

OVERSEER'S REPORT ON CORRELATION

GEOCRES No. 31E-71

DIST 11 REGION NORTHERN

W.P. No. 193-65-00

CONT. No. 77-05

W. O. No. _____

STR. SITE No. 44-070

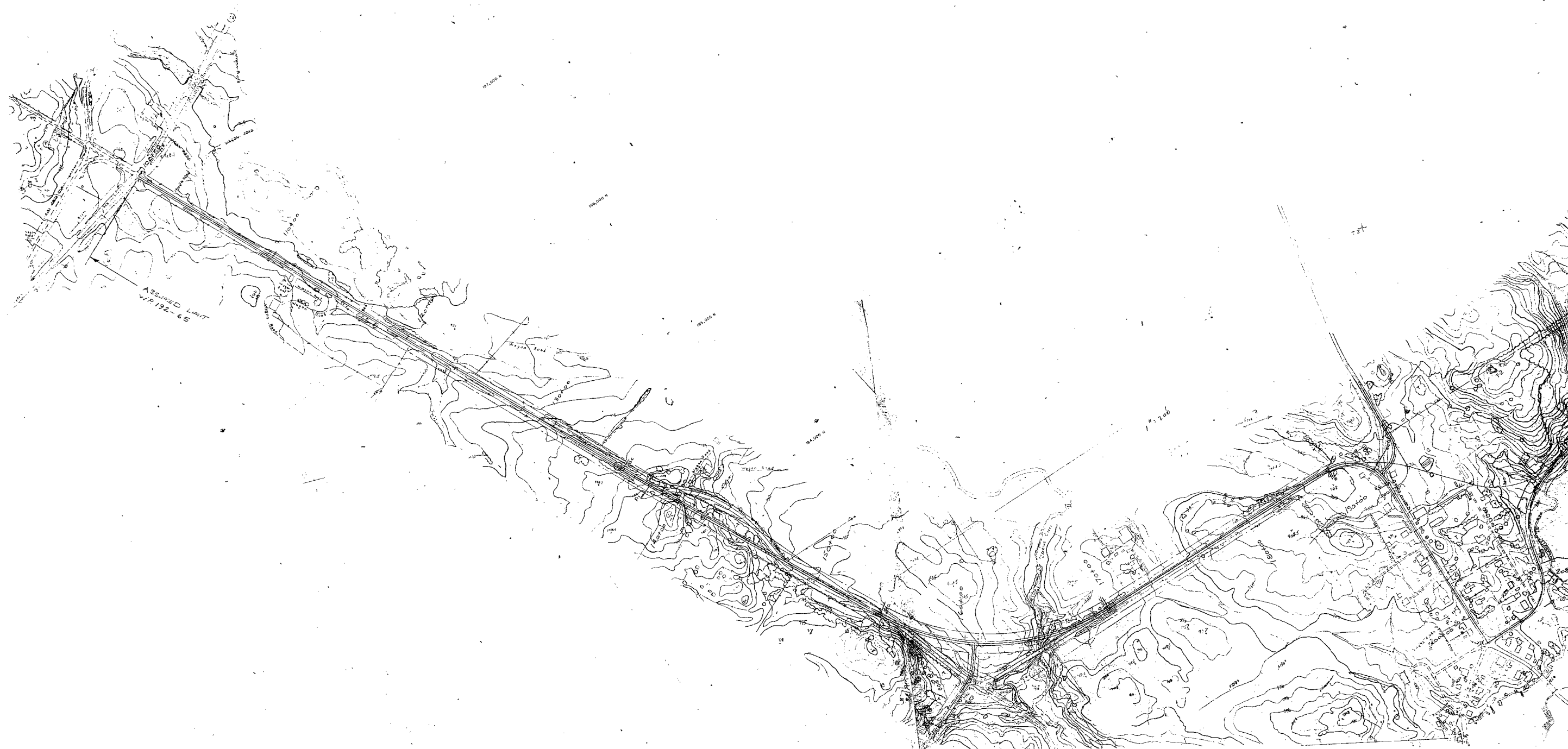
HWY. No. _____

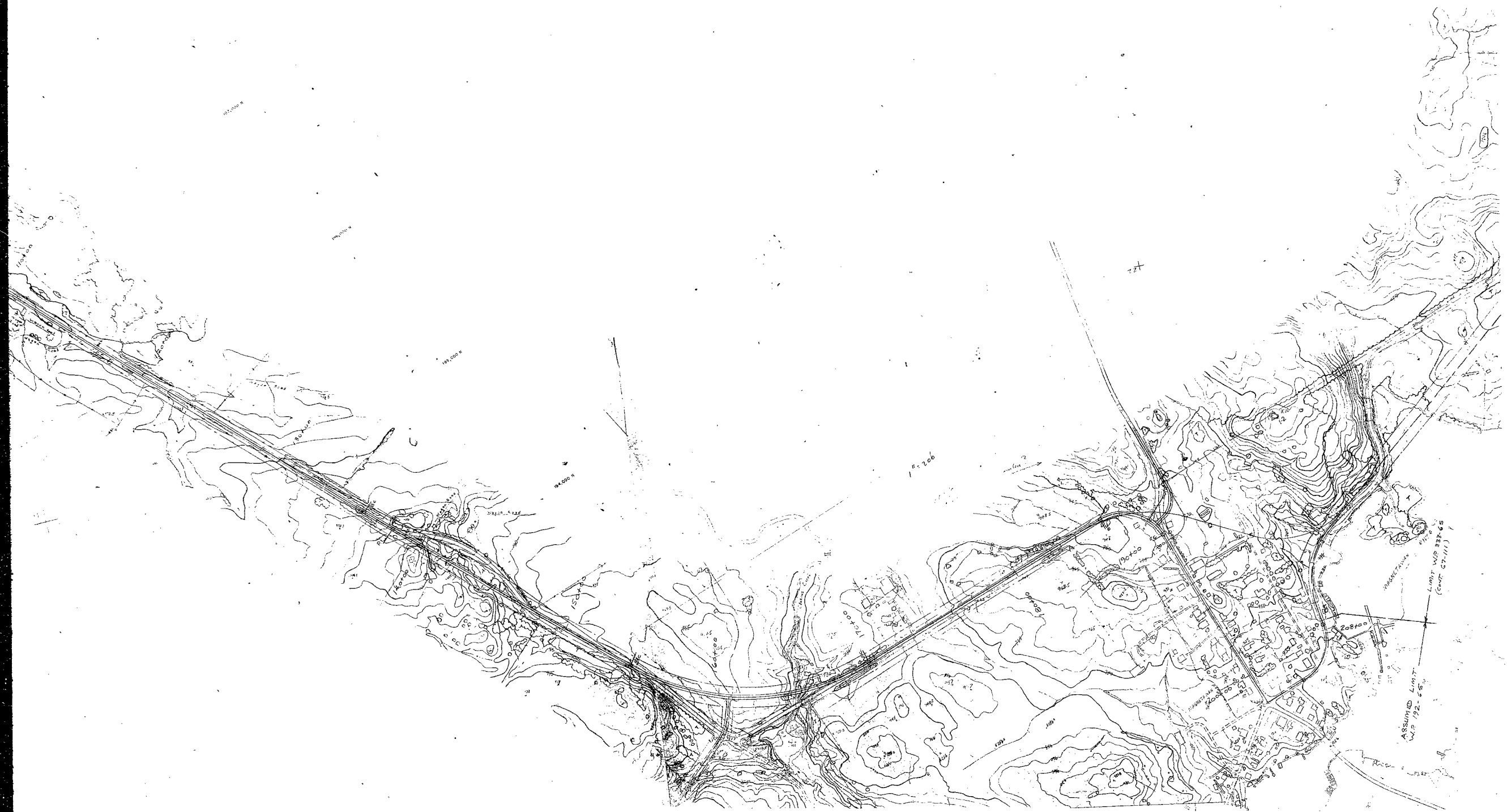
LOCATION JENKINS CREEK AND

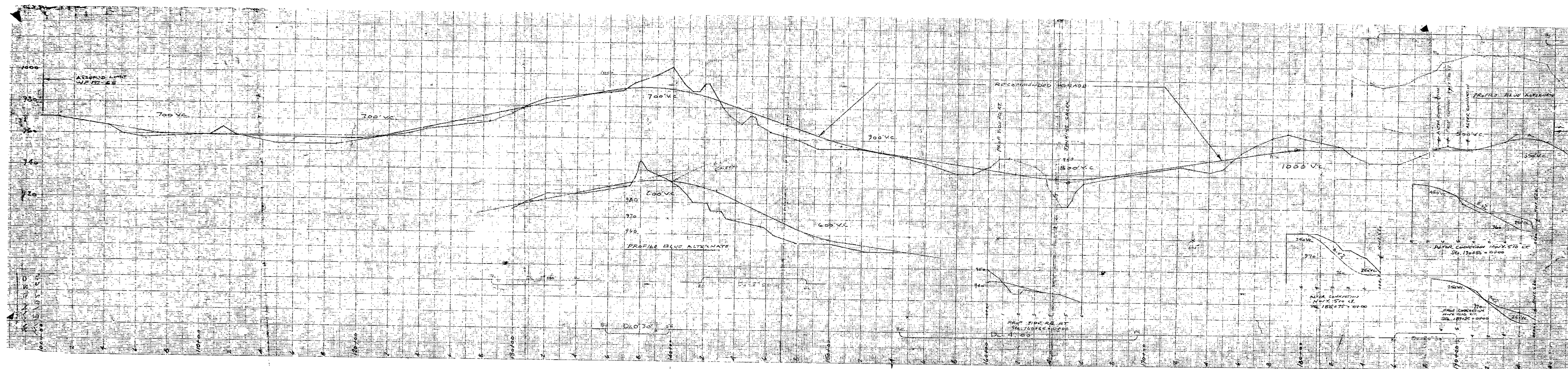
SECONDARY RD. # 520

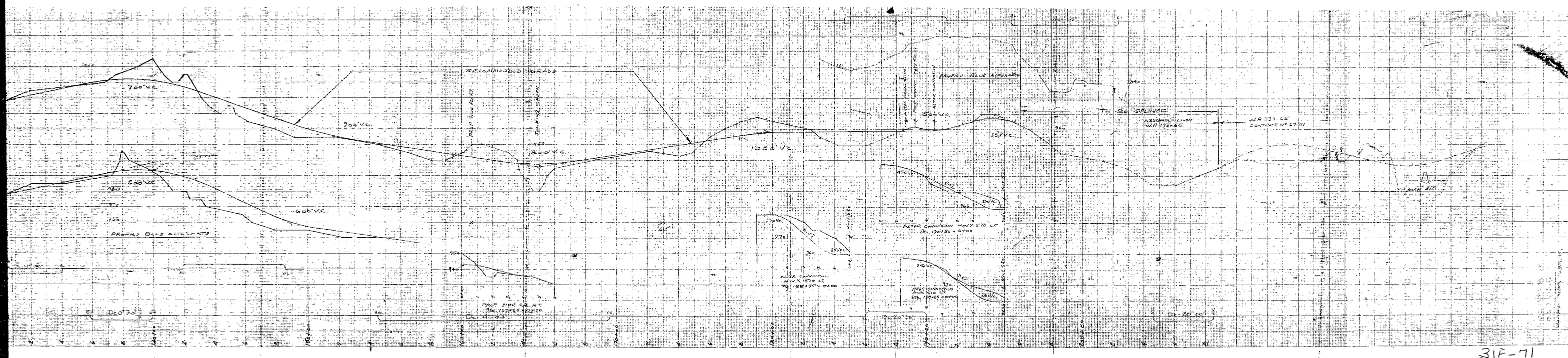
OVERSEER'S REPORT ON CORRELATION 3

REMARKS: _____

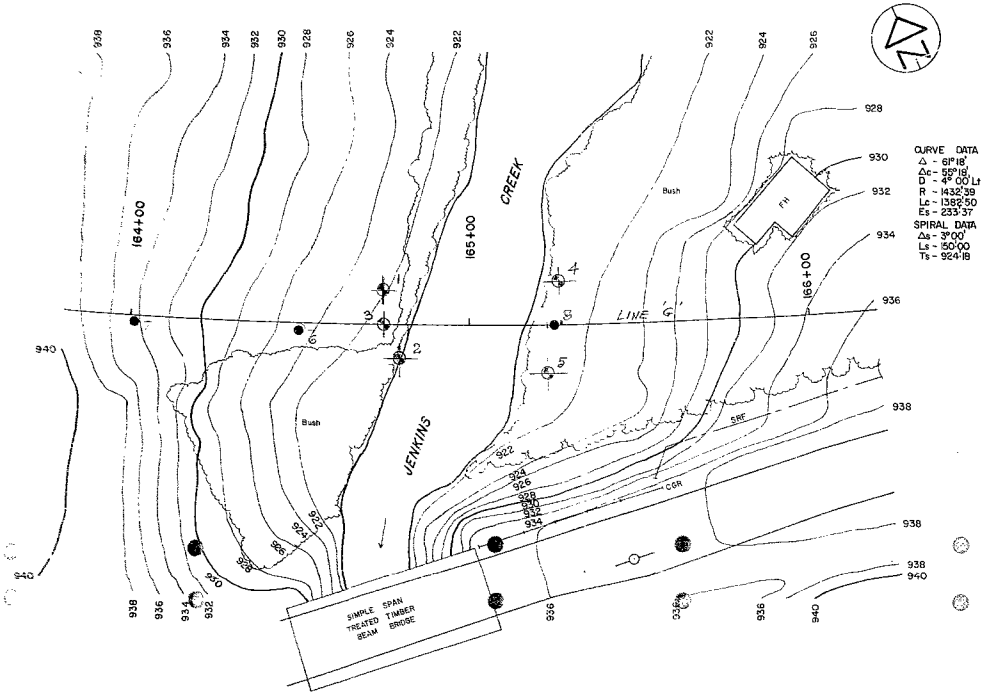




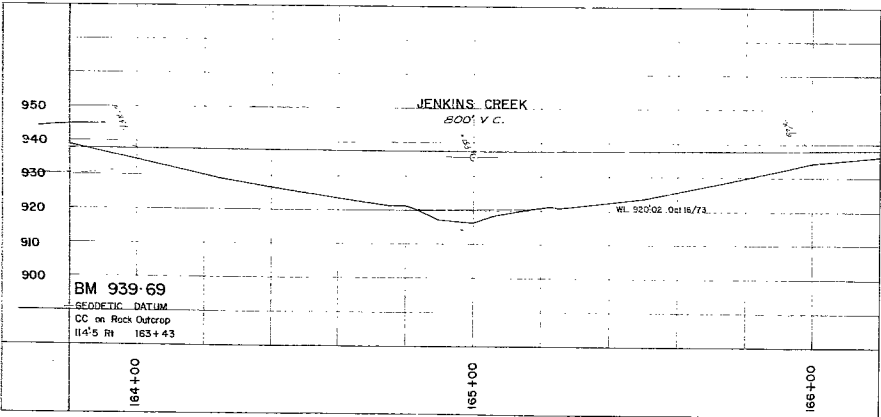




DIST PARRY SOUND
TWP CHAPMAN
CON B
LOT 97



PLAN



PROFILE OF LINE 'G'

DATE	REVISIONS & ADDITIONS		
MINISTRY OF TRANSPORTATION & COMMUNICATIONS DESIGN SERVICES BRANCH ENGINEERING SURVEYS OFFICE			
BRIDGE SITE PLAN			
PROPOSED CROSSING AT JENKINS CREEK AND SEC HIGHWAY 520 LINE 'G'			
LOT 97 TWP CHAPMAN		CON B DIST PARRY SOUND	
SCALE AS SHOWN	DISTRICT 11- HUNTSVILLE	REGION NORTHERN	
STUDY PLAN F-3749	PROFILE C-	PLAN B-	
Date of Survey OCT 1973	Date of Plan DEC 1973	SITE	
WG	PLAN E-		
WP	193-65		

31E-71

GEOCRES No. 31E-71

DIST. 11 REGION Northern

W.P. No. 193-65-00

CONT. No. 77-05

W. O. No.

STR. SITE No. 44-070

HWY. No.

LOCATION Jenkins Creek &
Secondary Rd. #520

CASES TO BE INCLUDED WITH THIS REPORT. 3

REMARKS: documents to be unfolded
before microfilming

FOUNDATION INVESTIGATION REPORT

For

Structural Plate Pipe - Jenkins Creek
Sta. 164+98, Hwy. 520
District 11, Huntsville
W.P. 193-65-00

INTRODUCTION

This report contains the results of a foundation investigation carried out at the site of the above mentioned project. Fieldwork was done during the period of September 12 to 14, 1973, utilizing a conventional diamond drill adapted for soil sampling purposes. Washboring techniques were used to advance the holes which were cased with NX size casing (3 inch I.D.). Bedrock was proved by obtaining AXT size (1 9/32 inch diameter) rock core samples.

DESCRIPTION OF SITE

The site of the proposed new crossing is approximately 1 mile northwest of the Village of Magnetawan and some 60 - 70 feet north of the existing single span timber bridge crossing at Secondary Road #520 and Jenkins Creek.

Topographically, the land surface is composed of gently rolling rounded hills. To the north and west are tree covered rock ridges. Numerous rock outcrops protrude through the otherwise grass covered rolling hills. The land is used primarily for agricultural purposes. At this point Jenkins Creek flows in a north to south direction through a wide, shallow depression some 15 - 20 feet deep.

Geologically the area lies within the Canadian Shield, in a region referred to as the Grenville series. Grenville is a term applied to a complex of more or less granitized sedimentary gneisses associated with large amounts of crystalline limestone and with a little lava. Intense glaciation has left scattered rounded rock outcrops and rock ridges separated by glacial deposits, muskeg and myriads of lakes of many sizes and shapes, here and there connected by rivers.

SUBSURFACE CONDITIONS

General

Reference should be made to the Record of Borehole Sheets which are contained in the Appendix of this report and on which are shown detailed descriptions of the different soil and bedrock types and summarized results of laboratory and field tests. Reference should also be made to Drawing 1936500-A of the Contract Drawings which shows the locations and elevations of all borings, together with the inferred subsoil stratigraphy. Subsoil at the site consists of a 3 to 6 foot thick surficial deposit of micaceous organic silt underlain by a 3 to 19 foot thick deposit of silty sand overlying bedrock. The bedrock elevation was found to vary considerably over the site area, consistent with the observed terrain and bedrock outcrops.

From the ground level downwards the various soil strata are described in some detail with regard to soil types and physical properties as follows.

Micaceous Organic Silt, Some Sand, Traces of Clay

This deposit was encountered in both boreholes, extending from the ground level down to elevation 916± to 918± in Boreholes #1 and #5, respectively.

The 3 to 6 foot thick layer consists of brown to black micaceous organic silt with some sand and traces of clay. In addition, some decayed organic matter, roots and bits of bark and wood were discovered within the main deposit.

Average physical properties of the material as determined by laboratory tests are: Liquid Limit - 40%, Plastic Limit - 30%, Natural Moisture Content - 39%.

Standard penetration test 'N' values obtained within this stratum ranged from 2 to 4 blows/foot indicating the consistency of the deposit to be very soft to soft.

Silty Sand, Trace of Clay

This was the predominant overburden in the area and extends from beneath the organic silt layer to bedrock. Its depth varies considerably, being some 19 feet thick at the location of Borehole #1 and 3 to 4 feet thick at the location of Borehole #5.

The deposit consists of silty sand with traces of clay. Occasional thin seams and pockets of silty clay were also discovered in the main deposit.

The natural moisture content of the stratum as determined by laboratory tests on selected soil samples, was found to vary between 20 to 25%, the average being about 23%.

Based on obtained 'N' values ranging from 6 to 14 blows/foot, the stratum may be described as having a loose to compact relative density.

Grain size analyses performed on samples indicated the following distributions which are plotted in envelope form on Figure 1 in the Appendix.

		<u>Max.</u>	<u>Min.</u>	<u>Average</u>
Gravel	%	0	0	0
Sand	%	62	68	65
Silt & Clay	%	32	38	35

Bedrock

Bedrock was proven at the locations of Borehole #1 and Borehole #5 at elevation 897 and 918.9, respectively, using rock coring techniques. At other locations its elevation was assumed as being that at which refusal to penetration of cone tests was met.

The bedrock elevation on the west side of the creek varies between elevations 897 and 902 (north to south). On the east side of the creek bedrock varies between elevations 911 and 910 (north to south). As mentioned previously, numerous rock outcrops are visible in the area. In general, the bedrock profile appears to dip towards the creek on either side, consistent with observations of rock outcrops made at the time of the field investigation.

Bedrock consists of biotite gneiss with small amounts of feldspar and mica. The upper 6 inch zone is slightly weathered and fractured, otherwise the bedrock is sound.

GROUNDWATER

At the time of the field investigation the natural groundwater levels as measured in the open boreholes were as follows.

<u>Borehole No.</u>	<u>Elevation</u>
1	921.7
5	920.0

The elevation of the surface of the creek was approximately 919±. Because of the pervious nature of the subsoil, the groundwater level will undergo seasonal variations.

K. G. Selby

K.G. Selby, P. Eng.
Supervising Engineer

KGS/gs
February, 1977

HIGHWAY ENGINEERING DIVISION - ENGINEERING MATERIALS OFFICE - SOIL MECHANICS SECTION

RECORD OF BOREHOLE NO 1

WP 193-65-00

LOCATION Sta. 164+75 10' Lt. & Line 'G'

ORIGINATED BY LJH

DIST 11 HWY 520

BORING DATE Sept. 12, 1973

COMPILED BY LJH

DATUM Geodetic

BOREHOLE TYPE Washbore & Cone Test

CHECKED BY

SOIL PROFILE			SAMPLES			GROUND WATER ELEV	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 SHEAR STRENGTH PSF ○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL x LAB VANE	LIQUID LIMIT — w_L PLASTIC LIMIT — w_p WATER CONTENT — w w_p — w — w_L WATER CONTENT % 10 20 30	UNIT WEIGHT γ	REMARKS
ELEV DEPTH	DESCRIPTION	STRAT. PLOT	NUMBER	TYPE	N' VALUES					
922.1	Ground Level									
0.0	Micaceous organic silt. Black to grey		1	SS	2	920				GR SA 51 CL
916.1	Very soft		2	SS	3					Org. 4.05%
6.0	Silty sand		3	SS	8					0 15 77 8
	Occasional thin seams & pockets of silty clay, trace gravel & organics.		4	SS	8					Org. 1.33%
			5	SS	6					0 17 78 5
			6	SS	14					0 68 (32)
	Grey		7	SS	7					0 68 (32)
897.1	Loose to Compact		8	SS	12					0 66 (14)
25.0	Bedrock		9	RC	95%					
891.1	Biotite Gneiss									
	Sound									
31.0	End of Borehole					890				

20
15 \diamond 5 % STRAIN AT FAILURE
10

RECORD OF BOREHOLE No 2

CHECKED BY

20
15 ϕ 5 % STRAIN AT FAILURE
10

HIGHWAY ENGINEERING DIVISION - ENGINEERING MATERIALS OFFICE - SOIL MECHANICS SECTION

RECORD OF BOREHOLE No 3

WP 193-65-00

LOCATION Sta. 164+75 of Line 'G'

ORIGINATED BY LJH

DIST 11 HWY 520

BORING DATE Sept. 13, 1973

COMPILED BY LJH

DATUM Geodetic

BOREHOLE TYPE Cone Test

CHECKED BY

[illegible]

20
15 ϕ 5 % STRAIN AT FAILURE
10

RECORD OF BOREHOLE No 4

SOIL PROFILE			SAMPLES			DYNAMIC CONE PENETRATION RESISTANCE PLOT						LIQUID LIMIT ——— w_L PLASTIC LIMIT ——— w_p WATER CONTENT — w			UNIT WEIGHT γ	REMARKS
ELEV DEPTH	DESCRIPTION	STRAT. PLOT	NUMBER	TYPE	'N' VALUES	GROUND WATER ELEV	20	40	60	80	100	w_p	w	w_L		
922.1	Ground Level															
0.0	Probable micaceous organic silt.					920										
916.1	Very soft															
6.0	Probable silty sand															
911.0	Loose															
11.1	End of Cone Test Probable Bedrock					910					bouncing					

15 ϕ 5 % STRAIN AT FAILURE

RECORD OF BOREHOLE No 5

[illegible]

20
15 ϕ -5 % STRAIN AT FAILURE
10

1

HIGHWAY ENGINEERING DIVISION - ENGINEERING MATERIALS OFFICE - SOIL MECHANICS SECTION

RECORD OF BOREHOLE NO 7

WP 193-65-00

LOCATION Sta. 164+01 2' Rt. & Line 'G'

ORIGINAL D BY LJH

DIST 11 HWY 520

BORING DATE Sept. 13, 1973

COMPILED BY LJH

DATUM Geodetic

BOREHOLE TYPE Probe

CHECKED BY *[Signature]*

SOIL PROFILE			SAMPLES			GROUND WATER ELEV	DYNAMIC CONE PENETRATION RESISTANCE PLOT					LIQUID LIMIT w_L PLASTIC LIMIT w_p WATER CONTENT w			UNIT WEIGHT γ	REMARKS
ELEV DEPTH	DESCRIPTION	STRAT. PLOT	NUMBER	TYPE	'N' VALUES		20	40	60	80	100	w_p	w	w_L		
934.1	Ground Level															
0.0																
	Probable Silty Sand					930										
927.0																
7.1	End of Probe Refusal probable Bedrock					920										

20
15 ϕ 5 % STRAIN AT FAILURE
10

HIGHWAY ENGINEERING DIVISION - ENGINEERING MATERIALS OFFICE - SOIL MECHANICS SECTION

RECORD OF BOREHOLE NO 8

WP 193-65-00

LOCATION Sta. 165+25 & Line 'G'

ORIGINATED BY LJH

DIST 11 HWY 520

BORING DATE Sept. 13, 1973

COMPILED BY LJH

DATUM Geodetic

BOREHOLE TYPE Probe

CHECKED BY

SOIL PROFILE			SAMPLES			GROUND WATER ELEV	DYNAMIC CONE PENETRATION RESISTANCE PLOT					LIQUID LIMIT w_L PLASTIC LIMIT w_p WATER CONTENT w			UNIT WEIGHT γ	REMARKS
ELEV DEPTH	DESCRIPTION	STRAT. PLOT	NUMBER	TYPE	'N' VALUES		20	40	60	80	100	w_p	w	w_L		
921.7	Ground Level															
0.0	Probable					920										
917.9	Org. Silt															
3.8	End of Probe															
	Refusal probable															
	Bedrock					910										

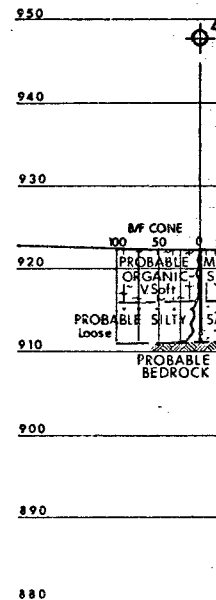
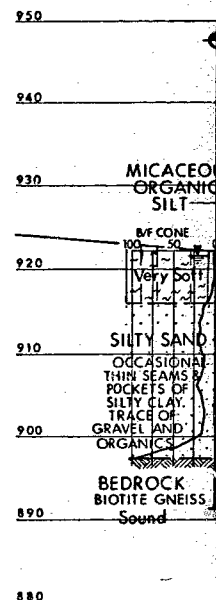
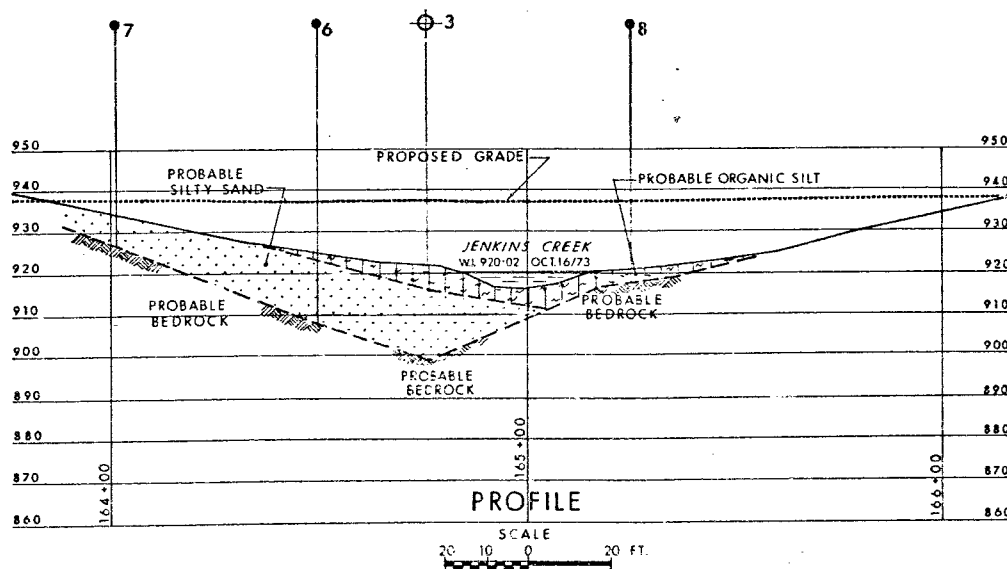
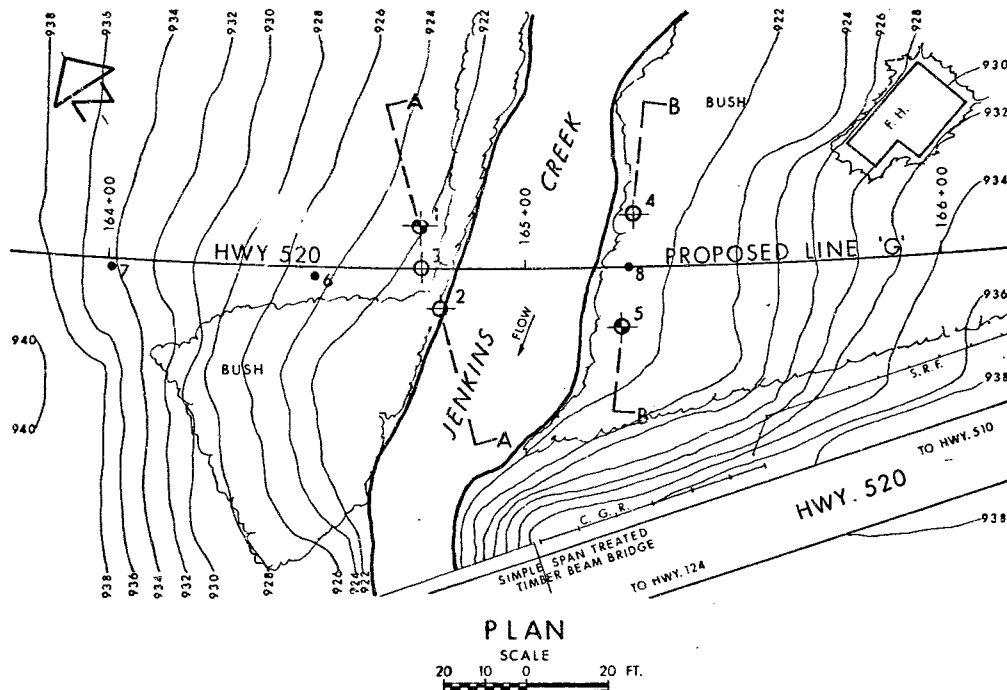
20
15 ϕ 5 % STRAIN AT FAILURE
10

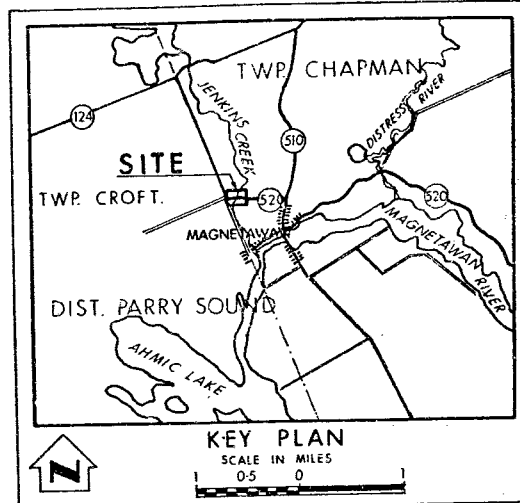
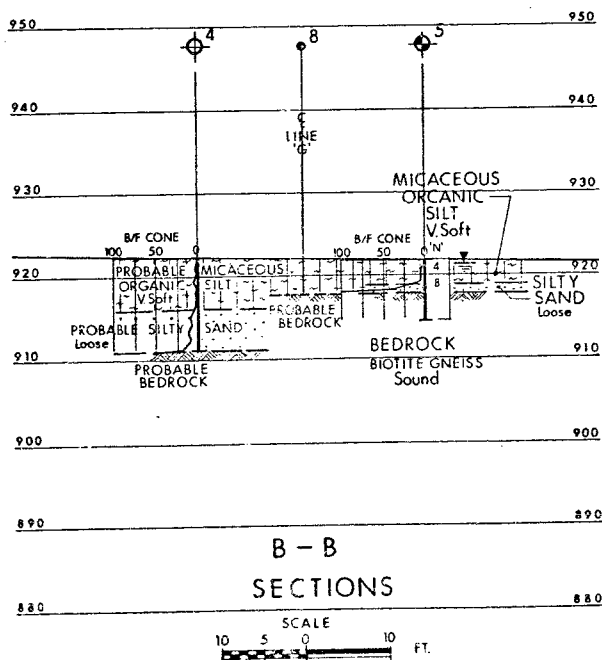
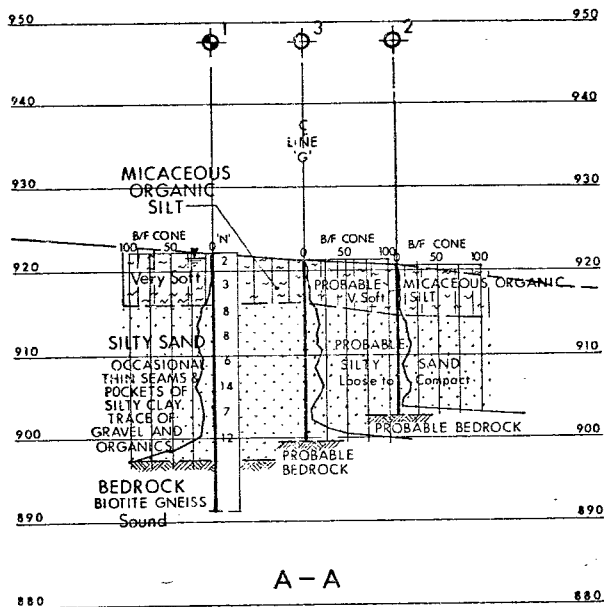


SOIL MECHANICS SECTION

FIG No 1

W P 193 - 65 - 00





LEGEND

- Bore Hole
- ⊕ Cone Penetration Test
- ⊕ Bore Hole & Cone Test
- ▽ Water Levels established at time of field investigation, Sept. 14, 1973
- Probe Hole

NO.	ELEVATION	STATION	OFFSET
1	922.1	164+75	10' LT.
2	920.6	164+80	10' RT.
3	921.3	164+75	6
4	922.1	165+27	12' LT.
5	921.9	165+23	14' RT.
6	924.6	164+50	2' RT.
7	934.1	164+01	2' RT.
8	921.7	165+25	6

NOTE:

The complete foundation investigation report for this structure may be examined at the Structural Office and Foundations Office, Downsview, and at the HUNTSVILLE District Office.

NOTE -

The boundaries between soil strata have been established only at Bore Hole locations. Between Bore Holes the boundaries are assumed from geological evidence.

REVISIONS	DATE	BY	DESCRIPTION

MINISTRY OF TRANSPORTATION AND COMMUNICATIONS—ONTARIO
ENGINEERING SERVICES BRANCH—GEOTECHNICAL OFFICE

JENKINS CREEK

HIGHWAY NO. 520 LINE 'G' DIST. NO. 11
DIST. PARRY SOUND
TWP. CHAPMAN LOT 97 CON. B

BORE HOLE LOCATIONS & SOIL STRATA

SUBMD J. H. CHECKED	WP NO 192-65	DRAWING NO.
DRAWN O. J. CHECKED	WO NO 73-11073	73-11073A
DATE 12 JAN 1973	SITE NO.	BRIDGE DRAWING NO.
APPROVED	CONT. NO.	
PRINCIPAL FOUNDATION ENGINEER		

~~44-70~~

WP. 193-65-00

Mr. A. Rutka
Manager
Geotechnical Office

Soil Mechanics Section
Geotechnical Office
West Building, Downsview

July 11, 1975

W.P. 193-65-00

Your memo of July 10/75

JENKINS CREEK BRIDGE
Site 44-70, Hwy. 520
Dist. 11

1. A Foundation Investigation Report for a relocated structure site on proposed Line 'G' of Hwy. 520 re-alignment was issued in January, 1974.
2. There is no acknowledgement of the settlement of the existing structure in the Foundation Report.

It would appear that settlement is being caused by scour of the loose silty sand deposit on which the cribs may be founded. Photographs in our files show a downstream scour hole in the stream bed near the existing structure.

3. I concur that a geotechnical inspection would be required to decide on the safety of the existing structure.

...is the reason for the crib settlement.
...for his own avoidance of settlement
...avoid
...C. Mirza

c.c. W.D. Birch ✓
C.S. Grebski
J.D. Harris
J. MacAllister

Files
Record Services

RETURN TO M.T.C.
STRUCTURAL
MAINTENANCE SECTION

Mar. 1972

Bridge Inspection Addendum

Highway No. 520 District No. 11 Index No. 44-70
Name of Structure Jenkins Creek
Type of Structure Creosoted timber beams
Inspected By H.W.C. Rahn Date of Inspection July 19 1974
Present Posted Load Limit "Max. weight 15 Tons" (White Sign)
Present Posted Speed Limit None Overload Permit

1. Tipping of east abutment and east pier increased from previous inspection.
2. Settlement of east abutment bent continues.
3. Several handrail boards rotted.
4. Balance of structure in poor-fair condition.
5. Structure scheduled for replacement in 1976.

Recommendations:

1. District to continue regular inspections of structure and notify Structural Maintenance Engineer, of any untoward developments or changes.
2. Replace rotted handrail timbers.
3. Replace structure as scheduled.

*Replacement on 1976/77 advance program
WP 193-65-ccc see T.T.*

RETURN TO M.T.C.
STRUCTURAL
MAINTENANCE SECTION



GEOTECHNICAL OFFICE
Memorandum

A Rutka
Struct Eval - file

To: Mr. C. Mirza,
Head,
Soil Mechanics Section.

From: A. Rutka

Attention:

Date: July 10, 1975

Our File Ref.

In Reply to

Subject:

Re: Jenkins Creek Bridge - Hwy. 520
0.7 Miles West of Sec. Hwy. 510
Site 44-70 -- W.P. 193-65

At the Structural Evaluation Committee Meeting of July 10, this bridge was discussed. The abutments, consisting of open wooden cribs, have been settling unevenly over the years and the bridge is scheduled for replacement on the 1976 construction program. Various inspections have been made by the Maintenance staff, and consideration is being given to postponing the replacement.

As this bridge is on the program, would you advise:

1. If a foundation investigation has been completed.
2. If so, what is the reason for the crib settlement.
3. If no investigation has been completed or scheduled soon, what might the remedial measures be to avoid the bridge replacement. This would have to be ascertained after an inspection.

al

AR/MdeF

A. Rutka
Manager, Geotechnical Office

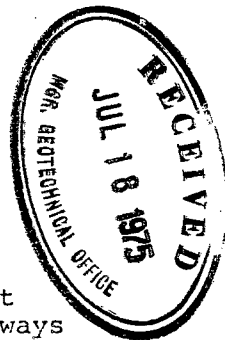
cc: Mr. C. S. Grebski

A. Rutka

STRUCTURAL EVALUATION COMMITTEE

MINUTES OF MEETING HELD JULY 10th, 1975.

BOARDROOM "A", WEST BUILDING, 9:00 A.M.



Present: B. Davis (Acting Chairman)
A. Rutka
A. McKim
C. Grebski
W. Birch
P. Wilson
R. Taylor - Engineering Research & Development
G. Ricker - District 6 Project Engineer, Freeways
(representing H. Greenland)
A. Agarwal (representing P. Csagoly)
H. Fromm

1. Minutes

Minutes approved as written except item on Pine River Bridge had been omitted. At the June meeting it was stated by Mr. P. Csagoly that he had recently inspected this timber bridge and he would like to load test it to ascertain its load carrying capacity. Subsequently, the bridge was advertised for replacement on June 18th.

Note: The Structural Evaluation Committee had previously reviewed this bridge for structural adequacy and approved replacement of the bridge.

2. Review of Bridges on 76 Construction Program -
W. Birch, P. Csagoly, A. Radkowski

Jenkins Creek, Site 44-70, Hwy. 520: This bridge was reported on by Mr. A. McKim whose staff (Mr. K. Carter) were in the area on other business. Mr. P. Csagoly who was to report on this bridge was unable to fit it into his schedule. Mr. K. Carter recommended the bridge be replaced mainly due to severe settlement (2 feet) at the east abutment. The Committee reserved judgement on this bridge awaiting a report from Mr. P. Csagoly and also from Mr. A. Rutka whose staff will look into the settlement problem to see if further settlement is likely to take place and also methods of possible underpinning.

Browns Creek, Site 30-88, Highway 27: Mr. Birch presented a report by Mr. E. VanBielen (see attached copy). The Committee agreed with Mr. VanBielen's recommendation that replacement of this bridge can be postponed as it is structurally adequate providing minor repairs are made. Mr. A. McKim's staff also inspected this bridge and were in agreement with Mr. VanBielen's report.

Trent Canal at Lower Buckhorn, Site 26-123 and
Lower Buckhorn Lake Bridge, Site 26-146, Highway 507
Mr. Birch reported both structures on Hwy. 507 are owned by the Federal Government. Replacement has been a contentious issue over the past few years with political involvement both

provincially and federally. The Canal Bridge is presently posted for 11 tons.

Due to the fact that the Structural Maintenance Section have done only cursory inspections of these two bridges and as they are Federally owned, the Committee recommends the Federal Government be asked to give an opinion on the structural adequacy of these bridges.

Sharpe's Creek Structure, Site 38S-095 and
Walls Bridge, Site 38S-094, Highway 550.

Mr. A. Radkowski was unable to inspect these bridges but will do so before the next meeting.

3. Cathodic Protection of The Paint Lake and Humber River Bridges -
P. Wilson.

A new conductive asphalt has been developed which may replace the presently used coke under the asphalt of cathodically protected bridges. Mr. H. Fromm stated there have been water entry problems with the coke mix which affects conductivity. He would now like to try the new mix on a bridge. The mix has been proven out in the laboratory. Mr. Fromm stated the Humber River Bridge was not ideal for the first application. The Committee approved the Paint Lake Bridge as the first application for this method of cathodic protection.

4. Result of Tests on Condition of Timber in Sioux Narrows Bridge -
P. Csagoly

Mr. A. Agarwal introduced Mr. R. Taylor who worked on this project as an undergraduate of U. of T. and who has subsequently joined the Engineering Research and Development Branch. Mr. Taylor made an excellent presentation with slides. The Committee agreed with the recommendations as outlined by Mr. Taylor (see attached copy).

NOTE: This does not change the recommendation of the Committee on this bridge. (See attached excerpt from the minutes of the meeting held on November 23rd, 1972.)

5. Discussion - How Can the S.E.C. Be Made More Effective?

The Committee recommended this item be postponed until some indication is received from the Chairman of the Structural Evaluation Committee as to the opinion of the Structural Management Committee regarding this topic.

6. Minutes of Structural Management Committee

Mr. Davis read the minutes of the June 25th S.M.C. for the information of all members. Discussion on some of the items in these minutes followed.

Structural Repair Contracts

Mr. Davis stated he has requested a change in procedure for repair contracts wherein no other work is included. He has requested the same procedure as for regular contracts ie. the Regions shall be involved.

Bridge Deck Repairs

Considerable discussion took place on this item. Mr. Rutka asked when the MTC report on this matter will be available. Mr. P. Wilson stated it will be another three months. It was the opinion of this Committee that Mr. D. Manning should make a presentation on this matter when the draft report is ready in order that this Committee have some input into the final report.

7. Old Business

No old business to discuss.

8. New Business

- (A) Mr. Kleinstein brought up a problem he has encountered with three concrete rigid frames of an unusual design and which are exhibiting vertical cracking in the webs of the main beams.

He asked Mr. Birch if he was aware of this problem on King's Highway bridges. Mr. Birch replied he was not and stated there were very few bridges of this type on the King's Highway system. The Committee recommended the Engineering Research & Development Branch look into this problem further and report to the Committee.

- (B) Mr. Grebski brought up the matter of the repair of the bridge decks of the Hogg's Hollow Bridges on Hwy. 401. Due to limited time this item was postponed to the next meeting.

- (C) Mr. Rutka brought up the matter of putting all bridge data including repairs on computer tape for easy future reference.

Mr. Birch stated he and his staff would look into this and report its feasibility at the next meeting.

MEMORANDUM

TO: Mr. W.D. Birch,
Structural Maintenance Engineer,
Room 312A, Central Building,
Downsview.

FROM: Structural Maintenance Office,
Room 312A, Central Building,
Downsview, Ontario.

ATTENTION:

DATE: July 3, 1975.

OUR FILE REF.

IN REPLY TO

SUBJECT:

Brown's Creek (Wye River) bridge at Elmvale
Highway # 27, Site: 30-88, District # 5.

Following your request an inspection of the above structure was made on July 2, 1975.

The original bridge consisted of a 25' steel beam span with a concrete deck on concrete abutments, and was widened in 1932 by adding a reinforced concrete T-beam section on each side including widening of the concrete abutments, increasing the roadway width to 35'.

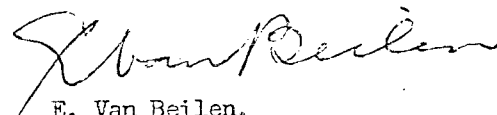
The following repairs to the original part of the bridge were carried out in 1960:

- 1 The number of steel beams were doubled by placing additional ones between the existing ones.
- 2 The concrete deck was replaced by a 2" X 4" laminated creosoted timber deck.
- 3 The bridge seats were repaired.
- 4 A new wearing surface was placed over the entire deck area and approaches.

The present facility is in reasonable good condition except for some minor cracking of the wearing surface, corrosion of the steel beams, spalling of the abutment walls and handrails.

The replacement of the bridge can be postponed and should be reviewed after each biennial inspection.

EVB/lr


E. Van Beilen,
Senior Structural Inspection
Engineer.

c.c. A.E. Argue
c.c. G.M. Sinclair
c.c. J.G. Tillcock

Inspection & Repair Recommendations by Engineering
Research & Development Branch for The Sioux Narrows Bridge
(Wood samples from only one side of the timber truss were taken)

1. Inspection of remainder of the bridge.
2. Repair of concrete in the Northern Pier.
3. Additional lighting (subject to District Review).
4. Waterproofing of checks in truss members and filling of holes.
5. Some type of outrigger sidewalk be installed (subject to Regional Review).
6. Replacement of asphalt deck when required (maybe five years).
7. Levelling of approaches if speed limit raised (subject to Regional Review).
8. Portal bracing to be relocated.
9. If insipient decay found stringent maintenance checks should be carried out.

K. Kleinstedt

BRIDGE EVALUATION COMMITTEE

Meeting November 23, 1972

Minutes

All members of the committee were present with the exception of Mr. G. Wheeler and Mr. W. D. Birch. Mr. E. Van Beilen and Mr. M. Sinclair from Maintenance Branch replaced Mr. Birch.

1. The minutes of the October 26th meeting were accepted as correct by those present.

2. Posted Bridges - G. Wheeler was not present hence Items 2 & 3 on the agenda have been postponed to the next meeting.

3. Load Limit Signs - The sub-committee on Load Limits should have an initial meeting soon, according to the Chairman. Mr. Csagoly will speak to the sub-committee chairman.

4. Sioux Narrows Bridge - Paul Csagoly showed slides of the existing timber truss and approaches. His men took core samples of the timber in the truss and found it to be in adequate condition. His opinion was that the bridge was generally in good condition. E. Van Beilen did not fully agree and stated that many of the existing large timbers in the truss are badly split (up to 1/2" wide splits). He also stated that in 1970 he drove about 50 nails into the large timbers, many of these sounded hollow. Also, he stated that the top one inch of the stringers are rotted and will not hold nails adequately. In addition, many timber ends abutting other members have gaps, up to 1/2" Shims have been placed by the District but these fall out in due course.

It was reported that the District stated heavy construction vehicles will be using this bridge during construction of the highway north and south of the bridge, and it is the recommendation of the Maintenance Section that this bridge be replaced before these heavy construction vehicles use the bridge.

Mr. Grebski stated that the bridge is not geometrically up to standard. Both vertical and horizontal clearances through the truss are below today's requirements.

In reply to the Region's letter on this bridge, the committee agrees that the life of the existing bridge can be prolonged up to ten years providing the bridge is kept under observation by the District Maintenance Section. Also, after heavy construction equipment uses the bridge for construction of the roadway approaches, the bridge may require considerable maintenance. Mr. Davis will reply to the Region.



Memorandum

To: Mr. A. Rutka
Manager
Geotechnical Office

From: Soil Mechanics Section
Geotechnical Office
West Building, Downsview

Attention:

Date: July 11, 1975

Our File Ref. W.P. 193-65-00

In Reply to Your memo of July 10/75

Subject:

JENKINS CREEK BRIDGE
Site 44-70, Hwy. 520
Dist. 11

1. A Foundation Investigation Report for a relocated structure site on proposed Line 'G' of Hwy. 520 re-alignment was issued in January, 1974.
2. There is no acknowledgement of the settlement of the existing structure in the Foundation Report.

It would appear that settlement is being caused by scour of the loose silty sand deposit on which the cribs may be founded. Photographs in our files show a downstream scour hole in the stream bed near the existing structure.

3. I concur that a geotechnical inspection would be required to decide on the safety of the existing structure.

C. Mirza

c.c. W.D. Birch
C.S. Grebski
J.D. Harris
J. MacAllister

Files
Record Services





Memorandum

To: Mr. A.E. McKim,
Asst. Construction Engineer,
Structures.

From: Construction Office,
Third Floor, Central Bldg.

Attention:

Date: June 23, 1975.

Our File Ref.

In Reply to

Subject:

Jenkins Creek Bridge, Site 44-70,
W.P. 193-65, Hwy. 520, District 11.

On a recent field trip I inspected the above structure as per your request.

The above is a three span timber structure with timber bents at the abutments and timber cribs for the piers. The beams are timber approximately 6" x 12" @ 12" C/C on the end spans and approximately 6" x 16" @ 12" C/C for the centre span. The deck is laminated timber with asphalt on top.

The condition of the structure is as follows:

- 1) All of the timber appears to be in good condition.
- 2) West abutment appears to be in its proper location.
- 3) The bottom of the west pier has moved eastward 7" at the south end and 12" at the north end but the beams have full bearing.
- 4) The bottom of the east pier has moved westward 22" at the south end and 9" at the north end. The beams for the east span and centre span do not have full bearing.
- 5) The east abutment has settlement 1'-2' vertically and towards the east pier. Some of the cross-bracing is detached for the abutment bent.
- 6) The timber crib pier bents are approximately 15' high and have about 2' of fill in them above the water level.

Since it may be difficult to straighten the piers and east abutment I would recommend that this structure should be replaced.

K.C. Carter,
Structural Inspection Engineer.

KCC/JC

W R. 193-65-00

800' V.C.
L.V.C. 530'

