

BAYFIELD, ONTARIO

NORTH AND SOUTH PIER REPAIRS (LOCATOR CODE 4516)



GOVERNMENT
OF CANADA

FISHERIES
AND OCEANS

GOUVERNEMENT
DU CANADA

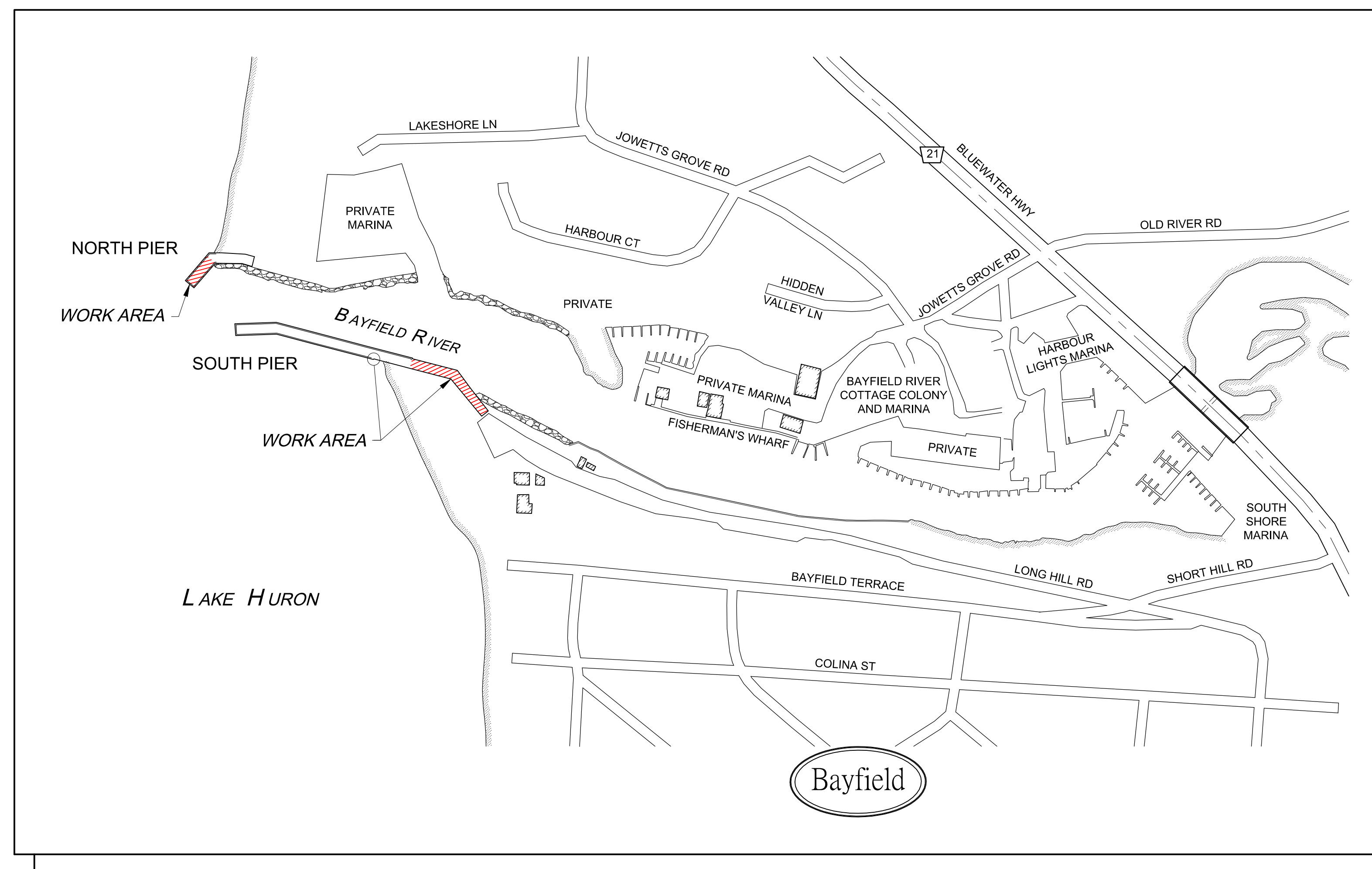
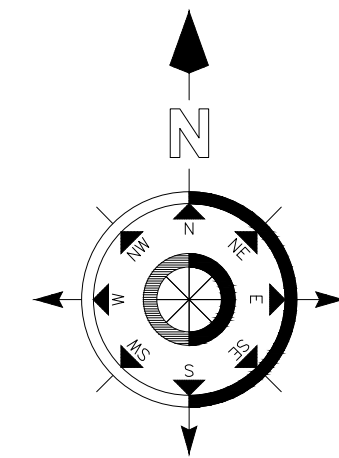
PÊCHES
ET OCÉANS

SMALL CRAFT HARBOURS
CENTRAL AND ARCTIC REGION



AECOM

London, Ontario
519.673.0510
PROJECT No. 60429883



DRAWING FILE: C:\PROJECTS\60309010 Bayfield Marina\000-CADD\040-CADD-DIM WIP\02-Sheets\60309010-SHT-30-S-001
DATE: 7/14/2015 11:48:57 AM

GENERAL NOTES :

1. SAFEGUARD ALL EXISTING STRUCTURES, SERVICES AND UTILITIES WHICH WILL BE AFFECTED BY THE WORK OF THIS CONTRACT.
2. BEFORE PROCEEDING WITH THE WORK, CHECK AND VERIFY ALL DIMENSIONS AND ALL ELEVATIONS SHOWN ON THE DRAWINGS AND REPORT ANY DISCREPANCIES.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ENVIRONMENTAL PROTECTION AND CONSTRAINTS DURING PERFORMANCE OF THE WORK.
4. ACCESS PERMISSION FOR SHEET PILING INSTALLATION SHALL BE ARRANGED BY SMALL CRAFT HARBOURS, FOR THE HARBOUR SIDE (NORTH PIER).
5. THE CONTRACTOR SHALL EMPLOY THE SERVICES OF AN UNDERWATER DIVER TO GUIDE THE REMOVAL OF OBSTRUCTIONS ALONG NEW SHEET PILE WORK AND TO REVIEW THE EXTENTS OF TOE DISPLACEMENT AT THE NORTH PIER PRIOR TO SHEET PILE DRIVING.
6. ALL DIMENSIONS IN MILLIMETERS, UNLESS OTHERWISE NOTED.

CONSTRUCTION NOTES :

1. THE LOCATION OF POLE LINES, CONDUITS, WATERMAIN, SEWERS AND OTHER UTILITIES ARE NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN THE ACCURACY OF THE LOCATION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED.
2. BEFORE STARTING WORK THE CONTRACTOR SHALL LOCATE ALL UTILITIES AND SHALL PROTECT THEM FROM DAMAGE.
3. ALL WORK SHALL MEET THE MINIMUM STANDARDS OF THE SPECIFICATIONS AND THE OCCUPATIONAL HEALTH AND SAFETY ACT (OHSA).
4. ENVIRONMENTAL APPLICATIONS HAVE BEEN FILED WITH VARIOUS AUTHORITIES HAVING JURISDICTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ENVIRONMENTAL PROTECTION AND CONSTRAINTS DURING PERFORMANCE OF THE WORK.
5. ALL TREES, FACILITIES AND MISCELLANEOUS OBSTRUCTIONS TO THE WORK ARE NOT NECESSARILY SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL COMPLETE A VISUAL SITE REVIEW PRIOR TO THE BID AND PRIOR TO UNDERTAKING THE WORK.
6. THE CONTRACTOR SHALL INSTALL AND MAINTAIN A SECURE SITE PERIMETER FENCE AT ALL TIMES DURING CONSTRUCTION. FENCING SHALL INCLUDE SIGNAGE NOTIFYING PUBLIC OF HAZARDS. LOCKABLE GATES SHALL BE INSTALLED TO PROVIDE VEHICLE AND PERSONNEL ACCESS.
7. ALL DISTURBED AREAS SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION.
8. THE CONTRACTOR SHALL PREPARE AND MAINTAIN A WORKING AS BUILT FULL SIZE 'REDLINE' MARKUP SET OF THE CONTRACT DRAWINGS. WORKING AS BUILTS SHALL BE KEPT CURRENT ON A WEEKLY BASIS AND BE AVAILABLE ON THE JOB SITE AT ALL TIMES. THE 'REDLINE' SET SHALL DEPICT ALL CURRENT VARIATIONS/DEVIATIONS (INCLUDING, BUT NOT LIMITED TO THE FOLLOWING: ADDENDUMS, CHANGE ORDERS, FIELD ADJUSTMENTS, EXISTING AND NEW UTILITY LINES). MEASUREMENTS ARE TO BE SHOWN FOR ALL CHANGE OF DIRECTION POINTS AND ALL COMPONENTS. THESE SHALL BE SHOWN WITH TWO OFFSET DISTANCES TO PERMANENTLY FIXED FEATURES.

SHEET PILE NOTES :

1. CORNER SECTIONS SHALL BE PROVIDED AT ALL BENDS TO SHEETING.
2. MECHANICAL COUPLERS/TURNBUCKLES WITH LOCK NUTS FOR DYWIDAG TIES SHALL BE PROVIDED AS REQUIRED TO SUIT THE TIE LENGTHS.
3. LOCATIONS/DETAILS OF WALER SPICE PLATES ARE SHOWN ON THE DRAWINGS. THE NUMBER AND ACTUAL LOCATION OF EACH WALER SPICE PLATE IS TO BE DETERMINED BY THE CONTRACTOR TO SUIT THE WALER PIECE LENGTHS.
4. DRIVING CAPS SHALL BE USED TO PROTECT THE PILE TOPS DURING INSTALLATION.
5. TOP DRIVING GUIDES SHALL BE USED FOR SHEET PILE ALIGNMENT.
6. THE CONTRACTOR SHALL NOTE THAT THE INSTALLATION OF SHEETING WILL NOT RESULT IN A REDUCTION TO WATER LEVEL ON THE FILL SIDE.
7. TYPICAL SPACING OF TIEBACKS AND DEADMEN IS PROVIDED ON THE DRAWINGS. SPACING OF DEADMEN MAY BE MODIFIED TO AVOID SPATIAL CONFLICTS SUBJECT TO ENGINEER'S APPROVAL.

MATERIAL SPECIFICATIONS :

1. CONCRETE : IN ACCORDANCE WITH CSA STANDARD A23.1 AND A23.2.
CLASS OF CONCRETE :
PRECAST 40 MPa
REMAINDER 30 MPa
CLEAR COVER TO REINFORCING STEEL :
PRECAST 50 ± 10mm
REMAINDER 70 ± 20mm
2. STRUCTURAL CONCRETE UNLESS OTHERWISE NOTED: 30 MPa AT 28 DAYS, EXPOSURE CLASSIFICATION F-1.
3. REINFORCING STEEL: CSA STANDARD G30.18, GRADE 400, DEFORMED BARS.
4. STRUCTURAL STEEL: CSA STANDARD G40.20/G40.21, GRADE 350W ROLLED SECTIONS, 300W PLATES.
5. SHEET PILING: CSA STANDARD G40.21, GRADE 350W OR ASTM A572, GRADE 50.
6. BOLTS: ASTM A325M (25mm DIAMETER, UNLESS NOTED OTHERWISE).
7. TIE BACKS: DYWIDAG GRADE 75, #10 OR EQUAL.
8. WELDING: CSA STANDARD W59 PERFORMED BY WELDERS MEETING THE REQUIREMENTS OF CSA STANDARD W47.
9. UNLESS OTHERWISE NOTED THE MINIMUM FILLET WELD SHALL BE AS FOLLOWS:
MATERIAL THICKNESS OF THICKER PART JOINED (mm) MINIMUM SIZE OF SINGLE PASS FILLET WELD (mm)
TO 12 INCLUSIVE 5
OVER 12 TO 20 6
OVER 20 TO 40 8
OVER 40 TO 60 10
OVER 60 TO 80 12

DESIGN LOADING :

PIER LIVE LOAD : 4.8 kN/m²

REFERENCE PLANS :

EXISTING DETAILS OF PIERS HAVE BEEN DERIVED FROM DRAWINGS BY PUBLIC WORKS OF CANADA, BAYFIELD ONTARIO, DATED NOVEMBER 1962, JULY 1966 AND OCTOBER 1987.

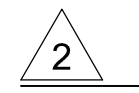

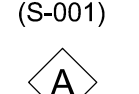
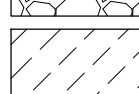
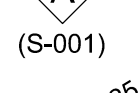


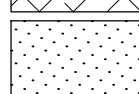

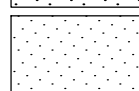


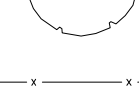


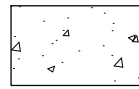

SURVEY INFORMATION :

1. SURVEY INFORMATION PROVIDED BY SMALL CRAFT HARBOURS CENTRAL AND ARCTIC REGION, NOVEMBER 2013.
2. BENCHMARK :
GEODETIC BENCHMARK 72U097 TOP OF CONCRETE SOUTH SIDE OF SOUTH PIER, ELEVATION 178.107.
3. ELEVATIONS ARE PROVIDED IN RELATION TO CHART DATUM (LEVEL 0.00) RELATIVE TO IGLD 1985 (ELEVATION 176.00), UNLESS OTHERWISE NOTED.

ABBREVIATIONS :

| | | | |
|----------|---------------------------------|--------|------------------------|
| CONC. | CONCRETE | m | METERS |
| CL | CENTRE LINE | MAX. | MAXIMUM |
| EL | ELEVATION | MIN. | MINIMUM |
| EX | EXISTING | MISC. | MISCELLANEOUS |
| GRAN. | GRANULAR | mm | MILLIMETERS |
| HWL | HIGH WATER LEVEL | R/W | RETAINING WALL |
| I.G.L.D. | INTERNATIONAL GREAT LAKES DATUM | T/C | TOP OF CONCRETE |
| LWL | LOW WATER LEVEL | TYP. | TYPICAL |
| LS | LIGHT STANDARD | WL | WATER LEVEL |
| | | U.O.N. | UNLESS OTHERWISE NOTED |

LEGEND :

| | | | |
|---|--------------------|---|-----------------------|
|  | SECTION NUMBER |  | RIP RAP |
|  | DRAWING LOCATION |  | CONCRETE REMOVAL |
|  | DETAIL LETTER |  | FILL MATERIAL REMOVAL |
|  | DRAWING LOCATION |  | GRANULAR 'A' |
|  | ORIGINAL ELEVATION |  | GRANULAR 'B' |
|  | FINAL ELEVATION |  | CLEAR STONE TYPE 1 |
|  | TREE |  | CLEAR STONE TYPE 2 |
|  | CHAIN LINK FENCE |  | CONCRETE |
|  | BRUSH | | |

LIST OF PROJECT DRAWINGS :

| NORTH PIER | |
|--------------|---------------------------------------|
| Sheet Number | Sheet Title |
| S-001 | NOTES, ABBREVIATIONS AND LEGENDS |
| S-002 | GENERAL ARRANGEMENT |
| S-003 | NORTH PIER EXISTING AND REMOVALS PLAN |
| S-004 | NORTH PIER PARTIAL PLAN AND DETAILS |
| S-005 | NORTH PIER DETAILS |
| S-006 | NORTH PIER SECTION 1 |
| S-007 | NORTH PIER SECTION 2 |
| S-008 | NORTH PIER SECTIONS 3 AND 4 |
| SOUTH PIER | |
| Sheet Number | Sheet Title |
| S-009 | SOUTH PIER EXISTING AND REMOVALS PLAN |
| S-010 | SOUTH PIER PARTIAL PLAN AND DETAILS |
| S-011 | SOUTH PIER SECTION 1 |
| S-012 | SOUTH PIER SECTION 2 |
| S-013 | SOUTH PIER DEADMAN DETAILS |
| S-014 | MISCELLANEOUS DETAILS - 1 |
| S-015 | MISCELLANEOUS DETAILS - 2 |

BID SCENARIOS :

THE CONTRACTOR SHALL PROVIDE A TENDER BID COST FOR THE FOLLOWING SCENARIOS, AS SHOWN ON THE DRAWINGS:

- SCENARIO A :
- REHABILITATION OF NORTH PIER
- SCENARIO B :
- REHABILITATION OF NORTH PIER
- REHABILITATION OF SOUTH PIER (MIDDLE PORTION)
- SCENARIO C :
- REHABILITATION OF NORTH PIER
- REHABILITATION OF SOUTH PIER (MIDDLE AND EAST PORTIONS)



SMALL CRAFT HARBOURS
CENTRAL AND ARCTIC REGION



AECOM

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519.673.0510

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NOTES:

1. ALL UNITS IN mm UNLESS OTHERWISE NOTED.

REVISION:

| No. | REVISIONS | DATE |
|-----|-----------|------------|
| 1 | | 04/02/2015 |
| | | |
| | | |
| | | |
| | | |

SCALE:

CLASS:

PROJECT:

SMALL CRAFT HARBOURS
CENTRAL AND ARCTIC REGION
BAYFIELD, ONTARIO

NORTH AND SOUTH PIER
REPAIRS

DESCRIPTION:

NOTES, ABBREVIATIONS
AND LEGENDS

DRAWN:

APPROVED:

T.G.

J.P.

DATE:

DATE:

JULY 2015

JULY 2015

LOCATION:

BAYFIELD ONTARIO

DRAWING NO.:

LOCATOR CODE:

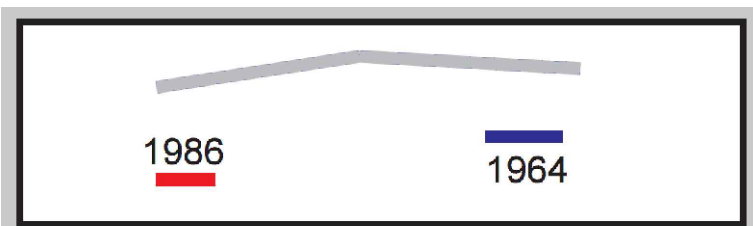
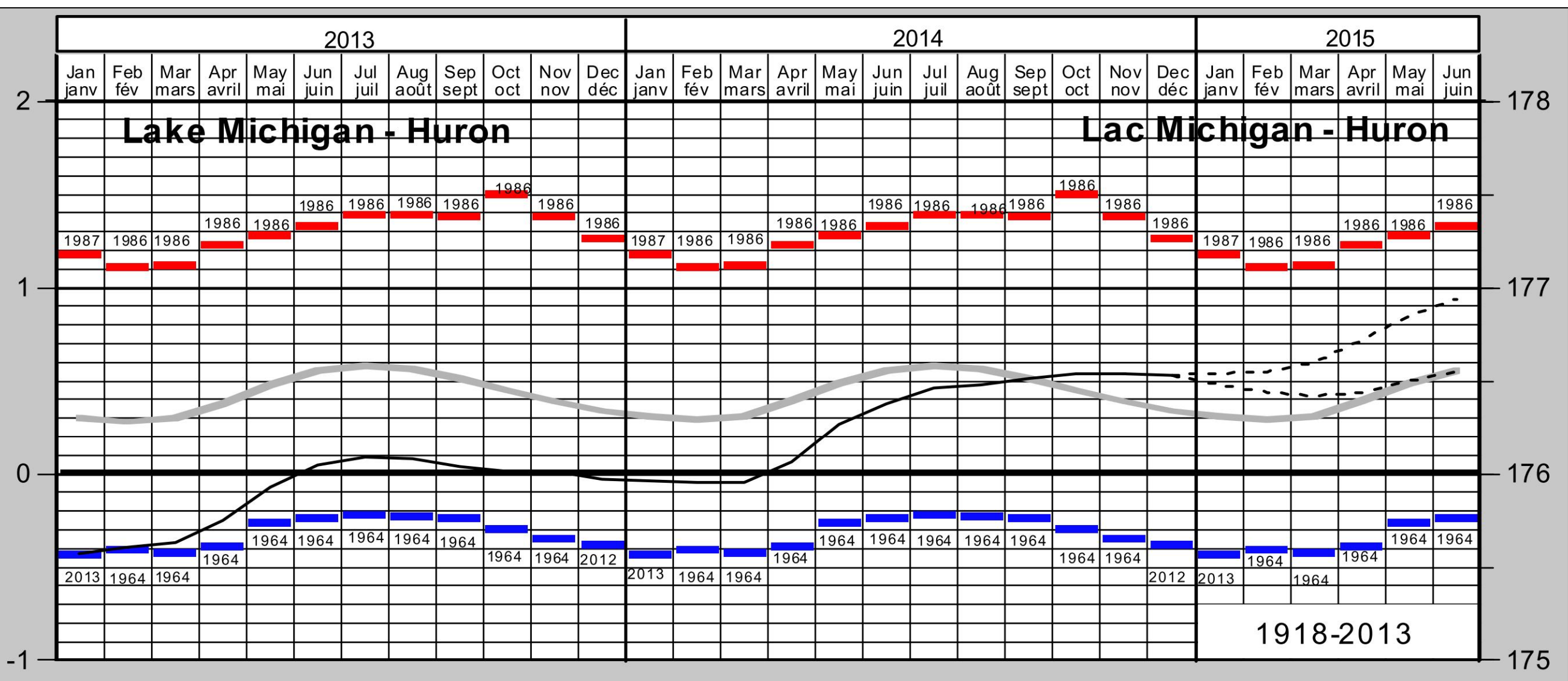
S-001

4516



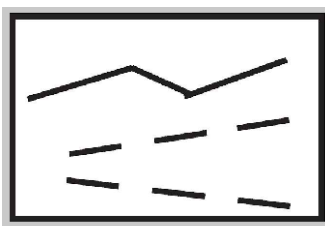
KEY MAP

WATER LEVEL CHART : (WATER LEVELS TAKEN FROM www.waterlevels.gc.ca)



ALL-TIME AVERAGE

HISTORIC EXTREMES -
MAXIMUM / MINIMUM



RECORDED MONTHLY MEAN LEVEL

PROBABLE RANGE OF FUTURE
LEVELS



PLAN
1 : 750 (FULL SIZE)
1 : 1500 (REDUCED)

FULL SCALE :
(1 : 750)

REDUCED SCALE :
(1 : 1500)



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NOTES:

1. FOR NOTES, ABBREVIATIONS AND LEGENDS SEE
DRAWING S-001.

[illegible]

SCALE: AS NOTE

PROJECT:

SMALL CRAFT HARBOURS
CENTRAL AND ARCTIC REGION
BAYFIELD, ONTARIO
NORTH AND SOUTH PIER
REPAIRS

DESCRIPTION:

GENERAL
ARRANGEMENT

| | |
|--------|-----------|
| DRAWN: | APPROVED: |
| T.G. | J.P. |

| | |
|-----------|-----------|
| DATE: | DATE: |
| JULY 2015 | JULY 2015 |

LOCATION: BAYFIELD ONTARIO

| | |
|--------------|---------------|
| DRAWING NO.: | LOCATOR CODE: |
| S-002 | 4516 |