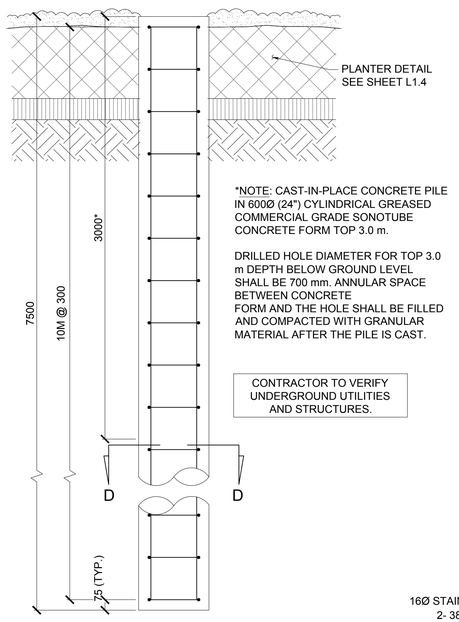
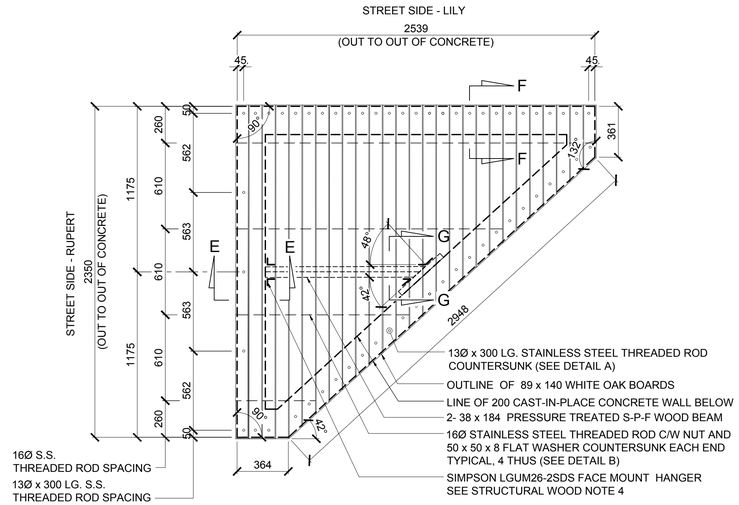


*NOTE: CAST-IN-PLACE CONCRETE PILE IN 600Ø (24") CYLINDRICAL GREASED COMMERCIAL GRADE SONOTUBE CONCRETE FORM TOP 3.0 m.

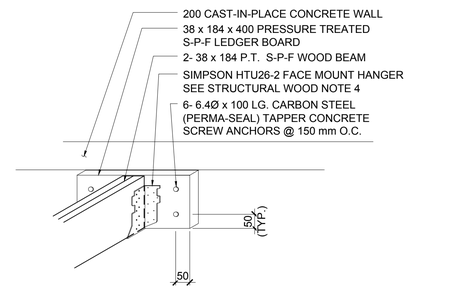
DRILLED HOLE DIAMETER FOR TOP 3.0 m DEPTH BELOW GROUND LEVEL SHALL BE 700 mm. ANNULAR SPACE BETWEEN CONCRETE FORM AND THE HOLE SHALL BE FILLED AND COMPACTED WITH GRANULAR MATERIAL AFTER THE PILE IS CAST.

CONTRACTOR TO VERIFY UNDERGROUND UTILITIES AND STRUCTURES.

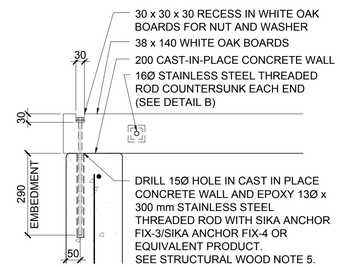
1 / S1.2 TRELLIS PILE (TYP.)
SCALE 1:20



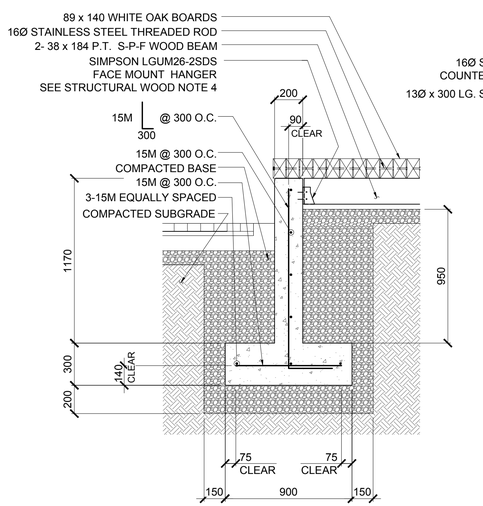
3 / S1.2 BENCH ON C-I-P CONCRETE WALL - LILY
SCALE 1:20



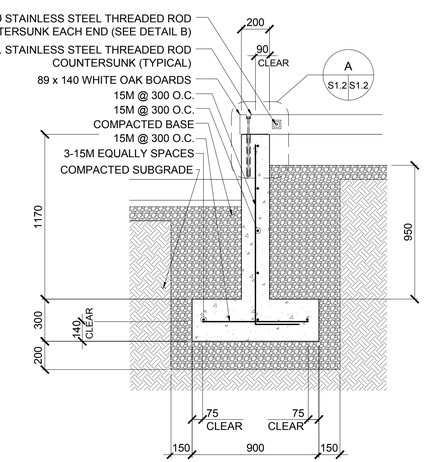
6 / S1.2 SECTION G-G
SCALE 1:10



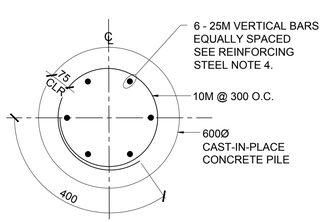
A / S1.2 DETAIL
SCALE 1:10



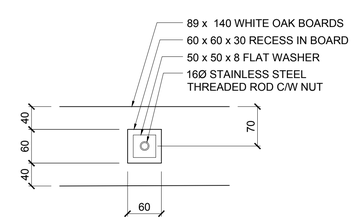
4 / S1.2 SECTION E-E
SCALE 1:20



5 / S1.2 SECTION F-F
SCALE 1:20



2 / S1.2 SECTION D-D
SCALE 1:10



B / S1.2 DETAIL
SCALE 1:5

GENERAL NOTES:

1. DESIGN IS IN ACCORDANCE WITH THE NATIONAL BUILDING CODE OF CANADA, 2010 EDITION PLUS MANITOBA AMENDMENTS.
2. CONTRACTOR TO VERIFY UNDERGROUND UTILITIES AND STRUCTURES PRIOR TO CONSTRUCTION.

CAST IN PLACE CONCRETE:

1. TO BE READ IN CONJUNCTION WITH CW 2160 AND AS AMENDED IN ACCORDANCE WITH THESE NOTES.
2. CONCRETE MIX:
   a. CLASS OF EXPOSURE: S-1
   b. MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS: 32MPa
   c. MAXIMUM SLUMP: 80mm ± 20mm
   d. AIR CONTENT: 4 - 7%
   e. MAXIMUM WATER/CEMENT RATIO: 0.45
4. CONCRETE COVER = 50mm UNLESS OTHERWISE STATED.
5. ALL EXTERIOR CORNERS CHAMFERED 20mm.
6. TOP CONCRETE SURFACE OF STAIR TREAD SHALL BE GRADED TO ALLOW DRAINAGE.

REINFORCING STEEL:

1. TO BE READ IN CONJUNCTION WITH CW 2160 AND AS AMENDED IN ACCORDANCE WITH THESE NOTES.
2. ALL REINFORCING STEEL SHALL CONFORM TO CSA G30.18M, GRADE 400W.
3. ALL CONCRETE REINFORCING WORK SHALL BE PERFORMED IN ACCORDANCE WITH CSA A23.1.
4. LAPS IN BARS SHALL BE AT LEAST 40 BAR DIAMETERS, NO LONGITUDINAL BARS OF TRELLIS PILE SHALL BE SPLICED WITHIN TOP 3.0 m DEPTH BELOW GROUND LEVEL.
5. BEFORE PLACING CONCRETE, REINFORCING TO BE CLEAN, FREE OF LOOSE SCALE, DIRT OR OTHER FOREIGN MATTER THAT WOULD REDUCE OR PREVENT BOND TO THE CONCRETE.

STRUCTURAL STEEL & MISCELLANEOUS NOTES:

1. ALL STRUCTURAL STEEL SHAPES AND PLATES SHALL BE IN ACCORDANCE WITH CSA G40.21-M, GRADE 300W, EXCEPT W, HP AND HSS SECTIONS WHICH SHALL BE GRADE 350W CLASS C.
2. ALL GALVANIZING SHALL COMPLY WITH THE LATEST EDITION OF CSA G164, WITH MINIMUM ZINC COATING OF 600g/m^2. TOUCH UPS MADE WITH GALVALLOY OR GAL-VIZ.
3. ALL BOLTS SHALL BE ASTM A316 STAINLESS STEEL, UNLESS OTHERWISE INDICATED.
4. ALL BOLTS SHALL BE TIGHTENED USING TURN-OF-NUT METHOD. EACH BOLT SHALL BE BROUGHT TO SNUG TIGHT USING A SPUD WRENCH. AFTER THAT EITHER THE NUT OR BOLT HEAD SHALL BE GIVEN AN ADDITIONAL ⅓ OF A TURN WHILE PREVENTING OPPOSITE PART FROM TURNING.
5. ANCHOR RODS SHALL COMPLY WITH ASTM-F1554, GRADE 55.
6. ANGLES, STEEL PLATE, GRATING & HARDWARE INCLUDING SADDLE CLIPS, AND BOLTS SHALL BE GALVANIZED AFTER FABRICATION.
7. ALL WELDS SHALL BE SEALED PRIOR TO GALVANIZING.
8. WELDING SHALL BE IN ACCORDANCE WITH OF CSA W59-13
9. APPLY GALVALLOY OR GAL-VIS TO ALL FIELD WELDS AND DAMAGED AREAS OF GALVANIZING.
10. THREADED ROD, WASHER, AND NUT SHALL BE GALVANIZED OR STAINLESS STEEL, UNLESS NOTED OTHERWISE.
11. ROUND ALL SHARP CORNERS.

STRUCTURAL WOOD NOTES:

1. ALL LUMBER SHALL CONFORM TO 2014 N.L.G.A. GRADING RULES FOR CANADIAN LUMBER.
2. THE CARPENTRY CONTRACTOR IN CONJUNCTION WITH THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING AND INSTALLING ALL TEMPORARY AND PERMANENT BRACING REQUIRED TO PROVIDE THE STABILITY OF THE STRUCTURE.
3. S-P-F WOOD BEAM MATERIAL SHALL BE PRESSURE TREATED SS GRADE.
4. FACE MOUNT HANGER SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
5. DRILL AND EPOXY ANCHORS SHALL BE IN ACCORDANCE WITH EPOXY MANUFACTURERS SPECIFICATIONS.

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

APEGM
Certificate of Authorization
MMM Group Limited
No. 4531

LOCATIONS APPROVED UNDERGROUND STRUCTURES

SIGNED BY: _____ SUPV U/G STRUCTURES
DATE _____

LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE BUT NO GUARANTEE IS GIVEN THAT ALL EXISTING UTILITIES ARE SHOWN OR THAT THE GIVEN LOCATIONS ARE EXACT CONFIRMATION OF EXISTANCE AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING

G.B.M. -
ELEV. -

NO.	REVISIONS	DATE	BY
3	ISSUED FOR TENDER	05/25/16	MRI
2	ISSUED TO U/G STRUCTURES REVIEW	04/08/16	MRI
1	ISSUED FOR CITY OF WINNIPEG REVIEW	03/18/16	MRI

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www.mmm.ca

DESIGNED BY	MRI	CHECKED BY	MRI
DRAWN BY	KB	APPROVED BY	WC
HOR. SCALE	AS NOTED	RELEASED FOR CONSTRUCTION	
VERTICAL	AS NOTED		
DATE	24/05/2016	DATE	

ENGINEER'S SEAL: PROVINCE OF MANITOBA May 25, 2016 M. R. ISLAM Member 36041 REGISTERED PROFESSIONAL ENGINEER

CONSULTANT ACAD DWG. NO. S1.2

Winnipeg
THE CITY OF WINNIPEG
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES DIVISION

CITY OF WINNIPEG

NORTH EAST EXCHANGE DISTRICT ENGINEERING STUDY

CAST-IN-PLACE CONCRETE PILE &
BENCH ON CAST-IN-PLACE CONCRETE WALL DETAILS

CITY DRAWING NUMBER
SHEET 33 OF 39
BID NO. -

NOTE:
These design documents are prepared solely for the use by the party with whom the design professional has entered into a contract and there are no representations of any kind made by the design professional to any party with whom the design professional has not entered into a contract.

May 24, 2016 – 4:05pm
P:\551001-551599\551503\ – 2015 NE Exchange\MMM Drawings\2016 Structural Work\NE Exchange_John H Struct Details & Lily St. Bench.dwg – tab:S1.2