRON GRATE W/FRAME TYPE B	604.46	
						2775	2775	LF	6'' UNDERDRAIN	605.10	EST.
						270	270	LF	6'' UNDERDRAIN CARRIER PIPE	605.20	EST.
						8	8	EA	UNDERDRAIN FLUSHING BASIN	605.95	EST.
						37	37	HR	ROADWAY PATROL MAINTENANCE	607.10	EST
						1	1	HR	BULLDOZER RENTAL, TYPE I (NOT A BID ITEM)	608.10	EST.
						1	1	HR	BULLDOZER RENTAL, TYPE II (NOT A BID ITEM)	608.11	EST.
						1	1	HR	ALL PURP. EXCAVATOR RENTAL, TYPE I (NOT A BID ITEM)	608.25	EST.
						1	1	HR	ALL PURP. EXCAVATOR RENTAL, TYPE II (NOT A BID ITEM)	608.26	EST.
						1	1	HR	TRUCK RENTAL (NOT A BID ITEM)	608.37	EST.
						1	1	HR	LOADER RENTAL TYPE I (NOT A BID ITEM)	608.40	EST.
						1	1	HR	LOADER RENTAL TYPE II (NOT A BID ITEM)	608.41	EST.
						420	420	M. GAL	DUST CONTROL W/WATER	609.10	EST.
						3	3	TON	DUST AND ICE CONTROL W/CALC. CHLORIDE	609.15	EST.
400							400	CY	STONE FILL, TYPE I	613.10	11
10						7400	7410	CY	STONE FILL, TYPE II	613.11	6
						1	1	EA	RELOCATE MAILBOX, MULTIPLE SUPPORT	617.12	
						36	36	EA	BOUNDARY MARKERS	619.10	EST.
						23	23	EA	WOOD MARKER POST	619.15	EST.
						12	12	EA	REMOVING AND RESETTING PROP. MARKER	619.20	EST.
						24	24	LF	PLANK RAIL	621.15	
						1400	1400	LF	STEEL BEAM GUARD RAIL	621.20	
						32	32	LF	HEAVY DUTY GUARD RAIL	621.21	
						6	6	EA	BREAKAWAY CABLE TERMINAL	621.50	
						1	1	EA	TERMINAL CONNECTOR FOR STEEL BEAM GUARD RAIL	621.53	
						135	135	LF	REMOVING AND RESETTING GUARD RAIL	621.75	
						485	485	LF	REMOVAL AND DISPOSAL OF GUARD RAIL	621.80	5
						310	310	HR	UNIFORMED TRAFFIC OFFICERS	630.10	EST.
						844	844	HR	FLAGGERS	630.15	EST.
						1	1	LS	FIELD OFFICE-ENGINEERS	631.10	
						1	1	LS	TESTING EQUIPMENT - CONCRETE	631.16	

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS

FINAL QUANTITIES ARE ARCHIVED WITH THE FIELD BOOKS

STATIONS		PAVEMENT WIDTHS			EQUATIONS		FEET	MILES	REMARKS
FROM	TO				+	-			
TOTALS									

PROJECT NAME BRATTLEBORO
PROJECT NUMBER STP-HES 010-1(30)

84e070qs2
SHEET 6 OF 122 SHEETS

QUANTITY SHEET

STATE OF VERMONT
AGENCY OF TRANSPORTATION

APPROXIMATE SUMMARY OF QUANTITIES

EROSION CONTROL	R.O.W.	TRAINING			BRIDGE	ROADWAY	QUANTITIES GRAND TOTAL	UNIT	ITEMS	ITEM NO.	ROUNDING
						1	1	LS	TESTING EQUIPMENT - BITUMINOUS	631.17	-
						1	1	LS	FIELD OFFICE-TELEPHONE	631.25	
		1040					1040	HR	EMPLOYEE TRAINEESHIP	634.10	
						1	1	LS	MOBILIZATION	635.10	EST.
						150	150	HR	TRAFFIC OFFICER W/LIGHT	641.35	
						7200	7200	LF	DURABLE 4'' WHITE LINE	646.40	20
						14000	14000	LF	DURABLE 4'' YELLOW LINE	646.41	
						20	20	LF	DURABLE 24'' STOP BAR	646.46	
						4	4	EA	DURABLE LETTER OR SYMBOL	646.50	
						7200	7200	LF	TEMPORARY 4'' WHITE LINE	646.60	-
						14000	14000	LF	TEMPORARY 4'' YELLOW LINE	646.61	60
800							800	SY	GEOTEXTILE FABRIC FOR SILT FENCE	649.20	EST.
350							350	LB	SEED	651.15	8
40							40	LB	SEED-WINTER RYE	651.17	4
2850							2850	LB	FERTILIZER	651.18	
12							12	TON	AGRICULTURAL LIMESTONE	651.20	.8
12							12	TON	HAY MULCH	651.25	.2
150							150	EA	HAY BALES FOR EROSION CONTROL	651.26	
						450	450	CY	TOPSOIL	651.35	19
						11000	11000	SY	GRUBBING MATERIAL	651.40	27
120							120	SY	EROSION MATTING	654.10	EST.
						55	55	SF	TRAFFIC SIGNS, TYPE A	675.20	-
						380	380	LB	FLANGED CHANNEL SIGN POST	675.30	8
						23	23	EA	REMOVING SIGNS	675.50	2

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS

FINAL QUANTITIES ARE ARCHIVED WITH THE FIELD BOOKS

STATIONS		PAVEMENT WIDTHS			EQUATIONS		FEET	MILES	REMARKS
FROM	TO				+	-			
TOTALS									

PROJECT NAME BRATTLEBORO
PROJECT NUMBER STP-HES 010-1(30)

84e070qs3
SHEET 7 OF 122 SHEETS

ITEM DETAIL AND DRAINAGE SHEET

STATE OF VERMONT
AGENCY OF TRANSPORTATION

DRAINAGE STRUCTURES

STA.	STA.	POSITION	ASKEW	TYPE IN/OUT	DITCH IN	DITCH OUT	PIPE ARCH S IN	PIPE ARCH R IN	PIPE ARCH L FT	PIPE D IN	PIPE L FT	ALLOWABLE OPTIONS PCCSP TH	CAAP TH	RCP CL	CSP TH	CPEP SL	PCCSP FI TH	PIPE ELBOW NO-DEG	E S EA	CB	PROPOSED	DEPTH DI	CONC CL B CY	REIN STEEL LBS	DI GRATE TYPE	CHAN ELEV	CRM CY	TR EXCAV EARTH CY	TR EXCAV ROCK CY	COMM EXC CY	UNC CHAN EXC CY	STRUC EXCAV CY	GRAN BKF STRUC CY	GRAN BORR CY	EROS MATT SY	STONE FILL CY	STONE FILL TYPE	MRKR POSTS LT	MRKR POSTS RT	REMARKS
102+00.00	106+00	LT																									113								113	I			CONSTRUCT STONE LINED DITCH
103+34.10		℄	76-34 RT																				.5				28	4.2											REMOVE EXIST 15'' RCP/PLUG EXIST VCP PIPE W/CL B CONC.
105+37.80		℄	77-15 RT																								23	1.3											REMOVE EXIST. 15'' RCP PIPE
105+50.00		℄		RCDI		X				18	80	.064	.060	III		X						4.0	2.1	193	B			54								1	I	1	1	
108+50.00		℄		RCDI		X				18	112	.064	.060	III		X						3.5	1.9	158	B			205	83				6			1	I	1	1	CONSTRUCT OUTLET DITCH
109+50.00		RT																																					EXISTING 15'' RCP RETAIN (ON EXIST. RT. 9)
111+50.00		℄		RCDI RCDT						18	76	.064	.060	III		X						3.5	1.9	158	B				47				5.5					1		
111+51	114+49	LT		RCDI RCDT						18	300	.064	.060	III		X						4.5	2.3	200	B				178				22					1		
114+50		℄		RCDI RCDT						18	76	.064	.060	III		X						3.0	1.7	150	B				43				6						1	
114+51	117+49	LT		RCDI RCDT						24	300	.064	.060	III		X						5.0	2.5	231	B				203				25					1		
117+00		RT																																					EXISTING 18'' RCP RETAIN (ON EXIST. RT. 9)
117+50		℄		RCDI		X				30	116	.079	.075	III		X						5.5	3.7	303	B			187	19				1.5			4	II	1	1	CONSTRUCT OUTLET DITCH
117+50	118+30	LT																									28								28	I			CONSTRUCT STONE LINED DITCH
118+30	118+73	LT		RCDI		X				15	44	.64	.060	III								3.0	1.7	150	B			8												
118+73	121+25	LT																									83								83	I			CONSTRUCT STONE LINED DITCH
REV 121+44.74		℄	69-33 RT																								23	1											REMOVE EXIST. 18''RCP W/HEADWALL & INLET & OUTLET
REV 121+50	121+60	LT/RT		SHWAL		X				18	94	.064	.060			X										1.8	69							3	I	1	1	CONSTRUCT STRAIGHT HEADWALL & INLET
REV 124+24.25		LT		LAWAL RCDT						24	48	.064	.060	III		X										4.1	38											CONSTRUCT ''L'' TYPE HEADWALL & INLET
REV 124+24.25	124+82.00	LT/RT		RCDI		X				30	104	.79	.075	III		X						5.5	3.7	303	B			155								4	II		1	CONSTRUCT OUTLET DITCH
REV 124+24.25	124+45.00	LT																																					REMOVE EXIST. 24'' GMP
REV 124+65.46		℄	68-24 RT																								12	4											REMOVE EXIST. 30''RCP W/HEADWALL & INLET & OUTLET
125+70	126+65																																						CONSTRUCT PAVED DITCH
126+65	130+00	LT																									86								86	I			CONSTRUCT STONE LINED DITCH
TOWN HIGHWAY # 48																																							
20+75	22+00	RT																									44								44	I			CONSTRUCT SPECIAL DITCH W/STONE FILL TYPE I
20+66	22+00	RT/LT		SHWAL	X	X				18	172	.064	.060			X										1.8	122										1	1	END SECTION & INLET
23+89		℄																																					EXISTING 15''RCP RETAIN
TOTALS										15	44	.064	.060	III																									
										18	644	.064	.060	III		X							22.0	1846	9-B		7.7	1270	583.5				66		359	I	9	7	
										18	266	.064	.060			X																		8	II	1	6	
										24	348	.064	.060	III		X																						
										30	220	.079	.075	III		X																						
TOTALS																																							

GUARD RAIL

STA.	STA.	LT.	RT.	END TREATMENT	
	MAIN LINE				
102+25	107+00		475	2	621.50
116+00	123+50		750	2	621.50
125+35	127+10	175		2	621.50
	TOTAL		1400	6	
		TH # 48			
27+50	27+74.10	32			1
(FACTORED LENGTH)					
TOTALS					

UNDERDRAIN

STA.	STA.	TYPE	POS.	D	L	TRENCH E	TRENCH R	GRAN BKF	FB	MKR PST
102+50	105+50	U	LT	6	300	136			1	1
105+55	108+50	U	LT	6	295		180		1	1
108+55	111+50	U	LT	6	295		180		1	1
111+55	114+50	U	LT	6	295		180		1	1
114+55	117+50	U	LT	6	295		180		1	1
117+55	120+00	U	LT	6	245	151			1	1
120+00		C	℄	6	80	37				
125+00	129+50	U	LT	6	450	190			1	1
129+50		C	℄	6	90	29				
EST. UNDERDRAIN		U		6	600	525			1	1
		C		6	100	25				
TOTALS		U		2775					8	8
		C		270	1093	720				

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On CADD

PROJECT NAME BRATTLEBORO
PROJECT NUMBER STP - HES 010-1(30)

84E070DR 03-DEC-1993

FINAL DRAINAGE SUMMARY

PREPARED BY M.W.B. 8/4/95 PROJECT Brattleboro
CHECKED BY J.T.D. 9/8/95 NO. STP-HES 010-1(30)

	STATION	STATION	Position	Arrow	Type In	Type Out	Ditch In	Ditch Out	Pipe D	Pipe L	End Section	Depth DI	1X6	Item 601.25 Conc. Class	Item 507.15 Rein. Steel	Item 708.1 Type Stone	Item 602.15 CRM	Item 203.20 203.21 Trench Ex. Earth	Item 203.20 203.21 Trench Ex. Rock	Item 203.32 Grav. Bottom	Item 203.31 Sand Bottom	Item 605.15 Underd. Fabric	Item 613.10 613.11 Stone Fill Type I	Item 613.10 613.11 Stone Fill Type II	Item 619.15 Marker Post LT.	Item 619.15 Marker Post RT.	Drawing Sheet No.	6" Underdrain Type	6" Culvert Pipe	Bk. No.	Page No.	Remarks
	26	105+50																														
	102+00	106+00	LT.															96.0					96.0				—			2	9	Construct stone-lined ditch
	103+38	10	Rt.	76-34 Rt.														22.2	5.7								1			2	11	Remove old 18" R.C.P.
Added	103+40		Rt.		RCDI				18	74		3.75		2.0	175	B		67.1		33.0			1.8		1.	1.	4			2	12	Install new 18" C.A.A.P.
	105+37.80		Rt.	77-45 Rt.														16.1	2.9								1			2	13	Remove old 18" R.C.P.
	105+50		Rt.		RCDI				18	84		3.5		1.9	158	B		60.7	6.3	12.9			1.8		1.	1.	1			2	15	Install new 18" C.A.A.P.
	108+50		Rt.		RCDI			X	18	110.		3.5		1.9	158	B		14.1	99.4	61.0			2.1		1.	1.	3			2	19	Install new 18" C.A.A.P.
	109+50		RT.																								—			2	23	Retain existing 15" R.C.P.
	111+50		Rt.		RCDI	RCDI			18	78.		3.5		1.9	158	B			58.2	52.1					.1	1.	3			2	25	Install new 18" C.A.A.P.
	111+51	~ 114+49	LT.		RCDI	RCDI			18"	280.		4.25'		2.2.	197.	B			131.0	107.3					.1		—			2	29	Install new 18" C.A.A.P.
	114+50		Rt.		RCDI	RCDI			18	78.		3.0		1.7.	150.	B			52.3	52.6						.1	4			2	33	Install new 18" C.A.A.P.
	114+51	~ 117+48	LT.		RCDI	RCDI			24	280		4.6		2.4.	213.	B			157.9	131.4					1.		—			2	37	Install new 24" C.A.A.P.
	117+00		RT.																								—			2	41	Retain 18" R.C.P.
	117+50		Rt.		RTI			X	30	114.		5.5	X	3.7.	303.	B			221.5	25.0	71.1.			32.7	.1	1.	4			2	43	Install new 30" C.A.A.P. w/ 6" U.d.
	117+50	~ 118+30	LT.																23.7					23.7			2			2	47	Construct stone-lined ditch
	118+30	~ 118+73	LT.						15	44.									11.8								1			2	49	Remove old 15" CMP and install new 15" C.A.A.P.
	118+73	~ 121+25	LT.																82.0					82.0			2			2	51	Construct stone-lined ditch
Rev.	121+44.44	(121+55.5)	Rt.	69-33 Rt.															21.0	2.3							1			2	53	Remove old 18" R.C.P.
Rev.	121+50	~ 121+60	LT/Rt.		SRW			X	18	96							1.8		24.0		14.3			1.8		.1	.1	1			2	55	Install new 18" C.A.A.P.
Rev.	124+24.25	(124+52)	LT.		(RW)	RCDI			24	44.							3.2		52.6		7.2.					1.		2			2	59	Install new 24" C.A.A.P.
Rev.	124+24.25	124+82.8	Lt/Rt			RCDI		X	30	114.			9.6	X	3.06	295	B			253.5		79.8.			18.1	.1	.1	2			2	63	Install new 30" C.A.A.P. w/ 6" U.d.
Rev.	124+24.25	124+55.00	LT.	53-15 Rt.															19.1								1			2	67	Remove old 24" C.M.P.
Rev.	125+55.16		Rt.	68-23 Rt.															19.3	3.1							1			2	69	Remove old 30" R.C.P.
	125+70	~ 126+65	LT.																											2	71	Construct paved ditch
	126+65	~ 130+00	LT.																55.6					55.6						2	73	Construct stone-lined ditch
Added	116+25	~ 117+00	LT.																28.4					28.4						2	139	Construct stone-lined ditch
	Town Highway #43																															
	20+75	~ 22+00	RT.																39.7					39.7						2	75	Construct stone-lined ditch
	20+66	~ 22+00	Rt/Lt		SRW		X	X	18	172.	0						1.8		33.6		80.3					1.	.1	3			2	77	Install new 18" C.A.A.P.
	23+84		Rt.																									—			2	81	Retain 15" R.C.P.
	6" Underdrain																															
Added	102+55	~ 103+40	LT.																36.3											2	123	Install new 6" Underdrain
	103+45	~ 106+50	LT.																63.0	14.5										2	83	
	105+55	~ 108+50	LT.																166.9											2	87	
	108+55	~ 111+50	LT.																163.1											2	91	
	111+55	~ 114+50	LT.																160.5											2	95	
	114+55	~ 117+50	LT.																159.7											2	99	
Added	117+50		Rt.																											2	127	
	117+55	~ 120+01	LT.																183.9											2	103	
Added	120+00		Rt.																7.3											2	109	
	124+52		Rt.																											2	131	
	124+98	~ 129+50	Lt.																211.3	6.5										2	113	
	129+32		Rt.																14.2											2	111	
									15	44																						
									18	472																						
									24	324																						
									30	118																						
												2		20.8	1757	.9	6.8		1679.1	1210.0	703.3	7020		10	332.4	50.8	.18	11.		2325.0	18 6		

Included in underdrain prices

EARTHWORKS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

GRADES V. C.	GRADES % GRADE	STATION	ELEVATION ON TANGENT	ELEVATION ON CURVES	CORR V. C.	DIST	TOTAL EXCAVATION EARTH AND ROCK AREA	TOTAL EXCAVATION EARTH AND ROCK CU. YDS.	ROCK EXCAVATION AREA	ROCK EXCAVATION CU. YDS.	EMBANKMENT AREA	EMBANKMENT CU. YDS.		
		100+00	904.93											
		+30	903.29											
		+50	902.20											
		101+00	899.46											
		+50	896.73											
		+77	895.25											
								BEGIN APPROACH						
		102+00	894.00	894.00	+0.0		33				0			
						50		216				157	C	12583
	-5.4667%	+50	891.26	891.29	+0.02		200				170		F	1816
						50		353				338	R	621
		103+00	888.53	888.60	+0.07		181				195		FAC R	0.3
													Ex C	10953
		+34.10	886.67	886.80	+0.13									
						50		484				308		
								END APPROACH BEGIN PROJECT						
300 V.C.		+50	885.80	885.97	+0.17		342				138			
						50		756				216		
		104+00	883.29	883.36	+0.07		474				95			
	-5.0195%					50		897				130		
		+50	880.78	880.80	+0.02		495				45			
						50		921				125		
		105+00	878.27	878.27	+0.0		500				90			
		+37.80	876.37											
						50		1242				171		
		+50	875.76				841				95			
						50		2019				116		
		106+00	873.25				1340		0		30			
						50		2636		167		93		
		+50	870.74				1507		180		70			
						50		3059		454		162		
		107+00	868.23				1797		310		105			
						50		3635		499		169		
		+50	865.72				2129		229		78			
						50		5053		1481		75		
		108+00	863.21				3328		1370		3		C	130364
						50		7045		2666		6	F	466
		+50	860.70				4281		1509		3		R	76555
						50		8079		3933		6	FacR	0.3
		109+00	858.19				4444		2739		3		ExC	152864
						50		9103		5301		6		
		+50	855.68				5387		2986		3			
						50		12028		7115		25		
		110+00	853.17				7603		4698		24			
						50		15010		10213		44		
		+50	850.66				8608		6332		24			
						50		18395		13340		44		
		111+00	848.15				11259		8075		24			
						50		22372		15438		45		
		+50	845.64				12903		8598		25			
						50		29644		16569		46		
		112+00	843.13				19112		9296		25			
						50		31749		17271		46		
		+50	840.62				15177		9357		25			
CARRIED FORWARD								31749		17271		46		
COLUMN FOOTINGS								174696		94447		2328		

GRADES V. C.	GRADES % GRADE	STATION	ELEVATION ON TANGENT	ELEVATION ON CURVES	CORR V. C.	DIST	TOTAL EXCAVATION EARTH AND ROCK AREA	TOTAL EXCAVATION EARTH AND ROCK CU. YDS.	ROCK EXCAVATION AREA	ROCK EXCAVATION CU. YDS.	EMBANKMENT AREA	EMBANKMENT CU. YDS.		
		+50	840.62				15177		9357		25			
						50		26464		16740		46		
		113+00	838.11				13404		8722		25			
						50		22520		15741		46	C	159288
		+50	835.61				10918		8278		25		F	487
						50		18689		13538		46	R	97652
		114+00	833.10				9266		6343		25		FacR	0.3
						50		16104		11304		46	ExC	188097
		+50	830.59				8126		5865		25			
						50		13254		9043		46		
		115+00	828.08				6188		3901		25			
						50		10027		5643		28		
		+50	825.57				4642		2193		5			
						50		8375		3917		9		
		116+00	823.06				4403		2037		5			
						50		7269		3092		9		
		+50	820.55				3447		1302		5			
						50		4837		1363		165		
		117+00	818.04				1777		170		173			
						50		2524		201		340		
		+50	815.53				949		47		194			
		+92	813.42											
						50		1203		44		351		
		118+00	813.02				350		0		185			
						50		393				357		
	-5.0195%	+50	810.51				74				200			
						50		402				402		
		119+00	808.00				360				234			
						50		701				522		
		+50	805.49	803.49	+0.00		397				330		C	6015
						49.99		580				714	F	6038
		119+99.99	802.98	803.01	+0.03		229				441		R	245
													FacR	0.3
		120+00	802.98	803.01	+0.03								ExC	51
						49.96		212				855		
		+49.95	800.47	800.60	+0.13		0				483			
		+50	800.47	800.59	+0.12									
						49.91						924		
		+99.86	797.97	798.25	+0.28						517			
		121+00	797.96	798.24	+0.28									
						49.86						849		
		+44.20	795.74	796.21	+0.47									
		+49.72	795.46	795.96	+0.50						402			
		+50	795.45	795.95	+0.50									
						49.79						724		
		+99.51	792.97	793.74	+0.77						383			
		122+00	792.94	793.71	+0.77									
						49.86						658		
		+49.37	791.07	791.57	+0.52						330			
	-3.7813%													
		+50	791.05	791.54	+0.49									
						50.02						574	C	1047
		+99.39	789.18	789.46	+0.28						290		F	2410
													R	0
													FacR	0.3
													ExF	1363
CARRIED FORWARD								0		0		1232		
COLUMN FOOTINGS								133554		80626		7711		

GRADES V. C.	GRADES % GRADE	STATION	ELEVATION ON TANGENT	ELEVATION ON CURVES	CORR V. C.	DIST	TOTAL EXCAVATION EARTH AND ROCK AREA	TOTAL EXCAVATION EARTH AND ROCK CU. YDS.	ROCK EXCAVATION AREA	ROCK EXCAVATION CU. YDS.	EMBANKMENT AREA	EMBANKMENT CU. YDS.		
		+99.39	789.18	789.46	+0.28						290			
						50.02						435		
		123+00	789.16	789.44	+0.28									
		+49.41	787.29	787.42	+0.13		0				180			
		+50	787.27	787.39	+0.12									
						50.02		93				271		
		+99.43	785.40	785.43	+0.03		100				112			
		124+00	785.38	785.41	+0.03									
		+24.45	784.45	784.46	+0.01									
		+25	784.43	784.44	+0.01									
	-3.7813%					50.03		136				226		
		+49.46	783.51	783.51	+0.00		47				132			
		+50	783.49	783.49	+0.00									
		+62.26	783.02											
		+62.30	783.02											
		+67.45	782.83											
		+67.70	782.82											
						50.01		145				141		
		+77.46	782.45											
		+78	782.43											
		+99.47	781.62				109				20			
		125+00	781.60											
						50.52		204				40		
		+49.99	779.71				109				23			
		+50	779.71											
						50.45		224				39		
		126+00	777.82											
		+00.44	776.15				131				19			
		+50	775.92											
						50.27		245				26		
		+50.71	775.90				132				9			
		127+00	774.03											
						50.10		244				32		
		+00.81	774.00				131				25			
						49.99		341				23	C	1902
		+50	772.14	=									F	55
		+50.80					237				0		R	0
								END PROJECT BEGIN APPROACH					FAC-R	0.3
						50		414					EX-C	1847
		128+00	770.25				210							
						50		306						
		+50	768.36				120							
						50		227						
		129+00	766.47				125							
						50		222						
		+50	764.58				115							
						50		148						
		130+00	762.69				45							
								END APPROACH BUTT						
CARRIED FORWARD								1902				55		
COLUMN FOOTINGS								2949				1233		

Archived
On CADD

PROJECT NAME BRATTLEBORO
PROJECT NUMBER STP - HES 010-I(30)

84e070ewl

EARTHWORKS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

GRADES V.C.	GRADES % GRADE	STATION	ELEVATION ON TANGENT	ELEVATION ON CURVES	CORR V.C.	DIST	TOTAL EXCAVATION EARTH AND ROCK AREA	TOTAL EXCAVATION EARTH AND ROCK CU. YDS.	ROCK EXCAVATION AREA	ROCK EXCAVATION CU. YDS.	EMBANKMENT AREA	EMBANKMENT CU. YDS.	AREA	CU. YDS.
								TOWN HIGHWAY # 48						
								BEGIN CONSTRUCTION EAST APPROACH						
		20+20	826.36	826.36	-0.00		30		30				BUTT	
		+25	826.26	826.24	-0.02									
		+40	825.94	825.75	-0.19									
						50		743		194			C	2304
		+50	825.34	825.29	-0.05		772		180		0		F	1930
													R	361
		+60	824.75	824.75	-0.00								FAC-R	0.3
													EXC-C	482
		+75	823.85											
						50		1056		167		415		
		21+00	822.36				368		0		448			
		+25	820.86											
						50		341				838		
		+50	819.37	819.37	+0.00		0				457			
						50						550		
		22+00	816.38	817.23	+0.85		0				137			
		+25	814.89	816.80	+1.19									
						50		70				127		
		+50	815.94	816.79	+0.85		76				0			
						50		94						
		23+00	818.04	818.04	+0.00		26						BUTT	
								END CONSTRUCTION EAST APPROACH						
		+50	820.41					EXISTING ROADWAY						
		24+00	823.11											
		+50	826.21											
		25+00	829.86											
		+50	833.56											
								BEGIN CONSTRUCTION WEST APPROACH						
		26+00	837.16				43		0				BUTT	
		+25	838.81											
		+25.90	838.86	838.86	-0.00									
						50		116		19			C	867
		+50	840.45	840.19	-0.26		82		20				F	0
													R	55
		+75	842.10	841.02	-1.08								FAC-R	0.3
						50		242		30			EXC-C	884
		27+00	843.74	841.29	-2.45		179		12					
						25		213		6				
		+25	842.08	841.01	-1.07		281		0					
						25		209						
		+50	840.42	840.16	-0.26		171							
						24.10		87						
		+74.10	838.82	838.82	-0.00		24						BUTT	
								END CONSTRUCTION WEST APPROACH BEGIN BRIDGE						
		28+00	837.86											
		+05.65	837.65											

FINAL EARTHWORK SHEET

STATE OF VERMONT
AGENCY OF TRANSPORTATION

STATION	DIST	TOTAL EXCAVATION EARTH AND ROCK AREA	TOTAL EXCAVATION EARTH AND ROCK CU. YDS.	Item 203.16 Solid Rock Excav AREA	Item 203.16 Solid Rock Excav CU. YDS.	Item 203.15 Common Excav AREA	Item 203.15 Common Excav CU. YDS.								
								AREA	CU. YDS.	AREA	CU. YDS.	AREA	CU. YDS.	AREA	CU. YDS.
102+0		60.85				60.85									
	50		231.11				231.11								
+50		188.75				188.75				Total Excavation	=	11,770.23			
	50		343.77				343.77								
103+0		182.52				182.52									
	50		487.44				487.44								
+50		343.92				343.92				Item 203.15 Common Exc	=	9963.47 Cy			
	50		762.29				762.29								
104+0		479.35				479.35				Item 203.16 Solid Rock Exc	=	1806.76 Cy			
	50		878.23				878.23								
+50		469.25				469.25									
	50		891.22				891.22								
105+0		493.32		0		493.32									
	50		1210.97		110.07		1100.90								
+50		811.53		118.88		692.65									
	50		1810.40		347.38		1463.02								
106+0		1173.10		236.29		936.81									
	50		2329.82		538.03		1791.84								
+50		1343.16		324.78		1018.38									
	50		2794.78		811.28		1983.50								
107+0		1675.20		551.40		1123.80									
	50		3306.31		1281.90		2024.42								
+50		1895.62		833.05		1062.57									
	50		4475.06		1704.17		2770.90								
108+0		2987.45		1057.45		1930.00				Total Excavation	=	124,057.96 Cy			
	50		5970.42		2339.81		3630.60								
+50		3510.60		1519.55		1991.05									
	50		7062.30		3110.14		3952.16								
109+0		4116.68		1839.40		2277.28				Item 207.15 Common Excav	=	57535.67 Cy			
	50		8657.25		3504.35		5152.90								
+50		5233.15		1945.30		3287.85				Item 203.16 Solid Rock Exc	=	66502.32 Cy			
	50		11259.40		4790.73		6468.67								
110+0		6927.00		3228.90		3699.10									
	50		13634.76		7132.45		8501.31								
+50		7960.70		4474.15		3486.55									
	50		17234.23		11332.80		8101.44								
111+0		11352.27		7765.27		3587.0									
	50		22331.12		14788.34		7742.78								
+50		12981.36		8206.14		4775.20									
	50		25425.11		16517.43		8907.69								
112+0		14477.78		9632.48		4845.10									
	50		27787.96		17214.81		10573.15								
+50		15446.83		9391.32		6055.50									
	50		26722.78		18180.00		8542.78								
113+0		13413.78		10243.08		3170.70				Total Excavation	=	157,109.40 Cy			
	50		22441.92		18245.17		4196.75								
+50		10780.29		9461.70		1318.59									
	50		18649.27		16320.85		2328.42								
114+0		9360.92		8164.82		1196.10				Item 203.15 Common Exc	=	42,847.56 Cy			
	50		16006.94		13.686.19		2320.74								
+50		7726.57		6416.27		1310.30				Item 203.16 Solid Rock Exc	=	114,259.84 Cy			
	50		13517.23		10.370.89		2726.34								
115+0 Bgn		6704.44		5070.29		1634.15									
	0	—	—	—	—	—	—								
115+0 Bend		6466.94		4999.49		1467.45									
	50		10802.23		7993.47		2886.76								
+50		5285.87		3635.62		1650.25									
	50		9214.14		5745.35		3468.79								
116+0 Bgn		4665.40		2569.90		2095.55									
	0	—	—	—	—	—	—								
116+0 Bend		4694.40		2569.90		2124.50									
	50		7211.50		3730.51		3480.99								
+50		3094.02		1459.05		1634.97									
	50		4765.44		1920.09		2845.34								
117+0		2052.65		614.65		1438.00									
CARRIED FORWARD															
COLUMN FOOTINGS															

STATION	DIST	TOTAL EXCAVATION EARTH AND ROCK AREA	TOTAL EXCAVATION EARTH AND ROCK CU. YDS.	Item 203.16 Solid Rock Excav AREA	Item 203.16 Solid Rock Excav CU. YDS.	Item 203.15 Common Excav. AREA	Item 203.15 Common Excav. CU. YDS.								
								AREA	CU. YDS.	AREA	CU. YDS.	AREA	CU. YDS.	AREA	CU. YDS.
117+0		2052.65		614.65		1438.00									
	50		2661.97		636.39		2025.38								
+50		822.29		72.87		749.41									
	50		1093.81		67.47		1026.35								
118+0		359.05		0		359.05									
	50		399.58				399.58								
+50		72.50				72.50									
	50		375.93				375.93								
119+0		333.50				333.50									
	50		671.67				671.67								
+50		391.90				391.90									
	50		525.19				525.19								
120+0		175.30				175.30									
	50		162.31				162.31								
+50		0				0									
	150		0				0								
122+0		0				0									
	150		0				0								
123+50		0				0				Total Excavation	=	14,514.44 Cy			
	50		88.19				88.19								
124+0		95.25				95.25									
	50		148.15				148.15								
+50		64.75				64.75				Item 203.15 Common Excav	=	1459.84 Cy			
	50		183.61				183.61								
125+0		133.55				133.55				Item 203.16 Solid Rock Excav	=	0			
	50		226.76				226.76								
+50		111.35				111.35									
	50		219.05				219.05								
126+0		125.22				125.22									
	50		243.03				243.03								
+50		137.25				137.25									
	50		345.65				345.65								
127+0		236.05				236.05									
			423.61				423.61								
+50		221.45				221.45				Total Excavation	=	1859.63 Cy			
			398.10				398.10								
128+0		208.50				208.50									
			331.57				331.57								
+50		149.60				149.60				Item 203.15 Common Excav	=	1858.63 Cy			
			243.52				243.52								
129+0		113.40				113.40				Item 203.16 Solid Rock Excav	=	0			
			259.81				259.81								
+50		167.20				167.20									
			202.02				202.02								
130+0		50.98				50.98									
20+50 Bgn		105.35		73.50		31.85									
	25														
+75		523.35		468.05		55.30									
	25														
21+00		362.35		167.75		194.60									
	25														
21+25		0		0		0									
22+25		0				0									
	25		25.19				25.19								
+50		54.4				54.4									
	50		80.98				80.98								
23+0 Bgn		33.09				33.09									
23+0 End		36.79				36.79									
	50		95.65				95.65								
24+50		66.35				66.35									
	50		204.60				204.60								
27+0		154.62				154.62				Item 203.15 Common Excav	=	769.33 Cy			
	25		201.94				201.94								
27+25		281.57				281.57									
	25		195.56				195.56								
27+50		140.05				140.05									
	24.80		71.58				71.58								
27+74.80		15				15									
CARRIED FORWARD															
COLUMN FOOTINGS															

CONSTEW. PRF: 1
ZGD: (50, 50) CONST. DGN
21-SEP-1989

PROJECT NAME BRATTLEBORO
PROJECT NUMBER STP-HES 010-1(30)

SHEET OF SHEETS

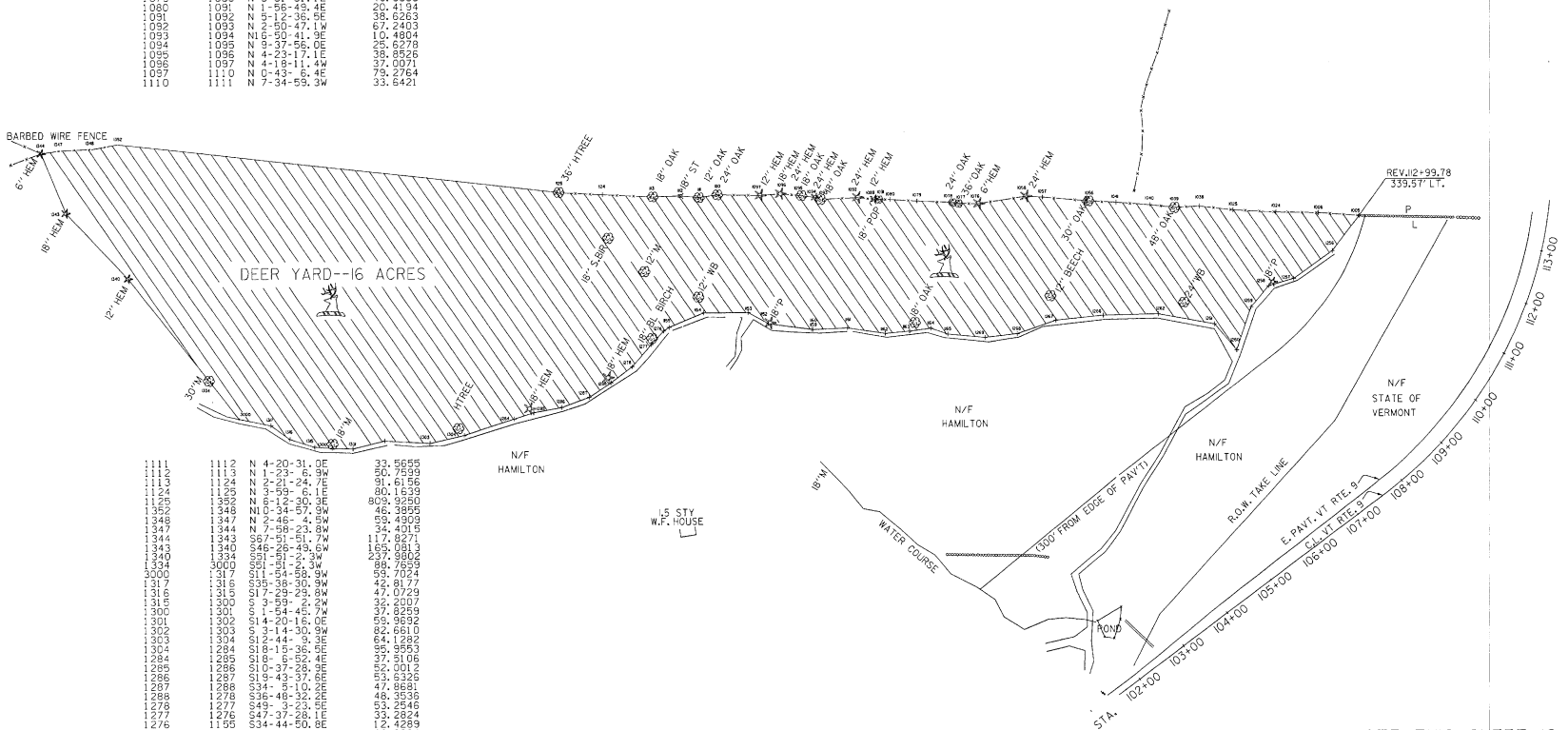
PROPOSED WINTER HABITAT FOR DEER

LAND OF E. & C. HAMILTON

CONSERVATION EASEMENT AREA

16 ACRES

FROM	TO	DIRECTION	DISTANCE
1005	1006	N 4- 0-22.3E	74.7062
1006	1024	N 0-59-51.0E	77.2021
1024	1025	N 2-53-11.1E	77.9198
1025	1038	N 6-14- 6.0E	62.4564
1038	1039	N 1- 6-45.4W	44.4651
1039	1040	N 4-22-29.6E	45.1770
1040	1041	N 4-14-57.3E	62.1891
1041	1056	N 3-56-10.6E	50.4673
1056	1057	N 4-23-11.6E	84.6211
1057	1058	N 4- 0-43.7E	30.1664
1058	1076	N 9- 8-42.9W	87.4199
1076	1077	N 0- 4-21.2E	36.1833
1077	1078	N13-56-42.8E	11.1476
1078	1079	N 1-55-27.6E	65.6212
1079	1080	N 3-31-31.1E	49.3383
1080	1091	N 1-56-49.4E	20.4194
1091	1092	N 5-12-36.5E	38.6263
1092	1093	N 2-50-47.1W	67.2403
1093	1094	N16-50-41.9E	10.4804
1094	1095	N 9-37-56.0E	25.6278
1095	1096	N 4-23-17.1E	38.8526
1096	1097	N 4-18-11.4W	37.0071
1097	1110	N 0-43- 6.4E	79.2764
1110	1111	N 7-34-59.3W	33.6421
1111	1112	N 4-20-31.0E	33.5655
1112	1113	N 1-23- 6.9W	80.7599
1113	1124	N 2-21-24.7E	91.6156
1124	1125	N 3-59- 6.1E	80.1639
1125	1352	N 8-12-30.3E	809.9250
1352	1348	N10-34-57.9W	46.3955
1348	1347	N 2-46- 4.5W	59.4909
1347	1344	N 7-58-23.8W	34.4015
1344	1343	S87-51-51.7W	117.8271
1343	1340	S46-26-49.6W	165.0813
1340	1334	S51-51-2.3W	237.9802
1334	3000	S51-51-2.3W	88.7659
3000	1317	S11-54-58.9W	59.7024
1317	1316	S35-38-30.9W	42.8177
1316	1315	S17-29-29.8W	47.0729
1315	1300	S 3-59- 2.2W	32.2007
1300	1301	S 1-54-45.7W	37.8259
1301	1302	S14-20-16.0E	59.9692
1302	1303	S 3-14-30.9W	82.6610
1303	1304	S12-44- 9.3E	64.1282
1304	1284	S18-15-36.5E	95.9553
1284	1285	S18- 6-52.4E	37.5106
1285	1286	S10-37-28.9E	52.0012
1286	1287	S19-43-37.6E	53.6326
1287	1288	S34- 5-10.2E	47.8681
1288	1278	S36-48-32.2E	48.3536
1278	1277	S49- 3-23.5E	53.2546
1277	1276	S47-37-28.1E	33.2824
1276	1155	S34-44-50.8E	12.4289
1155	1154	S22-28-41.0E	68.3294
1154	1153	S 0-16-39.6E	81.1462
1153	1152	S28-19-12.9W	42.2077
1152	1159	S 5-58- 8.5W	81.2854
1159	1160	S67-14- 1.7W	2.7609
1160	1161	S 2-41-19.8E	62.7734
1161	1162	S 8-42-43.3W	68.7300
1162	1163	S 5-31-32.9E	44.4596
1163	1164	S 7-46-28.4E	39.0532
1164	1165	S19-26- 2.4W	33.1109
1165	1269	S 5-30-43.7W	68.0775
1269	1268	S 6-48- 9.9E	59.1146
1268	1267	S19- 6-41.9E	74.9047
1267	1266	S 5-52-30.6E	87.4098
1266	1262	S 1-15-57.0E	100.3609
1262	1261	S10- 3-39.3W	104.8668
1261	1260	S43-55-30.9W	82.2633
1260	1259	S71-40-40.7E	82.9917
1259	1258	S50-16-44.0E	50.0827
1258	1257	S16-37- 6.0E	47.4426
1257	1256	S35-19-37.9E	86.7353
1256	1005	S62-37-55.6E	80.5059



DATUM

VERTICAL _____

HORIZONTAL _____

0 100 200

SCALE

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On CADD

NOTE: THIS SHEET IS FOR R.O.W. USE ONLY

SURVEYED BY	L.ORVIS	DATE	6-93
DRAWN BY	A.JONES	DATE	9-93
SQUAD LEADER	S.MENARD		
DESIGN FILE NO.	/sqdc/84e070/de070cy2d.dgn		
IPARM FILE	e070100.i	DATE PLOTTED	31-JAN-1994
PROJ. NAME	BRATTLEBORO		
PROJ. NO.	HES 010-1(30)		
SHEET	11 OF 122 SHEETS		

REVISED 1-31-94

STATE OF VERMONT
AGENCY OF TRANSPORTATION
RIGHT OF WAY PLANS
DETAIL SHEET

TABLE OF PROJECT PROPERTY ACQUISITION

PARCEL NO.	GRANTOR	SHEET NO.	BEGINNING STATION	ENDING STATION	TAKING	REM.	RIGHTS			TITLE TAKEN	DATE	TOWN OR CITY RECORDED	BK.	PG.	REMARKS
1	STARK, DONALD A.	10	101+84 RT. 101+84 RT.	102+02 RT. 102+00 RT.			CONST. SLOPE	(T) (T)	0.01A± 0.01A±	AGREE.		BRATTLEBORO			80 S.F.± 150 S.F.±
2	STRONG, ANN S.	10	102+00 CL. 102+00 RT. 102+90 RT. 103+50 RT. 105+50 RT. 108+10 RT. 108+25 RT. TH 48 27+40 RT. TH 48 27+42 RT.	108+88 RT. 103+50 RT. 107+10 RT. 107+00 RT. 108+90 RT. 108+75 RT. TH 48 27+65 RT. TH 48 27+80 RT.	0.41A±		ALL R. T. & I. SLOPE CONST. SLOPE CUL., DIT. & DR. CONST. DITCH & DRAINAGE SLOPE CONST.	 (T) (T) (P) (P) (T) (P) (T) (T)	 0.13A± 0.11A± 0.10A± 0.02A± 0.02A± 0.01A± 0.01A±	WD		BRATTLEBORO			VT. RTE. 9 1000 S.F.± 900 S.F.± 260 S.F.± 400 S.F.±
3A	HAMILTON, ELWIN R. & CINDY C.	10	102+00 LT. 109+00 RT. 105+50 LT. 109+60 RT. 113+22 LT.	113+69 RT. 113+69 RT. 113+22 LT. 113+38 RT. 113+10 LT.	4.71A±	2.58A±	 SLOPE CONST. ALL R. T. & I.	 (P) (T)	 0.62A± 0.12A±	WD		BRATTLEBORO			 STONE WALL
3B		10	102+00 CL.	109+00 RT.	0.41A±		ALL R. T. & I.								VT. RTE. 9
4A	BOYD, MARK A. & BOYD, EMILY A.	11	119+25 RT. 116+15 RT. 116+20 RT. 117+35 RT. 118+25 RT. 118+55 RT. REV. 121+60 RT. REV. 122+50 RT.	REV. 124+31 RT. 117+75 RT. 116+60 RT. 117+65 RT. REV. 124+31 RT. REV. 122+50 RT. REV. 124+12 RT.	0.23A±		 CONST. DITCH & DRAINAGE DITCH & DRAINAGE CONST. SLOPE CUL., DIT. & DR. SLOPE	 (T) (P) (P) (T) (P) (P) (T)	 0.07A± 0.02A± 0.01A± 0.13A± 0.11A± 0.06A±	WD		BRATTLEBORO			 2934 S.F.± 765 S.F.± 225 S.F.± 2494 S.F.±
4B	PARCEL 4 CONTINUED ON FOLLOWING SHEET	11	115+95 RT.	REV. 124+31 RT.	0.51A±		ALL R. T. & I.								VT RTE. 9

REVISION NO.	SHEET	DESCRIPTION OF REVISION	DATE	MADE BY	APPROVED BY
1	7,10 11	PARCEL NO. 5 DODGE. ADD DODGE, ETTA M. - LESSEE TO TITLE. PER C.O. 8125.	10-07-91	M. J. R.	L. W. B.
2	6,10	PARCEL NO. 2 STRONG. ADD ANN S. STRONG TO TITLE. PER C.O. 8124.	10-07-91	M. J. R.	L. W. B.
3	6,10	PARCEL NO. 3 HAMILTON. CHANGE P/L ALIGNMENT. INCREASE TAKE. REMAINDER AND CHANGE ENDING STATION. PER C.O. 8168.	01-03-91	M. J. R.	F. J. M.
4	7,10 11	PARCEL NO. 5 DODGE. CHANGE TAKE TO 2.94A± REMAINDER 0.33A±. CHANGE BEG. STA. OF REMAINDER TO 113+69 RT. ADD ALL R. T. & I. FOR STORAGE SHED AT 119+55 LT. ON PARCEL 5B CHANGE STA. 24+80 CL TO 23+86 CL. 0.40A±. ADD WALL, WALK & SHED TOPO. PER C.O. 8167.	01-03-92	M. J. R.	F. J. M.
5	7,11	PARCEL NO. 7 OLSON. CHANGE STA. TO REV. 124+28 LT. FOR ALL R. T. & I. IN ROW. PER C.O. 8164.	01-03-92	M. J. R.	F. J. M.
6	8,11	PARCEL NO. 8 OLSON. CHANGE STA. TO REVISED 124+28 LT. FOR ALL R. T. & I. IN ROW. CHANGE TAKE LINE NOT TO INCLUDE TOTAL COMMON ROW. REDUCE TAKE TO 0.12A±. PER C.O. 8163.	01-03-92	M. J. R.	F. J. M.
7	8,11	PARCEL NO. 9 FILION & STALKER. CHANGE STA. TO REV. 124+28 LT. FOR ALL R. T. & I. IN ROW. PER C.O. 8162.	01-03-92	M. J. R.	F. J. M.
8	8,11	PARCEL NO. 10 BORST. CHANGE STA. TO REV. 124+28 LT. FOR ALL R. T. & I. IN ROW. PER C.O. 8165.	01-03-92	M. J. R.	F. J. M.
9	8,11	PARCEL NO. 11 DEROSIA. CHANGE STA. TO REV. 124+28 LT. FOR ALL R. T. & I. IN ROW. PER C.O. 8166.	01-03-92	M. J. R.	F. J. M.
10	7,11	PARCEL NO. 5 DODGE. CHANGE TAKE FROM 2.99 A± TO 2.94A±; CHANGE REMAINDER FROM 0.57A± TO 0.33A±; CHANGE BEGINNING STA. OF REMAINDER FROM 113+38 RT. TO 113+69 RT.; ADD ALL R. T. & I. AT STA. 119+55 LT. FOR STORAGE SHEDS.; ON PARCEL 5B, CHANGE STA. 24+80 CL. TO 23+86 CL. AND AREA FROM 0.45 A± TO 0.40A±; ADD NEW TOPO TO LAYOUT. PER C.O. 8167.	01-03-92	M. J. R.	F. J. M.
11	7	PARCEL NO. 5 DODGE. REMOVE 'PERSONAL PROPERTY' ON MOBILE HOME. PER C.O. 8177.	01-03-92	M. J. R.	F. J. M.

03-3220 1805 84E070

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/usr/zfal/070070.dir/84e070d.dgn
DATE PLOTTED 01-DEC-1992
84e070dl.1

DR. (P)- DRAINAGE RIGHT
DIT. (P)- DITCHING RIGHT
CH. (P)- CHANNEL RT.
DRIVE (T)- DRIVE RIGHT
CUL. (P)- CULVERT RIGHT
[W]- WATER SOURCES

PRESENT R.O.W.
TAKING WITHOUT ACCESS
TAKING WITHOUT ACCESS ALONG PROPERTY LINE
TAKING WITH ACCESS
(P) PERMANENT EASEMENT
(T) TEMPORARY EASEMENT

LEGEND
CZ (P) CLEAR ZONE
CONST. (T) CONSTRUCTION EASEMENT
SR SR SLOPE RIGHTS
P L PROPERTY LINE
TOP OF CUT
TOE OF SLOPE

REVISED 11-30-92

APPROVED: LAWRENCE BLISS L.S. DATE: 8-26-91
AGENT D. PLANS & TITLES

R. O. W. PLANS
BRATTLEBORO
STP-HES-010-1(30)
ROW SHEET 6 OF 11

STATE OF VERMONT
AGENCY OF TRANSPORTATION
RIGHT OF WAY PLANS
DETAIL SHEET

TABLE OF PROJECT PROPERTY ACQUISITION

PARCEL NO.	GRANTOR	SHEET NO.	BEGINNING STATION	ENDING STATION	TAKING	REM.	RIGHTS	TITLE TAKEN	DATE	TOWN OR CITY RECORDED	BK.	PG.	REMARKS
	PARCEL 4 CONTINUED FROM PREVIOUS SHEET												
	BOYD, MARK A. & BOYD, EMILY A.												
4C		10	TH 48 27+14 LT. TH 48 26+55 LT. TH 48 26+30 LT.	TH 48 27+20 LT. TH 48 27+60 LT. TH 48 27+80 LT.			INSTALL & MAINTAIN (P) SLOPE (T) 0.01A± CONST. (T) 0.02A±						GUARDRAIL 150 S.F ± 900 S.F.±
5A	BELLOWS FALLS TRUST COMPANY	10,11	113+22 LT. 113+69 RT. 113+10 LT. 113+22 LT. 117+90 LT. 119+00 LT. 118+50 LT. 119+55 LT.±	119+65 RT. 114+50 RT. 117+20 LT. 113+10 LT.	2.94A±	0.33A±	SLOPE (P) 0.16A± ALL R. T. & I. ALL R. T. & I. ALL R. T. & I.	WD		BRATTLEBORO			STONE WALL ARTESIAN WELL SEPTIC TANK & APPURTENANCE DRIVE 12' GRAVEL M.P. 0147 STORAGE SHEDS
5B		10,11	TH 48 23+86 CL.	119+65 LT.	0.40A±		ALL R. T. & I.						VT RTE. 9
6	AKELEY, MARIAN D. BOYD, EMILY E. STARK, ELIZABETH A. DODGE, ETTA M.	10,11	TH 48 23+38 CL. TH 48 22+25 LT. TH 48 22+25 RT.	116+15 RT.	0.15A±		ALL R. T. & I. DRIVE (T) ALL R. T. & I.	WD		BRATTLEBORO			VT RTE. 9 12' GRAVEL SPRING & APPURTENANCE
7A	OLSON, STEVEN M. & DIANE M.	11	119+65 LT. REV. 120+00 LT. REV. 120+25 LT. REV. 121+25 LT.	REV. 121+45 LT. REV. 121+45 LT. REV. 121+45 LT.	0.14A±		CONST. (T) 0.03A± DITCH (P) 0.01A± CULVERT (P)	WD		BRATTLEBORO			1237 S.F.± 423 S.F.±
7B		11	119+65 CL.	REV. 121+45 LT.	0.10A±		ALL R. T. & I.						VT RTE. 9
7C		11	REV. 124+28 LT. REV. 124+65 LT.	REV. 125+70 LT.			ALL R. T. & I. DRIVE (T)						20' R.O.W. TO RTE. 9 30' GRAVEL M.P. 0159

REVISION NO.	SHEET	DESCRIPTION OF REVISION	DATE	MADE BY	APPROVED BY
12	9,10 11	RELINQUISHMENT NO. 1. CHANGE BEG. STA. TO TH 48 27+42 RT. AND REDUCE LENGTH TO 735'. PER C.O. 8194.	01-30-92	M.J.R.	F.J.M.
13	9,11	PARCEL NO. 17 OLSON. ADD NEW PARCEL NO. 17 OLSON, EDWARD W. & JOYCE M. PER C.O. 8198.	02-18-92	M.J.R.	F.J.M.
14	7,10 11	PARCEL NO. 18 DODGE. ADD NEW PARCEL (#18) FOR ETTA M. DODGE, ALL R.T. & I. IN HOUSE TRAILER, 118+85 LT. ~ 119+50 LT. PER C.O. 8205.	03-06-92	M.J.R.	L.W.B.
15	7,10 11	PARCEL NO. 5 DODGE. CHANGE TITLE TO BELLOWS FALLS TRUST COMPANY. REMOVE ALL R. T. & I. IN HOUSE TRAILER. PER C.O. 8206.	03-06-92	M.J.R.	L.W.B.
16	6,10	PARCEL NO. 2 STRONG. REMOVE RAYMOND B. STRONG, JR. FROM DETAIL SHEET AND LAYOUT. PER C.O. 8287.	11-09-92	C.C.P.	L.W.B.
17	7,11	PARCEL NO. 5 BELLOWS FALLS TRUST CO. REMOVE ALL R. T. & I. IN RIGHTS COLUMN OF DETAIL SHEET AND ON LAYOUT FOR STORAGE SHEDS AT STA. 119+55 LT.± PER C.O. 8289.	11-30-92	C.C.P.	L.W.B.
18	8,11	PARCEL NO. 8 OLSON. REMOVE CAROL A. OLSON FROM TITLE. ADD PERSONAL PROPERTY, SIGN, AT STA. 124+78 LT. PER C.O. 8312. MYLARS TO DESIGN 03-15-93	01-26-93	M.J.R.	L.W.B.

03-3220 1805 84E070

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DATE PLOTTED 27-JAN-1993
84e070d2.1

DR. (P)- DRAINAGE RIGHT
DIT. (P)- DITCHING RIGHT
CH. (P)- CHANNEL RT.
DRIVE (T)- DRIVE RIGHT
CUL. (P)- CULVERT RIGHT
[W]- WATER SOURCES

PRESENT R.O.W.
TAKING WITHOUT ACCESS
TAKING WITHOUT ACCESS ALONG PROPERTY LINE
TAKING WITH ACCESS
(P) PERMANENT EASEMENT
(T) TEMPORARY EASEMENT

LEGEND
CZ (P) CLEAR ZONE
CONST. (T) CONSTRUCTION EASEMENT
SR SR SLOPE RIGHTS
P PROPERTY LINE
L
TOP OF CUT
TOE OF SLOPE

REVISED 01-26-93

APPROVED: LAWRENCE BLISS L.S. DATE: 8-26-91
AGENT D. PLANS & TITLES

R. O. W. PLANS

BRATTLEBORO
STPHES-010-1(30)

ROW SHEET 7 OF 11

STATE OF VERMONT
AGENCY OF TRANSPORTATION
RIGHT OF WAY PLANS
DETAIL SHEET

TABLE OF PROJECT PROPERTY ACQUISITION

PARCEL NO.	GRANTOR	SHEET NO.	BEGINNING STATION	ENDING STATION	TAKING	R&M.	RIGHTS			TITLE TAKEN	DATE	TOWN OR CITY RECORDED	BK.	PG.	REMARKS
8A	OLSON, MICHAEL J.	11	REV. 121+45 LT. REV. 121+45 LT. REV. 121+45 LT. REV. 124+24 LT. REV. 126+50 LT. REV. 126+50 LT. REV. 124+00 LT. REV. 124+65 LT. REV. 124+78 LT. REV. 125+20 LT.	REV. 125+70 LT. REV. 122+25 LT. REV. 124+00 LT. REV. 126+62 LT. REV. 126+62 LT. REV. 125+70 LT.	0.12A±		SLOPE CONST. CULVERT ALL R. T. & I. SLOPE DRIVE SLOPE	(T) (T) (P) (T) (T) (T)	0.01A± 0.04A± 0.01A± 0.01A±	WD		BRATTLEBORO			516 S.F.± 1885 S.F.± STONE WALL 102 S.F.± SIGN - PERSONAL 30' GRAVEL M.P. 0159 SIGN PERSONAL 330 S.F.±
8B		11	REV. 121+45 LT.	REV. 126+62 LT.	0.30A±		ALL R. T. & I.								VT RTE. 9
8C		11	REV. 124+28 LT.	REV. 125+70 LT.			ALL R. T. & I.								20' R.O.W. TO RTE. 9
9	FILION, PETER J. & STALKER, CYNTHIA D.	11	REV. 124+28 LT. REV. 124+65 LT.	REV. 125+70 LT.			ALL R. T. & I. DRIVE	 (T)		QCD		BRATTLEBORO			20' R.O.W. TO RTE. 9 30' GRAVEL M.P. 0159
10	BORST, HARRY W. JR. & CAROLYN E.	11	REV. 124+28 LT. REV. 124+65 LT.	REV. 125+70 LT.			ALL R. T. & I. DRIVE	 (T)		QCD		BRATTLEBORO			20' R.O.W. TO RTE. 9 30' GRAVEL M.P. 0159
11	DEROSIA, STEPHEN V. & KRIS A.	11	REV. 124+28 LT. REV. 124+65 LT.	REV. 125+70 LT.			ALL R. T. & I. DRIVE	 (T)		QCD		BRATTLEBORO			20' R.O.W. TO RTE. 9 30' GRAVEL M.P. 0159
12A	GOLEMBIEWSKI, JOSEPH H. & KARIN G.	11	REV. 124+31 RT. REV. 127+25 RT. 128+00 RT. 129+50 RT. 129+80 RT.	130+00 RT. 130+00 RT. 129+70 RT. 130+15 RT.	0.31A±		CONST. SLOPE CUL., DIT. & DR. REMOVE & RESET	(T) (T) (P) (T)	0.06A± 0.02A±	WD		BRATTLEBORO			2701 S.F.± 981 S.F.± FENCE
12B		11	REV. 124+31 RT.	130+00 RT.	0.32A±		ALL R. T. & I.								VT RTE. 9

REVISION NO.	SHEET	DESCRIPTION OF REVISION	DATE	MADE BY	APPROVED BY

03-3220 1805 84E070

ACCT.prop
/usr/zfol/070070.dlr/84e070d.dgn
DATE PLOTTED 27-JAN-1993
84e070d3.1

DR.(P)- DRAINAGE RIGHT
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TAKING WITHOUT ACCESS ALONG PROPERTY LINE
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CONST.(T) CONSTRUCTION EASEMENT
SR SR SLOPE RIGHTS
P PROPERTY LINE
L
TOP OF CUT
TOE OF SLOPE

REVISED 01-26-93

APPROVED: LAWRENCE BLISS L.S. DATE: 8-26-91
AGENT D, PLANS & TITLES

R. O. W. PLANS
BRATTLEBORO
STP HES-010-1(30)
ROW SHEET 8 OF 11

STATE OF VERMONT
AGENCY OF TRANSPORTATION
RIGHT OF WAY PLANS
DETAIL SHEET

TABLE OF PROJECT PROPERTY ACQUISITION

PARCEL NO.	GRANTOR	SHEET NO.	BEGINNING STATION	ENDING STATION	TAKING	REM.	RIGHTS	TITLE TAKEN	DATE	TOWN OR CITY RECORDED	BK.	PG.	REMARKS
13A	MCKAY, JOHN E. & CHRISTIE W.	11	REV. 126+62 LT. REV. 126+77 LT. REV. 128+70 LT.	130+00 LT. 130+00 LT. 130+00 LT.	0.17A±		CONST. (T) 0.06A± SLOPE (T) 0.01A±	WD		BRATTLEBORO			2813 S.F.± 427 S.F.±
13B		11	REV. 126+62 LT.	130+00 LT.	0.19A±		ALL R. T. & I.						VT RTE. 9
14	TOWN OF BRATTLEBORO	10	TH 48 26+73 CL.				APPROACH (T)						TH 48
15	NEW ENGLAND TELEPHONE COMPANY												UTILITY
16	CENTRAL VERMONT PUBLIC SERVICE CORP.												UTILITY
17	OLSON, EDWARD W. & JOYCE M.	11	REV. 124+28 LT. REV. 124+65 LT.	REV. 125+70 LT.			ALL R.T. & I. DRIVE (T)	OCD		BRATTLEBORO			20' ROW TO RTE. 9 30' GRAVEL MP 0159
18	DODGE, ETTA M.	11	118+85 LT.	119+50 LT.			ALL R. T. & I.						HOUSE TRAILER
	RELINQUISHMENT NO. 1	10,11	TH 48 27+42 RT.	REV. 115+58 RT.									LENGTH 1115' VT. RTE. 9
	MAINTENANCE AGREE. NO. 1	11	REV. 115+58 RT.	REV. 115+55 RT.									LENGTH 22' NEW T.H. 48

REVISION NO.	SHEET	DESCRIPTION OF REVISION	DATE	MADE BY	APPROVED BY

03-3220 1805 84E070

ACCT.PROP
ZFAIL70,70384E070D.DGN
PRF: 84E070D4
DATE PLOTTED 6-MAR-1992

DR.(P)- DRAINAGE RIGHT
DIP.(P)- DITCHING RIGHT
CH.(P)- CHANNEL RT.
DRIVE (T)- DRIVE RIGHT
CUL.(P)- CULVERT RIGHT
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TAKING WITHOUT ACCESS
TAKING WITHOUT ACCESS ALONG PROPERTY LINE
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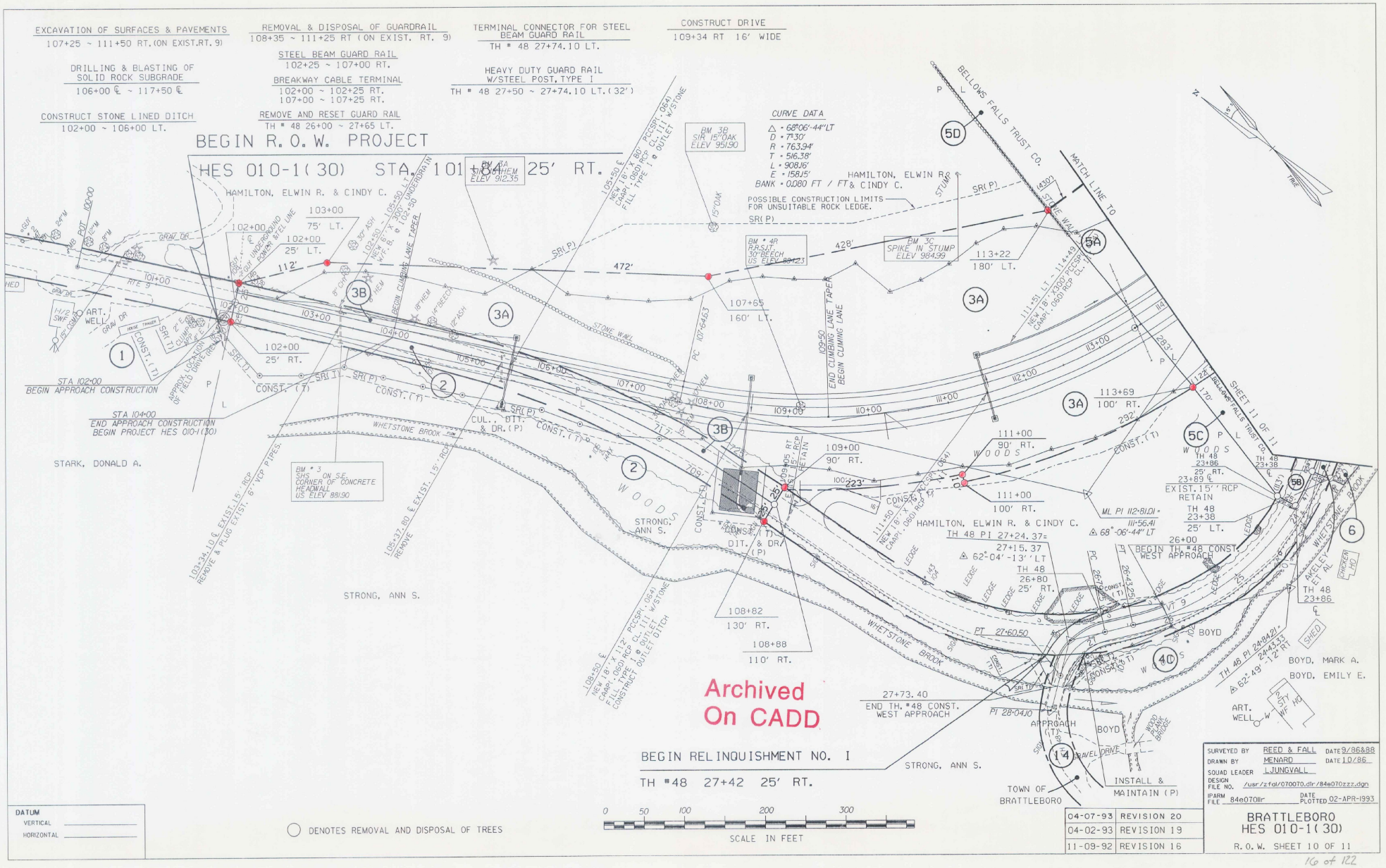
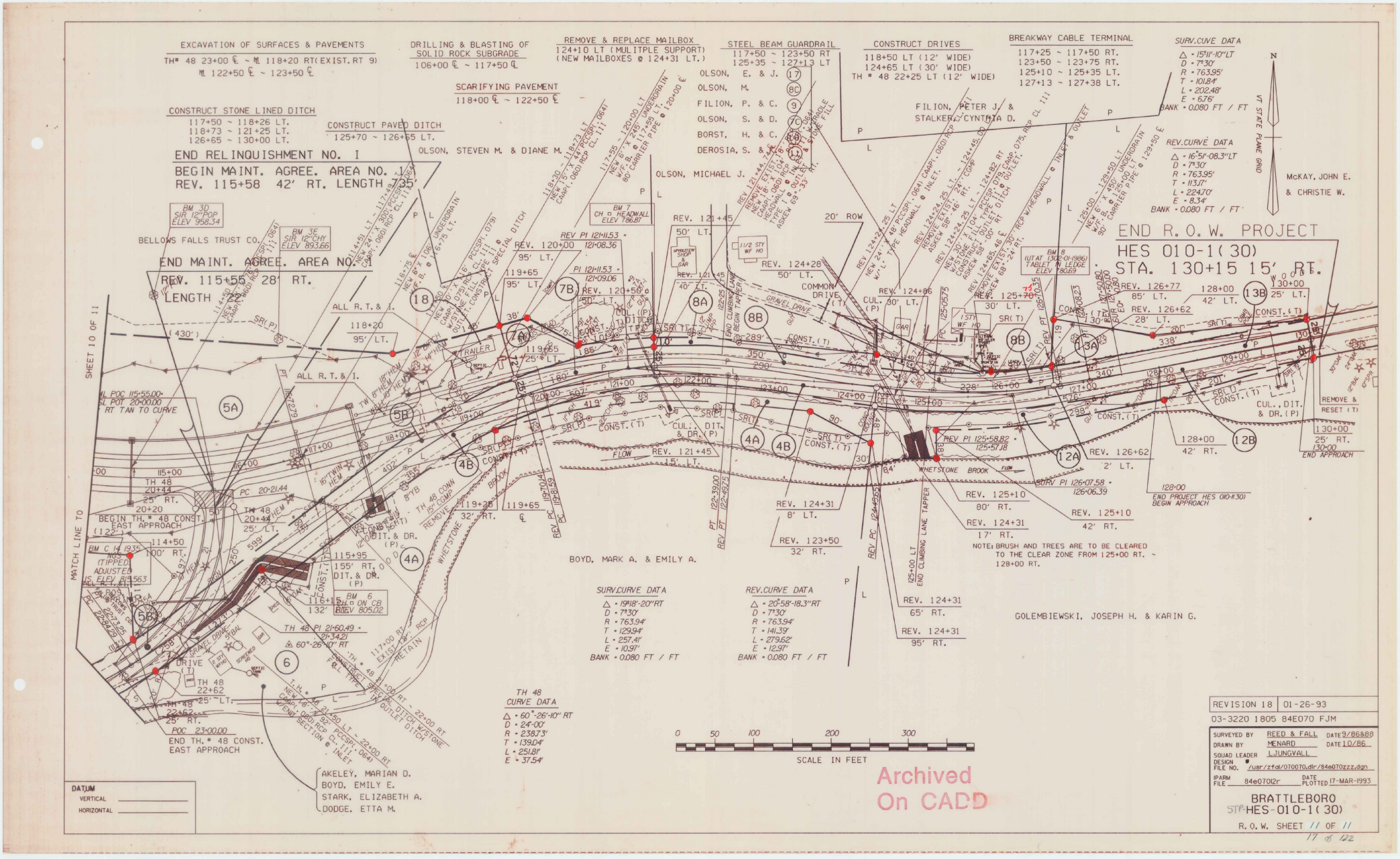
LEGEND
CZ (P) CLEAR ZONE
CONST.(T) CONSTRUCTION EASEMENT
SR SR SLOPE RIGHTS
P L PROPERTY LINE
TOP OF CUT
TOE OF SLOPE

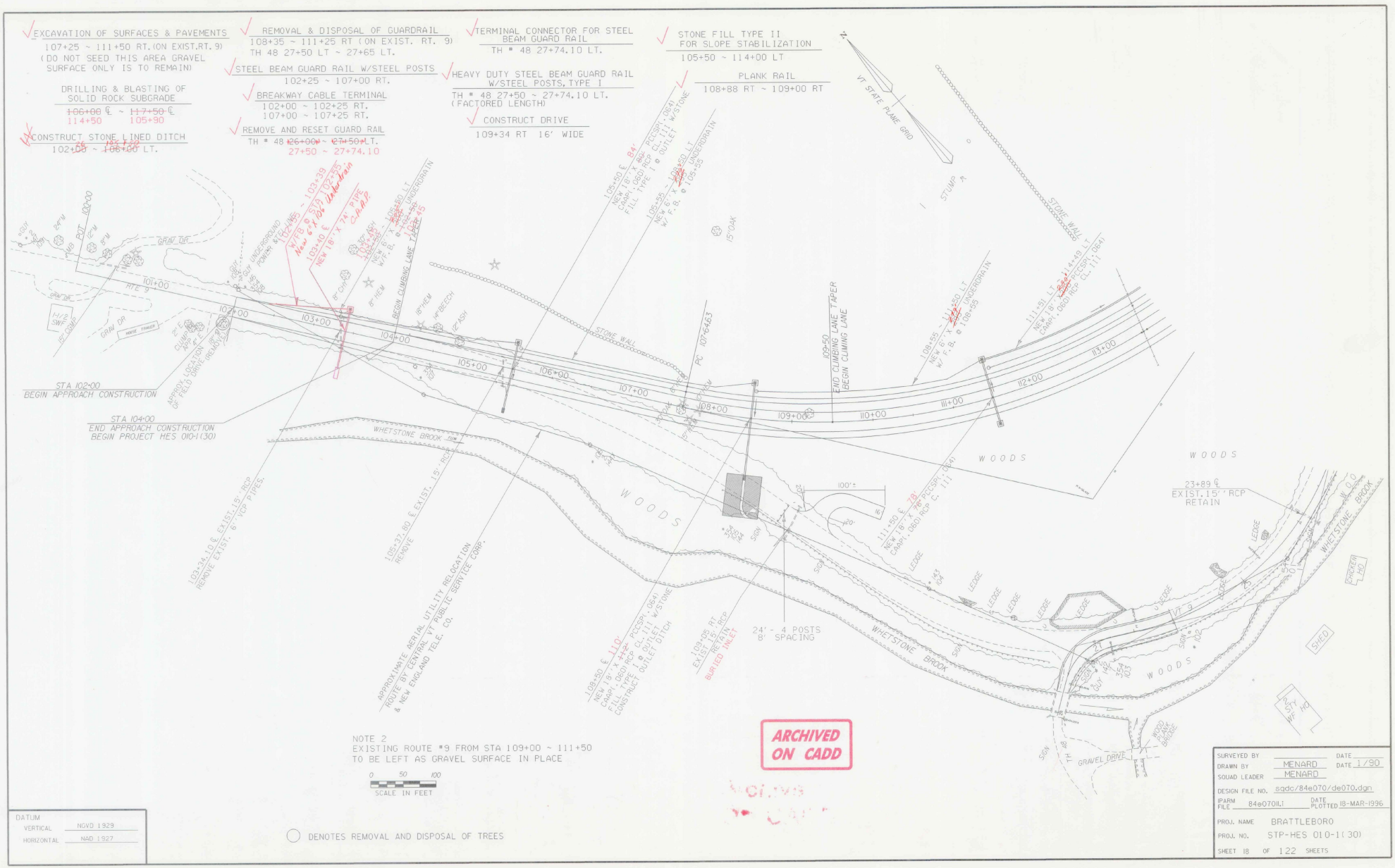
APPROVED: LAWRENCE BLISS L.S. DATE: 8-26-91
AGENT D, PLANS & TITLES

R. O. W. PLANS

BRATTLEBORO
STP HES-010-1(30)
ROW SHEET 9 OF 11


EXCAVATION OF SURFACES & PAVEMENTS
107+25 ~ 111+50 RT. (ON EXIST. RT. 9)
DRILLING & BLASTING OF SOLID ROCK SUBGRADE
106+00 ℄ ~ 117+50 ℄
CONSTRUCT STONE LINED DITCH
102+00 ~ 106+00 LT.
REMOVAL & DISPOSAL OF GUARDRAIL
108+35 ~ 111+25 RT (ON EXIST. RT. 9)
STEEL BEAM GUARD RAIL
102+25 ~ 107+00 RT.
BREAKWAY CABLE TERMINAL
102+00 ~ 102+25 RT.
107+00 ~ 107+25 RT.
REMOVE AND RESET GUARD RAIL
TH # 48 26+00 ~ 27+65 LT.
TERMINAL CONNECTOR FOR STEEL BEAM GUARD RAIL
TH # 48 27+74.10 LT.
HEAVY DUTY GUARD RAIL W/STEEL POST, TYPE I
TH # 48 27+50 ~ 27+74.10 LT. (32')
CONSTRUCT DRIVE
109+34 RT 16' WIDE
BEGIN R. O. W. PROJECT
HES 010-1(30) STA. 101+84 25' RT.
HAMILTON, ELWIN R. & CINDY C.
CURVE DATA
△ = 68°06'-44" LT
D = 7°30'
R = 763.94'
T = 516.38'
L = 908.16'
E = 158.15'
BANK = 0.080 FT / FT
POSSIBLE CONSTRUCTION LIMITS FOR UNSUITABLE ROCK LEDGE.
BELLOWS FALLS TRUST CO.
MATCH LINE TO
STA 102+00 BEGIN APPROACH CONSTRUCTION
STA 104+00 END APPROACH CONSTRUCTION BEGIN PROJECT HES 010-1(30)
STARK, DONALD A.
STRONG, ANN S.
WHETSTONE BROOK
BM # 3 SHS ON S.E. CORNER OF CONCRETE HEADWALL US ELEV 881.90
BM 3B SIR 15" OAK ELEV 951.90
BM 3C SPIKE IN STUMP ELEV 984.99
BM # 4R R.R.S.J.T. 30" BEECH US ELEV 884.23
BM 3A SIR 15" HEM ELEV 912.35
BM # 3 SHS ON S.E. CORNER OF CONCRETE HEADWALL US ELEV 881.90
END CLIMBING LANE TAPER BEGIN CLIMING LANE
BEGIN CLIMBING LANE TAPER
CUL., DIT. & DR. (P)
DIT. & DR. (P)
STONE WALL
WOODS
ML PI 112+81.01 = 111+56.41 △ 68°-06'-44" LT
TH 48 PI 27+24.37 = 27+15.37 △ 62°-04'-13" LT
TH 48 26+80 25' RT.
BEGIN TH. #48 CONST. WEST APPROACH
27+73.40 END TH. #48 CONST. WEST APPROACH
PI 28+04.10
APPROACH (T)
BOYD
BOYD, MARK A.
BOYD, EMILY E.
ART. WELL
TOWN OF BRATTLEBORO
INSTALL & MAINTAIN (P)
SHEET 11 OF 11
BEGIN RELINQUISHMENT NO. I
TH #48 27+42 25' RT.
Archived On CADD
DATUM
VERTICAL
HORIZONTAL
DENOTES REMOVAL AND DISPOSAL OF TREES
SCALE IN FEET
SURVEYED BY REED & FALL DATE 9/86&88
DRAWN BY MENARD DATE 10/86
SQUAD LEADER LJUNGVALL
DESIGN FILE NO. /usr/zfal/070070.dlr/84e070zzz.dgn
IPARM FILE 84e070llr DATE PLOTTED 02-APR-1993
04-07-93 REVISION 20
04-02-93 REVISION 19
11-09-92 REVISION 16
BRATTLEBORO
HES 010-1(30)
R.O.W. SHEET 10 OF 11


EXCAVATION OF SURFACES & PAVEMENTS
TH# 48 23+00 ℄ ~ ℳ 118+20 RT(EXIST. RT 9)
ℳ 122+50 ℄ ~ 123+50 ℄
DRILLING & BLASTING OF SOLID ROCK SUBGRADE
106+00 ℄ ~ 117+50 ℄
SCARIFYING PAVEMENT
118+00 ℄ ~ 122+50 ℄
REMOVE & REPLACE MAILBOX
124+10 LT (MULITPLE SUPPORT)
(NEW MAILBOXES @ 124+31 LT.)
STEEL BEAM GUARDRAIL
117+50 ~ 123+50 RT
125+35 ~ 127+13 LT
CONSTRUCT DRIVES
118+50 LT (12' WIDE)
124+65 LT (30' WIDE)
TH # 48 22+25 LT (12' WIDE)
BREAKWAY CABLE TERMINAL
117+25 ~ 117+50 RT.
123+50 ~ 123+75 RT.
125+10 ~ 125+35 LT.
127+13 ~ 127+38 LT.
SURV.CUVE DATA
Δ = 15°11'-10"LT
D = 7°30'
R = 763.95'
T = 101.84'
L = 202.48'
E = 6.76'
BANK = 0.080 FT / FT
REV.CURVE DATA
Δ = 16°51'-08.3"LT
D = 7°30'
R = 763.95'
T = 113.17'
L = 224.70'
E = 8.34'
BANK = 0.080 FT / FT
CONSTRUCT STONE LINED DITCH
117+50 ~ 118+26 LT.
118+73 ~ 121+25 LT.
126+65 ~ 130+00 LT.
CONSTRUCT PAVED DITCH
125+70 ~ 126+65 LT.
END RELINQUISHMENT NO. I
BEGIN MAINT. AGREE. AREA NO. 1
REV. 115+58 42' RT. LENGTH 135'
END MAINT. AGREE. AREA NO. 1
REV. 115+55 28' RT.
LENGTH 72'
OLSON, STEVEN M. & DIANE M.
OLSON, E. & J. (17)
OLSON, M. (8C)
FILION, P. & C. (9)
OLSON, S. & D. (7C)
BORST, H. & C. (8)
DEROSIA, S. & (11)
OLSON, MICHAEL J.
FILION, PETER J. & STALKER, CYNTHIA D.
McKAY, JOHN E. & CHRISTIE W.
BELLOWS FALLS TRUST CO.
BOYD, MARK A. & EMILY A.
GOLEMBIEWSKI, JOSEPH H. & KARIN G.
AKELEY, MARIAN D.
BOYD, EMILY E.
STARK, ELIZABETH A.
DODGE, ETTA M.
END R. O. W. PROJECT
HES 010-1(30)
STA. 130+15 15' RT.
END APPROACH
BEGIN TH. # 48 CONST. EAST APPROACH
END TH. # 48 CONST. EAST APPROACH
TH 48 CURVE DATA
Δ = 60°-26'-10" RT
D = 24°-00'
R = 238.73'
T = 139.04'
L = 251.81'
E = 37.54'
SURV.CURVE DATA
Δ = 19°18'-20"RT
D = 7°30'
R = 763.94'
T = 129.94'
L = 257.41'
E = 10.97'
BANK = 0.080 FT / FT
REV.CURVE DATA
Δ = 20°58'-18.3"RT
D = 7°30'
R = 763.94'
T = 141.39'
L = 279.62'
E = 12.97'
BANK = 0.080 FT / FT
NOTE: BRUSH AND TREES ARE TO BE CLEARED TO THE CLEAR ZONE FROM 125+00 RT. ~ 128+00 RT.
SCALE IN FEET
0 50 100 200 300
VT STATE PLANE GRID
DATUM
VERTICAL
HORIZONTAL
REVISION 18 01-26-93
03-3220 1805 84E070 FJM
SURVEYED BY REED & FALL DATE 9/86&88
DRAWN BY MENARD DATE 10/86
SQUAD LEADER LJUNGVALL
DESIGN FILE NO. /usr/ztfal/070070.dir/84e070zzz.dgn
IPARM FILE 84e07012r DATE PLOTTED 17-MAR-1993
BRATTLEBORO
STP HES-010-1(30)
R.O.W. SHEET 11 OF 11
Archived On CADD
SHEET 10 OF 11
MATCH LINE TO


EXCAVATION OF SURFACES & PAVEMENTS
107+25 ~ 111+50 RT. (ON EXIST. RT. 9)
(DO NOT SEED THIS AREA GRAVEL SURFACE ONLY IS TO REMAIN)
DRILLING & BLASTING OF SOLID ROCK SUBGRADE
106+00 ℄ ~ 117+50 ℄
114+50 105+90
CONSTRUCT STONE LINED DITCH
102+05 ~ 106+00 LT.
REMOVAL & DISPOSAL OF GUARDRAIL
108+35 ~ 111+25 RT (ON EXIST. RT. 9)
TH 48 27+50 LT ~ 27+65 LT.
STEEL BEAM GUARD RAIL W/STEEL POSTS
102+25 ~ 107+00 RT.
BREAKWAY CABLE TERMINAL
102+00 ~ 102+25 RT.
107+00 ~ 107+25 RT.
REMOVE AND RESET GUARD RAIL
TH # 48 26+00 ~ 27+50 LT.
27+50 ~ 27+74.10
TERMINAL CONNECTOR FOR STEEL BEAM GUARD RAIL
TH # 48 27+74.10 LT.
HEAVY DUTY STEEL BEAM GUARD RAIL W/STEEL POSTS, TYPE I
TH # 48 27+50 ~ 27+74.10 LT.
(FACTORED LENGTH)
CONSTRUCT DRIVE
109+34 RT 16' WIDE
STONE FILL TYPE II FOR SLOPE STABILIZATION
105+50 ~ 114+00 LT
PLANK RAIL
108+88 RT ~ 109+00 RT
VT STATE PLANE GRID
STUMP
STONE WALL
GRAV DR
RTE 9
STA 102+00
BEGIN APPROACH CONSTRUCTION
STA 104+00
END APPROACH CONSTRUCTION
BEGIN PROJECT HES 010-1(30)
BEGIN CLIMBING LANE TAPER
END CLIMBING LANE
BEGIN CLIMING LANE
PC 107+64.63
WHETSTONE BROOK
WOODS
23+89 ℄
EXIST. 15" RCP
RETAIN
24' - 4 POSTS
8' SPACING
GRAVEL DRIVE
WOOD PLANK BRIDGE
SHED
NOTE 2
EXISTING ROUTE #9 FROM STA 109+00 ~ 111+50
TO BE LEFT AS GRAVEL SURFACE IN PLACE
0 50 100
SCALE IN FEET
DENOTES REMOVAL AND DISPOSAL OF TREES
ARCHIVED ON CADD
DATUM
VERTICAL NGVD 1929
HORIZONTAL NAD 1927
SURVEYED BY
DRAWN BY MENARD
SQUAD LEADER MENARD
DATE
DATE 1/90
DESIGN FILE NO. sqdc/84e070/de070.dgn
IPARM FILE 84e07011.1
DATE PLOTTED 18-MAR-1996
PROJ. NAME BRATTLEBORO
PROJ. NO. STP-HES 010-1(30)
SHEET 18 OF 122 SHEETS

EXCAVATION OF SURFACES & PAVEMENTS

TH# 48 23+00 ℄ ~ ML 118+20 RT(EXIST. RT 9)
ML 122+50 ℄ ~ 123+50 ℄

CONSTRUCT STONE LINED DITCH
√117+50 ~ 118+30 LT.
√118+73 ~ 121+~~25~~ 30 LT.
√126+65 ~ ~~130+00~~ 129+50 LT.
116+25 ~ 117+00 RT.

CONSTRUCT PAVED DITCH
125+70 ~ 126+~~65~~ 75 LT.

DRILLING & BLASTING OF
SOLID ROCK SUBGRADE
~~105+90 ℄ ~ 114+50 ℄~~
T.H. #48 STA. 20+20 ~ 21+00

SCARIFYING PAVEMENT
118+00 ℄ ~ 122+50 ℄

CONSTRUCT SPECIAL DITCH
√T.H. #48 STA 20+75 ~ 22+00 RT

CONSTRUCT BERM
T.H. #48 STA 22+00 RT

REMOVE & REPLACE MAILBOX
124+10 LT (MULITPLE SUPPORT)
(NEW MAILBOXES @ 124+31 LT.)

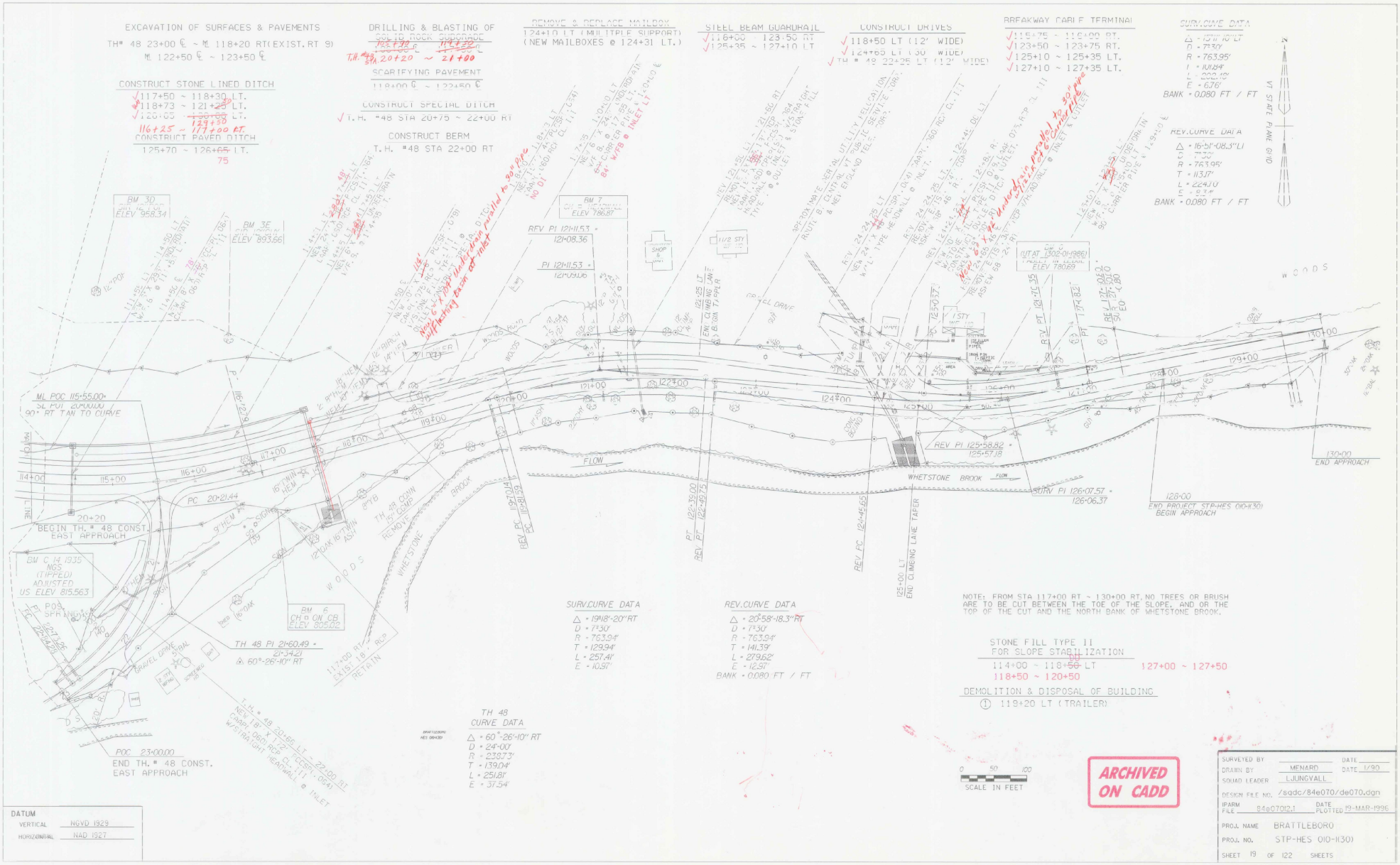
STEEL BEAM GUARDRAIL
√116+00 ~ 123+50 RT
√125+35 ~ 127+10 LT

CONSTRUCT DRIVES
√118+50 LT (12' WIDE)
√124+65 LT (30' WIDE)
√TH # 48 22+25 LT (12' WIDE)

BREAKWAY CABLE TERMINAL
√115+75 ~ 116+00 RT.
√123+50 ~ 123+75 RT.
√125+10 ~ 125+35 LT.
√127+10 ~ 127+35 LT.

SURV.CURVE DATA
Δ = 15°11'10" LT
D = 7°30'
R = 763.95'
T = 101.84'
L = 202.10'
E = 6.76'
BANK = 0.080 FT / FT

REV.CURVE DATA
Δ = 16°51'-08.3" LT
D = 7°30'
R = 763.95'
T = 113.17'
L = 224.70'
E = 8.34'
BANK = 0.080 FT / FT



SURV.CURVE DATA
Δ = 19°18'-20" RT
D = 7°30'
R = 763.94'
T = 129.94'
L = 257.41'
E = 10.97'

REV.CURVE DATA
Δ = 20°58'-18.3" RT
D = 7°30'
R = 763.94'
T = 141.39'
L = 279.62'
E = 12.97'
BANK = 0.080 FT / FT

TH 48
CURVE DATA
Δ = 60°-26'-10" RT
D = 24°00'
R = 238.73'
T = 139.04'
L = 251.81'
E = 37.54'

NOTE: FROM STA 117+00 RT ~ 130+00 RT, NO TREES OR BRUSH ARE TO BE CUT BETWEEN THE TOE OF THE SLOPE, AND OR THE TOP OF THE CUT AND THE NORTH BANK OF WHETSTONE BROOK.

STONE FILL TYPE II
FOR SLOPE STABILIZATION
114+00 ~ 118+~~50~~ 60 LT
118+50 ~ 120+50
127+00 ~ 127+50

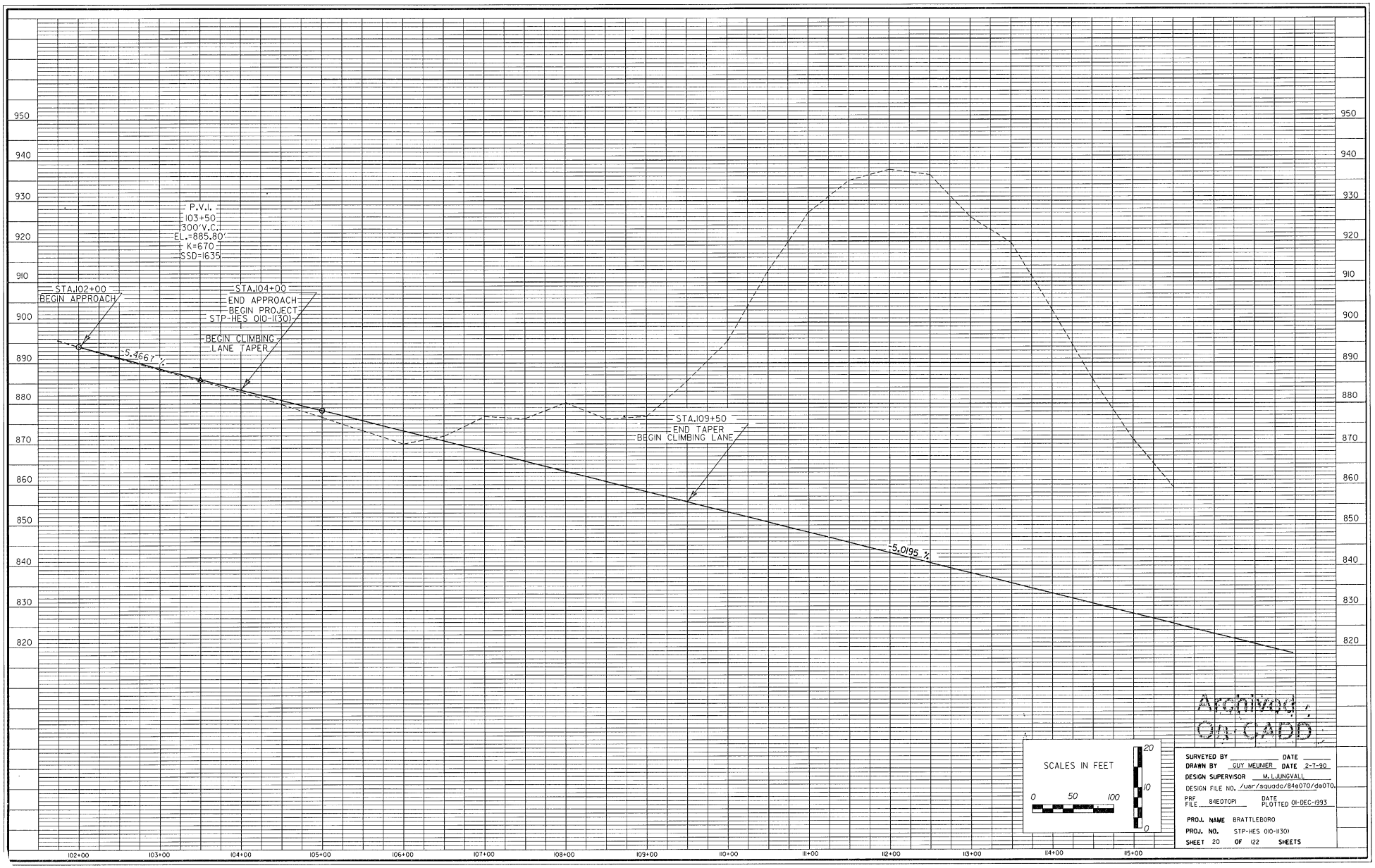
DEMOLITION & DISPOSAL OF BUILDING
① 119+20 LT (TRAILER)

0 50 100
SCALE IN FEET

ARCHIVED ON CADD

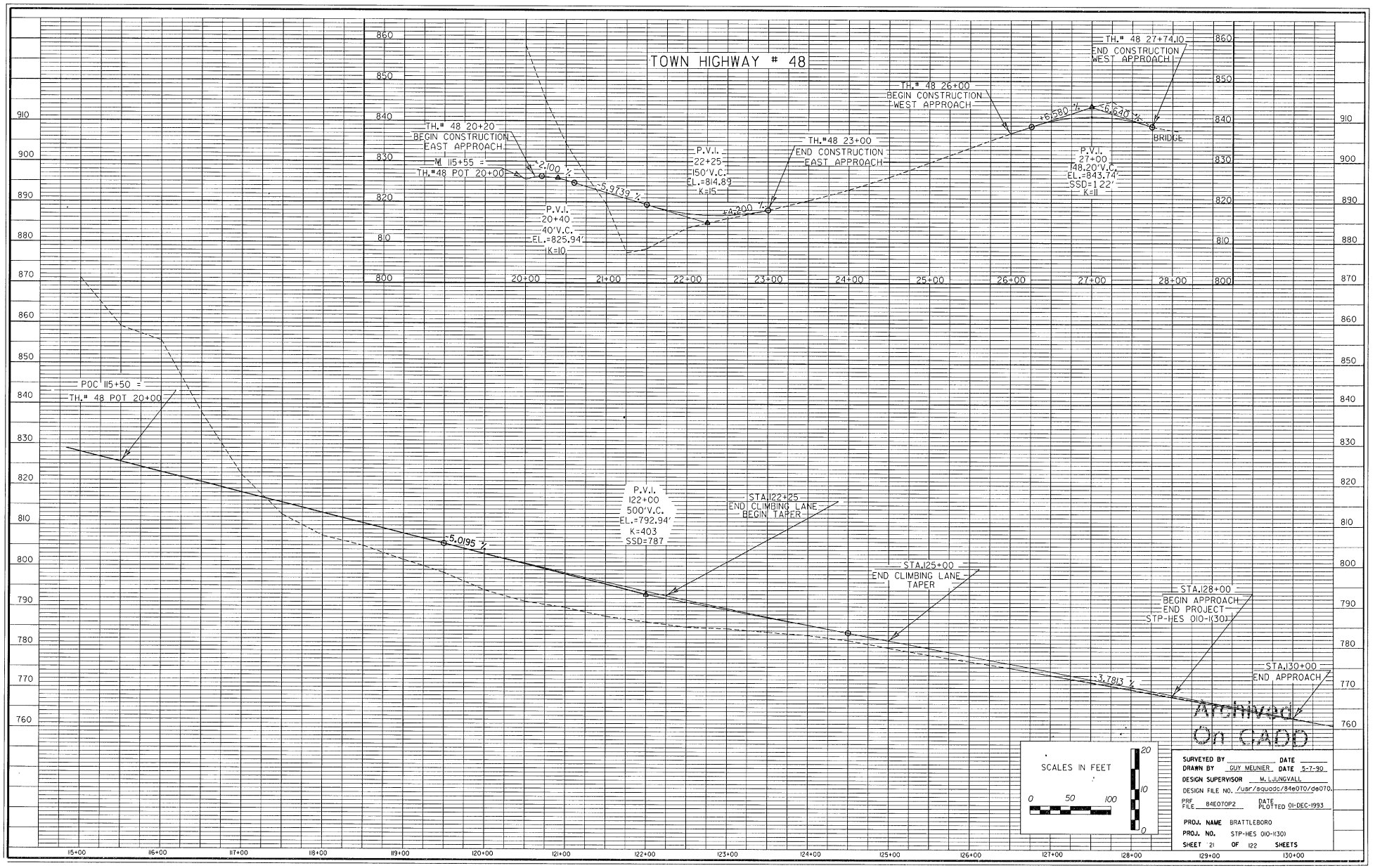
DATUM
VERTICAL NGVD 1929
HORIZONTAL NAD 1927

SURVEYED BY		DATE	
DRAWN BY	MENARD	DATE	1/90
SQUAD LEADER	LJUNGVALL		
DESIGN FILE NO.	/sqdc/84e070/de070.dgn		
IPARM FILE	84e07012.1	DATE PLOTTED	19-MAR-1996
PROJ. NAME	BRATTLEBORO		
PROJ. NO.	STP-HES 010-1(30)		
SHEET 19 OF 122 SHEETS			

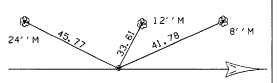


Archived On CADD

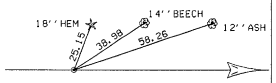
SURVEYED BY _____ DATE _____
DRAWN BY GUY MEUNIER DATE 2-7-90
DESIGN SUPERVISOR M. LJUNGVALL
DESIGN FILE NO. /usr/squadc/84e070/de070.
PRF FILE 84E070P1 DATE PLOTTED 01-DEC-1993
PROJ. NAME BRATTLEBORO
PROJ. NO. STP-HES 010-1(30)
SHEET 20 OF 122 SHEETS


TOWN HIGHWAY # 48
TH.# 48 20+20
BEGIN CONSTRUCTION
EAST APPROACH
℄ 115+55 =
TH.#48 POT 20+00
+2.100 %
-5.9739 %
P.V.I.
20+40
40'V.C.
EL.=825.94'
K=10
P.V.I.
22+25
150'V.C.
EL.=814.89
K=15
+4.200 %
TH.#48 23+00
END CONSTRUCTION
EAST APPROACH
TH.# 48 26+00
BEGIN CONSTRUCTION
WEST APPROACH
+6.580 %
-6.640 %
P.V.I.
27+00
148.20'V.C.
EL.=843.74'
SSD=122'
K=11
TH.# 48 27+74.10
END CONSTRUCTION
WEST APPROACH
BRIDGE
POC 115+50 =
TH.# 48 POT 20+00
-5.0195 %
P.V.I.
122+00
500'V.C.
EL.=792.94'
K=403
SSD=787
STA.122+25
END CLIMBING LANE
BEGIN TAPER
STA.125+00
END CLIMBING LANE
TAPER
STA.128+00
BEGIN APPROACH
END PROJECT
STP-HES 010-1(30)
-3.7813 %
STA.130+00
END APPROACH
SCALES IN FEET
0 50 100
20 10 0
115+00 116+00 117+00 118+00 119+00 120+00 121+00 122+00 123+00 124+00 125+00 126+00 127+00 128+00 129+00 130+00
Archived
On CADD
SURVEYED BY DATE
DRAWN BY GUY MEUNIER DATE 5-7-90
DESIGN SUPERVISOR M. LJUNGVALL
DESIGN FILE NO. /usr/squadc/84e070/de070.
PRF FILE 84E070P2 DATE PLOTTED 01-DEC-1993
PROJ. NAME BRATTLEBORO
PROJ. NO. STP-HES 010-1(30)
SHEET 21 OF 122 SHEETS

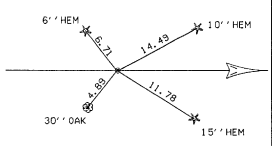
POT 100+00



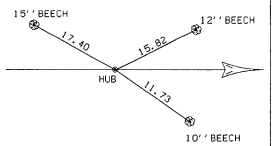
POT 104+17.66



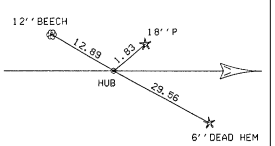
PC 107+64.63



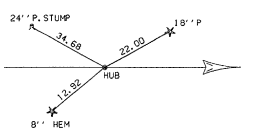
POC 110+00



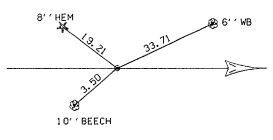
POC 111+00



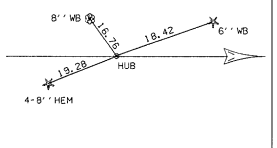
POC 112+25



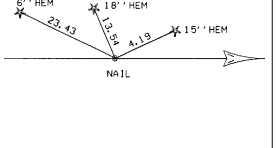
POC 113+50



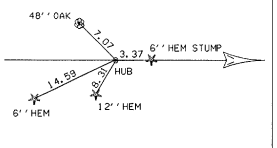
POC 115+55.00 = TH. POT 20+00



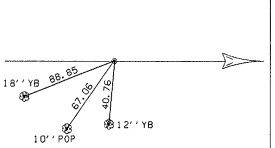
POC 116+00



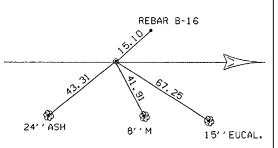
PT 116+72.79



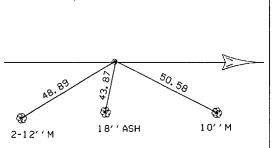
PC 119+81.59



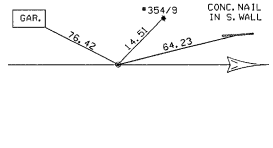
PI 121+11.53



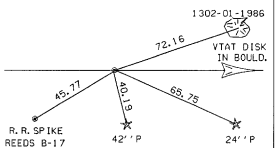
PT 122+39.00



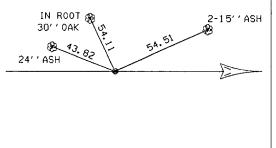
PC 125+05.73



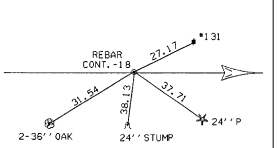
PI 126+07.57 = 126+06.37



PT 127+08.21



POT 132+95.55 = REED POT 90+60.41

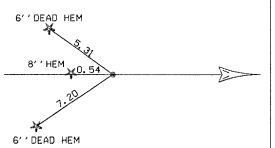


TOWN HIGHWAY # 48 TIES

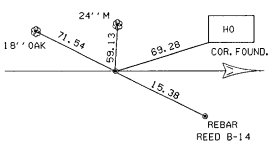
TH. POT 20+00 = POC 115+55.00

SEE M FOR TIES

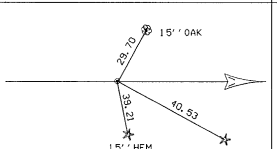
PC 20+21.44



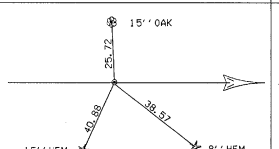
PI 21+60.49



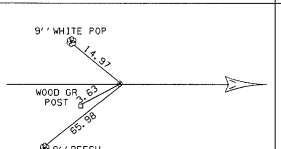
PT 22+73.26



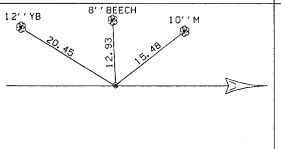
PC 22+84.28



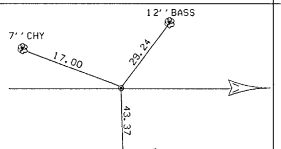
POST 23+86.66



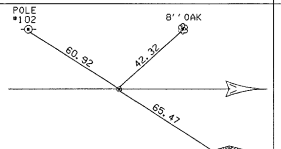
PI 24+84.21 = 24+43.33



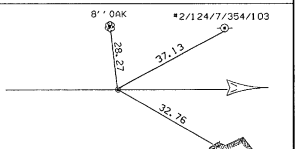
POST 25+34.89



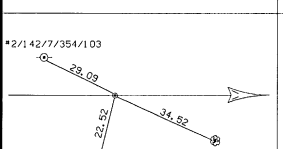
PT 26+43.25



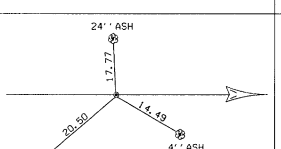
PC 26+79.24



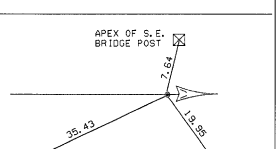
PI 27+24.37= 27+15.37



PT 27+60.49



POT 28+04.09

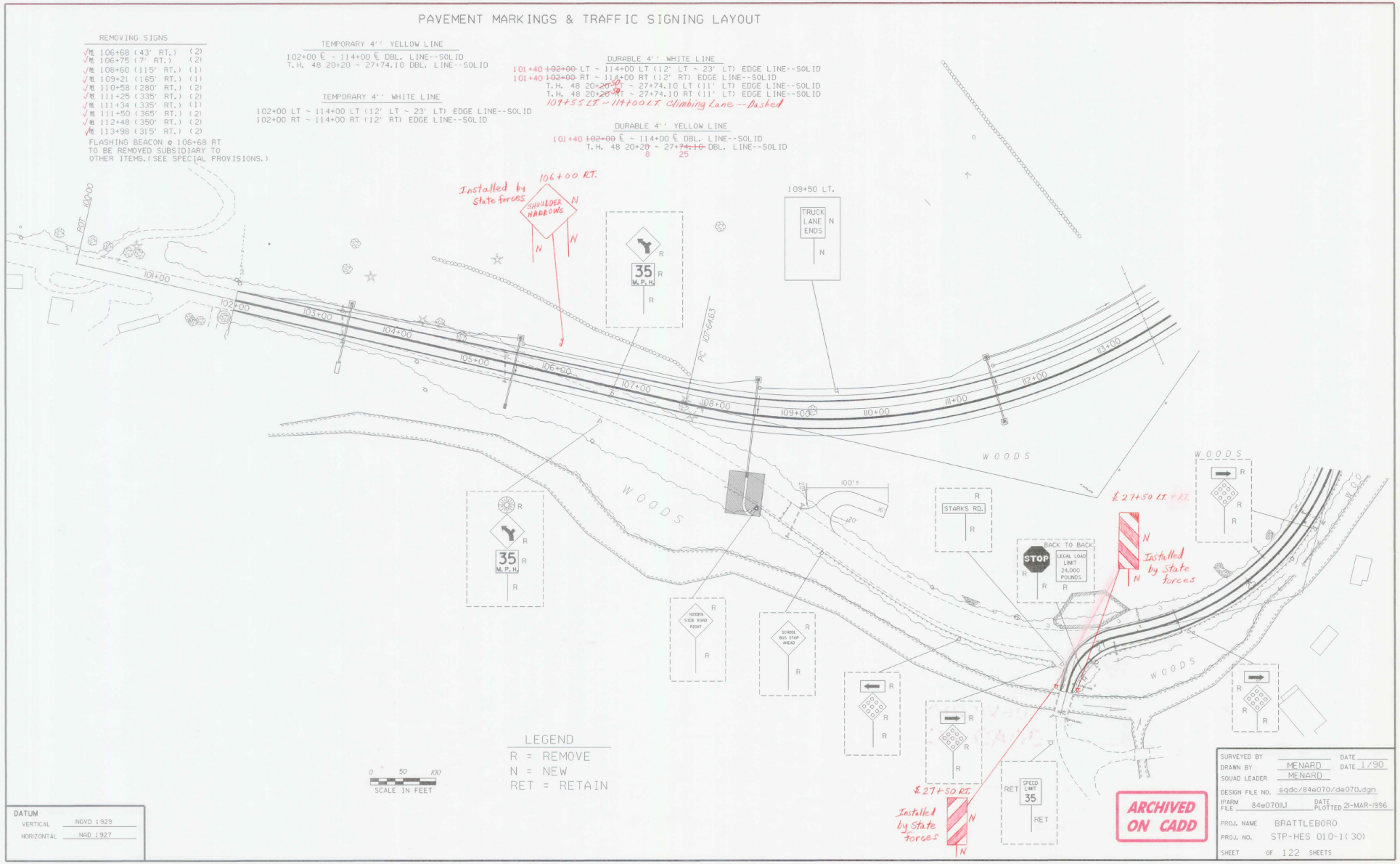


Archived On CADD

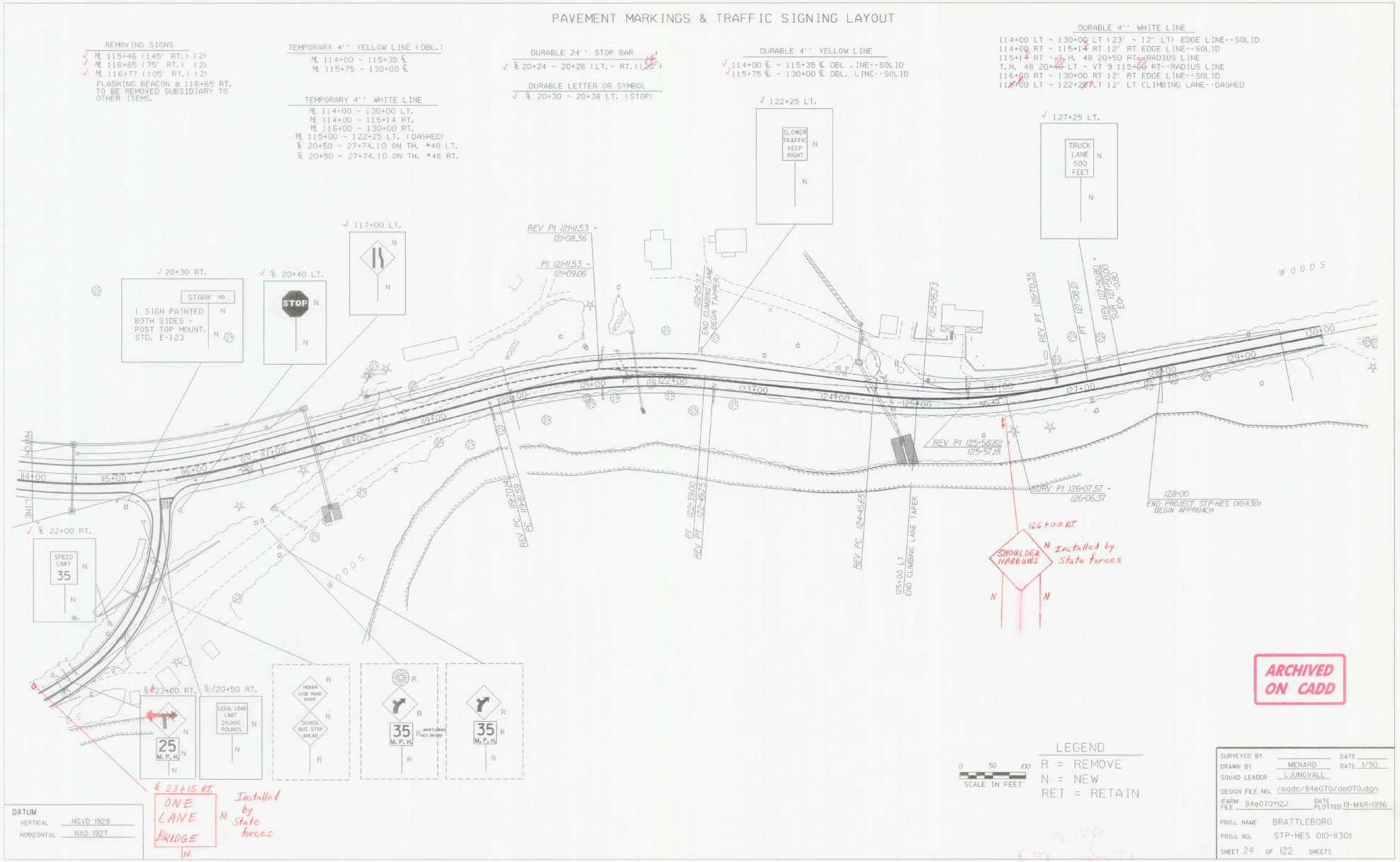
TIES NOT TO SCALE

SURVEYED BY	REED & FALL	DATE	9/86&88
DRAWN BY	sqdc	DATE	1/4/90
SQUAD LEADER	LJUNGVALL		
DESIGN FILE NO.	/usr/squadc/84e070/de070		
IPARM FILE	84E070TS	DATE PLOTTED	01-DEC-1993
PROJ. NAME	BRATTLEBORO		
PROJ. NO.	STP-HES 010-1(30)		
SHEET 22	OF 122 SHEETS		

PAVEMENT MARKINGS & TRAFFIC SIGNING LAYOUT



PAVEMENT MARKINGS & TRAFFIC SIGNING LAYOUT



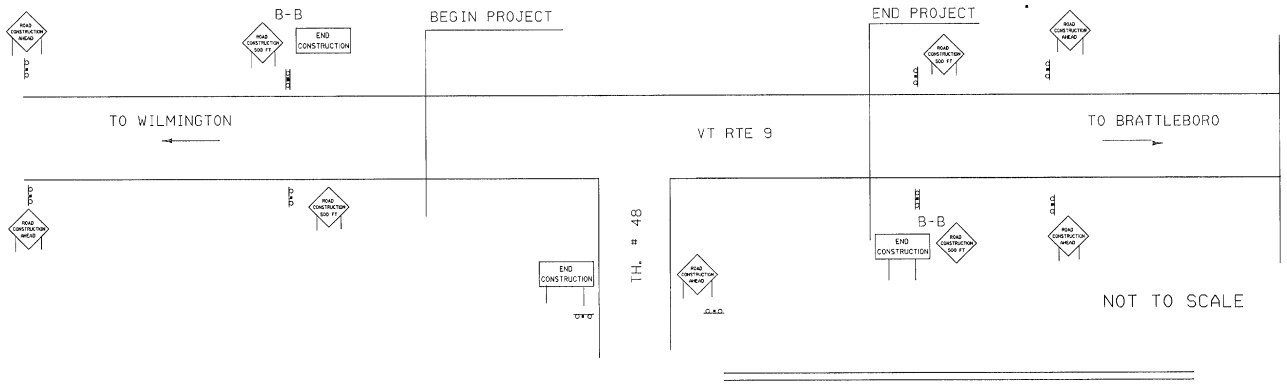
ARCHIVED ON CADD

MILEMARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS	NEW AND SALVAGED SIGNS				EXIST. POSTS		NEW SIGN POSTS																	REMARKS	SIGN DETAIL	
			"A"	"B"	SALV. SIGN	SALV. T.I.S.	RET.	SALV.	NO. OF POSTS	FLANGED CHANNEL LB./FT.			TUBULAR ALUMINUM		TUBULAR STEEL					W-SHAPE STEEL		FTG. SIZE		SIGN FRAME		DETAIL ON SHEET NUMBER	STD. SHEET NUMBER
										1.12	2.0	3.0	3.0"ø	4.0" ø	FOUND-ATION	3"ø	3.5"ø	4.0"ø	5.0"ø	POST SIZE	WEIGHT	24"	30"			
109+50 LT	TRUCK LANE ENDS	24" X 30"	5						1			X														E-141
117+00 LT		36" X 36"	9						1			X														E-151
122+25 LT	SLOWER TRAFFIC KEEP RIGHT	24" X 30"	5						1			X														E-141
127+25 LT	TRUCK LANE 500 FEET	24" X 30"	5						1			X														E-141
FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE TRAFFIC & SAFETY DIVISION'S " SIGN POST DESIGN GUIDELINE ". TOTALS			SF. 24.0	SF.	EA.	SF.			LBS.	LBS.	LBS. 168	LBS.	LBS.	EA.	LBS.	LBS.	LBS.	LBS.		LBS.	EA.	EA.					

Archived On CADD

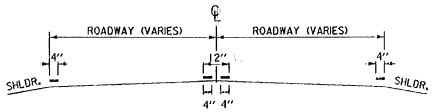
DRAWN BY _____ DATE _____
SQUAD LEADER MENARD
DESIGN FILE NO. /sqdc/84a070/da070.dgn
IPARM _____ DATE PLOTTED 03-DEC-1993
FILE j84a070tsl
PROJ. NAME BRATTLEBORO
PROJ. NO. STP-HES 010-1(30)
SHEET 25 OF 122 SHEETS

MILEMARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS	NEW AND SALVAGED SIGNS				EXIST. POSTS		NEW SIGN POSTS																REMARKS	SIGN DETAIL	
			"A"	"B"	SALV. SIGN	SALV. T.I.S.	RET.	SALV.	NO. OF POSTS	FLANGED CHANNEL LB./FT.			TUBULAR ALUMINUM		TUBULAR STEEL					W-SHAPE STEEL		FTG. SIZE		SIGN FRAME		DETAIL ON SHEET NUMBER	STD. SHEET NUMBER
										1.12	2.0	3.0	3.0"ø	4.0"ø	FOUND-ATION	3"ø	3.5"ø	4.0"ø	5.0"ø	POST SIZE	WEIGHT	24"	30"			
TOWN HIGHWAY # 48																											
20+30 RT	STARK RD.	9''X 36''		4.50					1			X														E-123	
20+40 LT	STOP	30''X 30''		6.25					1			X														E-143	
20+50 RT	LEGAL LOAD LIMIT 24,000 POUNDS	24''X 30''		5					1			X														E-141	
22+00 RT	SPEED LIMIT 35	24''X 30''		5					1			X														E-142	
23+00 RT		30''X 30''		6.25					1			X														E-151	
23+00 RT	25 M.P.H.	18''X 18''		2.25																							
FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE TRAFFIC & SAFETY DIVISION'S " SIGN POST DESIGN GUIDELINE ". TOTALS			SF.	SF. 29.50	EA.	SF.				LBS.	LBS.	LBS. 204	LBS.	LBS.	EA.	LBS.	LBS.	LBS.	LBS.		LBS.	EA.	EA.				



Archived On CADD

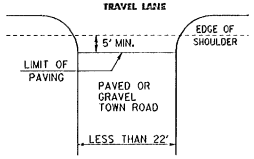
DRAWN BY _____ DATE 1/90
SQUAD LEADER MENARD
DESIGN FILE NO. /sqdc/84a070/de070.dgn
IPARM FILE 84a070ts2 DATE PLOTTED 03-DEC-1993
PROJ. NAME BRATTLEBORO
PROJ. NO. STP-HES 010-(30)
SHEET 26 OF 122 SHEETS



PAVEMENT MARKING PLACEMENT DETAIL

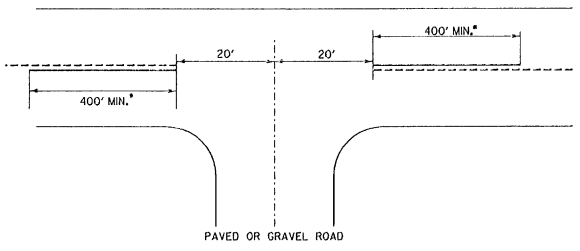
TRAFFIC NOTES

DETAIL B



PAVING LIMITS FOR TOWN ROADS

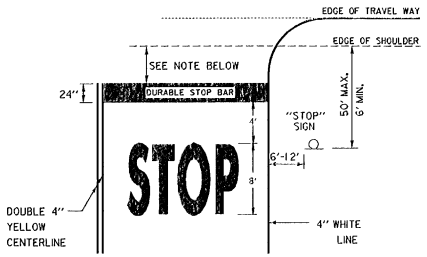
NOT TO SCALE



A SOLID LINE IN THE DIRECTION OF TRAVEL IS BEGUN AT A LOCATION 400 FEET IN ADVANCE OF THE INTERSECTION. THE DISTANCE IS MEASURED FROM A POINT 20 FEET IN ADVANCE OF THE CENTERLINE OF THE INTERSECTING ROADWAY.

* CENTERLINE TREATMENT SHALL CONSIST OF A MINIMUM OF 400 FEET OF SOLID LINE IN ADVANCE OF THE INTERSECTION AND SHALL BE PAIRED WITH EITHER A SOLID OR DASHED LINE DEPENDING ON SIGHT DISTANCE AVAILABILITY IN THE OPPOSING LANE.

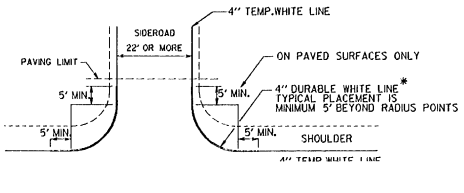
APPROACH TO A SIDE ROAD INTERSECTION



THE "DESIRED STOPPING POINT" IS THE LOCATION BASED ON SITE CONDITIONS THAT BEST ALLOWS THE STOPPED VEHICLE TO VIEW THE APPROACHING TRAFFIC , IN NO CASE MORE THAN 30 FEET OR LESS THAN 4 FEET FROM THE NEAREST EDGE OF THE INTERSECTING ROADWAY.

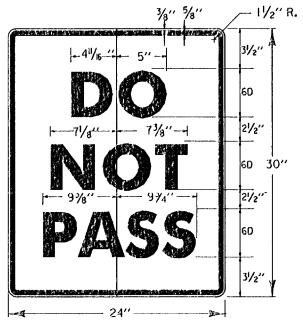
PAVEMENT MARKING DETAILS
(SEE TRAFFIC NOTE "F")

DETAIL A



* FOR ALL PAVED CLASS 1 & CLASS 2 TOWN HIGHWAYS AND ANY CLASS 3 TOWN HIGHWAY WIDER THAN 22 FEET.

DURABLE EDGELINE RADIUS LAYOUT TYPICAL



LEGEND - BLACK (NON-REFL.)
BACKGROUND - ORANGE (ENCAPSULATED LENS)
SEE NOTE " C SIGN DETAIL

GUIDELINES FOR MINIMUM INTERIM PAVEMENT MARKINGS FOR CONSTRUCTION ZONES

A. DEFINITION - INTERIM MARKINGS ARE MARKINGS THAT ARE PLACED PRIOR TO THE APPLICATION OF FINAL PAVEMENT MARKINGS ON THE WEARING COURSE AS SPECIFIED IN THE PROJECT PLANS. THE COST ASSOCIATED WITH THE INTERIM MARKINGS INCLUDING MATERIAL COST, PLACEMENT COSTS, AND REMOVAL COSTS SHALL BE SUBSIDIARY TO THE SPECIFIED FINAL PAVEMENT MARKINGS.

B. INTERIM MARKINGS SHALL CONSIST OF TAPE, OR, TEMPORARY RAISED PAVEMENT MARKERS (RPM'S).

THE TAPE SHALL BE OF A TYPE EASILY REMOVED IF PLACED ON THE FINAL PAVEMENT SURFACE. INTERIM TAPE MARKINGS OR RPM'S WILL BE OFFSET AND REMOVED IMMEDIATELY UPON APPLICATION OF THE SPECIFIED FINAL MARKINGS AND SHALL BE APPLIED AS DESCRIBED BELOW.

STATEMENTS A OR B PERTAIN TO THE PAVEMENT MARKINGS PLACED ON THE WEARING COURSE. MARKINGS PLACED ON THE BASE COURSE OR VARIOUS LIFTS OF PAVEMENT MAY CONSIST OF TAPE, PAINT OR RPM'S. IF TAPE IS USED, IT SHALL THE TYPE THAT CAN BE PAVED OVER OR A TYPE EASILY REMOVED. IF RPM'S ARE USED, PAYMENT SHALL BE THE LINEAR RATE AS IF A SOLID LINE WAS APPLIED.

C. CENTERLINE AND GORE AREA MARKINGS SHALL BE APPLIED AT THE END OF EACH WORKING DAY. THE FOLLOWING LAYOUT REQUIREMENTS SHALL BE MET:

NO PASSING ZONE
-SOLID STRIPES- DOUBLE YELLOW REMOVABLE PAVEMENT MARKING TAPE LINES SPACED 4" APART.
OR
-RAISED PAVEMENT MARKERS- IN NO CASE SHALL TEMPORARY RAISED PAVEMENT MARKERS BE USED FOR MORE THAN THREE CALENDAR DAYS BEFORE THE APPLICATION OF THE SPECIFIED FINAL MARKINGS.

RAISED PAVEMENT MARKERS (REMOVABLE) WHEN USED, SHALL BE PLACED ON 5'CENTERS WITH EVERY 4TH MARKER BEING REFLECTORIZED. THE RAISED PAVEMENT MARKINGS SHALL BE SUPPLEMENTED WITH BLACK ON ORANGE "DO NOT PASS" SIGNS PLACED AT THE BEGINNING OF THE NO PASSING ZONE AND EVERY 1000' THEREAFTER THROUGHOUT THE NO PASSING ZONE. ALL TEMPORARY RAISED PAVEMENT MARKERS SHALL BE REMOVED IMMEDIATELY UPON PLACEMENT OF THE SPECIFIED FINAL MARKINGS, ALL COSTS ASSOCIATED WITH "DO NOT PASS" SIGNS AND THEIR INSTALLATION SHALL BE SUBSIDIARY TO THE SPECIFIED FINAL PAVEMENT MARKINGS.

DASHED LINE
-10-FOOT SOLID LINE WITH 30-FOOT GAP.
OR
FOR MARKINGS TO BE USED FOR THREE DAYS OR LESS
-4 FOOT SOLID LINE WITH 36 FOOT GAP TO BE REMOVED IMMEDIATELY UPON THE APPLICATION OF THE SPECIFIED FINAL MARKINGS.
OR
-4 RETRO-REFLECTIVE RPM'S ON THREE FOOT CENTERS WITH A 30 FOOT GAP TO BE REMOVED IMMEDIATELY UPON THE APPLICATION OF THE SPECIFIED FINAL MARKINGS.

GORE AREAS
GORE AREAS TO INCLUDE 8" CHANNELIZING LINE AND 4" DASHED LINE. SEE STANDARD E-191.

D. EDGE LINES
UNLESS SPECIFIED, FINAL EDGE LINES ARE NOT REQUIRED UNTIL COMPLETION OF THE PROJECT. EDGE LINES HOWEVER SHOULD BE APPLIED AT THE END OF THE DAY. WHERE TRAFFIC VOLUMES ARE HIGH AND/OR A DELAY OF SEVERAL DAYS IS ANTICIPATED, IN THESE INSTANCES, TAPE, PAINT OR RPM'S CAN BE USED AS THE MARKING. MATERIAL QUANTITIES ARE TO BE PAID UNDER THE APPROPRIATE BID ITEM FOR TEMPORARY LINES. RPM'S SHOULD BE RETRO-REFLECTIVE TEMPORARY MARKERS ON A 5' SPACING PATTERN AND THE SAME COLOR AS THE LINE THEY ARE SUBSTITUTING FOR.

E. PRIOR TO ACCEPTANCE, THE PAVEMENT MARKINGS SHALL BE COMPLETED FOR THE ENTIRE PROJECT BY THE CONTRACTOR AS DETAILED ON THE PLANS OR DIRECTED BY THE RESIDENT ENGINEER.

F. THE DURABLE STOP BAR SHALL BE APPLIED AT ALL NEWLY PAVED SIDEROAD LOCATIONS. THE DURABLE "STOP" MARKINGS ARE TO BE APPLIED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE RESIDENT ENGINEER.

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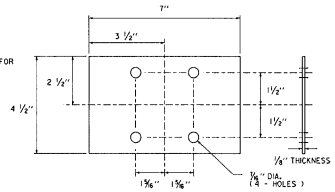
MASHMA.DGN

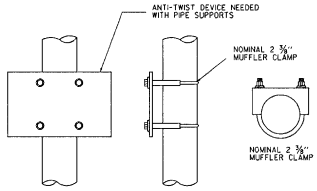
REVISIONS		
DELETED DRIVE DETAIL & REVISED STOPBAR - CL	SURVEYED BY	DATE
07/11/89	DRAWN BY WILDER	DATE 03/90
NOTES CHANGED, SIGN ADDED 10/03/89 DAR	SQUAD LEADER LJUNGVALL	
	DESIGN FILE NO. 84E070.DGN	1-APR-1991 PLOTTED DATE F-APR-199
	PROJ. NAME	BRATTLEBORO
	PROJ. NO.	HES 010-1(30)
84E070TN	SHEET 27 OF 122 SHEETS	

NOTES

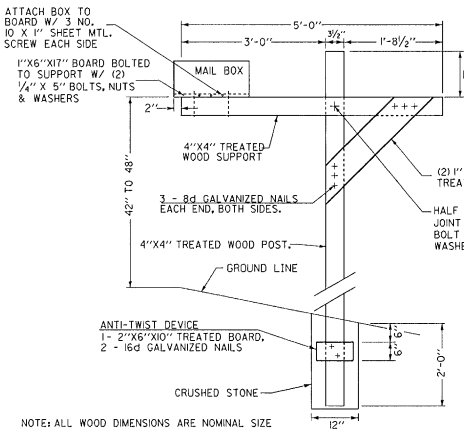
1. ONLY LIGHTWEIGHT MAILBOXES MADE OF LIGHT SHEET METAL OR PLASTIC SHALL BE USED. MAILBOXES SHALL MEET REQUIREMENTS AND APPROVAL OF THE U.S. POSTAL SERVICE.
2. AN ALTERNATE MAILBOX SUPPORT STRUCTURE DESIGN AND CONSTRUCTION MAY BE USED AS LONG AS PROVEN CRASHWORTHY AND MEETS GUIDELINES AS SET OUT IN AASHTO'S "GUIDE FOR ERECTING MAILBOXES ON HIGHWAYS". SUPPORT STRUCTURE SHALL ALSO MEET REQUIREMENTS OF THE U.S. POSTAL SERVICE.
3. MAILBOX TURNOUT SHALL MEET B-17 STANDARD AS SET OUT IN "STATE OF VERMONT AGENCY OF TRANSPORTATION DESIGN STANDARDS FOR ROAD AND BRIDGE CONSTRUCTION".
4. IF THE STANDARD TURNOUT OFFSET CANNOT BE ATTAINED DUE TO RIGHT-OF-WAY CONSTRAINTS OR OTHER REASONS THE TURNOUT SHALL BE MODIFIED AS DIRECTED BY THE ENGINEER.



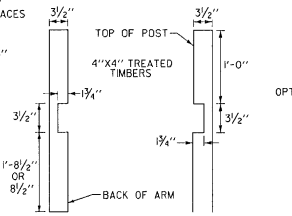
ANTI-TWIST DEVICE DETAIL FOR METAL PIPE

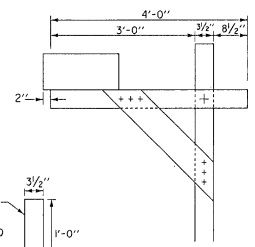


ANTI-TWIST DEVICE ASSEMBLY FOR METAL PIPES
(USED FOR SINGLE AND MULTIPLE INSTALLATIONS)

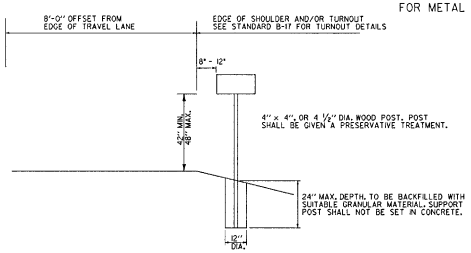


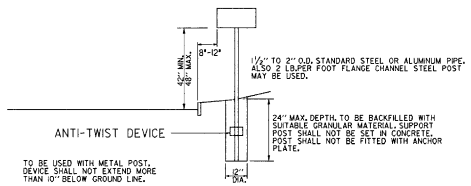
NOTE: ALL WOOD DIMENSIONS ARE NOMINAL SIZE

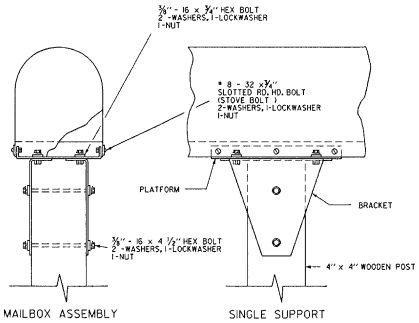


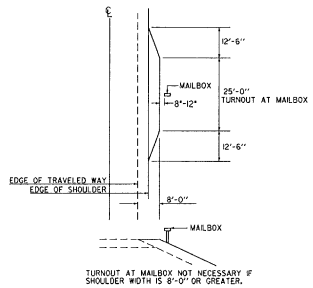


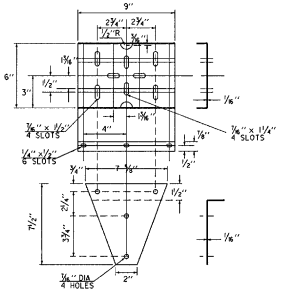
CANTILEVER TYPE MAILBOX SINGLE SUPPORT





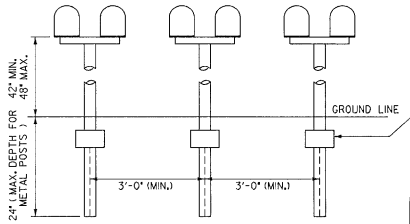




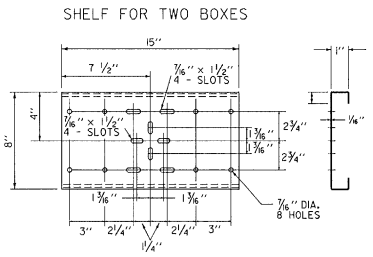


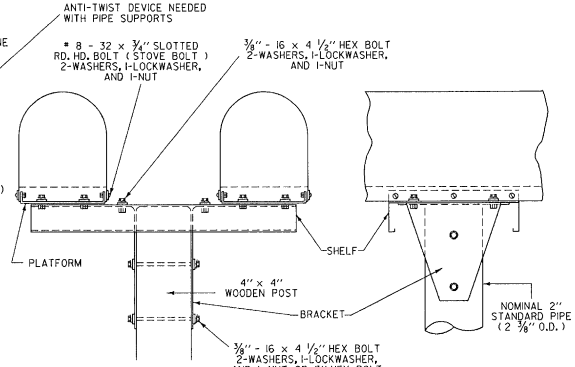
PLATFORM AND BRACKET DETAIL FOR METAL OR WOOD POSTS
(USED FOR SINGLE AND MULTIPLE BOXES)

SINGLE MAILBOX SUPPORT



SPACING FOR MULTIPLE POST INSTALLATION
(APPLIES TO BOTH SINGLE AND MULTIPLE MAILBOX SUPPORTS)





MULTIPLE MAILBOX SUPPORT

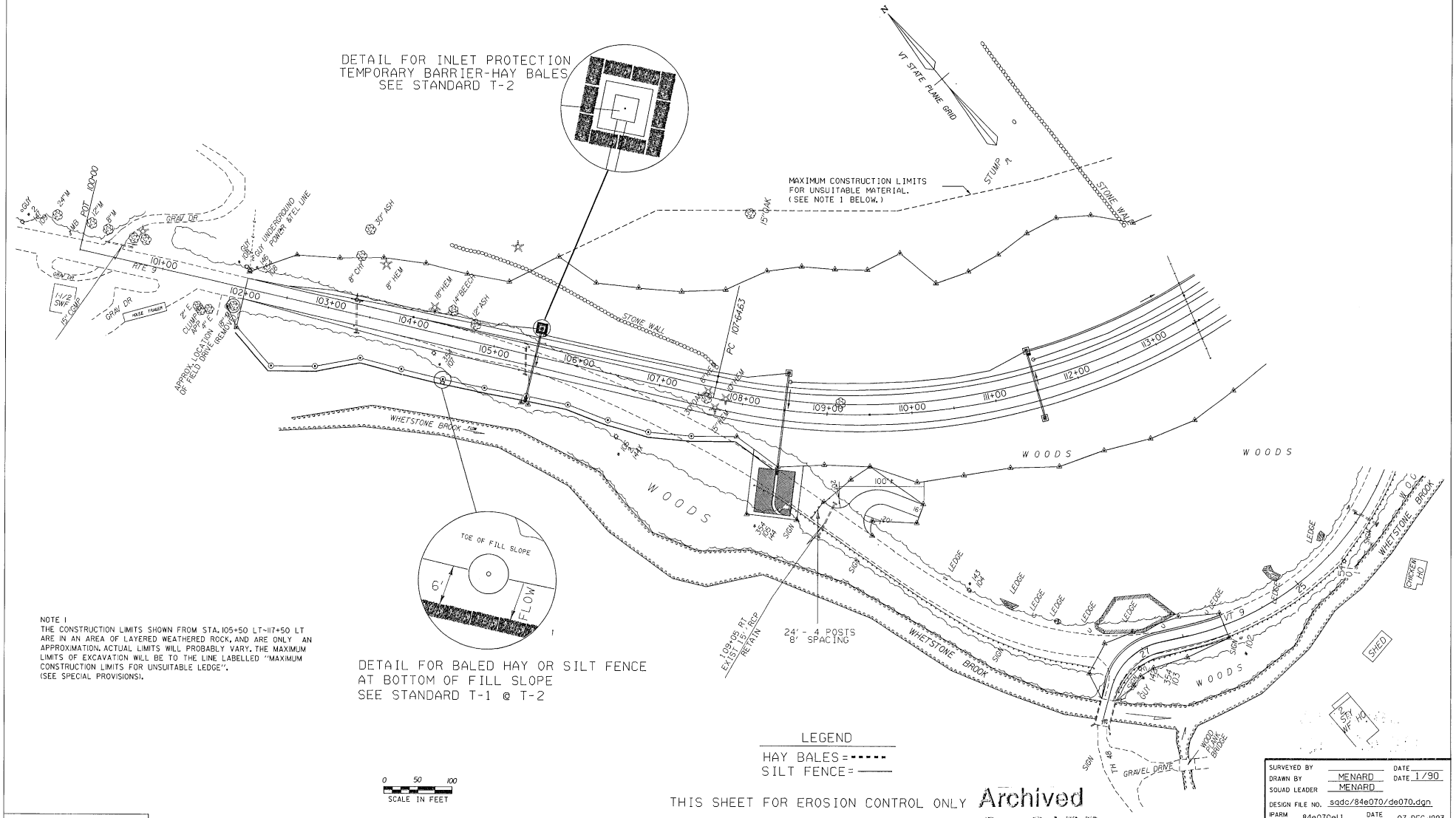
MAILBOX SUPPORT HARDWARE

(SINGLE AND MULTIPLE SUPPORT)

Archived On CADD

DATUM
VERTICAL _____
HORIZONTAL _____

SURVEYED BY	REED & FALL	DATE	9/86&88
DRAWN BY	sqdc	DATE	4/12/91
SQUAD LEADER	LJUNGVALL		
DESIGN FILE NO.	/sqdc/84e070/de070.dgn		
PRF FILE	84E070MB	DATE PLOTTED	03-DEC-1993
PROJ. NAME	BRATTLEBORO		
PROJ. NO.	STP-HES 010-1(30)		
SHEET 28 OF 122 SHEETS			



NOTE 1
THE CONSTRUCTION LIMITS SHOWN FROM STA. 105+50 LT-117+50 LT ARE IN AN AREA OF LAYERED WEATHERED ROCK, AND ARE ONLY AN APPROXIMATION. ACTUAL LIMITS WILL PROBABLY VARY. THE MAXIMUM LIMITS OF EXCAVATION WILL BE TO THE LINE LABELLED "MAXIMUM CONSTRUCTION LIMITS FOR UNSUITABLE LEDGE". (SEE SPECIAL PROVISIONS).

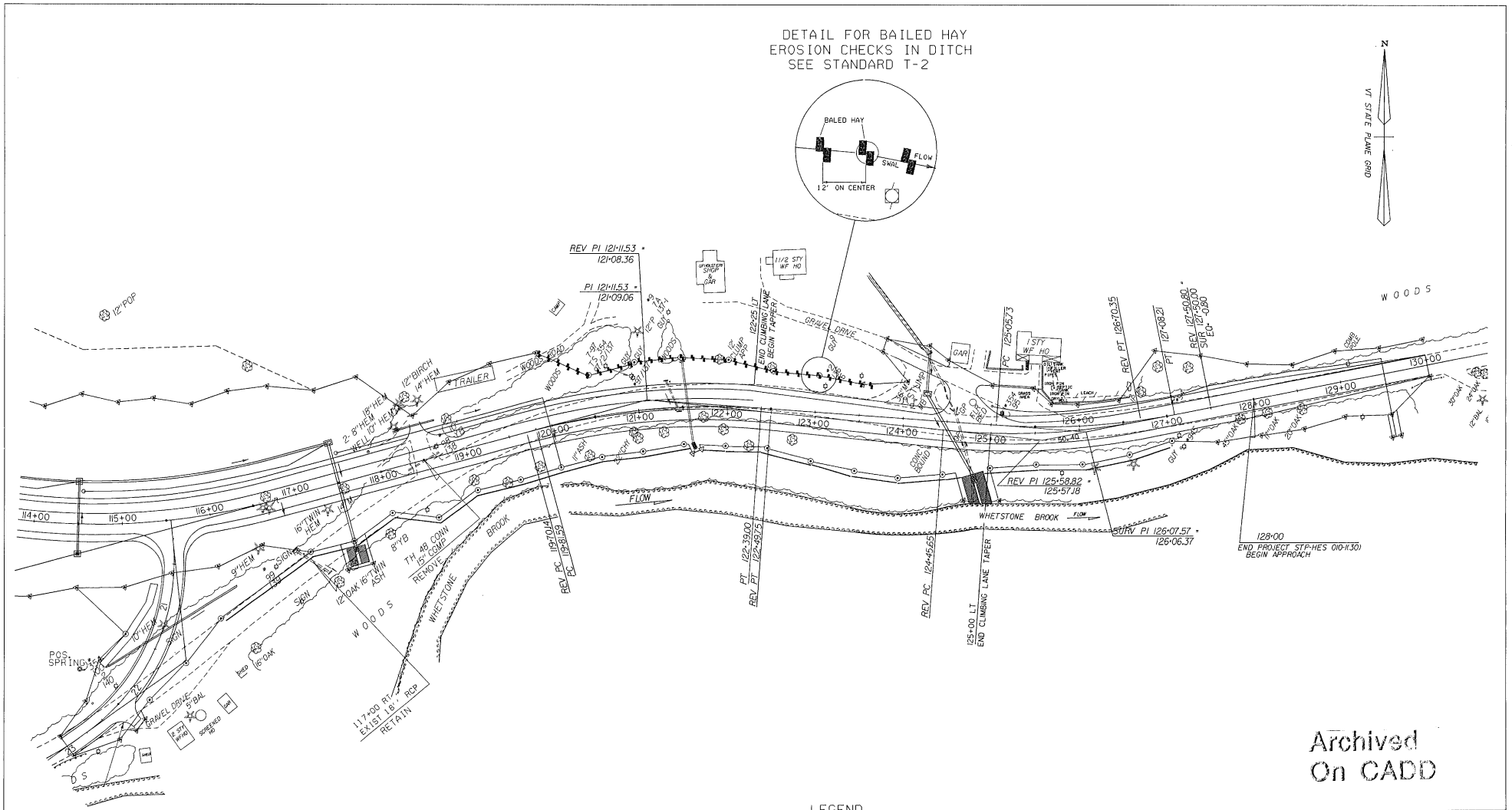
LEGEND
HAY BALES = - - - - -
SILT FENCE = ———

THIS SHEET FOR EROSION CONTROL ONLY

Archived On CADD

SURVEYED BY		DATE	
DRAWN BY	MENARD	DATE	1/90
SQUAD LEADER	MENARD		
DESIGN FILE NO.	sqdc/84e070/de070.dgn		
IPARM FILE	84e070el.1	DATE PLOTTED	07-DEC-1993
PROJ. NAME	BRATTLEBORO		
PROJ. NO.	STP-HES 010-1(30)		
SHEET 29 OF 122 SHEETS			

DATUM
VERTICAL NGVD 1929
HORIZONTAL NAD 1927



Archived
On CADD

LEGEND

HAY BALES = -----

SILT FENCE = ——

0 50 100
SCALE IN FEET

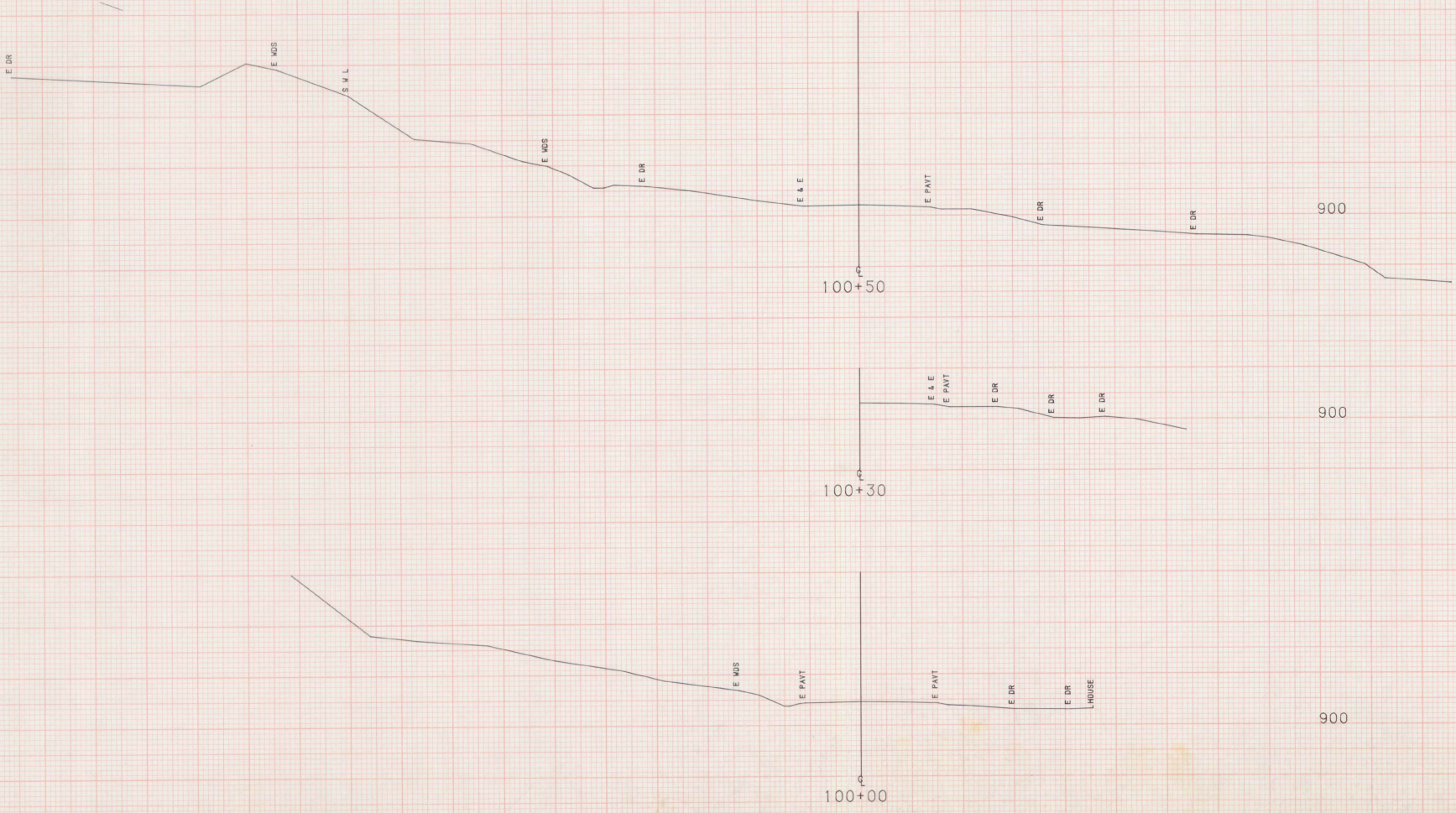
THIS SHEET FOR EROSION CONTROL ONLY

SURVEYED BY		DATE
DRAWN BY	MENARD	DATE 1/90
SQUAD LEADER	LJUNGVALL	
DESIGN FILE NO.	/sqdc/84e070/de070.dgn	
IPARM FILE	84e070e2.1	DATE PLOTTED 06-DEC-1993
PROJ. NAME	BRATTLEBORO	
PROJ. NO.	STP-HES 010-I(30)	
SHEET	30 OF 122 SHEETS	

DATUM

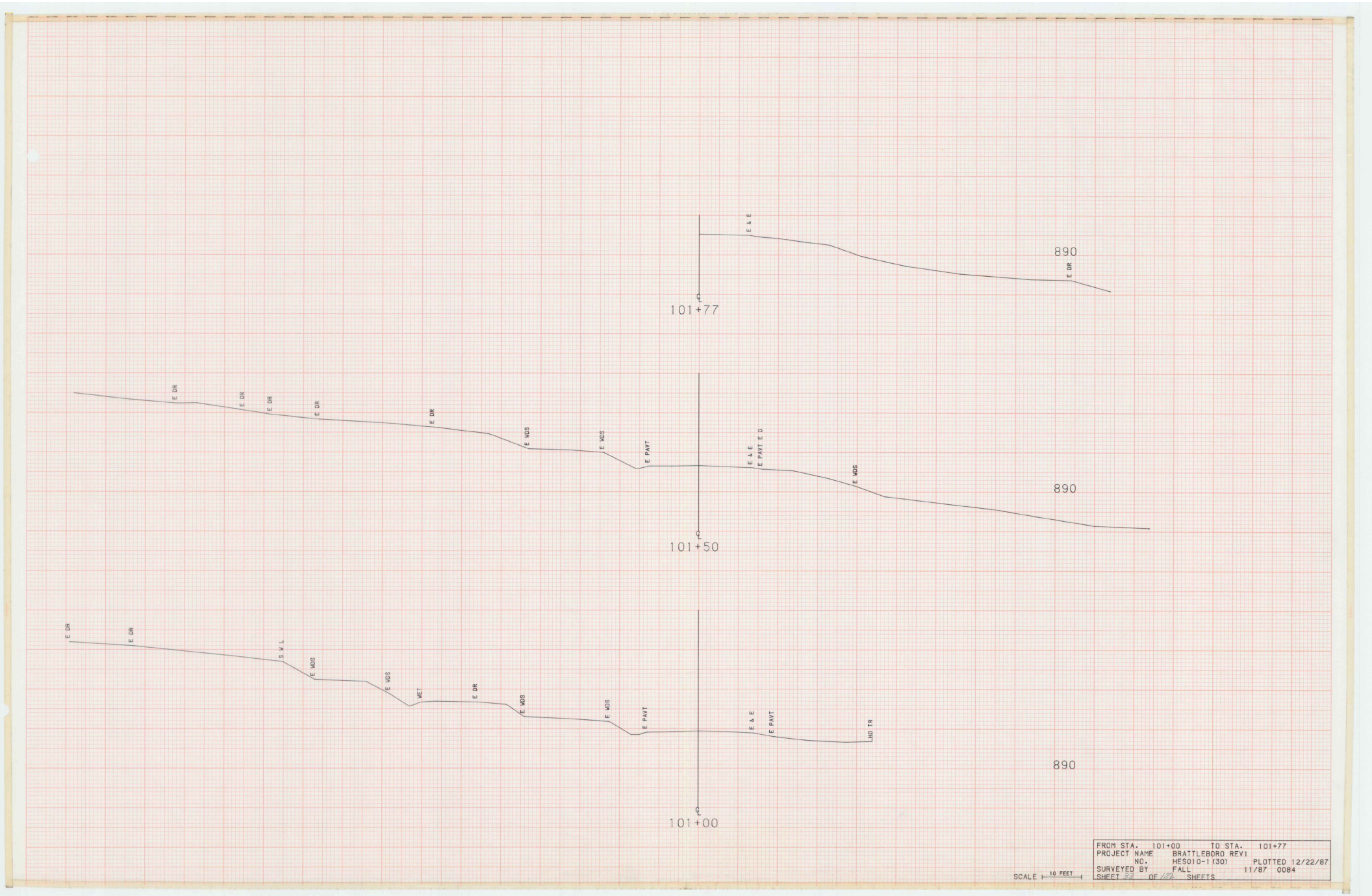
VERTICAL NGVD 1929

HORIZONTAL NAD 1927



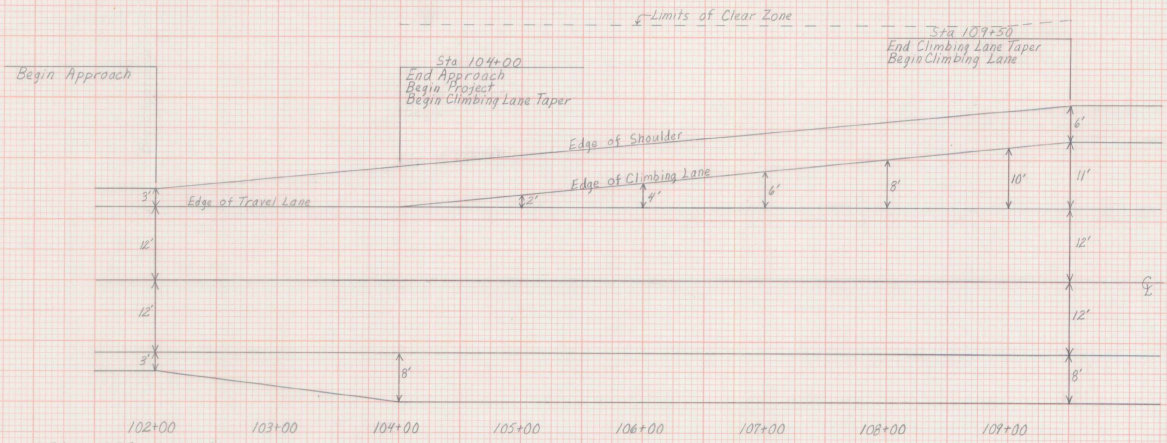
SCALE 10 FEET

FROM STA.	100+00	TO STA.	100+50
PROJECT NAME	BRATTLEBORO REV1		
NO.	HES010-1(30)		PLOTTED 12/22/87
SURVEYED BY	FALL		11/87 0084
SHEET 32	OF 122	SHEETS	



FROM STA. 101+00	TO STA. 101+77		
PROJECT NAME	BRATTLEBORO REV1		
NO.	HES010-1(30)	PLOTTED 12/22/87	
SURVEYED BY	FALL	11/87	0084
SHEET 33 OF 182 SHEETS			

SCALE 10 FEET



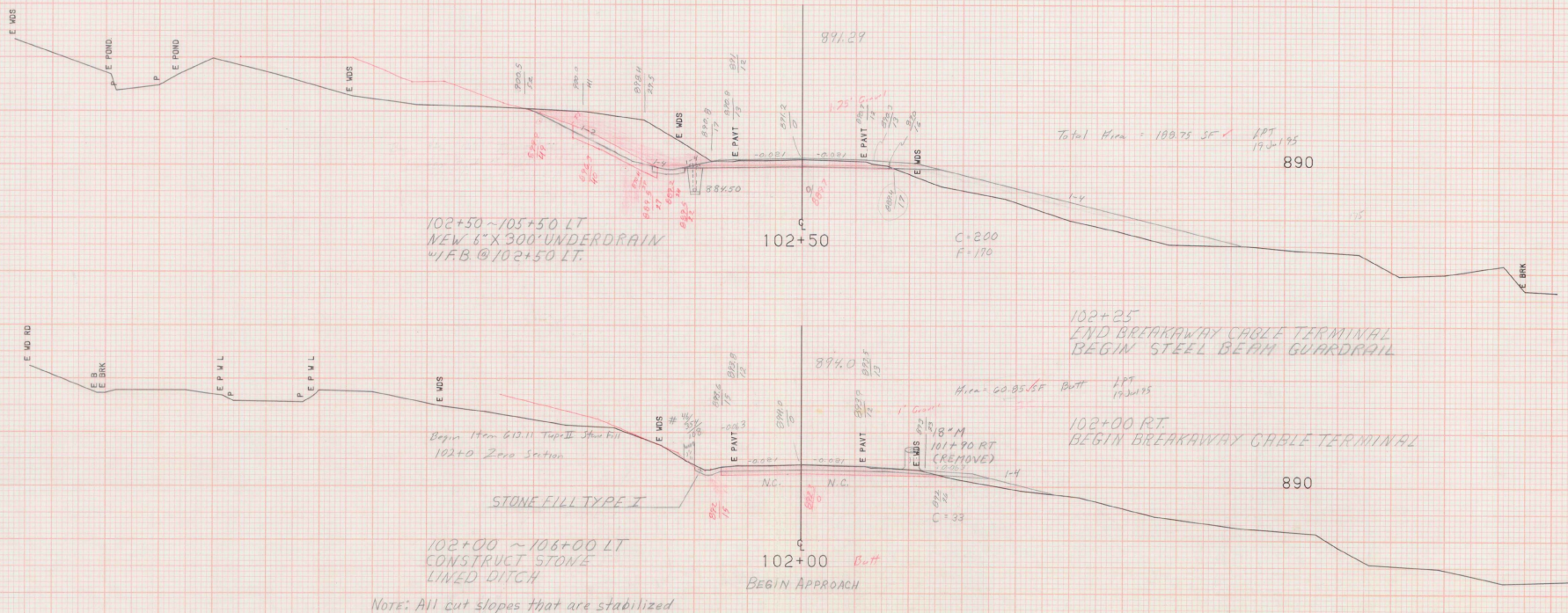
SEE SHEET #36 FOR GUARD RAIL TERMINAL DETAIL.

Roadway Approach & Climbing Lane Taper Diagram
Scale: Horiz. 1"=50'
Vert. 1"=10'

ITEM 613.11 & ITEM 203.15

STA.	SLOPE DIST. (FOOT)	AREA 2' Depth	AVG. AREA	LENGTH	VOL. (CY)
102+00	0	0			
102+50	18'	3.4 ft²	18	50	33.33 CY
103+00	24'	4.8 ft²	42	50	77.78 CY
103+50	25'	5.0 ft²	49	50	90.74 CY
104+00	19'	3.8 ft²	44	50	81.49 CY
					283.3 CY

JTD 11/16/87
APT 11/16/87



102+50 ~ 105+50 LT
NEW 6"X 300' UNDERDRAIN
w/ F.A.B. @ 102+50 LT.

Total Area = 100.75 SF APT 19 Jul 95

102+25
END BREAKAWAY CABLE TERMINAL
BEGIN STEEL BEAM GUARDRAIL

102+00 RT.
BEGIN BREAKAWAY CABLE TERMINAL

18" M
101+90 RT
(REMOVE)

Begin 14cm 613.11 Type II Stone Fill
102+0 Zero Section

STONE FILL TYPE I

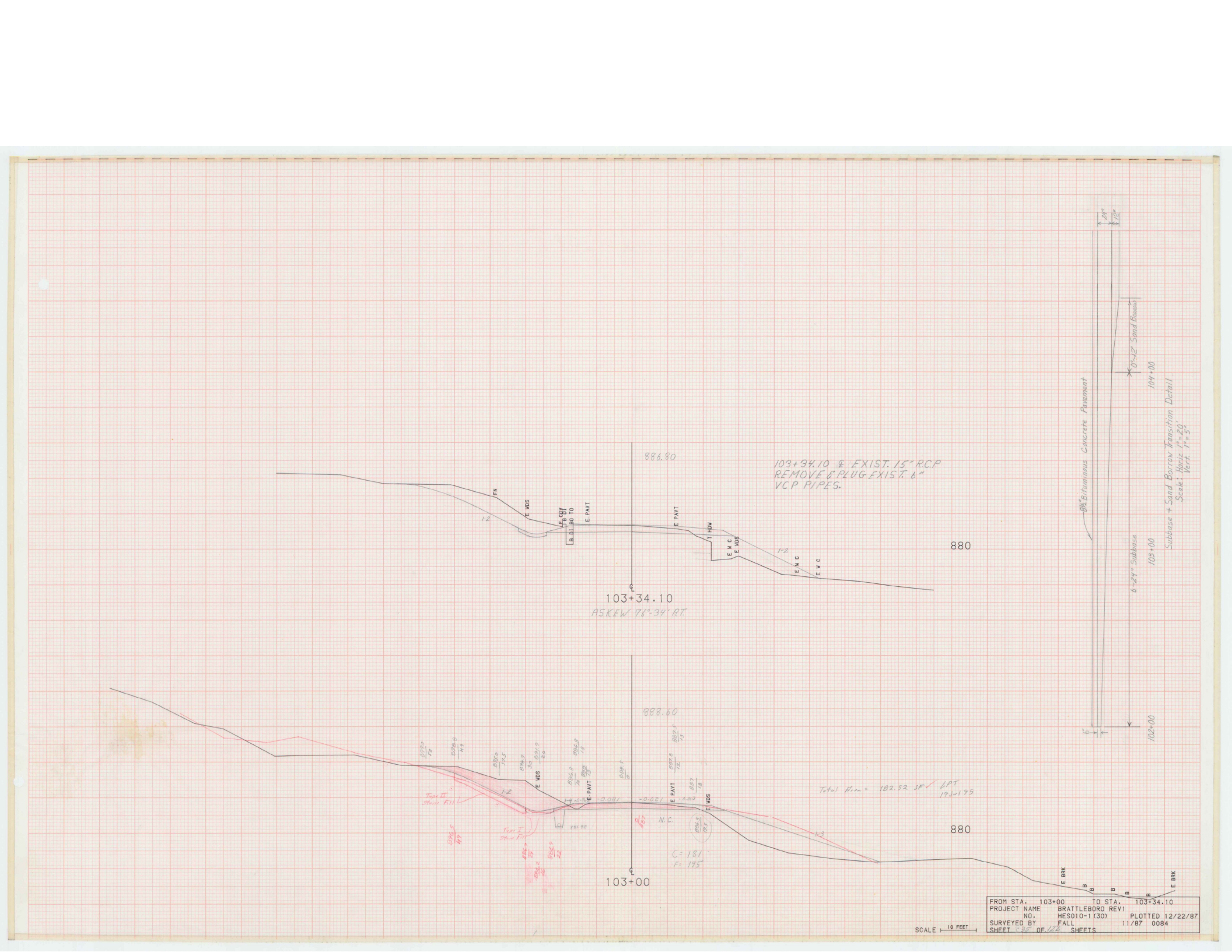
102+00 ~ 106+00 LT
CONSTRUCT STONE
LINED DITCH

102+00 Butt
BEGIN APPROACH

NOTE: All cut slopes that are stabilized with Stone Fill are to be covered with 4" of Earth.

FROM STA.	102+00 TO STA. 102+50
PROJECT NAME	BRATTLEBORO REV1
NO.	HES010-1(30) PLOTTED 12/22/87
SURVEYED BY	FALL 11/87 0084
SHEET 34	OF 122 SHEETS

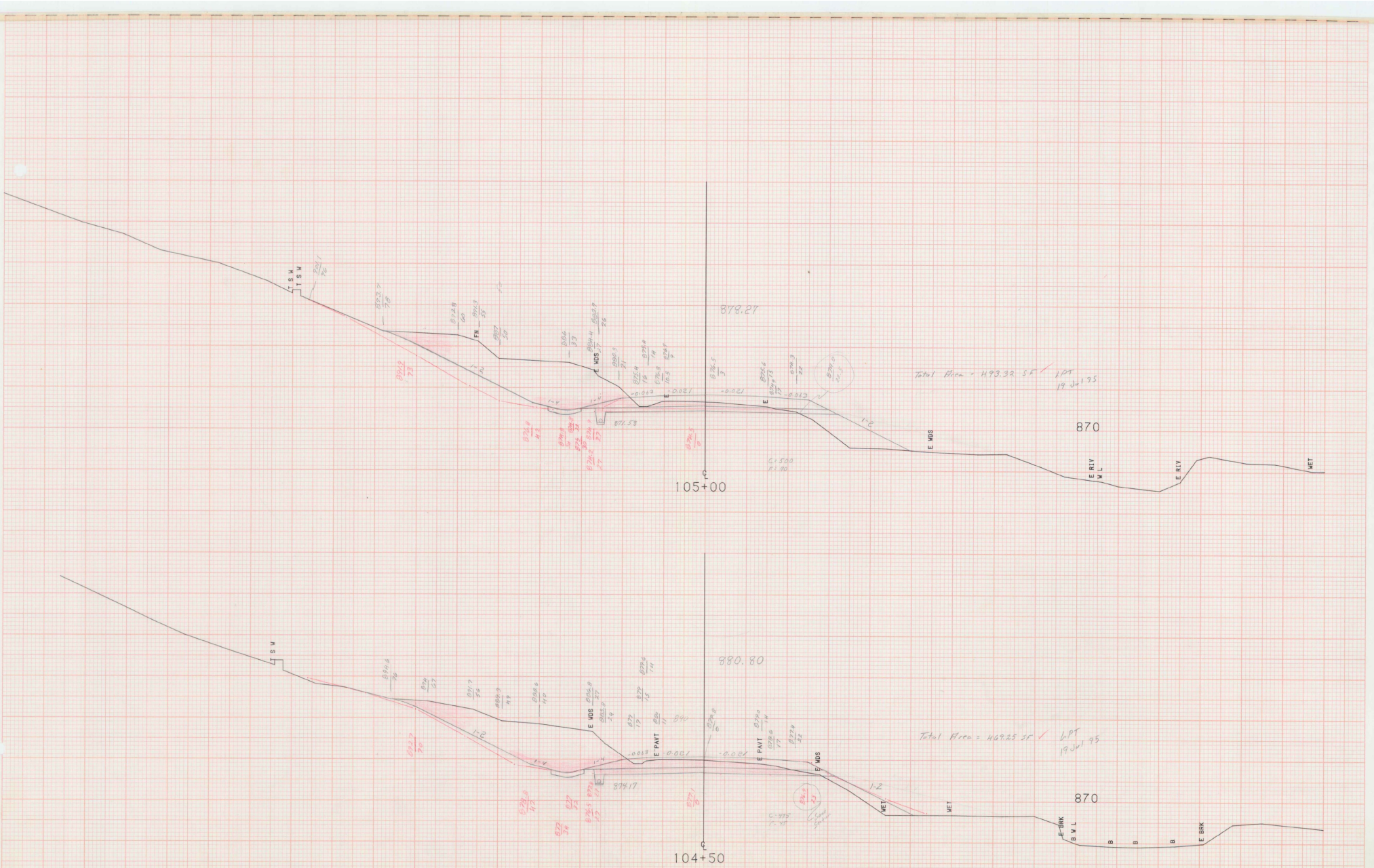
SCALE 10 FEET



FROM STA.	103+00	TO STA.	103+34.10
PROJECT NAME	BRATTLEBORO REV1		
NO.	HES010-1(30)		PLOTTED 12/22/87
SURVEYED BY	FALL		11/87 0084
SHEET 22 OF 122	SHEETS		

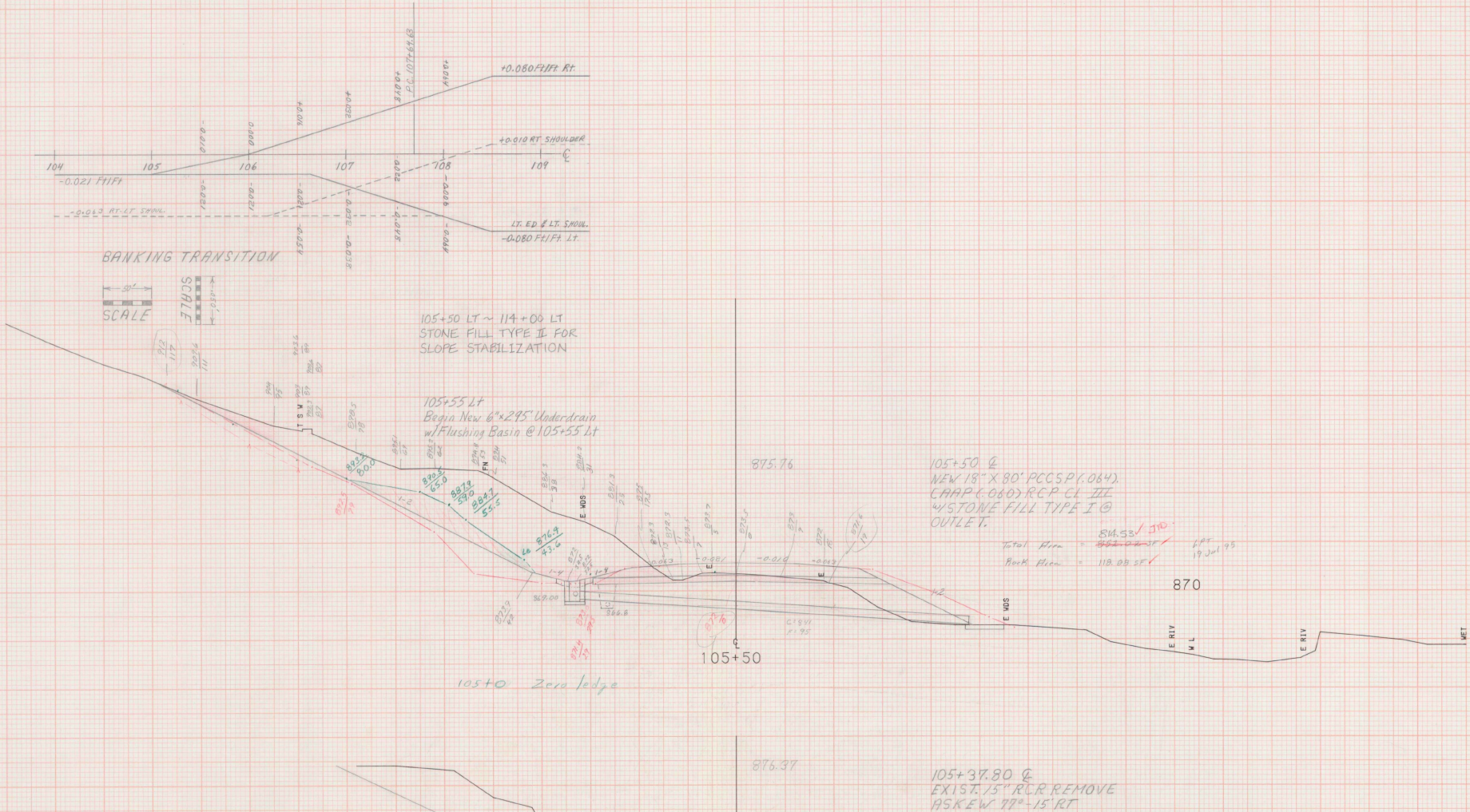
FROM STA.	103+50	TO STA.	104+00
PROJECT NAME	BRATTLEBORO REV1		
NO.	HES010-1(30)	PLOTTED	12/22/87
SURVEYED BY	FALL		11/87 0084
SHEET 24	OF 122 SHEETS		

SCALE 10 FEET



FROM STA. 104+50 TO STA. 105+00
PROJECT NAME BRATTLEBORO REV1
NO. HES010-1(30) PLOTTED 12/22/87
SURVEYED BY FALL 11/87 0084
SHEET 39 OF 122 SHEETS

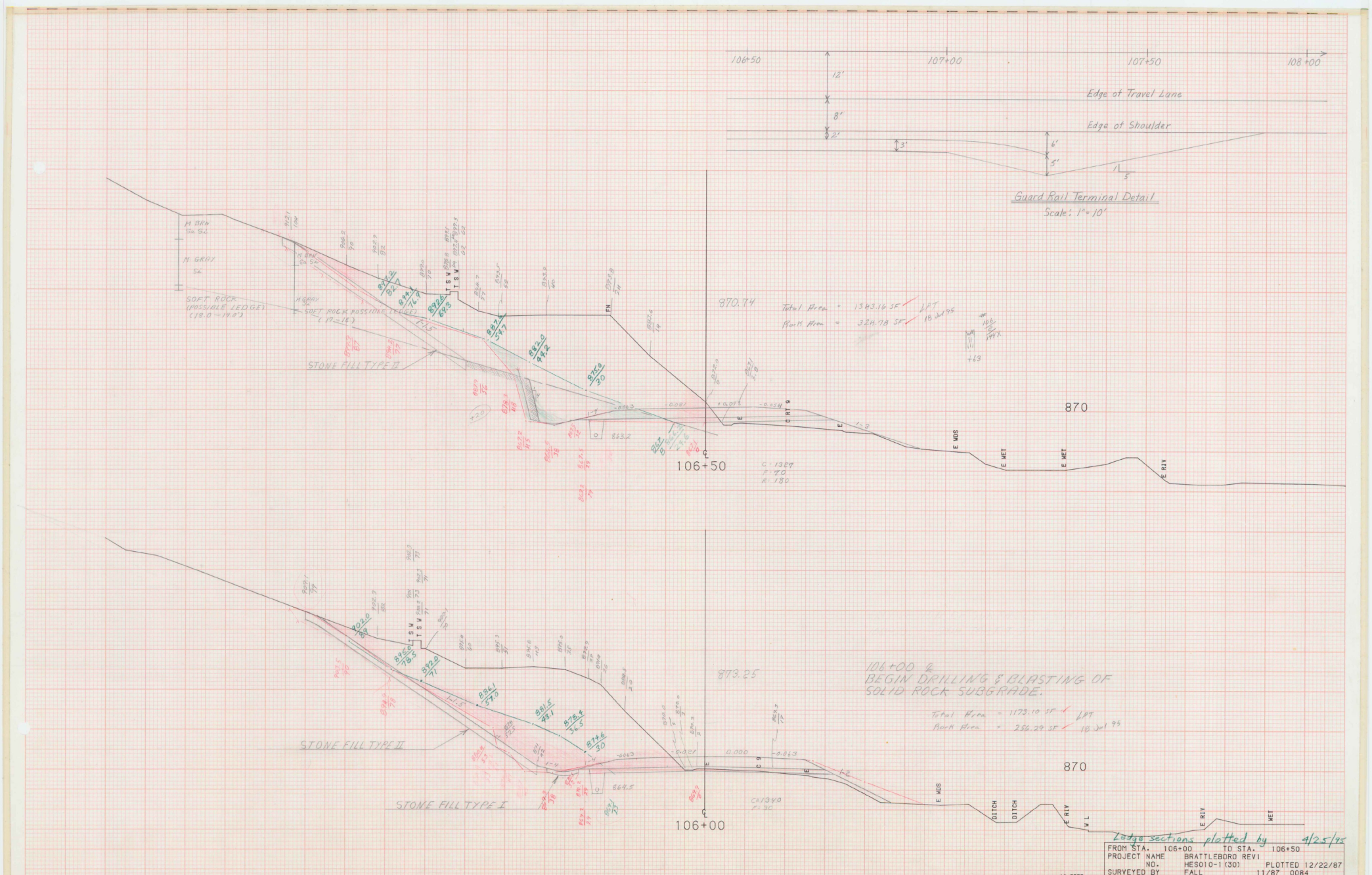
SCALE 10 FEET

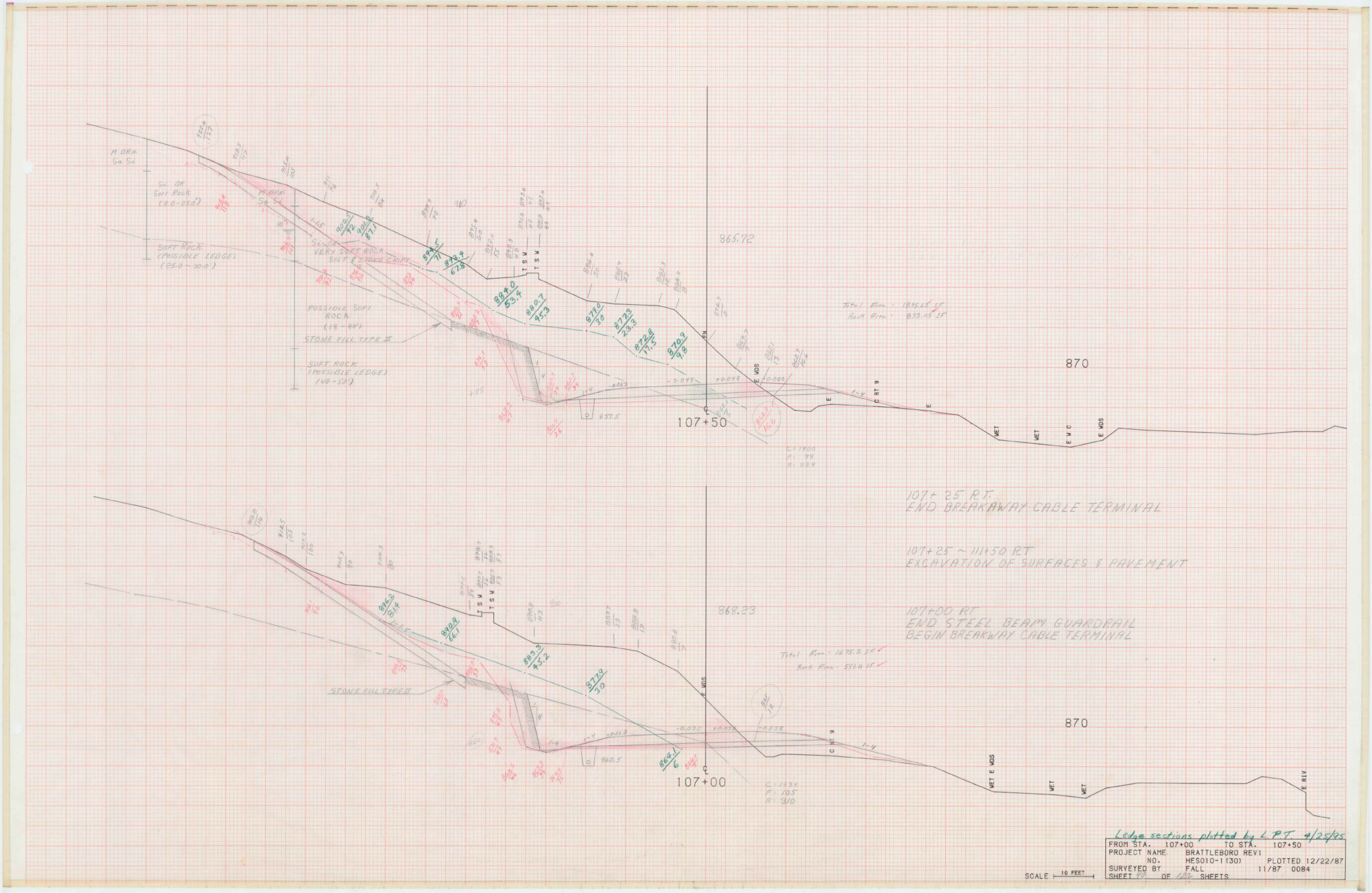


Ledge sections plotted by M.W.H. 4/5/95

FROM STA.	105+37.80	TO STA.	105+50
PROJECT NAME	BRATTLEBORO REV1		
NO.	HES010-1 (30)	PLOTTED	12/22/87
SURVEYED BY	FALL	11/87	0084
SHEET 38 OF 122 SHEETS			

SCALE 10 FEET


106+50
107+00
107+50
108+00
12'
8'
2'
3'
6'
5'
Edge of Travel Lane
Edge of Shoulder
Guard Rail Terminal Detail
Scale: 1" = 10'
M BRN
M GRAY
SOFT ROCK (POSSIBLE LEDGE) (18.0 - 19.0')
SOFT ROCK POSSIBLE LEDGE (17 - 18)
STONE FILL TYPE II
870.74
Total Area = 1343.16 SF
Rock Area = 324.78 SF
LPT 18 Jul 95
870
106+50
C: 1327
F: 70
R: 180
E WDS
E WET
E RIV
873.25
106+00 ℄
BEGIN DRILLING & BLASTING OF SOLID ROCK SUBGRADE.
Total Area = 1173.10 SF
Rock Area = 256.29 SF
LPT 18 Jul 95
STONE FILL TYPE II
STONE FILL TYPE I
870
106+00
C=1340
F: 30
DITCH
WET
Ledge sections plotted by 4/25/95
FROM STA. 106+00 TO STA. 106+50
PROJECT NAME BRATTLEBORO REV1
NO. HES010-1 (30) PLOTTED 12/22/87
SURVEYED BY FALL 11/87 0084
SHEET 39 OF 122 SHEETS
SCALE 10 FEET



Ledge sections plotted by L.P.T. 4/25/95

FROM STA. 107+00	TO STA. 107+50		
PROJECT NAME	BRATTLEBORO REV1		
NO.	HES010-1 (30)	PLOTTED 12/22/87	
SURVEYED BY	FALL	11/87	0084
SHEET 40 OF 122 SHEETS			

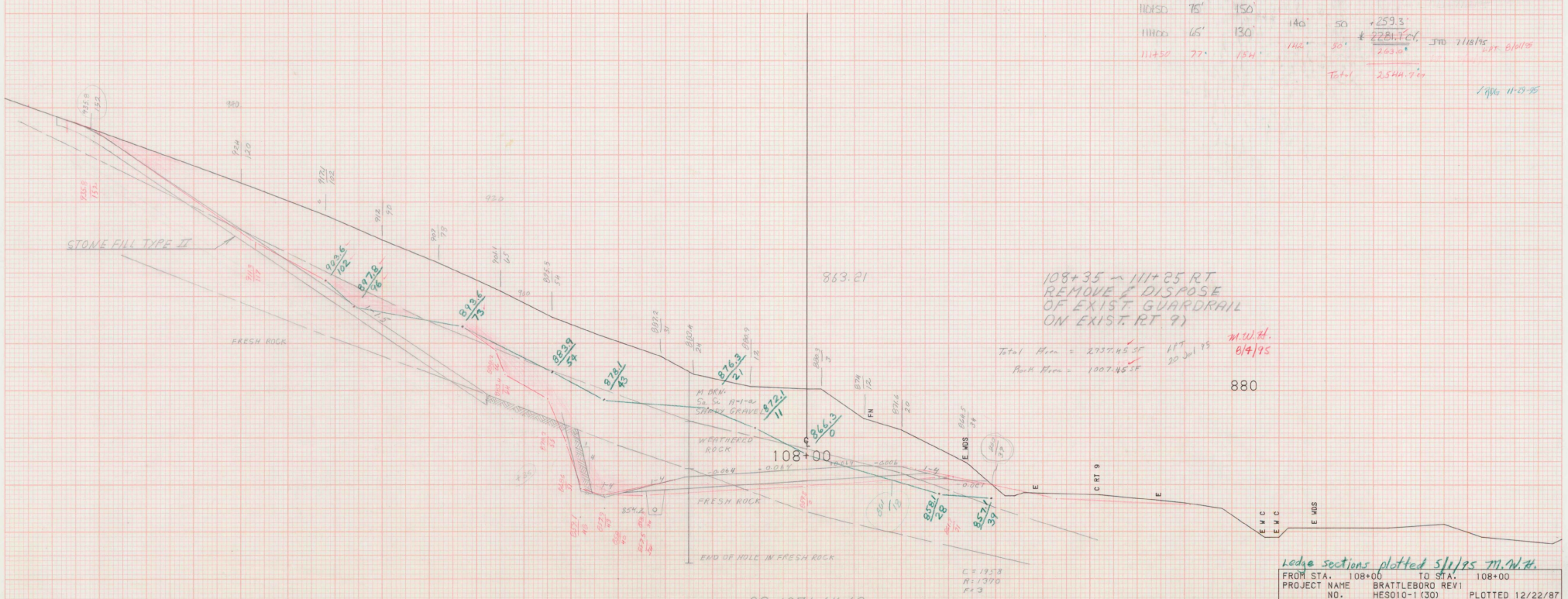
ITEM 613.11 & ITEM 203.15

STA.	SLOPE DIST. (FIELD)	AREA 2' Depth	AVG. AREA	LENGTH	VOL. (CY.)
105+50	25'	50'			
			55'	50	101.9'
106+00	30'	60'			
			58'	50	107.4'
106+50	28'	56'			
			55'	50	101.9'
107+00	27'	54'			
			68'	50	125.9'
107+50	41	82'			
			90'	50	166.7'
108+00	49	98'			
			112'	50	207.4'
108+50	63	126'			
			138'	50	255.6'
109+00	75'	150'			
			142'	50	263.0'
109+50	67	134'			
			183'	50	338.9'
110+00	116'	232'			
			191'	50	353.7'
110+50	75'	150'			
			140'	50	+259.3'
111+00	65'	130'			~~2281.7 CY.~~
			142'	50'	263.0'
111+50	77'	154'			
				Total	2544.7 CY

* NOTE: UPPER & LOWER FIELD MEASURED LENGTH'S WERE COMBINED TO COMPUTE THIS QUANTITY.

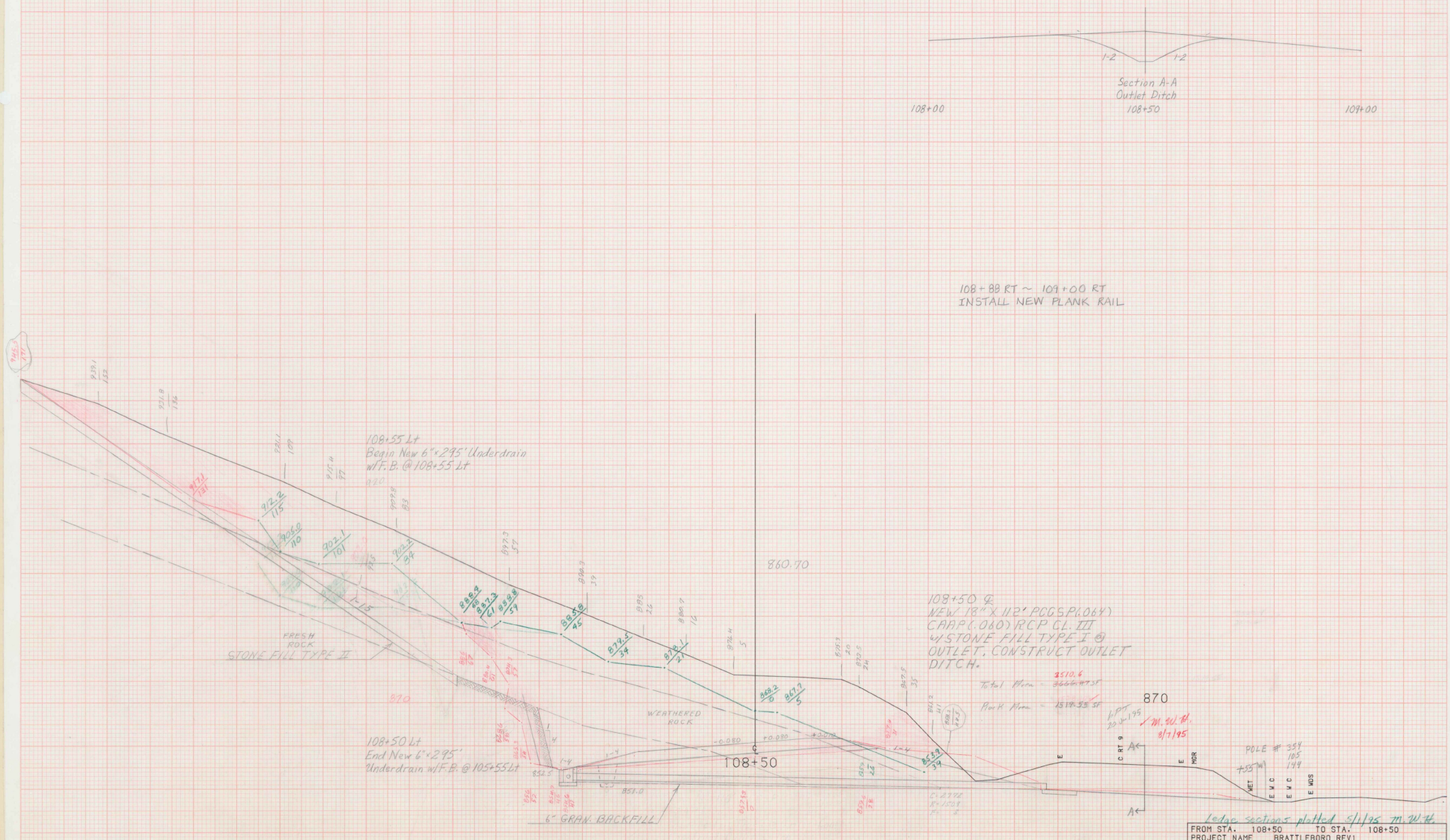
JTD 7/18/95 LPT 8/01/95

/RDG 11-29-95



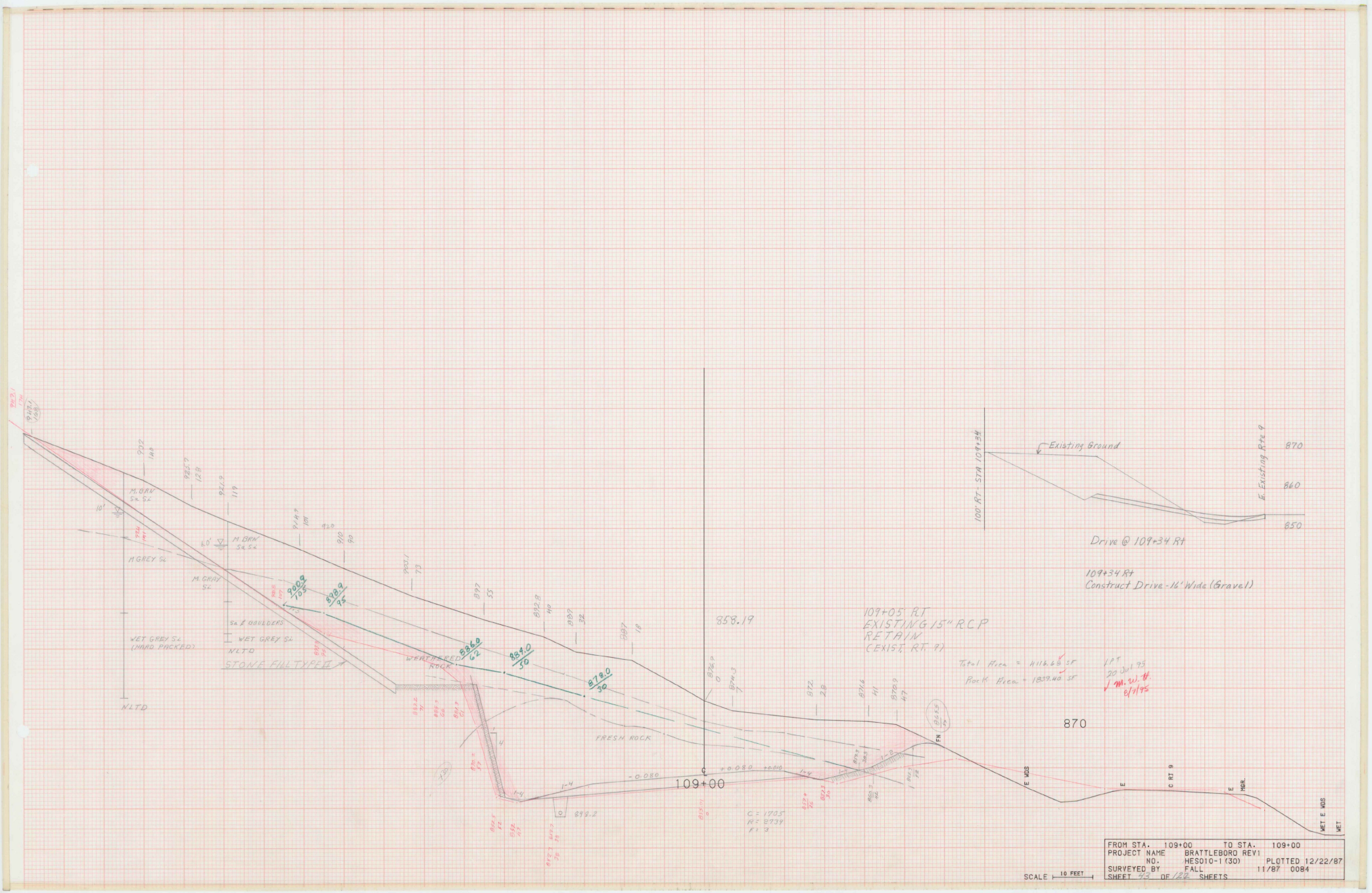
Ledge sections plotted 5/1/95 M.W.H.

FROM STA. 108+00	TO STA. 108+00		
PROJECT NAME	BRATTLEBORO REV1		
NO.	HES010-1 (30)	PLOTTED 12/22/87	
SURVEYED BY	FALL	11/87	0084
SHEET 41 OF 122 SHEETS			



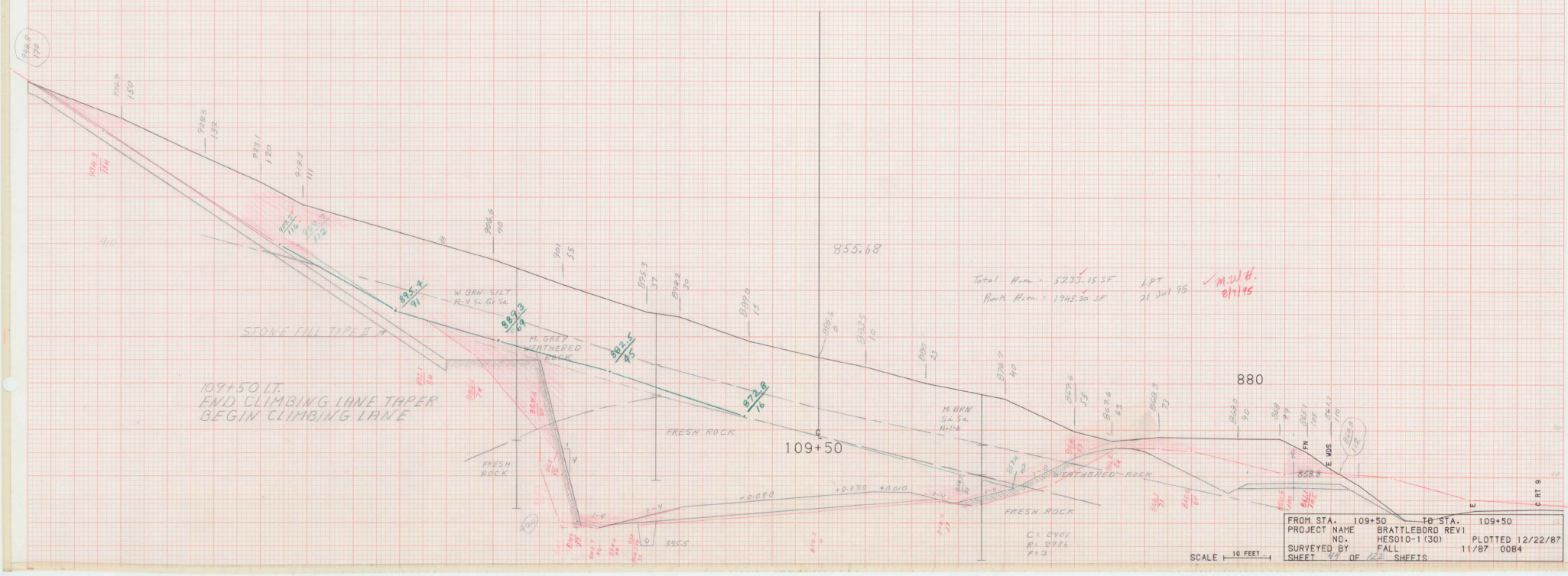
Ledge sections plotted 5/1/95 M.W.H.

FROM STA. 108+50	TO STA. 108+50		
PROJECT NAME	BRATTLEBORO REV1		
NO.	HES010-1 (30)	PLOTTED 12/22/87	
SURVEYED BY	FALL	11/87	0084
SHEET 42 OF 122 SHEETS			

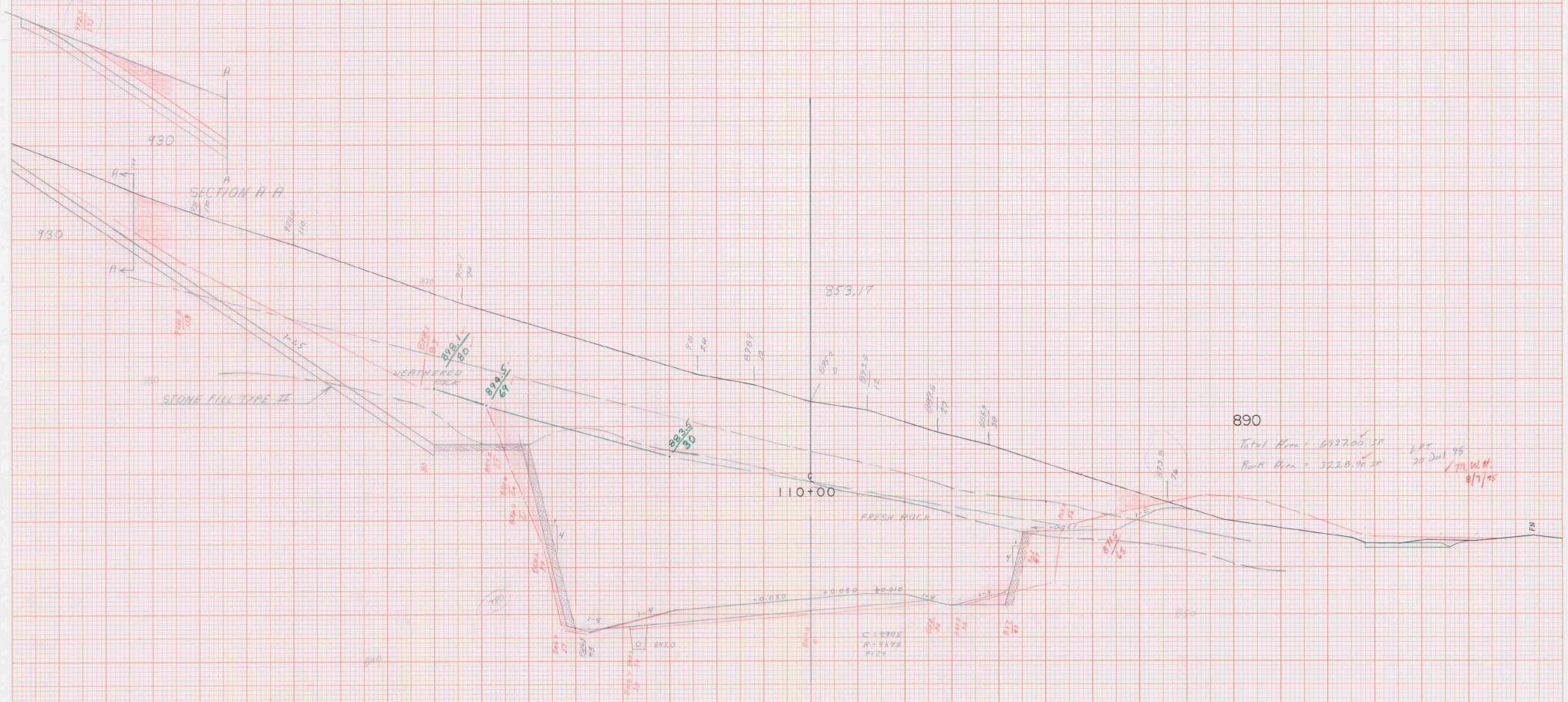


FROM STA.	109+00	TO STA.	109+00
PROJECT NAME	BRATTLEBORO REV1		
NO.	HES010-1(30)	PLOTTED	12/22/87
SURVEYED BY	FALL		11/87 0084
SHEET 93	OF 122 SHEETS		

SCALE 10 FEET



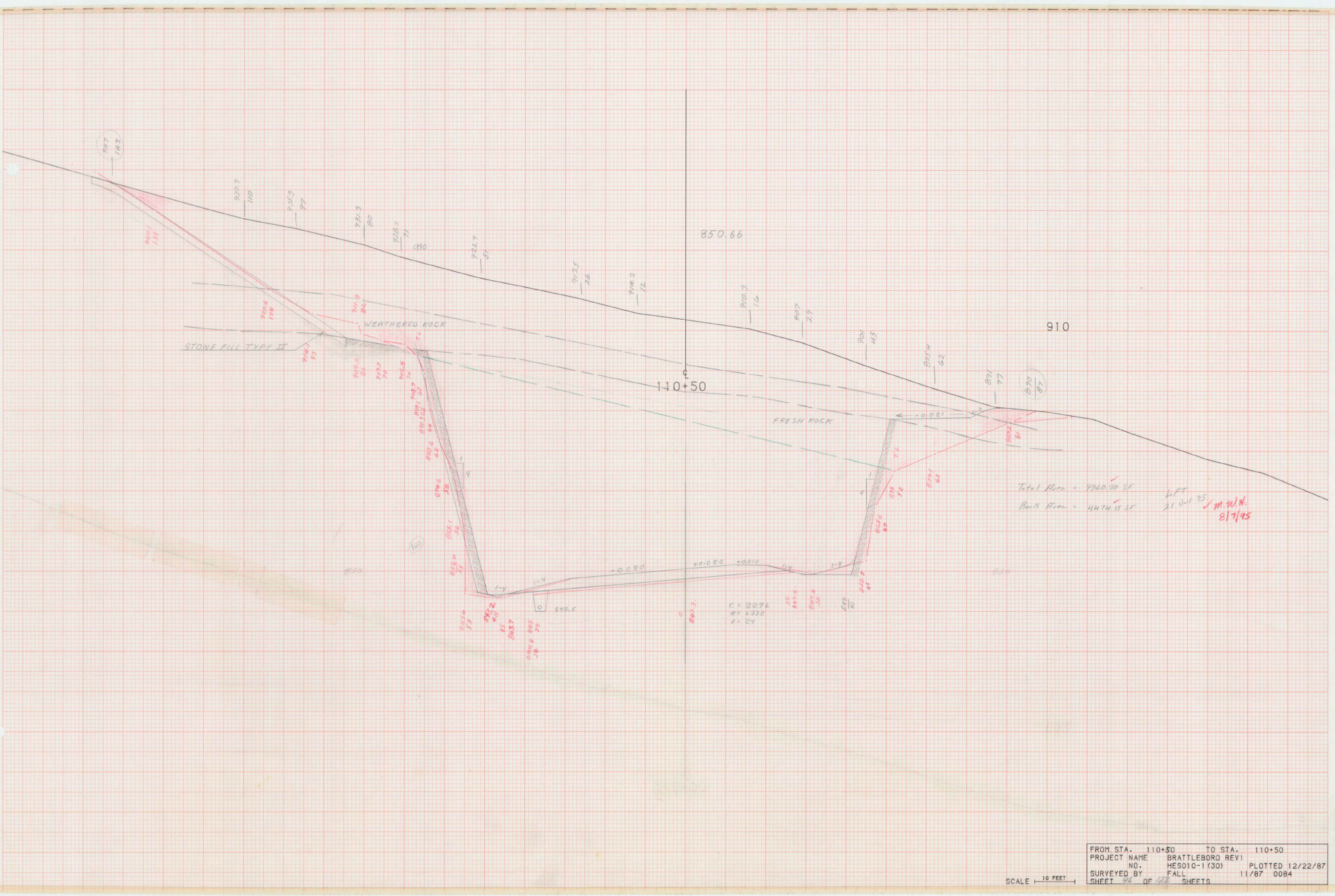
855.68
880
109+50
109+50 LT.
END CLIMBING LANE TAPER
BEGIN CLIMBING LANE
STONE FILL TYPE II
W. BRN SILT
A-4 Sa Gr Sa
M. GREY
WEATHERED
ROCK
FRESH ROCK
M. BRN
Sa Sa
A-1-b
WEATHERED ROCK
FRESH ROCK
FRESH ROCK
Total Area = 5233.15 SF
Rock Area = 1945.30 SF
LPT
21 Jul 95
M.W.H.
8/7/95
C = 2401
R = 2986
F = 3
-0.080
+0.080
+0.010
SCALE 10 FEET
FROM STA. 109+50 TO STA. 109+50
PROJECT NAME BRATTLEBORO REV1
NO. HES010-1 (30) PLOTTED 12/22/87
SURVEYED BY FALL 11/87 0084
SHEET 44 OF 122 SHEETS

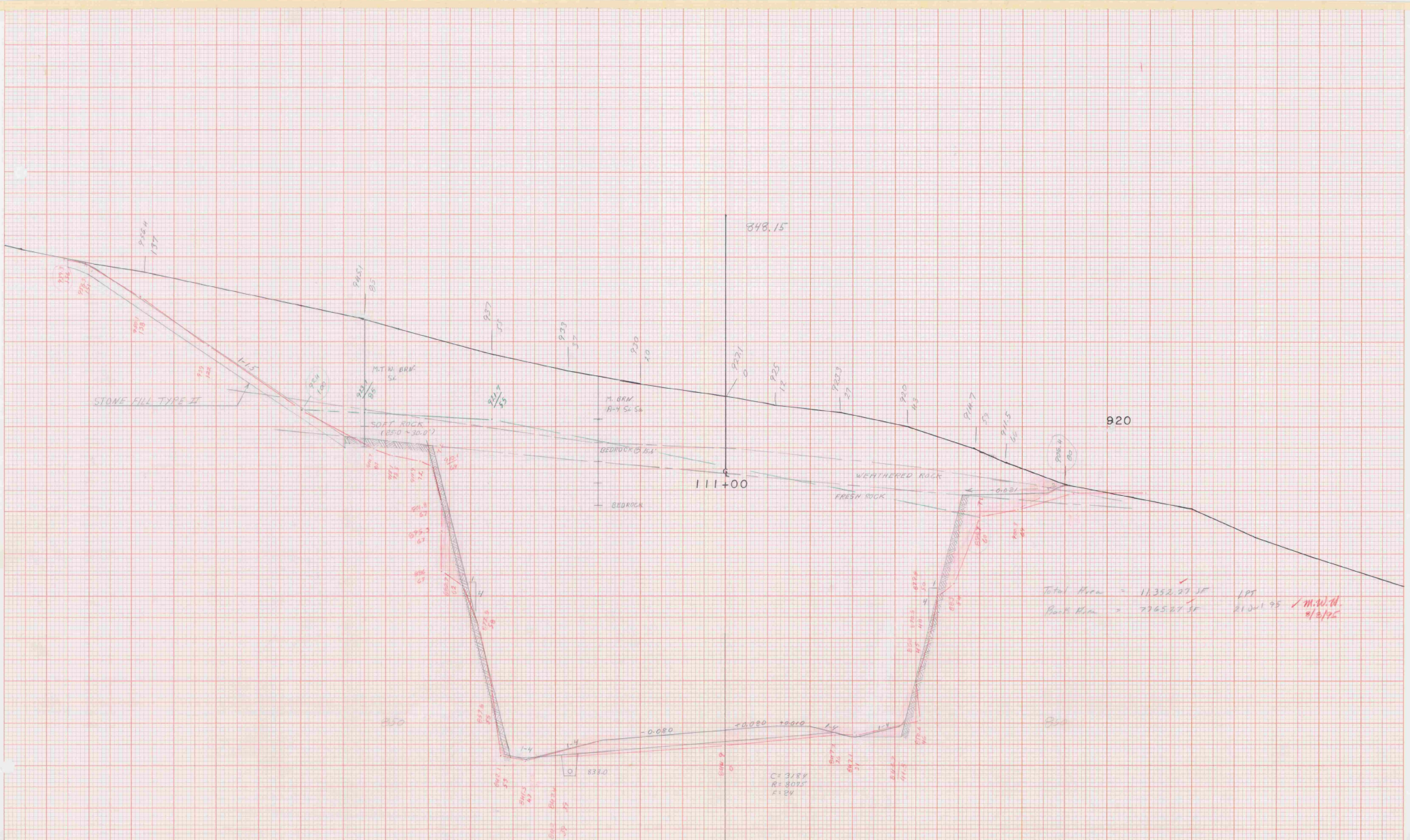


Ledge sections plotted M.W.H. 5/1/95

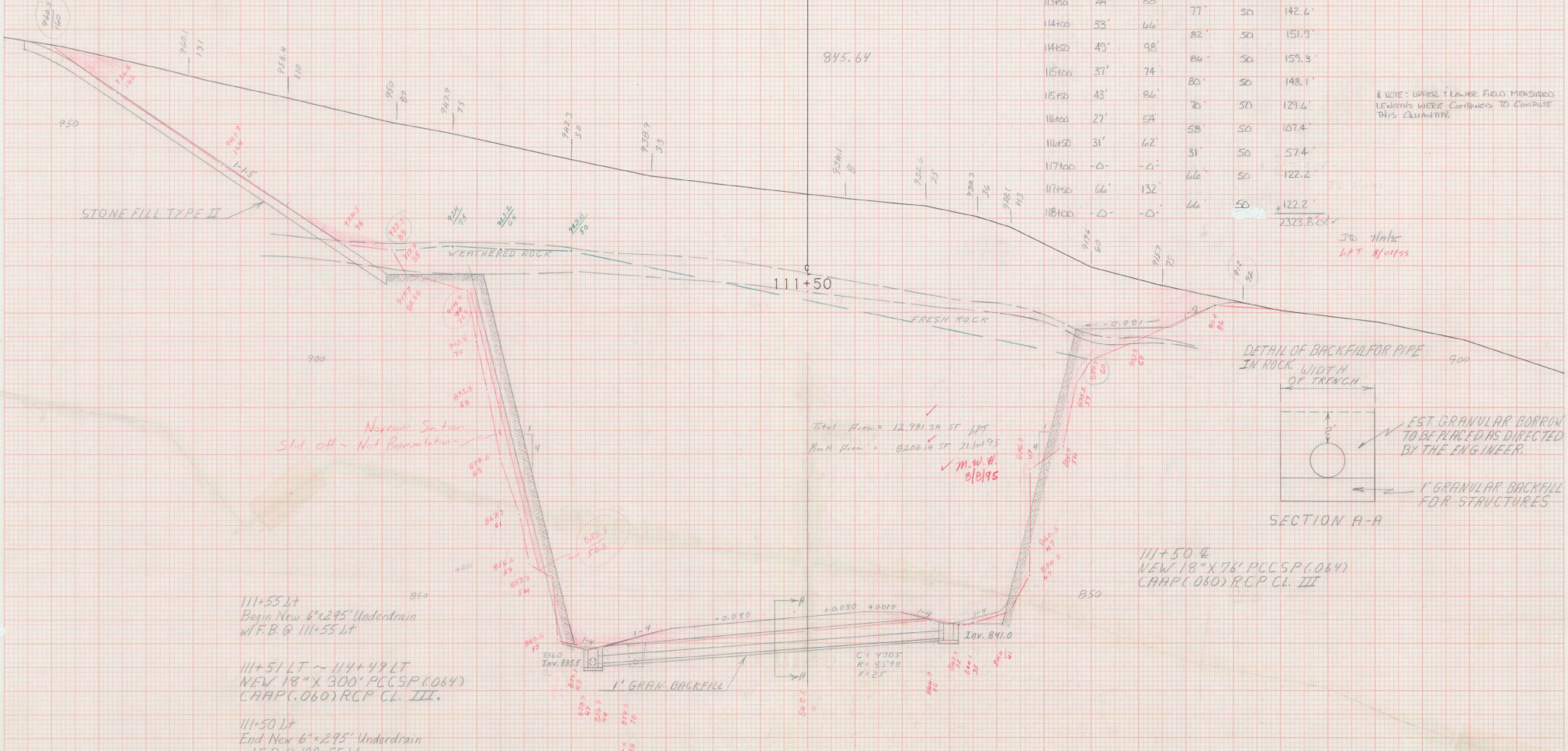
FROM STA.	110+00	TO STA.	110+00
PROJECT NAME	BRATTLEBORO REVI		
NO.	HES 010-1(30)	PLOTTED	12/22/87
SURVEYED BY	FALL		11/87
SHEET 28 OF 128	SHEETS		

SCALE ← 10 FEET


850.66
910
110+50
WEATHERED ROCK
STONE FILL TYPE II
FRESH ROCK
Total Area = 4960.90 SF
Earth Area = 4474.15 SF
21 Oct 95
M.W.H.
8/7/95
C = 2276
RT 5332
E = 24
840.5
SCALE 10 FEET
FROM STA. 110+50 TO STA. 110+50
PROJECT NAME BRATTLEBORO REV1
NO. HES010-1(30) PLOTTED 12/22/87
SURVEYED BY FALL 11/87 0084
SHEET 96 OF 122 SHEETS



FROM STA.	111+00 TO STA. 111+00
PROJECT NAME	BRATTLEBORO
NO.	HES 010-1(30) PLOTTED 12/22/87
SURVEYED BY	FALL 11/87
SHEET 69	OF 162 SHEETS



ITEM 613.11 & ITEM 203.15

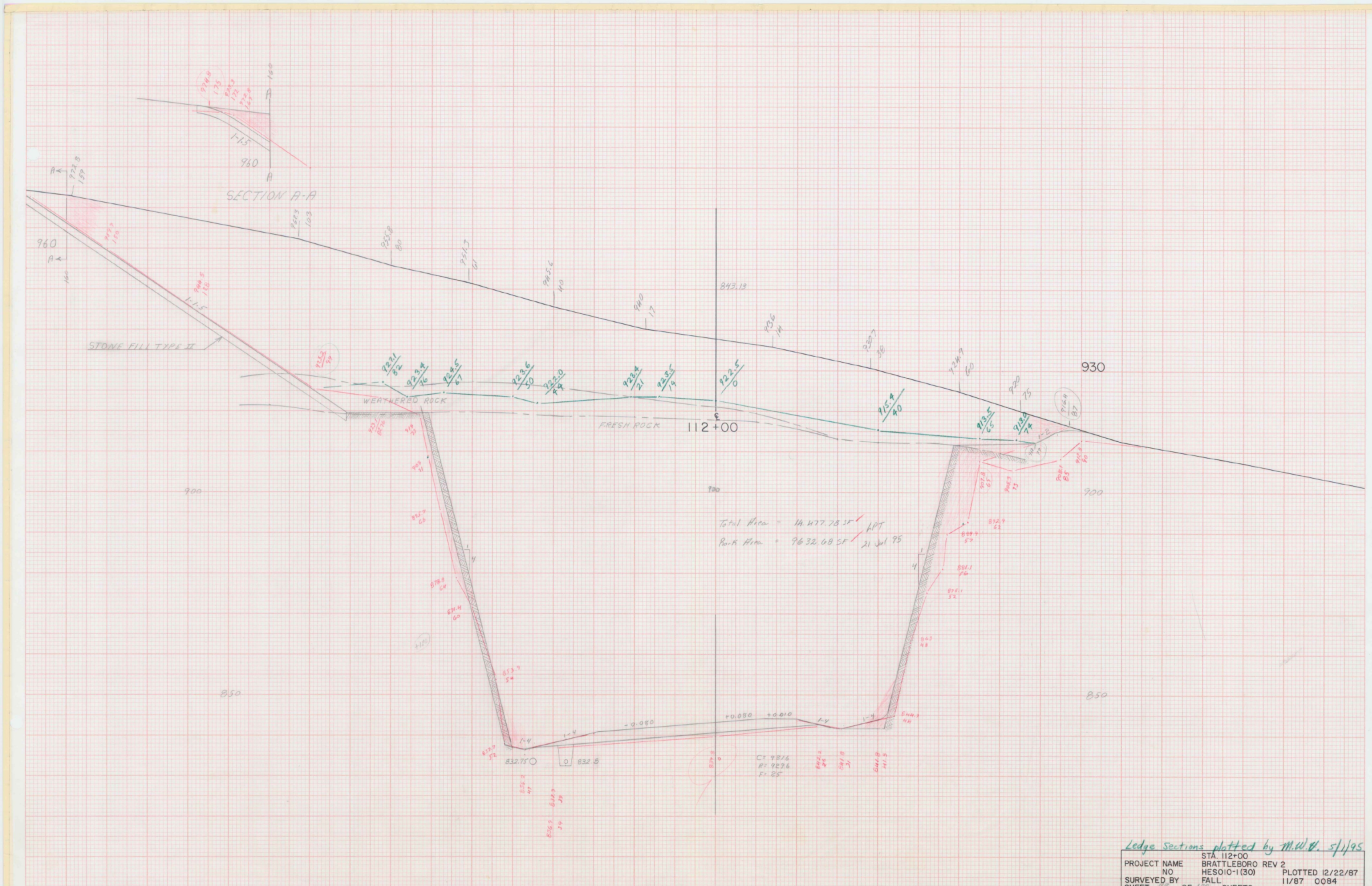
STA.	SLOPE DIST. (FIELD)	AREA	AVG. AREA	LENGTH	VOL. (CY.)
111+50	77'	154'			
			168'	50	311.0'
112+00	91'	182'			
			172'	50	318.5'
112+50	81'	162'			
			168'	50	311.0'
113+00	87'	174'			
			131'	50	242.6'
113+50	44'	88'			
			77'	50	142.6'
114+00	33'	66'			
			82'	50	151.9'
114+50	49'	98'			
			86'	50	159.3'
115+00	37'	74			
			80'	50	148.1'
115+50	43'	86'			
			70'	50	129.6'
116+00	27'	54'			
			58'	50	107.4'
116+50	31'	62'			
			31'	50	57.4'
117+00	-0-	-0-			
			66'	50	122.2'
117+50	66'	132'			
			66'	50	+122.2'
118+00	-0-	-0-			
					2323.8 CY. ✓

* NOTE: UPPER & LOWER FIELD MEASURED LENGTHS WERE COMBINED TO COMPUTE THIS QUANTITY.

JTD 7/19/95
LPT 8/01/95

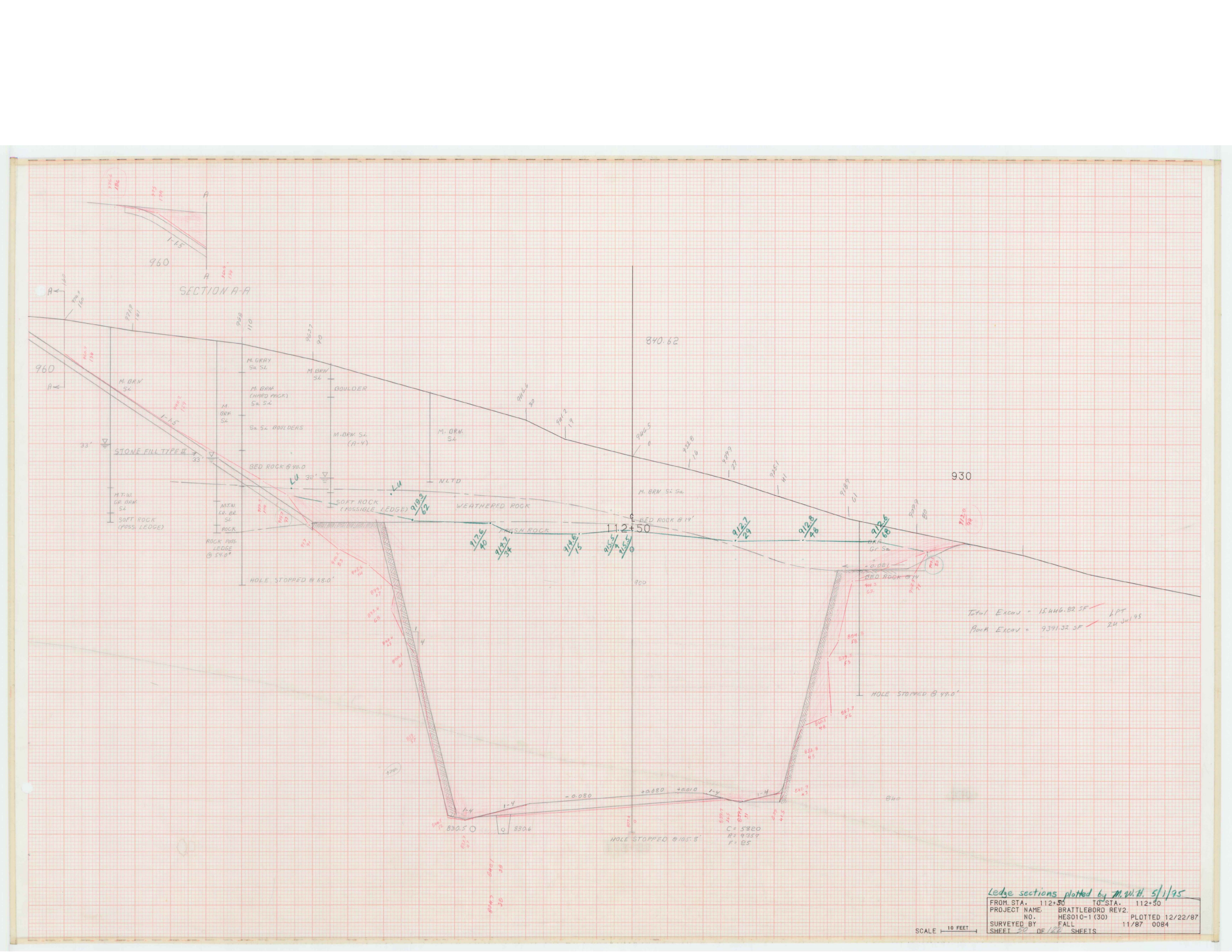
FROM STA. 111+50	TO STA. 111+50		
PROJECT NAME.	BRATTLEBORO REV1		
NO.	HES010-1 (30)	PLOTTED 12/22/87	
SURVEYED BY	FALL	11/87	0084
SHEET 48 OF 122 SHEETS			

SCALE 10 FEET



Ledge Sections plotted by M.W.B. 5/1/95

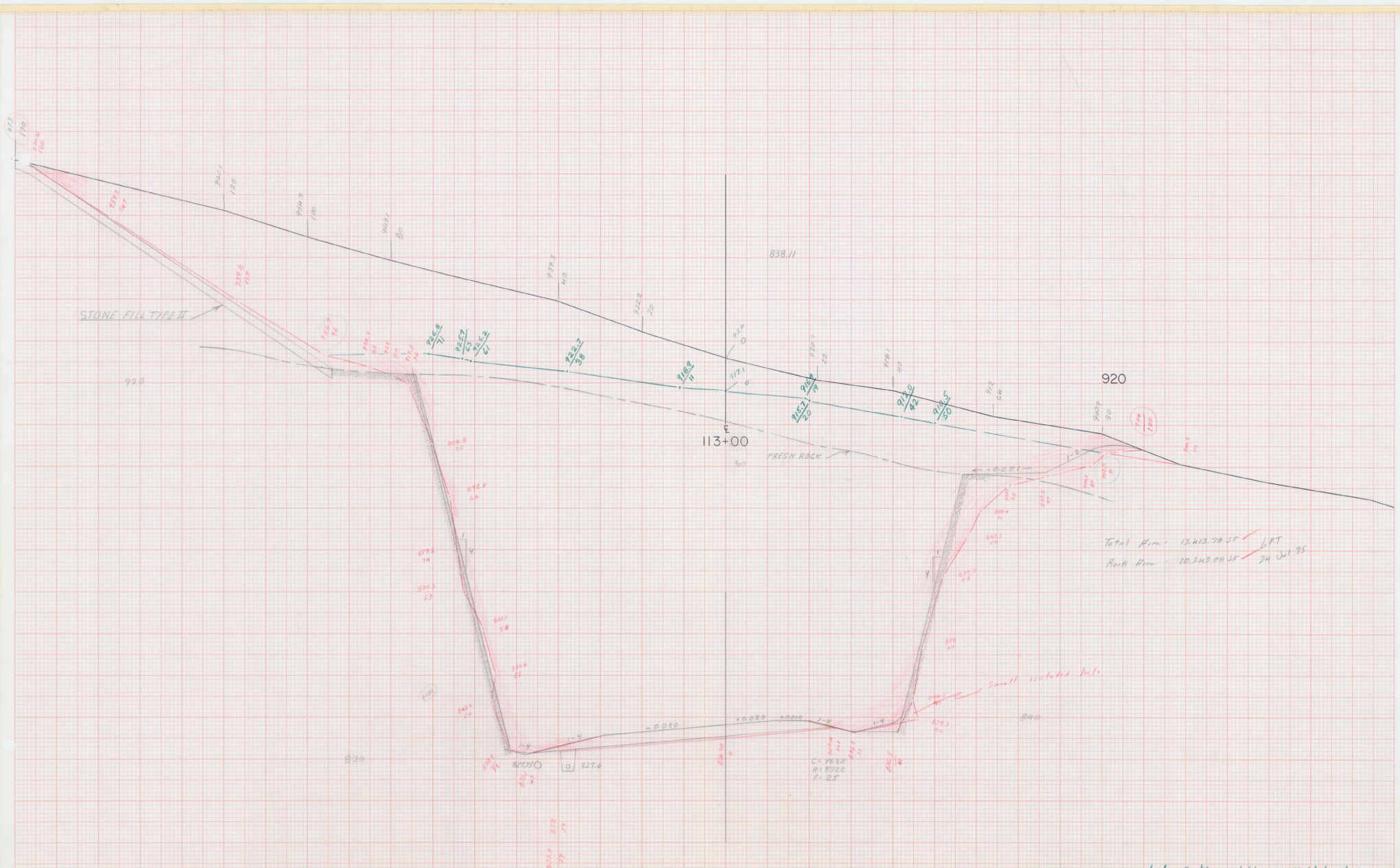
	STA. 112+00	
PROJECT NAME	BRATTLEBORO REV 2	
NO	HES010-1(30)	PLOTTED 12/22/87
SURVEYED BY	FALL	11/87 0084
SHEET 27 OF 126 SHEETS		

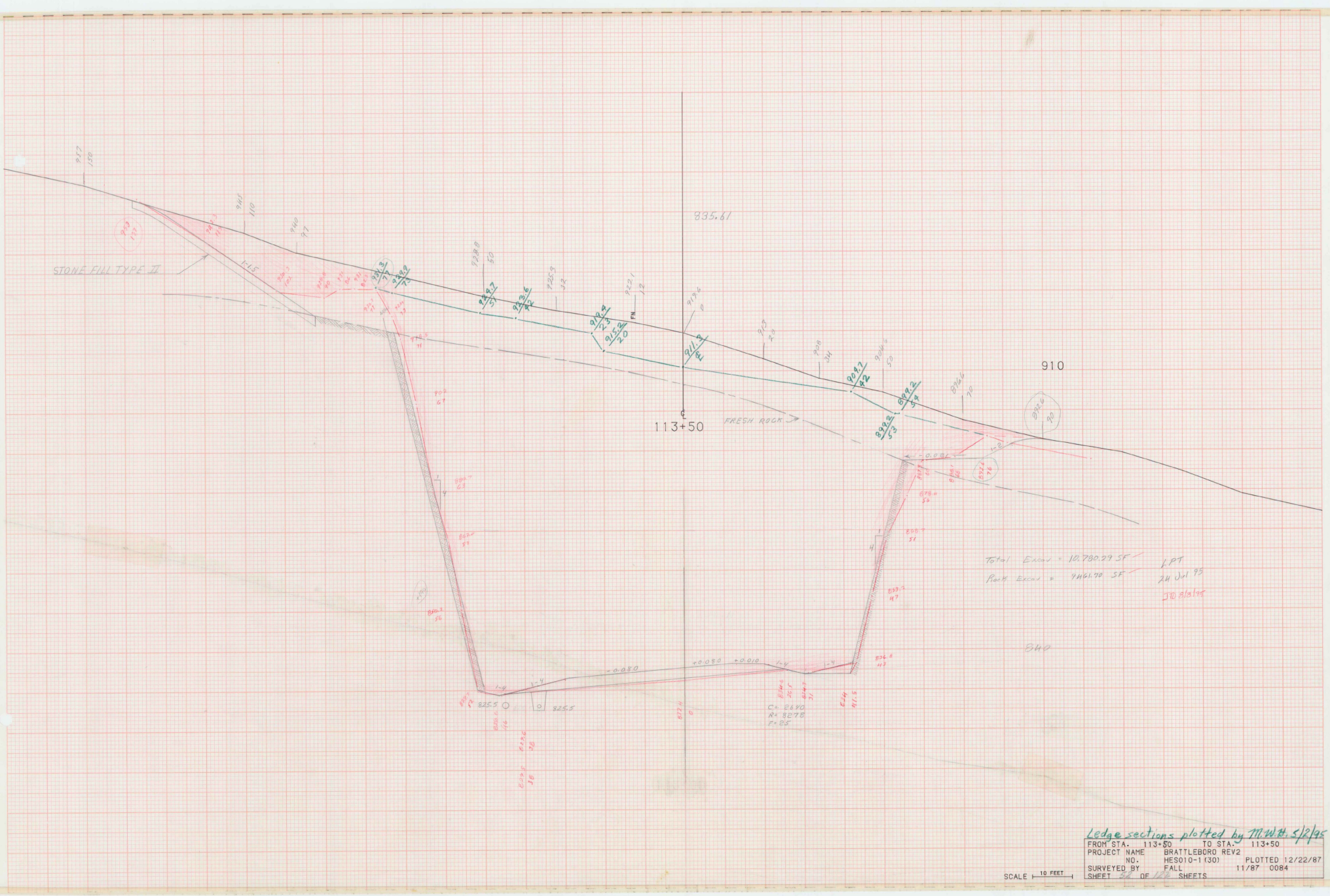


Ledge sections plotted by M.W.H. 5/1/95

FROM STA.	112+50	TO STA.	112+50
PROJECT NAME:	BRATTLEBORO REV2.		
NO.	HES010-1 (30)		PLOTTED 12/22/87
SURVEYED BY	FALL	11/87	0084
SHEET 30 OF 122 SHEETS			

SCALE 10 FEET

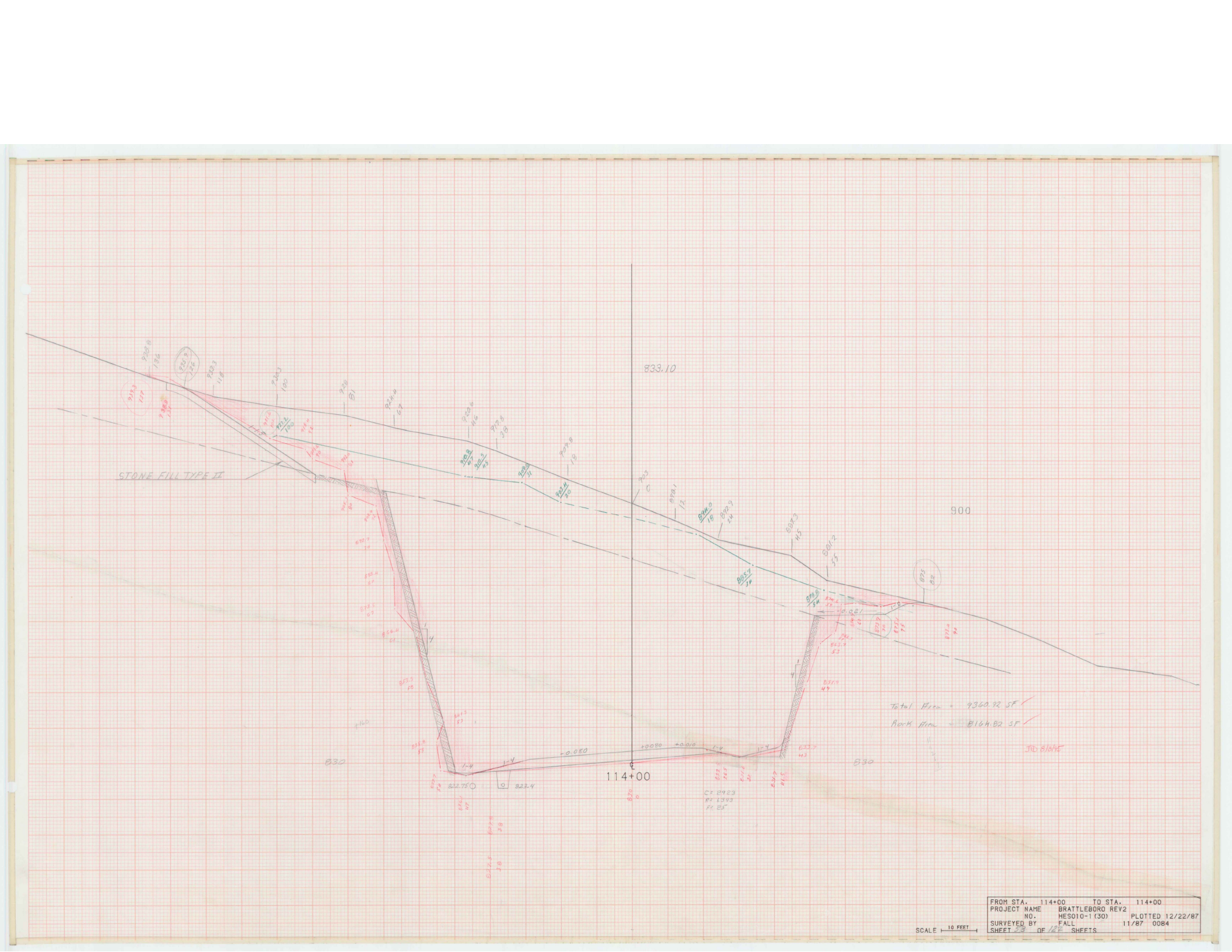

STONE FILL TYPE II
920
113+00
FRESH ROCK
838.11
Total Area = 13,413.78 SF
Rock Area = 10,243.08 SF
LPT
24 Jul 95
Small isolated hole
C = 9682
R = 8722
F = 25
SCALE 10 FEET
Ledge Sections plotted by M.W.H. 5/2/95
STA. 113+00
PROJECT NAME BRATTLEBORO REV 2
NO HES010-1(30)
PLOTTED 12/22/87
SURVEYED BY FALL
11/87 0084
SHEET 31 OF 122 SHEETS



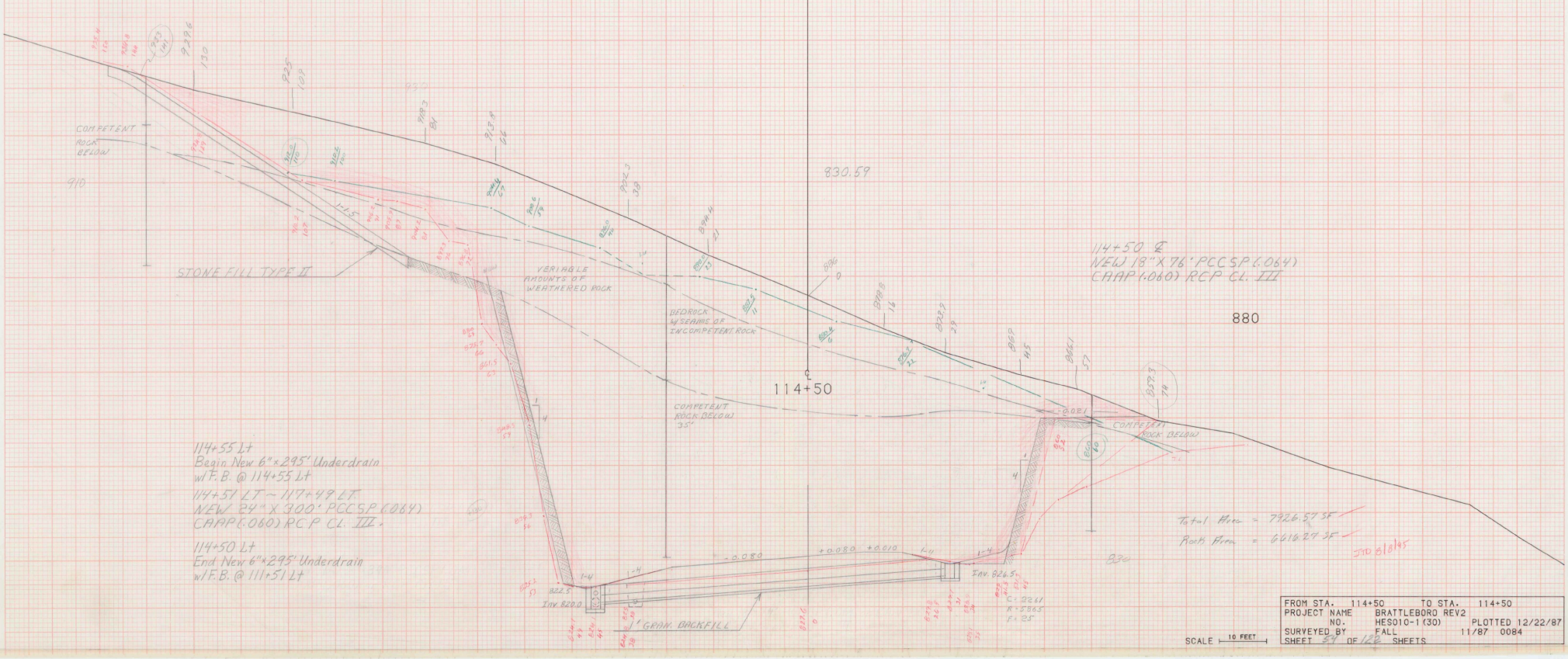
Ledge sections plotted by MWH 5/2/95

FROM STA.	113+50	TO STA.	113+50
PROJECT NAME		BRATTLEBORO REV2	
NO.		HES010-1 (30)	PLOTTED 12/22/87
SURVEYED BY		FALL	11/87 0084
SHEET 54 OF 112 SHEETS			

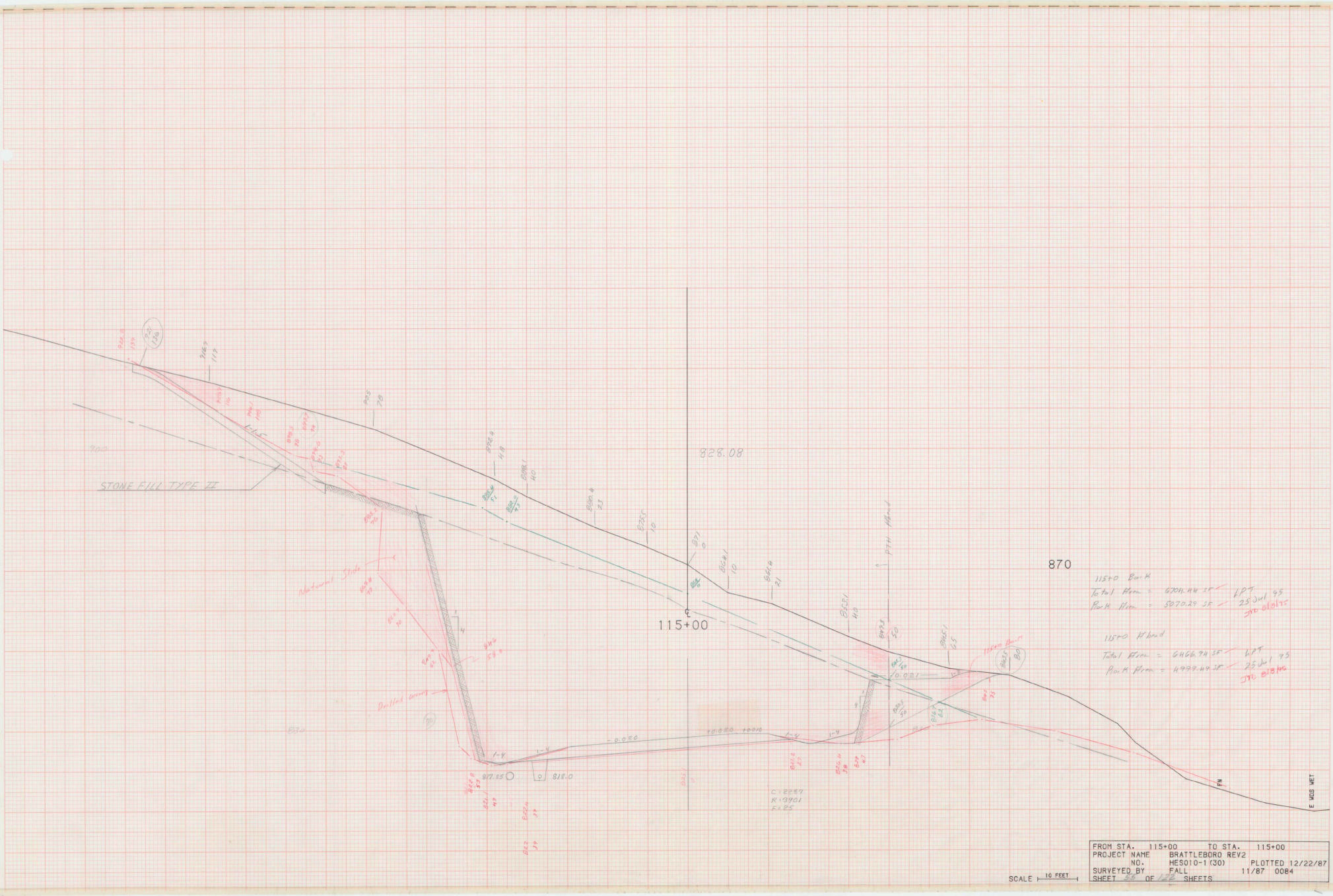
SCALE 10 FEET



FROM STA. 114+00 TO STA. 114+00
PROJECT NAME BRATTLEBORO REV2
NO. HES010-1(30) PLOTTED 12/22/87
SURVEYED BY FALL 11/87 0084
SHEET 53 OF 122 SHEETS

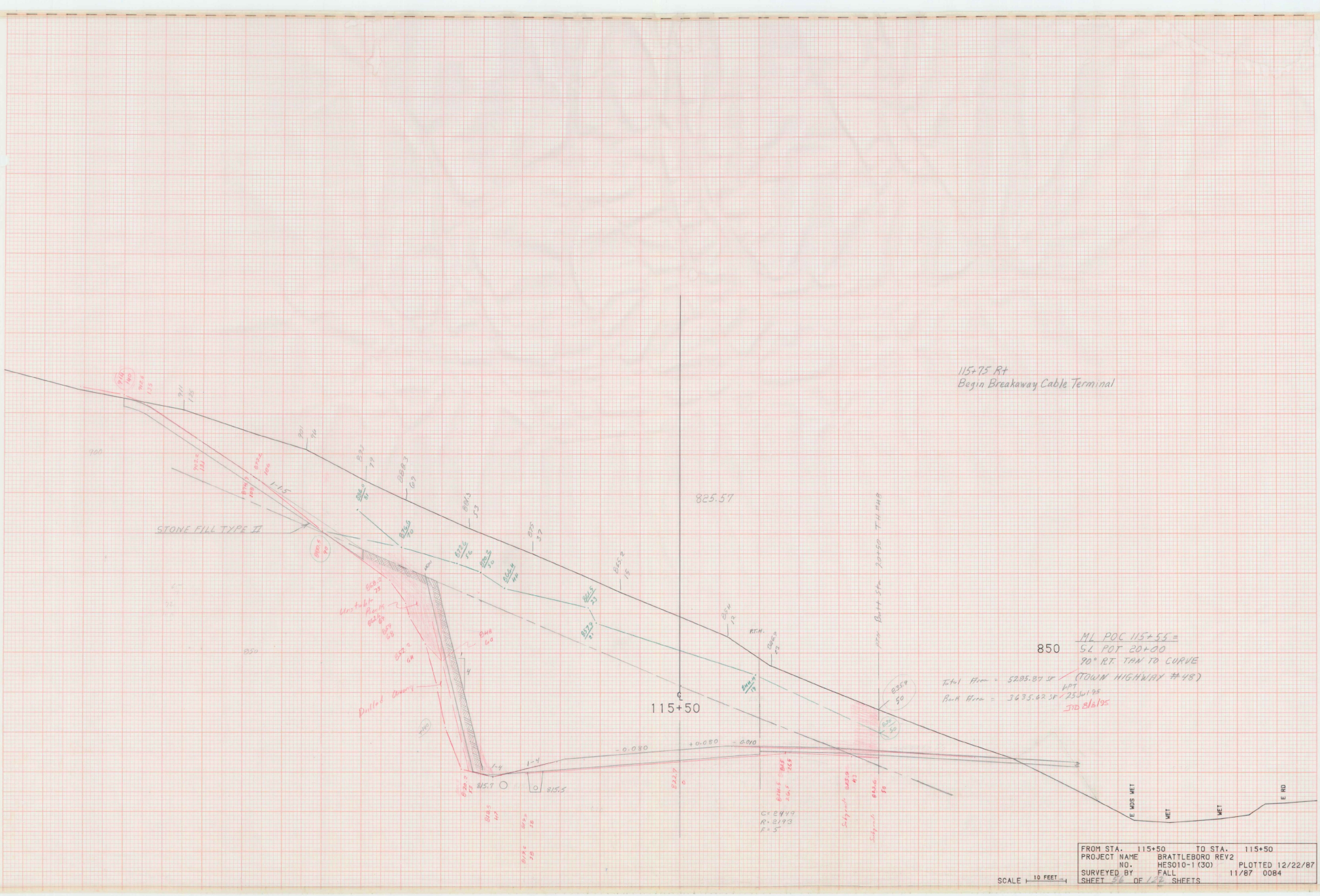


FROM STA. 114+50	TO STA. 114+50		
PROJECT NAME	BRATTLEBORO REV2		
NO.	HES010-1 (30)	PLOTTED 12/22/87	
SURVEYED BY	FALL	11/87	0084
SHEET 54 OF 122 SHEETS			

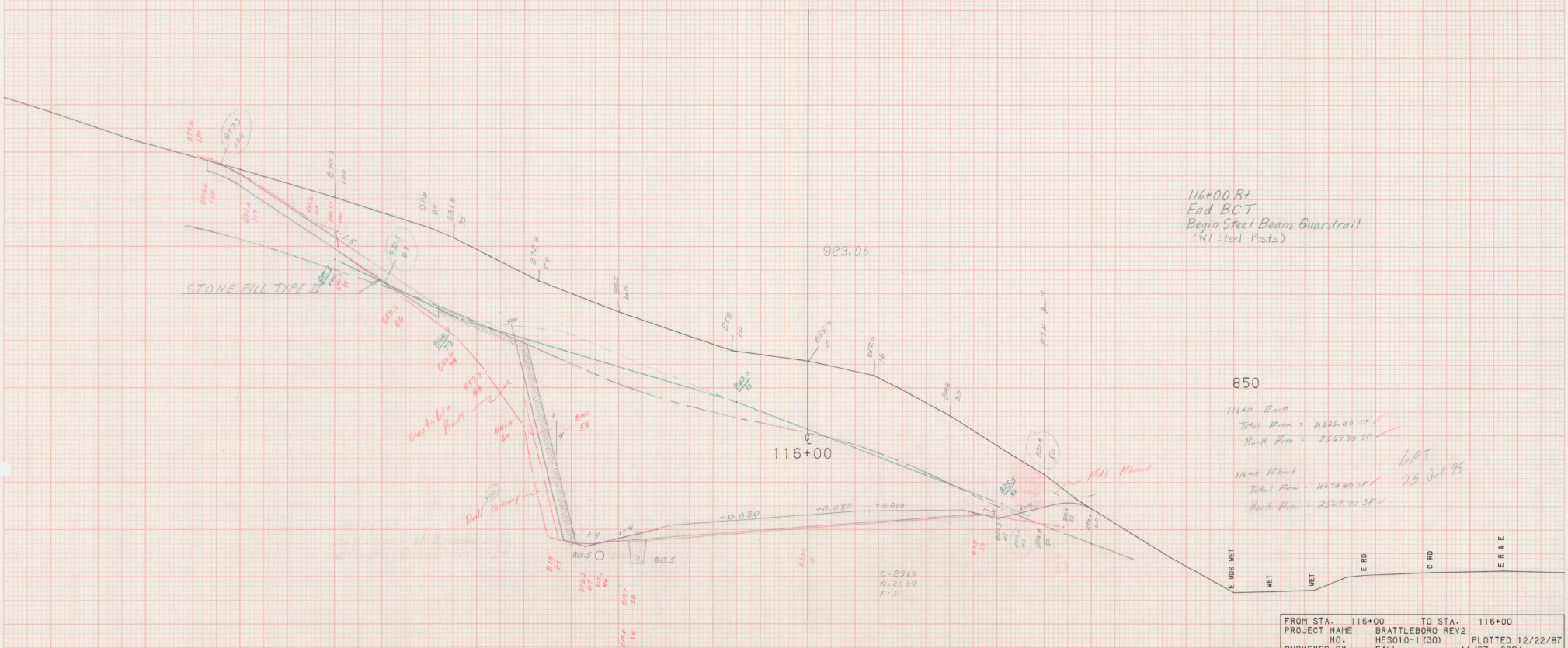


FROM STA.	115+00	TO STA.	115+00
PROJECT NAME	BRATTLEBORO REV2		
NO.	HES010-1(30)		PLOTTED 12/22/87
SURVEYED BY	FALL	11/87	0084
SHEET 25 OF 122 SHEETS			

SCALE 10 FEET

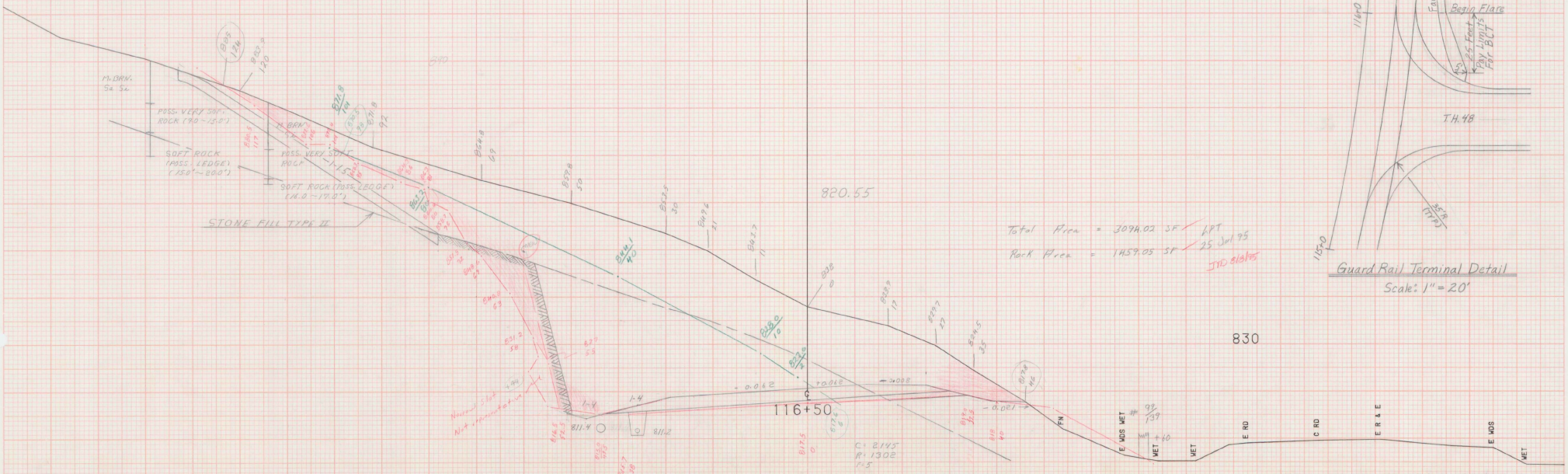


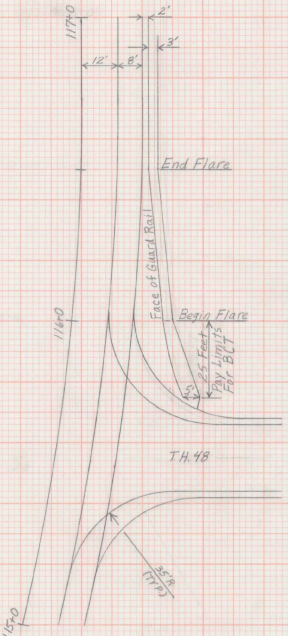
FROM STA. 115+50		TO STA. 115+50	
PROJECT NAME	BRATTLEBORO REV2		
NO.	HES010-1(30)	PLOTTED 12/22/87	
SURVEYED BY	FALL	11/87	0084
SHEET 56 OF 122 SHEETS			



FROM STA. 116+00	TO STA. 116+00		
PROJECT NAME	BRATTLEBORO REV2		
NO.	HES010-1 (30)	PLOTTED 12/22/87	
SURVEYED BY	FALL	11/87	0084
SHEET 57 OF 122 SHEETS			

PT 116+72.79

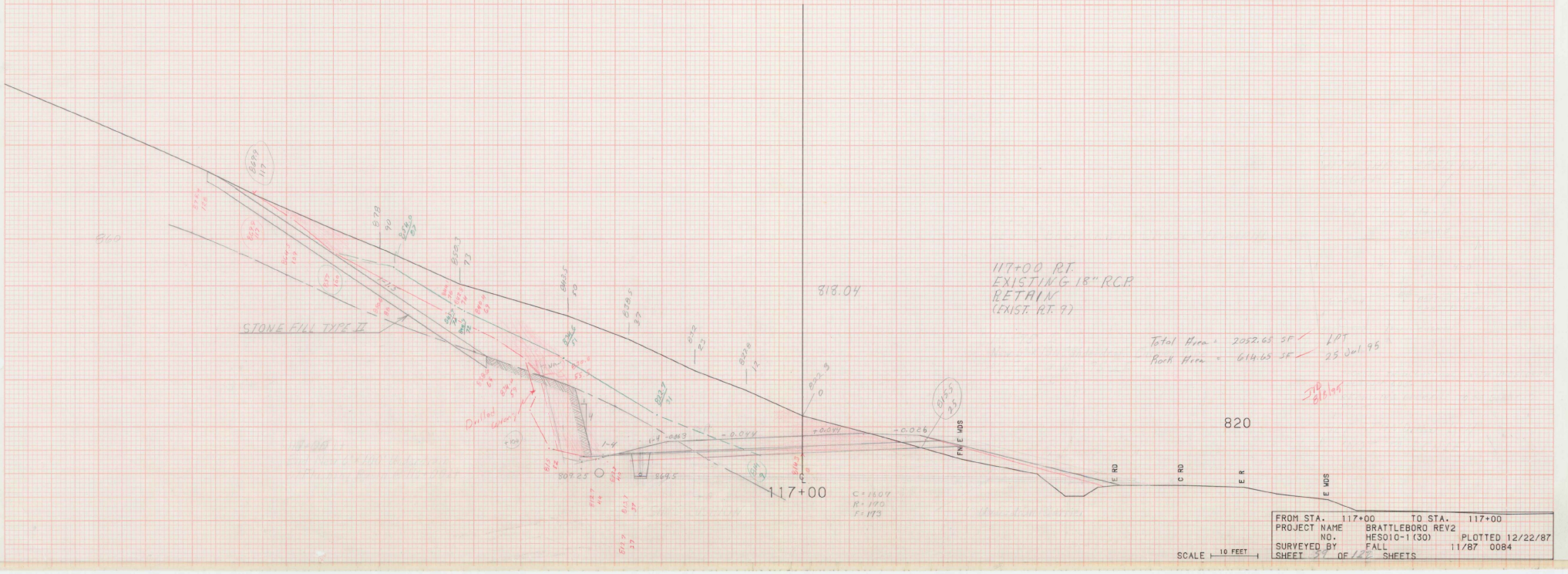




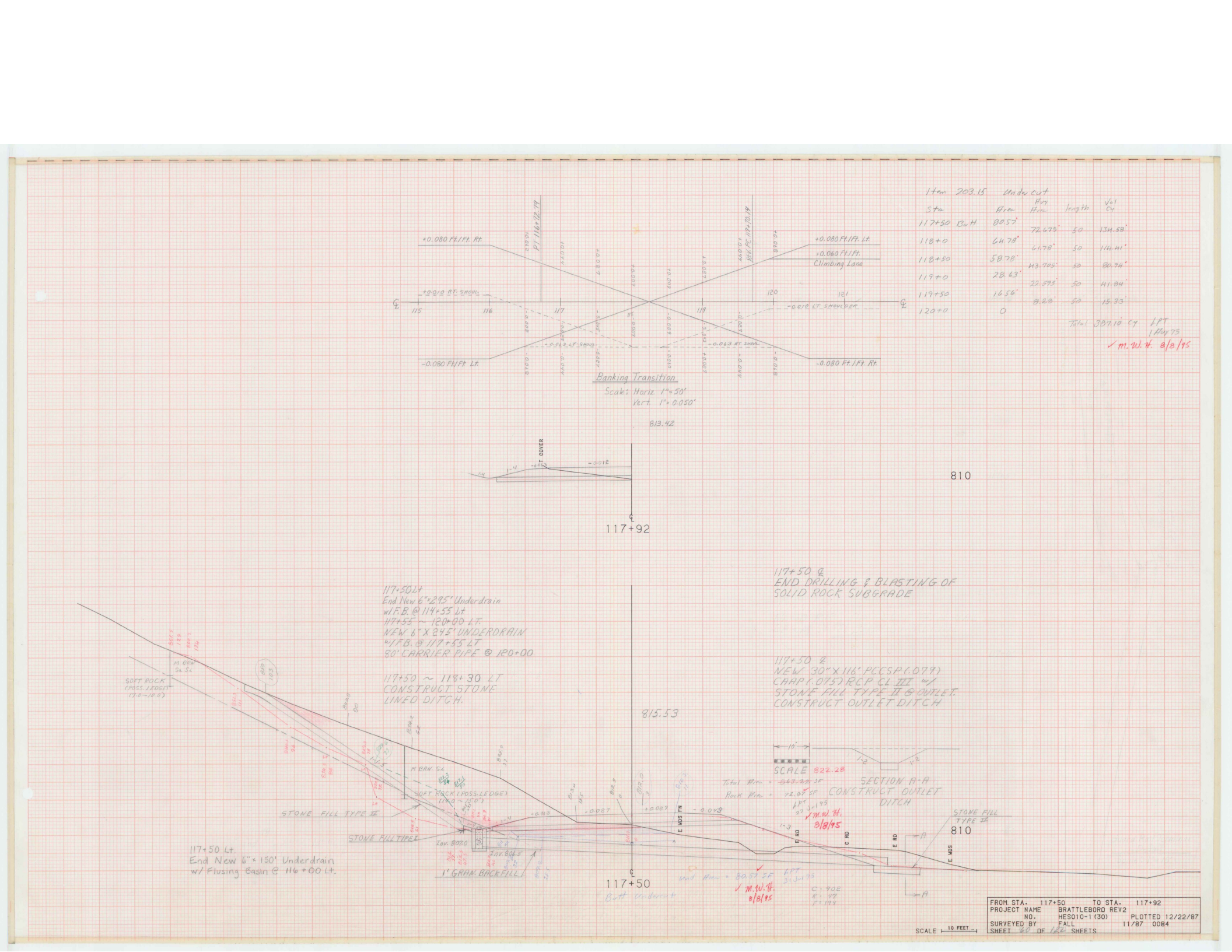
Total Area = 3074.02 SF LPT 25 Jun 95
Rock Area = 1457.05 SF JTD 8/6/95

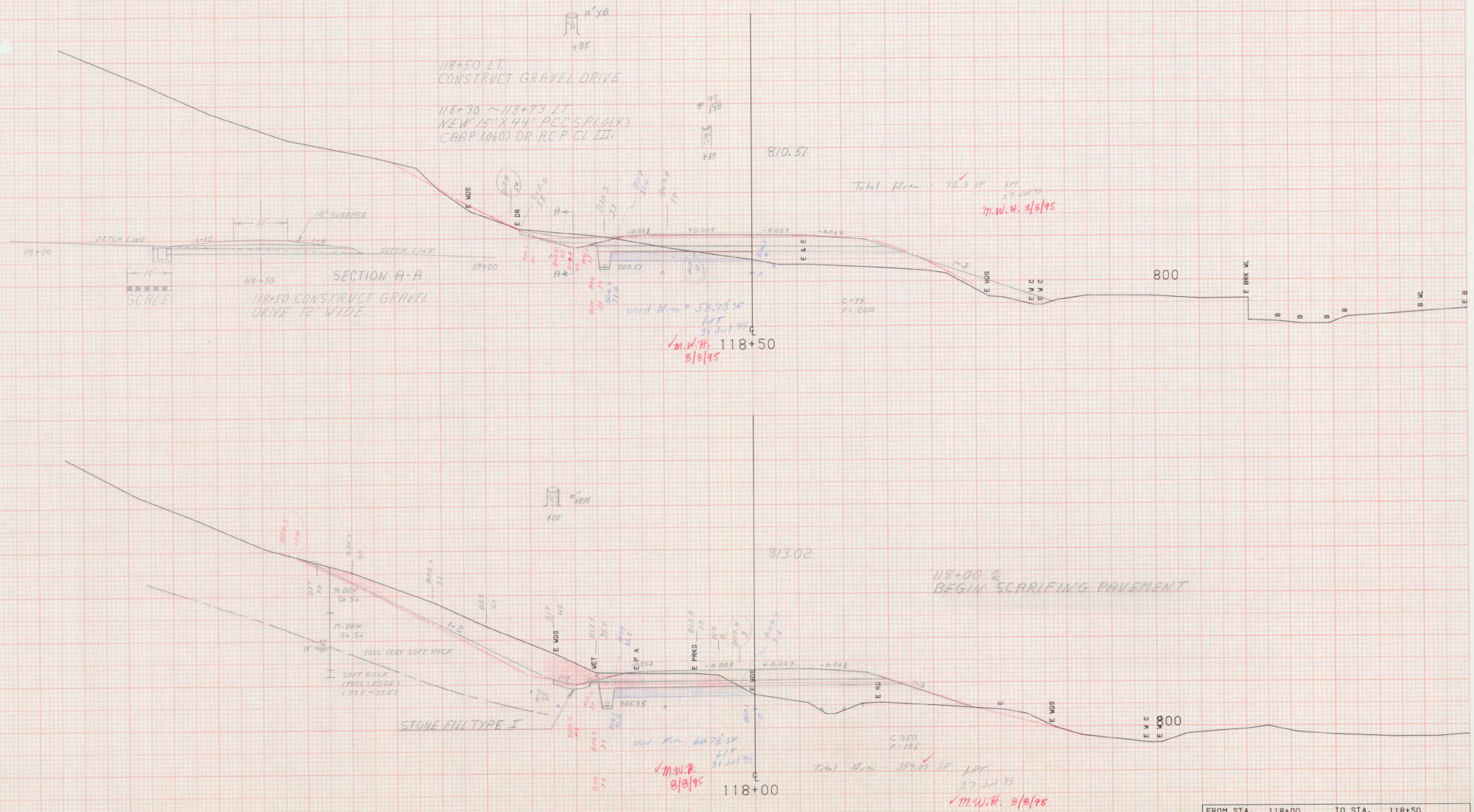
SCALE 10 FEET

FROM STA.	116+50	TO STA.	116+50
PROJECT NAME	BRATTLEBORO REV2		
NO.	HES010-1(30)		PLOTTED 12/22/87
SURVEYED BY	FALL	11/87	0084
SHEET 58 OF 122 SHEETS			



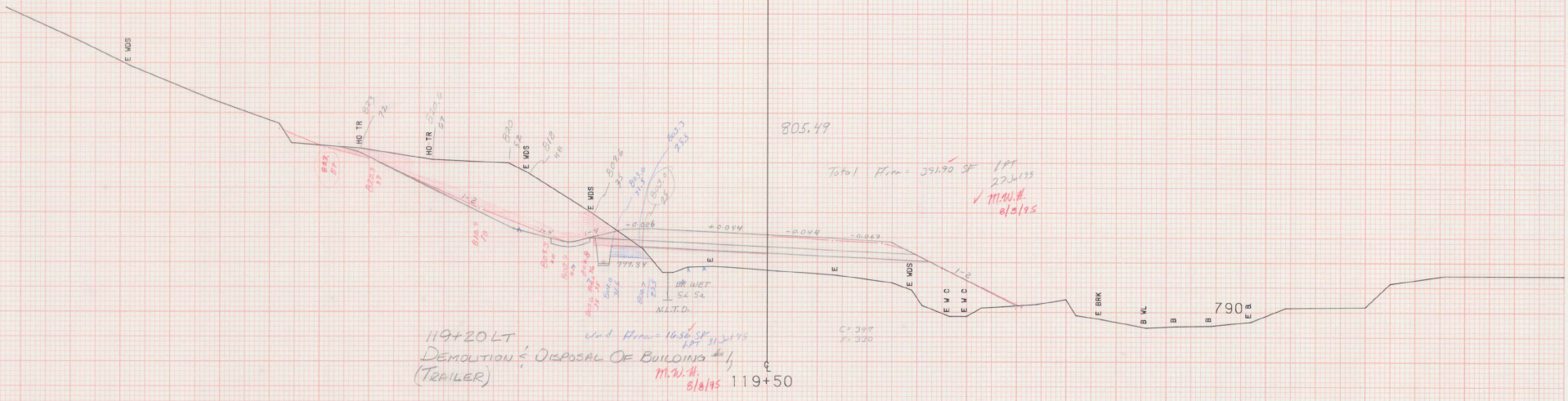
FROM STA.	117+00	TO STA.	117+00
PROJECT NAME	BRATTLEBORO REV2		
NO.	HES010-1(30)	PLOTTED	12/22/87
SURVEYED BY	FALL		11/87 0084
SHEET	OF	SHEETS	

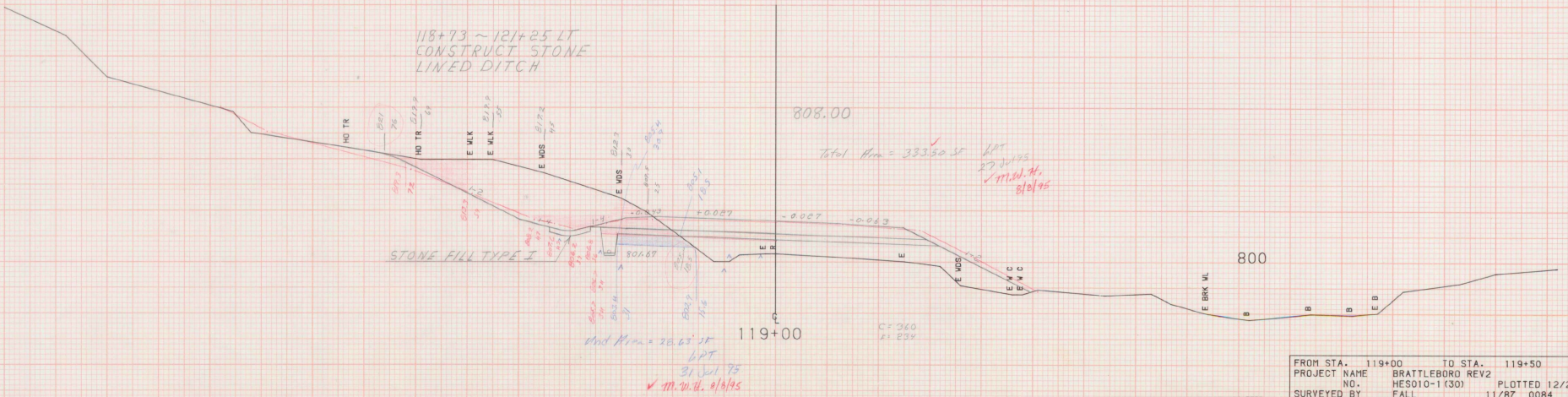

Item 203.15 Undercut
Sta Area Hyp Hrzn Length Vol CY
117+50 Bot H 80.57 72.675' 50 134.58'
118+0 64.78 61.78' 50 114.41'
118+50 58.78 43.705' 50 80.94'
119+0 28.63 22.595' 50 41.84'
119+50 16.56 8.20' 50 15.33'
120+0 0
Total 387.10 CY
LPT 1 May 95
m.w.h. 8/8/95
+0.080 Ft./Ft. Rt.
+0.080 Ft./Ft. Lt.
+0.060 Ft./Ft. Climbing Lane
-0.080 Ft./Ft. Lt.
-0.080 Ft./Ft. Rt.
-0.010 Rt. Shoul.
-0.010 Lt. Shoul.
-0.043 Lt. Shoul.
-0.043 Rt. Shoul.
PT 116+92.79
PC/PC 117+70.19
115
116
117
118
119
120
121
Banking Transition
Scale: Horiz. 1"=50'
Vert. 1"=0.050'
813.42
810
117+92
117+50 Lt
End New 6"x295' Underdrain
w/ F.B. @ 114+55 Lt
117+55 ~ 120+00 Lt.
NEW 6" X 295' UNDERDRAIN
w/ F.B. @ 117+55 LT
80' CARRIER PIPE @ 120+00
117+50 ~ 118+30 LT
CONSTRUCT STONE
LINED DITCH.
117+50 ℄
END DRILLING & BLASTING OF
SOLID ROCK SUBGRADE
117+50 ℄
NEW 30"x116' PCCSP(.079)
CHAP(.075) RCP CL VII w/
STONE FILL TYPE II @ OUTLET.
CONSTRUCT OUTLET DITCH
815.53
SOFT ROCK (POSS. LEDGE) (17.0'~18.0')
M. GRN. SH.
SOFT ROCK (POSS. LEDGE) (12.0'~15.0')
STONE FILL TYPE II
STONE FILL TYPE I
Inv. 807.0
1' GRAN. BACKFILL
117+50 Lt.
End New 6"x 150' Underdrain
w/ Flusing Basin @ 116+00 Lt.
117+50
Bott Underdrain
SCALE 822.28
SECTION A-A
CONSTRUCT OUTLET
DITCH
Total Area = 69.27 SF
Rock Area = 72.07 SF
Undr Area = 80.57 SF
LPT 31 Jul 95
m.w.h. 8/8/95
E WDS FN
E RD
C RD
E WDS
STONE FILL TYPE II
810
C = 90E
R = 97
F = 124
FROM STA. 117+50 TO STA. 117+92
PROJECT NAME BRATTLEBORO REV2
NO. HES010-1(30) PLOTTED 12/22/87
SURVEYED BY FALL 11/87 0084
SHEET 46 OF 166 SHEETS
SCALE 10 FEET



SCALE 10 FEET

FROM STA. 118+00	TO STA. 118+50		
PROJECT NAME	BRATTLEBORO REV2		
NO.	HES010-1(30)	PLOTTED 12/22/87	
SURVEYED BY	FALL	11/87	0084
SHEET 62 OF 122 SHEETS			





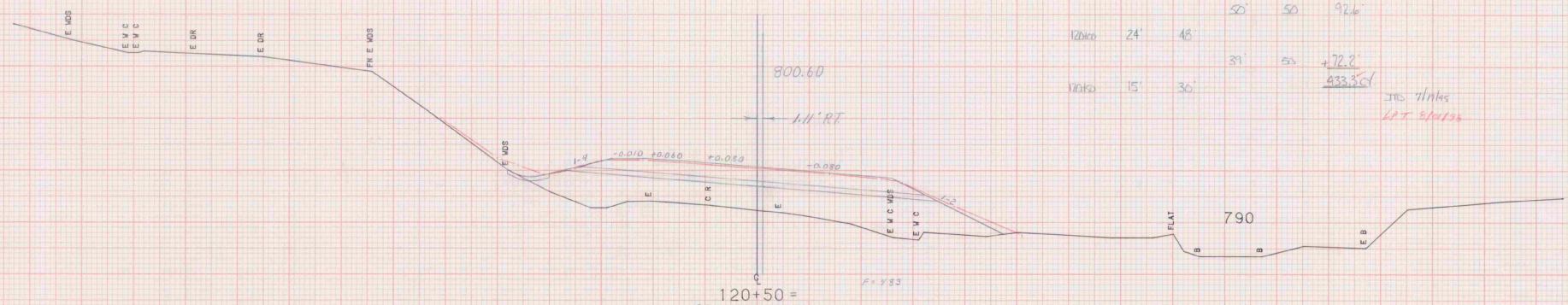
FROM STA.	119+00	TO STA.	119+50
PROJECT NAME	BRATTLEBORO REV2		
NO.	HES010-1(30)	PLOTTED	12/22/87
SURVEYED BY	FALL		11/87 0084
SHEET 62	OF 122 SHEETS		

SCALE 10 FEET

ITEM 613.11 & ITEM 203.15

STA.	SLOPE FEET (FIELD)	AREA 2' THICK	AVG. AREA	LENGTH	VOL. (CY.)
118+50	55'	110'			
			87'	50	161.1'
119+00	32'	64'			
			58'	50	107.4'
119+50	26'	52'			
			50'	50	92.6'
120+00	24'	48'			
			39'	50	+72.2'
120+50	15'	30'			433.3' CY

JTD 7/19/95
LPT 8/01/95

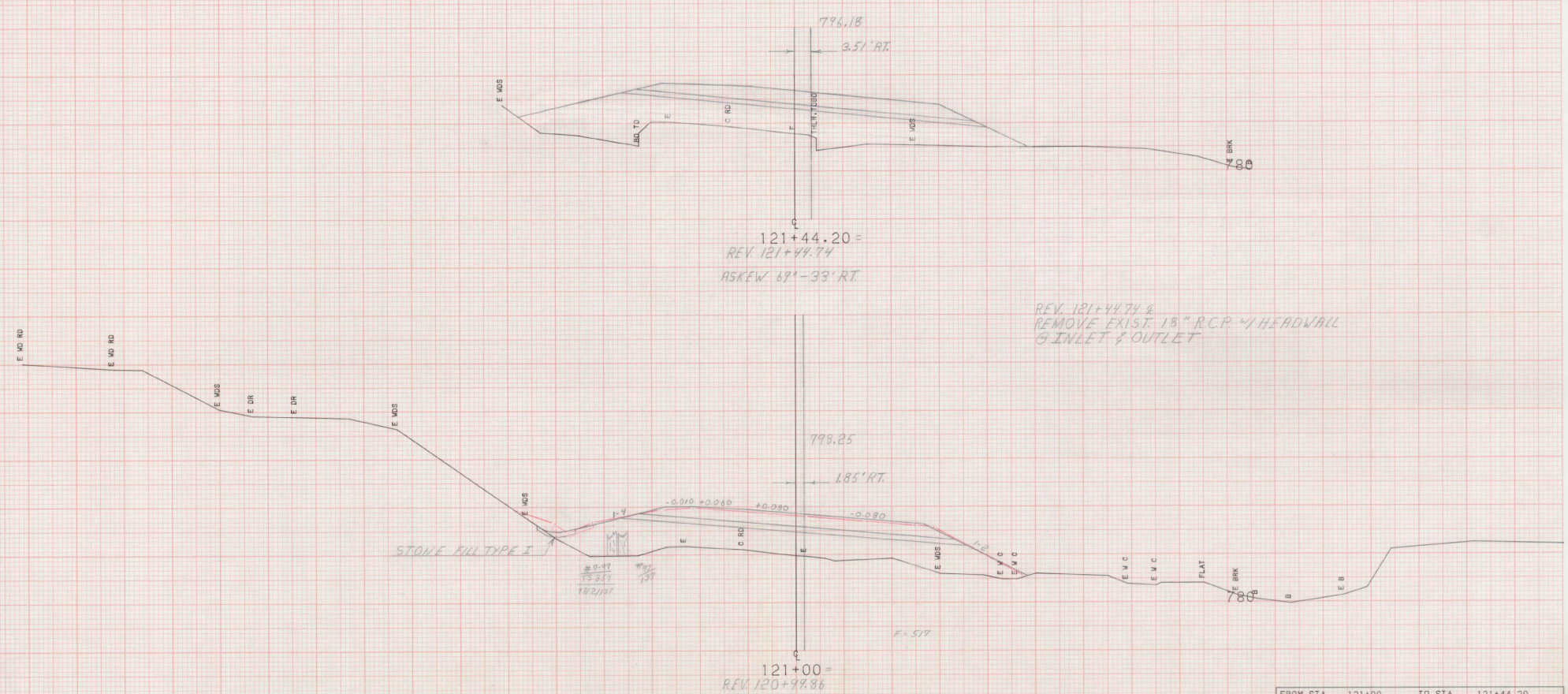


120+50 =
REV. 120+49.95

120+00 =
REV. 119+99.99
REV. PC 119+70.14

SCALE 10 FEET

FROM STA. 120+00	TO STA. 120+50		
PROJECT NAME	BRATTLEBORO REV		
NO.	HES010-1 (30)	PLOTTED 12/09/87	
SURVEYED BY	FALL	11/87	0084
SHEET 63 OF 122	SHEETS		

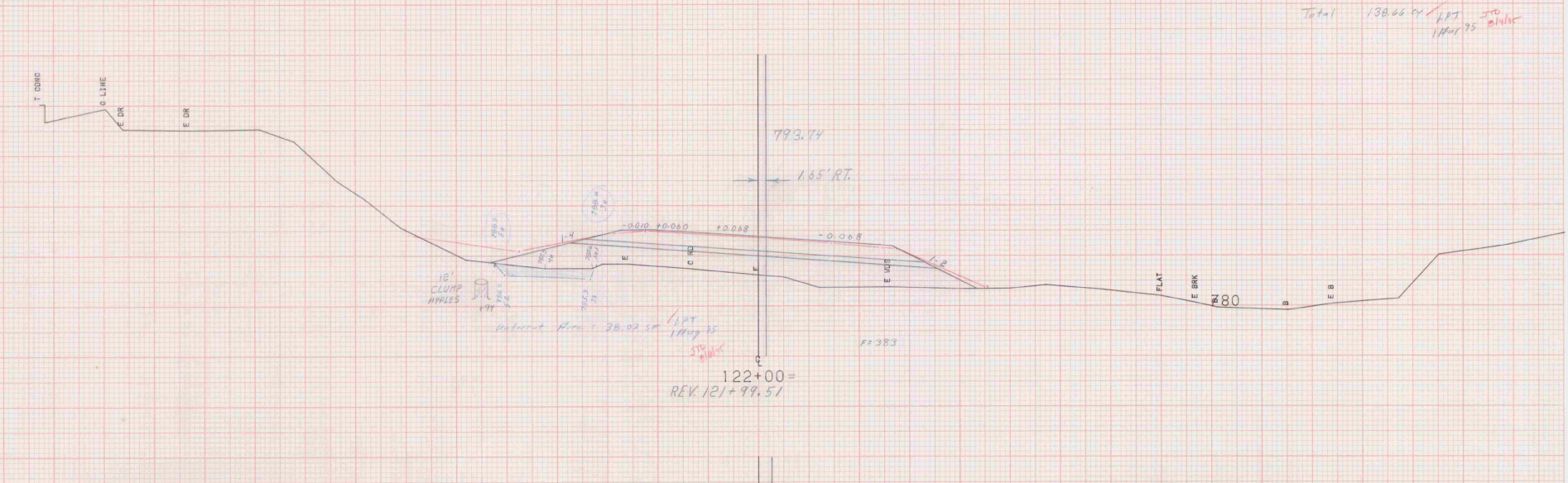


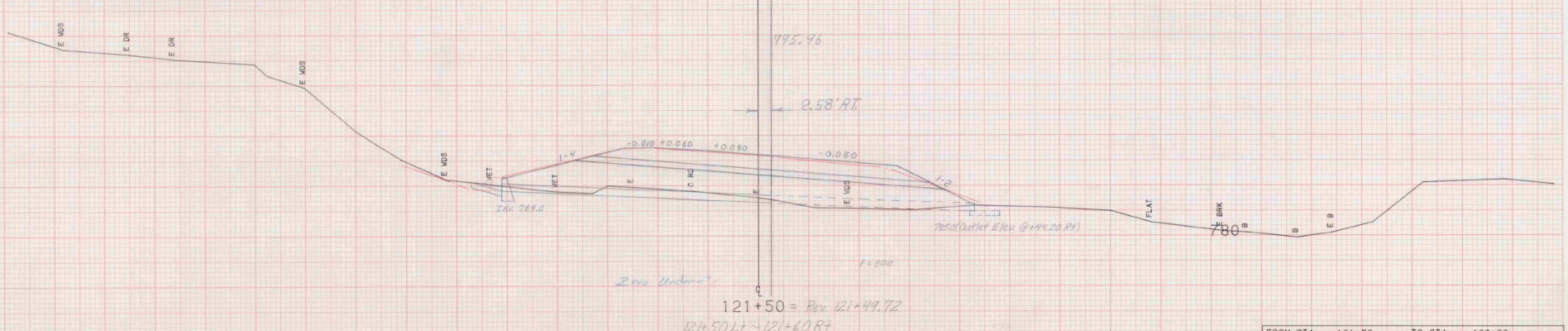
FROM STA. 121+00	TO STA. 121+44.20		
PROJECT NAME	BRATTLEBORO REV		
NO.	HES010-1(30)	PLOTTED 12/09/87	
SURVEYED BY	FALL	11/87	0084
SHEET 64 OF 122 SHEETS			

Item 203.15 Common Excav - Undercut Section

Sta	Area	Avg Area	length	Vol Cy
121+50	0			
		19.01	50	35.20
122+0	38.02			
		23.585	50	43.68
122+50	9.15			
		14.06	50	26.04
123+0	18.97			
		15.31	50	28.35
123+50	11.65			
		5.825	25	5.39
123+75	0			
			Total	138.66 cy

LPT 1 Aug 95 JTD 8/9/95

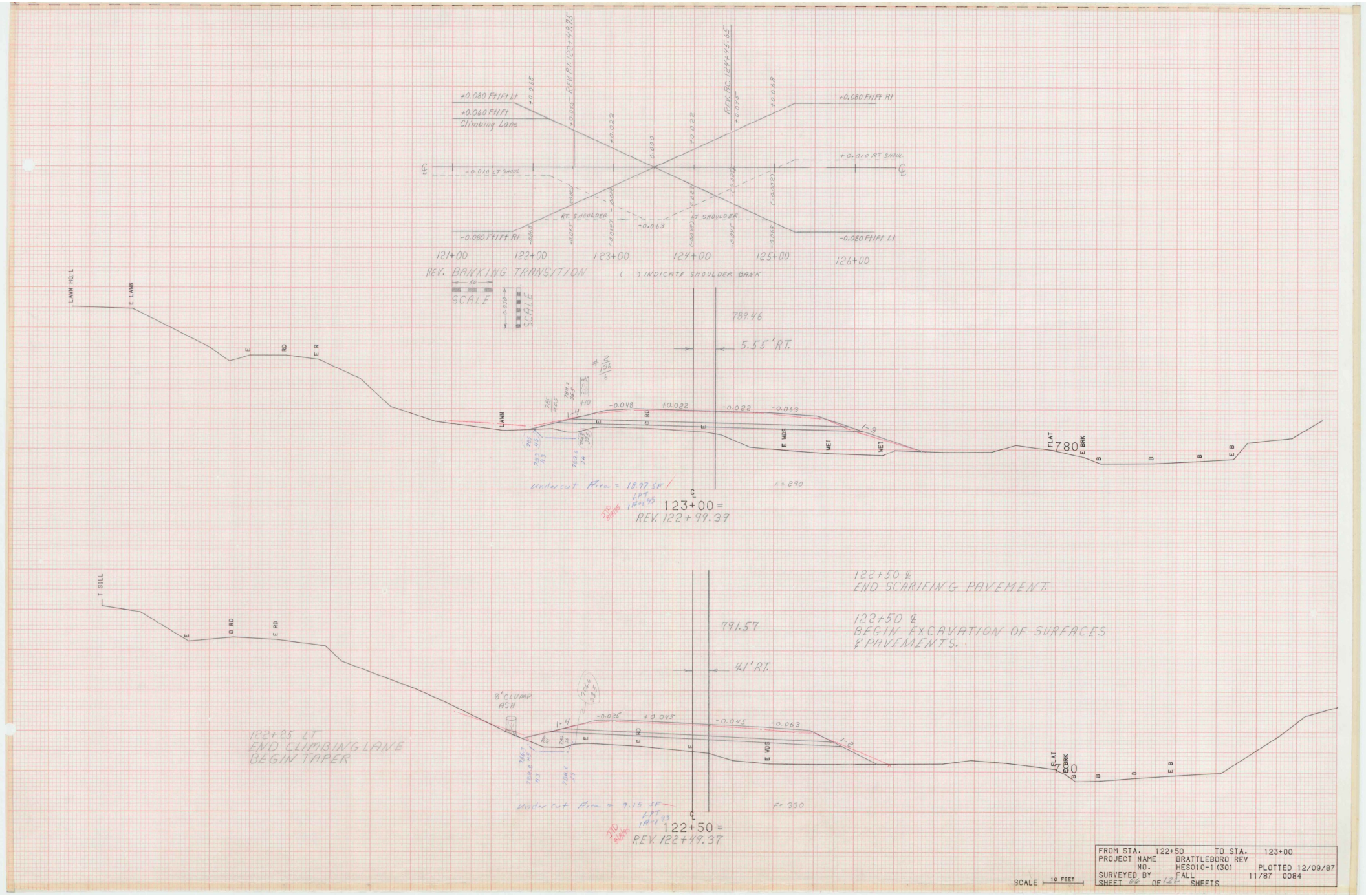




121+50 Lt ~ 121+60 Rt
New 18" x 94' PCCSP .064, CAAP .060 or CPEP (SL)
w/ Straight Headwall @ Inlet, Stone Fill Type I
@ Inlet + Outlet

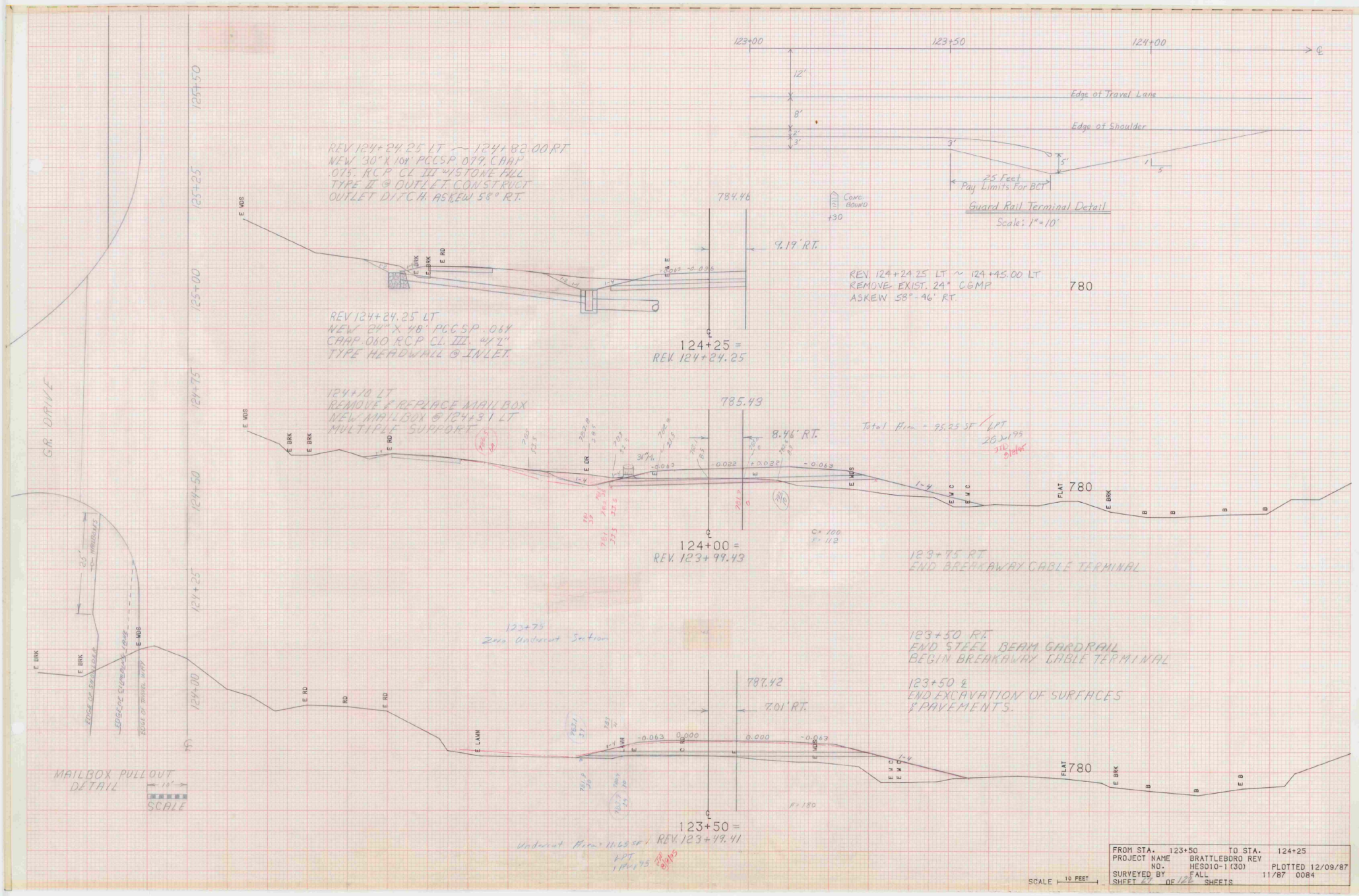
SCALE 10 FEET

FROM STA. 121+50	TO STA. 122+00		
PROJECT NAME	BRATTLEBORO REV		
NO.	HES010-1 (30)	PLOTTED 12/09/87	
SURVEYED BY	FALL	11/87	0084
SHEET 65 OF 122	SHEETS		

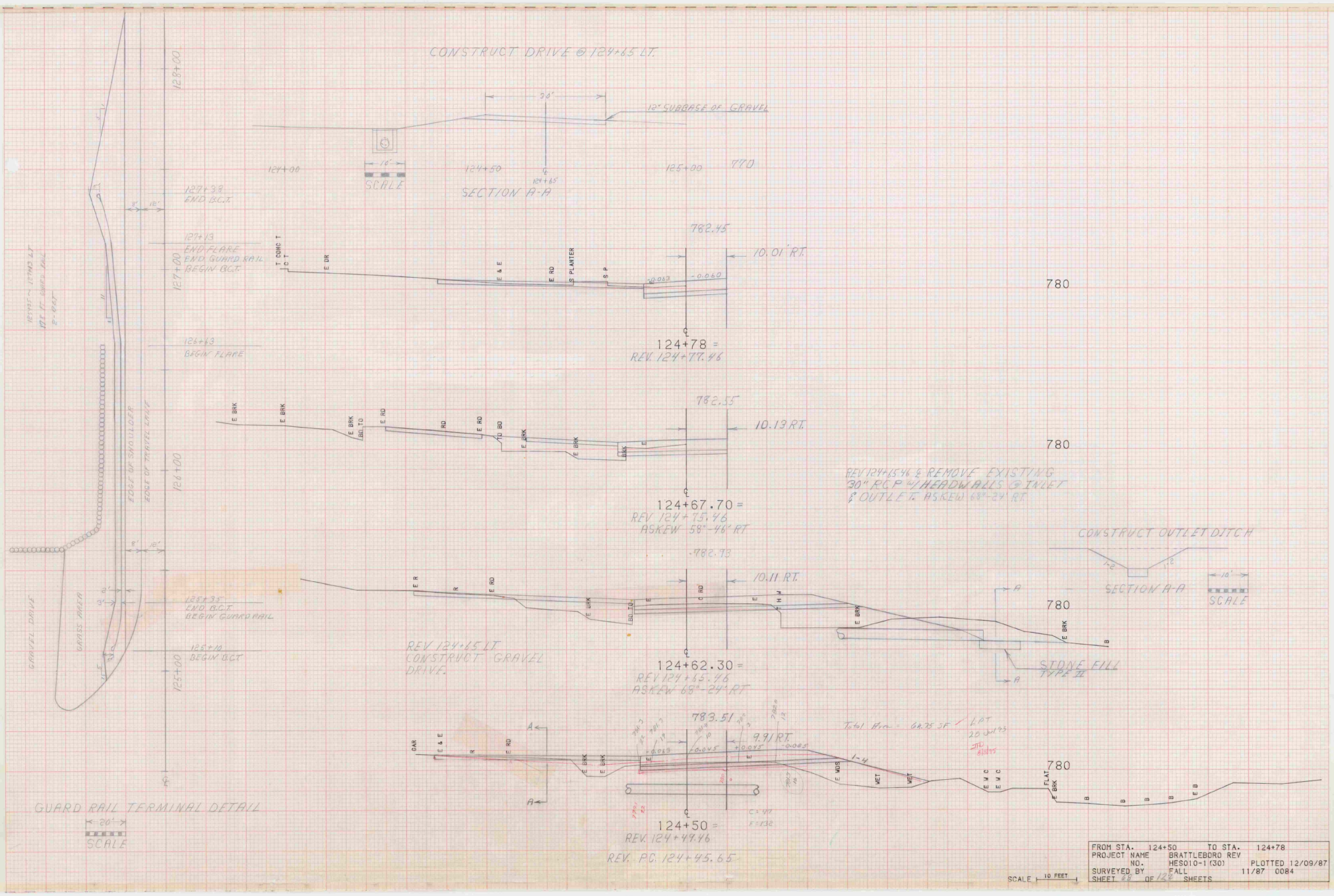


FROM STA.	122+50	TO STA.	123+00
PROJECT NAME	BRATTLEBORO REV		
NO.	HES010-1(30)		PLOTTED 12/09/87
SURVEYED BY	FALL	11/87	0084
SHEET 66 OF 122 SHEETS			

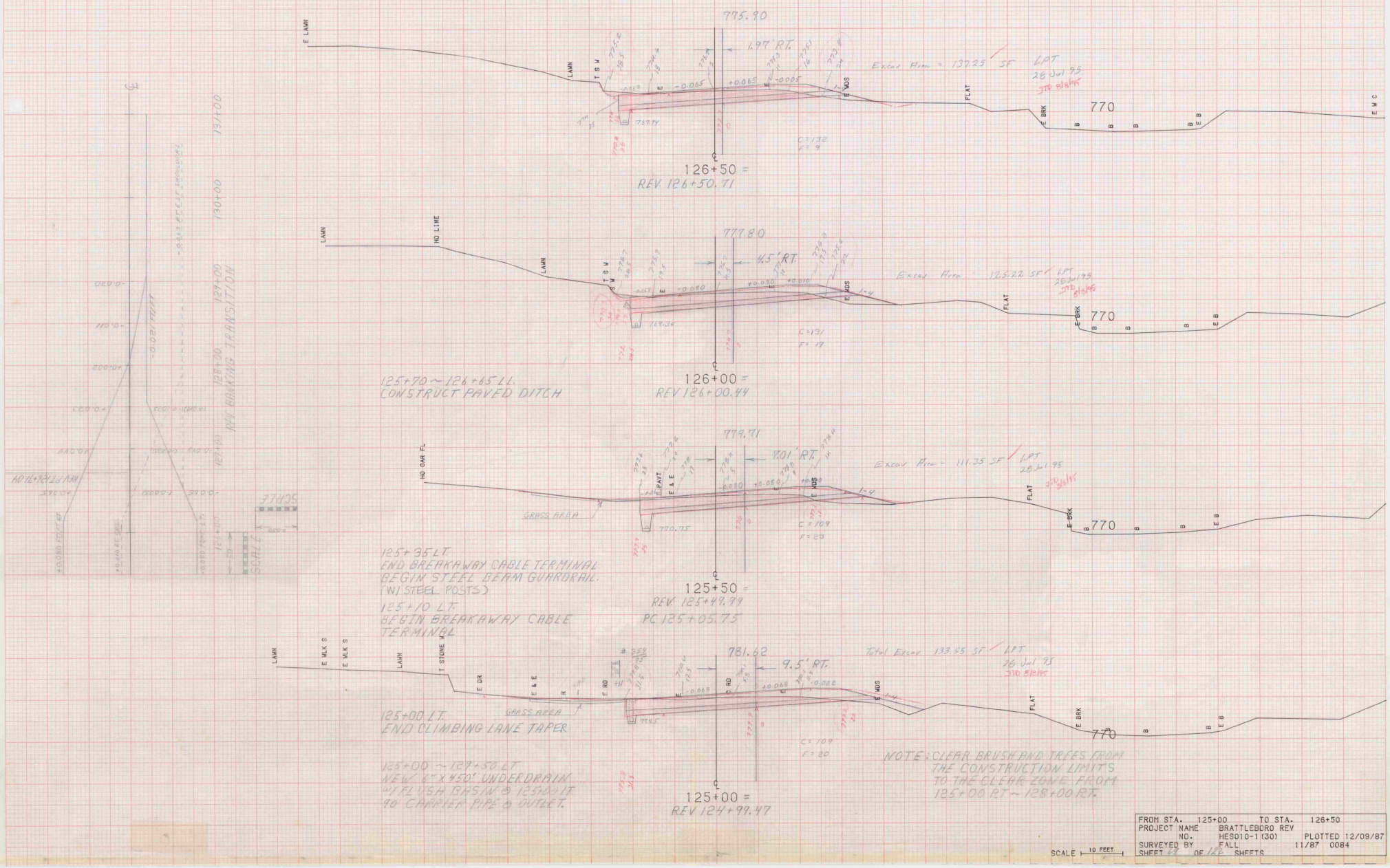
SCALE 10 FEET

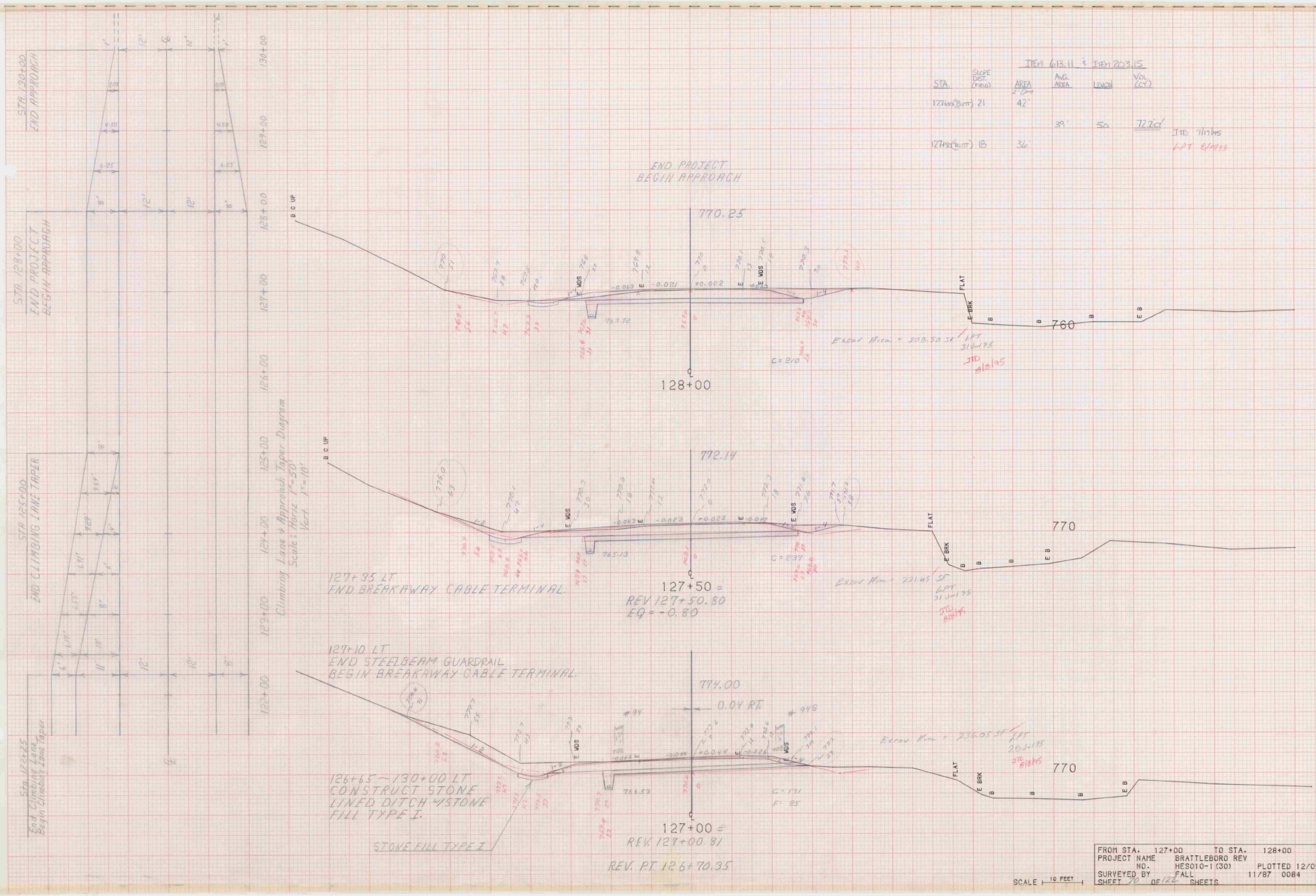


123+00
123+50
124+00
12'
8'
2'
3'
Edge of Travel Lane
Edge of Shoulder
3'
5'
25 Feet
Pay Limits For BCT
Conc. Bound
+30
Guard Rail Terminal Detail
Scale: 1" = 10'
REV 124+24.25 LT ~ 124+82.00 RT
NEW 30" X 104' PCCSP .079, CAAP .075 RCP CL III w/STONE FILL TYPE II @ OUTLET. CONSTRUCT OUTLET DITCH. ASKEW 58° RT.
784.46
9.19' RT.
REV. 124+24.25 LT ~ 124+45.00 LT
REMOVE EXIST. 24" CGMP
ASKEW 58°-46' RT.
780
REV 124+24.25 LT
NEW 24" X 48' PCCSP .064
CAAP .060 RCP CL. III. w/ "L"
TYPE HEADWALL @ INLET.
124+25 =
REV. 124+24.25
124+10 LT
REMOVE & REPLACE MAILBOX
NEW MAILBOX @ 124+31 LT
MULTIPLE SUPPORT
785.43
8.46' RT.
Total Area = 95.25 SF / LPT
780
124+00 =
REV. 123+99.43
123+75 RT.
END BREAKAWAY CABLE TERMINAL
123+75
Zero Undercut Section
123+50 RT.
END STEEL BEAM GARDRAIL
BEGIN BREAKAWAY CABLE TERMINAL
123+50 ℄
END EXCAVATION OF SURFACES & PAVEMENTS.
787.42
7.01' RT.
780
123+50 =
REV. 123+49.41
Undercut Area = 11.65 SF / LPT
125+50
125+25
125+00
124+75
124+50
124+25
124+00
G.R. DRIVE
MAILBOX PULLOUT DETAIL
SCALE
SCALE 10 FEET
FROM STA. 123+50 TO STA. 124+25
PROJECT NAME BRATTLEBORO REV
NO. HES010-1 (30) PLOTTED 12/09/87
SURVEYED BY FALL 11/87 0084
SHEET 67 OF 122 SHEETS

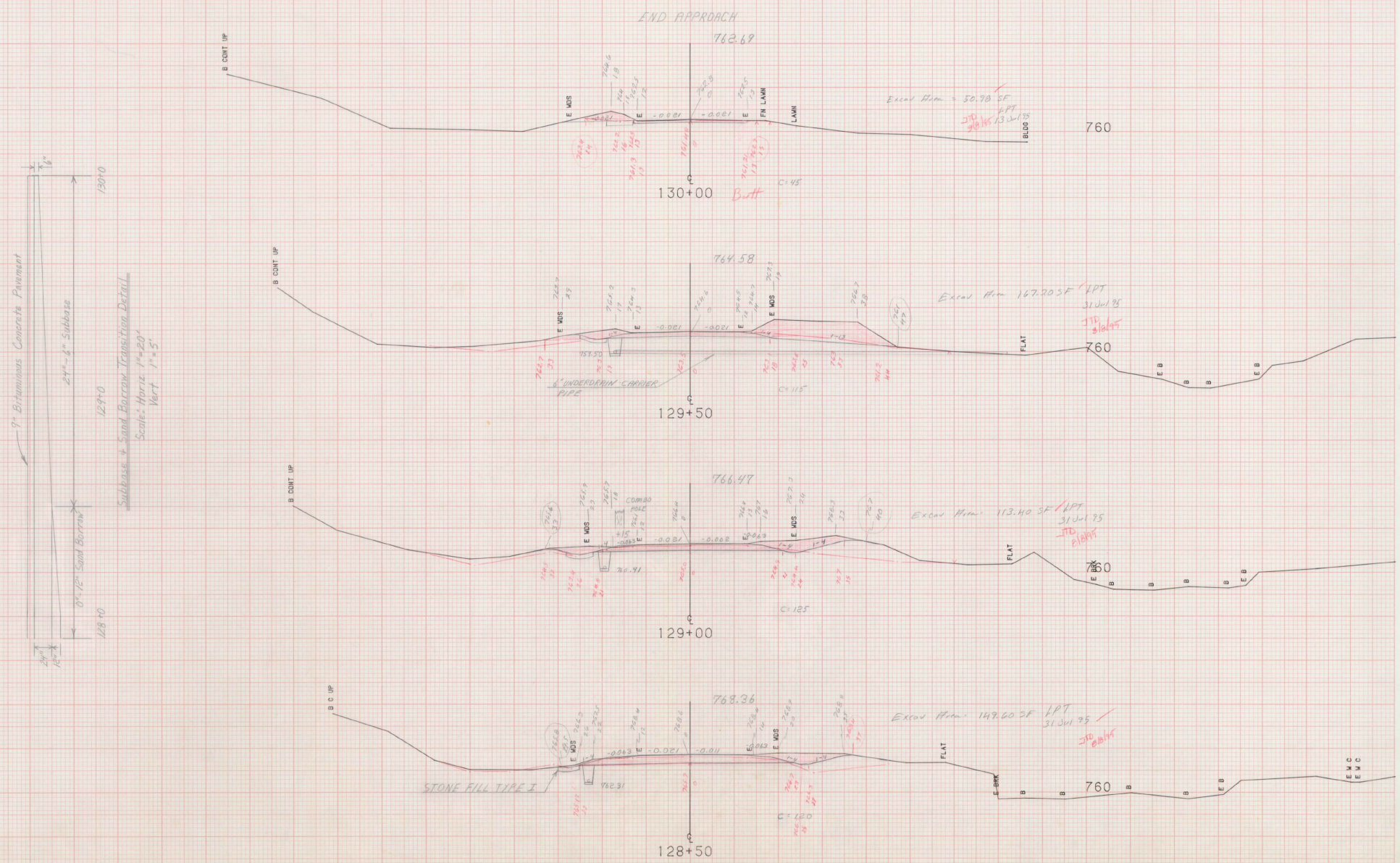


FROM STA. 124+50	TO STA. 124+78		
PROJECT NAME	BRATTLEBORO REV		
NO.	HES010-1 (30)	PLOTTED 12/09/87	
SURVEYED BY	FALL	11/87	0084
SHEET 68 OF 122 SHEETS			

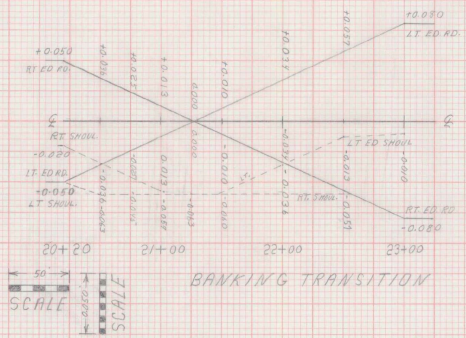

775.90
1.97' RT.
Excav Area = 137.25 SF / LPT 28 Jul 95
126+50 =
REV. 126+50.71
777.80
4.5' RT.
Excav Area = 125.22 SF / LPT 28 Jul 95
126+00 =
REV 126+00.44
779.71
7.01' RT.
Excav Area = 111.35 SF / LPT 28 Jul 95
125+50 =
REV. 125+49.99
PC 125+05.75
781.62
9.5' RT.
Total Excav 133.55 SF / LPT 28 Jul 95
125+00 =
REV 124+99.47
770
125+70 ~ 126+65 LT.
CONSTRUCT PAVED DITCH
125+35 LT.
END BREAKAWAY CABLE TERMINAL
BEGIN STEEL BEAM GUARDRAIL
(W/STEEL POSTS)
125+10 LT.
BEGIN BREAKAWAY CABLE
TERMINAL
125+00 LT.
END CLIMBING LANE TAPER
125+00 ~ 127+50 LT.
NEW 6" X 450' UNDERDRAIN
W/FLUSH GRASS IN @ 125+00 LT
90° CARRIER PIPE @ OUTLET.
NOTE: CLEAR BRUSH AND TREES FROM
THE CONSTRUCTION LIMITS
TO THE CLEAR ZONE FROM
125+00 RT ~ 128+00 RT.
FROM STA. 125+00 TO STA. 126+50
PROJECT NAME BRATTLEBORO REV
NO. HES010-1(30) PLOTTED 12/09/87
SURVEYED BY FALL 11/87 0084
SHEET 67 OF 122 SHEETS
SCALE 10 FEET



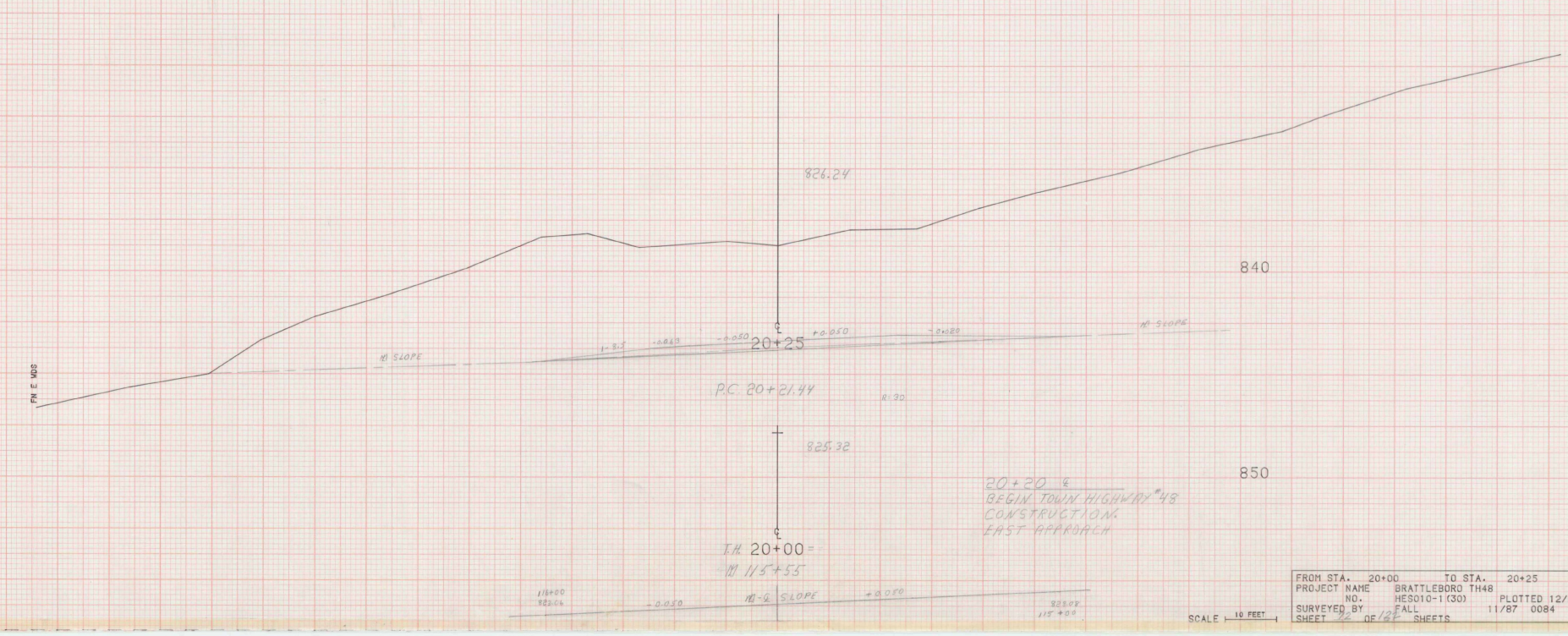
FROM STA.	127+00 TO STA. 128+00
PROJECT NAME	BRATTLEBORO REV
NO.	HES010-1(30) PLOTTED 12/09/87
SURVEYED BY	FALL 11/87 0084
SHEET 20 OF 122	SHEETS



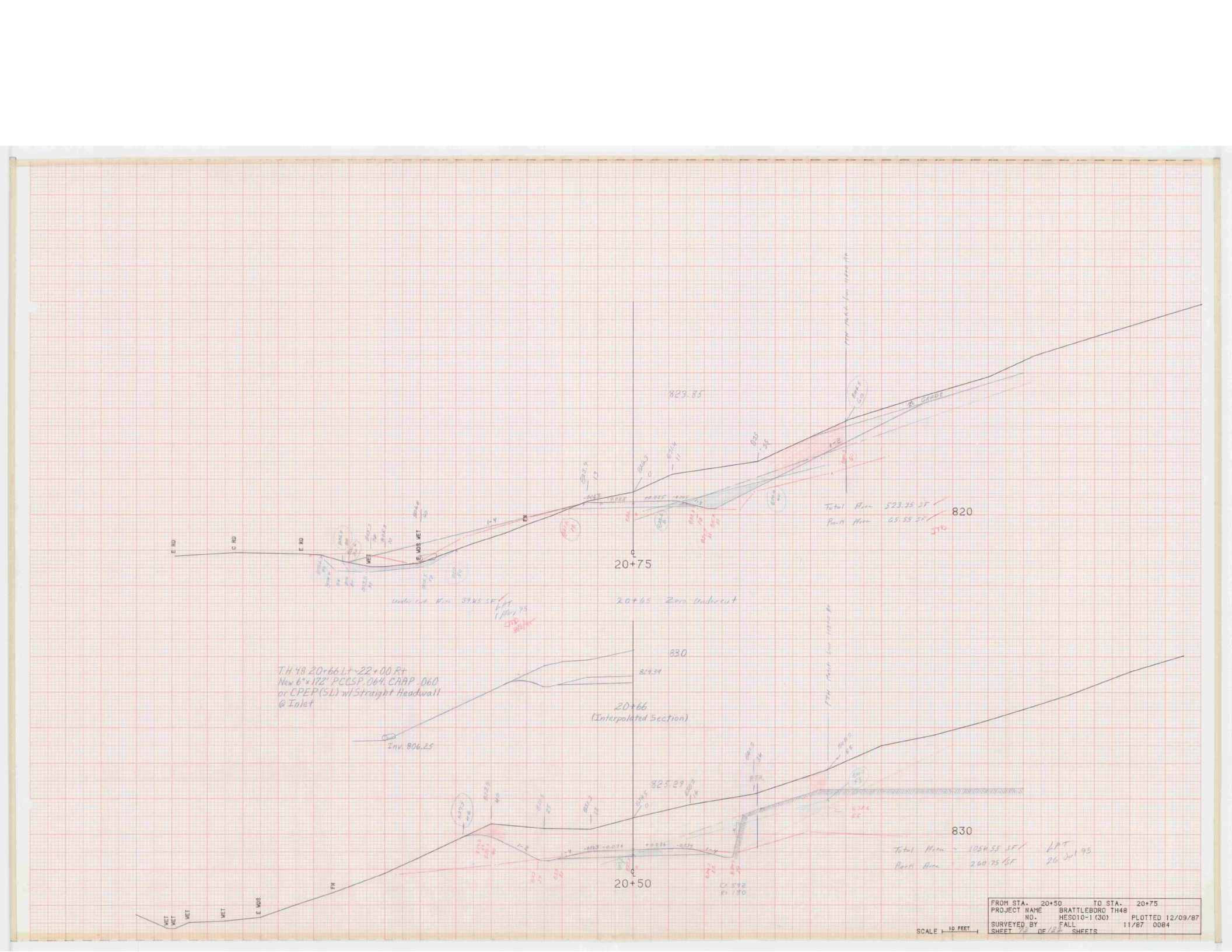
FROM STA. 128+50	TO STA. 130+00		
PROJECT NAME	BRATTLEBORO REV		
NO.	HES010-1 (30)	PLOTTED 12/09/87	
SURVEYED BY	FALL	11/87	0084
SHEET 71 OF 122	SHEETS		



BANKING TRANSITION



FROM STA. 20+00	TO STA. 20+25		
PROJECT NAME	BRATTLEBORO TH48		
NO.	HES010-1(30)	PLOTTED 12/09/87	
SURVEYED BY	FALL	11/87	0084
SHEET 72 OF 127	SHEETS		



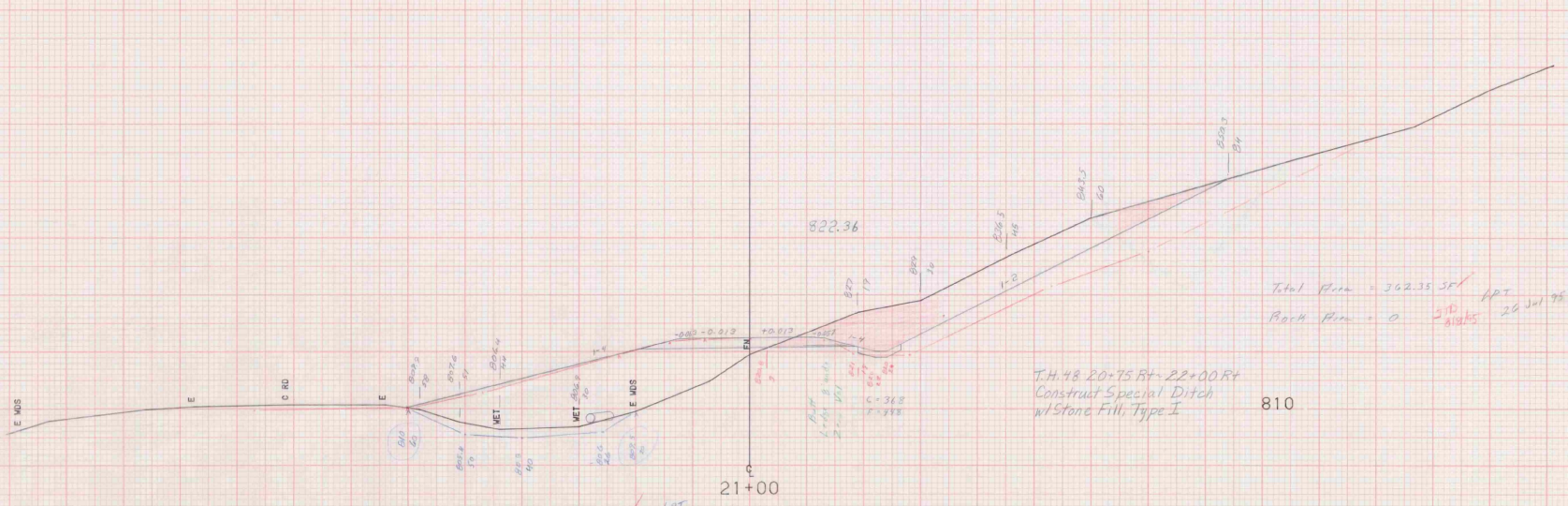
FROM STA.	20+50	TO STA.	20+75
PROJECT NAME	BRATTLEBORO TH48		
NO.	HES010-1 (30)		PLOTTED 12/09/87
SURVEYED BY	FALL		11/87 0084
SHEET 73	OF 182	SHEETS	

SCALE 10 FEET

Item 203.15 Common Excav - Undercut Area

Station	Area	Avg Min	Length	Vol Cy
20+65	0			
20+75	39.45	19.725	10	7.31 CY
21+0	52.75	46.10	25	42.69
21+25	123.55	88.15	25	81.62
21+50	112.65	118.10	25	109.35
22+0	69.10	90.875	50	168.29
22+25	0	34.55	25	31.99
			Total	441.25 CY

APT 18 Jul 95
STD 818145



Total Area = 362.35 SF
Rock Area = 0

APT 26 Jul 95
STD 818145

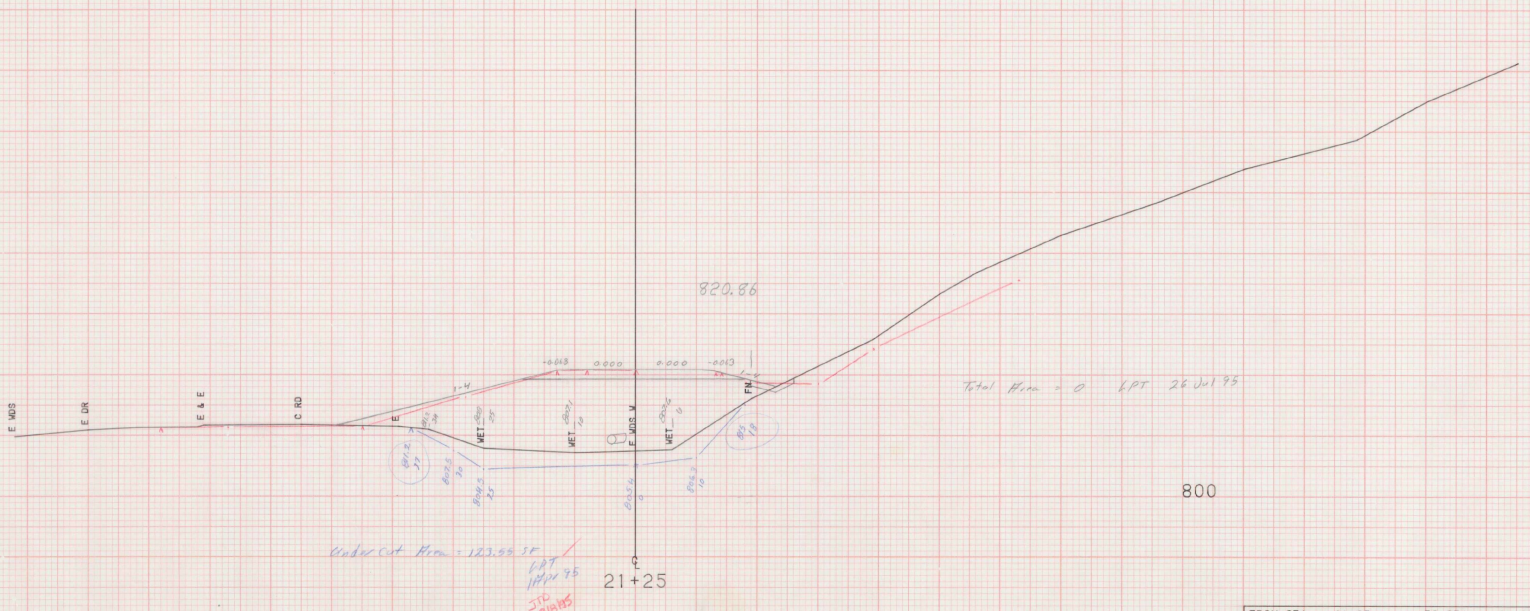
T.H. 48 20+75 Rt - 22+00 Rt
Construct Special Ditch
w/ Stone Fill, Type I

810

Undercut Area = 52.75 SF APT 18 Jul 95
STD 818145

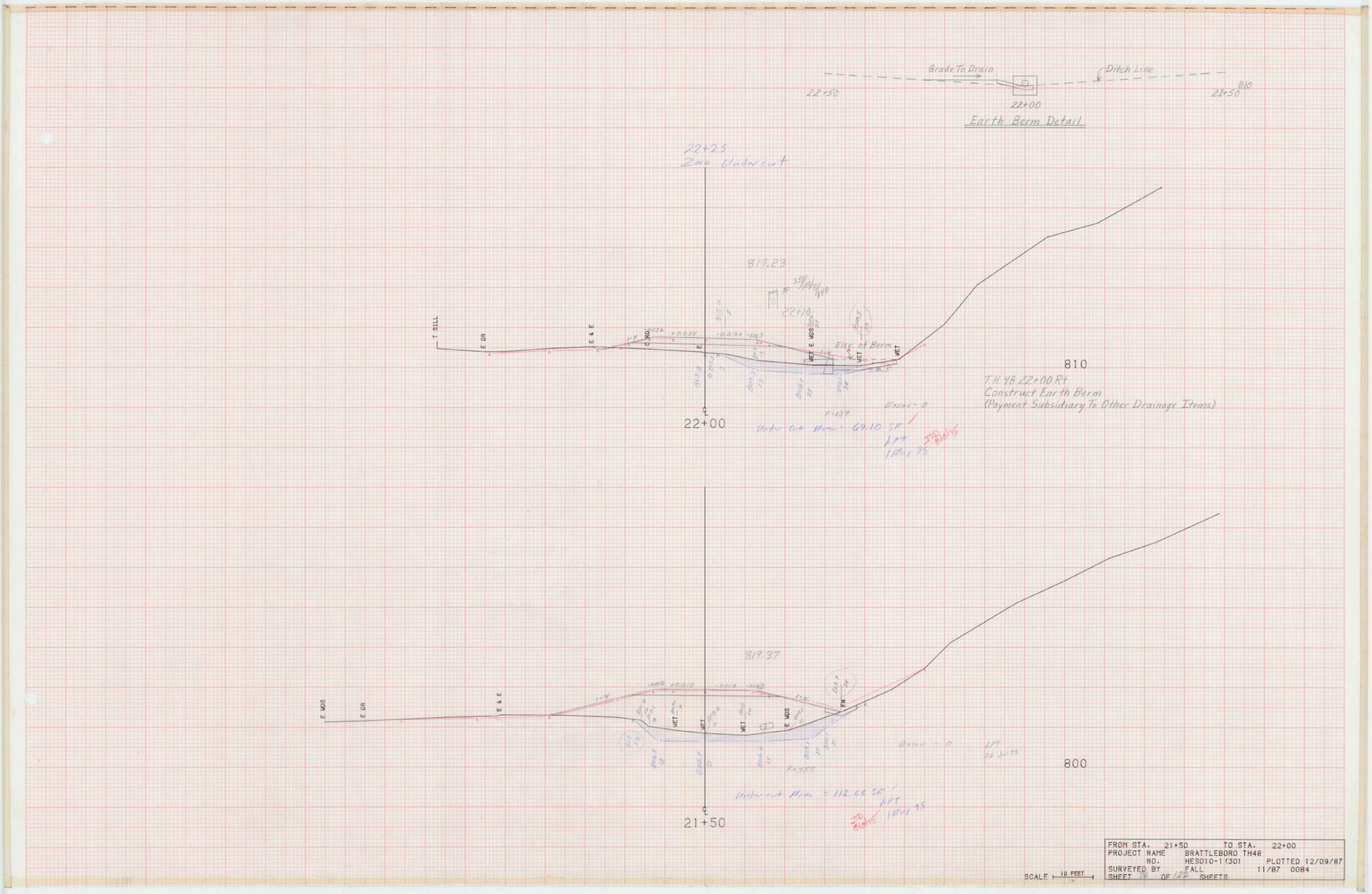
FROM STA.	21+00	TO STA.	21+00
PROJECT NAME	BRATTLEBORO TH48		
NO.	HES010-1(30)		PLOTTED 12/09/87
SURVEYED BY	FALL		11/87 0084
SHEET 14 OF 122	SHEETS		

SCALE 10 FEET



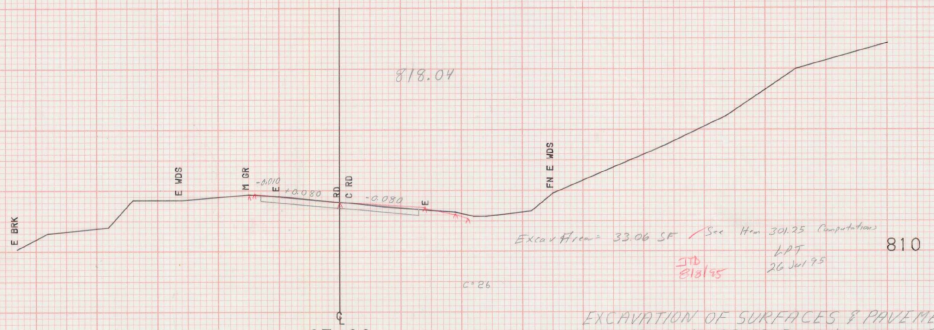
SCALE 10 FEET

FROM STA. 21+25		TO STA. 21+25	
PROJECT NAME	BRATTLEBORO TH48		
NO.	HES010-1 (30)		PLOTTED 12/09/87
SURVEYED BY	FALL		11/87 0084
SHEET 75 OF 122 SHEETS			



FROM STA. 21+50		TO STA. 22+00	
PROJECT NAME	BRATTLEBORO TH48		
NO.	HES010-1 (30)	PLOTTED 12/09/87	
SURVEYED BY	FALL	11/87 0084	
SHEET 76 OF 122 SHEETS			

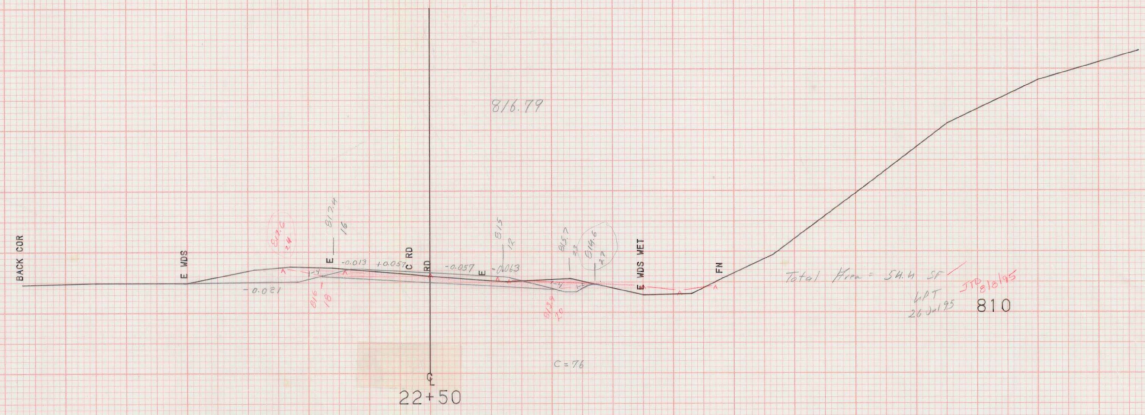
END TOWN HIGHWAY #48
CONSTRUCTION
EAST APPROACH



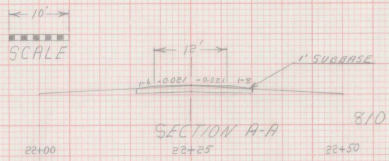
Excav Area = 33.06 SF / See Hrm 301.25 Computations
LPT 26 Jul 95
JTB 8/31/95

EXCAVATION OF SURFACES & PAVEMENTS
NEW TH #48 23+00 ℄ ~ 11 118+20 RT.

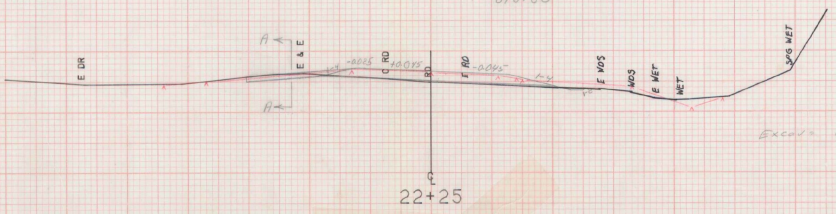
PT 22+73.25



Total Area = 54.4 SF
LPT 26 Jul 95
JTB 8/31/95



22+25 LT
CONSTRUCT GRAVEL
DRIVE (12' WIDE)

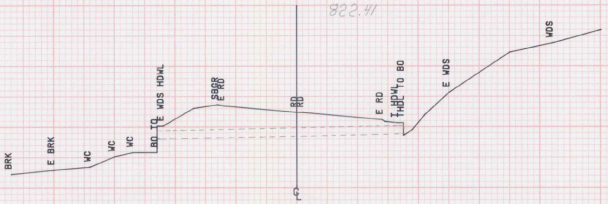


Excav = 0 SF

FROM STA. 22+25	TO STA. 23+00		
PROJECT NAME	BRATTLEBORO TH48		
NO.	HES010-1 (30)	PLOTTED 12/09/87	
SURVEYED BY	FALL	11/87	0084
SHEET 27 OF 124 SHEETS			

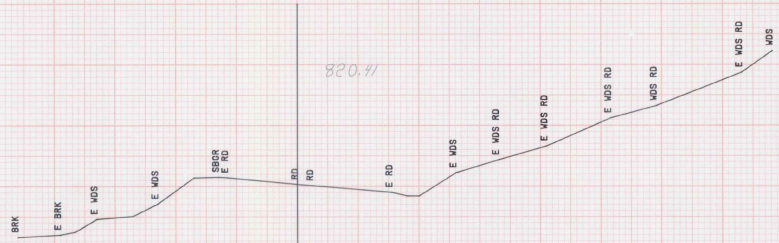
SCALE 10 FEET

23+89 ℄
EXISTING 15" RCP
RETAIN



820

23+89
ASKEW 85° RT



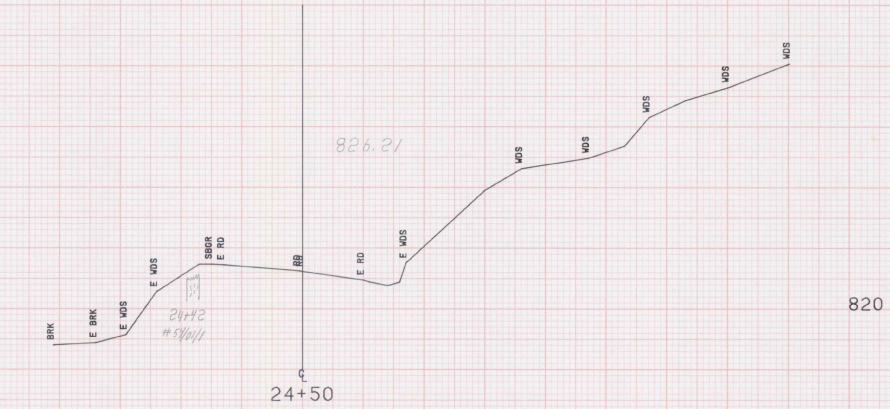
820

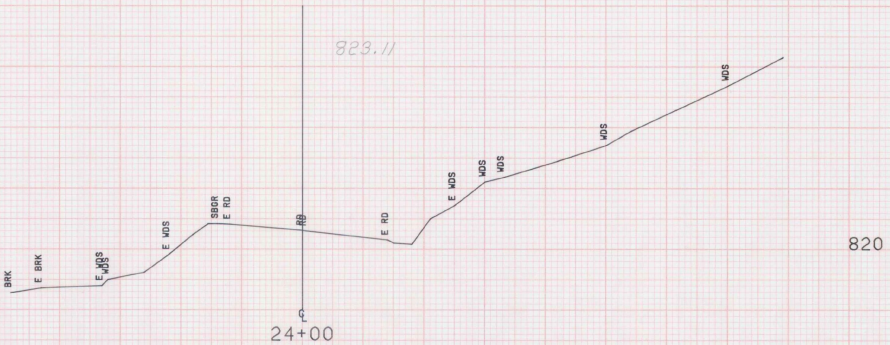
23+50

810

FROM STA.	22+26	TO STA.	23+89
PROJECT NAME	BRATTLEBORO TH48		
NO.	HES010-1(30)	PLOTTED	07/20/90
SURVEYED BY	REED		07/90 0303
SHEET 78	OF 122	SHEETS	

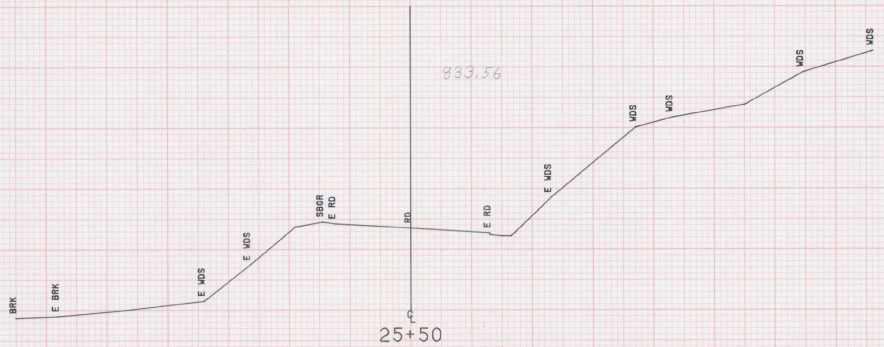
SCALE 10 FEET

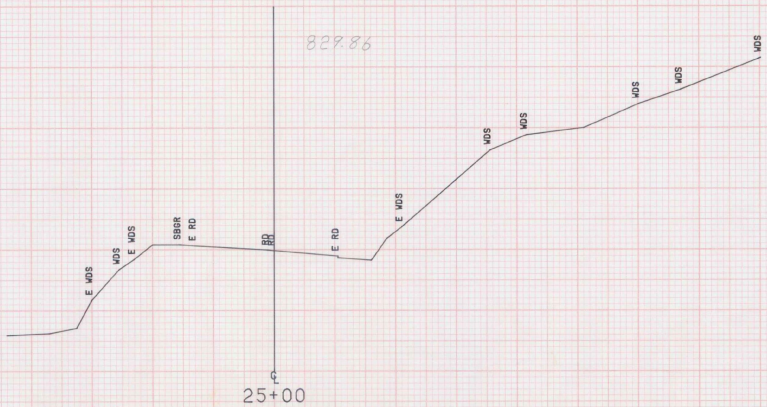




FROM STA.	24+00	TO STA.	24+50
PROJECT NAME	BRATTLEBORO TH48		
NO.	HES010-1(30)	PLOTTED	07/20/90
SURVEYED BY	REED	07/90	0303
SHEET 78 OF 122 SHEETS			

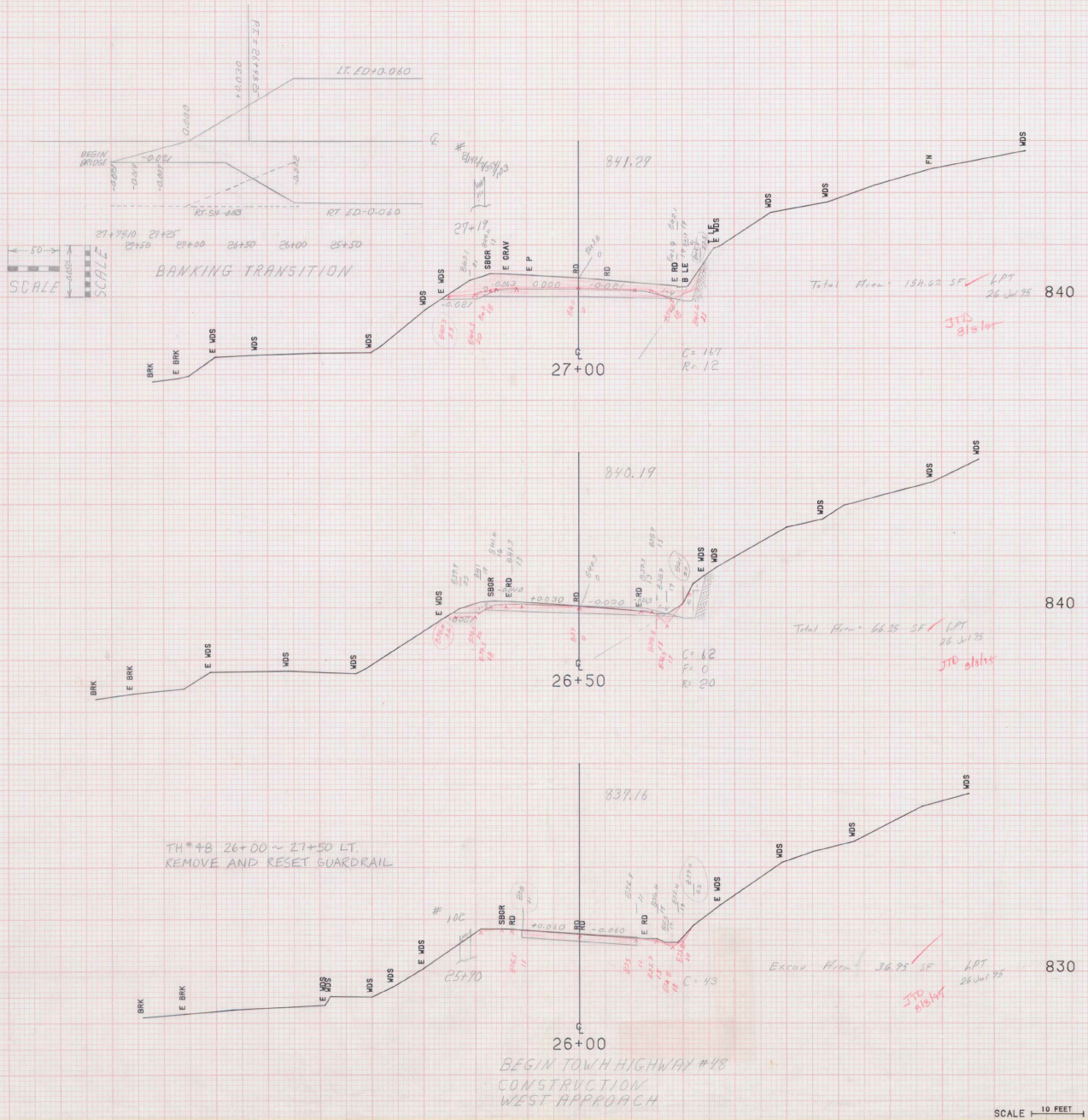
SCALE 10 FEET





FROM STA.	25+00	TO STA.	25+50
PROJECT NAME		BRATTLEBORO TH48	
NO.		HES010-1(30)	PLOTTED 07/20/90
SURVEYED BY		REED	07/90 0303
SHEET 80	OF 122	SHEETS	

SCALE 10 FEET



FROM STA. 26+00	TO STA. 27+00
PROJECT NAME	BRATTLEBORO TH48
NO.	HES010-1(30)
SURVEYED BY	REED 07/90 0303
SHEET 8 OF 12	SHEETS

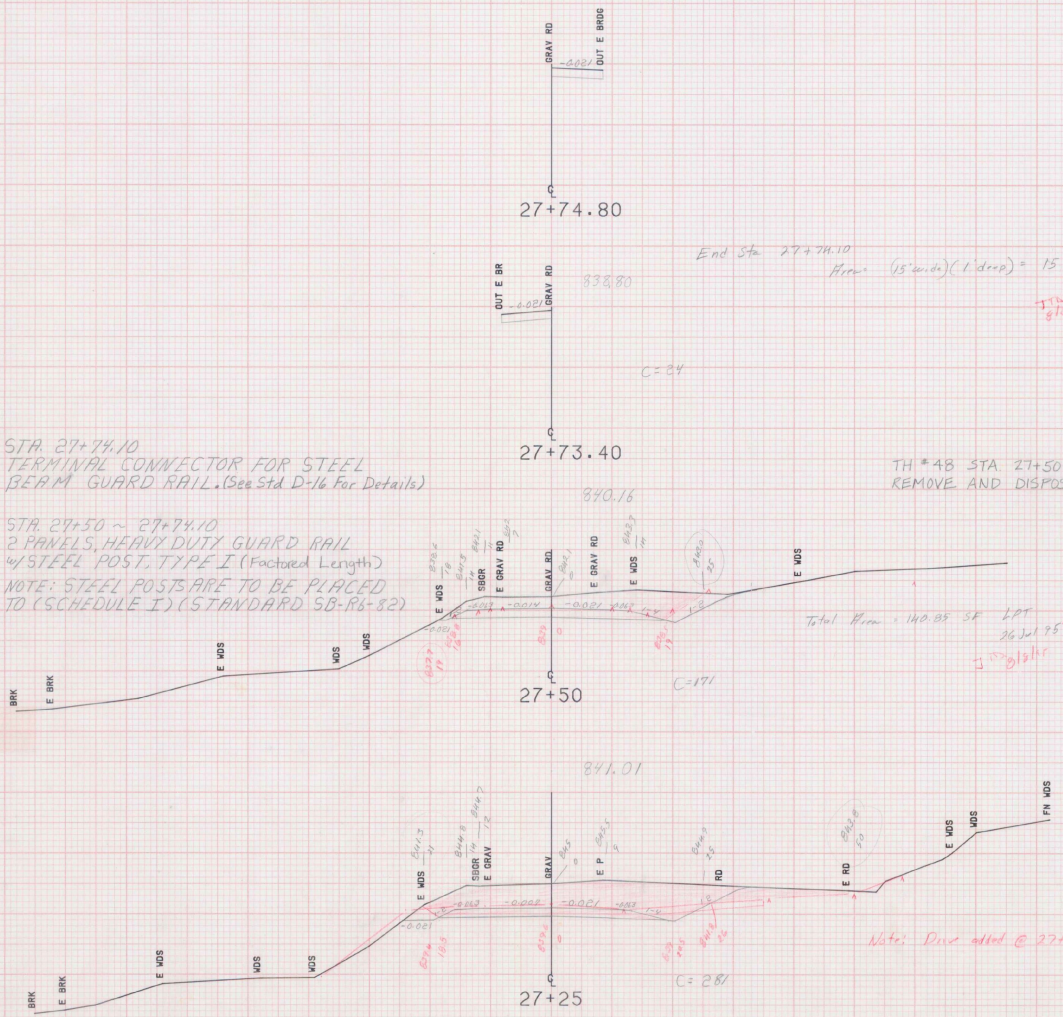
PLOTTED 07/20/90

SCALE 10 FEET

END TOWN HIGHWAY #48
CONSTRUCTION
WEST APPROACH

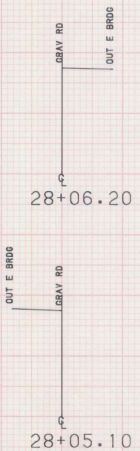
TOWN HIGHWAY #48
TAPER DIAGRAM
WEST APPROACH

20'
SCALE



FROM STA. 27+25	TO STA. 27+74.80		
PROJECT NAME	BRATTLEBORO TH48		
NO.	HES0:0-1 (30)	PLOTTED	07/20/90
SURVEYED BY	REED	07/90	0303
SHEET 24 OF 122	SHEETS		

SCALE 10 FEET

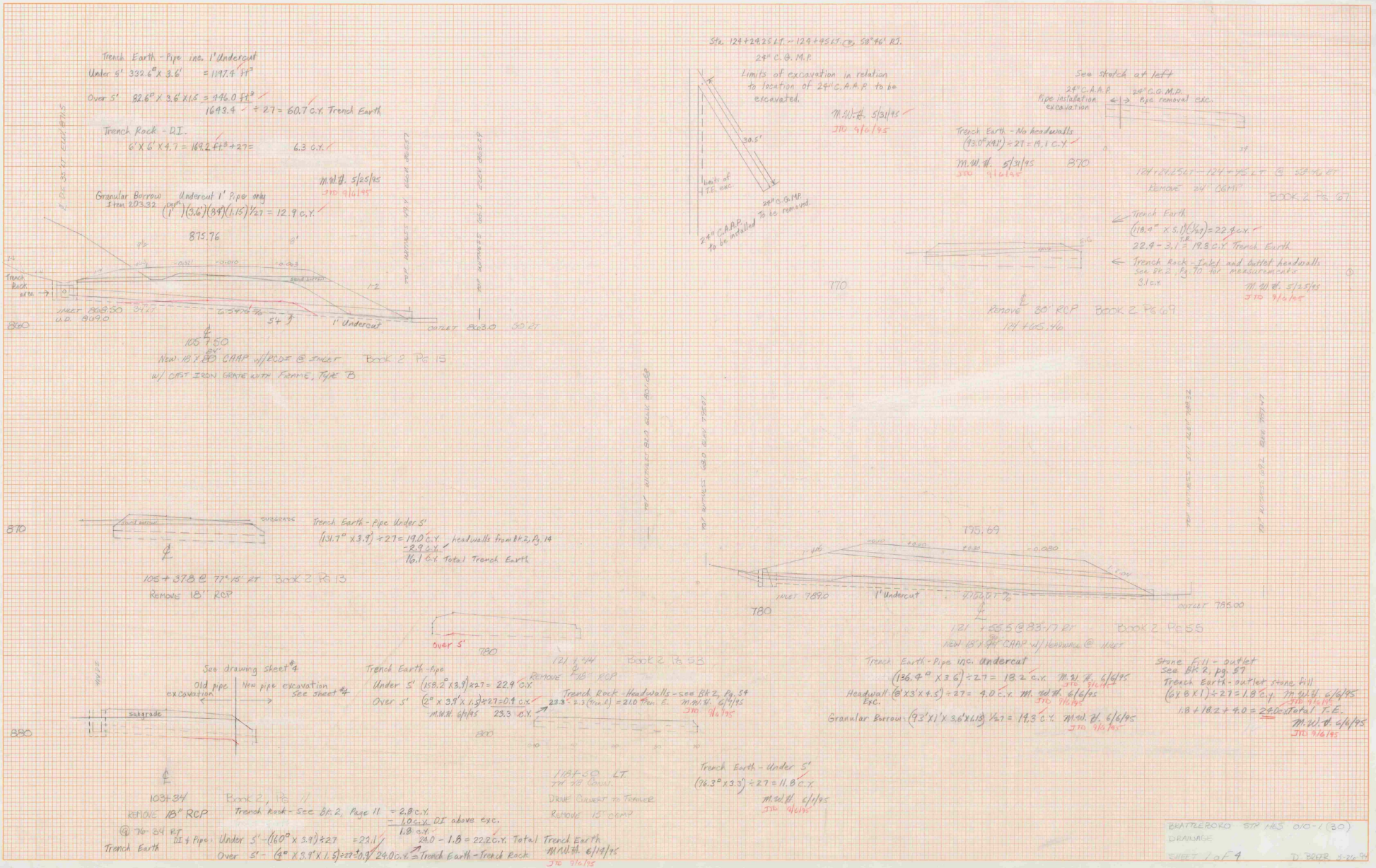


830

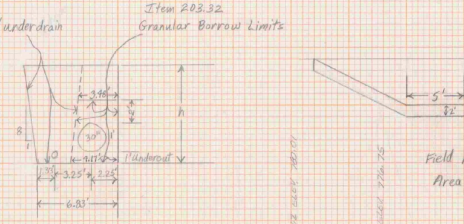
830

FROM STA.	28+05.10	TO STA.	28+06.20
PROJECT NAME	BRATTLEBORO TH48		
NO.	HES010-1(30)	PLOTTED	07/20/90
SURVEYED BY	REED	07/90	0303
SHEET 83 OF 122 SHEETS			

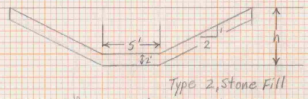
SCALE 10 FEET


Trench Earth - Pipe incl. 1' Undercut
Under 5' 332.6° X 3.6' = 1197.4 ft³
Over 5' 82.6° X 3.6' X 1.5 = 446.0 ft³
1643.4 ÷ 27 = 60.7 c.y. Trench Earth
Trench Rock - DI.
6' X 6' X 4.7 = 169.2 ft³ ÷ 27 = 6.3 c.y.
M.W.H. 5/25/95
JTD 9/6/95
Granular Borrow Item 203.32
(1' pipe undercut)(3.6')(8.4')(1.15) ÷ 27 = 12.9 c.y.
875.76
Trench Rock
Sand bottom
1:2
Invert 868.80
U.D. 90910
54 l.f.
1' Undercut
Outlet 863.0
105+50
New 18" X 80' CMAP w/RCDI @ Invert
w/ CAST IRON GRATE with Frame, Type "B"
Book 2 Pg 15
860
Trench Earth - Pipe Under 5'
(131.7° X 3.9') ÷ 27 = 19.0 c.y.
-2.9 c.y. headwalls from Bk 2, Pg 14
16.1 c.y. Total Trench Earth
105+378 @ 72° 18' RT
Remove 18" RCP
Book 2 Pg 13
870
Subgrade
Over 5'
780
121+14
Book 2 Pg 53
Remove 15" RCP
See drawing sheet #4
Old pipe excavation
New pipe excavation see sheet #4
Subgrade
880
103+34
REMOVE 18" RCP
Book 2, Pg 11
Trench Earth - Pipe
Under 5' (158.2° X 3.9') ÷ 27 = 22.9 c.y.
Over 5' (2° X 3.9' X 1.5) ÷ 27 = 0.9 c.y.
M.W.H. 6/9/95
23.3 c.y.
Trench Rock - Headwalls - see Bk 2, Pg 54
23.3 - 2.3 (from E.) = 21.0 from E.
M.W.H. 6/9/95
JTD 9/6/95
800
Trench Earth - Under 5'
(76.3° X 3.3') ÷ 27 = 11.8 c.y.
M.W.H. 6/1/95
JTD 9/6/95
118+50 @ LT
Drive Culvert to Trench
Remove 15" CMP
Trench Earth - Trench Rock
Trench Rock - DI & Pipe: Under 5' - (160° X 3.9') ÷ 27 = 23.1
Over 5' - (2° X 3.9' X 1.5) ÷ 27 = 0.9
24.0 c.y. = Trench Earth - Trench Rock
24.0 - 1.8 = 22.2 c.y. Total Trench Earth
M.W.H. 6/14/95
JTD 9/6/95
Sta. 124+29.25 Lt. - 129+95 Lt. @ 58° 46' RT.
24" C.G.M.P.
Limits of excavation in relation to location of 24" C.A.A.P. to be excavated.
30.5'
Limits of T.E. excavation
24" C.G.M.P. To be removed
24" C.A.A.P. To be installed
M.W.H. 5/31/95
JTD 9/6/95
See sketch at left
24" C.A.A.P. Pipe installation excavation
24" C.G.M.P. Pipe removal exc.
Trench Earth - No headwalls
(93.0° X 11') ÷ 27 = 19.1 c.y.
M.W.H. 5/31/95
JTD 9/6/95
870
124+62.5 Lt. - 124+95 Lt. @ 32° 40' RT
Remove 24" CMP
Book 2 Pg 67
Trench Earth
(118.9° X 5.1 (C½a)) ÷ 27 = 22.9 c.y.
22.9 - 3.1 = 19.8 c.y. Trench Earth
Trench Rock - Inlet and Outlet headwalls see Bk 2, Pg 70 for measurements
3.1 c.y.
M.W.H. 5/25/95
JTD 9/6/95
770
Remove 80' RCP
Book 2 Pg 69
124+65.46
780
121+55.5 @ 23° 17' RT
Book 2 Pg 55
New 18" X 94' CMAP w/ HEADWALL @ Invert
Trench Earth - Pipe incl. undercut
(136.9° X 3.6') ÷ 27 = 18.2 c.y.
M.W.H. 6/6/95
JTD 9/6/95
Headwall Exc. (8' X 3' X 4.5) ÷ 27 = 4.0 c.y.
M. and W.H. 6/6/95
JTD 9/6/95
Granular Borrow (9.2' X 1' X 3.6' X 1.15) ÷ 27 = 14.3 c.y.
M.W.H. 6/6/95
JTD 9/6/95
Stone Fill - outlet
See Bk 2, pg. 57
Trench Earth - outlet stone fill
(6' X 8' X 1') ÷ 27 = 1.8 c.y.
M.W.H. 6/6/95
JTD 9/6/95
1.8 + 18.2 + 4.0 = 24.0 Cu. Total T.E.
M.W.H. 6/6/95
JTD 9/6/95
BRATTLEBORO STP M&S 010-1(30)
DRAINAGE
SHEET 1 of 9
D. BRAIR 5-26-94

Kerkhoff & Ezell Company — STATE'S CROSS SECTION METHOD — Made in U.S.A.



Item 209.20 Trench Earth
Area = $6.83h + \frac{h^2}{16}$



Field measured-See Bk.2, Pg.65
Area = $5h + 2h^2$ (Plus Type II Stone if used)

Trench Earth - Item 209.20

Sta.	h (max. 5')	Area 100%	h over 5'	Area - Including undercut >5' - 50%	Total area + ave.	Length	Vol. C.Y.
0+02 Bank	4.9	34.97	0	0	70.83	55	8.31
0+07.5 Bk.	6.0	43.23	1.0	3.45	——	0	0
0+07.5 Ahd.	4.8	34.22	0	0	44.90	64.5	107.26
0+12	6.8	49.33	1.8	6.25	53.91	2.5	9.99
0+79.5	6.5	47.04	1.5	5.19	——	0	0
0+80.5 Bk.	5.0	35.71	0	0	43.97	6.0	7.77
0+80.5 Ahd.	5.5	37.46	0.5	1.72	——	0	0
0+87.5	2.5	17.47	0	0	29.33	7.0	7.60
0+95.5	2.5	17.47	0	0	17.47	8.0	5.17
1+00.5	5.5	39.46	0.5	1.72	29.33	5.0	5.43
1+03.5	5.8	41.72	0.8	2.75	42.83	3.0	4.76
1+12.5 Bk.	4.4	31.26	0	0	37.87	9.0	12.62
1+12.5 Ahd.	6.8	117.50	1.5	12.0	12.5.13	5.0	23.17
1+17.5	6.3	110.88	1.3	9.88	111.16	7.5	30.88
1+25	5.8	76.28	0.8	5.28	72.79	6.5	17.51
1+31.5	36	43.92	0	0	85.76	7.0	9.32
1+38.5	2.0	28.0	0	0			

Total Trench Earth 275.9

M.W.B. 7/25/95

JTD 9/6/96 258.96

Trench Earth - D.I. 6 X 6 X 5 = 180 ÷ 27 = 6.67 c.y. → 6.67

Total Trench Earth 275.9

M.W.B. 7/25/95

JTD 9/6/96 258.96

Item 203.32 Granular Borrow for 30" pipe backfill

Area = $\frac{(Ave.\ width)}{2}(h)$

Station	Area - equation	Area	Ave. Area.	Length	Vol. c.y.
0+02	$\frac{3.56+9.17}{2}(9.9)$	18.94			
0+07.5 Bk.	$\frac{3.48+9.17}{2}(5.5)$	21.04	19.99	5.5	9.07
0+07.5 Ahd.	$\frac{3.57+9.17}{2}(4.8)$	18.58			
0+30.5	$\frac{3.48+9.17}{2}(5.5)$	21.04	19.81	23.0	16.88
0+80.5 Bk.	$\frac{3.48+9.17}{2}(5.5)$	21.04	21.04	50.0	38.96
0+80.5 Ahd.	$\frac{3.42+9.17}{2}(6.0)$	22.77			
End of Gran. Borrow 1+12.5	$\frac{3.42+9.17}{2}(6.0)$	22.77	22.77	32.0	26.99

Total Gran. Bor. 86.90 c.y.

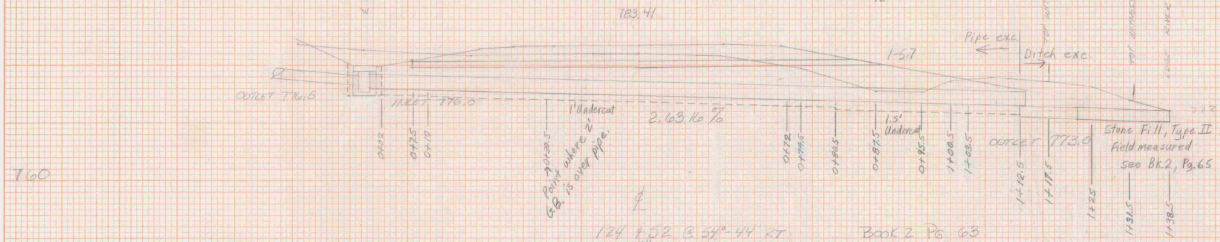
86.9 x 1.15 Factor = 99.93 c.y.

Pipe Vol. - $(114'-3')\pi r^2 = 111(\pi)(1.25^2)\left(\frac{1}{27}\right) = 20.18$ c.y.

99.93 - 20.18 = 79.8 c.y.

M.W.B. 7/25/95

JTD 9/6/96

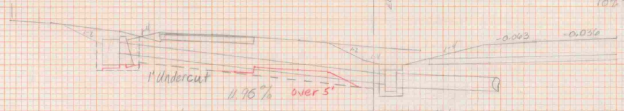


124 + 52 @ 54" RT

Book 2 Pg 63

NEW 30" x 104' CMP w/ 4'x6' RCBJ @ INLET

CONSTRUCT OUTLET DITCH



Trench Earth - Pipe

Under 5' - (95.5" X 4.1) ÷ 27 = 29.7 c.y.

Over 5' - (31.9" X 4.1 X 1.5) ÷ 27 = 7.3 c.y.

37.0 c.y.

Trench Earth - Headwall - L Shaped

Under 5' - 37" X 9.7 = 13.3 c.y.

Over 5' - 7.3" X 1.5 X 7.7 = 2.3 c.y.

15.6 c.y. + 37.0 = 52.6 c.y. M.W.B. 6/6/95 JTD 9/6/96

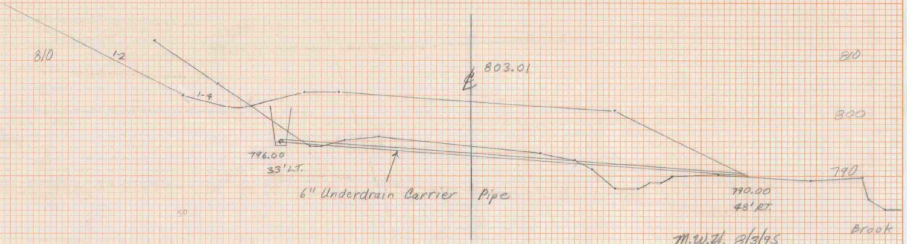
124 + 24.25 x T

48'

Book 2 Pg 59

NEW 24" x 48' CMP w/ 4' HEADWALL @ INLET

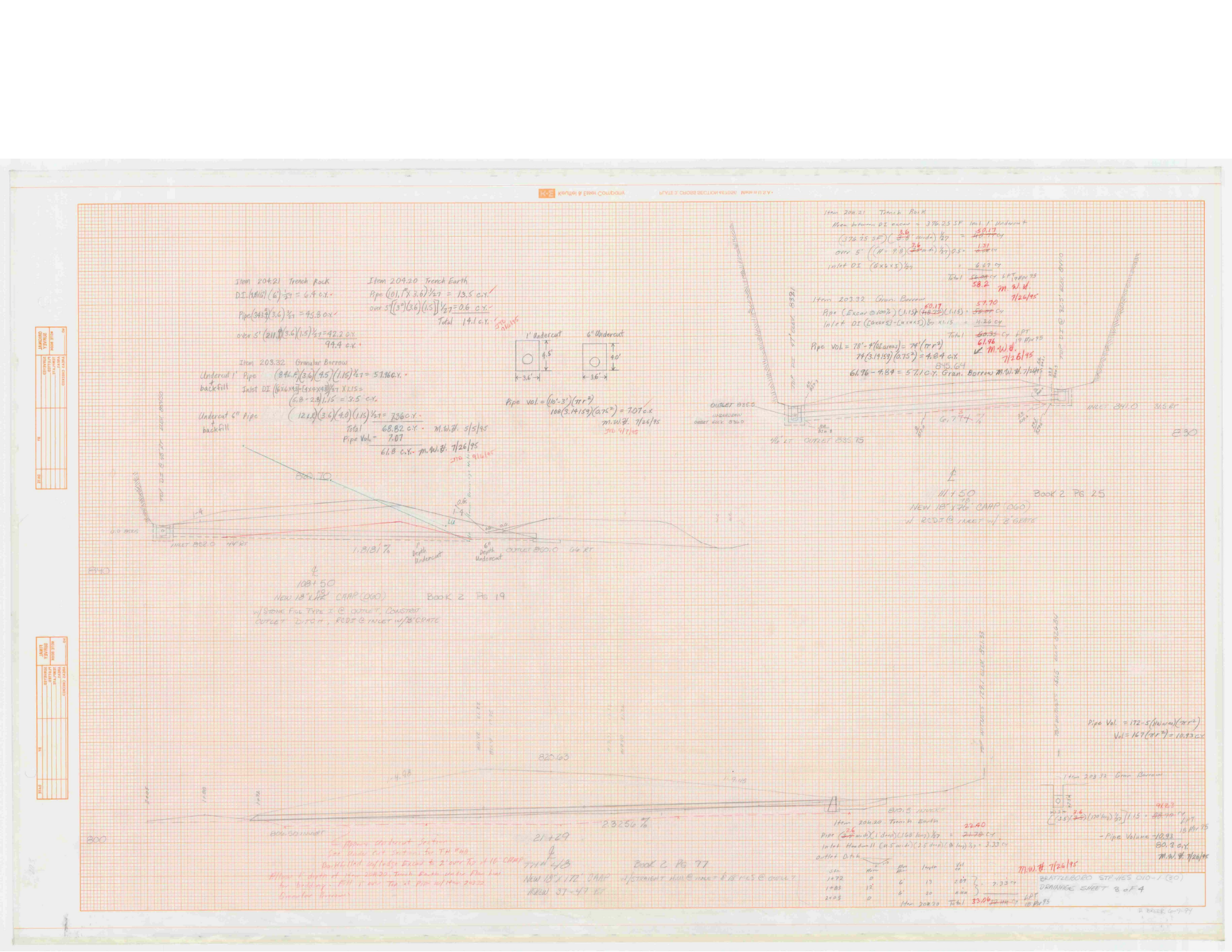
Gran. Borrow - Pipe $(41 \times 4.1 \times 1 \times 1.15) \div 27 = 7.2$ c.y. M.W.B. 6/6/95 JTD 9/6/96



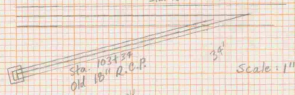
M.W.B. 8/3/95

120 + 00 Bk. # 2, Pg. 109

EXAMPLE ONLY
SIP-HES 010-1(30)
SHEET 2 OF 7
DRAINAGE
D. BRUCE 6-2-94


Item 204.21 Trench Rock
DI. (4'x4') (6') 1/27 = 6.4 c.y.
Pipe (343.8') (3.6) 1/27 = 45.8 c.y.
over 5' (211.8') (3.6) (1.5) 1/27 = 42.2 c.y.
94.4 c.y.
Item 204.20 Trench Earth
Pipe (101.1"x 3.6') 1/27 = 13.5 c.y.
over 5' [(3") (3.6) (1.5)] 1/27 = 0.6 c.y.
Total 14.1 c.y.
Item 203.32 Granular Borrow
Undercut 1' Pipe (84.1') (3.6) (1.5) 1/27 = 51.96 c.y.
backfill
Inlet DI [(6'x6'x4.3') - (5'x5'x4')] 1/27 X 1.15 =
(6.8 - 2.9) 1.15 = 3.5 c.y.
Undercut 6" Pipe backfill (12.1') (3.6) (4.0) (1.15) 1/27 = 7.36 c.y.
Total 68.82 c.y. M.W.B. 5/5/95
Pipe Vol. = 7.07
61.8 c.y. M.W.B. 7/26/95
1' Undercut
6" Undercut
4.5'
4.0'
3.6'
Pipe Vol. = (110'-3') (π r²)
100 (3.14159) (0.75²) = 7.07 c.y.
M.W.B. 7/26/95
STH 9/26/95
Item 204.21 Trench Rock
Area between DI excav = 376.25 SF Int'l 1' Undercut
(376.75 SF) (3.6 cu.yd./9 cu.yd.) 1/27 = 5.0.17 60.17 cy
over 5' ((H - 9.8) 24 cu.yd./9 cu.yd.) 1/27 0.5 = 1.31 cy
Inlet DI (6'x6'x5') 1/27 = 6.67 cy
Total 11.98 cy 1PT 9/26/95 58.2
M.W.B. 7/26/95
Item 203.32 Gran. Borrow
Pipe (Excav @ 100%) (1.15) (48.25) (1.15) = 57.70 cy
Inlet DI (Excav 82) - (w (4'x5')) 1/27 x 1.15 = 4.26 cy
Total 60.35 cy 1PT 9/26/95 61.96
M.W.B. 7/26/95
Pipe Vol. = 78' - 4 (12 arms) = 74 (π r²)
74 (3.14159) (0.75²) = 4.84 c.y.
61.96 - 4.84 = 57.1 c.y. Gran. Borrow M.W.B. 7/26/95
345.64
OUTLET 835.5
UNDERDRAIN
outlet elev. 836.0
INLET 841.0 345.67
Book 2 PG 25
NEW 18" x 70' CMAP (060)
w/ 20.0° ∠ INLET w/ 2' SKEW
Item 204.21 Trench Rock
DI (4'x4') (6') 1/27 = 6.4 c.y.
Pipe (343.8') (3.6) 1/27 = 45.8 c.y.
over 5' (211.8') (3.6) (1.5) 1/27 = 42.2 c.y.
94.4 c.y.
Item 204.20 Trench Earth
Pipe (101.1"x 3.6') 1/27 = 13.5 c.y.
over 5' [(3") (3.6) (1.5)] 1/27 = 0.6 c.y.
Total 14.1 c.y.
Item 203.32 Granular Borrow
Undercut 1' Pipe (84.1') (3.6) (4.5) (1.15) 1/27 = 51.96 c.y.
backfill
Inlet DI [(6'x6'x4.3') - (5'x5'x4')] 1/27 X 1.15 =
(6.8 - 2.9) 1.15 = 3.5 c.y.
Undercut 6" Pipe (12.1') (3.6) (4.0) (1.15) 1/27 = 7.36 c.y.
backfill
Total 68.82 c.y. M.W.B. 5/5/95
Pipe Vol. = 7.07
61.8 c.y. M.W.B. 7/26/95
STH 9/26/95
1' Undercut
6" Undercut
4.5'
4.0'
3.6'
Pipe Vol. = (110'-3') (π r²)
100 (3.14159) (0.75²) = 7.07 c.y.
M.W.B. 7/26/95
STH 9/26/95
INLET 860.0 44' RT
1.8181%
1' Depth Undercut
6" Depth Undercut
OUTLET 800.0 66' RT
860.70
840
10+50
NEW 18" x 112' CMAP (060)
Book 2 PG 19
w/ STONE FILL TYPE I @ OUTLET, CONSTRUCT OUTLET DITCH, RIP-RAP @ INLET w/ 18" CRATE
820.63
1.98%
23256%
800.50 INVERT
800
21+29
7TH 9/28
NEW 18" x 112' CMAP
Book 2 PG 77
w/ STRAIGHT HDWL @ INLET & 18" H.S. @ OUTLET
Item 204.20 Trench Earth
Pipe (2.6 cu.yd.) (1 day) (168 lin.ft.) 1/27 = 22.40 21.78 cy
Inlet Headwall (4.5 cu.yd.) (2.5 days) (8 lin.ft.) 1/27 = 3.33 cy
Outlet Ditch
Sta. Dir. Bend Length Vol.
1+72 0 6' 13 2.89 7.33 cy
1+85 12° 6' 20 4.44
2+05 0 Total 33.06 33.11 cy
Item 204.20
1PT 10 Per 95
M.W.B. 7/26/95
Pipe Vol. = 172.5 (lin.ft.) (π r²)
Vol. = 167 (π r²) = 10.93 c.y.
Item 203.32 Gran. Borrow
(35') (2.6) (120 lin.ft.) 1/27 (1.15) = 41.2 40.10 cy
1PT 10 Per 95
- Pipe Volume 10.93
50.3 c.y.
M.W.B. 7/26/95
BRATTLEBORO STP-HES 010-1 (30)
DRAINAGE SHEET 8 OF 4
P. ERDER 6-7-95

Drawing for excavation quantities



Trench Earth – Pipe

Under 5' $(3570'' \times 3.6) \div 27 = 47.6$ c.y.

Over 5' $(975'' \times 3.6 \times 1.5) \div 27 = 19.5$ c.y.

67.1 c.y.

D.I. $(6 \times 6 \times 5) \div 27 = 6.7$ c.y.

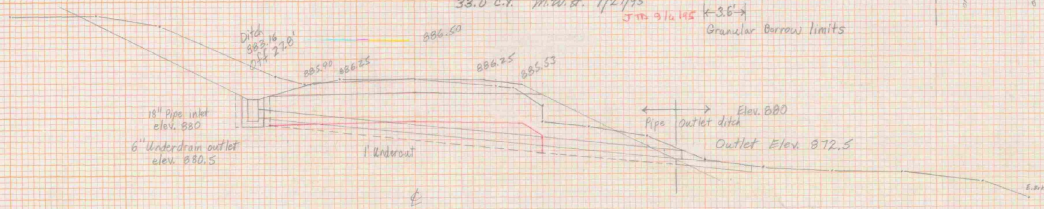
Granular Borrow

$(3.5 \times 3.6 \times 70') \div 27 \times 1.15 = 37.57$ c.y. m.w.#. 6/15/95 JTD 7/26/95

Pipe vol. $-(7.4 - 4)(\pi)(2^2) = 70(\pi)(0.75^2) = 4.58$ c.y.

33.0 c.y. m.w.#. 7/27/95

JTD 9/26/95



℄ 103 + 40 Bk. 2, Pg. 12

New 18" X 74' CAAP w/ 4'X4' RCDI at Inlet w.H. Type B Grate w/ 1' Deep X 14' Stone Fill pad at Outlet m.w.#. 3/20/95

Item 204.21 Trench Rock

Area = $3H2.12.5F$

Vol = $(3H2.12.5F)(3-5) \frac{1}{27}$ = 45.62 / 44.35 c.y.

Inlet DI $(6 \times 6 \times 5) \frac{1}{27}$ = 6.67 c.y.

Total 52.29 c.y.

Pay 52.3 c.y. m.w.#. 7/26/95

Item 203.32 Crow Borrow

Pipe 45.62 / 44.35 × 1.15 = 52.46 c.y.

Inlet DI $[(6 \times 6 \times 5) - (4 \times 4 \times 4)] \frac{1}{27}$ = (1.15) = 1.84 c.y.

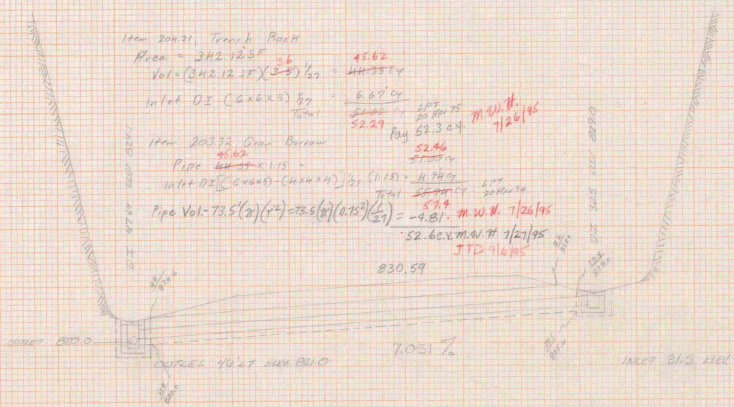
Total 54.30 c.y.

Pay 54.3 c.y. m.w.#. 7/26/95

Pipe Vol = $-73.5'(\pi)(2^2) = 73.5(\pi)(0.75^2)(\frac{1}{27}) = -4.81$ c.y. m.w.#. 7/27/95

52.6 c.y. m.w.#. 7/27/95

JTD 9/26/95



℄ 114 + 50

New 18" X 76' CMP (.064) w/ RCDI @ inlet

w/ B Grate & Frame

Granular Borrow limits

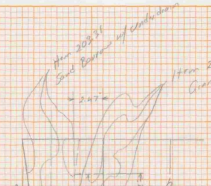
Item 204.21 Trench Rock

Inlet DI $[(6 \times 6 \times 5) + (6 \times 6 \times 1\frac{1}{2})] \frac{1}{27}$ = 9.00 cy

Sta	H	Area Inlet	Area Pipe	Area Sum	Total Area	Length	Vol cy
0+02	5.6'	34.61'	8.6'	7.77'	38.28	5'	7.09 cy
3+07	6.0'	37.23'	1.0'	2.95'			
0+19	0	0	0	0	20.09	12'	8.93 cy
						Total	25.02 cy

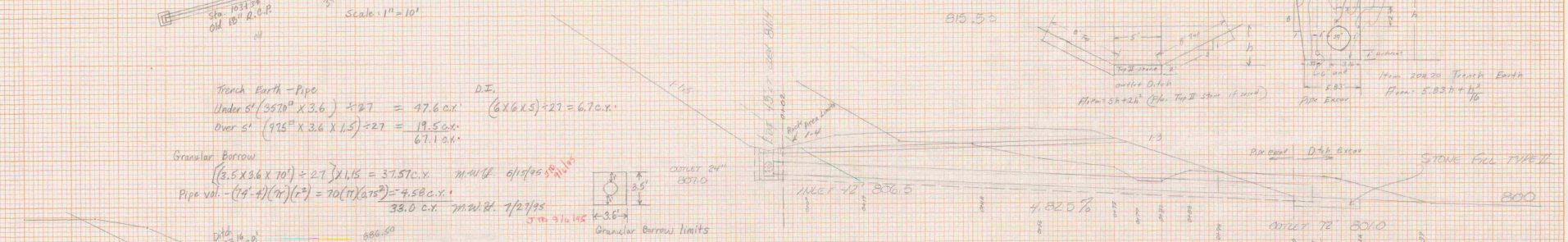
M.W.#. 7/28/95

Area = $5h + 2\frac{1}{2}h^2$ (Max Typ II stone if used)



Item 204.20 Trench Earth

Area = $5.83 h + h^2$



℄ 117 + 50

New 30" x 110' CAAP (.075) w/ 4'x4' RCDI @ inlet

w/ B Grate & Frame

Back 2 Pg. 12

Item 204.20 Trench Earth

Sta	h (nearest)	Area Inlet	Area Pipe	Sum	50%	Total Area + Pipe	Length	Vol
0+07	2/ 5.6	0	0	0	0	22.97 / 18.18	12'	10.21 / 8.08
0+19	5.6	9.20 / 34.61	1.6 / 1.6	4.74 / 1.76	56.30 / 51.97	28	52.18 / 44.90
0+44	8.7'	55.45'	3.7'	11.21'	57.75'	12'	25.67
0+56	6.7'	43.20	1.7'	5.65'	43.08'	16'	25.59
0+72	5.7	35.26	0.7'	2.06	27.68'	5'	5.13'
0+77	3'	18.05	0	0	18.05'	5'	3.34'
0+82	3'	18.05	0	0	27.21'	6'	6.05
0+88	5.6'	34.61'	0.6'	1.76'	36.37'	6'	8.08
0+94	5.6'	34.61'	0.6'	1.76'	34.83	16'	20.64
1+10.84	5.4'	33.30	0	0			
1+10.84 mine	4.3'	26.48'	0	0	60.74 / 47.79	6 / 4	13.50 / 10.62
1+16	4.5 / 4.2	63.00 / 58.77	0	0	31.50 / 28.14	21 / 19	24.50 / 19.79
1+37	0'	0				Sub Total	194.79 / 160.19

M.W.#. 7/27/95

Typ II Stone Mason (Field Mean) $(21 \times 21 \times 2) \frac{1}{27}$ = 32.67 c.y.

(Pay same amount for trench earth)

Total TE 227.5 c.y.

M.W.#. 7/27/95

Item 203.32 Crow Borrow for 30" pipe Cl. III

Inlet DI $[(20')(1')(6' deep)] \frac{1}{27}$ =

Sta	Area 203.32 / 5.0	Area	Length	Vol cy
0+92	15.48'			
		15.48'	92'	52.75
0+94	15.48'	7.74	16	4.59
1+10	0			
			Total	61.78 cy

Inlet DI (Sta 0+92 to 0+94)

$(61.78 \times 1.15$ Factor 71.05 c.y. Pay

M.W.#. 7/28/95

BENTLEBORO STP-HES 040-1(3)

DRAINAGE SHEET 4 of 4

Box 1254

INITIALS

DONE

Vermont Agency of
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PHASE 1-INTERSTATE
#122302-01

1995
VT. 9 RELOCATION

BRATTLEBORO STP HES 010-1(30)

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