

MEMORANDUM

To: Mr. A. Stermac,
Principal Foundation Engineer,
Room 107, Lab. Bldg.

FROM: Bridge Division,
Downsview, Ontario.

Attention: Mr. A. Barsvary

DATE: May 10th, 1967.

OUR FILE REF.

IN REPLY TO

SUBJECT: W.P. 267-66, Bridge No. 5,
Dundas Interchange,
District No. 6.

Attached for your information is a print of the
site plan received from the consultant for the design
of the above structure.

J. C. McAllister

JCMca/aw
Attach.

J. C. McAllister,
for W. S. Melinyshyn,
Regional Bridge Location Engineer.

c.c. A. Crowley

Dundas cont
(66-F-103)

66-1-107
cont. 85

Department of Highways Ontario

Copy for the information of
Mr. A. Stermac, Principal Foundation Engineer,
Room 107, Lab. Building

Mr. W. Melinyshyn,
Reg. Bridge Location Engineer,
Central Region,
Administration Building

Bridge Division,
Downsview, Ontario

June 21, 1967

Bridge #5
S.B. Basketweave S. of Bloor Street
W.P. 267-66, Site No. 37-727
Dundas Interchange, District No. 6

Attached herewith are prints of the Preliminary Bridge
Plan Drawing D-6200-P1 for the above-mentioned structure.

The estimated cost of the proposed structure is \$285,000.
This cost includes tender, materials, engineering and sundry
construction.

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

CSG:rd

C.S. Grebski,
Bridge Design Engineer

Attach.

c.c. S. McCombie
A. Stermac
R. Forrest
E. Cross

No. Comments
shg

Mr. C. S. Grebski,
Bridge Design Engineer,
Bridge Division,
Admin. Bldg.

Foundation Section,
Materials & Testing Div.,
Room 107, Lab. Bldg.

June 29, 1967

Bridge #5, W.P. 267-66, Contract #5, W.J. 66-F-103
-- Dundas Interchange, District #6 (Toronto) --

We have reviewed Preliminary Plan
#D-6200-F1 for the above mentioned structure.

We have no comments.

EGS/ndef

H. L. Selby
K. G. Selby,
SUPERVISING FOUNDATION ENGR.
For:
A. G. Stermac,
PRINCIPAL FOUNDATION ENGR.

cc: Messrs. S. McCombie
W. S. Melnyshyn
Foundations Files
Gen. Files

10. SOUTHBOUND BASKET-WEAVE JUST SOUTH OF BLOOR STREET: (cont'd.) ...

(W.P. 267-66)

10.1) Soil Conditions: (cont'd.) ...

Subsoil was found to consist of a layer of clayey silt fill, followed by alternate layers of cohesive and granular glacial till, which in turn, was underlain by weathered shale bedrock. The uppermost, approx. 5 ft. portion of the cohesive clayey silt, was found to be stiff to very stiff, with penetration 'N' values of 14 - 19 blows/ft.; below that, the consistency is hard. The granular portion of the glacial till displays very dense relative density indicated by 'N' values of much in excess of 100 blows/ft.

The upper surface of the bedrock varies between el. 383 ft. and 391 ft.

The groundwater was encountered in each borehole between el. 411.5 and 427 ft., the latter of which corresponds to ground level.

The locations and elevations of the borings, together with the soil profile, are shown on Drawing #66-F-103E.

10.2) Recommendations:

The proposed grade of TR. SB. Coll. - 27 SB. will be around el. 712 ft., the deck grade of the bridge around el. 433 - 434 ft.

Spread footings are recommended for the abutments with an allowable bearing pressure of up to 4 t.s.f. Footing for the north abutment should not be placed higher than el. 421 ft., and that of the south abutment not higher than el. 422 ft. Spread footings for the two piers should be four ft. below finished grade of TR. SB. Coll. - 27 SB. at around el. 403 ft. A safe load of up to 4 t.s.f. may also be utilized on these footings.

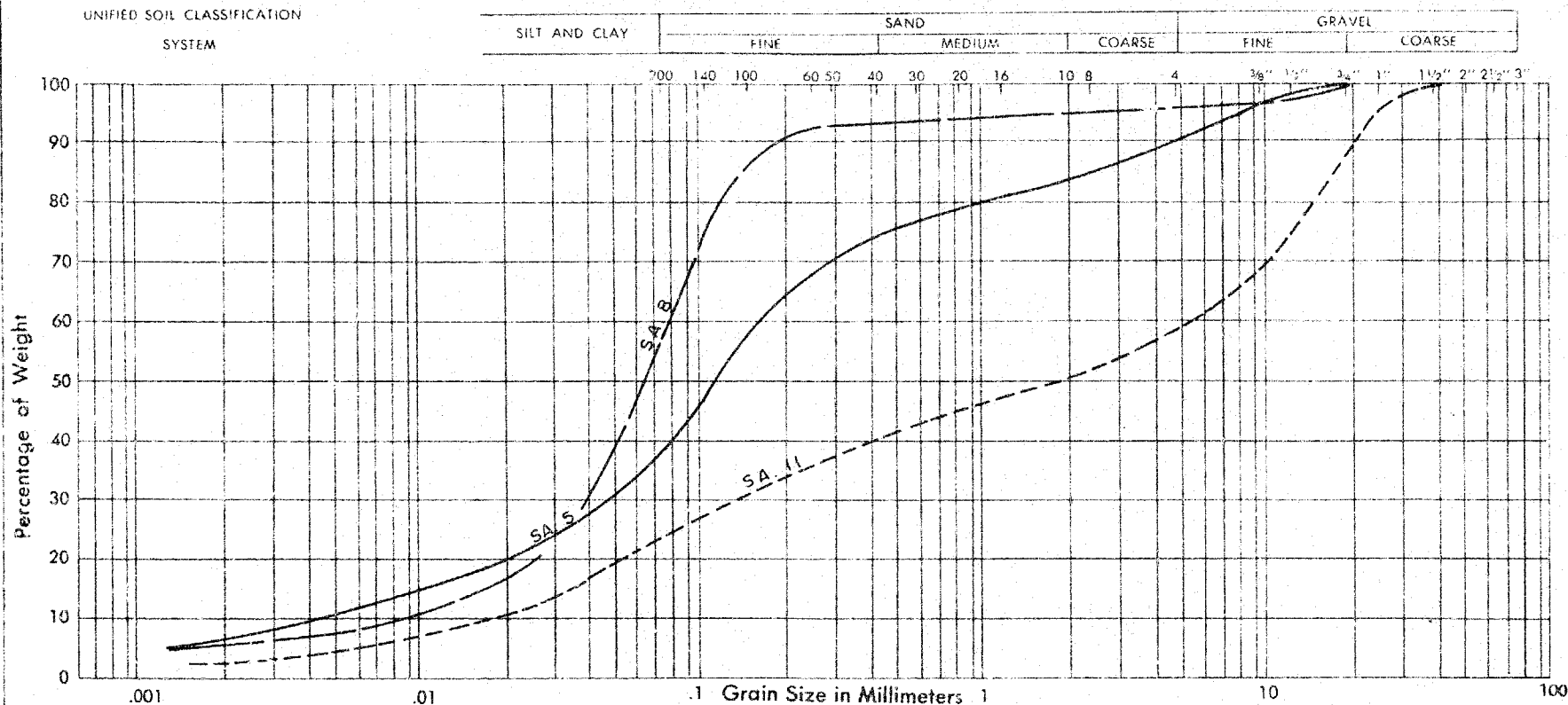
Some dewatering problems for the footing excavations might be encountered.

cont'd. /11 ...

DOMINION SOIL INVESTIGATION LIMITED

GRAIN SIZE DISTRIBUTION

OUR REFERENCE NO. 6 - 12 - 13¹



PROJECT: W.J. 66 - F - 103

LOCATION: ETOBICOKE, ONT.

BOREHOLE NO.: 13

SAMPLE NO.: 5 8 11

DEPTH OF SAMPLE: 20' 35' 50'

ELEVATION OF SAMPLE: 405.4' 390.4' 375.4'

COEFFICIENT OF UNIFORMITY

COEFFICIENT OF CURVATURE

Non Applicable

PLASTIC PROPERTIES:

LIQUID LIMIT % =
 PLASTIC LIMIT % = Non
 PLASTICITY INDEX % = Plastic
 MOISTURE CONTENT % =
 ACTIVITY % =

Classification of Sample and Group Symbol:

| | | |
|-------------------------------------|--|--|
| SILTY SAND with some clay | SANDY SILT with trace of gravel and clay. | SANDY GRAVEL with some silt and a trace of clay |
|-------------------------------------|--|--|

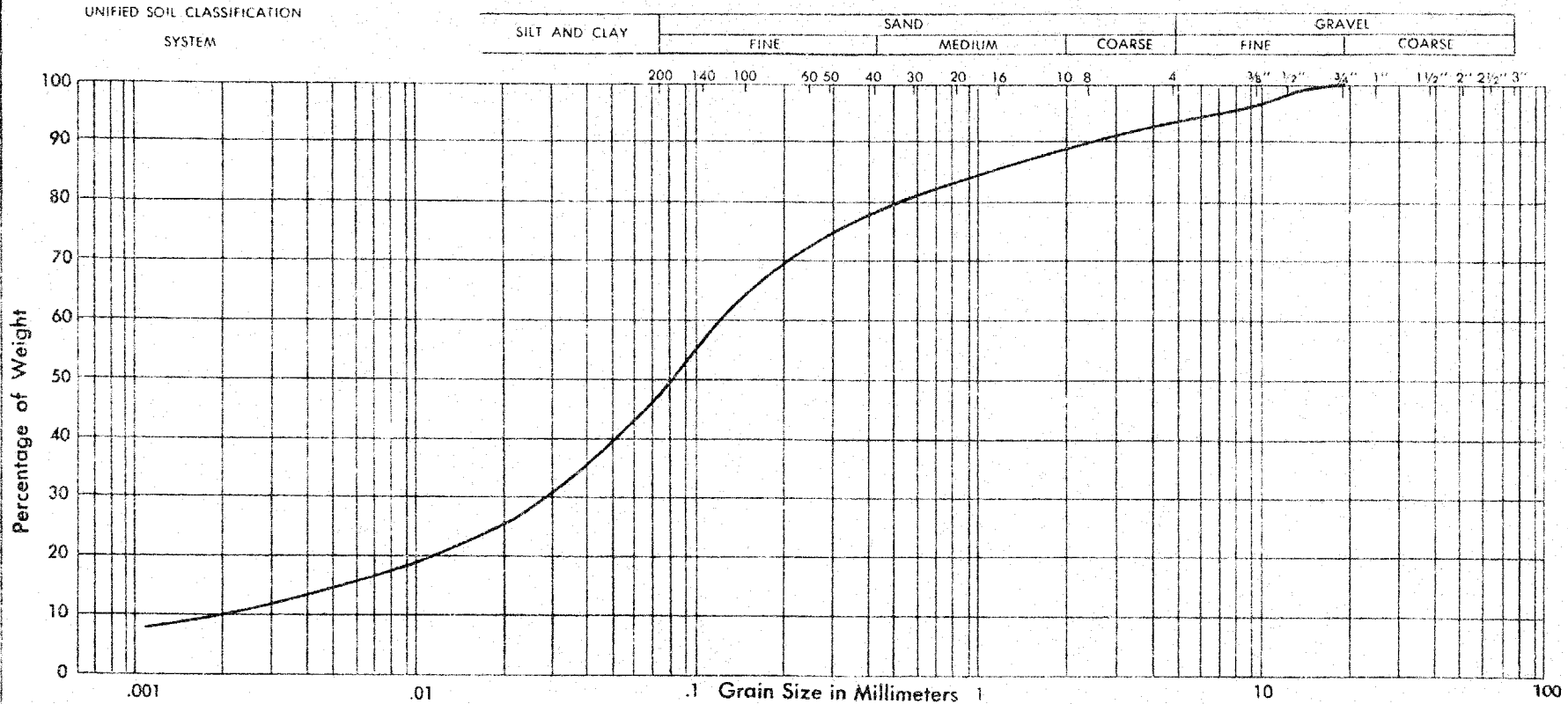
SA. 5 **SM** SA. 8 **SM** SA. 11 **GM**

Enclosure No.

DOMINION SOIL INVESTIGATION LIMITED

GRAIN SIZE DISTRIBUTION

OUR REFERENCE NO. 6 - 12 - 13



PROJECT: W.J. 66 - F - 103
 LOCATION: ETOBICOKE, ONT.
 BOREHOLE NO.: 18
 SAMPLE NO.: 4
 DEPTH OF SAMPLE: 15'
 ELEVATION OF SAMPLE: 411.9'

COEFFICIENT OF UNIFORMITY: Non Applicable
 COEFFICIENT OF CURVATURE: Non Applicable

Classification of Sample and Group Symbol:
 SILTY SAND with some CLAY and GRAVEL

S M

PLASTIC PROPERTIES:

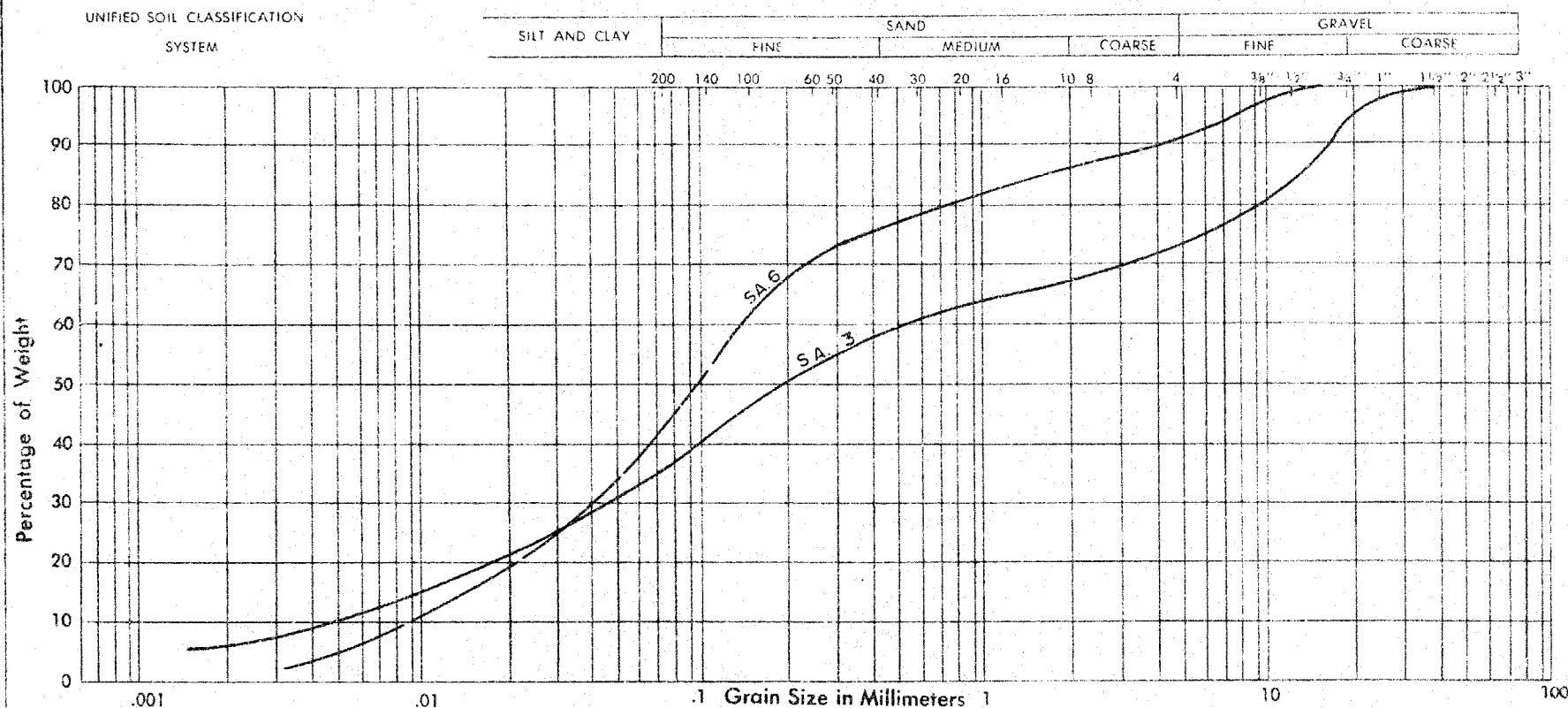
| | | | |
|------------------|---|---|---------|
| LIQUID LIMIT | % | = | |
| PLASTIC LIMIT | % | = | Non |
| PLASTICITY INDEX | % | = | Plastic |
| MOISTURE CONTENT | % | = | |
| ACTIVITY | | = | |

Enclosure No.

DOMINION SOIL INVESTIGATION LIMITED

GRAIN SIZE DISTRIBUTION

OUR REFERENCE NO. 6-12-13



PROJECT: W.J. 66-F-103
 LOCATION: ETOBICOKE, ONTARIO
 BOREHOLE NO.: 19
 SAMPLE NO.: 3 6
 DEPTH OF SAMPLE: 10' 2 5'
 ELEVATION OF SAMPLE: 419.1' 404.1'

COEFFICIENT OF UNIFORMITY Non Applicable
 COEFFICIENT OF CURVATURE

Classification of Sample and Group Symbol:
 SILTY SAND with some GRAVEL
 and trace of CLAY

PLASTIC PROPERTIES:

| | | |
|------------------|---|-----------|
| LIQUID LIMIT | % | = |
| PLASTIC LIMIT | % | = Non |
| PLASTICITY INDEX | % | = Plastic |
| MOISTURE CONTENT | % | = |
| ACTIVITY | = | |

S M

Enclosure No.

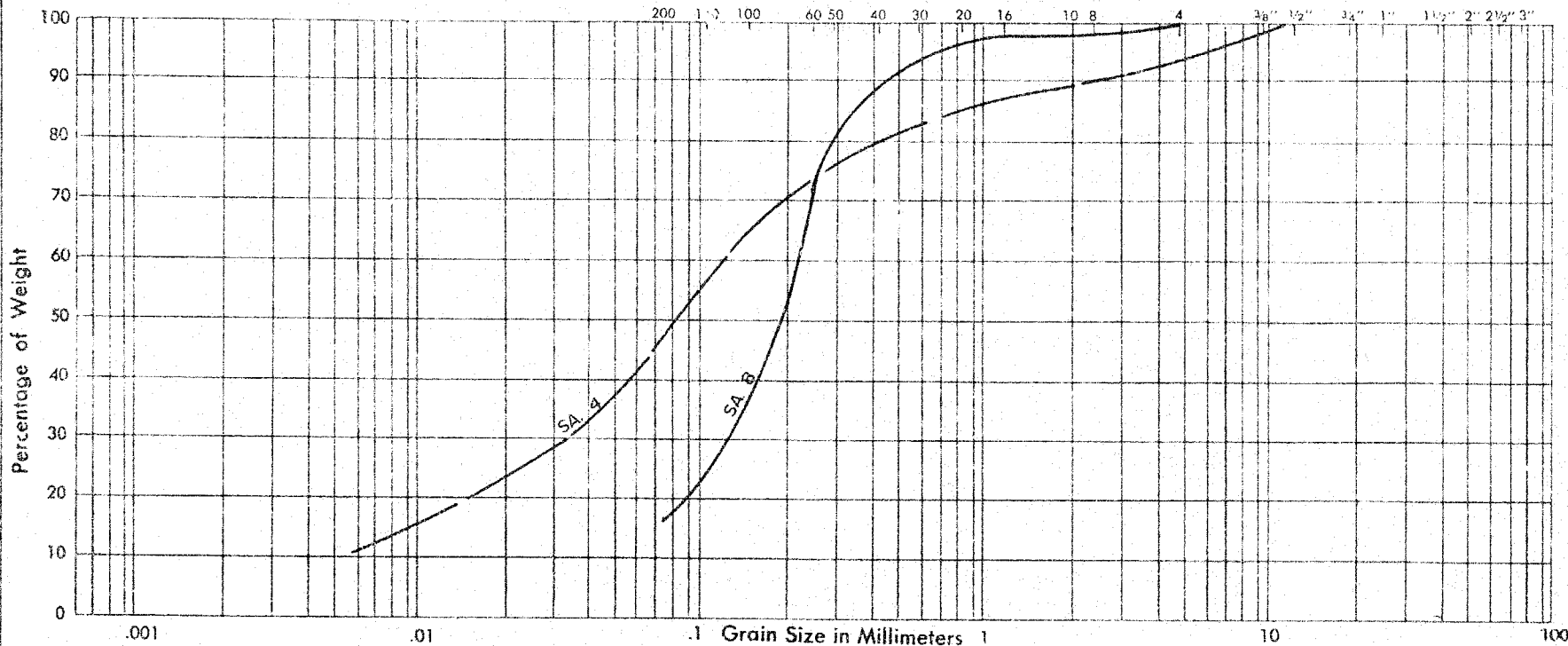
DOMINION SOIL INVESTIGATION LIMITED

GRAIN SIZE DISTRIBUTION

OUR REFERENCE NO 6-12-13

UNIFIED SOIL CLASSIFICATION
SYSTEM

| SILT AND CLAY | SAND | | | GRAVEL | |
|---------------|------|--------|--------|--------|--------|
| | FINE | MEDIUM | COARSE | FINE | COARSE |



PROJECT: W. J. 66-F-103
LOCATION: ETOBICOKE, ONT.
BOREHOLE NO.: 20
SAMPLE NO.: 4 8
DEPTH OF SAMPLE: 15' 35'
ELEVATION OF SAMPLE: 413.7' 393.7'

COEFFICIENT OF UNIFORMITY
COEFFICIENT OF CURVATURE

Non Applicable

PLASTIC PROPERTIES:

LIQUID LIMIT % =
PLASTIC LIMIT % = Non
PLASTICITY INDEX % = Plastic
MOISTURE CONTENT % =
ACTIVITY % =

Classification of Sample and Group Symbol:
SAND and SILT
with trace of CLAY and GRAVEL
SAND
with some SILT

SA 4 SM

SA 8 SP-SM

Enclosure No.

OUR REFERENCE NO 6 - 12 - 13
Your Ref. N° W. J. 66 - F - 103

W.U. 88-105
CLIENT: D. H.O.
PROJECT: FROM N. OF C.P.R. O'HEAD TO N. OF BLOOR ST.
LOCATION: 185, 980 N.; 206,620 E.
DATUM ELEVATION G. S. C.

METHOD OF BORING AUGERING
DIAMETER OF BOREHOLE 3 1/2"
DATE JAN. 12-13, 1967
W.P. 275-64-2

ENCLOSURE NO

| ELEVATION ft. | DEPTH ft. | STRATIFICATION DESCRIPTION | STRATIFICATION SYMBOL | SAMPLES | | | PENETRATION RESISTANCE blows per foot 2.0 4.0 6.0 8.0 10.0 | CONSISTENCY water content % W _p W W _L | REMARKS |
|------------------|--------------|--|--------------------------|---------|------|-------------------------------------|--|---|---------|
| | | | | NUMBER | TYPE | Advancement of Sampler in ft. | | | |
| 427.0 | 0 | GROUND SURFACE | | | | | | | |
| 425 | | 6" TOPSOIL CLAYEY SILT with sand and gravel | | 1 | S.S. | 18 | | | |
| | 5 | Mottled Brown V. Stiff Hard | | 2 | S.S. | 57 | | | |
| 420 | | (Weathered Till) sandy seams | | 3 | S.S. | 80/6" | | | |
| 415 | 12.5 | | | 4 | S.S. | 100/4" | | | |
| 410 | 15 | SILTY SAND with some gravel and a trace of clay | | 5 | S.S. | 100/4" | | | |
| 405 | 20 | (Glacial Till) Very Dense Grey | | 6 | S.S. | 100/3" | | | |
| 400 | 25 | | | 7 | S.S. | 100/4" | | | |
| 395 | 33.0 | GRAVELLY SAND with some silt boulder Very Dense | | 8 | S.S. | 100/6" | | | |
| 390 | 35 | | | 9 | S.S. | 125/3" | | | |
| 385 | 40 | WEATHERED SHALE | | 10 | S.S. | 100/3" | | | |
| 380 | 45 | | | 11 | S.S. | 100/4" | | | |
| 375 | 49.1 | END OF BOREHOLE | | | | | | | |

VERTICAL SCALE 1 IN TO 5 FT

COMMON SOIL INVESTIGATION LIMITED

MADE D. A. M. CHD

OUR REFERENCE NO. 6 - 12 - 13
Your Ref. No. W.J. 66 - F - 103

OUR REFERENCE NO. 6 - 12 - 13
Your Ref. No. W.J. 66 - F - 103

CLIENT: D. H. O.

PROJECT: FROM

PROJECT: FROM N. OF C.F.A. STREET TO N. OF BECON ST.
101. 000 N. 000. 075 E

LOCATION 185, 860 N; 206,635 E.

DATUM ELEVATION G. S. C.

METHOD OF BORING AUGERING

DIAMETER OF BOREHOLE 3 1/2 "

DATE. JAN. 12 - 13, 1967

W.P. 275- 64 - 2

ENCLOSURE NO

VERTICAL SCALE: 1 IN. TO 5 FT.

AMERICAN SOIL INVESTIGATION LIMITED

MADE - D. A. M. CH'D

GEOTECHNICAL DATA SHEET FOR BOREHOLE 19.

OUR REFERENCE NO. 6-12-13
Your Ref. No. W.J. 66 - F - 103

CLIENT: D. H. O.

PROJECT: FROM N. OF C.P.R. OVERHEAD TO N. OF BLOOR ST.

LOCATION: 185,690 N; 206,650 E.

DATUM ELEVATION: G.S.C.

METHOD OF BORING: AUGERING

DIAMETER OF BOREHOLE: 3 1/2"

DATE: JAN 11-12, 1967

W. P. 275-64-2

ENCLOSURE NO.

| ELEVATION ft. | DEPTH ft. | STRATIFICATION DESCRIPTION | STRATIFICATION SYMBOL | SAMPLES | | | PENETRATION RESISTANCE blows per foot | | CONSISTENCY water content % | | REMARKS |
|------------------|--------------|---|--------------------------|---------|------|--|--|----|--------------------------------|----|---------|
| | | | | NUMBER | TYPE | N ₆₀ or Advancement of Sampler | 20 | 40 | 60 | 80 | |
| 429.1 | 0 | GROUND SURFACE | | | | | | | | | |
| | | Clayey Silt FILL Brown | | | | | | | | | |
| 425 | 2.5 | CLAYEY SILT with Stiff sand Hard (Weathered Till) Brown | | 1 | SS | 14 | | | | | |
| | 5 | | | 2 | SS | 70 | | | | | |
| 420 | 8.0 | SILTY SAND with some gravel and trace of clay Brown-Grey | | 3 | SS | 100/5" | | | | | |
| | 10 | | | 4 | SS | 100/3" | | | | | |
| 415 | 12 | (Glacial Till) | | 5 | SS | 95/6" | | | | | |
| | 20 | Very Dense | | 6 | SS | 65/3" | | | | | |
| 410 | 25 | | | 7 | SS | 100/6" | | | | | |
| 405 | 30 | seams of silt | | 8 | SS | 100/4" | | | | | |
| 400 | 35 | CLAYEY SILT (Glacial Till) Hard Shale Fragments | | 9 | SS | 100/3" | | | | | |
| 395 | 38.0 | WEATHERED SHALE | | | | | | | | | |
| 390 | 40 | END OF BOREHOLE | | | | | | | | | |
| 385 | 40.3 | | | | | | | | | | |
| | 45 | | | | | | | | | | |

26 37 30 7

W.L. El. 413.1'
JAN. 13, 1967

10 46 44 0

GR SA SI CL
— per cent —

GEOTECHNICAL DATA SHEET FOR BOREHOLE 20.

OUR REFERENCE NO. 6-12-13
 Your Ref. No. W.J. 66-F-103
 CLIENT: D. H. O.
 PROJECT: NORTH OF C.P.R. O'HEAD TO NORTH OF BLOOR ST.
 LOCATION: 185,570 N, 206,660 E.
 DATUM ELEVATION: G.S.C.

METHOD OF BORING: AUGERING
 DIAMETER OF BOREHOLE: 3 1/2"
 DATE: JAN. 10 - 12, 1966
 W.P. 275-64-2

ENCLOSURE NO.

| ELEVATION ft. | DEPTH ft. | STRATIFICATION DESCRIPTION | STRATIFICATION SYMBOL | SAMPLES | | | PENETRATION RESISTANCE blows per foot | | | | CONSISTENCY water content % | | | | REMARKS |
|------------------|--------------|---|--------------------------|---------|------|-----------------------|--|----|----|----|--------------------------------|----------------|---|----------------|---------|
| | | | | NUMBER | TYPE | Advance of Sampler | 20 | 40 | 60 | 80 | 100 | W _p | W | W _L | |
| 428.7 | 0 | GROUND SURFACE | | | | | | | | | | | | | |
| | 1.0 | Clayey Silt FILL | | | | | | | | | | | | | |
| 425 | 5 | CLAYEY SILT with sand V. Stiff Hard | | 1 | S.S. | 16 | | | | | | | | | |
| | | (Glacial Till) | | | | | | | | | | | | | |
| 420 | 10 | Brown | | | | | | | | | | | | | |
| | | cobble | | | | | | | | | | | | | |
| 415 | 14.0 | | | 3 | S.S. | 100/6" | | | | | | | | | |
| | 15 | | | | | | | | | | | | | | |
| | | SAND and SILT with trace of clay and gravel Very Dense Grey | | 4 | S.S. | 70/3" | | | | | | | | | |
| 410 | 20 | | | | | | | | | | | | | | |
| | | | | 5 | S.S. | 80 | | | | | | | | | |
| 405 | 25 | | | | | | | | | | | | | | |
| | | | | 6 | S.S. | 70/5" | | | | | | | | | |
| 400 | 30 | | | | | | | | | | | | | | |
| | | sand increasing | | 7 | S.S. | 50/3" | | | | | | | | | |
| 395 | 33.0 | | | | | | | | | | | | | | |
| | 35 | | | | | | | | | | | | | | |
| | | SAND with some silt Very Dense cobbles silt seams | | 8 | S.S. | 50/3" | | | | | | | | | |
| 390 | 40 | | | | | | | | | | | | | | |
| | | | | 9 | S.S. | 80/4" | | | | | | | | | |
| 385 | 45 | | | | | | | | | | | | | | |
| | | trace of shale fragments | | 10 | S.S. | 100/4" | | | | | | | | | |
| 46.3 | | END OF BOREHOLE | | | | | | | | | | | | | |

6 46 43 5
 W.L. at 411'6"
 JAN. 12, 67

0 83 17 0

GR SA SI CL
 — per cent —

W.P. 275-04-2
66-F-103
W. A. Stornae,
Principal Foundation Engineer,
Room 107, 1100 Building.

Bridge Division,
Downsview, Ontario.

Attn: Mr. R. A. Selty

September 30, 1965.


**Preliminary Foundation Investigation
for Bridge Structures on Highway #27
between Q.E.W. and Kildview Side Rd.
W.P. 275-04-2 District # 6.**

This is an extension of the preliminary foundation
investigation of the intersection of Q.E.W. and Highway 27
etc.

Confirming our telephone conversation with Mr. Selty of
September 30, this investigation should include 4 structures at
Highway 5 (Dundas Street) and one each at Moor St.,
Turnant-Corpe Road, and Hainsbury Road.

It was agreed upon that the only available information at
this time, namely the Functional Planning Report, will be
sufficient for this preliminary investigation.

Knd/kp
c.c. E. McCabe
R. Forrest


J. J. Curtis,
for J. J. Curtis,
Regional Bridge Location Engineer.

DEFECTS IN NEGATIVE DUE TO
CONDITION OF ORIGINAL DOCUMENT

FOUNDATION INVESTIGATION REPORT
For
The Proposed Dundas St. and Hwy. #27
Interchange and Bloor St. Underpass,
Hwy. #27 -- District #6 (Toronto)
W.J. 66-F-103 -- W.P. 275-64-2

1. INTRODUCTION:

A memo by the Regional Bridge Location Engineer, Mr. W. S. Melinyshyn, dated December 8, 1966, was received by this Section, requesting a foundation investigation at the site of the proposed Hwy. #27 and Dundas Street interchange and Bloor Street underpass.

The request calls for investigations at the site of seven structures, all of which are delineated in Contract #5, which in turn, is part of the several contracts covering the proposed improvement of Hwy. #27.

A limited scale field investigation, containing some 7 boreholes, was already carried out at the site by the Foundation Section in 1965, and some of these boreholes are also incorporated in this report. The recent field work as well as the laboratory testing and the compilation of the geotechnical data sheets, were performed by Dominion Soil Investigation Ltd.

Presented in this report are the results of this investigation, together with recommendations pertaining to the foundations of the structures.

In the first part of the report, a general description of the site and subsoil conditions are given; the second part deals with each individual structure separately, presenting a short description of the soils and detailed recommendations for the footings.

cont'd. /2 ...

PART ONE

2. DESCRIPTION OF THE SITE:

Contract #5 covers the section of Hwy. #27 from north of the C.P.R. overhead to north of Bloor Street. The vicinity of the existing highway is generally flat, urban development with residential and light industrial buildings.

The area belongs to the "Iroquois Plain" physiographic region, formed by undulating till plains above the lowland, bordering Lake Ontario. This low-lying terrain was inundated by a body of water known as Lake Iroquois in late Pleistocene times. At this portion of the region, some alluvial terrace lands may be found behind huge baymouth bars.

3. FIELD AND LABORATORY INVESTIGATION PROCEDURE:

Thirty-seven boreholes, and adjacent to the holes, 37 cone penetration tests were carried out at the site of the seven proposed structures, during the recent field investigation.

The general layout of the site, showing the proposed structures, may be seen on attached Drawing #66-F-103A.

The borings were carried out by means of two conventional diamond core rigs adapted for soil sampling purposes, and two continuous flight augers. 2-in. O.D. split-spoon samplers were used to recover soil samples. The number of hammer blows necessary to advance the sampler one foot under an impact of 350 ft.-lbs. was recorded as the standard penetration 'N' value.

cont'd. /3 ...

3. FIELD AND LABORATORY INVESTIGATION PROCEDURE: (cont'd.) ...

Soil samples were visually examined and identified upon recovery and again in the laboratory. Laboratory tests of natural moisture content, Atterberg limits and grain-size distribution, were performed on representative soil specimens. The results of the laboratory and field tests are compiled on the geotechnical data sheets accompanying this report, together with the grain-size distribution curves.

4. GENERAL SOIL CONDITIONS:

The overburden within the entire area investigated was found to be a heterogeneous mixture of glacial till. Due to the nature of such glacial drifts, the classification of the various strata based on the individual samples, could sometimes be misleading. From the practical point of view, two main bodies of the glacial overburden may be differentiated. The coarse-grained portion was variously identified as silty sand to sandy silt, fine sand, silt, gravelly sand, etc. The fine-grained or cohesive portion is a clayey silt with some gravel and sand. At a few locations the uppermost ten-ft. zone exhibited firm to stiff consistency or loose to compact relative density. Otherwise, the deposit was found to be very dense or hard, corresponding to Standard Penetration 'N' values of much in excess of 100 blows/ft.

In order to ascertain the depth of the overburden, several boreholes were advanced into the bedrock. The bedrock was identified to be shale with intermittent limestone, the upper, approx. 8 - 10 ft. thickness of which was usually badly weathered. The surface of the weathered bedrock lies around el. 367 - 370 ft. The sound rock commences at el. 357 - 356 ft. Some 5 - 7 ft. depth of the sound rock was proved in a few locations by diamond drilling. The bedrock at the proposed crossing at Stobicoke Creek was observed to be somewhat lower.

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- Soil Conditions and Recommendations -
7. DUNDAS STREET UNDERPASS AT WEST MALL (W.P. 279-64-2).
- Soil Conditions and Recommendations -
8. DUNDAS STREET OVERPASS AT EAST MALL (Vickers Rd.) (W.P. 279-64-5).
- Soil Conditions and Recommendations -
9. NORTHBOUND BASKET-WEAVE JUST SOUTH OF BLOOR ST. (W.P. 266-66).
- Soil Conditions and Recommendations -
10. SOUTHBOUND BASKET-WEAVE JUST SOUTH OF BLOOR ST. (W.P. 267-66).
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- Soil Conditions and Recommendations -

13. SUMMARY.

14. MISCELLANEOUS.

MEMORANDUM

23-67-83

To: Mr. B. R. Davis,
Bridge Engineer,
Bridge Division,
Admin. Bldg.

From: Foundation Section,
Materials & Testing Div.,
Room 107, Lab. Bldg.

Attention: Mr. S. McCombie

Date: February 21, 1967

Our File Ref.

In Reply To:

FEB 28 1967

Subject:

FOUNDATION INVESTIGATION REPORT
For
The Proposed Dundas St. and Hwy. #27
Interchange and Bloor St. Underpass,
Hwy. #27 -- District #6 (Toronto)
W.J. 66-F-103 -- W.P. 275-6442

Attached, we are forwarding to you, our detailed foundation investigation report on the subsoil conditions existing at the above structure sites.

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

AGS/kdeP

Attach.

cc: Messrs. B. R. Davis (2)
H. A. Tregaskes
D. W. Farren
G. A. Hunter (2)
F. Allen
W. S. Melnychyn
T. J. Kovich
B. A. Singh

Foundations Files
Gen. Files

A. G. Stermac
A. G. Stermac
PRINCIPAL FOUNDATION ENGINEER

MEMORANDUM

To: Mr. A. Stermac,
Principal Foundation Engineer,
Room 107, Lab. Bldg.

From: Bridge Division,
Downsview, Ontario.

DATE: November 24, 1966.

Our File Ref.

IN REPLY TO

SUBJECT: W.F. 275-64-2, Contract #5,
Dundas and Hwy. #27 Interchange and Bloor St. Underpass,
District No. 6.

This will confirm my verbal request for foundation investigation to be carried out for the structures within the Dundas interchange and the Bloor St. Underpass as delineated in Contract #5.

I have approached the consultants for drawings (100' scale) of this interchange and have been promised them by 30th Nov. 1966. Three copies will be forwarded to you as soon as mark up is completed.

The contract schedule of November 16, 1966 calls for a foundation report by 1st March 1966. In view of the work already done here and the reasonable time available consideration should be given to completing an individual report for each structure prior to preliminary structure plans. Within a few days after 1st December, 1966 we can supply you with bore-hole locations for the proposed structures. I trust you will give this your consideration.

J. C. McAllister

JCMCA/im
cc. A. Crowley

J. C. McAllister,
for W. Melinyshyn,
Regional Bridge Location Engineer.

MEMORANDUM

To: Mr. A. G. Stermac,
Principal Foundation Engineer,
Room 107,
Lab. Building.

FROM: Bridge Division,
Downsview, Ontario.

DATE: December 8th, 1966.

Our File Ref.

IN REPLY TO

SUBJECT: W.P. 275-64-2, Contract #5,
Dundas and Hwy. #27 Interchange
and Bloor Street Underpass,
Hwy. #27, District #6.

Attached are three prints of 100' schematic drawing of the proposed interchange at Dundas Street marked up to show the approximate location of bridge footings as promised in my memo of 24th November, 1966.

You will notice that the layout of the proposed structures differs somewhat from the structures indicated on Mr. Strain's program dated 16th, November 1966. Dundas Street at the west mall has been combined with S.B. ramp of Hwy. #27 under West Mall. (i.e. W.P. 279-64-2 and -3 are combined). Also a grade separation is now called for East of Hwy. #27 on Dundas Street as shown on the plan.

Mr. Strain will be revising his program in the near future. When it is available a copy will be forwarded to you.

The alignment for the widening or replacement is not yet decided. When it is, a layout will be forwarded to you for investigation.

JCMcA/cew
Attach.

J. C. McAllister
J. C. McAllister,
for W. S. Melinyshyn,
Regional Bridge Location Engineer.

Continued 5 (Dundas)

| | | |
|---------------|-----------|---|
| 275-64-2 | CDGB Pav. | From N. of C. P. R. O'Head to N. of Bloor St. |
| W.P. 279-64-1 | Struct. | Hwy. 27 O'Pass at Dundas St. |
| W.P. 279-64-2 | Struct. | Dundas St. O'Pass at West Mall and S. Bd. range of Highway 27 |
| W.P. 279-64-5 | Struct. | Dundas St. O'Pass at E. Mall. |
| W.P. 256-66 | Struct. | N. Bd. Basketweave just S. of Bloor St. |
| W.P. 267-66 | Struct. | S. Bd. Basketweave just S. of Bloor St. |
| W.P. 37-65 | Struct. | Hwy. 27 U'Pass at Bloor St. |
| W.P. 277-69 | Struct. | Within present Choucouke Creek Bridge on Dundas Street just W. of Hwy. 27. |

Program

| | | | |
|--------------------|------------|--------------|------------------|
| Start Construction | | Expend. 1965 | 2,500,000 |
| Comp. Construction | Nov. 15/70 | Expend. 1969 | 2,500,000 |
| | | Expend. 1970 | <u>1,500,000</u> |
| | | | <u>5</u> |
| | | Total Value | 6,500,000 |

Pre-Engineering Schedule

| | Comp. Date |
|--------------------------------|------------------|
| Planning | Comp. |
| Struct. Geometries | Feb. 15/67 |
| Foundation Report | <u>Mar. 1/67</u> |
| Preliminary Property Request | Jan. 12/67 |
| Soils Report | Feb. 15/67 |
| Final Property Request | Apr. 12/67 |
| Bridge-Comp. D4 & Plans | Sept. 15/67 |
| Foundations - Comp. D4 & Plans | Oct. 20/67 |
| Regional RDO | Dec. 9/67 |
| Local Office RDO | Jan. 15/68 |
| Property Acquired | Feb. 20/68 |
| Surveying | Apr. 10/68 |
| Design | Aug. 22/68 |

9. NORTHBOUND BASKET-WEAVE JUST SOUTH OF BLOOR STREET: (cont'd.) ...
(W.P. 266-66)

9.1) Soil Conditions: (cont'd.) ...

The groundwater level in the boreholes was established at el. 411 - 412 ft., within the granular sandy silt to silty sand deposit.

The locations and elevations of the boreholes and also the soil profile, are presented on Drawing #66-P-103D.

9.2) Recommendations:

The estimated design grade of TR. NB. Coll. - 27 NB. will roughly be at el. 409 ft.; the grade of the basket-weave bridge at el. 427 - 432.5 ft.

The structure may be supported on spread footings, placed some four ft. below finished grade of TR. NB. Coll. - 27 NB. At this elevation (approx. el. 405 ft.) a safe bearing pressure of up to 4 t.s.f. is suggested for design purposes.

Footings for spill-through type abutments may be placed on higher elevations. The base of the footing of the north abutment should not, however, be higher than el. 419 ft., using a design load of 4 t.s.f. Placing the footing of the south abutment between el. 416 ft. and 420 ft., a safe load of 3 t.s.f. may be utilized; below el. 416 ft., up to 4 t.s.f. is recommended.

A dewatering scheme might be necessary for the footing excavations within the silty sand deposit.

10. SOUTHBOUND BASKET-WEAVE JUST SOUTH OF BLOOR STREET:
(W.P. 267-66)

10.1) Soil Conditions:

Soil information at this location is based on four boreholes numbered 17, 18, 19 and 20.

cont'd. /10 ...

MEMORANDUM

Mr. B. H. Davis,
Bridge Engineer,
Bridge Division,
Admin. Bldg.

FROM: Foundation Section,
Materials & Testing Div.,
Room 107, Lab. Bldg.

Attention: Mr. S. McCorbie

DATE: May 26, 1967

Our File No.

IN REPLY TO

MAY 31 1967

Subject:

FOUNDATION INVESTIGATION REPORT

For

The Proposed Bridge #2, Bridge #9,
And W.B. Basketweave,
Hwy. #27 and Dundas St. Interchange,
District #6 (Toronto).

W.J. 66-P-103 -- W.P. 275-64-2

In a memo dated April 25, 1967, Mr. W. S. Melnyshyn, Regional Bridge Location Engineer, requested foundation investigations at the sites of three bridges. These structures belong to the proposed Hwy. #27 and Dundas St. interchange, but were recently changed or added; consequently, they were not included in our original Foundation Report W.J. 66-P-103.

Supplementary field and laboratory investigations were therefore undertaken by this Section to enable us to give recommendations for the requested structure foundations.

Attached, we are forwarding to you, our foundation reports for the above bridges, namely: Bridge #2 (W.P. 275-64-2), Westbound Basketweave (W.P. 266-66), and Bridge #9 (W.P. 275-64-6). Please insert these pages and drawings into your copy(s) of the original report W.J. 66-P-103.

Your attention is called to the section entitled: "General Remarks about Foundations" - Part Two (2), page four (4) of the original report. Suggestions given under this heading are valid for the foundations of the bridges sent to you herby.

AGS/XdeP

Attach.

cc: Messrs. B. H. Davis (2)

H. A. Trageskes

D. W. Peirce

G. K. Hunter (2)

P. Allen

W. S. Melnyshyn

T. J. Kovich

B. A. Singh

A. C. Sterling
PRINCIPAL FOUNDATION ENGINEER

Foundations Files

Gen. Files ✓

PART TWO

5. GENERAL REMARKS ABOUT FOUNDATIONS:

5.1) Subsoil within the entire site investigated appears to exhibit sufficient strength for spread type foundations at relatively shallow depths. A four-ft. cover should be maintained above the base of the footings for frost protection.

5.2) Where perched abutments are supported on steel tube piles, it should be specified that no bouldery fill be placed at the locations of the footings. The working load on the piles must be checked during pile driving by means of the Hiley formula - (D.H.O. Standards DD 1218 and 1219).

5.3) Due to the high groundwater levels and the presence of the sandy silt to silty sand stratum, dewatering schemes for the footing excavations within this granular layer are likely to be necessary. Interlocking sheet piles, caissons, or well-point dewatering system, may be used. Sheet-piles or caissons should be lowered to a depth below the base of the excavation equal to the height of water above it, to prevent quick conditions of the soil.

5.4) No stability problems are foreseen for the approach fills and cuts with 2 horizontal to 1 vertical slopes.

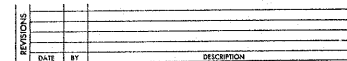
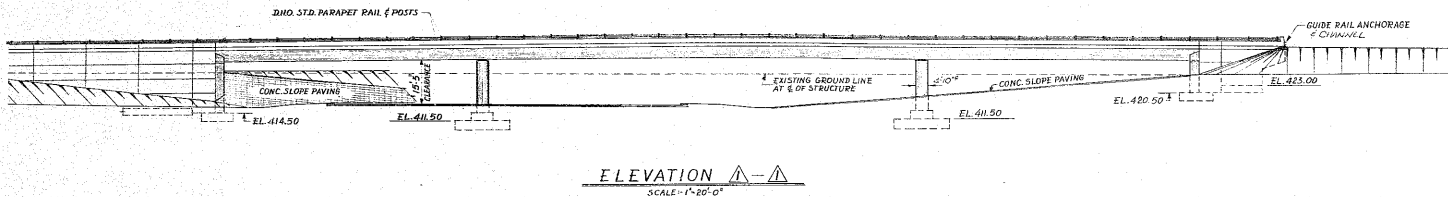
6. H.W. #27 OVERPASS AT DUNDAS STREET:

(W.P. 279-64-1)

6.1) Soil Conditions:

Some 8 boreholes were drilled at the site of the proposed structure during the recent field investigation, and they were numbered from 25 to 32, inclusive. Two borings numbered 1 and 2, drilled in October 1965, are also incorporated in the stratigraphy. Predominantly silty sand to sandy silt with some gravel and clay material was recovered by the samples. The granular type glacial deposit exhibited very dense relative density in almost every

cont'd. /S ...



| | | | |
|--|--|---|--|
| DEPARTMENT OF HIGHWAYS ONTARIO BRIDGE DIVISION | | | |
| <u>BRIDGE #5</u> <u>S.B. BASSETT WEAVE S.O. BLOOD STREET</u> KING'S HIGHWAY NO. DUNDAS INTERCHANGE 1/11/72 DIST. NO. 6 | | | |
| CO. YORK | | LOT _____ | |
| TWP. ETOBICOKE | | CON. _____ | |
| PRELIMINARY PLAN | | | |
| APPROVED _____ | | SITE No. 72-272 W.P. No. 267-66 | |
| BRIDGE INCHES DESIGN <input checked="" type="checkbox"/> 2' CHECK <input checked="" type="checkbox"/> 5' 2" | | CONTRACT No. _____ DRAWING No. _____ | |
| DATE 2.5.72 CHECK 12.2.72 DRAWN J.S. GALT LAYOUT W.B.20-44 | | D-6200-P1 | |

