

STANDARD SHEETS

B-5	SLOPE GRADING, EMBANKMENTS, MUCK	6/1/94
B-71	RESIDENTIAL AND COMMERCIAL DRIVES	11/16/00
E-100	CONSTRUCTION APPROACH SIGNS	1/6/97
E-100A	SIDE ROAD CONSTRUCTION - APPROACH SIGNS	1/6/97
E-102	CONSTRUCTION SIGN DETAILS	8/8/95
E-102A	CONSTRUCTION SIGN DETAILS	8/8/95
E-106	TRAFFIC CONTROL - MISCELLANEOUS DETAILS	8/8/95
E-107	DELINEATION, BARRICADES AND DETOURS FOR CONSTRUCTION AREAS	8/8/95
E-107A	BREAKAWAY BARRICADE DETAILS	8/8/95
E-121	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD	8/8/95
E-160	FLANGED CHANNEL STEEL SIGN POST	5/20/99
E-193	PAVEMENT MARKING DETAILS	8/18/95
G-1	STEEL BEAM GUARD RAIL (50MPH & OVER) HEAVY DUTY STEEL BEAM GUARD RAIL TWISTED END TERMINAL ANCHOR FOR STEEL BEAM RAIL	1/3/00
G-1D	STEEL BEAM GUARD RAIL (40MPH & LESS) HEAVY DUTY STEEL BEAM GUARD RAIL STEEL BEAM MEDIAN BARRIER ANCHOR FOR STEEL BEAM RAIL	1/3/00
G-18	PRECAST CONCRETE TEMPORARY TRAFFIC BARRIER	6/1/94
SB-R6-82	BRIDGE RAILING - HEAVY DUTY STEEL BEAM	1/6/95
SB-R7-90	BRIDGE RAILING - HEAVY DUTY STEEL BEAM	1/11/95
T-1	TEMPORARY EROSION CONTROL DETAILS	6/1/94
T-2	TEMPORARY EROSION CONTROL DETAILS	6/1/94

RECORD PLANS

CONTRACTOR: R.C. CONTRACTORS, INC. - GLOVER VT
 RESIDENT ENGINEER: J. COTA
 CONSTRUCTION BEGAN: JUNE 22, 2004
 CONSTRUCTION COMPLETE: J. COTA
 RECORD PLANS BY: J. COTA
 I HEREBY CERTIFY THAT ALL THE CONSTRUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.
 BY: *[Signature]* DATE: 5/12/05
 RESIDENT ENGINEER

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

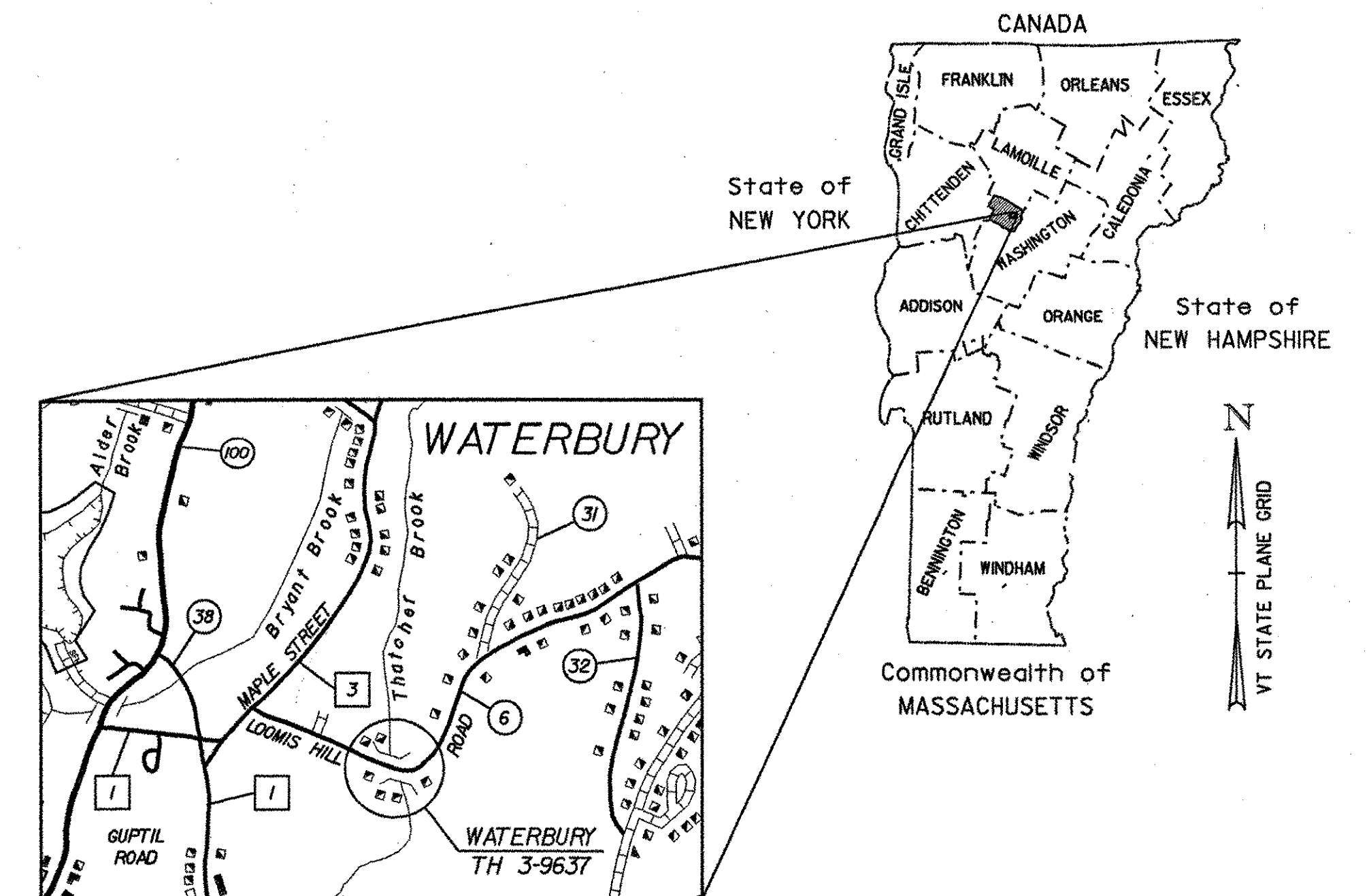
STATE OF VERMONT AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT BRIDGE PROJECT

TOWN OF WATERBURY
COUNTY OF WASHINGTON

LOOMIS HILL ROAD (T.H. 6, CLASS 3) BRIDGE NO. 14



LOCATION MAP
NOT TO SCALE

PROJECT LOCATION: BEGINNING APPROXIMATELY 0.40 MILES EAST OF THE INTERSECTION OF T.H. 3 (MAPLE STREET) AND T.H. 6 (LOOMIS HILL ROAD) AND PROCEEDING EASTERLY 0.034 MILES.

PROJECT DESCRIPTION: REMOVAL OF EXISTING SUPERSTRUCTURE, CONSTRUCTION OF NEW PRECAST VOIDED SLAB SUPERSTRUCTURE, REHABILITATION OF SUBSTRUCTURE AND RELATED ROADWAY WORK.

LENGTH OF STRUCTURE: 39.00 FEET - 0.007 MILES
 LENGTH OF ROADWAY: 139.00 FEET - 0.027 MILES
 LENGTH OF PROJECT: 178.00 FEET - 0.034 MILES

INDEX OF SHEETS

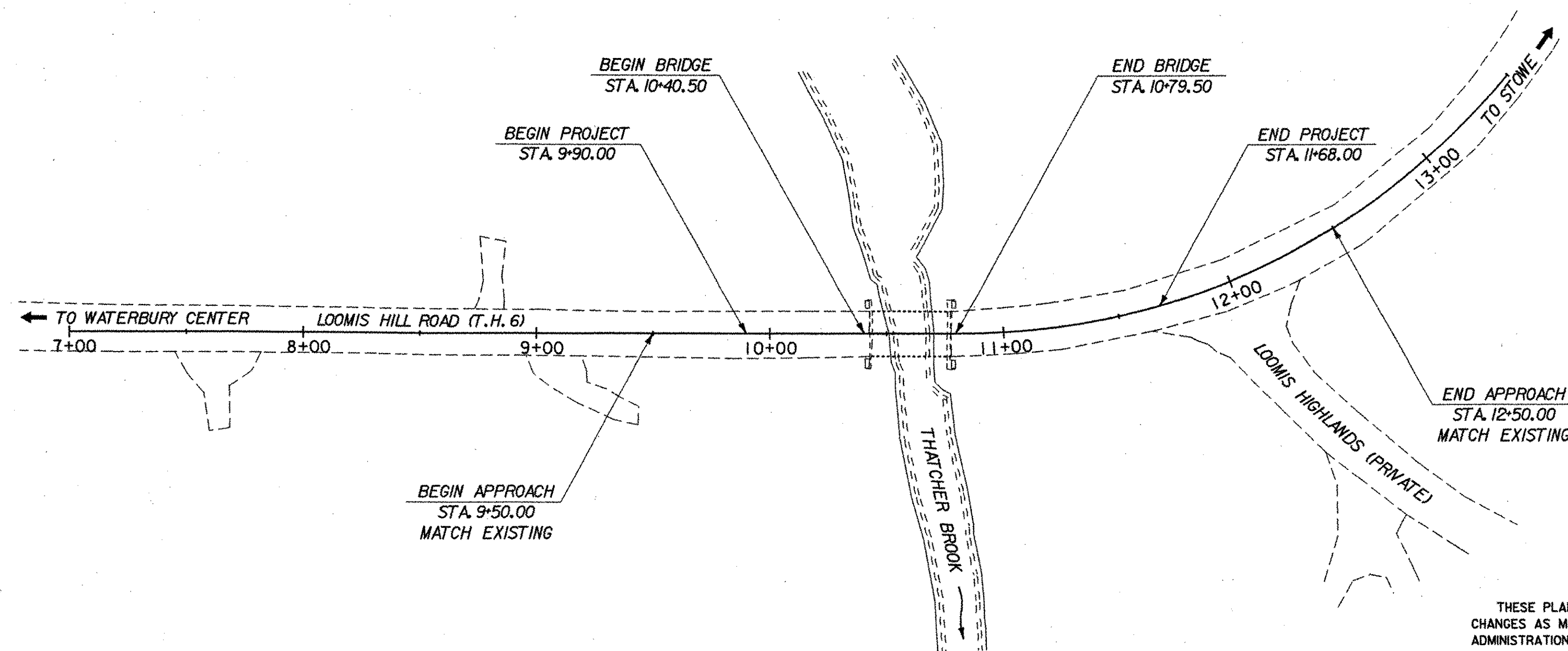
- 1 TITLE SHEET
- 2 PRELIMINARY INFORMATION SHEET
- 3 QUANTITY SHEET
- 4 TIE SHEET
- 5 PLAN SHEET
- 6 PROFILE AND BANKING DIAGRAM
- 7 TRAFFIC CONTROL SHEET
- 8 PLAN AND ELEVATION
- 9 EROSION CONTROL SHEET
- 10 CONSTRUCTION NOTES AND GUARD RAIL LAYOUT
- 11 SUPERSTRUCTURE DETAILS
- 12 ABUTMENT NO. 1
- 13 ABUTMENT NO. 2
- 14 ABUTMENT DETAILS
- 15 GABION WALL DETAILS
- 16-17 ROADWAY CROSS SECTIONS
- 18 CHANNEL CROSS SECTIONS

CONVENTIONAL SYMBOLS

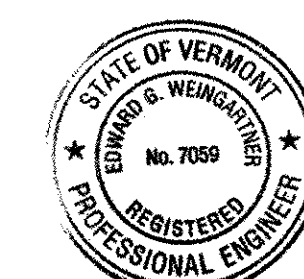
COUNTY LINE	
TOWN LINE	
LIMITS OF ACCESS	
POINT OF ACCESS	
FENCE LINE	
STONE WALL	
TRAVELED WAY	
GUARD RAIL	
RAILROAD	
SURVEY LINE	
CULVERT	
POWER POLE	
TELEPHONE POLE	
TREES	
CONTROL OF ACCESS	
PROPERTY LINE	
R.O.W. TAKING LINE	
SLOPE RIGHTS	
TOP OF CUT	
TOE OF SLOPE	

SURVEYED BY: VTRANS
 SURVEYED DATE: NOVEMBER 2000

DATUM
 VERTICAL: NAVD 88
 HORIZONTAL: NAD 83 (96)



PLAN
 SCALE 1" = 40'-0"



Edward J. Weingarten
 5/5/03

THESE PLANS ARE SUBJECT TO SUCH ENGINEERING CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY ADMINISTRATION OR THE DIRECTOR OF PROJECT DEVELOPMENT.

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2001, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JANUARY 4, 2001 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.



DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED: _____ DATE: _____

DIRECTOR OF PROJECT DEVELOPMENT

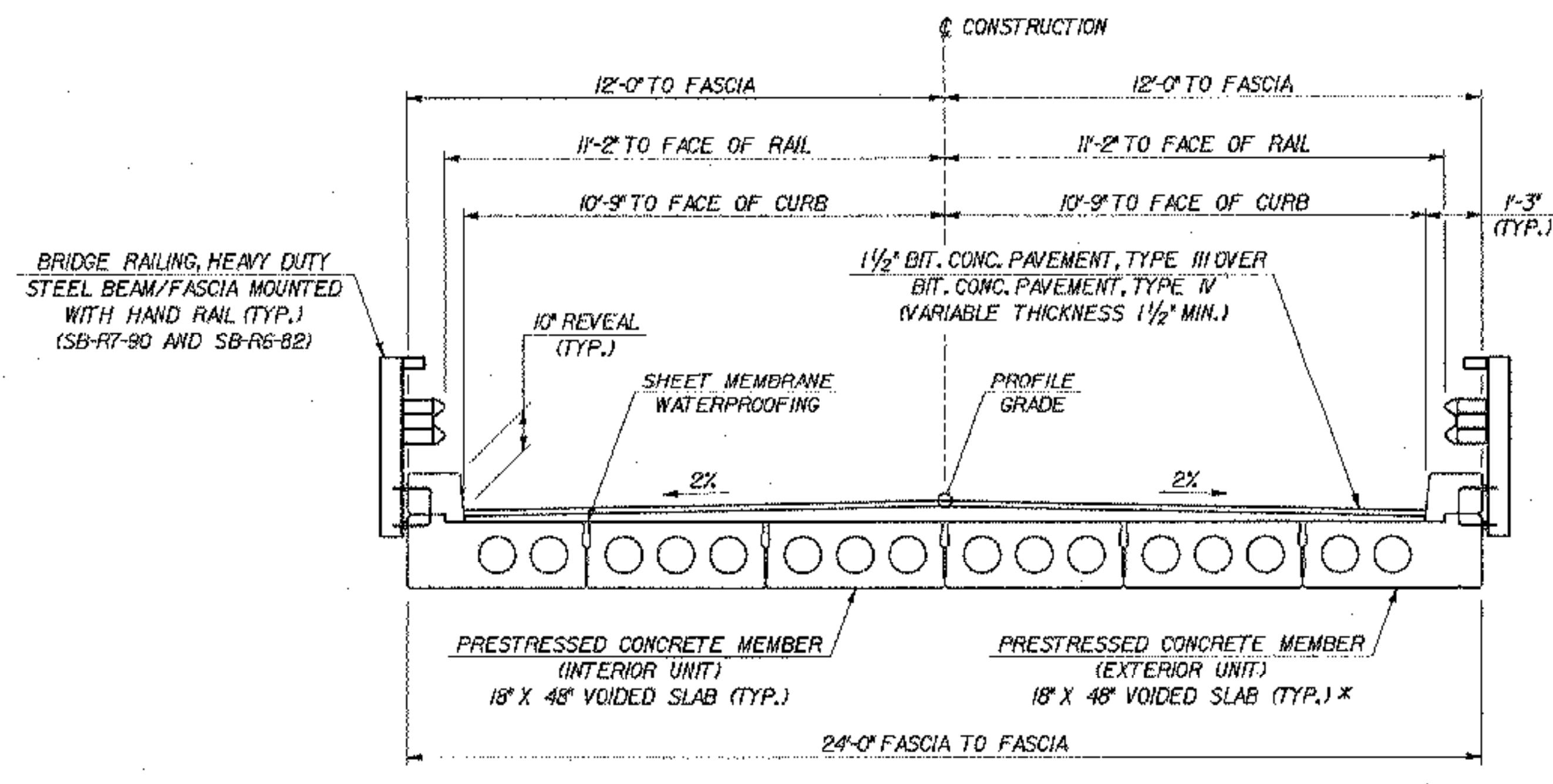
APPROVED: *[Signature]* DATE: 5/6/03

PROJECT MANAGER:

PROJECT NAME: WATERBURY

PROJECT NUMBER: TH 3-9637

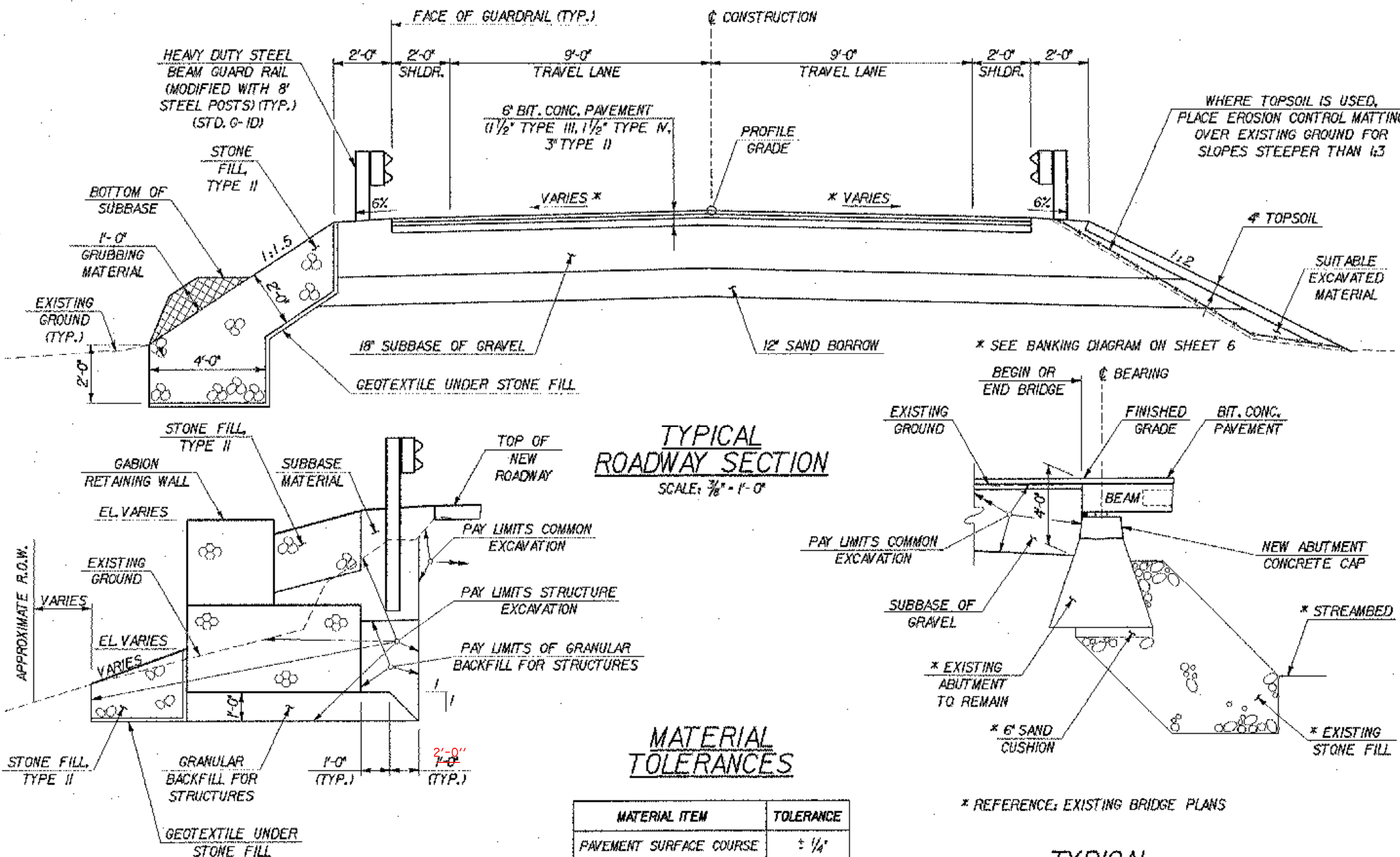
SHEET 1 OF 18 SHEETS



TYPICAL BRIDGE SECTION

SCALE: 3/8" = 1'-0"

* COST FOR NEW CURB TO BE INCLUDED IN THE PRICE FOR PRESTRESSED CONCRETE MEMBER (EXTERIOR UNIT)



TYPICAL ROADWAY SECTION

SCALE: 3/8" = 1'-0"

MATERIAL TOLERANCES

MATERIAL ITEM	TOLERANCE
PAVEMENT SURFACE COURSE	± 1/4"
PAVEMENT BASE COURSE	± 1/2"
SUBBASE	± 1"
SAND BORROW	± 1"

* REFERENCE: EXISTING BRIDGE PLANS

TYPICAL ABUTMENT SECTION

SCALE: 1/4" = 1'-0"

FINAL HYDRAULICS REPORT

HYDROLOGIC DATA

DRAINAGE AREA = 7.2 SQUARE MILES

CHARACTER OF TERRAIN: _____

CHARACTER & TYPE OF STREAM: _____

NATURE OF STREAMBED: _____

Q2.33 = _____ Q50 = _____

Q10 = _____ Q100 = _____

Q25 = _____ Q500 = _____

DATE OF FLOOD OF RECORD: _____

WATER SURFACE ELEV. ESTIMATED DISCHARGE: _____

NATURAL STREAM VELOCITY @ Q = _____

ICE CONDITIONS: _____ DEBRIS: _____

DOES THE STREAM REACH MAXIMUM HIGHWATER ELEVATION RAPIDLY? _____

IS ORDINARY RISE RAPID? _____

IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? _____

IF YES, DESCRIBE: _____

WATERSHED STORAGE: _____ HEADWATERS: _____ UNIFORM THROUGHOUT WATERSHED: _____ IMMEDIATELY ABOVE SITE: _____

EXISTING STRUCTURE

STRUCTURE TYPE: SINGLE SPAN STEEL BEAM WITH CONCRETE DECK YEAR BUILT: 1954

CLEAR SPAN (NORMAL TO STREAM): 35.0 FEET

VERTICAL CLEARANCE ABOVE STREAMBED: 8.0 FEET

WATERWAY OF FULL OPENING: _____

DISPOSITION OF STRUCTURE: SUPERSTRUCTURE TO BE REPLACED

TYPE OF MATERIAL UNDER SUBSTRUCTURE: _____

WATER SURFACE ELEV. @ Q2.33 = _____ VELOCITY = _____

Q10 = _____

Q25 = _____

Q50 = _____

Q100 = _____

LONG TERM STREAM BED CHANGES: _____

IS THE ROADWAY OVERTOPPED BELOW THE Q100? _____ FREQUENCY: _____

RELIEF ELEVATION: _____ DISCHARGE OVER ROAD @ Q100: _____

UPSTREAM STRUCTURE: TOWN: _____ DISTANCE: _____

HIGHWAY NO.: _____ STRUCTURE NO.: _____

STRUCTURE TYPE: _____

CLEAR SPAN: _____ CLEAR HEIGHT: _____

YEAR BUILT: _____ FULL WATERWAY: _____

DOWNSTREAM STRUCTURE: TOWN: _____ DISTANCE: _____

HIGHWAY NO.: _____ STRUCTURE NO.: _____

STRUCTURE TYPE: _____

CLEAR SPAN: _____ CLEAR HEIGHT: _____

YEAR BUILT: _____ FULL WATERWAY: _____

DESIGN CRITERIA:

- DESIGN LIVE LOAD AASHTO HS-25-44
- DESIGN SPAN 37.0 FEET
- ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL 4 KSF (ASSUMED) ON LEDGE N/A
- ALLOWABLE LOAD FOR PILING N/A TYPE N/A ESTIMATED LENGTH N/A
- STRUCTURAL STEEL AASHTO GRADE N/A
- REINFORCING STEEL GRADE 60
- CONCRETE CLASS B (MPC-B) f'_c 3500 PSI

TRAFFIC MAINTENANCE:

- IS TRAFFIC TO BE MAINTAINED? NO IF YES, ON EXISTING STRUCTURE N/A OR ON TEMPORARY BRIDGE N/A
- TRAFFIC WILL BE DETOURD AROUND THE BRIDGE SITE
- TEMPORARY BRIDGE REQUIREMENTS: ONE OR TWO WAY N/A TRAFFIC CONTROL SIGNALS REQUIRED NO

ARE SIDEWALKS REQUIRED? NO IF SO, ON WHAT SIDE? N/A

LEVELS	LOAD RATING (TONS)					
	H	HS	332	6 AXLE	3A. STR.	4A. STR.
INVENTORY						
POSTED						
OPERATING						

* LOAD RATING TABLE TO BE COMPLETED BY FABRICATOR. SEE CONSTRUCTION NOTES ON SHEET 10.

PROPOSED STRUCTURE

STRUCTURE TYPE: SINGLE SPAN PRECAST VOIDED SLAB

CLEAR SPAN (NORMAL TO STREAM): 35.0 FEET

VERTICAL CLEARANCE ABOVE STREAMBED: 8.0 FEET

WATERWAY OF FULL OPENING: _____

WATER SURFACE ELEV. @ Q2.33 = _____ VELOCITY = _____

Q10 = _____

Q25 = _____

Q50 = _____

Q100 = _____

IS THE ROADWAY OVERTOPPED BELOW THE Q100? _____ FREQUENCY: _____

RELIEF ELEVATION: _____ DISCHARGE OVER ROAD @ Q100: _____

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: _____

VERTICAL CLEARANCE @ Q = _____

SCOUR: _____

REQUIRED CHANNEL PROTECTION: _____

PERMIT INFORMATION

STRUCTURE TYPE: _____ YEAR BUILT: _____

AVERAGE DAILY FLOW: _____

ORDINARY LOW WATER: _____ DEPTH: _____

ORDINARY HIGH WATER: EL 672.4' (SEE NOTE 2) DEPTH: _____

ADDITIONAL COMMENTS

- HYDRAULIC STUDIES WERE NOT PERFORMED FOR THIS PROJECT.
- ORDINARY HIGH WATER (O.H.W.) WAS ESTIMATED IN THE FIELD.

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2003	649	75	50	9	60
2023	1425	200	50	9	130

18 kip ESAL for flexible pavement from 2003 to 2023 = 188,000

18 kip ESAL for flexible pavement from 2003 to 2043 = 598,000

Design speed: 30 MPH

STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of WATERBURY Bridge No. 14

Highway No. 6 Log Sta. _____

Surv. Sta. _____

LOOMIS HILL ROAD OVER THATCHER BROOK PRELIMINARY INFORMATION SHEET

Designed By L. WILSON Drawn By P. DUSTIN

Checked By _____ Date _____ Bridge Design Supervisor _____

R. JOY 03/03 M. ZYDEL Date 03/03

PROJECT WATERBURY PROJECT NO. TH 3-9637

I.G.C. Info. n:\549108-Waterbury\BRIDGE\6001\1\278pl.dgn

Bridge Sheet No. _____ Sheet 2 of 18

15-MAY-2003
PLOTTED

QUANTITIES

REINFORCING

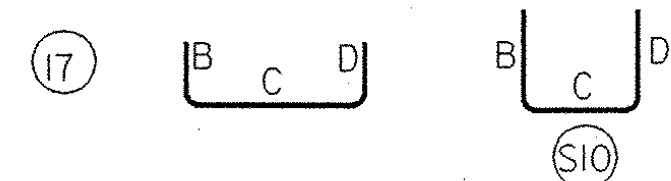
NO.	ITEM	UNIT	QUANTITY BREAKDOWN					TOTAL
			SUPER - STRUCTURE	ABUT. NO. 1	ABUT. NO. 2	ROADWAY	EROSION CONTROL	E & C
201.10	CLEARING & GRUBBING (INCLUDING INDIVIDUAL TREES AND STUMPS)	LS				1		1
203.15	COMMON EXCAVATION	CY				650		650
203.31	SAND BORROW	CY				100		100
204.20	TRENCH EXCAVATION OF EARTH	CY					10	10
204.25	STRUCTURE EXCAVATION	CY		40	40			80
204.30	GRANULAR BACKFILL FOR STRUCTURES	CY		14	16			30
210.10	COLD PLANING - BITUMINOUS PAVEMENT	SY				100		100
301.15	SUBBASE OF GRAVEL	CY				470	30	500
406.27	MEDIUM DUTY BITUMINOUS CONCRETE PAVEMENT (PG 58-34)	TON	25			200		225
501.34	CONCRETE, HIGH PERFORMANCE CLASS B	CY		4	5			9
507.15	REINFORCING STEEL	LB		490	520			1010
507.16	DRILLING AND GROUTING DOWELS	LF		48	48			96
510.20	PRESTRESSED CONCRETE MEMBER (INTERIOR UNITS)	EACH	4					4
510.20	PRESTRESSED CONCRETE MEMBER (EXTERIOR UNITS)	EACH	2					2
514.10	WATER REPELLENT	GAL	3.5	1.5	1			6
519.20	SHEET MEMBRANE WATERPROOFING (TORCH APPLIED)	SY	95					95
525.43	BRIDGE RAILING - HDSB/FASCIA MOUNTED/HAND RAIL	LF	88					88
527.10	MAINTENANCE OF TRAFFIC FOR BRIDGE PROJECTS	LS				1		1
529.10	REMOVAL OF BRIDGE PAVEMENT	SY	87					87
529.20	PARTIAL REMOVAL OF STRUCTURE	EACH	1					1
531.10	BEARING DEVICE ASSEMBLY	EACH	24					24
580.13	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I	SY		1.5	1.5			3
580.14	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II	SY		1.0	1.0			2
580.15	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III	CY		0.2	0.3			0.5
608.25	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	HR				1		1
609.15	DUST AND ICE CONTROL WITH CALCIUM CHLORIDE	TON				1		1
612.10	GABION RETAINING WALL	CY		25	26			51
613.11	STONE FILL, TYPE II	CY				90	10	100
620.70	SNOW FENCE (MOD.)	LF				250		250
621.21	HEAVY DUTY STEEL BEAM GUARD RAIL (MOD.)	LF				392		392
621.60	ANCHOR FOR STEEL BEAM RAIL	EACH				4		4
621.80	REMOVAL AND DISPOSAL OF GUARD RAIL	LF				100		100
621.90	TEMPORARY TRAFFIC BARRIER	LF				60		60
630.10	UNIFORMED TRAFFIC OFFICERS	HR				40		40
630.15	FLAGGERS	HR				160		160
631.10	FIELD OFFICE - ENGINEERS	LS						1
631.16	TESTING EQUIPMENT - CONCRETE	LS						1
631.17	TESTING EQUIPMENT - BITUMINOUS	LS						1
631.25	FIELD OFFICE - TELEPHONE (N.A.B.I.)	LU						1
635.10	MOBILIZATION	LS				1		1
646.21	#4 YELLOW LINE	LF				520		520
649.31	GEOTEXTILE UNDER STONE FILL	SY				200		200
649.51	GEOTEXTILE FOR SILT FENCE	SY					280	280
651.15	SEED	LB					20	20
651.18	FERTILIZER	LB					50	50
651.20	AGRICULTURAL LIMESTONE	TON					1	1
651.25	HAY MULCH	TON					1	1
651.26	HAY BALES FOR EROSION CONTROL	EACH					30	30
651.35	TOPSOIL	CY					40	40
651.40	GRUBBING MATERIAL	SY					20	20
654.10	EROSION MATTING	SY					340	340
675.20	TRAFFIC SIGNS, TYPE A (MOD.)	SF				173		173
675.301	FLANGED CHANNEL SIGN POSTS (MOD.)	LF				385		385
675.50	REMOVING SIGNS	EACH				2		2
675.60	ERECTING SALVAGED SIGNS	EACH				2		2
675.61	SETTING SALVAGED POSTS	EACH				2		2

ITEM	NO. PIECES	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
ABUTMENT NO. 1																	
	4	5	29 - 1	1A501	STR												
	24	5	3 - 3	1A502	SIO		0 - 10	1 - 7	0 - 10								
	48	5	3 - 2	1A503	IF		1 - 11	1 - 3	0 - 0								
	12	5	3 - 9	1A504	STR												
	32	5	2 - 4	1A505	STR												
	6	5	3 - 3	1A506	SIO		0 - 10	1 - 7	0 - 10								
ABUTMENT NO. 2																	
	4	5	29 - 1	2A501	STR												
	24	5	3 - 9	2A502	SIO		1 - 1	1 - 7	1 - 1								
	48	5	3 - 5	2A503	IF		2 - 2	1 - 3	0 - 0								
	12	5	4 - 0	2A504	STR												
	32	5	2 - 4	2A505	STR												
	6	5	3 - 3	2A506	SIO		0 - 10	1 - 7	0 - 10								

~ NOTES ~

- 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-S1). ALL BARS SHALL BE GRADE 60, UNLESS OTHERWISE DESIGNATED.
- FOR TYPICAL BENDING DETAILS, RECOMMENDED PIN DIAMETER "D" OF BENDS AND HOOKS, AND OTHER STANDARD PRACTICE, SEE CURRENT CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE".
- BARS WHICH REQUIRE MORE ACCURATE BENDING THAN STANDARD PRACTICES SHOULD HAVE LIMITS INDICATED.
- ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "G" ON STANDARD 180 DEGREE AND 135 DEGREE HOOKS.
- "J" DIMENSION ON 180 DEGREE HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE, STANDARD HOOKS ARE TO BE USED.
- "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
- WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
- ▲ DENOTES BARS TO BE CUT IN FIELD.
- * DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
- △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
- "E" IN PREFIX DENOTES EPOXY COATED REINFORCING STEEL.

ASTM STANDARD REINFORCING BARS	BAR SIZE DESIGNATION	WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS ROUND SECTION		
			DIAMETER INCHES	CROSS SECTIONAL AREA 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



NOTES

- EROSION CONTROL INCLUDES PERMANENT AND TEMPORARY EROSION CONTROL ITEMS.
- TRAFFIC SIGN AND SIGN POST QUANTITIES INCLUDE SIGNS AND POSTS DETAILED FOR TEMPORARY DETOUR SIGNING PLAN.
- EMULSIFIED ASPHALT SHALL BE SUBSIDIARY TO ITEM 406.27.



STATE OF VERMONT AGENCY OF TRANSPORTATION	
Town Of WATERBURY	Bridge No. 14
Highway No. 6	Log Sta. Surv. Sta.
LOOMIS HILL ROAD OVER THATCHER BROOK	
QUANTITY SHEET	
Designed By L.WIXSON	Drawn By P.DUSTIN
Checked By R.JOY	Bridge Design Supervisor M.ZYDEL
Date 03/03	Date 03/03
PROJECT WATERBURY	PROJECT NO. TH 3-9637
I.G.C. Info. m\549108-Waterbury\BRIDGE\6cont\J27Bqshdgn	
Bridge Sheet No. 	Sheet 3 of 18

GPS CONTROL POINTS

HVCTRL # 1

STANDARD DISK STAMPED
Grafton Smith
* N = 682944.8184
* E = 1586387.2170
ELEV. = 755.3790

GENERAL LOCATION, WATERBURY, VT., IN WATERBURY CENTER. OWNERSHIP, GRAFTON SMITH, 68 LOOMIS HIGHLANDS, WATERBURY CENTER, VT 05677. TO REACH FROM THE VT ROUTE 100 BRIDGE OVER I-89 AT EXIT 10 IN WATERBURY GO NORTH ALONG VT ROUTE 100 FOR 1.3 MI (2.1 KM) TO THE INTERSECTION OF GUPTIL ROAD RIGHT. TURN RIGHT AND GO EAST AND NORTH ALONG GUPTIL ROAD FOR 0.9 MI (1.4 KM) TO THE INTERSECTION OF KNEELAND FLATS ROAD RIGHT. CONTINUE STRAIGHT AHEAD AND GO NORTH ALONG GUPTIL ROAD FOR 1.1 MI (1.8 KM) TO THE Y-INTERSECTION OF MAPLE STREET RIGHT AND GUPTIL ROAD LEFT, AT THE TRIANGULAR COMMON IN WATERBURY CENTER. BEAR RIGHT AND GO NORTHEAST ALONG MAPLE STREET FOR 0.2 MI (0.3 KM) TO THE INTERSECTION OF LOOMIS HILL ROAD RIGHT. TURN RIGHT AND GO EAST ALONG LOOMIS HILL ROAD FOR 0.4 MI (0.6 KM) TO THE INTERSECTION OF LOOMIS HIGHLANDS RIGHT. TURN RIGHT AND GO SOUTHEAST ALONG LOOMIS HIGHLANDS FOR 0.05 MI (0.08 KM) TO THE Y-INTERSECTION OF LOOMIS HIGHLANDS LEFT AND A GRAVEL DRIVE RIGHT LEADING TO THE SMITHS HOUSE NO 68. BEAR RIGHT AND GO SOUTH ALONG THE GRAVEL DRIVE FOR 0.1 MI (0.2 KM) TO THE SMITHS HOUSE AND ATTACHED GARAGE AND THE SITE OF THE MARK ON THE RIGHT. THE MARK IS SET IN THE TOP OF A MASSIVE LEDGE OUTCROP. IT IS 27.0 M (88.6 FT) NORTH OF THE NORTHWEST PORCH CORNER OF THE HOUSE, 28.0 M (91.9 FT) NORTHWEST OF THE NORTH CORNER OF THE ATTACHED GARAGE, 25.2 M (82.7 FT) WEST NORTHWEST OF A 30 CM CLUMP MAPLE, AND 16.5 M (54.1 FT) SOUTHWEST OF AN 8 CM SPRUCE.

HVCTRL # 2

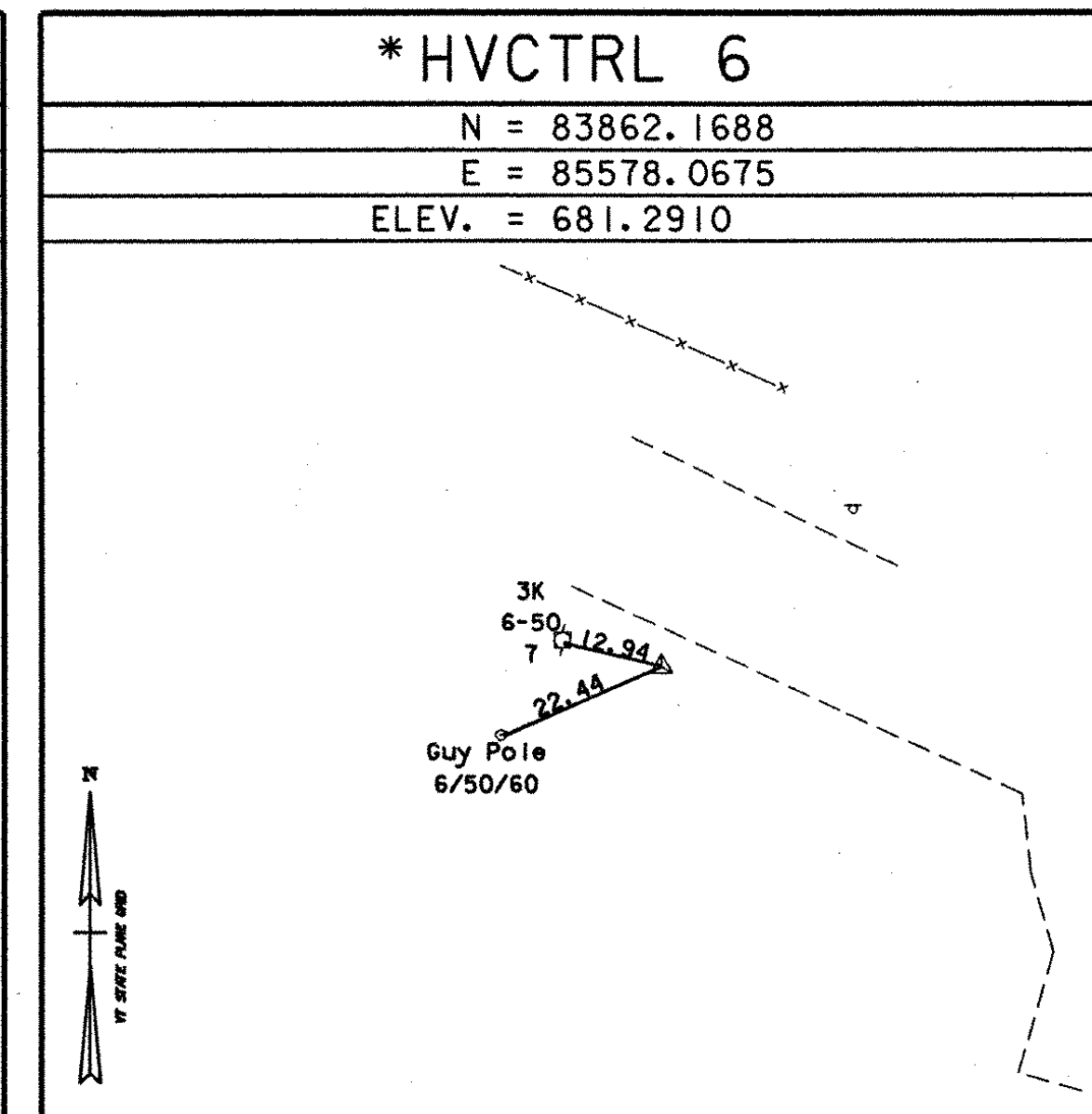
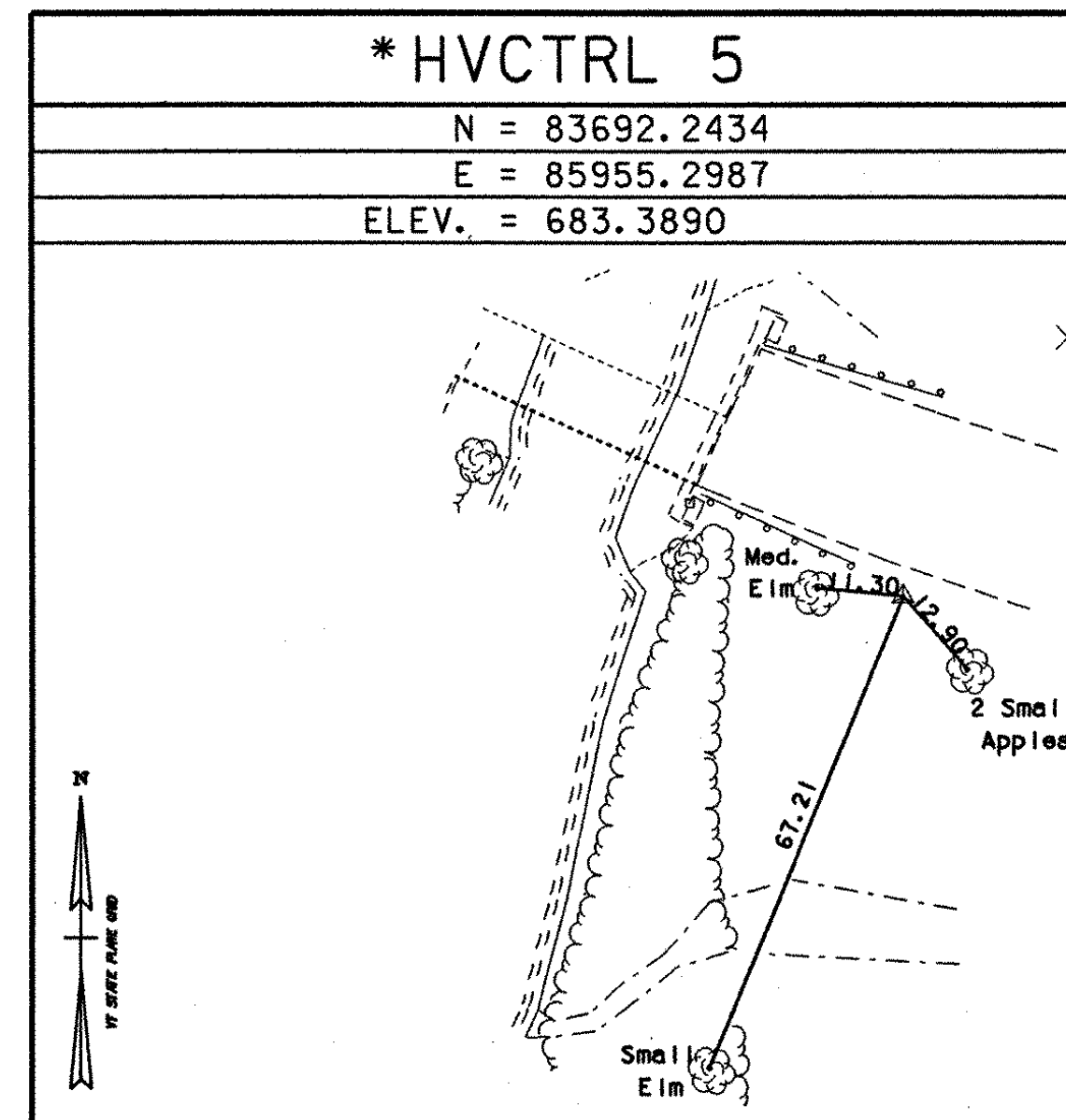
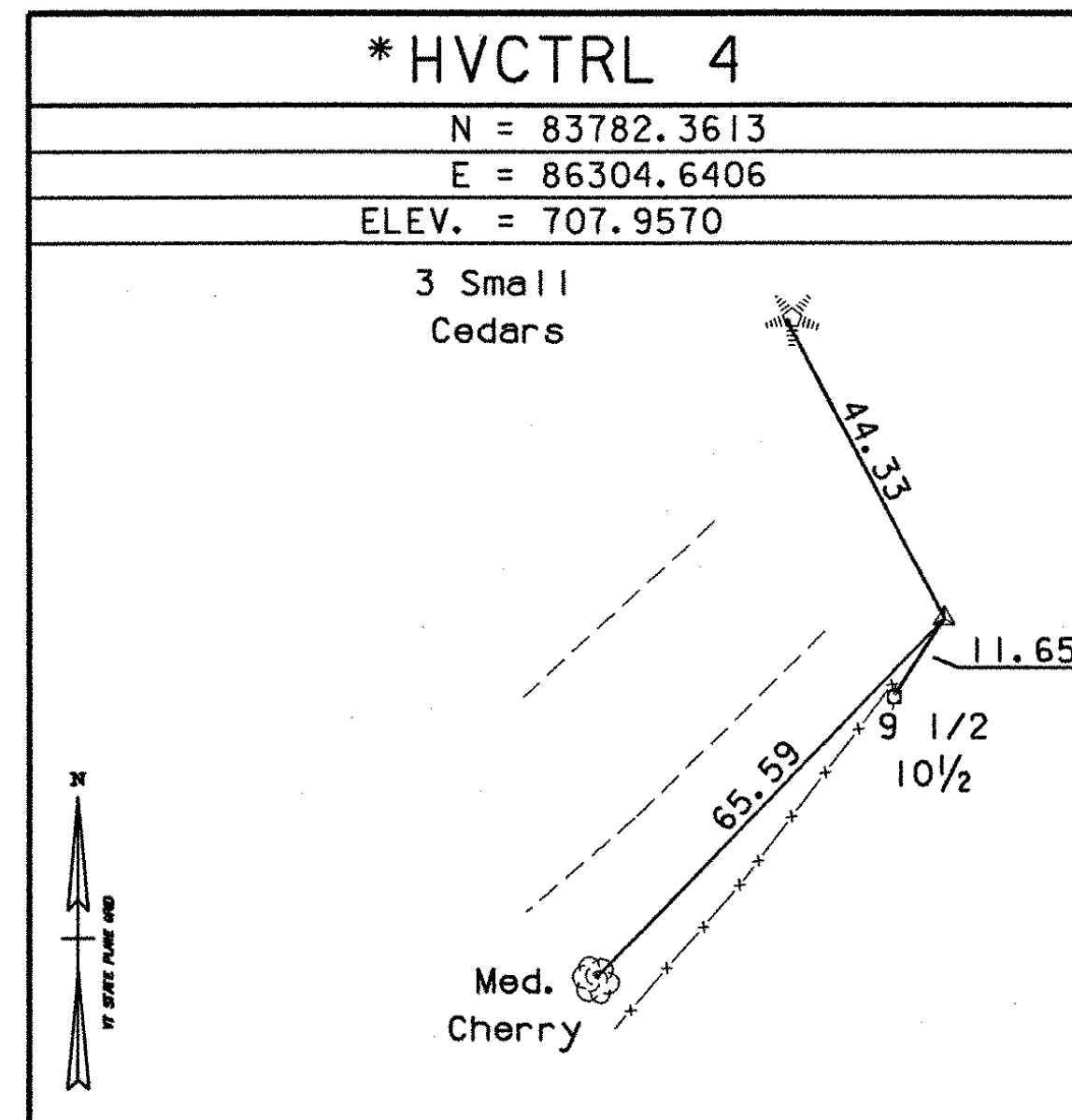
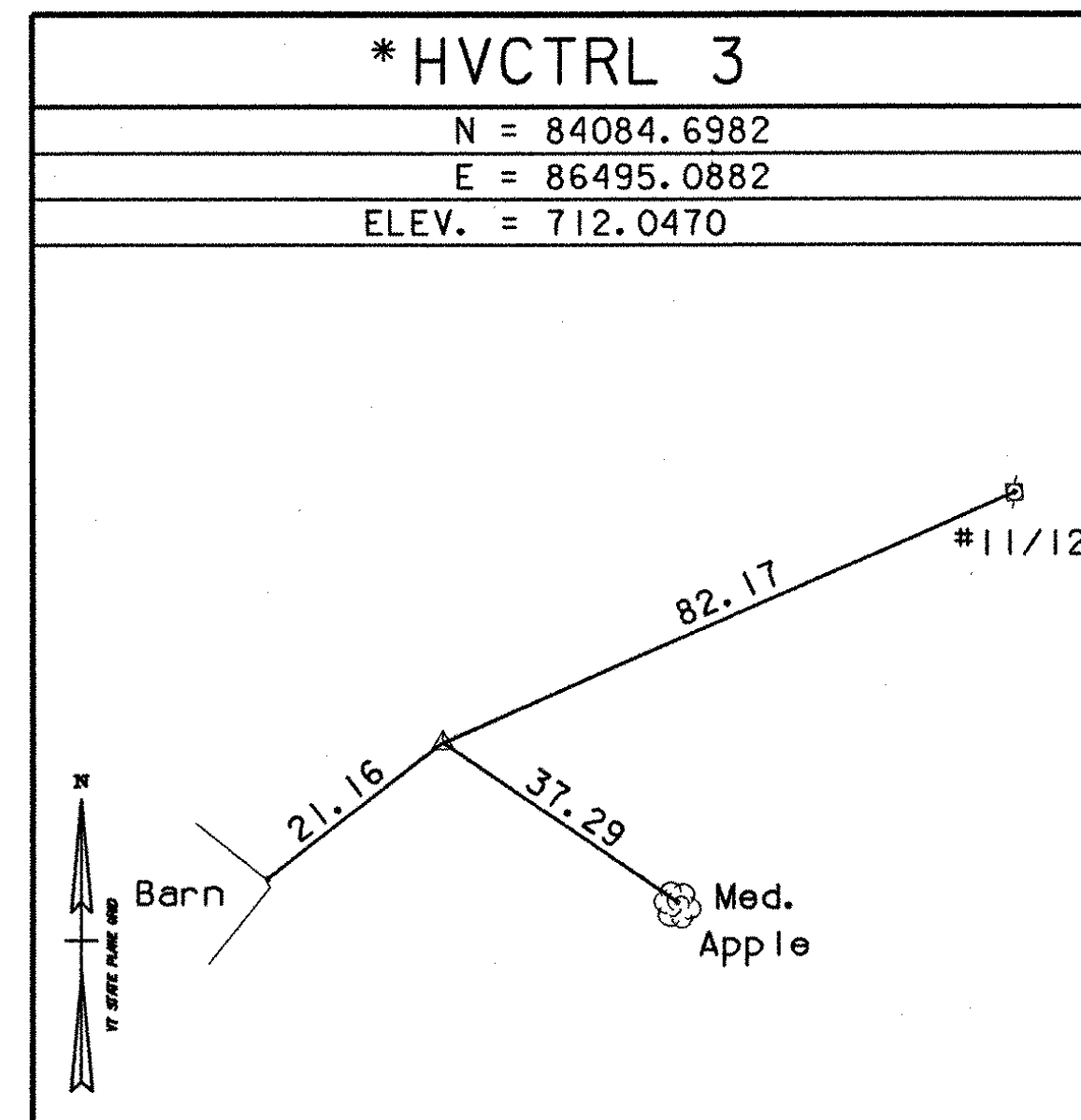
STANDARD DISK STAMPED
Foregger
* N = 684960.0342
* E = 1586720.4550
ELEV. = 736.547

GENERAL LOCATION, WATERBURY, VT., IN WATERBURY CENTER. OWNERSHIP, RUSS FOREGGER, P.O. BOX 119, HUBBARD FARM ROAD, WATERBURY CENTER, VT 05677. TO REACH FROM THE VT ROUTE 100 BRIDGE OVER I-89 AT EXIT 10 IN WATERBURY GO NORTH ALONG VT ROUTE 100 FOR 1.3 MI (2.1 KM) TO THE INTERSECTION OF GUPTIL ROAD RIGHT. TURN RIGHT AND GO EAST AND NORTH ALONG GUPTIL ROAD FOR 0.9 MI (1.4 KM) TO THE INTERSECTION OF KNEELAND FLATS ROAD RIGHT. CONTINUE STRAIGHT AHEAD AND GO NORTH ALONG GUPTIL ROAD FOR 1.1 MI (1.8 KM) TO THE Y-INTERSECTION OF MAPLE STREET RIGHT AND GUPTIL ROAD LEFT, AT THE TRIANGULAR COMMON IN WATERBURY CENTER. BEAR RIGHT AND GO NORTHEAST ALONG MAPLE STREET FOR 0.2 MI (0.3 KM) TO THE INTERSECTION OF LOOMIS HILL ROAD RIGHT. TURN RIGHT AND GO EAST AND NORTH ALONG LOOMIS HILL ROAD FOR 0.7 MI (1.1 KM) TO THE SITE OF THE MARK ON THE LEFT IN THE NORTHEAST CORNER OF A LARGE FIELD. THE MARK IS SET IN THE TOP OF A 0.5 M (1.6 FT) X 0.3 M (1.0 FT) ROCK OUTCROP WHICH PROJECTS ABOUT 0.1 M (0.3 FT) ABOVE GROUND SURFACE. IT IS 38.7 M (127.0 FT) WEST OF AND ABOUT 15 M (49.2 FT) LOWER THAN THE CENTERLINE OF LOOMIS HILL ROAD, 51.9 M (170.3 FT) NORTHWEST OF POLE NO 14/19/15, 45.4 M (148.9 FT) NORTH NORTHWEST OF THE WEST (OUTLET) END OF A 38 CM DIAMETER METAL CULVERT, AND 32.6 M (107.0 FT) WEST OF A FIBERGLASS WITNESS POST.

1/8" = 1' FEET

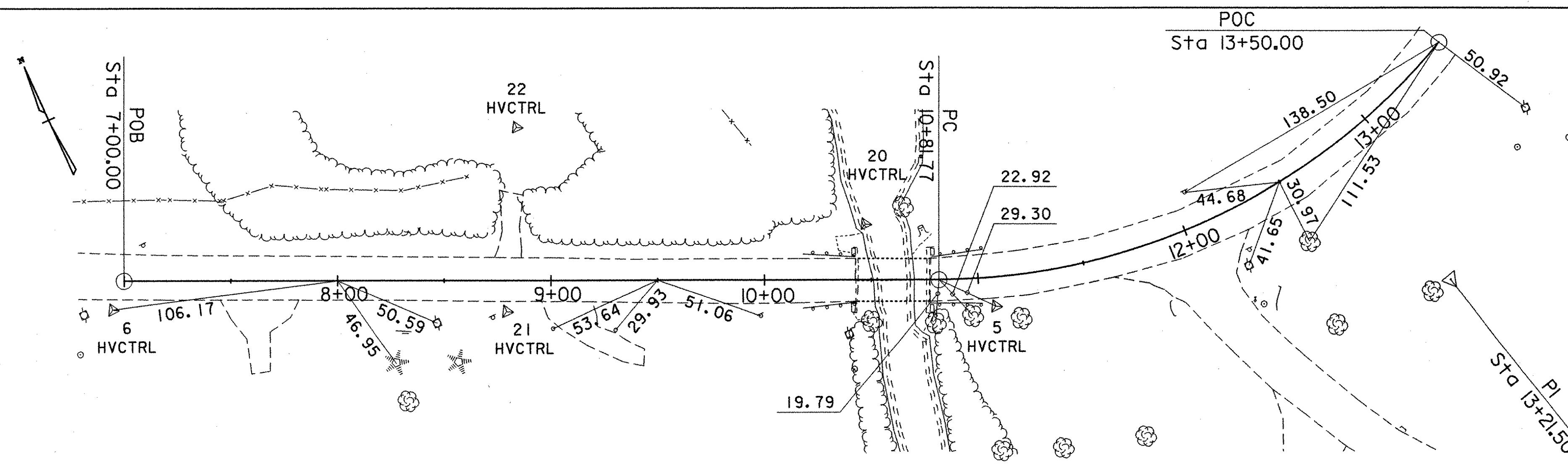
* TO ALLOW THE STATE PLANE COORDINATES TO FIT THE AGENCY DESIGN PLANE, SUBTRACT 600,000 FROM THE NORTHING AND SUBTRACT 1,500,000 FROM THE EASTING.
* DESCRIPTION PROVIDED BY VERMONT AGENCY OF TRANSPORTATION GEODETIC SURVEY UNIT

TRAVERSE TIES



* MAIN TRAVERSE COMPLETED November 28, 2000 by L. Orvis P.C. and J. Hulett

ALIGNMENT TIES



LAYOUT
SCALE 1" = 40'-0"
0 40

COORDINATE TABLE

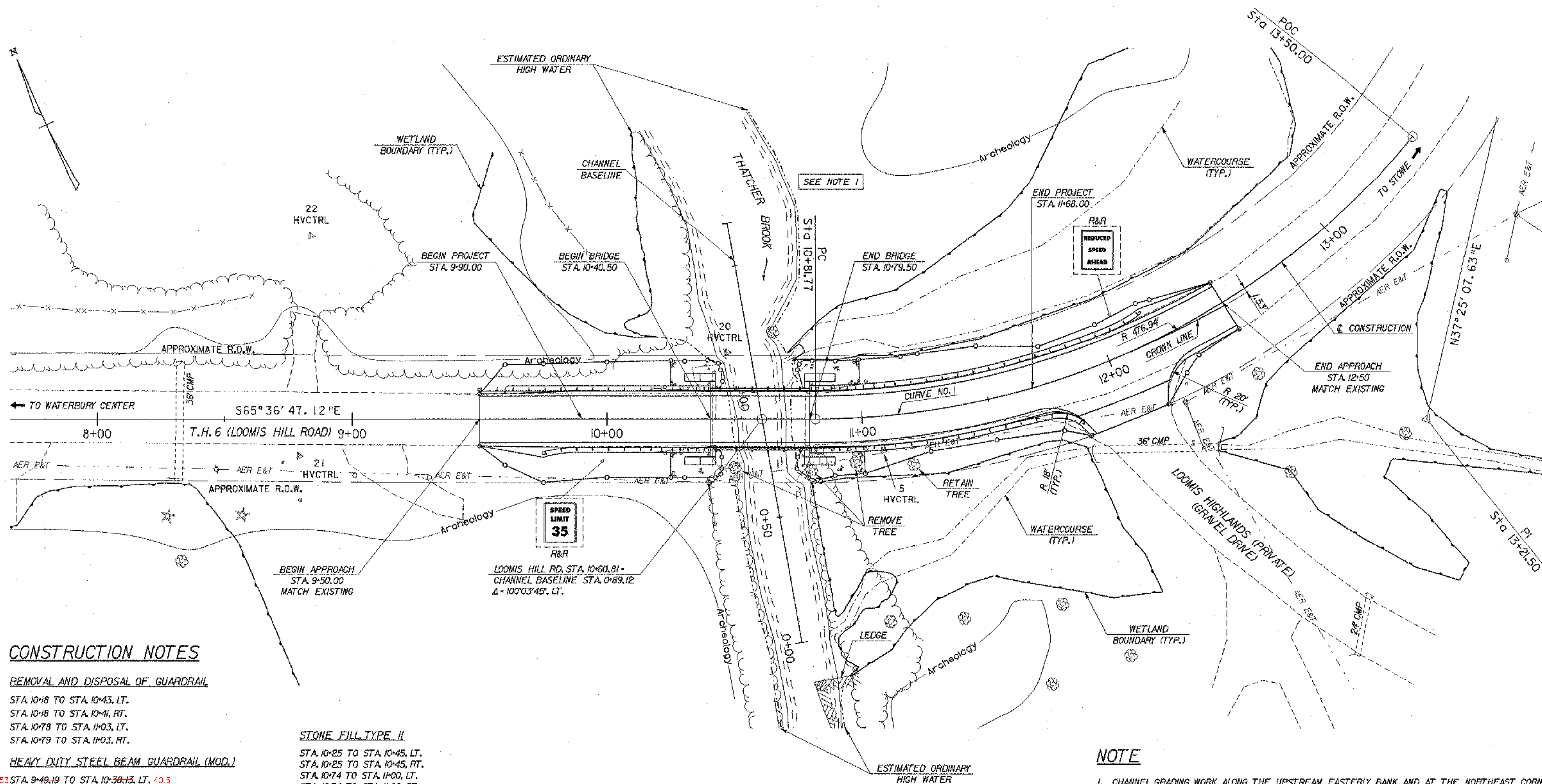
POINT	STATION	NORTHING	EASTING
POT	8+00.00	83830.7284	85679.4761
BEGIN APPROACH	9+50.00	83768.7940	85816.0928
PC	10+81.77	83714.3885	85936.1019
END APPROACH	12+50.00	83690.1161	86100.3798
POC	13+50.00	83719.3478	86195.5334

STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of	WATERBURY	Bridge No.	14
Highway No.	6	Log Sta.	
LOOMIS HILL ROAD OVER THATCHER BROOK			
TIE SHEET			
Designed By	VTRANS/LKW	Drawn By	P.DUSTIN
Checked By	R.JOY	Bridge Design Supervisor	M.ZYDEL
Date	03/03	Date	03/03
PROJECT	WATERBURY	PROJECT NO.	TH 3-9637
I.G.C. Info. m:\549108-Waterbury\BRIDGE\6cont\1\27811e.dgn			
Bridge Sheet No.		Sheet	4 of 18

McFarland-Johnson, Inc.

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (96)
ADJUSTMENT NONE



CONSTRUCTION NOTES

REMOVAL AND DISPOSAL OF GUARDRAIL

STA. 10+18 TO STA. 10+43, LT.
STA. 10+18 TO STA. 10+41, RT.
STA. 10+78 TO STA. 11+03, LT.
STA. 10+79 TO STA. 11+03, RT.

HEAVY DUTY STEEL BEAM GUARDRAIL (MOD.)

53 STA. 9+49.19 TO STA. 10+38.13, LT. 40.5
53 STA. 9+74.48 TO STA. 10+38.13, RT. 40.5
84 STA. 10+81.88 TO STA. 12+19.37, LT. 09
84 STA. 10+81.86 TO STA. 11+82.94, RT. 84

ANCHOR FOR STEEL BEAM RAIL

STA. 9+52.88, LT. 53
STA. 9+84.12, RT. 53
STA. 12+09.24, LT. 09
STA. 11+76.10, RT. 84

BRIDGE RAILING - HDSB/FASCIA MOUNTED/ HANDRAIL

40.5 STA. 10+38.13 TO STA. 10+81.88, LT. 84.5
40.5 STA. 10+38.13 TO STA. 10+81.86, RT. 84.5

GABION RETAINING WALL

STA. 10+30.50 TO STA. 10+42.50, LT.
STA. 10+30.50 TO STA. 10+42.50, RT.
STA. 10+77.50 TO STA. 10+89.50, LT.
STA. 10+77.50 TO STA. 10+89.50, RT.

STONE FILL TYPE II

STA. 10+25 TO STA. 10+45, LT.
STA. 10+25 TO STA. 10+45, RT.
STA. 10+74 TO STA. 11+00, LT.
STA. 10+74 TO STA. 11+00, RT.

GRUBBING MATERIAL

STA. 10+25 TO STA. 10+45, LT.
STA. 10+25 TO STA. 10+45, RT.
STA. 10+74 TO STA. 11+00, LT.
STA. 10+74 TO STA. 11+00, RT.

CONSTRUCT (PAVED APRON & GRAVEL DRIVE)

STA. 12+00.00, RT.

COLD PLANING BITUMINOUS PAVEMENT

STA. 9+50.00 TO STA. 9+70.00
STA. 12+30.00 TO STA. 12+50.00

4" YELLOW LINE

SOLID DOUBLE CENTERLINE
STA. 9+50.00 TO STA. 11+80.00
STA. 12+20.00 TO STA. 12+50.00 35

EXISTING STRUCTURE DATA

SINGLE-SPAN STEEL BEAM WITH CONCRETE DECK
OVERALL LENGTH = 39 FEET
CONCRETE GRAVITY WALL ABUTMENTS
BRIDGE WIDTH (CURB-TO-CURB) = 20.0 FEET
BUILT IN 1954

CURVE NO. 1 DATA

Δ = 76°58'05.25" LT.
D = 19°00'00"
R = 301.56'
T = 239.73'
L = 405.10'
E = 83.68'

NOTE

1. CHANNEL GRADING WORK ALONG THE UPSTREAM EASTERLY BANK AND AT THE NORTHEAST CORNER OF THE BRIDGE WAS PERFORMED IN 2002 AFTER PROJECT SURVEY.

SIGN LEGEND

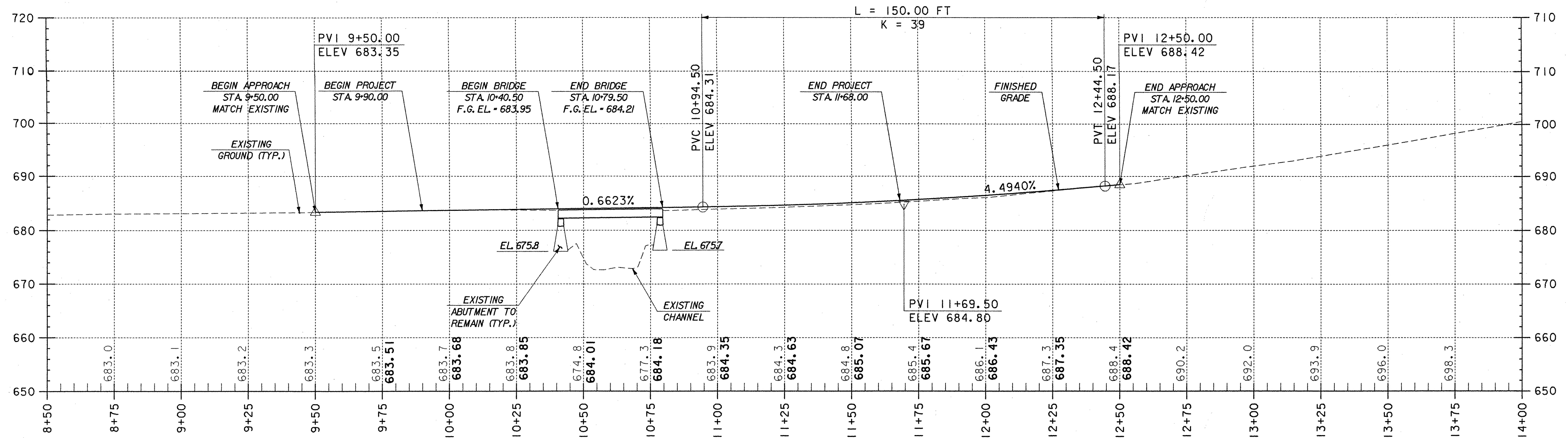
R&R REMOVE AND RESET
SALVAGED SIGN



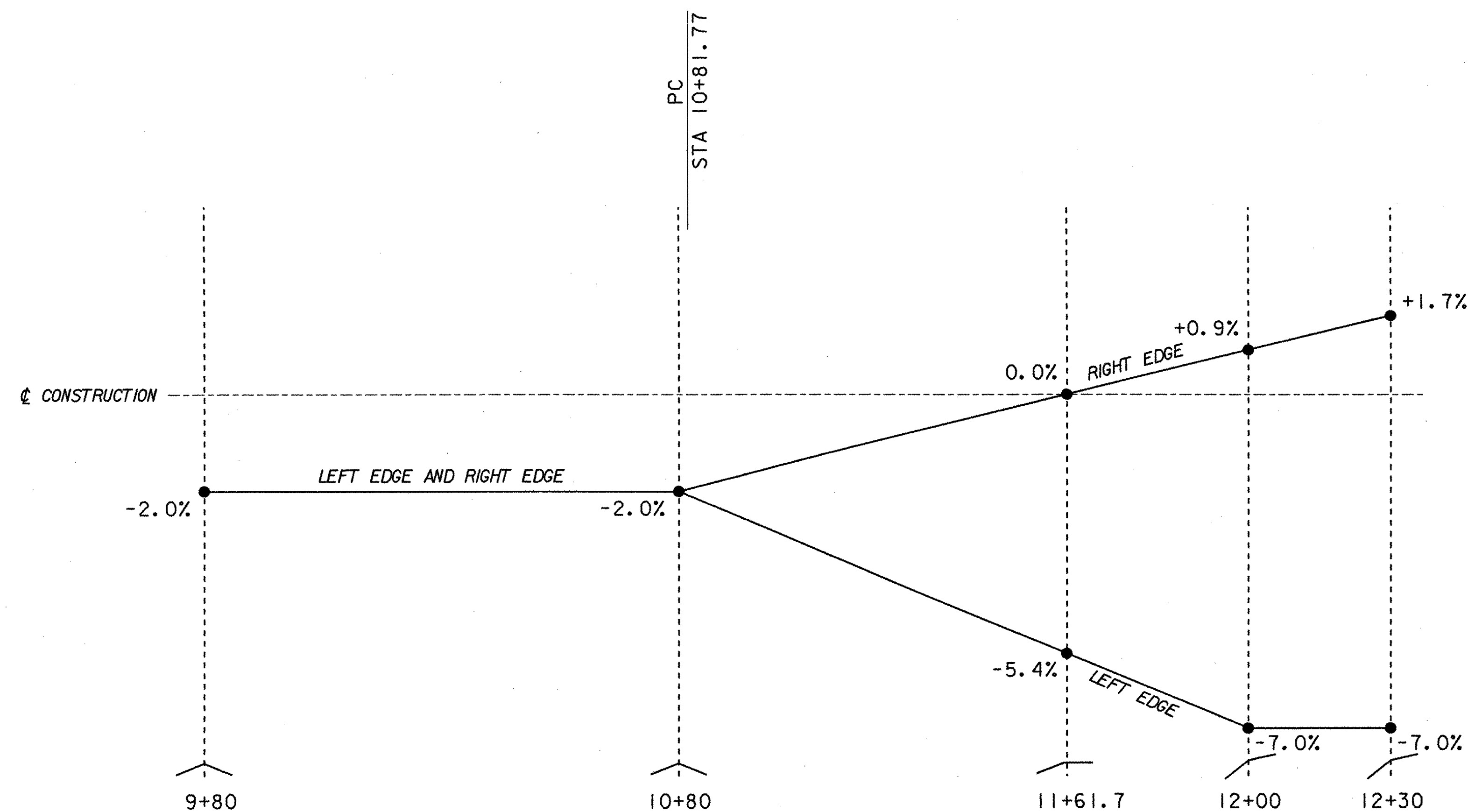
McFarland-Johnson, Inc.

STATE OF VERMONT AGENCY OF TRANSPORTATION

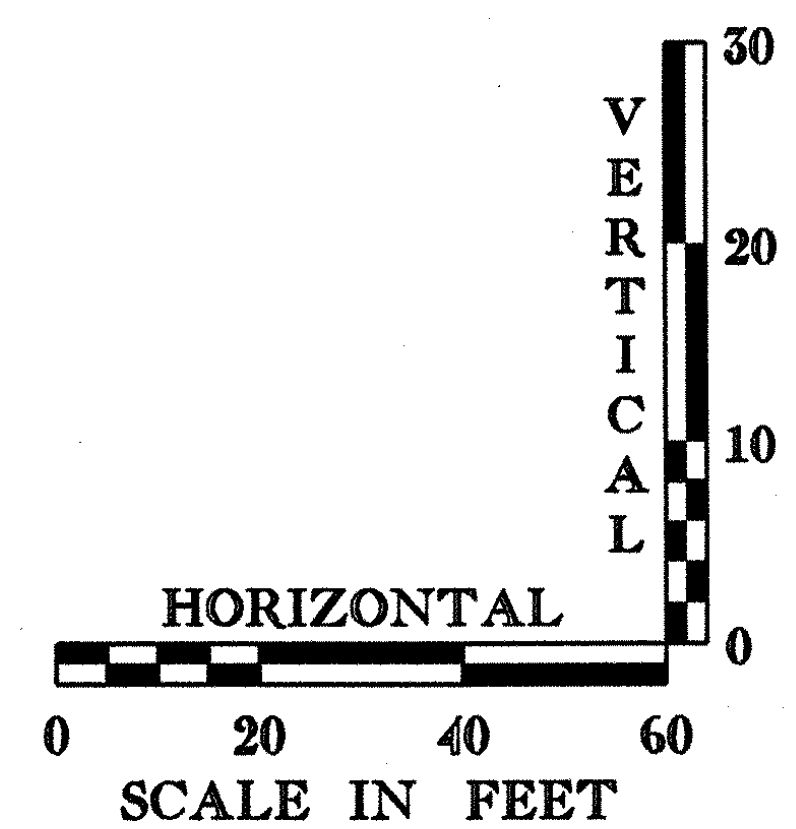
Town Of	WATERBURY	Bridge No.	14
Highway No.	6	Log Sta.	
		Surv. Sta.	
LOOMIS HILL ROAD OVER THATCHER BROOK			
PLAN SHEET			
Designed By	L. WIXSON	Drawn By	P. DUSTIN
Checked By	Date	Bridge Design Supervisor	
R. JOY	03/03	M. ZYDEL	Date 03/03
PROJECT	WATERBURY	PROJECT NO.	TH 3-9637
166.C. info.	m:\549108\Waterbury\BRIDGE\6con\1\J278p\ndgn		
Bridge Sheet No.		Sheet	5 of 18



PROFILE - LOOMIS HILL ROAD

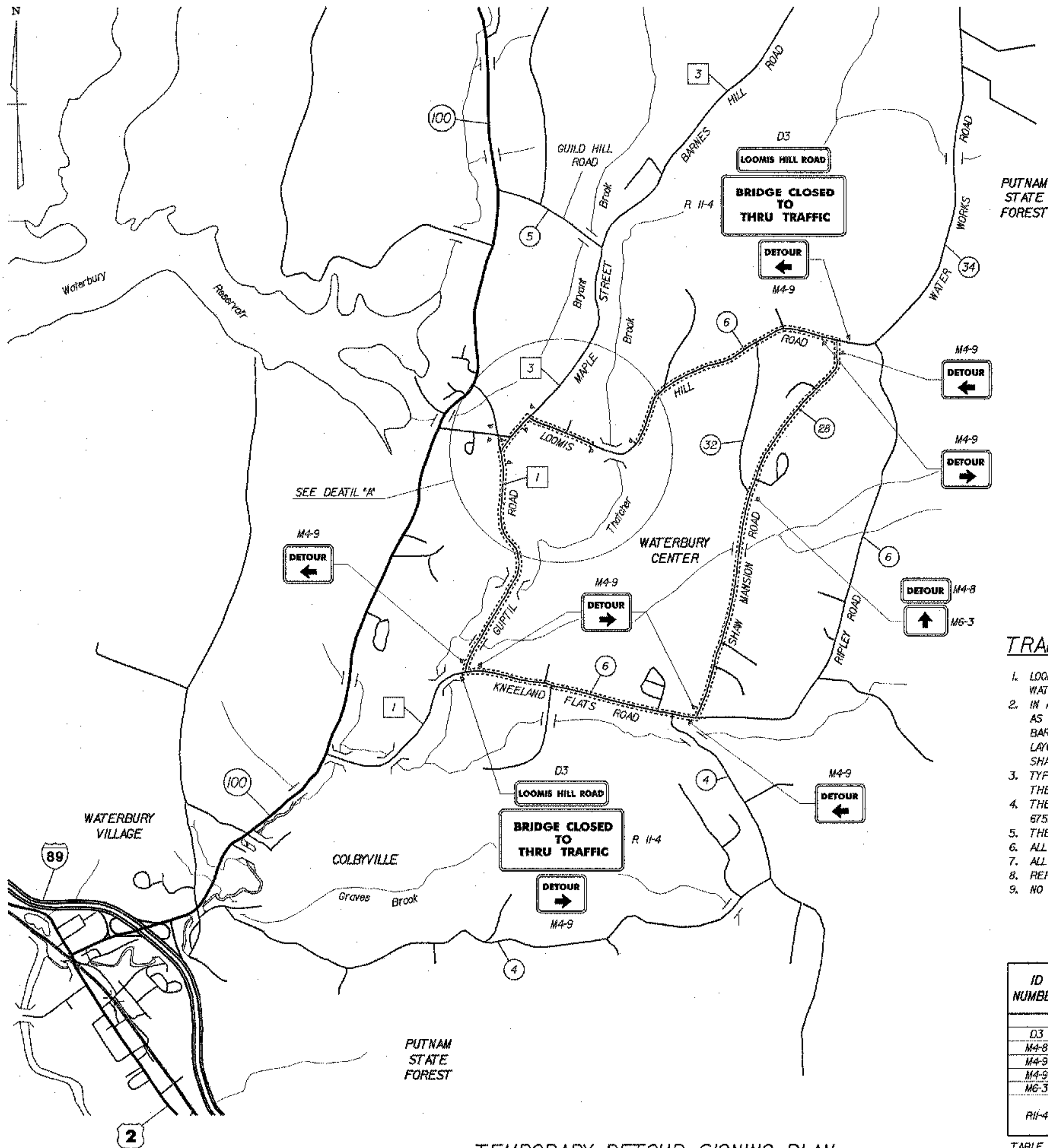


BANKING DIAGRAM



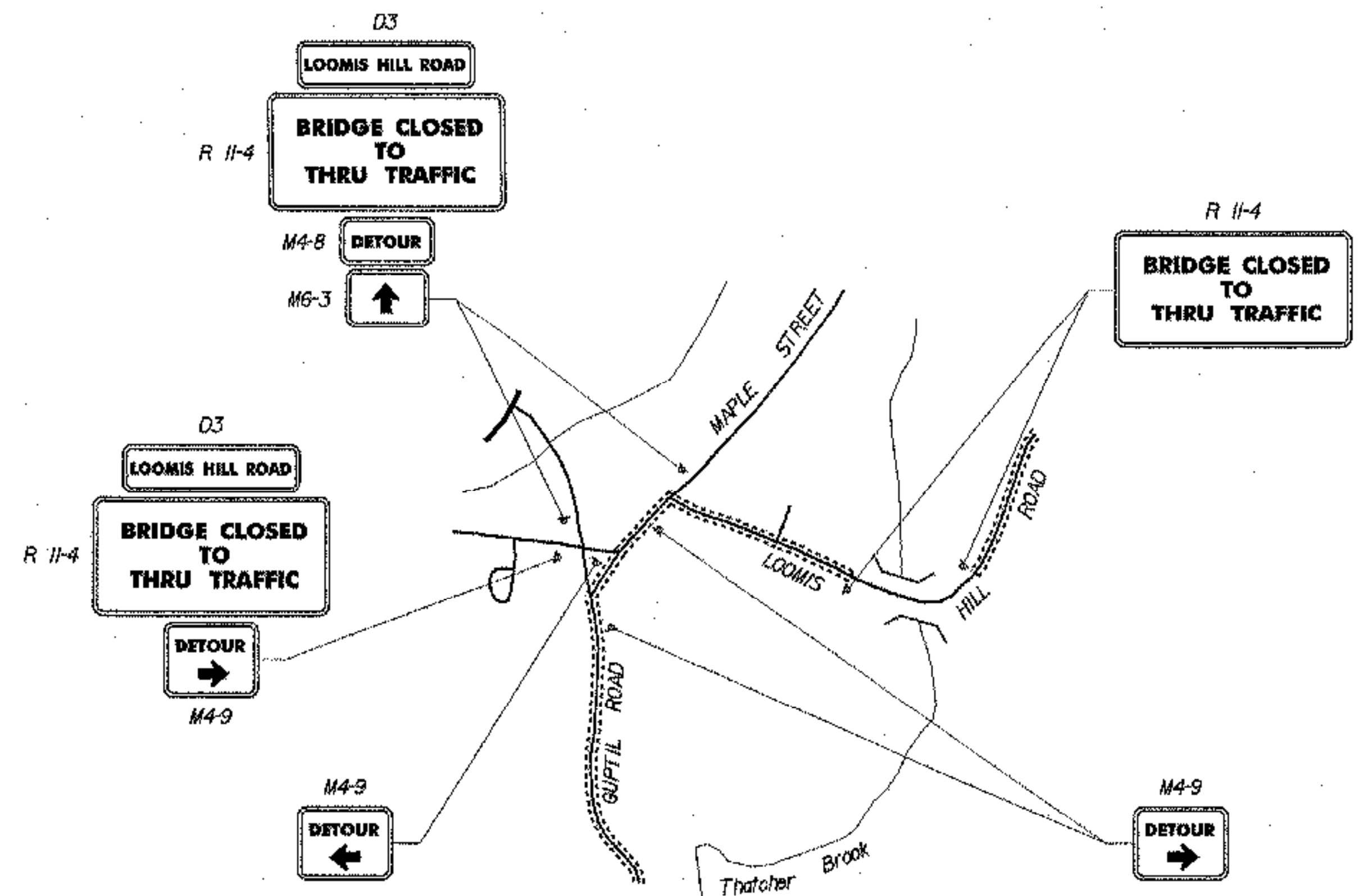
STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of WATERBURY		Bridge No. 14	
Highway No. 6		Log Sta.	
		Surv. Sta.	
LOOMIS HILL ROAD OVER THATCHER BROOK			
PROFILE AND BANKING DIAGRAM			
Designed By L.WIXSON		Drawn By P.DUSTIN	
Checked By R.JOY		Bridge Design Supervisor	
Date 03/03		Date 03/03	
PROJECT WATERBURY		PROJECT NO. TH 3-9637	
I.G.C. Info. ms\549108-Waterbury\BRIDGE\6cont\1\278prodgn			
Bridge Sheet No.		Sheet 6 of 18	





TEMPORARY DETOUR SIGNING PLAN

SCALE 1" = 1500'
1500 0 1500



DETAIL "A"
SCALE 1" = 1000'
1000 0 1000

TRAFFIC CONTROL NOTES

1. LOOMIS HILL ROAD (T.H.6) WILL BE CLOSED TO THROUGH TRAFFIC DURING CONSTRUCTION OF THE PROJECT. THE CONTRACTOR SHALL NOTIFY THE TOWN OF WATERBURY AT LEAST TWO (2) WEEKS PRIOR TO CLOSING THE ROAD.
2. IN ADDITION TO THE TEMPORARY DETOUR SIGNS DETAILED ON THIS SHEET, THE CONTRACTOR SHALL LAYOUT, ERECT AND MAINTAIN (AND REMOVE AND/OR RESET AS REQUIRED) ADDITIONAL ON-PROJECT TEMPORARY TRAFFIC CONTROL ZONE DEVICES, INCLUDING BUT NOT LIMITED TO, CONSTRUCTION SIGNS, SIGN SUPPORTS, BARRICADES, CONCRETE TRAFFIC BARRIERS AND OTHER DEVICES USED TO REGULATE, WARN AND GUIDE TRAFFIC DURING CONSTRUCTION. TRAFFIC CONTROL DEVICE LAYOUT SHALL CONSIDER THE REQUIREMENTS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND PERTINENT E-SERIES STANDARDS, AND SHALL BE SUBMITTED TO THE RESIDENT ENGINEER FOR APPROVAL.
3. TYPE III CONSTRUCTION BARRICADES AND PRECAST CONCRETE BARRIERS SHALL BE PLACED ON THE LOOMIS HILL ROAD APPROACHES TO LIMITS APPROVED BY THE RESIDENT ENGINEER TO PREVENT TRAFFIC FROM ENTERING THE BRIDGE WORK AREA.
4. THE COST OF ALL TEMPORARY DETOUR SIGNS AND ASSOCIATED SIGN POSTS DETAILED ON THIS SHEET SHALL BE INCLUDED IN ITEM 675.20 (MOD.) AND ITEM 675.30 (MOD.) RESPECTIVELY.
5. THE COST OF ALL ON-PROJECT TEMPORARY TRAFFIC CONTROL ZONE DEVICES (EXCEPT TEMPORARY TRAFFIC BARRIERS) SHALL BE INCLUDED IN ITEM 527.10.
6. ALL SIGNS SHALL BE FLUORESCENT ORANGE REFLECTIVE SHEETING, WITH BLACK LETTERING AND BLACK BORDERS UNLESS OTHERWISE NOTED.
7. ALL "BRIDGE CLOSED TO THRU TRAFFIC" (R 11-4) SIGNS SHALL BE WHITE REFLECTIVE SHEETING, WITH BLACK LETTERING AND BLACK BORDERS.
8. REFLECTIVE SHEETING SHALL CONFORM TO ASTM D4956, TYPE VII OR TYPE VIII.
9. NO CONSTRUCTION SIGNS SHALL BE INSTALLED SO AS TO INTERFERE WITH OR OBSTRUCT THE VIEW OF EXISTING TRAFFIC CONTROL DEVICES.

ID NUMBER	SIGN TEXT	SIZE OF SIGN		SIGN AREA (SQ. FT.)	NUMBER REQ'D	
		WIDTH	HEIGHT			
D3	LOOMIS HILL ROAD	30"	12"	2.5	5	12.5
M4-8	DETOUR	24"	12"	2.0	3	6.0
M4-9	DETOUR ←	30"	24"	5.0	5	25.0
M4-9	DETOUR →	30"	24"	5.0	7	35.0
M6-3	↑	21"	15"	2.19	3	6.57
R11-4	BRIDGE CLOSED TO THRU TRAFFIC	60"	30"	12.5	7	87.5

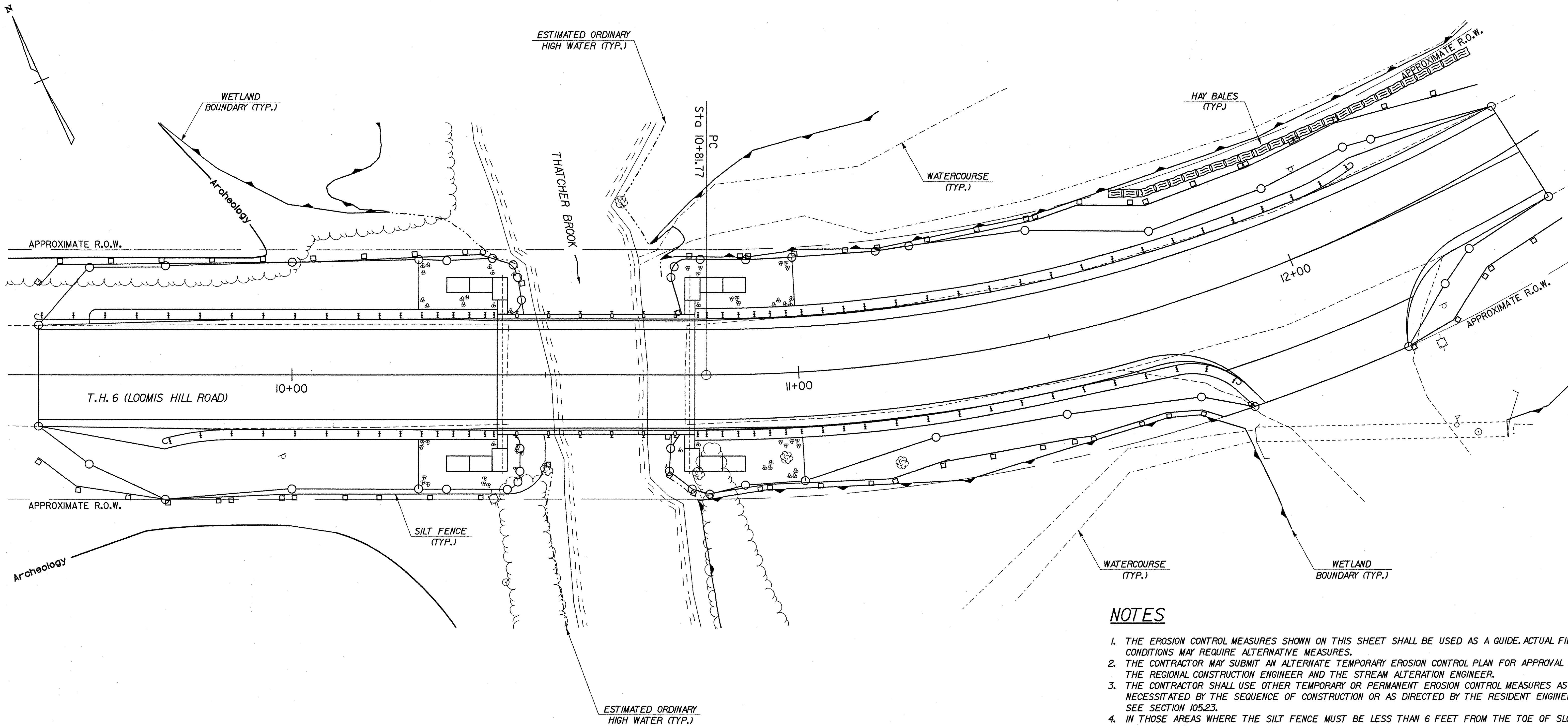
TABLE PROVIDED FOR ESTIMATING PURPOSES ONLY

172.57 SQ. FT.

STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of	WATERBURY	Bridge No.	14
Highway No.	6	Log Sta.	
		Surv. Sta.	
LOOMIS HILL ROAD OVER THATCHER BROOK			
TRAFFIC CONTROL SHEET			
Designed By	L. WILSON	Drawn By	P. DUSTIN
Checked By	Date	Bridge Design Supervisor	
R. JOY	03/03	M. ZYDEL	Date 03/03
PROJECT	WATERBURY	PROJECT NO.	TH 3-9637
I.G.C. Info. m\549108\Waterbury\BRIDGE\scantfx\j278top.dgn			
Bridge Sheet No.		Sheet	7 of 18





EROSION CONTROL LAYOUT

SCALE 1" = 10'-0"

10 0 10

NOTES

1. THE EROSION CONTROL MEASURES SHOWN ON THIS SHEET SHALL BE USED AS A GUIDE. ACTUAL FIELD CONDITIONS MAY REQUIRE ALTERNATIVE MEASURES.
2. THE CONTRACTOR MAY SUBMIT AN ALTERNATE TEMPORARY EROSION CONTROL PLAN FOR APPROVAL BY THE REGIONAL CONSTRUCTION ENGINEER AND THE STREAM ALTERATION ENGINEER.
3. THE CONTRACTOR SHALL USE OTHER TEMPORARY OR PERMANENT EROSION CONTROL MEASURES AS NECESSITATED BY THE SEQUENCE OF CONSTRUCTION OR AS DIRECTED BY THE RESIDENT ENGINEER. SEE SECTION 105.23.
4. IN THOSE AREAS WHERE THE SILT FENCE MUST BE LESS THAN 6 FEET FROM THE TOE OF SLOPES DUE TO THE RIGHT-OF-WAY LIMIT, THE CONTRACTOR MUST TAKE SPECIAL PRECAUTION TO HIGHLIGHT THE LOCATION OF THE SILT FENCE AND TO AVOID ANY DAMAGE TO IT.
5. ORANGE TEMPORARY FENCING SHALL BE PLACED TO DELINEATE ARCHEOLOGICALLY SENSITIVE AREAS WHERE SILT FENCE IS NOT NEEDED, AS DIRECTED BY THE RESIDENT ENGINEER. COST IS INCLUDED IN ITEM 620.70 (MOD.).

STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of	WATERBURY	Bridge No.	14
Highway No.	6	Log Sta.	
		Surv. Sta.	
LOOMIS HILL ROAD OVER THATCHER BROOK			
EROSION CONTROL SHEET			
Designed By	L. WIXSON	Drawn By	P. DUSTIN
Checked By	R. JOY	Bridge Design Supervisor	M. ZYDEL
Date	03/03	Date	03/03
PROJECT	WATERBURY	PROJECT NO.	TH 3-9637
I.G.C. Info. m\549108-Waterbury\BRIDGE\6cont\J278rodgn			
Bridge Sheet No.		Sheet 9 of 18	



McFarland-Johnson, Inc.

GENERAL NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2001, AND ITS LATEST REVISIONS AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 16TH EDITION, DATED 1996 AND ITS LATEST REVISIONS.
2. DIMENSIONS, ANGLES, BEARINGS AND ELEVATIONS OF THE EXISTING BRIDGE SHOWN ON THESE PLANS HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND LIMITED FIELD INVESTIGATION AND MAY NOT ACCURATELY REFLECT ACTUAL FIELD CONDITIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING FIELD MEASUREMENTS OF ALL EXISTING STRUCTURE COMPONENTS IMPACTED BY THE NEW WORK TO ASSURE CONSISTENCY WITH THE PROPOSED MODIFICATIONS. ANY DISCREPANCIES IN DIMENSIONS, CHARACTER OR EXTENT OF THE EXISTING FEATURES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE ADVANCING THE WORK.
3. ALL DIMENSIONS ARE HORIZONTAL AND VERTICAL AND ARE GIVEN AT 68 DEGREES FAHRENHEIT.
4. THE CONTRACTOR SHALL NOT BE PERMITTED TO USE ANY HEAVY EQUIPMENT OUTSIDE THE CONSTRUCTION LIMITS SHOWN ON THESE PLANS.
5. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A SUITABLE STAGING AREA.
6. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT SILTATION OR POLLUTION, ESPECIALLY THE DISCHARGE OF RAW CONCRETE INTO THE BROOK AS DIRECTED BY THE RESIDENT ENGINEER.
7. FOR TRAFFIC CONTROL NOTES, SEE SHEET 7. TRAFFIC SHALL BE MAINTAINED AT THE LOOMIS HIGHLANDS DRIVEWAY LOCATED AT STA. 12+00, RT.
8. THE PRESTRESSED CONCRETE FABRICATOR SHALL BE RESPONSIBLE FOR THE DESIGN OF THE VOIDED SLAB BEAMS. THE DESIGN SHALL BE IN ACCORDANCE WITH THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 16TH EDITION, DATED 1996, AND ITS LATEST REVISIONS, AND THE LATEST VDOT STRUCTURES MANUAL. DESIGN CALCULATIONS AND FABRICATION DRAWINGS SHALL BE SIGNED, STAMPED AND DATED BY A PROFESSIONAL ENGINEER, LICENSED IN THE STATE OF VERMONT. IN ADDITION TO DESIGNING THE BEAMS, THE FABRICATOR SHALL ALSO COMPLETE THE LOAD RATING TABLE ON SHEET 2. THE DESIGN SHALL COMPLY WITH THE FOLLOWING:
- A. HS 25-44 DESIGN LOAD
 - B. F'C (MIN.) = 6000 PSI
 - C. MAXIMUM CONCRETE RELEASE STRENGTH = 0.80 F'C
 - D. MAXIMUM POSITIVE CAMBER AT MIDSPAN = ONE INCH.
 - E. ZERO TENSION IN THE PRECOMPRESSED TENSION ZONE, UNDER FINAL SERVICE CONDITIONS.
- FABRICATION DRAWINGS SHALL BE SUBMITTED (6 WEEKS PRIOR TO FABRICATION OF THE BEAMS) TO THE STRUCTURES ENGINEER IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. THE STRUCTURES ENGINEER MUST APPROVE BEFORE FABRICATION COMMENCES.
9. PRESTRESSED CONCRETE MEMBERS SHALL CONFORM TO SECTION 510 OF THE STANDARD SPECIFICATIONS. THE UNIT PRICE FOR INTERIOR UNITS AND EXTERIOR UNITS SHALL INCLUDE ALL MATERIALS CAST INTO THE UNITS, AND ALL EQUIPMENT AND LABOR ASSOCIATED WITH THE DESIGN, DETAILING, FABRICATING, TESTING, HANDLING, TRANSPORTING, ERECTING AND FINISHING OF THE UNITS, INCLUDING POST-TENSIONING AND PROCEDURES DETAILED IN THE SEQUENCE OF CONSTRUCTION. ADDITIONAL COSTS ASSOCIATED WITH THE EXTERIOR UNITS INCLUDE ALL COSTS ASSOCIATED WITH CONSTRUCTING THE REINFORCED CONCRETE CURB AND ATTACHING THE BRIDGE RAILING TO THE BEAM. THE CONTRACTOR'S/FABRICATOR'S METHOD OF CONSTRUCTING THE CURB, WHETHER IT INVOLVES PRECASTING OR CAST-IN-PLACE METHODS, SHALL BE APPROVED BY THE RESIDENT ENGINEER PRIOR TO FABRICATION OF THE PRESTRESSED CONCRETE MEMBERS.
10. THE EXISTING STONE RIP-RAP IN FRONT OF THE ABUTMENTS SHOULD BE DISTURBED AS LITTLE AS POSSIBLE. ANY STONE THAT IS DISTURBED DURING CONSTRUCTION SHOULD BE REPLACED OR RESTORED TO ITS PRESENT CONDITION TO THE SATISFACTION OF THE RESIDENT ENGINEER.
11. IN SOME AREAS, THE NEW 1:2 SLOPES ARE VERY CLOSE TO THE EXISTING RIGHT-OF-WAY LINE. IN THESE AREAS, THE RESIDENT ENGINEER SHALL CONSULT WITH THE STRUCTURES DIVISION AND MAY DIRECT THE CONTRACTOR TO CONSTRUCT THE SLOPES AT 1:1.5 WITH A 2-FOOT THICK FACING OF STONE FILL, TYPE II, FOR STABILITY. AN ESTIMATED QUANTITY OF 25 CY OF ITEM 613.11 HAS BEEN INCLUDED FOR THIS WORK.

REMOVAL NOTES

1. REMOVAL OF PORTIONS OF THE EXISTING STRUCTURE SHALL BE IN ACCORDANCE WITH SECTION 529.
2. REMOVAL OF THE THE EXISTING BRIDGE PAVEMENT SHALL BE PAID AS ITEM 529.10.
3. ITEM 529.20, PARTIAL REMOVAL OF STRUCTURE, SHALL INCLUDE:
- A. REMOVAL OF EXISTING BRIDGE RAILING, CONCRETE CURB, CONCRETE BRIDGE DECK AND CURTAIN WALLS.
 - B. REMOVAL OF EXISTING STEEL BEAMS AND DIAPHRAGMS.
 - C. REMOVAL OF ALL BEARING DEVICES.

REMOVAL NOTES (CONTINUED)

- D. REMOVAL OF PORTIONS OF THE EXISTING ABUTMENTS AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER.
- E. ERECTION, MAINTENANCE AND REMOVAL OF TEMPORARY STRUCTURES TO PREVENT DEBRIS FROM FALLING INTO THE THATCHER BROOK.
4. THE CONTRACTOR'S METHODS FOR PARTIAL REMOVAL OF THE EXISTING STRUCTURES SHALL BE APPROVED BY THE ENGINEER PRIOR TO ANY REMOVAL WORK.
5. LIMITS OF REMOVAL SHOWN ARE APPROXIMATE. THE ENGINEER SHALL ESTABLISH ACTUAL LIMITS OF REMOVAL AFTER A COOPERATIVE INSPECTION BY THE CONTRACTOR AND THE ENGINEER. EXISTING ELEVATIONS SHALL BE FIELD VERIFIED TO ENSURE THE REMOVAL LIMITS ARE ADEQUATE TO OBTAIN THE REQUIRED DIMENSIONS AND ELEVATIONS OF THE NEW CONSTRUCTION.
6. EXISTING REINFORCING STEEL EXPOSED DURING REMOVAL OPERATIONS, WITHIN THE LIMITS OF THE NEW MASONRY, SHALL BE RETAINED AND INCORPORATED INTO THE NEW MASONRY. EXISTING REINFORCING STEEL TO BE RETAINED SHALL BE CLEANED OF ALL CONCRETE, DIRT, DETRIMENTAL SCALE, PAINT, OIL AND OTHER FOREIGN SUBSTANCES. ALL COSTS SHALL BE INCLUDED IN ITEM 529.20.
7. SAW CUTS SHALL BE 1" DEEP ALONG ALL EXPOSED REMOVAL LINES WHERE NEW CONCRETE IS PLACED AGAINST EXISTING CONCRETE. ALL COSTS SHALL BE INCLUDED IN ITEM 529.20.
8. EXISTING REINFORCING STEEL THAT WILL NOT BE INCORPORATED INTO THE NEW MASONRY SHALL BE REMOVED A MINIMUM OF 1' BELOW THE MASONRY SURFACE. CAVITIES PRODUCED BY REINFORCING STEEL REMOVAL SHALL BE CLEANED, SATURATED WITH WATER AND POINTED AND TRUED WITH MORTAR PER SECTION 501. ALL COSTS SHALL BE INCLUDED IN ITEM 529.20.
9. THE EXISTING STRUCTURAL STEEL ON THIS PROJECT WAS PAINTED WITH A MATERIAL WHICH MAY CONTAIN LEAD. THE REMOVED STRUCTURAL STEEL IS THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE STATE, ITS OFFICERS AND THE EMPLOYEES HARMLESS CONCERNING THE CONTRACTOR'S USE OR DISPOSITION OF THE STRUCTURAL STEEL.

SEQUENCE OF CONSTRUCTION FOR PRESTRESSED VOIDED SLABS

THE FOLLOWING CONSTRUCTION SEQUENCE SHALL BE USED FOR INSTALLING THE PRESTRESSED VOIDED SLAB UNITS. IF THE CONTRACTOR WISHES TO ALTER THIS PROCESS, IT MUST BE APPROVED BY THE VTRANS STRUCTURES ENGINEER.

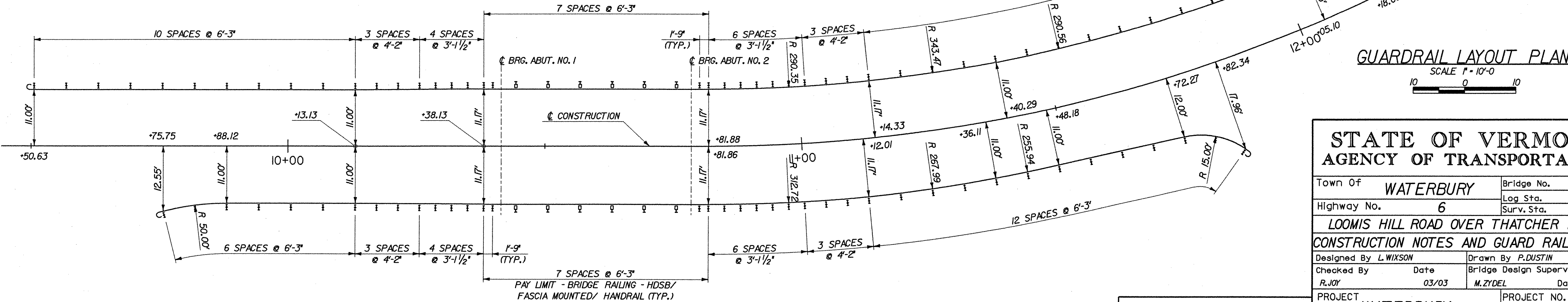
- A. LAYOUT WORKING LINES
- * LAYOUT WORKING LINES FOR THE BRIDGE'S ENTIRE WIDTH ON THE BEAM SEAT.
 - * MEASURE ALL WORKING LINES FROM A COMMON WORKING POINT.
 - * THE WORKING LINES ARE TO BE BASED ON THE NOMINAL BEAM WIDTHS.
- B. VERIFY BEAM SEAT ELEVATIONS
- * TAKE ELEVATIONS AT BEAM SEATS.
 - * IF SEATS ARE HIGH, GRIND TO CORRECT ELEVATIONS.
 - * INSTALL BEARINGS.
- C. ERECT BEAMS
- * BEAMS SHALL BE PLACED TO FIT WITHIN THE WORKING LINES.
 - * AS WORK PROGRESSES, INSTALL HARDWOOD WEDGES BETWEEN ADJACENT BEAMS TO MAINTAIN PROPER JOINT OPENING (A MINIMUM OF ONE WEDGE AT EACH LATERAL TIE).
- D. INSTALL OAKUM OR EQUIVALENT JOINT FILLER (BACKER ROD)
- * FILLER SHALL BE PLACED BELOW THE KEY'S BOTTOM AS SHOWN ON THE PLANS.
- E. GROUT DOWEL ENDS AT THE FIXED END AT BRIDGE SEATS AND PLACE COLD POURED JOINT SEALERS AT EXPANSION END.
- F. INSTALL TRANSVERSE TIES
- * A SEAMLESS POLYPROPYLENE SHEATH SHALL COVER TIES (WITH CORROSION INHIBITOR GREASE BETWEEN SHEATH AND STRAND).
 - * FEED TIES THROUGH DUCTS.
 - * VERIFY THAT HARDWOOD WEDGES ARE IN PLACE AS REQUIRED TO PREVENT SLIPPAGE OF BEAMS.
 - * USING CALIBRATED JACK OPERATED BY QUALIFIED PERSONNEL, POST-TENSION TIES TO APPROXIMATELY 5,000 LBS. TO REMOVE SAG IN THE TIE AND TO SEAT THE CHUCK.

SEQUENCE OF CONSTRUCTION FOR PRESTRESSED VOIDED SLABS (CONTINUED)

- G. GROUT SHEAR KEYS
- * CLEAN JOINT WITH AN OIL FREE AIR-BLAST IMMEDIATELY BEFORE GROUT PLACEMENT. THEN VERIFY THAT THE BACKER ROD IS STILL IN PLACE.
 - * ADDITIONAL JOINT PREPARATION AND GROUT PLACEMENT SHALL BE PER MANUFACTURER'S RECOMMENDATIONS.
 - * CAREFULLY ROD THE JOINTS TO ELIMINATE ANY POSSIBILITY OF VOIDS.
- H. POST-TENSION TRANSVERSE TIES
- * GROUT SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI, BASED ON THE MANUFACTURER'S RECOMMENDATIONS, PRIOR TO STRESSING.
 - * USING A CALIBRATED JACK OPERATED BY QUALIFIED PERSONNEL, POST-TENSION TIES TO 30,000 LBS.
- I. FINISH WORK
- * REMOVE WEDGES, AND PATCH DECK AND FASCIA BEAMS AT TRANSVERSE TIES.
 - * PLACE AN OVERLAY.
 - * PLACE PAVEMENT.

CONCRETE AND REINFORCING STEEL NOTES

1. ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI).
2. REINFORCING PLACEMENT TOLERANCES SHALL BE:
- SPACING: +/- ONE-INCH
 - CLEARANCE: +/- ONE-QUARTER INCH
3. MINIMUM CLEAR COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS:
- ALONG BACK FACES OF WALLS AGAINST EARTH: 2 INCHES
 - ELSEWHERE, UNLESS OTHERWISE NOTED: 3 INCHES
4. ALL CONCRETE SHALL BE CONCRETE, CLASS B (HPC-B), UNLESS NOTED OTHERWISE.
5. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" X 1", OR AS OTHERWISE INDICATED ON THE PLANS.
6. WATER REPELLENT SHALL BE APPLIED TO ALL EXPOSED CONCRETE SUPERSTRUCTURE SURFACES EXCEPT THE UNDERSIDE OF THE VOIDED SLABS BETWEEN DRIP NOTCHES. WATER REPELLENT SHALL ALSO BE APPLIED TO THE EXPOSED SUBSTRUCTURE CONCRETE, NEW AND EXISTING.
7. JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
8. THE KEY IN CONSTRUCTION JOINTS SHALL BE MONOLITHIC AND CONTINUOUS FOR THE FULL LENGTH OF THE JOINT.
9. SURFACES OF BRIDGE SEATS UNDER BEARING DEVICES SHALL BE LEVEL.
10. THE REPAIR AREAS INDICATED ON THE PLANS ARE SCHEMATIC ONLY AND ARE NOT INTENDED TO SHOW THE ACTUAL LIMITS OF NEEDED REPAIR. A THOROUGH INSPECTION BY THE ENGINEER SHALL BE MADE OF ALL SUBSTRUCTURE AREAS AT THE TIME OF THE CONSTRUCTION. AREAS OF CONCRETE FOUND TO HAVE SPALLED, DELAMINATED OR TO BE OTHERWISE UNSOUND SHALL BE REPAIRED. ABUTMENT CONCRETE REPAIRS SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 580. SEE CONCRETE SUBSTRUCTURE REPAIR DETAIL ON SHEET 14.



GUARDRAIL LAYOUT PLAN

SCALE 1" = 10'-0"

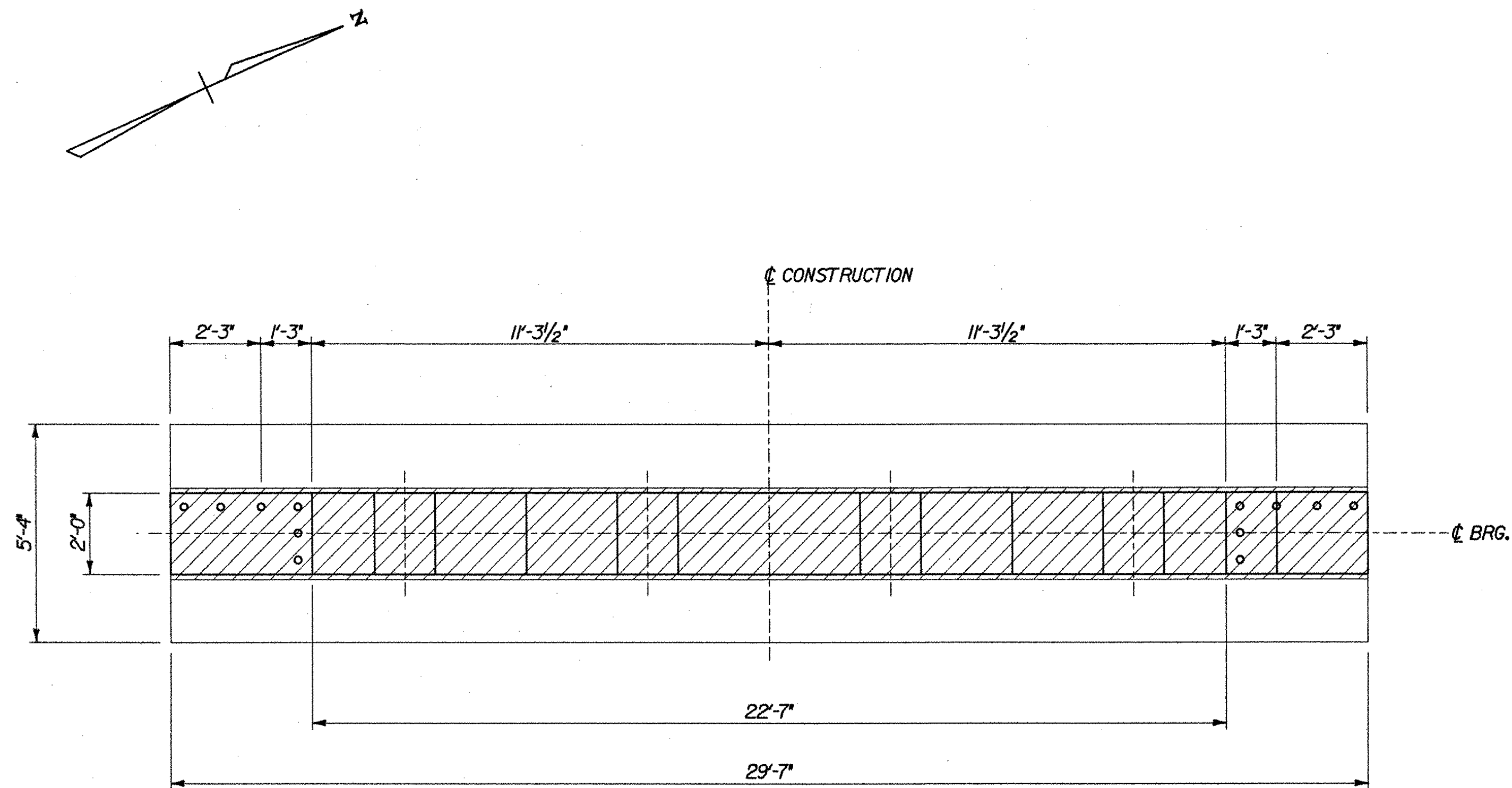
STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of	WATERBURY	Bridge No.	14
Highway No.	6	Log Sta.	
		Surv. Sta.	
LOOMIS HILL ROAD OVER THATCHER BROOK			
CONSTRUCTION NOTES AND GUARD RAIL LAYOUT			
Designed By	L. WIXSON	Drawn By	P. DUSTIN
Checked By	R. JOY	Date	03/03
		Bridge Design Supervisor	M. ZYDEL
		Date	03/03
PROJECT	WATERBURY	PROJECT NO.	TH 3-9637
I.G.C. Info. m:\549108-Waterbury\BRIDGE\6cont\1\278rnted.dgn			
Bridge Sheet No.		Sheet	10 of 18

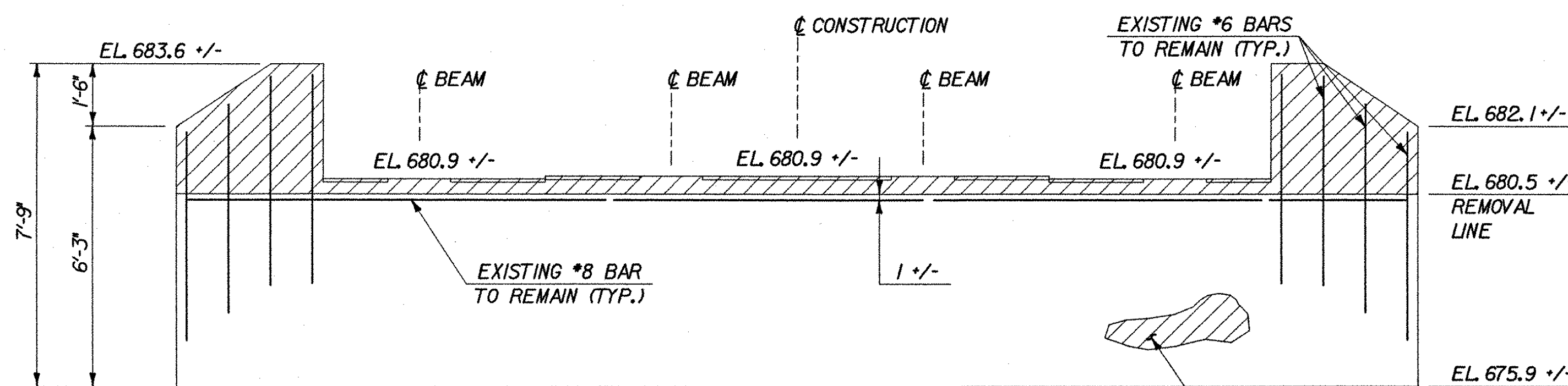


McFarland-Johnson, Inc.





PLAN



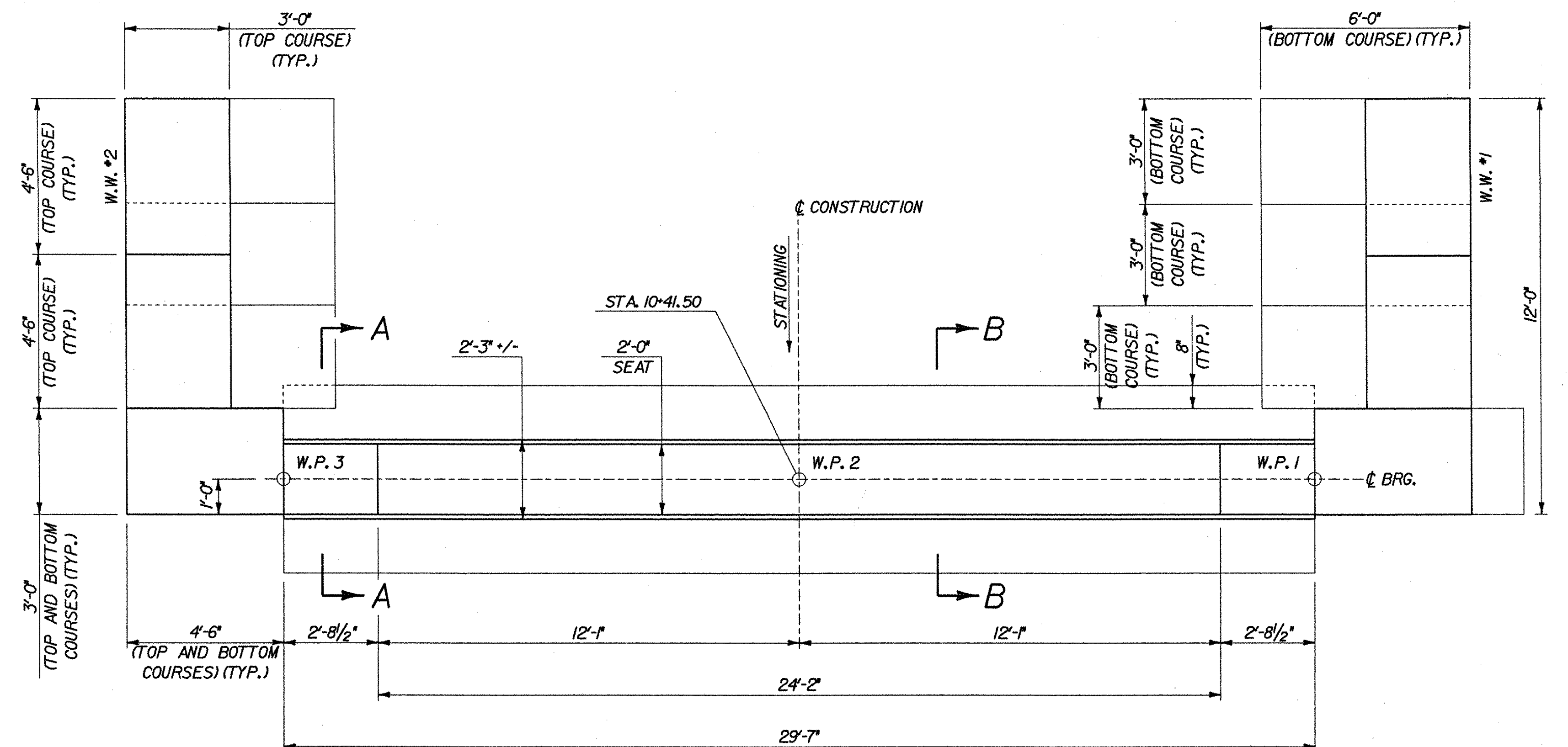
ELEVATION

ABUTMENT REMOVAL
SCALE: 3/8" = 1'-0"

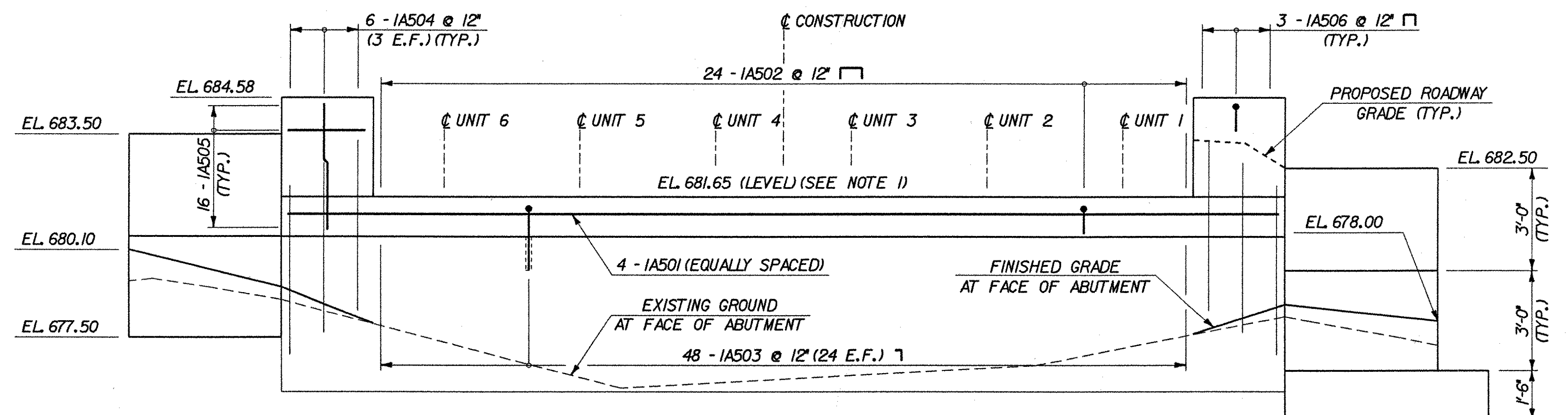
WORKING POINTS		
LOCATION	NORTHING	EASTING
W.P. 1	83744.4859	85905.5364
W.P. 2	83731.0139	85899.4290
W.P. 3	83717.5420	85893.3216

NOTES

1. BEAM SEAT ELEVATION HAS BEEN ADJUSTED FOR 1" MAXIMUM CAMBER AT MIDSPAN. FINAL BEAM SEAT ELEVATION TO BE CONFIRMED.
2. FOR SECTIONS A-A AND B-B, SEE SHEET 14.
3. E.F. DESIGNATES EACH FACE.
4. ONE-INCH THICK PREFORMED JOINT FILLER SHALL BE PLACED BETWEEN VOIDED SLABS AND CONCRETE WINGWALLS. COST SHALL BE SUBSIDIARY TO ITEM 501.34.



PLAN

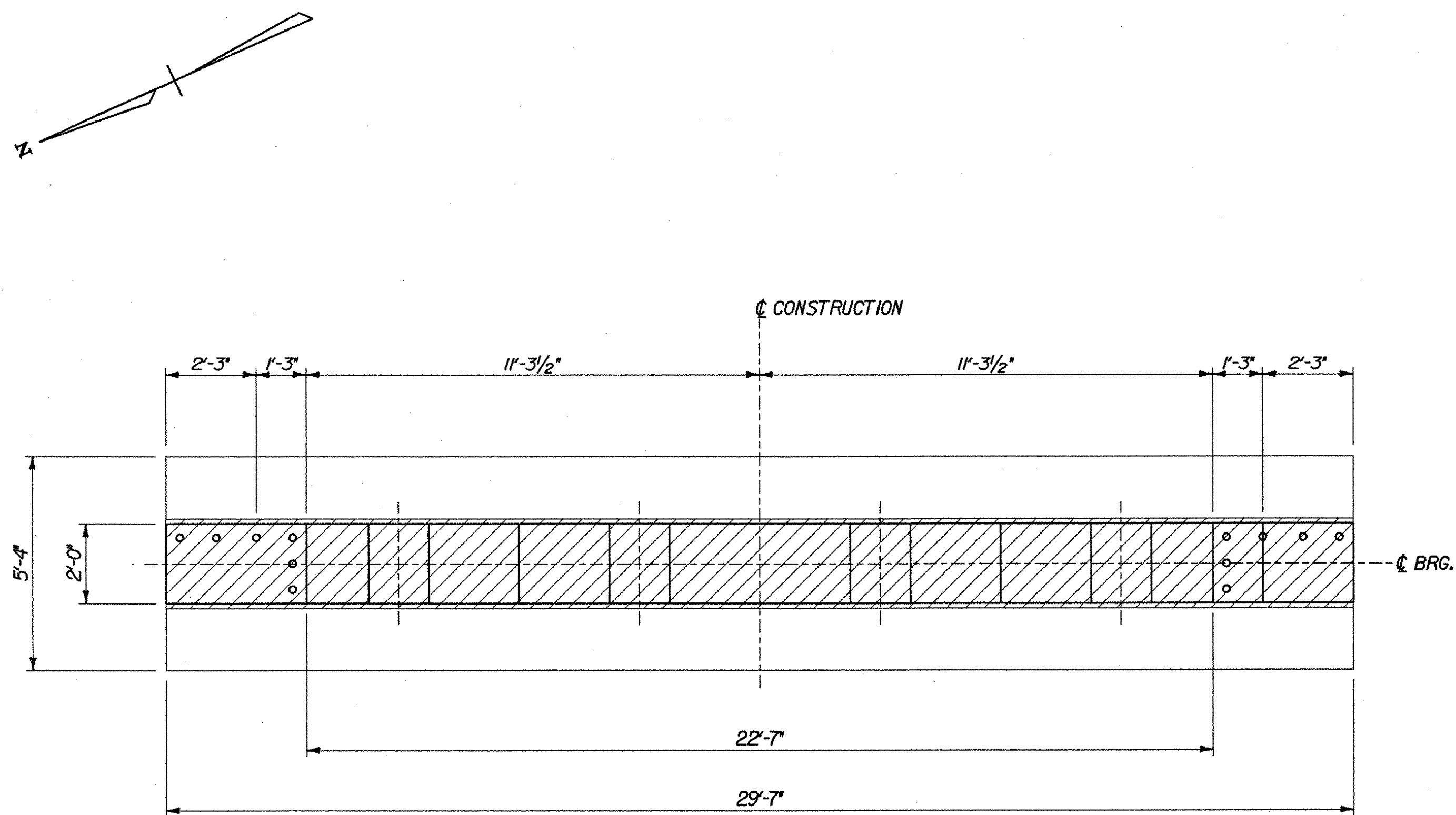


ELEVATION

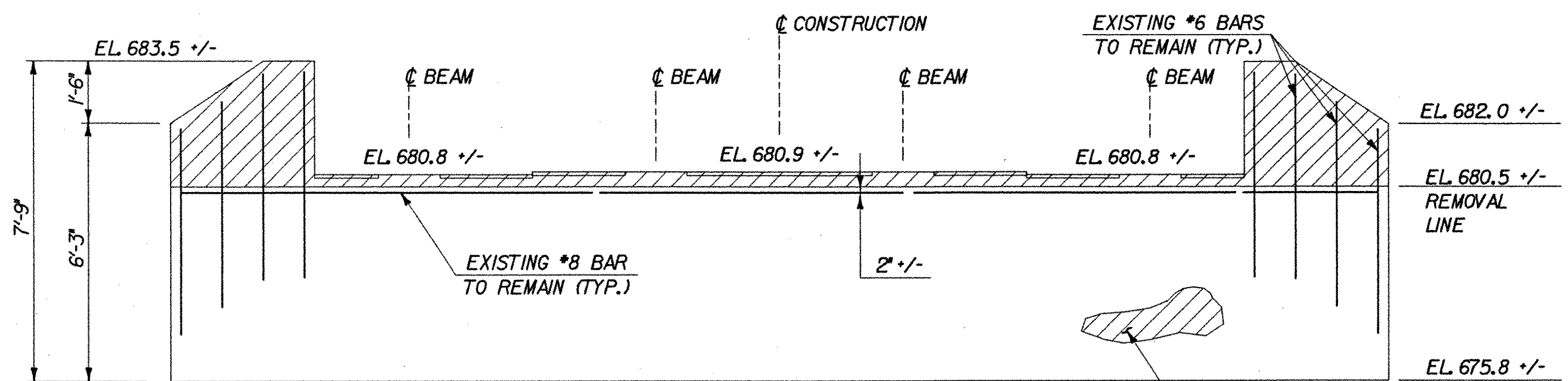
ABUTMENT MODIFICATIONS
SCALE: 3/8" = 1'-0"

STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of WATERBURY		Bridge No. 14	
Highway No. 6		Log Sta.	
		Surv. Sta.	
LOOMIS HILL ROAD OVER THATCHER BROOK ABUTMENT NO. 1			
Designed By L. WIXSON		Drawn By P. DUSTIN	
Checked By R. JOY	Date 03/03	Bridge Design Supervisor M. ZYDEL	Date 03/03
PROJECT WATERBURY		PROJECT NO. TH 3-9637	
I.G.C. Info. mn\549108-Waterbury\BRIDGE\6cont\1\278ad1.dgn			
Bridge Sheet No.		Sheet 12 of 18	





PLAN



ELEVATION

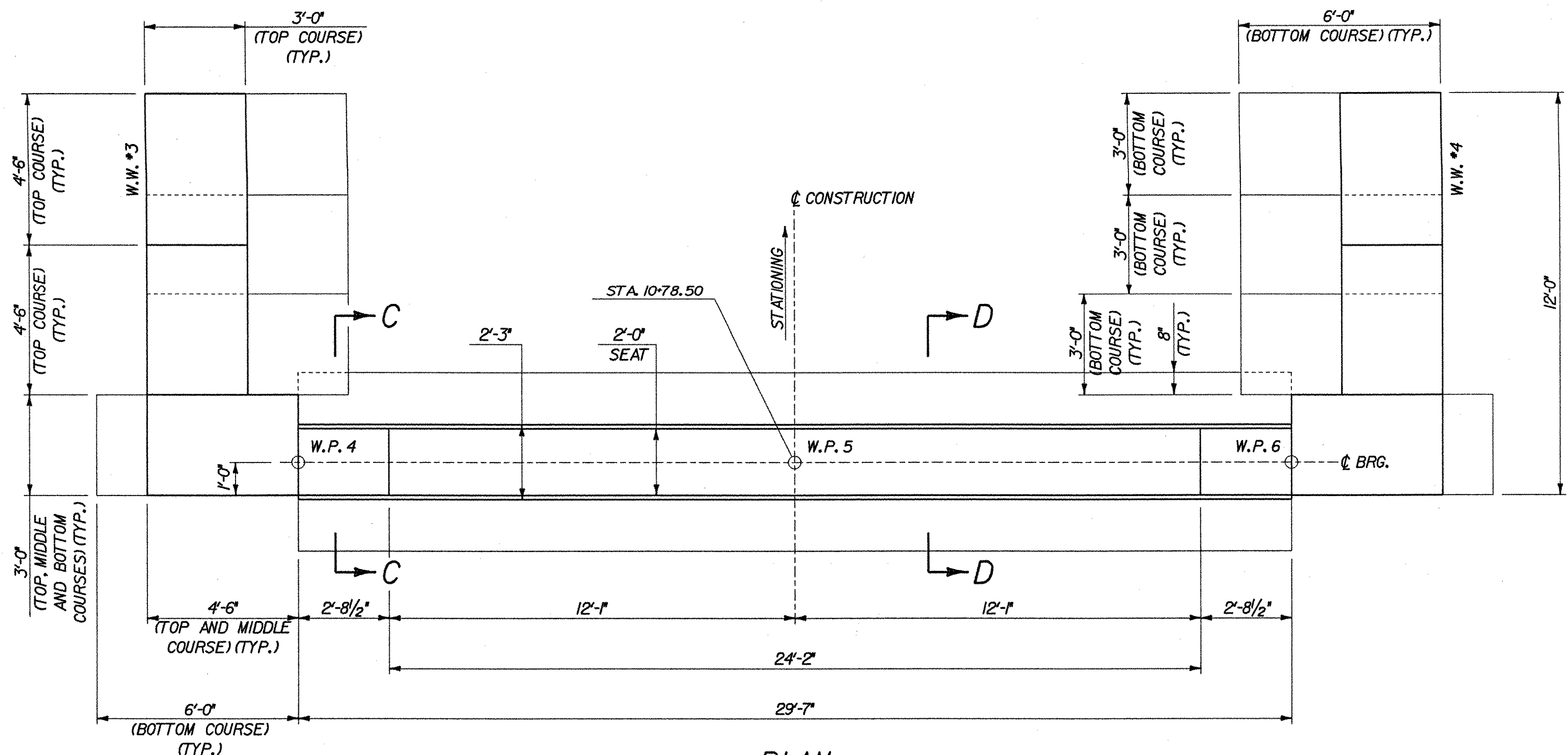
ABUTMENT REMOVAL

SCALE: 3/8" = 1'-0"

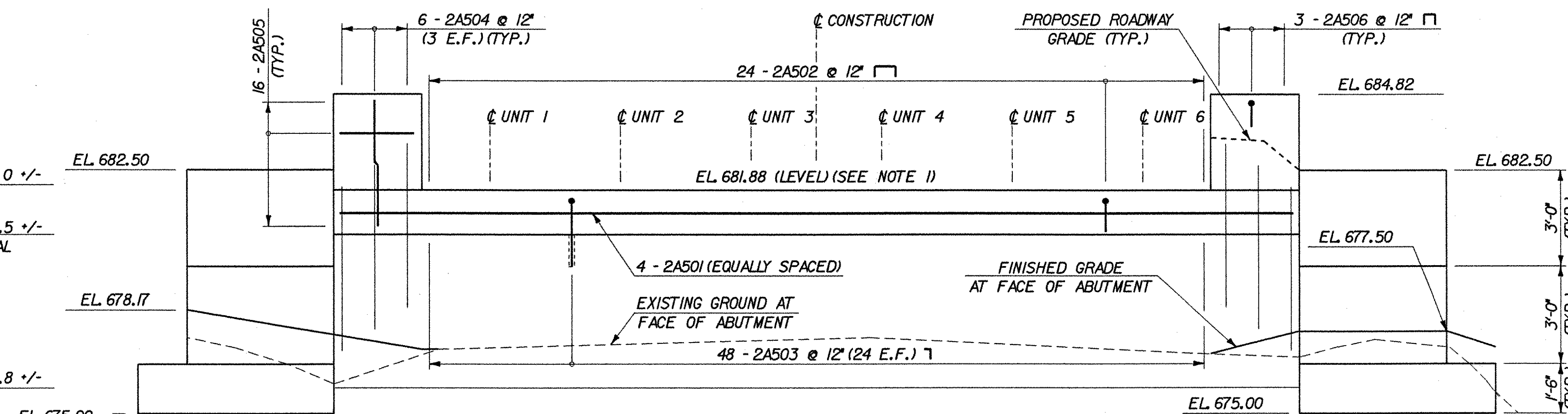
REPAIR EXISTING CONCRETE ABUTMENT
(SEE CONSTRUCTION NOTES, SHEET 10)
(SEE SUBSTRUCTURE REPAIR DETAIL, SHEET 14)

NOTES

1. BEAM SEAT ELEVATION HAS BEEN ADJUSTED FOR MAXIMUM CAMBER AT MIDSPAN. FINAL BEAM SEAT ELEVATION TO BE CONFIRMED.
2. FOR SECTIONS C-C AND D-D, SEE SHEET 14.
3. E.F. DESIGNATES EACH FACE.
4. ONE-INCH THICK PREFORMED JOINT FILLER SHALL BE PLACED BETWEEN VOIDED SLABS AND CONCRETE WINGWALLS. COST SHALL BE SUBSIDIARY TO ITEM 501.34.



PLAN



ELEVATION

ABUTMENT MODIFICATIONS

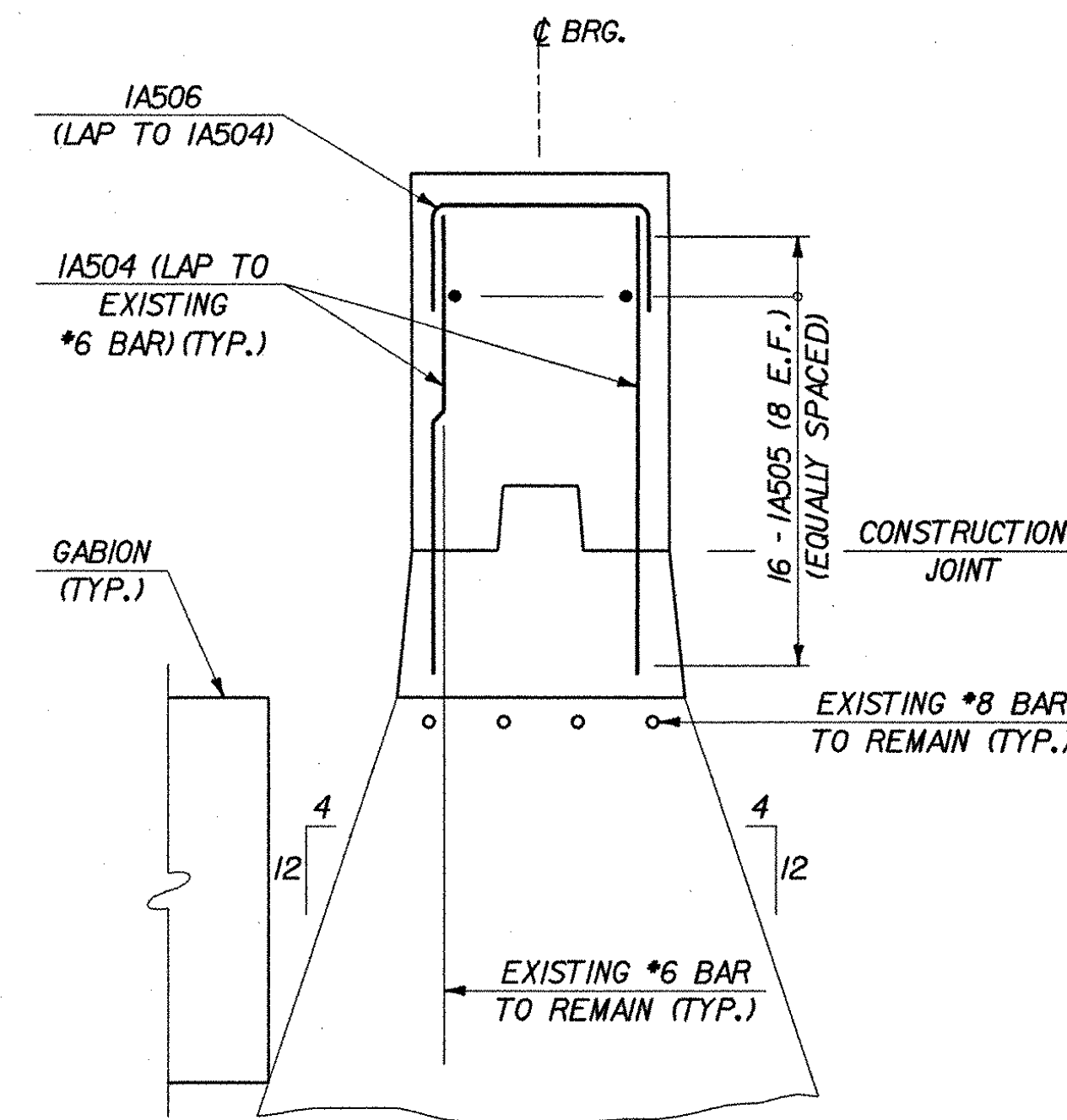
SCALE: 3/8" = 1'-0"

WORKING POINTS		
LOCATION	NORTHING	EASTING
W.P. 4	83729.2087	85939.2352
W.P. 5	83715.7368	85933.1278
W.P. 6	83702.2649	85927.0204

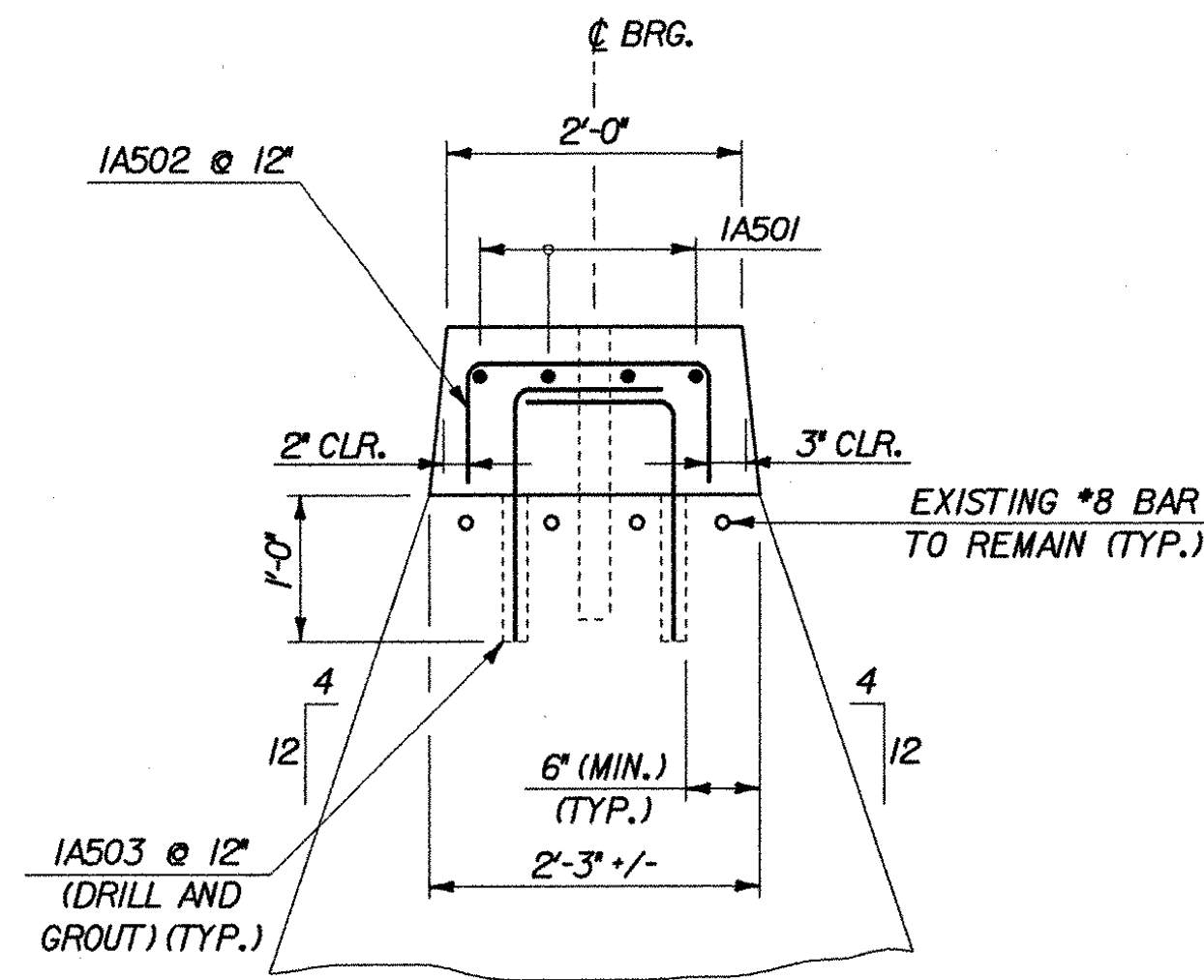
STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of	WATERBURY		Bridge No.	14			
Highway No.	6		Log Sta.				
			Surv. Sta.				
LOOMIS HILL ROAD OVER THATCHER BROOK							
ABUTMENT NO. 2							
Designed By		L. WIXSON			Drawn By	P. DUSTIN	
Checked By		Date		Bridge Design Supervisor			
R. JOY		03/03		M. ZYDEL			Date 03/03
PROJECT				PROJECT NO.			
WATERBURY				TH 3-9637			
I.G.C. Info. m:\549108-Waterbury\BRIDGE\6conf\1\278ad2.dgn							
Bridge Sheet No.				Sheet 13 of 18			

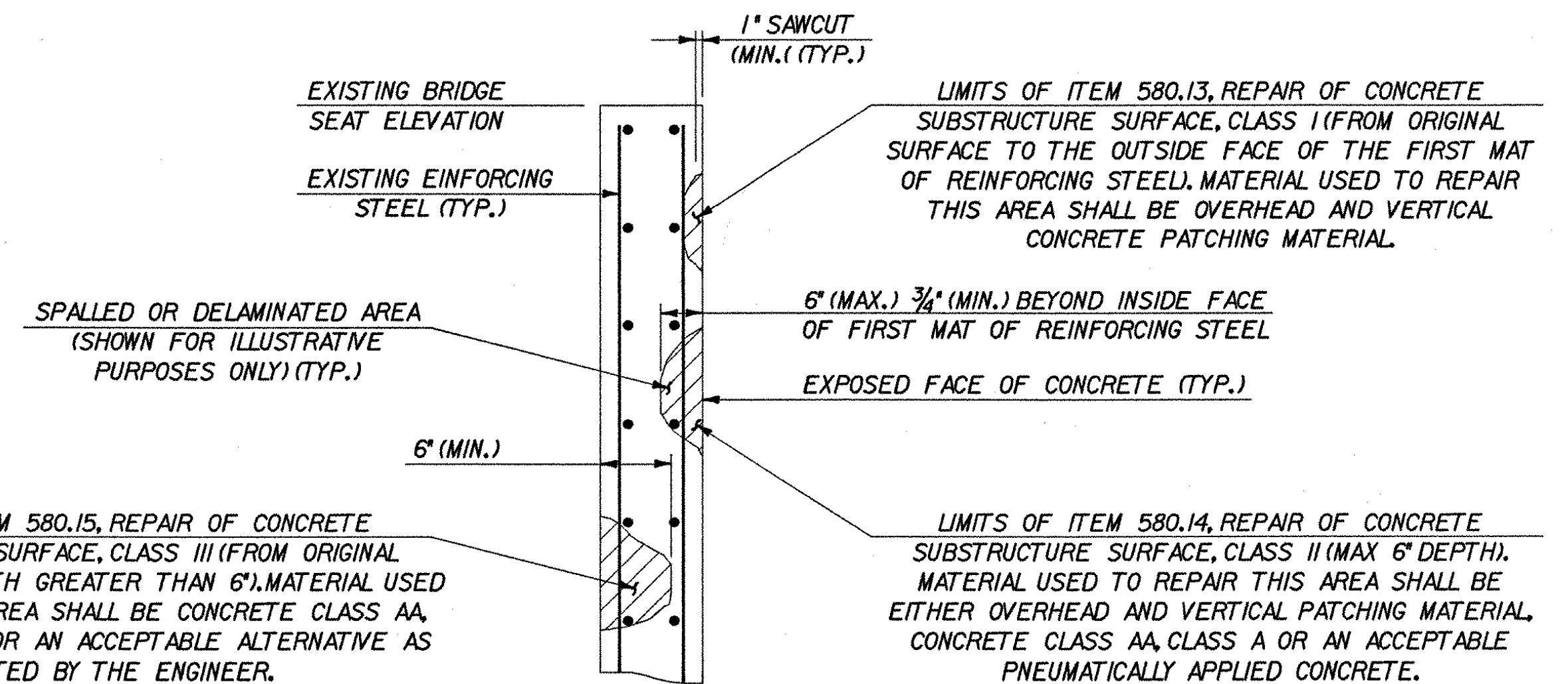




SECTION A-A
SCALE: 3/4" = 1'-0"



SECTION B-B
SCALE: 3/4" = 1'-0"

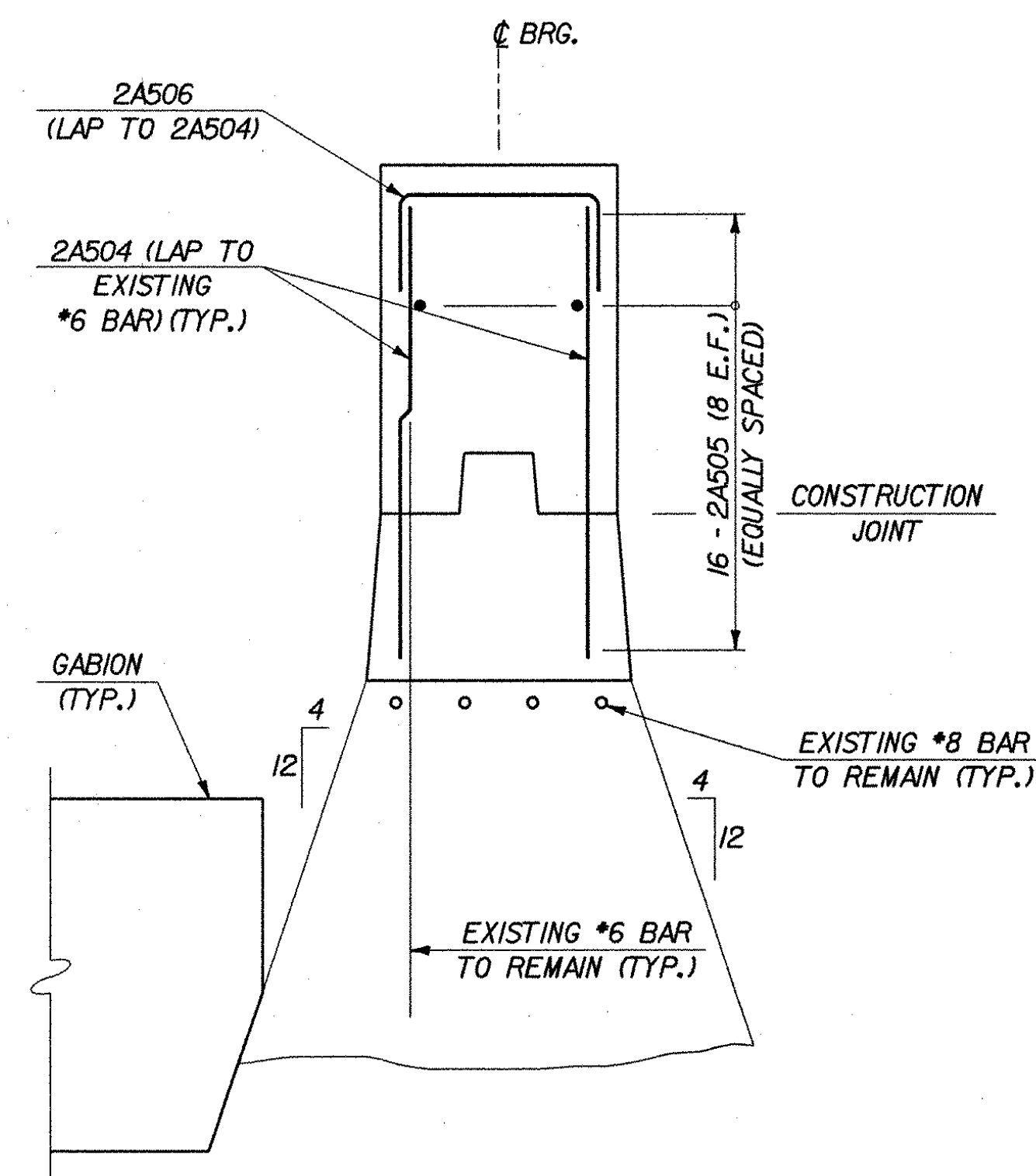


LIMITS OF REMOVAL

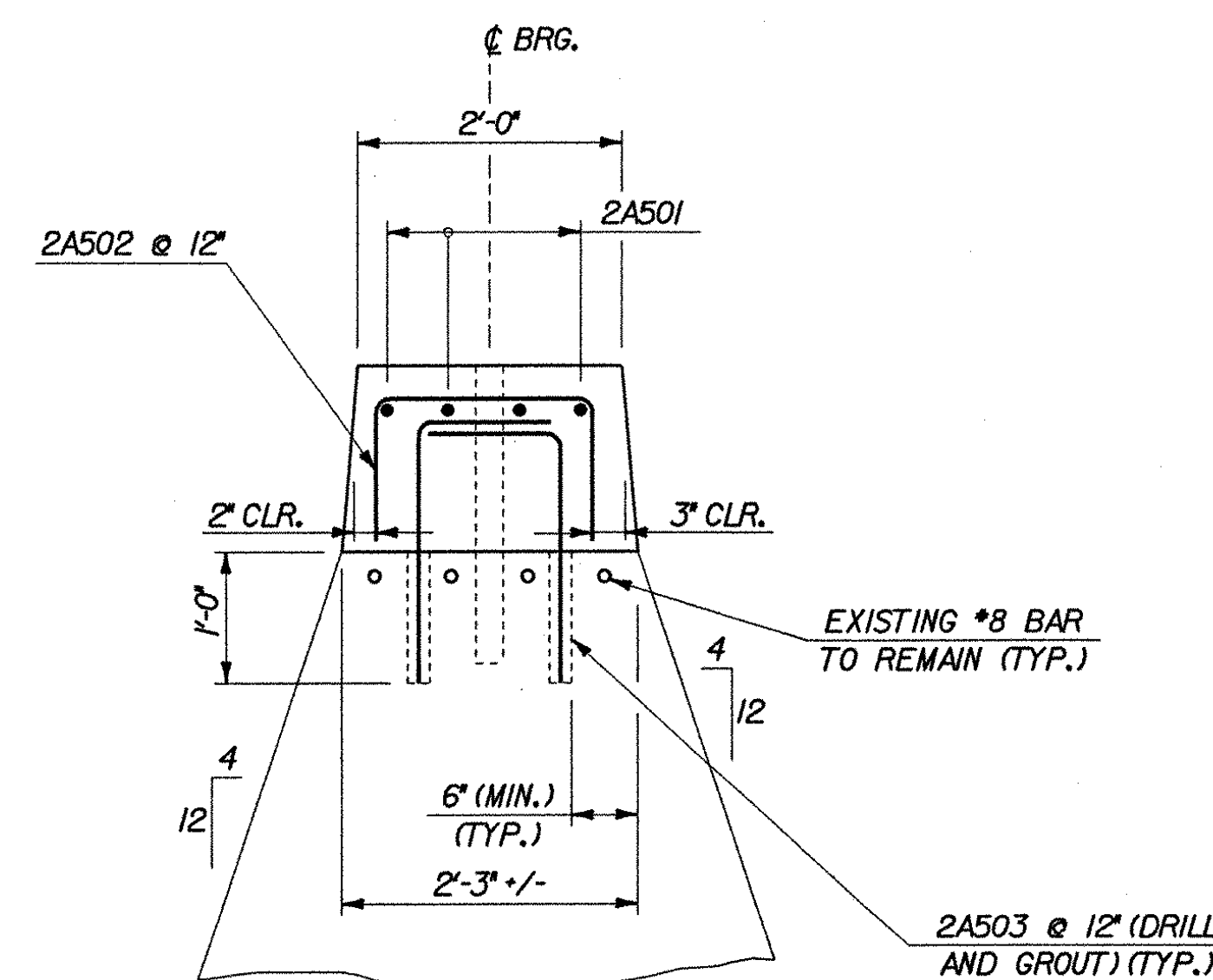
CONCRETE SUBSTRUCTURE REPAIR DETAIL
NOT TO SCALE

NOTE

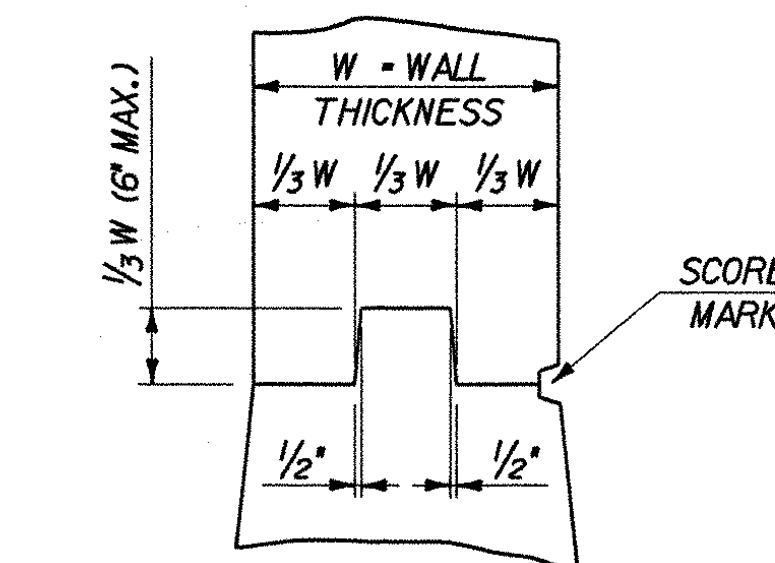
1. REMOVAL OF EXISTING CONCRETE TO A DEPTH GREATER THAN SPECIFIED FOR ITEM 580.14 SHALL BE PAID UNDER THE ITEM 580.15, REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III.



SECTION C-C
SCALE: 3/4" = 1'-0"



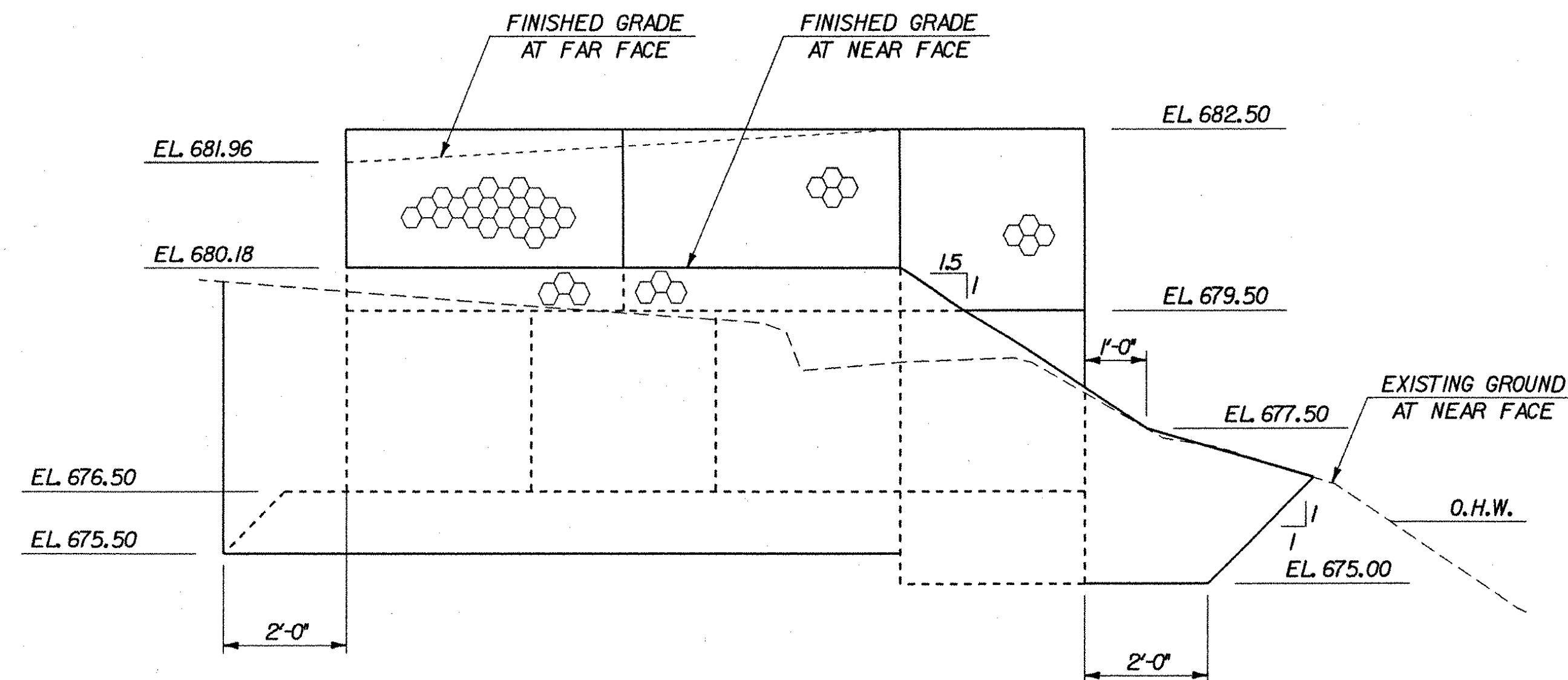
SECTION D-D
SCALE: 3/4" = 1'-0"



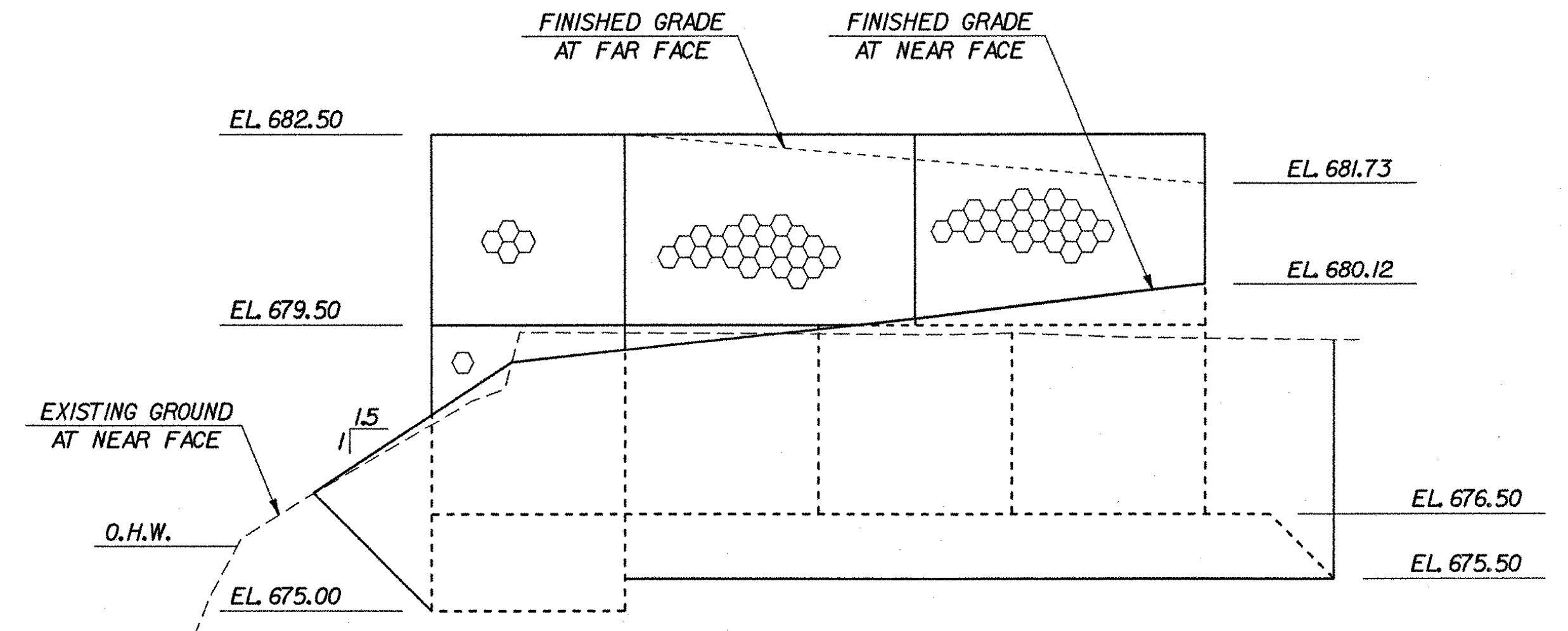
TYPICAL CONCRETE CONSTRUCTION JOINT
SCALE: 3/4" = 1'-0"

STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	WATERBURY	Bridge No.	14
Highway No.	6	Log Sta.	
		Surv. Sta.	
LOOMIS HILL ROAD OVER THATCHER BROOK			
ABUTMENT DETAILS			
Designed By	L. WIXSON	Drawn By	P. DUSTIN
Checked By	Date	Bridge Design Supervisor	
R. JOY	03/03	M. ZYDEL	Date 03/03
PROJECT	WATERBURY	PROJECT NO.	TH 3-9637
I.G.C. Info. m:\549108-Waterbury\BRIDGE\6001\X\278ad3.dgn			
Bridge Sheet No.		Sheet	14 of 18





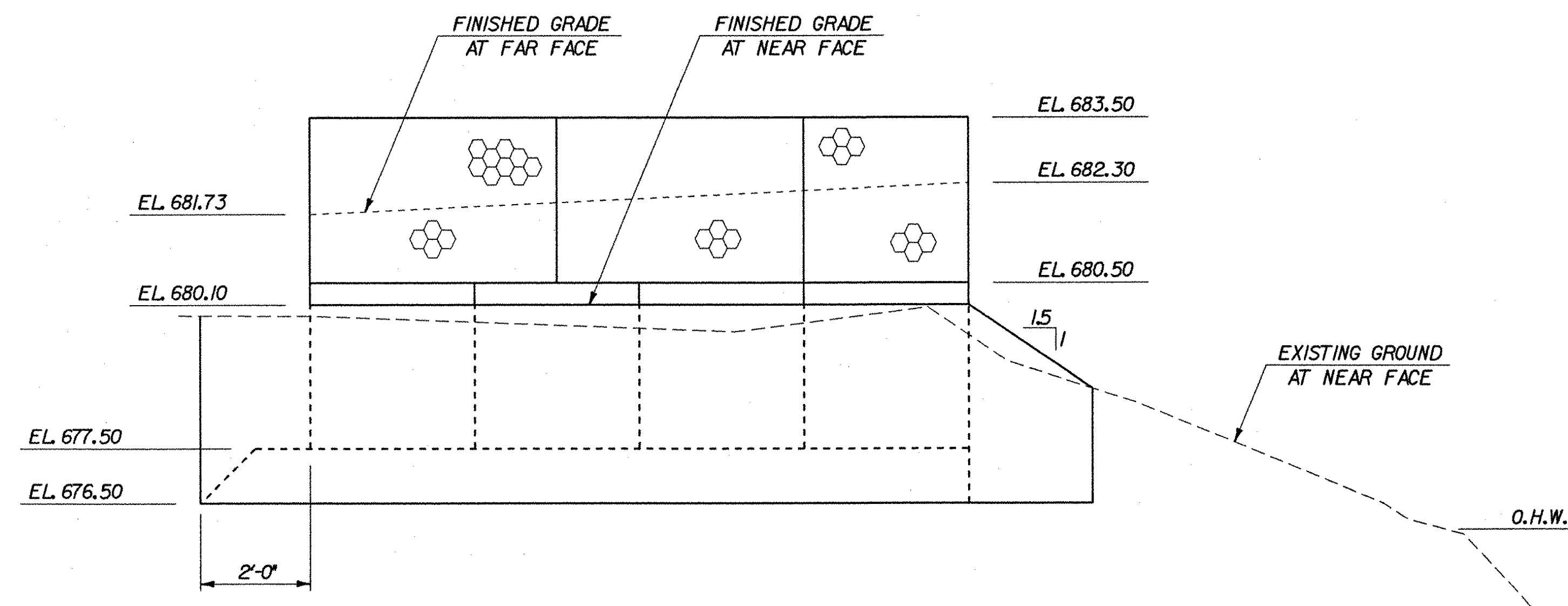
WW #3



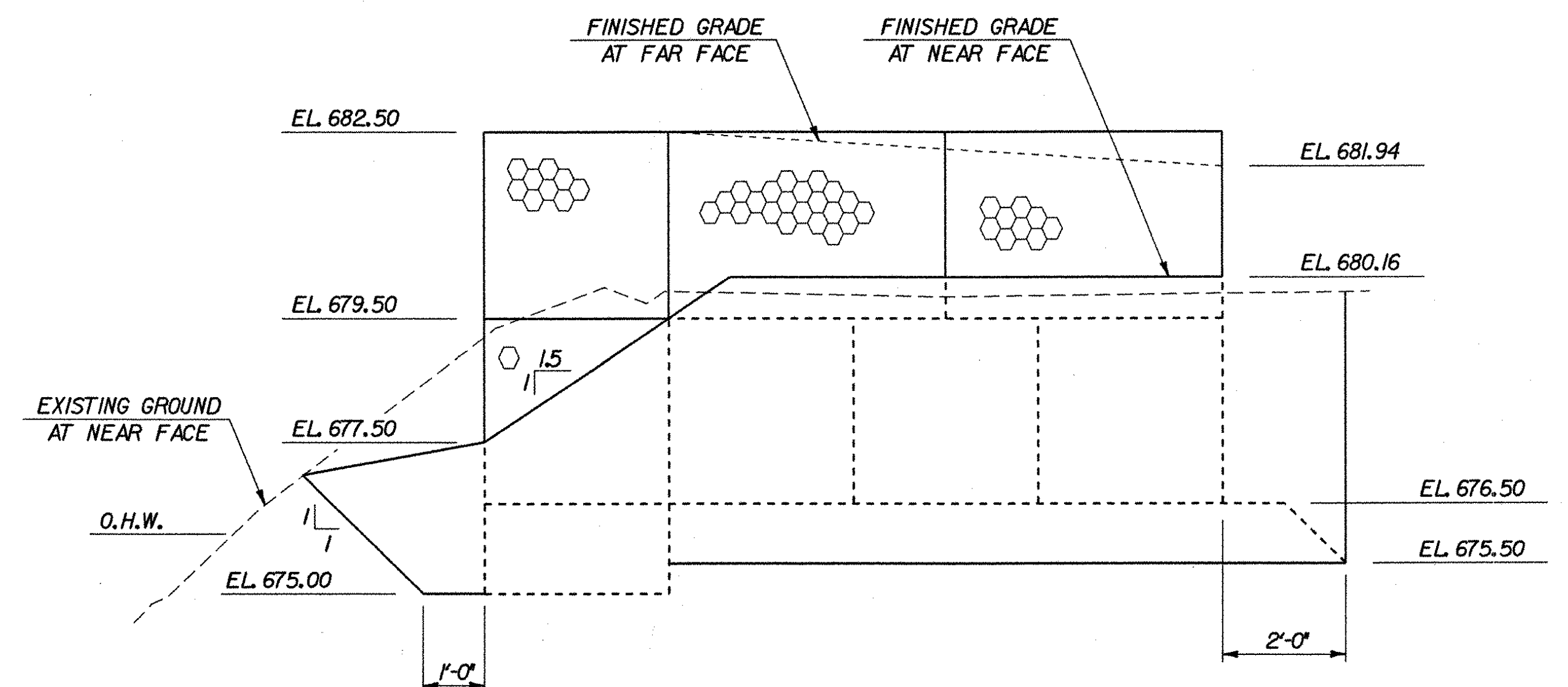
WW #1

NORTH GABION WALL ELEVATIONS

SCALE: 1/2" = 1'-0"



WW #2



WW #4

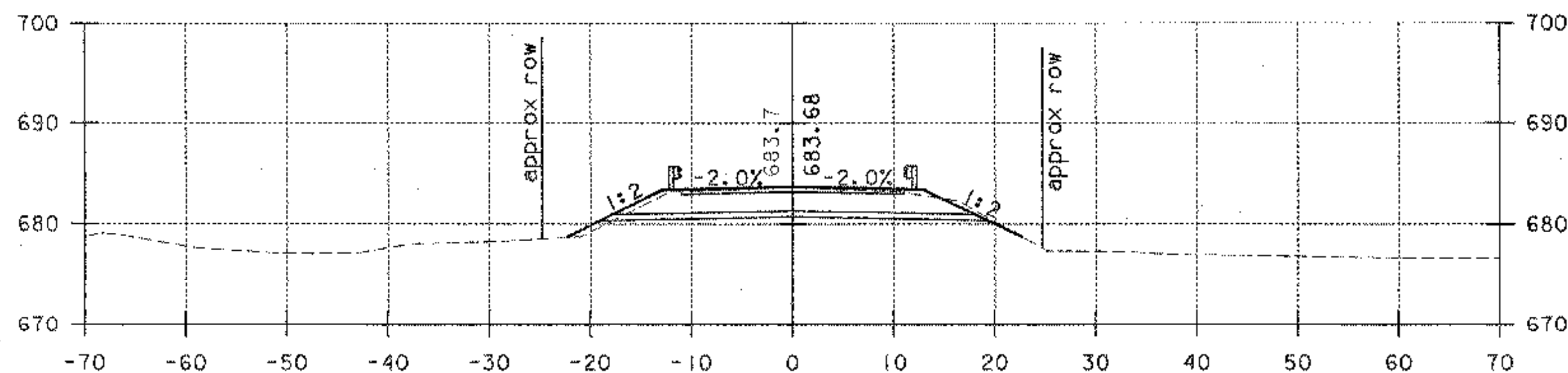
SOUTH GABION WALL ELEVATIONS

SCALE: 1/2" = 1'-0"

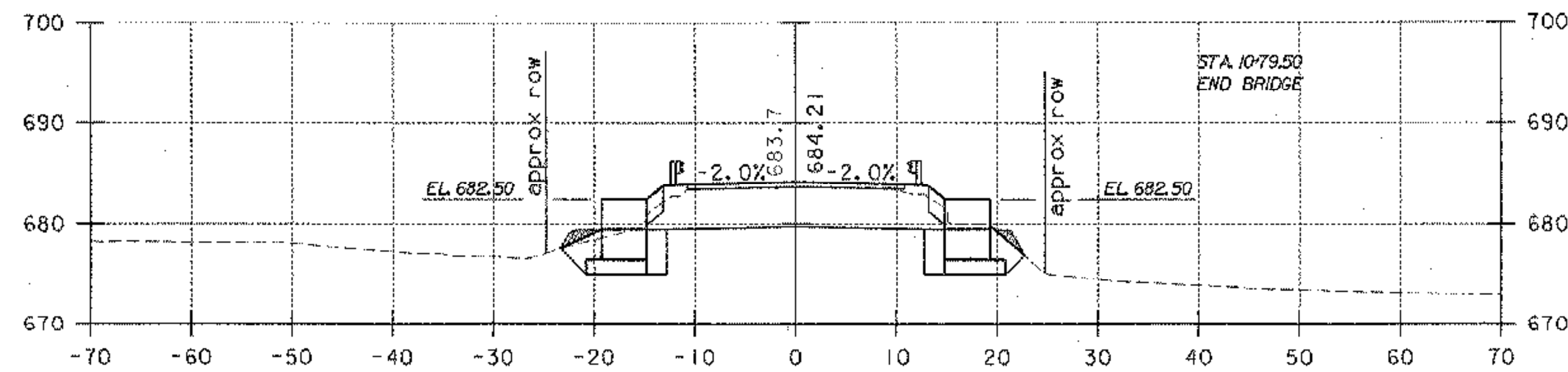
STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of	WATERBURY	Bridge No.	14
Highway No.	6	Log Sta.	
		Surv. Sta.	
LOOMIS HILL ROAD OVER THATCHER BROOK			
GABION WALL DETAILS			
Designed By	L. WIXSON	Drawn By	P. DUSTIN
Checked By	R. JOY	Bridge Design Supervisor	
Date	03/03	Date	03/03
PROJECT	WATERBURY	PROJECT NO.	TH 3-9637
I.G.C. Info.	m:\549108-Waterbury\BRIDGE\6cont\1x1278gwd.dgn		
Bridge Sheet No.		Sheet	15 of 18

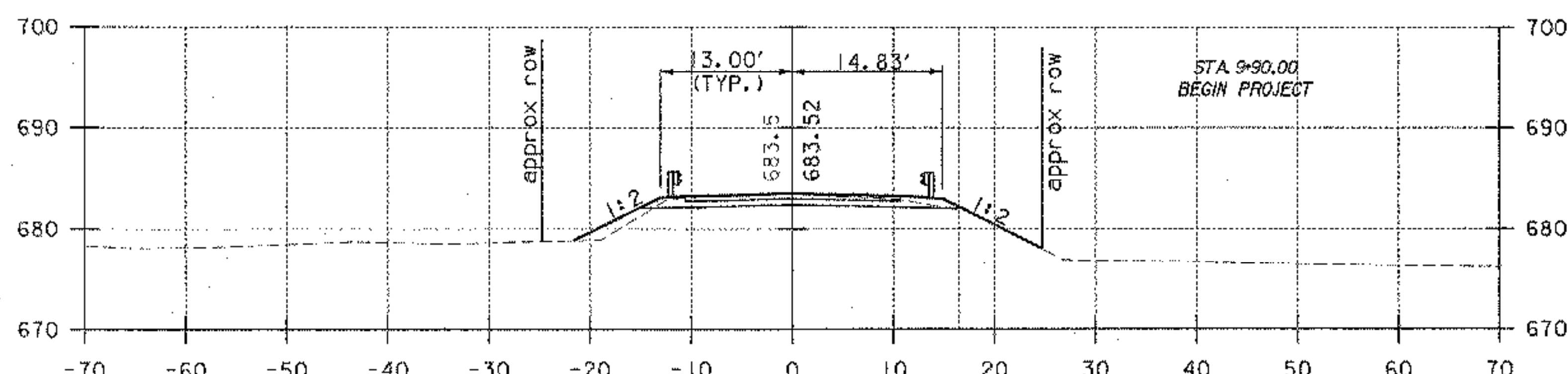




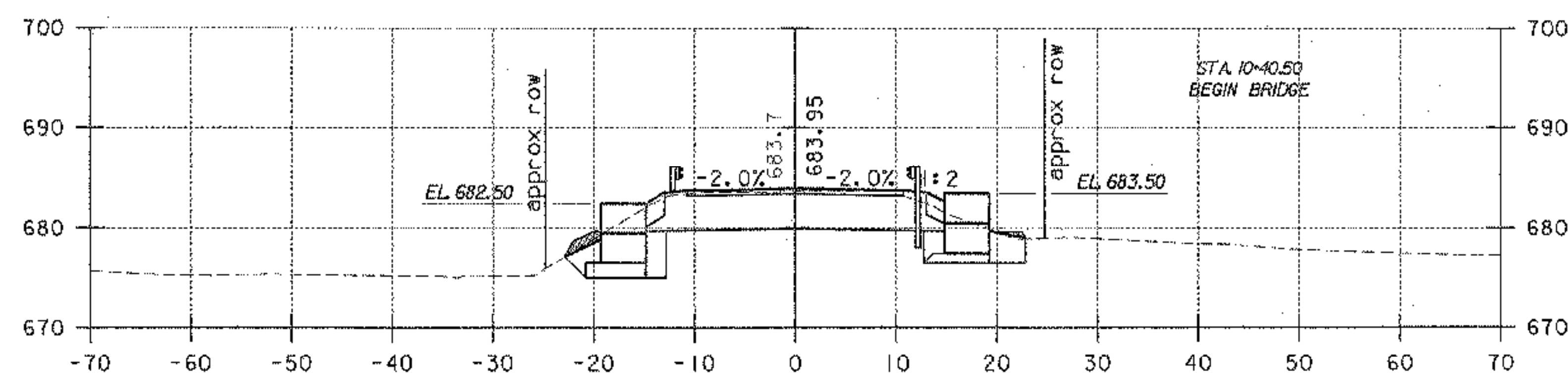
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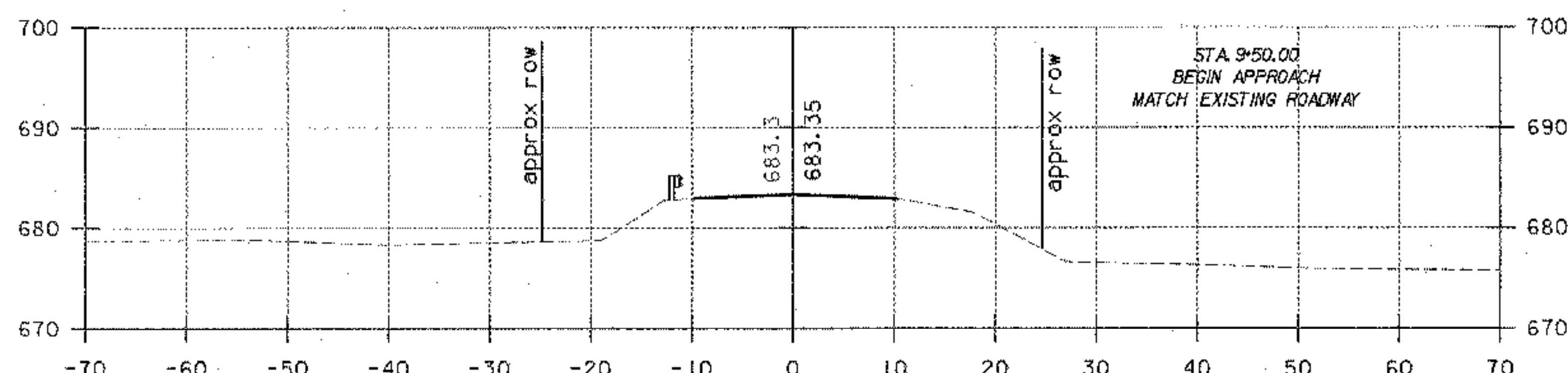
10+79.50



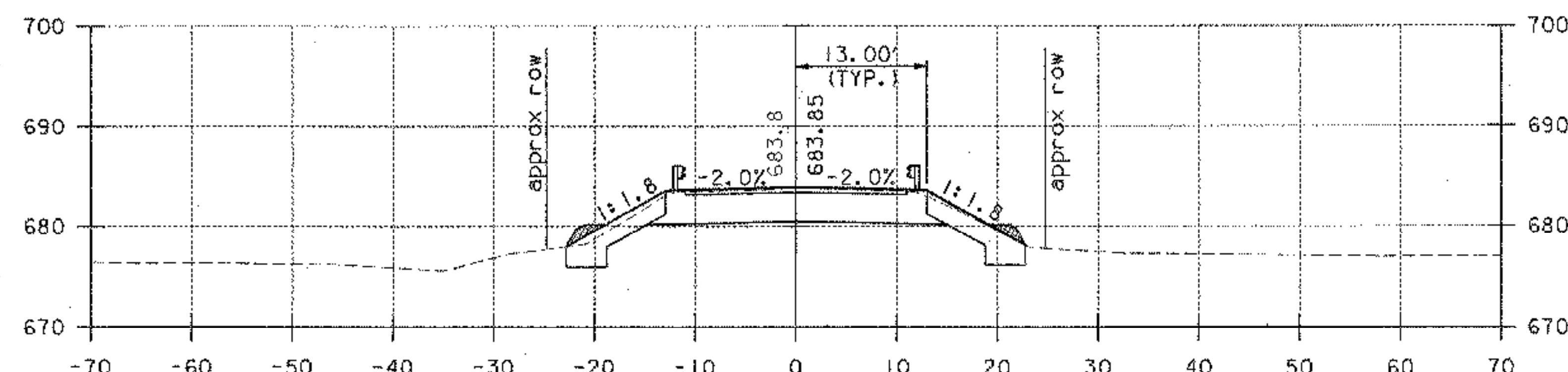
9+75



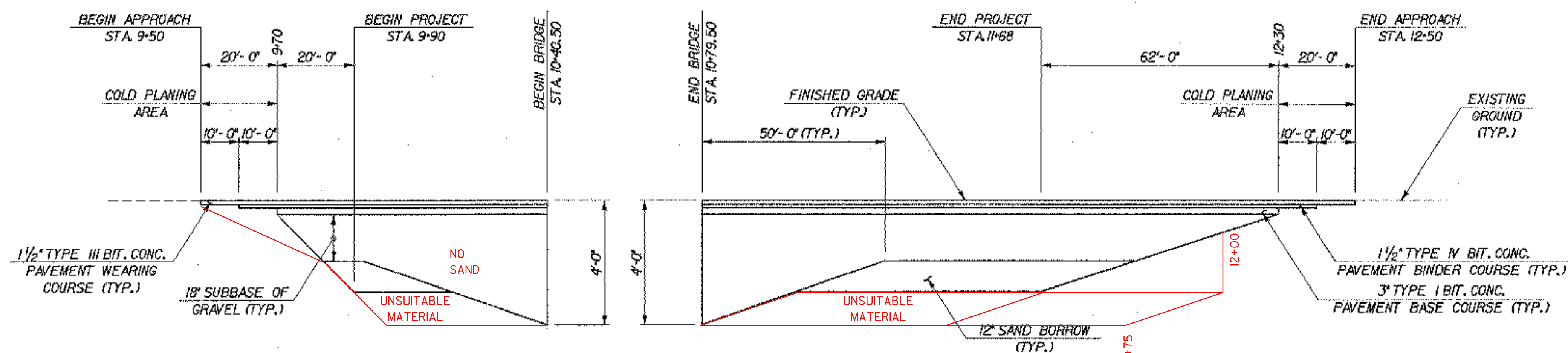
10+40.50



9+50



10+25

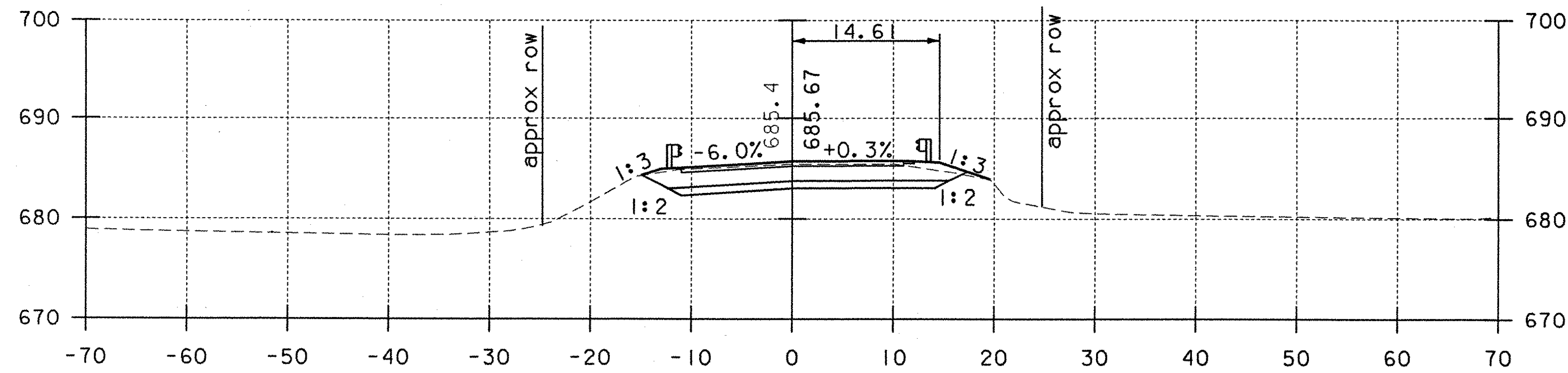


SUBBASE TRANSITION DETAIL
NOT TO SCALE

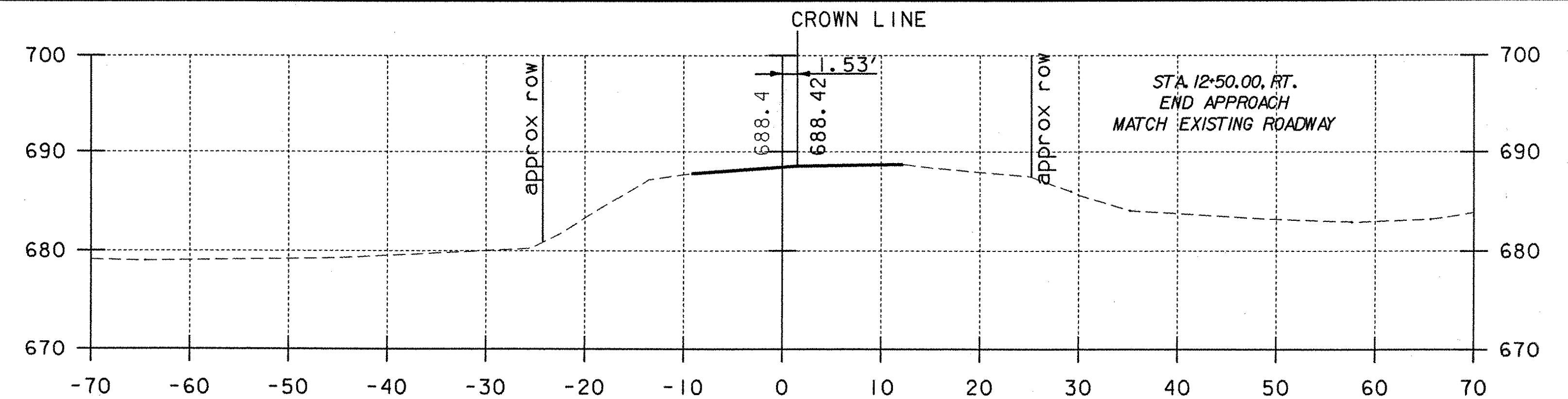
STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of WATERBURY		Bridge No. 14	
Highway No. 6		Log Sta.	
		Surv. Sta.	
LOOMIS HILL ROAD OVER THATCHER BROOK ROADWAY CROSS SECTIONS			
Designed By L. WIXSON		Drawn By P. DUSTIN	
Checked By R. JOY		Bridge Design Supervisor	
Date 03/03		Date 03/03	
PROJECT WATERBURY		PROJECT NO. TH 3-9637	
I.G.C. Info. m:\549138-Waterbury\BRIDGE\600n\7278\ssldgn			
Bridge Sheet No.		Sheet 16 of 18	



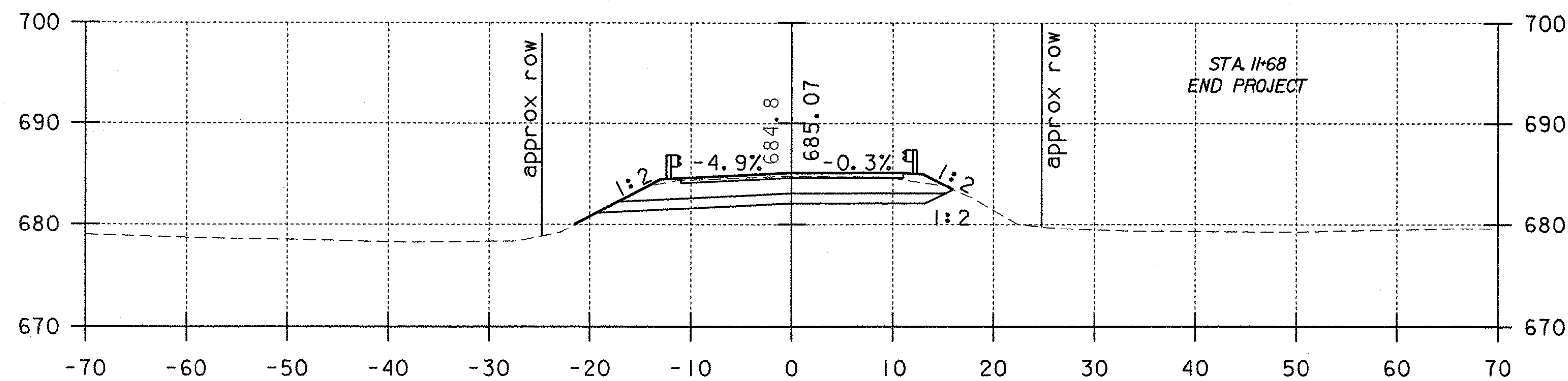
PLOTTED 05-MAY-2003



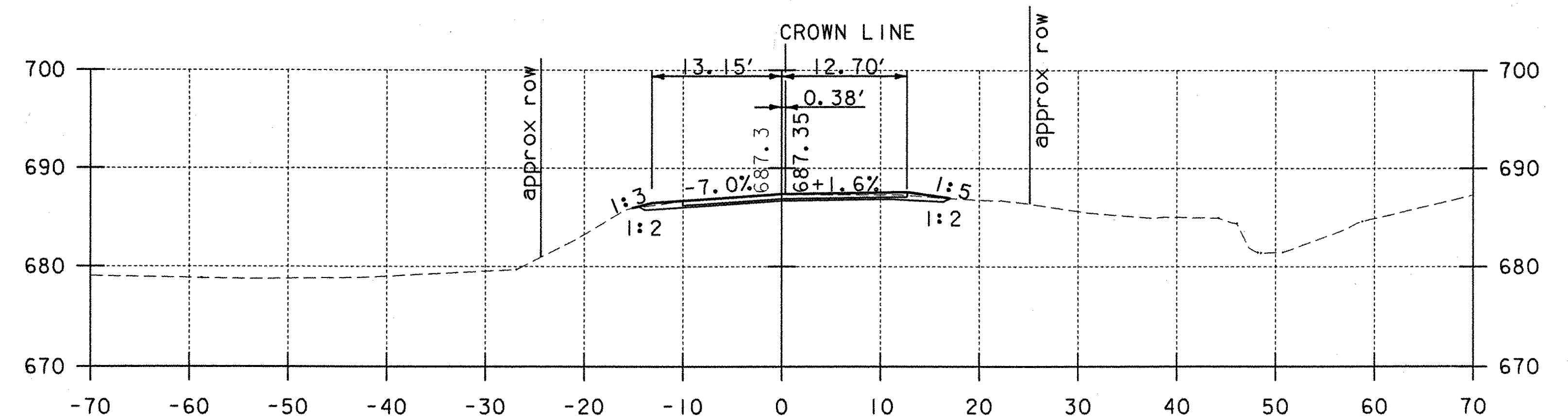
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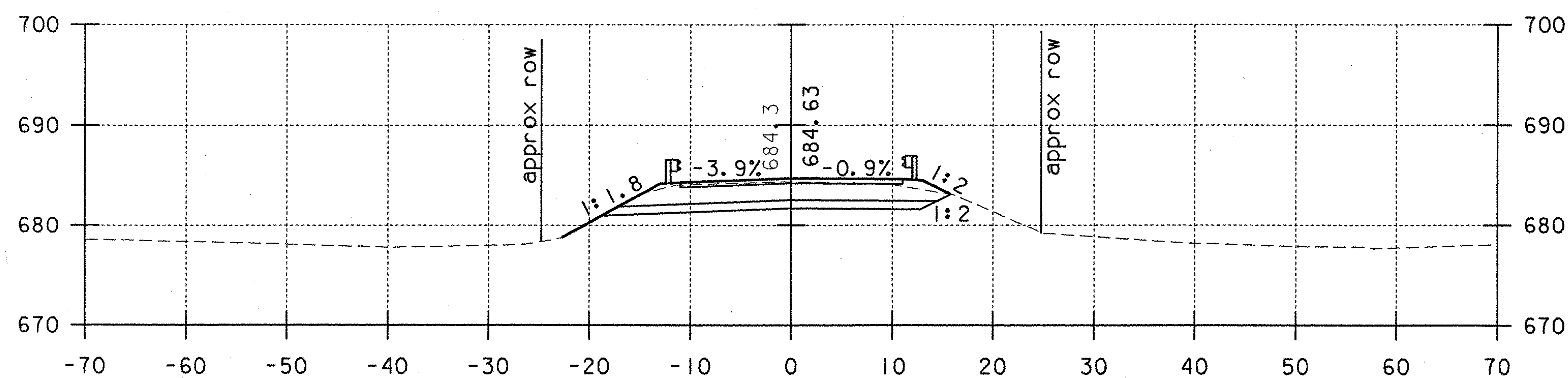
12+50



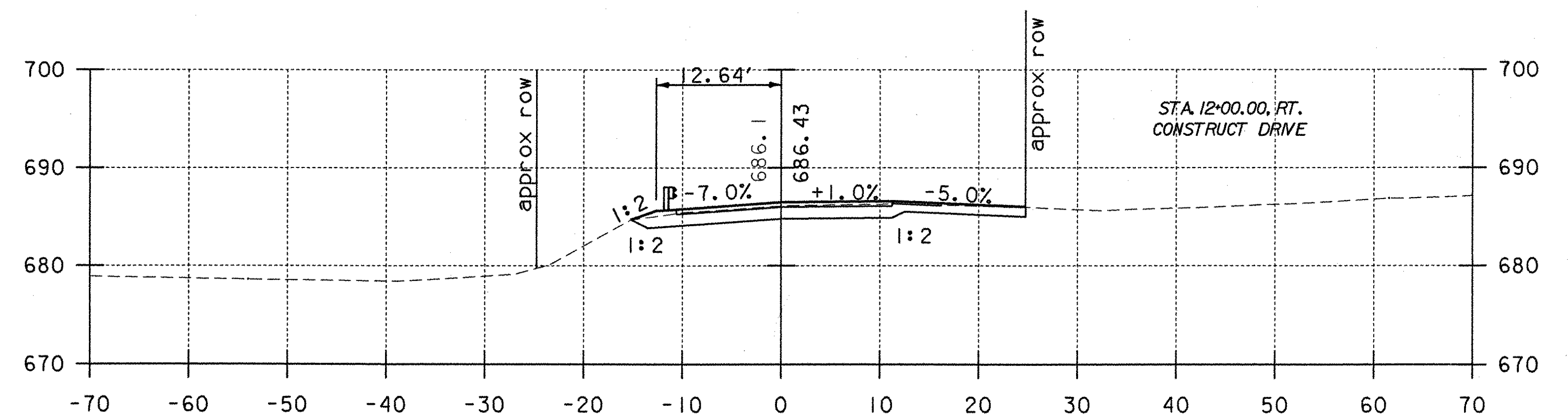
11+50



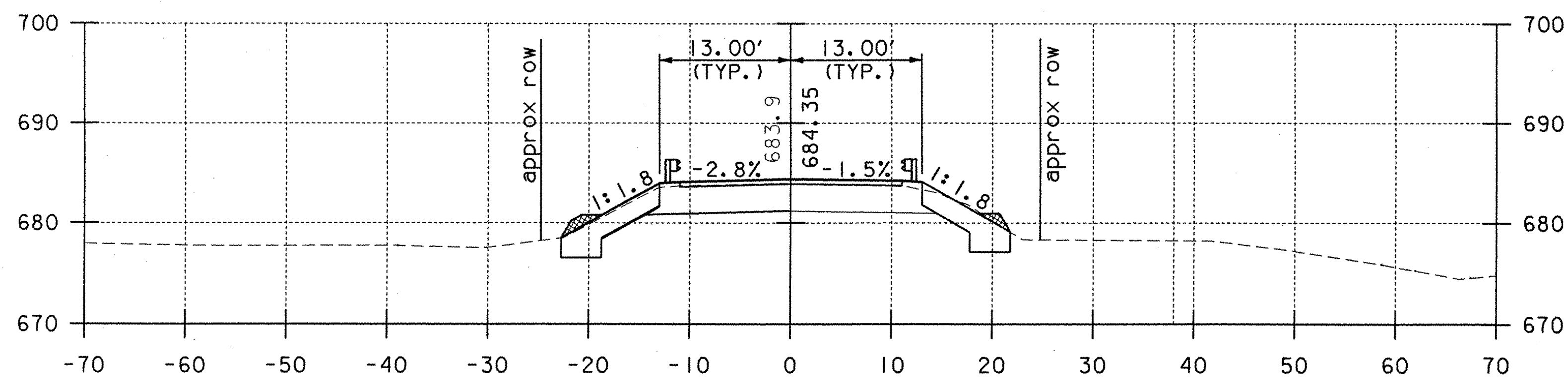
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11+25



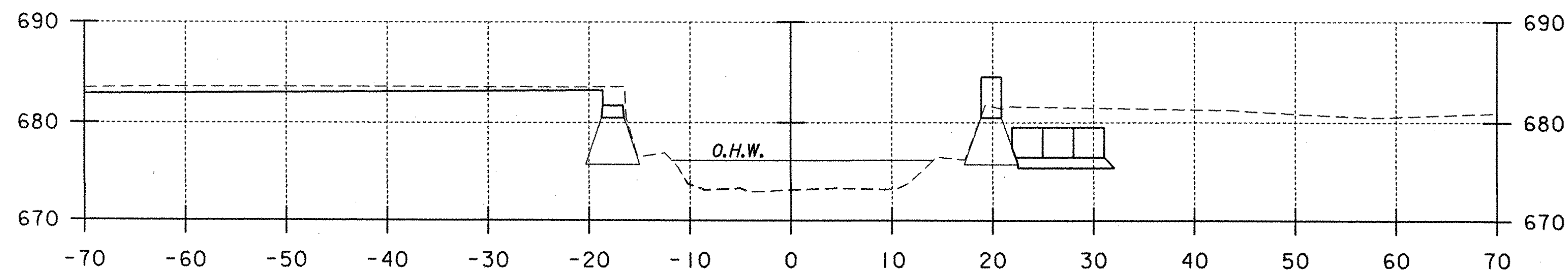
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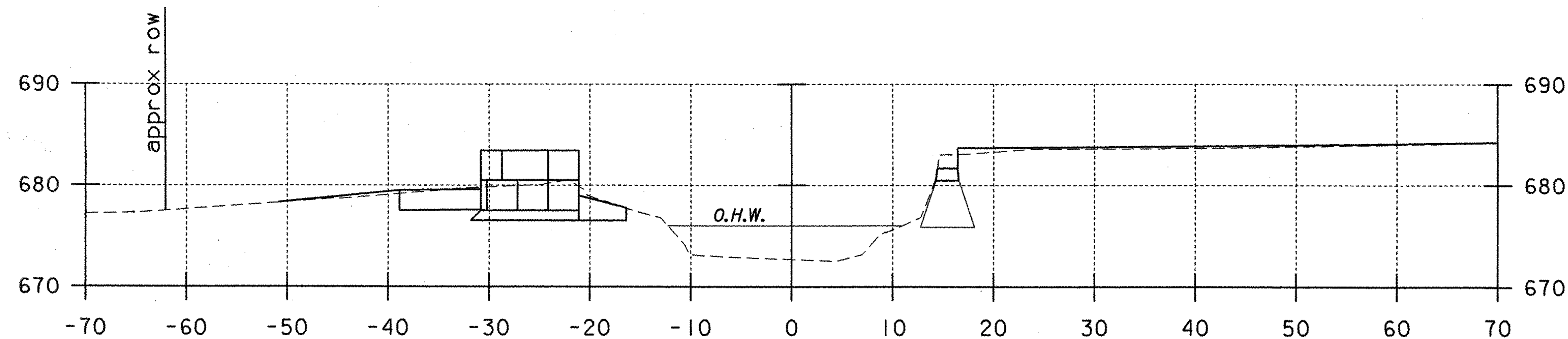
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STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of WATERBURY		Bridge No. 14	
Highway No. 6		Log Sta.	
		Surv. Sta.	
LOOMIS HILL ROAD OVER THATCHER BROOK			
ROADWAY CROSS SECTIONS			
Designed By L. WIXSON		Drawn By P. DUSTIN	
Checked By R. JOY	Date 03/03	Bridge Design Supervisor M. ZYDEL	Date 03/03
PROJECT WATERBURY		PROJECT NO. TH 3-9637	
I.G.C. Info. m:\549108-Waterbury\BRIDGE\6cont\1\J278xs2.dgn			
Bridge Sheet No.		Sheet 17 of 18	

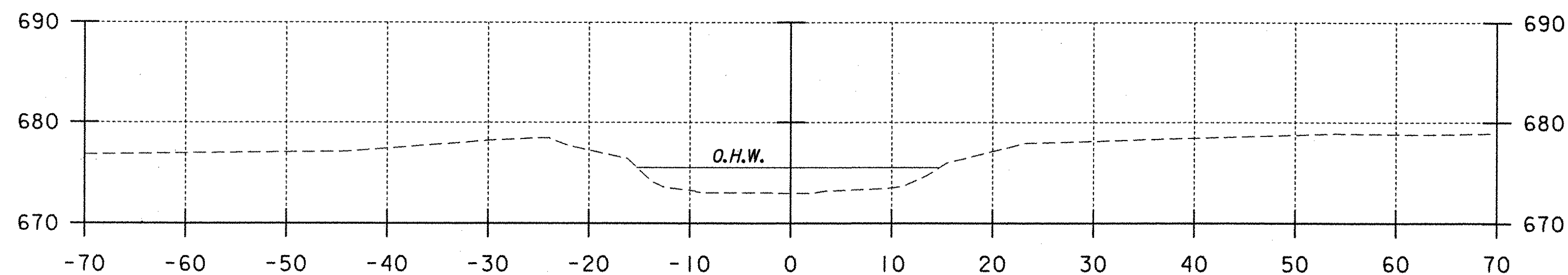




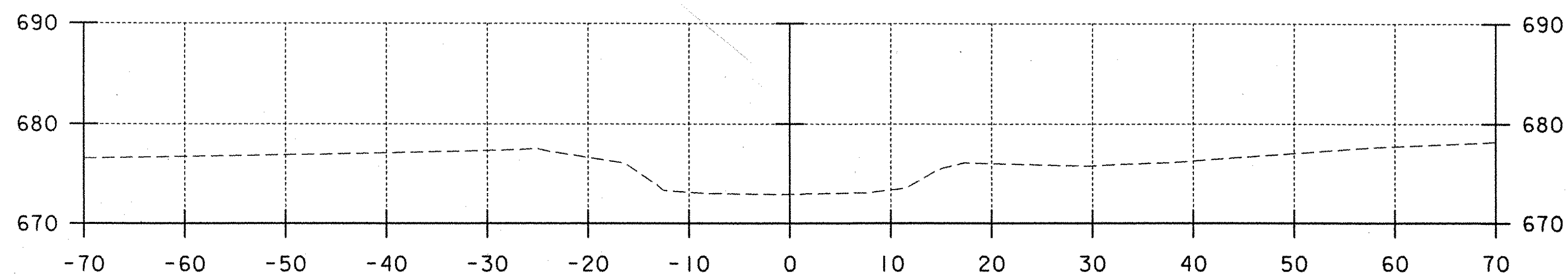
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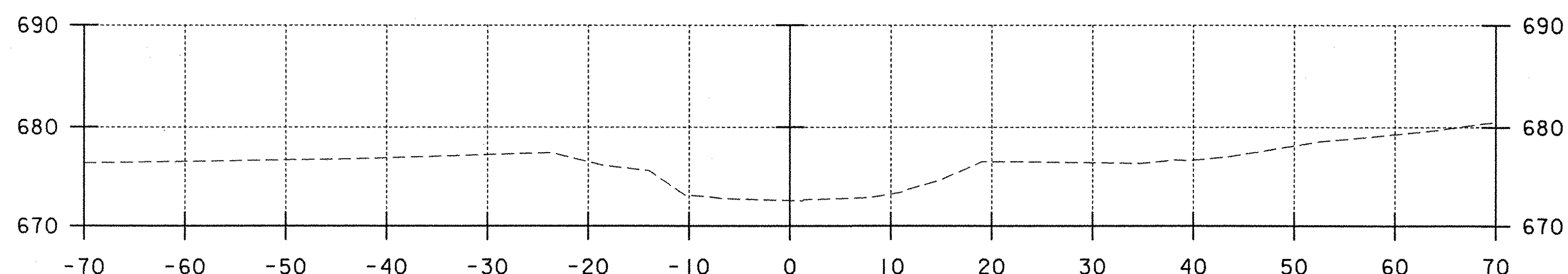
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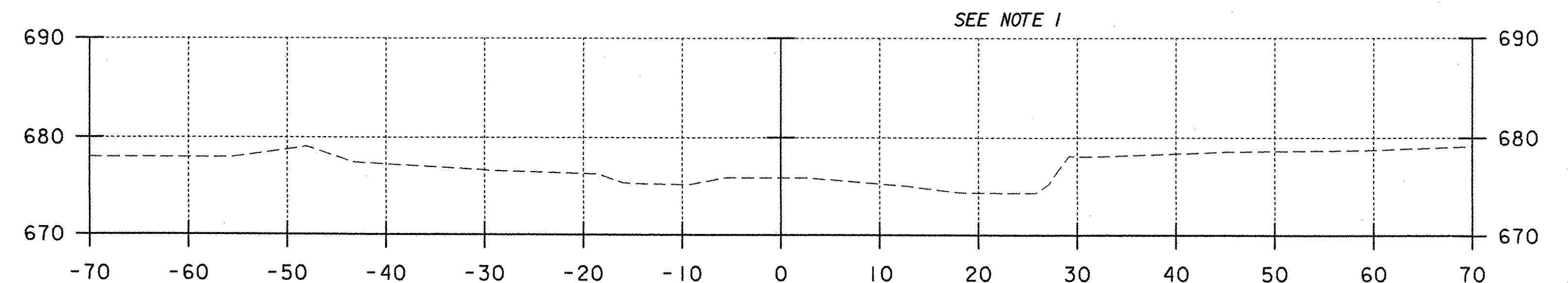
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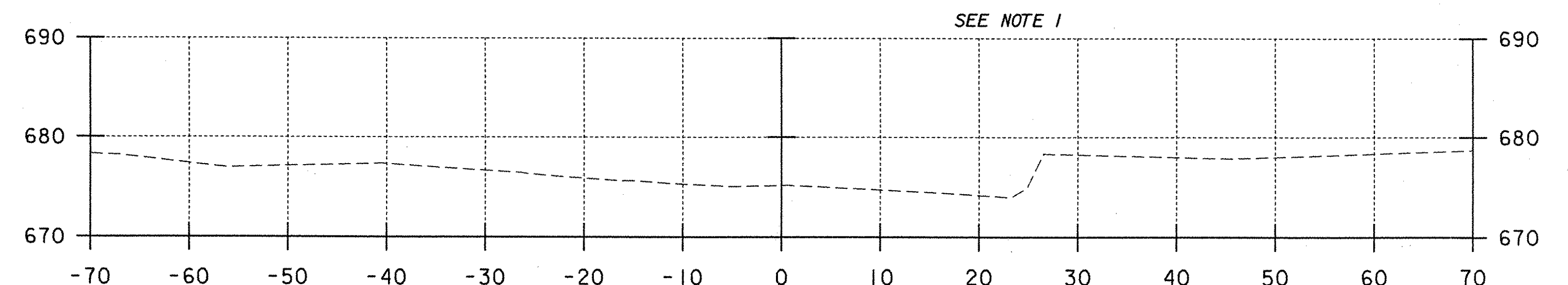
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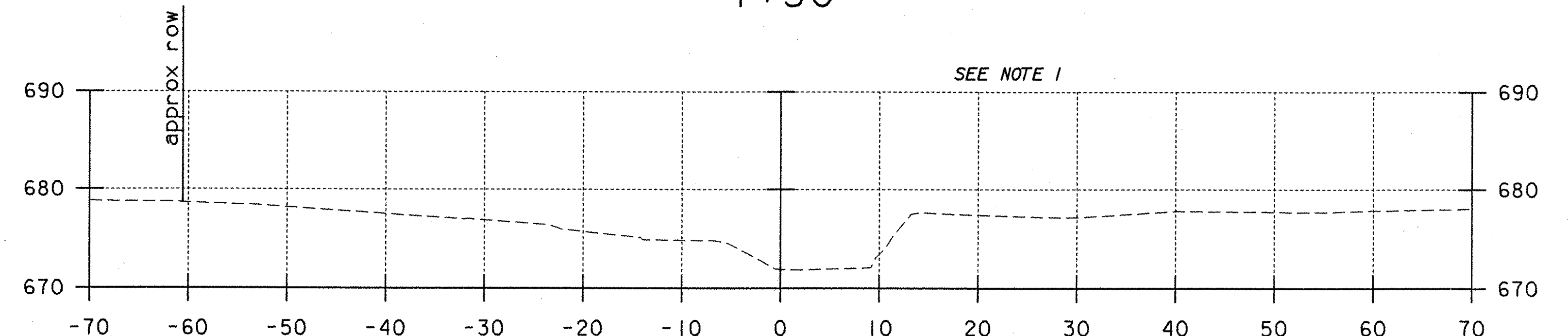
0+00



1+67



1+50



1+25

NOTES

1. CHANNEL STABILIZATION WORK WAS PERFORMED IN 2002 ALONG THE UPSTREAM EASTERN CHANNEL BANK AFTER PROJECT SURVEY.

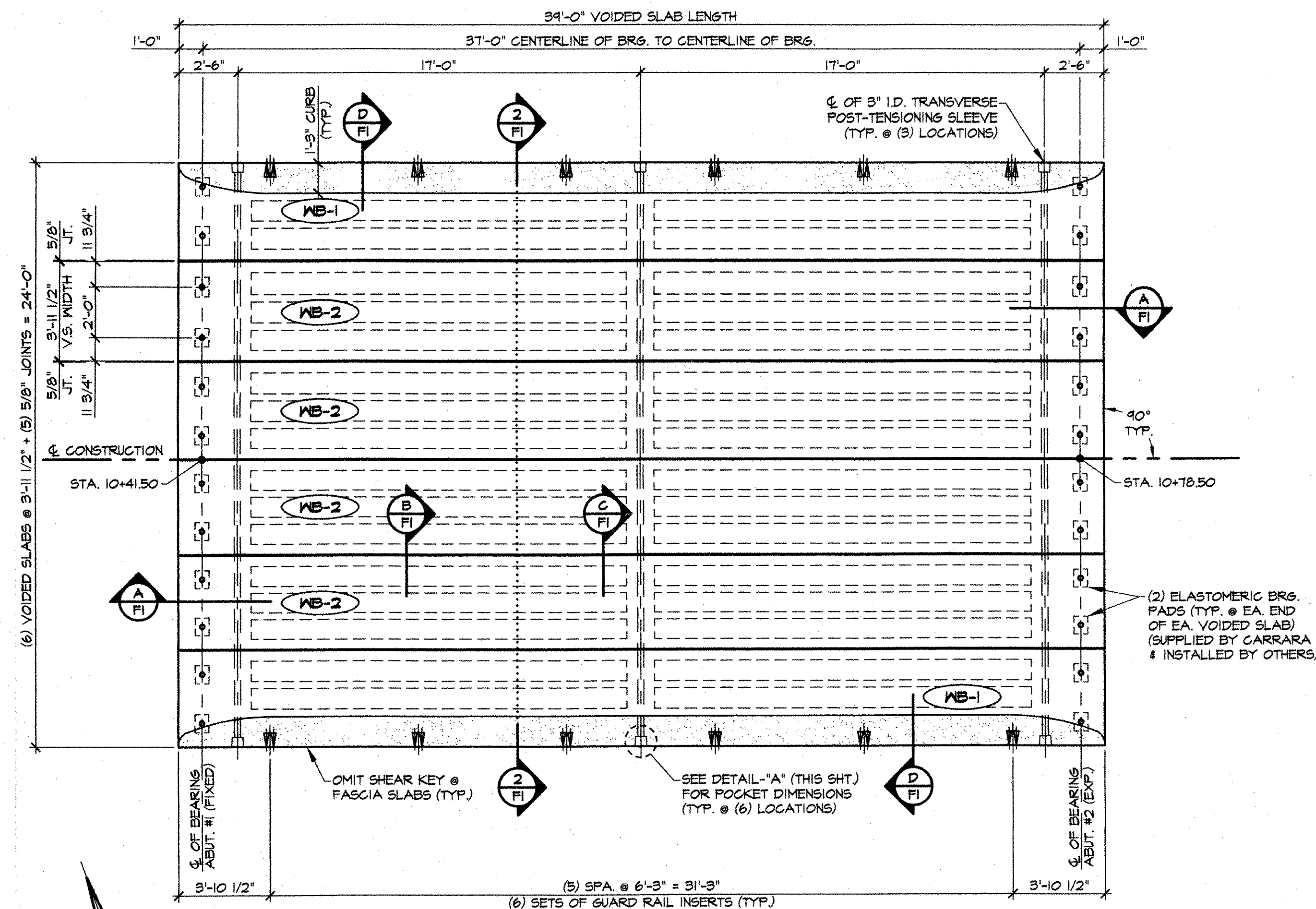
LEGEND

O.H.W. ORDINARY HIGH WATER

STATE OF VERMONT AGENCY OF TRANSPORTATION

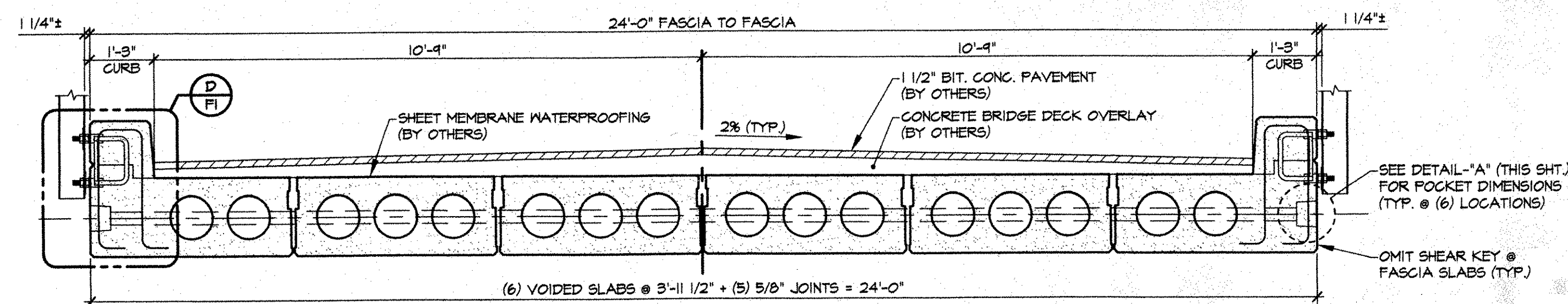
Town Of	WATERBURY	Bridge No.	14
Highway No.	6	Log Sta.	
		Surv. Sta.	
LOOMIS HILL ROAD OVER THATCHER BROOK			
CHANNEL CROSS SECTIONS			
Designed By	L. WIXSON	Drawn By	P. DUSTIN
Checked By	R. JOY	Bridge Design Supervisor	M. ZYDEL
Date	03/03	Date	03/03
PROJECT	WATERBURY	PROJECT NO.	TH 3-9637
I.G.C. Info. m:\549108-Waterbury\BRIDGE\6cont\1\J278xsdgn			
Bridge Sheet No.		Sheet 18 of 18	



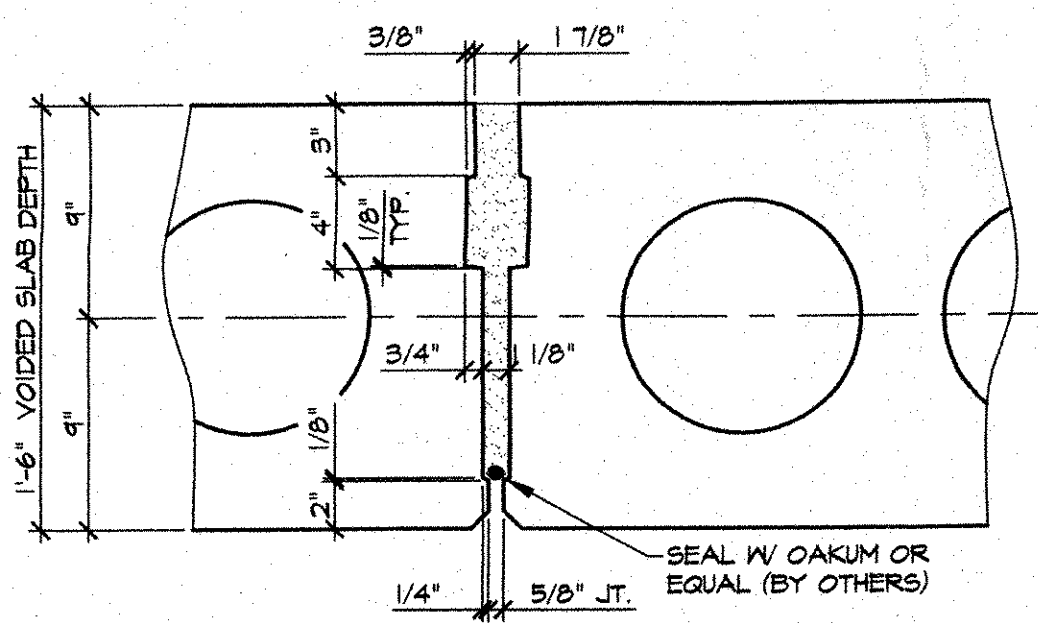


1 PRESTRESSED VOIDED SLAB LAYOUT
1/4" = 1'-0"

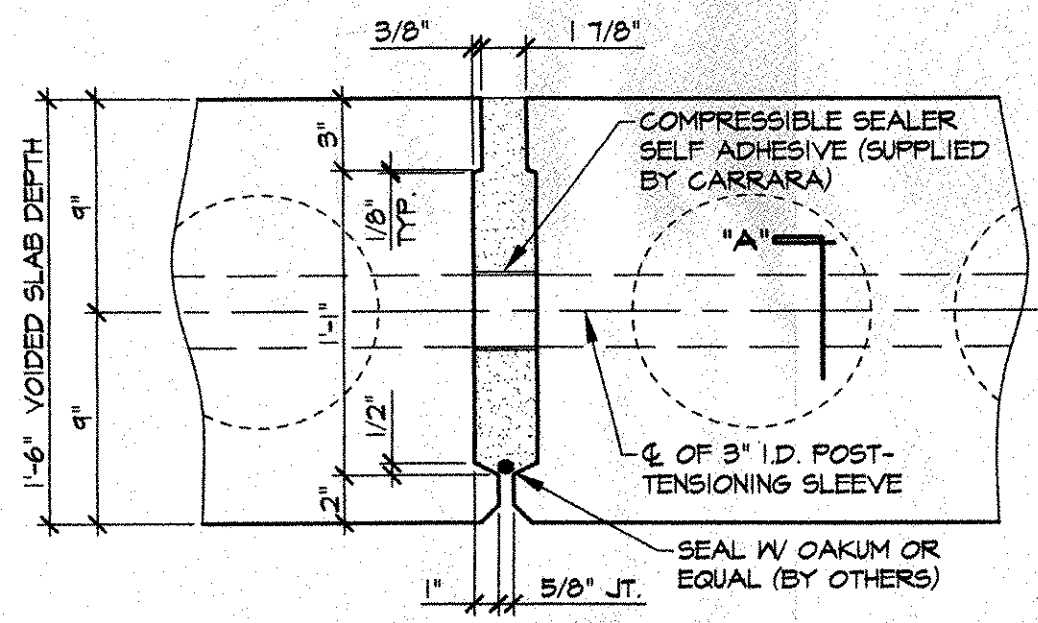
DESIGN LOAD: HS-25-44
SEE J.P. CARRARA & SONS, INC.
DESIGN CALCULATIONS FOR LOAD
RATING TABLE INFORMATION.



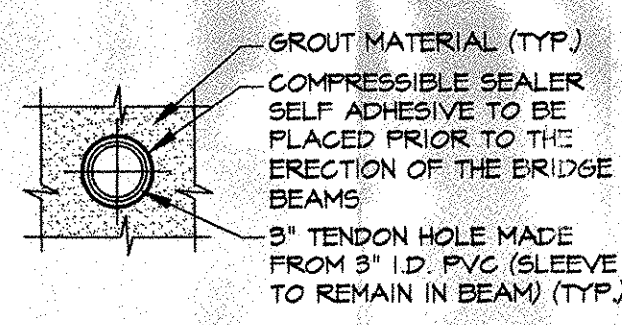
2 TRANSVERSE SECTION
1/2" = 1'-0"



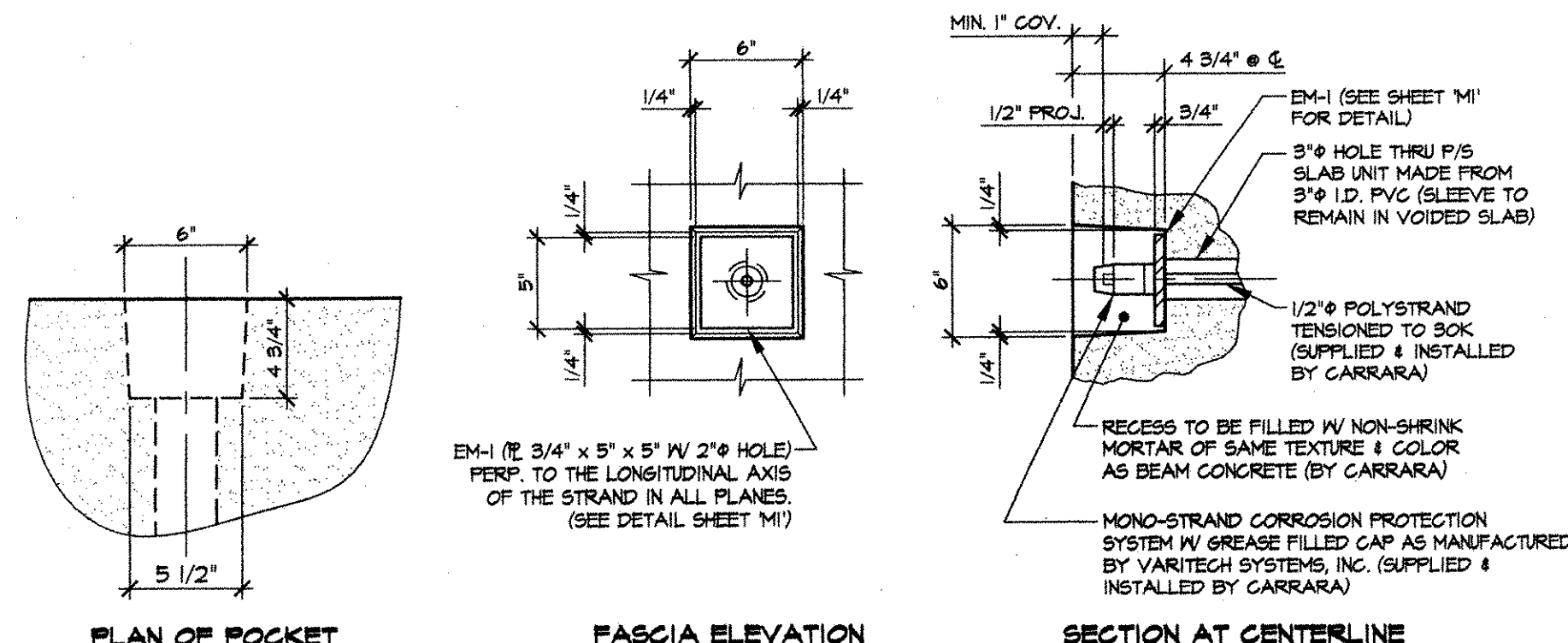
B TYP. SHEAR KEY SECTION
1 1/2" = 1'-0"



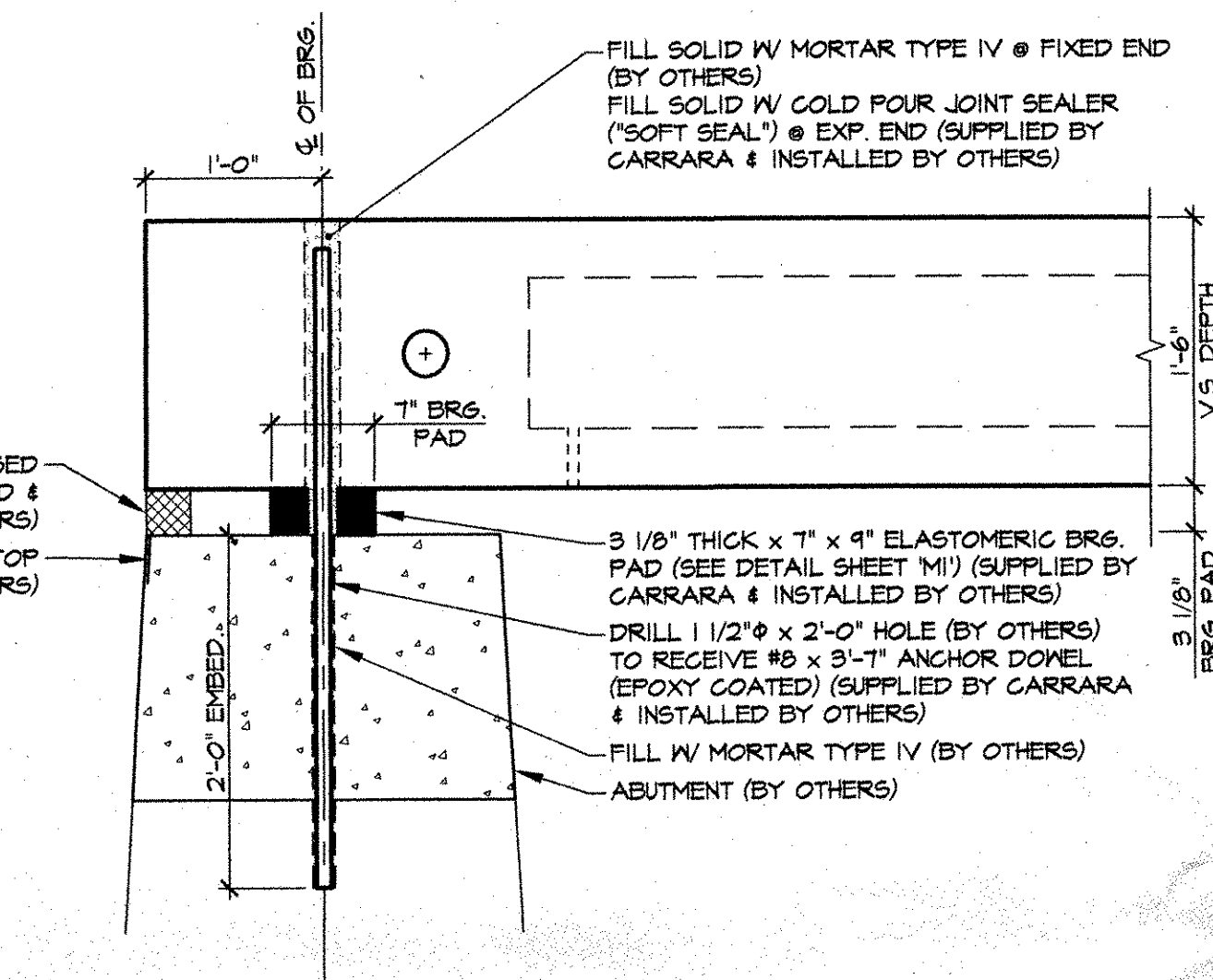
C SHEAR KEY SECTION @ P.T. SLEEVE
1 1/2" = 1'-0"



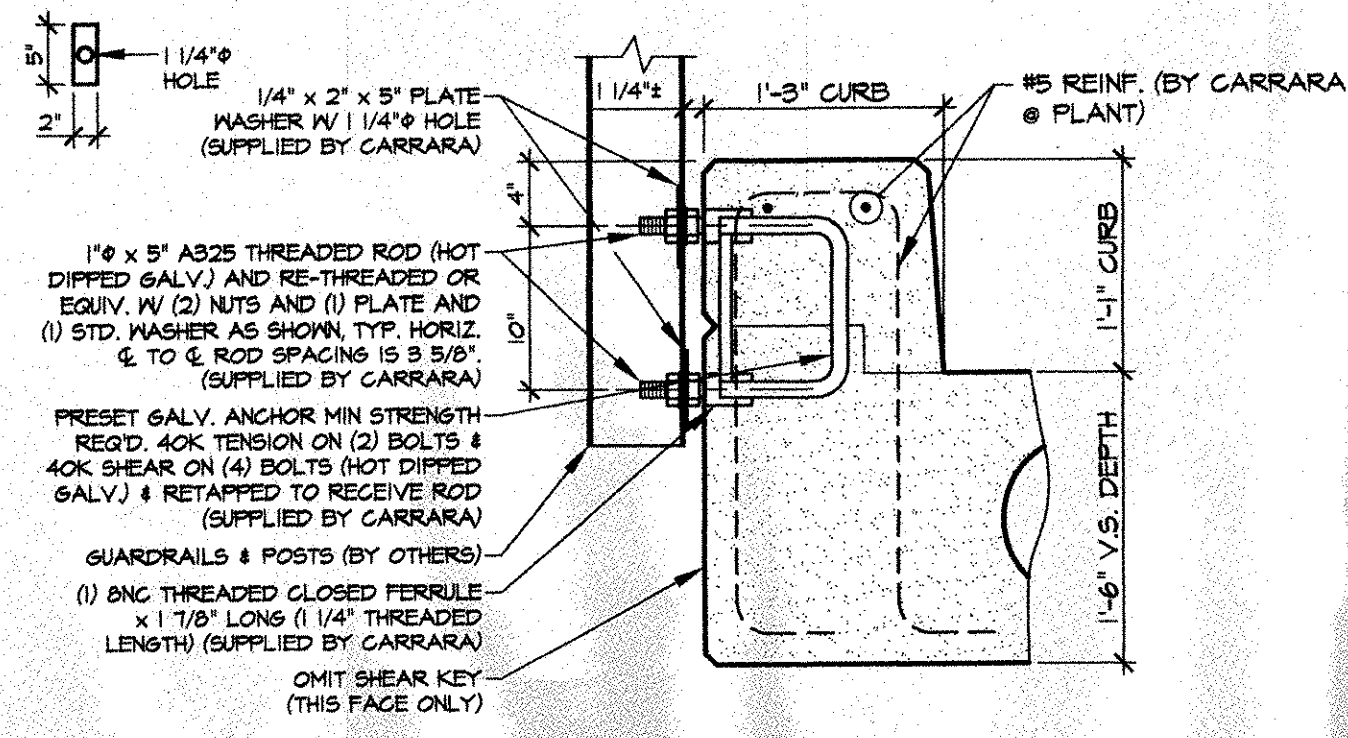
SECTION - 'A'
1 1/2" = 1'-0"



DETAIL - 'A'
1 1/2" = 1'-0"



A SECTION AT BEARING
1" = 1'-0"



D GUARDRAIL ANCHORAGE DETAIL
1" = 1'-0"

GENERAL NOTES

- MIN. CONCRETE STRENGTH AT 28 DAYS SHALL BE 6,000 PSI.
- MIN. CONCRETE STRENGTH AT STRESS TRANSFER SHALL BE 4,800 PSI.
- REINFORCING STEEL SHALL BE GR-60, ASTM A-615 (AASHTO M31) AND SHALL BE BLACK STEEL.
- PRESTRESSING STRANDS SHALL CONFORM TO ASTM A-416 (AASHTO M209) AND SHALL CONSIST OF 1/2" x 270 KSI 7 WIRE LOW RELAXATION STRANDS.
- PRESTRESSING STRANDS SHALL EACH BE PULLED TO HAVE A NET TENSION OF 31,000 LB AFTER ACCOUNTING FOR CHUCK SLIPPAGE. TENSION SHALL BE VERIFIED BY MEASURING STRAND ELONGATION. SEE EXAMPLE ELONGATION CALCULATION AND TENSIONING PROCEDURE, THIS SHEET.
- ENDS OF PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH END OF BOX BEAMS AND EPOXY PAINTED.
- BEARING PADS SHALL CONFORM TO VERMONT SPEC. TS1.03.
- ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4".
- THE TOPS OF THE SLABS SHALL RECEIVE A SMOOTH FLOAT FINISH, (UNLESS NOTED OTHERWISE).
- SHEAR KEY SURFACES SHALL BE BLASTED CLEAN.
- SLABS SHALL BE HANDLED AND ERECTED USING THE LIFTING LOOPS ONLY. THE MINIMUM SLING ANGLE FROM THE HORIZONTAL SHALL BE 60°. SLABS SHALL BE STORED AND TRANSPORTED WITH TIMBER SUPPORTS WITHIN 2'-0" OF THE SLAB ENDS, UNLESS APPROVED BY J.P. CARRARA & SONS, INC.
- MATERIAL SPECIFICATION AND MIX DESIGN SHALL CONFORM TO VERMONT SPEC. PS10.02 AND PS10.05 RESPECTIVELY.
DESIGN MIX: J.P.C. BRIDGE MIX #450
152 LBS. TYPE III CEMENT - 6 LBS. FALLS CEMENT
125 LBS. FINE AGGREGATE
1650 LBS. COARSE AGGREGATE
22 GAL. WATER - 233 LBS.
1% (+ 2%) AIR CONTENT (5.5 OZ. DAREX II) ADJUST AS REQUIRED
6.0 OZ. ADVA PER 100 LBS. CEMENT, MAX. 1" SLUMP
3 OZ. PARACEM PER 100 LBS. CEMENT
5/2 OZ. DCL
- QUALITY CONTROL PROCEDURES ARE IN ACCORDANCE WITH PCI REQUIREMENTS. J.P. CARRARA & SONS, INC. IS A PCI CERTIFIED PLANT.
- THE VOIDS MUST BE VENTED DURING CURING PERIOD.
- CURING METHOD: AS SOON AS THE TOP OF THE BEAM IS FINISHED, A COVER OF POLY AND A LAYER OF HOMOSOTE (OR BLUE BOARD) WILL BE PLACED OVER THE SLAB. THE DESIRED CURING TEMPERATURE RANGE SHALL NOT DROP BELOW TO DEGREES F. THE TEMPERATURE SHALL BE RECORDED BY AUTOMATIC SENSOR INSTRUMENTS ON GRAPH CHARTS, SPACED NOT MORE THAN 100' APART AND WILL CONTINUE UNTIL RELEASE STRENGTH IS ACHIEVED (NATURAL CURE WITH NO EXTERNAL HEAT APPLIED). EACH CHART SHALL BE MARKED.
- TRANSVERSE POST-TENSIONING SEQUENCE:
A. ONCE VOIDED SLABS ARE ERECTED, POST-TENSION TENDONS TO APPROXIMATELY 5,000 LBS.
B. GROUT SHEAR KEYS.
C. ONCE SHEAR KEY GROUT HAS ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 1,500 PSI, POST-TENSION TENDONS TO 30,000 LBS.

EXAMPLE PRESTRESSING STRAND ELONGATION CALC. AND TENSIONING
(NOT TO BE USED FOR CONSTRUCTION)

SIZE & GRADE: 1/2" x 270 KSI
AREA: 0.153 IN²
TENSION: 31,000 LB EACH STRAND
GRIP TO GRIP: 192'-4 3/4" = 192.813'
E_s = 28,600,000 PSI (ASSUMED FOR THESE CALCULATIONS; VALUE TO BE OBTAINED FOR STRAND SPOOL ACTUALLY USED)

EXAMPLE:
$$\Delta = \frac{PL}{AE} = \frac{(31,000 - 3,000) \times 192.813 \times 12}{0.153 \times 28,600,000} = 14.81"$$

TOLERANCES: ± 5%
THEREFORE
$$\Delta \text{ UPPER LIMIT} = 1.05 \times 14.81" = 15.55" = 15 \text{ 9/16}"$$

$$\Delta \text{ LOWER LIMIT} = 0.95 \times 14.81" = 14.07" = 14 \text{ 1/16}"$$

EXTRA FORCE REQUIRED TO COMPENSATE FOR 1/2" CHUCK SLIPPAGE.
$$\Delta P = \frac{0.5 \times 28,000}{14.81} = 945 \text{ LB}$$

TOTAL TENSIONING FORCE = 31,000 + 945 = 31,945 LB

STRAND TENSIONING PROCEDURE:

- PULL EACH STRAND INITIALLY TO 3,000* LB AND MARK STRAND.
- THEN PULL EACH STRAND TO A TOTAL TENSION OF 31,945* LB AND MEASURE ELONGATION AFTER SEATING. IT MUST BE BETWEEN 14 1/16" & 15 9/16"

*NOTE: FORCES READ ON STRESSING JACK GAUGES MUST BE MADE TO CORRESPOND TO ABOVE VALUES BASED ON CALIBRATION DATA FOR SPECIFIC JACK USED.

J.P. CARRARA & SONS, INC.
NOV 12 2003
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11-12-03 ISSUED FOR PRODUCTION

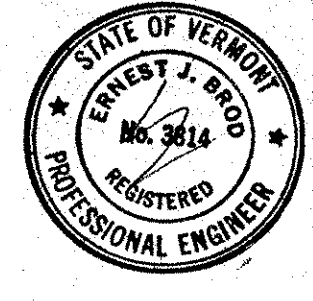
APPROVAL STAMP:

☒ Reviewed
☐ Rejected

☐ Furnish as Corrected
☐ Revise and Resubmit
☐ Submit Specified Item

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11/25/03
Date
By: R. Jorg



J.P. CARRARA & SONS, INC.
Precast & Prestress Manufacturer
2464 CASE ST., WOODBURY, VERMONT 05553 Phone: (802)388-6361 Fax: (802)388-9010

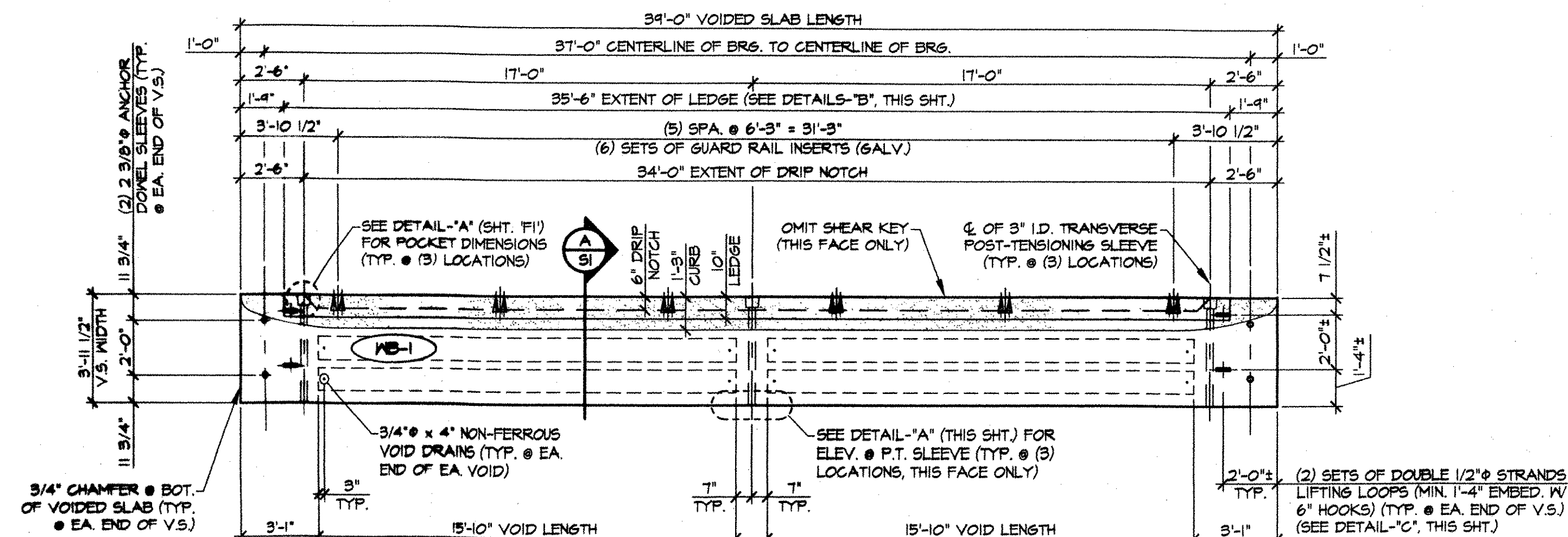
R.C. CONTRACTORS
CONTRACTOR
GLOVER, VERMONT

STATE OF VERMONT
AGENCY OF TRANSPORTATION

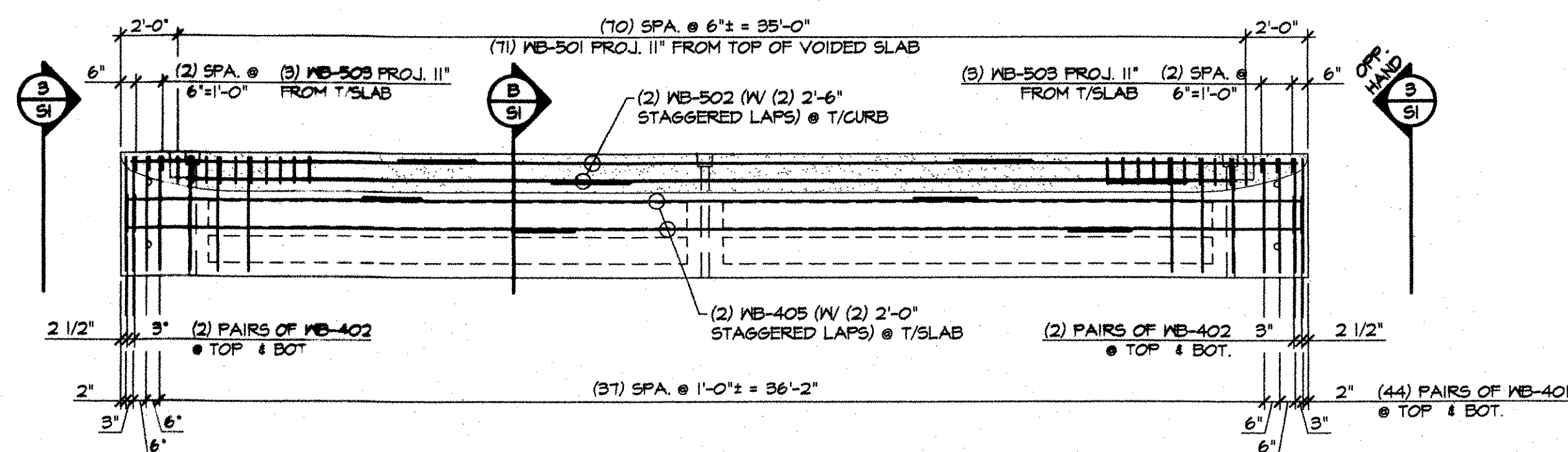
TOWN OF WATERBURY
TH 3-1637 LOOMIS HILL ROAD (TH. 6, CLASS B) BRIDGE NO. 14

SUPERSTRUCTURE PLAN & DETAILS

DATE: JULY 18, 2003
SCALE: NOTED
CHKD: -- DFTM: B.L.
JOB NO: 23185-03
DWG. NO: F1

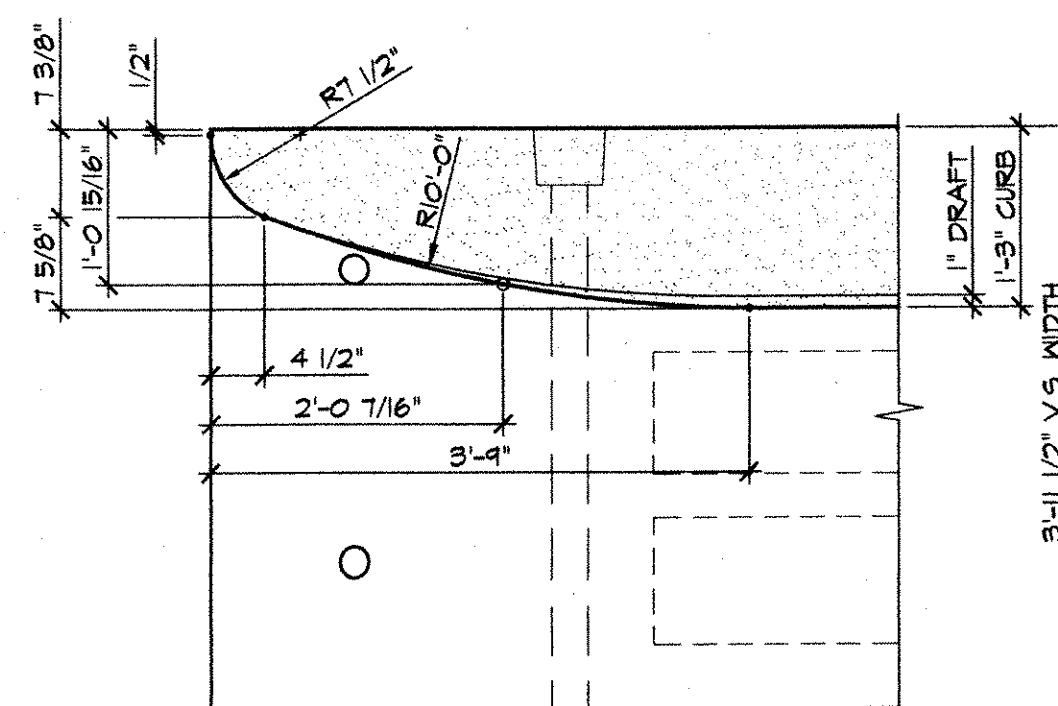
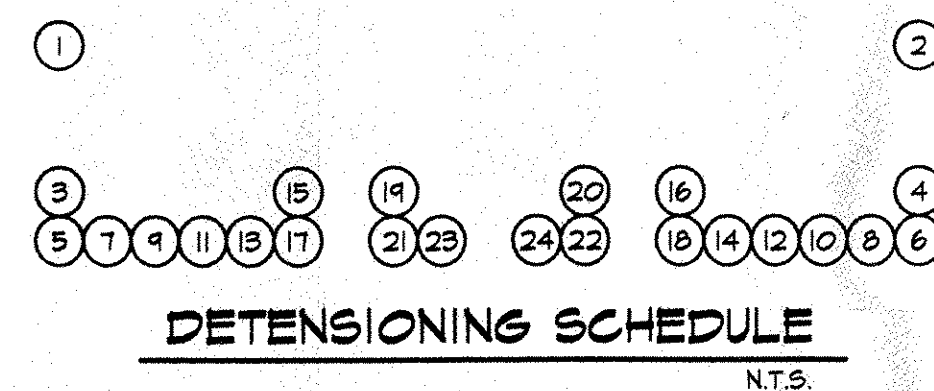
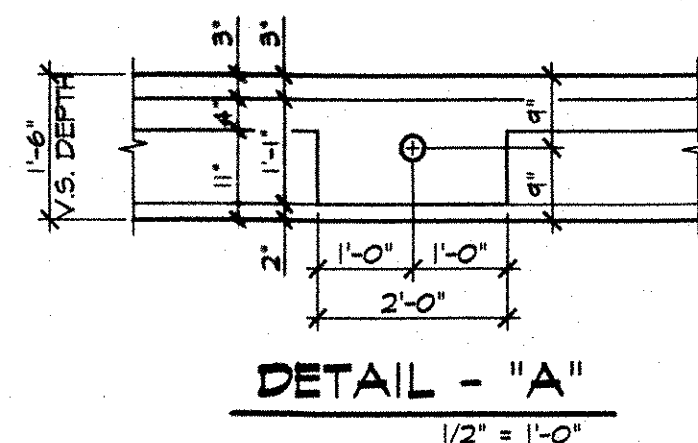


1 DIMENSIONAL PLAN VIEW IN FORM
1/4" = 1'-0"

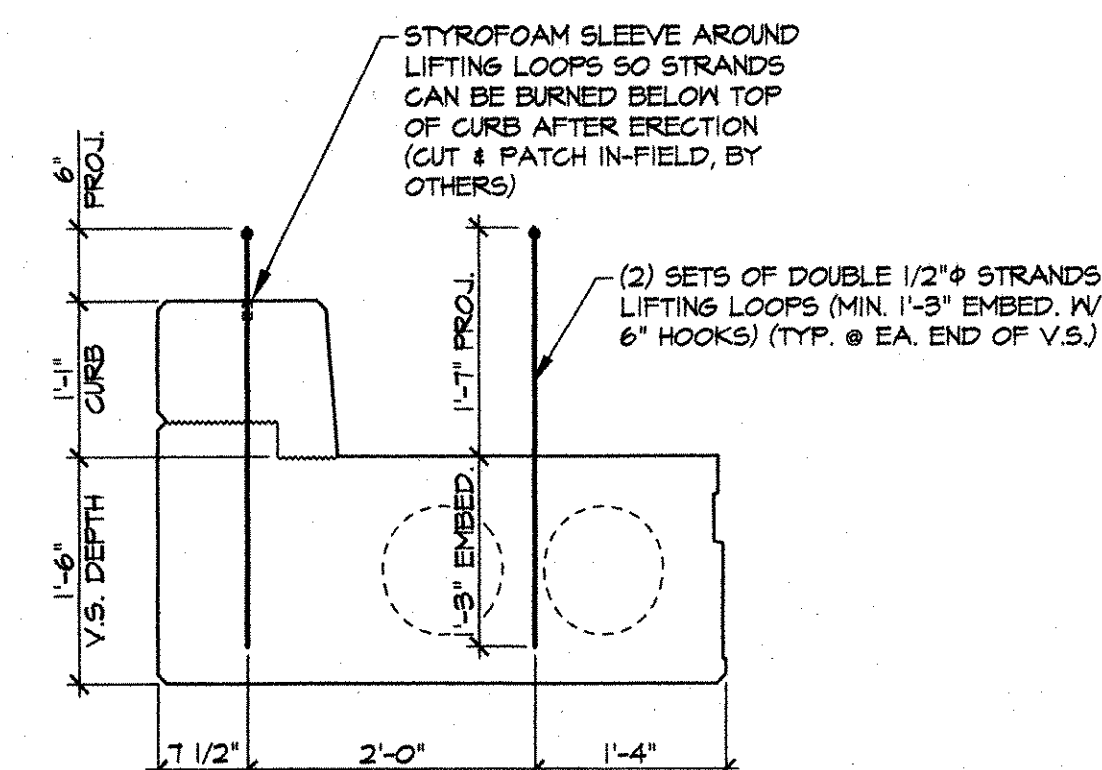


2 REINFORCING PLAN VIEW IN FORM
1/4" = 1'-0"

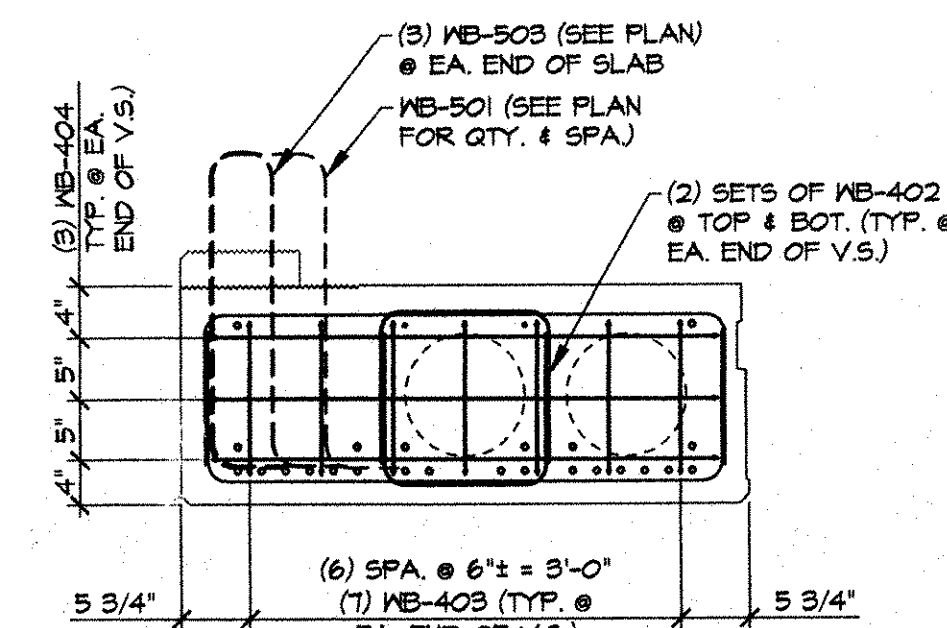
SHOP NOTE:
ADJUST REINFORCING AS REQUIRED
TO CLEAR P.T. DUCTS, SLEEVES, ETC.



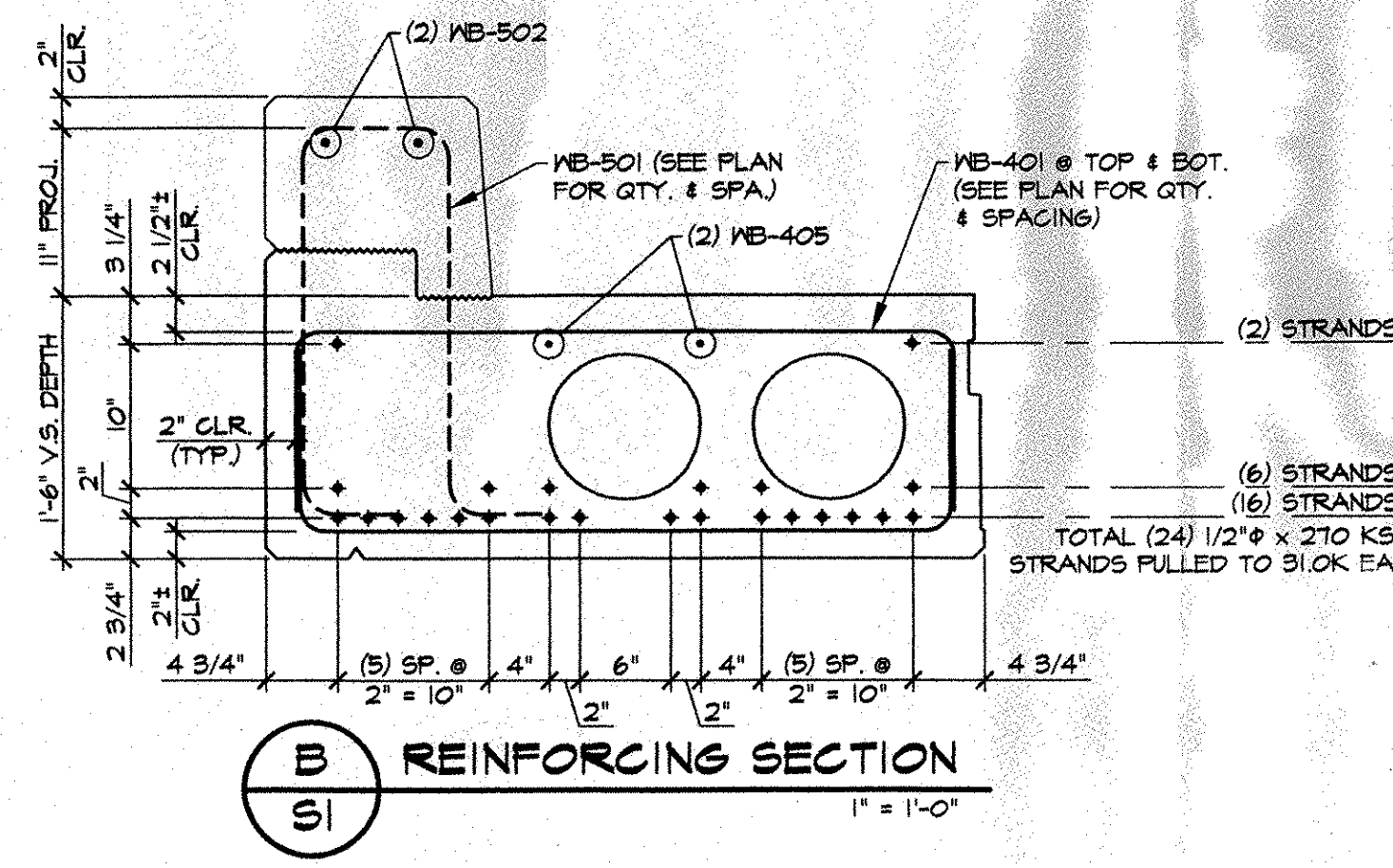
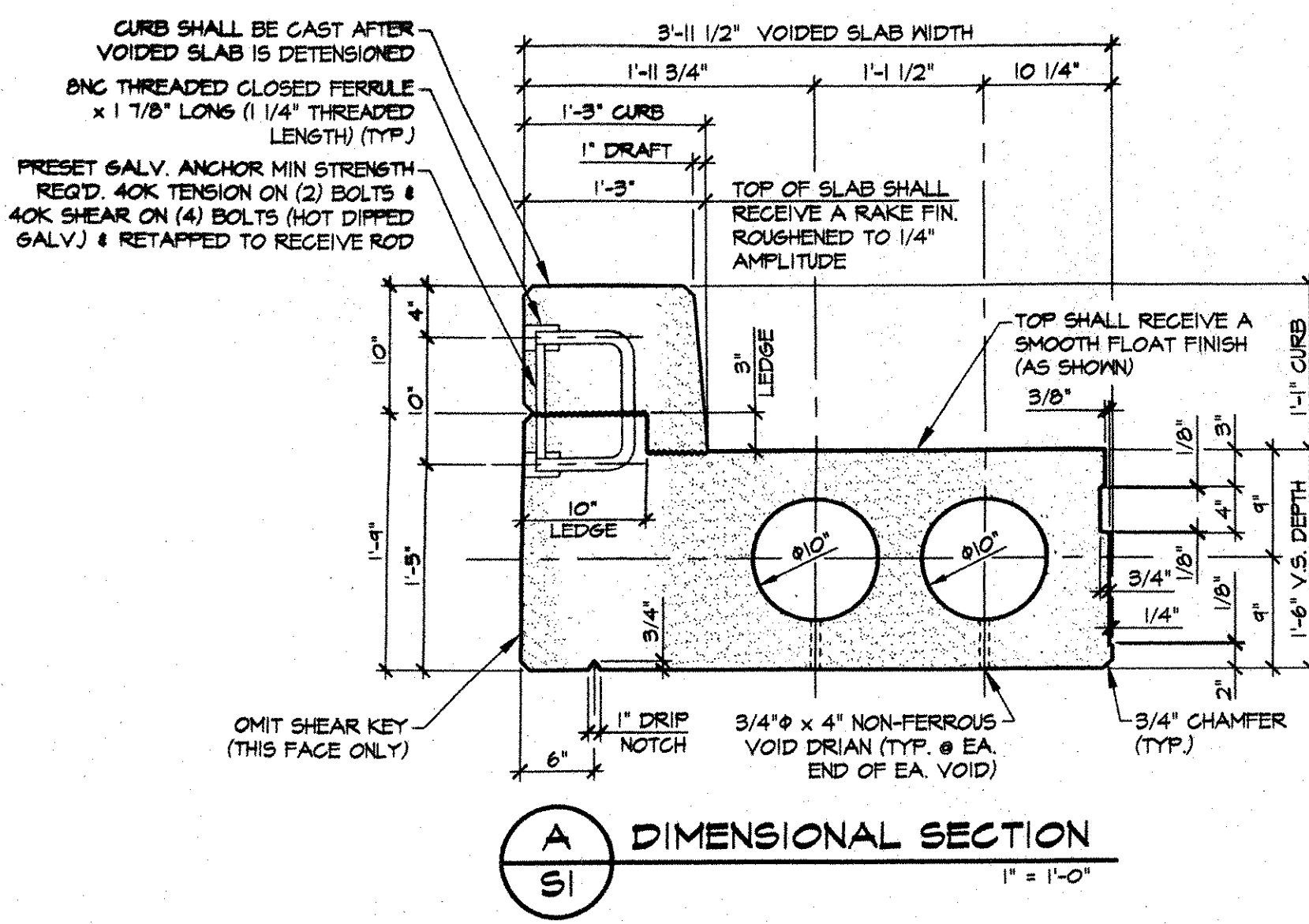
DETAIL - "B"
3/4" = 1'-0"



DETAIL - "C"
3/4" = 1'-0"



3 END BLOCK REINF. SECTION
3/4" = 1'-0"



J.P. CARRARA & SONS, INC.

NOV 12 2003

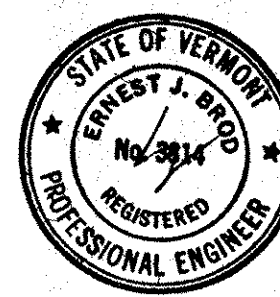
ISSUED FOR PRODUCTION

11-12-03 ISSUED FOR PRODUCTION

APPROVAL STAMP:
☒ Reviewed
☐ Revised and Resubmit
☐ Submit Specified Item

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McFarland-Johnson, Inc.
Date: 11/25/03
By: [Signature]



MARK: MB-1	QTY.: 2	WT.: SLAB: 15.20 T CURB: 9.24 T TOTAL: 18.44 T	VOL.: SLAB: 7.50 cy CURB: 1.60 cy TOTAL: 9.10 cy
MATERIAL LIST / SLAB			
ITEM	MARK	DESCRIPTION	QTY.
1	401	#4 BENT BAR	88
2	402	#4 BENT BAR	8
3	403	#4 BENT BAR	14
4	404	#4 BENT BAR	6
5	405	#4 CONTINUOUS BAR (W/ (2) 2'-0" STAGGERED LAP)	2
6			
7	501	#5 BENT BAR	71
8	502	#5 CONTINUOUS BAR (W/ (2) 2'-6" STAGGERED LAP)	2
9	503	#5 BENT BAR	6
10			
11			
12			
13			
14			
15			
16		GUARD RAIL INSERT (PRESET GALV. ANCHOR)	6
17		10" x 15'-10" VOID	2
18		3/4" x 4" NON-FERROUS VOID DRAIN	8
19		DOUBLE 1/2" STRAND LIFTING LOOPS	4
20			

J.P. CARRARA & SONS, INC.
Precast & Prestress Manufacturer
2464 CASE ST., MIDDLEBURY, VERMONT 05753 Phone: (802)388-6361 Fax: (802)388-9010

R.C. CONTRACTORS
CONTRACTOR
GLOVER, VERMONT

STATE OF VERMONT
AGENCY OF TRANSPORTATION

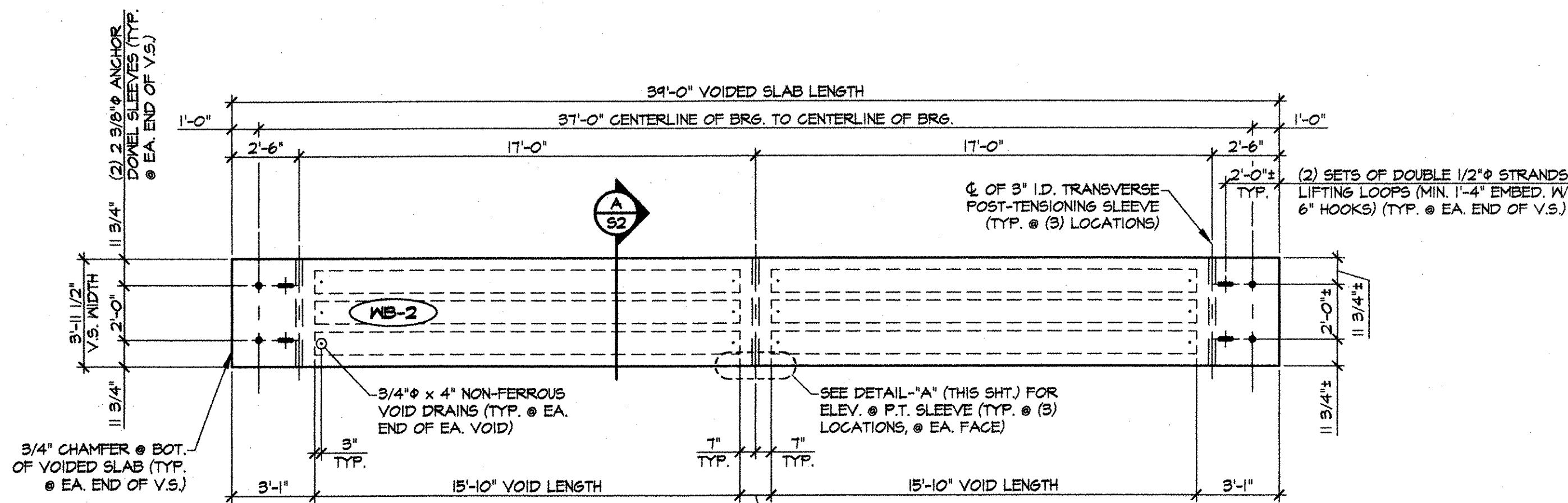
DATE: JULY 18, 2003
SCALE: NOTED

TOWN OF WATERBURY
TH B-4687 LOOMIS HILL ROAD (T.H. 6, CLASS B) BRIDGE NO. 14

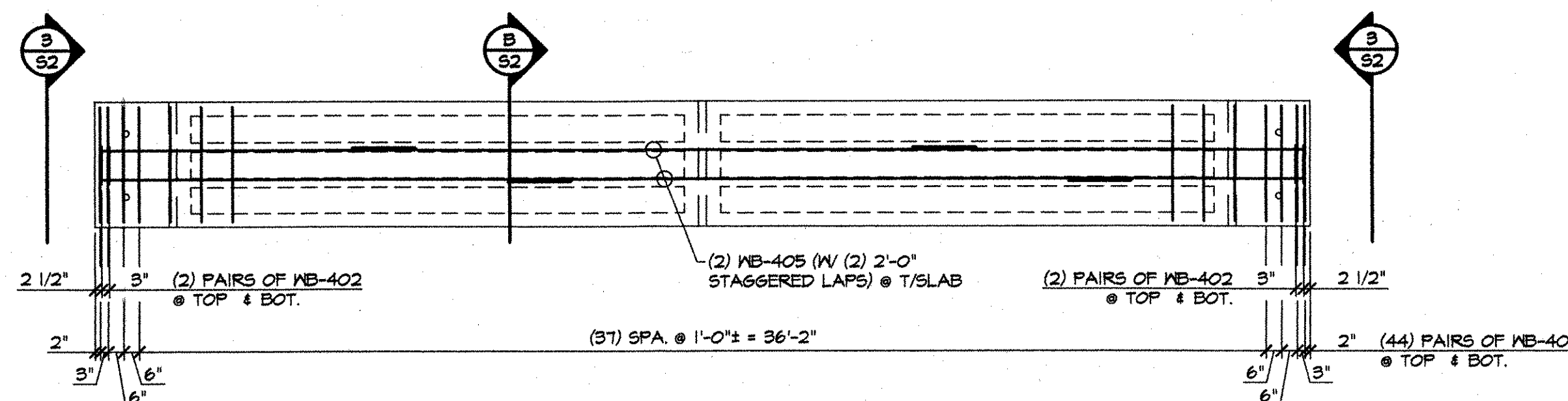
CHKD: -- DFTM: BL.
JOB NO: 23185-03

P/S VOIDED SLAB DETAILS

DWG. NO: S1

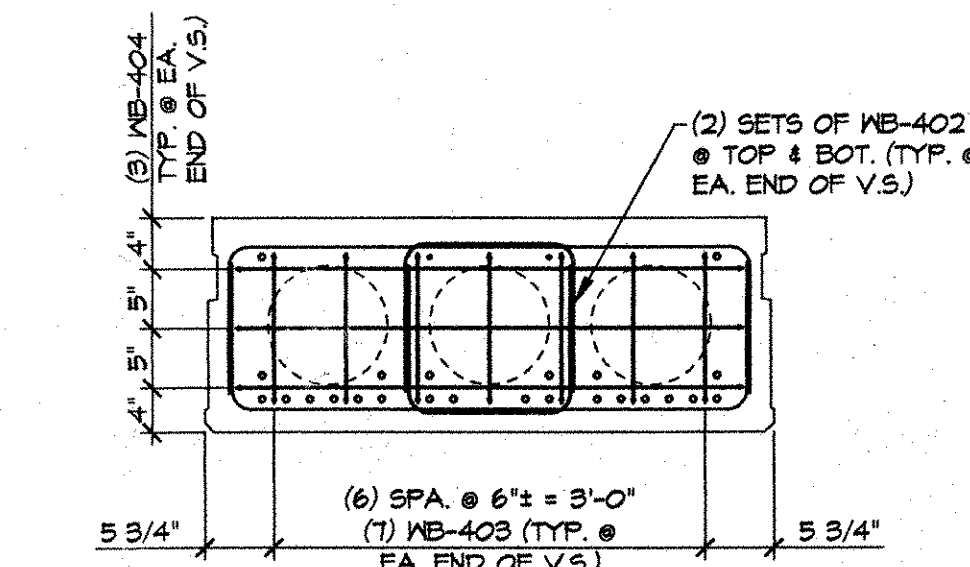


1 DIMENSIONAL PLAN VIEW IN FORM
1/4" = 1'-0"

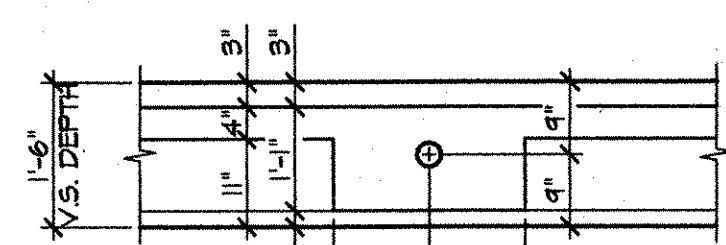


2 REINFORCING PLAN VIEW IN FORM
1/4" = 1'-0"

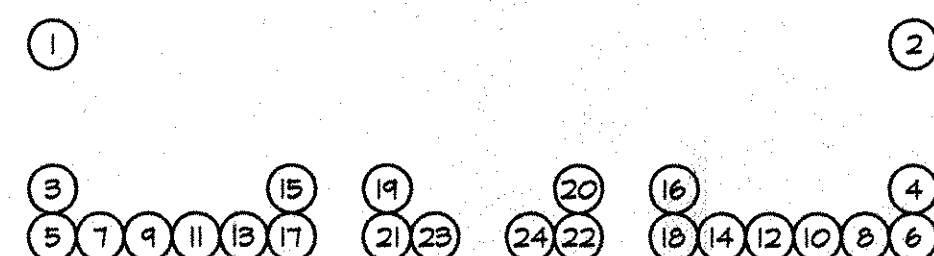
SHOP NOTE:
ADJUST REINFORCING AS REQUIRED
TO CLEAR P.T. DUCTS, SLEEVES, ETC.



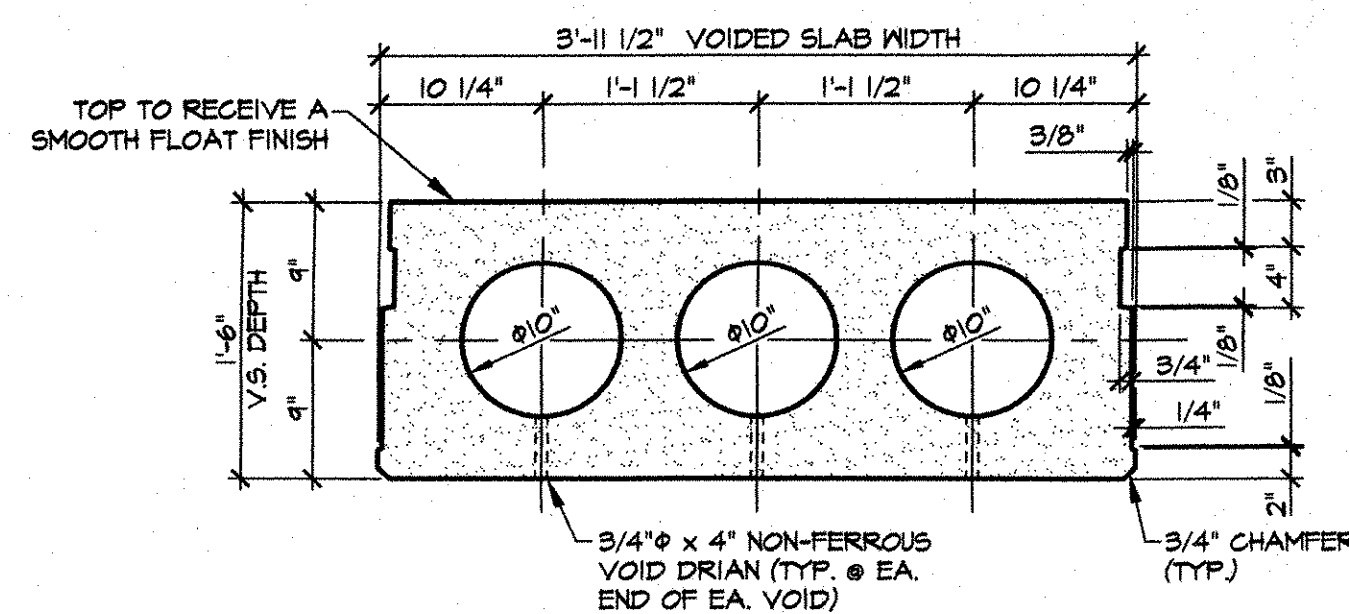
3 END BLOCK REINF. SECTION
3/4" = 1'-0"



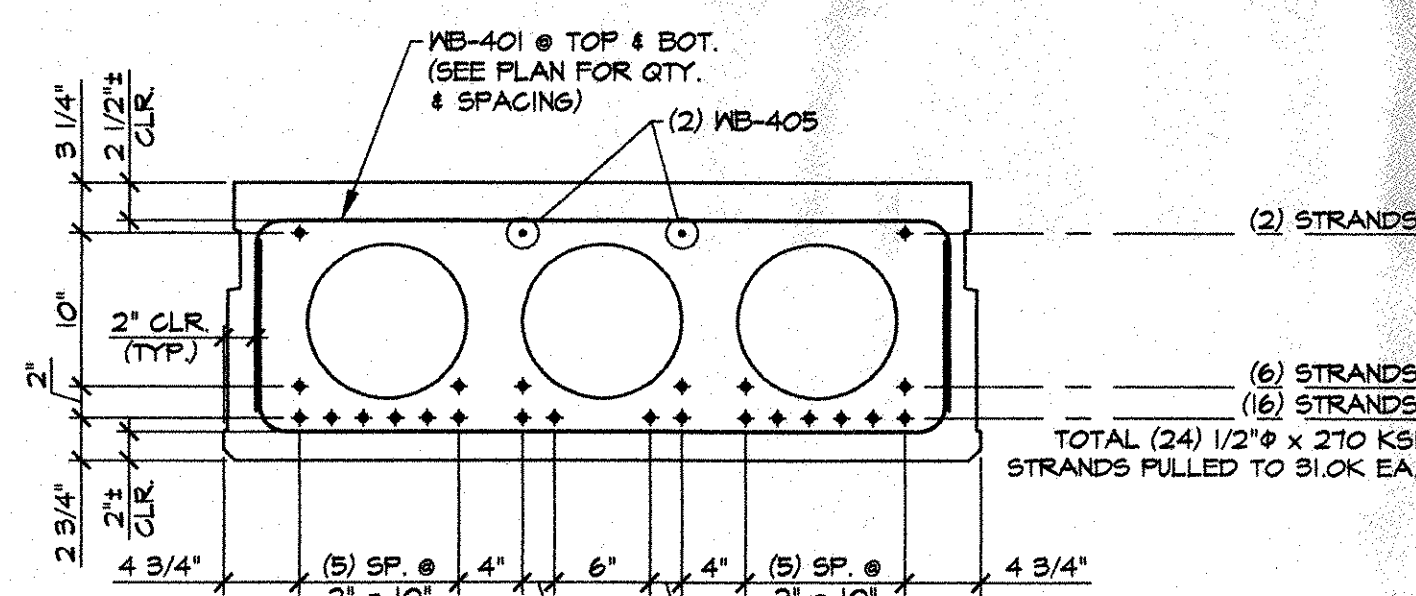
DETAIL - "A"
1/2" = 1'-0"



DETENSIONING SCHEDULE
N.T.S.



A DIMENSIONAL SECTION
1" = 1'-0"



B REINFORCING SECTION
1" = 1'-0"

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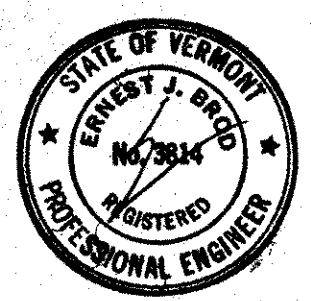
MARK: WB-2				QTY.: 4	WT./TONS: 10.00	CU. YDS.: 4.95
MATERIAL LIST / SLAB						
ITEM	MARK	DESCRIPTION	QTY.			
1	401	#4 BENT BAR	88			
2	402	#4 BENT BAR	8			
3	403	#4 BENT BAR	14			
4	404	#4 BENT BAR	6			
5	405	#4 CONTINUOUS BAR (W/ (2) 2'-0" STAGGERED LAP)	2			
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17		10" x 15'-10" VOID	6			
18		3/4" x 4" NON-FERROUS VOID DRAIN	12			
19		DOUBLE 1/2" STRAND LIFTING LOOPS	4			
20						

11-12-03 ISSUED FOR PRODUCTION

APPROVAL STAMP:
☒ Reviewed
☐ Rejected
☐ Furnish as Corrected
☐ Revise and Resubmit
☐ Submit Specified Item

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McFarland-Johnson, Inc.
Date: 11/25/03
By: [Signature]



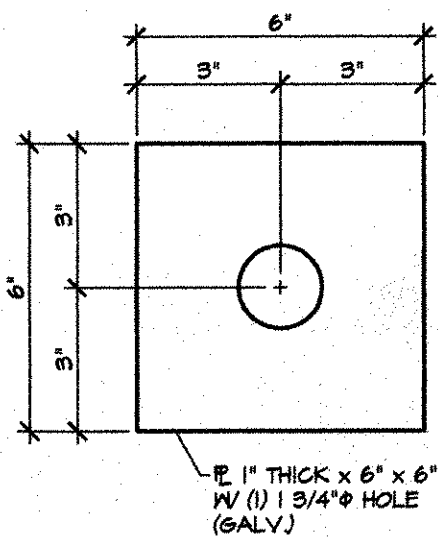
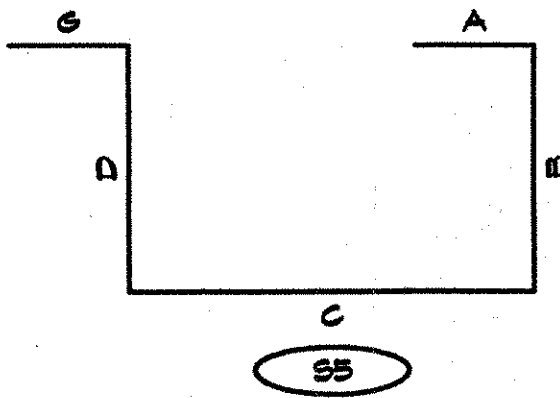
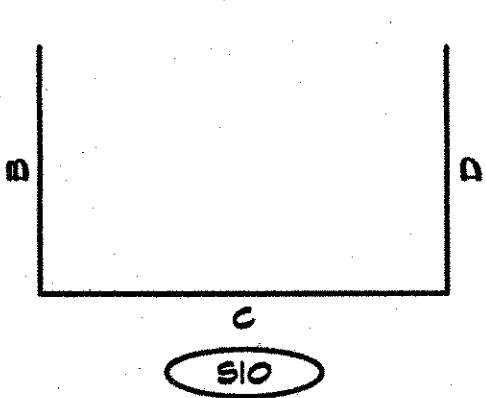
J.P. CARRARA & SONS, INC. Precast & Prestress Manufacturer 2464 CASE ST., WATERBURY, VERMONT 05671 Phone: (802) 388-6361 Fax: (802) 388-9010		R.C. CONTRACTORS CONTRACTOR GLOVER, VERMONT	
STATE OF VERMONT AGENCY OF TRANSPORTATION		DATE: JULY 18, 2003 SCALE: NOTED	
TOWN OF WATERBURY TH B-4637 LOOMIS HILL ROAD (T.H. 6, CLASS 3) BRIDGE NO. 14		CHKD: -- DFTM: B.L. JOB NO: 23185-03	
P/S VOIDED SLAB DETAILS		DWG. NO: 52	

BENT BARS, TIES, & STIRRUPS

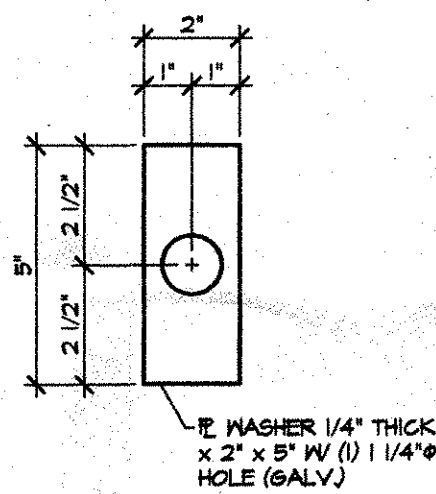
ITEM	MARK	QTY.	SIZE	LENGTH	TYPE	A	B	C	D	E	F/R	G	H	J	K	O	GRADE	REMARKS
1	401	528	#4	5'-6 1/2"	S/O		1'-0 1/2"	3'-7 1/2"	1'-0 1/2"								60	
2	402	48	#4	3'-1"	S/O		1'-0 1/2"	1'-2"	1'-0 1/2"								60	
3	403	84	#4	6'-10 1/2"	S/O		3'-0"	1'-0 1/2"	3'-0"								60	
4	404	36	#4	4'-4 1/4"	S/O		3'-0"	3'-6 1/4"	3'-0"								60	
5	405	12	#4	38'-8"	STR.												60	(2) 2'-0" STAG. LAP
6																		
7	501	142	#5	5'-4 1/2"	SS	6"	2'-2"	10"	2'-2"			6"					60	
8	502	4	#5	38'-8"	STR.												60	(2) 2'-6" STAG. LAP
9	503	12	#5	5'-4 1/2"	SS	6"	2'-2"	5"	2'-2"			6"					60	
10																		
11																		
12																		
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MISCELLANEOUS MATERIALS

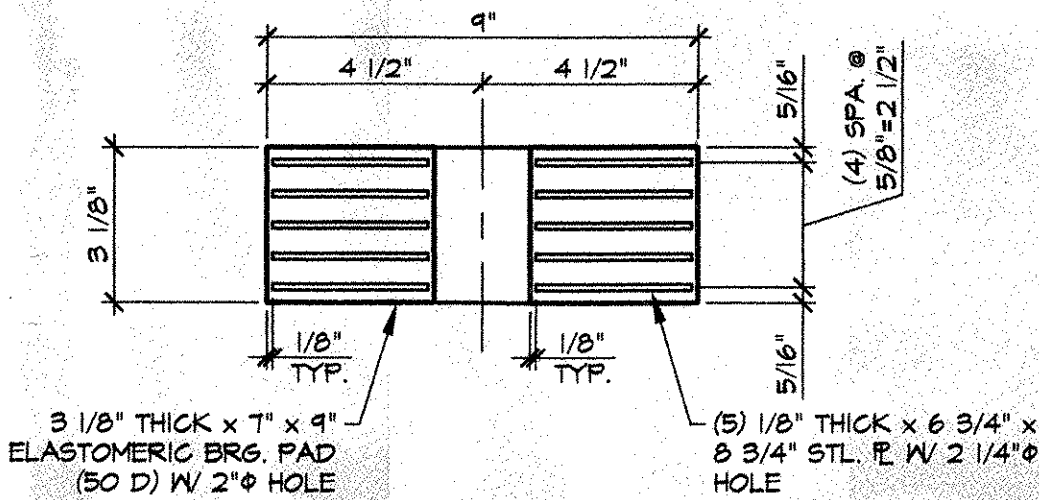
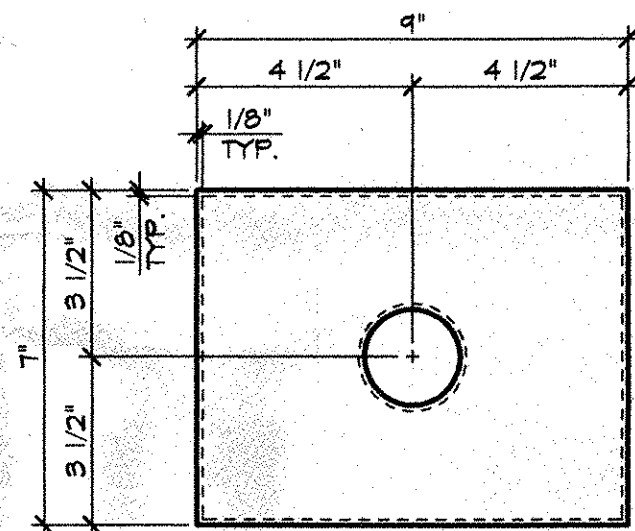
ITEM	MARK	QTY.	DESCRIPTION	REMARKS
1	EM-1	6	1/2" x 3/4" x 5" x 5" W/ (1) 2" HOLE (GALV.)	FOR ERECTION, SEE DETAIL THIS SHEET
2		6	SINGLE USE STRESSING CHUCK	FOR ERECTION
3		3	1/2" x 26'-4" POLYSTRAND	FOR ERECTION
4		24	3 1/8" THICK x 7" x 9" ELASTOMERIC BRG. PAD (SO D) W/ (1) 2" HOLE	FOR ERECTION, SEE DETAIL THIS SHEET
5		24	#8 x 3'-1" ANCHOR DOWEL (EPOXY COATED)	FOR ERECTION
6				
7		48	1/4" x 2" x 5" W/ (1) 1/4" HOLE (GALV.)	FOR ERECTION, SEE DETAIL THIS SHEET
8		48	1" x 5" A325 THEADED ROD (HOT DIPPED GALV.)	FOR ERECTION
9		48	STANDARD WASHER (GALV.)	FOR ERECTION
10		96	1" NUTS (GALV.)	FOR ERECTION
11				
12		12	GUARD RAIL INSERT (MEADOW BURKE)	PRESET GALV. ANCHOR
13		32	10" x 15'-10" VOID	
14		64	3/4" x 4" NON-FERROUS VOID DRAIN	
15		24	DOUBLE 1/2" STRAND LIFTING LOOPS	
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				



EM - 1
3" = 1'-0"

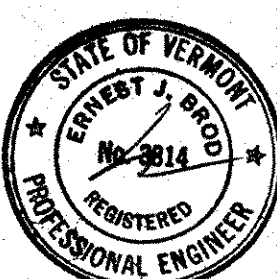


WASHER
3" = 1'-0"

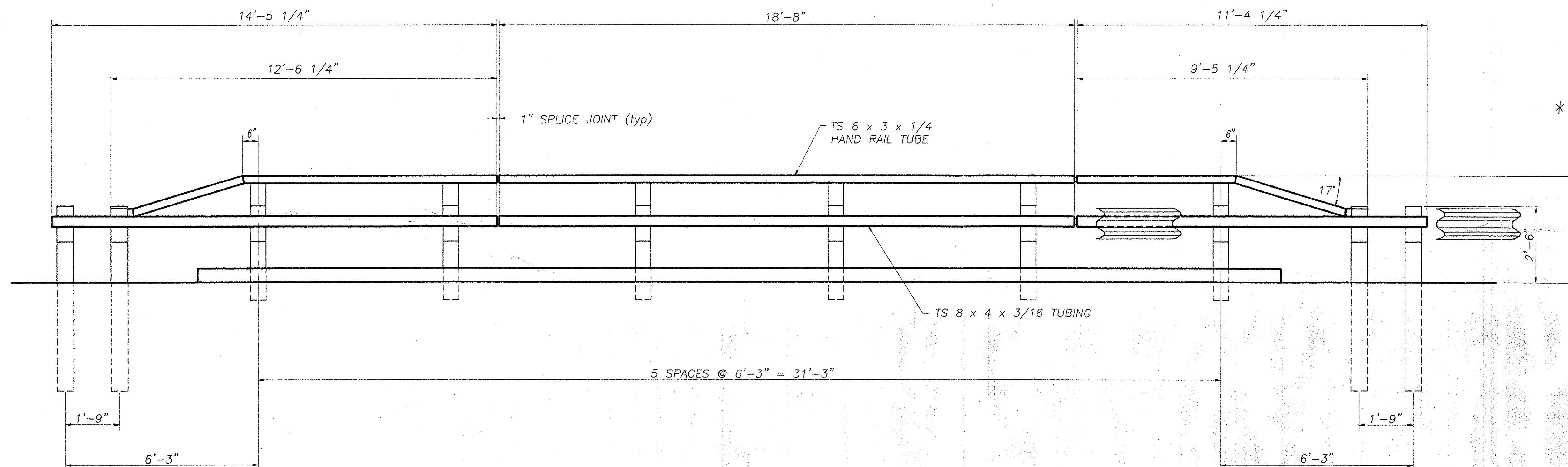


BEARING PAD DETAIL
3" = 1'-0"

J.P. CARRARA & SONS, INC.
NOV 12 2003
ISSUED FOR PRODUCTION



11-12-03 ISSUED FOR PRODUCTION		J.P. CARRARA & SONS, INC. Precast & Prestress Manufacturer 244 OISE ST., WATERBURY, VERMONT 05671 Phone: (802) 388-6361 Fax: (802) 388-9010		R.C. CONTRACTORS CONTRACTOR GLOVER, VERMONT	
APPROVAL STAMP: ☒ Reviewed ☐ Rejected ☐ Furnish as Corrected ☐ Revise and Resubmit ☐ Submit Specified Item		STATE OF VERMONT AGENCY OF TRANSPORTATION		DATE: JULY 18, 2003 SCALE: NOTED	
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McFarland-Johnson, Inc. Date: 11/24/03 By: [Signature]		MATERIALS LIST		DWG. NO: M1	



ELEVATION – RIGHT BRIDGE RAILING
LEFT BRIDGE RAILING – SIMILAR

TOTAL PAY LIMIT ITEM 525.43 (STEEL BRIDGE RAILING HDSB WITH HANDRAIL) = 88 L.F.

BILL OF MATERIAL		
Qty.	Description	Material
12	FASCIA MOUNTED POST W8x24 x 4'-1"	A572 GR 50
8	TRANSITION POST W8x24 x 6'-0"	A572 GR 50
4	SPLICE CHANNEL C7x12.25 x 2'-7"	A572 GR 50
56	TUBE BLOCKOUTS TS 8x4x3/16 x 6" LG	A500 GR B
2	RAIL TUBE TS 8x4x3/16 x 18'-8" OAL	A500 GR B
2	RAIL TUBE TS 8x4x3/16 x 14'-5 1/4" OAL	A500 GR B
2	RAIL TUBE TS 8x4x3/16 x 11'-4 1/4" OAL	A500 GR B
8	10 GA. HDSB RAIL 12'-6" / 6'-3"	M180 B2
2	HAND RAIL TUBE TS 6x3x1/4 x 18'-8" OAL	A500 GR B
2	HAND RAIL TUBE (DROP END) TS 6x3x1/4 x 12'-6 1/4"	A500 GR B
2	HAND RAIL TUBE (DROP END) TS 6x3x1/4 x 9'-5 1/4"	A500 GR B
8	SPLICE PLATE – HAND RAIL TUBE 3/4"x5"x2'-7"	A572 GR 50
12	SHELF ANGLE L5x3 1/2x3/8 6 1/2" LG.	A36
20	5/8" x 13" HEX BOLT	A325
4	5/8" x 12" HEX BOLT	A325
20	5/8" x 10" HEX BOLT	A325
80	5/8" x 2" HEX BOLT	A325
12	5/8" x 4 1/2" HEX BOLT	A325
16	3/4" x 4 1/2" HEX BOLT	A325
20	RECTANGULAR WASHER 3/16" x 1-3/4" x 3"	A572 GR 50
104	5/8" HEX NUT	A194 GR 2H
12	5/8" HEX NUT	A563
16	3/4" HEX NUT	A563
16	3/4" ROUND WASHER (LARGE)	F844
204	5/8" ROUND WASHER	F436
64	5/8" x 1 1/4" PANEL SPLICE BOLT	A307
64	5/8" DBL RECESSED NUT	A563A
24	1" U-SHAPED ANCHOR RODS	A449
48	1" HEX NUT	A194 GR 2H
24	1/4" x 2" x 5" PLATE WASHER	A572 GR 50
24	1" PLAIN WASHER	F436

* PROVIDED BY OTHERS, NOT SUPPLIED BY HIGHWAY SAFETY CORPORATION. SHOWN FOR REFERENCE ONLY.



☒ Reviewed
☐ Rejected
☐ Furnish as Corrected
☐ Revise and Resubmit
☐ Submit Specified Item

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Date: 2/16/04
 By: SLM

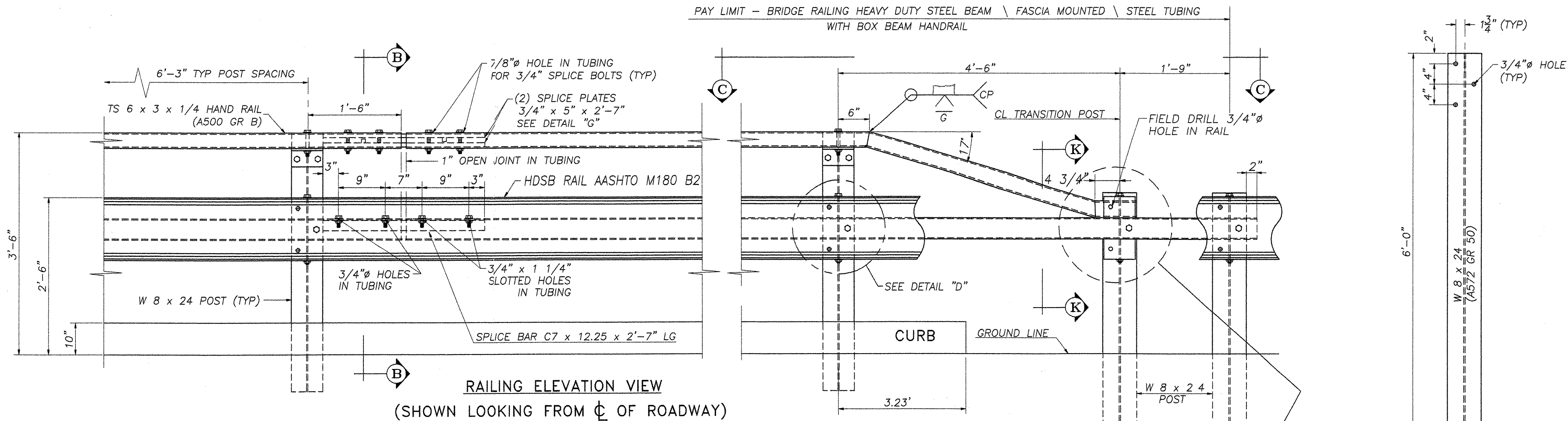
REVISIONS		
No.	Remarks	Date
0	Initial submittal	11-11-03

HIGHWAY SAFETY CORP.
 GLASTONBURY, CT

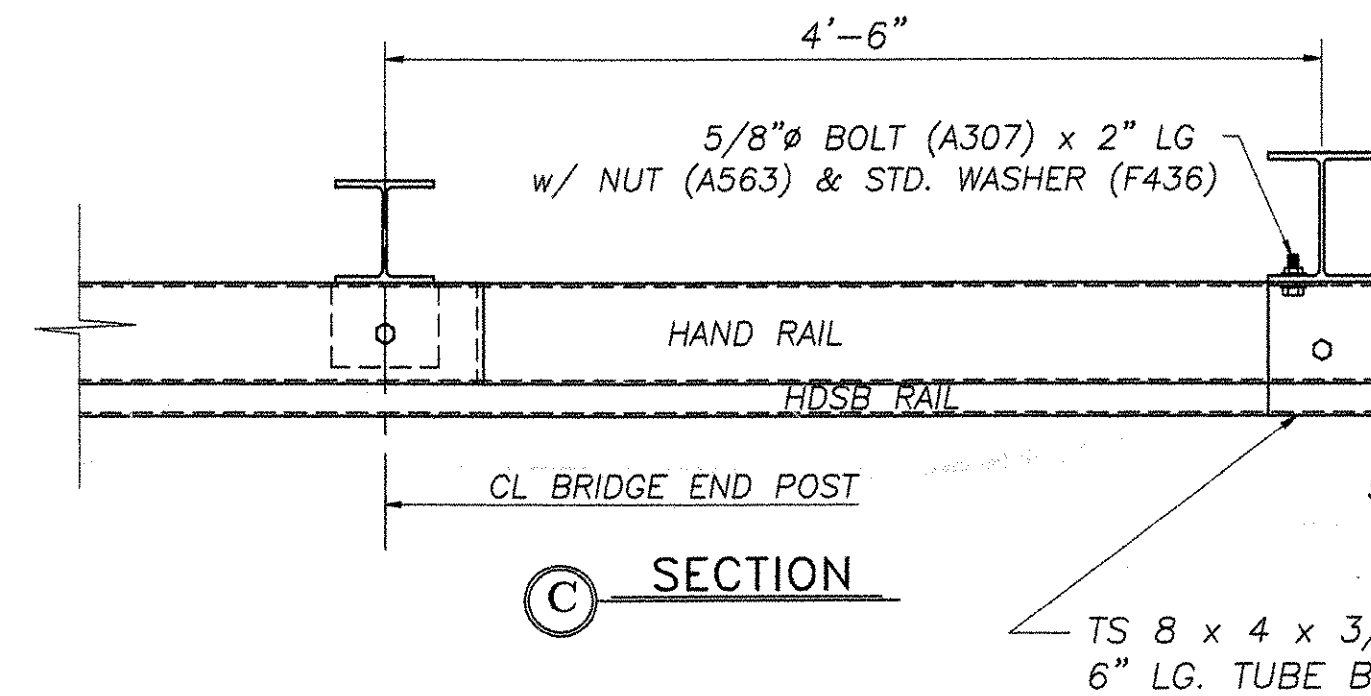
ITEM 525.43 BRIDGE RAILING HDSB WITH HANDRAIL
 BRIDGE NO. 14 HIGHWAY NO. 6
 TOWN OF WATERBURY, VERMONT
 LOOMIS HILL ROAD OVER THATCHER BROOK
 PROJECT NO. TH 3-9637

DRAWN: MHM
 CHECKED: [Signature]
 DATE: 10/15/03
 SCALE: N.T.S.
 HSC REFERENCE NO.: 1400
 SIZE: D REVISION: 0
 SHEET NO. 023 RAIL: 1 of 2

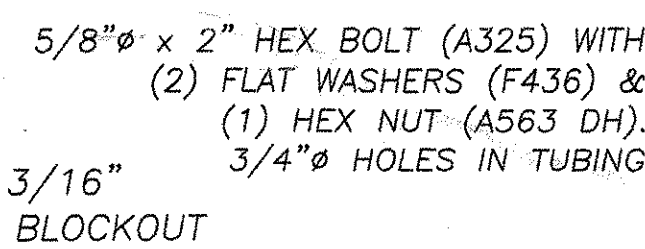
GENERAL CONTRACTOR: F.R. LAFAYETTE INC.
 SUB CONTRACTOR: F.R. LAFAYETTE INC.



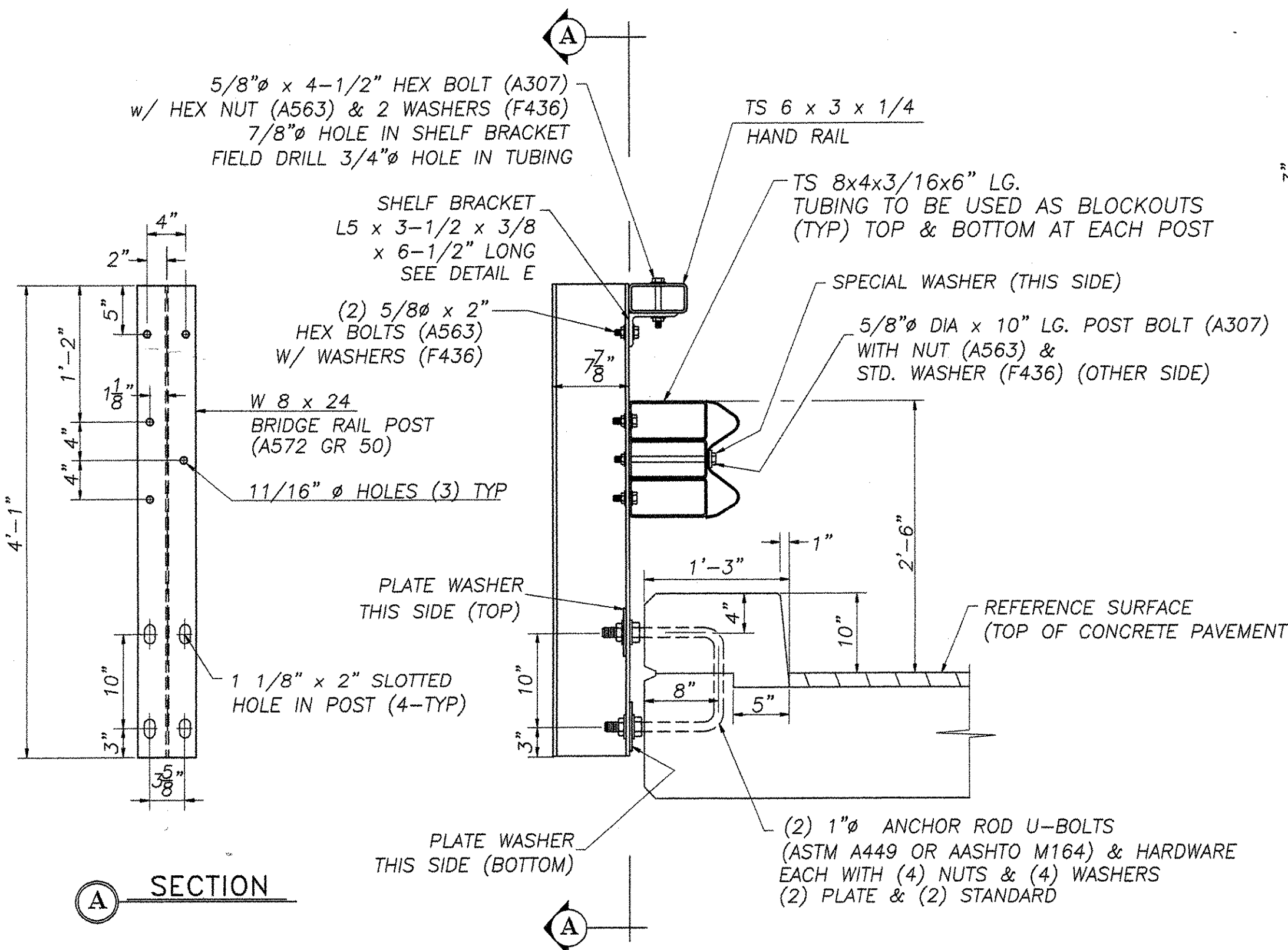
RAILING ELEVATION VIEW
(SHOWN LOOKING FROM CL OF ROADWAY)



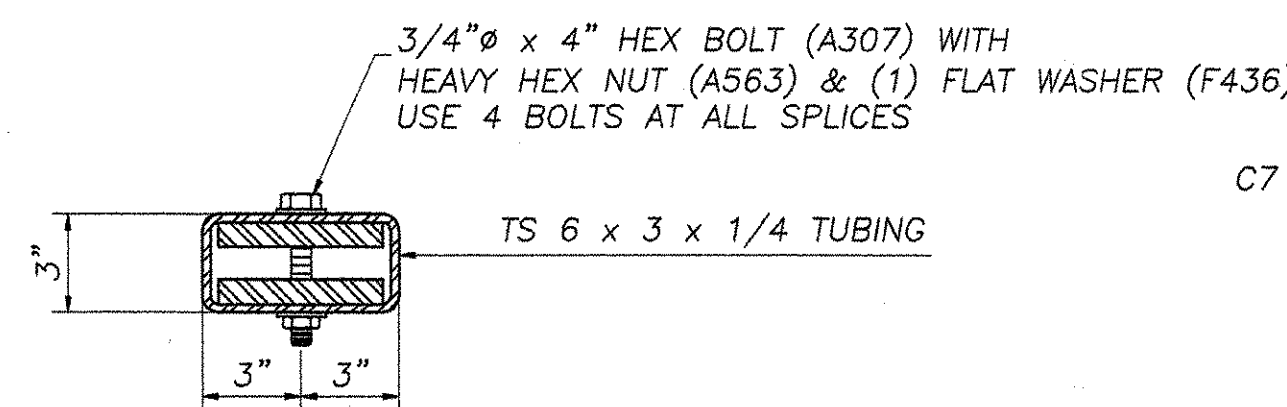
SECTION
C



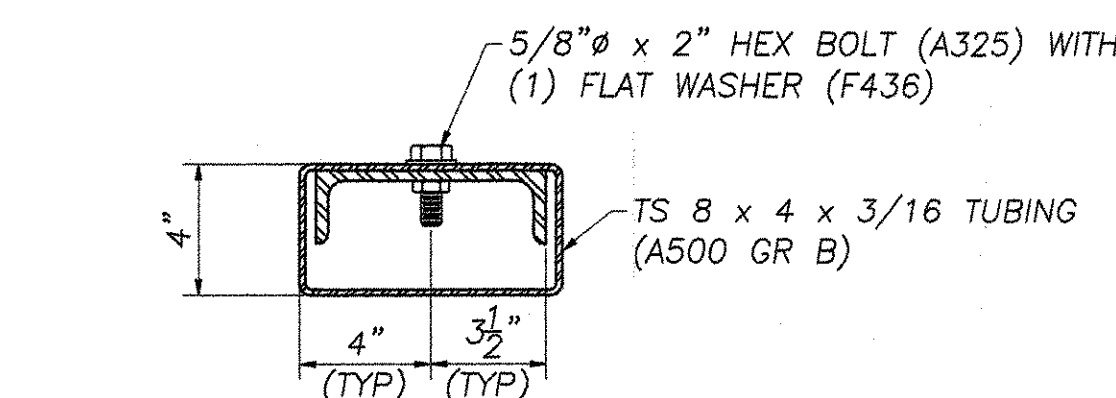
DETAIL "D"
STEEL BEAM GUARD RAIL NOT SHOWN



FASCIA MOUNTED POST WITH CURB
W 8 x 24 (A572 GR 50)



PARTIAL SECTION
B
SHOWING HAND RAIL TUBE, BRIDGE
RAIL TUBE & SPLICE BARS



SPECIAL WASHER DETAIL

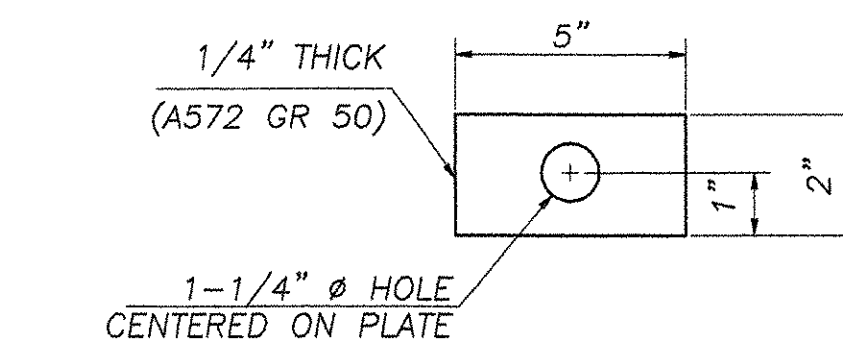
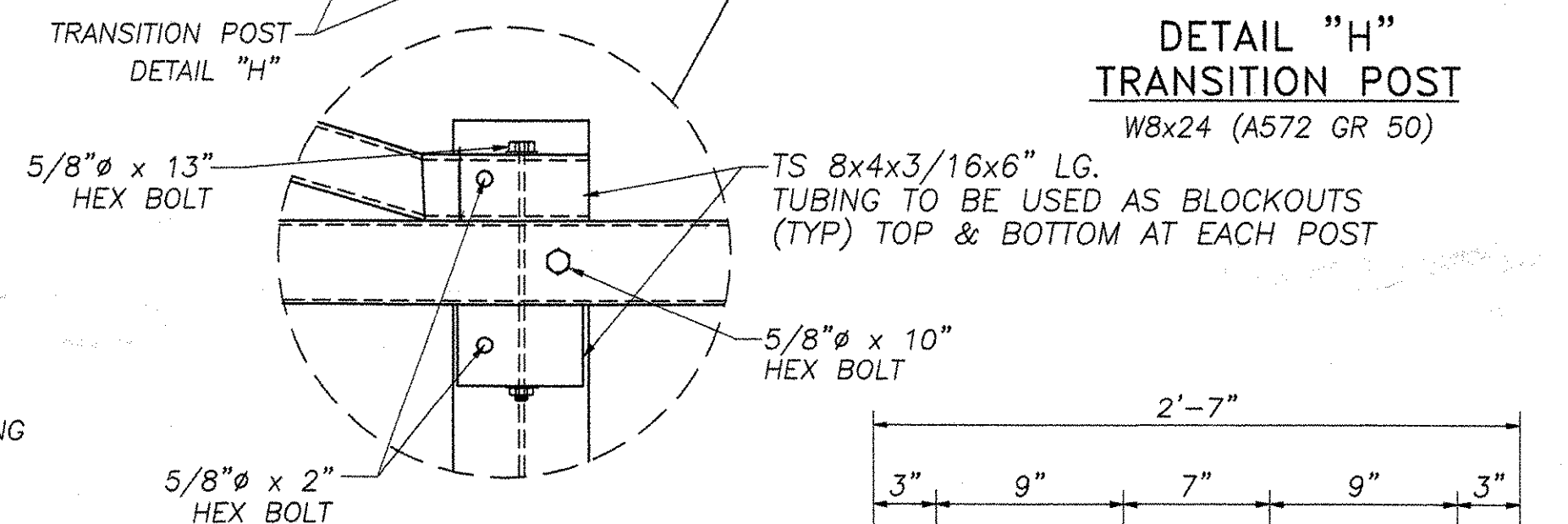
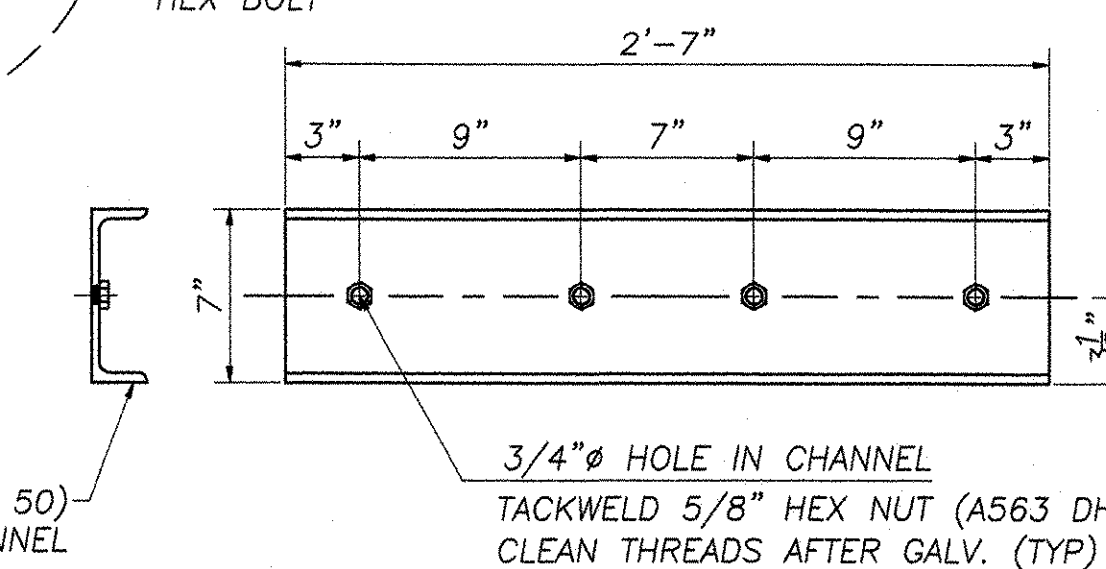


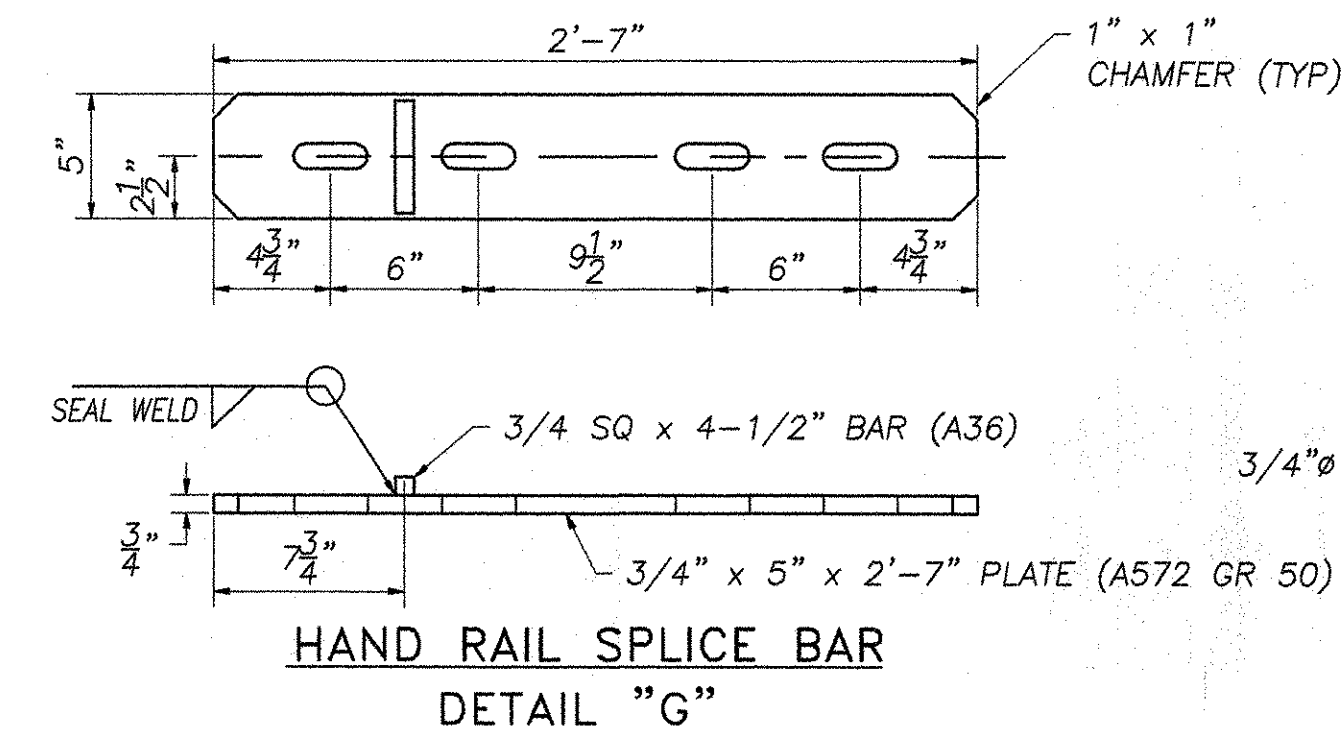
PLATE WASHER DETAIL



DETAIL "H"
TRANSITION POST
W8x24 (A572 GR 50)



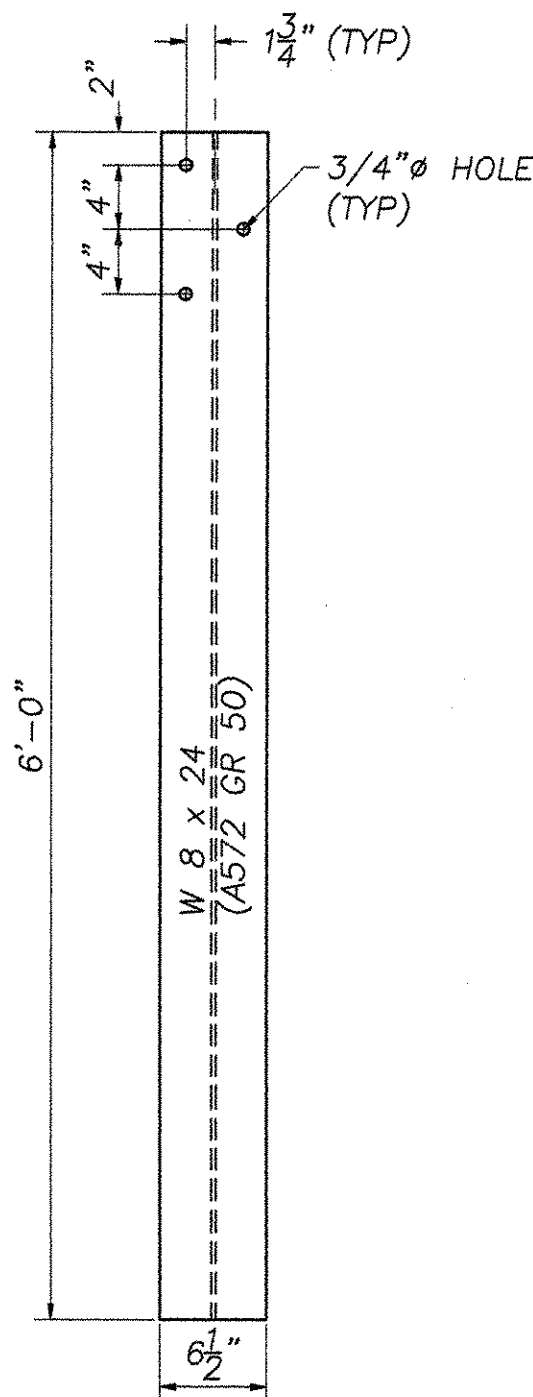
SPLICE BAR DETAIL



HAND RAIL SPLICE BAR
DETAIL "G"

GENERAL ERECTION NOTES

1. Heavy duty steel beam guard rail shall conform to VT. specification 732. AASHTO M180 B2
2. Structural steel tubing shall conform to VT. specification 732. ASTM A500 gr B
3. Anchor bolts, nuts and washers shall be galvanized in accordance with AASHTO M 232 and shall conform to VT. specification 714 unless otherwise noted.
4. Bridge rail posts, special washers, splice bars and plate washers shall conform to AASHTO M 223 / M 223M and shall be galvanized after fabrication in accordance with AASHTO M 111. Prior to galvanizing all corners and edges of steel plates, shapes, etc., shall be ground to a 1/16" radius.
5. See standard drawing G-1 and G-1d for additional details concerning guard rail.
6. See standard drawing SB-R6-82 for approach rail details and for information relative to schedule I and schedule II. All approach rail shall be heavy duty steel beam guard rail. Also see Std. Dwg. SB-R6-82 for handrail details (except end details) if hand rail is required.
7. All posts shall be set normal to grade.
8. Splices for the steel beam guard rail shall lap in the direction of traffic.
9. See Standard drawing G-1 for details of delineators. A delineator shall be located at every fifth post. Payment shall be subsidiary to other items.
10. A railing joint splice shall be provided at each superstructure expansion joint.
11. All field cut or drilled areas shall be coated with zinc rich paint.
12. For radii less than 950 feet, the steel tubing shall be shop bent to fit the applicable curve.
13. The drop-weight tear test in section 732 shall not apply to the structural tubing on this standard.
14. All bolts and related hardware shall conform to AASHTO M164 type 1 bolts, hot dipped or mechanically galvanized per specification.



DETAIL
E
SHELF BRACKET

Reviewed
Rejected

Furnish as Corrected
Revise and Resubmit
Submit Specified Item

McFarland-Johnson, Inc.
Date: 2/16/04
By: SCM

REVISIONS		
No.	Remarks	Date
0	Initial submittal	1/12/04

HIGHWAY SAFETY CORP.
GLASTONBURY, CT

ITEM 525.43 STEEL BRIDGE RAIL - HDSB W/HANDRAIL
BRIDGE NO. 14 HIGHWAY NO. 6
TOWN OF WATERBURY, VERMONT
LOMMIS HILL ROAD OVER THATCHER BROOK
PROJECT NO. TH 3-9637

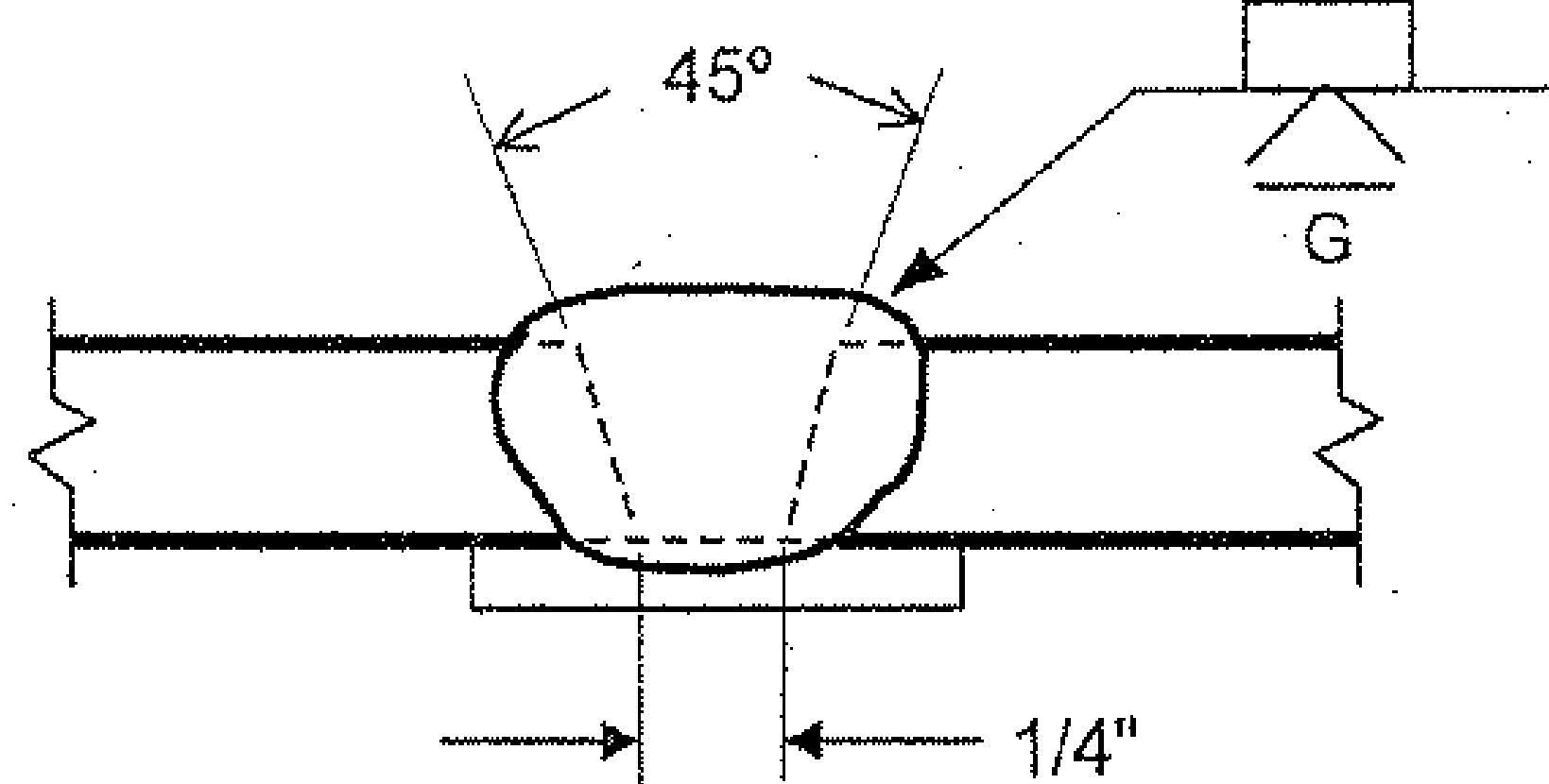
GENERAL CONTRACTOR
SUB CONTRACTOR
F.R. LAFAYETTE, INC.

DRAWN: MHM
CHECKED: [Signature]
DATE: 10/15/03
SCALE: N.T.S.
HSC REFERENCE NO.: 1400
SIZE: D
REVISION: 0
SHEET NO.: 024 RAIL
2 of 2

Single or multiple pass Multiple
 Single or multiple arc Single
 Welding current AC
 Polarity N/A
 Welding progression Stringers
 Root treatment None
 Preheat and interpass temperature 50°F (min)
 Postheat treatment None
 Electrode extension N/A

V.A.O.T.
RECEIVED
 CK'D BY _____ CK'D BY JWC
JAN 29 2004
 RESUBMIT _____ APPROVED ✓
 BY _____ DATE 02-03-04

WELDING PROCEDURE

Weld size	Pass no.	Electrode size	Welding parameters		Travel speed	Joint detail
			Amperes	Volts		
	ALL	5/32"	150 A to 220 A		VARIES	B-U2a 

This procedure may vary due to fabrication sequence, fit-up, pass size, etc. within the limitation of variables given in section 5 of latest edition AWS D1.1

WPS no. W-1400-A
 Revision no. 0
 Supporting PQR no. Pre-Qualified
 Project Name Waterbury, Vermont

Fabricator Highway Safety Corporation
 Authorized by Paul Radice
 Date 1/19/03
 Project Number TH-3-9637

025
RAIL