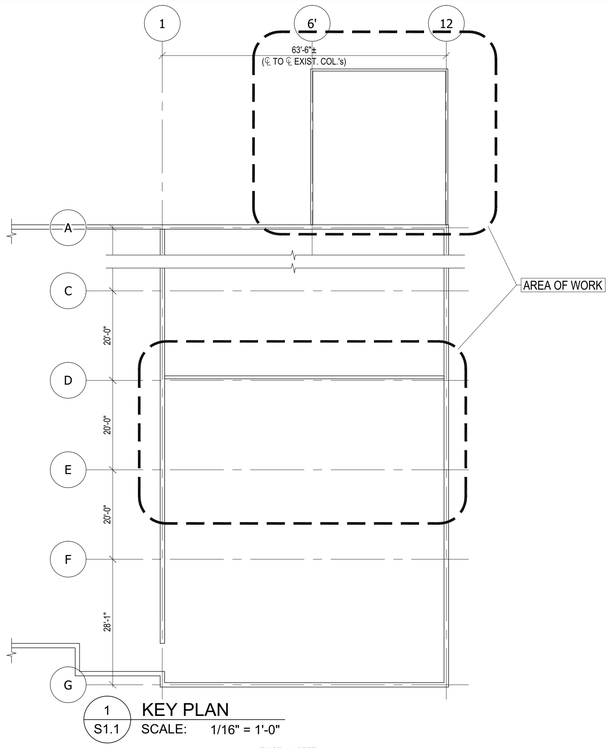
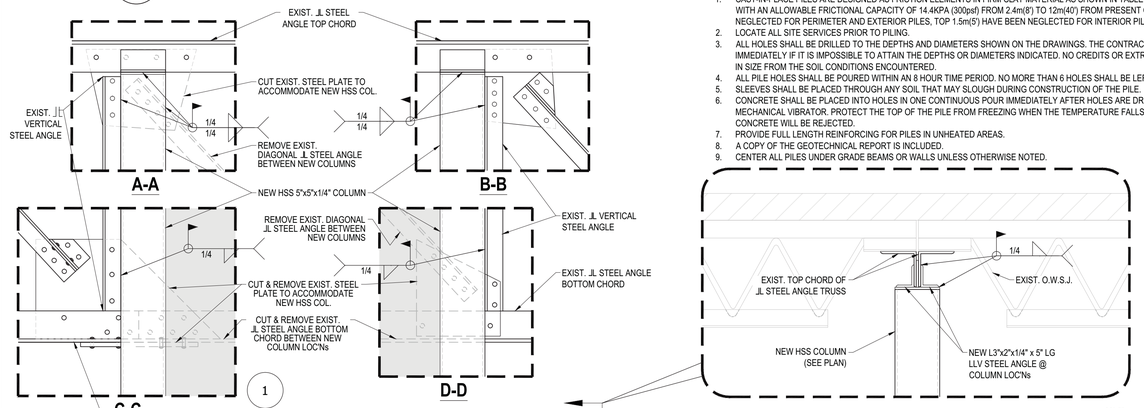
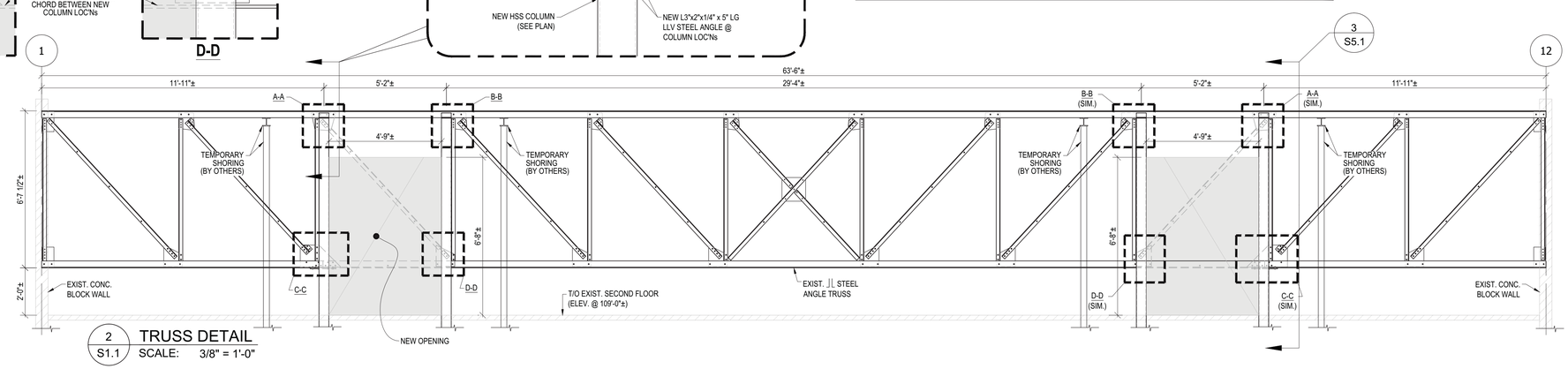


1 S1.1 KEY PLAN
SCALE: 1/16" = 1'-0"





2 S1.1 TRUSS DETAIL
SCALE: 3/8" = 1'-0"

GENERAL NOTES

1. DO NOT SCALE DRAWINGS.
2. COORDINATE AND VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO COMMENCING CONSTRUCTION.
3. SEE ARCHITECTURAL DRAWINGS FOR ELEVATIONS, SLOPES, ROUGH OPENING DIMENSIONS FOR WINDOWS, DOORS, ETC.
4. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR OPENINGS IN FLOORS, ROOF, WALLS, ETC.
5. DO NOT CUT OR DRILL OPENINGS IN ANY STRUCTURAL MEMBERS WITHOUT WRITTEN APPROVAL FROM THE CONTRACT ADMINISTRATOR
6. THE CONTRACT ADMINISTRATOR SHALL BE NOTIFIED AT LEAST 48 HOURS IN ADVANCE OF REQUIRED SITE INSPECTIONS. (TEL: 1-204-255-7251, FAX: 1-204-257-7239).
7. STRUCTURAL DRAWINGS SHOW THE COMPLETED STRUCTURE. THEY DO NOT SHOW COMPONENTS WHICH MAY BE NECESSARY FOR SAFETY DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION SITE SAFETY AND TO ENSURE THAT ALL SUBTRADES CONFORM TO THE LATEST REGULATIONS OF THE PROVINCIAL "BUILDING PROTECTION ACT", TO PROVIDE ALL NECESSARY SAFETY EQUIPMENT AS REQUIRED THEREIN AND TO NOTIFY LOCAL AUTHORITIES AS REQUIRED BY LAW.
8. THE CONTRACTOR SHALL CONFORM TO THE COLD WEATHER REQUIREMENTS OF THE LATEST EDITION OF CSA STANDARD A23.1/A23.2 AND THE NATIONAL BUILDING CODE.
9. IT IS THE GENERAL CONTRACTORS RESPONSIBILITY TO LOCATE ALL SITE SERVICES PRIOR TO CONSTRUCTION.
10. THE GENERAL CONTRACTOR SHALL DESIGN ALL SHORING, FORM WORK, AND BRACING TO ENSURE PROPER CONSTRUCTION AND ERECTION.
11. THE CONTRACTOR SHALL VISIT THE SITE, AND NOTE ALL CHARACTERISTICS AND IRREGULARITIES AFFECTING THE WORK OF THIS SECTION.
12. SHOP DRAWINGS NOT STAMPED, SIGNED, AND DATED BY THE CONTRACTOR WILL BE RETURNED AND SHALL BE CONSIDERED REJECTED. SHOP DRAWINGS FOR WORK DESIGNED BY THE CONTRACTOR SHALL BEAR THE SEAL AND SIGNATURE OF A QUALIFIED PROFESSIONAL ENGINEER IN THE PROJECTS PROVINCE.
13. THE CONTRACTOR SHALL SUBMIT AT LEAST 3 COPIES OF STAMPED SHOP DRAWINGS FOR ALL PRE-FABRICATED STRUCTURAL ASSEMBLIES, INCLUDING REINFORCING STEEL TO THE CONTRACT ADMINISTRATOR FOR REVIEW AND APPROVAL PRIOR TO FABRICATION. ALL SHOP DRAWINGS, EXCEPT REINFORCING STEEL, SHALL BEAR THE SEAL OF AN ENGINEER REGISTERED IN THE PROJECTS PROVINCE.

CONCRETE

1. CONCRETE SHALL BE MANUFACTURED AND PLACED IN ACCORDANCE WITH THE LATEST EDITION OF CSA STANDARDS A23.1 AND A23.2.
2. THE CONTRACTOR SHALL PROVIDE ONE SET OF STANDARD CONCRETE CYLINDER TEST RESULTS CONDUCTED BY AN INDEPENDENT TESTING FIRM FOR EACH DAYS POUR AND AN ADDITIONAL SET OF CYLINDERS FOR EVERY 50 CUBIC METERS POURED AT NO EXTRA COST TO THE CITY. TEST RESULTS ARE TO BE FORWARDED TO THE CONTRACT ADMINISTRATOR IMMEDIATELY UPON RECEIPT FROM THE TESTING FIRM.
3. PROVIDE A MINIMUM 150mm (6") VOID UNDER ALL BEAMS, WALLS AND STRUCTURAL SLABS. VOID TO BE SHEARMAT OR APPROVED CARDBOARD VOIDFORM.
4. VIBRATE ALL CONCRETE TO ENSURE COMPLETE CONSOLIDATION.
5. THE LOCATIONS OF CONSTRUCTION JOINTS IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE APPROVED BY THE CONTRACT ADMINISTRATOR
6. WHEN THE OUTSIDE TEMPERATURE FALLS BELOW 5 DEGREES CENTIGRADE, THE CONTRACTOR SHALL CONFORM TO THE LATEST EDITION OF CSA STANDARD A23.1/A23.2 AND THE NATIONAL BUILDING CODE FOR COLD WEATHER CONCRETING PROCEDURES, AND SHALL RECIEVE WRITTEN APPROVAL FROM THE CONTRACT ADMINISTRATOR PRIOR TO COMMENCING CONCRETE CONSTRUCTION.
7. PROVIDE $\frac{1}{4}$" x 1" SAW CUTS AT 20' O.C. BOTH WAYS IN FLOOR SLABS UNLESS OTHERWISE NOTED ON DRAWINGS.
8. CONCRETE SHALL CONFORM TO THE FOLLOWING:

8.1.	GRADE BEAMS	-	EXPOSURE CLASS F-2 (25MPA AT 28 DAYS)
8.2.	PILE CAPS	-	EXPOSURE CLASS S-2 (25MPA AT 28 DAYS)
8.3.	CAST-IN-PLACE PILES	-	EXPOSURE CLASS S-2 (32MPA AT 28 DAYS)
8.4.	INTERIOR SLABS ON GRADE	-	EXPOSURE CLASS N (25MPA AT 28 DAYS)

REINFORCING STEEL

1. REINFORCING STEEL SHALL BE NEW BILLET DEFORMED BARS MANUFACTURED IN ACCORDANCE WITH CSA G30.18 AND DETAILED IN ACCORDANCE WITH THE LATEST EDITION OF THE ACI MANUAL, WITH MINIMUM YEILD STRENGTH AS FOLLOWS: 10M BARS-300MPA, 15M BARS & LARGER - 400MPA.
2. REINFORCING STEEL SHALL BE FREE FROM LOOSE RUST, MUD, OIL OR OTHER COATINGS WHICH MAY REDUCE THE BOND OR HARM THE CONCRETE.
3. REINFORCING STEEL SHALL BE HELD IN PLACE AND TIED WITH PROPER ACCESSORIES SUCH AS HI-CHAIRS, SPACERS, TIES, ETC. SUPPLIED BY THE REINFORCING STEEL PROVIDER. APPROPRIATE SUPPORT SHALL BE PROVIDED UNDER ALL SUPPORT ACCESSORIES TO ENSURE THAT THE REINFORCING STEEL IS ACCURATELY POSITIONED.
4. LAP TOP BARS AT MID-SPAN AND BOTTOM BARS OVER SUPPORTS.
5. BEND ALL HORIZONTAL STEEL 18" AROUND CORNERS, OR USE EXTRA 36"x36" CORNER BARS TO MATCH HORIZONTALS.
6. PROVIDE 2-15M AROUND ALL SLAB, WALL, & BEAM OPENINGS, UNLESS OTHERWISE NOTED ON STRUCTURAL DRAWINGS.
7. CONCRETE COVER TO REINFORCING STEEL SHALL BE AS FOLLOWS:

7.1.	CONCRETE CAST IN DIRECT CONTACT WITH SOIL	-	75mm (3")
7.2.	FORMED CONCRETE IN CONTACT WITH SOIL 15M OR SMALLER	-	50mm (2")
7.3.	FORMED CONCRETE IN CONTACT WITH SOIL 20M OR LARGER	-	40mm (1 $\frac{1}{2}$")
7.4.	FORMED CONCRETE NOT IN CONTACT WITH SOIL (BEAMS AND COLUMNS)	-	40mm (1 $\frac{1}{2}$")
7.5.	FORMED CONCRETE NOT IN CONTACT WITH SOIL (SLABS AND WALLS)	-	20mm ($\frac{3}{4}$")

8. MISCELLANEOUS CONCRETE HOUSEKEEPING PADS AND CURBS SHALL BE REINFORCED WITH A MINIMUM 10M AT 18" O.C. EACH WAY UNLESS NOTED. SEE ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS.

CAST-IN-PLACE PILES

1. CAST-IN-PLACE PILES ARE DESIGNED AS FRICTION ELEMENTS IN FIRM CLAY MATERIAL AS SHOWN IN TABLE WITH AN ALLOWABLE FRICTIONAL CAPACITY OF 14.4KPA (300psf) FROM 2.4m(8') TO 12m(40') FROM PRESENT GRADE LEVEL. THE TOP 3m (10') HAVE BEEN NEGLECTED FOR PERIMETER AND EXTERIOR PILES, TOP 1.5m(5') HAVE BEEN NEGLECTED FOR INTERIOR PILES.
2. LOCATE ALL SITE SERVICES PRIOR TO PILING.
3. ALL HOLES SHALL BE DRILLED TO THE DEPTHS AND DIAMETERS SHOWN ON THE DRAWINGS. THE CONTRACT ADMINISTRATOR SHALL BE NOTIFIED IMMEDIATELY IF IT IS IMPOSSIBLE TO ATTAIN THE DEPTHS OR DIAMETERS INDICATED. NO CREDITS OR EXTRAS WILL BE CONSIDERED DUE TO ANY REVISION IN SIZE FROM THE SOIL CONDITIONS ENCOUNTERED.
4. ALL PILE HOLES SHALL BE POURED WITHIN AN 8 HOUR TIME PERIOD. NO MORE THAN 6 HOLES SHALL BE LEFT OPEN AT ANY TIME.
5. SLEEVES SHALL BE PLACED THROUGH ANY SOIL THAT MAY SLOUGH DURING CONSTRUCTION OF THE PILE.
6. CONCRETE SHALL BE PLACED INTO HOLES IN ONE CONTINUOUS POUR IMMEDIATELY AFTER HOLES ARE DRILLED. CONSOLIDATE THE TOP 10 FEET WITH A MECHANICAL VIBRATOR. PROTECT THE TOP OF THE PILE FROM FREEZING WHEN THE TEMPERATURE FALLS BELOW 5 DEGREES CENTIGRADE. ANY FROZEN CONCRETE WILL BE REJECTED.
7. PROVIDE FULL LENGTH REINFORCING FOR PILES IN UNHEATED AREAS.
8. A COPY OF THE GEOTECHNICAL REPORT IS INCLUDED.
9. CENTER ALL PILES UNDER GRADE BEAMS OR WALLS UNLESS OTHERWISE NOTED.

METAL DECK

1. ROOF DECK SHALL BE 1 $\frac{1}{2}$" DEEP x 22 Ga. (MIN) WITH 6" RIB SPACING UNLESS OTHERWISE NOTED ON DRAWINGS.
2. FLOOR DECK SHALL BE 1 $\frac{1}{2}$" DEEP x 22 Ga. (MIN) COMPOSITE ACTION.
3. ALL DECK FOR INTERIOR EXPOSURE SHALL BE ZINC COATED TO ZF75 (A25). ALL DECK FOR EXTERIOR EXPOSURE SPECIFIED AS GALVANIZED TO HAVE A MINIMUM ZINC COATING DESIGNATION OF ZF275.
4. BEARING SURFACES TO BE FUSION WELDED WITH 3/4"Ø WELDS SPACED AT 12" O.C. MECHANICALLY FASTEN SIDE LAPS AT 12" O.C. PROVIDE AT 4" MINIMUM LAP AT DECK JOINTS.
5. STEEL DECK TO BE CONTINUOUS OVER THREE SPANS.
6. ALL ROOF DECK OPENINGS LARGER THAN 16"x16" SHALL BE REINFORCED (SEE STRUCTURAL STEEL NOTES FOR REINFORCING)
7. TOUCH UP DECK WITH ZINC RICH PAINT WHERE DECK IS DAMAGED DUE TO WELDING AND FASTENING.
8. STEEL DECK SUPPLIER SHALL PROVIDE STAMPED SHOP DRAWINGS TO THE CONTRACT ADMINISTRATOR FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.

STEEL JOISTS

1. OPEN WEB STEEL JOISTS TO BE DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF CSA STANDARD S-16 AND S-136 FOR THE LOADS SHOWN ON THE PLAN.
2. VERIFY ALL LOADS IMPOSED FROM MECHANICAL AND ELECTRICAL EQUIPMENT. CONFIRM DIMENSIONS OF EQUIPMENT WITH CONTRACTOR.
3. PROVIDE 2 $\frac{1}{2}$" MINIMUM BEARING.
4. ALL OPEN WEB STEEL JOISTS TO HAVE 4" JOIST SHOE UNLESS OTHERWISE NOTED ON DRAWINGS.
5. ALL JOISTS SHALL BE PRE-CAMBERED.
6. MAXIMUM JOIST DEFLECTION SHALL NOT EXCEED L/360.
7. JOIST SUPPLIER TO ARRANGE JOISTS TO ACCOMMODATE MECHANICAL DUCT WORK.
8. PROVIDE STRUT-JOISTS WHERE JOISTS FRAME DIRECTLY INTO COLUMNS.
9. SEE ARCHITECTURAL DRAWINGS FOR ANY MASONRY NON-LOAD BEARING WALLS BEARING ON JOISTS.
10. NO EXTRAS WILL BE CONSIDERED FOR MISCELLANEOUS LOADS (BRACING, PARAPETS, UPLIFT) NOT SHOWN ON THE STRUCTURAL DRAWINGS. IT IS THE JOIST SUPPLIER RESPONSIBILITY TO CONFIRM ALL LOADS REQUIRED FOR FABRICATION PRIOR TO BID OPPORTUNITY.
11. BRIDGING AND BRACING OF JOIST TO BE DESIGNED AND SUPPLIED BY JOIST SUPPLIER.
12. FOR DECK OPENINGS GREATER THAN 16"x16" PROVIDE 3" x 3" x $\frac{1}{4}$" ANGLE.
13. JOIST SUPPLIER SHALL PROVIDE STAMPED SHOP DRAWINGS TO THE CONTRACT ADMINISTRATOR FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.

STRUCTURAL STEEL

1. STRUCTURAL STEEL SHALL BE DESIGNED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST EDITION OF THE CAN/CSA-S16-09 BY FULLY CERTIFIED MEMBERS OF THE CANADIAN INSTITUTE OF STEEL CONSTRUCTION.
2. ALL STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF CNA/CSA G40.21-350W CLASS C TO SIZES AND SHAPES INDICATED ON THE DRAWINGS. NO SUBSTITUTIONS IN GRADES OR SIZES ARE PERMITTED WITHOUT WRITTEN APPROVAL OF BEACH ROCKE ENGINEERING LTD. ALL ANGLES AND PLATES TO BE G40.21-300W.
3. ALL FABRICATION SHALL BE CARRIED OUT IN PLANT FACILITIES CERTIFIED BY THE CANADIAN WELDING BUREAU TO CSA S16-09 AND S136, LATEST EDITION. SITE FABRICATION IS NOT PERMITTED WITHOUT WRITTEN APPROVAL FROM BEACH ROCKE ENGINEERING LTD.
4. ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF CSA W59 BY WELDERS FULLY CERTIFIED FOR STRUCTURAL WELDING BY THE CANADIAN BUREAU TO CSA W47.1. ALL BASE AND CAP PLATES SHALL BE FULLY WELDED TO COLUMNS.
5. STRUCTURAL FASTENERS SHALL BE A325 BOLTS. ANCHOR BOLTS SHALL BE 18" LG. C/W 3"HOOK (A307) UNLESS NOTED OTHERWISE ON STRUCTURAL DRAWINGS. BASE AND CAP PLATES TO BE $\frac{3}{4}$" THICK. CAP PLATES TO HAVE MIN. 4 BOLT (A325) CONNECTION UNLESS NOTED OTHERWISE ON STRUCTURAL DRAWINGS.
6. PROVIDE TEMPORARY GUYING AND BRACING AS NECESSARY TO PROVIDE STABILITY FOR THE WHOLE STRUCTURE UNTIL DECKING AND PERMANENT BRACING ARE SECURED IN PLACE.
7. PROVIDE $\frac{3}{8}$" STIFFENER PLATES IN ALL BEAMS CONTINUOUS OVER SUPPORTS. HOLES ARE NOT PERMITTED IN THE TOP FLANGES UNLESS NOTED OTHERWISE ON THE DRAWINGS.
8. INTERIOR STEEL SHALL BE PAINTED WITH ONE COAT OF RED OXIDE PRIMER, AFTER HAVING BEEN CLEANED TO SSPC-SP2.
9. CLEAN ALL FIELD WELDS AND TOUCH UP WITH PRIMER TO MATCH SHOP COAT.
10. DESIGN AND FABRICATE CONNECTIONS FOR THE FULL STRENGTH OF THE MEMBER. SPLICING OF MEMBERS IS NOT PERMITTED UNLESS WRITTEN APPROVAL FROM THE CONTRACT ADMINISTRATOR HAS BEEN PROVIDED.
11. FOR DECK OPENINGS GREATER THAN 16"x16" PROVIDE 3" x 3" x $\frac{1}{4}$" ANGLE.
12. PROVIDE C100x9 CHANNEL BELOW ALL RTU CURBS (4 SIDES). FASTEN CHANNEL TO 4"x4"x $\frac{1}{4}$" CLIP ANGLE ON OPEN WEB STEEL JOIST TOP CHORD, OR DIRECTLY TO STEEL BEAMS.
13. WHERE STRUCTURAL STEEL SUPPORTS PRECAST HOLLOWCORE, PROVIDE $\frac{3}{4}$" DIAMETER x 6" LONG NELSON STUDS @ 48" O.C.
14. PROVIDE 1 $\frac{1}{2}$" x $\frac{1}{4}$" x 10" LONG STRAP ANCHOR AT 32" O.C. WHERE MASONRY IS IN CONTACT WITH STRUCTURAL STEEL.
15. ALL STEEL EXPOSED TO WEATHER SHALL BE GALVANIZED.
16. PROVIDE 6"X6"X$\frac{5}{8}$" ANGLE AT HOLLOWCORE OPENINGS TO ENSURE HOLLOWCORE BEARING IS PROVIDED.
17. MISCELLANEOUS METALS INCLUDING BUT NOT LIMITED TO STEEL STAIRS, GUARDRAILS AND HANDRAILS ARE DESIGNED BY OTHERS. THE SUPPLIER SHALL SUBMIT SHOP DRAWINGS TO THE CONTRACT ADMINISTRATOR FOR REVIEW AND APPROVAL.
18. STRUCTURAL STEEL SUPPLIER SHALL PROVIDE STAMPED SHOP DRAWINGS TO THE CONTRACT ADMINISTRATOR FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.

STRUCTURAL DRAWING LIST

DESIGN IN ACCORDANCE WITH THE 2011 MANITOBA BUILDING CODE

CAST-IN-PLACE PILE FRICTIONAL CAPACITIES

DEPTH BELOW EXISTING SITE GRADE	SLS SHAFT ADHESION	FACTORED ULS (kPa)	
		SHAFT ADHESION	END BEARING
0m TO 2.5m	0.0 kPa	0.0 kPa	0
2.5m TO 7.0m	20.0 kPa	24.0 kPa	145
7.0m TO 10.5m	13.3 kPa	16.0 kPa	145

DESIGN
TRUE
NORTH

APEGM
Certificate of Authorization
Beach Rocke Engineering Ltd.
No. 4050 Date: JUNE 19, 2015

REV	DESCRIPTION	DATE	BY
5	ISSUED FOR TENDER	19 JUNE 2015	SAS
4	ISSUED FOR CONSTRUCTION	01 JUNE 2015	SAS
3	ISSUED FOR REVIEW	13 MAY 2015	SAS
2	ISSUED FOR PRICING	10 APR 2015	SAS
1	ISSUED FOR REVIEW	23 FEB 2015	SAS

SEAL:

SEAL:
PROVINCE OF MANITOBA
JUNE 19, 2015
R.M. HUDON
Member
3009
REGISTERED PROFESSIONAL ENGINEER

DRAWING:

KEY PLAN, NOTES & TRUSS DETAILS

PROJECT:

TRANSPORTATION MANAGEMENT CENTRE RENOVATIONS

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Neil Cooper Architect Inc.
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DRAWN BY:	CHECKED BY:	SHEET NO:	REV NO:
SAS	RH	S1.15	

DATE: 19 JUNE 2015
SCALE: AS NOTED
FILE: 15-086-CG-31