

CASTLETON RS 0142(11)
 HOLE NO. B-1 STA. 302+08 OFFSET RT. 10'
 DRILLER MCGLYNN
 LOG APPROVED BY D. G. CADIZ
 DATE START 10-31-84 FINISH
 SURFACE ELEVATION 455.3'

CASTLETON RS 0142(11)
 HOLE NO. B-2 STA. 302+60 OFFSET LT. 13'
 DRILLER MCGLYNN
 LOG APPROVED BY D. G. CADIZ
 DATE START 11-1-84 FINISH
 SURFACE ELEVATION 454.6'

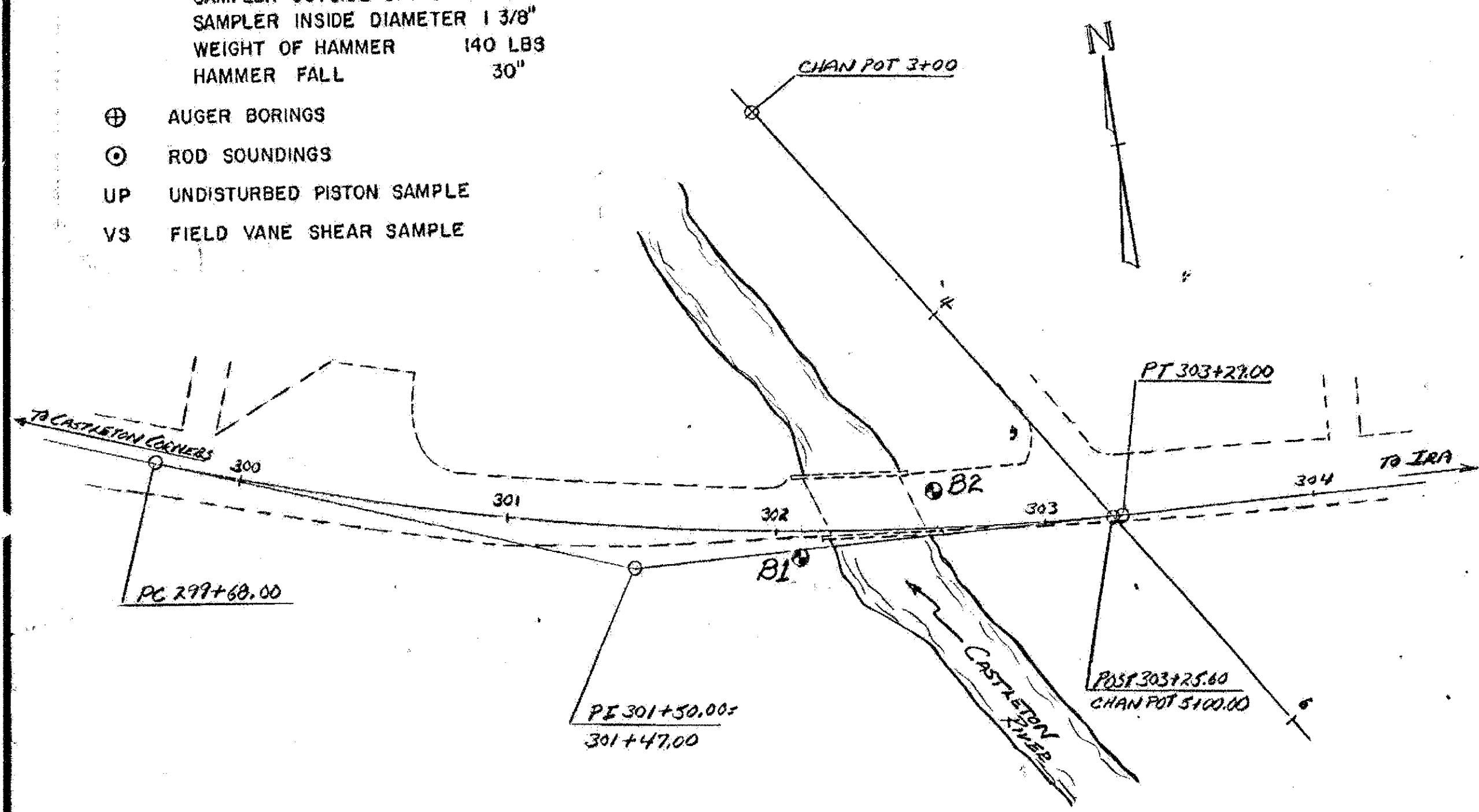
GENERAL NOTES
 THE SUBSURFACE EXPLORATIONS SHOWN HEREON WERE MADE BETWEEN 10-31-84 AND 11-1-84 BY THE VERMONT AGENCY OF TRANSPORTATION.
 1. SOIL AND ROCK (WHERE ENCOUNTERED) CLASSIFICATION, PROPERTIES AND DESCRIPTIONS ARE BASED ON ENGINEERING INTERPRETATION OF AVAILABLE SUBSURFACE INFORMATION BY THE VERMONT AGENCY OF TRANSPORTATION AND MAY NOT NECESSARILY REFLECT ACTUAL VARIATIONS IN SUBSURFACE CONDITIONS THAT MAY BE ENCOUNTERED BETWEEN INDIVIDUAL BORING OR SAMPLE LOCATIONS.
 2. OBSERVED WATER LEVELS AND/OR WATER CONDITIONS INDICATED ARE AS RECORDED AT THE TIME OF EXPLORATION AND MAY VARY ACCORDING TO THE PREVAILING RAINFALL, METHODS OF EXPLORATION AND OTHER FACTORS.
 3. SOUND ENGINEERING JUDGEMENT WAS EXERCISED IN PREPARING THE SUBSURFACE INFORMATION PRESENTED HEREON. ANALYSIS AND INTERPRETATION OF SUBSURFACE DATA WAS PERFORMED AND INTENDED FOR AGENCY DESIGN AND ESTIMATE PURPOSES ONLY. PRESENTATION OF THE INFORMATION ON THE PLANS OR ELSEWHERE IS FOR THE PURPOSE OF PROVIDING INTENDED USERS WITH ACCESS TO THE SAME DATA AVAILABLE TO THE AGENCY. THE SUBSURFACE INFORMATION IS PRESENTED IN GOOD FAITH AND IS NOT INTENDED AS A SUBSTITUTE FOR PERSONAL INVESTIGATION, INDEPENDENT INTERPRETATIONS, INDEPENDENT ANALYSIS OR JUDGEMENT OF THE CONTRACTOR.
 4. PICTORIAL STRUCTURE DETAILS SHOWN HEREON ARE FOR ILLUSTRATIVE PURPOSES ONLY AND MAY NOT BE INDICATIVE OF THE FINAL DESIGN CONDITIONS SHOWN IN THE CONTRACT PLANS.

DEPTH	BLOWS ON CASING	STANDARD PENETRATION TEST	PLASTICITY LIMIT	MOISTURE INDEX	COLOR	CLASSIFICATION AND PROPERTIES OF SOIL AND ROCK
10	12	MTW	GR			A-1-b SILTY GRAVEL
20	23	MTW	GR			A-2-4 SILTY GRAVEL
30	51					NO SAMPLE
40	69	M	GR			A-4 SANDY SILT
50	78	M	GR			A-2-4 SILTY SAND
60	68	M	GR			A-4 GRAVELLY SILT
70						HOLE STOPPED @ 36.5' IN HARDPAN

DEPTH	BLOWS ON CASING	STANDARD PENETRATION TEST	PLASTICITY LIMIT	MOISTURE INDEX	COLOR	CLASSIFICATION AND PROPERTIES OF SOIL AND ROCK
10						NO SAMPLE FILL
20	21	MTW	BR			A-2-4 SILTY GRAVEL
30	12	MTW	BR			A-1-a SANDY GRAVEL
40	83	M	GR			A-4 SANDY SILT
50	81	M	GR			A-4 SILT
60	124	M	GR			A-4 SILT
70						HOLE STOPPED @ 41.5' IN HARDPAN

BORING NOMENCLATURE

- ⊕ STANDARD PENETRATION BORINGS
 SAMPLER OUTSIDE DIAMETER 2"
 SAMPLER INSIDE DIAMETER 1 3/8"
 WEIGHT OF HAMMER 140 LBS
 HAMMER FALL 30"
- ⊕ AUGER BORINGS
- ⊙ ROD SOUNDINGS
- UP UNDISTURBED PISTON SAMPLE
- VS FIELD VANE SHEAR SAMPLE



PLAN
 SCALE: 1" = 40'

LIST OF STANDARD DRAWINGS

- 58-R4A-82 12-13-84R
- 58-R4B-82 12-13-84R

INDEX OF BRIDGE SHEETS

- BR 100 PRELIMINARY INFORMATION & BORINGS
- BR 101 QUANTITY SHEET
- BR 102 PLAN & ELEVATION
- BR 103 BRIDGE TYPICAL SECTION & FRAMING DETAILS
- BR 104 APPROACH SLAB & SUPERSTRUCTURE DETAILS
- BR 105 CURTAINWALL DETAILS
- BR 106 BEARING DEVICE DETAILS
- BR 107 ABUTMENT #1 DETAILS
- BR 108 ABUTMENT #2 DETAILS
- BR 109 WINGWALL DETAILS
- BR 110 REINFORCING STEEL SCHEDULE
- BR 111 REFERENCE SHEET
- BR 112 REFERENCE SHEET
- BR 113 REFERENCE SHEET
- BR 114-118 CHANNEL CROSS SECTIONS

EXISTING STRUCTURE

1. STRUCTURE TYPE ONE SPAN CONCRETE SIDE GIRDER OVERALL LENGTH 45' INVENTORY RATING H15
2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS 39'
3. CLEAR SPAN LENGTH(S) NORMAL TO STREAM 38'
4. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) 307 SQ. FT. VERTICAL CLEARANCE ABOVE STREAMBED 7'
5. WATER SURFACE ELEVATION @ Q 233 449.8 WATER SURFACE ELEVATION @ Q 50 453.2
6. WATER SURFACE ELEVATION AT FLOOD OF RECORD 442.0 YEAR 1922 ESTIMATED DISCHARGE 453.2
7. DOES ALL WATER PASS THROUGH EXISTING STRUCTURE NO IF NOT, AT WHAT FREQUENCY AND ELEVATION DOES RELIEF OCCUR? Q25
8. ADDITIONAL WATERWAY AREA PROVIDED BY RELIEF UNDETERMINED
9. TYPE OF SUBSTRUCTURE FOUNDATION MATERIAL SAND SILT SAND GRAVEL
10. DISPOSITION OF STRUCTURE REMOVE, BECOMES PROPERTY OF CONTRACTOR

NEW STRUCTURE

- STRUCTURE GEOMETRY:
1. STRUCTURE TYPE SIMPLE SPAN COMPOSITE ROLLED BEAM OVERALL LENGTH 62'-5 1/2"
 2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS 60'-0" (ALONG MAJOR CHORD)
 3. VERTICAL CLEARANCE ABOVE STREAMBED OR ROAD UNDER 7'
 4. CLEAR SPAN LENGTH(S) NORMAL TO STREAM 47'
 5. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) 403 SQ. FT.
 6. ARE PROVISIONS TO BE MADE FOR PUBLIC UTILITIES? NO

HYDRAULIC DATA:

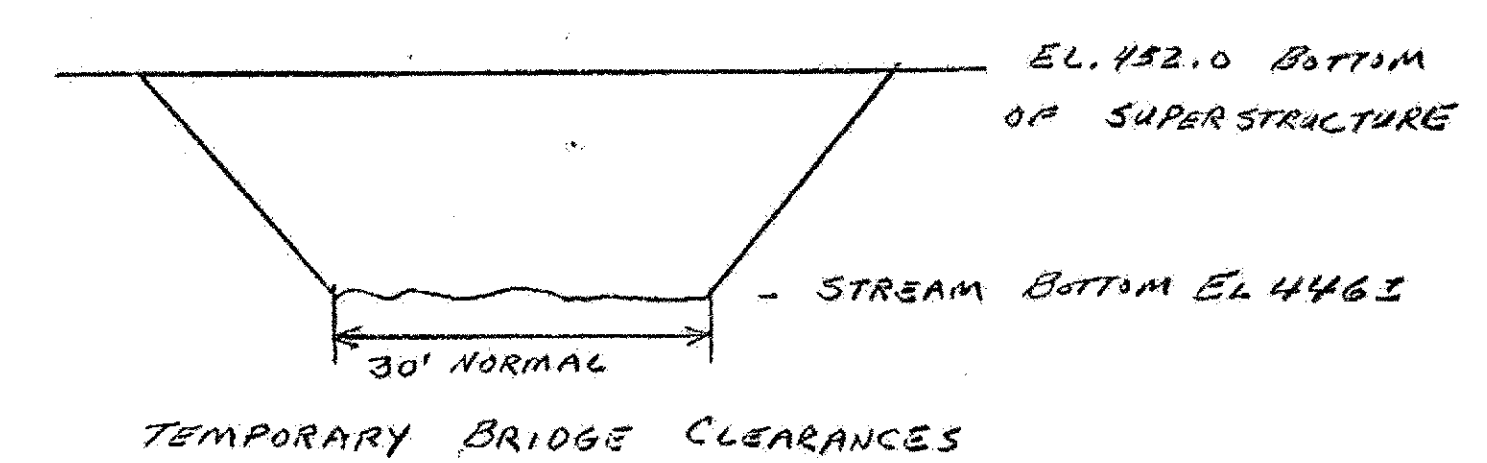
Q	CFD	WATER ELEVATION	VELOCITY
Q 233	800	449.8	5.7 FPS
Q 10	1700	451.7	6.6 FPS
Q 25	2150	452.6	8.9 FPS
Q 50	2900	453.0	9.5 FPS
Q 100	2900	453.5	10.3 FPS

2. DRAINAGE AREA 2.17 SQ. MI. CHARACTER OF TERRAIN ROLLING TO MOUNTAINOUS
3. ARE THERE OBJECTIONS TO A PIER IN THE STREAM? YES
4. DOES STREAM REACH ITS MAXIMUM HIGH WATER ELEVATION RAPIDLY? NO IS ORDINARY RISE RAPID? NO
5. NATURE OF NATURAL STREAMBED SAND, SILT, SOME GRAVEL
6. ESTIMATED SCOUR DEPTH 4.6' COMMENT ON: DRIFT MODERATE ICE HEAVY
7. WILL ALL WATER PASS THROUGH NEW STRUCTURE? NO IF NOT, WHAT FREQUENCY AND ELEVATION WILL RELIEF OCCUR? Q25 @ 452.5'
8. VERTICAL CLEARANCE ABOVE Q 50 0.75'
9. ALLOWABLE WATER SURFACE ELEVATION 453.6 LIMITED BY NO WORSENING OF EXISTING CONDITIONS
10. IS DESIGN STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? NO IF YES, DESCRIBE
11. AVERAGE DAILY LOW FLOW 20 CFD DEPTH 1.0' AVERAGE DAILY HIGH FLOW 125 CFD DEPTH 3.0'
12. STREAMBANK OR CHANNEL PROTECTION REQUIRED? TYPE 25 STRIPS
13. DISTANCE TO EXISTING UPSTREAM STRUCTURE 0.55 MI SPAN 25' WATERWAY AREA OF FULL OPENING 0
14. DISTANCE TO EXISTING DOWNSTREAM STRUCTURE 1.53 MI SPAN 25' WATERWAY AREA OF FULL OPENING 0

- ALLOWABLE STRESSES:
1. DESIGN LIVE LOAD AASHTO H5-25
 2. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL 4.0 KSF ON LEDGE N.A.
 3. ALLOWABLE LOAD FOR PILING N.A. TYPE N.A. ESTIMATED LENGTH N.A.
 4. ALLOWABLE STRESS FOR STRUCTURAL STEEL AASHTO M222 TENSION 27.0 KSI
 5. ALLOWABLE STRESS FOR REINFORCING STEEL GRADE 60 TENSION 27.0 KSI COMPRESSION 20.0 KSI
 6. ALLOWABLE STRESS FOR CONCRETE CLASS A 3.5 KSI 1.4 KSI
 - CLASS B 3.5 KSI 1.4 KSI

- TRAFFIC MAINTENANCE:
1. IS TRAFFIC TO BE MAINTAINED? YES IF YES, ON EXISTING STRUCTURE NO OR ON TEMPORARY BRIDGE YES
 2. TEMPORARY BRIDGE REQUIREMENTS: ONE OR TWO LANE MINIMUM CLEAR SPAN SEE BELOW MINIMUM CLEAR HEIGHT SEE BELOW MINIMUM WATERWAY AREA SEE BELOW ARE SIDEWALKS REQUIRED? NO IF SO, ON WHAT SIDE?
- TEMPORARY BRIDGE IS TO BE LOCATED SOUTHERLY OF THE EXISTING BRIDGE.

ADDITIONAL DESIGN CONSIDERATIONS



LOAD RATING (TONS)

STRESS LEVELS	TRUCK						
	H	H5	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY	38	47					
0.55 Fy = POSTED	56		92		60	63	79
0.67 Fy = OPERATING			110	125			
0.75 Fy =							

FAIR HAVEN - RUTLAND
 BHF MEMB(2)
 SHEET 40 OF 45
 BRIDGE 11
 FOR REFERENCE ONLY

RECOMMENDED FOR APPROVAL Warren B. Dixon 2/20/85 DATE
 STRUCTURES ENGINEER
 RECOMMENDED FOR APPROVAL Frank J. Whitch 2-21-85 DATE
 CHIEF OF DESIGN
 APPROVED BY Frank J. Whitch 2-21-85 DATE
 CHIEF ENGINEER

STATE OF VERMONT AGENCY OF TRANSPORTATION

TOWN OF <u>CASTLETON</u>	Bridge No. <u>11</u>
HIGHWAY NO. <u>VA 4A</u>	Surv. Sta. <u>302+50</u>
PRELIMINARY INFORMATION & BORINGS	
<u>VA 4A OVER CASTLETON RIVER</u>	
Drawn by <u>G.V. SPILAK</u>	Drawn by <u>R. RANALDO</u>
Checked by <u>G.V. SPILAK</u> date <u>2/85</u>	Checked by <u>R.S. HAUPT</u> date <u>3/87</u>
PROJECT <u>CASTLETON</u>	PROJECT NO. <u>RS0142(11)</u>
Bridge Sheet No. <u>BR 100</u>	Sheet <u>26</u> of <u>90</u>

REVISIONS

NO.	DESCRIPTION	BY & DATE
	<u>VT 4A</u>	
	<u>BR 11</u>	