

PORT ELGIN, ONTARIO

SOUTH BREAKWATER REPAIRS (LOCATOR CODE 4770)



GOVERNMENT
OF CANADA
FISHERIES
AND OCEANS

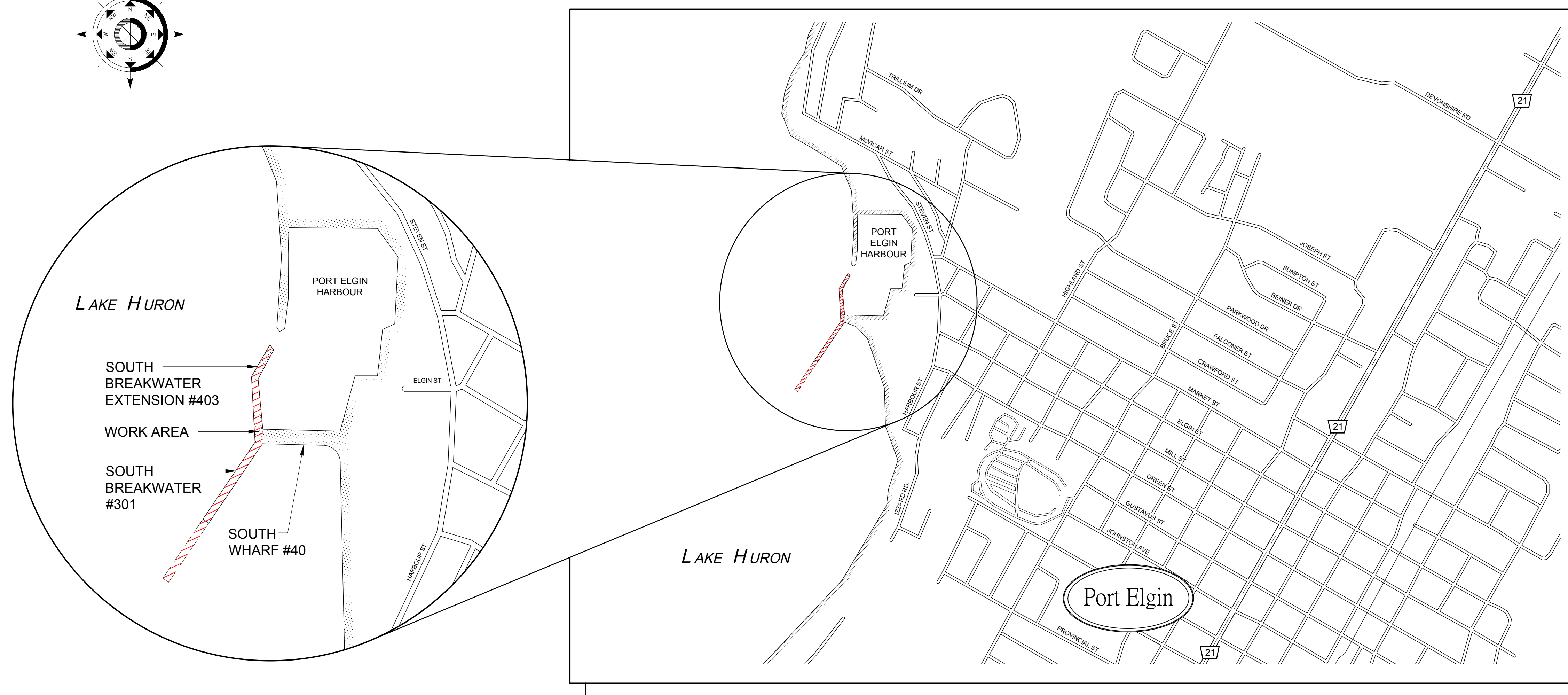
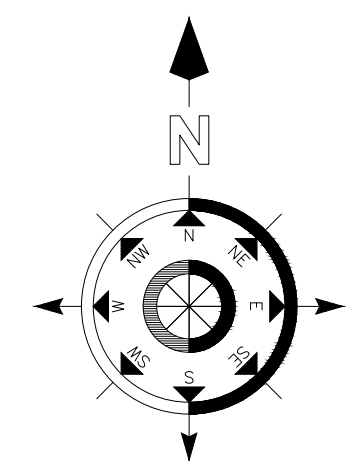
GOUVERNEMENT
DU CANADA
PÊCHES
ET OCÉANS

SMALL CRAFT HARBOURS
CENTRAL AND ARCTIC REGION



AECOM

London, Ontario
519.673.0510
PROJECT No. 60595678



ISSUED FOR TENDER, AUGUST 23, 2019

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.
5. THE CONTRACTOR SHALL EMPLOY THE SERVICES OF AN UNDERWATER DIVER TO GUIDE THE REMOVAL OF OBSTRUCTIONS ALONG NEW SHEET PILE WORK.
6. ALL DIMENSIONS IN MILLIMETERS, UNLESS OTHERWISE NOTED.
7. THE USE OF THE TERM "TYPICAL" AND "TYP." DENOTES A COMMON DIMENSION, FEATURE, FORM OF CONSTRUCTION AND SCOPE OF WORK, WHICH IS APPLICABLE TO OTHER LOCATIONS ON THE DRAWING (TO AVOID REPETITION).

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.

MATERIAL SPECIFICATIONS :

1. CONCRETE: IN ACCORDANCE WITH CSA STANDARD A23.1 AND A23.2.
CLASS OF CONCRETE: REMAINDER 30 MPa
CLEAR COVER TO REINFORCING STEEL: 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. TIE RODS: ASTM A615M GRADE 75 #10 OR EQUAL.
7. BOLTS: ASTM A3125M (25 mm DIAMETER, UNLESS NOTED OTHERWISE).
8. ANCHORS: ASTM A307.
9. WELDING: CSA STANDARD W59 PERFORMED BY WELDERS MEETING THE REQUIREMENTS OF CSA STANDARD W47.
10. 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
11. DOWELS INTO CONCRETE: CHEMICAL ADHESIVE TYPE. DRILL HOLES SHALL BE DOWEL DIAMETER +4mm. MODIFY DIAMETER AS REQUIRED TO SUIT THE REQUIREMENTS OF THE CHEMICAL ADHESIVE MANUFACTURER.

GEOTECHNICAL :

1. GEOTECHNICAL REPORT BY EXP.

DESIGN LOADING :

SLAB LIVE LOAD : 5.0 kN/m²

REFERENCE PLANS :

EXISTING DETAILS OF PIERS HAVE BEEN DERIVED FROM DRAWINGS BY PUBLIC WORKS OF CANADA, PORT ELGIN ONTARIO, DATED MAY 1930, JULY 1947, MAY 1952, NOVEMBER 1964, MARCH 1969 AND JUNE 1976, AND DRAWINGS BY WSP DATED MAY 2014.

SURVEY INFORMATION :

1. SURVEY INFORMATION PROVIDED BY SMALL CRAFT HARBOURS CENTRAL AND ARCTIC REGION, NOVEMBER 2017.
2. BENCHMARK :
ON BOLLARD ON WEST PIER, ELEVATION 178.350.
3. ELEVATIONS ARE PROVIDED IN RELATION TO CHART DATUM (LEVEL 0.00) RELATIVE TO IGLD 1985 (ELEVATION 176.00), UNLESS OTHERWISE NOTED.

ABBREVIATIONS :

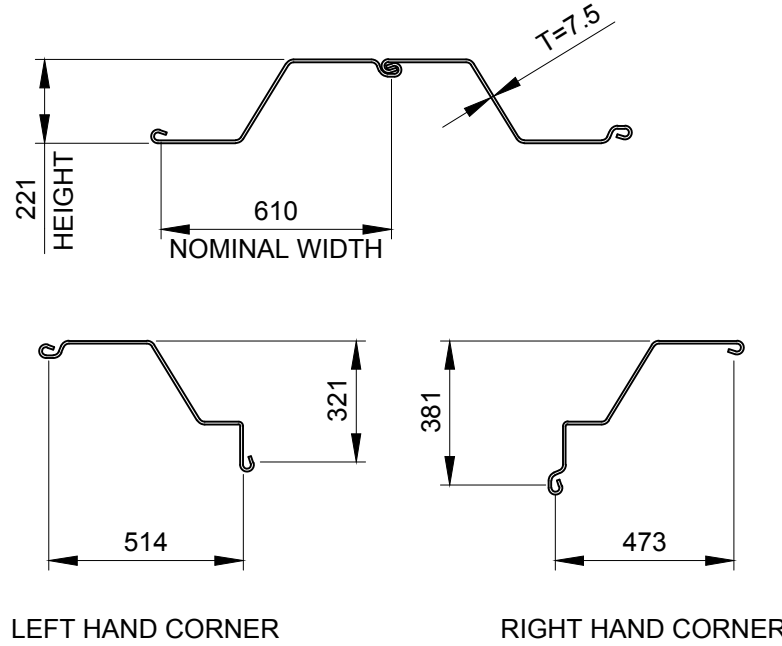
BOT.	BOTTOM	MAX.	MAXIMUM
CONC.	CONCRETE	MIN.	MINIMUM
CL.	CENTRE LINE	MISC.	MISCELLANEOUS
C.J.	CONSTRUCTION JOINT	mm	MILLIMETERS
CONT.	CONTINUOUS	N.T.S.	NOT TO SCALE
DIA.	DIAMETER	PL.	PLATE
DWG.	DRAWING	R/W	RETAINING WALL
E.F.	EACH FACE	SO	SOUNDING
EL.	ELEVATION	SQ.	SQUARE
E.W.	EACH WAY	SSP	STEEL SHEET PILING
E.J.	EXPANSION JOINT	T/C	TOP OF CONCRETE
EX.	EXISTING	T/W	TOP OF WALL
GRAN.	GRANULAR	TYP.	TYPICAL
HWL	HIGH WATER LEVEL	U.O.N.	UNLESS OTHERWISE NOTED
I.G.L.D.	INTERNATIONAL GREAT LAKES DATUM	U/S	UNDERSIDE
LWL	LOW WATER LEVEL	WL	WATER LEVEL
LS	LIGHT STANDARD	W.P.	WORKING POINT
m	METERS		

LEGEND :

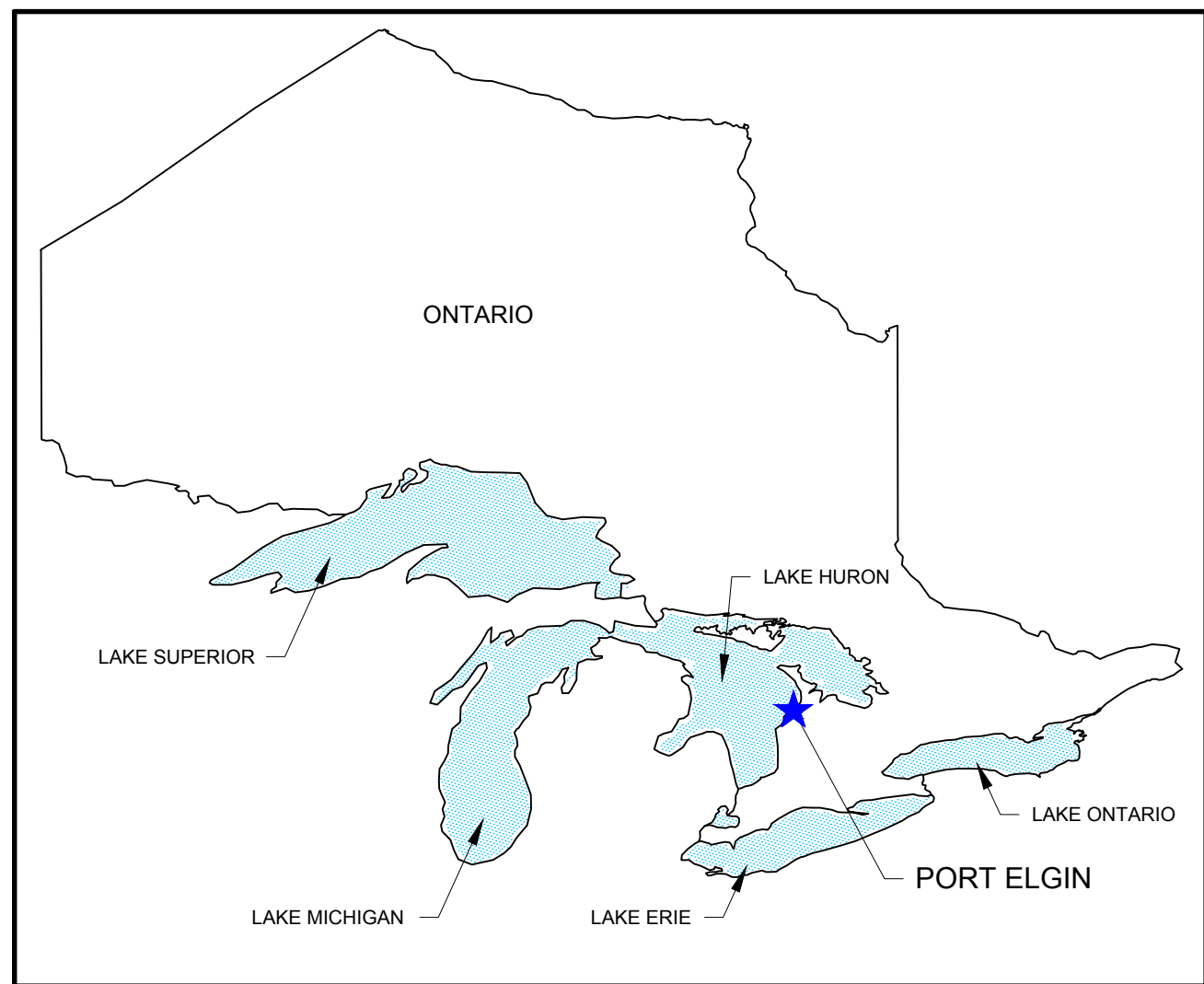
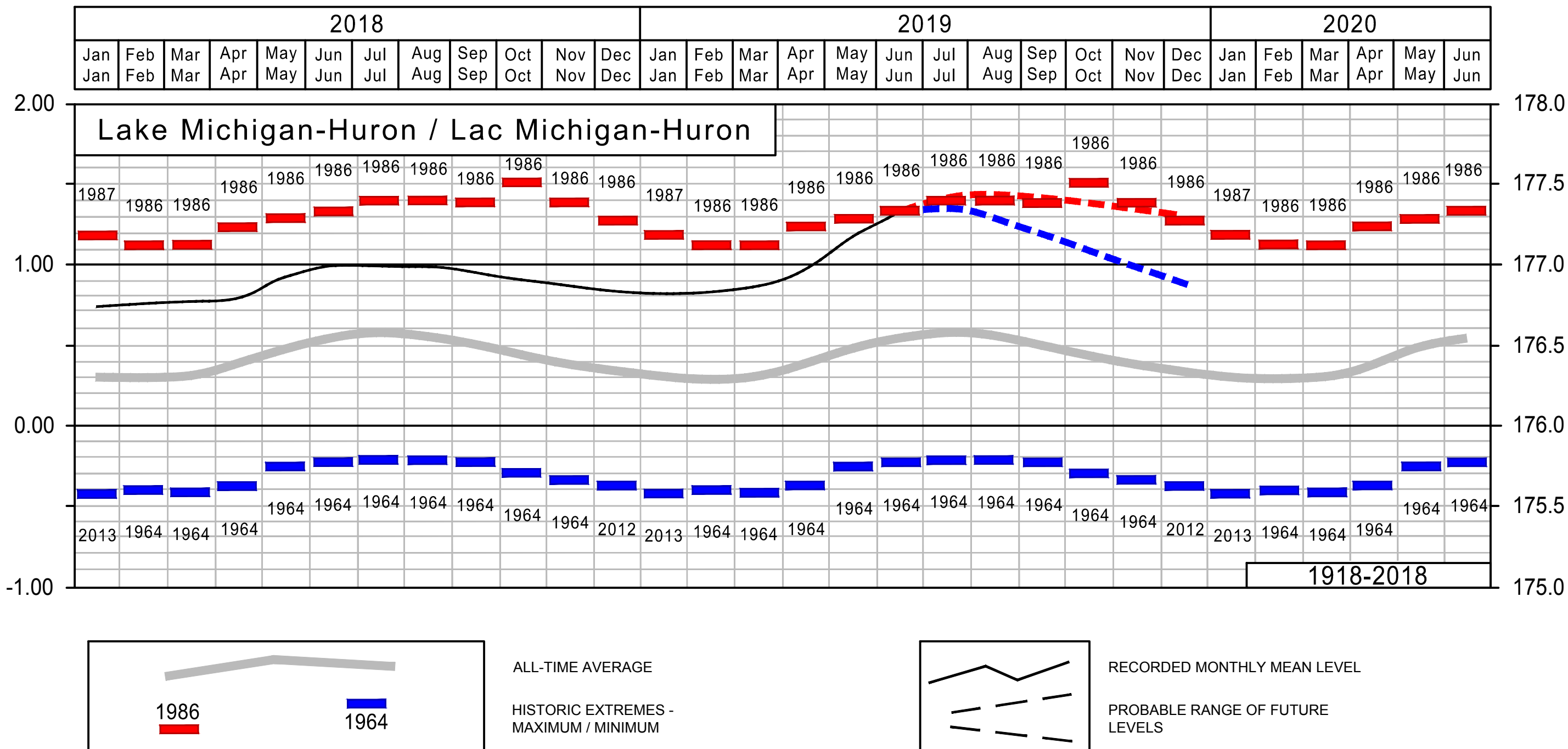
	SECTION NUMBER		TREE
	DETAIL LETTER		CHAIN LINK FENCE
	ORIGINAL ELEVATION		BRUSH
	FINAL ELEVATION		

SHEET PILING :

DESIGN AND ARRANGEMENT WAS BASED ON A Z75 SECTION. ALTERNATE EQUIVALENT PRODUCTS MEETING THE FOLLOWING SECTION PROPERTIES: (CONTRACTOR SHALL ADJUST ALL ARRANGEMENTS AND DIMENSIONS TO SUIT ALTERNATE PRODUCTS.
SECTION MODULUS = 839 cm³/WALL m
THICKNESS = 7.5 mm
LENGTH OF SHEET PILES = VARIES (8.15m - 9.40m)



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



KEY MAP

BID SCENARIOS :

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

SCENARIO 'A' :

- NO CONCRETE DECK ON SOUTH BREAKWATER.
- NO CONCRETE DECK ON SOUTH BREAKWATER EXTENSION.
- PROVIDE GRANULAR SURFACE.
- CONCRETE DECK ON RAMP (SOUTH BREAKWATER EXTENSION).

SCENARIO 'B' :

- NO CONCRETE DECK ON SOUTH BREAKWATER, PROVIDE GRANULAR SURFACE.
- CONCRETE DECK ON SOUTH BREAKWATER EXTENSION.
- CONCRETE DECK ON RAMP (SOUTH BREAKWATER EXTENSION).

SCENARIO 'C' :

- CONCRETE DECK AND PARAPET WALL ON SOUTH BREAKWATER.
- CONCRETE DECK ON SOUTH BREAKWATER EXTENSION.
- CONCRETE DECK ON RAMP (SOUTH BREAKWATER EXTENSION).

DETAILS AND ARRANGEMENT NOT DESIGNATED FOR EITHER SCENARIO, SHALL BE CONSIDERED COMMON TO ALL SCENARIO'S.

BENCHMARK :

TOP OF BOLLARD ON WEST PEIR LOCATED APPROXIMATELY 2.5m NORTH OF WHARF CORNER ELEVATION 178.35.

LIST OF PROJECT DRAWINGS :

Sheet Number	Sheet Title
S - 1	NOTES, ABBREVIATIONS AND LEGENDS
S - 2	GENERAL ARRANGEMENT
S - 3	SOUTH BREAKWATER EXISTING AND REMOVALS PLAN
S - 4	SOUTH BREAKWATER EXTENSION EXISTING AND REMOVALS PLAN
S - 5	SOUTH BREAKWATER REHABILITATED PLAN
S - 6	SOUTH BREAKWATER SECTIONS AND DETAILS
S - 7	SOUTH BREAKWATER EXTENSION REHABILITATED PLAN
S - 8	SECTIONS - 1
S - 9	SECTIONS - 2
S - 10	SECTIONS - 3
S - 11	SECTIONS - 4
S - 12	RAMP PLAN AND DETAILS
S - 13	RAMP SECTIONS - 1
S - 14	RAMP SECTIONS - 2
S - 15	CONCRETE ANCHOR DETAILS
S - 16	MISCELLANEOUS DETAILS - 1
S - 17	MISCELLANEOUS DETAILS - 2



SMALL CRAFT HARBOURS CENTRAL AND ARCTIC REGION

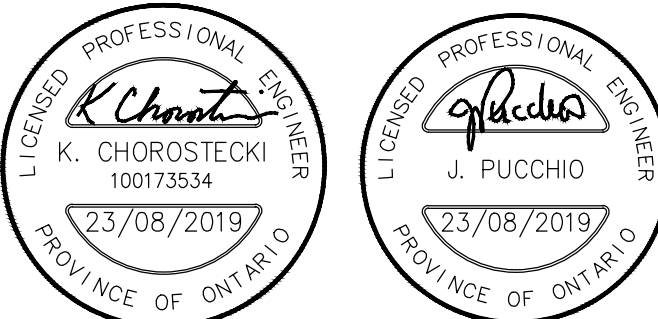


AECOM

London, Ontario
519.673.0510

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NOTES:



REVISION:		
No.	REVISIONS	DATE
0	ISSUED FOR TENDER	08/23/2019

SCALE:	CLASS:
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PROJECT:
**SMALL CRAFT HARBOURS
CENTRAL AND ARCTIC REGION
PORT ELGIN, ONTARIO
SOUTH BREAKWATER
REPAIRS**

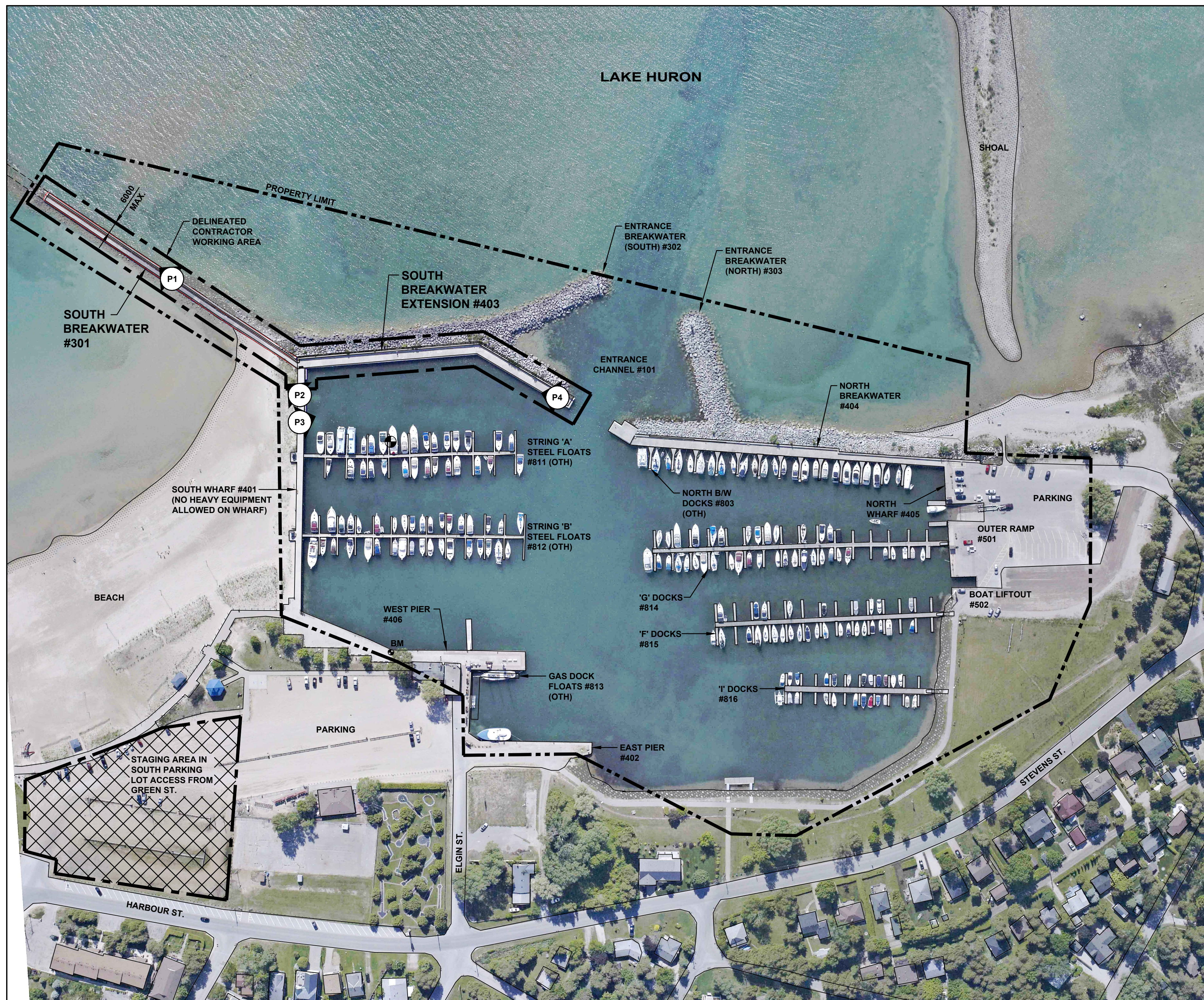
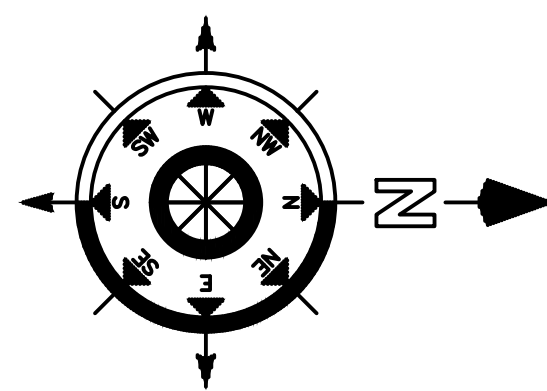
DESCRIPTION:
**NOTES, ABBREVIATIONS
AND LEGENDS**

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

DATE: AUGUST 2019 DATE: AUGUST 2019

LOCATION:
PORT ELGIN, ONTARIO

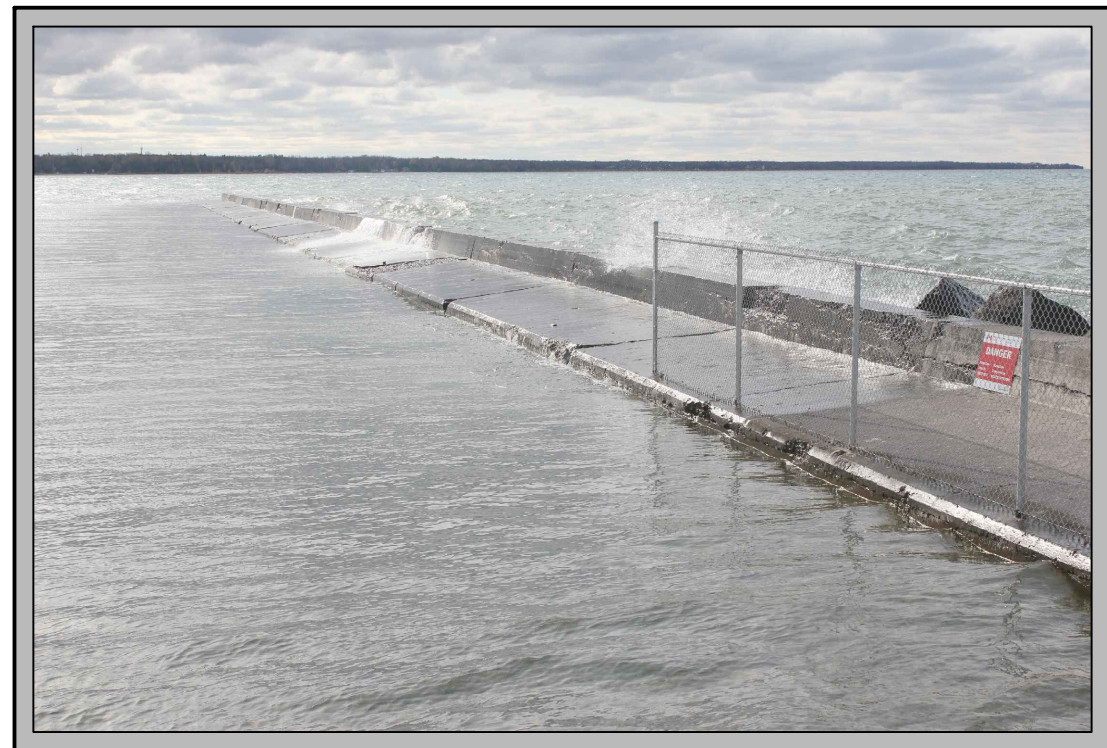
DRAWING NO.: S-1 LOCATOR CODE: 4770



PLAN
1:1250



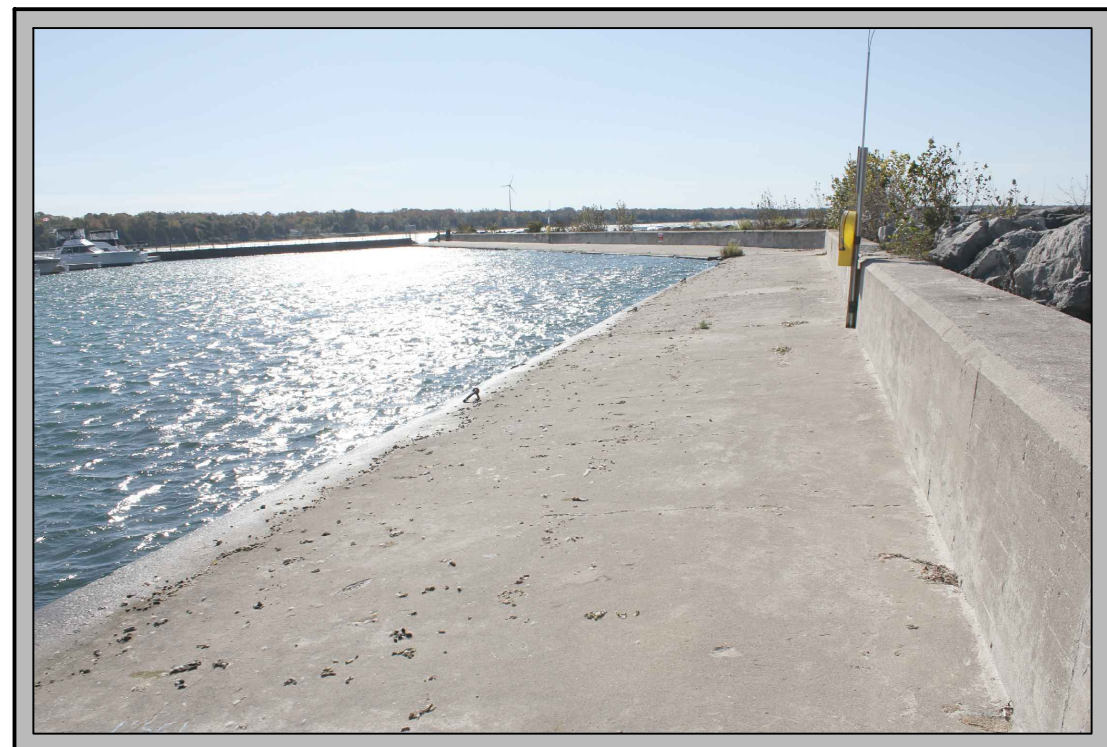
P1 SOUTH BREAKWATER



P2 SOUTH BREAKWATER



P3 SOUTH BREAKWATER EXTENSION



P4 SOUTH BREAKWATER EXTENSION

SMALL CRAFT HARBOURS
CENTRAL AND ARCTIC REGION



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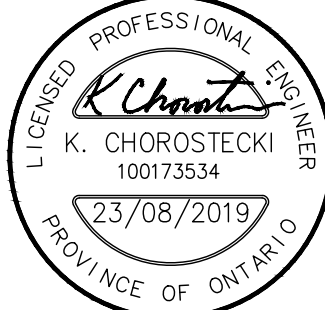
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NOTES:

- FOR NOTES, ABBREVIATIONS AND LEGENDS SEE DRAWING S-1.
- BEACH SHALL NOT BE USED FOR LAYDOWN OF EQUIPMENT OR MATERIALS OR HEAVY ACCESS TO SOUTH BREAKWATER.

BENCHMARK :

TOP OF BOLLARD ON WEST PEIR LOCATED APPROXIMATELY 2.5m NORTH OF WHARF CORNER ELEVATION 178.35.



REVISION:

No.	REVISIONS	DATE
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SCALE:

AS NOTE

CLASS:

PROJECT:

SMALL CRAFT HARBOURS
CENTRAL AND ARCTIC REGION
PORT ELGIN, ONTARIO
SOUTH BREAKWATER
REPAIRS

DESCRIPTION:

GENERAL
ARRANGEMENT

DRAWN:

T.G.

APPROVED:

J.P.

DATE:

AUGUST 2019

DATE:

AUGUST 2019

LOCATION:

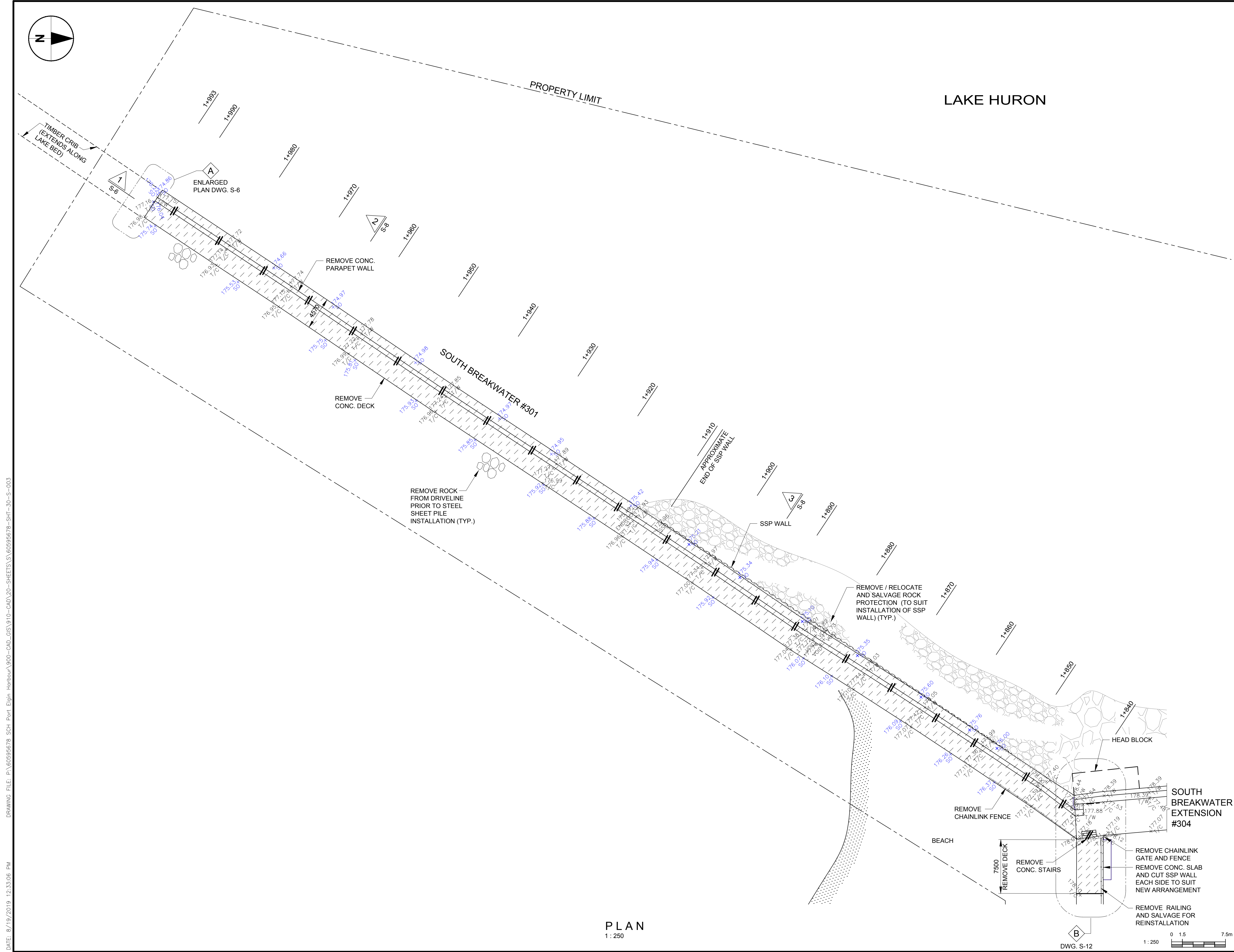
PORT ELGIN, ONTARIO


DRAWING NO.:

S-2


LOCATOR CODE:

4770







GOVERNMENT OF CANADA
FISHERIES AND OCEANS



GOUVERNEMENT DU CANADA
PÊCHES ET OcéANS

SMALL CRAFT HARBOURS
CENTRAL AND ARCTIC REGION



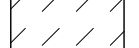



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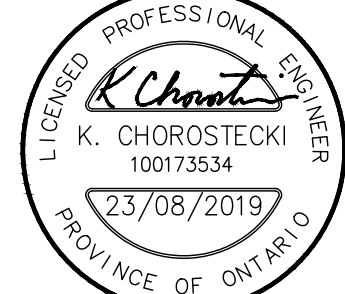
LEGEND:

 CONCRETE REMOVALS

 EXISTING ELEVATIONS

 REMOVALS

 SOUNDING



REVISION:

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CLASS:

PROJECT:

SMALL CRAFT HARBOURS
CENTRAL AND ARCTIC REGION
PORT ELGIN, ONTARIO
SOUTH BREAKWATER
REPAIRS

DESCRIPTION:

SOUTH BREAKWATER
EXISTING AND REMOVALS
PLAN

DRAWN:

T.G.

APPROVED:

J.P.

DATE:

AUGUST 2019

DATE:

AUGUST 2019

LOCATION:

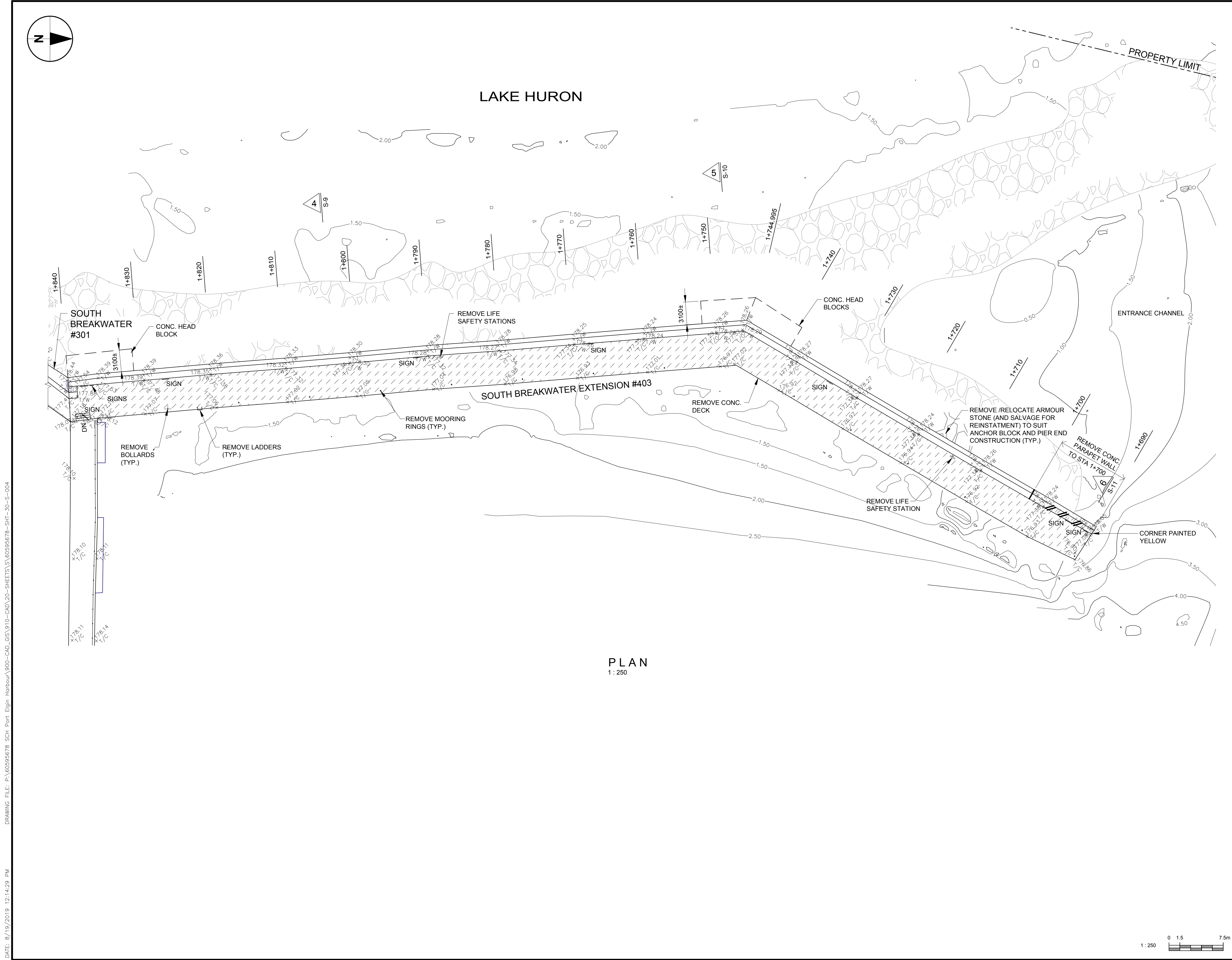
PORT ELGIN, ONTARIO


DRAWING NO.:

S-3


LOCATOR CODE:

4770





GOVERNMENT
OF CANADA




GOUVERNEMENT
DU CANADA

FISHERIES
AND OCEANS

PECHES
ET OCEANS

SMALL CRAFT HARBOURS
CENTRAL AND ARCTIC REGION



AECOM

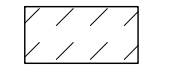

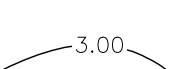

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NOTES:

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LEGEND:

	CONCRETE REMOVALS
	EXISTING ELEVATIONS
	REMOVALS
	SOUNDING CONTOURS



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SMALL CRAFT HARBOURS
CENTRAL AND ARCTIC REGION
PORT ELGIN, ONTARIO
SOUTH BREAKWATER
REPAIRS

DESCRIPTION:

SOUTH BREAKWATER
EXTENSION
EXISTING AND REMOVALS
PLAN

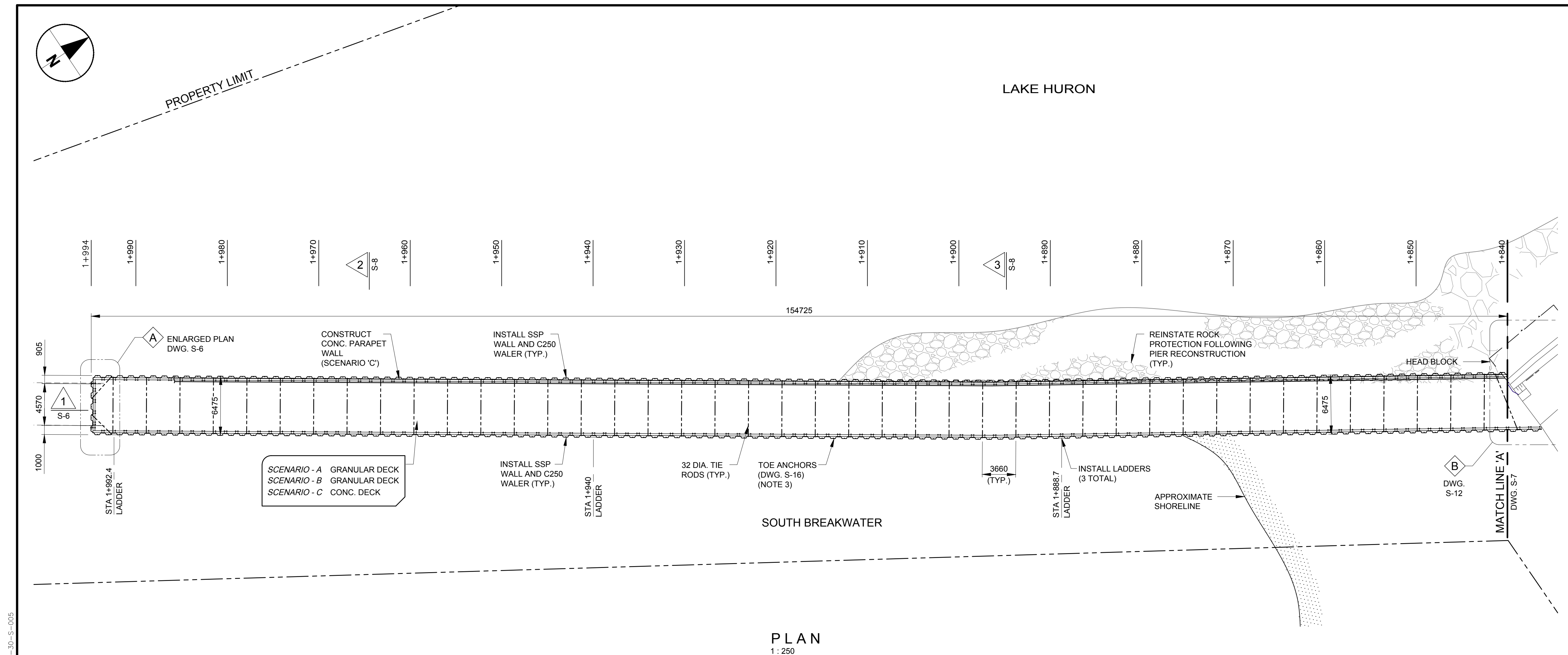
DRAWN:	APPROVED:
T.G.	J.P.

DATE:	DATE:
AUGUST 2019	AUGUST 2019

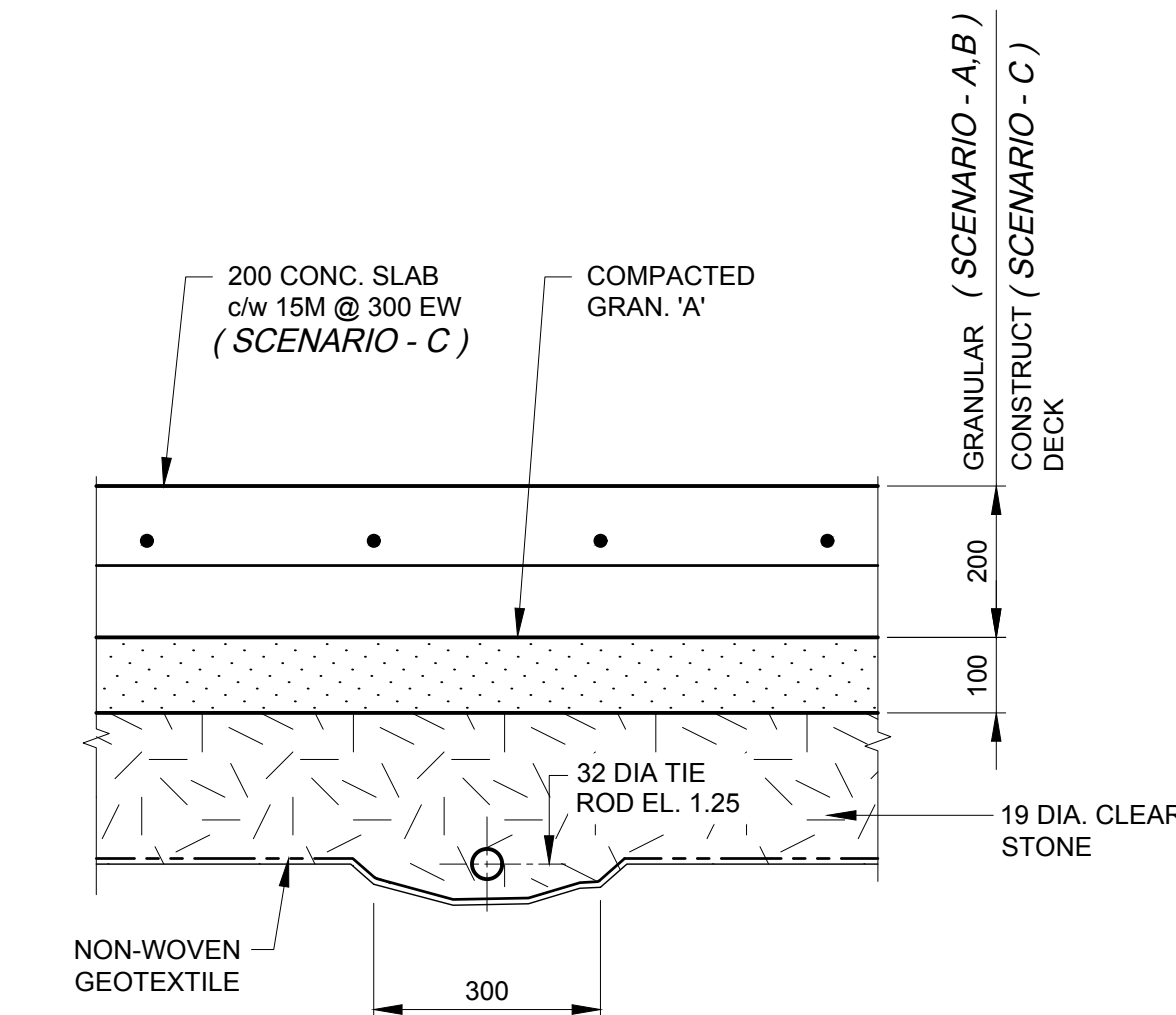
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PORT ELGIN, ONTARIO

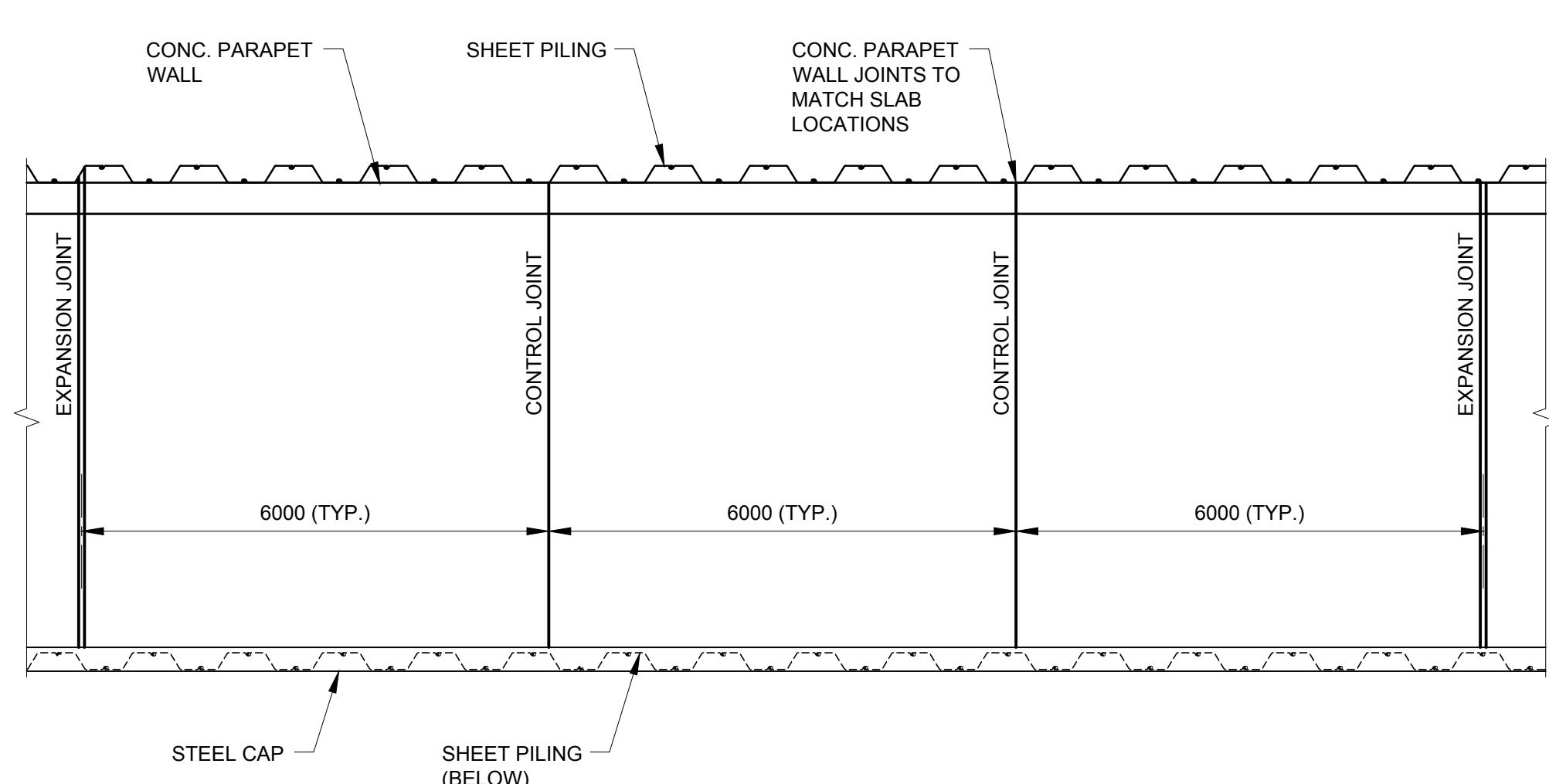
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S-4	4770



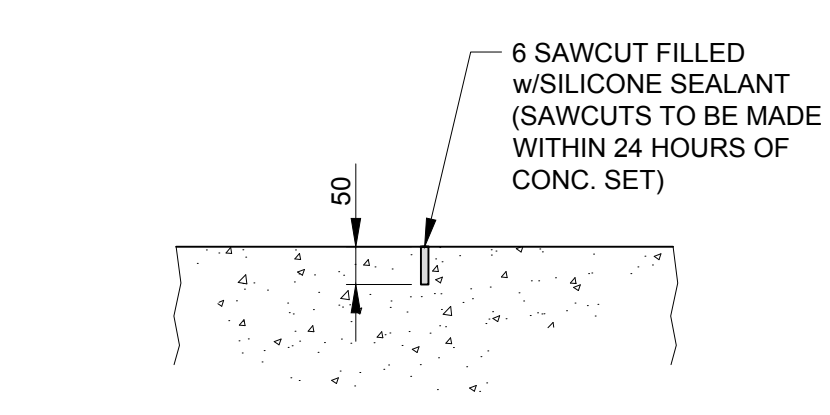
PLAN
1 : 250



TYPICAL DETAIL AT EXISTING
FILL LOCATIONS
1 : 10

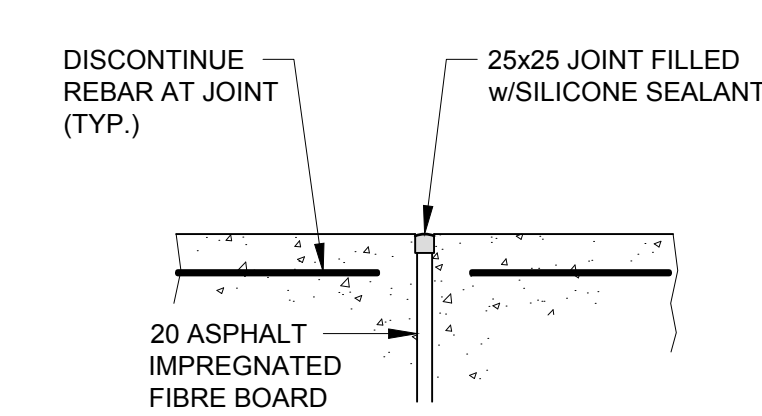


TYPICAL SLAB JOINT LAYOUT
(SCENARIO 'C')
1 : 75




NOTE :
PROVIDE CONTROL JOINT AT 6000 c/c

TYPICAL CONTROL JOINT




NOTE :
PROVIDE EXPANSION JOINT AT 18000 c/c

TYPICAL EXPANSION JOINT



GOVERNMENT
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SMALL CRAFT HARBOURS
CENTRAL AND ARCTIC REGION




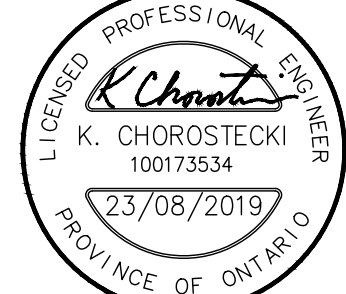
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NOTES:

- FOR NOTES, ABBREVIATIONS AND LEGENDS SEE DRAWING S-1.
- TOP OF CONCRETE TO HAVE ROUGH BROOM FINISH.
- WHERE SHEET PILE MEETS REFUSAL DUE TO LOCALIZED HIGH BEDROCK, INSTALL TOE ANCHORS.



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SMALL CRAFT HARBOURS
CENTRAL AND ARCTIC REGION
PORT ELGIN, ONTARIO
SOUTH BREAKWATER
REPAIRS

DESCRIPTION:

SOUTH BREAKWATER
REHABILITATED PLAN

DRAWN:
T.G.

APPROVED:
J.P.

DATE:
AUGUST 2019

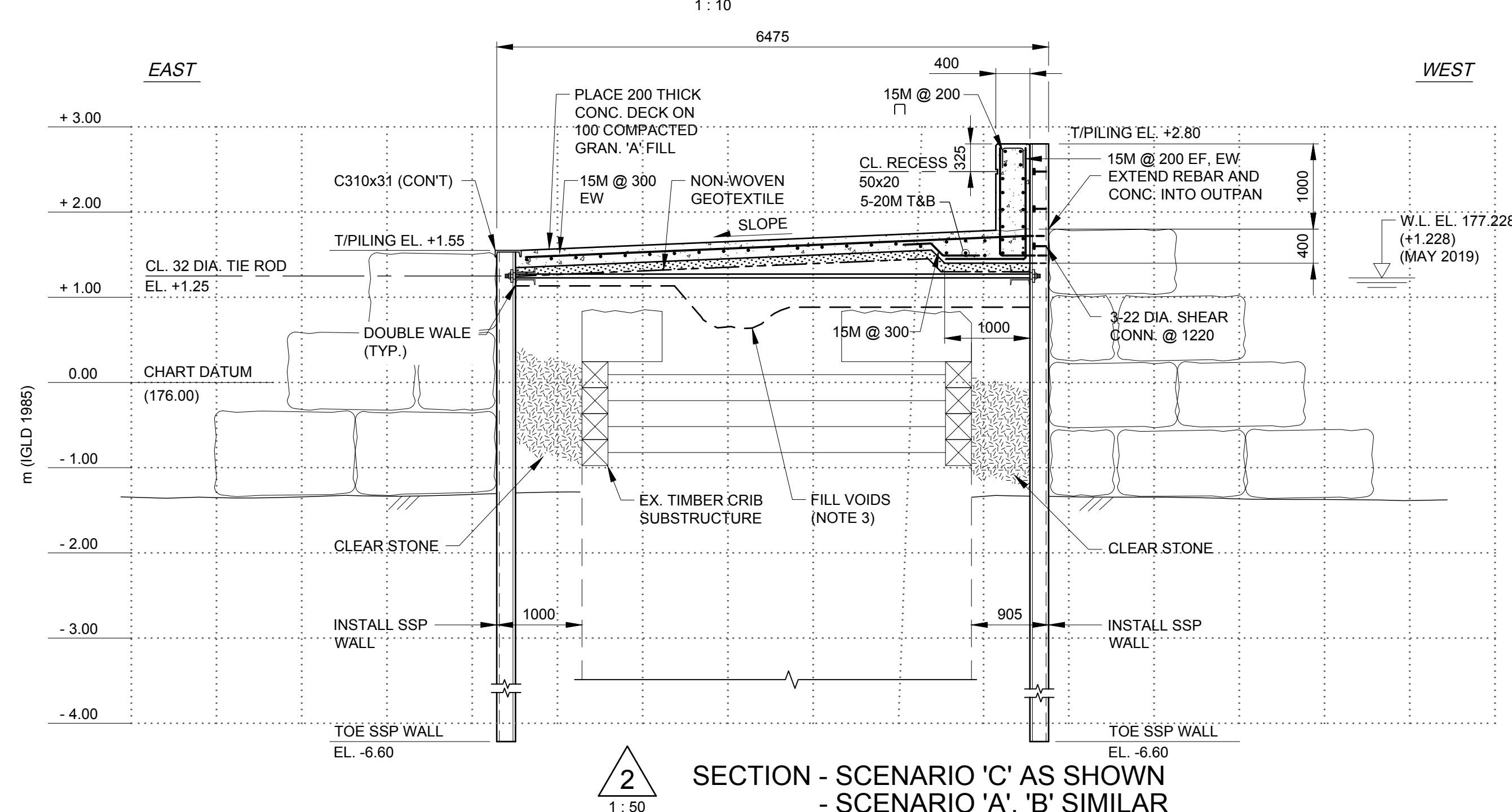
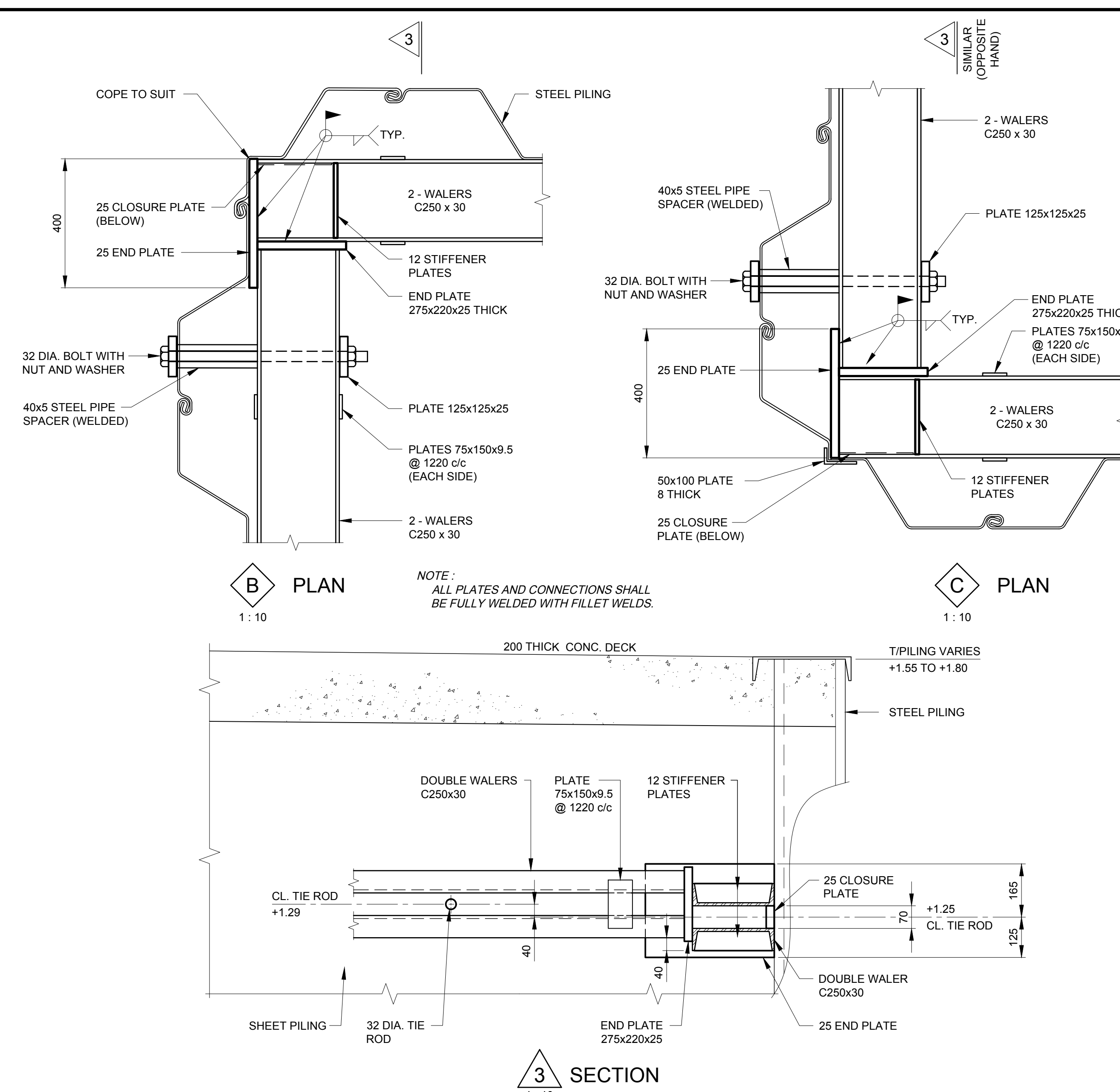
DATE:
AUGUST 2019




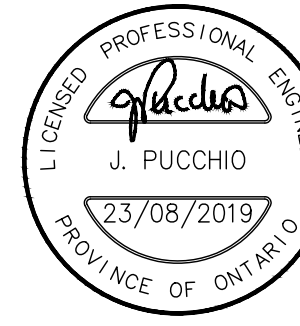
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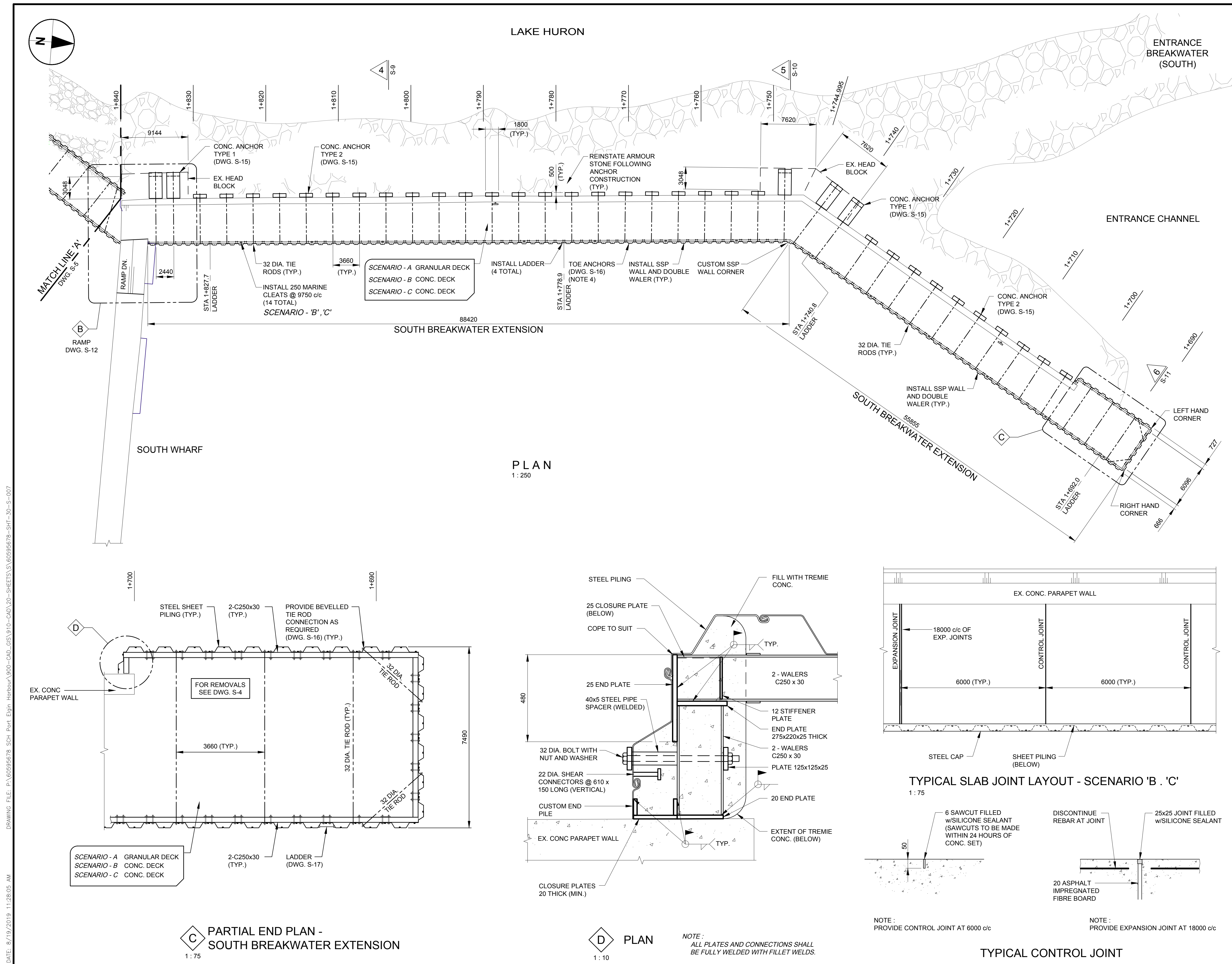
PORT ELGIN, ONTARIO

DRAWING NO.:
S-5

LOCATOR CODE:
4770



		GOVERNMENT OF CANADA	GOVERNMENT DU CANADA
FISHERIES AND OCEANS		PÊCHES ET OCÉANS	
SMALL CRAFT HARBOURS CENTRAL AND ARCTIC REGION			
			
AECOM			
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NOTES:			
1. FOR NOTES, ABBREVIATIONS AND LEGENDS SEE DRAWING S-1.			
2. STEEL CAP SHALL RECEIVE AN EPOXY COATING (AS PER SPECIFICATIONS). TOUCH UP COATINGS FOLLOWING INSTALLATION.			
3. WHERE VOIDS IN FILL MATERIALS ARE OBSERVED, UNDERTAKE THE FOLLOWING : FILL WITH CLEAR STONE.			
4. PROVIDE TEMPORARY SUPPORT TO STEEL SHEET PILING UNTIL BACKFILLED AND FULLY SUPPORTED ON BOTH SIDES.			
5. FIELD WELD ALL PLATE ATTACHMENTS, UNLESS OTHERWISE NOTED OR APPROVED(MINIMUM 6 mm FILLET WELD ALL AROUND).			
			
REVISION:			
No.	REVISIONS		DATE
0	ISSUED FOR TENDER		08/23/2019
SCALE:		CLASS:	
AS NOTED			
PROJECT:			
SMALL CRAFT HARBOURS CENTRAL AND ARCTIC REGION PORT ELGIN, ONTARIO SOUTH BREAKWATER REPAIRS			
DESCRIPTION:			
SOUTH BREAKWATER SECTIONS AND DETAILS			
DRAWN:		APPROVED:	
T.G.		J.P.	
DATE:		DATE:	
AUGUST 2019		AUGUST 2019	
LOCATION:			
PORT ELGIN, ONTARIO			
DRAWING NO.:		LOCATOR CODE:	
S-6		4770	



GOVERNMENT OF CANADA
FISHERIES AND OCEANS

GOUVERNEMENT DU CANADA
PÊCHES ET Océans

Small Craft Harbours
Ports pour petits bateaux

London, Ontario
519.673.0510

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NOTES:
1. FOR NOTES, ABBREVIATIONS AND LEGENDS SEE DRAWING S-1.
2. DECK WIDTH INDICATED ON PLANS ARE TO INSIDE FACES OF SSP.
3. TOP OF SLAB SHALL HAVE A ROUGH BROOM FINISH.
4. WHERE SHEET PILE MEETS REFUSAL DUE TO LOCALIZED HIGH BEDROCK, INSTALL TOE ANCHORS.

REVISION:		
No.	REVISIONS	DATE
0	ISSUED FOR TENDER	08/23/2019

SCALE: AS NOTED

CLASS:

PROJECT:

SMALL CRAFT HARBOURS
CENTRAL AND ARCTIC REGION
PORT ELGIN, ONTARIO
SOUTH BREAKWATER
REPAIRS

DESCRIPTION:

SOUTH BREAKWATER
EXTENSION
REHABILITATED PLAN

DRAWN:

T.G.

APPROVED:

J.P.

DATE:

AUGUST 2019

DATE:

AUGUST 2019

LOCATION:

PORT ELGIN, ONTARIO

DRAWING NO.:

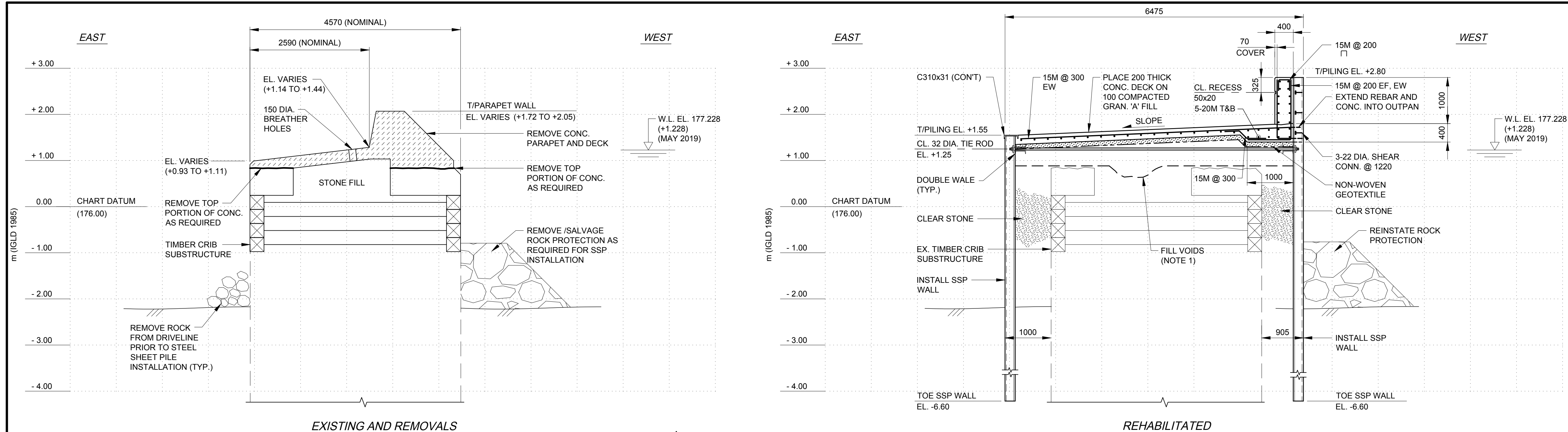
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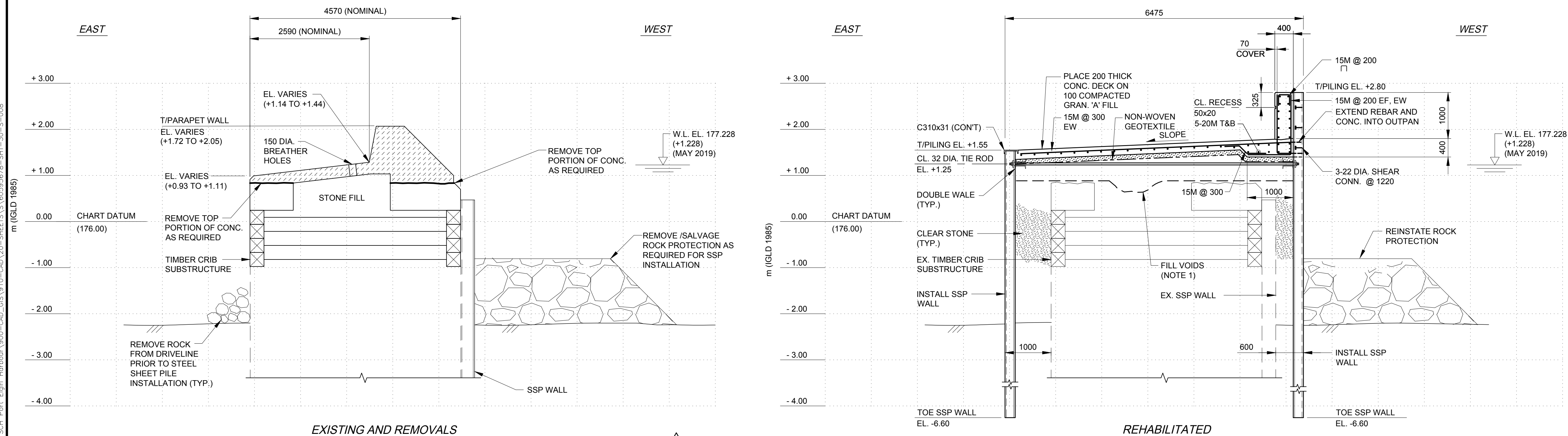
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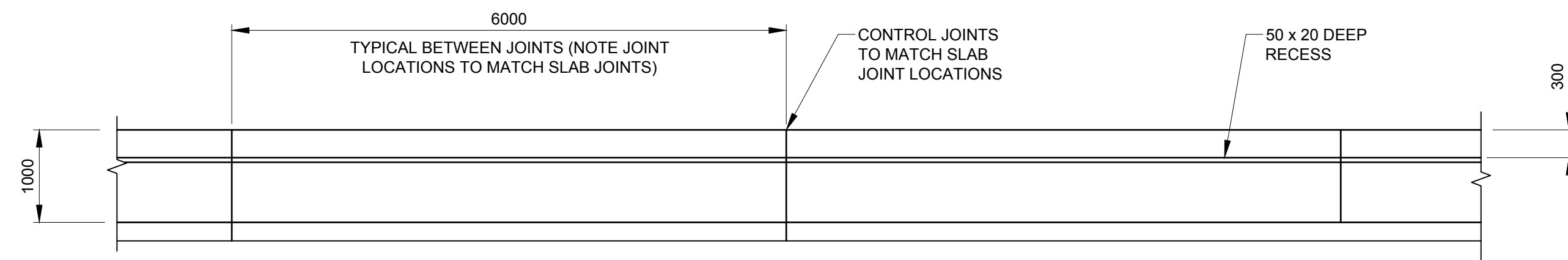
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DATE: 8/22/2019 2:14:56 PM



2 SOUTH BREAKWATER SECTION
(FOR LOCATION SEE DWG. S-3 AND DWG. S-5)
(SCENARIO 'C' WITH CONC. DECK SHOWN,
OTHER SCENARIOS SIMILAR)



3 SOUTH BREAKWATER SECTION
(FOR LOCATION SEE DWG. S-3 AND DWG. S-5)
(SCENARIO 'C' WITH CONC. DECK SHOWN,
OTHER SCENARIOS SIMILAR)



TYPICAL PARAPET ELEVATION
1:50

GOVERNMENT OF CANADA
FISHERIES AND OCEANS

GOUVERNEMENT DU CANADA
PÊCHES ET OcéANS

Small Craft Harbours
Ports pour petits bateaux

London, Ontario
519.673.0510

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NOTES:

- WHERE VOIDS IN FILL MATERIALS ARE OBSERVED, UNDERTAKE THE FOLLOWING : FILL WITH CLEAR STONE
- TOP OF SLAB SHALL HAVE A ROUGH BROOM FINISH.

LEGEND :

- CONCRETE REMOVALS
- REMOVALS

No.	REVISIONS	DATE
0	ISSUED FOR TENDER	08/23/2019

SCALE: AS NOTED CLASS:

PROJECT: SMALL CRAFT HARBOURS
CENTRAL AND ARCTIC REGION
PORT ELGIN, ONTARIO
SOUTH BREAKWATER
REPAIRS

DESCRIPTION: SOUTH BREAKWATER
SECTIONS - 1

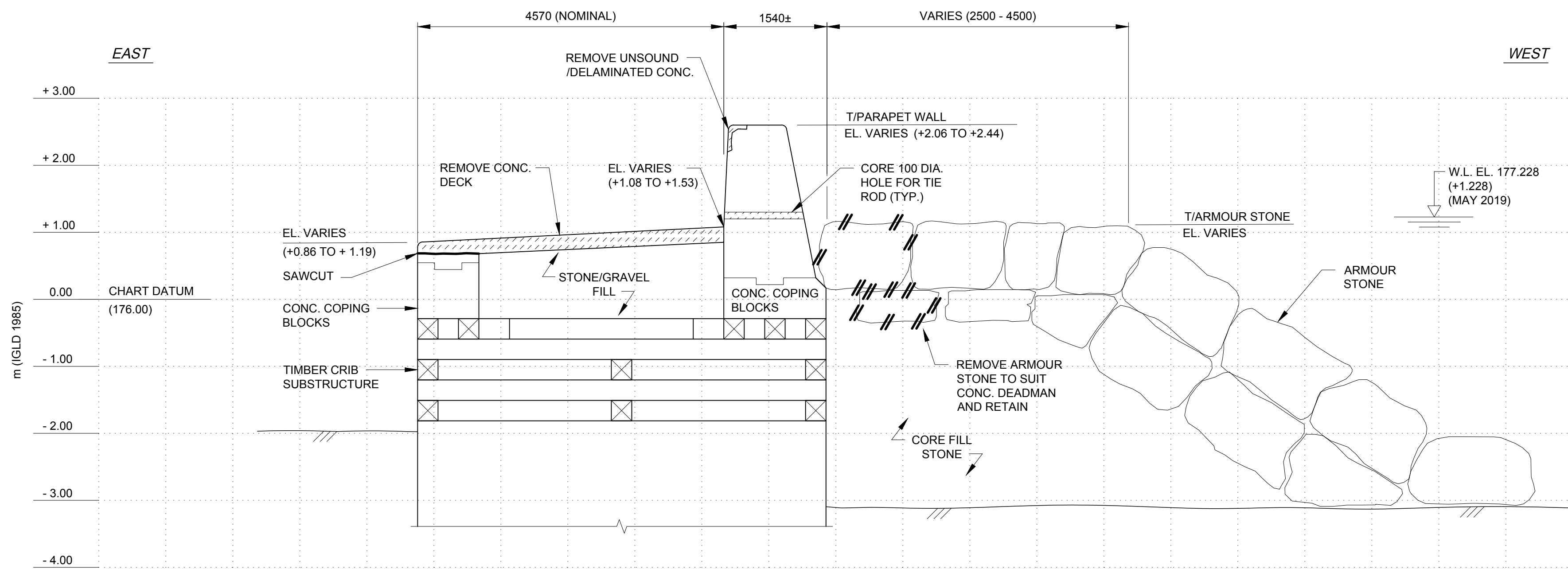
DRAWN:	APPROVED:
T.G.	J.P.

DATE:	DATE:
AUGUST 2019	AUGUST 2019

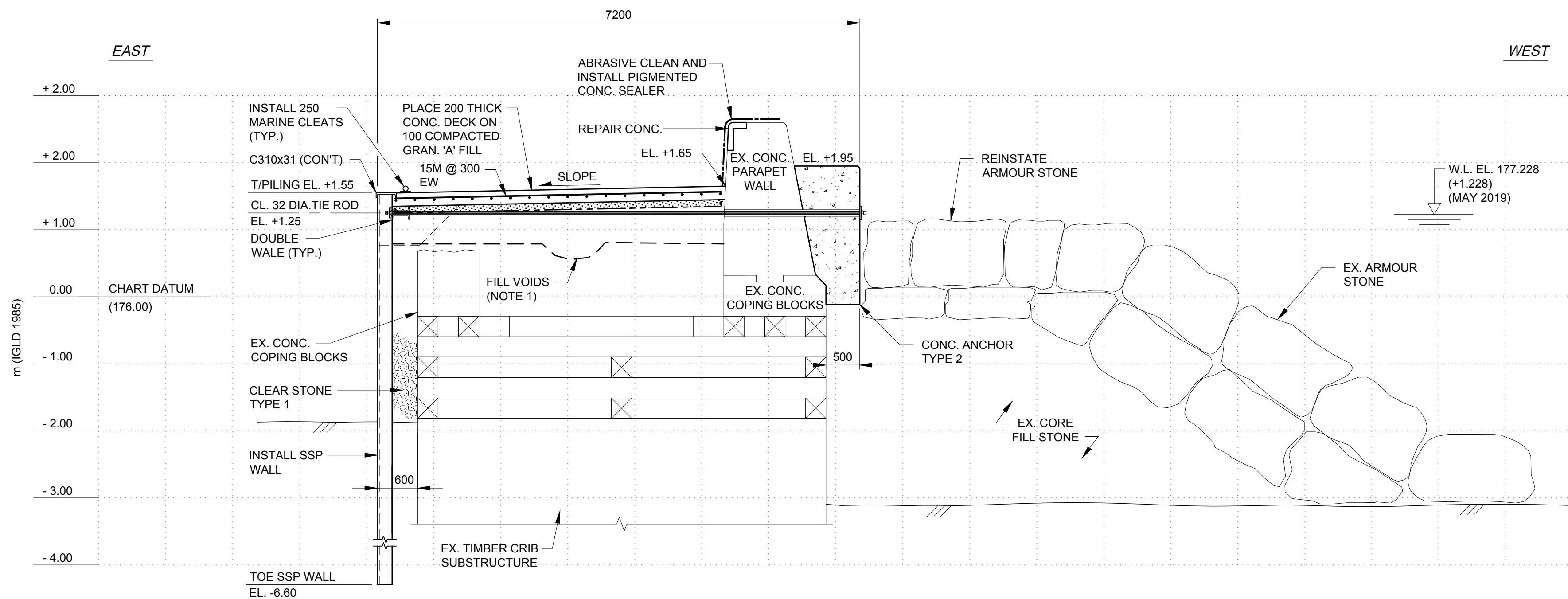
LOCATION: PORT ELGIN, ONTARIO

DRAWING NO.:	LOCATOR CODE:
S-8	4770

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DATE: 8/15/2019 11:23:05 AM



EXISTING AND REMOVALS



REHABILITATED

4 SOUTH BREAKWATER EXTENSION
(FOR LOCATION SEE DWG. S-4 AND S-7)
(SCENARIO 'B', 'C' SHOWN, OTHER SCENARIOS SIMILAR)

SMALL CRAFT HARBOURS
CENTRAL AND ARCTIC REGION



AECOM

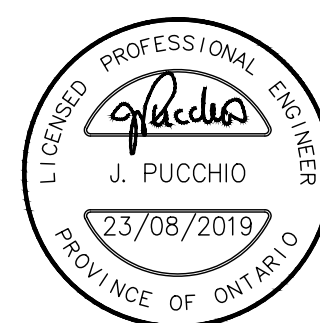
London, Ontario
519.673.0510

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- NOTES:
- WHERE VOIDS IN FILL MATERIALS ARE OBSERVED, UNDERTAKE THE FOLLOWING : FILL WITH CLEAR STONE
 - TOP OF SLAB SHALL HAVE A ROUGH BROOM FINISH.

LEGEND :

- CONCRETE REMOVALS
REMOVALS



REVISION:		
No.	REVISIONS	DATE
0	ISSUED FOR TENDER	08/23/2019

SCALE:	CLASS:
AS NOTED	

PROJECT:
**SMALL CRAFT HARBOURS
CENTRAL AND ARCTIC REGION
PORT ELGIN, ONTARIO
SOUTH BREAKWATER
REPAIRS**

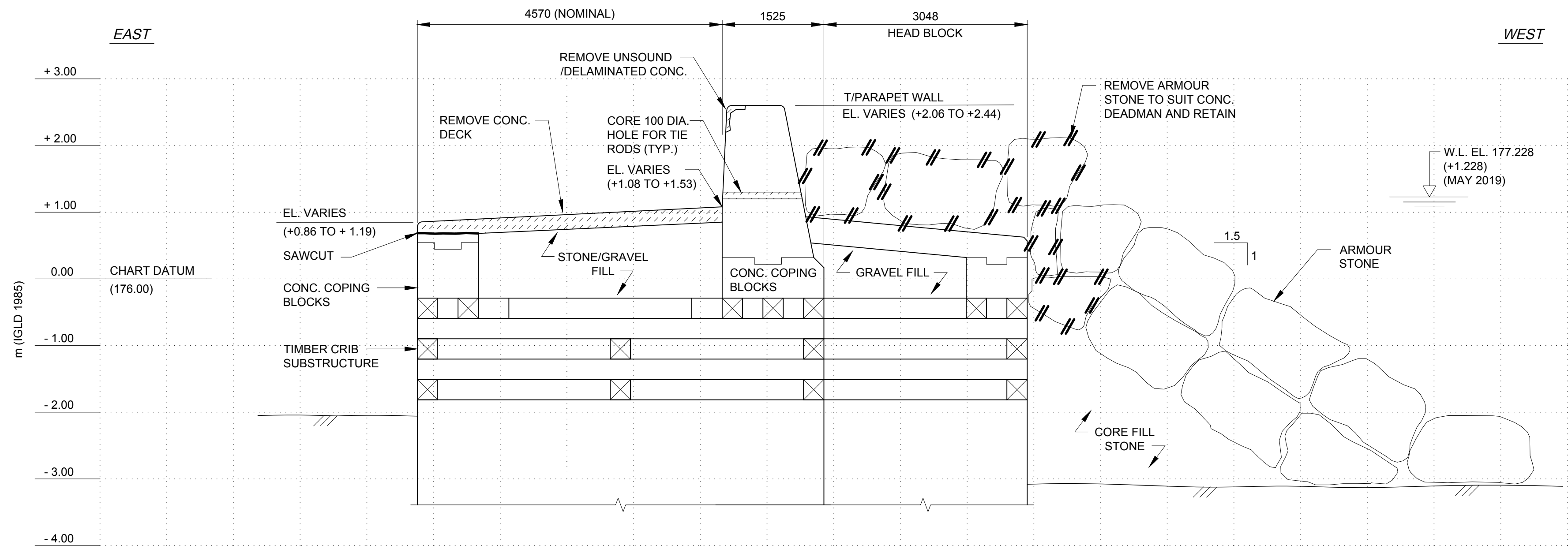
DESCRIPTION:
**SOUTH BREAKWATER
SECTIONS - 2**

DRAWN:	APPROVED:
T.G.	J.P.
DATE:	DATE:
AUGUST 2019	AUGUST 2019

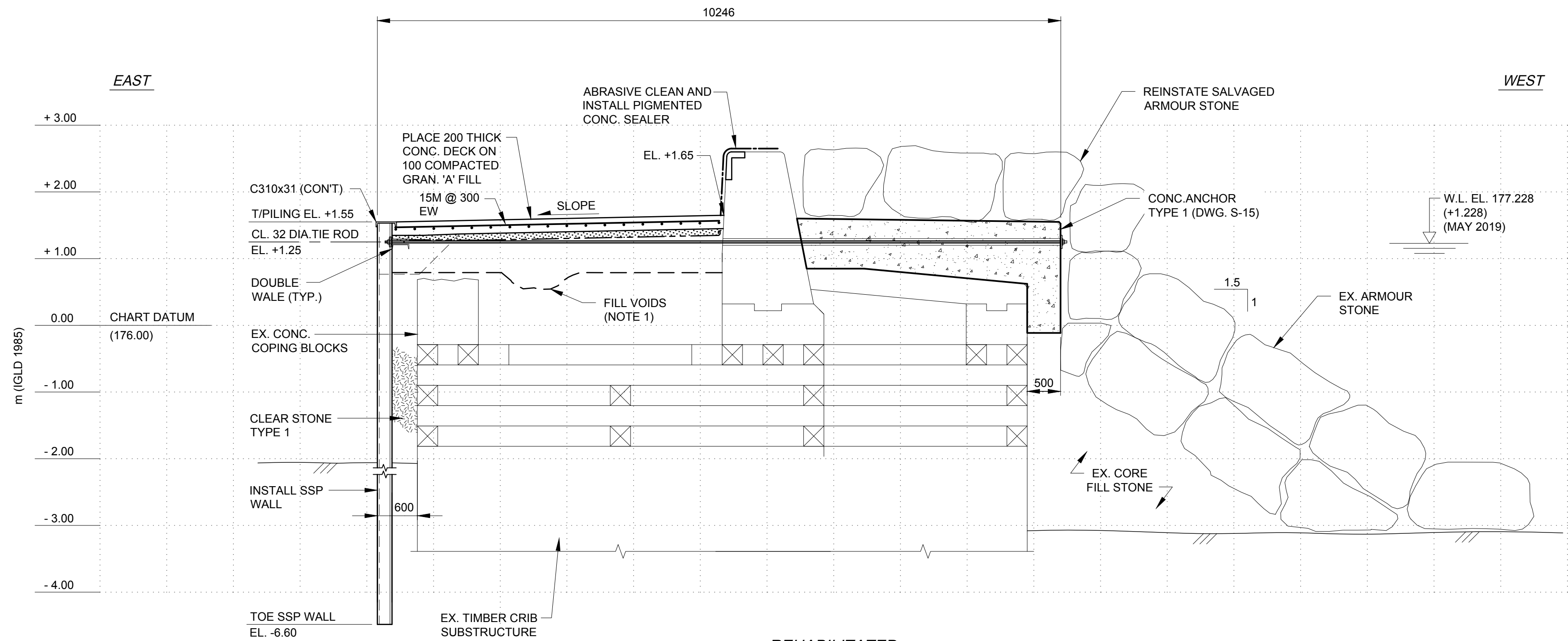
LOCATION:
PORT ELGIN, ONTARIO

DRAWING NO.:	LOCATOR CODE:
S-9	4770

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DATE: 8/19/2019 11:32:32 AM



EXISTING AND REMOVALS



REHABILITATED

5
1 : 50

SOUTH BREAKWATER EXTENSION
(FOR LOCATION SEE DWG. S-4 AND DWG. S-7)
(SCENARIO 'B', 'C' AS SHOWN, OTHER SCENARIOS SIMILAR)

**SMALL CRAFT HARBOURS
CENTRAL AND ARCTIC REGION**



AECOM



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519.673.0510

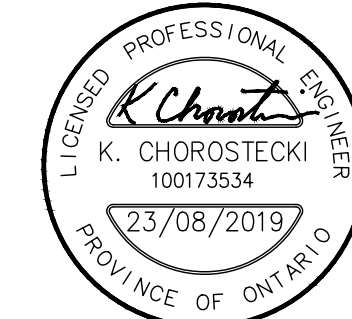
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NOTES:

- WHERE VOIDS IN FILL MATERIALS ARE OBSERVED, UNDERTAKE THE FOLLOWING : FILL WITH CLEAR STONE.
- TOP OF SLAB SHALL HAVE A ROUGH BROOM FINISH.
- PROVIDE BEND IN TRANSVERSE REINFORCING STEEL TO SUIT SLAB CROWN.

LEGEND :

 CONCRETE REMOVALS
 REMOVALS



REVISION:

No.	REVISIONS	DATE
0	ISSUED FOR TENDER	08/23/2019

SCALE:

AS NOTED

CLASS:

PROJECT:

**SMALL CRAFT HARBOURS
CENTRAL AND ARCTIC REGION
PORT ELGIN, ONTARIO
SOUTH BREAKWATER
REPAIRS**

DESCRIPTION:

**SOUTH BREAKWATER
SECTIONS - 3**

DRAWN:

T.G.

APPROVED:

J.P.

DATE:

AUGUST 2019

DATE:

AUGUST 2019

LOCATION:

PORT ELGIN, ONTARIO

DRAWING NO.:

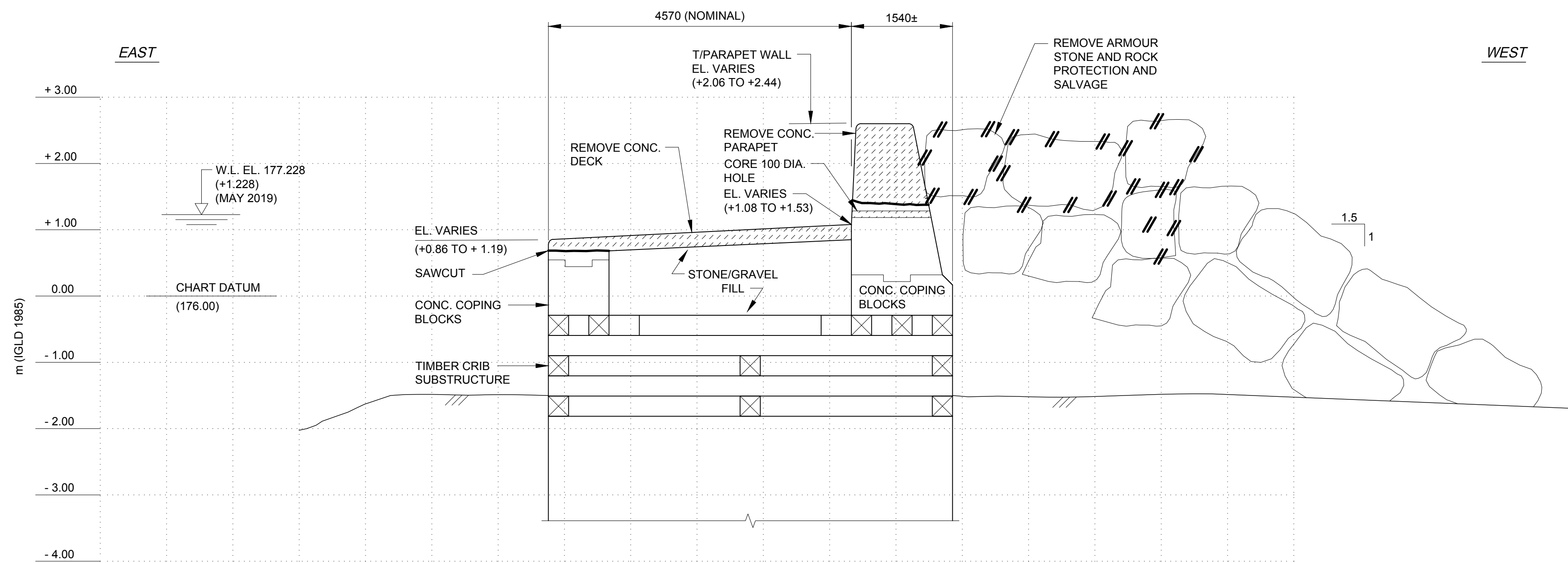
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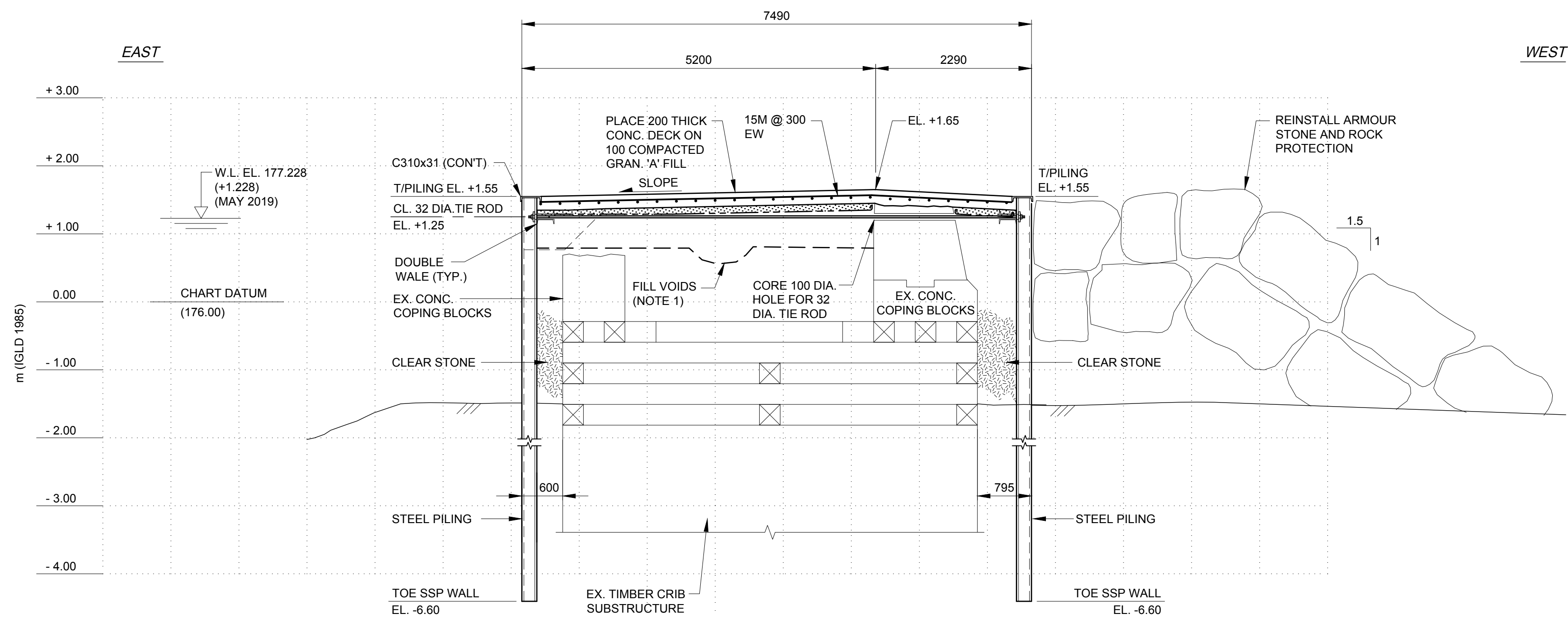
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DATE: 8/19/2019 11:34:01 AM



EXISTING AND REMOVALS



REHABILITATED

6
1:50

SOUTH BREAKWATER EXTENSION
(FOR LOCATION SEE DWG. S-4 AND DWG. S-7)
(SCENARIO 'B', 'C' AS SHOWN, OTHER SCENARIOS SIMILAR)

SMALL CRAFT HARBOURS
CENTRAL AND ARCTIC REGION



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- NOTES:
- WHERE VOIDS IN FILL MATERIALS ARE OBSERVED, UNDERTAKE THE FOLLOWING : FILL WITH CLEAR STONE.
 - TOP OF SLAB SHALL HAVE A ROUGH BROOM FINISH.
 - PROVIDE BEND IN TRANSVERSE REINFORCING STEEL TO SUIT SLAB CROWN.

LEGEND :

CONCRETE REMOVALS
REMOVALS



REVISION:		
No.	REVISIONS	DATE
0	ISSUED FOR TENDER	08/23/2019

SCALE:	CLASS:
AS NOTED	

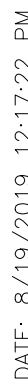
PROJECT:
**SMALL CRAFT HARBOURS
CENTRAL AND ARCTIC REGION
PORT ELGIN, ONTARIO
SOUTH BREAKWATER
REPAIRS**

DESCRIPTION:
**SOUTH BREAKWATER
SECTIONS - 4**

DRAWN: T.G.	APPROVED: J.P.
DATE: AUGUST 2019	DATE: AUGUST 2019

LOCATION:
PORT ELGIN, ONTARIO

DRAWING NO.: S-11	LOCATOR CODE: 4770
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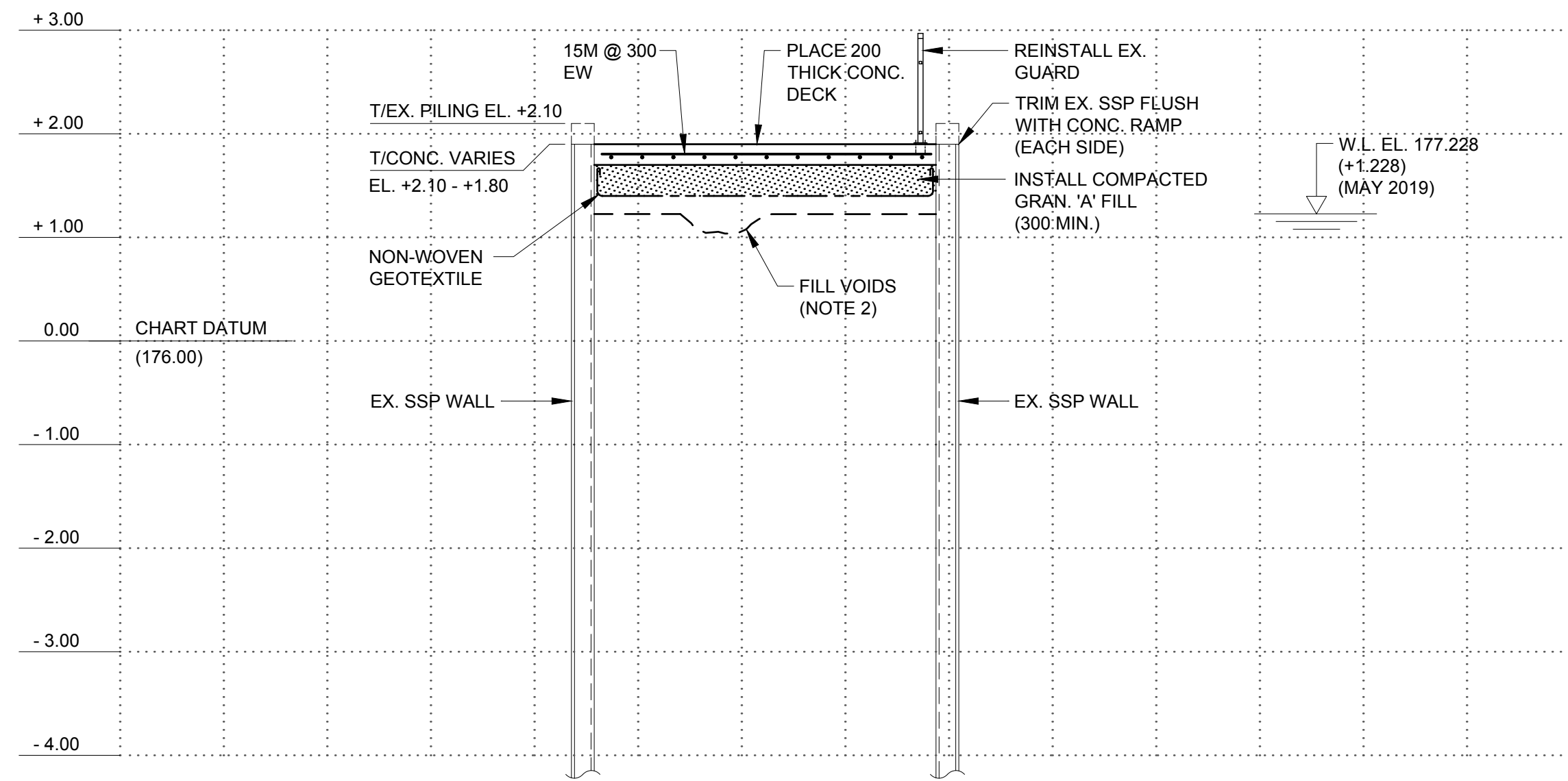


DRAWING NO.: S-12	LOCATOR CODE: 4770

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DATE: 8/22/2019 2:15:04 PM

SOUTH

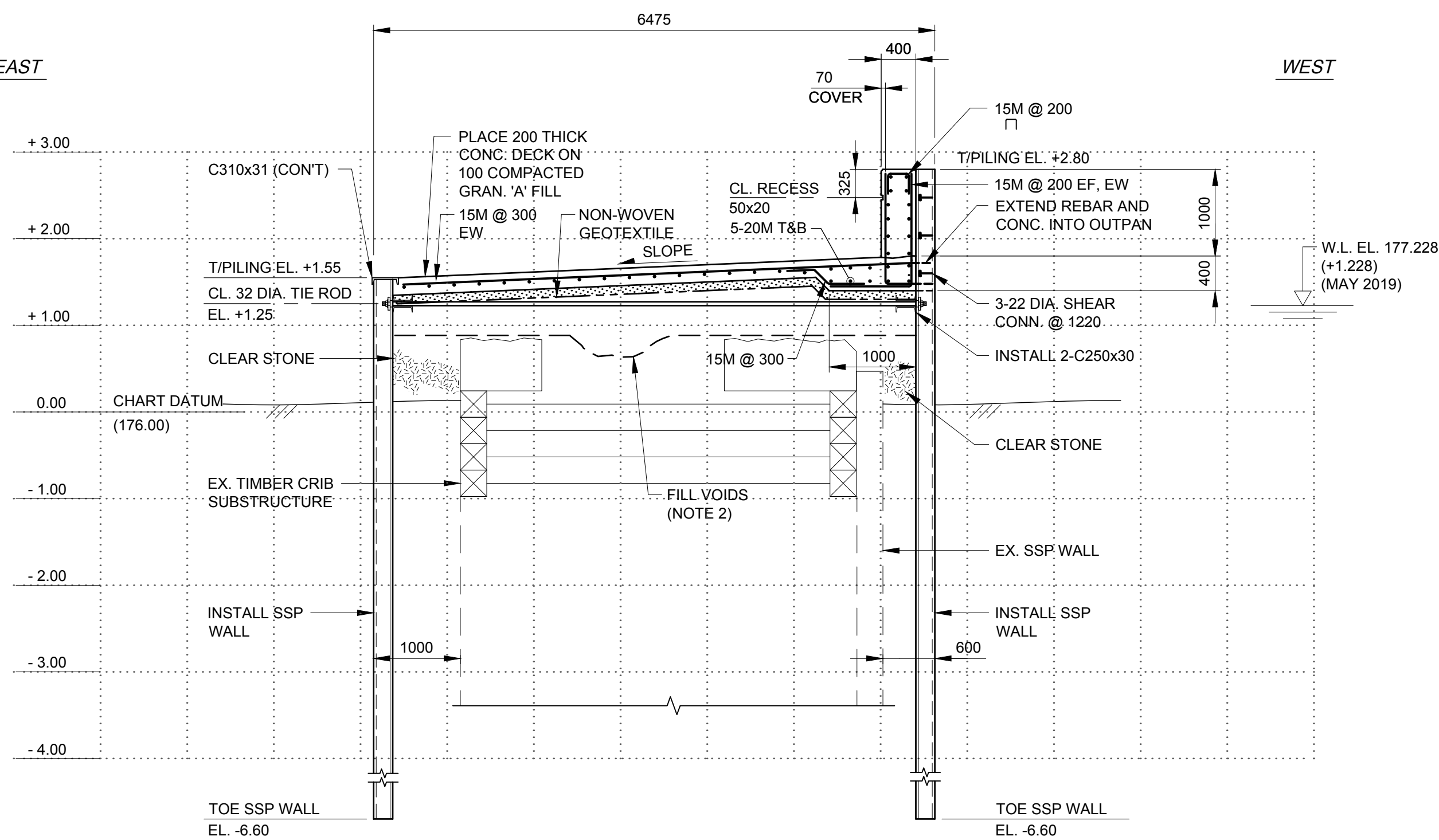
NORTH



REHABILITATED
1 SOUTH WHARF SECTION
(FOR LOCATION SEE DWG. S-12)
1: 50

EAST

WEST



REHABILITATED
2 SOUTH BREAKWATER SECTION
(FOR LOCATION SEE DWG. S-12)
(SCENARIO 'C' AS SHOWN, OTHER SCENARIOS SIMILAR)
1: 50

SMALL CRAFT HARBOURS
CENTRAL AND ARCTIC REGION



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519.673.0510

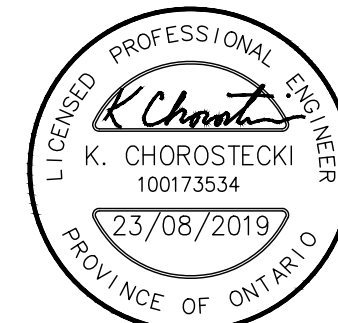
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NOTES:

- FOR NOTES, ABBREVIATIONS AND LEGENDS SEE DRAWING S-1.
- WHERE VOIDS IN FILL MATERIAL ARE OBSERVED FILL WITH CLEAR STONE.

LEGEND:

- CONCRETE REMOVALS
- EXISTING ELEVATIONS
- REMOVALS
- REHABILITATED ELEVATION



REVISION:

No.	REVISIONS	DATE
0	ISSUED FOR TENDER	08/23/2019

SCALE:

AS NOTED

CLASS:

PROJECT:

SMALL CRAFT HARBOURS
CENTRAL AND ARCTIC REGION
PORT ELGIN, ONTARIO
SOUTH BREAKWATER
REPAIRS

DESCRIPTION:

SOUTH BREAKWATER
RAMP SECTIONS - 1

DRAWN:

T.G.

APPROVED:

J.P.

DATE:

AUGUST 2019

DATE:

AUGUST 2019

LOCATION:

PORT ELGIN, ONTARIO

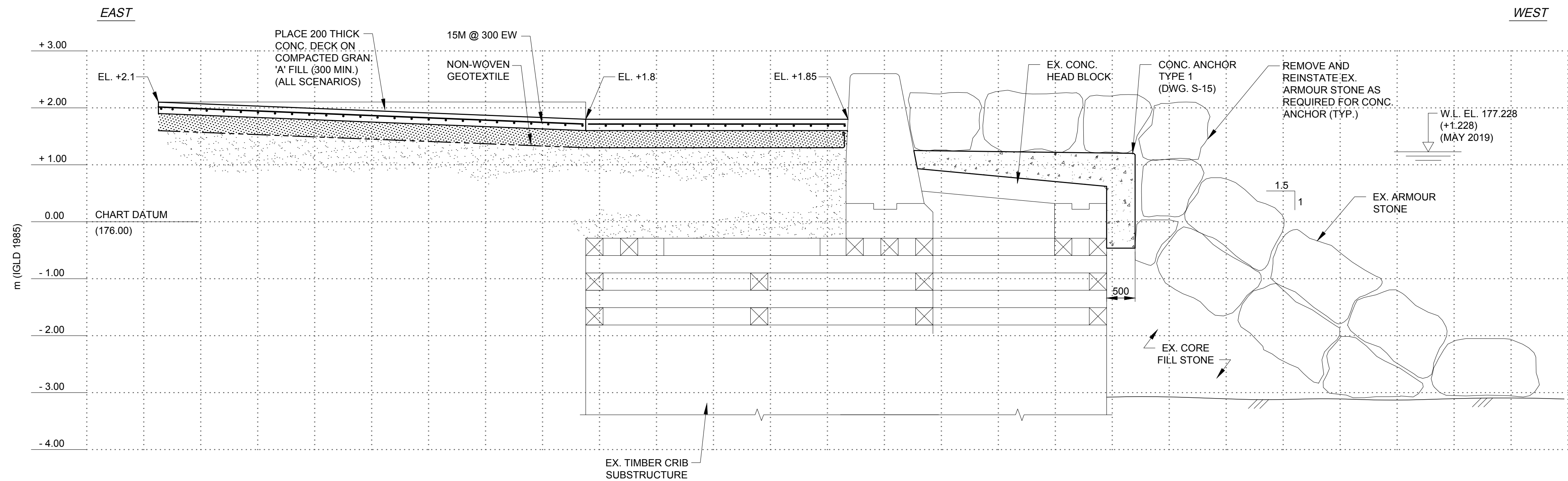
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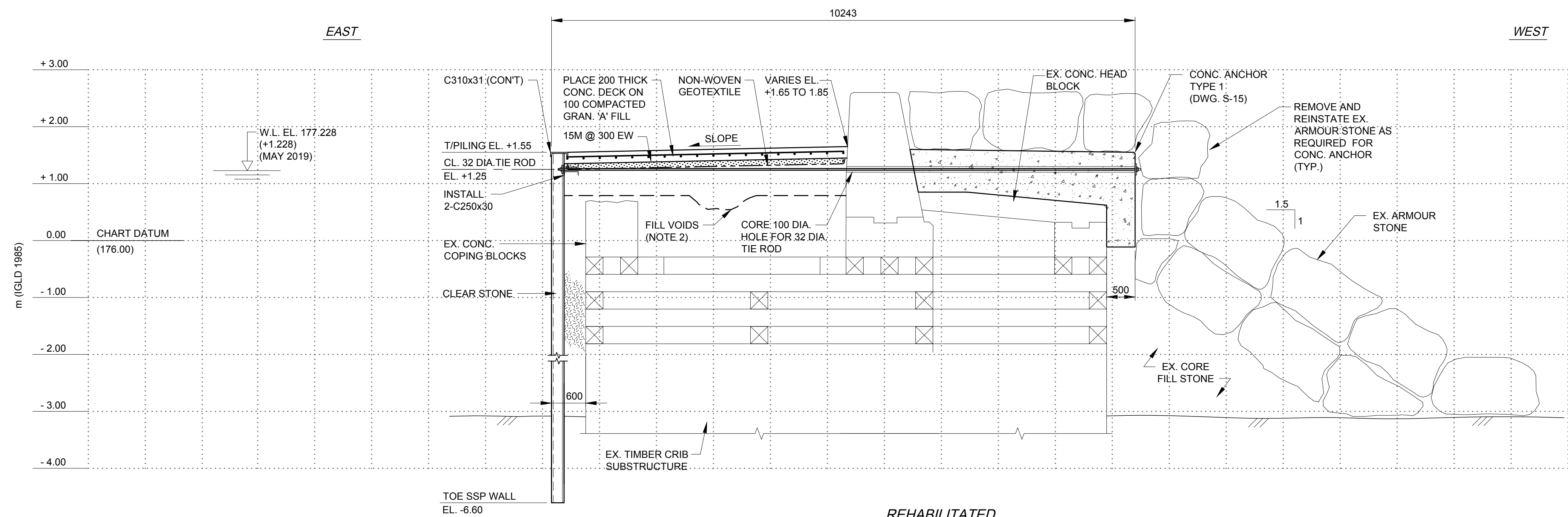
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REHABILITATED

3 SOUTH BREAKWATER EXTENSION
1 : 50
(FOR LOCATION SEE DWG. S-12)



REHABILITATED

4 SOUTH BREAKWATER EXTENSION
1 : 50
(FOR LOCATION SEE DWG. S-12)
(SCENARIO 'B', 'C' AS SHOWN, OTHER SCENARIOS SIMILAR)

SMALL CRAFT HARBOURS
CENTRAL AND ARCTIC REGION



AECOM




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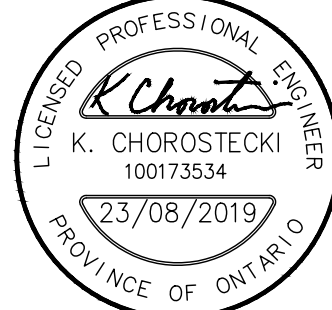
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NOTES:

- FOR NOTES, ABBREVIATIONS AND LEGENDS SEE DRAWING S-1.
- WHERE VOIDS IN FILL MATERIALS ARE OBSERVED, UNDERTAKE THE FOLLOWING : PLACE CLEAR STONE
- WHERE EXISTING DEADMAN CONFLICTS WITH NEW TIE LOCATION, PARTIALLY REMOVE CONCRETE.
- TOP OF SLAB SHALL HAVE A ROUGH BROOM FINISH.

LEGEND:

-  CONCRETE REMOVALS
-  EXISTING ELEVATIONS
-  REMOVALS



REVISION:

No.	REVISIONS	DATE
0	ISSUED FOR TENDER	08/23/2019

SCALE:

AS NOTED

CLASS:

PROJECT:

SMALL CRAFT HARBOURS
CENTRAL AND ARCTIC REGION
PORT ELGIN, ONTARIO
SOUTH BREAKWATER
REPAIRS

DESCRIPTION:

SOUTH BREAKWATER
RAMP SECTIONS - 2

DRAWN:

T.G.

APPROVED:

J.P.

DATE:

AUGUST 2019

DATE:

AUGUST 2019

LOCATION:

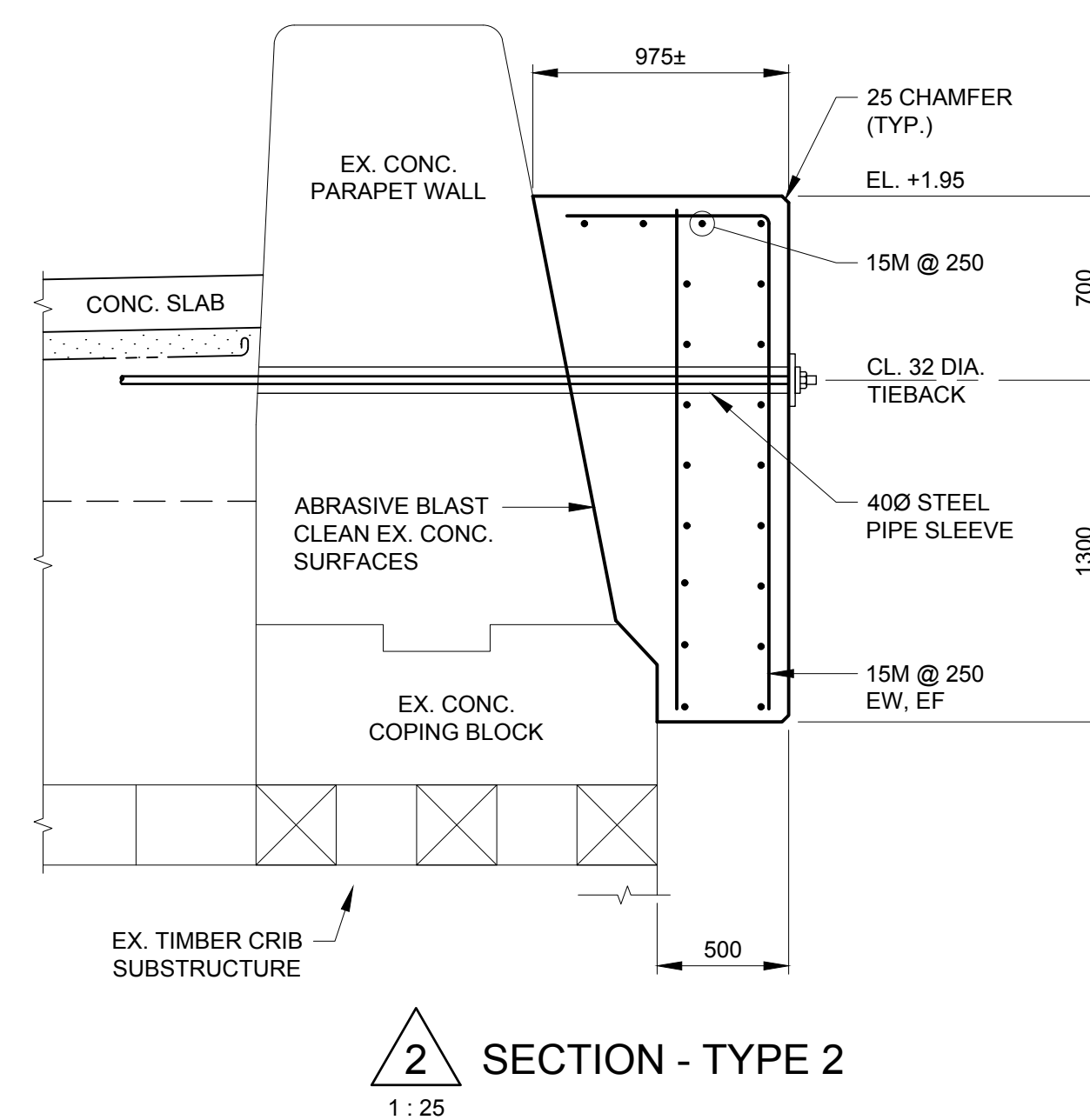
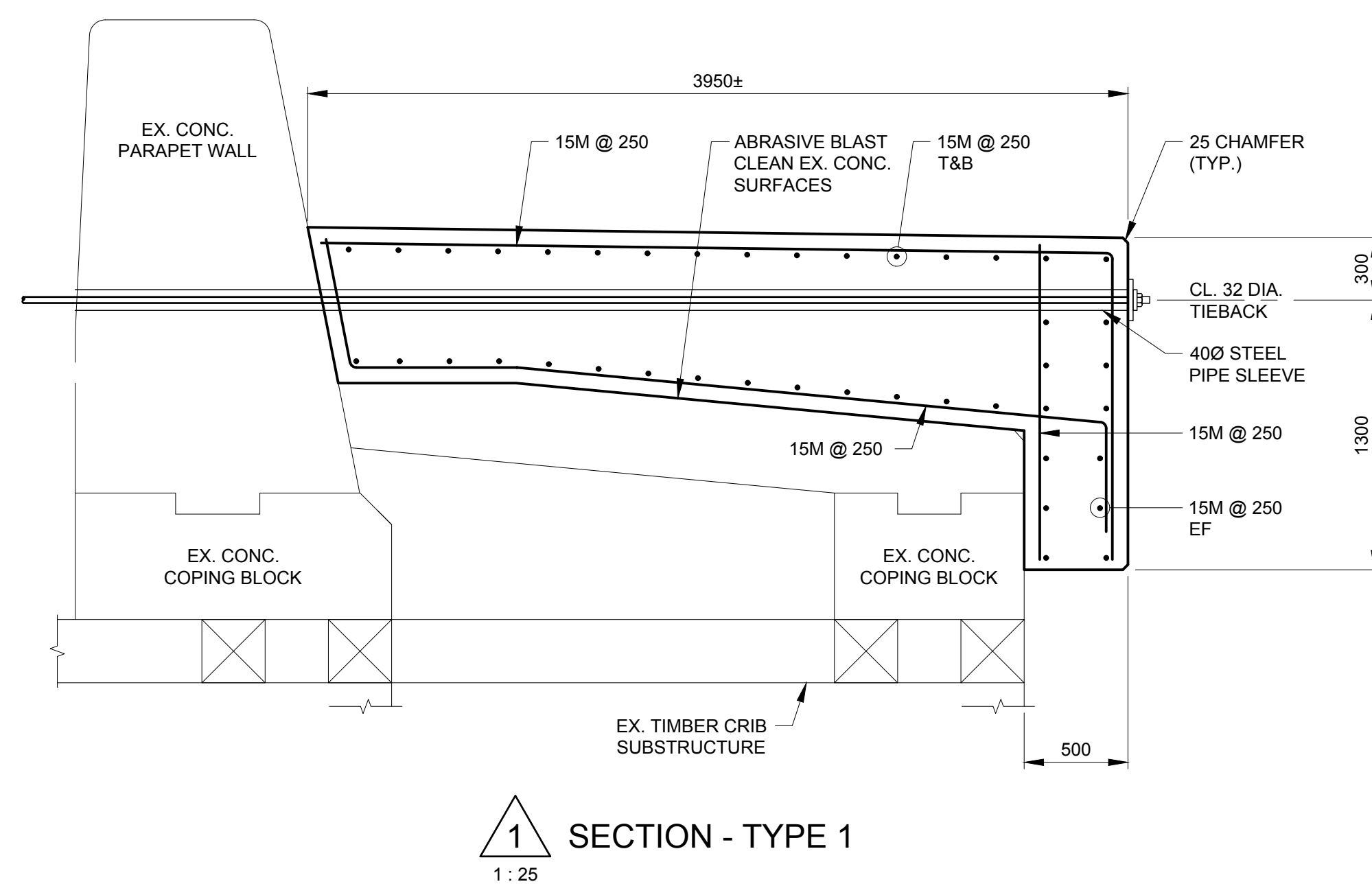
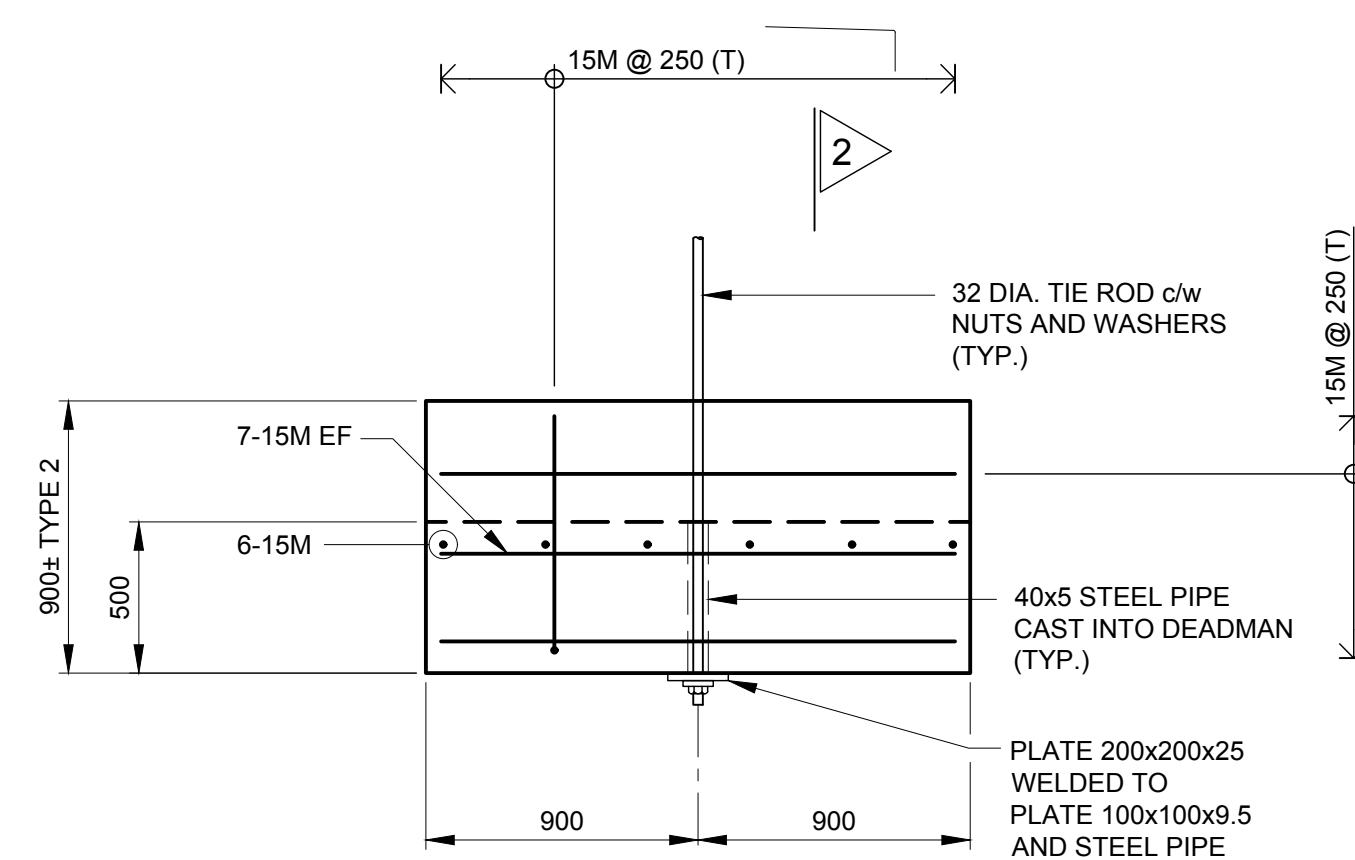
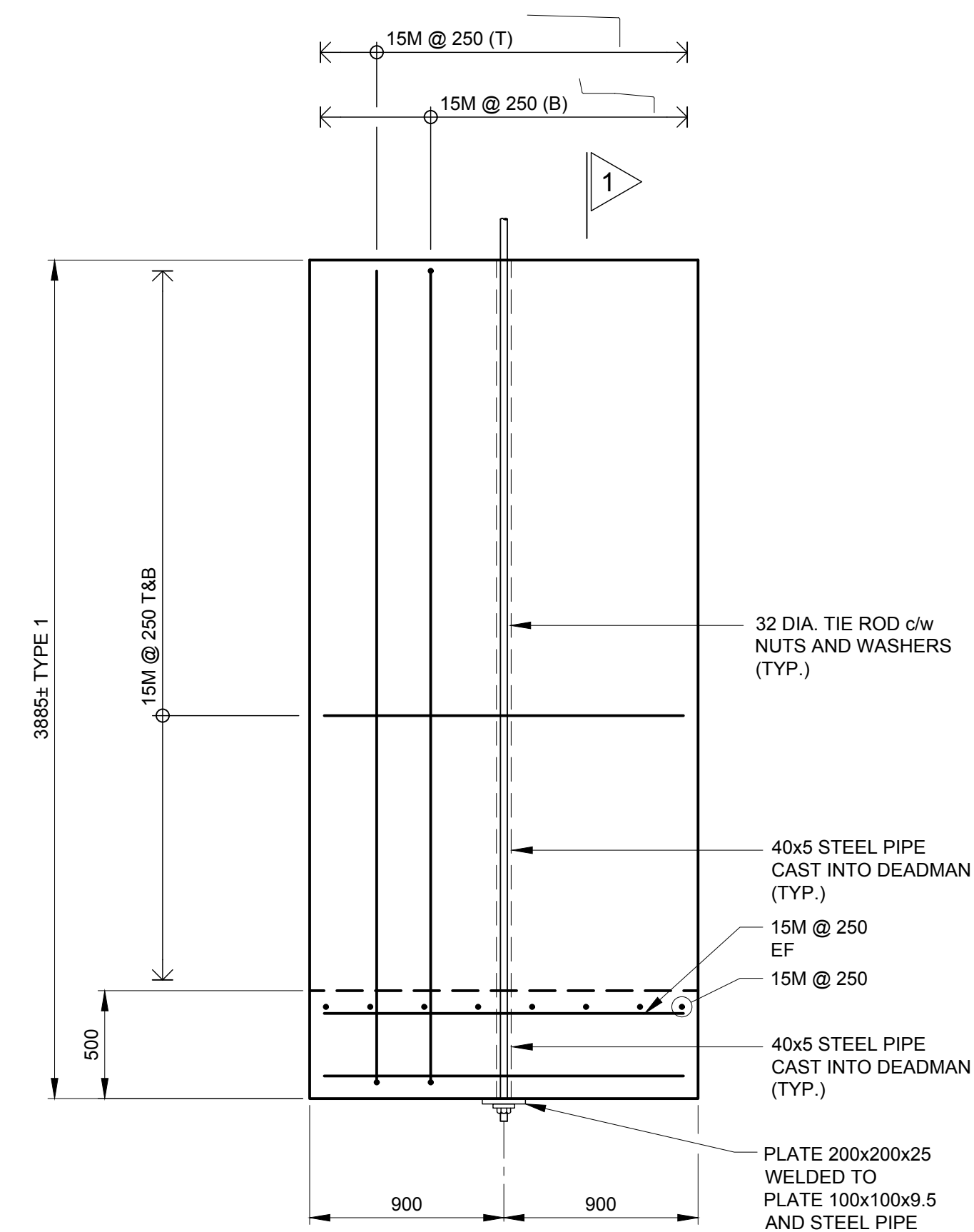
PORT ELGIN, ONTARIO

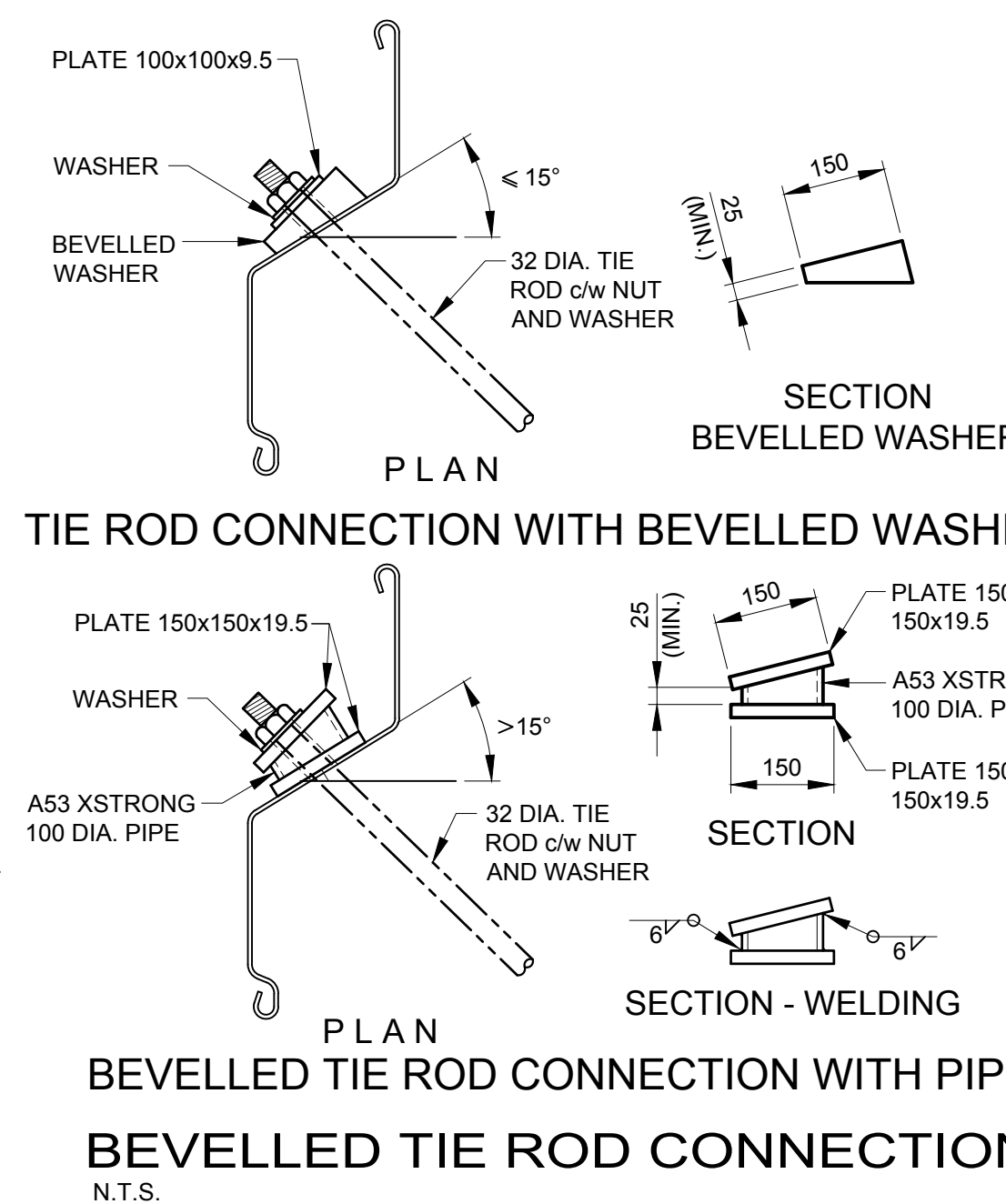
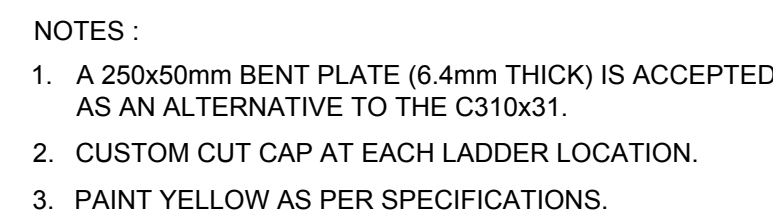
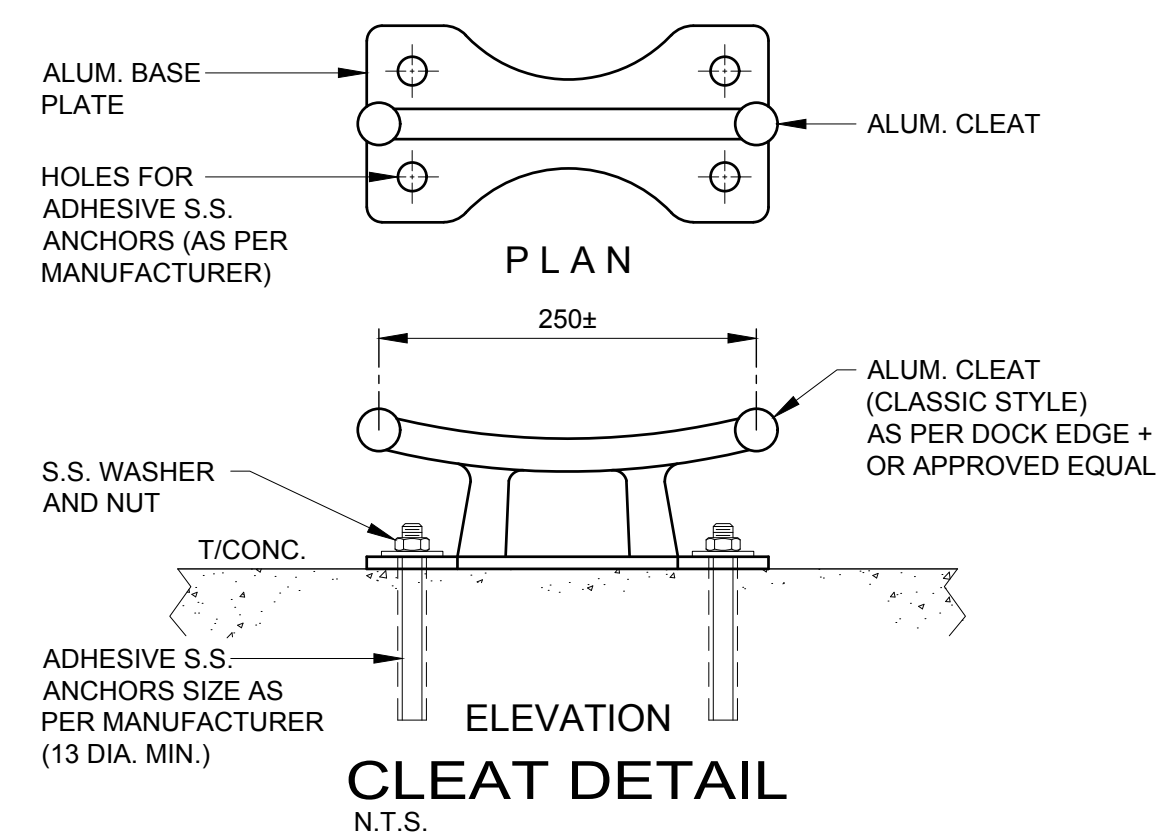
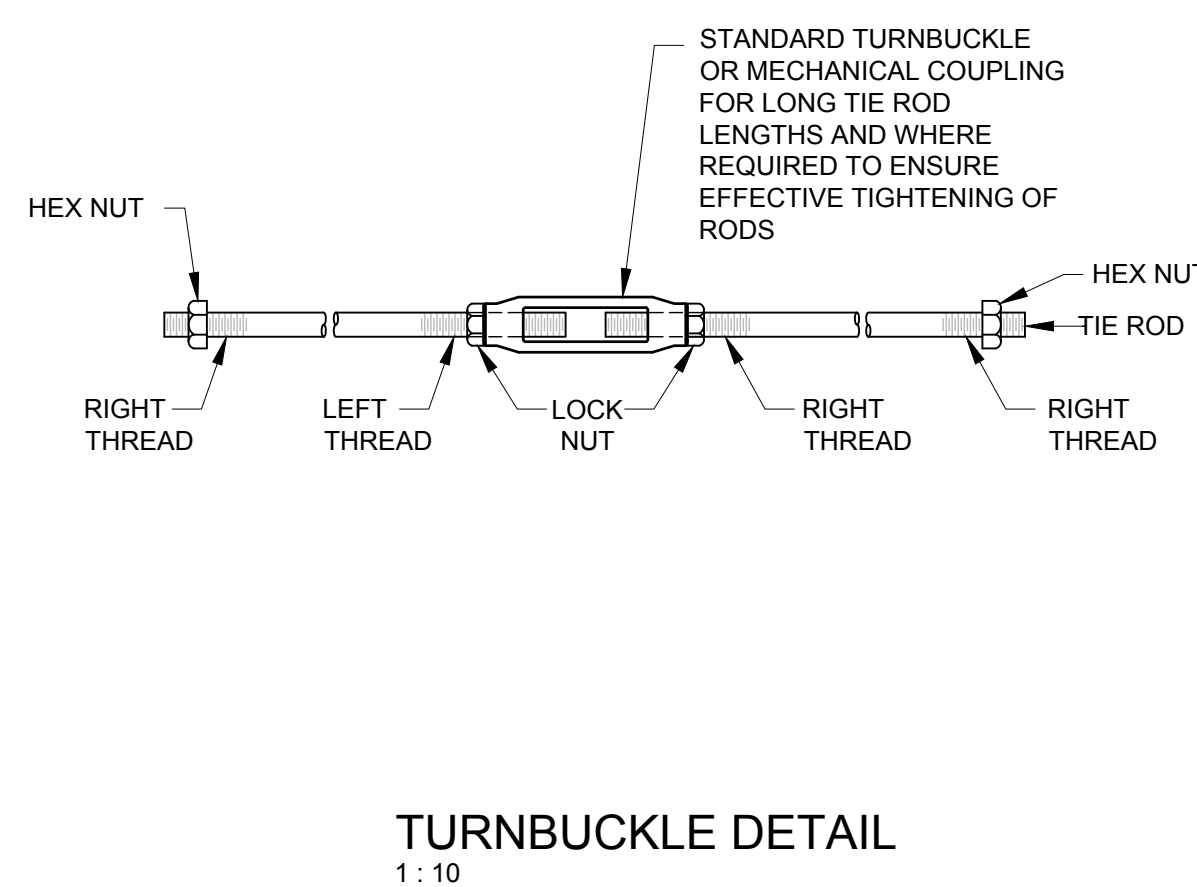
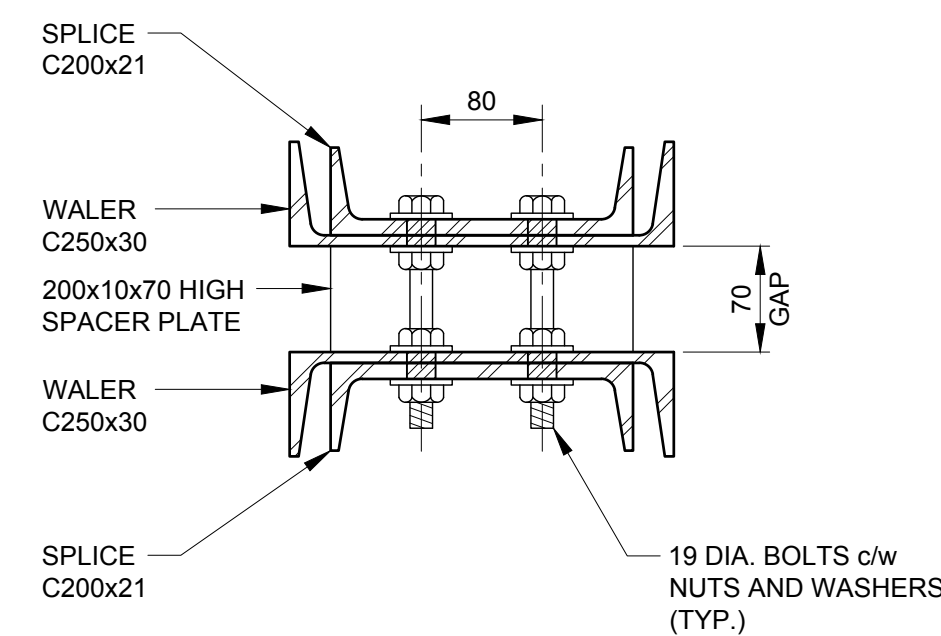
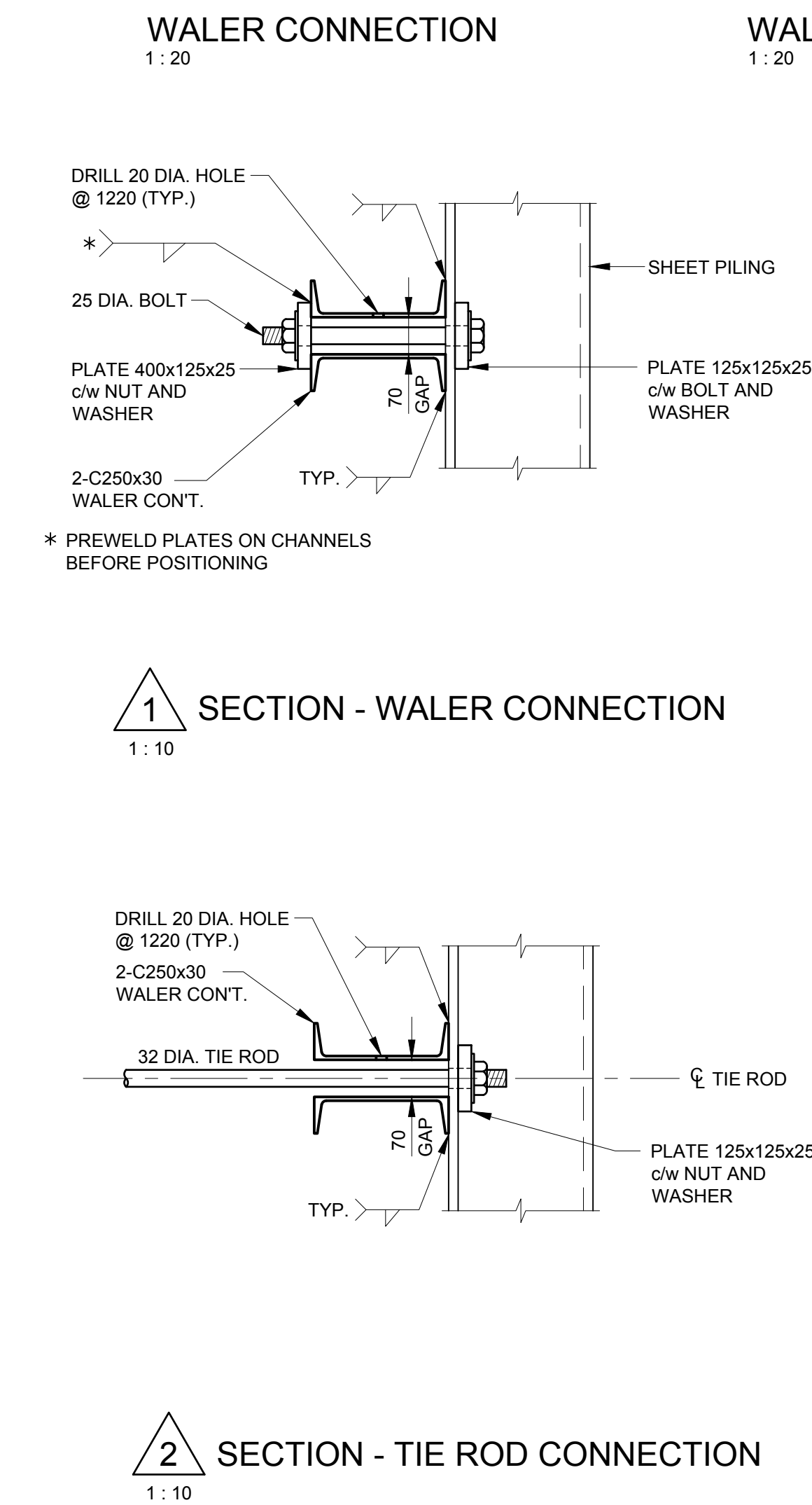
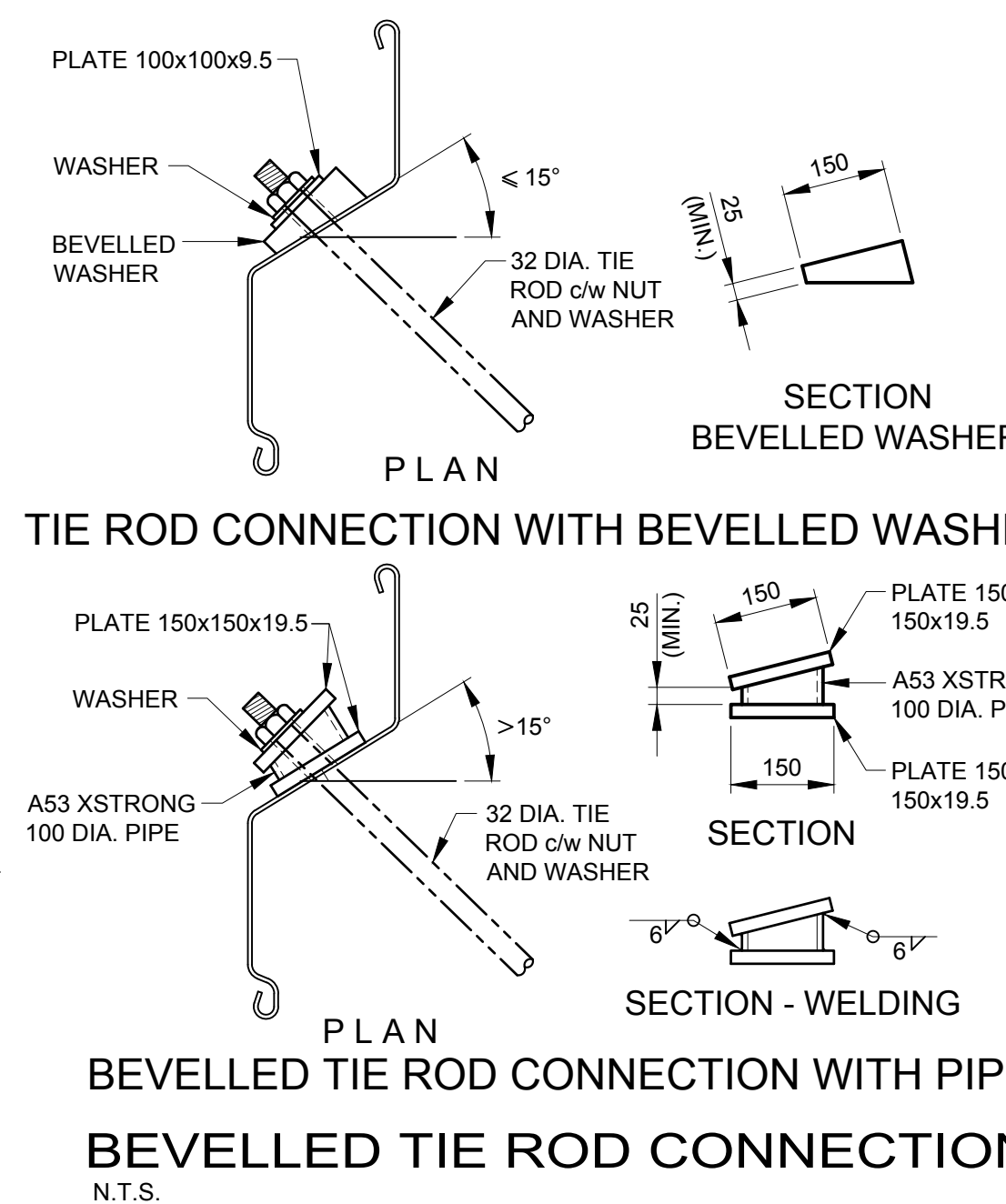
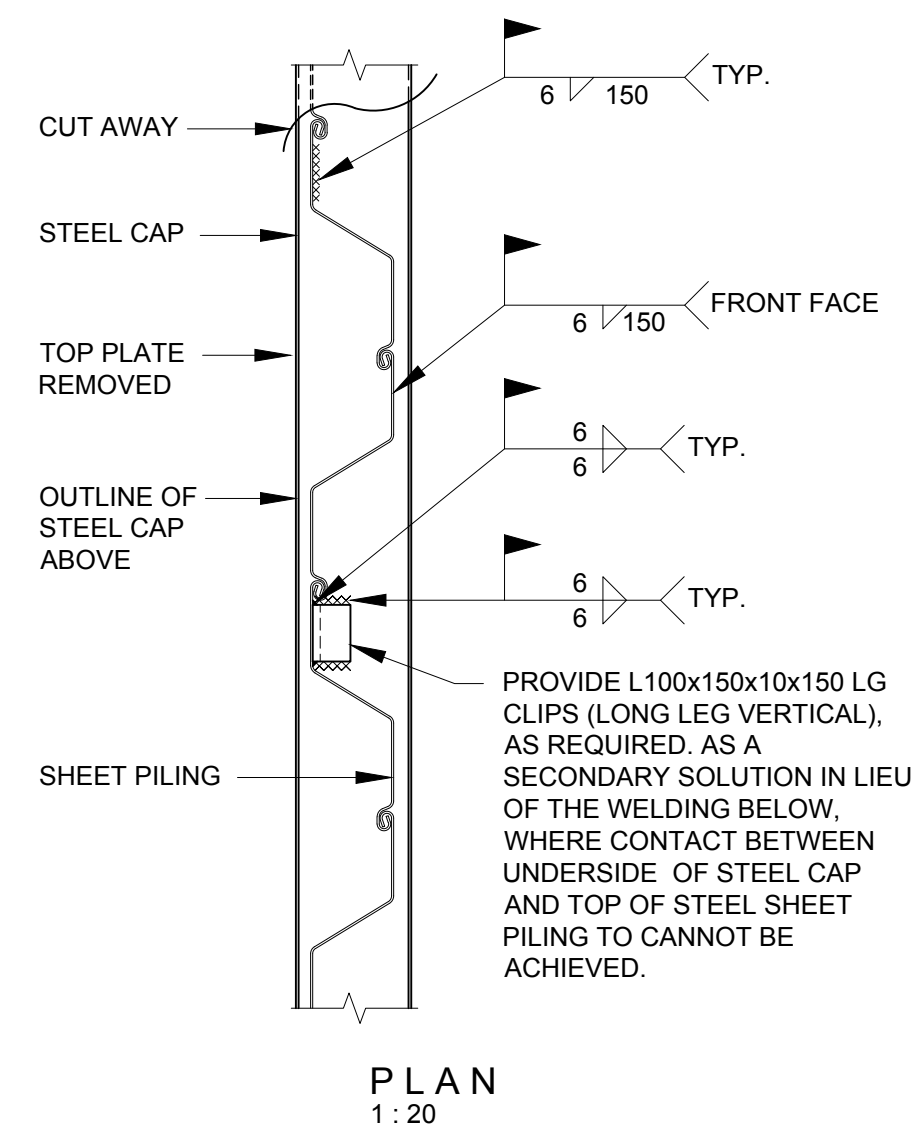
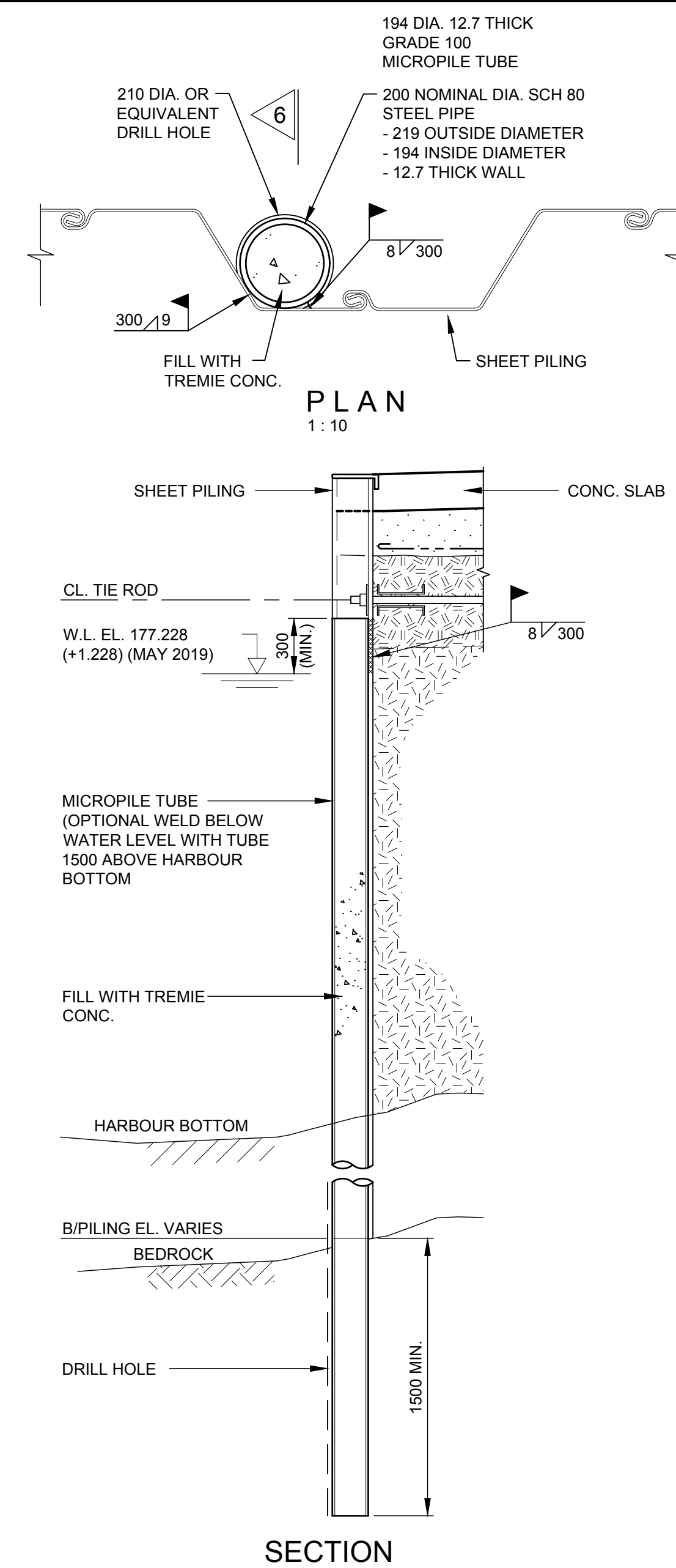
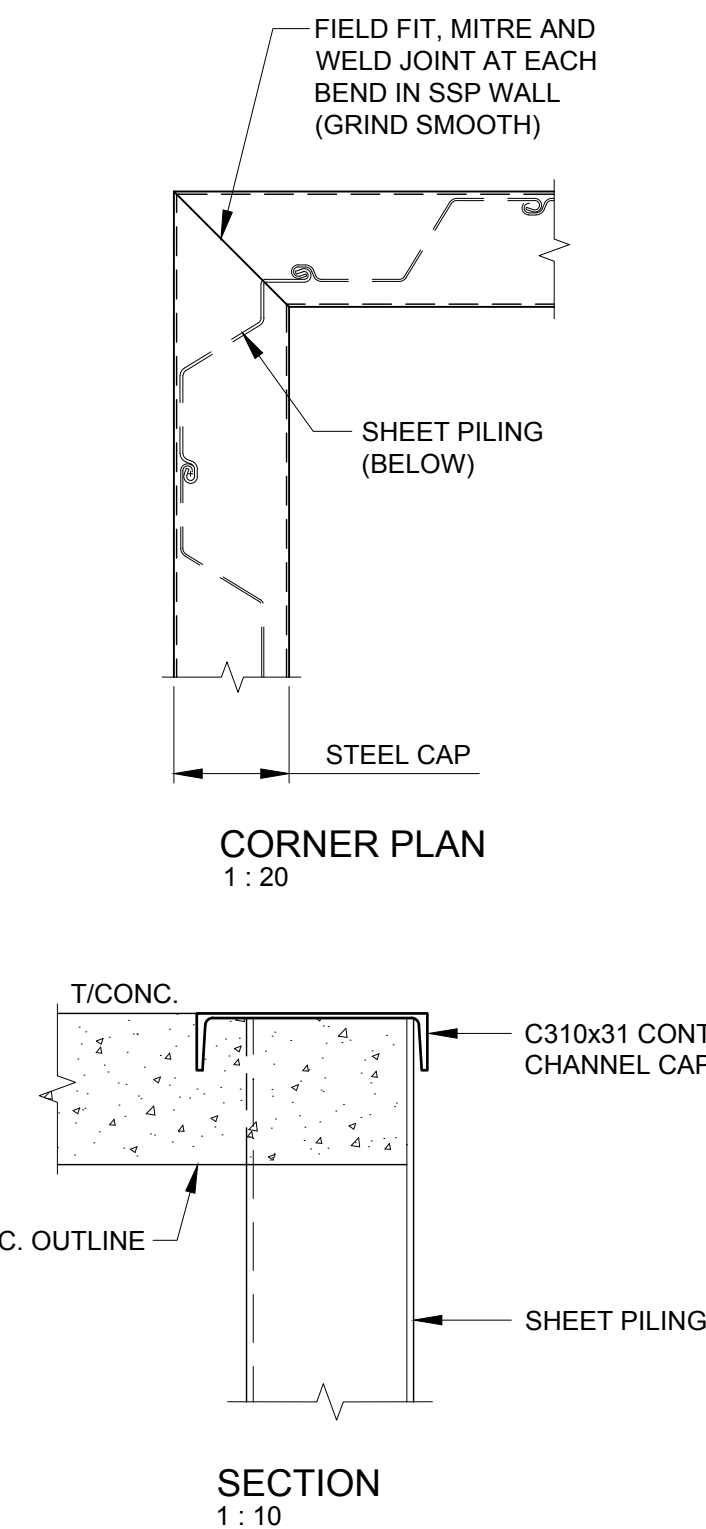
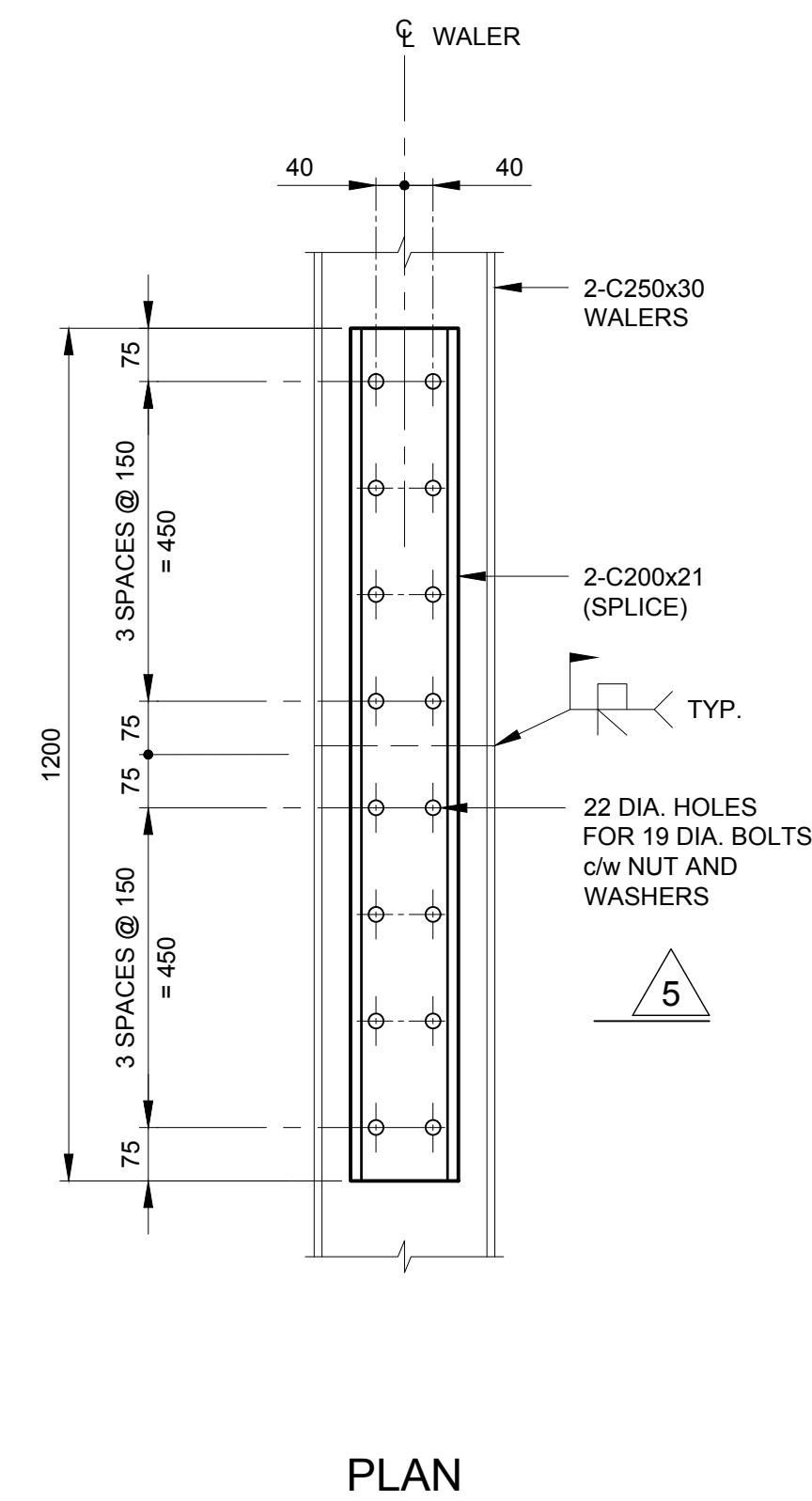
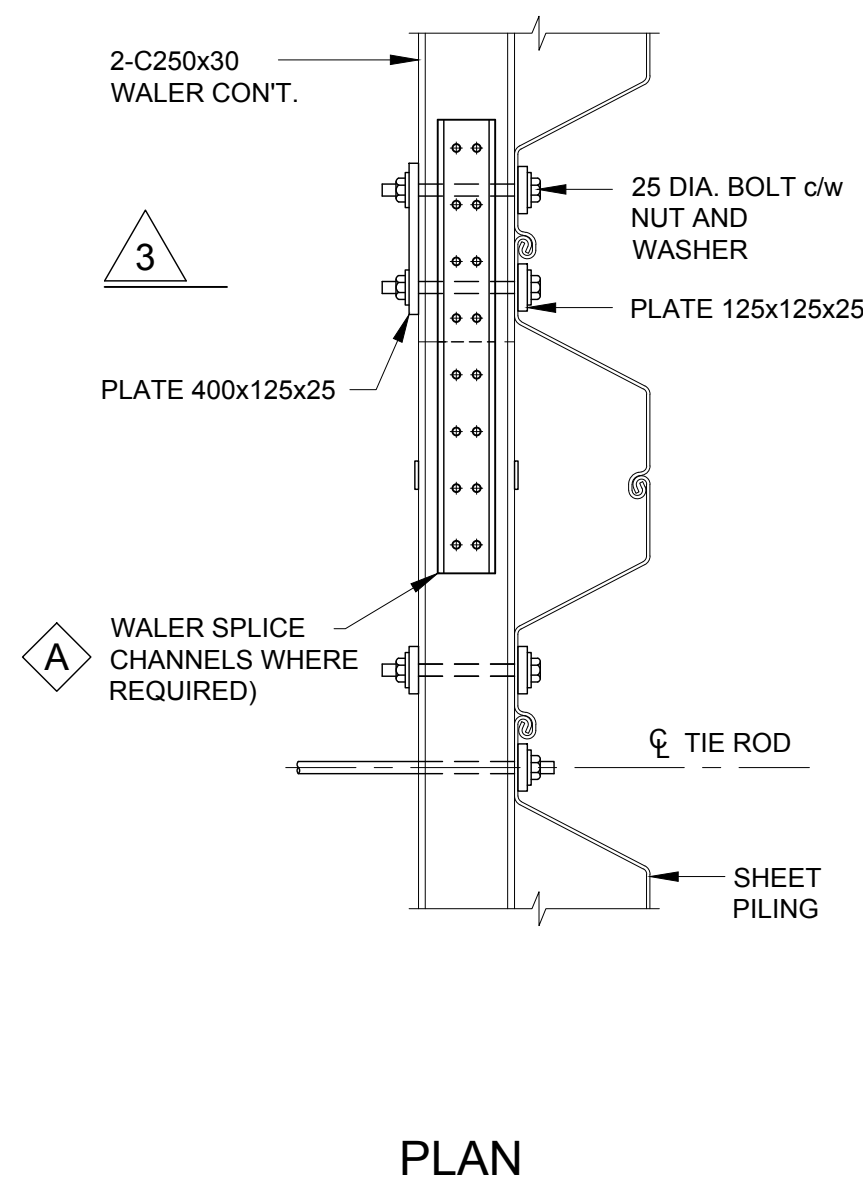
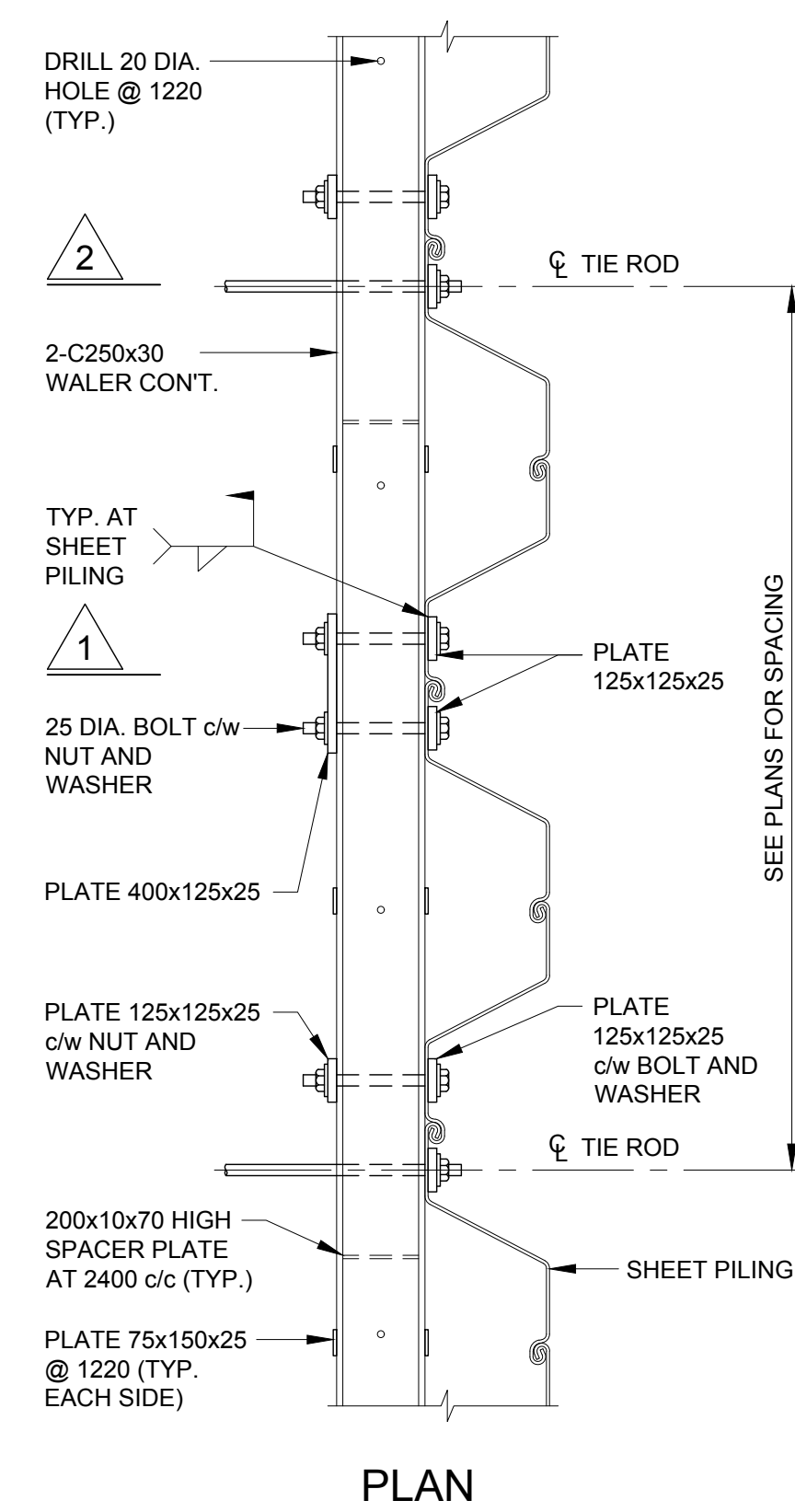
DRAWING NO.:

S-14

LOCATOR CODE:

4770



**AECOM**

London, Ontario
519.673.0510

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NOTES:

1. FOR NOTES, ABBREVIATIONS AND LEGENDS SEE DRAWING S-1.
2. STEEL CAP SHALL RECEIVE AN EPOXY COATING (AS PER SPECIFICATIONS). TOUCH UP COATINGS FOLLOWING INSTALLATION.
3. DRILLED HOLE FOR TIE RODS SHALL BE 40 mm DIAMETER.

[illegible]

SCALE: AS NOTED	CLASS:
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PROJECT:

SMALL CRAFT HARBOURS
CENTRAL AND ARCTIC REGION
PORT ELGIN, ONTARIO
SOUTH BREAKWATER
REPAIRS

DESCRIPTION:

MISCELLANEOUS
DETAILS - 1

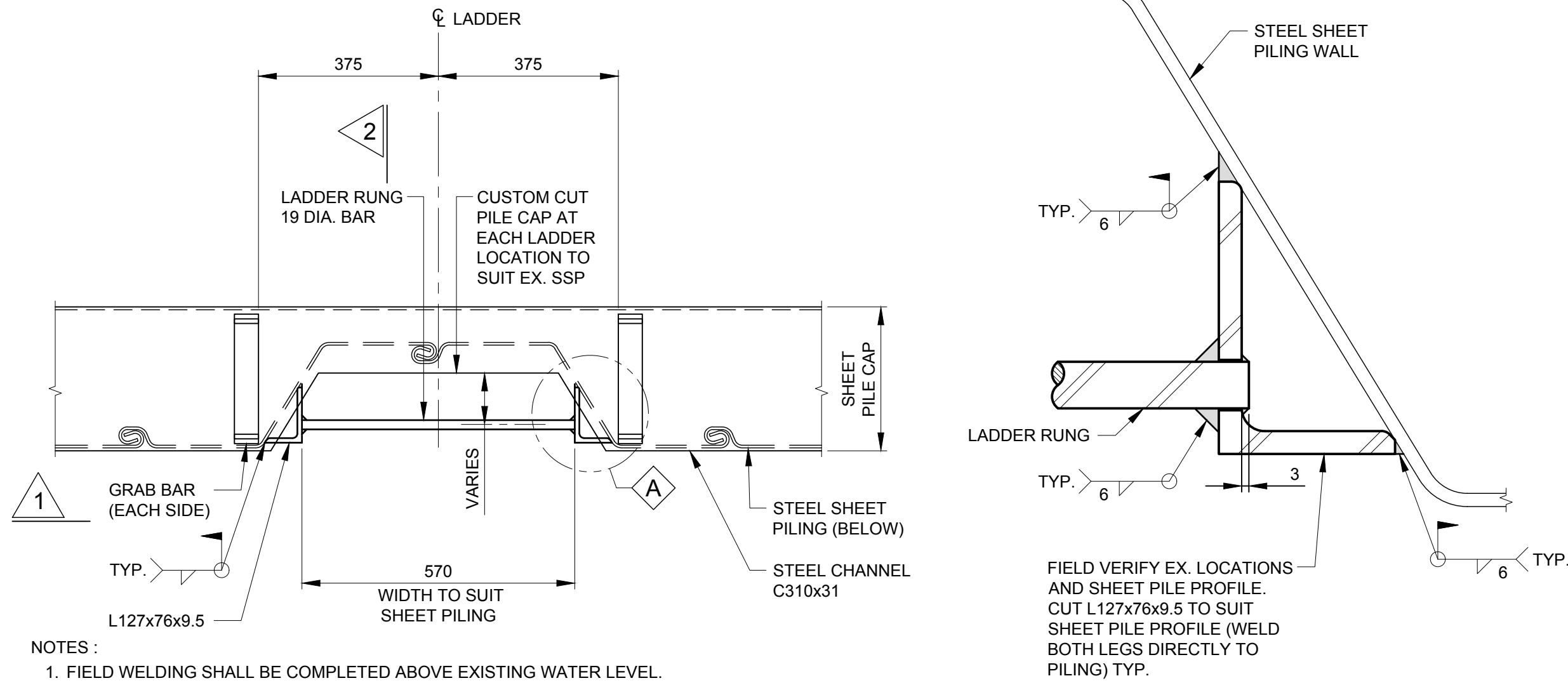
DRAWN: T.G.	APPROVED: J.P.
DATE: AUGUST 2019	DATE: AUGUST 2019

LOCATION:

PORT ELGIN, ONTARIO

DRAWING NO.:	LOCATOR CODE:
S-16	4770

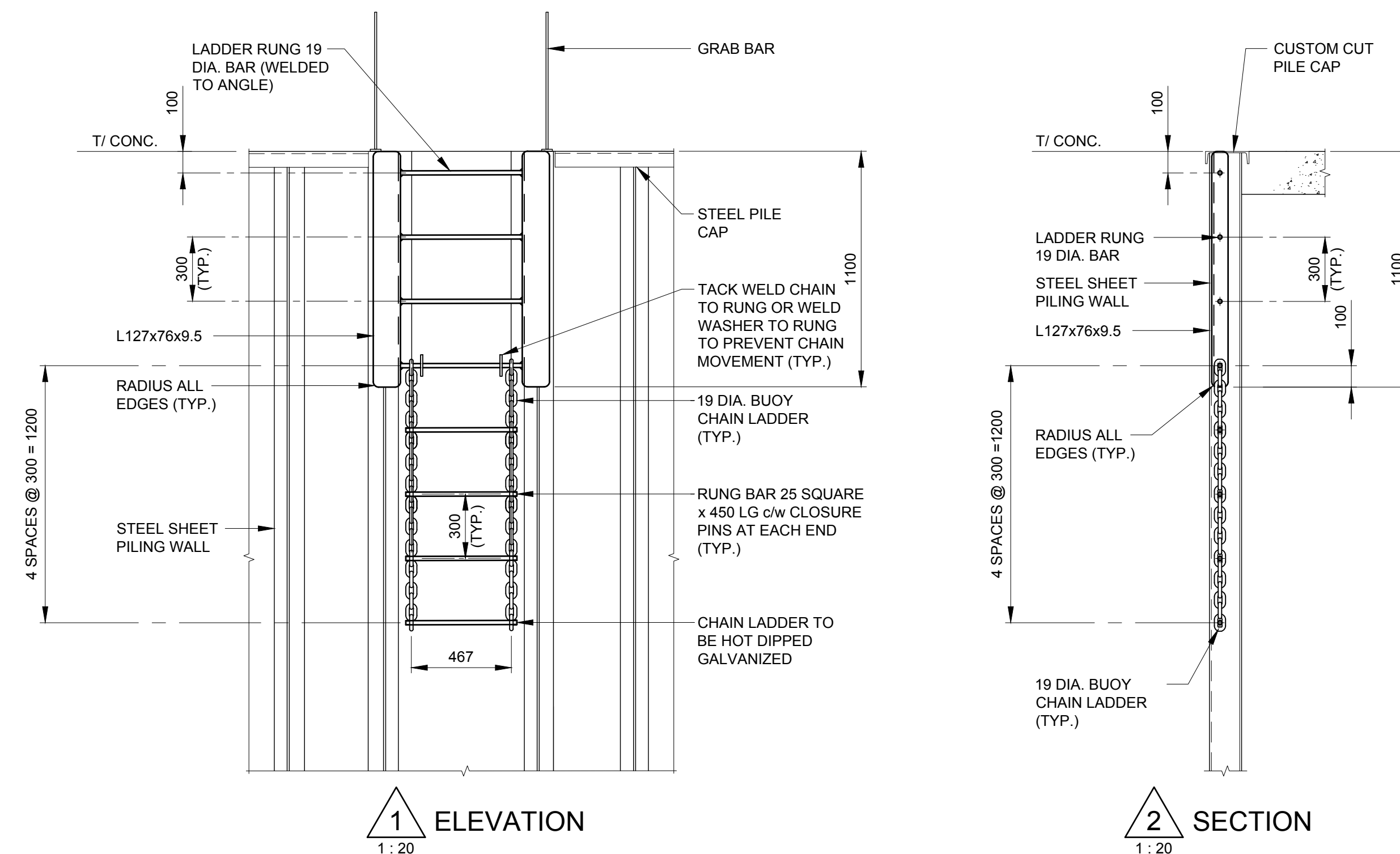
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DATE: 8/19/2019 11:39:33 AM



- NOTES:
1. FIELD WELDING SHALL BE COMPLETED ABOVE EXISTING WATER LEVEL.
 2. COAT OUTSIDE LEG AND GRAB BAR WITH SAFETY YELLOW PAINT COATING.

PLAN
1:10

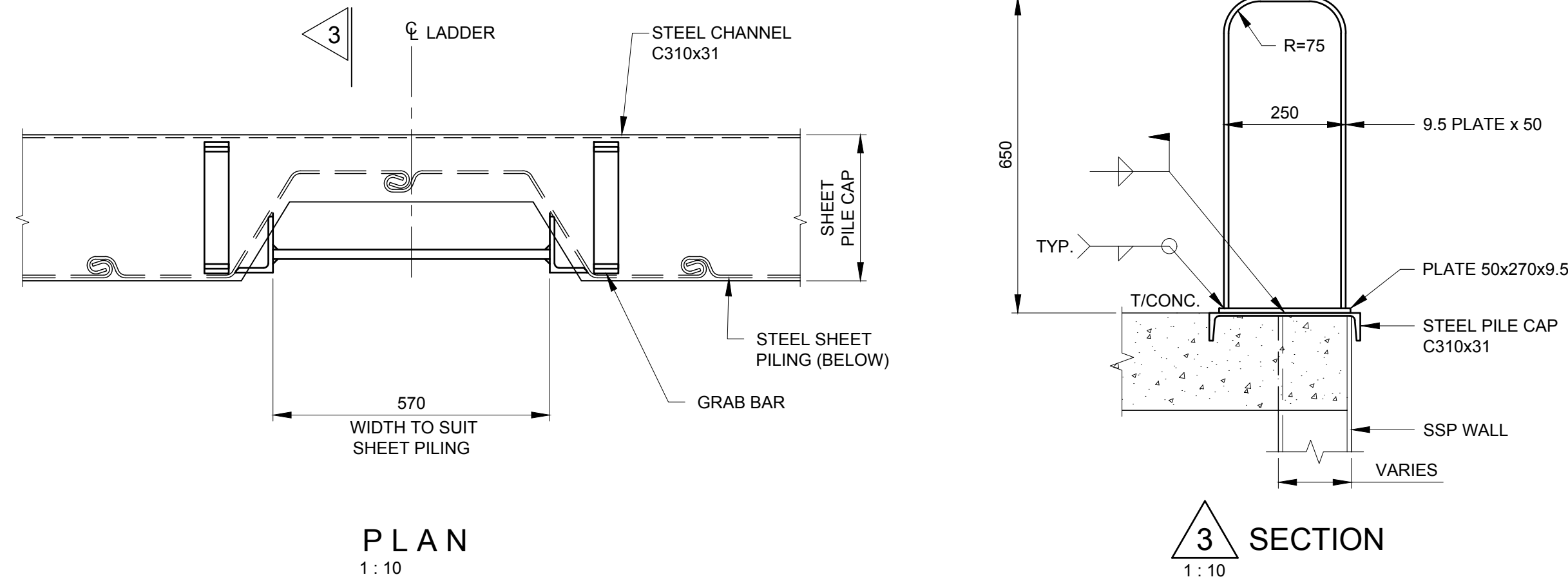
DETAIL
1:2



1 ELEVATION
1:20

2 SECTION
1:20

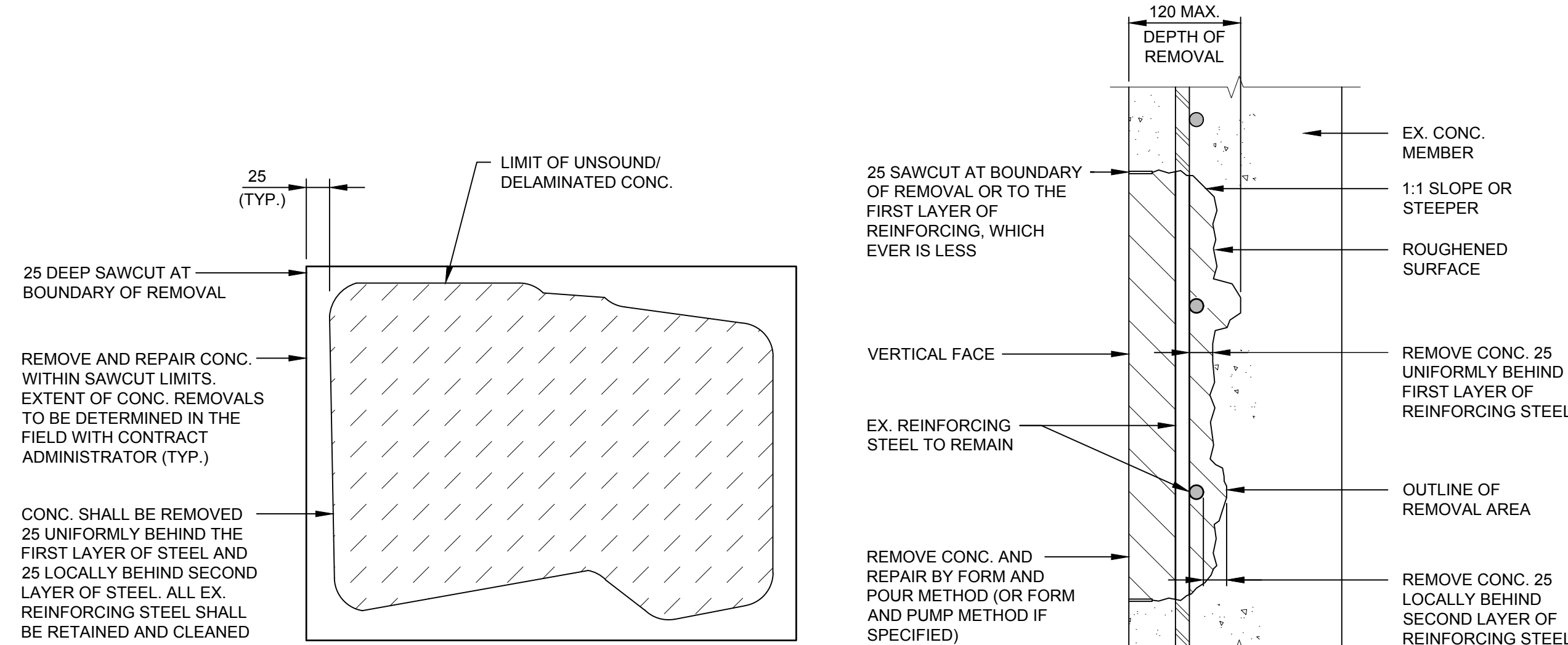
EMERGENCY LADDER DETAIL
(FOR LOCATION SEE DWG. S-05 AND S-07)
(7 TOTAL)



PLAN
1:10

3 SECTION
1:10

GRAB BAR DETAIL

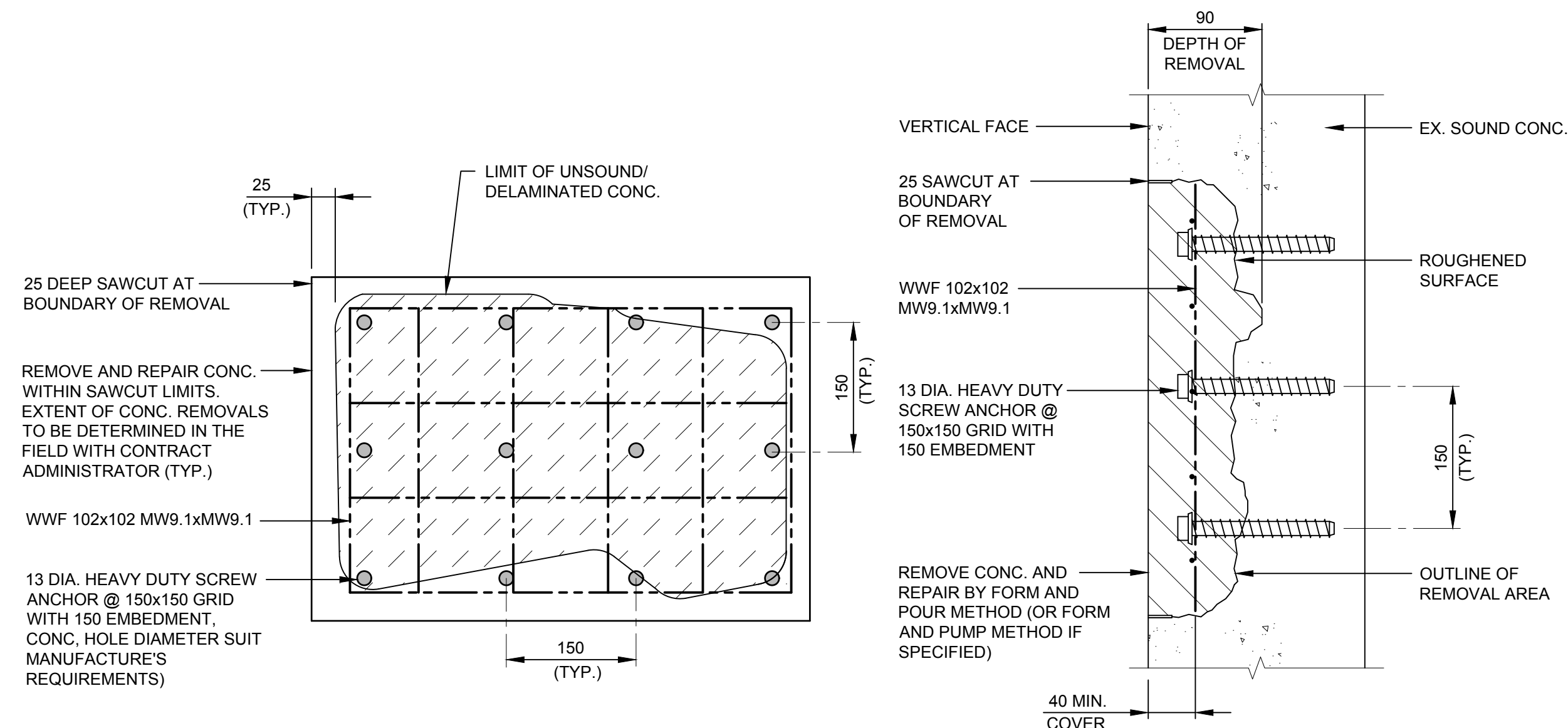


ELEVATION

VERTICAL SURFACE
REMOVAL/REPAIR DETAIL

CONCRETE REPAIR WITH EXISTING REINFORCING STEEL

N.T.S.



ELEVATION


VERTICAL SURFACE
REMOVAL/REPAIR DETAIL

CONCRETE REPAIR WITHOUT EXISTING REINFORCING STEEL

N.T.S.

REPAIR NOTES:

1. TYPICAL LOCATIONS AND AREAS OF REPAIR ARE INDICATED ON DRAWINGS. THE ACTUAL LOCATIONS AND EXTENT OF REMOVAL WILL BE DETERMINED ON SITE WITH THE CONTRACT ADMINISTRATOR.
2. REPAIR TO ORIGINAL SURFACE, UNLESS OTHERWISE INSTRUCTED BY THE CONTRACT ADMINISTRATOR.
3. CONCRETE REMOVALS SHALL BE BASED ON A VISUAL AND DELAMINATION SURVEY.
4. SAWCUTS IN CONCRETE, UNLESS OTHERWISE SHOWN, SHALL BE 25mm DEEP OR TO THE FIRST LAYER OF REINFORCING, WHICHEVER IS LESS.
5. DEEPER REMOVALS WILL BE REQUIRED WHERE UNSOUND CONCRETE IS ENCOUNTERED BELOW THE SECOND LAYER OF REINFORCING STEEL.




GOVERNMENT
OF CANADA

GOVERNMENT
DU CANADA

PECHES
ET OCEANS

FISHERIES
AND OCEANS

SMALL CRAFT HARBOURS
CENTRAL AND ARCTIC REGION



Small Craft Harbours
Ports pour petits bateaux



AECOM

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NOTES:

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REVISION:		
No.	REVISIONS	DATE
0	ISSUED FOR TENDER	08/23/2019

SCALE: AS NOTED

CLASS:

PROJECT:

SMALL CRAFT HARBOURS
CENTRAL AND ARCTIC REGION
PORT ELGIN, ONTARIO
SOUTH BREAKWATER
REPAIRS

DESCRIPTION:

MISCELLANEOUS
DETAILS - 2

DRAWN:

T.G.

APPROVED:

J.P.

DATE:

AUGUST 2019

DATE:

AUGUST 2019

LOCATION:

PORT ELGIN, ONTARIO

DRAWING NO.:

S-17

LOCATOR CODE:

4770