

# ROOF RAILING SYSTEM - PHASE 6

## GREAT LAKES FORESTRY CENTRE

### 1219 QUEEN STREET EAST

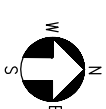
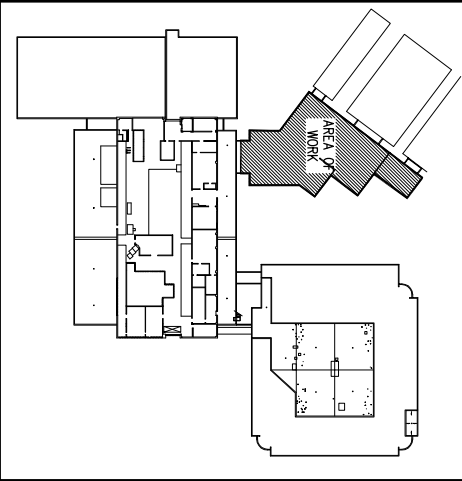
### SAULT STE. MARIE, ONTARIO

JUNE 2015

MET PROJECT No. 15M42



**mct**  
energy systems  
CONSULTING ENGINEERING  
477 QUEEN STREET EAST SUITE 204  
SAULT STE. MARIE, ON P6A 1Z5  
PHONE: (705)942-3344 FAX: (705)942-1417  
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The logo for mct energy systems features a stylized diamond shape on the left, composed of two overlapping triangles. The right triangle is white with a black outline, and the left triangle is black with a white outline. To the right of this graphic, the text "mct" is written in a large, bold, lowercase sans-serif font. Below "mct", the words "energy systems" are written in a smaller, lowercase sans-serif font, with "energy" on one line and "systems" on the next.

**mct**  
energy systems

CONSULTING ENGINEERING  
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DO NOT SCALE DRAWINGS

ENGINEER'S SEAL



0	ISSUED FOR TENDER	15 JUN. 2015
REV.	DESCRIPTION	DATE

**PROJECT DESCRIPTION:**  
**ROOF RAILING SYSTEM – PHASE 6**  
**GREAT LAKES FORESTRY CENTRE**  
**1219 QUEEN STREET EAST**  
**SAULT STE. MARIE, ON**

**DRAWING DESCRIPTION:**

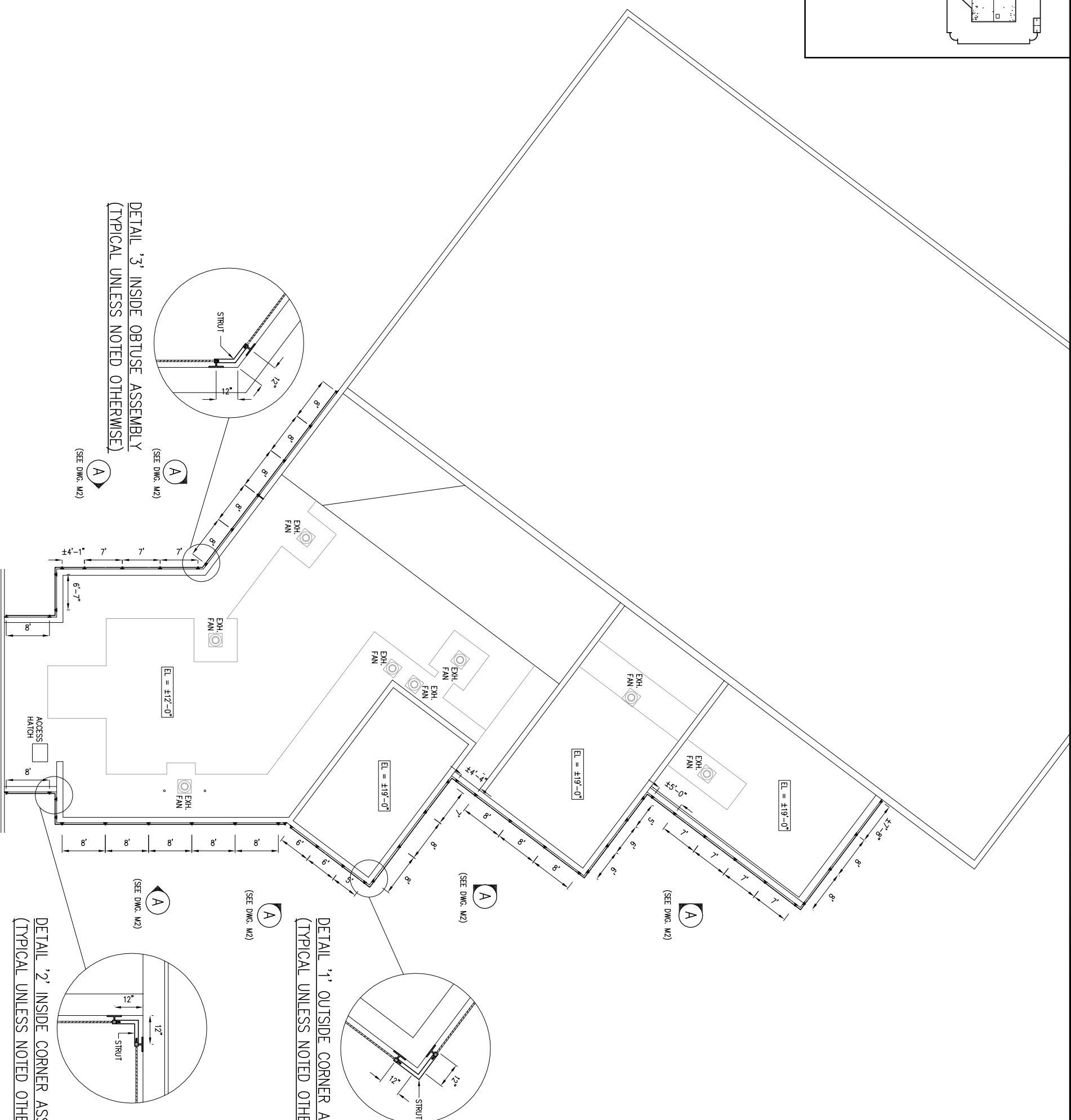
ARCHITECTURAL  
PARTIAL ROOF PLAN  
ROOF RAILING

SCALE:	$1'' = 20'-0''$	FROM DATE (10.5.107)
DRAWN BY:	JV	DATE:
CHECKED BY:	TSJ	DATE:
PROJECT NO:	15M42	FILE NO:
		15M42-A1

DETAIL '2' INSIDE CORNER ASSEMBLY  
(TYPICAL UNLESS NOTED OTHERWISE)

DETAIL '1' OUTSIDE CORNER ASSEMBLY  
(TYPICAL UNLESS NOTED OTHERWISE)

DETAIL '3' INSIDE OBTUSE ASSEMBLY  
(TYPICAL UNLESS NOTED OTHERWISE)



A1

SHEET NO.  
1 of 4

0  
REV



CONSULTING ENGINEERING  
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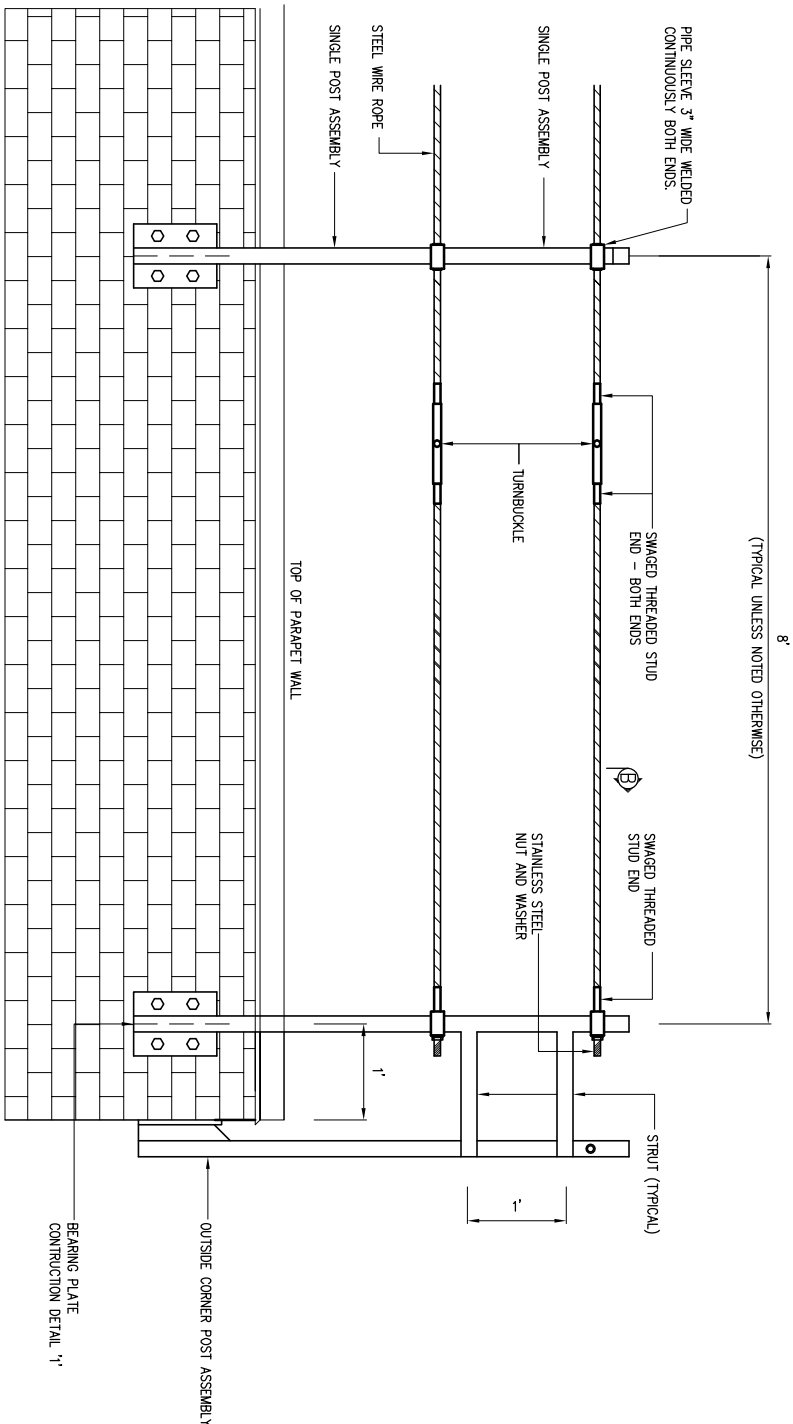
REV.	DESCRIPTION	DATE
0	ISSUED FOR TENDER	15 JUN 2015

PROJECT DESCRIPTION:  
**ROOF RAILING SYSTEM – PHASE 6**  
**GREAT LAKES FORESTRY CENTRE**  
**1219 QUEEN STREET EAST**  
**SAULT STE. MARIE, ON**

DRAWING DESCRIPTION:  
**ARCHITECTURAL**  
**ELEVATION AND SECTIONS**  
**DETAILS**

SCALE:	1/2" = 1'-0"	1:24	FORM SIZE (15.5x10")
DRAWN BY:	JV	DATE:	28 MAY 2015
CHECKED BY:	TSJ	DATE:	15 JUNE 2015
PROJECT NO:	15M42	FILE NO:	15M42-A2

SHEET NO.	2 OF 4
REV	0

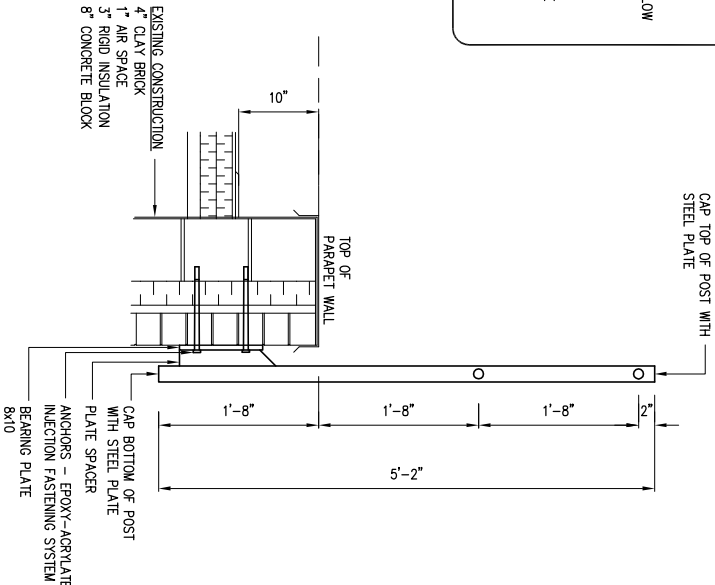


PARTIAL ELEVATION 'A' (TYPICAL)  
FROM DWG AT

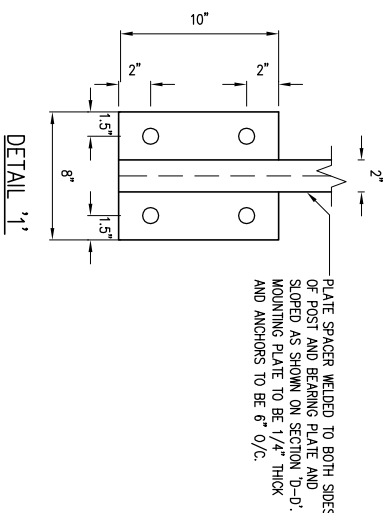
- NOTES
1. RAILING DESIGN NATIONAL BUILDING CODE OF CANADA 2010 , PART 4, CLAUSE 4.1.5.14.
  2. DESIGN LOAD: STATIC POINT LOAD OF 890 N APPLIED IN ANY DIRECTION AT ANY POINT ON THE TOP RAIL.
  3. FASTENER CRITERIA: FACTORED PULLOUT RESISTANCE MUST EXCEED 18.84 KN PER ANCHOR. FASTENER MANUFACTURER IDENTIFY ANCHOR CAPACITY WITH AN ON SITE PULLOUT TEST BEFORE INSTALLATION OF RAILING SYSTEM. CONTRACTOR TO PROVIDE (3) RANDOM TEST SPOTS, LOCATIONS TO BE CO-ORDINATED WITH GFC AND ENGINEER PRIOR TO INSTALLATION OF RAILING SYSTEM.
  4. LOAD TEST  
-FASTEN POST TO PARAPET SIMILAR TO SECTION 'B-B'  
-LOAD TOP OF POST USING METHOD DETERMINED BY CONTRACTOR  
-RECORD AMOUNT OF DEFLECTION AND LOAD  
-TEST SHALL BE STOPPED WHEN LOAD REACHES 36KN (810 LBS) ENSURE AREA BELOW IS TAPERED OFF AND GUARDED  
-HOLD LOAD FOR 10 MINUTES MINIMUM  
-PROVIDE A MINIMUM OF 4 TESTS PROVIDED NO FAILURE  
-LOAD TEST MUST BE PERFORMED BY A REGISTERED PROFESSIONAL ENGINEER
  5. THERE CURRENTLY IS NO TIE OFF ANCHOR POINTS ON THE H CORRIDOR/HEAD HOUSE ROOF. CONTRACTOR IS RESPONSIBLE FOLLOW THE ONTARIO HEALTH AND SAFETY GUIDELINES FOR FALL ARREST.
  6. ALL TESTING IS TO BE AT THE EXPENSE OF THE CONTRACTOR.

TYPICAL CONSTRUCTION MATERIALS

- POSTS, STRUTS AND STRINGERS-- HSS 2"x2"x1/8" T-304 1/8" THICKNESS, NO. 4 FINISH
- STEEL WIRE ROPE – HIGH-GRADE STEEL WITH STEEL CORE, 7/8 – 1/2" DIAMETER, STAINLESS STEEL TYPE AISI 316 (14401)
- ANCHORS – ASTM 304 STAINLESS STEEL ASSEMBLY, EQUAL TO UCAN FLO-ROK FRS MAX EPOXY – ACRYLATE INJECTION, WITH 3/4" DIAMETER WIRE MESH SCREEN, 3/4" DIAMETER S.S. ROD, WASHER AND NUT. INSTALLED THROUGH BRICK, AIR SPACE AND INSULATION EMBEDDED A MIN. OF 3" INTO CONCRETE BLOCK.
- BEARING PLATE – 8" X 10", STAINLESS STEEL – GRADE T-304 1/4" THICKNESS, NO. 4 FINISH
- PLATE SPACER – STAINLESS STEEL – GRADE T-304 1/4" THICKNESS, NO. 4 FINISH
- TURNBUCKLE – STAINLESS STEEL BODY MODEL (S9) BY UNIROPE LTD. INSTALL ONE EVERY 50'-0" WITH A MINIMUM OF ONE PER SECTION.
- SWAGED THREADED STUD – STAINLESS STEEL EQUAL TO MODEL (APAG) FINELINE BY UNIROPE LTD.
- WELDS – ALL WELDS ARE TO BE STAINLESS STEEL 6MM THICK. WELDS AND ADJACENT SURFACES ARE TO BE PICKLED TO REMOVE ANY DISCOLORATION FROM WELDING PROCESS.



POST CONSTRUCTION – SECTION 'B-B'



TYPICAL BEARING PLATE CONSTRUCTION  
N.T.S

SINGLE POST ASSEMBLY  
N.T.S





<http://www.meteng.cn>

USED FOR CONSTRUCTION OR FABRICATION UNTIL SIGNED AS CHECKED AND APPROVED.

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**ROOF RAILING SYSTEM – PHASE 6**  
**GREAT LAKES FORESTRY CENTRE**  
**1219 QUEEN STREET EAST**  
**SAULT STE. MARIE, ON**

**DRAWING DESCRIPTION:**

ARCHITECTURAL

## LIGHTING ROD DETAILS

SCALE:	1/2" = 1'-0"	1:24	FORM SIZE (inches)
DRAWN BY:	JV	DATE:	28 MAY 2015
CHECKED BY:	TSJ	DATE:	15 JUN 2015
PROJECT NO:	15MA2	FILE NO:	15MA2 - A4

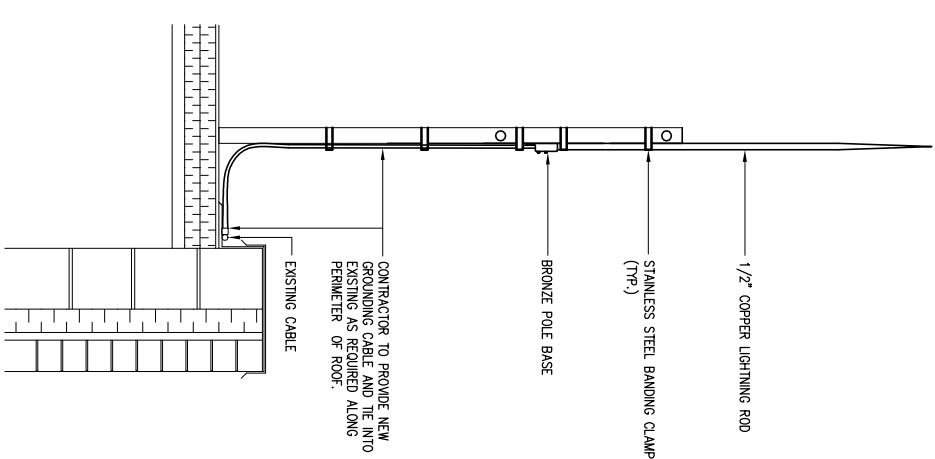
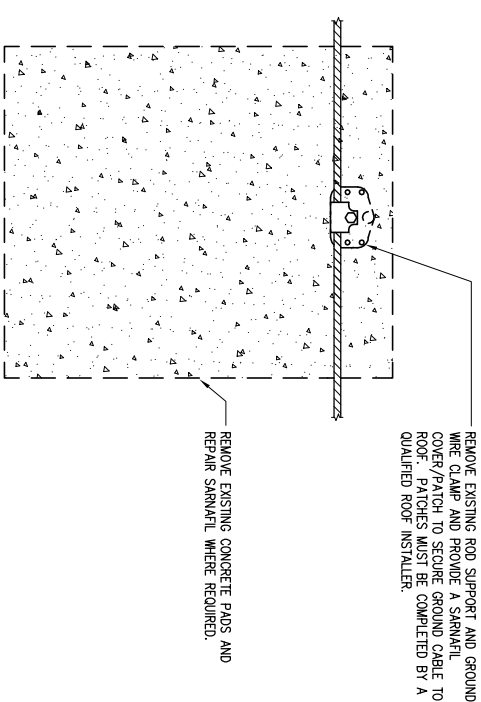
A4

SHEET NO. 4 OF 4

REV

NOTE

ALL NEW LIGHTING RODS MUST  
MATCH EXISTING LIGHTING RODS  
INSTALLED ON BUILDING



EXISTING LIGHTNING ROD GROUND DETAIL  
NTS

## EXISTING LIGHTNING PROTECTION

