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 6. REINFORCING STEEL SCHEDULE

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7. E-3 12-15-78 (R)
8. E-6 12-15-78 (R)
9. E-7 9-5-78 (R)
10. E-7a 8-8-77 (R)
11. G-1d 9-12-77 (R)
12. SCB-DI-75 4-9-78 (R)

CONCRETE-CHARLESTOWN READY MIX INC., CHARLESTOWN, N.H.

REINFORCING STEEL-PIONEER VALLEY STEEL CO. INC., GREENFIELD, MASS.

GENERAL NOTES

1. FOR ADDITIONAL NOTES SEE STANDARD SCB-DI-75.
2. ROADWAY ALIGNMENT SHALL MATCH EXISTING AS DIRECTED BY THE ENGINEER.
3. ALL REINFORCING STEEL SHALL HAVE A MINIMUM COVER OF 3", MEASURED FROM THE CONCRETE SURFACE TO THE FACE OF THE REINFORCEMENT.
4. TRAFFIC SHALL BE MAINTAINED UNDER THE ITEM 'MAINTENANCE OF TRAFFIC FOR BRIDGE PROJECTS'. ALL SIGNS AND BARRICADES SHALL BE SUBSIDIARY TO THIS ITEM.
5. THE TWO EXISTING PIPES SHALL BE REMOVED UNDER THE ITEM 'REMOVAL OF STRUCTURE'. CARE SHALL BE TAKEN NOT TO DAMAGE THESE PIPES WHICH SHALL REMAIN THE PROPERTY OF THE TOWN.
6. TURF ESTABLISHMENT SHALL BE SUBSIDIARY TO ALL OTHER ITEMS IN THE CONTRACT.
7. CARE SHALL BE TAKEN IN DRIVING GUARD RAIL POST TO PREVENT POST FROM DAMAGING THE TOP OF THE PIPE.
8. NO EXCAVATION SHALL BE REQUIRED IN ROADWAY OUTSIDE OF STRUCTURE LIMITS. SHIM ROADWAY WITH SUBBASE OF GRAVEL TO OBTAIN NEW ROADWAY GRADE AS DETERMINED BY THE ENGINEER.
9. THE CONTRACTOR MAY REMOVE ONE OF THE EXISTING PIPES AND USE IT TO BUILD A DETOUR. THE CONTRACTOR MUST SUPPLY ALL FILL MATERIAL USED IN THE DETOUR, AND MUST REMOVE ALL OF THIS MATERIAL BEFORE COMPLETION OF THE PROJECT, AS DIRECTED BY THE ENGINEER. ALL WORK AND MATERIALS NECESSARY FOR THE DETOUR SHALL BE PAID FOR UNDER THE ITEM 'MAINTENANCE OF TRAFFIC FOR BRIDGE PROJECTS'.

CONVENTIONAL SIGNS

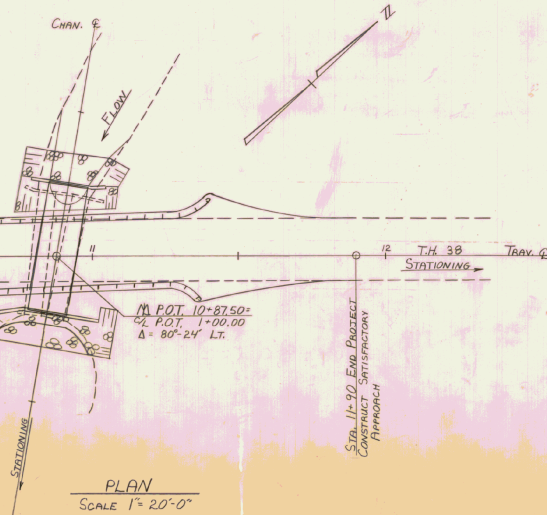
- COUNTY LINE
- TOWN LINE
- LIMITS OF ACCESS
- POINT OF ACCESS
- FENCE LINE
- STONE WALL
- TRAVELED WAY
- GUARD RAIL
- RAILROAD
- SURVEY LINE
- CULVERT
- POWER POLE
- TELEPHONE POLE
- TREES
- CONTROL OF ACCESS
- PROPERTY LINE
- R.O.W. TAKING LINE
- SLOPE RIGHTS
- TOP OF CUT
- TOE OF SLOPE

DATUM
VERTICAL _____
HORIZONTAL _____

PT. 10+00.00
Δ = 17'-30" RT.

Trav. 9
To Vt. Rte. 121

Sta. 1+30.00
Begin Project
Construct Satisfactory
Approach



**STATE OF VERMONT
AGENCY OF TRANSPORTATION**



CONSTRUCTION ACCEPTED-21 SEPTEMBER 1979

RECORD PLANS-MATERIAL SUPPLIERS

CONTRACTOR-WALLIN CORP., CAVENDISH, VT. CONTRACT DATED-11 JULY 1979

CONSTRUCTION BEGAN-19 JULY 1979 COMPLETED-7 SEPTEMBER 1979

RESIDENT ENGINEER-RONALD D. GRAY RECORD PLANS-PAUL E. SINGLETON

GUARD RAIL-LAFAYETTE-SHELDON INC., ESSEX JCT., VT.

GRANULAR BORROW, GRANULAR BACKFILL FOR STRUCTURES, SUB-BASE OF GRAVEL-THERON FISHER PIT, GRAFTON, VT.

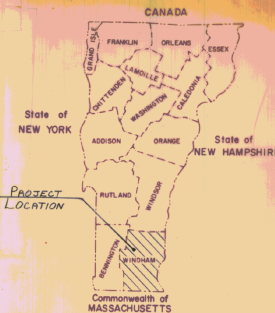
**PROPOSED IMPROVEMENT
BRIDGE PROJECT**

TOWN OF GRAFTON
COUNTY OF WINDHAM

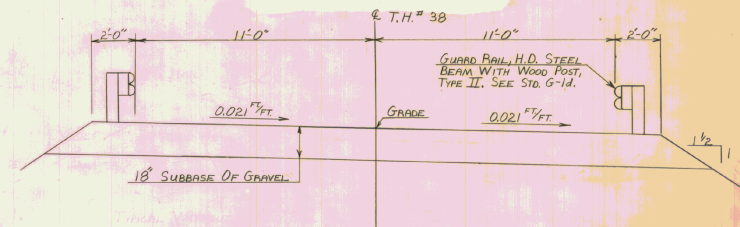
ROUTE NO: T.H. 38, CL. 3 BRIDGE NO: 31

PROJECT LOCATION: BEGINNING AT A POINT ON T.H. 38, 0.10 MILES NORTHERLY OF THE INTERSECTION OF VT. RTE. 121 AND T.H. 38 AND EXTENDING NORTHERLY 0.038 MILES ON T.H. 38.
PROJECT DESCRIPTION: REMOVAL OF EXISTING PIPES AND CONSTRUCTION OF A 13'-5" x 8'-5" x 44' CGMPPA WITH CONCRETE HEADWALLS. RELATED ROADWAY AND CHANNEL WORK.

LENGTH OF STRUCTURE:	—	FEET
LENGTH OF PARTICIPATION ROADWAY:	2.00	FEET
LENGTH OF NON-PARTICIPATION ROADWAY:	—	FEET
LENGTH OF PROJECT:	2.00	FEET



13'-5" x 8'-5" x 44' CGMPPA-REPUBLIC STEEL CORP., BOSTON, MASS.



BUILT AS DESIGNED

SUBMITTED BY ORDER OF THE STATE TRANSPORTATION BOARD
APPROVED 1.1.1979 DATE 4-6-79
DIR. OF ENGINEERING AND CONSTRUCTION

PROJECT
GRAFTON
SHEET 1 OF 12 SHEETS

[illegible]

BRIDGE QUANTITY SHEET														STATE OF VERMONT DEPARTMENT OF HIGHWAYS BRIDGE DIVISION		
NO.	ITEM	UNIT	QUANTITY BREAKDOWN											TOTAL	FINAL	
			STRUCTURE	ROADWAY	CHANNEL											
202.25	REMOVAL OF STRUCTURE	EA	1												1	1
203.27	UNCLASSIFIED CHANNEL EXCAVATION	C.Y.				110									110	105
203.30	EARTH BORROW	C.Y.		20											20	15
203.32	GRAVULAR BORROW	C.Y.	150												150	125
204.25	STRUCTURE EXCAVATION	C.Y.	390												390	363
204.30	GRAN. BACKFILL FOR STRUCTURES	C.Y.	60												60	62
301.15	SUBBASE OF GRAVEL	C.Y.		60											60	151
501.25	CONCRETE, CLASS B	C.Y.	42												42	42.34
507.15	REINFORCING STEEL	LBS.	2,730												2,730	2729
511.15	13'-5"x 8'-5" CGMPPA 44' LONG 0.169" THICK, 16,148 LBS.	EA	1												1	1
613.11	STONE FILL, TYPE II	C.Y.				70									70	0
613.12	STONE FILL, TYPE III	C.Y.				80									80	177.5
621.38	GUARD RAIL, HEAVY DUTY STEEL BEAM w/ WOOD POST, TYPE II	L.F.		248											248	248
637.10	MAINTENANCE OF TRAFFIC FOR BRIDGE PROJECTS	L.S.		1											1	1

BRIDGE (S) AT STATION (S)

LOCATION (S)

10+87.50

T.H.#38 OVER BROOK

Prepared by:

Checked by:

Supervisor:

BR 31

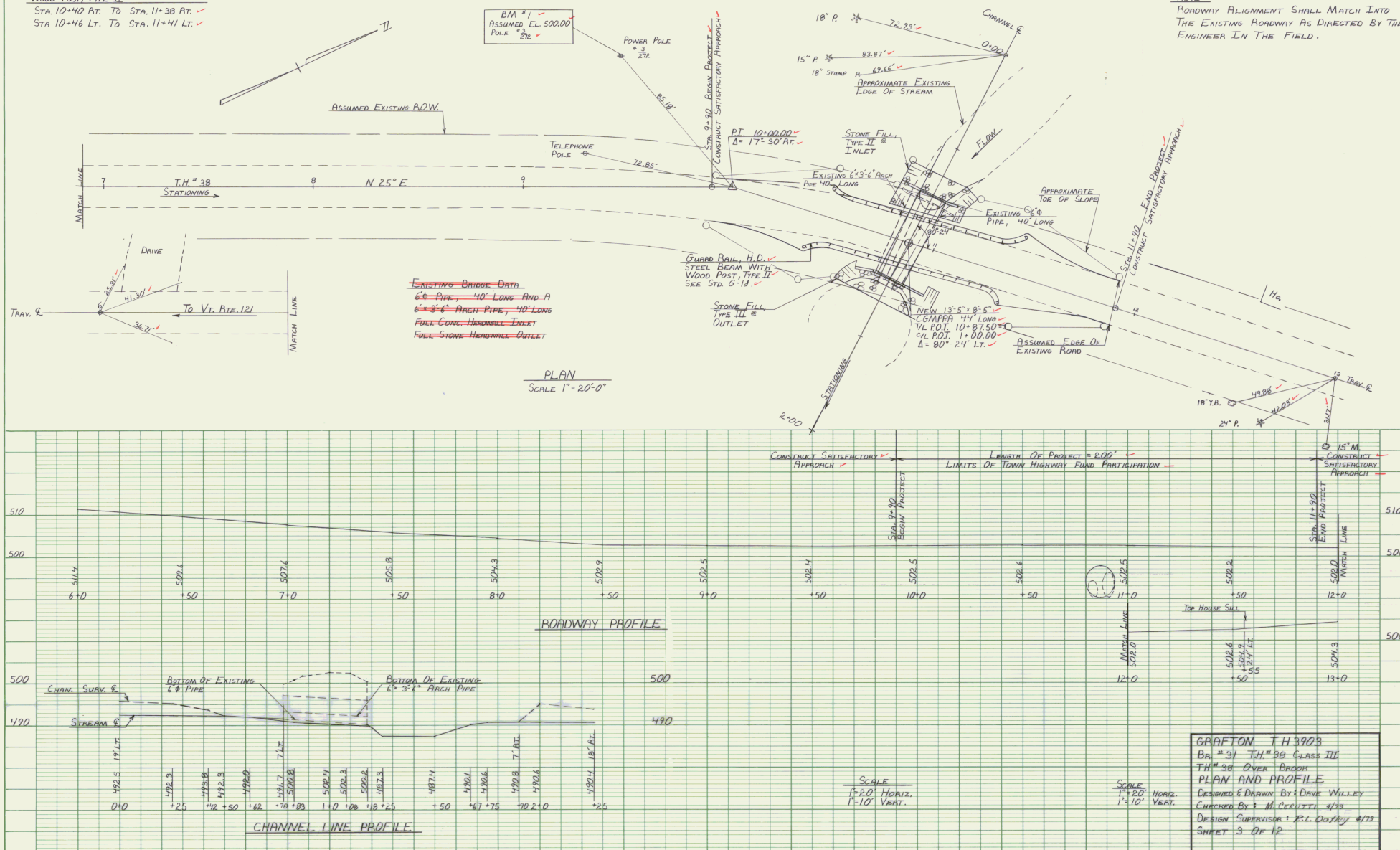
GRAFTON

SHEET NO. 2 OF 12

PROJECT NO. TH3903

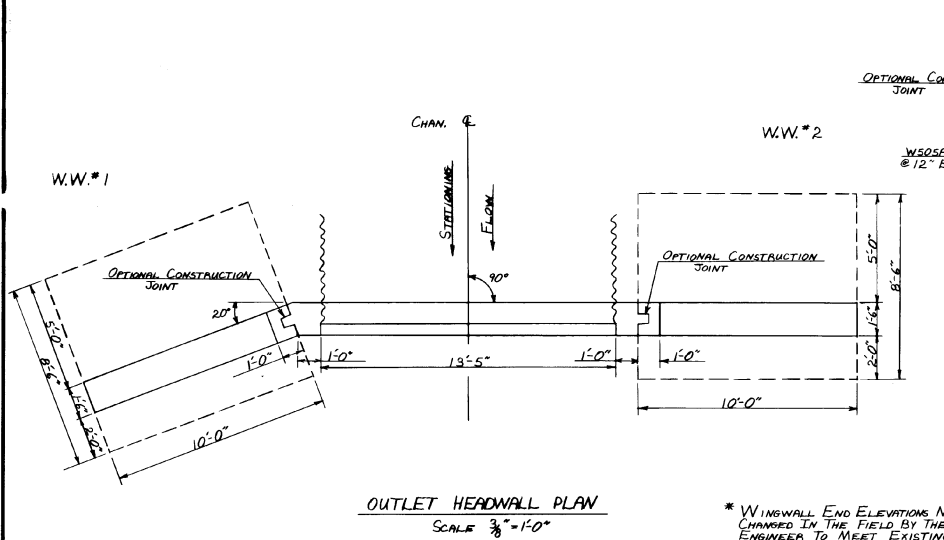
PLAN	SHEET	BY	DATE
	PLOTTED	<i>COARSE</i>	<i>3-1-61</i>
	ALIGNMENT CHECKED	<i>DINK WILLEY</i>	
	SEC. OF WAY CHECKED		

 PROFILE THE BOOK	SERVICED	BY	DATE
	PLOTTED GRABES CHECKED S. M.'S NOTED STRUCTURE NOTATIONS CHECKED		

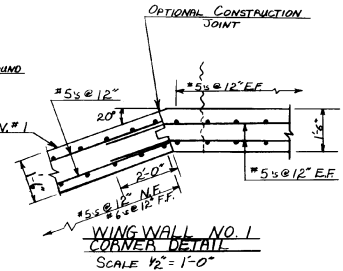
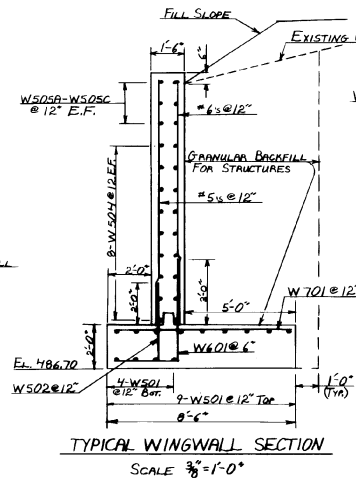
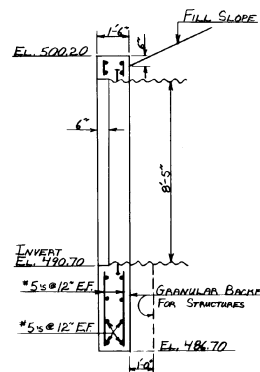
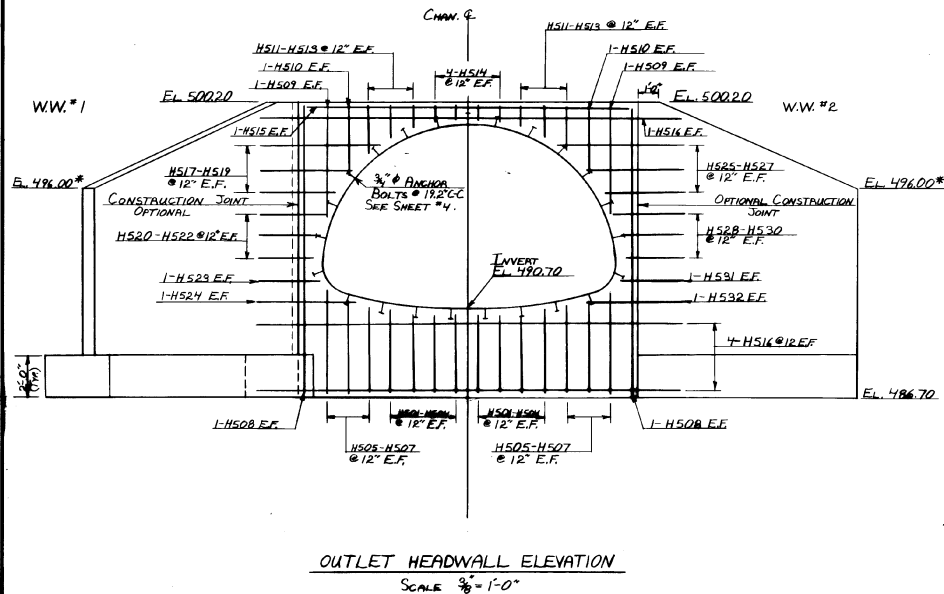
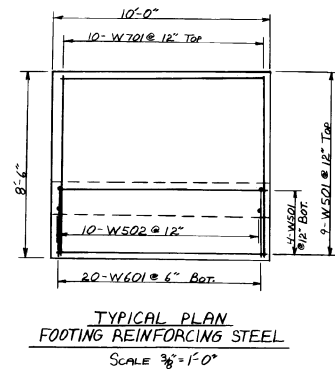
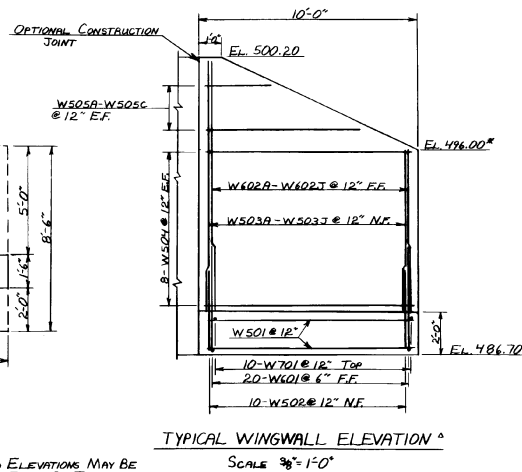


NOTE
ROADWAY ALIGNMENT SHALL MATCH INTO
THE EXISTING ROADWAY AS DIRECTED BY THE
ENGINEER IN THE FIELD.

GRAFTON T.H. 3903
BR. #31 TH. #38 CLASS III
TH. #38 OVER BROOK
PLAN AND PROFILE
DESIGNED & DRAWN BY: DAVE WILLEY
CHECKED BY: M. CERUTTI 3/79
DESIGN SUPERVISOR: P.L. Ostry 4/79
SHEET 3 OF 12



* WINGWALL END ELEVATIONS MAY BE CHANGED IN THE FIELD BY THE ENGINEER TO MEET EXISTING SLOPE CONDITIONS.



STATE OF VERMONT AGENCY OF TRANSPORTATION			
TOWN OF	GRAFTON	Bridge No.	31
HIGHWAY NO.	TH #38, CLASS 3	Log Sta.	
		Surv. Sta.	10+87.50
TH #38 OVER BROOK OUTLET HEADWALL DETAILS			
Designed by	DAVE WILLEY	Drawn by	DAVE WILLEY
Checked by	M. CERUTTI	Bridge Design Supervisor	R. L. O'NEIL
PROJECT	GRAFTON	PROJECT NO.	TH 3903
Bridge Sheet No.		Sheet	5 of 12

[illegible]

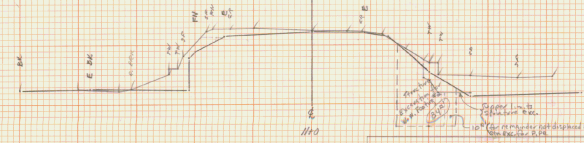
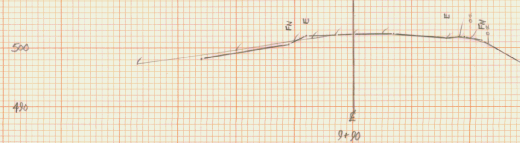
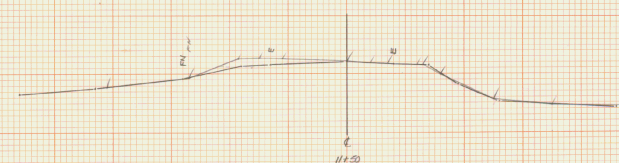
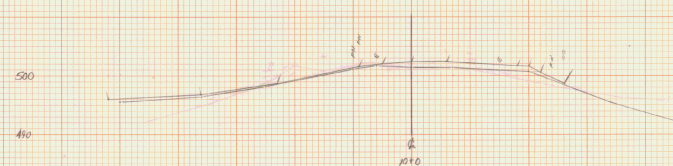
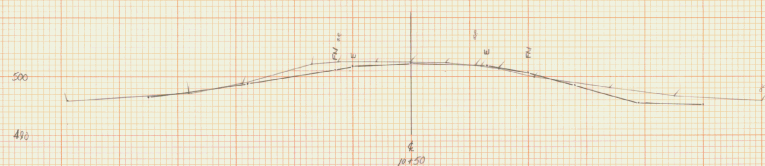
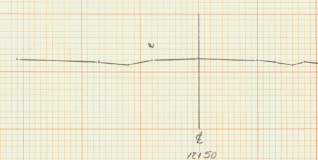
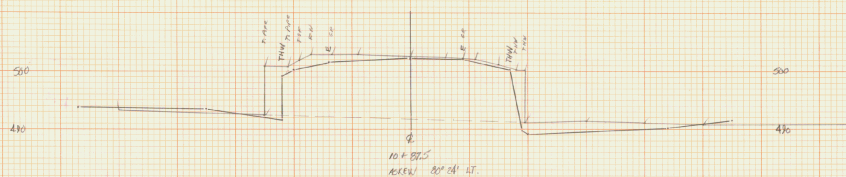
ASTM STANDARD REINFORCING BARS				
BAR SIZE DESIGNATION	WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS ROUND SECTION		
		DIAMETER INCHES	CROSS SECTIONAL SQ. INCHES	PERIMETER INCHES
#3	.376	.375	.11	1.178
#4	.668	.500	.20	1.571
#5	1.043	.625	.31	1.963
#6	1.502	.750	.44	2.356
#7	2.044	.875	.60	2.749
#8	2.670	1.000	.79	3.142
#9	3.400	1.128	1.00	3.544
#10	4.303	1.270	1.27	3.990
#11	5.313	1.410	1.56	4.430
#14	7.65	1.693	2.25	5.32
#18	13.60	2.257	4.00	7.09

1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT;" AASHTO M 31 (ASTM A 615), GRADE 60.
2. FOR TYPICAL BENDING DETAILS, RECOMMENDED MIN DIAMETER "D" OF BENDS AND HOOKS AND OTHER STANDARD PRACTICE SEE CURRENT CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE."
3. BARS WHICH REQUIRE MORE ACCURATE BENDING THAN STANDARD PRACTICES SHOULD HAVE LIMITS INDICATED.
4. ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "X" AND "G" ON STANDARD 180° AND 135° HOOKS.
5. "J" DIMENSION ON 180° HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE, OTHERWISE STANDARD HOOKS ARE TO BE USED.
6. "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
7. WHERE SLOPE DIFFERS FROM 45° DIMENSIONS "H" AND "K" MUST BE SHOWN

REV. NO.	MADE BY	DATE	DESCRIPTION
I	J. WOOD	8/11/75	AASHO. CHANGED TO AASHO. AND GRADE 40 CHANGED TO GRADE 60.

STATE OF VERMONT DEPARTMENT OF HIGHWAYS	
TOWN OF <u>GRAFTON</u>	BRIDGE NO. <u>31</u>
<u>LOS STA.</u>	
HIGHWAY NO. <u>TH "39", CLASS 3</u>	SURV. STA. <u>10+87.5</u>
TH "39 OVER BROOK	
REINFORCING STEEL SCHEDULE	
DESIGNED BY <u>DAVE WILLEY</u>	DRAWN BY <u>DAVE WILLEY</u>
CHECKED BY <u>M. CERVITI</u>	BRIDGE DESIGN SUPERVISOR
DATE <u>3-79</u>	<u>F. L. CORTLEY</u> DATE <u>4/79</u>
PROJECT	PROJECT NO. <u>TH 3903</u>
<u>GRAFTON</u>	
BRIDGE SHEET NO.	SHEET <u>6</u> OF <u>12</u>

* DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES



SHEET #1

GRAFTON TH 3903

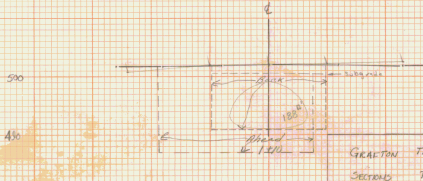
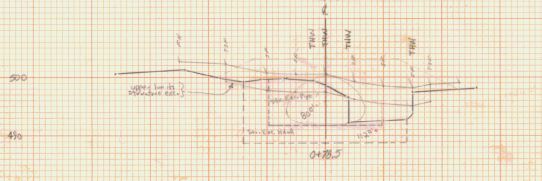
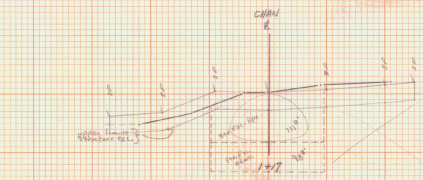
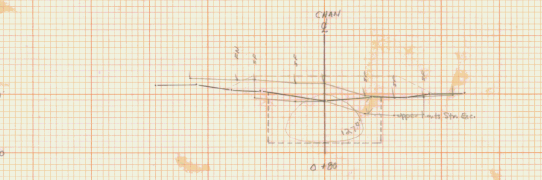
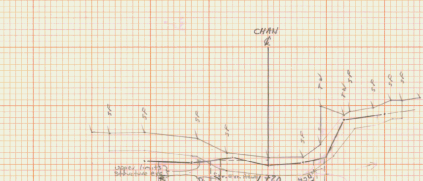
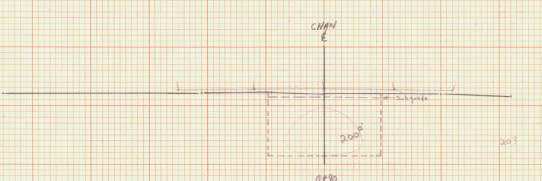
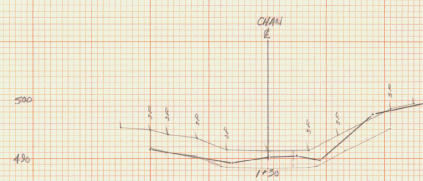
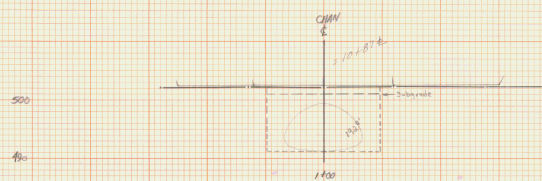
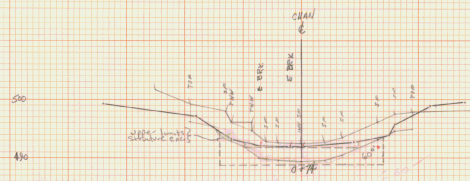
ROADWAY SECTIONS

SECTIONS BDX 7-17-79

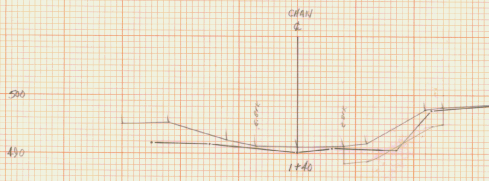
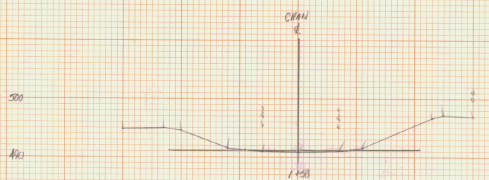
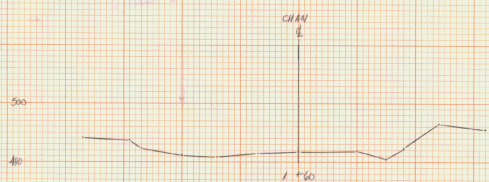
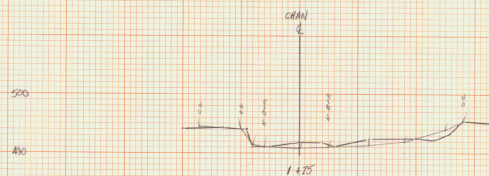
PLOTTED RDG 8-1-79

Finals Period *Per* 9-14-79

$$\text{Volume of Structure} = \frac{(84' \times 9') + (0' \times 3')}{2} = \underline{\underline{29.1cy}}$$



SECTION #2
 SECTION 77 300
 SECTION 712 7-17-75
 PLOTED 712 8-1-75
 CHANNEL SECTIONS



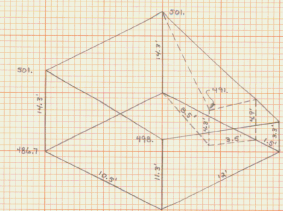
STRUCTURE EXCAVATIONS

STATION	DISTANCE	Exc. AREA	Exc. AREA	VOLUME
WING WALL FOOTING #1 (Sheet #1)				29.7
WING WALL FOOTING #1 (Sheet #2)				46.1
OUTLET HEADWALL (Sheet #2)				9.1
INLET HEADWALL (Sheet #2)				17.2
PIPE (Sheet #2)				5.7
0+78.5	4.5'	8.0'	90.0'	5.7
0+85	1.5'	12.7'	183.8'	5.8
0+90	10'	100'	107.5'	60.6
0+95	10'	100'	107.5'	72.6
1+00	10'	100'	107.5'	70.4
1+10	7'	100'	107.5'	38.8
1+17	3'	0	23.5'	4.2
1+20	0	0	23.5'	362.6

GRASSING EXCAVATIONS

STATION	DISTANCE	Exc. AREA	Exc. AREA	VOLUME
0+75.5	3'	0	13.2'	1.1
0+78.5	0	0	0	0
0+78.5	1.5'	30.5'	95.0'	4.5
0+80	10'	100'	107.5'	38.8
0+90	10'	100'	107.5'	38.8
1+00	10'	100'	107.5'	38.8
1+10	7'	100'	107.5'	38.8
1+17	3'	0	23.5'	4.2
1+20	0	0	23.5'	4.2
1+20	0	0	23.5'	4.2

STRUCTURE EXCAVATIONS WING WALL FOOTING #1 (Sheet #1)



$$\frac{10 \times 10 \times 10}{2.7} = 37.0$$

$$\frac{10 \times 10 \times 10}{2.7} = 37.0$$

$$\frac{10 \times 10 \times 10}{2.7} = 37.0$$

STATION	DISTANCE	Exc. AREA	Exc. AREA	VOLUME
0+75.5	3'	0	13.2'	1.1
0+78.5	0	0	0	0
0+78.5	1.5'	30.5'	95.0'	4.5
0+80	10'	100'	107.5'	38.8
0+90	10'	100'	107.5'	38.8
1+00	10'	100'	107.5'	38.8
1+10	7'	100'	107.5'	38.8
1+17	3'	0	23.5'	4.2
1+20	0	0	23.5'	4.2

$$\frac{10 \times 10 \times 10}{2.7} = 37.0$$

$$\frac{10 \times 10 \times 10}{2.7} = 37.0$$

$$\frac{10 \times 10 \times 10}{2.7} = 37.0$$

5 SHEET #3

GRATON 74 300

SECTION 7-25-79

PROTOD 710 8-2-79

CHANNEL SECTIONS