

CONT. 73-53

.8 MI. E. OF W.

JCT. HWY. 401

+ HWY. 2

40J8-35

DEPARTMENT OF TRANSPORTATION AND COMMUNICATIONS

MEMORANDUM

15-53
40 J-157
GEOCRE No.

TO: Mr. A. P. Watt, (4)
Regional Bridge Planning Eng.,
Southwestern Region,
London, Ontario.

FROM: Foundations Office,
Design Services Branch,
Central Bldg., Downsview.

ATTENTION:

DATE: May 19, 1972.

OUR FILE REF.

IN REPLY TO

MAY 25 1972

SUBJECT:

4038-35
GEOCRE No.

FOUNDATION INVESTIGATION REPORT
For
The Proposed Tilbury Creek Bridge
0.8 Miles East of West Jct. Hwy. 401
& Hwy. 2
District 1, Chatham.
W.O. 72-11029 -- W.P. 92-68-01

CONT. 73-53

Attached we are forwarding to you our detailed foundation investigation report on the subsoil conditions existing at the above-mentioned site.

We believe that the factual data and recommendations contained therein will prove adequate for your design requirements. Should additional information be required, please do not hesitate to contact our Office.

AGS/ao
Attach.

A. G. Stermac
A. G. Stermac,
PRINCIPAL FOUNDATIONS ENGINEER.

cc: Messrs. D. W. Farren
B. R. Davis
A. Rutka
W. A. Zonnenberg
F. C. Brown
E. J. Giroux
J. R. Roy
G. A. Wrong
B. A. Singh

Foundations Files
Documents

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-

FOUNDATION INVESTIGATION REPORT

For

The Proposed Tilbury Creek Bridge
0.8 Miles East of West Jct. Hwy. 401
& Hwy. 2

District 1, Chatham

W.O. 72-11029 --- W.P. 92-68-01

1. INTRODUCTION:

A foundation investigation was undertaken for the proposed Tilbury Creek Bridge on Hwy. 2 following a request by Mr. S. Jants, Bridge Planning Technician, south-western Region in a memorandum dated January 28, 1972. Subsequently field and laboratory investigations were implemented by this Section in order to determine subsoil and ground-water conditions prevailing at the proposed footing locations.

In this report are presented the results of the above investigations along with recommendations concerning the structure foundations.

2. DESCRIPTION OF SITE AND GEOLOGY:

The area is generally very flat. The land use is mainly agricultural. The town of Tilbury is immediately to the east. The existing bridge at Tilbury Creek is a single-span structure. The creek is about 35 feet wide and about 4 feet deep. The banks are very steep and about 4 feet high with levees on either side. The flow is very slow.

Geologically, the area belongs to the physiographic region known as the St. Clair Clay Plain. This area is characterized by a fairly uniform deposit of clay over the underlying bedrock. The deep clay deposit is a result of not only the sedimentation of Glacial Lake Whittlesey and Lake Warren, but also their levelling of the Till Plains.

3. FIELD AND LABORATORY INVESTIGATIONS:

Two sampled boreholes and five dynamic Cone Penetration Tests, two of the cone tests being adjacent to the boreholes were advanced during the course of the field investigation. A conventional diamond drilling rig adapted for soil sampling was used to wash bore the holes.

Split spoons were taken at regular intervals. Within the clay layers 2" I.D. Shelby Tube samples were regularly taken either by pushing the tube into the undisturbed soil manually or hydraulically. Whenever possible field vane tests were carried out in the cohesive layers. Standard Penetration Tests were conducted by conventional techniques and the Penetration "N" Values recorded. Bedrock was proved in Borehole #5 using an AXT core barrel. The boreholes were surveyed by personnel from the south-western Region. All the field and laboratory test results were recorded on the accompanying borelog sheets.

Soil samples were identified in the field and again upon arrival in the laboratory. Laboratory testing of moisture content and Atterberg Limits were carried out on representative samples. Undisturbed samples were also tested, to determine the undrained shear strength and Bulk Density of the deposits.

The locations and elevations of the boreholes as well as the stratigraphical profiles are plotted on Drawing #72-11029A, attached at the end of this report.

4. SUBSOIL CONDITIONS:

4.1) General:

Subsoil at the site consists of a deep deposit of clayey silt to silty clay with some sand and traces of gravel, followed by a layer of silty sand. Underlying these deposits, in B.H. #7, there is a layer of clayey silt with some sand and gravel, followed by silty sand, and in B.H. 5 there is a layer of clayey silt with some sand and gravel, followed by clayey silt and sand and finally bedrock.

4.2) Clayey Silt to Silty Clay with some Sand and Traces of Gravel:

This layer extends from ground level to Elevation 501 and 509, some 81 to 71 feet below the surface. The upper 5 to 6 feet are dessicated. Standard penetration "N" values range between 3 and 25 blows/foot. Natural moisture content was calculated to be between 15% and 31%. The plastic limit ranged between 18% and 22%, while the liquid limit varied between 31% and 42%. A typical plasticity chart is included in the Appendix as Fig. #2. The bulk density was measured to be 123 to 125 PCF. Field vane tests and laboratory unconfined compression tests were

- 3 -

conducted to determine the undrained shear strength. In general, field vane values yield results greater than the unconfined compression test results and are believed to be more representative. From this it is estimated that the undrained shear strength ranges uniformly with depth from 640 to 1,840 PSF.

4.3) Silty Sand to Sandy Silt with some Clay:

This layer varies in thickness from 5 to 11 feet, and extends to Elevation 496 and 498, some 86 to 72 feet below ground level. Mechanical grain size analyses indicate that the composition of this deposit is 1% gravel, 42% sand, 38% silt, and 19% clay. A typical grain-size curve envelope is included in the Appendix as Fig. 1. Standard penetration "N" values varied from 21 to more than 100 blows/foot, indicating a compact to very dense relative density. The natural moisture content was calculated to be between 12.5% and 20%.

4.4) Clayey Silt with some Sand and Gravel:

Beneath the silty sand there is a layer of clayey silt with some sand and gravel. This deposit was found to extend in B.H. #7 for a thickness of 9 feet to Elevation 483, some 91 feet below the surface and in B.H. #5 some 50 feet to Elevation 446, some 136 feet below the ground level. Standard penetration "N" values for this material varied between 8 to more than 100 blows/foot. Based on this it estimated that the consistency is stiff to hard. Natural moisture content varied between 11.5% to 28%.

4.5) Bedrock:

At Elevation 446, some 136 feet below the surface bedrock was encountered in B.H. #5. The bedrock was proved by diamond drilling using an AXT size core barrel. The first 2'2" was found to be calcereous shale. From 2'2" to 4'1" the rock was identified as fossileferous limestone and the last 9" were again, calcereous shale. A total of 4'10" was drilled and 100% was recovered.

4.6) Groundwater:

Groundwater levels after several days of observation were found in B.H. #5 to be at Elevation 571, some 12 feet below the ground surface, and at Elevation 561, some 20' below ground surface in B.H. #7. Because of the impervious nature of the material these levels will in all probability rise to some degree. It may be assumed that the groundwater

- 4 -

level will be equal to or somewhat higher than the prevailing water level in the creek.

5. DISCUSSION AND RECOMMENDATIONS:

5.1) General:

It is proposed to construct a new structure to carry Hwy. 2 over Tilbury Creek. The new bridge will be a single-span structure with a span of 35 feet and a width of 42 feet. The grade of the bridge will be at approximate Elevation 582.5. This is the same elevation as the existing bridge. A detour will be built during construction some 40 to 50 feet north of the existing bridge.

5.2) Foundations:

Subsoil at the site consists of a very deep deposit of clayey silt to silty clay with some sand and traces of gravel. Below 75 feet layers of silty sand were encountered followed by clayey silt. Bedrock was reached at 136 feet below ground level. At Elevation 565.0 the clayey silt to silty clay has an adequate bearing capacity for spread footings. Therefore, the entire structure may be supported on spread footings, founded at or below this level. The net safe soil pressure is recommended to be 3,000 p.s.f.. Settlements under such a loading, should not exceed 1 inch.

The footings should be placed below the depth of scour and perimeter sheet piles should be driven if scour is a problem. The hydrology section should be consulted regarding the scour depth. A minimum of 4 feet of cover above the footings is required for frost protection.

Dewatering will be required as the footing excavations will be either right beside or within the existing creek bed, below the water level. No major problems are anticipated since the subsoil is of a relatively impermeable cohesive nature.

No stability problems are anticipated for the approach slopes of the structure.

5.3) Detour:

For the proposed detour a Bailey Bridge will be constructed. This structure will have a span of 90 feet. The abutments for this structure may be founded on the existing ground after removal of all

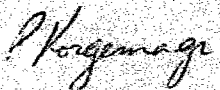
organic and soft surface soil. Safe pressures of up to 4 TSF may be assumed for design purposes. The existing banks may be left as is or flattened to 2:1 if steeper.

6. MISCELLANEOUS:

The field work was carried out from April 10-20, 1972, and it was supervised by Mr. P. Korgemagi, who also prepared this report.

The equipment used was owned and operated by Canadian Longyear Ltd., Toronto.

This report was reviewed by Mr. K.G. Selby, Supervising Foundations Engineer.



P. Korgemagi,
Project Foundation Engineer



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

EK/ht

May 18, 1972

APPENDIX I

FOUNDATION SECTION

CHECKED BY *[Signature]*

[illegible]

DEPARTMENT OF TRANSPORTATION AND COMMUNICATIONS

DESIGN SERVICES BRANCH

RECORD OF BOREHOLE No. 5

FOUNDATION SECTION

JOB 72-11029

LOCATION Sta: 500 + 84, 21 RT

ORIGINATED BY P.K.

W.P. 92-58-01

BORING DATE April 10 - 17, 1972

COMPILED BY P.K.

DATUM Geodetic

BOREHOLE TYPE Wash Boring

CHECKED BY *HR*

SOIL PROFILE			SAMPLES			ELEV. SCALE	DYNAMIC PENETRATION RESISTANCE		LIQUID LIMIT — w_L PLASTIC LIMIT — w_p WATER CONTENT — w			BULK DENSITY γ P.C.F.	REMARKS				
ELEV. DEPTH	DESCRIPTION	STRAT. PCT	NUMBER	TYPE	BLOWS/FOOT		BLOWS / FOOT							WATER CONTENT %			
							SHEAR STRENGTH P.S.F.										
582.5	Ground elevation.						20	40	60	80	100	w_p	w	w_L		GR. SA. SI. CL.	
0.0	Clayey silt to silty clay with some sand and traces of gravel. Soft to very stiff.		1	SS	3												
			2	SS	8												
			3	SS	15												
			4	SS	22												
			5	SS	25												
			6	SS	15												
			7	SS	15												
			8	SS	8												
			9	SS	10												
			10	TW	PM												
			11	SS	5												
			12	SS	7												
			13	TW	PM												
			14	SS	3												
			15	TW	PM												
			16	SS	9												
			17	TW	PM												
501.0				18	SS		22										
81.5	Silty sand with some clay.		19	SS	100/7"	500											
496.4	Compact to v. dense.		20	SS	21											1 42 38 19	
86.1	Clayey silt with some sand and gravel. Stiff to hard.		21	SS	8	490											
			22	SS	13	480											
			23	SS	12	470											
			24	SS	9	460											
			25	SS	100/2"	450											
			26	SS	100/6"	440											
136.0	Bedrock. Calcereous shale. Fossileiferous limestone.		27	RC	100%	440											
140.8	End of borehole.																

DEPARTMENT OF TRANSPORTATION AND COMMUNICATIONS

DESIGN SERVICES BRANCH

RECORD OF BOREHOLE No. 6

FOUNDATION SECTION

JOB 72-11029

LOCATION Sta: 500 + 92, 20' LT

ORIGINATED BY P.K.

W.P. 92-68-01

BORING DATE April 18, 1972

COMPILED BY P.K.

DATUM Geodetic

BOREHOLE TYPE Cone

CHECKED BY *SK*

SOIL PROFILE		SAMPLES			ELEV. SCALE	DYNAMIC PENETRATION RESISTANCE		LIQUID LIMIT — w_L		BULK DENSITY γ	REMARKS
ELEV. DEPTH	DESCRIPTION	STRAT. PLOT	NUMBER	TYPE		BLOWS / FOOT	BLOWS / FOOT	20 40 60 80 100	PLASTIC LIMIT — w_p		
582.3	Ground elevation.										
0.0											
567.3											
15.0	End of cone.										

SHEAR STRENGTH P.S.F.
 ○ UNCONFINED + FIELD VANE
 ● QUICK TRIAXIAL x LAB. VANE

WATER CONTENT %
 w_p — w — w_L

P.C.F. GR. SA. SI. CL.

DESIGN SERVICES BRANCH

JOB 72-11029

LOCATION Sta: 501 + 54, 20' LT

ORIGINATED BY P.K.

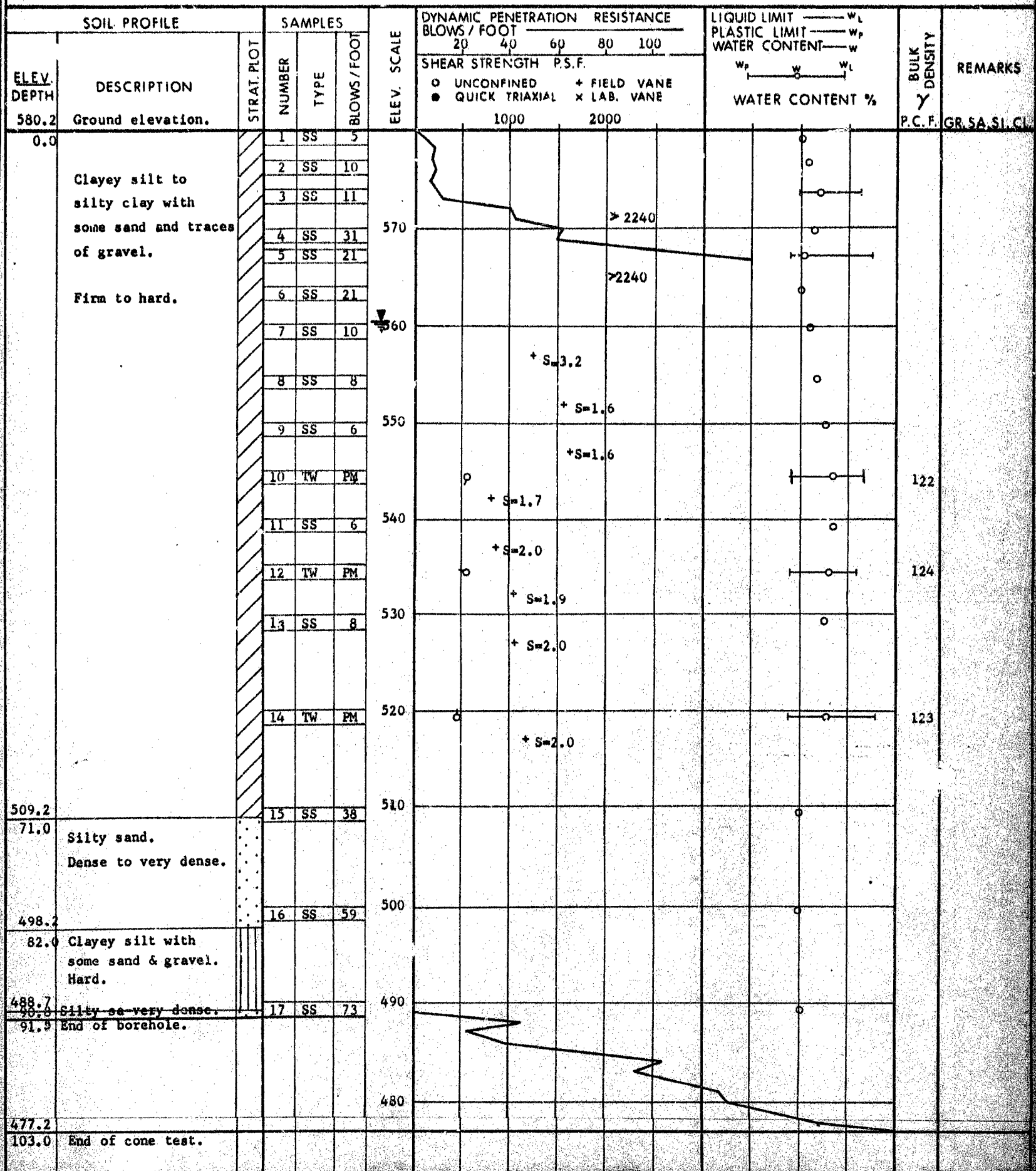
W.P. 92-68-01

BORING DATE April 18 - 20, 1972

COMPILED BY P.K.

DATUM Geodetic

BOREHOLE TYPE Wash Boring

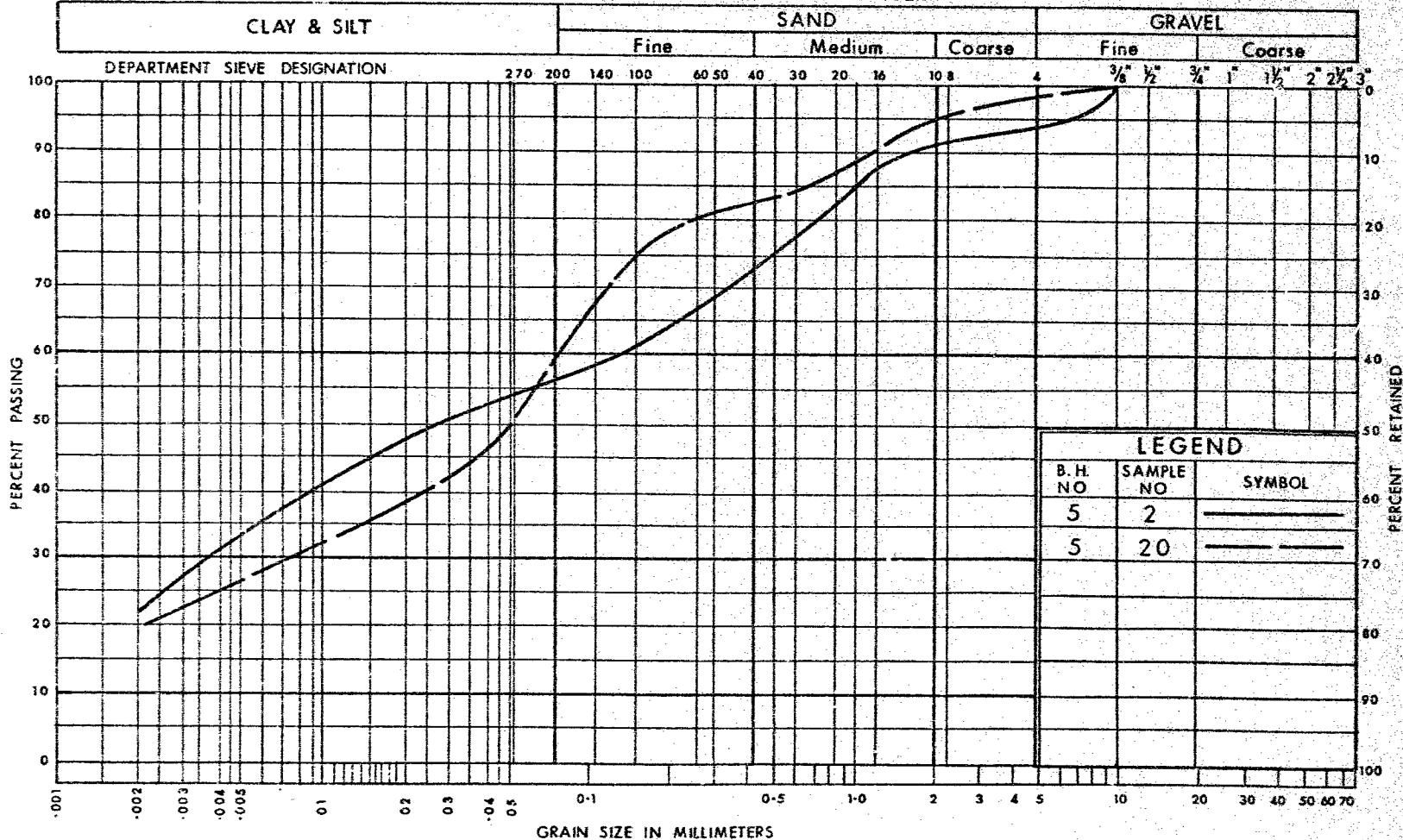
CHECKED BY *HL*

FOUNDATION SECTION

CHECKED BY *OK*

[illegible]

UNIFIED SOIL CLASSIFICATION SYSTEM



LEGEND		
B.H. NO	SAMPLE NO	SYMBOL
5	2	—
5	20	- - -

DEPARTMENT
OF
TRANSPORTATION AND COMMUNICATIONS



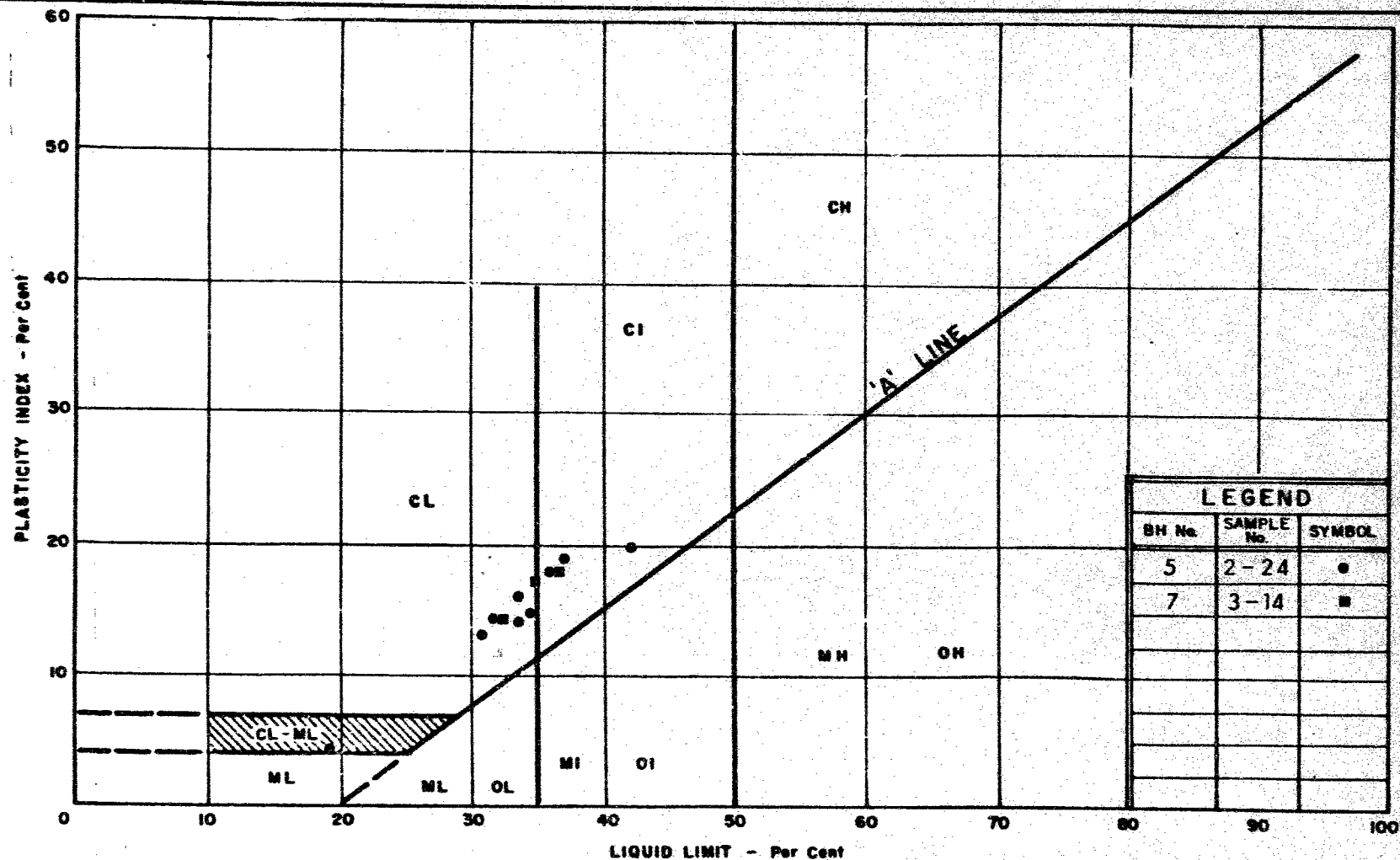
DESIGN SERVICES
BRANCH

GRAIN SIZE DISTRIBUTION
SILTY SAND TO SANDY SILT
SOME CLAY

W.P. No. 92-68-01

JOB No. 72-11029

FIG. NO. 1



DEPARTMENT OF HIGHWAYS
**MATERIALS and
TESTING
DIVISION**

PLASTICITY CHART
CLAYEY SILT TO SILTY CLAY
SOME SAND, TRACES OF GRAVEL

WP No. 92-68-01

JOB No. 72-11029

FIG. NO. 2

72-11-029

Mr. P. C. Brown,
District Engineer,
District #1,
Chatham, Ontario.

Foundations Office,
Design Services Branch,
West Bldg., Downsview.

June 14, 1973.

Mr. W. Katarynczuk,
Construction Engineer.

W.P. 92-68-01, Bridge Site 6-207
Tilbury Creek Bridge
0.8 Miles East of West Jct. Hwy. 401 Hwy. 2
District #1, Chatham

The writer visited the above site on June 11, 1973, along with Mr. B. Summers, Construction Supervisor. Our comments re bailey bridge are as follows.

A 90' span bailey will require construction of a rock fill crib in the water to support the foundations on each side.

We agree with the Chatham District that a 100 foot bailey be used for the above site. In this case, the north corner of the east side crib and the south corner of the west side crib should be protected by providing rock fill in front of it. The existing banks may be left as is or flattened to 2:1 if steeper. Wherever rock fill is provided the forward slopes should be 1-1/4:1 or flatter. It is necessary because of the following reasons:

- (1) These corners are situated almost on top of the banks which are steep at places,
- (2) The upper 8 ft. of the soil is relatively soft,
- (3) According to Mr. Summers very high water levels may be expected which can endanger the stability of the slopes by eroding the banks or softening the soil.

If it is necessary to provide larger crib size - as indicated by Mr. W. Birch - the above-mentioned treatment becomes even more important because in this case the cribs will be even nearer to the creek.

As an alternative, a 110 foot bailey may be provided, in which case, no treatment of banks will be necessary and no problems are anticipated.

Whatever alternative is chosen, recommendations contained in our report #72-11029 are still applicable; i.e., all organic and soft surface soil should be removed, safe pressures of up to 1/2 t.s.f. may be assumed for design purposes. Also, the backfill in the trench in the area of the east crib should be re-excavated and replaced with suitable material.

AP/ao

C.C. A. P. Watt
A. Rutka
W. Birch
A. Wittenberg

Foundations Files
Documents

A. Prakash

For: A. Prakash,
Senior Foundations Eng.,
K. G. Selby,
Supervising Foundations Eng.

MEMORANDUM

TO: Mr. A. G. Stermac
Principal Foundation Engineer
Foundation Office
West Bldg., Downsview

FROM: Structural Planning
Southwestern Region

ATTENTION: Mr. K. G. Selby
Supervising Foundation Engineer

DATE: June 6, 1973

OUR FILE REF.

IN REPLY TO

SUBJECT: W.P. 92-68-01, Bridge Site 6-207
Tilbury Creek Bridge
0.8 miles east of west Jct. Hwy. 401
Hwy. 2
District 1, Chatham

Further to our telephone conversation of today's date re bailey bridge foundations for the above site with Mr. K. G. Selby, enclosed please find:

- (1) E plan E-5326-1
- (2) One print showing existing cross section at proposed bailey bridge site with 90' bailey cribs superimposed as per contract drawings proposed by District 1 Survey personnel.

In view of the fact that the site conditions have now altered from those outlined in our memorandum of April 27, 1972, it is requested that you reassess your foundation report W.O. 72-11029, section dealing with the recommendations for bailey bridge foundations. This approach was agreed to with the District Construction Engineer, Mr. W. Katarynczuk.

In spring 1973, a watermain was installed in the Hwy. 2 R.O.W. on the north side of the centreline. This watermain passes under the proposed east bailey crib. As a result of a pipe failure, this trench was re-excavated and the pipe relaid. The backfill appears to be excavated clay. No special compaction appears to have been done in the area of the east crib.

The watermain veers to the north after leaving the east bank of Tilbury Creek and the excavated trench does not interfere with the location of the west bailey bridge crib.

As noted in the enclosed copy of letter from Mr. A. P. Watt, to Mr. W. Birch, it is proposed to utilize a 100' bailey instead of the previously planned 90' span. Photographs showing the stakes locating the proposed corners of 25'x8' cribs for such a 100' span are enclosed. However, Mr. W. Birch indicated a larger crib size could be employed if this was felt to be more desirable.

Mr. W. Katarynczuk requested that your Mr. A. Prakash telephone Mr. B. Summers, Construction Supervisor, Chatham District (519-354-1400) prior to finalizing his arrangements to visit the site.

Mr. A. G. Stermac

Page 2

June 6, 1973

It is also requested that any comments and/or recommendations which you may have be forwarded direct to the District Office with a copy for our files.

In view of the imminent contract award, it would be desirable to finalize all of the above not later than the 15th of June and preferably as early as possible during the week ending June 15, 1973.

B. J. McKenna

B. J. McKenna
Structural Planning Engineer

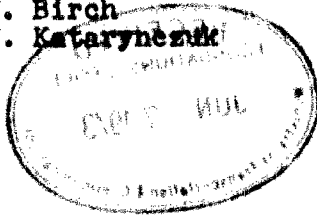
BJMcK:sz

Enc.

cc T. A. Hickey

W. Birch

W. Katarynchuk



72-11-029

MINISTRY OF TRANSPORTATION AND COMMUNICATIONS, ONTARIO

Copy for the information of Mr. K. Selby

Mr. W. D. Birch
~~Structural Maintenance~~ Design Eng.
Maintenance Branch
Central Bldg., Downsview

Structural Planning
Southwestern Region

June 6, 1973

Contract 73-53
W.P. 92-65-01, Bridge Site 6-207
Tilbury Creek Bridge
0.8 miles east of west Jet. Hwy. 401
Hwy. 2
District 1, Chatham

I am in agreement with the Chatham District - Mr. W. Katarynsuk, District Construction Engineer and Mr. B. R. Summers, Construction Supervisor - that a 100 foot Triple Single, New Heavy Duty Material, be used for the above site.

Attached please find an original copy of the cross sections with a 90 foot bailey bridge superimposed as per the contract drawings supplied by Mr. B. Summers, Construction Supervisor. Studying the three cross sections show that a 100 foot bailey bridge is required. Also attached is a set of pictures taken on May 20, 1973, showing approximately where the bailey bridge cribs for the 100 foot bailey bridge would be.

It is my understanding that Mr. W. Katarynsuk, District Construction Engineer, Chatham District, will be contacting you regarding the change.

Attached also please find a copy of the bridge site plan E-5326-1 for the above site for your use. You may wish to have a copy of the bridge site plans supplied with future bailey bridge requests.

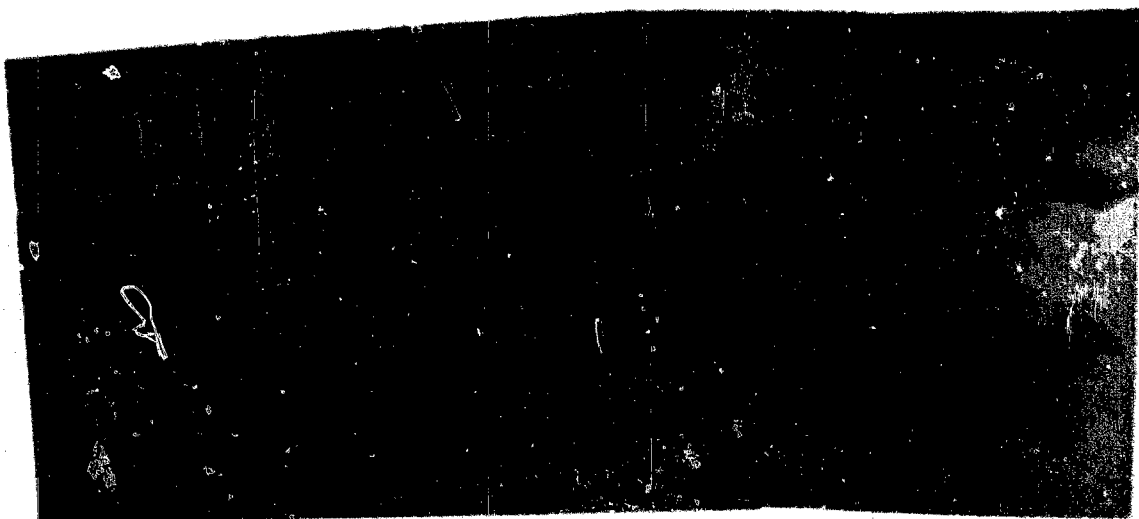


A. F. Watt
Regional Structural Planning Engineer

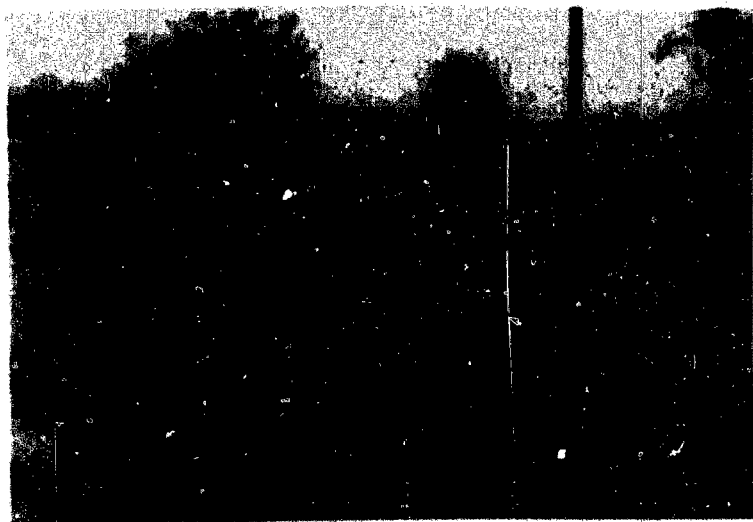
AFW:EE
Enc.

cc T. A. Mickey
W. Katarynsuk
K. Selby

PILBURY CREEK BRIDGE SITE 6-200



VIEW AT WEST CRIB
LOCATION - STAKES ARE
AT SOUTH CORNERS



VIEW LOOKING NORTH
AT EAST CRIB. LOCATION
FOR 100' BAILY BRIDGE.
STAKES ARE CORNERS
25X8 CRIB FOR 100'
BAILY (APPROXIMATE)

TILBURY CREEK BRIDGE

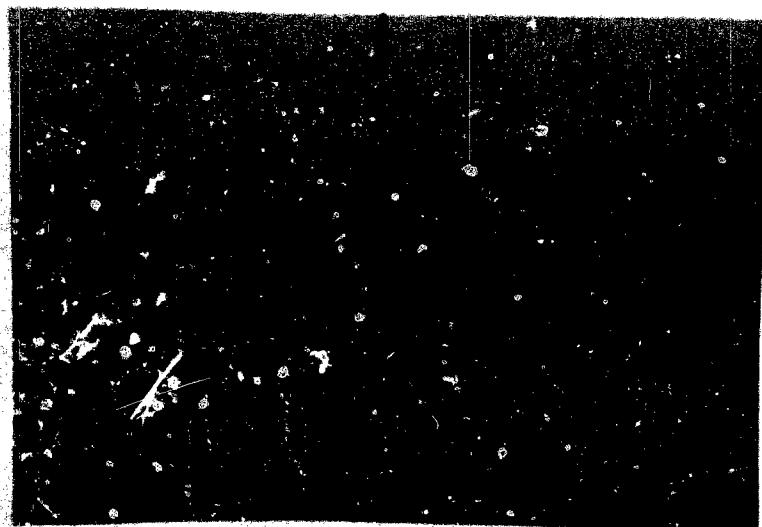
BRIDGE SITE 6-207



↑ VIEW LOOKING NORTH AT
EAST CRIB LOCATION



↙ VIEW LOOKING NORTHEAST AT EAST
CRIB LOCATION



WEST APPROACH TO
BAILY BRIDGE

FIELD RECONNAISSANCE REPORT
REQUIRED BY FOUNDATION SECTION
FOR

FF-69
SEPT. 1968

Bridge Site 6-207

W.P. NO. 92-68-01 HIGHWAY NO. 2 DISTRICT 1 SITE PLAN NO. _____ PROFILE NO. C-105-2-2
RIVER CROSSING ☒ GRADE SEPERATION ☐ R.R.X. ☐ OTHER (SPECIFY) _____
ALTERNATE SCHEME (IF ANY) _____

EXISTING SITE CONDITIONS

DESCRIPTION:

TOPOGRAPHY: HILLY ☐ ROLLING ☐ VALLEY ☐ GULLIED ☐ FLAT ☒
VEGETATION: TREES ☐ BRUSH ☒ GRASS ☒ SWAMP ☐ FARM CROPS ☐ CLEARED ☐
SNOW COVER: 0"-6" ☐ 6"-12" ☐ >12" ☐
ROCK OUTCROP (SPECIFY LOCATIONS) None

UNDERGROUND UTILITIES:

UTILITY COMPANY

TELEPHONE NO. FOR DEFINITE LOCATION

- 1 Bell aerial east and buried west on north right-of-way
- 2 Chatham 352-5500
- 3 2 - wire hydro on south right-of-way - Mr. Donns, Chatham
- 4 682-2141
- 5 _____

EXISTING STRUCTURE(S):

FOUNDATIONS: SPREAD FOUNDATIONS ☐ SIZE _____ ELEVATION(S) _____
PILES ☐ TYPE _____ LENGTH(S) _____
DESIGN LOAD _____ T.S.F. _____ TONS/PILE _____
CONDITION OF STRUCTURE _____

APPROACHES: CUT ☐ FILL ☐ SIDE SLOPES 1 to 1
BERMS YES ☐ NO ☒

OTHER OBSERVATIONS (USE BACK OF SHEET TO DESCRIBE ANY FAILURES IN AREA, PAST PERFORMANCE OF EXISTING APPROACHES & STRUCTURE, ETC.)

ACCESSIBILITY

IS STRUCTURE LOCATED ON D.H.O. RIGHT OF WAY? YES ☒ NO ☐ IF NO,
HAS PERMISSION BEEN OBTAINED TO ENTER PROPERTY? YES ☐ NO ☒ IF NO,
PROPERTY OWNER(S):

NAME

ADDRESS

TELEPHONE NO.

- 1 _____
- 2 _____
- 3 _____
- 4 _____

WHO WILL OBTAIN NECESSARY PERMISSION? Foundation Office

HAS SITE BEEN SURVEYED & STAKED? YES ☐ NO ☒ IF YES, DATE OF MOST RECENT SURVEY _____

WILL CLEARING BE NECESSARY TO ENTER SITE AREA? YES ☐ NO ☒

IS SITE ACCESSIBLE TO WHEELED VEHICLES? YES ☒ NO ☐

IF RIVER CROSSING:

WILL A RAFT BE NECESSARY? YES ☐ NO ☐ IF YES, GIVE MAX. DEPTH OF WATER _____ FT.
CURRENT: SWIFT ☐ MODERATE ☐ SLOW ☒

DRILLING OPERATIONS

NEAREST SOURCE OF WATER (GIVE HAULING DISTANCE, IF KNOWN) _____

ADDITIONAL INVESTIGATION REQUIRED FOR THE FOLLOWING PURPOSES:

ALTERNATE SCHEME: YES ☐ NO ☐ IF YES, SPECIFY _____

HYDROLOGIC REASONS: YES ☐ NO ☐ IF YES, SPECIFY (SCOUR, ETC.) _____

REMARKS

NEAREST AVAILABLE ACCOMODATION Tilbury

OTHER COMMENTS: _____

DATE June 17/71

A. P. Watt

MEMORANDUM

K. SELBY

72-4029

TO: Mr. A. G. Stermac,
Principal Foundation Engineer,
Foundation Office,
Design Services Branch,
ATTENTION: West Bldg., DOWNSVIEW, Ont.

FROM: Bridge Planning,
Southwestern Region,
London, Ontario.

DATE: January 28, 1972

73-53

OUR FILE REF.

IN REPLY TO

SUBJECT: W.P. 92-68-01, Bridge Site 6-207
Tilbury Creek Bridge
0.8 miles east of west Jct. Hwy. 401
Hwy. 2
District 1, Chatham

Would you kindly arrange to have a foundation investigation conducted at the above location.

I have enclosed one print each of the preliminary bridge site plan, profile 0-105-2-2 and plan B-105-2-2.

Also enclosed is the field reconnaissance report.

SJ/fs
Encls.



S. Jants,
Bridge Planning Technician,
Southwestern Region.

cc: Mr. C. Grobski
Mr. A. Crowley
Mr. J. Anderson

APR 26/72

May 17/72

DEPARTMENT OF TRANSPORTATION AND COMMUNICATIONS

MEMORANDUM

72-11029

TO: Mr. A. G. Stermac,
Principal Foundation Engineer,
Foundation Office,
Design Services Branch,
ATTENTION: West Bldg., DOWNSVIEW, Ont.

FROM: Bridge Planning,
Southwestern Region,
London, Ontario.

DATE: February 14, 1972.

OUR FILE REF.

IN REPLY TO

SUBJECT: W.P. 92-68-01, Bridge Site 6-207
Tilbury Creek Bridge
0.8 miles east of west Jct. Hwy. 401
Hwy. 20
District 1, Chatham

Further to memorandum of January 28, 1972, please
find attached for your use two copies of the final bridge
site plan E-5326-1 for the Tilbury Creek Structure.

APW/fs
Encls.



A. P. Watt,
Regional Bridge Planning Engineer,
Southwestern Region.

cc: Mr. C. Grebski

COMPLETION DATE APRIL 26th

C-60

MINISTRY
~~DEPARTMENT~~ TRANSPORTATION AND COMMUNICATIONS

MEMORANDUM

TO: Mr. A. G. Stermac,
Principal Foundation Engineer,
Foundation Office,
Design Services Branch,
ATTENTION: West Bldg., DOWNSVIEW, Ont.

FROM: Bridge Planning,
Southwestern Region,
London, Ontario.

DATE: April 27, 1972

OUR FILE REF.

IN REPLY TO

SUBJECT:

Re: W.P. 92-68-01 Bridge Site 6-207
Tilbury Creek Bridge
0.8 miles East of West Jct. Hwy. 401
Highway 2
District 1, Chatham

72-11-029

Further to Mr. S. Jants memorandum of January 28, 1972 requesting a foundation investigation at the above site, would you please comment on the suitability of the creek banks to support the cribs for a single 90' span one-way Baily bridge.

It is proposed to align the Baily Bridge with its north edge coincident with the line marked "prop. detour" on the location plan forwarded to you on January 28, 1972.

The bridge itself is to be constructed between this line and the existing bridge.

B. J. McKenna

B. J. McKenna,
Bridge Location Engineer,
Southwestern Region.

BJMcK:sz

c.c. C. Grebski
A. Crowley

MEMORANDUM

TO: Mr. A. P. Watt,
Reg. Structural Planning Engineer,
SOUTHWESTERN REGION, London.

FROM: Structural Office,
West Building, DOWNSVIEW.

ATTENTION: DATE: November 13th, 1972.

OUR FILE REF. IN REPLY TO

SUBJECT:

Tilbury Creek Bridge,
0.8 Miles E. of W. Jct. of Hwy. 401,
W.P.#92-68-01, Site #5-237,
Hwy. #2, District #1.

72-11-029

Attached herewith are prints of the Preliminary Bridge File Drawing D-6-207-P1 for the above-mentioned structure.

The estimated cost of the proposed structure is \$60,000 which includes tender, materials, engineering and sundry construction.

Any comments or revisions you may have should be submitted within three weeks.



D. S. Grebski,
Structural Design Engineer.

CSG:dp
Attach.

cc. W. D. Birch,
A. L. McKim,
B. R. Davis,
A. Stermac,
Foundation Office, ✓
J. Anderson,
L. Crowley.

No. comments

K.L. Selby

FOUNDATION OFFICE

REVIEW OF DESIGN DRAWINGS:

A.P. 92-68-01
A.O. 72-11029

Foundation Report By:

P. KORGEMAGI

Review of Design Drawings By:

P. PAYER

Design Drawing No.'s.:

6-207-P1
(PRELIMINARY)

1. Does footing design comply with our report or subsequent memos? YES
2. If answer to 1. is No, is present design acceptable? —
3. Has sufficient field work been done? YES
4. Are estimated pile lengths shown on Drawings correct? If not, make a new list. N.A.
5. If excavation of unsuitable soil is recommended, is this shown on Drawings? N.A.
6. Are approaches designed in accordance with our report? Check slopes and berm lengths. N.A.
7. Do you anticipate any construction problems? i.e. dewatering, stability of temporary slopes or excavations. No.
8. Summarize your comments; on separate sheet if necessary.

NO COMMENTS

Drawings Received Nov 17 1972
Reviewed Nov 28 1972

Signed P. Payer

DEPARTMENT OF TRANSPORTATION AND COMMUNICATIONS

Copy for the information of FOUNDATION OFFICE.



A. Stermac,
Principal Foundation Engineer,
Room 107, West Building.

Structural Office,
West Bldg., DOWNSVIEW.

February 19th, 1973.

Tilbury Creek Bridge,
0.8 Mi. E. of W. Jct of Hwy. #401,
W.P.#92-68-01, Site #6-207,
Hwy. #2, District #1.

72-11-029

Attached herewith we are submitting the final bridge
drawings which show the foundation design for this structure.

Kindly give us your comments at your earliest convenience.

CSG:dp
Attach.

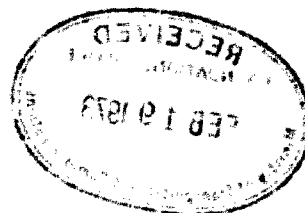
C.S. Grebski,
Structural Design Engineer.

cc. Foundation Office

No comments

Ken. Grebski

*Copy to Structural Office
17 April 73
OK*



FOUNDATIONS OFFICE

REVIEW OF DESIGN DRAWINGS:

W.P. 92-68-01....

W.O. 72-11029....

Foundation Report By:

P. Korgemoglu.....

Review of Design Drawings By:

A. Prakash.....

Design Drawing No.'s:

6-207-1,3.....

1. Does footing design comply with our report or subsequent memos?

yes

2. If answer to 1. is No, is present design acceptable?

NA

3. Has sufficient field work been done?

yes

4. Are estimated pile lengths shown on Drawings correct? If not, make a new list.

NA

5. If excavation of unsuitable soil is recommended, is this shown on Drawings?

NA

6. Are approaches designed in accordance with our report? Check slopes and berm lengths.

NO

7. Do you anticipate any construction problems? i.e., dewatering, stability of temporary slopes or excavations.

NO

8. Summarize your comments; on separate sheet if necessary.

Effective Stress Analysis carried out assuming the following parameters and 1 1/2 : 1 forward slopes :

$c' = 0 \text{ ksf}$ $\phi' = 26^\circ$ F.S. = 0.979

$c' = 150 \text{ psf}$ $\phi' = 26^\circ$ F.S. = 1.241

Factor of Safety is low but acceptable because of moderate height of approaches.

Drawings Received Feb 27 1973...

Reviewed March 5 1973..

Signed A. Prakash.....