The Corporation of the City of Sault Ste. Marie
Municipal Heritage Committee
Agenda

Wednesday, March 5, 2025

12:00 pm - 1:00 pm

Video Conference

Meetings may be viewed live on the City's Youtube channel
https://www.youtube.com/user/SaultSteMarieOntario

Pages

1. Land Acknowledgement

I acknowledge, with respect, that we are in Robinson-Huron Treaty territory, that the land on which we are gathered is the traditional territory of the Anishinaabe and known as Bawating. Bawating is the home of Garden River First Nation, Batchewana First Nation, the Historic Sault Ste. Marie Metis Council.

2. Adoption of Minutes 3 - 6

Mover _____

Seconder _____
Resolved that Minutes of Municipal Heritage Committee meeting of February 5, 2025 be approved.

3. Declaration of Pecuniary Interest

4. Adoption of Agenda

Mover _____

Seconder _____
Resolved that the Agenda for Municipal Heritage Committee meeting for March 5, 2025 as presented be approved.

5. Business Arising

5.1 Heritage Week Update

5.2 Museum Bell

6. Sub-committee / Task Force Updates

6.1 Heritage Booklet and Video Tours

6.2 Doors Open Subcommittee

6.3 Heritage Trees

Planning a meeting for early April.

7. New Business

7.1 Memorial Tower Rehabilitation 7 - 21

Dan Moody from Tulloch Engineering will be attending to provide information on the project.

7.2 Community Culture Plan - Goal 6: Natural and Built Heritage 22 - 23

8. Correspondence

9. Next Meeting

April 2, 2025 at noon

10. Adjournment

Mover _____

Seconder _____

Resolved that this Committee now adjourn.

The Corporation of the City of Sault Ste. Marie

Municipal Heritage Committee

Minutes

Wednesday, February 5, 2025 at 12:00 pm
Video Conference
Meetings may be viewed live on the City's Youtube channel
https://www.youtube.com/user/SaultSteMarieOntario

Present:	A. White, S. Walker, J. van Haaften, L. Joyal, Councillor S. Spina, C. Tomchik, H. Ellis
Officials:	V. McLeod, N. Maione, S. Marchese, A. Hornblower

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1. Land Acknowledgement

2. Welcome and Introductions

3. Adoption of Minutes

Moved by: L. Joyal
Seconded by: J. van Haaften

Resolved that the Minutes of Municipal Heritage Committee meeting of November 14, 2024 be approved as amended.

Carried

4. Declaration of Pecuniary Interest

None Noted

5. Adoption of Agenda

Moved by: A. White
Seconded by: S. Walker

Resolved that the Agenda for Municipal Heritage Committee meeting for February 5, 2025 as amended be approved amended.

Carried

6. Business Arising

6.1 Election of Officers

Moved by: L. Joyal
Seconded by: A. White

Resolved that the nominations are open for the position of Chair of the Municipal Heritage Committee for 2025.

Carried

Moved by: S. Walker
Seconded by: A. White

Resolved that Jami van Haaften was declared Chairperson of the Municipal Heritage Committee for 2025.

Carried

Moved by: A. White
Seconded by: S. Walker

Resolved that nominations be open for the position of Vice-chair of the Municipal Heritage Committee for 2025.

Carried

Moved by: H. Ellis
Seconded by: S. Walker

Resolved that Alex White was declared Vice-chairperson of the Municipal Heritage Committee for 2025.

Carried

6.2 Museum Bell

The Museum would like to build a cover to protect the Bell from the elements and to prevent vandalism. Alex has been in touch with the high schools to see if they could help with the build, but they cannot assist. Lise contacted Sault College to see if they would be interested in the project. Hanna will look into the cost of materials and if any businesses are willing to assist. If the Bell is part of the Museum collection, it may be eligible for funding, Hanna will investigate and report back.

6.3 Heritage Property Tax Rebate Program

Moved by: S. Walker
Seconded by: S. Spina

Resolved that the Sault Ste. Marie Municipal Heritage Committee recommend to City Council that the Designated Heritage Property Tax Rebate for 143 McGregor for the 2022/2023 tax year be paid.

Carried

7. Sub-committee / Task Force Updates

7.1 Heritage Booklet and Video Tours

The sub-committee met before Christmas to review the draft booklet. A meeting will be planned for March.

Moved by: J. van Haaften
Seconded by: L. Joyal

Resolved that Colin Tomchik and Hanna Ellis be appointed to the Heritage Booklet and Video Tour sub-committee.

Carried

7.2 Heritage Trees

Next steps include obtaining measurements of tree diameters, and further research needs to be done on trees.

Moved by: J. van Haaften
Seconded by: S. Walker

Resolved that Colin Tomchik be appointed to the Heritage Trees sub-committee.

Carried

8. New Business

8.1 Heritage Week

Activities planned for Heritage Week include:

- A walking tour down Queen Street starting at the ECNHS to Plaza will be conducted by Alex and Sonny

- A series of social media posts are prepared.

- Displays will be set up at both Library locations.

8.2 Doors Open

Moved by: S. Walker

Seconded by: S. Spina

Resolved that Jami van Haaften, Alex White and Hanna Ellis be appointed to the Doors Open sub-committee.

Carried

9. Correspondence

10. Next Meeting

March 5, 2025 at noon

11. Adjournment

Moved by: S. Walker
Seconded by: A. White

Resolved that this Committee now adjourn.

Carried

GFL MEMORIAL TOWER
REHABILITATION
SAULT STE. MARIE, ONTARIO

OWNER:
THE CORPORATION OF THE CITY OF SAULT STE. MARIE
COMMUNITY SERVICES DIVISION
VIRGINIA MCLEOD
99 FOSTER DRIVE
SAULT STE. MARIE, ON
P6A 5X6
ph (705) 759-5264

STRUCTURAL CONSULTANT
TULLOCH ENGINEERING INC.
DAN MOODY, A.Sc.T.
71 BLACK ROAD, UNIT #8
SAULT STE. MARIE, ON
P6B 0A3
ph (705) 949-1457

PROJECT: 24-1255

MEMORIAL TOWER
WEST ELEVATION
(LOOKING SOUTH)

ISSUED FOR REVIEW
FEBRUARY 27, 2025

FEATURES OF DESIGN

1. THE UPPER GLASS LIGHT ENCLOSURE WILL REMAIN UNTOUCHED.

2. THE UPPER OCTAGONAL CONCRETE BASE BENEATH THE GLASS LIGHT ENCLOSURE WILL REMAIN MOSTLY UNTOUCHED, WITH THE EXCEPTION OF SURFACE REPAIRS TO THE CONCRETE AND APPLICATION OF A COATING TO MATCH THE REMAINDER OF THE TOWER CONCRETE.

3. THE CONCRETE RING AND STEEL RAILING AROUND THE PERIMETER OF THE TOWER WILL BE EXTENSIVELY REPAIRED. THE RING WILL BE REMOVED AND REPLACED WITH NEW CONCRETE TO MATCH THE DIMENSIONS OF THE EXISTING. THE STEEL RING IS BADLY CORRODED AND ONCE REMOVED WILL NOT LIKELY BE REPAIRABLE. THE PROJECT INCLUDES FOR THE FABRICATION OF A NEW RAILING TO MATCH THE DIMENSIONS OF THE EXISTING.

4. ALL DAMAGED CONCRETE (SPALLED OR DELAMINATED) WILL BE REMOVED AND REPAIRED WITH A CONCRETE PRODUCT.

5. THE EXISTING DOOR AT THE BASE AND THE SMALL ACCESS DOOR BENEATH THE GLASS LIGHT ENCLOSURE WILL REMAIN UNTOUCHED EXCEPT FOR THE APPLICATION OF NEW COATING.

6. THE EXISTING EXTERIOR LIGHTS WILL REMAIN UNTOUCHED.

7. THE INTERIOR OF THE TOWER WILL REMAIN MOSTLY UNTOUCHED (REFER TO THE ITEM ON DRAWING G2 WHICH DESCRIBES POTENTIAL ALTERATIONS TO THE EXISTING GLASS BLOCKS).

   THERE IS ONE ELEMENT ON THE TOWER THAT HAS PROVEN CHALLENGING TO SOURCE A REPLACEMENT. THERE ARE A NUMBER OF GLASS BLOCKS THAT ARE MISSING OR BROKEN. THE DIMENSION OF THE GLASS BLOCK MAKES REPLACEMENT NEARLY IMPOSSIBLE. ADDITIONALLY, THE EXISTING GLASS BLOCKS ARE HEAVILY STAINED - RESULTING IN A DARKER PATINA THAN WOULD BE PRESENT ON A NEW BLOCK. WE HAVE DEVELOPED TWO OPTIONS RELATING TO THE GLASS BLOCKS. PLEASE REFER TO THE FOLLOWING PAGE FOR AN ILLUSTRATION OF THOSE PROPOSED OPTIONS.

8. THE EXTERIOR OF THE TOWER WILL RECEIVE A NEW COATING. COLOUR SELECTION IS PROPOSED TO MATCH THE CURRENT COLOUR, AND CAN BE REVIEWED WITH STAKEHOLDERS BEFORE APPROVAL.

No.	DATE	BY	ISSUES / REVISIONS
0	27 Feb '25	BWI	ISSUED FOR REVIEW

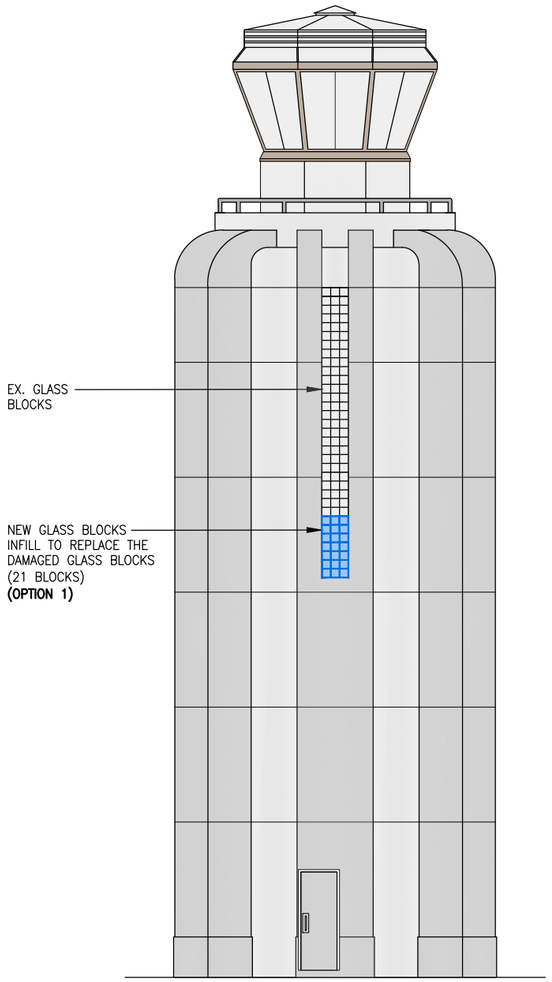
DRAWN BY: BWI
CHECKED BY: MF
DESIGNED BY: DJM
APPROVED BY: RM
SCALE: AS NOTED
DATE: OCT 1, 2024
PROJECT No. : 24-1255
DRAWING No. G1
REVISION No. 0

ENGINEER'S SEAL

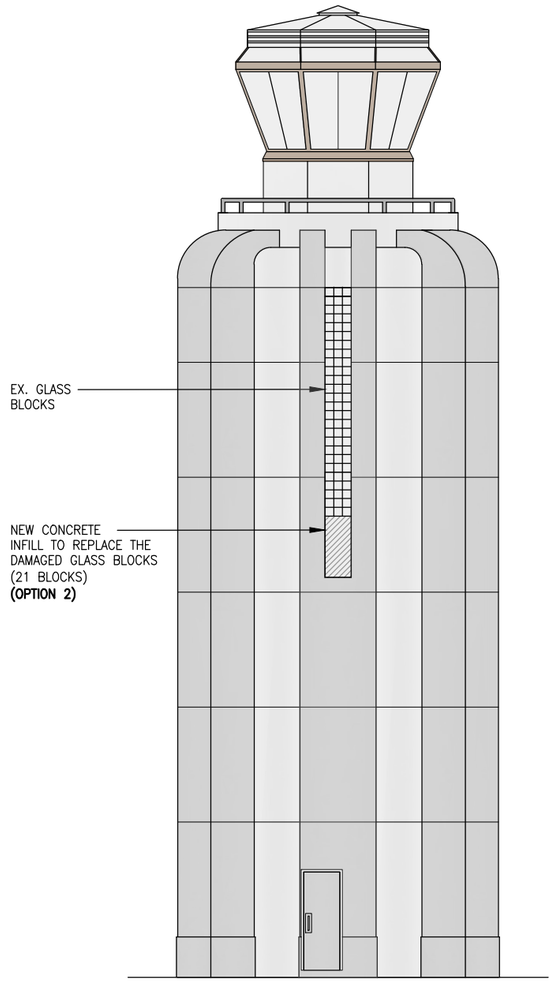
PROJECT:
CITY OF SAULT STE. MARIE
GFL MEMORIAL TOWER REHABILITATION
SAULT STE. MARIE, ONTARIO

DRAWING: FEATURES OF DESIGN

TULLOCH



EAST ELEVATION
(OPTION 1)
SCALE: 1:125



EAST ELEVATION
(OPTION 2)
SCALE: 1:125

GLASS BLOCK REPAIR/REPLACEMENT OPTIONS

OPTION 1

- REMOVE ALL EXISTING GLASS BLOCK.
- DISCARD ALL BROKEN GLASS BLOCK.
- CLEAN AND PALLETIZE ALL SALVAGED GLASS BLOCK AND SECURELY STORE OFF SITE DURING CONSTRUCTION.
- PROVIDE TEMPORARY HOARDING TO MAINTAIN THE TOWER IN A WEATHERTIGHT STATE.
- SOURCE NEW GLASS BLOCK TO MATCH THE EXISTING AS CLOSE AS POSSIBLE.
- INSTALL THE NEW GLASS BLOCK IN A LOCATION THAT WOULD BE CONSIDERED LEAST NOTICEABLE TO DAILY TRAFFIC AND VISITORS.
- INSTALL THE EXISTING GLASS BLOCKS WITH NEW MORTAR, ENSURING THE SALVAGED BLOCK ARE USED WHERE MOST VISIBLE.
- INSTALL NEW PERIMETER SEALANT.

APPROXIMATELY 21 BLOCKS TO BE REPLACED

OPTION 2

- REMOVE ALL EXISTING GLASS BLOCK.
- DISCARD ALL BROKEN GLASS BLOCK.
- CLEAN AND PALLETIZE ALL SALVAGED GLASS BLOCK AND SECURELY STORE OFF SITE DURING CONSTRUCTION.
- PROVIDE TEMPORARY HOARDING TO MAINTAIN THE TOWER IN A WEATHERTIGHT STATE.
- REDUCE THE SIZE OF THE EXISTING CONCRETE OPENINGS TO PERMIT THE AVAILABLE BLOCK TO BE USED, WITHOUT REQUIRING REPLACEMENT BLOCK. THIS OPTION IS ESSENTIALLY SHRINKING THE ROUGH OPENINGS TO ACCOMMODATE THE AREA OF AVAILABLE BLOCK. THE OPENINGS WOULD BE INFILLED AT THE BASE OR AT THE TOP WITH CONCRETE AND FINISHED TO MATCH THE REMAINDER OF THE TOWER. THE INFILL WOULD NOT BE EASILY DISTINGUISHABLE. IF APPROVED, THE REDUCTION IN ROUGH OPENING COULD OCCUR ON ONE OF THE OPENINGS OR BE SPREAD EVENLY ACROSS ALL THREE TO MINIMIZE THE IMPACT OF THE CHANGE.
- INSTALL THE EXISTING GLASS BLOCKS WITH NEW MORTAR.
- INSTALL NEW PERIMETER SEALANT.

APPROXIMATELY 21 BLOCKS TO BE REPLACED

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DRAWN BY: BWI
CHECKED BY: MF
DESIGNED BY: DJM
APPROVED BY: RM
SCALE: AS NOTED
DATE: OCT 1, 2024
PROJECT No. : 24-1255
DRAWING No. G2
REVISION No. 0

ENGINEER'S SEAL

PROJECT:
CITY OF SAULT STE. MARIE
GFL MEMORIAL TOWER REHABILITATION
SAULT STE. MARIE, ONTARIO

DRAWING:
EXTERIOR ELEVATIONS
GLASS BLOCK INFILL OPTIONS

TULLOCH

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE ONTARIO BUILDING CODE, LATEST EDITION.
2. CONTRACTOR TO CHECK FOR ALL UNDERGROUND SERVICES LOCATIONS PRIOR TO EXCAVATION AND SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING SERVICES.
3. STRUCTURAL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH SPECIFICATIONS AND OTHER CONTRACT DOCUMENTS.
4. BEFORE PROCEEDING WITH WORK, CHECK ALL DIMENSIONS AND REPORT ANY DISCREPANCIES.
5. TYPICAL STRUCTURAL DETAILS SHOWN ON THE DRAWINGS SHALL GOVERN THE WORK. IF DETAILS ON OTHER DRAWINGS CONFLICT THE MOST STRINGENT SHALL GOVERN.
6. CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR DESIGN, ERECTION AND REMOVAL OF TEMPORARY WORKS.
7. FORMWORK SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST EDITION OF CSA A23.1.
8. DESIGN OF FORMWORK IS THE CONTRACTOR'S RESPONSIBILITY.
9. PROVIDE TEMPORARY BRACING, SUPPORTS AND/OR OTHER INSTALLATIONS NECESSARY TO MAINTAIN PLUMBNESS, TRUE, ALIGNMENT AND STABILITY OF THE STRUCTURE AND ALL OF ITS PARTS THROUGHOUT ALL ERECTION STAGES.
10. EXCAVATION AND FOUNDATION WORK SHALL CONFORM TO THE LATEST EDITION OF THE ONTARIO OCCUPATIONAL HEALTH AND SAFETY ACT.
11. IT IS THE ULTIMATE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL REQUIRED PERMITS AND APPROVALS ARE OBTAINED & POSTED PRIOR TO PROCEEDING WITH CONSTRUCTION. THESE PERMITS/APPROVALS MAY INCLUDE (BUT ARE NOT NECESSARILY LIMITED TO):
    i) MUNICIPAL BUILDING DEPARTMENT PERMIT TO CONSTRUCT (MULTIPLE PERMITS MAY BE REQUIRED)
    ii) ELECTRICAL SAFETY AUTHORITY (ESA) PERMIT

STRUCTURAL STEEL NOTES

1. ALL STRUCTURAL STEEL PLATE SHALL BE IN ACCORDANCE WITH C.S.A. G40.21M GRADE 300W, UNLESS NOTED.
2. ALL STRUCTURAL PIPE SHALL BE ASTM A53-GRADE B.
3. ALL STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH CSA S16-19.
4. FABRICATION, ERECTION AND WORKMANSHIP SHALL CONFORM TO C.S.A. S16-19.
5. ALL WELDING SHALL CONFORM TO C.S.A. AND W59-18 AND SHALL BE PERFORMED BY A WELDER QUALIFIED UNDER C.S.A. W47.1-19
6. SURFACES TO BE WELDED SHALL BE THOROUGHLY CLEANED OF ALL FOREIGN MATTER INCLUDING PAINT FILM.
7. ALL JOINTS SHALL BE WELDED USING 490 MPa STRENGTH ELECTRODES.
8. ALL WELDS TO BE CONTINUOUS ALL AROUND PART TO BE WELDED. FILLET WELDS SHALL BE 6.0mm UNLESS NOTED OTHERWISE.
9. ALL BOLTS SHALL BE A325 GRADE UNLESS NOTED OTHERWISE.
10. ALL STAINLESS STEEL ANCHORS SHALL BE ASTM F593, CW1.
11. PROVIDE WEEP HOLES IN ALL SEALED ASSEMBLIES.

CONCRETE

1. CONCRETE IS SPECIFIED USING ALTERNATIVE NUMBER OF CSA A23.1 TABLE 2 AS FOLLOWS:

PARAMETER	EXTERIOR CONCRETE
EXPOSED CLASS (TABLE 1)	C-1
AIR CONTENT (TABLE 4)	1
MAX. W/C RATIO (TABLE 2)	0.40
CURING TYPE (TABLE 2)	2
MIN. COMPRESSIVE STRENGTH @ 56 DAYS	35 MPa

2. AT LEAST TWO (2) WEEKS PRIOR TO THE PLACEMENT OF CONCRETE THE CONTRACTOR SHALL SUBMIT THE FOLLOWING TO THE ENGINEER FOR REVIEW:
   - A VALID 'CERTIFICATE OF READY MIXED CONCRETE PRODUCTION FACILITIES' OR A VALID 'CERTIFICATE OF MOBILE MIX CONCRETE PRODUCTION FACILITIES' AS ISSUED BY THE 'READY MIXED CONCRETE ASSOCIATION OF ONTARIO' TO THE PLANT BEING USED.
   - A COMPLETED 'CONCRETE MIXED DESIGN SUBMISSION FORM'
   - A QUALITY PLAN THAT DESIGNATES A SPECIFIED SLUMP OR SOME OTHER MEASURE OF WORKMANSHIP
   - TEST RESULTS TO SHOW COMPLIANCE WITH CSA A23.1
   - AIR VOID SYSTEM OF HARDENED CONCRETE.
   - STATISTICAL STRENGTH TEST ANALYSIS TO CONFIRM THE STRENGTH LEVEL FOR EACH CLASS OF CONCRETE INCLUDING THE EXPECTED 7/28 DAY STRENGTH RATIO
3. FABRICATION AND PLACEMENT OF REINFORCING STEEL TO BE IN ACCORDANCE WITH CSA A23.1 AND THE REINFORCING STEEL INSTITUTE OF CANADA'S 'REINFORCING STEEL MANUAL OF STANDARD PRACTICE'.
4. REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO CSA G30.18 M92, Fy=400 MPa (GRADE 400)
5. CONCRETE SHALL NOT BE POURED UNTIL REBAR HAS BEEN INSPECTED BY THE ENGINEER.
6. WHERE REBARS JOIN AT CORNERS PROVIDE CORNER BARS FOR LAPS.
7. CONCRETE COVER FOR REINFORCING STEEL AS PER TABLE 17 OF CSA A23.1
   - ALL CONCRETE CAST AGAINST EARTH 3"
   - ALL CONCRETE CAST IN FORMS BUT EXPOSED TO EARTH OR WEATHER 2"
   - BARS 20M AND SMALLER IN WALLS AND SLABS 1 1/4"
   - CONCRETE NOT EXPOSED TO EARTH AND WEATHER 1" OR 1.5 NOMINAL BAR DIAMETER
8. ALL REINFORCING BARS SHALL BE ACCURATELY PLACED AND ADEQUATELY SUPPORTED BY PRECAST CONCRETE, ADDITIONAL BARS, STIRRUPS, TIES OR APPROVED CHAIRS AGAINST DISPLACEMENT.
9. CONTINUOUS AND TEMPERATURE REINFORCING BARS SPLICES TO BE LAPPED 40 BAR DIAMETERS OR A MINIMUM OF 12" AT SPLICES AND CORNERS, UNLESS OTHERWISE SHOWN ON SECTION OR TYPICAL DETAILS. LAP CONTINUOUS TOP BARS AT CENTRE BETWEEN SUPPORTS AND CONTINUOUS BOTTOM BARS AT SUPPORTS. AS REQUIRED, TERMINATE CONTINUOUS BARS AT NON CONTINUOUS ENDS WITH STANDARD HOOKS.

SIDEWALK AND ROAD CLOSURES

1. THE CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH LANE OR SIDEWALK CLOSURES (INCLUDING PERMITS, TRAFFIC CONTROL PLANS, SIGNAGE, ETC.)

TEMPORARY WATER AND POWER

1. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE TEMPORARY POWER AND WATER FOR THE FULL DURATION OF THE PROJECT.

WARRANTY

1. PROVIDE A TWO YEAR WRITTEN WARRANTY INCLUSIVE OF ALL LABOUR AND MATERIALS..

MATERIALS TESTING AND INSPECTION

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MATERIALS TESTING AND INSPECTION COSTS.

TRAFFIC CONTROL

1. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL REQUIRE PERMITS, TRAFFIC PROTECTION/CONTROL, ROAD CLOSURES, POLICE ESCORTS, ETC., AS REQUIRED FOR THE MOVEMENT OF THE GLASS LIGHT ENCLOSURE TO AND FROM THE FABRICATION SHOP.
2. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL REQUIRE PERMITS, TRAFFIC PROTECTION/CONTROL, ROAD CLOSURES, ETC. AS REQUIRED FOR THE REMOVAL OF THE EXISTING GLASS LIGHT ENCLOSURE AND INSTALLATION OF THE NEW GLASS LIGHT ENCLOSURE.
3. CONTRACTOR IS RESPONSIBLE FOR THE PREPARATION OF ALL TRAFFIC PROTECTION/CONTROL PLANS, COMPLETED IN ACCORDANCE WITH THE 'ONTARIO TRAFFIC MANUAL'S BOOK 7' (TEMPORARY CONDITIONS). SUBMIT ALL TRAFFIC CONTROLS PLANS TO THE CONSULTANT FOR REVIEW.
4. ALL ANTICIPATED SIDEWALK, LANE OR ROAD CLOSURES IN THE VICINITY OF THE PROJECT LOCATION SHALL BE INDICATED IN THE TENDER SUBMISSION.

STAINLESS STEEL FLASHING

1. ALL STAINLESS STEEL FLASHING SHALL BE CUSTOM BENT, 24 GAUGE, GRADE 304, 2B SURFACE FINISH.

ROOFING

1. REMOVE ALL EXISTING MEMBRANE ROOFING FROM THE WALKWAY AT THE TOP OF THE TOWER. REMOVALS TO INCLUDE ALL FLASHING, SEALANTS, FIBREBOARD, INSULATION, CANT STRIPS, ETC.
2. SUPPLY AND INSTALL NEW "BLUESKIN" WEATHER RESISTANT BARRIER TO THE HORIZONTAL SURFACE BENEATH THE ROOF/WALKWAY. WRB TO EXTEND 150mm VERTICALLY BOTH SIDES.
3. SUPPLY AND INSTALL NEW DENSDECK TO THE HORIZONTAL SURFACE.
4. SUPPLY AND INSTALL NEW 60mil PVC MEMBRANE TO THE ROOF/WALKWAY SURFACE. MEMBRANE TO EXTEND VERTICALLY MIN. 200mm. PROVIDE CANT STRIPS EACH SIDE.
5. PROVIDE NEW STAINLESS STEEL COUNTER FLASHING, COIL STOCK, FASTENERS AND SEALANTS AS REQUIRED FOR A COMPLETE AND WEATHERTIGHT INSTALLATION.

GLASS BLOCK

1. PROVIDE ALL LABOUR, MATERIALS AND EQUIPMENT REQUIRED TO REPLACE THE BROKEN GLASS PANE IN THE LIGHT ENCLOSURE.
2. REPLACEMENT GLASS BLOCK TO BE SOURCED TO MATCH THE EXISTING DIMENSIONS, PATTERN, AND WHERE POSSIBLE THE COLOUR OF THE EXISTING GLASS BLOCK.
3. GLASS BLOCK REPLACEMENT TO INCLUDE ALL LABOUR, EQUIPMENT AND MATERIALS REQUIRED TO REMOVE CRACKED OR BROKEN GLASS BLOCKS AND REPLACE WITH NEW.
4. GROUT JOINTS TO BE CONSTRUCTED TO MATCH THE SIZE AND COLOUR OF THE EXISTING.

HOLD

TULLOCH

ISSUED FOR REVIEW
FEBRUARY 27, 2025

No.	DATE	BY	ISSUES / REVISIONS
0	27 Feb '25	BWI	ISSUED FOR REVIEW

DRAWN BY: BWI
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PROJECT No.: 24-1255
DRAWING No.: G3
REVISION No.: 0

ENGINEER'S SEAL

PROJECT:
CITY OF SAULT STE. MARIE
GFL MEMORIAL TOWER REHABILITATION
SAULT STE. MARIE, ONTARIO

DRAWING: GENERAL NOTES

TULLOCH

PAINT

1. ALL CARBON STEEL SHALL BE PREPARED AND SHOP PAINTED AS SPECIFIED BELOW;

   SURFACE PREPARATION SHALL BE COMMERCIAL BLAST OR WHEEL ABRADED PER STEEL STRUCTURES PAINTING COUNCIL STANDARD SSPC-SP6, WITH GRIT SIZE TO PRODUCE 1.0 TO 3.0 MIL BLAST PROFILE.

   APPLICATION METHODS, TEMPERATURE AND RE-COAT TIME SHALL BE IN STRICT ACCORDANCE WITH THE INSTRUCTIONS AND RECOMMENDATIONS OF THE PAINT MANUFACTURER.

   MEASUREMENT OF DRY FILM THICKNESS SHALL BE IN ACCORDANCE WITH STEEL STRUCTURES PAINTING COUNCIL STANDARD PA-2.

   PAINTING SYSTEM SHALL BE AS FOLLOWS;

   PRIMER COAT – ZINC PRIMER 2-3 MILS DFT PER COAT (2 COATS REQUIRED), "CARBOZINC 11" BY CARBOLINE, SPRAY APPLIED WITHIN 8 HOURS AFTER BLAST CLEANING.

   COLOUR COAT – CYCLOALIPHATIC AMINE EPOXY 4-6 MILS DFT PER COAT (2 COATS REQUIRED), CARBOGUARD 890 LT, SPRAY APPLIED.

   FINISH COAT – ALIPHATIC ACYLIC-POLYESTER POLYURETHANE 3-5 MILS DFT PER COAT (2 COATS REQUIRED), "CARBOTHANE 133 HB", SPRAY APPLIED.

2. COLOURS SELECTION BY OWNER. PROVIDE PAINT CHIP SELECTION TO CONSULTANT.
3. AN APPROPRIATE QUANTITY OF PAINT IS TO BE SUPPLIED FOR FIELD TOUCH UP.
4. EXISTING HOLLOW METAL DOORS AND FRAMES SHALL BE SURFACE PREPARED TO RECEIVE NEW PAINT. APPLY 3 COATS OF NEW RUST INHIBITING PAINT TO THE INTERIOR AND EXTERIOR SURFACES. COLOUR AND SHEEN TO BE SELECTED BY CLIENT.

EXTERIOR CONCRETE COATING

ALL EXTERIOR SURFACES NOT IMPACTED BY CONCRETE RESTORATION SHALL BE PREPARED WITH HIGH PRESSURE WATER (2,500 PSI) TO REMOVE DUST, DIRT AND LOOSE COATING.

AT THE COMPLETION OF THE PRESSURE WASHING, APPLY "PRYMIT DS4S4" BY DRYVIT.

THE COMPLETE EXTERIOR CONCRETE SURFACE OF THE MEMORIAL TOWER, INCLUDING THE EXTERIOR OF THE UPPER OCTAGONAL CONCRETE WALL SHALL RECEIVE "TEXTURED ACRYLIC FINISH SYSTEM" (TAFS) BY DRYVIT.

COLOURS SELECTION BY OWNER. PROVIDE PAINT CHIP SELECTION TO CONSULTANT.

5 GALLONS OF TAFS PRODUCT IS TO BE SUPPLIED FOR FIELD TOUCH UP.

COMPLETE A 2.0mx2.0m MOCKUP OF THE DRYVIT BUILDUP FOR REVIEW BY THE CONSULTANT.

GENERAL CONTRACTOR IS RESPONSIBLE TO CONTACT DRYVIT TO ENSURE ALL DETAILS RELATING TO SURFACE PREPARATION, PRODUCT APPLICATION, QUALITY CONTROL, ETC. ARE UNDERSTOOD AND CAPTURED IN THE BID.

DRYVIT CONTACT:

Ed Clark, BSc, CTR
Technical Sales Representative (SW/ON & Northern ON)
Dryvit Systems Canada
T. 416.856.7310
E. ejclark@dryvit.ca

SCOPE OF WORK

1. MOBILIZE TO WORK AREA
2. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL TRAFFIC CONTROL AND PEDESTRIAN/ VEHICULAR BARRIERS AS REQUIRED TO PERMIT FULL PERIMETER ACCESS TO THE TOWER.
3. CONTRACTOR IS RESPONSIBLE FOR ALL REQUIRED NEGOTIATIONS WITH THE CITY OF SAULT STE. MARIE AND ANY AFFECTED ADJACENT PROPERTY OWNERS REGARDING TRAFFIC AND PEDESTRIAN BARRIERS. CONTRACTOR IS RESPONSIBLE FOR ALL COSTS.
4. CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL TRAFFIC CONTROL PROCEDURES AND SIGNAGE SHALL BE DESIGNED AND INSTALLED BY TRAINED PERSONNEL AND SHALL COMPLY WITH ALL PROVINCIAL CODES, STANDARDS, AND REGULATIONS. CONTRACTOR TO SUBMIT TRAFFIC/PEDESTRIAN CONTROL PROCEDURES TO TULLOCH FOR REVIEW.
5. INSTALL PROTECTION BARRIERS FOR ALL LANDSCAPED AND HARDSCAPED AREAS WITHIN THE WORK ZONE (I.E., PLYWOOD OR DROP SHEETS, ETC.).
6. GENERAL CONTRACTOR IS RESPONSIBLE TO PROVIDE PROTECTIVE DROP CLOTHS AND HOARDING TO PROTECT DISPLAYS ON THE INTERIOR OF THE MEMORIAL TOWER.
7. MECHANICAL/ELECTRICAL PROTECTION – BE RESPONSIBLE TO PROTECT OR TEMPORARILY REMOVE AND REINSTALL ANY MECHANICAL OR ELECTRICAL EQUIPMENT AT RISK OF DAMAGE PRIOR TO COMMENCING WITH THE WORK.
8. INSTALL SCAFFOLDING AND/OR MOBILIZE MANLIFT TO SITE.
9. EXECUTE THE FULL SCOPE OF WORK AS NOTED ON THE CONTRACT DRAWINGS.
10. CONTRACTOR IS RESPONSIBLE FOR THE CLEANUP AND PROTECTION OF THE WORK AREA, CONTRACTOR IS TO PICKUP ALL DEBRIS, SWEEP AND, POWER WASH THE WORK AREA UPON COMPLETION AS NEEDED.
11. DEMOBILIZE FROM SITE.

SIDEWALK AND ROAD CLOSURES

THE CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH LANE OR SIDEWALK CLOSURES (INCLUDING PERMITS, TRAFFIC CONTROL PLANS, SIGNAGE, ETC.)

TEMPORARY WATER AND POWER

THE CONTRACTOR IS RESPONSIBLE TO PROVIDE TEMPORARY POWER AND WATER FOR THE FULL DURATION OF THE PROJECT.

TULLOCH
ISSUED FOR REVIEW
FEBRUARY 27, 2025

No.	DATE	BY	ISSUES / REVISIONS
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DESIGNED BY: DJM
APPROVED BY: RM
SCALE: AS NOTED
DATE: OCT 1, 2024
PROJECT No. : 24-1255
DRAWING No. G4
REVISION No. 0

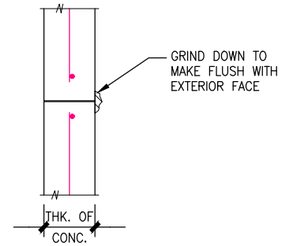
ENGINEER'S SEAL

PROJECT:
CITY OF SAULT STE. MARIE
GFL MEMORIAL TOWER REHABILITATION
SAULT STE. MARIE, ONTARIO

DRAWING: GENERAL NOTES AND WORK PROCEDURES

TULLOCH

REPAIR SCHEDULE

REPAIR NOTES	PICTURE	REPAIR DETAIL	PAYMENT TYPE
NOTE 1: 1. REMOVE AND REPLACE EXISTING PERIMETER SEALANT. 2. SURFACE PREPARE EXISTING HOLLOW METAL DOOR AND FRAME. 3. APPLY 3 COATS OF EXTERIOR LATEX ENAMEL PAINT. COLOUR AND SHEEN BY OWNER.			LUMP SUM
NOTE 2: 1. GRIND SMOOTH EXISTING COLD JOINT PRIOR TO APPLICATION OF COATING. 2. IF JOINT IS OPEN, INSTALL ELASTOMERIC SEALANT (AND FOAM BACKER ROD IF REQUIRED)		 DETAIL 1 SECTION SCALE: 1:15	LUMP SUM
REFER TO DWG G2 FOR OPTIONS			LUMP SUM
NOTE 4: 1. AT ALL LOCATIONS WHERE RUST BLEEDS ARE PRESENT AT CRACKS OR COLD JOINTS, THE CONCRETE SHALL BE CHIPPED OUT TO EXPOSE THE CORRODED REINFORCING STEEL. THE REINFORCING STEEL SHALL BE SAND BLASTED CLEAN AND COATED WITH A CORROSION INHIBITOR. ONCE THE CORROSION INHIBITOR HAS BEEN INSTALLED, REPLACE THE CONCRETE WITH REPAIR MORTAR.		SEE REPAIR DETAIL 1, THIS SHEET	UNIT RATE

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FEBRUARY 27, 2025

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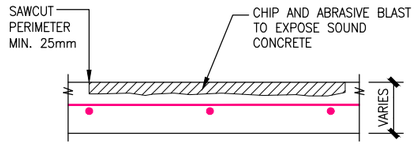
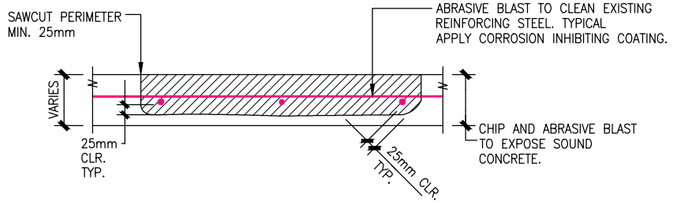
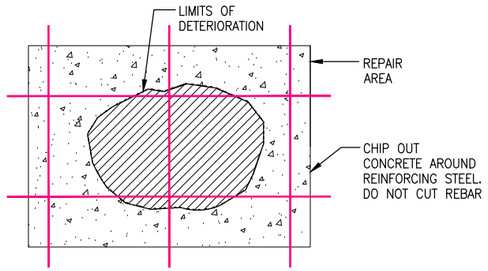
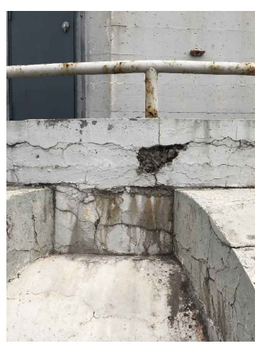
ENGINEER'S SEAL

PROJECT:
CITY OF SAULT STE. MARIE
GFL MEMORIAL TOWER REHABILITATION
SAULT STE. MARIE, ONTARIO

DRAWING:
GENERAL NOTES AND WORK PROCEDURES

TULLOCH

REPAIR SCHEDULE

REPAIR NOTES	PICTURE	REPAIR DETAIL	PAYMENT TYPE
NOTE 5: 1. ALL AREAS OF CRACKED, SPALLED OR DELAMINATED CONCRETE AS NOTED BY THE CONSULTANT SHALL BE REPAIRED AS NOTED IN THE SPECIFICATIONS AND ON THE DRAWINGS.		 **DETAIL 2** (PARTIAL DEPTH REMOVAL MAX. 50mm DEPTH) N.T.S.  **DETAIL 2 (ALT)** TOP SURFACE REMOVAL N.T.S.  **ELEVATION** N.T.S.	UNIT RATE
NOTE 6: 1. REFER TO DETAIL ON DWG. S2 FOR REPAIRS TO THE UPPER PERIMETER RING WALL AND PIPE GUARD RAIL.		SEE DRAWING S2 FOR DETAILS	LUMP SUM

TULLOCH
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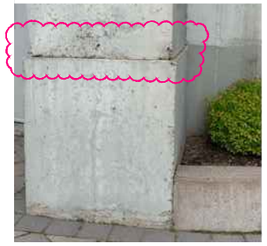
ENGINEER'S SEAL

PROJECT:
CITY OF SAULT STE. MARIE
GFL MEMORIAL TOWER REHABILITATION
SAULT STE. MARIE, ONTARIO

DRAWING:
GENERAL NOTES AND WORK PROCEDURES

TULLOCH

REPAIR SCHEDULE

REPAIR NOTES	PICTURE	PAYMENT TYPE
NOTE 7: 1. REMOVE ALL EXPOSED DEBRIS FROM THE EXISTING CONCRETE. 2. SURFACE PREPARE AND INFILL WITH REPAIR MORTAR.		UNIT RATE
NOTE 8: 1. SURFACE PREPARE THE JOINT AT THE HORIZONTAL AND VERTICAL SURFACE INTERSECTION AT THE BASE OF THE BUTTRESSES. 2. INSTALL ELASTOMERIC SEALANT. ENSURE SEALANT BEAD IS PROFILED TO SHED WATER.		LUMP SUM
NOTE 9: 1. PAINTING AND COATING SURFACES REFER TO "EXTERIOR CONCRETE COATING" ON DWG G4		LUMP SUM

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ENGINEER'S SEAL

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PROJECT:
CITY OF SAULT STE. MARIE
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SAULT STE. MARIE, ONTARIO

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GENERAL NOTES AND WORK PROCEDURES

TULLOCH

SOUNDING & CONCRETE REMOVALS

TULLOCH WILL ATTEND THE SITE AND ASSIST WITH INITIAL SOUNDINGS TO ESTABLISH A METHODOLOGY TO BE USED FOR THE REMAINDER OF THE PROJECT.

DESIGNATED SUBSTANCE & HAZARDOUS MATERIALS SURVEY (DSS)

A DSS HAS BEEN PROVIDED WITH THE BID DOCUMENTS. GENERAL CONTRACTOR IS RESPONSIBLE TO REVIEW THE DOCUMENT AND MAKE ALL NECESSARY INCLUSIONS FOR FULL COMPLIANCE WITH THE APPLICABLE REGULATIONS, CODE AND STANDARDS.

MANDATORY SITE VISIT

THERE WILL BE A MANDATORY SITE VISIT CONDUCTED ON TO BE DETERMINED.

HOURS OF WORK

HOURS OF WORK ARE TO CONFORM TO THE REQUIREMENTS OF THE CITY OF SAULT STE. MARIE NOISE BYLAW.

PERMITS

ALL REQUIRED PERMIT APPLICATIONS AND APPLICATION FEES ARE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

CONCRETE SPECIFICATIONS

ITEM 5: HORIZONTAL AND VERTICAL SURFACES CONCRETE REPAIRS

1. LOCALLY REPAIR CONCRETE COLUMN BASES WITHIN THE PARKING GARAGE, AS WELL AS OTHER VERTICAL SURFACES & OVERHEAD SLAB SOFFIT DELAMINATION, AS REQUIRED.
2. THIS ITEM INCLUDES ALL LABOUR, TOOLS AND MATERIALS REQUIRED TO REMOVE DETERIORATED CONCRETE SECTIONS AND PLACE NEW CONCRETE. CLEAN REINFORCEMENT TO SSPC-SP10, REPLACE OR AUGMENT ANY REINFORCING REBAR THAT HAVE EXCESSIVELY CORRODED AND/OR HAVE BEEN REDUCED TO LESS THAN 90% OF THEIR ORIGINAL CROSS-SECTIONAL AREA.
3. SOUND AND DELINEATE THE SOFFIT OF THE SLABS, FOUNDATION WALLS AND COLUMN BASES TO IDENTIFY AND QUANTIFY DELAMINATED OR SPALLED AREAS WITH THE CONSULTANT PRIOR TO PROCEEDING WITH THE REPAIRS.
4. THIS ITEM IS BASED ON A MAXIMUM REPAIR DEPTH OF 125MM AND IS ASSUMED TO EXTEND BEYOND THE BOTTOM LAYER OF REINFORCING STEEL. PERFORM DELAMINATION REPAIRS TO THE CONCRETE COLUMNS WERE DETERIORATED. THE REPAIR DEPTH IS ASSUMED TO EXTEND BEYOND THE COLUMN VERTICAL REINFORCING STEEL.
5. REMOVAL, PREPARATION, CLEANING, AND BOND COAT APPLICATION ARE INCIDENTAL TO THIS ITEM.
6. INCIDENTAL TO THIS ITEM IS THE PRIMING AND PAINTING OF THE CONCRETE REPAIR AREAS TO MATCH THE EXISTING ADJACENT PAINT FINISH.
7. PAYMENT FOR THIS ITEM WILL BE BASED ON THE MEASURED AREA OF CONCRETE REPAIR, AND THE CONTRACT UNIT PRICE. QUANTITY WILL BE MEASURED TO THE NEAREST 0.1 SQUARE METER. REINFORCING STEEL IS MEASURED SEPARATELY UNDER ITEM 9.

FINISHING

1. FINISHING OF THE CONCRETE SURFACE SHALL BE DONE WHILE IT IS SUFFICIENTLY PLASTIC TO ACHIEVE THE DESIRED GRADES, ELEVATIONS, AND TEXTURE.
2. THE CONTRACTOR SHALL ENSURE THAT EXCESSIVE FINES AND WATER ARE NOT DRAWN TO THE SURFACE.
3. NO MATERIAL SHALL BE APPLIED TO THE CONCRETE SURFACE OR THE FINISHING TOOLS TO AID IN THE FINISHING.
4. THE SURFACE SHALL BE SMOOTH, FREE FROM OPEN TEXTURING, UNDULATIONS, PROJECTIONS, AND RIDGES AND SHALL BE STRUCK OFF TRUE TO GRADE AND CROSS-SECTION.

3.5 QUALITY ASSURANCE

1. TESTING OF CONCRETE AND CONCRETE MATERIALS WILL BE CARRIED OUT BY A TESTING LABORATORY DESIGNATED BY THE ENGINEER, IN ACCORDANCE WITH CAN/CSA-A23.2. TESTING AGENCY SHALL BE CERTIFIED BY THE CANADIAN STANDARDS ASSOCIATION CSA A283 TO PERFORM THE SPECIFIED TESTS.
2. CONCRETE TESTING BY AN INDEPENDENT AGENCY WILL INCLUDE BUT WILL NOT NECESSARILY BE LIMITED TO:
3. A STANDARD TEST FOR EACH 20 CUBIC METRES OF CONCRETE PLACED BUT NOT LESS THAN ONE TEST FOR CONCRETE PLACED EACH DAY. EACH STRENGTH TEST WILL CONSIST OF THREE CYLINDERS WITH PROPER IDENTIFICATION AND FIELD DATA. ONE SPECIMEN WILL BE TESTED AT 7 DAYS AND TWO AT 28 DAYS. CYLINDERS WILL BE STORED IN CURING BOXES AND MAINTAINED A MINIMUM TEMPERATURE OF +10 DEGREES CELSIUS UNTIL SHIPPED TO THE TESTING LABORATORY.
4. ONE STANDARD AIR ENTRAINMENT TEST FOR EACH STANDARD STRENGTH TEST.
5. ONE OR MORE STANDARD SLUMP TESTS WITH EACH STANDARD STRENGTH TEST.
6. TEST CYLINDERS SHALL BE PREPARED EVERY DAY THAT CONCRETE IS PLACED AS FOLLOWS:
7. 2 CYLINDERS FOR 7-DAY TEST.
8. 2 CYLINDERS FOR 28-DAY TEST
9. TEST CYLINDERS SHALL BE TESTED FOR COMPRESSIVE STRENGTH AT 7 DAYS AND 28 DAYS IN ACCORDANCE WITH CAN/CSA A23.2-9C. SITE CURED CYLINDER TO BE TESTED FOR COMPRESSIVE STRENGTH AT 28 DAYS OR AS DIRECTED BY ENGINEER.
10. TO CONFORM TO THE SPECIFIED NOMINAL 28-DAY STRENGTH REQUIREMENT:
11. THE AVERAGE OF ALL GROUPS OF THREE CONSECUTIVE STRENGTH CYLINDERS SHALL BE EQUAL OR GREATER THAN THE SPECIFIED STRENGTH.
12. NO INDIVIDUAL STRENGTH TEST SHALL BE MORE THAN 3.5 MPA BELOW THE SPECIFIED STRENGTH.
13. AN ADDITIONAL TEST CYLINDERS SHALL BE PREPARED AND CURED ON SITE (UNDER SAME CONDITIONS AS CONCRETE IT REPRESENTS) EVERY DAY THAT CONCRETE IS PLACED.
14. TEST FOR COMPRESSIVE STRENGTH AT 28 DAYS OR AS DIRECTED BY ENGINEER.

3.6 DEFECTIVE WORK

1. REMOVE AND REPLACE CONCRETE THAT FAILS TO MEET SPECIFIED REQUIREMENTS.
2. REMOVE AND REPLACE ANY DEBONDED OR HONEYCOMBED MATERIAL. REPAIR ANY CRACKS 1MM OR MORE IN WIDTH.

WARRANTY

1. PROVIDE A TWO (2) YEAR WARRANTY FROM THE DATE OF SUBSTANTIAL PERFORMANCE FOR WORK OF THE SECTION AGAINST DELAMINATION, SCALING, DEBONDING, CRACKING, DISINTEGRATION AND OTHER FORMS OF DETERIORATION INCLUDING DEFICIENCIES RELATED TO WORKMANSHIP. WARRANTY INCLUDES REPAIR WORK REQUIRED AS A CONSEQUENCE OF FAILURE OF WORK IN THIS SECTION.
2. CORRECT DEFICIENCIES IMMEDIATELY.

ARCHITECTURAL CONCRETE

1. ARCHITECTURAL CONCRETE IS CONCRETE, WHICH WILL BE PERMANENTLY EXPOSED TO VIEW. THIS INCLUDES THE FULL EXTERIOR SURFACE OF THE MEMORIAL TOWER.
2. ENSURE THAT EXPOSED SURFACES ARE DENSE, EVEN, UNIFORM IN COLOUR, TEXTURE AND DISTRIBUTION OF EXPOSED AGGREGATE. ENSURE THAT EXPOSED SURFACES ARE FREE FROM DEFECTS SUCH AS HONEYCOMBING, VOIDS, LOSS OF FINES, VISIBLE FLOW LINES, COLD JOINTS, EXCESSIVE BUG HOLES, INADEQUATE COVER TO REINFORCEMENT AND INCORRECT TIE HOLES, SPACERS, REGLETS, FORMWORK JOINTS OR CONSTRUCTION JOINTS. ENSURE THE CONCRETE MEMBERS HAVE SHARP ACCURATE DEFINITIONS OF CORNERS, REGLETS, ETC. AND ARE FREE FROM CHIPS AND SPALLS. FAILURE TO MEET ANY OF THESE REQUIREMENTS SHALL BE CAUSE FOR REJECTION AT THE DISCRETION OF THE CONSULTANT AND/OR OWNER.
3. FAILURE OF THE AS-CAST CONCRETE TO MEET THE REQUIRED STANDARD OF APPEARANCE SHALL BE CAUSE FOR REJECTION AT THE DISCRETION OF THE CONSULTANT AND/OR OWNER.
4. PROTECT EXPOSED SURFACES DURING THE CONSTRUCTION PERIOD FROM DAMAGE, MARKING, STAINING, AND BECOMING COATED WITH CONCRETE LEAKAGE. UNLESS REJECTED, REPAIR DAMAGE AND REMOVE MARKS AND STAINS TO THE APPROVAL OF THE CONSULTANT AND/OR OWNER.

MOCK-UPS

1. CONSTRUCT MOCK-UP FIELD SAMPLE FOR ARCHITECTURAL CONCRETE SURFACE AND. CONFORM TO CSA A23.1, A23.2. USE THE SAME MATERIALS AND WORKMANSHIP AS EMPLOYED FOR THE ACTUAL WORK. INCLUDE A REPAIRED AREA FOR EACH SAMPLE. IF THE SAMPLE DOES NOT MEET THE STANDARD OF QUALITY SPECIFIED FOR THE WORK, CONSTRUCT ADDITIONAL SAMPLES UNTIL THE REQUIRED STANDARD IS ACHIEVED AND ACCEPTED BY THE CONSULTANT. THE ACCEPTED SAMPLES SHALL REPRESENT THE MINIMUM STANDARD OF QUALITY FOR THE WORK. DO NOT PROCEED UNTIL THE CONSULTANT AND/OR OWNER ACCEPTS THE SAMPLES.
2. MOCK-UP OF THE PROPOSED ARCHITECTURAL CONCRETE FINISH SHALL DEMONSTRATE TYPICAL JOINTS, SURFACE FINISH, TEXTURE, COLOUR, TOLERANCES AND STANDARD OF WORKMANSHIP.
3. APPROVED MOCK-UP FOR FORMED SURFACES MAY BECOME PART OF THE COMPLETED WORK, IF UNDISTURBED AT TIME OF SUBSTANTIAL COMPLETION.

QUALITY ASSURANCE

QUALIFICATIONS:

1. CONSTRUCTION OF SPECIALTY CONCRETE ITEMS SHALL BE COMPLETED BY PERSONS WITH A MINIMUM OF FIVE (5) YEARS' EXPERIENCE, WHO HAS ADEQUATE EQUIPMENT AND SKILLS TO PERFORM IT EXPEDITIOUSLY AND IS KNOWN TO HAVE BEEN RESPONSIBLE FOR SATISFACTORY INSTALLATION SIMILAR TO THAT SPECIFIED.
2. UPON REQUEST, THE GENERAL CONTRACTOR IS TO SUBMIT A LIST OF FIVE REFERENCES OF RECENT APPLICABLE PROJECTS COMPLETED BY THE CONCRETE TRADE. PRE-INSTALLATION MEETINGS: CONDUCT PRE-INSTALLATION MEETING TO VERIFY PROJECT REQUIREMENTS AND INSTALLATION INSTRUCTIONS AND COORDINATE SCOPE AMONGST TRADES.

PRODUCTS, MATERIALS & EQUIPMENT

2.1 CONCRETE MATERIALS

1. AGGREGATES SHALL BE NORMAL DENSITY, SATISFYING THE PHYSICAL AND GRADATION REQUIREMENTS OF CAN/CSA-A23.1.
2. CEMENT SHALL BE:
3. TYPE GU NORMAL PORTLAND CEMENT TO CSA-A3001;
4. WATER SHALL BE POTABLE, FROM MUNICIPAL WATER MAIN TO CAN/CSA – A23.1
5. AIR-ENTRAINING MIXTURE SHALL CONFORM TO THE REQUIREMENTS OF CSA-A260-06.
6. CHEMICAL ADMIXTURES, IF USED, SHALL CONFORM TO THE REQUIREMENTS OF ASTM C494 AND SHALL BE COMPATIBLE WITH THE EACH OTHER AND THE AIR ENTRAINING ADMIXTURE.
7. CALCIUM CHLORIDE OR ANY ADMIXTURE CONTAINING CHLORIDE SHALL NOT TO BE USED IN THE WORK.
8. LATEX EMULSION USED IN LATEX BOND BOAT FOR CONCRETE REPAIRS TO BE NON RE-EMULSIFIABLE, HAVING 47%+1 LATEX SOLIDS INCORPORATING A DEFOAMING AGENT.

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ENGINEER'S SEAL

PROJECT:
CITY OF SAULT STE. MARIE
GFL MEMORIAL TOWER REHABILITATION
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DRAWING:
GENERAL NOTES AND CONCRETE SPECIFICATIONS

TULLOCH

CONCRETE SPECIFICATIONS CONTINUED

2.2 CONCRETE MIXES

1. ALL CONCRETE SHALL BE SUPPLIED BY A READY MIX CONCRETE PRODUCER. PROPORTION NORMAL DENSITY CONCRETE IN ACCORDANCE WITH ALTERNATIVE 1 (CONCRETE SUPPLIER RESPONSIBLE FOR MIX PROPORTIONING), TABLE 5 OF CAN/CSA-A23.1 TO MEET THE FOLLOWING REQUIREMENTS:

2. MEMORIAL TOWER EXTERIOR SURFACE DELAMINATION REPAIRS: .1 MINIMUM COMPRESSIVE CYLINDER STRENGTH AT 28 DAYS: 35 MPA. .2 CLASS OF EXPOSURE: C-1. .3 NOMINAL SIZE OF COARSE AGGREGATE: 10 MM. .4 MAXIMUM WATER/CEMENT RATIO: 0.40. .5 SLUMP AT TIME AND POINT OF DISCHARGE: TO BE DETERMINED BY THE CONCRETE SUPPLIER TO SUIT APPLICATION. .6 AIR CONTENT: 6 – 9 PERCENT AT POINT OF DISCHARGE. .7 CHLORIDE ION PERMEABILITY REQUIREMENT: <1500 COULOMBS WITHIN 56 DAYS .8 AIR VOID SPACING FACTOR: TO CAN/CSA A23.1.

2.3 PRE-BAGGED CONCRETE MIXES

1. PRE-BAGGED CONCRETE MIXES MAY BE USED FOR SMALL VOLUME CONCRETE REPAIRS IF APPROVED BY THE CONSULTANT. PROVIDE TECHNICAL DATA SHEETS OF PROPOSED REPAIR MATERIALS TO THE CONSULTANT FOR APPROVAL AT LEAST ONE (1) WEEK IN ADVANCE OF CONCRETE PLACEMENT.

PART 3 – EXECUTION

3.1 PREPARATION

1. REINFORCING STEEL AND CONCRETE REPAIR AREAS TO BE ADEQUATELY PREPARED AND CLEAN. REFER TO SECTION 033500.

2. CONFIRM CLEAR COVER TO REINFORCING STEEL IN ACCORDANCE WITH THE DRAWINGS.

3. PROVIDE 48 HOURS' NOTICE TO THE CONSULTANT PRIOR TO PLACING CONCRETE.

3.2 CONCRETE PLACEMENT

1. CONCRETE SUBSTRATE MUST BE CLEAN, SOUND AND IN A SATURATED SURFACE DRY CONDITION AT TIME OF APPLICATION. TEMPERATURE OF SLAB AND AIR TEMPERATURE MUST NOT BE BELOW +10°C. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ADEQUATE METHODS OF HEATING. HEATING DEVICES SHALL NOT BE LEFT UNATTENDED.

2. THOROUGHLY WET SUBSTRATE FOR A PERIOD OF 24 HOURS BEFORE PLACING REPAIR CONCRETE/OVERLAY. BLOW AREAS FREE OF WATER USING OIL-FREE COMPRESSED AIR JUST PRIOR TO APPLICATION OF BOND COAT. CONCRETE SHALL BE SATURATED SURFACE DRY (SSD).

3. CONCRETE TEMPERATURE, AT THE TIME OF DISCHARGE FROM THE TRUCK, SHALL NOT EXCEED THE LIMITS SHOWN IN TABLE 14 OF CSA-A23.1.

4. HAVE ALL TRANSPORTING, PLACING AND CURING EQUIPMENT IN PLACE PRIOR TO COMMENCING CONCRETING OPERATIONS.

5. EQUIPMENT TRANSPORTING CONCRETE AND RUNWAYS USED BY EQUIPMENT TRANSPORTING CONCRETE SHALL NOT BE SUPPORTED BY THE SUSPENDED SLABS.

6. NO WATER SHALL BE ADDED TO THE CONCRETE MIX OR ADDED TO THE PLACED CONCRETE.

7. MAINTAIN ACCURATE RECORDS OF CONCRETE PLACEMENT INDICATING DATE, LOCATION, WEATHER CONDITIONS, AIR TEMPERATURE, FIELD TEST RESULTS AND CONCRETE TEST SAMPLES TAKEN.

3.2 LATEX BONDING

THOROUGHLY WET EXISTING CONCRETE SUBSTRATE AND MAINTAIN WET FOR A PERIOD OF 24 HOURS PRIOR TO PLACEMENT OF REPAIR CONCRETE.

1. BLOW REPAIR AREAS CLEAR OF FREE WATER JUST PRIOR TO APPLICATION OF LATEX/CEMENT BOND COAT. SURFACE SHOULD BE SATURATED SURFACE DRY (SSD) WITH NO STANDING WATER.

2. .3 APPLY LATEX BOND COAT TO THE CONCRETE SUBSTRATE IMMEDIATELY PRIOR AND NOT MORE THAN 5 MINUTES, AHEAD OF THE APPLICATION OF REPAIR CONCRETE. PREPARE THE BOND COAT SLURRY BY MIXING THE LATEX EMULSION WITH CEMENT UNTIL A CEMENT LIKE CONSISTENCY IS OBTAINED IN STRICT ACCORDANCE WITH THE LATEX MANUFACTURER'S INSTRUCTIONS. VIGOROUSLY SCRUB THE SLURRY ON THE PREPARED, MOIST SUBSTRATE, USING A STIFF BRISTLED BRUSH. SPECIAL ATTENTION IS TO BE GIVEN TO THE EDGES OF THE REPAIR AREAS.

3.3 PLACING CONCRETE

1. PLACE AND CONSOLIDATE CONCRETE IN ACCORDANCE WITH CAN/CSA A23.1. FOLLOW THE RECOMMENDATIONS OF ACI 304.2R FOR PLACING CONCRETE BY PUMPING.

3.4 FINISHING

1. FINISHING OF THE CONCRETE SURFACE SHALL BE DONE WHILE IT IS SUFFICIENTLY PLASTIC TO ACHIEVE THE DESIRED GRADES, ELEVATIONS, AND TEXTURE.

2. THE CONTRACTOR SHALL ENSURE THAT EXCESSIVE FINES AND WATER ARE NOT DRAWN TO THE SURFACE.

3. NO MATERIAL SHALL BE APPLIED TO THE CONCRETE SURFACE OR THE FINISHING TOOLS TO AID IN THE FINISHING.

4. THE SURFACE SHALL BE SMOOTH, FREE FROM OPEN TEXTURING, UNDULATIONS, PROJECTIONS, AND RIDGES AND SHALL BE STRUCK OFF TRUE TO GRADE AND CROSS-SECTION.

3.4 CURING

1. CURING AND PROTECTION SHALL BE IN ACCORDANCE WITH CAN/CSA-A23.1.

2. DAMP-CURE THE REPAIR CONCRETE USING WET BURLAP COVERED BY POLYETHYLENE FILM, FOR A MINIMUM OF SEVEN (7) DAYS AFTER INSTALLATION AND FOR THE TIME NECESSARY TO ATTAIN 70% OF THE SPECIFIED STRENGTH. BURLAP MUST BE PRESOAKED BY IMMERSING IT IN WATER FOR A PERIOD OF AT LEAST 24 HOURS PRIOR TO PLACING. TWO LAYERS OF BURLAP MUST BE APPLIED TO THE SURFACE OF THE CONCRETE. STRIPS MUST OVERLAP A MINIMUM OF 6 INCHES AND MUST BE HELD IN PLACE WITHOUT DAMAGING THE SURFACE OF THE CONCRETE. APPLY WET BURLAP AS SOON AS POSSIBLE AFTER FINISHING, AND WITHOUT DAMAGE TO THE SURFACE. THE BURLAP AND REPAIR CONCRETE SURFACE SHALL BE KEPT CONTINUOUSLY MOIST FOR THE ENTIRE CURE PERIOD. AIR FLOW BETWEEN THE SPACE BETWEEN THE BURLAP AND THE MOISTURE VAPOUR BARRIER MUST BE PREVENTED. DURING COLD WEATHER BURLAP MUST BE PREVENTED FROM FREEZING. PROTECT THE REPAIR CONCRETE FROM HIGH TEMPERATURE DURING INITIAL CURE.

3. PROTECT THE REPAIR AREAS FROM DAMAGE DURING THE CURING PERIOD. DO NOT PERMIT CHIPPING OPERATIONS ADJACENT TO THE REPAIRED AREAS FOR A MINIMUM OF SEVEN (7) DAYS AFTER THE INSTALLATION OF REPAIR CONCRETE OR UNTIL 75% OF THE SPECIFIED 28 COMPRESSIVE STRENGTH OF THE CONCRETE IS DEVELOPED.

4. THE CAST-IN-PLACE CONCRETE SHOULD BE SHADED FROM DIRECT SUNLIGHT OR EXCESSIVE WIND FOR SEVEN (7) DAYS.

5. CURING TEMPERATURES SHALL BE MAINTAINED BETWEEN +10°C AND +30°C FOR THE ENTIRE CURING PERIOD.

6. THE CONTRACTOR SHALL SUPPLY AND INSTALL TEMPORARY HEAT AND ENCLOSURES, INCLUDING COST OF INSTALLATION, FUEL, VENTILATIONS, OPERATION, MAINTENANCE AND REMOVAL OF EQUIPMENT WHEN THE CURING TEMPERATURE HAS OR IS EXPECTED TO DROP BELOW 10°C DURING THE CURING PERIOD. THE USE OF DIRECT-FIRED HEATERS DISCHARGING WASTE PRODUCTS INTO WORK AREAS WILL NOT BE PERMITTED.

3.5 ARCHITECTURAL CONCRETE FINISHING

1. FINISH CONCRETE IN ACCORDANCE WITH TECHNICAL DRAWINGS.

2. TOWER HORIZONTAL AND VERTICAL SURFACES: TROWEL FINISH TO MATCH THE FINISH OF THE SURROUNDING CONCRETE.

3. ALL ARCHITECTURAL EXPOSED CONCRETE AS STRIPPED BUT REMOVE ALL PROJECTIONS GREATER THAN 1.5mm.

4. FILL FLUSH ALL VOIDS LARGER THAN 6mm.

5. SANDBLASTED SURFACES SHALL BE GIVEN ABRASIVE BLASTING TO PRODUCE UNIFORM APPEARANCE SIMILAR IN ALL RESPECTS TO THE SANDBLASTED FINISH OF PROTOTYPE SAMPLE PANELS.

6. AN ADDITIONAL SANDBLASTING MOCKUP ON COMPLETED WORK TO BE APPROVED BY THE CONSULTANT AND/OR OWNER, PRIOR TO PROCEEDING WITH SANDBLASTING THE REMAINING LARGE AREAS OF FINISHED WORK.

7. ABRASIVE MATERIALS USED SHALL NOT ADVERSELY AFFECT THE COLOUR OF THE FINISHED WORK. MASK AND PROPERLY PROTECT ALL INSERTS AND OTHER ITEMS, AS REQUIRED TO COMPLETE THE ABRASIVE BLASTING. ABRASIVE BLASTING SHALL BE PERFORMED NO SOONER THAN TWENTY-ONE DAYS AFTER CASTING. PROVIDE SUITABLE ENCLOSURES TO COLLECT GRIT AND DUST FROM BLASTING OPERATIONS. ABRASIVE BLASTING OPERATIONS SHALL CONFORM TO EXISTING CODES AND REGULATIONS.

8. ABRASIVE BLASTING SHALL BE CARRIED OUT IN CONTINUOUS OPERATION FOR A GIVEN AREA, USING THE SAME PERSONNEL UNTIL COMPLETION.

9. COMPLETELY CLEAN UP AND REMOVE ALL SAND IMMEDIATELY AFTER ABRASIVE BLASTING IS COMPLETE.

10. ALL CORNERS RADII TO BE 12MM UNLESS SPECIFIED OTHERWISE.

3.6 ARCHITECTURAL REPAIRS

1. GENERAL REPAIR AREAS SHALL BE DETERMINED BY THE CONSULTANT AND SHALL NOT EXCEED 0.2M2 FOR EVERY 100M2 OF SURFACE AREA, AND SHALL BE WIDELY DISPERSED. REPAIRS SHALL MATCH THE SURROUNDING AREAS. ARCHITECTURAL CONCRETE REQUIRING REPAIR IN EXCESS OF ABOVE STANDARD IS SUBJECT TO REJECTION BY THE CONSULTANT AND/OR OWNER AND SHALL BE REMOVED AND REPLACED. REMOVAL AND REPLACEMENT SHALL BE AT NO ADDITIONAL COST TO THE OWNER.

3.7 ARCHITECTURAL CONCRETE TOLERANCES

1. CONCRETE TOLERANCE IN ACCORDANCE WITH CAN/CSA-A23.1, PLUS OR MINUS 3MM TOLERANCE (NOT IN ADDITION) OVER VERTICAL AND HORIZONTAL SURFACE DIMENSIONS (REFER TO DRAWINGS).

TULLOCH

ISSUED FOR REVIEW

FEBRUARY 27, 2025

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PROJECT No.: 24-1255 | DRAWING No.: G9 | REVISION No.: 0

ENGINEER'S SEAL

PROJECT:
CITY OF SAULT STE. MARIE
GFL MEMORIAL TOWER REHABILITATION
SAULT STE. MARIE, ONTARIO

DRAWING: CONCRETE SPECIFICATIONS

TULLOCH

CONCRETE SPECIFICATIONS CONTINUED

3.8 QUALITY ASSURANCE

1. CONCRETE TESTING SHALL BE PERFORMED BY A TESTING COMPANY DESIGNATED BY THE CONSULTANT AND CERTIFIED BY THE CANADIAN STANDARDS ASSOCIATION, CSA A283 TO PERFORM THE SPECIFIED TESTS.
2. EACH LOAD OF CONCRETE SHALL BE SAMPLED AND FIELD TESTED FOR SLUMP, AIR CONTENT AND TEMPERATURE IN CONFORMANCE WITH CAN/CSA A23.2.
3. ALL TEST RESULTS SHALL SATISFY THE REQUIREMENTS OF THIS SPECIFICATION.
4. TEST CYLINDERS SHALL BE PREPARED EVERY DAY THAT CONCRETE IS PLACED AS FOLLOWS:
   - 2 CYLINDERS FOR 7 DAY TEST, ONE (1) TO BE CURED ON SITE (UNDER SAME CONDITIONS AS CONCRETE IT REPRESENTS)
   - 2 CYLINDERS FOR 28 DAY TEST
5. TEST CYLINDERS SHALL BE TESTED FOR COMPRESSIVE STRENGTH AT 7 DAYS AND 28 DAYS IN ACCORDANCE WITH CAN/CSA A23.2-9C TO CONFORM TO THE SPECIFIED NOMINAL 28 DAY STRENGTH REQUIREMENT:
   - THE AVERAGE OF ALL GROUPS OF THREE CONSECUTIVE STRENGTH CYLINDERS SHALL BE EQUAL OR GREATER THAN THE SPECIFIED STRENGTH;
   - NO INDIVIDUAL STRENGTH TEST SHALL BE MORE THAN 3.5 MPA BELOW THE SPECIFIED STRENGTH.
6. IF REQUESTED BY THE CONSULTANT, TENSILE BOND TESTING SHALL BE PERFORMED IN ACCORDANCE WITH CAN/CSA A23.2-6B TO EVALUATE THE ADHESION OF THE DECK REPAIR CONCRETE TO THE SUBSTRATE. THE TOTAL REPAIR AREA ON EACH LEVEL WILL BE DIVIDED INTO LOTS OF APPROXIMATELY 10,000 SQ FT OR LESS. WITHIN EACH LOT, TESTING SHALL BE CONDUCTED AT SIX (6) LOCATIONS SELECTED BY THE CONSULTANT.
7. A SATISFACTORY TEST RESULT CONFORMS TO THE FOLLOWING REQUIREMENTS:
   - THE AVERAGE BOND STRENGTH WITHIN A LOT SHALL BE EQUAL OR GREATER THAN 0.9 MPA WHEN TESTED AT 28 DAYS, NOT INCLUDING COHESIVE FAILURE(S) THAT OCCUR WITHIN THE SUBSTRATE.
8. NO INDIVIDUAL TEST RESULT SHALL BE LESS THAN 0.9 MPA.

3.9 DEFECTIVE WORK

1. REMOVE AND REPLACE CONCRETE THAT FAILS TO MEET SPECIFIED REQUIREMENTS.
2. REMOVE AND REPLACE ANY DEBONDED OR HONEYCOMBED MATERIAL. REPAIR ANY CRACKS 3 MM OR MORE IN WIDTH.
3. SUBMIT DETAILS OF REMOVAL AND REPAIR METHOD TO THE CONSULTANT PRIOR TO COMMENCING SUCH WORK.

DIVISION 03 -- CONCRETE

SECTION 03 30 20 -- REPAIR MORTAR

PART 1 – GENERAL

1.1 GENERAL REQUIREMENTS

1. CONFORM TO THE PROVISIONS OF DIVISION 1, GENERAL REQUIREMENTS.

1.2 DESCRIPTION OF WORK

1. PREPARE SUBSTRATE, SUPPLY, MIX, PLACE, FINISH AND CURE REPAIR MORTAR FOR GARAGE SUSPENDED SLAB REPAIRS.

1.3 RELATED WORK

1. CONCRETE REMOVAL ..... SECTION 02 21 00
2. CONCRETE REINFORCEMENT ..... SECTION 03 20 00
3. ABRASIVE BLAST CLEANING ..... SECTION 03 35 00
4. SHORING AND UNDERPINNING ..... SECTION 31 40 00

1.4 REFERENCE STANDARDS

1. CAN/CSA S413-07, PARKING STRUCTURES
2. CAN/CSA A23.1-09, CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION
3. CAN/CSA A23.2-09, METHODS OF TEST FOR CONCRETE
4. CSA A283-06, QUALIFICATION CODE FOR CONCRETE TESTING LABORATORIES
5. CAN/CSA A3000-08, CEMENTITIOUS MATERIALS COMPENDIUM
6. ASTM C109/C 109M-08, STANDARD TEST METHOD FOR COMPRESSIVE STRENGTH OF HYDRAULIC CEMENT MORTARS

1.5 SUBMITTALS

1. REPAIR MORTAR DATA, INCLUDING MANUFACTURER'S TECHNICAL DATA SHEET AND MIX PROPORTIONS FOR MORTAR EXTENDED WITH AGGREGATES.
2. SOURCE AND GRADATION OF ANY AGGREGATES USED TO EXTEND THE REPAIR MORTAR.

1.6 WARRANTY

1. PROVIDE A TWO (2) YEAR WARRANTY FROM THE DATE OF SUBSTANTIAL PERFORMANCE FOR WORK OF THE SECTION AGAINST DELAMINATION, SCALING, DEBONDING, CRACKING, DISINTEGRATION AND OTHER FORMS OF DETERIORATION INCLUDING DEFICIENCIES RELATED TO WORKMANSHIP. WARRANTY INCLUDES REPAIR WORK REQUIRED AS A CONSEQUENCE OF FAILURE OF WORK IN THIS SECTION.
1. CORRECT DEFICIENCIES IMMEDIATELY.

PART 2 – PRODUCTS, MATERIALS & EQUIPMENT

2.1 MATERIALS

1. AGGREGATES SHALL BE NORMAL DENSITY, SATISFYING THE PHYSICAL AND GRADATION REQUIREMENTS OF CAN/CSA A23.1.
2. WATER SHALL BE POTABLE, FROM MUNICIPAL WATER MAIN.
3. ACCEPTABLE REPAIR MORTAR PRODUCTS INCLUDE:
4. HORIZONTAL APPLICATIONS (UP TO 25 MM DEEP):
5. REFER TO SECTION 072500.
6. HORIZONTAL APPLICATIONS (BETWEEN 25 MM TO 40 MM DEEP):
7. "SIKATOP 122 PLUS" BY SIKA CANADA INC., OR
8. APPROVED ALTERNATIVE.
9. VERTICAL APPLICATIONS (UP TO 50 MM DEEP) EXCLUDING COLUMNS:
10. "SIKATOP 123" BY SIKA CANADA INC., OR
11. APPROVED ALTERNATIVE.
12. OVERHEAD APPLICATIONS:
13. "SIKATOP 123" BY SIKA CANADA INC., OR
14. APPROVED ALTERNATIVE
15. NON-SHRINK GROUT FOR DRAIN BODY SETTING:
16. M-BED STANDARD BY SIKA CANADA INC OR APPROVED EQUIVALENT.

2.2 REPAIR MORTAR MIX

1. PROPORTION REPAIR MORTAR IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS MIX FULL BATCHES ONLY; PARTIAL BATCHES ARE NOT PERMITTED.
2. MINIMUM COMPRESSIVE CUBE STRENGTH OF REPAIR MORTAR AT 28 DAYS: 50 MPA

PART 3 – EXECUTION

3.1 PREPARATION

1. PERFORM A SOUNDING SURVEY TO IDENTIFY AND MARK ALL HOLLOW SOUNDING AREAS FOR CONSULTANT'S REVIEW.
2. IDENTIFY AND DELINEATE ALL VISIBLE CONCRETE DETERIORATION, PITTED, DEPRESSIONS AND UNEVEN AREAS ON THE SURFACE OF THE MEMORIAL TOWER FOR THE CONSULTANT'S REVIEW.
3. CONTRACTOR TO RETAIN THE SERVICES OF A PROFESSIONAL ENGINEER TO DESIGN AND REVIEW SHORING AS REQUIRED TO COMPLETE THE CONCRETE REPAIRS.
4. FOLLOWING CONSULTANT'S REVIEW, REMOVE IDENTIFIED CONCRETE DETERIORATION.
5. PERIMETER OF REPAIR AREA TO BE SAW-CUT SQUARE TO A DEPTH OF 15 MM TO PREVENT FEATHERING EDGING. PREPARE SURFACES AND ABRASIVE BLAST CLEAN EXPOSED EXISTING STEEL AND SUBSTRATE.
6. PROVIDE 48 HR NOTICE TO THE CONSULTANT PRIOR TO PLACING REPAIR MORTAR FOR REVIEW OF SURFACE PREPARATION. AREAS TO BE REPAIRED MUST BE REVIEWED BY CONSULTANT PRIOR TO PLACEMENT OF REPAIR MORTAR.

TULLOCH
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ENGINEER'S SEAL

PROJECT:
CITY OF SAULT STE. MARIE
GFL MEMORIAL TOWER REHABILITATION
SAULT STE. MARIE, ONTARIO

DRAWING: CONCRETE SPECIFICATIONS

TULLOCH

CONCRETE SPECIFICATIONS CONTINUED

3.2 APPLICATION

1. CONCRETE SUBSTRATE MUST BE CLEAN AND SOUND AT TIME OF APPLICATION OF REPAIR CONCRETE. TEMPERATURE OF SUBSTRATE AND AIR TEMPERATURE MUST NOT BE BELOW +10°C. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ADEQUATE METHODS OF HEATING TO CONTROL CURING CONDITIONS. DO NOT LEAVE HEATING DEVICES UNATTENDED.

2. PREPARE REPAIR MORTAR IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR SHALL MEASURE AND RECORD THE WATER CONTENT ADDED TO EACH BATCH OF REPAIR MATERIAL USING A MARKED CONTAINER. FULL BATCHES OF REPAIR MORTAR SHALL BE MIXED AND PLACED AT ALL TIMES; PARTIAL BATCHES ARE NOT PERMITTED.

3. BOND COAT SLURRY.

4. THOROUGHLY WET AND MAINTAIN WET FOR A PERIOD OF 24 HOUR PRIOR TO PLACEMENT OF REPAIR MORTAR.

5. BLOW REPAIR AREAS CLEAR OF FREE WATER USING OIL FREE COMPRESSED AIR JUST PRIOR TO APPLICATION OF BOND COAT SLURRY. SUBSTRATE SURFACE SHOULD BE SATURATED SURFACE DRY (SSD) PRIOR TO APPLICATION OF BOND COAT SLURRY.

6. APPLY BOND COAT SLURRY TO THE CONCRETE SUBSTRATE IMMEDIATELY PRIOR TO THE APPLICATION OF REPAIR MORTAR. PREPARE THE BOND COAT SLURRY IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. VIGOROUSLY SCRUB THE SLURRY ON THE PREPARED, MOIST SUBSTRATE, USING A STIFF–BRISTLED BRUSH. SPECIAL ATTENTION IS TO BE GIVEN TO THE EDGES OF THE REPAIR AREAS.

PLACING

1. APPLY REPAIR MORTAR PRIOR TO FILMING OF THE BOND–COAT SLURRY, AND VIGOROUSLY WORK INTO PLACE, TO ENSURE COMPLETE CONSOLIDATION.

2. PROVIDE A SMOOTH, DENSE, TROWELLED FINISH, FREE OF BLEMISHES.

3. MAINTAIN ACCURATE RECORDS OF REPAIR MORTAR APPLICATIONS, INDICATE DATE, LOCATION OF POUR, AIR TEMPERATURE AND FIELD TEST RESULTS AND TEST SAMPLES TAKEN.

3.3 CURING

1. CURE AND PROTECT IN ACCORDANCE WITH CAN/CSA–A23.1.

2. CURE PROPRIETARY CONCRETE MATERIALS IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

3. DAMP–CURE THE REPAIR MORTAR, USING WET BURLAP COVERED BY POLYETHYLENE FILM, FOR 24 HOURS AFTER INSTALLATION. APPLY WET BURLAP AS SOON AS POSSIBLE AFTER FINISHING, AND WITHOUT DAMAGE TO THE SURFACE. THE REPAIR MORTAR SHALL BE KEPT MOIST FOR THE FIRST 24 HOURS. AFTER 24 HOURS, PERMIT AIR DRYING OF AN ADDITIONAL 72 HOURS. PROTECT REPAIR MORTAR FROM HIGH TEMPERATURE DURING INITIAL CURE.

4. CURE REPAIR MORTAR IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

5. MAINTAIN A CURING TEMPERATURE BETWEEN +10°C AND +30°C FOR THE ENTIRE CURING PERIOD.

6. PROTECT THE REPAIR AREAS FROM DAMAGE DURING THE CURING PERIOD. DO NOT PERMIT CHIPPING OPERATIONS ADJACENT TO THE REPAIRED AREAS FOR A MINIMUM OF SEVEN (7) DAYS AFTER THE INSTALLATION OF REPAIR MORTAR.

7. THE USE OF CURING COMPOUNDS WILL NOT BE PERMITTED.

3.4 QUALITY ASSURANCE

SAMPLING AND TESTING

1. TESTING SHALL BE PERFORMED BY A TESTING COMPANY DESIGNATED BY THE CONSULTANT AND CERTIFIED BY THE CANADIAN STANDARDS ASSOCIATION, CSA A283 TO PERFORM THE SPECIFIED TESTS.

2. REPAIR MORTAR– PREPARE 50 MM CUBES EACH DAY THAT THE REPAIR MORTAR IS PLACED. TEST MORTAR CUBES AT 7 DAYS AT 28 DAYS IN ACCORDANCE WITH ASTM C109.

3. REPAIR AREAS SHALL BE SOUNDED FOR VOIDS OR DELAMINATION.

4. AT THE DISCRETION OF THE CONSULTANT, TENSILE BOND TESTING MAY BE PERFORMED TO ASSESS THE ADHESION OF THE REPAIR MORTAR TO THE CONCRETE SUBSTRATE. TENSILE BOND TESTING SHALL BE PERFORMED IN ACCORDANCE WITH CAN/CSA A23.2–6B. A MINIMUM OF THREE (3) TESTS CONSTITUTES AS RESULT.

5. A SATISFACTORY RESULT CONFORMS TO THE FOLLOWING REQUIREMENTS:

– THE AVERAGE BOND STRENGTH SHALL BE EQUAL OR GREATER THAN 1.5 MPA OR GREATER THAN THE COHESIVE STRENGTH OF THE UNDERLYING CONCRETE WHEN TESTED AFTER 7 DAYS.

6. NO INDIVIDUAL TEST RESULT SHALL BE LESS THAN 1.3 MPA, NOT INCLUDING COHESIVE FAILURES THAT OCCUR IN THE UNDERLYING CONCRETE.

3.5 DEFECTIVE WORK

1. REMOVE AND REPLACE ANY DEBONDED OR HONEYCOMBED MATERIAL.

2. REPAIR ANY CRACKS 1 MM OR MORE IN WIDTH.

3. REMOVE AND REPLACE MATERIAL THAT FAILS TO SATISFY TENSILE BOND OR COMPRESSIVE STRENGTH CRITERIA.

4. SUBMIT DETAILS OF REMOVAL AND REPAIR METHOD TO THE CONSULTANT PRIOR TO COMMENCING SUCH WORK.

1.2 DESCRIPTION OF WORK

1. INCLUDES THE FURNISHING OF ALL LABOUR, MATERIALS, PLANT, TOOLS, TRANSPORTATION AND SERVICES, NECESSARY FOR ABRASIVE BLAST CLEANING OF ALL CONCRETE AND REINFORCING STEEL SURFACES IN THE CONCRETE REPAIR AREAS AS REQUIRED.

2. INCLUDES THE FURNISHING OF ALL LABOUR, MATERIALS, PLANT, TOOLS, TRANSPORTATION AND SERVICES, NECESSARY TO ABRASIVE BLAST THE NEW ARCHITECTURAL WALLS.

3. INCLUDES THE FURNISHING OF ALL LABOUR, MATERIALS, PLANT, TOOLS, TRANSPORTATION AND SERVICES NECESSARY FOR ABRASIVE SHOT BLAST CLEANING OF ALL SURFACES THAT ARE TO RECEIVE NEW WATERPROOFING SYSTEM.

1.3 RELATED WORK

1. CONCRETE REINFORCEMENT ..... SECTION 03 20 00
2. SELF–CONSOLIDATING CONCRETE ..... SECTION 03 30 00
3. REPAIR CONCRETE ..... SECTION 03 30 01
4. REPAIR MORTAR ..... SECTION 03 90 00

PART 2 – PRODUCTS

2.1 MATERIALS

1. ABRASIVE MATERIALS SUITABLE FOR THE PURPOSE SHALL BE USED FOR THE ABRASIVE BLAST CLEANING OPERATION.

2. NO RE–USE OF THE ABRASIVE WILL BE PERMITTED.

3. SHOT–BLAST EQUIPMENT SUITABLE FOR THE PURPOSE EMPLOYING STEEL SHOT.

PART 3 – EXECUTION

3.1 SURFACE PREPARATION

1. CONCRETE SHALL BE ABRASIVE BLAST CLEANED TO EXPOSE CLEAN COARSE AGGREGATE AND REMOVE ALL DIRT, LAITANCE, AND HARDENED CONCRETE SLURRY. ANY OIL AND GREASE SHALL BE REMOVED USING HAND TOOLS.

2. EXPOSED REINFORCEMENT SHALL BE ABRASIVE BLAST CLEANED TO SSPC–SP10 NEAR WHITE BLAST FINISH. ALL MILL SCALE, RUST SCALE, PAINT OR ANY OTHER FOREIGN MATTER MUST BE REMOVED BY THE USE OF ABRASIVES. THE SURFACE SHALL APPEAR A GRAYISH, METALLIC WHITE, VERY UNIFORM IN COLOUR.

3. SURFACES TO BE RECOATED SHALL BE PREPARED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

4. A MAXIMUM OF 24 HOURS SHALL BE ALLOWED TO ELAPSE BETWEEN THE ABRASIVE BLAST CLEANING AND SHOT–BLASTING OPERATION AND CONCRETE PLACEMENT.

5. DO NOT SHOT–BLAST SURFACES WHERE EXISTING PAINT COATING IS TO REMAIN. CLEAN AND PREPARE EXISTING MEMBRANE IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

6. REPAIR PITTED AND OTHER UNEVEN AREAS AS REQUIRED AFTER SHOT BLASTING USING AN EPOXY MORTAR.

3.2 PROTECTION AND ADJACENT PROPERTIES

1. PROVIDE PROTECTIVE SCREENS WHERE NECESSARY, AND AT THE BOUNDARIES OF WORK AREAS.

2. PROVIDE SUITABLE PROTECTION FOR ALL ENTRANCE AND EXIT WAYS INTO ALL BUILDINGS, ALL FRESH AIR INTAKES, ALL GARAGE EXHAUST FANS, TELEPHONE, HYDRO AND MECHANICAL ROOMS, ALL PLUMBING, LANDSCAPING, EXPOSED DUCTS AND ELECTRICAL OR OTHER CABLES AND OTHER AREAS.

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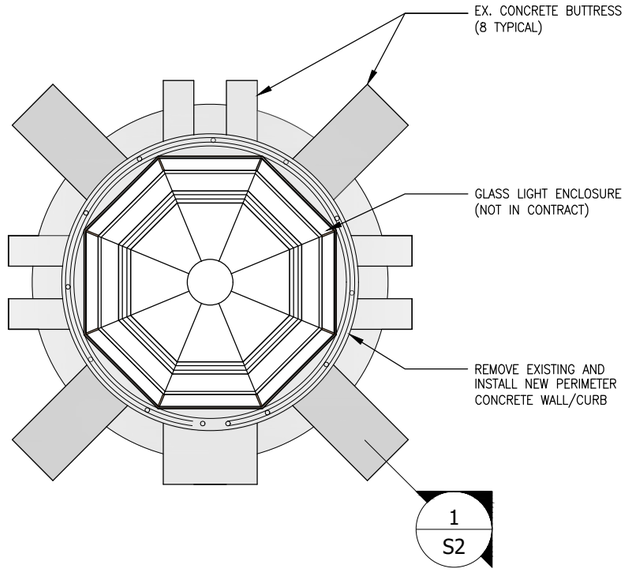
ENGINEER'S SEAL

PROJECT: CITY OF SAULT STE. MARIE
GFL MEMORIAL TOWER REHABILITATION
SAULT STE. MARIE, ONTARIO

DRAWING: CONCRETE SPECIFICATIONS

TULLOCH



PLAN
MEMORIAL TOWER
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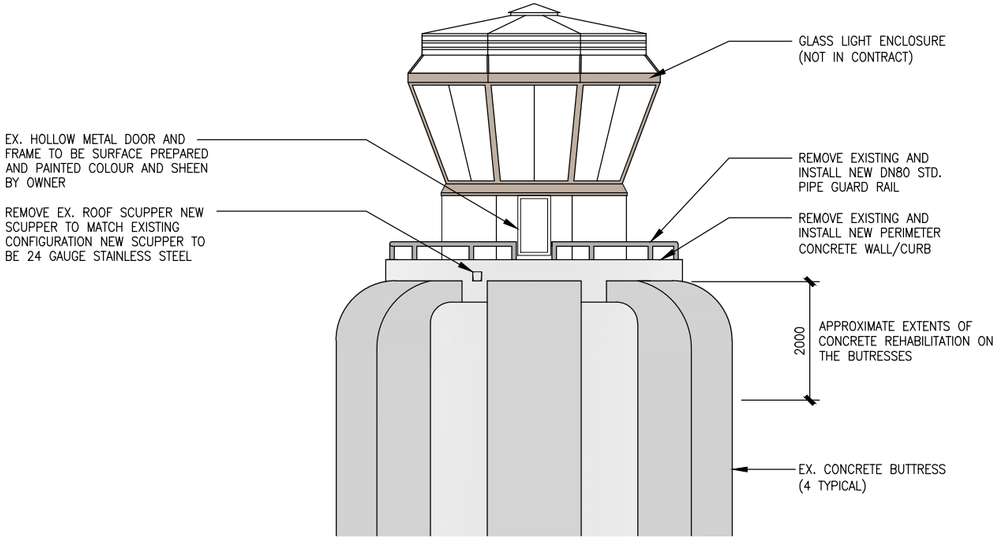

ENLARGED ELEVATION
UPPER PORTION OF TOWER
(LOOKING NORTH)
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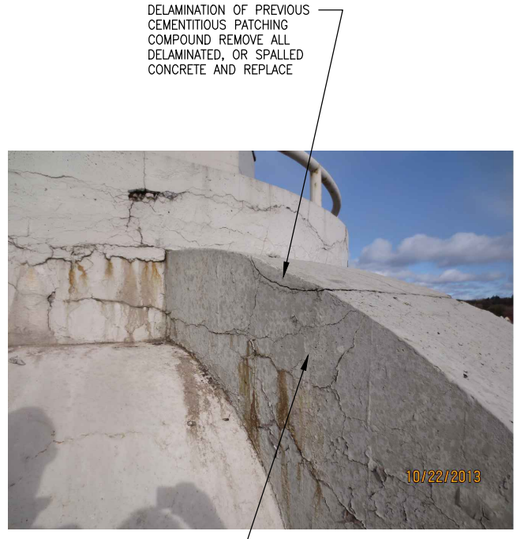

EX. CONDITIONS (TYP)
T/O CONCRETE BUTTRESS

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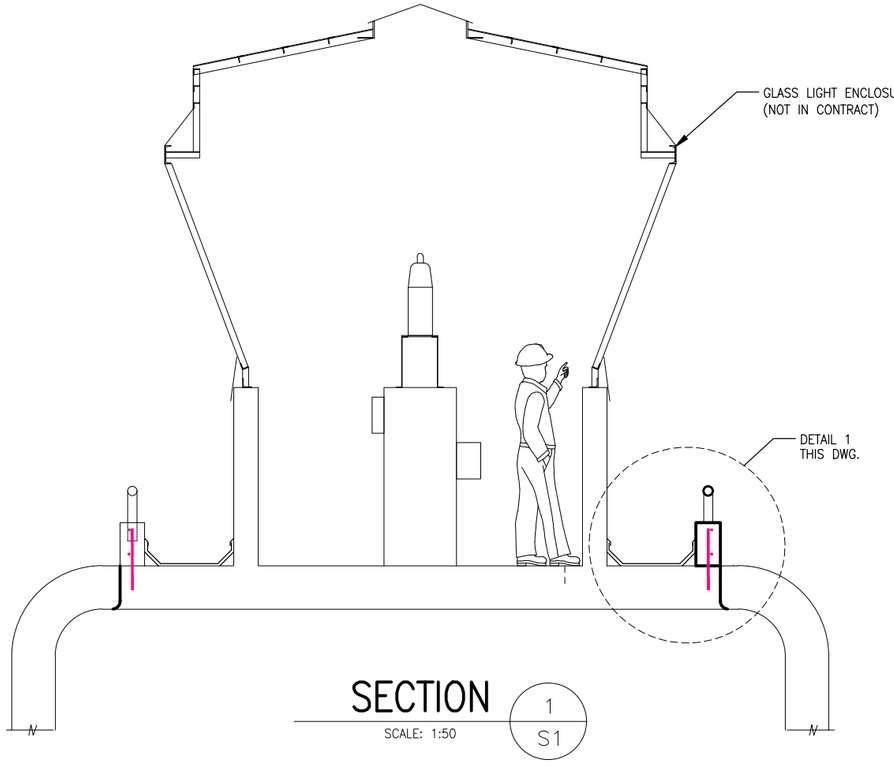
ENGINEER'S SEAL

PROJECT:
CITY OF SAULT STE. MARIE
GFL MEMORIAL TOWER REHABILITATION
SAULT STE. MARIE, ONTARIO

DRAWING:
ENLARGED DETAILS
(TOP OF TOWER)

TULLOCH



SECTION 1/S1
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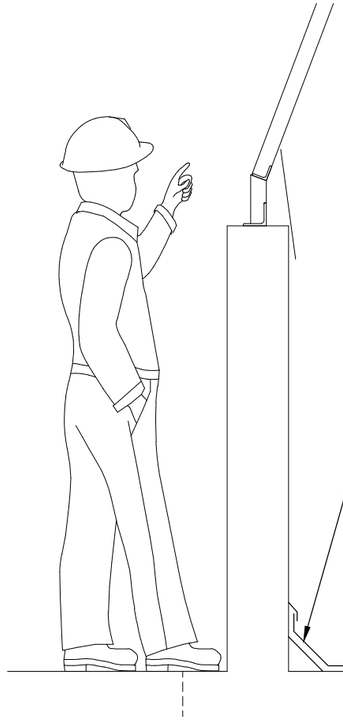

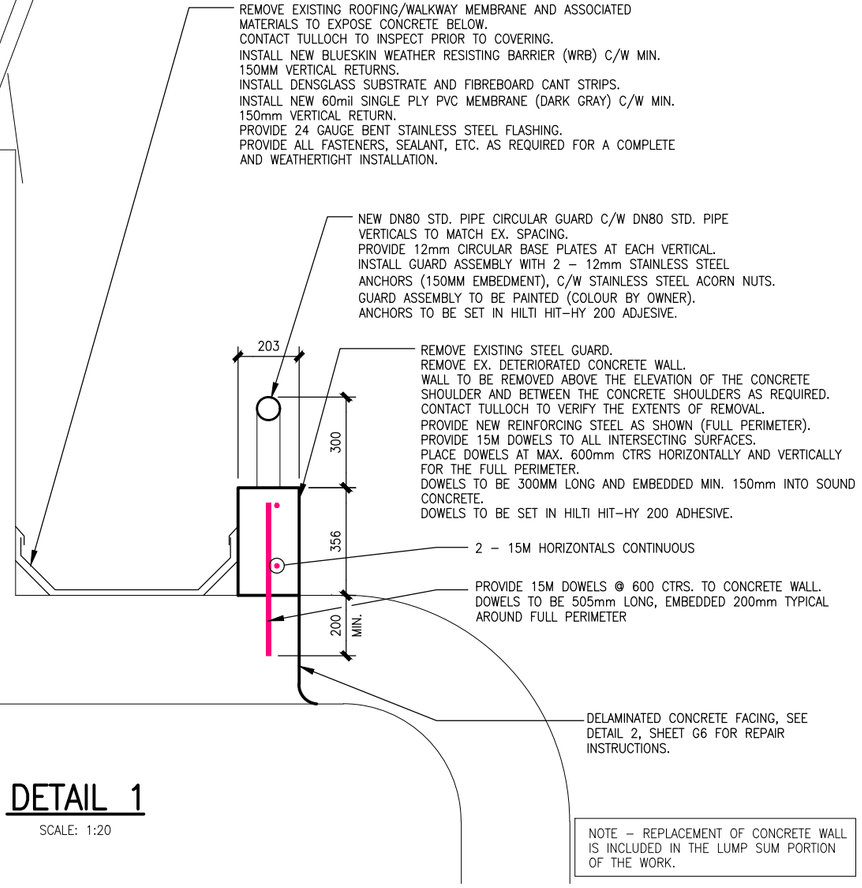

DETAIL 1
SCALE: 1:20

NOTE – REPLACEMENT OF CONCRETE WALL IS INCLUDED IN THE LUMP SUM PORTION OF THE WORK.

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ENGINEER'S SEAL

PROJECT:
CITY OF SAULT STE. MARIE
GFL MEMORIAL TOWER REHABILITATION
SAULT STE. MARIE, ONTARIO

DRAWING:
ENLARGED DETAILS
(TOP OF TOWER)

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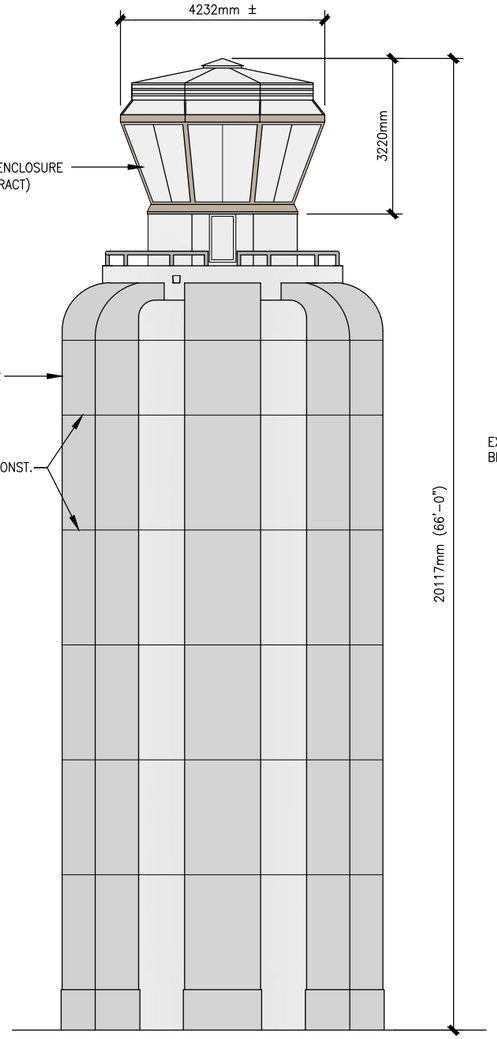
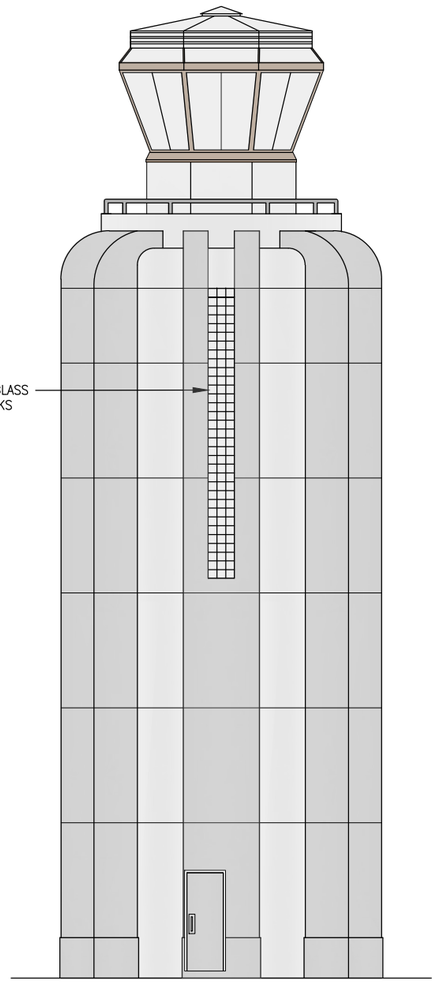


SOUTH ELEVATION
(LOOKING NORTH)
SCALE: 1:125



EAST ELEVATION
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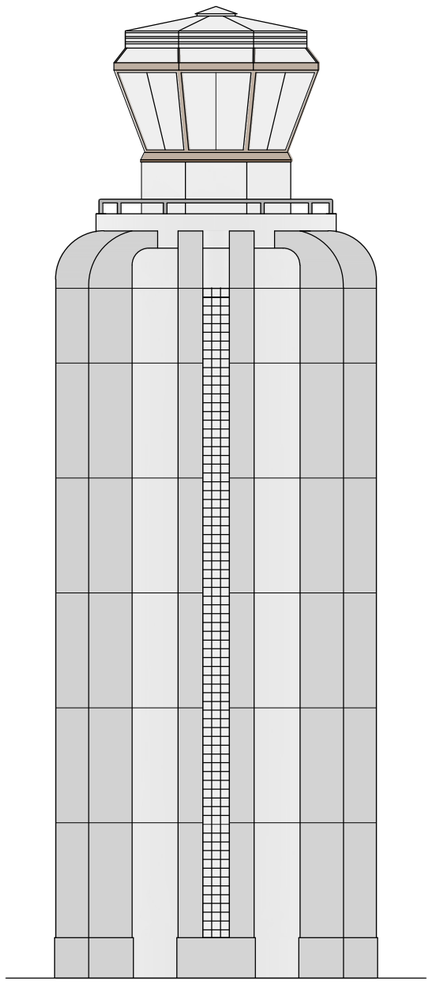

NORTH ELEVATION
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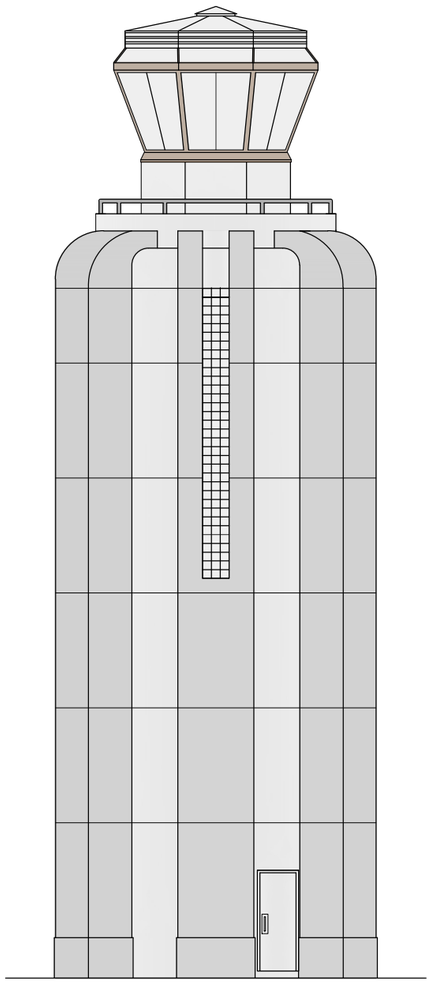

WEST ELEVATION
(LOOKING EAST)
SCALE: 1:125

ALL DIMENSION ARE IN mm
UNLESS NOTED OTHERWISE

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ENGINEER'S SEAL

PROJECT:
CITY OF SAULT STE. MARIE
GFL MEMORIAL TOWER REHABILITATION
SAULT STE. MARIE, ONTARIO

DRAWING:
EXISTING
EXTERIOR ELEVATIONS

TULLOCH

Goal 6:

Natural & Built Heritage

Actions:

1. Continue Efforts to Beautify, Animate and Activate the Waterfront Beyond Roberta Bondar Park - **Ongoing**
2. Develop Design Guidelines for Waterfront Development - **Yet to be Initiated**
3. Greater Connectivity from Waterfront to Downtown - **In Progress**
4. Recognize and Protect Historic Neighbourhoods - **Complete**
5. Codify Intangible Heritage and Knowledge as Part of Conservation/Protection Strategy for Natural and Built Heritage - **Ongoing**
6. Heritage Trees - **In Progress**

Goal 6: Natural and Built Heritage

Action 1: Continue efforts to beautify, animate and activate the waterfront beyond RBP

STATUS: Ongoing

Work is ongoing to beautify and animate the waterfront. Significant projects have included:

- Bay St. redevelopment
- Boardwalk extension
- Downtown Plaza development
- Public Art Installation
- Horticulture

Action 2: Develop design guidelines for waterfront development

STATUS: Yet to be Initiated

To be developed in collaboration with City Planning division.

Action 3: Greater connectivity from waterfront to downtown

STATUS: In Progress

This is part of the Waterfront Master Plan. Projects completed that improve connectivity include: Bay St. redevelopment, Downtown Plaza project, Queen Street redevelopment.

Action 4: Recognize & Protect Historic Neighbourhoods (SLUM and others)

STATUS: Complete

The sub-committee included Municipal Heritage Committee and Planning Dept. Five neighbourhoods were identified for inclusion in the Official Plan: Downtown Queen, S.L.U.M (Simpson, Leo, Upton, McGregor), Pim Hill, Lower Pim.

Action 5: Codify Intangible Heritage and Knowledge as Part of Conservation/ Protection Strategy for Natural and Built Heritage

STATUS: Ongoing

<u>Projects completed:</u>

- St. Mary's River Heritage Walk
- On This Spot Tours
- Doors Open and Digital Doors Open
- Interactive Heritage Map
- 4 new Designations, Under Part IV of the OHA
- 28 Properties added to Heritage Register

<u>Upcoming Projects:</u>

- Heritage Traffic Wraps
- Updated Heritage Booklet
- Additional Designations
- GIS Mapping

Action 6: Heritage Trees – Protected by Policies Similar to Other Heritage Properties

STATUS: In Progress

A working group was formed consisting of MHC members, City Staff and local expert. Trees have been short-listed and are under review.

SAULT STE. MARIE