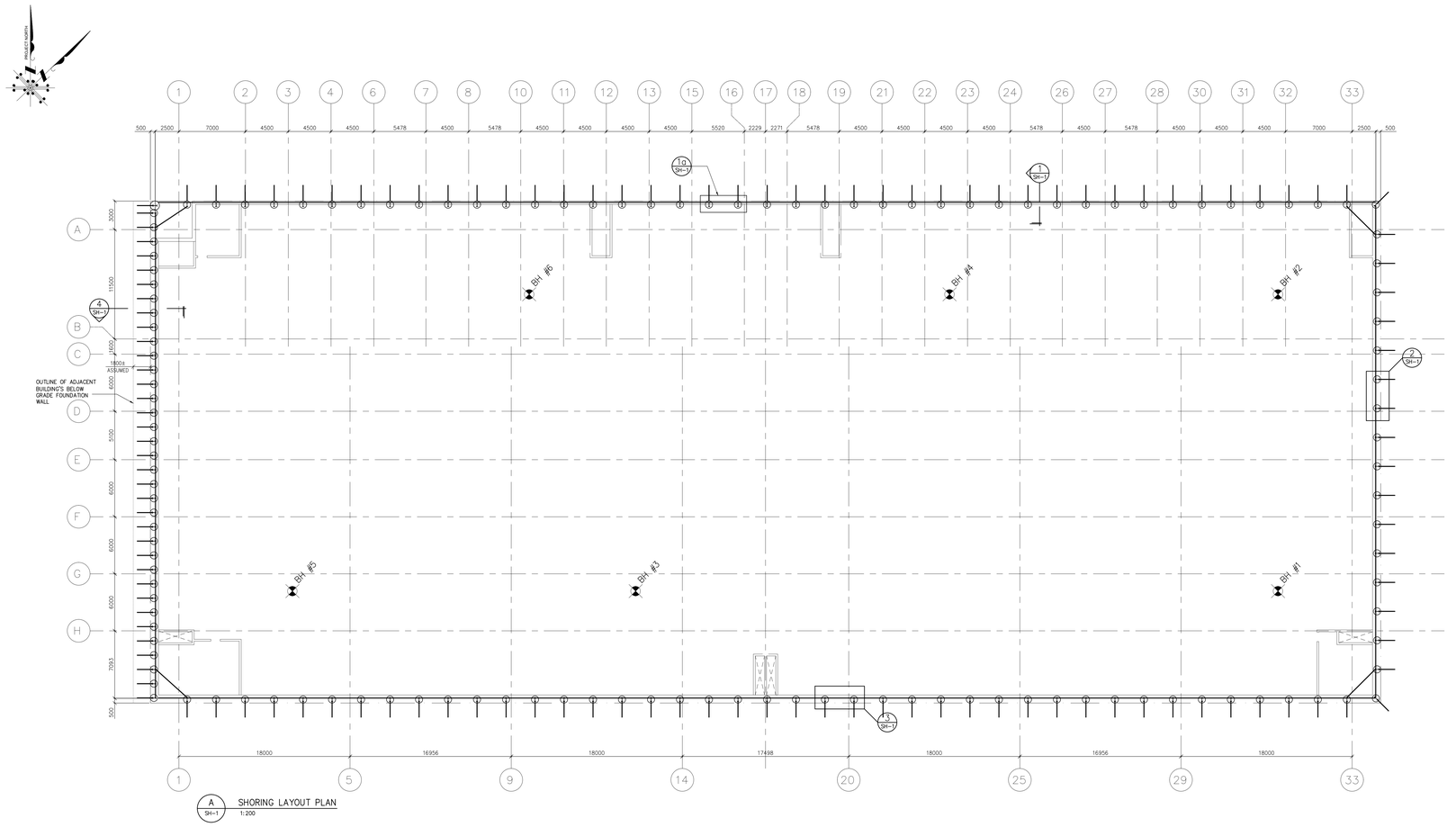
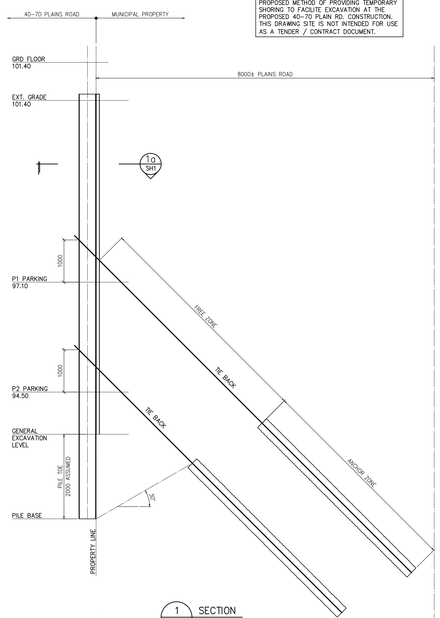
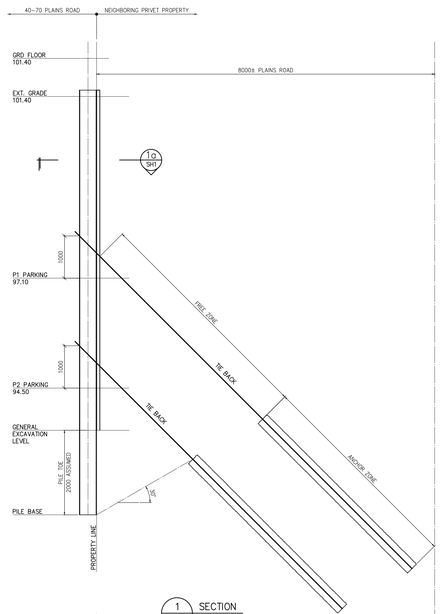



A SHORING LAYOUT PLAN
SH-1 1:200

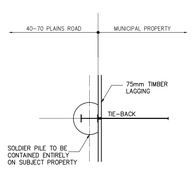
THIS DRAWING HAS BEEN PREPARED SOLELY TO ILLUSTRATE THE INTENDED EXTENT OF AND PROPOSED METHOD OF PROVIDING TEMPORARY SHORING TO FACILITE EXCAVATION AT THE PROPOSED 40-70 PLAIN RD. CONSTRUCTION. THIS DRAWING SITE IS NOT INTENDED FOR USE AS A TENDER / CONTRACT DOCUMENT.



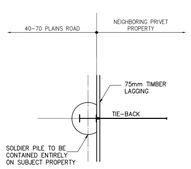

1 SECTION
SH-1 1:50



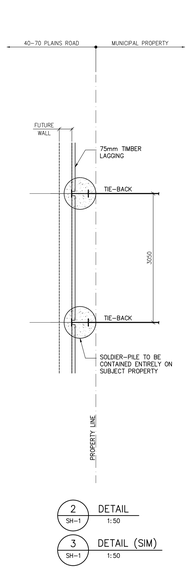

1 SECTION
SH-1 1:50




1a SECTION
SH-1 1:50

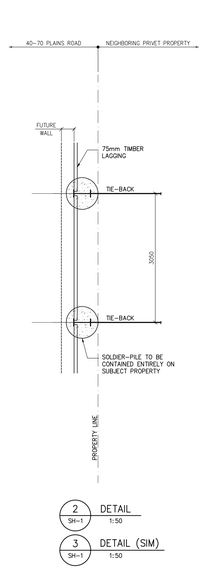



1a SECTION
SH-1 1:50



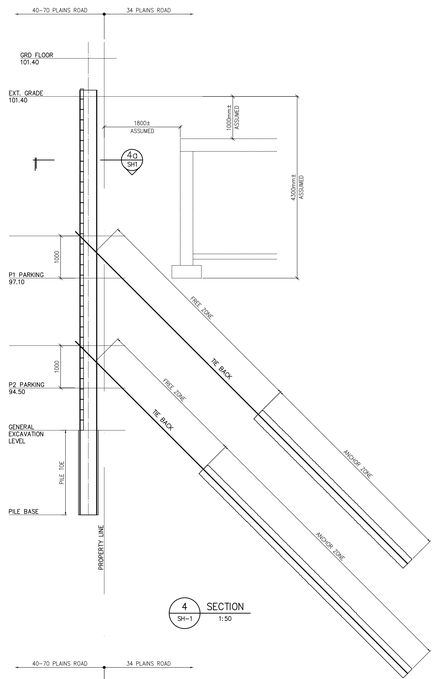

2 DETAIL
SH-1 1:50

3 DETAIL (SIM)
SH-1 1:50

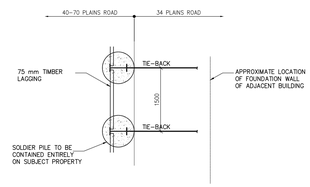



2 DETAIL
SH-1 1:50

3 DETAIL (SIM)
SH-1 1:50




4 SECTION
SH-1 1:50




4a SECTION
SH-1 1:50

GENERAL NOTES

TEMPORARY SHORING NOTES:

1.) GENERAL EXTENT OF EXCAVATION HAS BEEN ASSUMED AND DEPICTED ON THE DRAWINGS AND SECTIONS. SHORING CONTRACTOR SHALL CO-ORDINATE HIS WORK WITH THE EXCAVATION CONTRACTOR.

A. MATERIALS

1. ALL STRUCTURAL STEEL TO BE G40.12 GRADE HAVING A MINIMUM YIELD STRESS fy=350 MPa.
2. CONCRETE STRENGTH SHALL BE 20 MPa FOR SOLDIER PILE TOE ONLY.
3. GROUT STRENGTH FOR TIEBACK ANCHORS TO BE 35 MPa WITH AN EXPANSIVE ADMIXTURE.
4. GROUT STRENGTH FOR LEAN GROUT FILL IN UPPER SECTIONS OF TIEBACKS TO BE 7.0 MPa.
5. WOOD LAGGING SHALL BE DOUGLAS FIR CONSTRUCTION GRADE OR WESTERN HEMLOCK CONSTRUCTION GRADE, MINIMUM 100mm THICKNESS. ALLOWABLE BENDING STRESS TO BE 18 MPa.
6. ALL WELDING TO BE PREFORMED BY C.W.B. REGISTERED WELDERS IN ACCORDANCE WITH C.S.A. SPECIFICATION W59.

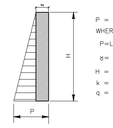
B. SOLDIER PILE INSTALLATION PROCEDURE

1. PRE-AUGER 750mm MIN. DIAMETER HOLES FOR SOLDIER PILES TO BASE OF SOLDIER PILE TOE.
2. INSTALL SOLDIER PILE, CONCRETE TOE AND FILL AROUND PILE LEAN CONCRETE TO GRADE AS SPECIFIED.
3. EXCAVATE AND PLACE LAGGING, MAXIMUM VERTICAL CUT FOR LAGGING TO BE 1200mm PLACE FREE DRAINING MATERIAL BEHIND LAGGING.

C. TIE-BACK PLACEMENT PROCEDURE

1. REMOVE TEMPORARY BERM IN FRONT OF TIE-BACKS A MAXIMUM OF 24 HOURS BEFORE DRILLING TIE-BACKS.
2. DRILL HOLE FOR UPPER TIE-BACK AND INSTALL TIE-BACKS AND ANCHOR ZONE GROUT.
3. FILL TIE-BACK FREE ZONES WITH BENTONITE CONCRETE MIX.
4. WHEN ANCHOR ZONE CONCRETE HAS REACHED 20 MPa STRENGTH, INSTALL LAGGING 450mm BELOW TIE-BACKS.
5. STRESS TIE-BACKS AND CONTINUE EXCAVATION.
6. REPEAT SIMILAR PROCEDURE FOR LOWER TIE-BACKS. (TEMPORARY BERM NOT REQUIRED).
7. TIE-BACKS AND ROCK ANCHORS ARE DESIGNED TO 50% ULTIMATE STRENGTH AND SHALL BE TESTED TO 67% ULTIMATE WITH THIS LOAD HELD FOR 10 MINUTES WITHOUT CREEP.
8. LOCK IN ALL TIE-BACKS AT 1.1 TIMES THE DESIGN LOAD, AFTER ALLOWANCE FOR WEDGE SLIP.

D. SHORING DESIGN CRITERIA




$P = k(\gamma H + q)$

WHERE

P=LATERAL EARTH PRESSURE

$\gamma = 21\ KN/m^3$

H = HEIGHT OF SOIL ABOVE BASE OF EXCAVATION.

k = 4

$q$ = SURCHARGE = $12KN/m^2$

FIGURE

E. GENERAL CONTRACTOR

1. GENERAL CONTRACTOR TO PROVIDE THE FOLLOWNG:
   a) LAYOUT.
   b) MONITORING OF ALL HORIZONTAL MOVEMENTS FOR EACH TIE-BACK LOCATION REPORT TO FISHER ENGINEERING AND QUINN DRESSEL ASSOCIATES IF ANY MOVEMENT OF MORE THAN 6mm OCCURS.

F. DOCUMENTS USED IN PREPARING SHORING CRITERIA DRAWINGS

1. SOIL REPORT FE-P20-1032BGEO PREPARED BY FISHER ENGINEERING DATED JULY 15, 2020. SEE S101 FOR ADDITIONAL SOIL REPORT REFERENCES.
2. EXISTING MARKHAM STOUFVILLE HOSPITAL DRAWINGS PREPARED BY CARUTHERS + WALLACE LIMITED.

Quinn Dressel
ASSOCIATES
CONSULTING STRUCTURAL ENGINEERS
890 Yonge St., Suite 300,Toronto, Ontario, Canada M4W 3P4
t. 416.961.8254 f. 416.961.7404
e. drawings@quinndressel.com www.quinndressel.com

KEY PLAN

REVISIONS / ISSUED TO

| NO. | | DATE | BY |
|---|---|---|---|

ARCHITECT / CONSULTANTS

CONTRACTOR SHALL CHECK ALL DIMENSIONS ON THE WORK AND REPORT ANY DISCREPANCY TO THE CONSULTANT BEFORE PROCEEDING. THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION UNTIL AUTHORIZED IN WRITING BY CONSULTANT.

SEAL / SIGNATURE

ISSUED FOR CONSTRUCTION DATE

CLIENT NAME

INFINITY DEVELOPMENTS

DRAWING TITLE

40 - 70 PLAINS ROAD E. BURLINGTON, ON. SHORING LAYOUT PLAN

DESIGNED BY / DRAWN BY: GM/DM

SCALE: AS NOTED

DRAWING NUMBER: SH-1

PROJECT NUMBER: 19-248