

# 68-F-15-3

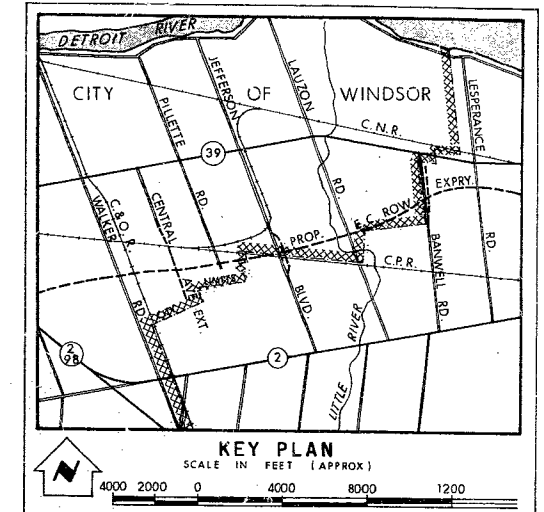
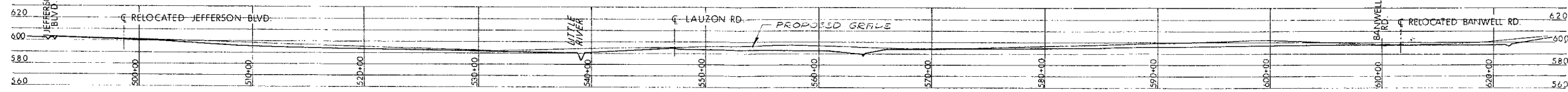
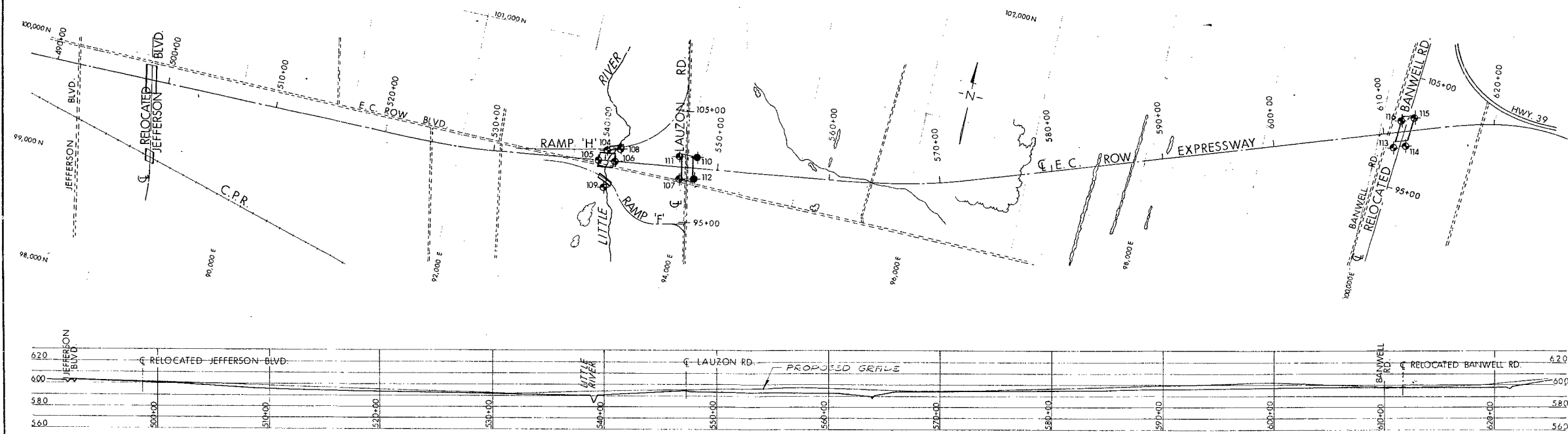
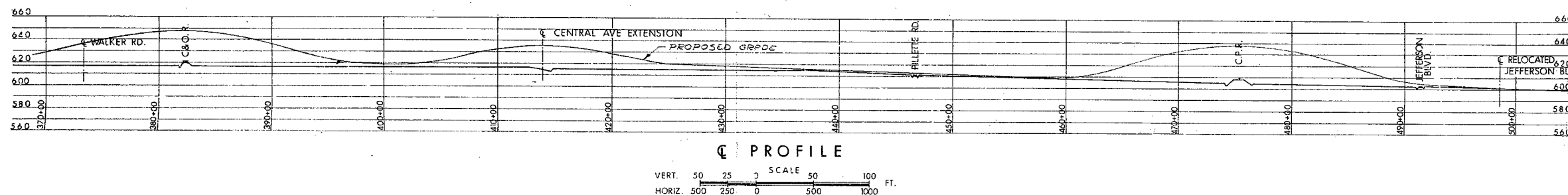
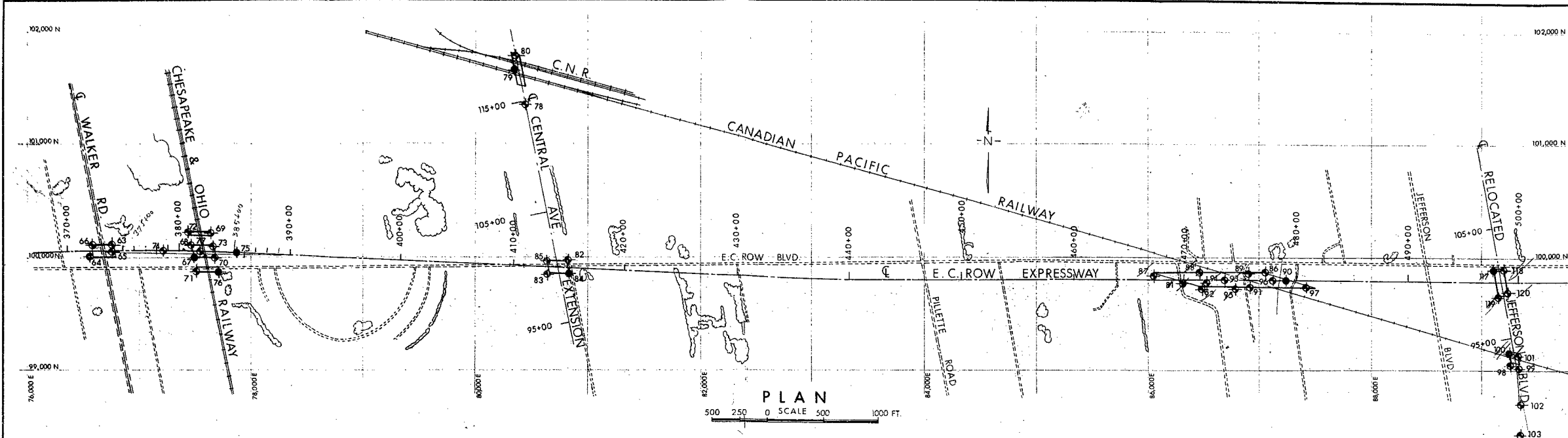
WALKER ROAD

TO

BANWELL ROAD

E.C. ROW

EXPRESSWAY



| LEGEND   |           |              |      |
|--|-----------|--------------|------|
| <div> <div></div> Bore Hole </div> <div> <div></div> Bore &amp; Cone Penetration Hole </div> |           |              |      |
| NO.  | ELEVATION | CO-ORDINATES |      |
|  |           | NORTH        | EAST |
| 63   | 617.4     | 100.1        | 76.7 |
| 64   | 617.4     | 100.1        | 76.7 |
| 65   | 617.4     | 100.1        | 76.7 |
| 66   | 617.4     | 100.1        | 76.7 |
| 67   | 617.4     | 100.1        | 76.7 |
| 68   | 617.4     | 100.1        | 76.7 |
| 69   | 617.4     | 100.1        | 76.7 |
| 70   | 617.4     | 100.1        | 76.7 |
| 71   | 617.4     | 100.1        | 76.7 |
| 72   | 617.4     | 100.1        | 76.7 |
| 73   | 617.4     | 100.1        | 76.7 |
| 74   | 617.4     | 100.1        | 76.7 |
| 75   | 617.4     | 100.1        | 76.7 |
| 76   | 617.4     | 100.1        | 76.7 |
| 77   | 617.4     | 100.1        | 76.7 |
| 78   | 617.4     | 100.1        | 76.7 |
| 79   | 617.4     | 100.1        | 76.7 |
| 80   | 617.4     | 100.1        | 76.7 |
| 81   | 617.4     | 100.1        | 76.7 |
| 82   | 617.4     | 100.1        | 76.7 |
| 83   | 617.4     | 100.1        | 76.7 |
| 84   | 617.4     | 100.1        | 76.7 |
| 85   | 617.4     | 100.1        | 76.7 |
| 86   | 617.4     | 100.1        | 76.7 |
| 87   | 617.4     | 100.1        | 76.7 |
| 88   | 617.4     | 100.1        | 76.7 |
| 89   | 617.4     | 100.1        | 76.7 |
| 90   | 617.4     | 100.1        | 76.7 |
| 91   | 617.4     | 100.1        | 76.7 |
| 92   | 617.4     | 100.1        | 76.7 |
| 93   | 617.4     | 100.1        | 76.7 |
| 94   | 617.4     | 100.1        | 76.7 |
| 95   | 617.4     | 100.1        | 76.7 |
| 96   | 617.4     | 100.1        | 76.7 |
| 97   | 617.4     | 100.1        | 76.7 |
| 98   | 617.4     | 100.1        | 76.7 |
| 99   | 617.4     | 100.1        | 76.7 |
| 100  | 617.4     | 100.1        | 76.7 |
| 101  | 617.4     | 100.1        | 76.7 |
| 102  | 617.4     | 100.1        | 76.7 |
| 103  | 617.4     | 100.1        | 76.7 |
| 104  | 617.4     | 100.1        | 76.7 |
| 105  | 617.4     | 100.1        | 76.7 |
| 106  | 617.4     | 100.1        | 76.7 |
| 107  | 617.4     | 100.1        | 76.7 |
| 108  | 617.4     | 100.1        | 76.7 |
| 109  | 617.4     | 100.1        | 76.7 |
| 110  | 617.4     | 100.1        | 76.7 |
| 111  | 617.4     | 100.1        | 76.7 |
| 112  | 617.4     | 100.1        | 76.7 |
| 113  | 617.4     | 100.1        | 76.7 |
| 114  | 617.4     | 100.1        | 76.7 |
| 115  | 617.4     | 100.1        | 76.7 |
| 116  | 617.4     | 100.1        | 76.7 |
| 117  | 617.4     | 100.1        | 76.7 |
| 118  | 617.4     | 100.1        | 76.7 |
| 119  | 617.4     | 100.1        | 76.7 |
| 120  | 617.4     | 100.1        | 76.7 |

| REVISION | DATE | BY | DESCRIPTION |
|----------|------|----|-------------|
|          |      |    |             |

DEPARTMENT OF HIGHWAYS - ONTARIO  
MATERIALS & TESTING DIVISION - FOUNDATION SECTION

WALKER RD. TO BANWELL RD.  
KING'S HIGHWAY NO. E.C. ROW EXPRESSWAY DIST. NO. 1  
CO. ESSEX CITY OF WINDSOR  
TWP. LOT CON.

GENERAL LAYOUT  
SUBM'D. A.P. CHECKED: W.P. NO. M.B.T. DRAWING NO.  
DRAWN S.O. CHECKED: JOB NO. 68-F-15-3 68-F-15-3A  
DATE: 10 OCT. 1968 SITE NO. BRIDGE DRAWING NO.  
APPROVED: [Signature] CONT. NO.

STATIONS ON PLAN & BOREHOLE CO-ORDINATES FROM PLANS B-835-11, 12, 13, 14 & 15  
REF. FUNCTIONAL REPORT SEPT. 1967

MEMORANDUM

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

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

ATTENTION: Mr. S. McCombie

DATE: July 10, 1969

OUR FILE NO:

IN REPLY TO

SUBJECT:

FOUNDATION INVESTIGATION REPORT  
For

Proposed E. C. Row Expressway  
Walker Road to Banwell Road  
District No. 1 (Chatham)  
W.J. 68-F-15-3 -- W.P. -

Enclosed please find our Foundation Investigation Report for the section of the proposed E. C. Row Expressway from Walker Road to Banwell Road. The report contains factual information only, and has been compiled so as to provide you with information relating to subsoil conditions. No attempt has been made to interpret our findings and make specific recommendations, since the design stage is still some time in the future and present proposals may well be subject to substantial change. A complete report will therefore be submitted at an appropriate time in the future.

AGS/MdeF  
Attach.

cc: Messrs. B. R. Davis (2)  
H. A. Tregaskes  
D. W. Farren  
W. Zonnenberg  
F. C. Brown  
A. P. Watt  
J. Roy  
B. A. Singh  
Foundations Files  
Gen. Files ✓

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

APPENDIX I

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DEPARTMENT OF HIGHWAYS - ONTARIO

MATERIALS & TESTING DIVISION

# RECORD OF BOREHOLE NO. 75

FOUNDATION SECTION

JOB 68-P-15-3 LOCATION Co-ords. 100,057 N; 77,874 E. ORIGINATED BY GPH  
W.P. 257-66-050 BORING DATE April 4, 1968 COMPILED BY AMC  
DATUM Geodetic BOREHOLE TYPE Cont. Flight Auger CHECKED BY

| SOIL PROFILE |   |             | SAMPLES |      |              | ELEV SCALE | DYNAMIC PENETRATION RESISTANCE<br>BLOWS / FOOT                  |      |      |      |    | LIQUID LIMIT ——— WL<br>PLASTIC LIMIT ——— WP<br>WATER CONTENT ——— W |    |  | BULK DENSITY<br>PCF | REMARKS    |  |
|--------------|---|-------------|---------|------|--------------|------------|---|------|------|------|----|--|----|--|---------------------|------------|--|
| ELEV. DEPTH  | DESCRIPTION   | STRAT. PLOT | NUMBER  | TYPE | BLOWS / FOOT |            | SHEAR STRENGTH P S F<br>+ Field Vane • Triaxial<br>o Unconfined |      |      |      |    | WATER CONTENT %  |    |  |                     |            |  |
|              |   |             |         |      |              | 500        | 1000  | 1500 | 2000 | 2500 | wp | w  | wL |  |                     |            |  |
| 616.0        | Ground Level  |             |         |      |              |            |   |      |      |      |    |  |    |  |                     |            |  |
| 0.0          | Clayey silt with sand, traces of gravel.<br><br>Hard to very stiff<br>Stiff |             | 1       | SS   | 57           |            |   |      |      |      |    |  |    |  |                     | 2 31 46 21 |  |
|              |   |             | 2       | SS   | 104          |            |   |      |      |      |    |  |    |  |                     |            |  |
|              |   |             | 3       | SS   | 40           |            |   |      |      |      |    |  |    |  |                     |            |  |
|              |   |             | 4       | SS   | 29           |            |   |      |      |      |    |  |    |  |                     |            |  |
|              |   |             | 5       | SS   | 22           |            |   |      |      |      |    |  |    |  |                     |            |  |
|              |   |             | 6       | SS   | 16           |            |   |      |      |      |    |  |    |  |                     |            |  |
|              |   |             | 7       | TW   | PH           |            |   |      |      |      |    |  |    |  |                     |            |  |
|              |   |             | 8       | TW   | PH           |            |   |      |      |      |    |  |    |  |                     |            |  |
|              |   |             | 9       | TW   | PH           |            |   |      |      |      |    |  |    |  |                     |            |  |
| 563.0        |   |             |         |      |              |            |   |      |      |      |    |  |    |  |                     |            |  |
| 53.0         | End of Borehole   |             |         |      |              |            |   |      |      |      |    |  |    |  |                     |            |  |
|              |   |             |         |      |              |            |   |      |      |      |    |  |    |  |                     |            |  |

20  
15-5 % strain at failure  
10

DEPARTMENT OF HIGHWAYS - ONTARIO

## MATERIALS &amp; TESTING DIVISION

JOB 68-P-15-3

LOCATION Co-ords. 99,774 N; 86,335 E.

ORIGINATED BY AL

W.P. 250-66-020

BORING DATE August 6, 1961

COMPILED BY AMS

DATUM Geodetic

BOREHOLE TYPE Open Drift & Core Drift

CHECKED BY

[illegible]

DEPARTMENT OF HIGHWAYS - ONTARIO

## MATERIALS &amp; TESTING DIVISION

## RECORD OF BOREHOLE NO. 76

FOUNDATION SECTION

JOB 68-E-15 LOCATION Co-ords. 99,876 N; 87,78 E. ORIGINATED BY AL  
W.P. 259-66-020 BORING DATE April 2, 1968 COMPILED BY AMC  
DATUM Geodetic BOREHOLE TYPE Cont. Flight Auger CHECKED BY SL

| SOIL PROFILE |   |             | SAMPLES |      |              | ELEV SCALE | DYNAMIC PENETRATION RESISTANCE |   | LIQUID LIMIT — WL<br>PLASTIC LIMIT — WP<br>WATER CONTENT — W |                 | BULK DENSITY<br>P.C.F. | REMARKS |
|--------------|---|-------------|---------|------|--------------|------------|--------------------------------|---|--|-----------------|------------------------|---------|
| ELEV. DEPTH  | DESCRIPTION   | STRAT. PLOT | NUMBER  | TYPE | BLOWS / FOOT |            | BLOWS / FOOT                   | SHEAR STRENGTH P.S.F.<br>+ Field Vane<br>o Unconfined | WATER CONTENT %  | WATER CONTENT % |                        |         |
| 603.3        | Ground Level  |             |         |      |              |            |                                |   |  |                 |                        |         |
|              | Clayey silt<br>with sand,<br>traces of<br>gravel.<br><br>Hard to<br>very stiff<br>stiff |             | 1       | SS   | 1L           | 600        |                                |   |  |                 |                        |         |
|              |   |             | 2       | SS   | 20           |            |                                |   |  |                 |                        |         |
|              |   |             | 3       | SS   | 83           |            |                                |   |  |                 |                        |         |
|              |   |             | 4       | SS   | 50           |            |                                |   |  |                 |                        |         |
|              |   |             | 5       | SS   | 27           |            |                                |   |  |                 |                        |         |
|              |   |             | 6       | SS   | 26           |            |                                |   |  |                 |                        |         |
|              |   |             | 7       | SS   | 22           |            |                                |   |  |                 |                        |         |
|              |   |             | 8       | SS   | 24           |            |                                |   |  |                 |                        |         |
|              |   |             | 9       | TW   | 1M           |            |                                |   |  |                 |                        |         |
|              |   |             | 10      | TW   | 1M           |            |                                |   |  |                 |                        |         |
|              |   |             | 11      | TW   | 1M           |            |                                |   |  |                 |                        |         |
| 550.3        |   |             |         |      |              |            |                                |   |  |                 |                        |         |
| 53.0         | End of Borehole   |             |         |      |              | 550        |                                |   |  |                 |                        |         |

20  
5-5 % Strain at failure  
10



[illegible]

DEPARTMENT OF HIGHWAYS - ONTARIO

## MATERIALS &amp; TESTING DIVISION

## RECORD OF BOREHOLE NO. 58

FOUNDATION SECTION

JOB 68-F-15-3 LOCATION Co-ords. 99,865 N; 86,485 E. ORIGINATED BY SRP  
W.P. 259-66-020 BORING DATE April 10, 1968 COMPILED BY AMP  
DATUM Geodetic BOREHOLE TYPE Washbore - MV Casing CHECKED BY SR

| SOIL PROFILE |  |             | SAMPLES |      |              | ELEV. SCALE | DYNAMIC PENETRATION RESISTANCE<br>BLOWS / FOOT         |  | LIQUID LIMIT — WL<br>PLASTIC LIMIT — WP<br>WATER CONTENT — W |  | BULK DENSITY<br>PCF | REMARKS    |
|--------------|--|-------------|---------|------|--------------|-------------|--|--|--|--|---------------------|------------|
| ELEV. DEPTH  | DESCRIPTION                                | STRAT. PLT. | NUMBER  | TYPE | BLOWS / FOOT |             | SHEAR STRENGTH P.S.F.<br>+ Field Value<br>o Unconfined |  | WATER CONTENT %  |  |                     |            |
| 601.6        | Ground Level                               |             |         |      |              |             |  |  |  |  |                     |            |
| 0.0          |  |             | 1       | SS   | 16           |             |  |  |  |  |                     |            |
|              |  |             | 2       | SS   | 51           |             |  |  |  |  |                     |            |
|              |  |             | 3       | SS   | 47           |             |  |  |  |  |                     |            |
|              |  |             | 4       | SS   | 32           |             |  |  |  |  |                     |            |
|              | Clayey silt with sand<br>traces of gravel. |             | 5       | SS   | 24           |             |  |  |  |  |                     | h 25 43 28 |
|              |  |             | 6       | SS   | 17           |             |  |  |  |  |                     |            |
|              | Hard.                                      |             | 7       | TM   | TM           |             |  |  |  |  | 136                 |            |
|              |  |             | 8       | SS   | 13           |             |  |  |  |  |                     |            |
|              |  |             | 9       | TM   | TM           |             |  |  |  |  | 136                 | 1 20 43 26 |
|              | Sand Seams                                 |             | 10      | SS   | 27           |             |  |  |  |  |                     | 3 20 38 29 |
|              |  |             | 11      | TM   | TM           |             |  |  |  |  |                     |            |
| 551.6        |  |             |         |      |              |             |  |  |  |  |                     |            |
| 53.0         | End of Borehole                            |             |         |      |              |             |  |  |  |  |                     |            |

20  
5 + 5 % strain at failure  
10

DEPARTMENT OF HIGHWAYS - ONTARIO

MATERIALS & TESTING DIVISION

RECORD OF BOREHOLE NO. 80

FOUNDATION SECTION

JOB 68-F-15-3 LOCATION Co-ords. 99,862 N; 86,927 E.

ORIGINATED BY A

W.P. 250-66-020 BORING DATE April 10 & 11, 1968

COMPILED BY ATG

DATUM Geodetic BOREHOLE TYPE 4-in. Drill P. Core Drill

CHECKED BY

| SOIL PROFILE   |  |            | SAMPLES |           |              | DYNAMIC PENETRATION RESISTANCE |                                 |   |                             |                             | LIQUID LIMIT — WL<br>PLASTIC LIMIT — WP<br>WATER CONTENT — W |   |    | BULK<br>DENSITY<br>PCF | REMARKS         |
|----------------|--|------------|---------|-----------|--------------|--------------------------------|---------------------------------|---|-----------------------------|-----------------------------|--|---|----|------------------------|-----------------|
| ELEV.<br>DEPTH | DESCRIPTION  | STRAT. PLT | NUMBER  | TYPE      | BLOWS / FOOT | ELEV. SCALE                    | BLOWS / FOOT<br>20 40 60 80 100 | SHEAR STRENGTH P S F<br>+ Field Vane • Triaxial | o Unconfined                | WATER CONTENT %<br>10 20 30 | wp   | w | wL |                        |                 |
| 602.3          | Ground Level   |            |         |           |              |                                |                                 |   |                             |                             |  |   |    |                        | Gr. Sa. Si. Cl. |
| 0.0            | Clayey silt with sand,<br>traces of gravel.<br><br>Hard. |            | 1       | TW        | 1M           | 600                            |                                 |   |                             |                             |  |   |    |                        |                 |
|                |  |            | 2       | TW        | 1M           |                                |                                 |   |                             |                             |  |   |    |                        |                 |
|                |  |            | 3       | SS        | 11           |                                |                                 |   |                             |                             |  |   |    |                        |                 |
|                |  |            | 4       | SS        | 13           | 500                            |                                 |   |                             | 10                          |  |   |    |                        |                 |
|                |  |            | 5       | SS        | 26           |                                |                                 |   |                             |                             |  |   |    |                        |                 |
|                |  |            | 6       | SS        | 26           | 580                            |                                 |   |                             | 10                          |  |   |    |                        |                 |
|                |  |            | 7       | TW        | 1M           |                                |                                 | +1.6  |                             | 10                          |  |   |    | 135                    | 2 29 42 27      |
|                |  |            | 8       | SS        | 18           | 670                            |                                 |   |                             |                             |  |   |    |                        |                 |
|                |  |            | 9       | TW        | TM           |                                |                                 |   | 6                           | 10                          |  |   |    | 137                    |                 |
|                |  |            | 10      | SS        | 17           | 660                            |                                 |   |                             | 10                          |  |   |    |                        | 1 30 47 22      |
| 551.3          | Sand seams   |            | 11      | TW        | PH           | 550                            |                                 |   |                             |                             |  |   |    |                        |                 |
| 51.0           |  |            |         |           |              |                                |                                 |   |                             |                             |  |   |    |                        |                 |
| 518.3          |  |            |         |           |              |                                |                                 |   |                             |                             |  |   |    |                        |                 |
| 54.0           |  |            | 12      | SS        | 26           | 540                            |                                 |   |                             | 10                          |  |   |    |                        | 8 28 34 30      |
|                |  |            | 13      | TW        | 1M           | 530                            |                                 |   |                             |                             |  |   |    |                        |                 |
|                |  |            | 14      | SS        |              | 520                            |                                 |   |                             | 10                          |  |   |    |                        |                 |
|                |  |            |         |           |              | 510                            |                                 |   |                             |                             |  |   |    |                        |                 |
|                |  |            |         |           |              | 500                            |                                 |   |                             |                             |  |   |    |                        |                 |
|                |  |            |         |           |              | 490                            |                                 |   |                             |                             |  |   |    |                        |                 |
| 476.0          | Limestone<br>Bedrock                                     |            | 15      | AST<br>RC | Rec<br>100%  |                                |                                 |   |                             |                             |  |   |    |                        |                 |
| 126.3          |  |            |         |           |              |                                |                                 |   |                             |                             |  |   |    |                        |                 |
| 471.0          |  |            |         |           |              |                                |                                 |   |                             |                             |  |   |    |                        |                 |
| 131.3          | End of Borehole  |            |         |           |              |                                |                                 |   | 1520<br>5% shear in failure |                             |  |   |    |                        |                 |

477.2

DEPARTMENT OF HIGHWAYS - ONTARIO  
MATERIALS & TESTING DIVISION

RECORD OF BOREHOLE NO. 91

FOUNDATION SECTION

JOB 68-F-15-3 LOCATION Co-ords. 99,741 N; 86,933 E. ORIGINATED BY GEH  
W.P. 259-66-020 BORING DATE April 11, 1968 COMPILED BY AMS  
DATUM Geodetic BOREHOLE TYPE Washbore - NX Casing CHECKED BY [Signature]

| SOIL PROFILE |   |             | SAMPLES |      |              | ELEV SCALE | DYNAMIC PENETRATION RESISTANCE |                    | LIQUID LIMIT — WL |                 | BULK DENSITY | REMARKS    |
|--------------|---|-------------|---------|------|--------------|------------|--------------------------------|--------------------|-------------------|-----------------|--------------|------------|
| ELEV. DEPTH  | DESCRIPTION   | STRAT. PLOT | NUMBER  | TYPE | BLOWS / FOOT |            | BLOWS / FOOT                   | PLASTIC LIMIT — WP | WATER CONTENT — W | WATER CONTENT % |              |            |
| 604.0        | Ground Level  |             |         |      |              |            |                                |                    |                   |                 |              |            |
| 0.0          | Clayey silt with sand, traces of gravel.<br><br>Hard to very stiff<br>Stiff |             | 1       | SS   | 15           | 600        |                                |                    |                   |                 |              | 2 28 40 39 |
|              |   |             | 2       | SS   | 13           |            |                                |                    |                   |                 |              |            |
|              |   |             | 3       | SS   | 13           |            |                                |                    |                   |                 |              |            |
|              |   |             | 4       | SS   | 31           |            |                                |                    |                   |                 |              |            |
|              |   |             | 5       | SS   | 27           |            |                                |                    |                   |                 |              |            |
|              |   |             | 6       | SS   | 25           |            |                                |                    |                   |                 |              |            |
|              |   |             | 7       | TW   | 1M           |            |                                |                    |                   |                 |              |            |
|              |   |             | 8       | SS   | 20           |            |                                |                    |                   |                 |              |            |
|              |   |             | 9       | TW   | 1M           |            |                                |                    |                   |                 |              |            |
|              |   |             | 10      | SS   | 16           |            |                                |                    |                   |                 |              |            |
|              |   |             | 11      | TW   | 1M           |            |                                |                    |                   |                 |              |            |
| 551.0        |   |             |         |      |              |            |                                |                    |                   |                 |              | 8 28 42 22 |
| 53.0         | End of Borehole   |             |         |      |              |            |                                |                    |                   |                 |              |            |

120/9'

20  
15 ± 5 % strain at failure  
10

|                                  |  |                                  |  |                    |  |
|----------------------------------|--|----------------------------------|--|--------------------|--|
| DEPARTMENT OF HIGHWAYS - ONTARIO |  | <b>RECORD OF BOREHOLE NO. 92</b> |  | FOUNDATION SECTION |  |
| MATERIALS & TESTING DIVISION     |  |                                  |  |                    |  |
| JOB <u>68-T-15-3</u>             | LOCATION <u>Co-ords. 99,725 N; 86,510 E.</u> | ORIGINATED BY <u>CEH</u>         |  |                    |  |
| W.P. <u>259-66-020</u>           | BORING DATE <u>April 11, 1968</u>            | COMPILED BY <u>AMD</u>           |  |                    |  |
| DATUM <u>Geodetic</u>            | BOREHOLE TYPE <u>Cont. Flight Auger</u>      | CHECKED BY <u>LL</u>             |  |                    |  |

| SOIL PROFILE |   |             | SAMPLES |      |              | DYNAMIC PENETRATION RESISTANCE |                                 |  | LIQUID LIMIT — WL<br>PLASTIC LIMIT — WP<br>WATER CONTENT — W |  |                            | BULK DENSITY<br>P.C.F. | REMARKS |            |
|--------------|---|-------------|---------|------|--------------|--------------------------------|---------------------------------|--|--|--|----------------------------|------------------------|---------|------------|
| ELEV. DEPTH  | DESCRIPTION   | STRAT. PLOT | NUMBER  | TYPE | BLOWS / FOOT | ELEV. SCALE                    | BLOWS / FOOT<br>20 40 60 80 100 |  | SHEAR STRENGTH P.S.F.<br>Field Vane<br>Unconfined            |  | WATER CONTENT %<br>WP — WL |                        |         |            |
| 604.1        | Ground Level  |             |         |      |              |                                |                                 |  |  |  |                            |                        |         |            |
| 0.0          | Clayey silt with sand, traces of gravel.<br><br>Hard to very stiff<br>Stiff |             | 1       | SS   | 10           | 600                            |                                 |  |  |  |                            |                        |         | 2 28 38 32 |
|              |   |             | 2       | SS   | 12           |                                |                                 |  |  |  |                            |                        |         |            |
|              |   |             | 3       | SS   | 37           |                                |                                 |  |  |  |                            |                        |         |            |
|              |   |             | 4       | SS   | 21           |                                |                                 |  |  |  |                            |                        |         |            |
|              |   |             | 5       | SS   | 10           | 500                            |                                 |  |  |  |                            |                        |         |            |
|              |   |             | 6       | TW   | PH           |                                |                                 |  |  |  |                            |                        |         |            |
|              |   |             | 7       | SS   | 16           | 580                            |                                 |  |  |  |                            |                        |         |            |
|              |   |             | 8       | TW   | PH           |                                |                                 |  |  |  |                            |                        |         |            |
|              |   |             | 9       | SS   | 13           | 570                            |                                 |  |  |  |                            |                        |         |            |
|              |   |             | 10      | TW   | PH           |                                |                                 |  |  |  |                            |                        |         |            |
|              |   |             |         |      |              | 560                            |                                 |  |  |  |                            |                        |         |            |
| 551.2        |   |             | 11      | TW   | PH           |                                |                                 |  |  |  |                            |                        |         |            |
| 53.0         | End of Borehole   |             |         |      |              |                                |                                 |  |  |  |                            |                        |         |            |

20  
15 + 5% strain at failure  
10

[illegible]

DEPARTMENT OF HIGHWAYS - ONTARIO

MATERIALS & TESTING DIVISION

RECORD OF BOREHOLE NO. 94

FOUNDATION SECTION

JOB 68-F-15-3 LOCATION Co-ords. 99,781 N; 86,538 E. ORIGINATED BY AMS  
W.P. 259-66-020 BORING DATE April 16, 1968 COMPILED BY AMS  
DATUM Geodetic BOREHOLE TYPE Cont. Flight Auger CHECKED BY LL

| SOIL PROFILE |  |            | SAMPLES |      |              | ELEV. SCALE | DYNAMIC PENETRATION RESISTANCE<br>BLOWS / FOOT |    |    |    |     | LIQUID LIMIT ——— WL<br>PLASTIC LIMIT ——— WP<br>WATER CONTENT ——— W |    |   | BULK DENSITY<br>P.C.F. | REMARKS |
|--------------|--|------------|---------|------|--------------|-------------|--|----|----|----|-----|--|----|---|------------------------|---------|
| ELEV. DEPTH  | DESCRIPTION  | STRAT. PLT | NUMBER  | TYPE | BLOWS / FOOT |             | 20   | 40 | 60 | 80 | 100 | WP   | WL | W |                        |         |
| 603.9        | Ground Level   |            |         |      |              |             |  |    |    |    |     |  |    |   |                        |         |
| 0.0          | Clayey silt with sand,<br>traces of gravel.<br>Hard to very stiff. |            | 1       | SS   | 33           |             |  |    |    |    |     |  |    |   |                        |         |
|              |  |            | 2       | SS   | 38           |             |  |    |    |    |     |  |    |   |                        |         |
|              |  |            | 3       | SS   | 18           |             |  |    |    |    |     |  |    |   |                        |         |
|              |  |            | 4       | TW   | PH           |             |  |    |    |    |     |  |    |   |                        |         |
|              |  |            | 5       | TW   | PH           |             |  |    |    |    |     |  |    |   |                        |         |
|              |  |            | 6       | TW   | PH           |             |  |    |    |    |     |  |    |   |                        |         |
| 570.9        |  |            |         |      |              |             |  |    |    |    |     |  |    |   |                        |         |
| 33.0         | End of Borehole  |            |         |      |              |             |  |    |    |    |     |  |    |   |                        |         |

+ Field Vane • Triaxial  
 o Unconfined  
 500 1000 1500 2000 2500  
 10 20 30  
 WATER CONTENT %  
 4 27 36 33  
 135  
 136 9 37 28 26  
 20  
 15 5 % strain at failure  
 10



DEPARTMENT OF HIGHWAYS - ONTARIO

MATERIALS & TESTING DIVISION

# RECORD OF BOREHOLE NO. 95

FOUNDATION SECTION

JOB 68-F-15-3 LOCATION Co-ords. 99,733 N; 86,805 E. ORIGINATED BY AMS  
W.P. 259-66-020 BORING DATE April 16, 1968 COMPILED BY AMS  
DATUM Geodetic BOREHOLE TYPE Continuous Flight Auger CHECKED BY [Signature]

| SOIL PROFILE |   |             | SAMPLES |      |              | ELEV. SCALE | DYNAMIC PENETRATION RESISTANCE<br>BLOWS / FOOT |                         | LIQUID LIMIT — WL<br>PLASTIC LIMIT — WP<br>WATER CONTENT — W |    | BULK DENSITY<br>P.C.F. | REMARKS |
|--------------|---|-------------|---------|------|--------------|-------------|--|-------------------------|--|----|------------------------|---------|
| ELEV. DEPTH  | DESCRIPTION   | STRAT. PLOT | NUMBER  | TYPE | BLOWS / FOOT |             | 20 40 60 80 100                                | 500 1000 1500 2000 2500 | WP   | WL |                        |         |
| 603.6        | Ground Level  |             |         |      |              |             |  |                         |  |    |                        |         |
|              | Clayey silt with sand, traces of gravel.<br><br>Hard to very stiff<br>Stiff |             | 1       | SS   | 27           |             |  |                         |  |    |                        |         |
|              |   |             | 2       | SS   | 34           |             |  |                         |  |    |                        |         |
|              |   |             | 3       | SS   | 17           |             |  |                         |  |    |                        |         |
|              |   |             | 4       | TW   | PH           |             |  |                         |  |    |                        |         |
|              |   |             | 5       | TW   | PH           |             |  |                         |  |    |                        |         |
|              |   |             | 6       | TW   | PH           |             |  |                         |  |    |                        |         |
| 570.6        |   |             |         |      |              |             |  |                         |  |    |                        |         |
| 33.0         | End of Borehole   |             |         |      |              |             |  |                         |  |    |                        |         |

20  
15-5% strain at failure  
10

DEPARTMENT OF HIGHWAYS - ONTARIO

MATERIALS & TESTING DIVISION

RECORD OF BOREHOLE NO. 96

FOUNDATION SECTION

JOB 68-F-15-3 LOCATION Co-ords. 99,807 N; 87,142 E. ORIGINATED BY AP  
W.P. 259-66-020 BORING DATE April 16, 1968 COMPILED BY AMS  
DATUM Geodetic BOREHOLE TYPE Cont. flight auger CHECKED BY 41

| SOIL PROFILE |  |             | SAMPLES |      |              | ELEV. SCALE | DYNAMIC PENETRATION RESISTANCE |               | LIQUID LIMIT — WL |                 | BULK DENSITY | REMARKS    |
|--------------|--|-------------|---------|------|--------------|-------------|--------------------------------|---------------|-------------------|-----------------|--------------|------------|
| ELEV. DEPTH  | DESCRIPTION  | STRAT. PLOT | NUMBER  | TYPE | BLOWS / FOOT |             | BLOWS / FOOT                   | BLANKS / FOOT | WATER CONTENT — W | WATER CONTENT % |              |            |
| 602.8        | Ground Level   |             |         |      |              |             |                                |               |                   |                 |              |            |
| 0.0          | Clayey silt with sand traces of gravel.<br><br>Hard to very stiff. |             | 1       | SS   | 6            |             |                                |               |                   |                 |              | 1 28 39 32 |
|              |  |             | 2       | SS   | 37           |             |                                |               |                   |                 |              |            |
|              |  |             | 3       | SS   | 74           |             |                                |               |                   |                 |              |            |
|              |  |             | 4       | SS   | 36           |             |                                |               |                   |                 |              |            |
|              |  |             | 5       | SS   | 38           |             |                                |               |                   |                 |              |            |
|              |  |             | 6       | SS   | 34           |             |                                |               |                   |                 |              |            |
|              |  |             | 7       | SS   | 33           |             |                                |               |                   |                 |              |            |
|              |  |             | 8       | SS   | 22           |             |                                |               |                   |                 |              |            |
|              |  |             | 9       | TW   | PH           |             |                                |               |                   |                 |              |            |
|              |  |             | 10      | TW   | PH           |             |                                |               |                   |                 |              |            |
| 559.8        |  |             |         |      |              |             |                                |               |                   |                 |              |            |
| 43.0         | End of Borehole  |             |         |      |              |             |                                |               |                   |                 |              |            |

20  
15 + 5 % strain at failure  
10

## MATERIALS & TESTING DIVISION

## RECORD OF BOREHOLE NO. 97

FOUNDATION SECTION

JOB 68-F-15-3

LOCATION Co-ords. 99,741 N; 87,439 E.

ORIGINATED BY AP

W. P. 259-66-020

BORING DATE April 16 & 17, 1968

COMPILED BY AMS

DATUM \_\_\_\_\_ Geodetic

BOREHOLE TYPE Cont. Flight Auger

CHECKED BY W. J. [Signature]

[illegible]

DEPARTMENT OF HIGHWAYS - ONTARIO

MATERIALS & TESTING DIVISION

RECORD OF BOREHOLE NO. 98

FOUNDATION SECTION

JOB 68-P-15-3 LOCATION Co-ords. 99,045 N; 89,265 E. ORIGINATED BY AMS  
W.P.                      BORING DATE April 16 & 17, 1968 COMPILED BY AMS  
DATUM Geodetic BOREHOLE TYPE Washbore & B.V. Casing CHECKED BY HL

| SOIL PROFILE |  |             | SAMPLES |      |              | ELEV. SCALE | DYNAMIC PENETRATION RESISTANCE<br>BLOWS / FOOT |    | LIQUID LIMIT — WL<br>PLASTIC LIMIT — WP<br>WATER CONTENT — W |    | BULK DENSITY<br>P.C.F. | REMARKS |     |
|--------------|--|-------------|---------|------|--------------|-------------|--|----|--|----|------------------------|---------|-----|
| ELEV. DEPTH  | DESCRIPTION  | STRAT. PLOT | NUMBER  | TYPE | BLOWS / FOOT |             | 20   | 40 | 60   | 80 |                        |         | 100 |
| 600.3        | Ground Level   |             |         |      |              |             |  |    |  |    |                        |         |     |
| 0.0          | Clayey silt with sand, traces of gravel.<br><br>Hard to<br>very stiff<br>Stiff |             | 1       | SS   | 13           |             |  |    |  |    |                        |         |     |
|              |  |             | 2       | SS   | 38           |             |  |    |  |    |                        |         |     |
|              |  |             | 3       | SS   | 43           | 590         |  |    |  |    |                        |         |     |
|              |  |             | 4       | SS   | 40           |             |  |    |  |    |                        |         |     |
|              |  |             | 5       | SS   | 27           |             |  |    |  |    |                        |         |     |
|              |  |             | 6       | SS   | 17           | 580         |  |    |  |    |                        |         |     |
|              |  |             | 7       | TW   | TM           |             |  |    |  |    |                        |         |     |
|              |  |             | 8       | TW   | TM           | 570         |  |    |  |    |                        |         |     |
|              |  |             | 9       | TW   | TM           |             |  |    |  |    |                        |         |     |
|              |  |             | 10      | TW   | TM           | 560         |  |    |  |    |                        |         |     |
|              |  |             | 11      | TW   | TM           | 550         |  |    |  |    |                        |         |     |
| 547.3        | End of Borehole  |             |         |      |              |             |  |    |  |    |                        |         |     |
| 53.0         |  |             |         |      |              |             |  |    |  |    |                        |         |     |

20  
15  $\div$  5 % strain at failure  
10

FOUNDATION SECTION

CHECKED BY                     

[illegible]

[illegible]

|                                  |  |                                   |  |                    |  |
|----------------------------------|--|-----------------------------------|--|--------------------|--|
| DEPARTMENT OF HIGHWAYS - ONTARIO |  | <b>RECORD OF BOREHOLE NO. 101</b> |  | FOUNDATION SECTION |  |
| MATERIALS & TESTING DIVISION     |  |                                   |  |                    |  |
| JOB <u>68-F-15</u>               | LOCATION <u>Co-ords. 99,145 N; 89,342 E.</u> | ORIGINATED BY <u>AMS</u>          |  |                    |  |
| W.P. _____                       | BORING DATE <u>April 17 &amp; 18, 1968</u>   | COMPILED BY <u>AMS</u>            |  |                    |  |
| DATUM <u>Geodetic</u>            | BOREHOLE TYPE <u>Washbore - BX Casing</u>    | CHECKED BY <u>AMS</u>             |  |                    |  |

| SOIL PROFILE |   |             | SAMPLES |      |              | ELEV. SCALE                                  | DYNAMIC PENETRATION RESISTANCE |    |    |    |     | LIQUID LIMIT — WL<br>PLASTIC LIMIT — WP<br>WATER CONTENT — W |   |    | BULK DENSITY<br>P.C.F. | REMARKS |
|--------------|---|-------------|---------|------|--------------|--|--------------------------------|----|----|----|-----|--|---|----|------------------------|---------|
| ELEV. DEPTH  | DESCRIPTION   | STRAT. PLOT | NUMBER  | TYPE | BLOWS / FOOT |  | BLOWS / FOOT                   |    |    |    |     | WATER CONTENT %  |   |    |                        |         |
|              |   |             |         |      |              |  | 20                             | 40 | 60 | 80 | 100 | WP   | W | WL |                        |         |
|              |   |             |         |      |              |  | SHEAR STRENGTH P.S.F.          |    |    |    |     |  |   |    |                        |         |
| 600.4        | Ground Level  |             |         |      |              | + Field Vane      • Triaxial<br>o Unconfined |                                |    |    |    |     |  |   |    | Gr.Sa.Si.Cl            |         |
| 0.0          | Clayey silt with sand, traces of gravel.<br><br>Hard to very stiff. |             | 1       | SS   | 14           |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             | 2       | SS   | 31           |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             | 3       | SS   | 45           | 590  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             | 4       | SS   | 15           |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             | 5       | SS   | 24           |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             | 6       | SS   | 14           | 580  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             | 7       | SS   | 10           |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             | 8       | SS   | 12           | 570  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             | 9       | SS   | 16           |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             | 10      | SS   | 16           | 560  |                                |    |    |    |     |  |   |    |                        |         |
| 555.4        |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
| 45.0         | Fine sand, some silt, traces of clay & gravel. Compact.             |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
| 548.9        |   |             | 11      | SS   | 22           | 550  |                                |    |    |    |     |  |   |    | 4 28 41 27             |         |
| 51.5         | End of Borehole   |             |         |      |              |  |                                |    |    |    |     |  |   |    | 5 73 13 9              |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   |             |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |
|              |   | </          |         |      |              |  |                                |    |    |    |     |  |   |    |                        |         |

20  
15 + 5 % strain at failure  
10

DEPARTMENT OF HIGHWAYS - ONTARIO  
MATERIALS & TESTING DIVISION

RECORD OF BOREHOLE NO. 102

FOUNDATION SECTION

JOB 68-F-15-3 LOCATION Co-ords. 98,705 N; 89,353 E. ORIGINATED BY AP  
W.P.                      BORING DATE April 17, 1968 COMPILED BY AMS  
DATUM Geodetic BOREHOLE TYPE Cont. flight auger CHECKED BY                     

| SOIL PROFILE |   |            | SAMPLES |      |              | ELEV SCALE | DYNAMIC PENETRATION RESISTANCE<br>BLOWS / FOOT | LIQUID LIMIT ——— W <sub>L</sub><br>PLASTIC LIMIT ——— W <sub>P</sub><br>WATER CONTENT ——— W |                 | BULK DENSITY<br>P.C.F. | REMARKS |            |
|--------------|---|------------|---------|------|--------------|------------|--|--|-----------------|------------------------|---------|------------|
| ELEV. DEPTH  | DESCRIPTION   | STRAT. PLT | NUMBER  | TYPE | BLOWS / FOOT |            | 20 40 60 80 100                                | W <sub>P</sub> ——— W <sub>L</sub>  | WATER CONTENT % |                        |         |            |
| 601.0        | Ground Level  |            |         |      |              |            |  |  |                 |                        |         |            |
| 0.0          | Clayey silt with sand, traces of gravel.<br><br>Hard to very stiff<br>Stiff |            | 1       | SS   | 83           |            |  |  |                 |                        |         |            |
|              |   |            | 2       | SS   | 68           |            |  |  |                 |                        |         |            |
|              |   |            | 3       | SS   | 35           |            |  |  |                 |                        |         |            |
|              |   |            | 4       | SS   | 23           |            |  |  |                 |                        |         |            |
|              |   |            | 5       | SS   | 20           |            |  |  |                 |                        |         |            |
|              |   |            | 6       | TW   | PM           |            |  |  |                 |                        | 132     | 2 27 39 32 |
|              |   |            | 7       | TW   | PM           |            |  |  |                 |                        |         |            |
|              |   |            | 8       | TW   | PM           |            |  |  |                 |                        | 135     |            |
| 552.0        | and seams   |            | 9       | TW   | PM           |            |  |  |                 |                        |         |            |
| 51.5         | End of Borehole   |            |         |      |              |            |  |  |                 |                        |         |            |

20  
15-5 % strain at failure  
10



DEPARTMENT OF HIGHWAYS - ONTARIO  
MATERIALS & TESTING DIVISION

RECORD OF BOREHOLE NO. 103

FOUNDATION SECTION

JOB 68-P-15-3 LOCATION Co-ords. 98,430 N; 89,350 E. ORIGINATED BY AP  
W.P.                      BORING DATE April 17, 1968 COMPILED BY AMS  
DATUM Geodetic BOREHOLE TYPE Washbore - NX Casing CHECKED BY                     

| SOIL PROFILE   |   |             | SAMPLES |      |              | DYNAMIC PENETRATION RESISTANCE<br>BLOWS / FOOT |                 | LIQUID LIMIT — WL<br>PLASTIC LIMIT — WP<br>WATER CONTENT — W |  | BULK DENSITY<br>P.C.F. | REMARKS |
|----------------|---|-------------|---------|------|--------------|--|-----------------|--|--|------------------------|---------|
| ELEV.<br>DEPTH | DESCRIPTION   | STRAT. PLOT | NUMBER  | TYPE | BLOWS / FOOT | ELEV. SCALE                                    | 20 40 60 80 100 | 10 20 30   |  |                        |         |
| 600.0          | Ground Level  |             |         |      |              |  |                 |  |  |                        |         |
| 0.0            | Clayey silt with sand, traces of gravel.<br><br>Hard to very stiff<br>Stiff |             | 1       | SS   | 11           |  |                 |  |  |                        |         |
|                |   |             | 2       | SS   | 27           |  |                 |  |  |                        |         |
|                |   |             | 3       | SS   | 16           |  |                 |  |  |                        |         |
|                |   |             | 4       | TW   | PM           |  |                 |  |  |                        |         |
|                |   |             | 5       | SS   | 21           |  |                 |  |  |                        |         |
|                |   |             | 6       | TW   | PM           |  |                 |  |  |                        |         |
|                |   |             | 7       | SS   | 12           |  |                 |  |  |                        |         |
|                |   |             | 8       | TW   | PM           |  |                 |  |  |                        |         |
| 557.0          |   |             |         |      |              |  |                 |  |  |                        |         |
| 43.0           | End of Borehole   |             |         |      |              |  |                 |  |  |                        |         |

100/8"

20  
15-25 % strain at failure  
10

3 27 42 28

+1.8

+1.6

[illegible]

DEPARTMENT OF HIGHWAYS - ONTARIO

MATERIALS & TESTING DIVISION

RECORD OF BOREHOLE NO. 105

FOUNDATION SECTION

JOB 48-E-15-3 LOCATION Co-ords. 100,023 N; 93,280 E. ORIGINATED BY AP  
W.P. 259-66-030 BORING DATE April 18, 1968 COMPILED BY AMS  
DATUM Geodetic BOREHOLE TYPE Washbore - NY Casing CHECKED BY AP

| SOIL PROFILE |   |            | SAMPLES |      |              | ELEV. SCALE | DYNAMIC PENETRATION RESISTANCE<br>BLOWS / FOOT |    |    |    |     | LIQUID LIMIT — WL<br>PLASTIC LIMIT — WP<br>WATER CONTENT — W |   |    | BULK DENSITY<br>P.C.F. | REMARKS |  |
|--------------|---|------------|---------|------|--------------|-------------|--|----|----|----|-----|--|---|----|------------------------|---------|--|
| ELEV. DEPTH  | DESCRIPTION   | STRAT. PLT | NUMBER  | TYPE | BLOWS / FOOT |             | 20   | 40 | 60 | 80 | 100 | wp   | w | wL |                        |         |  |
| 591.1        | Ground Level  |            |         |      |              |             |  |    |    |    |     |  |   |    |                        |         |  |
| 0.0          | Clayey silt with sand, traces of gravel.<br><br>Very stiff. |            | 1       | SS   | 10           |             |  |    |    |    |     |  |   |    |                        |         |  |
|              |   |            | 2       | SS   | 28           |             |  |    |    |    |     |  |   |    |                        |         |  |
|              |   |            | 3       | SS   | 29           |             |  |    |    |    |     |  |   |    |                        |         |  |
|              |   |            | 4       | SS   | 25           |             |  |    |    |    |     |  |   |    |                        |         |  |
|              |   |            | 5       | SS   | 17           |             |  |    |    |    |     |  |   |    |                        |         |  |
|              |   |            | 6       | SS   | 12           |             |  |    |    |    |     |  |   |    |                        |         |  |
|              |   |            | 7       | TW   | PM           |             |  |    |    |    |     |  |   |    |                        |         |  |
|              |   |            | 8       | SS   | 11           |             |  |    |    |    |     |  |   |    |                        |         |  |
| 554.6        |   |            | 9       | TW   | PM           |             |  |    |    |    |     |  |   |    |                        |         |  |
| 36.5         | End of Borehole   |            |         |      |              |             |  |    |    |    |     |  |   |    |                        |         |  |

20  
15  
10  
5% strain at failure

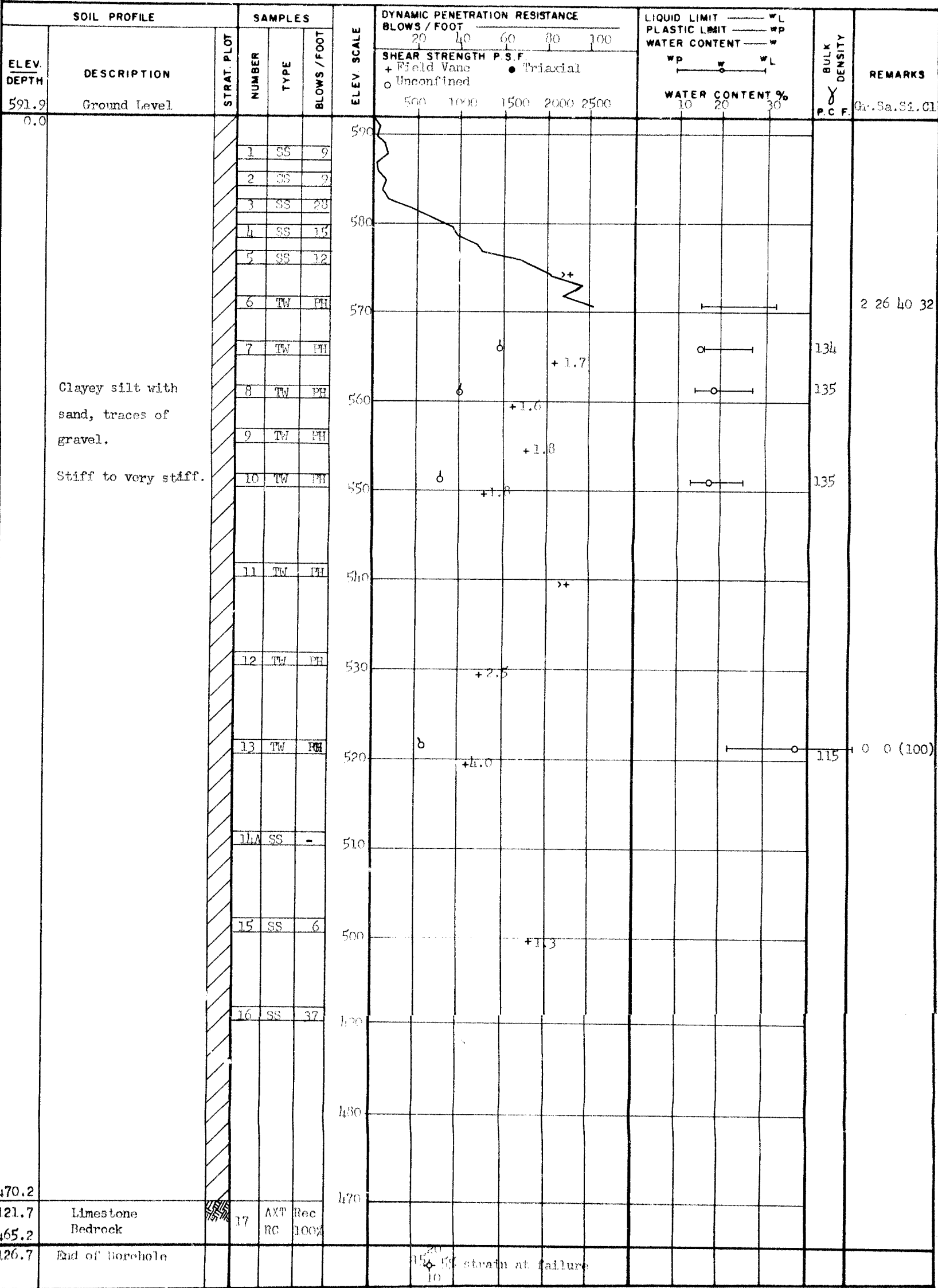
DEPARTMENT OF HIGHWAYS - ONTARIO

MATERIALS & TESTING DIVISION

RECORD OF BOREHOLE NO. 106

FOUNDATION SECTION

JOB 68-F-15-3 LOCATION Co-ords. 100,085 N; 93,446 E. ORIGINATED BY AMS  
W.P. 259-66-030 BORING DATE April 18 & 19, 1968 COMPILED BY AMS  
DATUM Geodetic BOREHOLE TYPE Open Drill & Core Drill CHECKED BY AMS



[illegible]

DEPARTMENT OF HIGHWAYS - ONTARIO

## MATERIALS &amp; TESTING DIVISION

## RECORD OF BOREHOLE NO. 108

FOUNDATION SECTION

JOB 68-F-15-3 LOCATION Co-ords. 100,158 N; 93,445 E. ORIGINATED BY AMS  
W.P. 259-66-030 BORING DATE April 19 & 22, 1968 COMPILED BY AMS  
DATUM Geodetic BOREHOLE TYPE Cont. flight auger CHECKED BY AMS

| SOIL PROFILE |   |             | SAMPLES |      |              | DYNAMIC PENETRATION RESISTANCE |                                 |  |  |  | LIQUID LIMIT — WL<br>PLASTIC LIMIT — WP<br>WATER CONTENT — W |                             |  | BULK DENSITY<br>P.C.F. | REMARKS |
|--------------|---|-------------|---------|------|--------------|--------------------------------|---------------------------------|--|--|--|--|-----------------------------|--|------------------------|---------|
| ELEV. DEPTH  | DESCRIPTION                                 | STRAT. PLOT | NUMBER  | TYPE | BLOWS / FOOT | ELEV. SCALE                    | BLOWS / FOOT<br>20 40 60 80 100 |  |  |  |  | WATER CONTENT %<br>10 20 30 |  |                        |         |
| 592.0        | Ground Level                                |             |         |      |              |                                |                                 |  |  |  |  |                             |  |                        |         |
| 0.0          |   |             |         |      |              |                                |                                 |  |  |  |  |                             |  |                        |         |
|              |   |             | 1       | SS   | 2            |                                |                                 |  |  |  |  |                             |  |                        |         |
|              |   |             | 2       | SS   | 7            |                                |                                 |  |  |  |  |                             |  |                        |         |
|              |   |             | 3       | SS   | 27           |                                |                                 |  |  |  |  |                             |  |                        |         |
|              |   |             | 4       | SS   | 16           |                                |                                 |  |  |  |  |                             |  |                        |         |
|              |   |             | 5       | SS   | 11           |                                |                                 |  |  |  |  |                             |  |                        |         |
|              | Clayey silt with sand,<br>traces of gravel. |             | 6       | TW   | PH           |                                |                                 |  |  |  |  |                             |  |                        |         |
|              |   |             | 7       | TW   | PH           |                                |                                 |  |  |  |  |                             |  |                        |         |
|              | Stiff                                       |             | 8       | TW   | PH           |                                |                                 |  |  |  |  |                             |  |                        |         |
|              |   |             | 9       | TW   | PH           |                                |                                 |  |  |  |  |                             |  |                        |         |
|              |   |             | 10      | TW   | PH           |                                |                                 |  |  |  |  |                             |  |                        |         |
|              |   |             | 11      | TW   | PH           |                                |                                 |  |  |  |  |                             |  |                        |         |
| 539.0        |   |             |         |      |              |                                |                                 |  |  |  |  |                             |  |                        |         |
| 53.0         | End of Borehole                             |             |         |      |              |                                |                                 |  |  |  |  |                             |  |                        |         |

0 7 64 29  
586.0

133 9 24 37 30

134

136 3 30 38 29

20  
15  $\diamond$  5% strain at failure  
10

| DEPARTMENT OF HIGHWAYS - ONTARIO |   |             |         |      |              | RECORD OF BOREHOLE NO. 109                     |  |  |  |  |                                |  |  | FOUNDATION SECTION     |        |  |  |
|----------------------------------|---|-------------|---------|------|--------------|--|--|--|--|--|--------------------------------|--|--|------------------------|--------|--|--|
| MATERIALS & TESTING DIVISION     |   |             |         |      |              |  |  |  |  |  |                                |  |  |                        |        |  |  |
| JOB                              | 68-P-15-3   |             |         |      |              | LOCATION Co-ords. 99,799 N; 93,366 E.          |  |  |  |  |                                |  |  | ORIGINATED BY AMS      |        |  |  |
| W.P.                             | 259-66-030  |             |         |      |              | BORING DATE April 22, 1968                     |  |  |  |  |                                |  |  | COMPILED BY AMS        |        |  |  |
| DATUM                            | Geodetic  |             |         |      |              | BOREHOLE TYPE Cont. Flight auger               |  |  |  |  |                                |  |  | CHECKED BY [Signature] |        |  |  |
| SOIL PROFILE                     |   |             | SAMPLES |      |              | DYNAMIC PENETRATION RESISTANCE<br>BLOWS / FOOT |  |  |  | LIQUID LIMIT — WL<br>PLASTIC LIMIT — WP<br>WATER CONTENT — W |                                |  |  | BULK DENSITY           |        | REMARKS  |  |
| ELEV.<br>DEPTH                   | DESCRIPTION   | STRAT. PLOT | NUMBER  | TYPE | BLOWS / FOOT | ELEV. SCALE                                    | SHEAR STRENGTH P.S.F.<br>+ Field Vane • Triaxial<br>o Unconfined |  |  |  | WATER CONTENT %<br>WP — W — WL |  |  |                        | P.C.F. |  |  |
| 582.1                            | Ground Level  |             |         |      |              |  |  |  |  |  |                                |  |  |                        |        | Gr. Sa. Sl. Cl.  |  |
| 0.0                              | Clayey silt with sand,<br>trace of gravel.<br><br>stiff |             | 1       | SS   | 6            |  |  |  |  |  |                                |  |  |                        |        | 587.0<br><br>7 25 39 29<br><br><br><br><br><br><br><br><br><br>133<br><br><br><br><br><br><br><br><br><br>133<br><br><br><br><br><br><br><br><br><br>133 |  |
|                                  |   |             | 2       | SS   | 24           |  |  |  |  |  |                                |  |  |                        |        |  |  |
|                                  |   |             | 3       | SS   | 13           | 580  |  |  |  |  |                                |  |  |                        |        |  |  |
|                                  |   |             | 4       | SS   | 11           |  |  |  |  |  |                                |  |  |                        |        |  |  |
|                                  |   |             | 5       | TW   | PH           |  |  |  |  |  |                                |  |  |                        |        |  |  |
|                                  |   |             | 6       | TW   | PH           | 570  |  |  |  |  |                                |  |  |                        |        |  |  |
|                                  |   |             | 7       | TW   | PH           |  |  |  |  |  |                                |  |  |                        |        |  |  |
|                                  |   |             | 8       | TW   | PH           | 560  |  |  |  |  |                                |  |  |                        |        |  |  |
|                                  |   |             | 9       | TW   | PH           |  |  |  |  |  |                                |  |  |                        |        |  |  |
|                                  |   |             | 10      | TW   | PH           | 550  |  |  |  |  |                                |  |  |                        |        |  |  |
|                                  |   |             | 11      | TW   | PH           | 540  |  |  |  |  |                                |  |  |                        |        |  |  |
| 473.1                            | Probable Bedrock<br>End of Borehole                     |             |         |      |              |  |  |  |  |  |                                |  |  |                        |        |  |  |
| 116.3                            |   |             |         |      |              |  |  |  |  |  |                                |  |  |                        |        |  |  |

|                                  |  |  |                            |                   |  |  |                    |  |  |  |
|----------------------------------|--|--|----------------------------|-------------------|--|--|--------------------|--|--|--|
| DEPARTMENT OF HIGHWAYS - ONTARIO |  |  | RECORD OF BOREHOLE NO. 110 |                   |  |  | FOUNDATION SECTION |  |  |  |
| MATERIALS & TESTING DIVISION     |  |  |                            |                   |  |  |                    |  |  |  |
| JOB 68-P-15-3                    |  | LOCATION Co-ords. 100,243 N; 94,135 E. |                            | ORIGINATED BY AMS |  |  |                    |  |  |  |
| W.P.                             |  | BORING DATE April 19 & 22, 1963        |                            | COMPILED BY AMS   |  |  |                    |  |  |  |
| DATUM Geodetic                   |  | BOREHOLE TYPE Cont. Flight auger       |                            | CHECKED BY        |  |  |                    |  |  |  |

| SOIL PROFILE |  |             | SAMPLES |      |              | DYNAMIC PENETRATION RESISTANCE |  |      |      |      | LIQUID LIMIT — WL<br>PLASTIC LIMIT — WP<br>WATER CONTENT — W |                 |    | BULK DENSITY<br>P.C.F. | REMARKS |              |
|--------------|--|-------------|---------|------|--------------|--------------------------------|--|------|------|------|--|-----------------|----|------------------------|---------|--------------|
| ELEV. DEPTH  | DESCRIPTION                              | STRAT. PLOT | NUMBER  | TYPE | BLOWS / FOOT | ELEV. SCALE                    | SHEAR STRENGTH P.S.F.<br>+ Field Vane • Triaxial<br>o Unconfined |      |      |      |  | WATER CONTENT % |    |                        |         |              |
| 593.5        | Ground Level                             |             |         |      |              |                                | 500  | 1000 | 1500 | 2000 | 2500   | 10              | 20 | 30                     |         | Gr.Sa.Si.Cl. |
|              | Clayey silt with sand, traces of gravel. |             | 1       | SS   | 16           | 590                            |  |      |      |      |  |                 |    |                        |         |              |
|              |  |             | 2       | SS   | 34           |                                |  |      |      |      |  |                 |    |                        |         |              |
|              |  |             | 3       | SS   | 62           |                                |  |      |      |      |  |                 |    |                        |         |              |
|              |  |             | 4       | SS   | 38           | 580                            |  |      |      |      |  |                 |    |                        |         |              |
|              |  |             | 5       | SS   | 31           |                                |  |      |      |      |  |                 |    |                        |         |              |
|              |  |             | 6       | SS   | 23           |                                |  |      |      |      |  |                 |    |                        |         |              |
|              |  |             | 7       | SS   | 20           | 570                            |  |      |      |      |  |                 |    |                        |         |              |
|              |  |             | 8       | SS   | 19           |                                |  |      |      |      |  |                 |    |                        |         |              |
|              |  |             | 9       | TW   | TM           |                                | 560  |      |      |      |  |                 |    |                        |         |              |
|              |  |             | 10A     | SS   | -            |                                | 550  |      |      |      |  |                 |    |                        |         |              |
| 544.5        | Sand seams.                              |             | 11      | SS   | 21           | 540                            |  |      |      |      |  |                 |    |                        |         |              |
| 49.0         |  |             |         |      |              |                                |  |      |      |      |  |                 |    |                        |         |              |
| 539.5        | Hard to<br>very stiff<br>Stiff           |             | 12A     | SS   | -            | 530                            |  |      |      |      |  |                 |    |                        |         |              |
| 54.0         |  |             |         |      |              |                                |  |      |      |      |  |                 |    |                        |         |              |
|              |  |             | 13      | TW   | PH           | 520                            |  |      |      |      |  |                 |    |                        |         |              |
|              |  |             | 14      | SS   | 24           | 510                            |  |      |      |      |  |                 |    |                        |         |              |
|              |  |             |         |      |              | 500                            |  |      |      |      |  |                 |    |                        |         |              |
|              |  |             |         |      |              | 490                            |  |      |      |      |  |                 |    |                        |         |              |
|              |  |             |         |      |              | 480                            |  |      |      |      |  |                 |    |                        |         |              |
| 478.5        | Probable Bedrock<br>End of Borehole      |             |         |      |              |                                |  |      |      |      |  |                 |    |                        |         |              |
| 115.0        |  |             |         |      |              |                                |  |      |      |      |  |                 |    |                        |         |              |

20  
15-18  
10

slump at failure



DEPARTMENT OF HIGHWAYS - ONTARIO

MATERIALS & TESTING DIVISION

RECORD OF BOREHOLE NO. 111

FOUNDATION SECTION

JOB 68-P-15-3 LOCATION Co-ords. 100,214 N; 93,987 E. ORIGINATED BY AMC  
W.P.                      BORING DATE April 22, 1968 COMPILED BY AMC  
DATUM Geodetic BOREHOLE TYPE Cont. Flight auger CHECKED BY                     

| SOIL PROFILE |   |            | SAMPLES |      |              | ELEV SCALE | DYNAMIC PENETRATION RESISTANCE |    |    |    |    | LIQUID LIMIT — WL<br>PLASTIC LIMIT — WP<br>WATER CONTENT — W |    |    | BULK DENSITY<br>P.C.F. | REMARKS        |
|--------------|---|------------|---------|------|--------------|------------|--------------------------------|----|----|----|----|--|----|----|------------------------|----------------|
| ELEV. DEPTH  | DESCRIPTION   | STRAT. PLT | NUMBER  | TYPE | BLOWS / FOOT |            | BLOWS / FOOT                   | 20 | 40 | 60 | 80 | 100  | WP | WL |                        |                |
| 593.3        | Ground Level  |            |         |      |              |            |                                |    |    |    |    |  |    |    |                        |                |
| 0.0          | Clayey silt with sand, traces of gravel.<br><br>Hard to very stiff<br>Stiff |            | 1       | SS   | 27           | 590        |                                |    |    |    |    |  |    |    |                        | Gr. Sa. Si. Cl |
|              |   |            | 2       | SS   | 34           |            |                                |    |    |    |    |  |    |    |                        |                |
|              |   |            | 3       | SS   | 26           |            |                                |    |    |    |    |  |    |    |                        |                |
|              |   |            | 4       | SS   | 57           | 590        |                                |    |    |    |    |  |    |    |                        |                |
|              |   |            | 5       | SS   | 23           |            |                                |    |    |    |    |  |    |    |                        |                |
|              |   |            | 6       | SS   | 12           | 570        |                                |    |    |    |    |  |    |    |                        |                |
|              |   |            | 7       | TW   | PM           |            |                                |    |    |    |    |  |    |    |                        |                |
|              |   |            | 8       | TW   | PM           | 560        |                                |    |    |    |    |  |    |    |                        |                |
|              |   |            | 9       | TW   | PM           |            |                                |    |    |    |    |  |    |    |                        |                |
|              |   |            | 10      | TW   | PM           | 550        |                                |    |    |    |    |  |    |    |                        |                |
| 550.3        |   |            |         |      |              |            |                                |    |    |    |    |  |    |    |                        |                |
| 43.0         | End of Borehole   |            |         |      |              |            |                                |    |    |    |    |  |    |    |                        |                |

20  
15-5% strain at failure  
10

[illegible]

DEPARTMENT OF HIGHWAYS - ONTARIO

## MATERIALS &amp; TESTING DIVISION

## RECORD OF BOREHOLE NO. 113

FOUNDATION SECTION

JOB 68-F-15-3 LOCATION Co-ords. 101,600 N; 100,151 E. ORIGINATED BY AMS  
W.P. Goodetic BORING DATE April 23, 1968 COMPILED BY AMS  
DATUM Goodetic BOREHOLE TYPE Cont. flight auger CHECKED BY AMS

| SOIL PROFILE |  |             | SAMPLES |      |              | ELEV. SCALE | DYNAMIC PENETRATION RESISTANCE<br>BLOWS / FOOT |                     | LIQUID LIMIT — WL<br>PLASTIC LIMIT — WP<br>WATER CONTENT — W |                 | BULK DENSITY<br>P.C.F. | REMARKS |
|--------------|--|-------------|---------|------|--------------|-------------|--|---------------------|--|-----------------|------------------------|---------|
| ELEV. DEPTH  | DESCRIPTION  | STRAT. PLOT | NUMBER  | TYPE | BLOWS / FOOT |             | 20 40 60 80 100                                | 100 200 300 400 500 | wp — WL  | WATER CONTENT % |                        |         |
| 597.0        | Ground Level   |             |         |      |              |             |  |                     |  |                 |                        |         |
| 0.0          |  |             |         |      |              |             |  |                     |  |                 |                        |         |
|              | Clayey silt with sand, traces of gravel.<br><br>Stiff to very stiff. |             | 1       | SS   | 9            |             |  |                     |  |                 |                        |         |
|              |  |             | 2       | SS   | 14           | 590         |  |                     |  |                 |                        |         |
|              |  |             | 3       | SS   | 41           |             |  |                     |  |                 |                        |         |
|              |  |             | 4       | SS   | 28           |             |  |                     |  |                 |                        |         |
|              |  |             | 5       | SS   | 25           |             |  |                     |  |                 |                        |         |
|              |  |             | 6       | SS   | 19           | 580         |  |                     |  |                 |                        |         |
|              |  |             | 7       | TW   | TM           |             |  |                     |  |                 |                        |         |
|              |  |             | 8       | TW   | TM           | 570         |  |                     |  |                 |                        |         |
|              |  |             | 9       | TW   | TM           |             |  |                     |  |                 |                        |         |
|              |  |             | 10      | TW   | TM           | 560         |  |                     |  |                 |                        |         |
| 554.0        | Sand seam  |             |         |      |              |             |  |                     |  |                 |                        |         |
| 43.0         | End of Borehole  |             |         |      |              |             |  |                     |  |                 |                        |         |

20  
15 + 5 % stain at failure  
10

DEPARTMENT OF HIGHWAYS - ONTARIO

## MATERIALS & TESTING DIVISION

JOB 68-F-15-3

LOCATION \_\_\_\_\_ Co-ords. 101,642 N; 100,252 E.

ORIGINATED BY AMS

W. P. \_\_\_\_\_ BORING DATE April 23 & 24, 1968

COMPILED BY \_\_\_\_\_ AMS

DATUM Geodetic

BOREHOLE TYPE Cont. flight auger

CHECKED BY                     

[illegible]

DEPARTMENT OF HIGHWAYS - ONTARIO

MATERIALS & TESTING DIVISION

RECORD OF BOREHOLE NO. 115

FOUNDATION SECTION

JOB 68-T-15-3 LOCATION Co-ords. 101,903 N; 100,285 E. ORIGINATED BY AMS  
W.P.                      BORING DATE April 23, 1968 COMPILED BY AMS  
DATUM Geodetic BOREHOLE TYPE Cont. flight auger CHECKED BY                     

| SOIL PROFILE |   |            | SAMPLES |      |              | ELEV. SCALE | DYNAMIC PENETRATION RESISTANCE<br>BLOWS / FOOT |    |    |    |     | LIQUID LIMIT — WL<br>PLASTIC LIMIT — WP<br>WATER CONTENT — W |    |    | BULK DENSITY<br>P.C.F. | REMARKS |
|--------------|---|------------|---------|------|--------------|-------------|--|----|----|----|-----|--|----|----|------------------------|---------|
| ELEV. DEPTH  | DESCRIPTION   | STRAT. PLT | NUMBER  | TYPE | BLOWS / FOOT |             | 20   | 40 | 60 | 80 | 100 | 10   | 20 | 30 |                        |         |
| 598.0        | Ground Level  |            |         |      |              |             |  |    |    |    |     |  |    |    |                        |         |
| 0.0          | Clayey silt with sand<br>traces of gravel.<br><br>Very stiff. |            | 1       | SS   | 14           |             |  |    |    |    |     |  |    |    |                        |         |
|              |   |            | 2       | SS   | 23           | 590         |  |    |    |    |     |  |    |    |                        |         |
|              |   |            | 3       | SS   | 29           |             |  |    |    |    |     |  |    |    |                        |         |
|              |   |            | 4       | SS   | 24           |             |  |    |    |    |     |  |    |    |                        |         |
|              |   |            | 5       | SS   | 20           |             |  |    |    |    |     |  |    |    |                        |         |
|              |   |            | 6       | SS   | 19           | 580         |  |    |    |    |     |  |    |    |                        |         |
|              |   |            | 7       | TW   | PH           |             |  |    |    |    |     |  |    |    |                        |         |
|              |   |            | 8       | TW   | PH           | 570         |  |    |    |    |     |  |    |    |                        |         |
|              |   |            | 9       | TW   | PH           |             |  |    |    |    |     |  |    |    |                        |         |
|              |   |            | 10      | SS   | 13           | 560         |  |    |    |    |     |  |    |    |                        |         |
| 556.5        | Sand Seams  |            |         |      |              |             |  |    |    |    |     |  |    |    |                        |         |
| 41.5         | End of Borehole   |            |         |      |              |             |  |    |    |    |     |  |    |    |                        |         |

20  
15-5 % strain at failure  
10

|                                  |  |  |  |  |  |   |  |  |  |  |  |  |                        |  |  |  |  |  |  |  |
|----------------------------------|--|--|--|--|--|---|--|--|--|--|--|--|------------------------|--|--|--|--|--|--|--|
| DEPARTMENT OF HIGHWAYS - ONTARIO |  |  |  |  |  | RECORD OF BOREHOLE NO. 116              |  |  |  |  |  |  | FOUNDATION SECTION     |  |  |  |  |  |  |  |
| MATERIALS & TESTING DIVISION     |  |  |  |  |  |   |  |  |  |  |  |  |                        |  |  |  |  |  |  |  |
| JOB 68-K-15-3                    |  |  |  |  |  | LOCATION Co-ords. 101,843 N; 100,668 E. |  |  |  |  |  |  | ORIGINATED BY AMS      |  |  |  |  |  |  |  |
| W.P.                             |  |  |  |  |  | BORING DATE April 23 & 24, 1968         |  |  |  |  |  |  | COMPILED BY AMS        |  |  |  |  |  |  |  |
| DATUM Geodetic                   |  |  |  |  |  | BOREHOLE TYPE Cont. flight auger        |  |  |  |  |  |  | CHECKED BY [Signature] |  |  |  |  |  |  |  |

| SOIL PROFILE |   |             | SAMPLES |      |              | DYNAMIC PENETRATION RESISTANCE |   |                                     |  |                             | LIQUID LIMIT — WL<br>PLASTIC LIMIT — WP<br>WATER CONTENT — W |  |  | BULK DENSITY<br>P.C.F.<br>$\gamma$ | REMARKS    |
|--------------|---|-------------|---------|------|--------------|--------------------------------|---|-------------------------------------|--|-----------------------------|--|--|--|------------------------------------|------------|
| ELEV. DEPTH  | DESCRIPTION                                 | STRAT. PLOT | NUMBER  | TYPE | BLOWS / FOOT | ELEV. SCALE                    | SHEAR STRENGTH P.S.F.<br>+ Field Vane      • Triaxial<br>o Unconfined | BLOWS / FOOT<br>20 40 60 80 100     |  | WATER CONTENT %<br>10 20 30 |  |  |  |                                    |            |
| 598.6        | Ground Level                                |             |         |      |              |                                |   |                                     |  |                             |  |  |  |                                    |            |
| 0.0          |   |             | 1       | SS   | 22           |                                |   |                                     |  |                             |  |  |  |                                    |            |
|              |   |             | 2       | SS   | 34           |                                |   |                                     |  |                             |  |  |  |                                    |            |
|              |   |             | 3       | SS   | 29           | 590                            |   |                                     |  |                             |  |  |  |                                    | ▼ 590.6    |
|              |   |             | 4       | SS   | 22           |                                |   |                                     |  |                             |  |  |  |                                    | 1 14 58 27 |
|              |   |             | 5       | SS   | 16           |                                |   |                                     |  |                             |  |  |  |                                    | 2 25 44 29 |
|              |   |             | 6       | SS   | 15           | 580                            |   |                                     |  |                             |  |  |  |                                    |            |
|              |   |             | 7       | TW   | PH           |                                |   |                                     |  |                             |  |  |  |                                    |            |
|              |   |             | 8       | SS   | 23           | 570                            |   |                                     |  |                             |  |  |  | 136                                | 1 25 45 29 |
| 563.6        |   |             | 9       | SS   | 59           |                                |   |                                     |  |                             |  |  |  |                                    |            |
| 35.0         | Sand Seams                                  |             | 10      | SS   | 10           | 560                            |   |                                     |  |                             |  |  |  |                                    |            |
| 560.6        |   |             | 11      | SS   | 19           |                                |   |                                     |  |                             |  |  |  |                                    |            |
| 38.0         | Clayey silt with sand,<br>traces of gravel. |             | 12      | SS   | 11           | 550                            |   |                                     |  |                             |  |  |  |                                    |            |
|              | Very stiff to stiff.                        |             | 13      | SS   | 10           |                                |   |                                     |  |                             |  |  |  |                                    |            |
|              |   |             | 14      | SS   | 11           | 540                            |   |                                     |  |                             |  |  |  |                                    |            |
|              |   |             |         |      |              |                                |   | + 1.8                               |  |                             |  |  |  |                                    |            |
|              |   |             |         |      |              | 530                            |   |                                     |  |                             |  |  |  |                                    |            |
|              |   |             |         |      |              |                                |   | + 1.8                               |  |                             |  |  |  |                                    |            |
|              |   |             |         |      |              | 520                            |   |                                     |  |                             |  |  |  |                                    |            |
|              |   |             |         |      |              |                                |   | + 1.7                               |  |                             |  |  |  |                                    |            |
|              |   |             |         |      |              | 510                            |   |                                     |  |                             |  |  |  |                                    |            |
|              |   |             |         |      |              |                                |   |                                     |  |                             |  |  |  |                                    |            |
|              |   |             |         |      |              | 500                            |   |                                     |  |                             |  |  |  |                                    |            |
|              |   |             |         |      |              |                                |   |                                     |  |                             |  |  |  |                                    |            |
|              |   |             |         |      |              | 490                            |   |                                     |  |                             |  |  |  |                                    |            |
|              |   |             |         |      |              |                                |   |                                     |  |                             |  |  |  |                                    |            |
|              |   |             |         |      |              | 480                            |   |                                     |  |                             |  |  |  |                                    |            |
| 469.1        |   |             |         |      |              |                                |   |                                     |  |                             |  |  |  |                                    |            |
| 429.5        | Probable Bedrock<br>End of Borehole         |             |         |      |              |                                |   |                                     |  |                             |  |  |  |                                    |            |
|              |   |             |         |      |              |                                |   | 20<br>15-5% strain at failure<br>10 |  |                             |  |  |  |                                    |            |

[illegible]

\_\_\_\_\_



[illegible]

**MATERIALS & TESTING DIVISION**

## RECORD OF BOREHOLE NO. 120

FOUNDATION SECTION

JOB 68-F-15-3

LOCATION Co-ords. 99,724 N; 89,191 E.

ORIGINATED BY AMS

W. P.

BORING DATE April 25, 1968

COMPILED BY \_\_\_\_\_ AMS

DATUM Geodetic

BOREHOLE TYPE Cont. flight auger

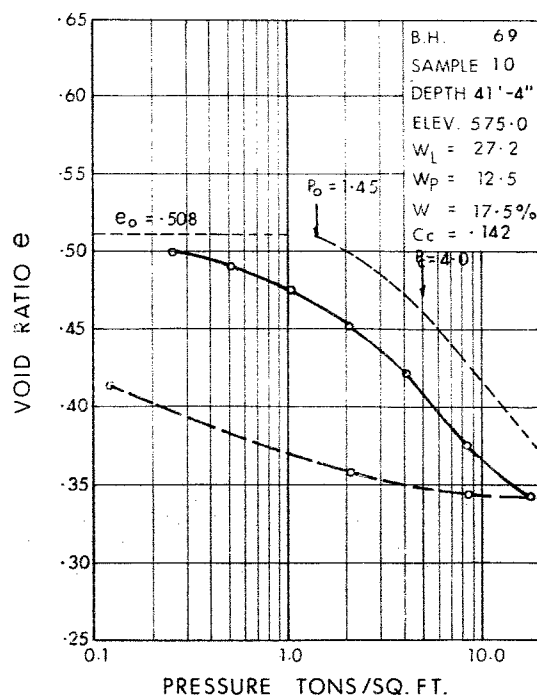
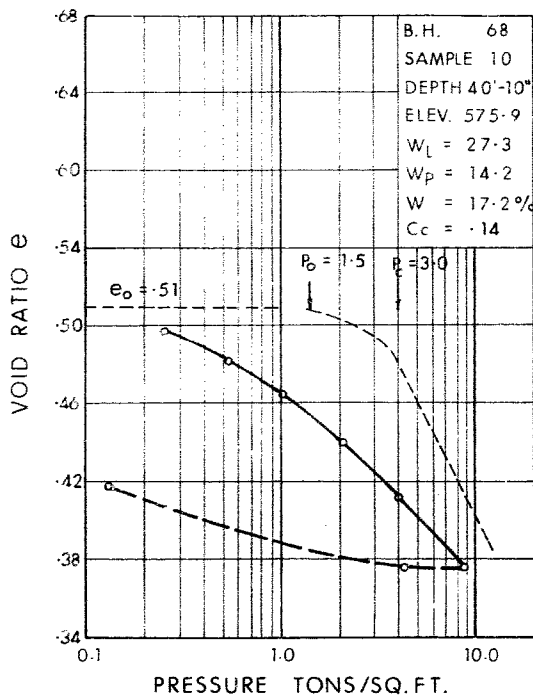
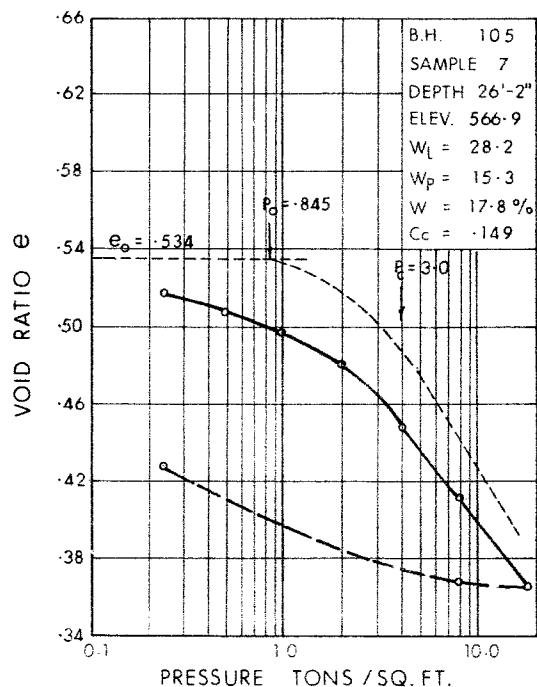
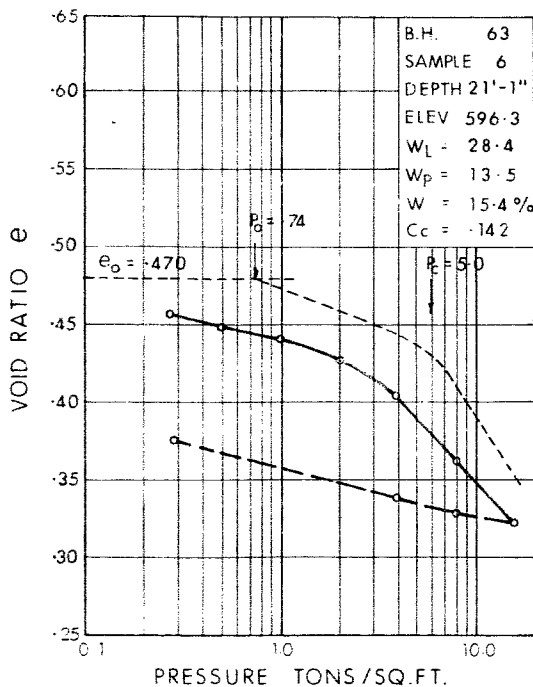
CHECKED BY

[illegible]



# VOID RATIO - PRESSURE CURVES

JOB NO. 68 - F-15-3

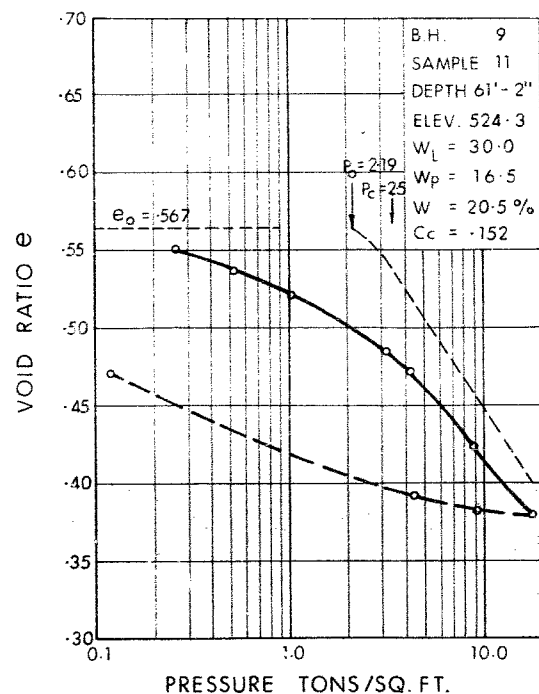
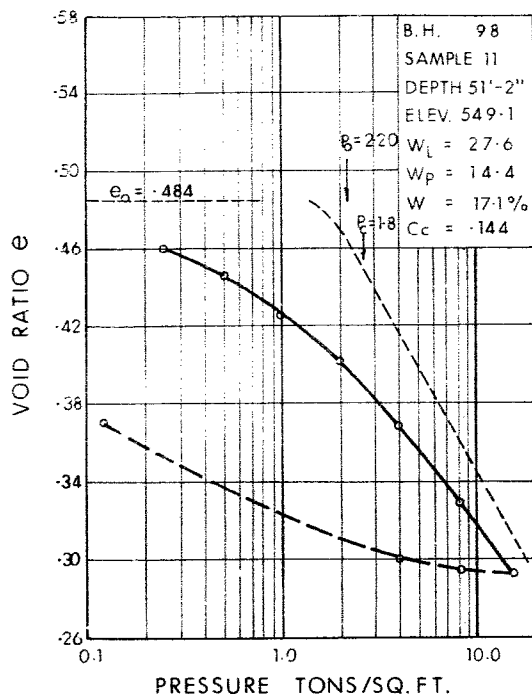
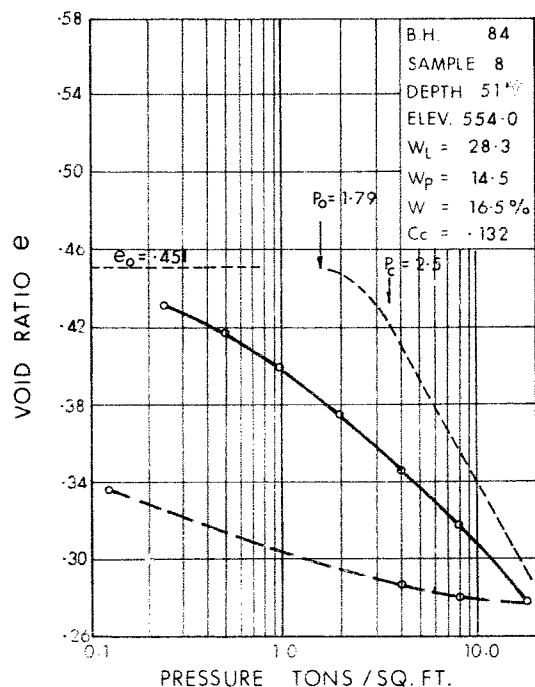
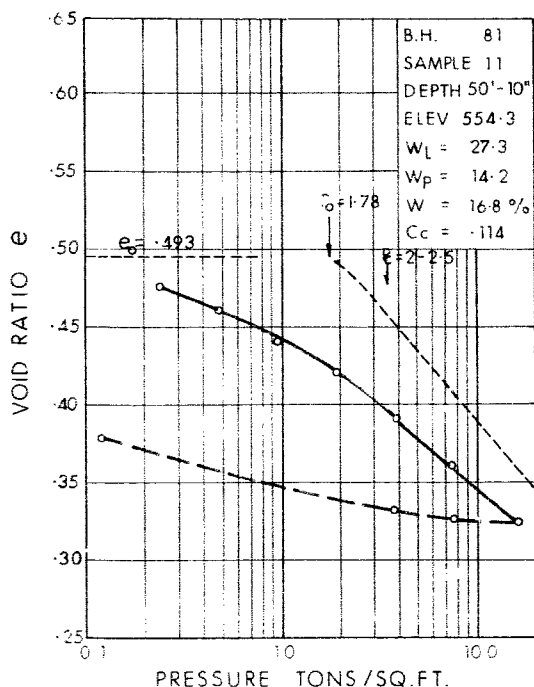


--- IN SITU COMPRESSION CURVE - SCHMERTMANN CONSTRUCTION

FIG. 2

# VOID RATIO - PRESSURE CURVES

JOB NO. 68-F-15-3



--- IN SITU COMPRESSION CURVE - SCHMERTMANN CONSTRUCTION

FIG. 3

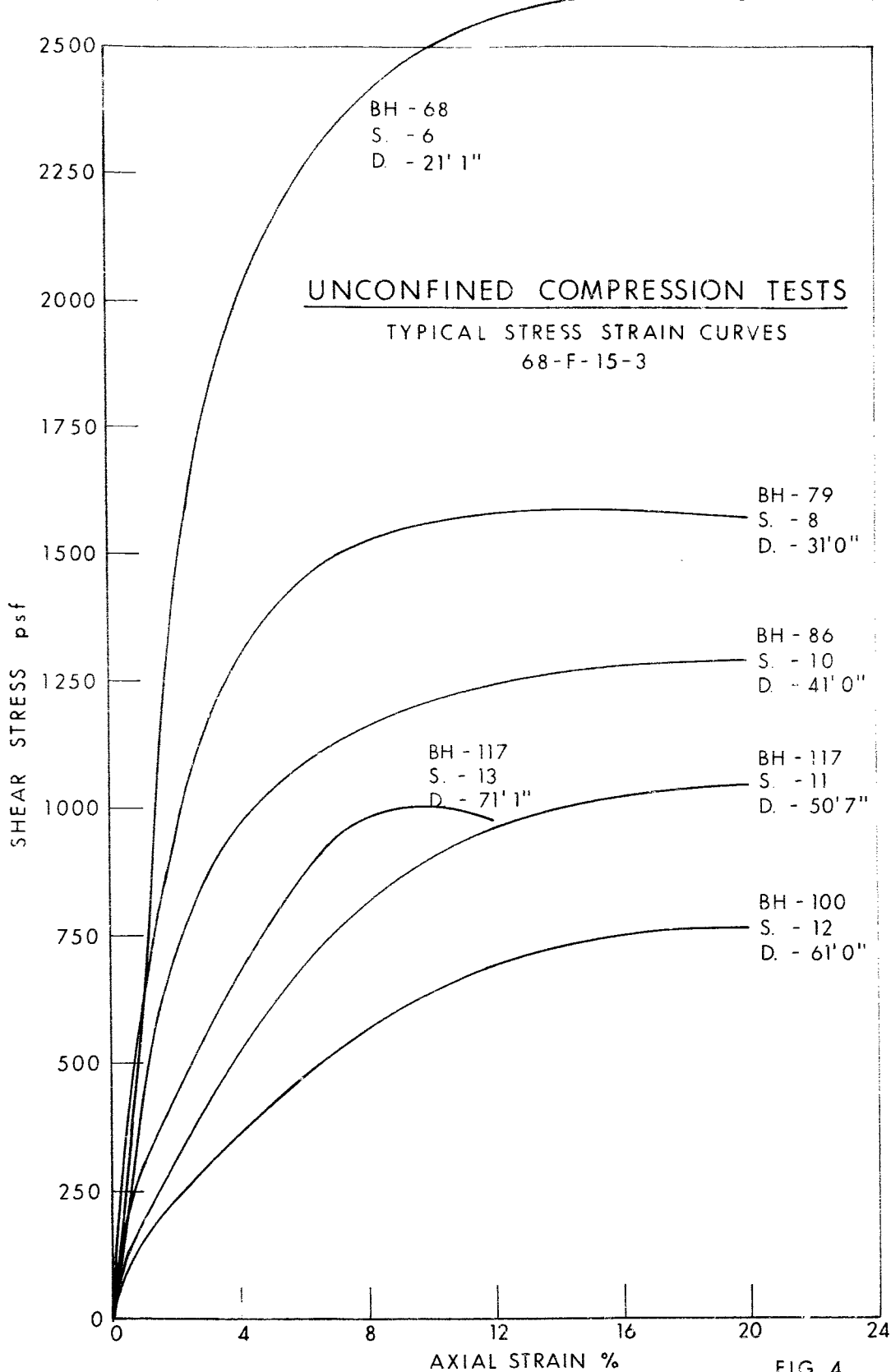
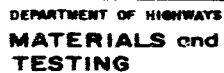
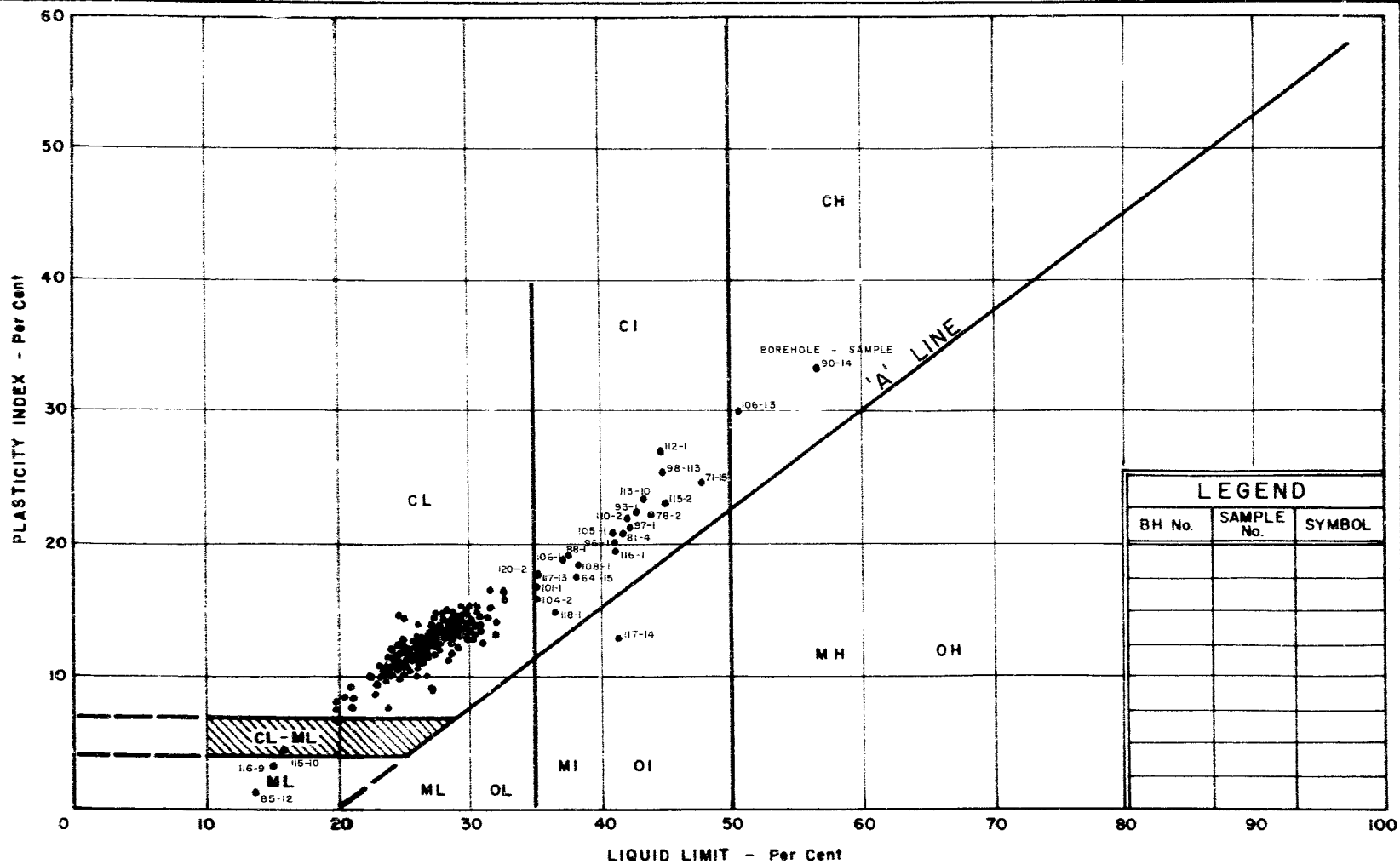


FIG. 4



# PLASTICITY CHART

**W.P. No.**

**JOB No. 68-F-15-3**

## ABBREVIATIONS USED IN THIS REPORT

### PENETRATION RESISTANCE

STANDARD PENETRATION RESISTANCE 'N' - THE NUMBER OF BLOWS REQUIRED TO ADVANCE A STANDARD SPLIT SPOON SAMPLER 12 INCHES INTO THE SUBSOIL, DRIVEN BY MEANS OF A 140 POUND HAMMER FALLING FREELY A DISTANCE OF 30 INCHES.

DYNAMIC PENETRATION RESISTANCE - THE NUMBER OF BLOWS REQUIRED TO ADVANCE A 2 INCH, 60 DEGREE CONE, FITTED TO THE END OF DRILL RODS, 12 INCHES INTO THE SUBSOIL, THE DRIVING ENERGY BEING 350 FOOT POUNDS PER BLOW.

### DESCRIPTION OF SOIL

THE CONSISTENCY OF COHESIVE SOILS AND THE RELATIVE DENSITY OR DENSENESS OF COHESIONLESS SOILS ARE DESCRIBED IN THE FOLLOWING TERMS:-

| <u>CONSISTENCY</u> | <u>'N' BLOWS / FT.</u> | <u>c LB. / SQ. FT.</u> | <u>DENSENESS</u> | <u>'N' BLOWS / FT.</u> |
|--------------------|------------------------|------------------------|------------------|------------------------|
| VERY SOFT          | 0 - 2                  | 0 - 250                | VERY LOOSE       | 0 - 4                  |
| SOFT               | 2 - 4                  | 250 - 500              | LOOSE            | 4 - 10                 |
| FIRM               | 4 - 8                  | 500 - 1000             | COMPACT          | 10 - 30                |
| STIFF              | 8 - 15                 | 1000 - 2000            | DENSE            | 30 - 50                |
| VERY STIFF         | 15 - 30                | 2000 - 4000            | VERY DENSE       | > 50                   |
| HARD               | > 30                   | > 4000                 |                  |                        |

### TYPE OF SAMPLE

|    |                       |                               |                   |
|----|-----------------------|-------------------------------|-------------------|
| SS | SPLIT SPOON           | TW                            | THINWALL OPEN     |
| WS | WASHED SAMPLE         | TP                            | THINWALL PISTON   |
| SB | SCRAPER BUCKET SAMPLE | OS                            | OESTERBERG SAMPLE |
| AS | AUGER SAMPLE          | FS                            | FOIL SAMPLE       |
| CS | CHUNK SAMPLE          | RC                            | ROCK CORE         |
| ST | SLOTTED TUBE SAMPLE   |                               |                   |
|    | PH                    | SAMPLE ADVANCED HYDRAULICALLY |                   |
|    | PM                    | SAMPLE ADVANCED MANUALLY      |                   |

### SOIL TESTS

|     |                                 |    |                 |
|-----|---------------------------------|----|-----------------|
| Qu  | UNCONFINED COMPRESSION          | LV | LABORATORY VANE |
| Q   | UNDRAINED TRIAXIAL              | FV | FIELD VANE      |
| Qcu | CONSOLIDATED UNDRAINED TRIAXIAL | C  | CONSOLIDATION   |
| Qd  | DRAINED TRIAXIAL                | S  | SENSITIVITY     |



## ABBREVIATIONS USED IN THIS REPORT

### SOIL PROPERTIES

|            |  |
|------------|--|
| $\gamma$   | UNIT WEIGHT OF SOIL (BULK DENSITY)                                   |
| $\gamma_s$ | UNIT WEIGHT OF SOLID PARTICLES                                       |
| $\gamma_w$ | UNIT WEIGHT OF WATER   |
| $\gamma_d$ | UNIT DRY WEIGHT OF SOIL (DRY DENSITY)                                |
| $\gamma'$  | UNIT WEIGHT OF SUBMERGED SOIL  |
| G          | SPECIFIC GRAVITY OF SOLID PARTICLES $G = \frac{\gamma_s}{\gamma_w}$  |
| e          | VOID RATIO   |
| n          | POROSITY   |
| w          | WATER CONTENT  |
| $S_r$      | DEGREE OF SATURATION   |
| $w_L$      | LIQUID LIMIT   |
| $w_p$      | PLASTIC LIMIT  |
| $I_p$      | PLASTICITY INDEX   |
| s          | SHRINKAGE LIMIT  |
| $I_L$      | LIQUIDITY INDEX = $\frac{w - w_p}{I_p}$                              |
| $I_C$      | CONSISTENCY INDEX = $\frac{w_L - w}{I_p}$                            |
| $e_{max}$  | VOID RATIO IN LOOSEST STATE  |
| $e_{min}$  | VOID RATIO IN DENSEST STATE  |
| $I_D$      | DENSITY INDEX = $\frac{e_{max} - e}{e_{max} - e_{min}}$              |
|            | RELATIVE DENSITY $D_r$ IS ALSO USED                                  |
| h          | HYDRAULIC HEAD OR POTENTIAL  |
| Q          | RATE OF DISCHARGE  |
| v          | VELOCITY OF FLOW   |
| i          | HYDRAULIC GRADIENT   |
| k          | COEFFICIENT OF PERMEABILITY  |
| J          | SEEPAGE FORCE PER UNIT VOLUME  |
| $m_v$      | COEFFICIENT OF VOLUME CHANGE = $\frac{-\Delta e}{(1+e)\Delta\sigma}$ |
| $C_v$      | COEFFICIENT OF CONSOLIDATION   |
| $C_c$      | COMPRESSION INDEX = $\frac{\Delta e}{\Delta \log_{10} \sigma}$       |
| $T_v$      | TIME FACTOR = $\frac{C_v t}{d^2}$ (d, DRAINAGE PATH)                 |
| U          | DEGREE OF CONSOLIDATION  |
| $\tau_f$   | SHEAR STRENGTH   |
| $c'$       | EFFECTIVE COHESION INTERCEPT   |
| $\phi'$    | EFFECTIVE ANGLE OF SHEARING RESISTANCE OR FRICTION                   |
| $c_u$      | APPARENT COHESION  |
| $\phi_u$   | APPARENT ANGLE OF SHEARING RESISTANCE OR FRICTION                    |
| $\mu$      | COEFFICIENT OF FRICTION  |
| S          | SENSITIVITY  |

### GENERAL

|                           |                                   |
|---------------------------|-----------------------------------|
| $\pi$                     | = 3.1416                          |
| e                         | BASE OF NATURAL LOGARITHMS 2.7183 |
| $\log_e a$ OR $\ln a$     | NATURAL LOGARITHM OF a            |
| $\log_{10} a$ OR $\log a$ | LOGARITHM OF a TO BASE 10         |
| t                         | TIME                              |
| g                         | ACCELERATION DUE TO GRAVITY       |
| V                         | VOLUME                            |
| W                         | WEIGHT                            |
| M                         | MOMENT                            |
| F                         | FACTOR OF SAFETY                  |

### STRESS AND STRAIN

|            |  |
|------------|--|
| u          | PORE PRESSURE  |
| $\sigma$   | NORMAL STRESS  |
| $\sigma'$  | NORMAL EFFECTIVE STRESS ( $\bar{\sigma}$ IS ALSO USED) |
| $\tau$     | SHEAR STRESS   |
| $\epsilon$ | LINEAR STRAIN  |
| $\gamma$   | SHEAR STRAIN   |
| $\nu$      | POISSON'S RATIO ( $\mu$ IS ALSO USED)                  |
| E          | MODULUS OF LINEAR DEFORMATION (YOUNG'S MODULUS)        |
| G          | MODULUS OF SHEAR DEFORMATION                           |
| K          | MODULUS OF COMPRESSIBILITY                             |
| $\eta$     | COEFFICIENT OF VISCOSITY                               |

### EARTH PRESSURE

|          |   |
|----------|---|
| d        | DISTANCE FROM TOP OF WALL TO POINT OF APPLICATION OF PRESSURE   |
| $\delta$ | ANGLE OF WALL FRICTION  |
| K        | DIMENSIONLESS COEFFICIENT TO BE USED WITH VARIOUS SUFFIXES IN EXPRESSIONS REFERRING TO NORMAL STRESS ON WALLS |
| $K_0$    | COEFFICIENT OF EARTH PRESSURE AT REST   |

### FOUNDATIONS

|       |  |
|-------|--|
| B     | BREADTH OF FOUNDATION  |
| L     | LENGTH OF FOUNDATION   |
| D     | DEPTH OF FOUNDATION BENEATH GROUND   |
| N     | DIMENSIONLESS COEFFICIENT USED WITH A SUFFIX APPLYING TO SPECIFIC GRAVITY, DEPTH AND COHESION ETC. IN THE FORMULA FOR BEARING CAPACITY |
| $k_s$ | MODULUS OF SUBGRADE REACTION   |

### SLOPES

|         |  |
|---------|--|
| H       | VERTICAL HEIGHT OF SLOPE                 |
| D       | DEPTH BELOW TOE OF SLOPE TO HARD STRATUM |
| $\beta$ | ANGLE OF SLOPE TO HORIZONTAL             |

(RM 110 LAB. BLDG)

DEPARTMENT OF HIGHWAYS ONTARIO

MEMORANDUM

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

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

ATTENTION: Mr. S. McCombie

DATE: July 10, 1969

OUR FILE REF:

IN REPLY TO

SUBJECT:

FOUNDATION INVESTIGATION REPORT  
For  
Proposed E. C. Row Expressway  
Walker Road to Banwell Road  
District No. 1 (Chatham)  
W.J. 68-F-15-3 -- W.P. -

Enclosed please find our Foundation Investigation Report for the section of the proposed E. C. Row Expressway from Walker Road to Banwell Road. The report contains factual information only, and has been compiled so as to provide you with information relating to subsoil conditions. No attempt has been made to interpret our findings and make specific recommendations, since the design stage is still some time in the future and present proposals may well be subject to substantial change. A complete report will therefore be submitted at an appropriate time in the future.

AGS/MdeF

Attach.

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

H. A. Tregaskes

D. W. Farren

W. Zonnenberg

F. C. Brown

A. P. Watt

J. Roy

B. A. Singh

Foundations Files

Gen. Files

*A. G. Stermac*  
A. G. Stermac

PRINCIPAL FOUNDATION ENGINEER

DEPARTMENT OF HIGHWAYS - ONTARIO

MATERIALS & TESTING DIVISION

RECORD OF BOREHOLE NO. 63

FOUNDATION SECTION

JOB 68-F-15-3

LOCATION

ORIGINATED BY AP

W P 257-66-040

BORING DATE March 28 & 29, 1968

COMPILED BY AMS

DATUM Geodetic

BOREHOLE TYPE Penn Drill & Core Drill

CHECKED BY

| SOIL PROFILE  |  | SAMPLES    |        |      | ELEV SCALE | DYNAMIC PENETRATION RESISTANCE<br>BLOWS / FOOT |                |    |                     |     | LIQUID LIMIT — WL<br>PLASTIC LIMIT — WP<br>WATER CONTENT — W |    |   | BUCK<br>DENSITY<br>PCF | REMARKS        |
|---------------|--|------------|--------|------|------------|--|----------------|----|---------------------|-----|--|----|---|------------------------|----------------|
| ELEV<br>DEPTH | DESCRIPTION                                | STRAT PLOT | NUMBER | TYPE |            | 20   | 40             | 60 | 80                  | 100 | WP   | WL | W |                        |                |
| 617.4         | Ground Level                               |            |        |      |            |  |                |    |                     |     |  |    |   |                        | Gr.Sa.Si.Cl    |
| 0.0           |  |            | 1      | SS   | 17         |  |                |    |                     |     |  |    |   |                        | 617.1          |
|               |  |            | 2      | SS   | 48         | 610  |                |    |                     |     |  |    |   |                        |                |
|               |  |            | 3      | SS   | 62         |  |                |    |                     |     |  |    |   |                        |                |
|               |  |            | 4      | SS   | 49         |  |                |    |                     |     |  |    |   |                        |                |
|               | Hard to very stiff                         |            | 5      | SS   | 26         | 600  |                |    |                     |     |  |    |   |                        |                |
|               |  |            | 6      | TW   | PH         |  |                |    |                     |     |  |    |   |                        | 3 28 43 26     |
|               |  |            | 7      | TW   | PH         | 590  |                |    |                     |     |  |    |   |                        |                |
|               | Stiff                                      |            | 8      | TW   | PH         |  |                |    |                     |     |  |    |   |                        |                |
|               |  |            | 9      | SS   | 12         | 580  |                |    |                     |     |  |    |   |                        |                |
|               | Clayey silt with sand,<br>traces of gravel |            | 10     | TW   | PH         |  |                |    |                     |     |  |    |   |                        |                |
|               |  |            | 11     | SS   | 12         | 570  |                |    |                     |     |  |    |   |                        | 136 4 28 40 28 |
|               | Stiff                                      |            | 12     | TW   | PM         |  |                |    |                     |     |  |    |   |                        |                |
|               | Very stiff                                 |            |        |      |            |  |                |    |                     |     |  |    |   |                        |                |
| 51.0          | Sand seams                                 |            |        |      |            |  |                |    |                     |     |  |    |   |                        |                |
| 55.0          |  |            | 13     | TW   | PM         | 560  |                |    |                     |     |  |    |   |                        |                |
|               |  |            |        |      |            |  |                |    |                     |     |  |    |   |                        |                |
|               |  |            | 14     | TW   | PH         | 550  |                |    |                     |     |  |    |   |                        |                |
| 547.4         |  |            |        |      |            |  |                |    |                     |     |  |    |   |                        |                |
| 70.0          | Sand seams                                 |            |        |      |            |  |                |    |                     |     |  |    |   |                        |                |
| 75.0          |  |            | 15     | TW   | PH         | 540  |                |    |                     |     |  |    |   |                        |                |
|               |  |            |        |      |            |  |                |    |                     |     |  |    |   |                        |                |
|               |  |            | 16     | TW   | PM         | 530  |                |    |                     |     |  |    |   |                        |                |
|               |  |            |        |      |            |  |                |    |                     |     |  |    |   |                        |                |
|               |  |            | 17     | TW   | PM         | 520  |                |    |                     |     |  |    |   |                        |                |
|               |  |            |        |      |            |  |                |    |                     |     |  |    |   |                        |                |
|               |  |            | 18     | SS   | 33         | 510  |                |    |                     |     |  |    |   |                        |                |
|               |  |            |        |      |            |  |                |    |                     |     |  |    |   |                        |                |
|               |  |            | 19     | SS   | 18         | 500  |                |    |                     |     |  |    |   |                        |                |
|               |  |            |        |      |            |  |                |    |                     |     |  |    |   |                        |                |
| 489.2         |  |            |        |      |            | 490  |                |    |                     |     |  |    |   |                        |                |
| 128.2         | Limestone                                  |            |        |      |            |  |                |    |                     |     |  |    |   |                        |                |
| 484.2         | Bedrock                                    |            |        |      |            |  |                |    |                     |     |  |    |   |                        |                |
| 133.2         | End of Borehole                            |            |        |      |            |  |                |    |                     |     |  |    |   |                        |                |
|               |  |            |        |      |            |  | 20<br>15<br>10 | 5  | % strain at failure |     |  |    |   |                        |                |

DEFECTS IN NEGATIVE DUE TO  
CONDITION OF ORIGINAL DOCUMENT

[illegible]

DEFECTS IN NEGATIVE DUE TO  
CONDITION OF ORIGINAL DOCUMENT

DEPARTMENT OF HIGHWAYS - ONTARIO

MATERIALS &amp; TESTING DIVISION

## RECORD OF BOREHOLE NO. 66

FOUNDATION SECTION

JOB 68-F-15-3

LOCATION

ORIGINATED BY AP

W P 257-66-040

BORING DATE Apr. 1, 1968

COMPILED BY AMS

DATUM Geodetic

BOREHOLE TYPE Cont. Flight Auger

CHECKED BY

| SOIL PROFILE  |  |             | SAMPLES |      |              | ELEV SCALE | DYNAMIC PENETRATION RESISTANCE<br>BLOWS / FOOT<br>20 40 60 80 100 | SHEAR STRENGTH P S F<br>+ Field Vane<br>o Unconfined<br>500 1000 1500 2000 2500 | LIQUID LIMIT — W <sub>L</sub><br>PLASTIC LIMIT — W <sub>P</sub><br>WATER CONTENT — W <sub>P</sub><br>* P — W <sub>L</sub> | WATER CONTENT %<br>10 20 30 | BULK<br>DENSITY<br>P C F | REMARKS         |
|---------------|--|-------------|---------|------|--------------|------------|---|---|---|-----------------------------|--------------------------|-----------------|
| ELEV<br>DEPTH | DESCRIPTION  | STRAT. PLOT | NUMBER  | TYPE | BLOWS / FOOT |            |   |   |   |                             |                          |                 |
| 618.6         | Ground Level   |             |         |      |              |            |   |   |   |                             |                          | Gr. Sa. Si. Cl. |
|               | Clayey silt with sand<br>traces of gravel.<br><br>Hard to<br>very stiff<br>Stiff |             | 1       | SS   | 17           |            |   |   |   |                             |                          |                 |
|               |  |             | 2       | SS   | 38           |            |   |   |   |                             |                          |                 |
|               |  |             | 3       | SS   | 82           |            |   |   |   |                             |                          |                 |
|               |  |             | 4       | SS   | 60           |            |   |   |   |                             |                          |                 |
|               |  |             | 5       | SS   | 45           |            |   |   |   |                             |                          |                 |
|               |  |             | 6       | SS   | 33           |            |   |   |   |                             |                          |                 |
|               |  |             | 7       | SS   | 25           |            |   |   |   |                             |                          |                 |
| 587.4         |  |             | 8       | SW   | 21           |            |   |   |   |                             |                          |                 |
| 581.0         |  |             | 9       | TW   | PM           |            |   |   |   |                             |                          |                 |
|               |  |             | 10      | TW   | PM           |            |   |   |   |                             |                          |                 |
|               |  |             | 11      | TW   | PM           |            |   |   |   |                             |                          |                 |
| 555.6         |  |             |         |      |              |            |   |   |   |                             |                          |                 |
| 53.0          | End of Borehole  |             |         |      |              |            |   |   |   |                             |                          |                 |

DEFECTS IN NEGATIVE DUE TO  
CONDITION OF ORIGINAL DOCUMENT

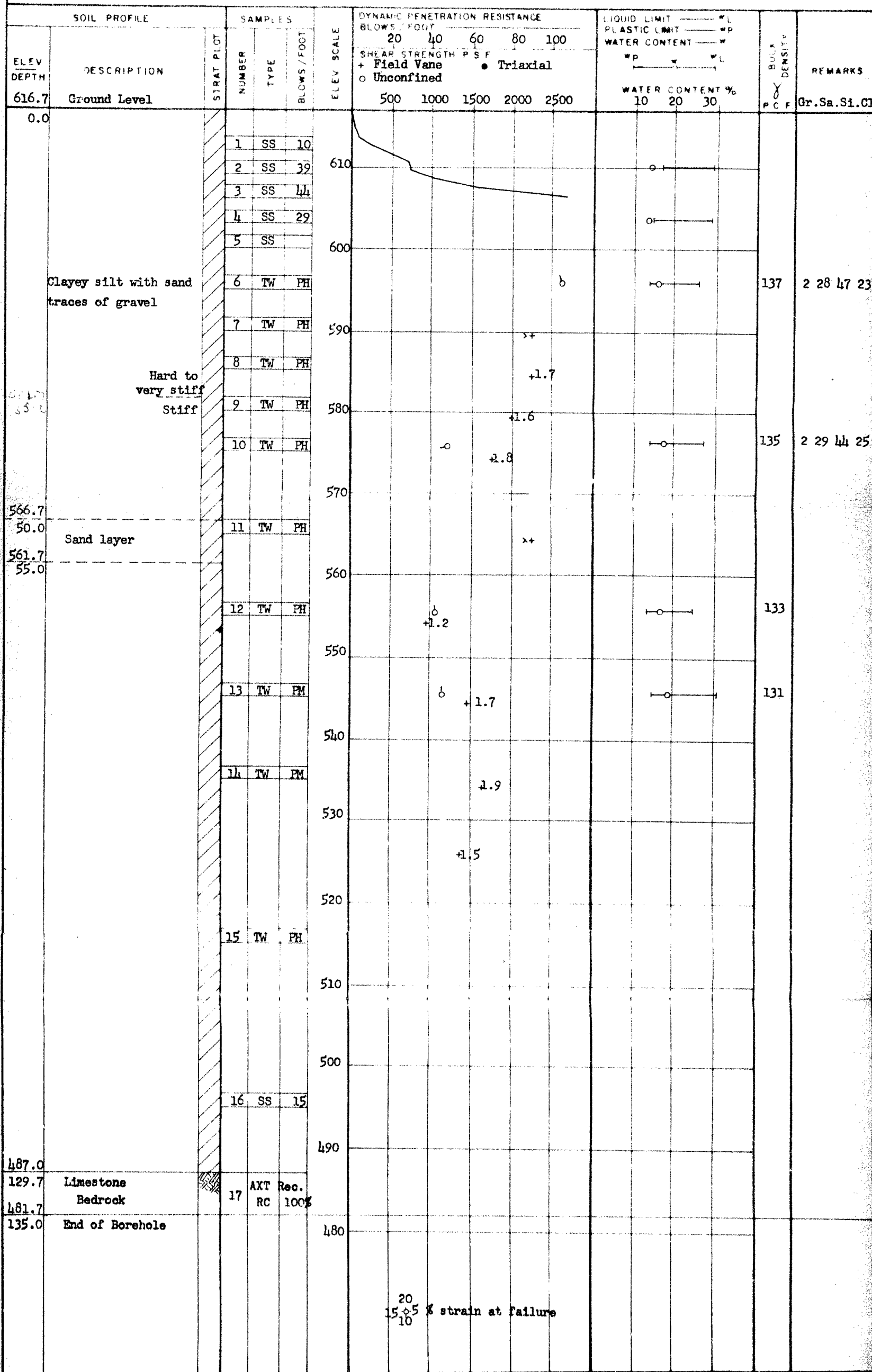
[illegible]

DEPARTMENT OF HIGHWAYS - ONTARIO  
MATERIALS & TESTING DIVISION

RECORD OF BOREHOLE NO. 68

FOUNDATION SECTION

JOB 68-F-15-3 LOCATION Highway 10, 12th St. E. at Hwy 101 ORIGINATED BY AP  
W.P. 257-66-050 BORING DATE April 1 & 2, 1968 COMPILED BY AMS  
DATUM Geodetic BOREHOLE TYPE Cont. flight auger CHECKED BY AMS



DEFECTS IN NEGATIVE DUE TO  
CONDITION OF ORIGINAL DOCUMENT



**DEFECTS IN NEGATIVE DUE TO  
CONDITION OF ORIGINAL DOCUMENT**

[illegible]



DEPARTMENT OF HIGHWAYS - ONTARIO

MATERIALS & TESTING DIVISION

JOB68-P-15-3

LOCATIONCo-ords. 100,230 N; 77,441 E.

ORIGINATED BYAP

W.P.257-66-060

BORING DATEApril 2, 1968

COMPILED BYAMS

DATUMGeodetic

BOREHOLE TYPEContinuous flight auger

CHECKED BY

| SOIL PROFILE |   | SAMPLES    |        |      | ELEV SCALE | DYNAMIC PENETRATION RESISTANCE<br>BLOWS / FOOT |                  |      |                   |     | LIQUID LIMIT ——— %<br>PLASTIC LIMIT ——— %<br>WATER CONTENT ——— % |      |      | BULK DENSITY<br>pcf | REMARKS     |
|--------------|---|------------|--------|------|------------|--|------------------|------|-------------------|-----|--|------|------|---------------------|-------------|
| ELEV DEPTH   | DESCRIPTION   | STRAT PLOT | NUMBER | TYPE |            | 20   | 40               | 60   | 80                | 100 | W.P.   | W.L. | W.C. |                     |             |
| 616.5        | Ground Level  |            |        |      |            |  |                  |      |                   |     |  |      |      |                     | Gr.Sa.Si.Cl |
| 0.0          | Hard to<br>v. stiff<br>Stiff<br><br>Clayey silt<br>with sand,<br>traces of<br>gravel. |            | 1      | SS   | 8          |  |                  |      |                   |     |  |      |      |                     |             |
|              |   |            | 2      | SS   | 25         | 610  |                  |      |                   |     |  |      |      |                     |             |
|              |   |            | 3      | SS   | 16         |  |                  |      |                   |     |  |      |      |                     |             |
|              |   |            | 4      | SS   | 50         |  |                  |      |                   |     |  |      |      |                     |             |
|              |   |            | 5      | SS   | 21         | 600  |                  |      |                   |     |  |      |      |                     |             |
|              |   |            | 6      | TW   | PH         |  |                  |      |                   |     |  |      |      |                     |             |
|              |   |            | 7      | TW   | PH         | 590  |                  |      | +1.5              |     |  |      |      | 3 29 39 29          |             |
|              |   |            | 8      | TW   | PH         |  |                  | +1.2 |                   |     |  |      |      |                     |             |
|              |   |            | 9      | TW   | PH         | 580  |                  |      | +1.7              |     |  |      |      |                     |             |
|              |   |            | 10     | TW   | PH         |  | 6                |      | +1.4              |     |  |      | 133  |                     |             |
|              |   |            | 11     | TW   | PH         | 570  |                  |      |                   |     |  |      |      | 134                 | 2 30 39 29  |
| 553.5        |   |            |        |      |            |  |                  |      | +1.7              |     |  |      |      |                     |             |
| 53.0         | End of Borehole   |            |        |      |            |  |                  |      |                   |     |  |      |      |                     |             |
|              |   |            |        |      |            |  | 20<br>1505<br>10 |      | strain at failure |     |  |      |      |                     |             |

[illegible]

DEPARTMENT OF HIGHWAYS - ONTARIO

## RECORD OF BOREHOLE NO. 74

FOUNDATION SECTION

## MATERIALS & TESTING DIVISION

JOB 68-F-15-3

**LOCATION** Co-ords. 100,068 N; 77,223 E.

ORIGINATED BY **AP**

W. P. 257-66-050

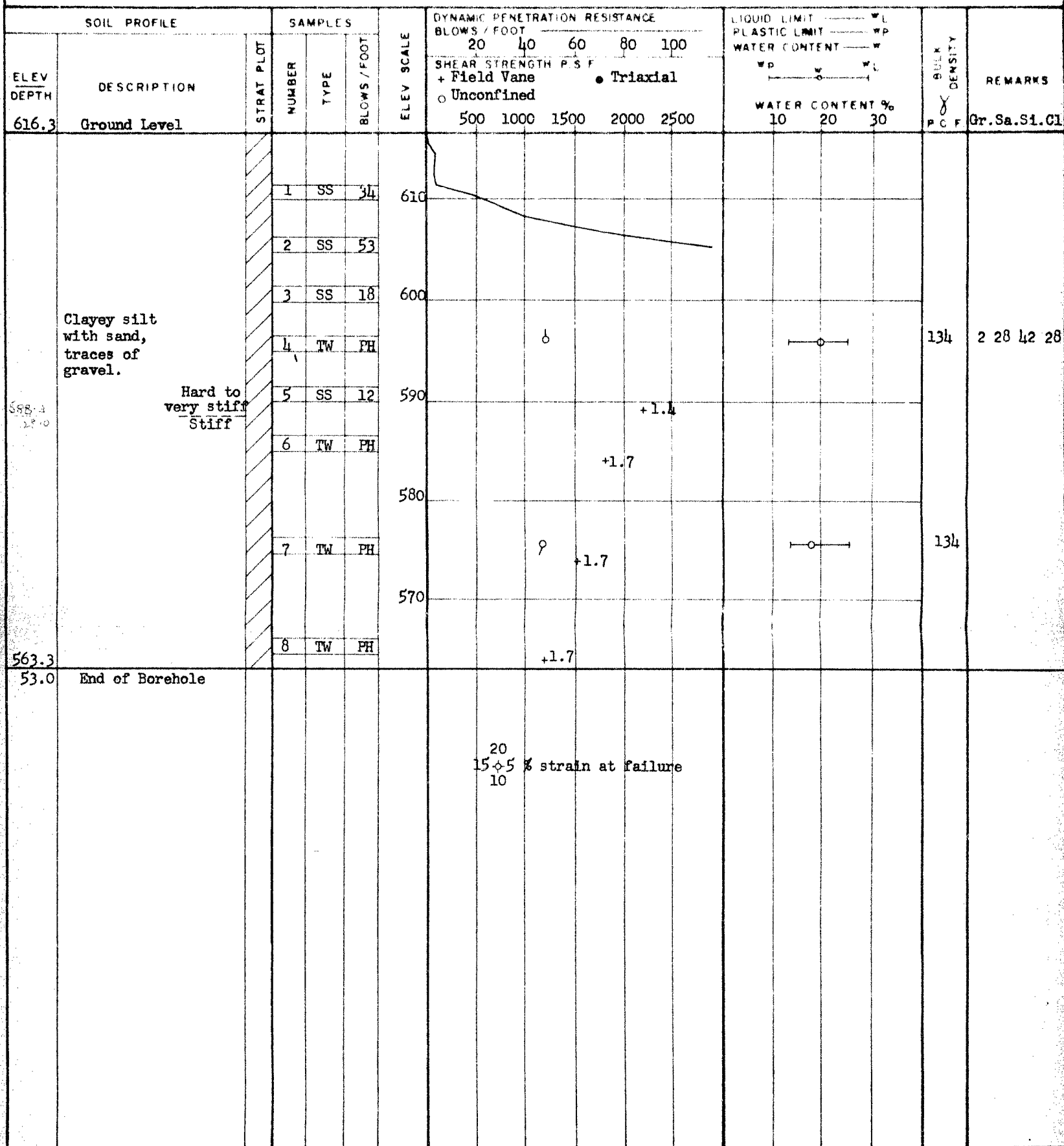
BORING DATE April 3, 1968

COMPILED BY **AMS**

**DATUM** Geodetic

**BOREHOLE TYPE** Continuous Flight Auger

CHECKED BY



DEPARTMENT OF HIGHWAYS - ONTARIO

## MATERIALS &amp; TESTING DIVISION

## RECORD OF BOREHOLE NO. 75

FOUNDATION SECTION

JOB 68-F-15-3

LOCATION \_\_\_\_\_ Co-ords. 100,057 N; 77,874 E.

ORIGINATED BY GEH

W P 257-66-050

BORING DATE April 4, 1968

COMPILED BY AMS

DATUM Geodetic

BOREHOLE TYPE Cont. Flight Auger

CHECKED BY

| SOIL PROFILE  |   |             | SAMPLES |      |              | DYNAMIC PENETRATION RESISTANCE |      |      |      |      | LIQUID LIMIT    |  |  | BULK DENSITY | REMARKS      |
|---------------|---|-------------|---------|------|--------------|--------------------------------|------|------|------|------|-----------------|--|--|--------------|--------------|
| ELEV<br>DEPTH | DESCRIPTION   | STRAT. PLOT | NUMBER  | TYPE | BLOWS / FOOT | BLOWS / FOOT                   |      |      |      |      | PLASTIC LIMIT   |  |  |              |              |
|               |   |             |         |      |              | SHEAR STRENGTH P S F           |      |      |      |      | WATER CONTENT   |  |  |              |              |
|               |   |             |         |      |              | +Field Vane • Triaxial         |      |      |      |      | WATER CONTENT % |  |  |              |              |
|               |   |             |         |      |              | o Unconfined                   |      |      |      |      | 10 20 30        |  |  |              |              |
|               |   |             |         |      |              | 500                            | 1000 | 1500 | 2000 | 2500 |                 |  |  |              |              |
| 616.0         | Ground Level  |             |         |      |              |                                |      |      |      |      |                 |  |  |              | Gr.Sa.Si.Cl. |
| 0.0           |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               | Clayey silt<br>with sand,<br>traces of<br>gravel.<br><br>Hard to<br>very stiff<br>Stiff |             | 1       | SS   | 57           | 610                            |      |      |      |      |                 |  |  |              | 2 31 46 21   |
|               |   |             | 2       | SS   | 104          |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             | 3       | SS   | 40           | 600                            |      |      |      |      |                 |  |  |              |              |
|               |   |             | 4       | SS   | 29           |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             | 5       | SS   | 22           | 590                            |      |      |      |      |                 |  |  |              |              |
|               |   |             | 6       | SS   | 16           |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             | 7       | TW   | PH           | 580                            |      |      |      |      |                 |  |  |              |              |
|               |   |             | 8       | TW   | PH           |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             | 9       | TW   | PH           |                                |      |      |      |      |                 |  |  |              |              |
| 563.0         |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
| 53.0          | End of Borehole   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      |                 |  |  |              |              |
|               |   |             |         |      |              |                                |      |      |      |      | </              |  |  |              |              |

DEPARTMENT OF HIGHWAYS - ONTARIO

## RECORD OF BOREHOLE NO. 76

FOUNDATION SECTION

MATERIALS &amp; TESTING DIVISION

JOB 68-F-15

LOCATION Co-ords. 99,892 N; 77,702 E.

ORIGINATED BY AP

W. P. 257-66-070

BORING DATE April 4, 1968

COMPILED BY AMS

DATUM Geodetic

BOREHOLE TYPE Cont. Flight Auger

CHECKED BY

| SOIL PROFILE  |   | SAMPLES    |        |      | ELEV SCALE | DYNAMIC PENETRATION RESISTANCE<br>BLOWS / FOOT |  | LIQUID LIMIT ——— W <sub>L</sub><br>PLASTIC LIMIT ——— W <sub>P</sub><br>WATER CONTENT ——— W |  | REMARKS |             |
|---------------|---|------------|--------|------|------------|--|--|--|--|---------|-------------|
| ELEV<br>DEPTH | DESCRIPTION   | STRAT PLOT | NUMBER | TYPE |            | BLOWS / FOOT                                   | SHEAR STRENGTH P S F<br>+ Field Vane      • Triaxial<br>o Unconfined | WATER CONTENT %<br>10      20      30  |  |         |             |
| 617.0         | Ground Level  |            |        |      |            |  | 500 1000 1500 2000 2500  |  |  |         | Gr.Sa.Si.Cl |
| 0.0           | Clayey silt<br>with sand,<br>traces of<br>gravel.<br><br>Hard to<br>very stiff<br>Stiff |            | 1      | SS   | 16         |  |  |  |  |         |             |
|               |   |            | 2      | SS   | 65         | 610  |  |  |  |         |             |
|               |   |            | 3      | SS   | 81         |  |  |  |  |         |             |
|               |   |            | 4      | SS   | 71         |  |  |  |  |         |             |
|               |   |            | 5      | SS   | 28         | 600  |  |  |  |         |             |
|               |   |            | 6      | SS   | 19         |  |  |  |  |         |             |
|               |   |            | 7      | TW   | PH         | 590  | p + 1.6  |  |  |         | 135         |
|               |   |            | 8      | TW   | PH         |  | + 1.6  |  |  |         |             |
|               |   |            | 9      | SS   | 31         | 580  | + 1.8  |  |  |         |             |
|               |   |            | 10     | TW   | PM         |  | + 1.6  |  |  |         |             |
|               |   |            | 11     | SS   | 14         | 570  | + 1.8  |  |  |         |             |
| 564.0         |   |            |        | 12   | TW         | PH   |  |  |  |         | 3 64 ( 33)  |
| 53.0          | End of Borehole   |            |        |      |            |  |  |  |  |         |             |
|               |   |            |        |      |            | 20<br>15 ÷ 5 % strain at failure<br>10         |  |  |  |         |             |



DEPARTMENT OF HIGHWAYS - ONTARIO

MATERIALS & TESTING DIVISION

# RECORD OF BOREHOLE NO 77

FOUNDATION SECTION

JOB 68-F-15-3 LOCATION Co-ords. 100,064 N; 77,550 E. ORIGINATED BY AP  
W P 257-66-050 BORING DATE April 4, 1968 COMPILED BY AMS  
DATUM Geodetic BOREHOLE TYPE Cont. Flight Auger CHECKED BY

| SOIL PROFILE   |   | SAMPLES     |        |      | DYNAMIC PENETRATION RESISTANCE |             |     |    |    | LIQUID LIMIT ——— %<br>PLASTIC LIMIT ——— %<br>WATER CONTENT ——— % |     |     | BULK<br>DENSITY<br>P C F | REMARKS |      |      |      |      |     |                               |                |
|----------------|---|-------------|--------|------|--------------------------------|-------------|-----|----|----|--|-----|-----|--------------------------|---------|------|------|------|------|-----|-------------------------------|----------------|
| ELEV.<br>DEPTH | DESCRIPTION   | STRAT. PLOT | NUMBER | TYPE | BLOWS / FOOT                   | ELEV. SCALE | 20  | 40 | 60 | 80   | 100 | 500 |                          |         | 1000 | 1500 | 2000 | 2500 | W P | W L                           | W C            |
| 618.9          | Ground Level  |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     | Gr.Sa.Si.Cl                   |                |
| 0.0            | Clayey silt<br>with sand,<br>traces of<br>gravel.<br><br>Hard to<br>very stiff<br>Stiff |             | 1      | SS   | 22                             | 610         |     |    |    |  |     |     |                          |         |      |      |      |      |     | 3 27 42 28                    |                |
|                |   |             | 2      | SS   | 80                             |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             | 3      | SS   | 80                             | 600         |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             | 4      | SS   | 34                             |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        | 5    | SS                             | 24          | 590 |    |    |  |     |     |                          |         |      |      |      |      |     |                               | 137 4 30 27 29 |
|                |   |             |        | 6    | SS                             | 21          |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        | 7    | TW                             | PM          | 580 |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        | 8    | TW                             | PM          |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             | 570 |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             | 560 |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
| 568.7<br>567.4 | Sand layer  |             | 9      | TW   | PM                             |             |     |    |    |  |     |     |                          |         |      |      |      |      |     | 135 1 38 26 25<br>12 59 ( 29) |                |
| 555.9          |   |             | 10     | TW   | PM                             |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
| 63.0           | End of Borehole   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |
|                |   |             |        |      |                                |             |     |    |    |  |     |     |                          |         |      |      |      |      |     |                               |                |

20  
15 ± 5 % strain at failure  
10

3 27 42 28

137 4 30 27 29

135 1 38 26 25  
12 59 ( 29)

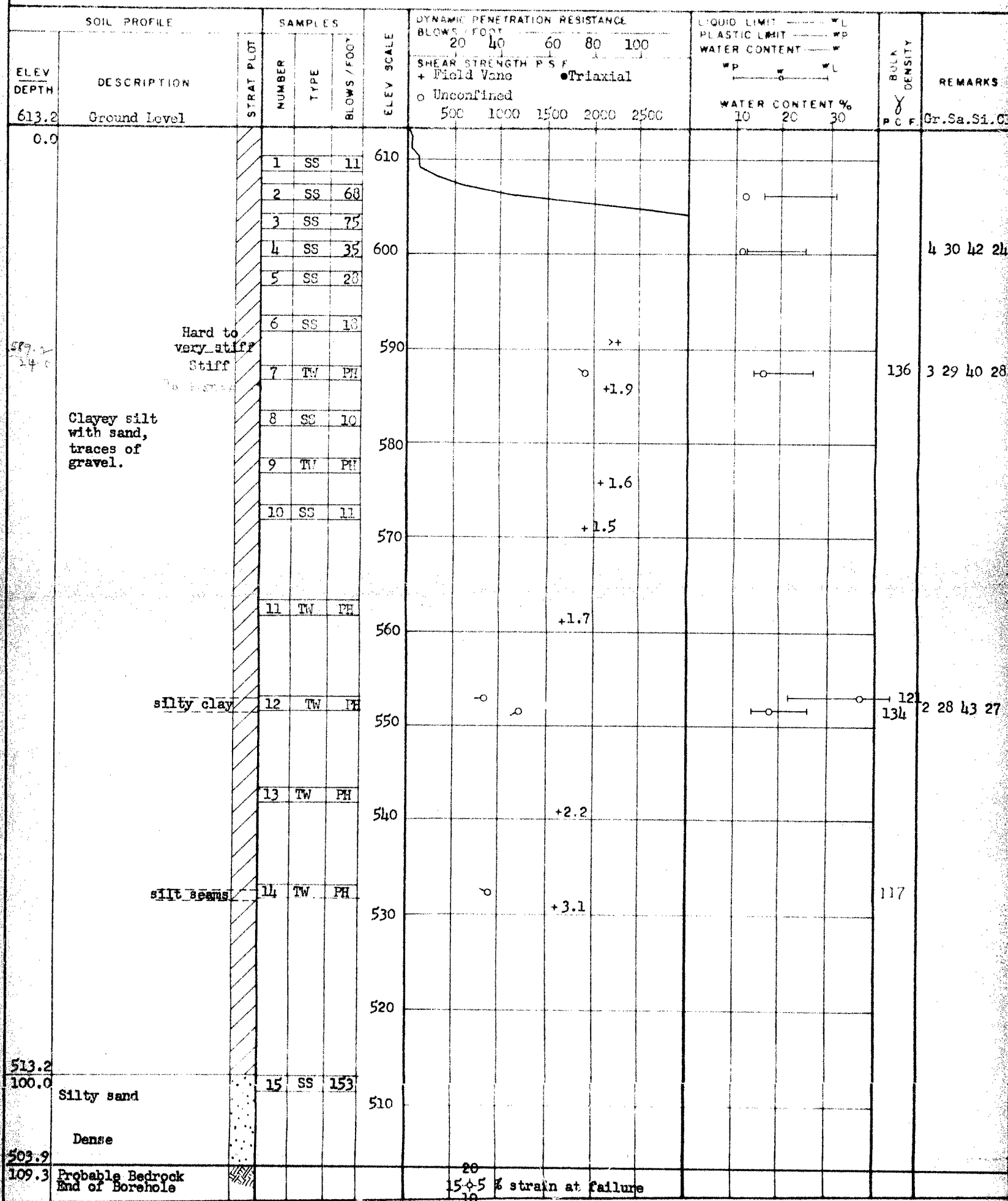
DEPARTMENT OF HIGHWAYS - ONTARIO

MATERIALS & TESTING DIVISION

RECORD OF BOREHOLE NO. 73

FOUNDATION SECTION

JOB 68-E-14-3 LOCATION Co-ords. 101,340 N; 80,445 E. ORIGINATED BY GEH  
W.P. 257-66-020 BORING DATE April 4 & 5, 1968 COMPILED BY AMS  
DATUM Geodetic BOREHOLE TYPE Cont. Flight Auger CHECKED BY AMS



DEFECTS IN NEGATIVE DUE TO  
CONDITION OF ORIGINAL DOCUMENT

DEPARTMENT OF HIGHWAYS - ONTARIO

MATERIALS & TESTING DIVISION

RECORD OF BOREHOLE NO. 79

FOUNDATION SECTION

|       |            |               |                               |               |     |
|-------|------------|---------------|-------------------------------|---------------|-----|
| JOB   | 68-F-15    | LOCATION      | Co-ords. 101,655 N; 80,350 E. | ORIGINATED BY | GEH |
| W P   | 257-66-090 | BORING DATE   | April 5 & 8, 1968             | COMPILED BY   | AMS |
| DATUM | Geodetic   | BOREHOLE TYPE | Continuous flight auger       | CHECKED BY    |     |

| SOIL PROFILE  |              |            | SAMPLES |      |              | DYNAMIC PENETRATION RESISTANCE<br>BLOWS / FOOT |   |  |      |  |  | LIQUID LIMIT ----- W L<br>PLASTIC LIMIT ----- W P<br>WATER CONTENT ----- W |  |  | BULK<br>DENSITY<br>PCF | REMARKS        |
|---------------|--------------|------------|---------|------|--------------|--|---|--|------|--|--|--|--|--|------------------------|----------------|
| ELEV<br>DEPTH | DESCRIPTION  | STRAT PLOT | NUMBER  | TYPE | BLOWS / FOOT | ELEV<br>SCALE                                  | SHEAR STRENGTH P S F<br>+ Field Vane                      • Triaxial<br>o Unconfined<br>500   1000   1500   2000   2500 |  |      |  |  | WATER CONTENT %<br>10   20   30  |  |  |                        |                |
| 613.1         | Ground Level |            |         |      |              |  |   |  |      |  |  |  |  |  |                        | Gr.Sa.S1.CL    |
| 0.0           |              |            |         |      |              |  |   |  |      |  |  |  |  |  |                        |                |
|               |              |            | 1       | SS   | 6            | 610  |   |  |      |  |  |  |  |  |                        |                |
|               |              |            | 2       | SS   | 40           |  |   |  |      |  |  |  |  |  |                        |                |
|               |              |            | 3       | SS   | 55           |  |   |  |      |  |  |  |  |  |                        |                |
|               |              |            | 4       | SS   | 72           | 600  |   |  |      |  |  |  |  |  |                        | 8 27 42 23     |
|               |              |            | 5       | SS   | 35           |  |   |  |      |  |  |  |  |  |                        |                |
|               |              |            | 6       | SS   | 28           |  |   |  |      |  |  |  |  |  |                        |                |
|               |              |            | 7       | TW   | PH           | 590  |   |  |      |  |  |  |  |  |                        |                |
|               |              |            | 8       | TW   | PH           |  |   |  | +2.4 |  |  |  |  |  |                        |                |
|               |              |            | 9       | TW   | PH           | 580  |   |  |      |  |  |  |  |  |                        | 136            |
|               |              |            | 10      | TW   | PH           |  |   |  | +1.9 |  |  |  |  |  |                        |                |
|               |              |            | 11      | TW   | PH           | 570  |   |  |      |  |  |  |  |  |                        |                |
|               |              |            | 12      | TW   | PH           |  |   |  | +2.0 |  |  |  |  |  |                        |                |
|               |              |            | 13      | TW   | PH           | 560  |   |  |      |  |  |  |  |  |                        |                |
|               |              |            | 14      | TW   | PH           |  |   |  | +2.7 |  |  |  |  |  |                        | 131 5 28 37 30 |
|               |              |            | 15      | TW   | PH           | 550  |   |  |      |  |  |  |  |  |                        |                |
|               |              |            |         |      |              |  |   |  | +2.2 |  |  |  |  |  |                        |                |
|               |              |            |         |      |              | 540  |   |  |      |  |  |  |  |  |                        |                |
|               |              |            |         |      |              |  |   |  | +1.8 |  |  |  |  |  |                        |                |
|               |              |            |         |      |              | 530  |   |  |      |  |  |  |  |  |                        | 2 27 42 29     |
|               |              |            |         |      |              |  |   |  | +1.3 |  |  |  |  |  |                        |                |
|               |              |            |         |      |              | 520  |   |  |      |  |  |  |  |  |                        |                |
|               |              |            |         |      |              |  |   |  | +1.6 |  |  |  |  |  |                        |                |
|               |              |            |         |      |              | 510  |   |  |      |  |  |  |  |  |                        |                |
|               |              |            |         |      |              | 500  |   |  |      |  |  |  |  |  |                        |                |
| 500.1         |              |            |         |      |              |  |   |  |      |  |  |  |  |  |                        |                |
| 413.0         | Limestone    |            |         |      |              |  |   |  |      |  |  |  |  |  |                        |                |
| 495.1         | Bedrock      |            |         |      |              |  |   |  |      |  |  |  |  |  |                        |                |

DEPARTMENT OF HIGHWAYS - ONTARIO

MATERIALS & TESTING DIVISION

RECORD OF BOREHOLE NO. 80

FOUNDATION SECTION

JOB 68-F-15-3

LOCATION Co-ords. 101.750 N; 80,357 E.

ORIGINATED BY GEM

W.P. 257-66-090

BORING DATE April 8 & 9, 1968

COMPILED BY AMS

DATUM Geodetic

BOREHOLE TYPE Continuous flight auger

CHECKED BY

| SOIL PROFILE |   | SAMPLES |      |              | ELEV SCALE | DYNAMIC PENETRATION RESISTANCE |    |    |      |                    | LIQUID LIMIT — W <sub>L</sub> |                |                | BULK DENSITY | REMARKS     |
|--------------|---|---------|------|--------------|------------|--------------------------------|----|----|------|--------------------|-------------------------------|----------------|----------------|--------------|-------------|
| ELEV DEPTH   | DESCRIPTION                             | NUMBER  | TYPE | BLOWS / FOOT |            | BLOWS / FOOT                   | 20 | 40 | 60   | 80                 | 100                           | W <sub>P</sub> | W <sub>L</sub> |              |             |
| 612.2        | Ground Level                            |         |      |              |            |                                |    |    |      |                    |                               |                |                |              | Gr.Sa.Si.Cl |
| 0.0          |   | 1       | SS   | 11           | 610        |                                |    |    |      |                    |                               |                |                |              |             |
|              |   | 2       | SS   | 44           |            |                                |    |    |      |                    |                               |                |                |              |             |
|              |   | 3       | SS   | 54           |            |                                |    |    |      |                    |                               |                |                |              |             |
|              |   | 4       | SS   | 25           | 600        |                                |    |    |      |                    |                               |                |                |              |             |
|              |   | 5       | SS   | 23           |            |                                |    |    |      |                    |                               |                |                |              |             |
|              |   | 6       | TW   | PH           | 590        |                                |    |    |      |                    |                               |                |                | 137          | 2 32 42 24  |
|              |   | 7       | TW   | PH           |            |                                |    |    |      |                    |                               |                |                |              |             |
| 582.2        | Hard to very stiff<br>Stiff             | 8       | TW   | PH           | 580        |                                |    |    | +1.4 |                    |                               |                |                |              |             |
| 30.0         |   | 9       | TW   | PH           |            |                                |    |    | +1.5 |                    |                               |                |                |              |             |
|              |   | 10      | TW   | PH           | 570        |                                |    |    | +1.7 |                    |                               |                |                |              |             |
|              | Clayey silt with sand, traces of gravel |         |      |              |            |                                |    |    |      |                    |                               |                |                |              |             |
|              |   | 11      | TW   | PH           | 560        |                                |    | 0  | +1.7 |                    |                               |                |                | 137          | 3 29 41 27  |
|              |   | 12      | TW   | PH           | 550        |                                |    |    | +1.9 |                    |                               |                |                |              |             |
|              |   | 13      | TW   | PH           | 540        |                                |    |    | +2.8 |                    |                               |                |                |              |             |
|              |   | 14      | TW   | PH           | 530        |                                |    |    | +3.9 |                    |                               |                |                |              |             |
|              |   | 15      | SS   | 29           | 520        |                                |    |    |      |                    |                               |                |                |              |             |
|              |   | 16      | SS   | 27           | 510        |                                |    |    |      |                    |                               |                |                |              | 1 17 57 25  |
| 501.9        |   |         |      |              |            |                                |    |    |      |                    |                               |                |                |              |             |
| 110.3        | Probable Bedrock End of Borehole        |         |      |              |            |                                | 20 | 15 | 5    | % Stain at failure |                               |                |                |              |             |

[illegible]

[illegible]

DEPARTMENT OF HIGHWAYS - ONTARIO

## MATERIALS &amp; TESTING DIVISION

68-F-15-3

LOCATION Co-ords. 99,852 N. 80,657 E.

ORIGINATED BY            AP

257-66-080

BOHRING DATE April 8 & 9, 1968

COMPILED BY **AMS**

DATUM Geodetic

BOREHOLE TYPE Washbore - NX Casing

CHECKED BY                     

## RECORD OF BOREHOLE NO. 83

FOUNDATION SECTION

| SOIL PROFILE  |  |            | SAMPLES |      |              | ELEV SCALE | DYNAMIC PENETRATION RESISTANCE<br>BLOWS / FOOT<br>20 40 60 80 100<br>SHEAR STRENGTH P S F<br>+ Field Vane • Triaxial<br>○ Unconfined | LIQUID LIMIT ——— WL<br>PLASTIC LIMIT ——— WP<br>WATER CONTENT ——— W<br>WP ——— WL | WATER CONTENT %<br>10 20 30 | BULK DENSITY<br>P C F | REMARKS     |  |
|---------------|--|------------|---------|------|--------------|------------|--|---|-----------------------------|-----------------------|-------------|--|
| ELEV<br>DEPTH | DESCRIPTION  | STRAT PLOT | NUMBER  | TYPE | BLOWS / FOOT |            |  |   |                             |                       |             |  |
| 615.0         | Ground Level   |            |         |      |              |            |  |   |                             |                       | Br.Sa.Si.Cl |  |
| 0.0           | Clayey silt with sand,<br>traces of gravel.<br><br>Hard to very stiff. |            | 1       | SS   | 17           |            |  |   |                             |                       | 3 30 40 27  |  |
|               |  |            | 2       | SS   | 62           |            |  |   |                             |                       |             |  |
|               |  |            | 3       | SS   | 60           |            |  |   |                             |                       |             |  |
|               |  |            | 4       | SS   | 54           |            |  |   |                             |                       |             |  |
|               |  |            | 5       | SS   | 28           |            |  |   |                             |                       |             |  |
|               |  |            | 6       | SS   | 21           |            |  |   |                             |                       |             |  |
|               |  |            | 7       | TW   | PM           |            |  |   |                             |                       |             |  |
|               |  |            | 8       | TW   | PM           |            |  |   | + 1.9                       |                       |             |  |
|               |  |            | 9       | TW   | PM           |            |  |   | + 2.2                       |                       |             |  |
|               |  |            | 10      | TW   | PM           |            |  |   | + 1.6                       |                       |             |  |
| 563.5         |  |            | 11      | SS   | 20           |            |  |   |                             |                       |             |  |
| 51.5          | End of Borehole  |            |         |      |              |            |  |   |                             |                       |             |  |
|               |  |            |         |      |              |            | 20<br>15 5 % strain at failure<br>10   |   |                             |                       |             |  |

DEPARTMENT OF HIGHWAYS - ONTARIO  
MATERIALS & TESTING DIVISION

RECORD OF BOREHOLE NO. 84

FOUNDATION SECTION

JOB 68-F-15-3 LOCATION Co-ords. 99,846 N. 80,843 E. ORIGINATED BY GEH  
W P 257-66-080 BORING DATE April 9, 1968 COMPILED BY AMS  
DATUM Geodetic BOREHOLE TYPE Penn Drill & Core Drill CHECKED BY AMS

| SOIL PROFILE  |   |            | SAMPLES |           |              | DYNAMIC PENETRATION RESISTANCE |  |                     |      |      | LIQUID LIMIT — WL<br>PLASTIC LIMIT — WP<br>WATER CONTENT — W |                    | BULK DENSITY<br>PCF | REMARKS     |
|---------------|---|------------|---------|-----------|--------------|--------------------------------|--|---------------------|------|------|--|--------------------|---------------------|-------------|
| ELEV<br>DEPTH | DESCRIPTION                                       | STRAT. PLT | NUMBER  | TYPE      | BLOWS / FOOT | ELEV SCALE                     | SHEAR STRENGTH P.S.F.<br>+ Field Vane • Triaxial<br>o Unconfined |                     |      |      |  | CONTENT %<br>20 30 |                     |             |
| 615.0         | Ground Level                                      |            |         |           |              |                                | 500  | 1000                | 1500 | 2000 | 2500   |                    |                     | Gr.Sa.Si.Cl |
| 0.0           |   |            | 1       | SS        | 9            | 610                            |  |                     |      |      |  |                    |                     |             |
|               |   |            | 2       | SS        | 47           |                                |  |                     |      |      |  |                    |                     |             |
|               |   |            | 3       | SS        | 77           |                                |  |                     |      |      |  |                    |                     | 1 30 42 27  |
|               |   |            | 4       | SS        | 50           |                                |  |                     |      |      |  |                    |                     |             |
|               |   |            | 5       | SS        | 21           | 600                            |  |                     |      |      |  |                    |                     |             |
|               |   |            | 6       | SS        | 16           |                                |  |                     |      |      |  |                    |                     |             |
|               | Hard to<br>very stiff<br>Stiff                    |            | 7       | TW        | PH           | 590                            |  |                     | +2.2 |      |  |                    |                     |             |
|               |   |            | 8       | TW        | PH           |                                |  |                     | +1.5 |      |  |                    | 134                 | 1 29 44 26  |
|               | Clayey silt<br>with sand,<br>traces of<br>gravel. |            | 9       | TW        | PH           | 580                            |  |                     | +1.6 |      |  |                    |                     |             |
|               |   |            | 10      | TW        | PH           |                                |  |                     | +1.5 |      |  |                    | 137                 |             |
|               |   |            | 11      | TW        | PH           | 570                            |  |                     |      |      |  |                    |                     |             |
|               |   |            |         |           |              |                                |  |                     |      |      |  |                    |                     |             |
|               |   |            | 12      | TW        | PH           | 560                            |  |                     | +2.1 |      |  |                    | 134                 | 1 30 36 33  |
| 554.0         |   |            |         |           |              |                                |  |                     |      |      |  |                    |                     |             |
| 61.0          |   |            |         |           |              |                                |  |                     |      |      |  |                    |                     |             |
| 549.0         | Sand seams  |            |         |           |              | 550                            |  |                     |      |      |  |                    |                     |             |
| 66.0          |   |            |         |           |              |                                |  |                     |      |      |  |                    |                     |             |
|               |   |            |         |           |              | 540                            |  |                     |      |      |  |                    |                     |             |
|               |   |            | 13      | TW        | PH           |                                |  |                     | +1.2 |      |  |                    |                     |             |
|               |   |            |         |           |              | 530                            |  |                     |      |      |  |                    |                     |             |
|               |   |            |         |           |              |                                |  |                     |      |      |  |                    |                     |             |
|               |   |            |         |           |              | 520                            |  |                     |      |      |  |                    |                     |             |
|               |   |            | 14      | SS        | 55           |                                |  |                     |      |      |  |                    |                     |             |
|               |   |            |         |           |              | 510                            |  |                     |      |      |  |                    |                     |             |
|               |   |            |         |           |              |                                |  |                     |      |      |  |                    |                     |             |
| 496.2         |   |            |         |           |              | 500                            |  |                     |      |      |  |                    |                     |             |
| 118.8         | Limestone<br>Bedrock                              |            | 15      | AXT<br>RC | Rec.<br>100% |                                |  |                     |      |      |  |                    |                     |             |
| 491.2         |   |            |         |           |              |                                |  |                     |      |      |  |                    |                     |             |
| 123.8         | End of Borehole                                   |            |         |           |              |                                |  |                     |      |      |  |                    |                     |             |
|               |   |            |         |           |              |                                | 20<br>15 ÷ 5<br>10   | % strain at failure |      |      |  |                    |                     |             |



DEPARTMENT OF HIGHWAYS - ONTARIO

## RECORD OF BOREHOLE NO. 85

FOUNDATION SECTION

MATERIALS &amp; TESTING DIVISION

JOB 68-F-15-3

LOCATION Co-ords. 29.974 N; 80.652 E.

ORIGINATED BY                      **GEH**

W. P. 257-66-080

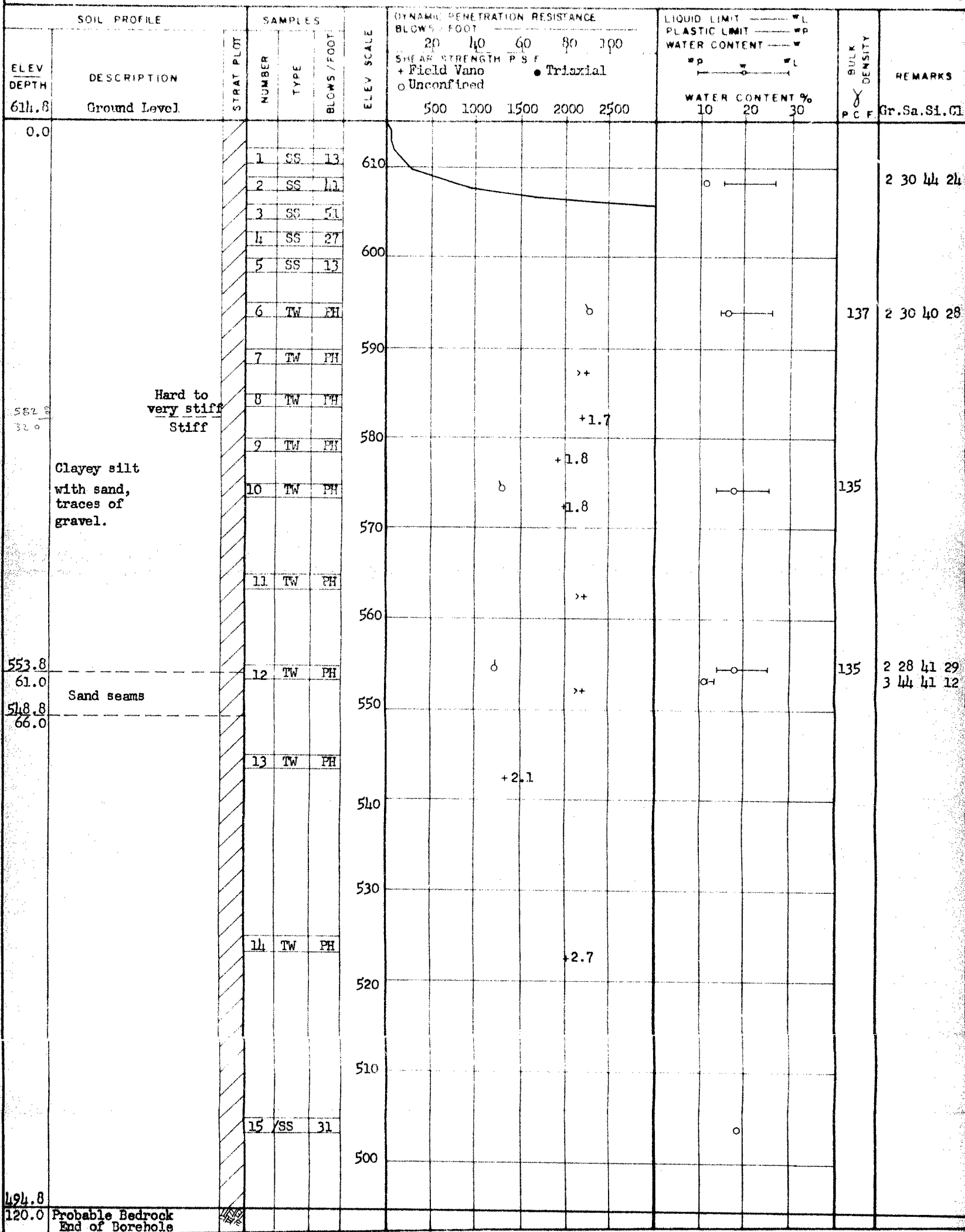
BORING DATE April 2 & 10, 1968

COMPILED BY \_\_\_\_\_ AMS

DATUM Geodetic

BOREHOLE TYPE Cont. Flight Auger

CHECKED BY \_\_\_\_\_



15  $\frac{20}{10}$  5 % strain at failure

| DEPARTMENT OF HIGHWAYS - ONTARIO                |   |            |         |      |              | RECORD OF BOREHOLE NO. 86             |    |    |    |    |              |  |  | FOUNDATION SECTION |  |  |               |  |  |              |  |  |         |  |  |
|---|---|------------|---------|------|--------------|---------------------------------------|----|----|----|----|--------------|--|--|--------------------|--|--|---------------|--|--|--------------|--|--|---------|--|--|
| MATERIALS & TESTING DIVISION                    |   |            |         |      |              |                                       |    |    |    |    |              |  |  |                    |  |  |               |  |  |              |  |  |         |  |  |
| JOB 68-F-15                                     |   |            |         |      |              | LOCATION Co-ords. 99,876 N; 87,078 E. |    |    |    |    |              |  |  | ORIGINATED BY AP   |  |  |               |  |  |              |  |  |         |  |  |
| W.P. 259-66-020                                 |   |            |         |      |              | BORING DATE April 2, 1968             |    |    |    |    |              |  |  | COMPILED BY AMS    |  |  |               |  |  |              |  |  |         |  |  |
| DATUM Geodetic                                  |   |            |         |      |              | BOREHOLE TYPE Cont. Flight Auger      |    |    |    |    |              |  |  | CHECKED BY         |  |  |               |  |  |              |  |  |         |  |  |
| SOIL PROFILE                                    |   |            | SAMPLES |      |              | DYNAMIC PENETRATION RESISTANCE        |    |    |    |    | LIQUID LIMIT |  |  | PLASTIC LIMIT      |  |  | WATER CONTENT |  |  | BULK DENSITY |  |  | REMARKS |  |  |
| ELEV<br>DEPTH                                   | DESCRIPTION   | STRAT PLOT | NUMBER  | TYPE | BLOWS / FOOT | ELEV SCALE                            | 20 | 40 | 60 | 80 | 100          |  |  |                    |  |  |               |  |  |              |  |  |         |  |  |
| 603.3   | Ground Level  |            |         |      |              |                                       |    |    |    |    |              |  |  |                    |  |  |               |  |  |              |  |  |         |  |  |
|   | Clayey silt with sand, traces of gravel.<br><br>Hard to very stiff<br>Stiff |            | 1       | SS   | 14           | 600                                   |    |    |    |    |              |  |  |                    |  |  |               |  |  |              |  |  |         |  |  |
|   |   |            | 2       | SS   | 20           |                                       |    |    |    |    |              |  |  |                    |  |  |               |  |  |              |  |  |         |  |  |
|   |   |            | 3       | SS   | 83           |                                       |    |    |    |    |              |  |  |                    |  |  |               |  |  |              |  |  |         |  |  |
|   |   |            | 4       | SS   | 50           | 590                                   |    |    |    |    |              |  |  |                    |  |  |               |  |  |              |  |  |         |  |  |
|   |   |            | 5       | SS   | 27           |                                       |    |    |    |    |              |  |  |                    |  |  |               |  |  |              |  |  |         |  |  |
|   |   |            | 6       | SS   | 26           |                                       |    |    |    |    |              |  |  |                    |  |  |               |  |  |              |  |  |         |  |  |
|   |   |            | 7       | SS   | 22           | 580                                   |    |    |    |    |              |  |  |                    |  |  |               |  |  |              |  |  |         |  |  |
|   |   |            | 8       | SS   | 24           | 570                                   |    |    |    |    |              |  |  |                    |  |  |               |  |  |              |  |  |         |  |  |
| 570.3   |   |            | 9       | TW   | PM           |                                       |    |    |    |    |              |  |  |                    |  |  |               |  |  |              |  |  |         |  |  |
| 53.0  |   |            | 10      | TW   | PM           | 560                                   |    |    |    |    |              |  |  |                    |  |  |               |  |  |              |  |  |         |  |  |
| 550.3   |   |            | 11      | TW   | PM           |                                       |    |    |    |    |              |  |  |                    |  |  |               |  |  |              |  |  |         |  |  |
| 53.0  | End of Borehole   |            |         |      |              | 550                                   |    |    |    |    |              |  |  |                    |  |  |               |  |  |              |  |  |         |  |  |
| <p>20<br/>15 ± 5 % Strain at failure<br/>10</p> |   |            |         |      |              |                                       |    |    |    |    |              |  |  |                    |  |  |               |  |  |              |  |  |         |  |  |

MATERIALS &amp; TESTING DIVISION

## RECORD OF BOREHOLE NO. 87

FOUNDATION SECTION

68-F-15-3

LOCATION \_\_\_\_\_ Co-ords. 99,841 N; 86,064 E.

ORIGINATED BY GEH

W P 259-66-020

BORING DATE April 10, 1968

COMPILED BY **AMS**

DATUM Geodetic

BOREHOLE TYPE Cont. flight auger

CHECKED BY                     

[illegible]

DEPARTMENT OF HIGHWAYS - ONTARIO

MATERIALS & TESTING DIVISION

# RECORD OF BOREHOLE NO. 88

FOUNDATION SECTION

JOB 68-F-15-3

LOCATION Co-ords. 99,865 N; 86,485 E.

ORIGINATED BY GEN

W.P. 259-66-020

BORING DATE April 10, 1968

COMPILED BY AMS

DATUM Geodetic

BOREHOLE TYPE Washbore - NX Casing

CHECKED BY

| SOIL PROFILE |   |             | SAMPLES |      | ELEV SCALE | DYNAMIC PENETRATION RESISTANCE<br>BLOWS / FOOT<br>20 40 60 80 100<br>SHEAR STRENGTH P S F<br>+ Field Vane • Triaxial<br>o Unconfined | LIQUID LIMIT — W <sub>L</sub><br>PLASTIC LIMIT — W <sub>P</sub><br>WATER CONTENT — W<br>WATER CONTENT %<br>10 20 30 | BULK DENSITY<br>P C F | REMARKS |
|--------------|---|-------------|---------|------|------------|--|---|-----------------------|---------|
| ELEV DEPTH   | DESCRIPTION                                 | STRAT. PLCT | NUMBER  | TYPE |            |  |   |                       |         |
| 604.6        | Ground Level                                |             |         |      |            |  |   |                       |         |
| 0.0          |   |             | 1       | SS   | 10         |  |   |                       |         |
|              |   |             | 2       | SS   | 51         |  |   |                       |         |
|              |   |             | 3       | SS   | 47         |  |   |                       |         |
|              |   |             | 4       | SS   | 32         |  |   |                       |         |
|              | Clayey silt with sand,<br>traces of gravel. |             | 5       | SS   | 24         |  |   |                       |         |
|              |   |             | 6       | SS   | 17         |  |   |                       |         |
|              | Hard.                                       |             | 7       | TW   | TM         |  |   |                       |         |
|              |   |             | 8       | SS   | 13         |  |   |                       |         |
|              |   |             | 9       | TW   | TM         |  |   |                       |         |
|              | Sand Seams                                  |             | 10      | SS   | 26         |  |   |                       |         |
|              |   |             |         |      |            |  |   |                       |         |
|              |   |             | 11      | TW   | TM         |  |   |                       |         |
| 551.6        |   |             |         |      |            |  |   |                       |         |
| 53.0         | End of Borehole                             |             |         |      |            |  |   |                       |         |

20  
15 ± 5 % strain at failure  
10

MATERIALS &amp; TESTING DIVISION

FOUNDATION SECTION

ORIGINATED BY AP

COMPILED BY \_\_\_\_\_ AMS

CHECKED BY

[illegible]

|                                  |  |  |                                       |  |  |  |                    |  |
|----------------------------------|--|--|---------------------------------------|--|--|--|--------------------|--|
| DEPARTMENT OF HIGHWAYS - ONTARIO |  |  | RECORD OF BOREHOLE NO. 90             |  |  |  | FOUNDATION SECTION |  |
| MATERIALS & TESTING DIVISION     |  |  |                                       |  |  |  |                    |  |
| JOB 68-F-15-3                    |  |  | LOCATION Co-ords. 99,808 N; 87,329 E. |  |  |  | ORIGINATED BY AP   |  |
| W.P. 259-66-020                  |  |  | BORING DATE April 10 & 11, 1968       |  |  |  | COMPILED BY AMS    |  |
| DATUM Geodetic                   |  |  | BOREHOLE TYPE Cont. Flight Auger      |  |  |  | CHECKED BY         |  |

| SOIL PROFILE |   |             | SAMPLES |      |              | DYNAMIC PENETRATION RESISTANCE |  |      |      |      | LIQUID LIMIT ——— WL<br>PLASTIC LIMIT ——— WP<br>WATER CONTENT ——— W |                 |    | BULK DENSITY<br>PCF | REMARKS |             |                  |
|--------------|---|-------------|---------|------|--------------|--------------------------------|--|------|------|------|--|-----------------|----|---------------------|---------|-------------|------------------|
| ELEV. DEPTH  | DESCRIPTION   | STRAT. PLOT | NUMBER  | TYPE | BLOWS / FOOT | ELEV. SCALE                    | SHEAR STRENGTH P.S.F.<br>+ Field Vane • Triaxial<br>o Unconfined |      |      |      |  | WATER CONTENT % |    |                     |         |             |                  |
| 603.6        | Ground Level  |             |         |      |              |                                | 500  | 1000 | 1500 | 2000 | 2500   | 10              | 20 | 30                  |         | Gr.Sa.Si.Cl |                  |
| 0.0          | Hard to<br>very stiff<br>Stiff<br><br>Clayey silt<br>with sand,<br>traces of<br>gravel. |             | 1       | SS   | 12           | 600                            |  |      |      |      |  |                 |    |                     |         |             |                  |
|              |   |             | 2       | SS   | 16           |                                |  |      |      |      |  |                 |    |                     |         |             |                  |
|              |   |             | 3       | SS   | 68           |                                |  |      |      |      |  |                 |    |                     |         |             |                  |
|              |   |             | 4       | SS   | 49           |                                |  | 590  |      |      |  |                 |    |                     |         |             | 4 27 37 32       |
|              |   |             | 5       | SS   | 24           |                                |  |      |      |      |  |                 |    |                     |         |             |                  |
|              |   |             | 6       | SS   | 20           |                                |  |      |      |      |  |                 |    |                     |         |             |                  |
|              |   |             | 7       | SS   | 18           |                                |  | 580  |      |      |  |                 |    |                     |         |             |                  |
|              |   |             | 8       | TW   | PM           |                                |  |      |      |      |  |                 |    |                     |         |             | 137.5 2 29 40 29 |
|              |   |             | 9       | SS   | 13           |                                |  | 570  |      |      |  |                 |    |                     |         |             |                  |
|              |   |             | 10      | TW   | PM           |                                |  |      |      |      |  |                 |    |                     |         |             | 138              |
|              |   |             | 11      | SS   | 13           |                                |  | 560  |      |      |  |                 |    |                     |         |             |                  |
|              |   |             | 12      | TW   | PM           |                                |  |      |      |      |  |                 |    |                     |         |             |                  |
|              |   |             | 13      | TW   | PM           |                                |  | 550  |      |      |  |                 |    |                     |         |             |                  |
|              | sand seams  |             | 14      | TW   | PM           | 540                            |  |      |      |      |  |                 |    |                     |         |             |                  |
|              |   |             | 15      | TW   | PM           | 530                            |  |      |      |      |  |                 |    |                     |         |             |                  |
|              |   |             | 16      | TW   | PM           | 520                            |  |      |      |      |  |                 |    |                     |         |             |                  |
| 80.0         | Clay layer  |             | 17      | TW   | PM           | 510                            |  |      |      |      |  |                 |    |                     |         | 1 1 32 66   |                  |
| 81.5         |   |             | 18      | TW   | PM           | 500                            |  |      |      |      |  |                 |    |                     |         |             |                  |
|              |   |             | 19      | TW   | PM           | 490                            |  |      |      |      |  |                 |    |                     |         |             |                  |
|              |   |             | 20      | TW   | PM           | 480                            |  |      |      |      |  |                 |    |                     |         |             |                  |
| 477.1        | Probable Bedrock  |             |         |      |              |                                |  |      |      |      |  |                 |    |                     |         |             |                  |
| 126.5        | End of Borehole   |             |         |      |              |                                |  |      |      |      |  |                 |    |                     |         |             |                  |

20  
15.5  
10  
% strain at failure

DEPARTMENT OF HIGHWAYS - ONTARIO

MATERIALS & TESTING DIVISION

RECORD OF BOREHOLE NO. 91

FOUNDATION SECTION

JOB 68-F-15-3 LOCATION Co-ords. 99,741 N; 86,933 E. ORIGINATED BY GEH  
W P 259-66-020 BORING DATE April 11, 1968 COMPILED BY AMS  
DATUM Geodetic BOREHOLE TYPE Washbore - NX Casing CHECKED BY 1/1

| SOIL PROFILE  |   |             | SAMPLES |      |              | ELEV SCALE | DYNAMIC PENETRATION RESISTANCE   |    |    |    |     | LIQUID LIMIT — WL<br>PLASTIC LIMIT — WP<br>WATER CONTENT — W |    |    | BULK DENSITY<br>PCF | REMARKS |
|---------------|---|-------------|---------|------|--------------|------------|--|----|----|----|-----|--|----|----|---------------------|---------|
| ELEV DEPTH    | DESCRIPTION   | STRAT. PLOT | NUMBER  | TYPE | BLOWS / FOOT |            | 20   | 40 | 60 | 80 | 100 | 10   | 20 | 30 |                     |         |
| 604.0         | Ground Level  |             |         |      |              |            | SHEAR STRENGTH P S F<br>+ Field Vane • Triaxial<br>o Unconfined x Lab Vane |    |    |    |     | WATER CONTENT %  |    |    |                     |         |
| 0.0           | Clayey silt with sand,<br>traces of gravel.<br><br>Hard to<br>very stiff<br>Stiff |             | 1       | SS   | 15           | 600        |  |    |    |    |     |  |    |    |                     |         |
|               |   |             | 2       | SS   | 13           |            |  |    |    |    |     |  |    |    |                     |         |
|               |   |             | 3       | SS   | 13           |            |  |    |    |    |     |  |    |    |                     |         |
|               |   |             | 4       | SS   | 31           |            |  |    |    |    |     |  |    |    |                     |         |
|               |   |             | 5       | SS   | 27           |            |  |    |    |    |     |  |    |    |                     |         |
|               |   |             | 6       | SS   | 25           |            |  |    |    |    |     |  |    |    |                     |         |
|               |   |             | 7       | TW   | PM           |            |  |    |    |    |     |  |    |    |                     |         |
|               |   |             | 8       | SS   | 20           |            |  |    |    |    |     |  |    |    |                     |         |
|               |   |             | 9       | TW   | PM           |            |  |    |    |    |     |  |    |    |                     |         |
|               |   |             | 10      | SS   | 16           |            |  |    |    |    |     |  |    |    |                     |         |
| 554.0<br>43.0 |   |             |         | 11   | TW           | PM         |  |    |    |    |     |  |    |    |                     |         |
| 551.0         |   |             |         |      |              |            |  |    |    |    |     |  |    |    |                     |         |
| 53.0          | End of Borehole   |             |         |      |              |            |  |    |    |    |     |  |    |    |                     |         |

120/9"

2 28 40 39

135 2 28 41 29

8 28 42 22

20  
15  $\diamond$  5 % strain at failure  
10

[illegible]



|                                  |  |  |                                  |  |  |  |  |  |                   |  |
|----------------------------------|--|--|----------------------------------|--|--|--|--|--|-------------------|--|
| DEPARTMENT OF HIGHWAYS - ONTARIO |  |  | RECORD OF BOREHOLE NO. 93        |  |  |  | FOUNDATION SECTION                     |  |                   |  |
| MATERIALS & TESTING DIVISION     |  |  | JOB 68-F-15-3                    |  |  |  | LOCATION Co-ords. 99,804 N.; 86,717 E. |  | ORIGINATED BY AMS |  |
| W.P. 259-66-020                  |  |  | BORING DATE April 16, 1968       |  |  |  | COMPILED BY AMS                        |  | CHECKED BY        |  |
| DATUM Geodetic                   |  |  | BOREHOLE TYPE Cont. Flight Auger |  |  |  |  |  |                   |  |

| SOIL PROFILE |  |                             | SAMPLES |      |              | DYNAMIC PENETRATION RESISTANCE |    |    |    | LIQUID LIMIT |     |                 | BULK DENSITY | REMARKS |                 |
|--------------|--|-----------------------------|---------|------|--------------|--------------------------------|----|----|----|--------------|-----|-----------------|--------------|---------|-----------------|
| ELEV. DEPTH  | DESCRIPTION                              | STRAT. PLT                  | NUMBER  | TYPE | BLOWS / FOOT | BLOWS / FOOT                   | 20 | 40 | 60 | 80           | 100 | WATER CONTENT % |              |         | WATER CONTENT % |
| 603.9        | Ground Level                             |                             |         |      |              |                                |    |    |    |              |     |                 |              |         |                 |
| 0.0          | Clayey silt with sand, traces of gravel. | Hard to very stiff<br>Stiff | 1       | SS   | 7            |                                |    |    |    |              |     |                 |              |         |                 |
|              |  |                             | 2       | SS   | 24           |                                |    |    |    |              |     |                 |              |         |                 |
|              |  |                             | 3       | SS   | 49           |                                |    |    |    |              |     |                 |              |         |                 |
|              |  |                             | 4       | SS   | 54           |                                |    |    |    |              |     |                 |              |         |                 |
|              |  |                             | 5       | SS   | 21           |                                |    |    |    |              |     |                 |              |         |                 |
|              |  |                             | 6       | SS   | 20           |                                |    |    |    |              |     |                 |              |         |                 |
|              |  |                             | 7       | TW   | PM           |                                |    |    |    |              |     |                 |              |         |                 |
|              |  |                             | 8       | TW   | PM           |                                |    |    |    |              |     |                 |              |         |                 |
|              |  |                             | 9       | TW   | PM           |                                |    |    |    |              |     |                 |              |         |                 |
|              |  |                             | 10      | TW   | PM           |                                |    |    |    |              |     |                 |              |         |                 |
|              |  |                             | 11      | TW   | PM           |                                |    |    |    |              |     |                 |              |         |                 |
| 543.9        | Sand seams                               |                             | 12A     | SS   | -            |                                |    |    |    |              |     |                 |              |         |                 |
| 60.0         |  |                             |         |      |              |                                |    |    |    |              |     |                 |              |         |                 |
| 538.9        |  |                             | 13      | TW   | PM           |                                |    |    |    |              |     |                 |              |         |                 |
| 65.0         |  |                             |         |      |              |                                |    |    |    |              |     |                 |              |         |                 |
| 475.9        | Probable Bedrock End of Borehole         |                             |         |      |              |                                |    |    |    |              |     |                 |              |         |                 |
| 128.0        |  |                             |         |      |              |                                |    |    |    |              |     |                 |              |         |                 |
|              |  |                             |         |      |              |                                |    |    |    |              |     |                 |              |         |                 |
|              |  |                             |         |      |              |                                |    |    |    |              |     |                 |              |         |                 |

20  
15-5 % strain at failure  
10

[illegible]

DEPARTMENT OF HIGHWAYS - ONTARIO

MATERIALS & TESTING DIVISION

RECORD OF BOREHOLE NO. 95

FOUNDATION SECTION

JOB 68-F-15-3 LOCATION Co-ords. 99,733 N; 86,805 E. ORIGINATED BY AMS  
W.P. 259-66-020 BORING DATE April 16, 1968 COMPILED BY AMS  
DATUM Geodetic BOREHOLE TYPE Continuous Flight Auger CHECKED BY

| SOIL PROFILE   |   |             | SAMPLES |      |              | DYNAMIC PENETRATION RESISTANCE<br>BLOWS / FOOT |    |    |    |     | LIQUID LIMIT ——— W L<br>PLASTIC LIMIT ——— W P<br>WATER CONTENT ——— W |      |      | BULK<br>DENSITY<br>PCF | REMARKS |      |      |     |     |
|----------------|---|-------------|---------|------|--------------|--|----|----|----|-----|--|------|------|------------------------|---------|------|------|-----|-----|
| ELEV.<br>DEPTH | DESCRIPTION   | STRAT. PLOT | NUMBER  | TYPE | BLOWS / FOOT | 20   | 40 | 60 | 80 | 100 | 500  | 1000 | 1500 |                        |         | 2000 | 2500 | W P | W L |
| 603.6          | Ground Level  |             |         |      |              |  |    |    |    |     |  |      |      |                        |         |      |      |     |     |
|                | Clayey silt<br>with sand,<br>traces of<br>gravel.<br><br>Hard to<br>very stiff<br>Stiff |             | 1       | SS   | 27           |  |    |    |    |     |  |      |      |                        |         |      |      |     |     |
|                |   |             | 2       | SS   | 34           |  |    |    |    |     |  |      |      |                        |         |      |      |     |     |
|                |   |             | 3       | SS   | 17           |  |    |    |    |     |  |      |      |                        |         |      |      |     |     |
|                |   |             | 4       | TW   | PH           |  |    |    |    |     |  |      |      |                        |         |      |      |     |     |
| 580.0<br>23.0  |   |             | 5       | TW   | PH           |  |    |    |    |     |  |      |      |                        |         |      |      |     |     |
| 570.6          |   |             | 6       | TW   | PH           |  |    |    |    |     |  |      |      |                        |         |      |      |     |     |
| 33.0           | End of Borehole   |             |         |      |              |  |    |    |    |     |  |      |      |                        |         |      |      |     |     |

20  
15-5% strain at failure  
10

| DEPARTMENT OF HIGHWAYS - ONTARIO   |  |  |            |                |      | RECORD OF BOREHOLE NO. 96        |            |   |  |  |  |  |  | FOUNDATION SECTION |  |  |  |                             |  |  |  |                  |                     |  |  |  |            |                |  |  |  |  |
|--|--|--|------------|----------------|------|----------------------------------|------------|---|--|--|--|--|--|--------------------|--|--|--|-----------------------------|--|--|--|------------------|---------------------|--|--|--|------------|----------------|--|--|--|--|
| MATERIALS & TESTING DIVISION   |  |  |            |                |      |                                  |            |   |  |  |  |  |  |                    |  |  |  |                             |  |  |  |                  |                     |  |  |  |            |                |  |  |  |  |
| JOB  | 68-F-15-3  |  |            |                |      | LOCATION Co-ords.                |            |   |  |  |  |  |  | 99,807 N;          |  |  |  | 87,142 E.                   |  |  |  | ORIGINATED BY AP |                     |  |  |  |            |                |  |  |  |  |
| W.P.   | 259-66-020   |  |            |                |      | BORING DATE April 16, 1968       |            |   |  |  |  |  |  |                    |  |  |  |                             |  |  |  | COMPILED BY AMS  |                     |  |  |  |            |                |  |  |  |  |
| DATUM  | Geodetic   |  |            |                |      | BOREHOLE TYPE Cont. flight auger |            |   |  |  |  |  |  |                    |  |  |  |                             |  |  |  | CHECKED BY       |                     |  |  |  |            |                |  |  |  |  |
| ELEV DEPTH   | SOIL PROFILE DESCRIPTION   |  | STRAT F OT | SAMPLES NUMBER | Type | BLOWS / FOOT                     | ELEV SCALE | DYNAMIC PENETRATION RESISTANCE<br>BLOWS / FOOT<br>20 40 60 80 100 |  |  |  |  | LIQUID LIMIT --- W L<br>PLASTIC LIMIT --- WP<br>WATER CONTENT --- WL |                    |  |  |  | WATER CONTENT %<br>10 20 30 |  |  |  |                  | BULK DENSITY<br>PCF |  |  |  |            | REMARKS        |  |  |  |  |
|  |  |  |            |                |      |                                  |            | SHEAR STRENGTH P.S.F.<br>+ Field Vane • Triaxial<br>o Unconfined  |  |  |  |  |  |                    |  |  |  |                             |  |  |  |                  |                     |  |  |  |            |                |  |  |  |  |
| 602.8  | Ground Level   |  |            |                |      |                                  |            | 500 1000 1500 2000 2500   |  |  |  |  |  |                    |  |  |  |                             |  |  |  |                  |                     |  |  |  |            | Gr. Sa. Si. Cl |  |  |  |  |
| 0.0  | Clayey silt with sand,<br>traces of gravel.<br><br>Hard to very stiff. |  |            | 1              | SS   | 6                                | 600        |   |  |  |  |  |  |                    |  |  |  |                             |  |  |  |                  |                     |  |  |  |            | 1 28 39 32     |  |  |  |  |
|  |  |  |            | 2              | SS   | 37                               |            |   |  |  |  |  |  |                    |  |  |  |                             |  |  |  |                  |                     |  |  |  |            |                |  |  |  |  |
|  |  |  |            | 3              | SS   | 74                               |            |   |  |  |  |  |  |                    |  |  |  |                             |  |  |  |                  |                     |  |  |  |            |                |  |  |  |  |
|  |  |  |            | 4              | SS   | 36                               | 590        |   |  |  |  |  |  |                    |  |  |  |                             |  |  |  |                  |                     |  |  |  |            |                |  |  |  |  |
|  |  |  |            | 5              | SS   | 38                               |            |   |  |  |  |  |  |                    |  |  |  |                             |  |  |  |                  |                     |  |  |  |            |                |  |  |  |  |
|  |  |  |            | 6              | SS   | 34                               |            |   |  |  |  |  |  |                    |  |  |  |                             |  |  |  |                  |                     |  |  |  |            |                |  |  |  |  |
|  |  |  |            | 7              | SS   | 33                               | 580        |   |  |  |  |  |  |                    |  |  |  |                             |  |  |  |                  |                     |  |  |  |            |                |  |  |  |  |
|  |  |  |            | 8              | SS   | 22                               |            |   |  |  |  |  |  |                    |  |  |  |                             |  |  |  |                  |                     |  |  |  |            |                |  |  |  |  |
|  |  |  |            | 9              | TW   | PH                               | 570        |   |  |  |  |  |  |                    |  |  |  |                             |  |  |  |                  |                     |  |  |  |            |                |  |  |  |  |
|  |  |  |            | 10             | TW   | PH                               | 560        |   |  |  |  |  |  |                    |  |  |  |                             |  |  |  |                  |                     |  |  |  |            |                |  |  |  |  |
| 559.8  |  |  |            |                |      |                                  |            |   |  |  |  |  |  |                    |  |  |  |                             |  |  |  |                  |                     |  |  |  | 2 28 42 28 |                |  |  |  |  |
| 43.0   | End of Borehole  |  |            |                |      |                                  |            |   |  |  |  |  |  |                    |  |  |  |                             |  |  |  |                  |                     |  |  |  |            |                |  |  |  |  |
| <div style="text-align: center;"> <p>20</p> <p>15 ÷ 5 % strain at failure</p> <p>10</p> </div> |  |  |            |                |      |                                  |            |   |  |  |  |  |  |                    |  |  |  |                             |  |  |  |                  |                     |  |  |  |            |                |  |  |  |  |



DEPARTMENT OF HIGHWAYS - ONTARIO

MATERIALS &amp; TESTING DIVISION

## RECORD OF BOREHOLE NO. 98

FOUNDATION SECTION

JOB 68-F-15-3

LOCATION Co-ords. 99,045 N; 89,265 E.

ORIGINATED BY AMS

W P

BORING DATE April 16 &amp; 17, 1968

COMPILED BY AMS

DATUM Geodetic

BOREHOLE TYPE Washbore &amp; BX Casing

CHECKED BY

| SOIL PROFILE  |   |            | SAMPLES |      |              | DYNAMIC PENETRATION RESISTANCE |              |    |    |    | LIQUID LIMIT |     |               | BULK DENSITY | REMARKS |
|---------------|---|------------|---------|------|--------------|--------------------------------|--------------|----|----|----|--------------|-----|---------------|--------------|---------|
| ELEV<br>DEPTH | DESCRIPTION                                 | STRAT PLOT | NUMBER  | TYPE | BLOWS / FOOT | ELEV SCALE                     | BLOWS / FOOT | 20 | 40 | 60 | 80           | 100 | WATER CONTENT |              |         |
| 600.3         | Ground Level                                |            |         |      |              |                                |              |    |    |    |              |     |               |              |         |
| 0.0           |   |            | 1       | SS   | 13           |                                |              |    |    |    |              |     |               |              |         |
|               |   |            | 2       | SS   | 38           |                                |              |    |    |    |              |     |               |              |         |
|               |   |            | 3       | SS   | 43           |                                |              |    |    |    |              |     |               |              |         |
|               | Clayey silt with sand,<br>traces of gravel. |            | 4       | SS   | 40           | 590                            |              |    |    |    |              |     |               |              |         |
|               |   |            | 5       | SS   | 27           |                                |              |    |    |    |              |     |               |              |         |
|               |   |            | 6       | SS   | 17           | 580                            |              |    |    |    |              |     |               |              |         |
|               |   |            | 7       | TW   | PM           |                                |              |    |    |    |              |     |               |              |         |
|               | Hard to<br>very stiff                       |            | 8       | TW   | PM           | 570                            |              |    |    |    |              |     |               |              |         |
|               |   |            | 9       | TW   | PM           |                                |              |    |    |    |              |     |               |              |         |
|               |   |            | 10      | TW   | PM           | 560                            |              |    |    |    |              |     |               |              |         |
|               |   |            | 11      | TW   | PM           | 550                            |              |    |    |    |              |     |               |              |         |
| 547.3         |   |            |         |      |              |                                |              |    |    |    |              |     |               |              |         |
| 53.0          | End of Borehole                             |            |         |      |              |                                |              |    |    |    |              |     |               |              |         |

20  
15 + 5 % strain at failure  
10

DEPARTMENT OF HIGHWAYS - ONTARIO

MATERIALS & TESTING DIVISION

RECORD OF BOREHOLE NO. 99

FOUNDATION SECTION

JOB 68-F-15-3 LOCATION Co-ords. 99,015 N; 89,343 E. ORIGINATED BY AMS  
W.P.                      BORING DATE April 17, 1968 COMPILED BY AMS  
DATUM Geodetic BOREHOLE TYPE Cont. flight auger CHECKED BY                     

| SOIL PROFILE |  |            | SAMPLES |      |              | DYNAMIC PENETRATION RESISTANCE |                                 |   |                         |                             | LIQUID LIMIT ——— W L<br>PLASTIC LIMIT ——— W P<br>WATER CONTENT ——— W |  |  | BULK DENSITY<br>P C F | REMARKS         |
|--------------|--|------------|---------|------|--------------|--------------------------------|---------------------------------|---|-------------------------|-----------------------------|--|--|--|-----------------------|-----------------|
| ELEV. DEPTH  | DESCRIPTION                              | STRAT. PLT | NUMBER  | TYPE | BLOWS / FOOT | ELEV. SCALE                    | BLOWS / FOOT<br>20 40 60 80 100 | SHEAR STRENGTH P S F<br>+ Field Vane • Triaxial<br>o Unconfined | 500 1000 1500 2000 2500 | WATER CONTENT %<br>10 20 30 |  |  |  |                       |                 |
| 600.4        | Ground Level                             |            |         |      |              |                                |                                 |   |                         |                             |  |  |  |                       | Gr. Sa. Si. Cl. |
| 0.0          |  |            | 1       | SS   | 13           |                                |                                 |   |                         |                             |  |  |  |                       |                 |
|              |  |            | 2       | SS   | 43           |                                |                                 |   |                         |                             |  |  |  |                       | 1 32 30 27      |
|              |  |            | 3       | SS   | 66           | 590                            |                                 |   |                         |                             |  |  |  |                       |                 |
|              |  |            | 4       | SS   | 54           |                                |                                 |   | 100/107                 |                             |  |  |  |                       |                 |
|              |  |            | 5       | SS   | 25           |                                |                                 |   |                         |                             |  |  |  |                       | 2 23 52 23      |
|              |  |            | 6       | SS   | 18           | 580                            |                                 |   |                         |                             |  |  |  |                       |                 |
|              |  |            | 7       | TW   | PM           |                                |                                 | o   |                         |                             |  |  |  | 134                   |                 |
| 572.4        | Hard to very stiff                       |            | 8       | TW   | PM           | 570                            |                                 | o   | + 2.2                   |                             |  |  |  | 134                   |                 |
| 570.0        | Stiff                                    |            | 9       | TW   | PM           |                                |                                 |   | + 1.6                   |                             |  |  |  |                       |                 |
|              |  |            | 10      | TW   | PM           | 560                            |                                 | o   | + 2.7                   |                             |  |  |  | 137.5                 | 2 30 38 30      |
|              | Clayey silt with sand, traces of gravel. |            | 11      | TW   | PM           | 550                            |                                 | o   | + 2.0                   |                             |  |  |  | 132                   |                 |
| 539.4        |  |            | 12A     | SS   | 13           | 540                            |                                 |   |                         |                             |  |  |  |                       |                 |
| 61.0         | Sand seams                               |            |         |      |              |                                |                                 |   |                         |                             |  |  |  |                       |                 |
| 534.4        |  |            | 13      | TW   | PM           | 530                            |                                 |   | + 2.1                   |                             |  |  |  |                       |                 |
| 66.0         |  |            | 14      | TW   | PM           | 520                            |                                 |   | + 1.9                   |                             |  |  |  |                       |                 |
|              |  |            |         |      |              | 510                            |                                 |   |                         |                             |  |  |  |                       |                 |
|              |  |            |         |      |              | 500                            |                                 |   |                         |                             |  |  |  |                       |                 |
|              |  |            |         |      |              | 490                            |                                 |   |                         |                             |  |  |  |                       |                 |
|              |  |            |         |      |              | 480                            |                                 |   |                         |                             |  |  |  |                       |                 |
| 126.0        | Probable Bedrock End of Borehole         |            |         |      |              |                                |                                 | 15 20 5 % strain at failure                                     |                         |                             |  |  |  |                       |                 |

DEFECTS IN NEGATIVE DUE TO  
CONDITION OF ORIGINAL DOCUMENT

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DEPARTMENT OF HIGHWAYS - ONTARIO

## MATERIALS &amp; TESTING DIVISION

JOB 68-F-15

LOCATION Co-ords. 99.145 N; 89.342 E.

W P

BORING DATE April 17 & 18, 1968

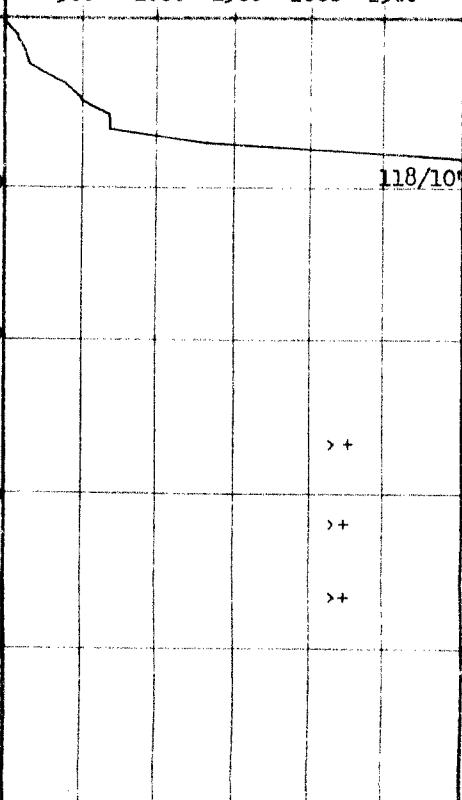
ORIGINATED BY **AMS**

DATUM Geodetic

BOREHOLE TYPE Washbore - BX Casing

COMPILED BY **AMS**

CHECKED BY

| SOIL PROFILE   |  | SAMPLES                  | DYNAMIC PENETRATION RESISTANCE<br>BLOWS / FOOT  | LIVID LIMIT ——— %<br>PLASTIC LIMIT ——— %<br>WATER CONTENT ——— % | BULK DENSITY<br>$\gamma_{pc}$ | REMARKS    |
|----------------|--|--------------------------|---|---|-------------------------------|------------|
| ELEV.<br>DEPTH | DESCRIPTION                              | NUMBER TYPE BLOWS / FOOT | <br>20    40    60    80    100<br>+ Field Vane • Triaxial<br>○ Unconfined<br>500   1000   1500   2000   2500 | % P      W      L<br>—————<br>10     20     30                  |                               |            |
| 600.4          | Ground Level                             |                          |   |   |                               |            |
| 0.0            | Clayey silt with sand, traces of gravel. | 1 SS 14                  |                            |   |                               |            |
|                | Hard to very stiff.                      | 2 SS 31                  |   |   |                               |            |
|                |  | 3 SS 45                  |   |   |                               |            |
|                |  | 4 SS 45                  |   |   |                               |            |
|                |  | 5 SS 24                  |   |   |                               |            |
|                |  | 6 SS 14                  |   |   |                               |            |
|                |  | 7 SS 10                  |   | > +   |                               |            |
|                |  | 8 SS 12                  | > +   |   |                               |            |
|                |  | 9 SS 16                  | > +   |   |                               | 4 28 41 27 |
|                |  | 10 SS 16                 |   |   |                               |            |
| 555.4          | Fine sand, some silt,                    |                          |   |   |                               |            |
| 45.0           | traces of clay &                         |                          |   |   |                               |            |
| 548.9          | gravel. Compact.                         | 11 SS 22                 |   |   |                               | 5 73 13 9  |
| 51.5           | End of Borehole                          |                          |   |   |                               |            |
|                |  |                          | 20<br>15 ± 5 % strain at failure<br>10  |   |                               |            |

[illegible]



FOUNDATION SECTION

CHECKED BY                     

| SOIL PROFILE   |   |             | SAMPLES |      |              | ELEV SCALE | DYNAMIC PENETRATION RESISTANCE             | LIQUID LIMIT ——— W <sub>L</sub><br>PLASTIC LIMIT ——— W <sub>P</sub><br>WATER CONTENT ——— W<br>W <sub>P</sub> ——— W <sub>L</sub> | BULK DENSITY<br>P C F | REMARKS        |                 |
|----------------|---|-------------|---------|------|--------------|------------|--|---|-----------------------|----------------|-----------------|
| ELEV DEPTH     | DESCRIPTION                                       | STRAT. PLOT | NUMBER  | TYPE | BLOWS / FOOT |            | SHEAR STRENGTH P S F                       |   |                       |                | WATER CONTENT % |
|                |   |             |         |      |              |            | + Field Vane • Triaxial<br>o Unconfined    |   |                       |                |                 |
| 590.7          | Ground Level                                      |             |         |      |              |            | 20 40 60 80 100<br>500 1000 1500 2000 2500 | 10 20 30  |                       | Gr.Sa.Si.Cl    |                 |
|                |   |             | 1       | SS   | 22           |            |  |   |                       |                |                 |
|                |   |             | 2       | SS   | 32           |            |  |   |                       | 2 11 52 35     |                 |
|                |   |             | 3       | SS   | 47           | 580        |  |   |                       |                |                 |
|                |   |             | 4       | SS   | 37           |            |  |   |                       |                |                 |
|                |   |             | 5       | SS   | 21           |            |  |   |                       |                |                 |
|                |   |             | 6       | SS   | 19           | 570        |  |   |                       | 3 25 45 27     |                 |
|                |   |             | 7       | SS   | 20           |            |  |   |                       |                |                 |
|                |   |             | 8       | SS   | 19           | 560        |  |   |                       |                |                 |
| 558.7<br>3-2-8 | Hard to<br><u>very stiff</u><br>Stiff             |             | 9       | TW   | PM           |            | + 1.5                                      |   |                       |                |                 |
|                | Clayey silt<br>with sand,<br>traces of<br>gravel. |             | 10      | TW   | PM           | 550        | + 1.7                                      |   |                       | 134 1 29 45 25 |                 |
|                |   |             | 11      | TW   | PM           | 540        | + 1.6                                      |   |                       |                |                 |
|                |   |             | 12      | TW   | PM           | 530        | + 1.6                                      |   |                       | 129 1 21 48 30 |                 |
|                |   |             | 13      | TW   | PM           | 520        | + 2.0                                      |   |                       |                |                 |
|                |   |             | 14      | TW   | PM           | 510        | + 1.9                                      |   |                       | 135 2 30 42 26 |                 |
|                |   |             |         |      |              | 500        |  |   |                       |                |                 |
|                |   |             |         |      |              | 490        |  |   |                       |                |                 |
|                |   |             |         |      |              | 480        |  |   |                       |                |                 |
| 486.7          |   |             |         |      |              |            |  |   |                       |                |                 |
| 114.0          | Probable Bedrock<br>End of Borehole               |             |         |      |              |            | 20<br>15% strain at failure<br>10          |   |                       |                |                 |

DEPARTMENT OF HIGHWAYS - ONTARIO

MATERIALS & TESTING DIVISION

# RECORD OF BOREHOLE NO. 105

FOUNDATION SECTION

JOB 68-F-15-3 LOCATION Co-ords. 100,023 N; 93,280 E. ORIGINATED BY AP  
W P 259-66-030 BORING DATE April 18, 1968 COMPILED BY AMS  
DATUM Geodetic BOREHOLE TYPE Washbore - NX Casing CHECKED BY AMS

| SOIL PROFILE  |   | SAMPLES    |        |      | DYNAMIC PENETRATION RESISTANCE |            |    |    |    | LIQUID LIMIT --- WL<br>PLASTIC LIMIT --- WP<br>WATER CONTENT --- W |     |     | BULK DENSITY<br>PCF | REMARKS |   |    |
|---------------|---|------------|--------|------|--------------------------------|------------|----|----|----|--|-----|-----|---------------------|---------|---|----|
| ELEV<br>DEPTH | DESCRIPTION   | STRAT PLOT | NUMBER | TYPE | BLOWS / FOOT                   | ELEV SCALE | 20 | 40 | 60 | 80   | 100 | W P |                     |         | W | WL |
| 591.1         | Ground Level  |            |        |      |                                |            |    |    |    |  |     |     |                     |         |   |    |
| 0.0           | Clayey silt with sand, traces of gravel.<br><br>Very stiff. |            | 1      | SS   | 10                             | 590        |    |    |    |  |     |     |                     |         |   |    |
|               |   |            | 2      | SS   | 28                             |            |    |    |    |  |     |     |                     |         |   |    |
|               |   |            | 3      | SS   | 22                             |            |    |    |    |  |     |     |                     |         |   |    |
|               |   |            | 4      | SS   | 25                             | 580        |    |    |    |  |     |     |                     |         |   |    |
|               |   |            | 5      | SS   | 17                             |            |    |    |    |  |     |     |                     |         |   |    |
|               |   |            | 6      | SS   | 12                             | 570        |    |    |    |  |     |     |                     |         |   |    |
|               |   |            | 7      | TV   | PM                             |            |    |    |    |  |     |     |                     |         |   |    |
|               |   |            | 8      | SS   | 11                             | 560        |    |    |    |  |     |     |                     |         |   |    |
| 554.6         |   |            | 9      | TV   | PM                             |            |    |    |    |  |     |     |                     |         |   |    |
| 36.5          | End of Borehole   |            |        |      |                                |            |    |    |    |  |     |     |                     |         |   |    |

20  
15 + 5% strain at failure  
10

DEPARTMENT OF HIGHWAYS - ONTARIO

## MATERIALS & TESTING DIVISION

JOB 68-F-15-3

LOCATION Co-ords. 100,085 N; 93,446 E.

ORIGINATED BY AMS

W. P. 259-66-030

BORING DATE April 18 & 19, 1968

COMPILED BY                      AMS

DATUM Geodetic

BOREHOLE TYPE Penn Drill & Core Drill

CHECKED BY \_\_\_\_\_

## RECORD OF BOREHOLE NO. 106

FOUNDATION SECTION

| SOIL PROFILE                     |   |             | SAMPLES        |        |              | DYNAMIC PENETRATION RESISTANCE<br>BLOWS / FOOT                        | Liquid Limit ———— WL<br>Plastic Limit ———— WP<br>Water Content ———— W <sub>p</sub> | BULK DENSITY<br>$\rho_{cf}$ | REMARKS         |
|----------------------------------|---|-------------|----------------|--------|--------------|---|--|-----------------------------|-----------------|
| ELEV.<br>DEPTH                   | DESCRIPTION   | STRAT. PLT. | NUMBER         | TYPE   | BLOWS / FOOT | SHEAR STRENGTH P.S.F.<br>+ Field Vane      • Triaxial<br>○ Unconfined | WATER CONTENT %<br>10    20    30  |                             |                 |
| 591.9<br>0.0                     | Ground Level  |             |                |        |              | 500   1000   1500   2000   2500                                       |  |                             |                 |
|                                  |   |             | 1              | SS     | 9            |   |  |                             |                 |
|                                  |   |             | 2              | SS     | 9            |   |  |                             |                 |
|                                  |   |             | 3              | SS     | 28           |   |  |                             |                 |
|                                  |   |             | 4              | SS     | 15           |   |  |                             |                 |
|                                  |   |             | 5              | SS     | 12           |   |  |                             |                 |
|                                  |   |             | 6              | TW     | PH           | +1.7  |  |                             | 2 26 40 32      |
|                                  |   |             | 7              | TW     | PH           | +1.6  |  |                             | 134             |
| -60.0<br>51.0                    | Clayey silt with sand,<br>traces of gravel.<br><br>Stiff to very stiff. |             | 8              | TW     | PH           | +1.8  |  |                             | 135             |
|                                  |   |             | 9              | TW     | PH           | +1.8  |  |                             |                 |
|                                  |   |             | 10             | TW     | PH           | +1.8  |  |                             | 135             |
|                                  |   |             | 11             | TW     | PH           |   |  |                             |                 |
|                                  |   |             | 12             | TW     | PH           | +2.5  |  |                             |                 |
|                                  |   |             | 13             | TW     | RH           | +4.0  |  |                             | 115 - 0 0 (100) |
|                                  |   |             | <del>14A</del> | SS     | -            |   |  |                             |                 |
|                                  |   |             | 15             | SS     | 6            | +1.3  |  |                             |                 |
|                                  |   |             | 16             | SS     | 37           |   |  |                             |                 |
| 470.2<br>421.7<br>465.2<br>126.7 | Limestone Bedrock   |             | 17             | AXT RC | Rec 100%     |   |  |                             |                 |
|                                  | End of Borehole   |             |                |        |              | 20% strain at failure   |  |                             |                 |

DEPARTMENT OF HIGHWAYS - ONTARIO  
MATERIALS & TESTING DIVISION  
JOB 68-F-15-3  
W. P. \_\_\_\_\_  
DATUM Geodetic

RECORD OF BOREHOLE NO. 107

FOUNDATION SECTION

|                       |  |                          |
|-----------------------|--|--------------------------|
| JOB <u>68-F-15-3</u>  | LOCATION <u>Co-ords. 100,029 N; 94,023 E.</u>    | ORIGINATED BY <u>AMS</u> |
| W.P. _____            | BORING DATE <u>April 18 &amp; 19, 1968</u>       | COMPILED BY <u>AMS</u>   |
| DATUM <u>Geodetic</u> | BOREHOLE TYPE <u>Penn Drill &amp; Core Drill</u> | CHECKED BY <u>AMS</u>    |

[illegible]

DEPARTMENT OF HIGHWAYS - ONTARIO

## MATERIALS &amp; TESTING DIVISION

108 68-F-15-3

LOCATION Co-ords. 100,158 N; 93,445 E.

ORIGINATED BY AMS

259-66-030

MOBING DATE April 19 & 22, 1968

COMPILED BY AMS

DATUM Geodetic

BOREHOLE TYPE Cont. flight auger

CHECKED BY                     

## RECORD OF BOREHOLE NO. 108

FOUNDATION SECTION

[illegible]

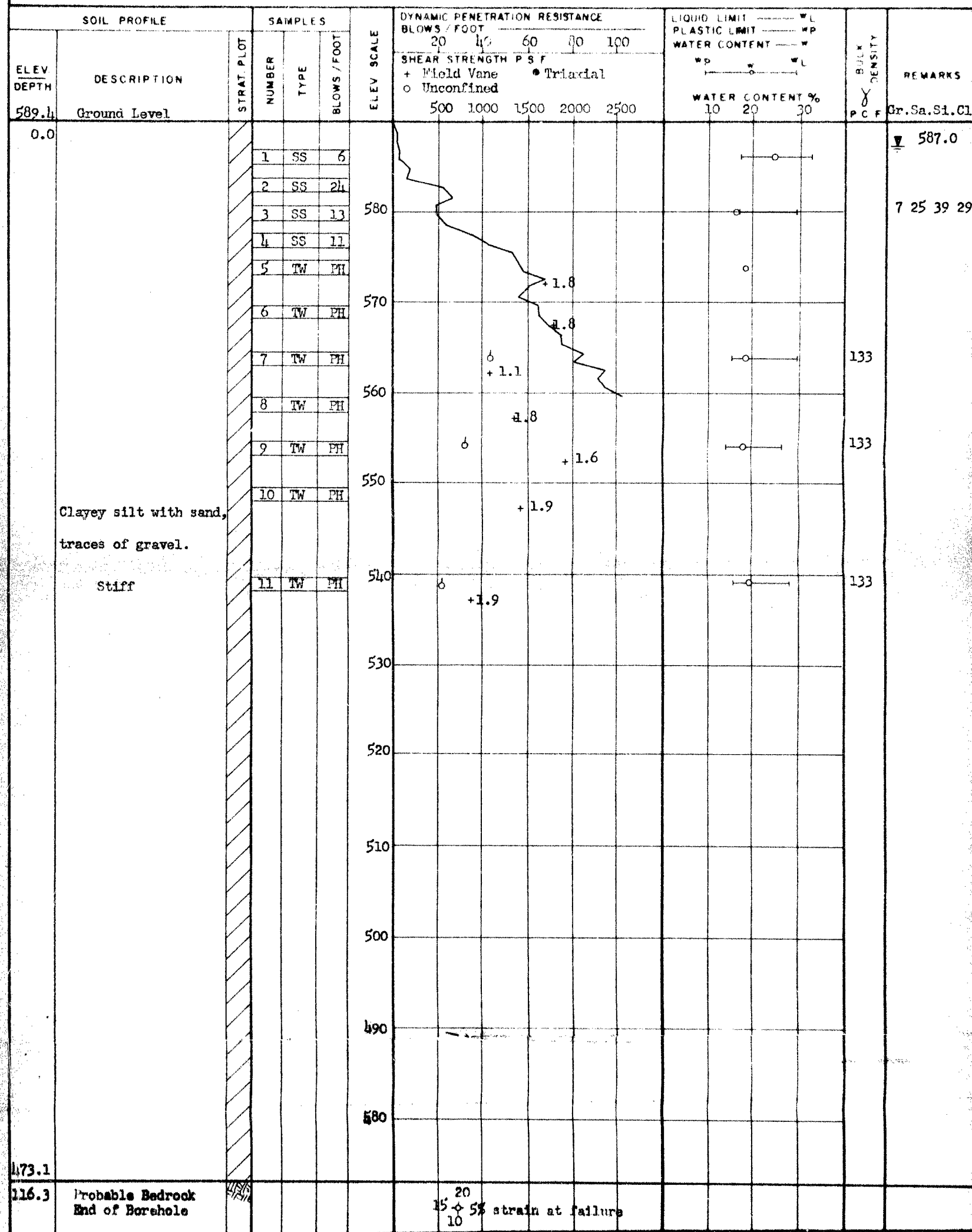


DEPARTMENT OF HIGHWAYS - ONTARIO  
MATERIALS & TESTING DIVISION

RECORD OF BOREHOLE NO. 109

FOUNDATION SECTION

JOB 68-F-15-3 LOCATION Co-ords. 99,799 N; 93,366 E. ORIGINATED BY AMS  
W.P. 259-66-030 BORING DATE April 22, 1968 COMPILED BY AMS  
DATUM Geodetic BOREHOLE TYPE Cont. flight auger CHECKED BY AMS



[illegible]

DEPARTMENT OF HIGHWAYS - ONTARIO

## RECORD OF BOREHOLE NO. 111

FOUNDATION SECTION

MATERIALS &amp; TESTING DIVISION

108 68-5-15-3

LOCATION Co-ords. 100,214 N; 93,987 E.

ORIGINATED BY **AMS**

W P

BORING DATE April 22, 1968

COMPILED BY AMS

DATUM Geodetic

BOREHOLE TYPE Cont. Fluid auger

CHECKED BY *du f*

| SOIL PROFILE  |   | SAMPLES    |        | DYNAMIC PENETRATION RESISTANCE |              | LIQUID LIMIT ——— %<br>PLASTIC LIMIT ——— %<br>WATER CONTENT ——— % |  | BULK<br>DENSITY<br>pcf | REMARKS   |  |
|---------------|---|------------|--------|--------------------------------|--------------|--|--|------------------------|---|--|
| ELEV<br>DEPTH | DESCRIPTION   | STRAT PLOT | NUMBER | TYPE                           | BLOWS / FOOT | ELEV SCALE   | WATER CONTENT %                            |                        |   |  |
| 593.3         | Ground Level  |            |        |                                |              |  | 20 40 60 80 100<br>500 1000 1500 2000 2500 |                        |   |  |
| 0.0           | Clayey silt<br>with sand,<br>traces of<br>gravel.<br><br>Hard to<br>very stiff<br>Stiff |            | 1      | SS                             | 27           | 590  |  |                        | 588.3<br>1 14 65 20<br><br><br><br><br><br><br>135<br><br><br><br><br><br><br>135 |  |
|               |   |            | 2      | SS                             | 34           |  |  |                        |   |  |
|               |   |            | 3      | SS                             | 84           |  |  | 100/10"                |   |  |
|               |   |            | 4      | SS                             | 57           | 580  |  |                        |   |  |
|               |   |            | 5      | SS                             | 22           |  |  |                        |   |  |
|               |   |            | 6      | SS                             | 12           | 570  |  |                        |   |  |
|               |   |            | 7      | TM                             | FM           |  |  |                        |   |  |
| 566.3<br>27.0 |   |            | 8      | TM                             | FM           |  | δ  | +1.6                   |   |  |
|               |   |            | 9      | TM                             | FM           | 560  |  | +1.8                   |   |  |
|               |   |            | 10     | TM                             | FM           | 550  | δ  | +1.5                   |   |  |
| 550.3         |   |            |        |                                |              |  |  |                        | 8 30 38 24  |  |
| 43.0          | End of Borehole   |            |        |                                |              |  | 20<br>15 ± 5% strain at failure<br>10      |                        |   |  |

DEPARTMENT OF HIGHWAYS - ONTARIO

## MATERIALS &amp; TESTING DIVISION

JOB 68-F-15-3

LOCATION Co-ords. 100,053 N; 94,145 E.

FOUNDATION SECTION

ORIGINATED BY AMS

W P

BORING DATE April 22, 1968

COMPILED BY \_\_\_\_\_ AIC

DATUM Geodetic

BOREHOLE TYPE Cont. Flight meter

CHECKED BY                     

[illegible]

DEPARTMENT OF HIGHWAYS - ONTARIO  
MATERIALS & TESTING DIVISION

RECORD OF BOREHOLE NO. 113

FOUNDATION SECTION

JOB 66-P-15-3 LOCATION Co-ords. 101,600 N; 100,151 E. ORIGINATED BY AMS  
W P                      BORING DATE April 23, 1968 COMPILED BY AMS  
DATUM Geodetic BOREHOLE TYPE Cent. Flight auger CHECKED BY                     

| SOIL PROFILE |  | STRAT PLOT | SAMPLES |      |              | ELEV SCALE | DYNAMIC PENETRATION RESISTANCE<br>BLOWS / FOOT |    |    |    |     | LIQUID LIMIT — WL<br>PLASTIC LIMIT — WP<br>WATER CONTENT — W |    |   | BULK DENSITY<br>PCF | REMARKS         |
|--------------|--|------------|---------|------|--------------|------------|--|----|----|----|-----|--|----|---|---------------------|-----------------|
| ELEV DEPTH   | DESCRIPTION                              |            | NUMBER  | TYPE | BLOWS / FOOT |            | 20   | 40 | 60 | 80 | 100 | WL   | WP | W |                     |                 |
| 597.0        | Ground level                             |            |         |      |              |            |  |    |    |    |     |  |    |   |                     | Gr. Sa. Si. Cl. |
| 0.0          |  |            |         |      |              |            |  |    |    |    |     |  |    |   |                     | 595.5           |
|              | Clayey silt with sand, traces of gravel. |            | 1       | SS   | 9            |            |  |    |    |    |     |  |    |   |                     | 0 15 59 26      |
|              |  |            | 2       | SS   | 11           | 590        |  |    |    |    |     |  |    |   |                     |                 |
|              |  |            | 3       | SS   | 11           |            |  |    |    |    |     |  |    |   |                     | 0 27 44 29      |
|              |  |            | 4       | SS   | 24           |            |  |    |    |    |     |  |    |   |                     |                 |
|              |  |            | 5       | SS   | 25           |            |  |    |    |    |     |  |    |   |                     |                 |
|              |  |            | 6       | SS   | 12           | 580        |  |    |    |    |     |  |    |   |                     |                 |
|              |  |            | 7       | TV   | TM           |            |  |    |    |    |     |  |    |   |                     |                 |
|              | Stiff to very stiff.                     |            | 8       | TV   | TM           | 570        |  |    |    |    |     |  |    |   |                     |                 |
|              |  |            | 9       | TV   | TM           |            |  |    |    |    |     |  |    |   |                     |                 |
|              |  |            | 10      | TV   | TM           | 560        |  |    |    |    |     |  |    |   |                     | 6 23 39 32      |
|              |  |            | 11      | TV   | TM           |            |  |    |    |    |     |  |    |   |                     |                 |
| 554.0        | Sand seam                                |            | 12      | TV   | TM           |            |  |    |    |    |     |  |    |   |                     | 119             |
| 43.0         | End of Borehole                          |            |         |      |              |            |  |    |    |    |     |  |    |   |                     |                 |

20  
15 + 5 % stain at failure  
10

DEPARTMENT OF HIGHWAYS - ONTARIO

## MATERIALS &amp; TESTING DIVISION

JOB 68-E-15-3

LOCATION \_\_\_\_\_ Co-ords. 101,642 N; 100,252 E.

ORIGINATED BY **AMS**

W.P. BORING DATE April 23 & 24, 1968

COMPILED BY **AMS**

DATUM Geodetic

BOREHOLE TYPE Cont. flight auger

CHECKED BY                     

## RECORD OF BOREHOLE NO. 114

FOUNDATION SECTION

[illegible]

DEPARTMENT OF HIGHWAYS - ONTARIO  
MATERIALS & TESTING DIVISION

## RECORD OF BOREHOLE NO. 115

FOUNDATION SECTION

JOB 68-F-15-3 LOCATION Co-ords. 101,903 N; 100,285 E. ORIGINATED BY AMS  
W.P. Geodetic BORING DATE April 23, 1968 COMPILED BY AMS  
DATUM Geodetic BOREHOLE TYPE Cont. flight auger CHECKED BY AMS

| SOIL PROFILE  |  | SAMPLES |            | DYNAMIC PENETRATION RESISTANCE |                       | LIQUID LIMIT |      | BULK DENSITY | REMARKS    |
|---------------|--|---------|------------|--------------------------------|-----------------------|--------------|------|--------------|------------|
| ELEV<br>DEPTH | DESCRIPTION  | NO.     | DEPTH (ft) | BLOWS / FOOT                   | SHEAR STRENGTH P.S.F. | W.P.         | W.L. |              |            |
| 598.0         | Ground Level   |         |            |                                |                       |              |      |              |            |
| 0.0           | Clayey silt with sand traces of gravel.<br><br>Very stiff. | 1       | 1.0        |                                |                       |              |      |              | 595.5      |
|               |  | 2       | 2.3        |                                |                       |              |      |              | 0 2 34 64  |
|               |  | 3       | 3.5        |                                |                       |              |      |              | 4 25 40 31 |
|               |  | 4       | SS         | 2.6                            |                       |              |      |              | 5 25 42 28 |
|               |  | 5       | SS         | 2.0                            |                       |              |      |              | 2 24 44 30 |
|               |  | 6       | SS         | 1.9                            |                       |              |      |              |            |
|               |  | 7       | TW         | PH                             |                       |              |      |              |            |
|               |  | 8       | TW         | PH                             |                       |              |      |              |            |
|               |  | 9       | TW         | PH                             |                       |              |      |              |            |
|               |  | 10      | SS         | 1.3                            |                       |              |      |              |            |
| 556.5         | Sand Seams   |         |            |                                |                       |              |      |              |            |
| 41.5          | End of Borehole  |         |            |                                |                       |              |      |              |            |

20  
15  $\div$  5 % strain at failure  
10

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DEPARTMENT OF HIGHWAYS - ONTARIO

RECORD OF BOREHOLE NO. 117

FOUNDATION SECTION

MATERIALS & TESTING DIVISION

JOB 68-P-15-3 LOCATION Co-ords. 99,935 N; 89,149 E. ORIGINATED BY AMS  
W P                      BORING DATE April 24, 25 & 26, 1968 COMPILED BY AMS  
DATUM Geodetic BOREHOLE TYPE Penn Drill and Core Drill CHECKED BY                     

| SOIL PROFILE   |   |            | SAMPLES |           |              | ELEV SCALE | DYNAMIC PENETRATION RESISTANCE<br>BLOWS / FOOT |    |                      |    |     | LIQUID LIMIT — WL<br>PLASTIC LIMIT — WP<br>WATER CONTENT — W |    |                             | BULK DENSITY<br>PCF | REMARKS      |     |      |      |      |      |  |  |  |  |  |
|----------------|---|------------|---------|-----------|--------------|------------|--|----|----------------------|----|-----|--|----|-----------------------------|---------------------|--------------|-----|------|------|------|------|--|--|--|--|--|
| ELEV DEPTH     | DESCRIPTION                                 | STRAT. PLT | NUMBER  | TYPE      | BLOWS / FOOT |            | 20   | 40 | 60                   | 80 | 100 | WP   | WL | WATER CONTENT %<br>10 20 30 |                     |              |     |      |      |      |      |  |  |  |  |  |
|                |   |            |         |           |              |            | SHEAR STRENGTH P.S. *                          |    |                      |    |     |  |    |                             |                     |              |     |      |      |      |      |  |  |  |  |  |
|                |   |            |         |           |              |            | + Field Vane<br>o Unconfined                   |    |                      |    |     |  |    |                             |                     |              |     |      |      |      |      |  |  |  |  |  |
|                |   |            |         |           |              |            |  |    |                      |    |     |  |    |                             |                     |              | 500 | 1000 | 1500 | 2000 | 2500 |  |  |  |  |  |
|                |   |            |         |           |              |            |  |    |                      |    |     |  |    |                             |                     |              |     |      |      |      |      |  |  |  |  |  |
| 600.4          | Ground Level                                |            |         |           |              |            |  |    |                      |    |     |  |    |                             |                     | Gr.Sa.Si.Cl. |     |      |      |      |      |  |  |  |  |  |
|                |   |            | 1       | SS        | 17           |            |  |    |                      |    |     |  |    |                             |                     | 1 22 49 28   |     |      |      |      |      |  |  |  |  |  |
|                |   |            | 2       | SS        | 46           |            |  |    |                      |    |     |  |    |                             |                     |              |     |      |      |      |      |  |  |  |  |  |
|                |   |            | 3       | SS        | 78           | 590        |  |    |                      |    |     |  |    |                             |                     |              |     |      |      |      |      |  |  |  |  |  |
|                |   |            | 4       | SS        | 58           |            |  |    |                      |    |     |  |    |                             |                     | 2 28 40 30   |     |      |      |      |      |  |  |  |  |  |
|                |   |            | 5       | SS        | 30           |            |  |    |                      |    |     |  |    |                             |                     |              |     |      |      |      |      |  |  |  |  |  |
|                |   |            | 6       | SS        | 28           | 560        |  |    |                      |    |     |  |    |                             |                     | 3 25 42 30   |     |      |      |      |      |  |  |  |  |  |
|                |   |            | 7       | SS        | 26           |            |  |    |                      |    |     |  |    |                             |                     |              |     |      |      |      |      |  |  |  |  |  |
|                |   |            | 8       | SS        | 28           | 570        |  |    |                      |    |     |  |    |                             |                     |              |     |      |      |      |      |  |  |  |  |  |
|                |   |            | 9       | SS        | 22           |            |  |    |                      |    |     |  |    |                             |                     |              |     |      |      |      |      |  |  |  |  |  |
|                | Clayey silt with sand,<br>traces of gravel. |            | 10      | TW        | PM           | 560        |  |    |                      |    |     |  |    |                             |                     |              |     |      |      |      |      |  |  |  |  |  |
|                | V. STIFF TO<br>Hard to stiff.               |            | 11      | TW        | PM           | 550        |  |    |                      |    |     |  |    |                             | 136                 | 2 29 41 28   |     |      |      |      |      |  |  |  |  |  |
|                |   |            | 12      | TW        | PM           | 540        |  |    |                      |    |     |  |    |                             |                     | 2 30 35 33   |     |      |      |      |      |  |  |  |  |  |
| 536.4<br>644.0 | Silty Clay                                  |            | 13      | TW        | PM           | 520        |  |    |                      |    |     |  |    |                             | 117                 | 2 7 33 58    |     |      |      |      |      |  |  |  |  |  |
|                | STIFF                                       |            | 14      | TW        | PM           | 520        |  |    |                      |    |     |  |    |                             | 130                 |              |     |      |      |      |      |  |  |  |  |  |
|                |   |            |         |           |              | 510        |  |    |                      |    |     |  |    |                             |                     |              |     |      |      |      |      |  |  |  |  |  |
|                |   |            |         |           |              | 500        |  |    |                      |    |     |  |    |                             |                     |              |     |      |      |      |      |  |  |  |  |  |
|                |   |            |         |           |              | 490        |  |    |                      |    |     |  |    |                             |                     |              |     |      |      |      |      |  |  |  |  |  |
|                |   |            |         |           |              | 480        |  |    |                      |    |     |  |    |                             |                     |              |     |      |      |      |      |  |  |  |  |  |
| 471.9          |   |            |         |           |              |            |  |    |                      |    |     |  |    |                             |                     |              |     |      |      |      |      |  |  |  |  |  |
| 128.5          | Boulders and<br>till                        |            | 15      | AXT<br>RC | 20%<br>Rec.  |            |  |    |                      |    |     |  |    |                             |                     |              |     |      |      |      |      |  |  |  |  |  |
| 460.4          |   |            |         |           |              |            |  |    |                      |    |     |  |    |                             |                     |              |     |      |      |      |      |  |  |  |  |  |
| 140.0          | End of Borehole                             |            |         |           |              |            |  |    |                      |    |     |  |    |                             |                     |              |     |      |      |      |      |  |  |  |  |  |
|                |   |            |         |           |              |            | 15<br>10                                       | 20 | 5% strain at failure |    |     |  |    |                             |                     |              |     |      |      |      |      |  |  |  |  |  |

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DEPARTMENT OF HIGHWAYS - ONTARIO

## RECORD OF BOREHOLE NO. 120

FOUNDATION SECTION

MATERIALS &amp; TESTING DIVISION

JOB 68-F-15-3

LOCATION Co-ords. 99,724 N; 89,191 E.

ORIGINATED BY AMS

W.P. \_\_\_\_\_ BORING DATE April 25, 1968

COMPILED BY AMS

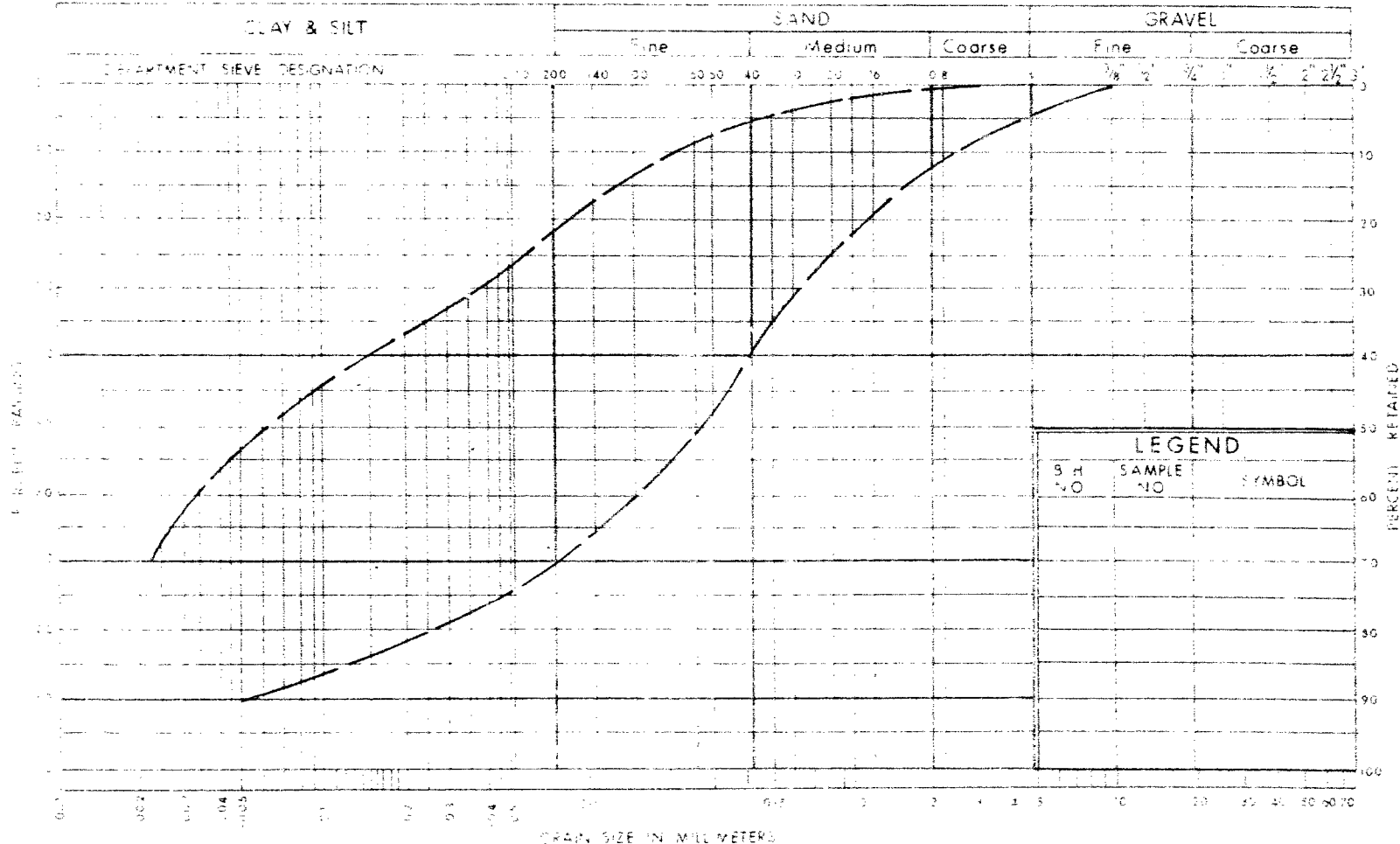
DATUM Geodetic

BOREHOLE TYPE Cont. flight auger

CHECKED BY

[illegible]

# UNIFIED SOIL CLASSIFICATION SYSTEM



DEPARTMENT OF HIGHWAYS  
MATERIALS and  
TESTING  
DIVISION

## GRAIN SIZE DISTRIBUTION ENVELOPE OF CLAYEY SILT

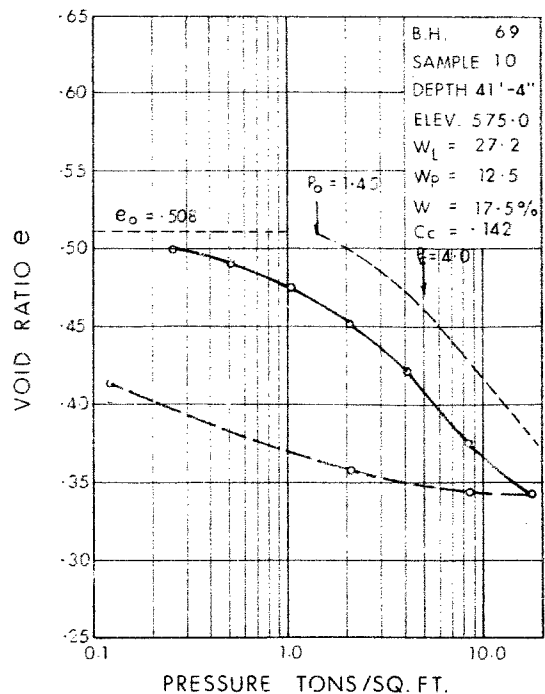
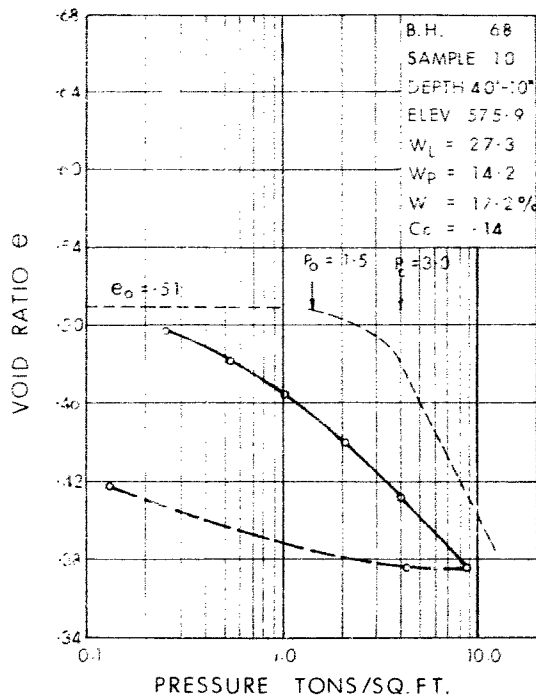
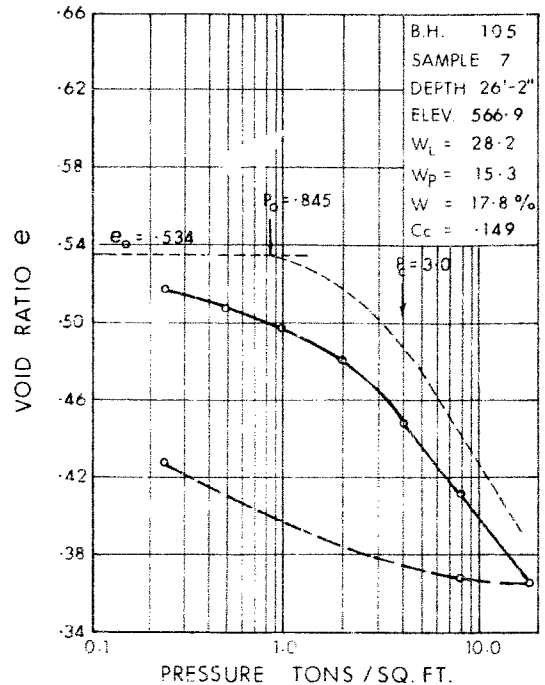
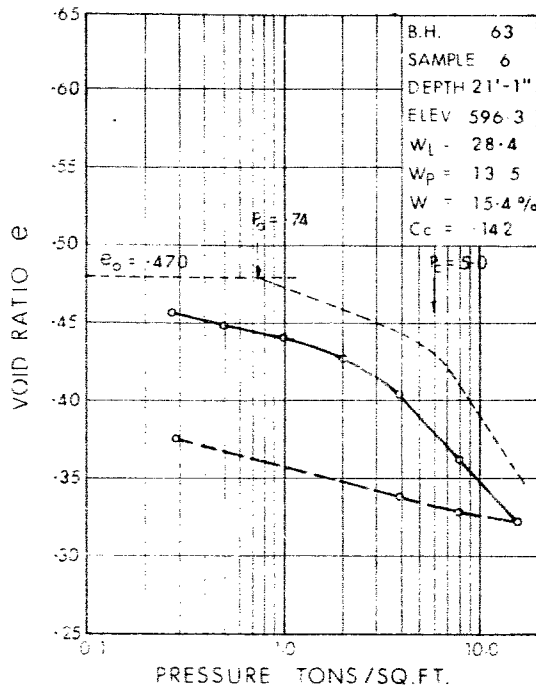
W.P. No. 257-66-040

JOB No. 68-F-15-3

FIG. 1

# VOID RATIO - PRESSURE CURVES

JOB NO. 68-F-15-3

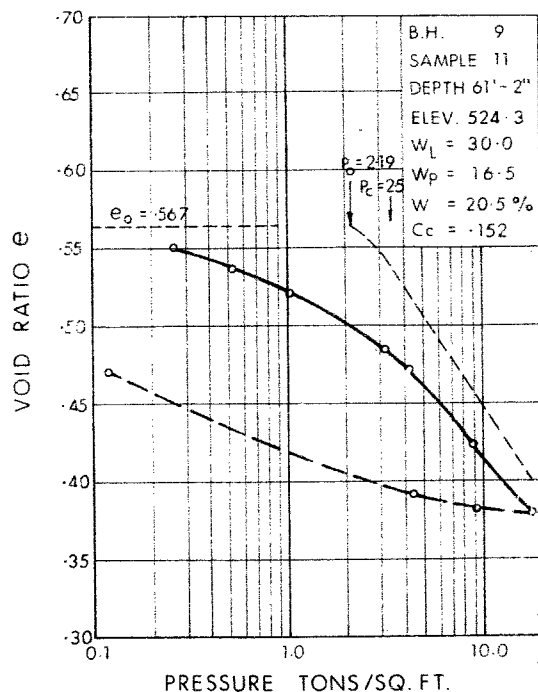
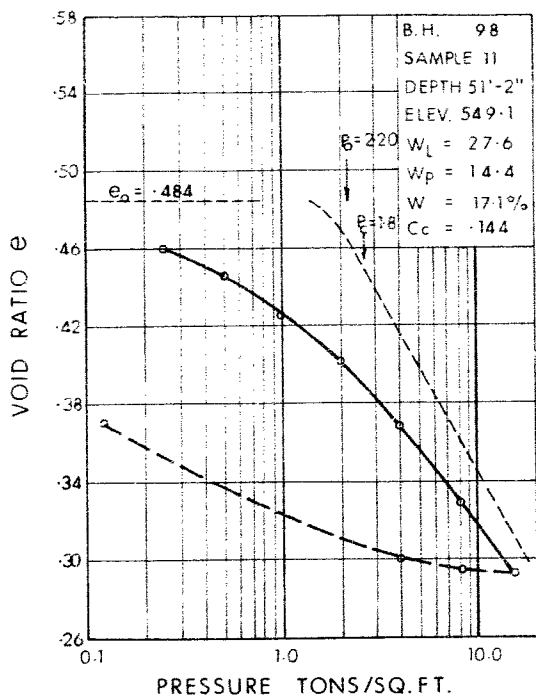
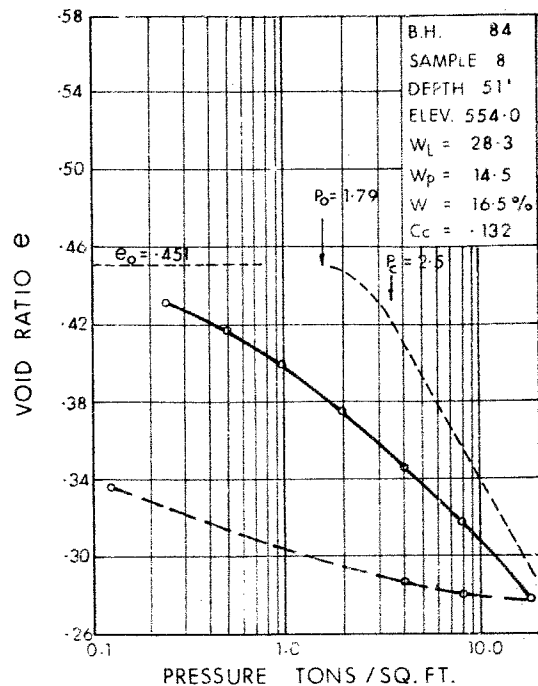
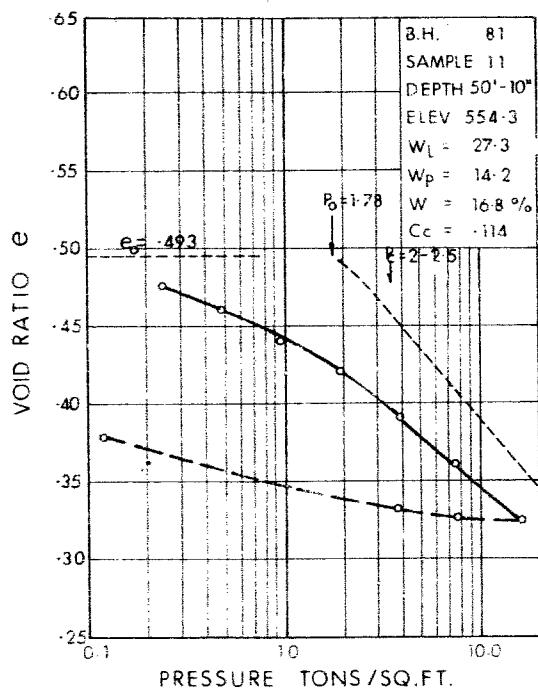


--- IN SITU COMPRESSION CURVE - SCHMERTMANN CONSTRUCTION

FIG. 2

# VOID RATIO - PRESSURE CURVES

JOB NO. 68-F-15-3



--- IN SITU COMPRESSION CURVE - SCHMERTMANN CONSTRUCTION

FIG. 3

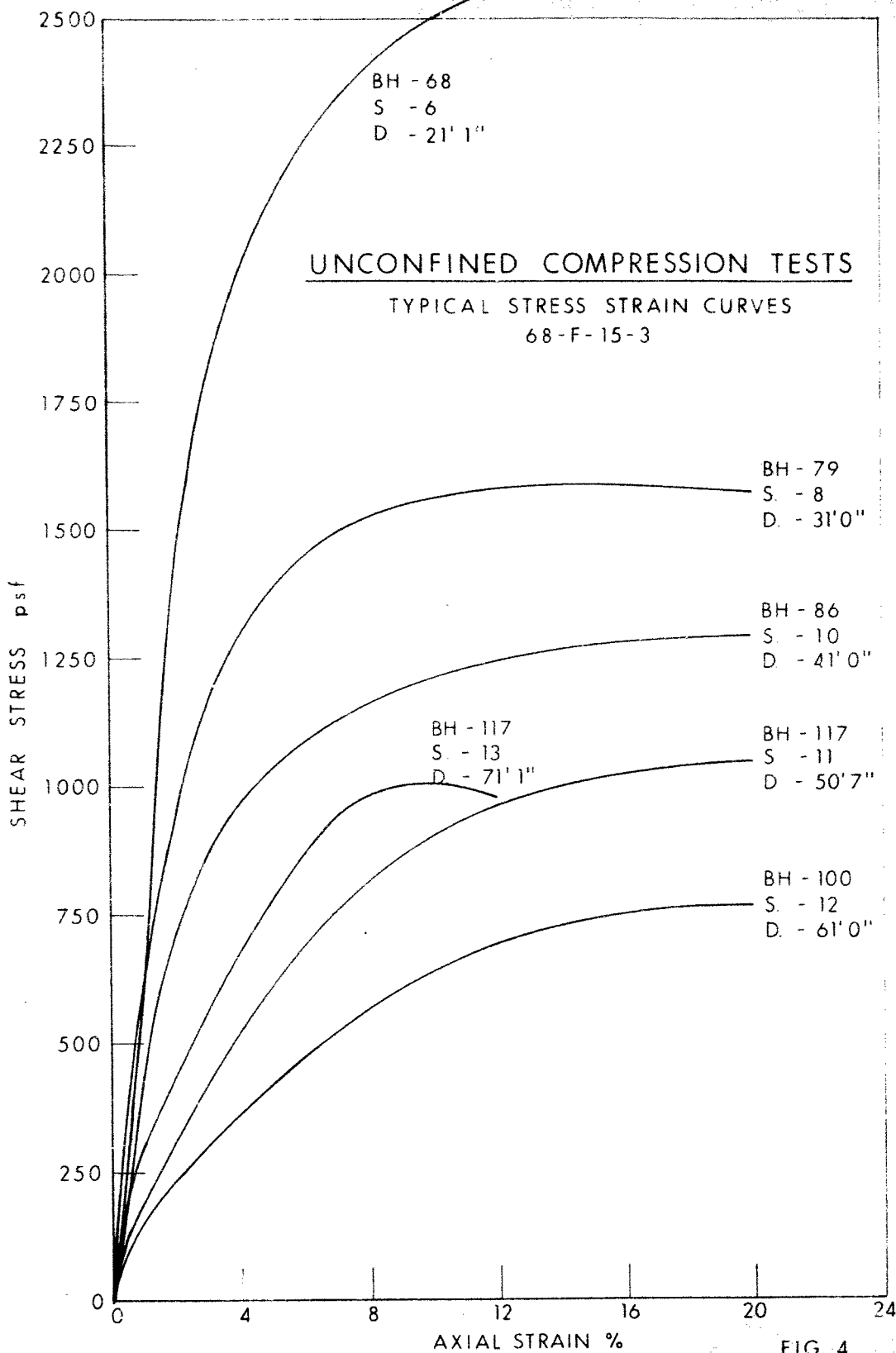
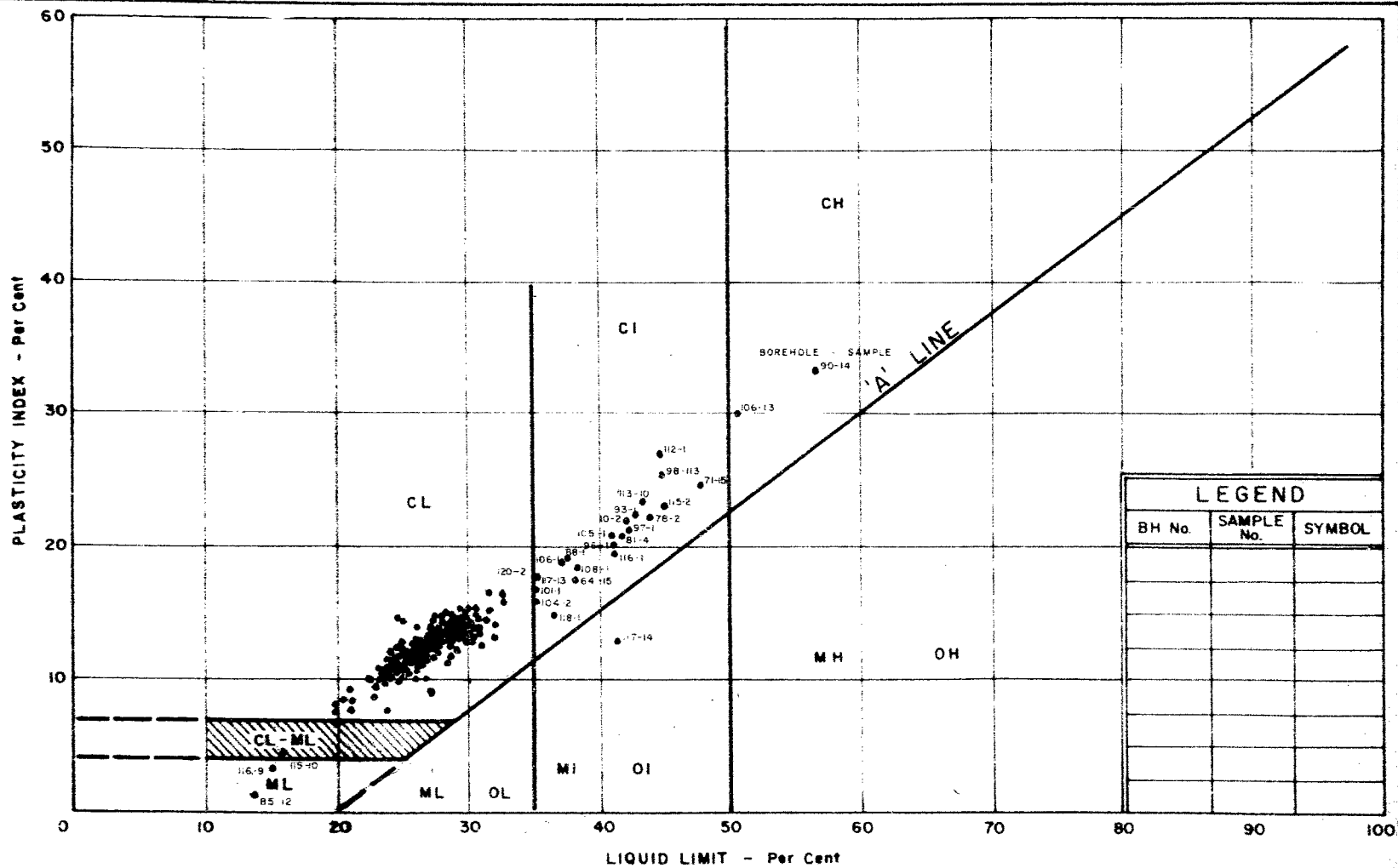


FIG. 4





# PLASTICITY CHART

W.P. No.

**JOB No. 68-F-15-3**

FIG. No. 5

## ABBREVIATIONS USED IN THIS REPORT

### PENETRATION RESISTANCE

STANDARD PENETRATION RESISTANCE 'N': - THE NUMBER OF BLOWS REQUIRED TO ADVANCE A STANDARD SPLIT SPOON SAMPLER 12 INCHES INTO THE SUBSOIL, DRIVEN BY MEANS OF A 140 POUND HAMMER FALLING FREELY A DISTANCE OF 30 INCHES.

DYNAMIC PENETRATION RESISTANCE :- THE NUMBER OF BLOWS REQUIRED TO ADVANCE A 2 INCH, 60 DEGREE CONE, FITTED TO THE END OF DRILL RODS, 12 INCHES INTO THE SUBSOIL, THE DRIVING ENERGY BEING 350 FOOT POUNDS PER BLOW.

### DESCRIPTION OF SOIL

THE CONSISTENCY OF COHESIVE SOILS AND THE RELATIVE DENSITY OR DENSENESS OF COHESIONLESS SOILS ARE DESCRIBED IN THE FOLLOWING TERMS :-

| <u>CONSISTENCY</u> | <u>'N' BLOWS / FT.</u> | <u>c LB. / SQ. FT.</u> | <u>DENSENESS</u> | <u>'N' BLOWS / FT.</u> |
|--------------------|------------------------|------------------------|------------------|------------------------|
| VERY SOFT          | 0 - 2                  | 0 - 250                | VERY LOOSE       | 0 - 4                  |
| SOFT               | 2 - 4                  | 250 - 500              | LOOSE            | 4 - 10                 |
| FIRM               | 4 - 8                  | 500 - 1000             | COMPACT          | 10 - 30                |
| STIFF              | 8 - 15                 | 1000 - 2000            | DENSE            | 30 - 50                |
| VERY STIFF         | 15 - 30                | 2000 - 4000            | VERY DENSE       | > 50                   |
| HARD               | > 30                   | > 4000                 |                  |                        |

### TYPE OF SAMPLE

|     |                       |                               |                   |
|-----|-----------------------|-------------------------------|-------------------|
| S.S | SPLIT SPOON           | T W                           | THINWALL OPEN     |
| W S | WASHED SAMPLE         | T.P                           | THINWALL PISTON   |
| S B | SCRAPER BUCKET SAMPLE | O.S.                          | OESTERBERG SAMPLE |
| A S | AUGER SAMPLE          | F S                           | FOIL SAMPLE       |
| C S | CHUNK SAMPLE          | R C                           | ROCK CORE         |
| S T | SLOTTED TUBE SAMPLE   |                               |                   |
|     | P H                   | SAMPLE ADVANCED HYDRAULICALLY |                   |
|     | P M                   | SAMPLE ADVANCED MANUALLY      |                   |

### SOIL TESTS

|                 |                                 |     |                 |
|-----------------|---------------------------------|-----|-----------------|
| Q <sub>u</sub>  | UNCONFINED COMPRESSION          | L V | LABORATORY VANE |
| Q               | UNDRAINED TRIAXIAL              | F V | FIELD VANE      |
| Q <sub>cu</sub> | CONSOLIDATED UNDRAINED TRIAXIAL | C   | CONSOLIDATION   |
| Q <sub>d</sub>  | DRAINED TRIAXIAL                | S   | SENSITIVITY     |

## ABBREVIATIONS USED IN THIS REPORT

### SOIL PROPERTIES

|            |  |
|------------|--|
| $\gamma$   | UNIT WEIGHT OF SOIL (BULK DENSITY)                                   |
| $\gamma_s$ | UNIT WEIGHT OF SOLID PARTICLES                                       |
| $\gamma_w$ | UNIT WEIGHT OF WATER   |
| $\gamma_d$ | UNIT DRY WEIGHT OF SOIL (DRY DENSITY)                                |
| $\gamma'$  | UNIT WEIGHT OF SUBMERGED SOIL  |
| G          | SPECIFIC GRAVITY OF SOLID PARTICLES $G = \frac{\gamma_s}{\gamma_w}$  |
| e          | VOID RATIO   |
| n          | POROSITY   |
| w          | WATER CONTENT  |
| $S_r$      | DEGREE OF SATURATION   |
| $w_L$      | LIQUID LIMIT   |
| $w_p$      | PLASTIC LIMIT  |
| $I_p$      | PLASTICITY INDEX   |
| s          | SHRINKAGE LIMIT  |
| $I_L$      | LIQUIDITY INDEX $= \frac{w - w_p}{I_p}$                              |
| $I_C$      | CONSISTENCY INDEX $= \frac{w_L - w}{I_p}$                            |
| $e_{max}$  | VOID RATIO IN LOOSEST STATE  |
| $e_{min}$  | VOID RATIO IN DENSEST STATE  |
| $I_D$      | DENSITY INDEX $= \frac{e_{max} - e}{e_{max} - e_{min}}$              |
|            | RELATIVE DENSITY $D_r$ IS ALSO USED                                  |
| h          | HYDRAULIC HEAD OR POTENTIAL  |
| Q          | RATE OF DISCHARGE  |
| v          | VELOCITY OF FLOW   |
| i          | HYDRAULIC GRADIENT   |
| k          | COEFFICIENT OF PERMEABILITY  |
| j          | SEEPAGE FORCE PER UNIT VOLUME  |
| $m_v$      | COEFFICIENT OF VOLUME CHANGE $= \frac{-\Delta e}{(1+e)\Delta\sigma}$ |
| $C_v$      | COEFFICIENT OF CONSOLIDATION   |
| $C_c$      | COMPRESSION INDEX $= \frac{\Delta e}{\Delta \log_{10} \sigma}$       |
| $T_v$      | TIME FACTOR $= \frac{C_v t}{d^2}$ (d, DRAINAGE PATH)                 |
| U          | DEGREE OF CONSOLIDATION  |
| $\tau_f$   | SHEAR STRENGTH   |
| c          | EFFECTIVE COHESION INTERCEPT   |
| $\phi$     | EFFECTIVE ANGLE OF SHEARING RESISTANCE, OR FRICTION                  |
| $c_u$      | APPARENT COHESION  |
| $\phi_u$   | APPARENT ANGLE OF SHEARING RESISTANCE, OR FRICTION                   |
| $\mu$      | COEFFICIENT OF FRICTION  |
| $S_t$      | SENSITIVITY  |

### GENERAL

|                           |                                   |
|---------------------------|-----------------------------------|
| $\pi$                     | = 3.1416                          |
| e                         | BASE OF NATURAL LOGARITHMS 2.7183 |
| $\log_e a$ OR $\ln a$     | NATURAL LOGARITHM OF a            |
| $\log_{10} a$ OR $\log a$ | LOGARITHM OF a TO BASE 10         |
| t                         | TIME                              |
| g                         | ACCELERATION DUE TO GRAVITY       |
| V                         | VOLUME                            |
| W                         | WEIGHT                            |
| M                         | MOMENT                            |
| F                         | FACTOR OF SAFETY                  |

### STRESS AND STRAIN

|            |  |
|------------|--|
| u          | PORE PRESSURE  |
| $\sigma$   | NORMAL STRESS  |
| $\sigma'$  | NORMAL EFFECTIVE STRESS ( $\bar{\sigma}$ IS ALSO USED) |
| $\tau$     | SHEAR STRESS   |
| $\epsilon$ | LINEAR STRAIN  |
| $\gamma$   | SHEAR STRAIN   |
| $\nu$      | POISSON'S RATIO ( $\mu$ IS ALSO USED)                  |
| E          | MODULUS OF LINEAR DEFORMATION (YOUNG'S MODULUS)        |
| G          | MODULUS OF SHEAR DEFORMATION                           |
| K          | MODULUS OF COMPRESSIBILITY                             |
| $\eta$     | COEFFICIENT OF VISCOSITY                               |

### EARTH PRESSURE

|          |   |
|----------|---|
| d        | DISTANCE FROM TOP OF WALL TO POINT OF APPLICATION OF PRESSURE   |
| $\delta$ | ANGLE OF WALL FRICTION  |
| K        | DIMENSIONLESS COEFFICIENT TO BE USED WITH VARIOUS SUFFIXES IN EXPRESSIONS REFERRING TO NORMAL STRESS ON WALLS |
| $K_0$    | COEFFICIENT OF EARTH PRESSURE AT REST   |

### FOUNDATIONS

|       |  |
|-------|--|
| B     | BREADTH OF FOUNDATION  |
| L     | LENGTH OF FOUNDATION   |
| D     | DEPTH OF FOUNDATION BENEATH GROUND   |
| N     | DIMENSIONLESS COEFFICIENT USED WITH A SUFFIX APPLYING TO SPECIFIC GRAVITY, DEPTH AND COHESION ETC. IN THE FORMULA FOR BEARING CAPACITY |
| $k_s$ | MODULUS OF SUBGRADE REACTION   |

### SLOPES

|         |  |
|---------|--|
| H       | VERTICAL HEIGHT OF SLOPE                 |
| D       | DEPTH BELOW TOE OF SLOPE TO HARD STRATUM |
| $\beta$ | ANGLE OF SLOPE TO HORIZONTAL             |