

MARINE STRUCTURE LAYOUT

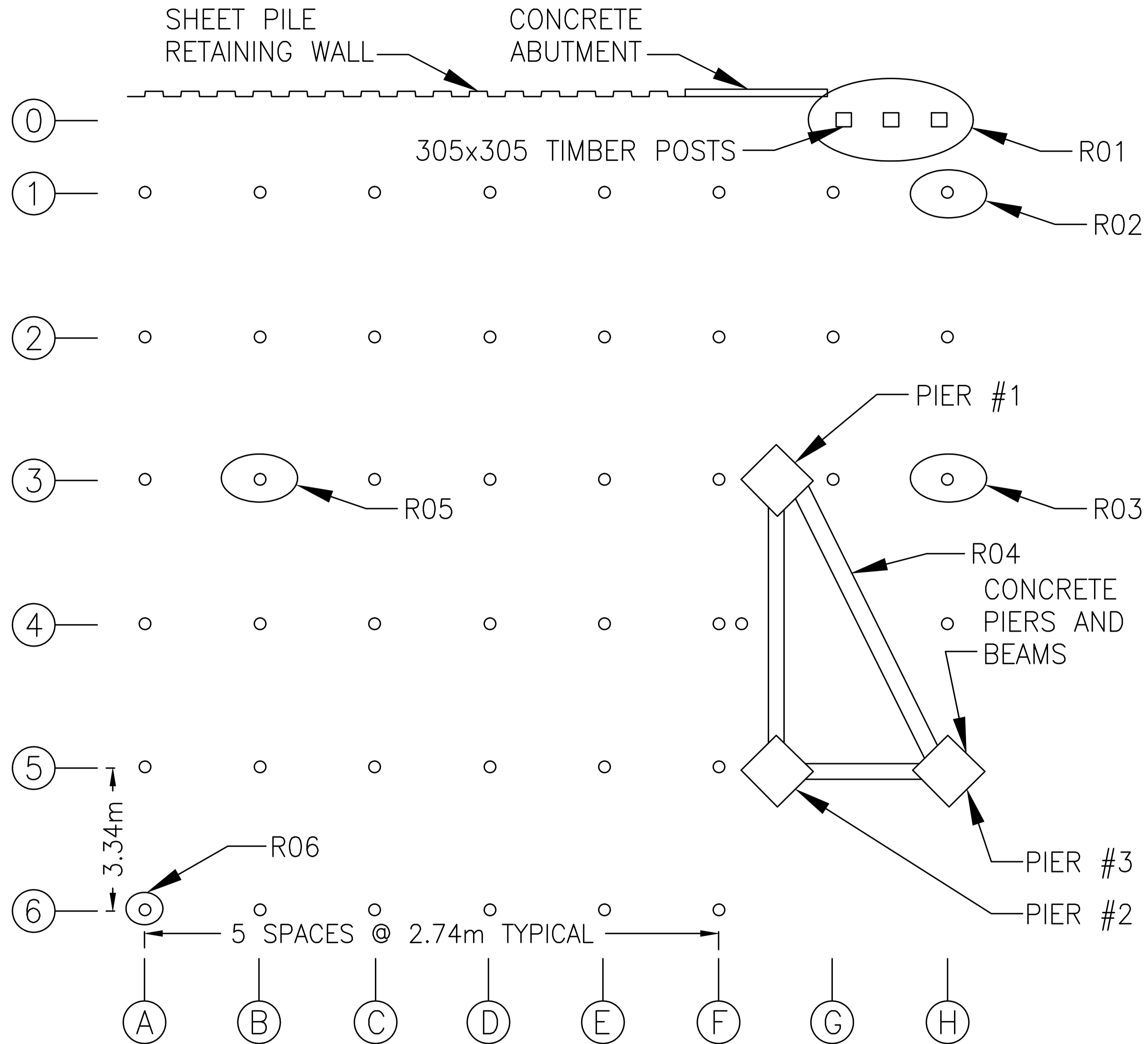
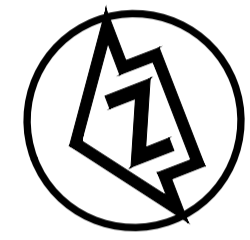
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No.	REVISION DESCRIPTION	DATE (Y/M/D)	BY	CHECK	PROJECT No.
C	ISSUED FOR TENDER	15/02/20	GW	RDT	BB3502BBA
B	95% SUBMISSION	15/01/30	GW	RDT	
A	75% SUBMISSION	14/12/05	GW	RDT	

DESIGN	GW
DRAWN	GW
CHECK	RDT
APPROVED	
DATE	14/12/05
SCALE	AS NOTED

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 BURNABY, BRITISH COLUMBIA, CANADA V5H 4M2  
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CMHC	SHEET No.	1
GRANVILLE ISLAND MARINE STRUCTURE REPAIRS	OF	14
MARINE STRUCTURE LAYOUT	REV.	A
	DRAWING NO.	SSD-01



REPAIR No.	DESCRIPTION	REPAIR DETAIL/DWG No.
R01	BENT 0, REPLACE CAP AND INSTALL NEW POSTS SUPPORTED ON CIP SONATUBE FOOTINGS	8-F2
R02	FRESH HEAD AND INSTALL CORBEL	8-F5
R03	FRESH HEAD AND INSTALL DOUBLE CORBEL BLOCK	8-F4
R04	CONCRETE AND SUB-BEAM RETROFIT	11\12
R05	INSTALL STEEL BANDS	9-F1
R06	INSTALL STEEL BANDS	9-F1

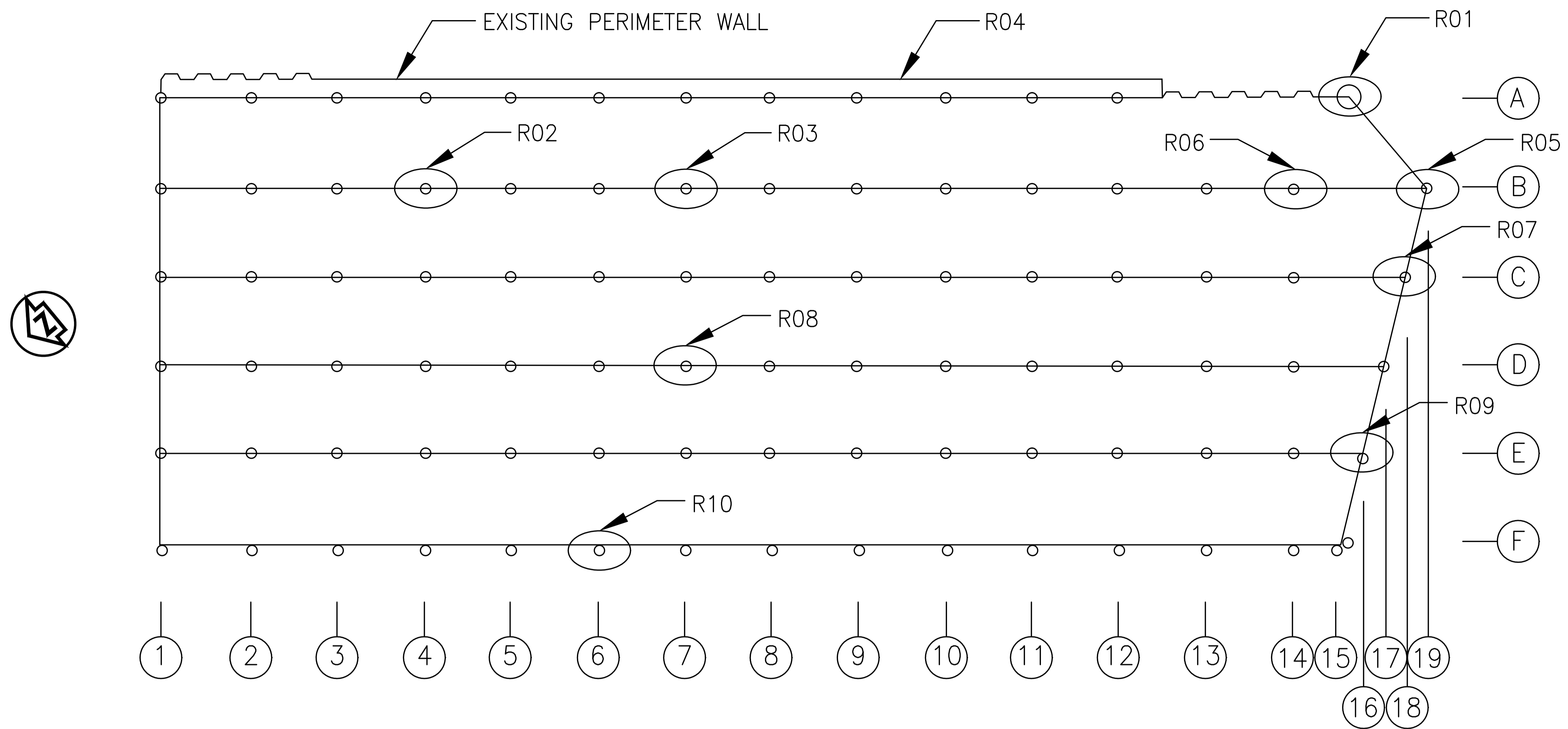
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No.	REVISION DESCRIPTION	DATE (Y/M/D)	BY	CHECK	PROJECT No.
C	ISSUED FOR TENDER	15/02/20	GW	RDT	BB3502BBA
B	95% SUBMISSION	15/01/30	GW	RDT	
A	75% SUBMISSION	14/12/05	GW	RDT	



CMHC	SHEET No.
GRANVILLE ISLAND MARINE STRUCTURE REPAIRS	2
SITE MAP - LIONS GATE DOCK	OF 14 REV. A
	DRAWING NO. SSD-02

# BRIDGES RESTAURANT



REPAIR No.	DESCRIPTION	REPAIR DETAIL/DWG No.
R01	INSTALL CHANNEL PATCH	9-F5
R02	REMOVE LARGE BOULDER. INSTALL STEEL ANGLE BRACKETS INTO TOP OF PILE COMPLETE WITH LAG BOLTS TO PREVENT FURTHER SHIFTING. REFERENCE DRAWING 8, FIGURE F-2, DETAIL A FOR ANGLE DETAIL.	8-F2
R03	INSTALL STEEL BANDS	9-F1
R04	FILL UNDERMINED CONCRETE ABUTMENT W/ CONCRETE	8-F1
R05	INSTALL STEEL BANDS	9-F1
R06	INSTALL STEEL BANDS	9-F1

REPAIR No.	DESCRIPTION	REPAIR DETAIL/DWG No.
R07	INSTALL STEEL BANDS	9-F1
R08	INSTALL STEEL BANDS	9-F1
R09	INSTALL STEEL BANDS	9-F1
R10	INSTALL STEEL BANDS	9-F1

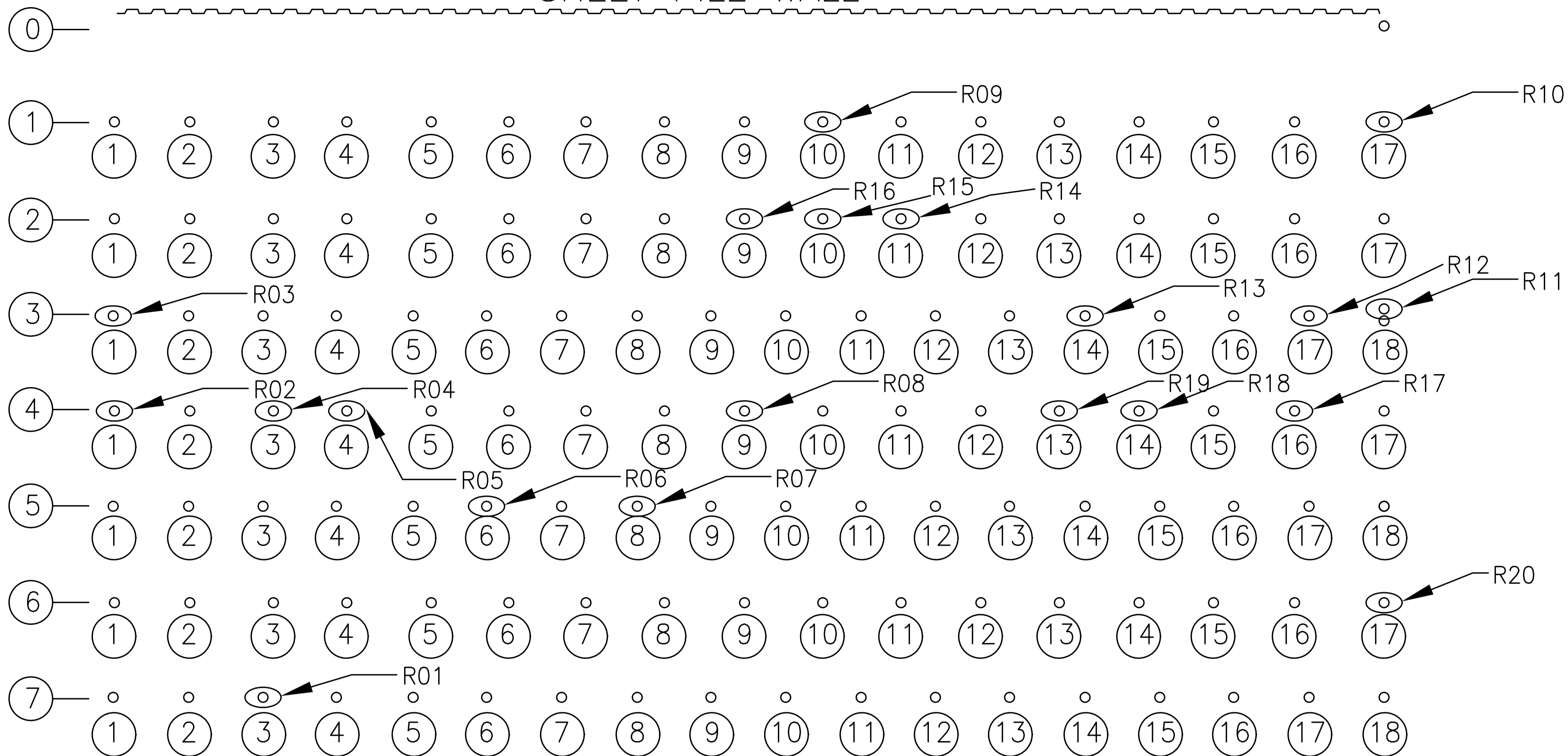
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B	95% SUBMISSION	15/01/30	GW	RDT	
A	75% SUBMISSION	14/12/05	GW	RDT	
DESIGN GW					
DRAWN GW					
CHECK RDT					
APPROVED					
DATE 14/12/05					
SCALE AS NOTED					



CMHC	SHEET No.
GRANVILLE ISLAND MARINE STRUCTURE REPAIRS	3
SITE MAP - BRIDGES DOCK	OF 14 REV. A
	DRAWING NO. SSD-03

# SHEET PILE WALL



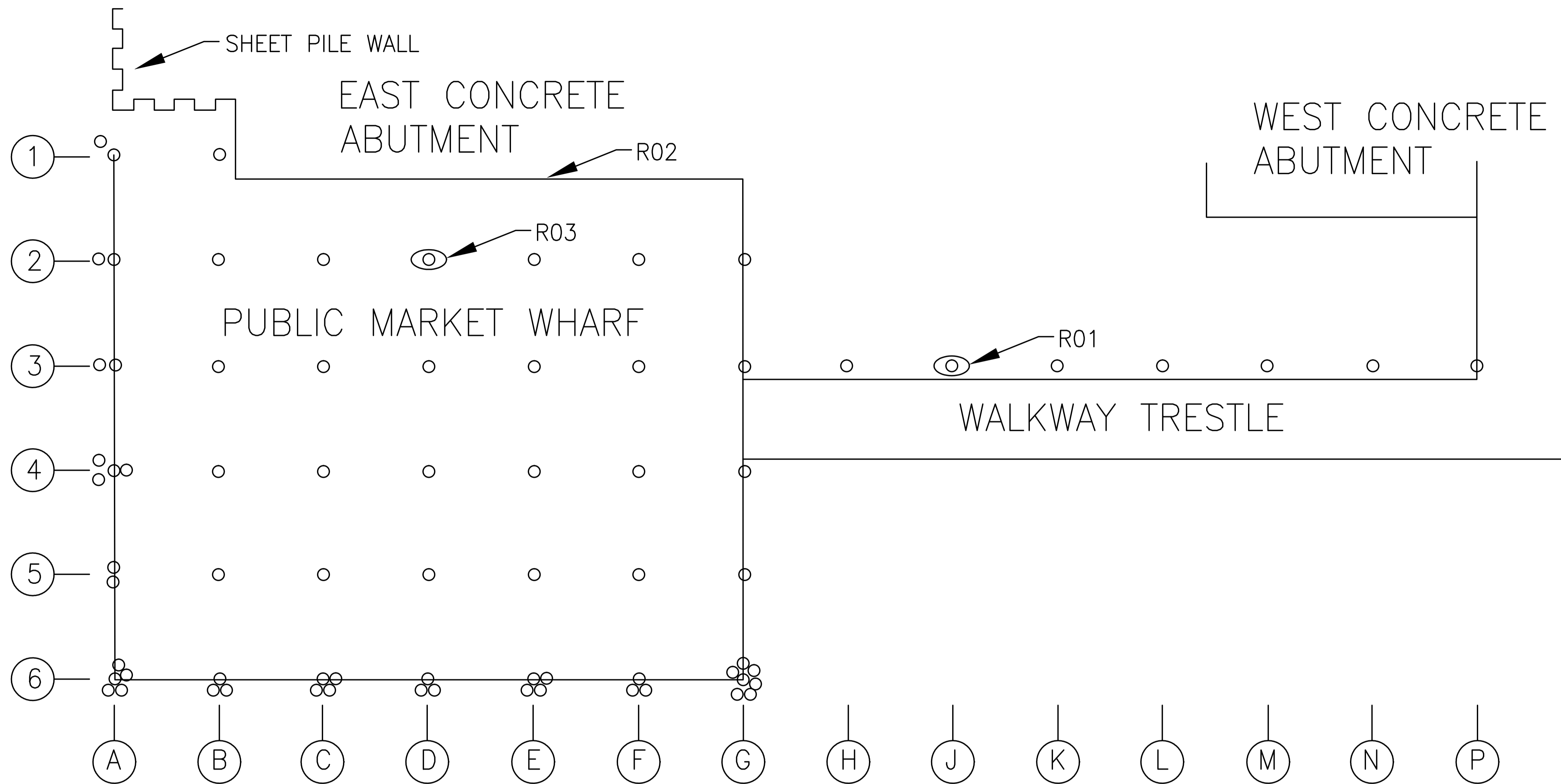
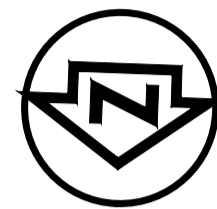
REPAIR No.	DESCRIPTION	REPAIR DETAIL/DWG No.
R01	INSTALL TREATED TIMBER SHIMS	9-F6
R02	INSTALL STEEL BANDS	9-F1
R03	INSTALL STEEL BANDS	9-F1
R04	INSTALL STEEL BANDS	9-F1
R05	ATTACH ANGLE BRACKET TO CAP	9-F4
R06	INSTALL STEEL BANDS	9-F1
R07	INSTALL STEEL BANDS	9-F1

REPAIR No.	DESCRIPTION	REPAIR DETAIL/DWG No.
R08	INSTALL STEEL BANDS	9-F1
R09	FRESH HEAD AND INSTALL DOUBLE CORBEL	8-F4
R10	REPLACE PILE	8-F6
R11	REPLACE PILE	8-F6
R12	REPLACE PILE	8-F6
R13	REPLACE PILE	8-F6
R14	INSTALL STEEL BANDS	9-F1
R15	REPLACE PILE	8-F6

REPAIR No.	DESCRIPTION	REPAIR DETAIL/DWG No.
R16	INSTALL STEEL BANDS	9-F1
R17	FRESH HEAD AND INSTALL DOUBLE CORBEL	8-F4
R18	INSTALL STEEL BANDS	9-F1
R19	INSTALL STEEL BANDS	9-F1
R20	INSTALL STEEL BANDS	9-F1

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REPAIR No.	DESCRIPTION	REPAIR DETAIL/DWG No.
R01	INSTALL STEEL BANDS	9-F1
R02	FILL UNDERMINING OF FOOTING WITH CONCRETE	8-F1
R03	FRESH HEAD AND INSTALL SUB-CAP	8-F5

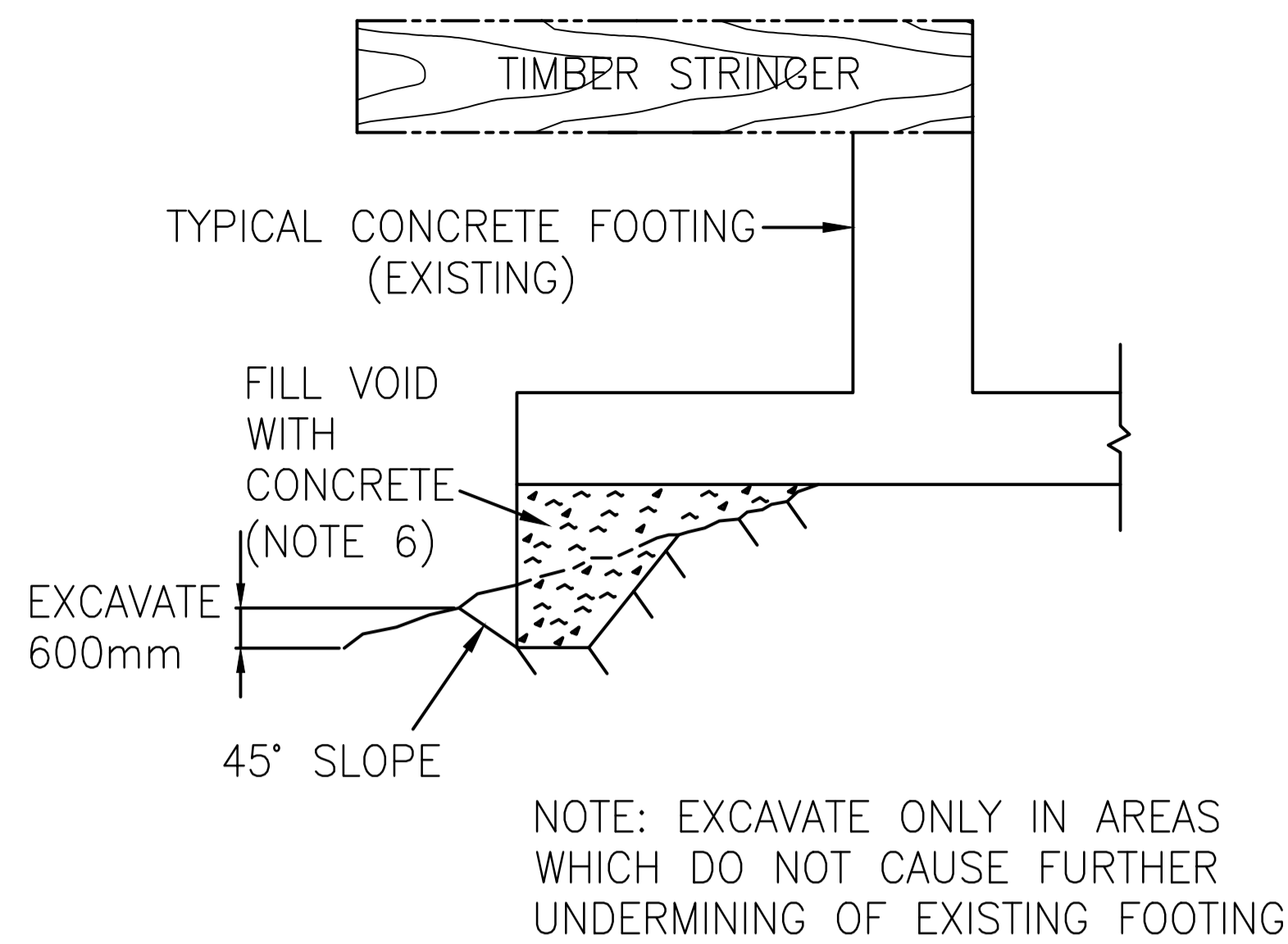
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DESIGN	GW																																									
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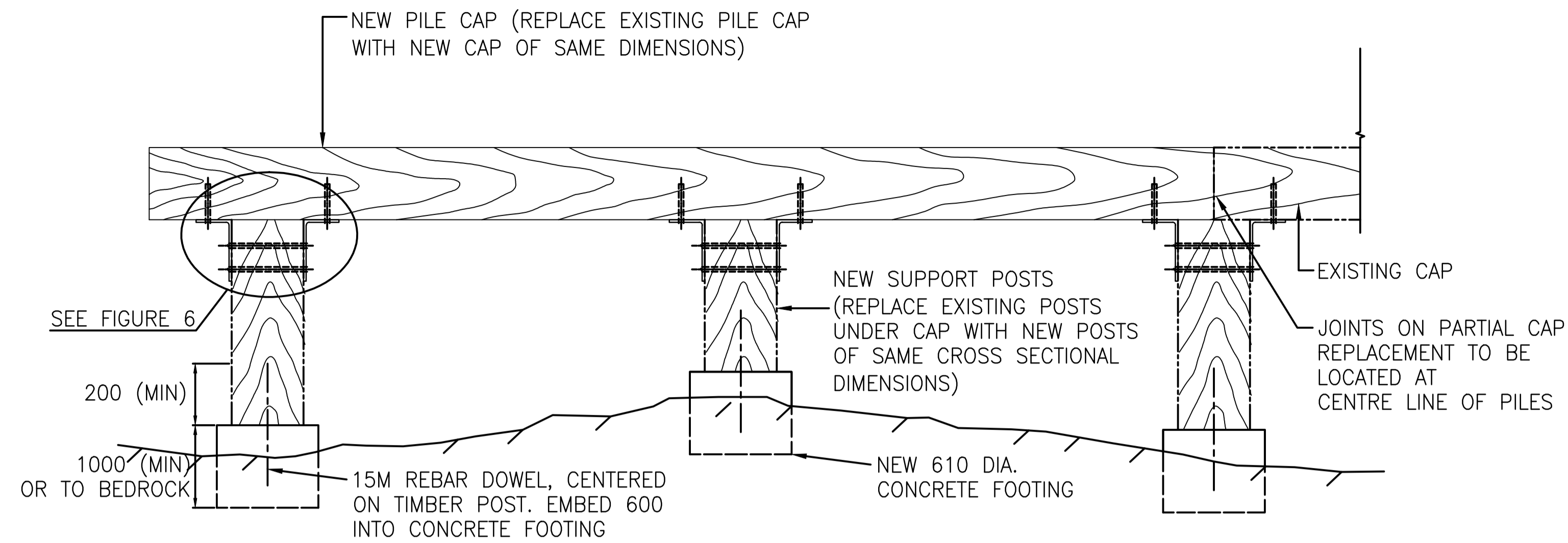






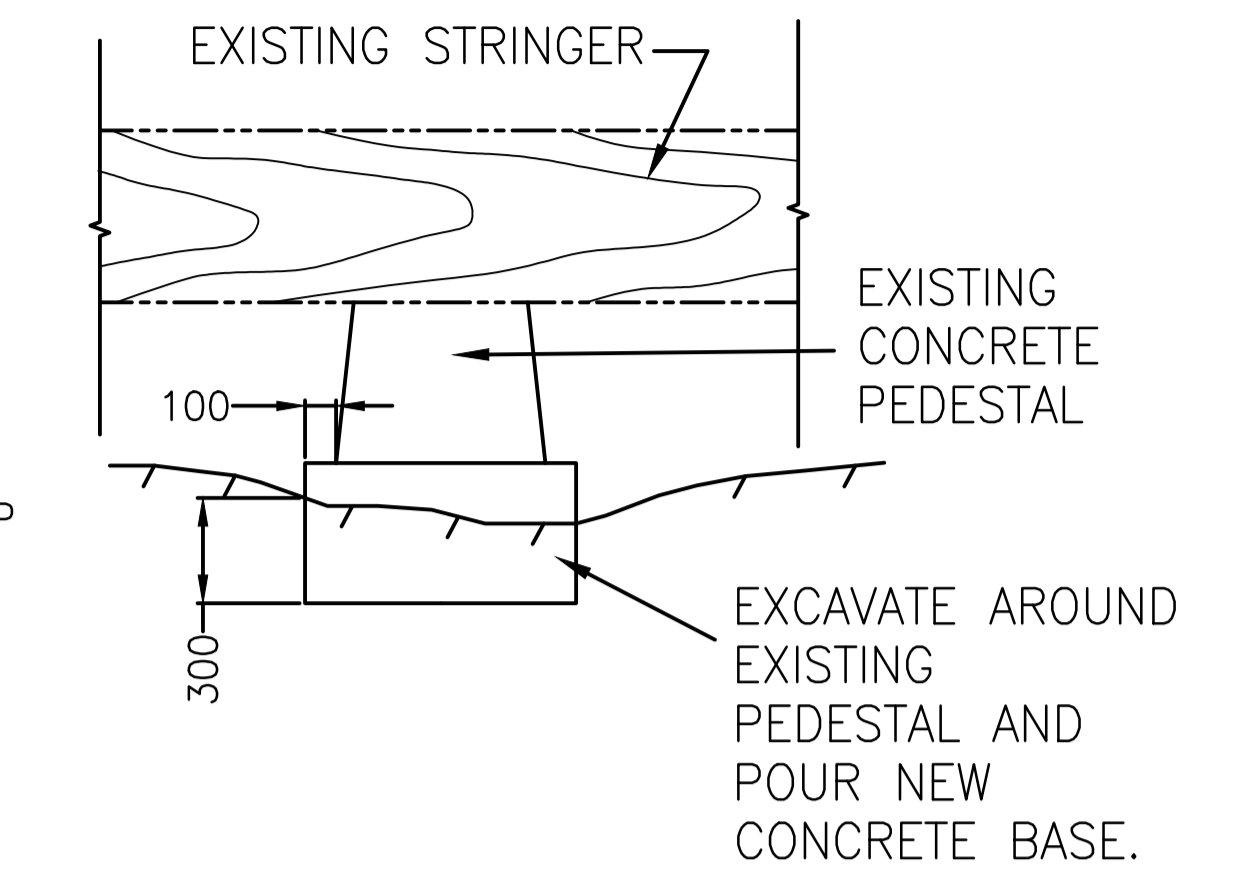
FOUNDATION VOID FILL DETAIL

FIGURE 1



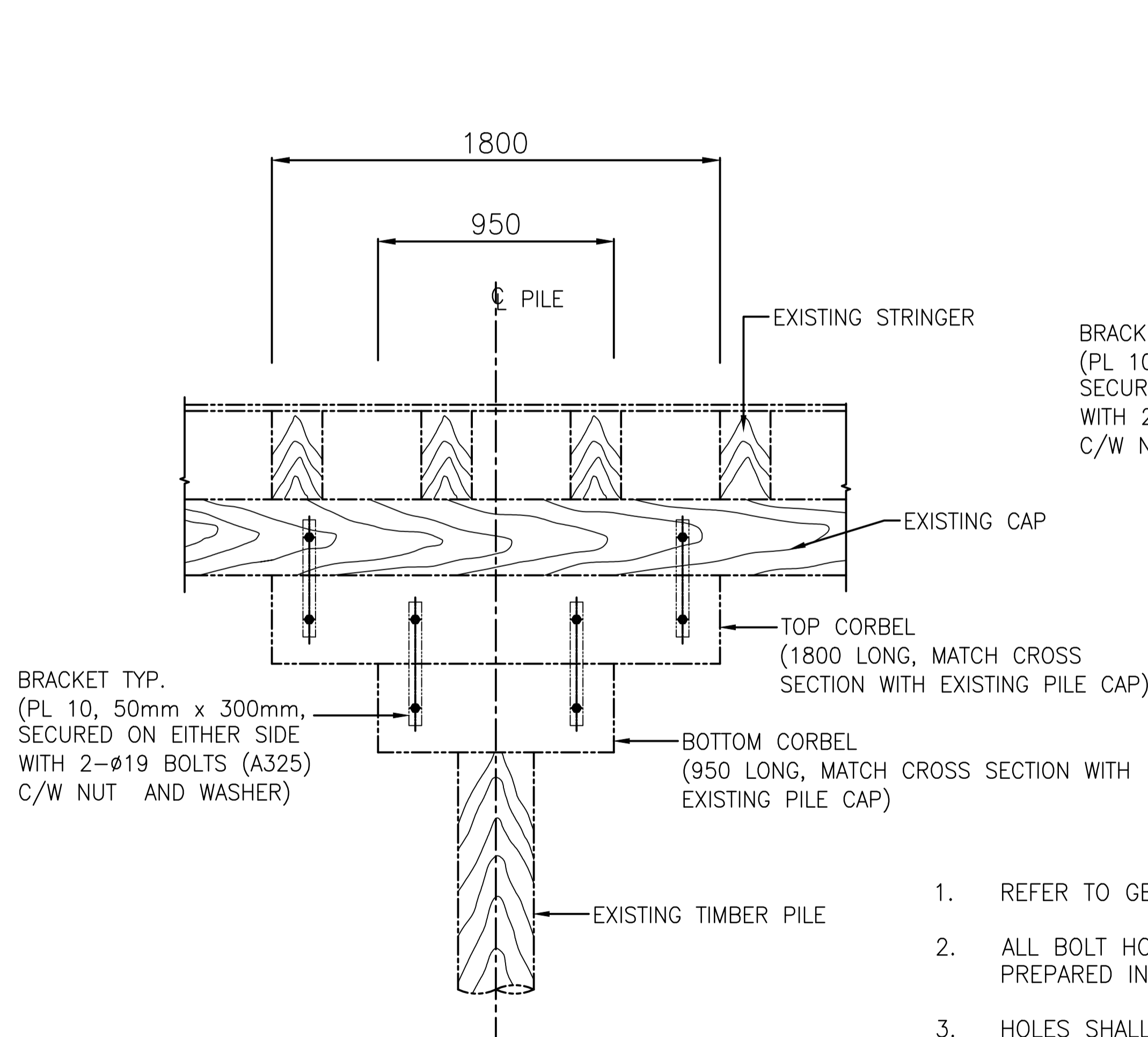
TYPICAL PILE CAP REPLACEMENT CONNECTION DETAILS

FIGURE 2



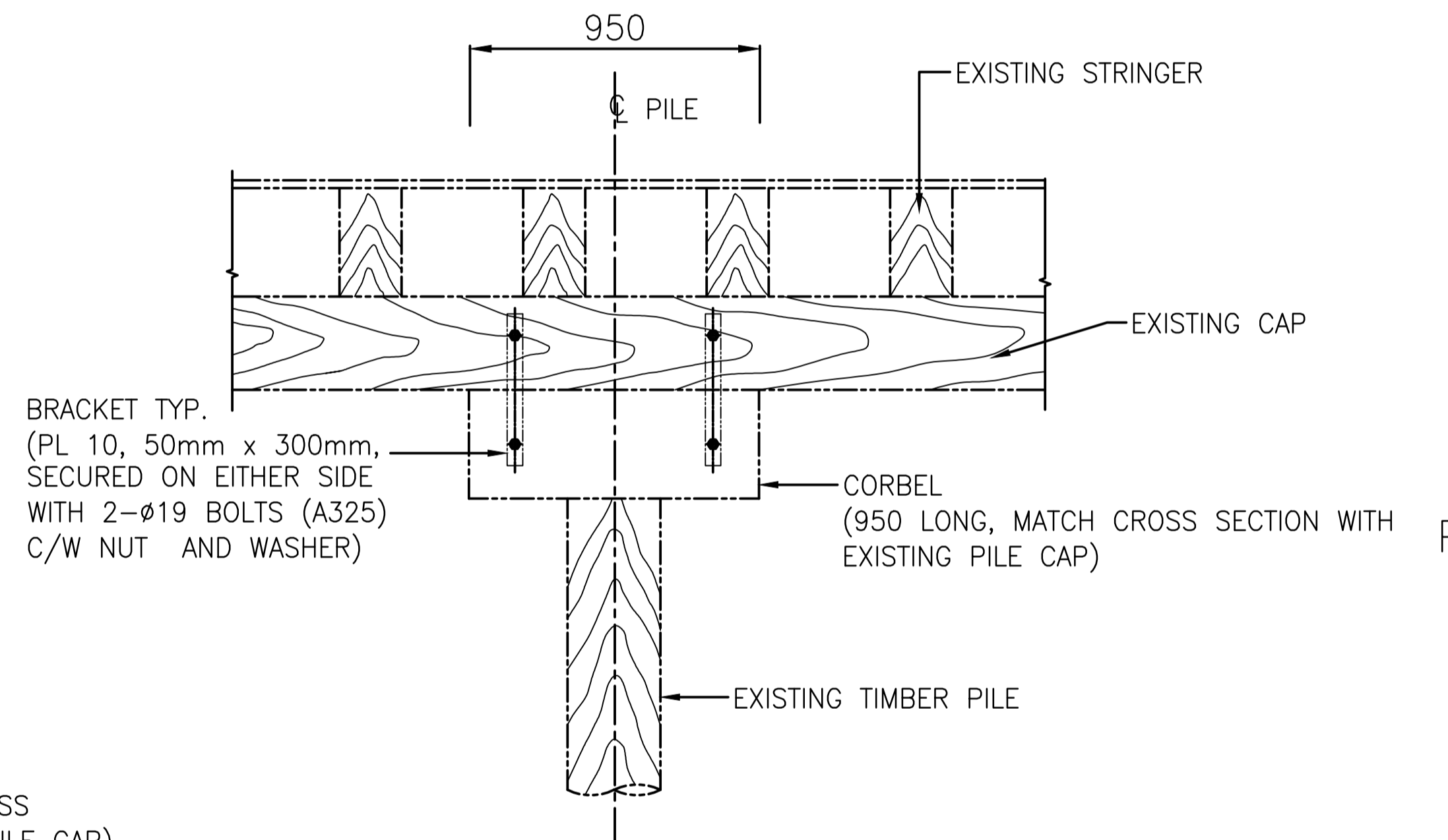
TYPICAL PEDESTAL DETAILS

FIGURE 3



TYPICAL DOUBLE CORBEL DETAILS

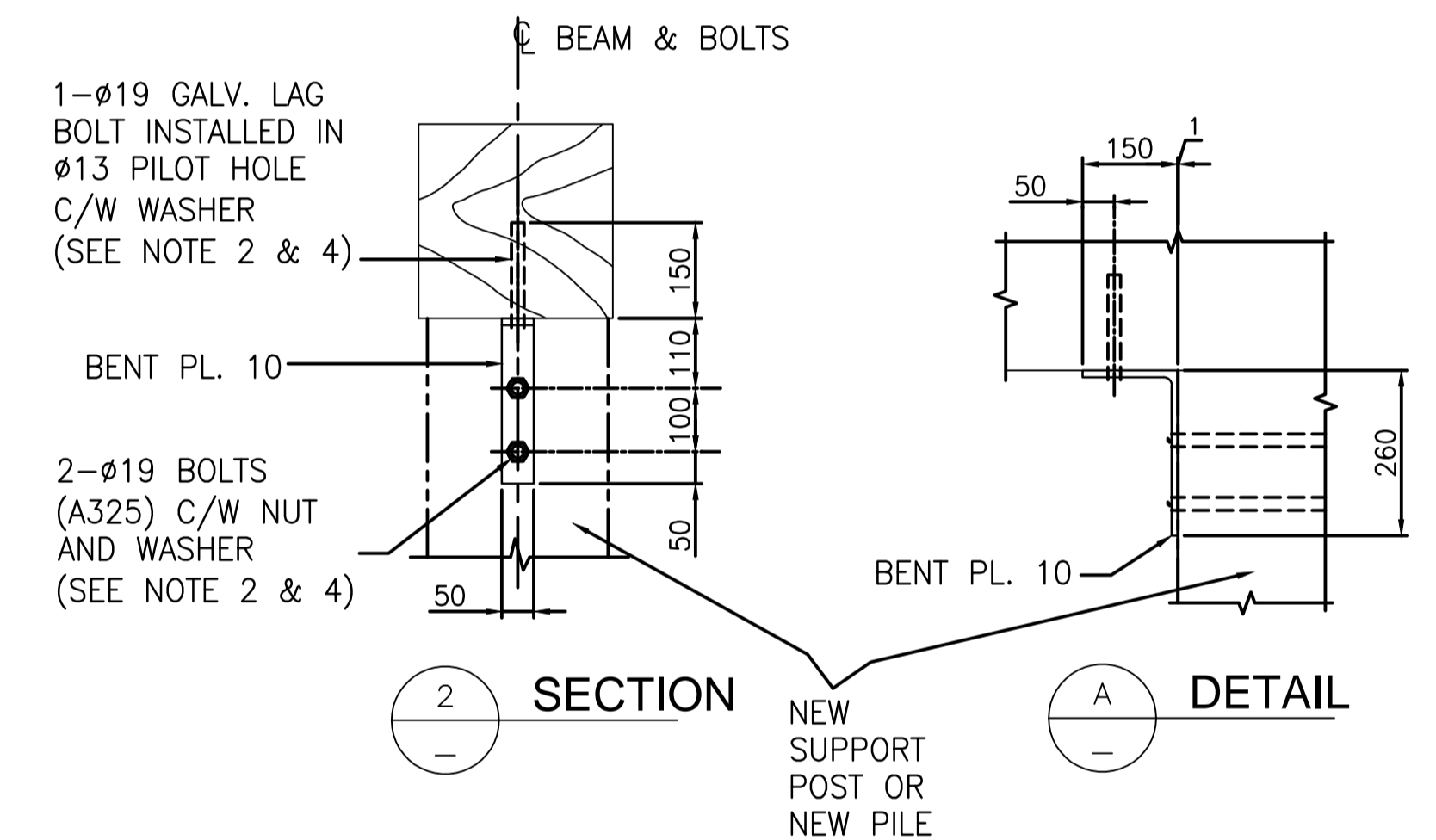
FIGURE 4



TYPICAL SUBCAP DETAILS

FIGURE 5

- REFER TO GENERAL NOTES ON COVER PAGE
- ALL BOLT HOLES AND CUTS ON TREATED TIMBER SHALL BE PREPARED IN ACCORDANCE WITH M<sub>0</sub>T SSHC, SECTION 213.
- HOLES SHALL BE BORED THE SAME DIAMETER AS THE BOLTS, UNLESS NOTED OTHERWISE.
- TEMPORARY SHORING SHALL BE CONSIDERED TO SUPPORT BENT WHILE PILE SECTION HAS BEEN REMOVED. DESIGN AND ERECTION OF TEMPORARY WORKS IS THE RESPONSIBILITY OF CONTRACTOR.
- CLOSE PUBLIC AREAS ABOVE CONSTRUCTION LOCATIONS.
- CONCRETE TO BE A FLOWABLE LEAN CONCRETE WITH 28 DAY COMPRESSIVE STRENGTH OF 2MPa. CONTRACTOR SUBMIT MIX DESIGN TO MUNICIPAL REP. PRIOR TO COMMENCING WORK.



TYPICAL PILE / PILECAP CONNECTION DETAIL

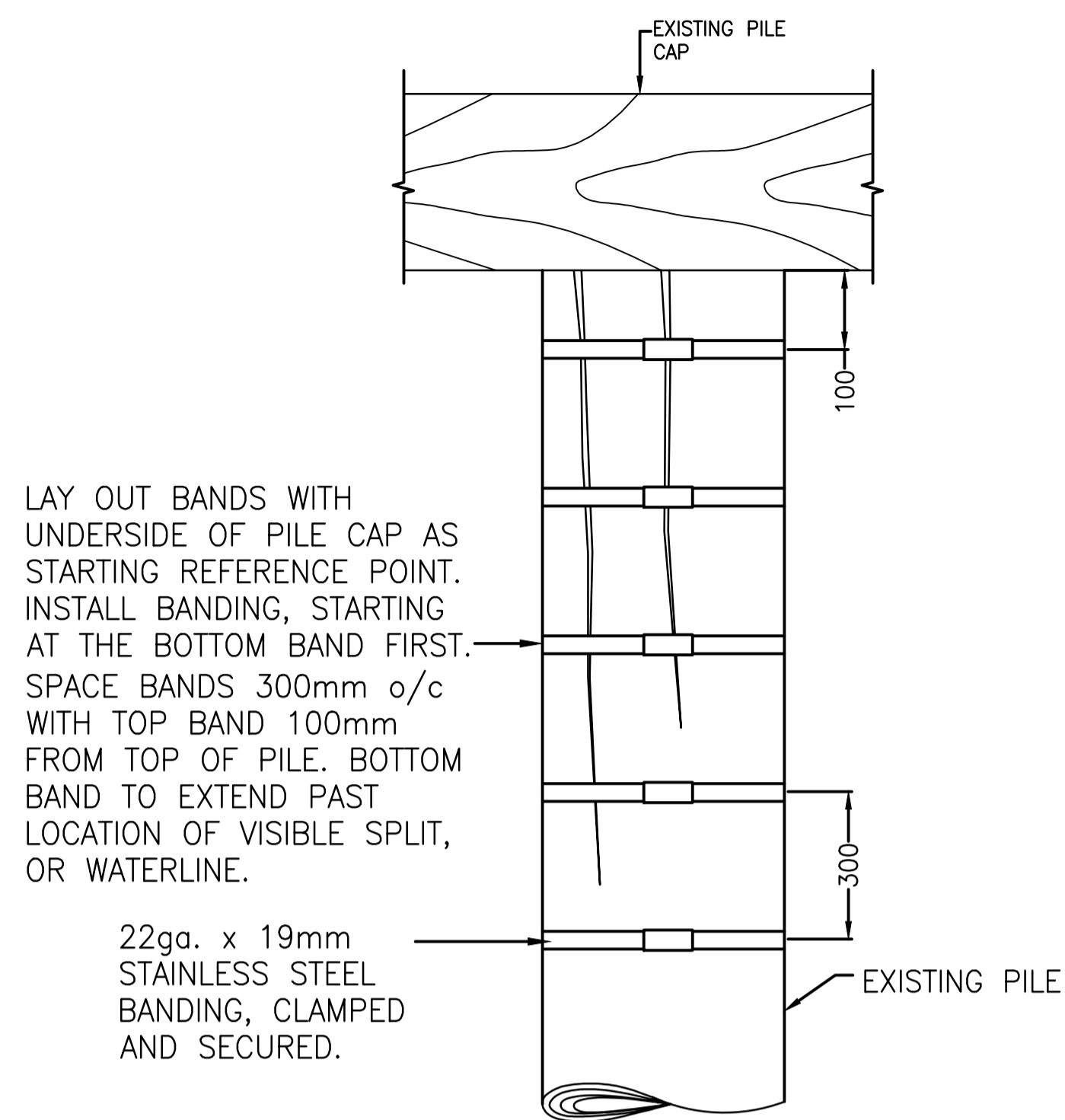
FIGURE 6

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No.	REVISION DESCRIPTION	DATE (Y/M/D)	BY	CHECK	PROJECT No.
C	ISSUED FOR TENDER	15/02/20	GW	RDT	BB3502BBA
B	95% SUBMISSION	15/01/30	GW	RDT	
A	75% SUBMISSION	14/12/05	GW	RDT	

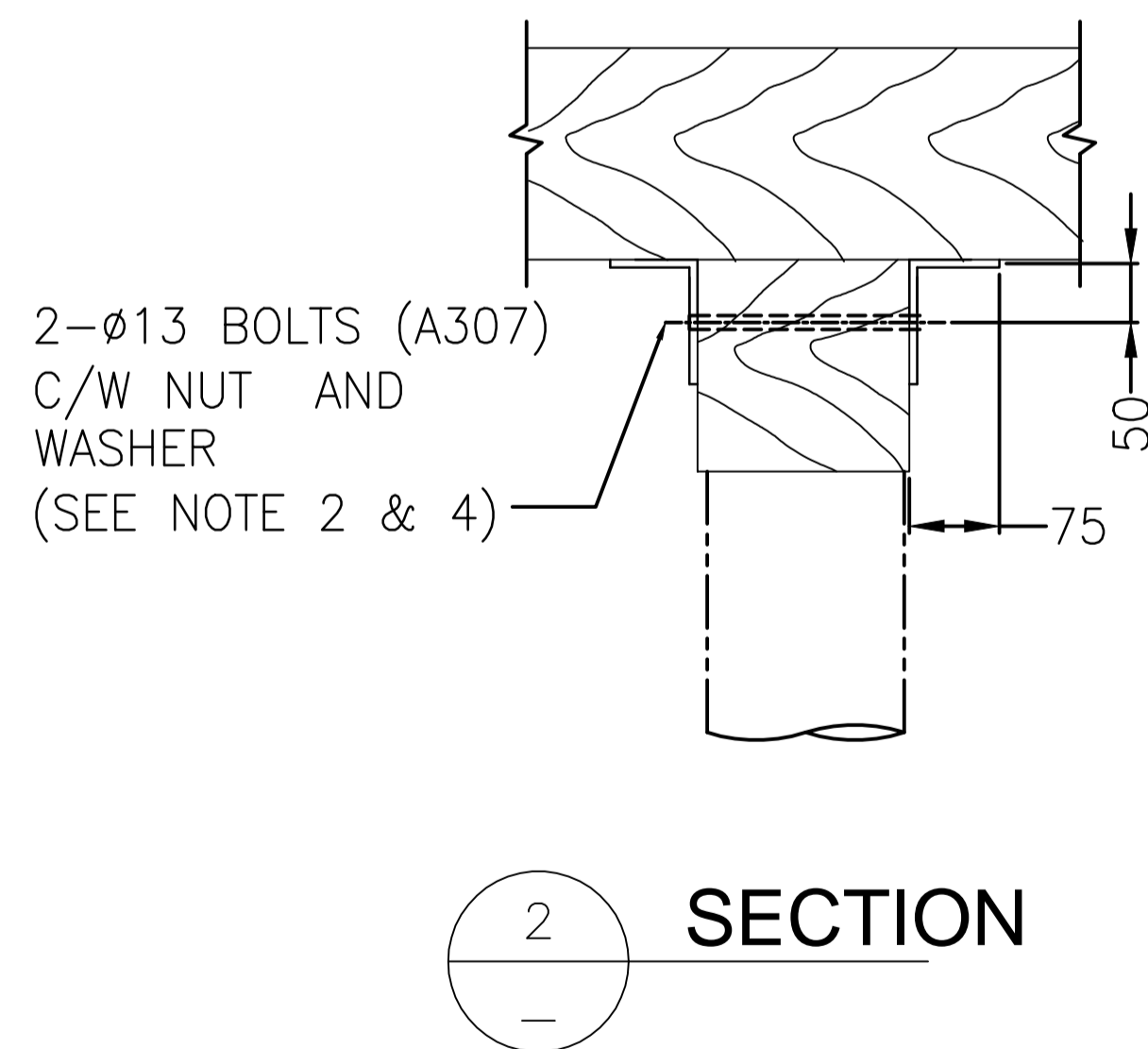
**PARSONS**  
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CMHC	SHEET No.
GRANVILLE ISLAND MARINE STRUCTURE REPAIRS	8
REPAIR DETAILS	OF 14 REV. A
	DRAWING No. SSD-08

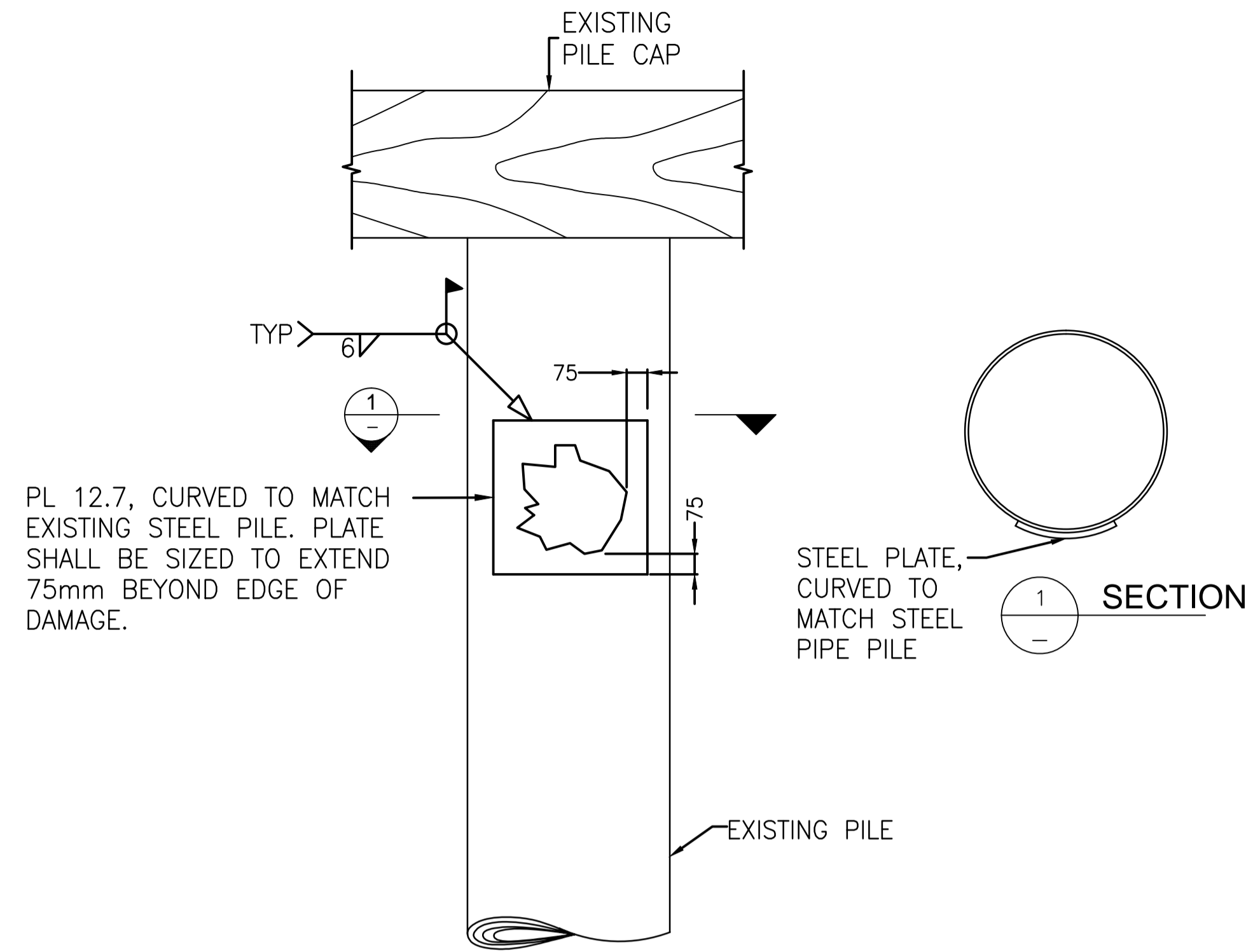


TYPICAL PILE BANDING DETAILS

FIGURE 1

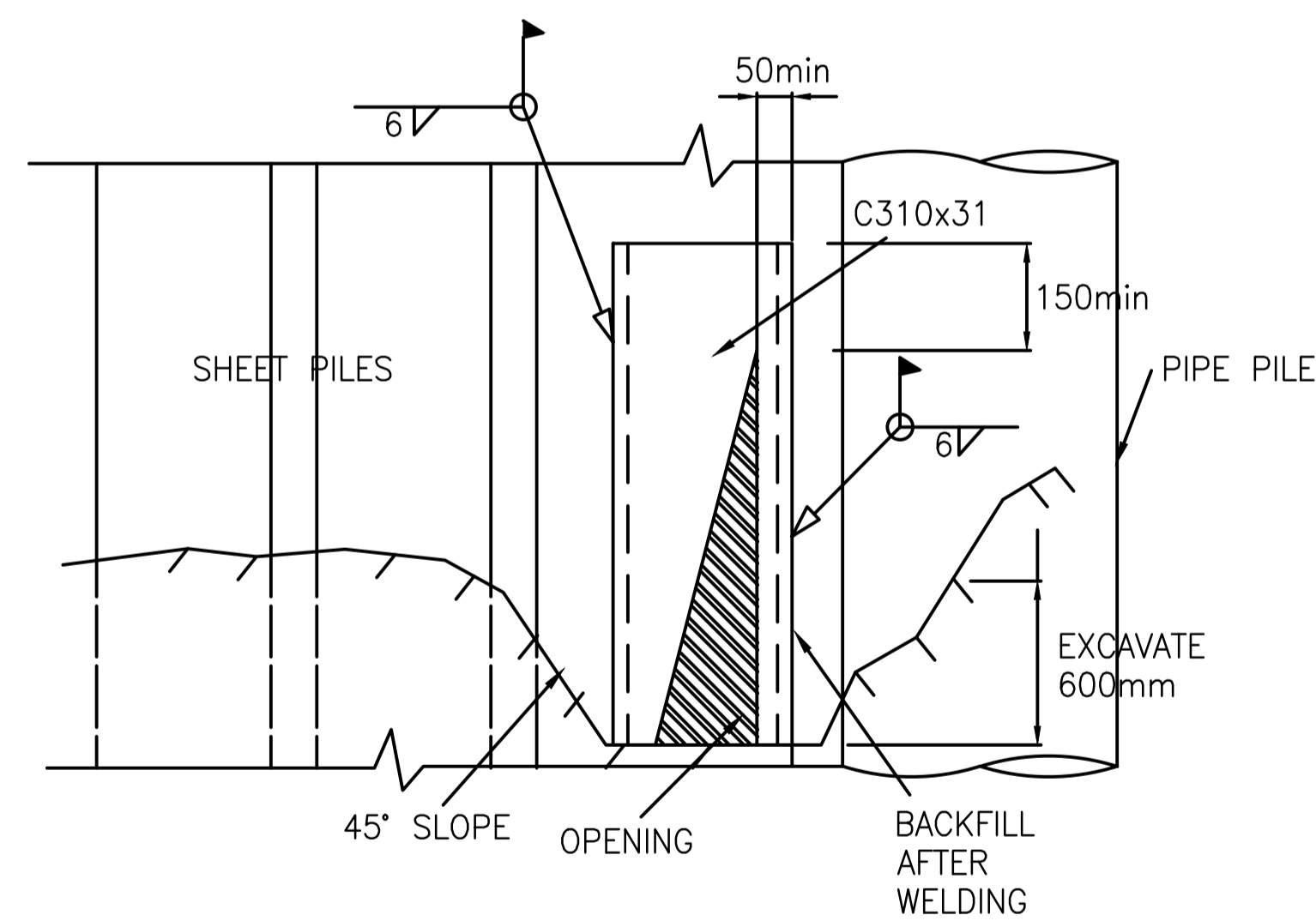


SECTION 2



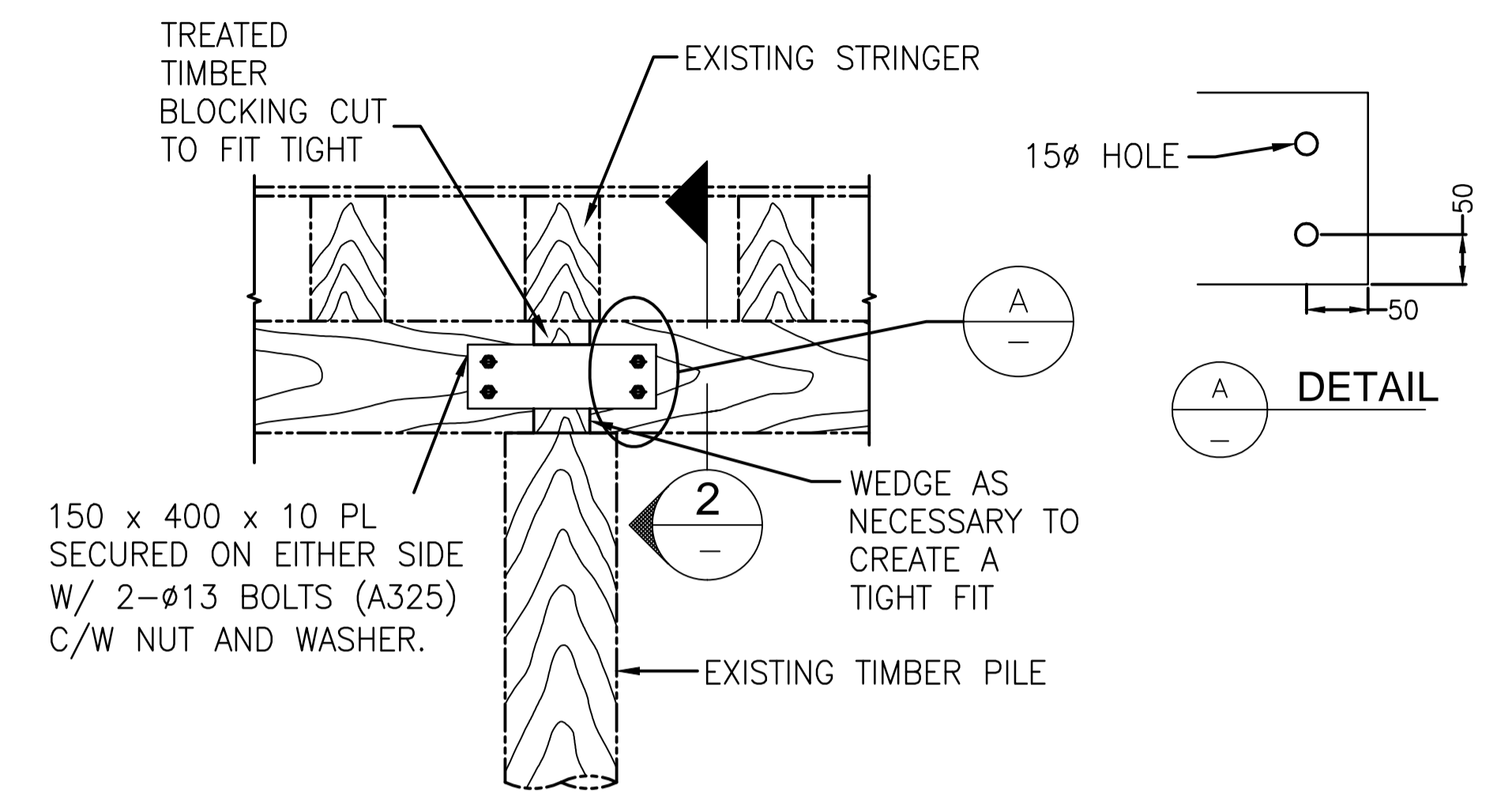
TYPICAL STEEL PILE PLATE PATCHING DETAILS

FIGURE 3



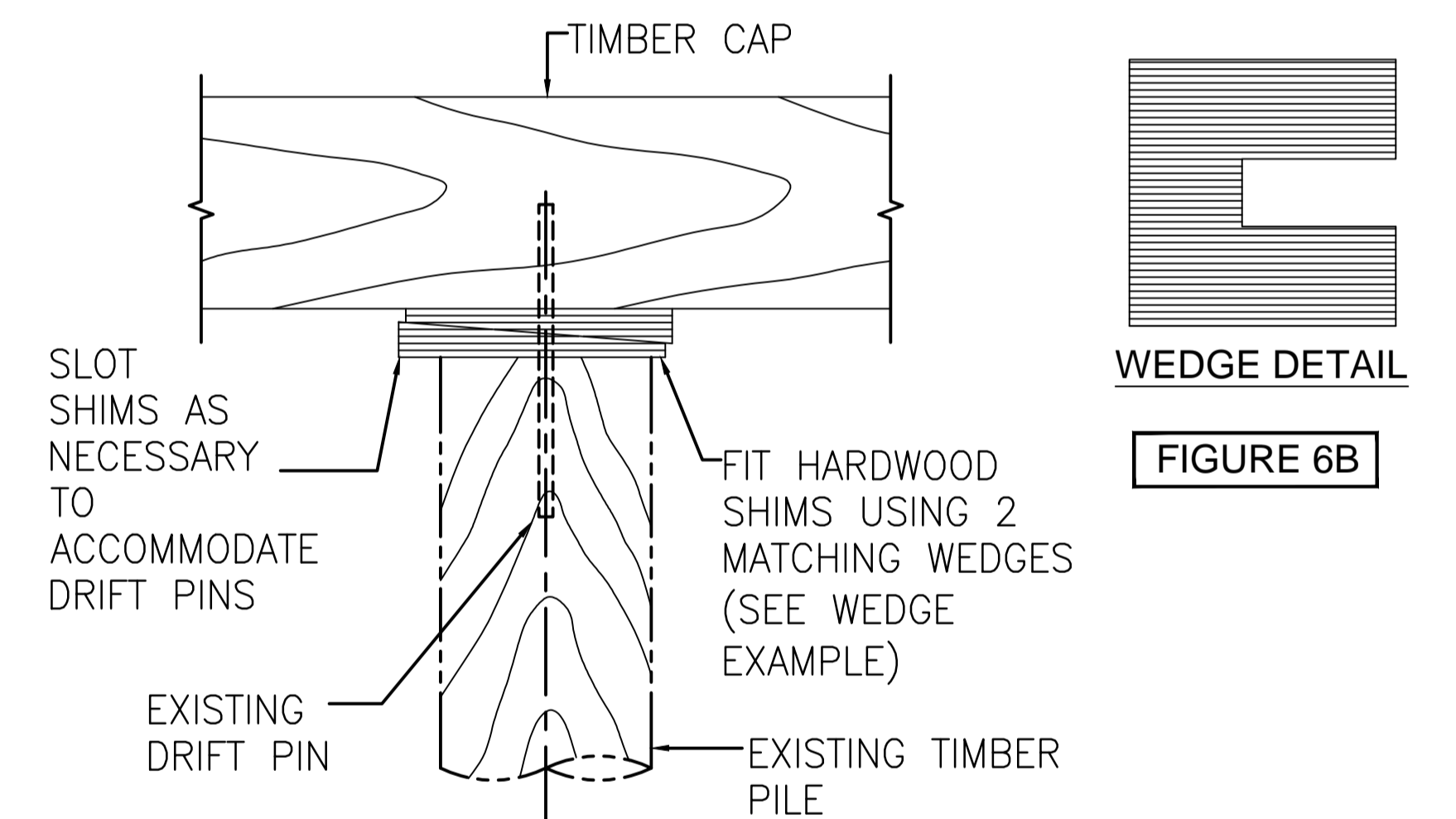
BRIDGES DOCK CONNECTION DETAIL

FIGURE 5



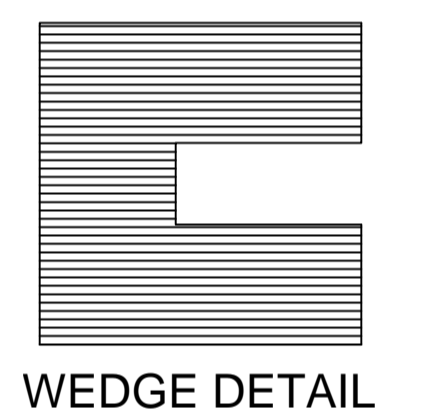
ANGLE BRACKET DETAIL

FIGURE 4



PILE SHIMMING DETAILS

FIGURE 6A



WEDGE DETAIL

FIGURE 6B

- REFER TO GENERAL NOTES ON COVER PAGE
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- CLOSE PUBLIC AREAS ABOVE CONSTRUCTION LOCATIONS.

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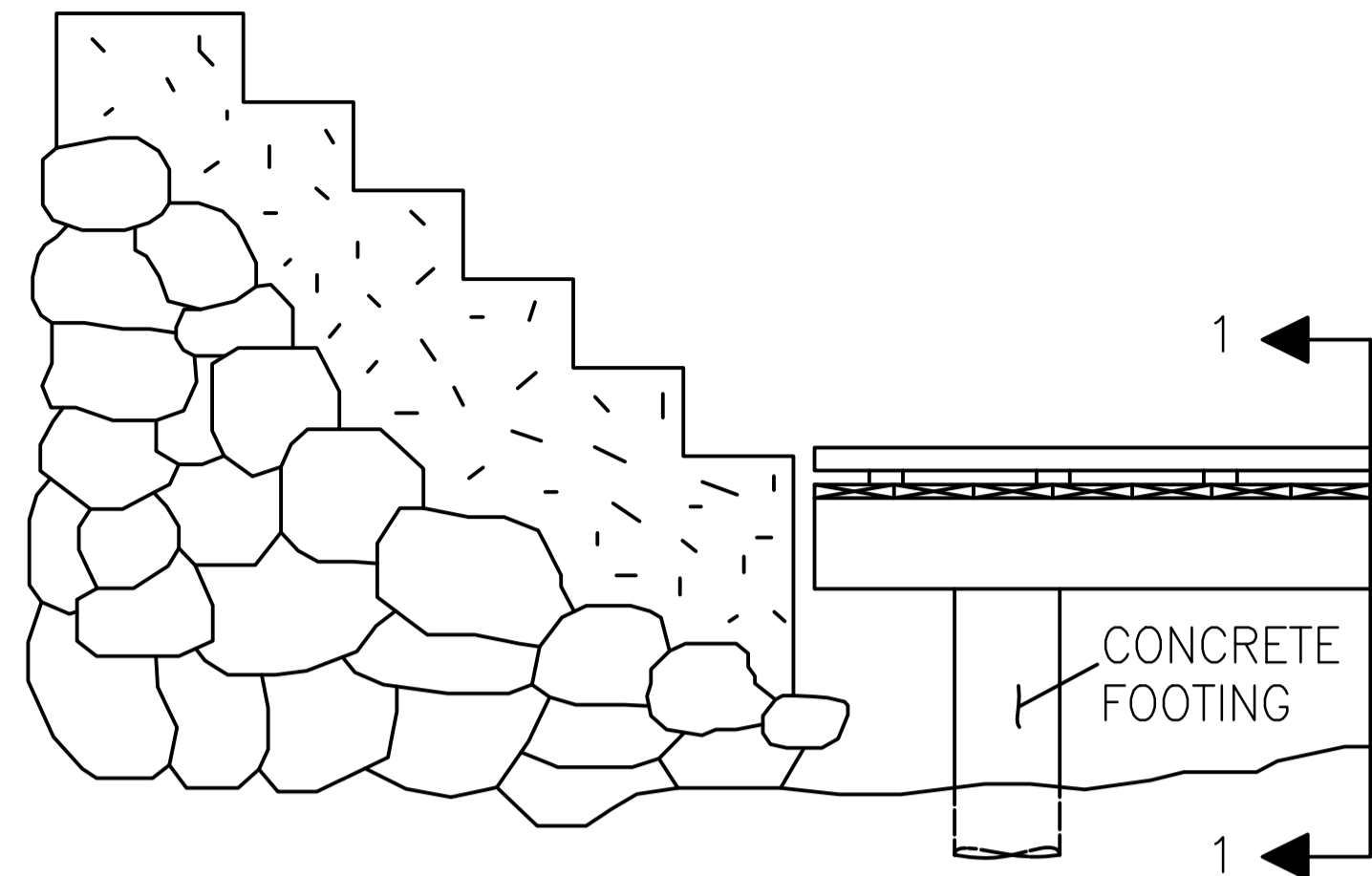
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C	ISSUED FOR TENDER	15/02/20	GW	RDT	BB3502BBA
B	95% SUBMISSION	15/01/30	GW	RDT	
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DESIGN GW  
DRAWN GW  
CHECK RDT  
APPROVED

DATE 14/12/05  
SCALE AS NOTED

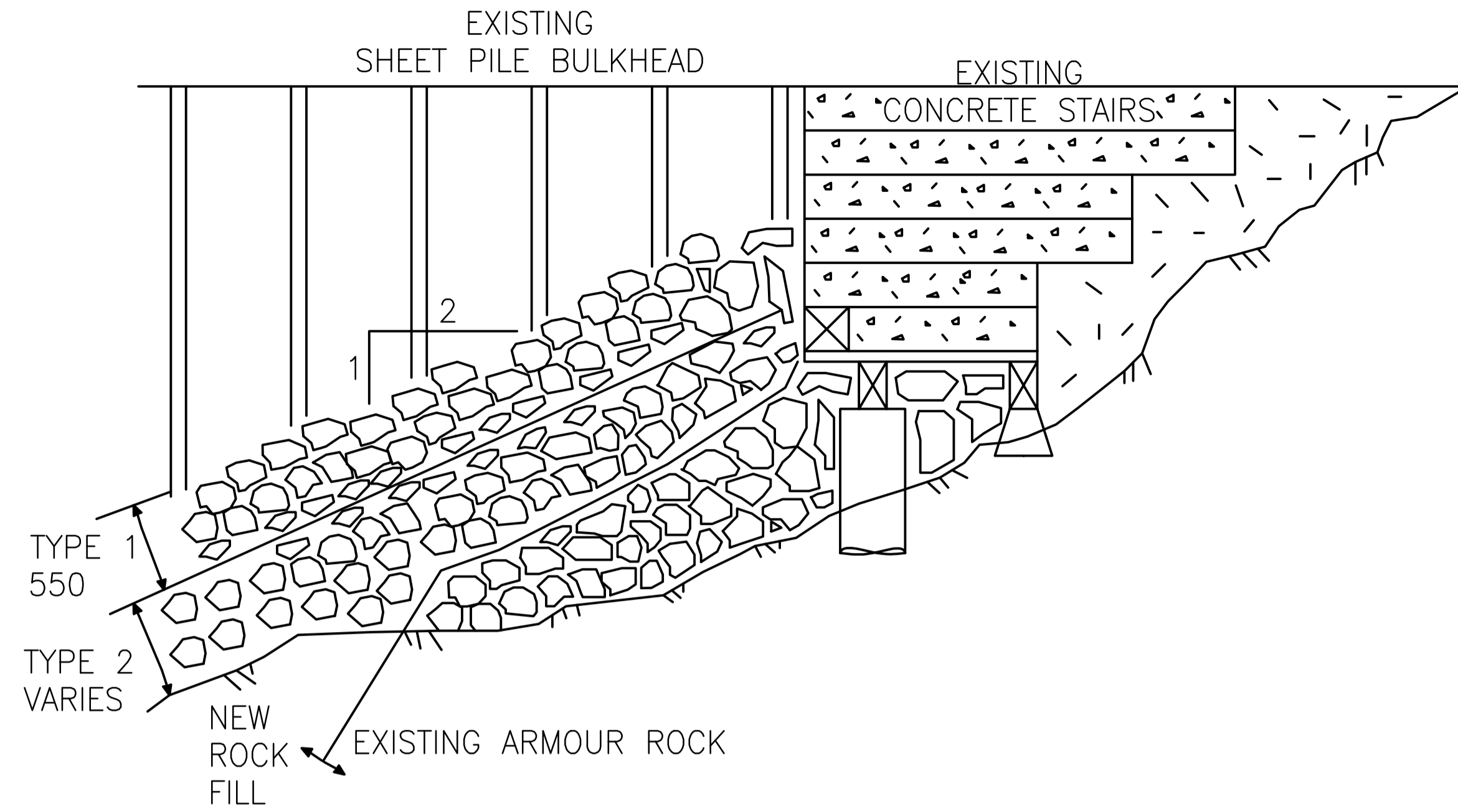
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CMHC	SHEET No.
GRANVILLE ISLAND MARINE STRUCTURE REPAIRS	9
REPAIR DETAILS	OF 14 REV. A
	DRAWING NO. SSD-09



**PUBLIC MARKET BOARDWALK ROCK ARMOURING ELEVATION**

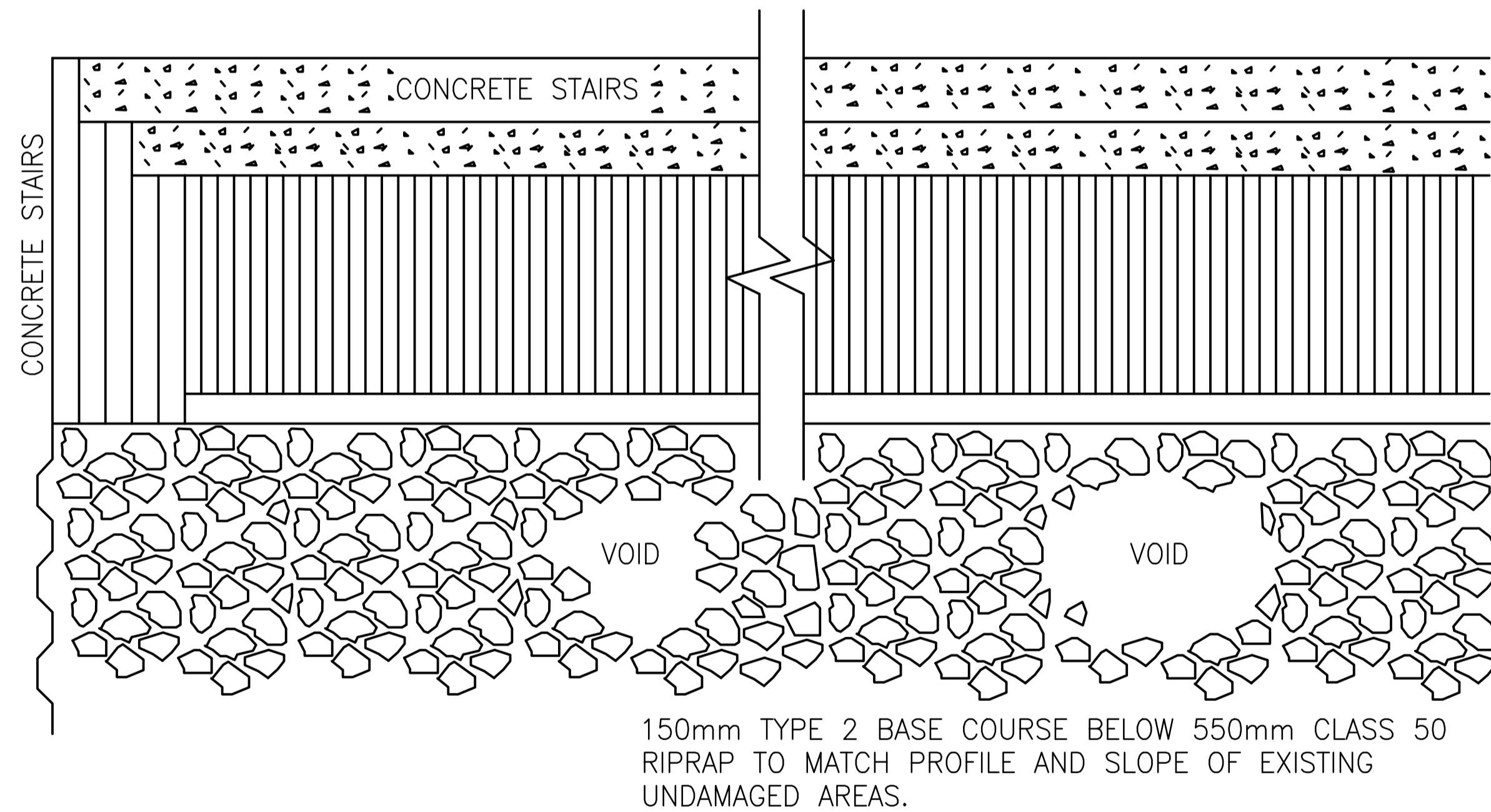
**FIGURE 1A**



**PUBLIC MARKET BOARDWALK ROCK ARMOURING**

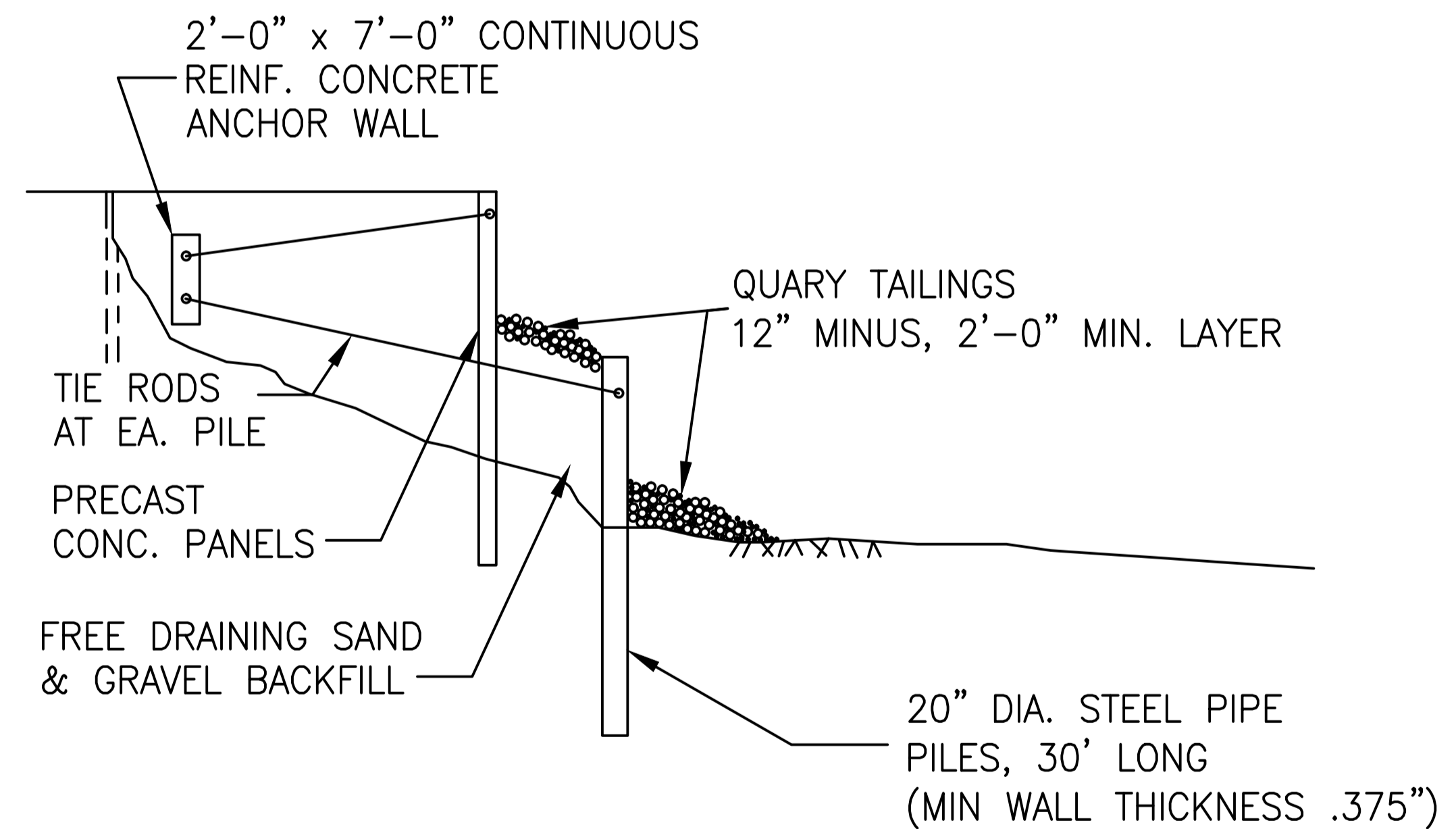
**FIGURE 1B**

1. TYPE 2 FOR BASE, TYPE 1 FOR TOPPING.
  2. TYPE 1: CLASS 50 RIPRAP\*  
TYPE 2: BRIDGE END FILL\*
- \*SEE GENERAL NOTES



**PUBLIC MARKET BOARDWALK ROCK ARMOURING PLAN**

**FIGURE 2**



**TYPICAL SEAWALL SECTION (FOR REFERENCE)**

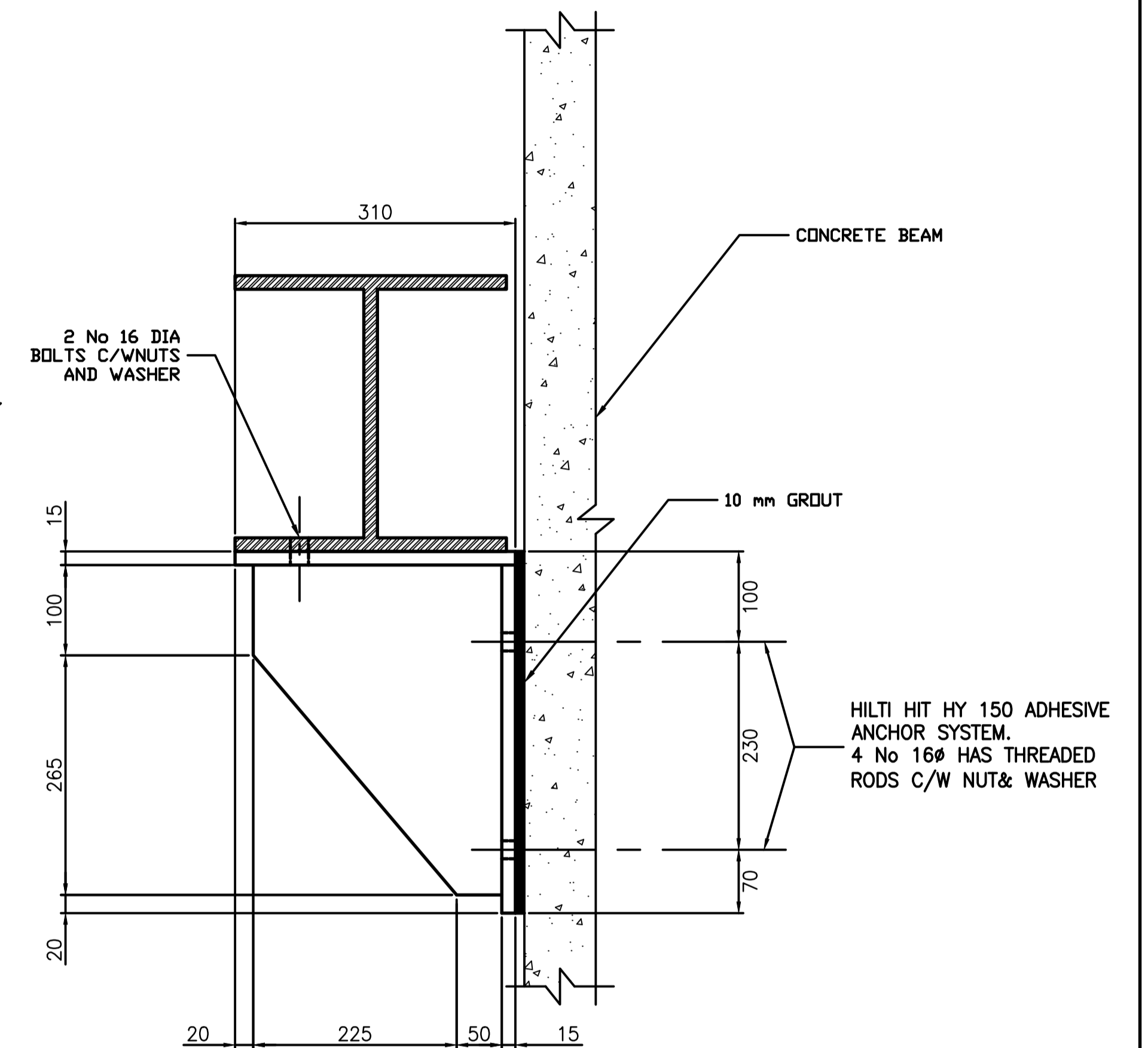
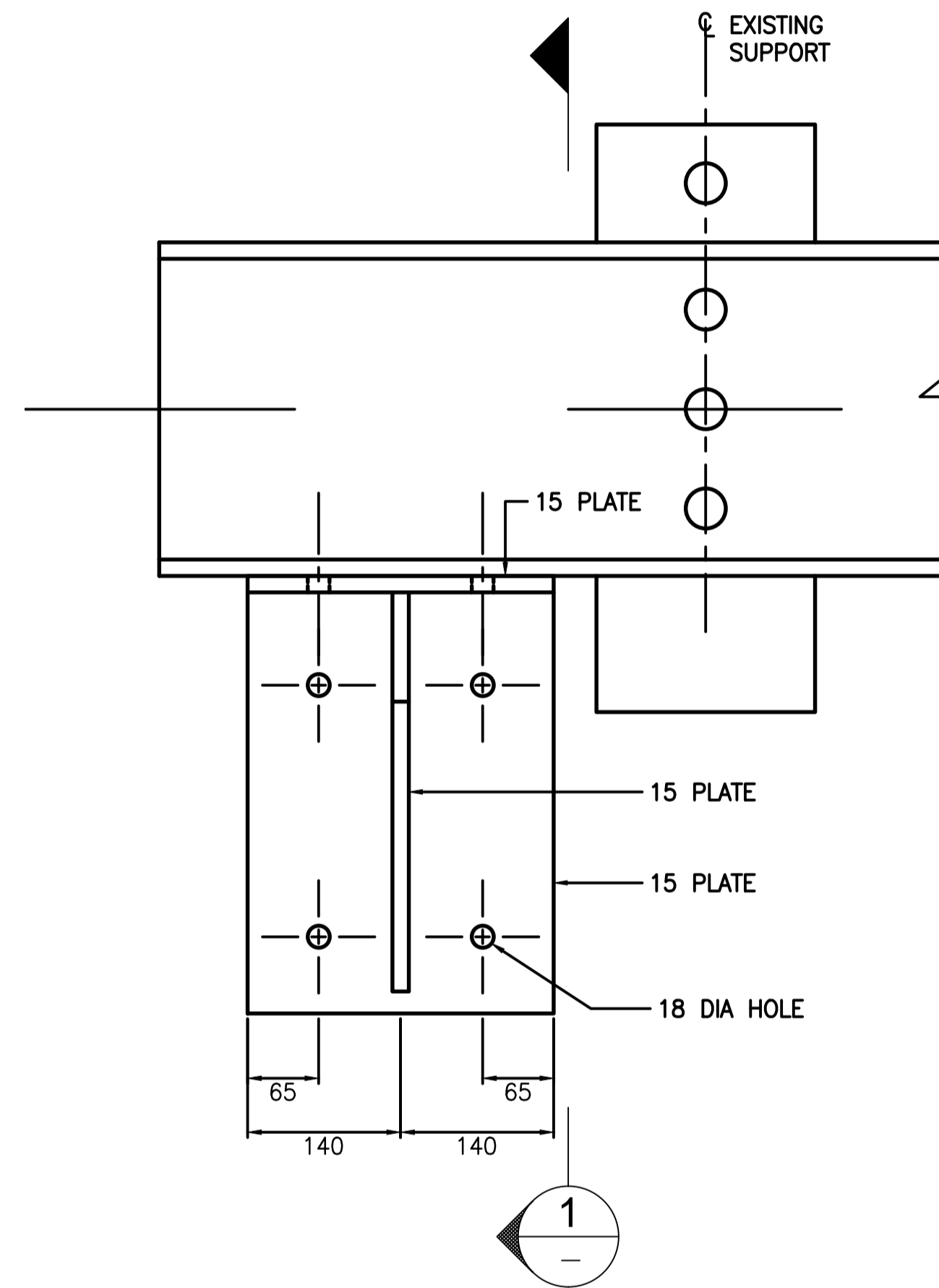
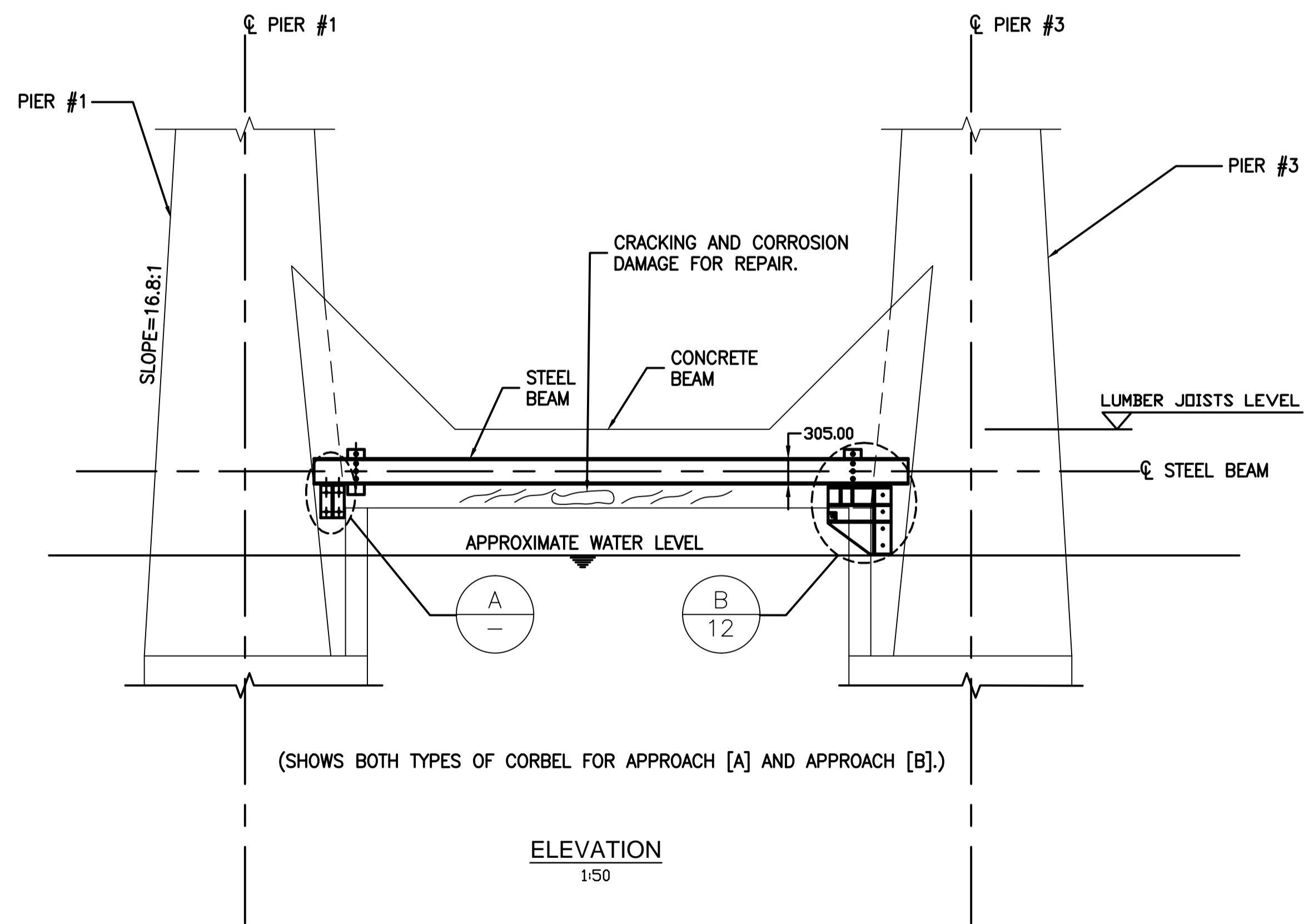
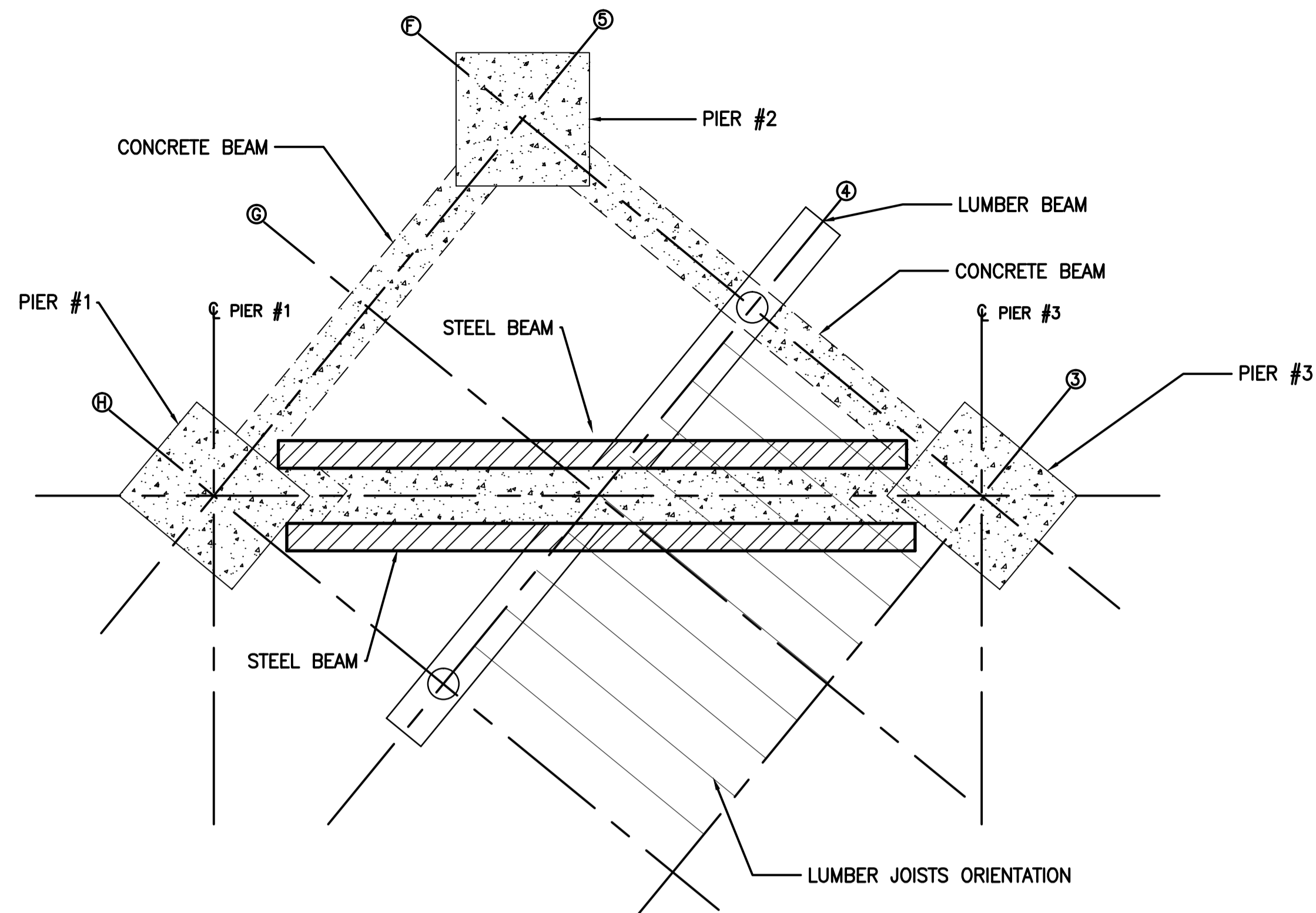
**FIGURE 3**

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No.	REVISION DESCRIPTION	DATE (Y/M/D)	BY	CHECK	PROJECT No.
C	ISSUED FOR TENDER	15/02/20	GW	RD	BB3502BBA
B	95% SUBMISSION	15/01/30	GW	RD	
A	75% SUBMISSION	14/12/05	GW	RD	
DESIGN	GW				
DRAWN	GW				
CHECK	RD				
APPROVED					
DATE	14/12/05				
SCALE	AS NOTED				

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CMHC		SHEET No.
GRANVILLE ISLAND MARINE STRUCTURE REPAIRS		10
OF 14	REV. A	
DRAWING NO.		SSD-10

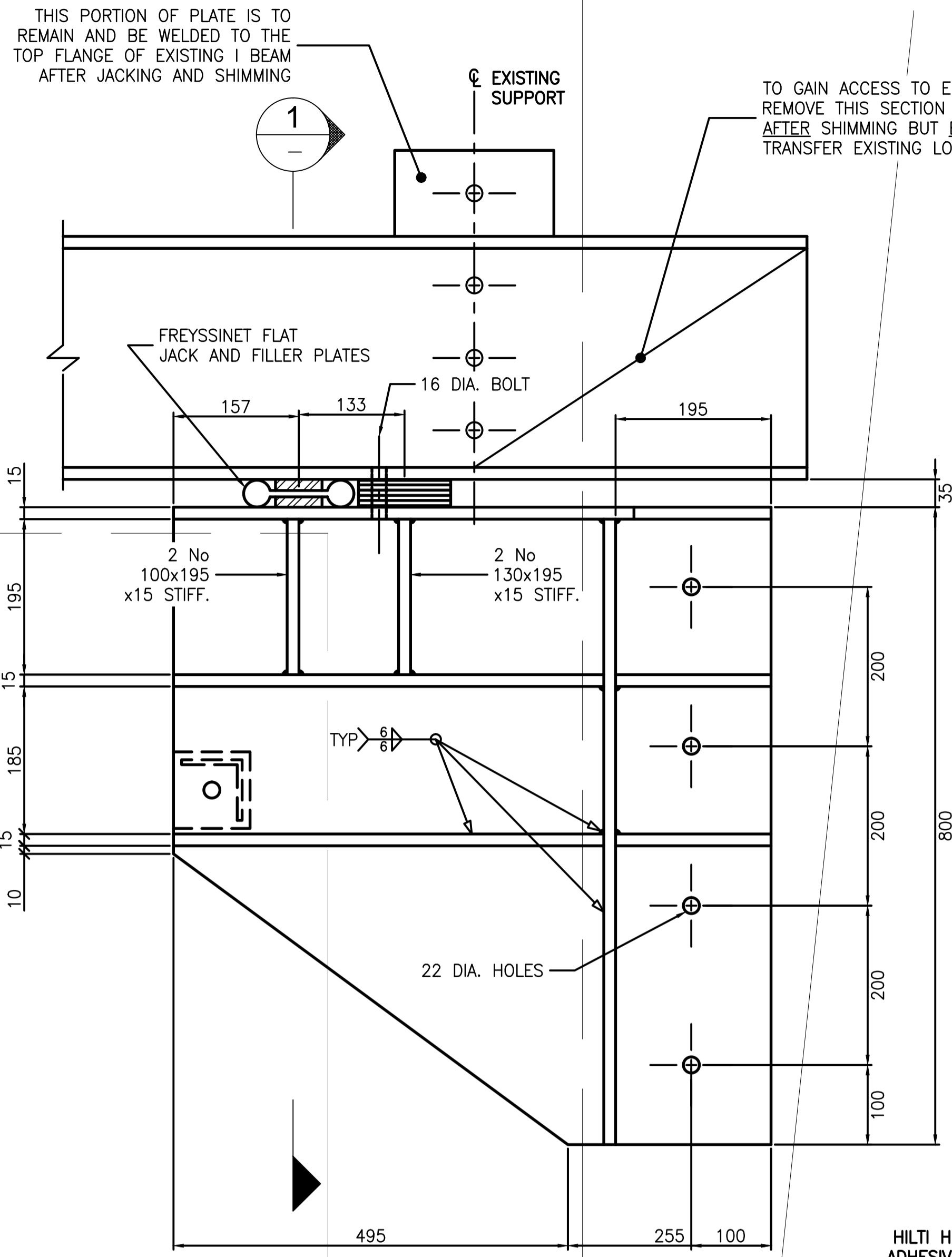


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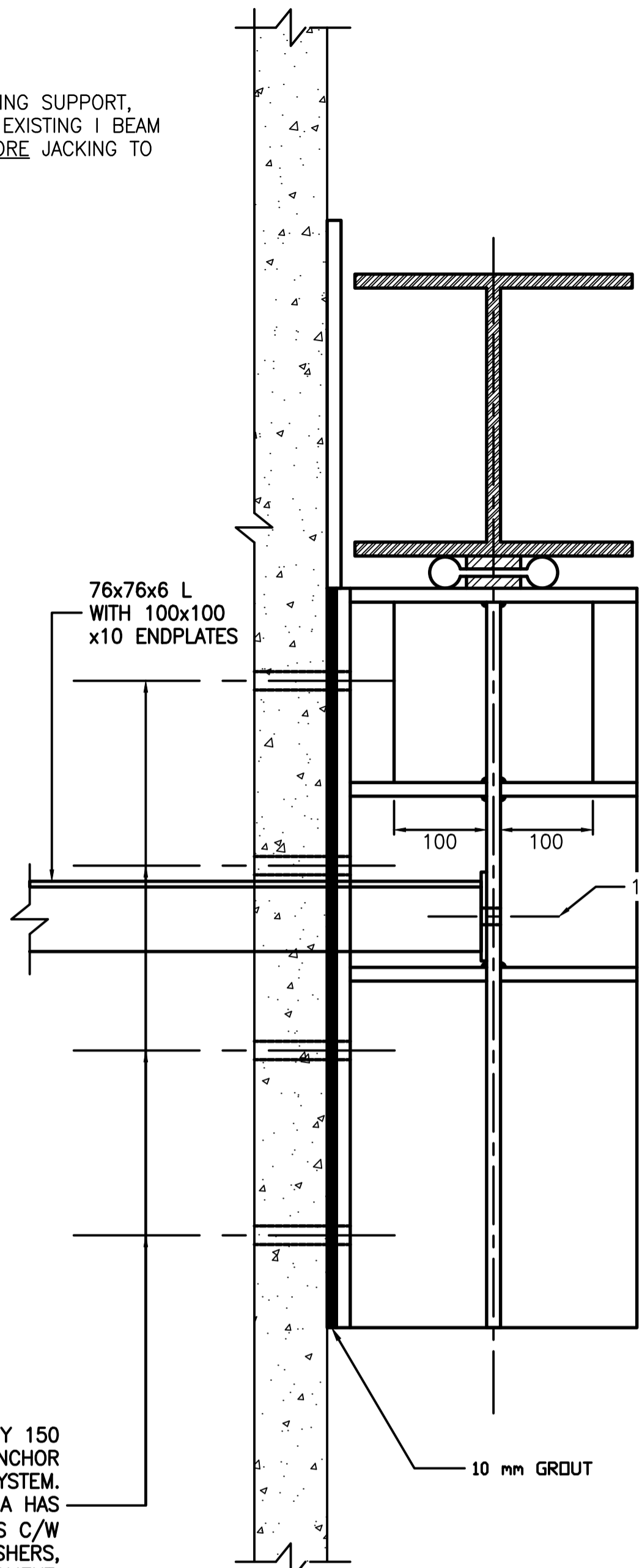
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CHECK	RDT				
APPROVED					
DATE	15/02/11				
SCALE	AS NOTED				
PROJECT No.	BB3502BBA				
No.	REVISION DESCRIPTION	DATE (Y/M/D)	BY	CHECK	
C	ISSUED FOR TENDER	15/02/20	GW	RDT	
A	ISSUED FOR REVIEW	15/02/11	MS	RDT	

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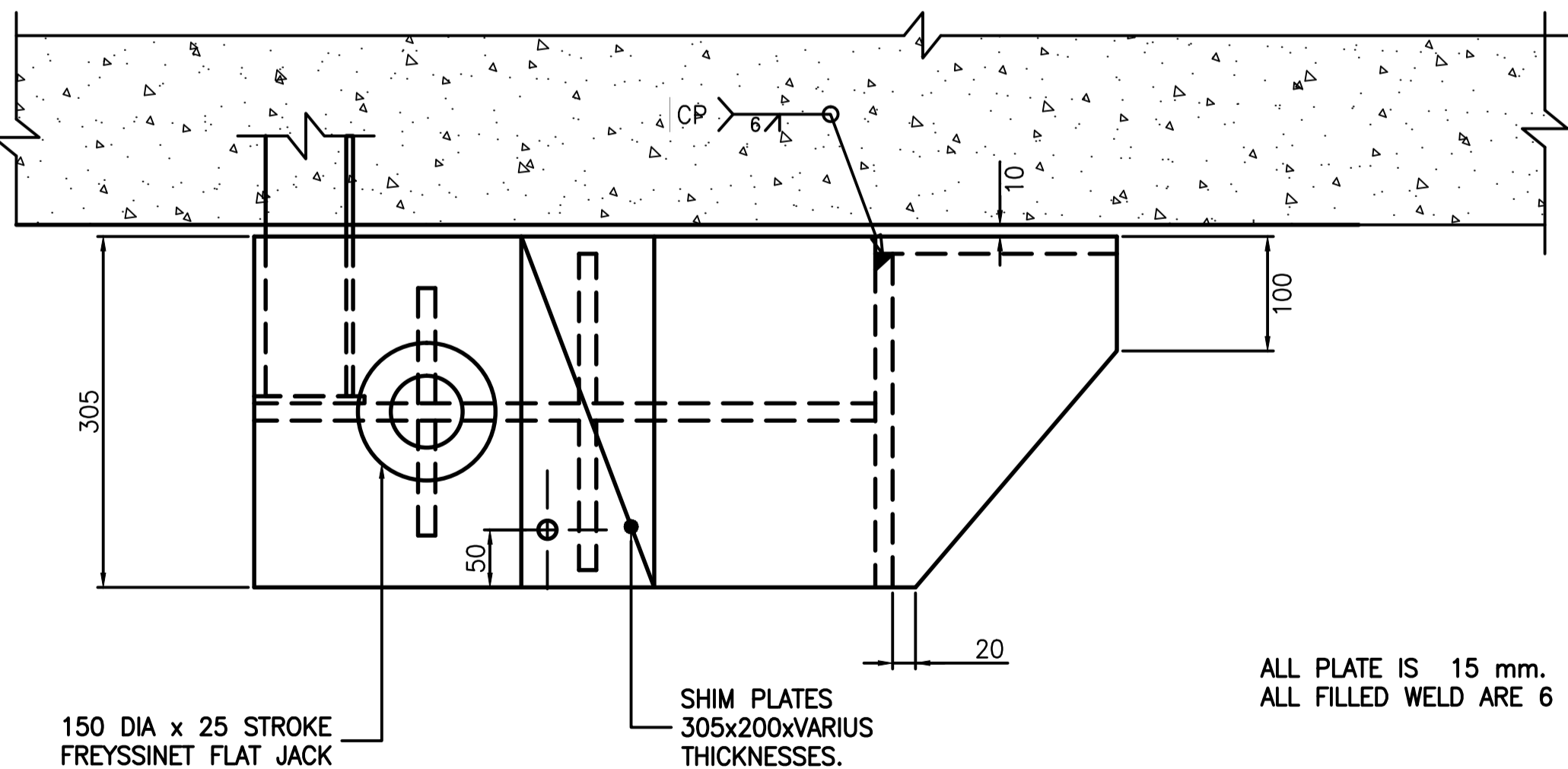
CMHC	SHEET No.	11
GRANVILLE ISLAND MARINE STRUCTURE REPAIRS	OF	14
REPAIR DETAILS	REV.	A
	DRAWING NO.	SSD-11



ELEVATION - OPTION B  
1:5



SECTION  
1:5



PLAN  
1:5

ALL PLATE IS 15 mm.  
ALL FILLED WELD ARE 6 mm , UNO.

GENERAL NOTES

1. ALL STEEL TO CONFORM TO CSA SPECIFICATION CAN3-G40.21-GRADE 350AT, CATEGORY 3.
2. BOLTS TO CONFORM TO ASTM A-325M TYPE 3 UNLESS OTHERWISE NOTED.
3. WELDING TO CONFORM TO CSA W59.
4. GROUT BEDDING SHALL BE A PROPRIETARY NON SHRINK GROUT WITH A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF 40 MPA.
5. CONTRACTOR TO CONFIRM DIMENSIONS OF ALL BOLTED CORBELS WITH RESPECT TO FIT AT THE SPECIFIED LOCATIONS.
6. ALL TEMPORARY WORKS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
7. THE CONTRACTOR SHALL ENSURE THAT NO DELETERIOUS MATERIALS, RESULTING FROM THE CORBEL INSTALLATION AND THE CONCRETE BEAM REPAIR, ARE DEPOSITED IN FALSE CREEK. ALL SUCH MATERIALS SHALL BE REMOVED FROM THE SITE FOR DISPOSAL.
8. SHOP DRAWINGS FOR FABRICATED STEEL COMPONENTS SHALL BE SUBMITTED TO THE CONTRACT ADMINISTRATOR FOR REVIEW AT LEAST 14 DAYS PRIOR TO FABRICATION.

INSTALLATION OF ADDITIONAL SUPPORT CORBELS

1. THE REINFORCED CONCRETE STRUCTURE, SUPPORTED ON ITS OWN FOUNDATIONS WITHIN THE TIMBER WHARF, WAS ORIGINALLY DESIGNED TO SUPPORT A DERRICK CRANE (NOW PARTIALLY DISMANTLED AND UNUSABLE). A LOW LEVEL BEAM CONNECTING TWO OF THE CRANE COLUMNS ACTS AS A SUPPORT FOR A PORTION OF THE WHARF DECK BUT HAS SUFFERED FROM CORROSION OF THE BEAM SOFFIT REINFORCEMENT, RESULTING IN SEVERE CRACKING AND DAMAGE. IT IS UNDERSTOOD THAT THE EXISTING STEEL BEAMS, INSTALLED ON EACH SIDE OF THE DAMAGED BEAM, WERE PROVIDED AS EITHER ALTERNATIVE OR ADDITIONAL SUPPORT FOR THE WHARF DECK ABOVE. IT IS NOT KNOWN IF THE WHOLE OF THE DECK LOAD WAS TRANSFERRED TO THE STEEL BEAMS AT THE TIME OF INSTALLATION BUT BEFORE REPAIR WORK FOR THE CONCRETE BEAM CAN PROCEED, THIS FACT NEEDS TO BE DETERMINED AND CONSEQUENTLY WHETHER LOAD TRANSFER NEEDS TO BE ACCOMPLISHED BY BEAM JACKING.

TWO APPROACHES HAVE BEEN ADOPTED FOR THE ADDITIONAL BEAM SUPPORT CORBELS AS FOLLOWS:

- (a) IF ON CLOSE INSPECTION IT CAN BE DETERMINED THAT THE STEEL BEAMS ARE CARRYING THE MAJORITY OF THE DECK LOAD, THE SIMPLIFIED SUPPORT CORBEL WILL BE ADOPTED.
- (b) IF IT CAN BE SHOWN THAT THE MAJORITY OF THE DECK LOAD IS STILL SUPPORTED BY THE REINFORCED CONCRETE BEAM, SOME ADDITIONAL JACKING WILL BE REQUIRED AND THE LARGER JACKING CORBEL WILL BE ADOPTED.

THE INITIAL PART OF THE WORK WILL INVOLVE ESTABLISHING WHICH SUPPORT CORBEL SYSTEM IS APPROPRIATE AND THIS WILL BE CARRIED OUT IN CONJUNCTION WITH THE CONTRACT ADMINISTRATOR.

2. FOR APPROACH (A), THE WORK WILL INVOLVE THE FABRICATION OF THE STEEL CORBELS AND THEIR INSTALLATION BY DRILLING, BOLTING AND GROUTING.

3. FOR APPROACH (B), THE WORK WILL INVOLVE FABRICATION OF THE STEEL JACKING CORBELS, THE PROCUREMENT OF 4 FREYSSINET FLAT JACKS AND ASSOCIATED EQUIPMENT, INSTALLATION OF THE CORBELS BY DRILLING, BOLTING AND GROUTING, JACKING AND SHIMMING AND POSSIBLE REMOVAL OF THE END PORTIONS OF THE EXISTING BEAMS AND SUPPORT BRACKETS TO FACILITATE JACKING MOVEMENT.

SITE INVESTIGATION AND CONSTRUCTION PROCEDURES

1. CONDUCT SITE INVESTIGATION IN CONJUNCTION WITH THE CONTRACT ADMINISTRATOR TO DETERMINE WHICH STRUCTURAL ELEMENTS (CONCRETE BEAM OR STEEL I BEAMS) ARE CARRYING THE MAJORITY OF THE ASSOCIATED DECK LOAD. IF A DISCERNIBLE AIR GAP EXISTS BETWEEN THE WHARF DECK TIMBERS AND THE TOP SURFACE OF THE CONCRETE BEAM, IT CAN BE CONCLUDED THAT THE DECK LOAD IS CARRIED BY THE STEEL BEAMS AND NO JACKING WILL BE REQUIRED. IN THIS CASE THE SIMPLIFIED CORBEL SUPPORT SYSTEM WILL BE APPLICABLE.

IF NO AIR GAP IS DISCERNIBLE OR ONLY PARTIALLY DISCERNIBLE, THIS SHALL BE REFERRED TO THE CONTRACT ADMINISTRATOR FOR A DECISION OR FURTHER INVESTIGATION.

APPROACH (A)

- TAKE SITE MEASUREMENTS OF BEAM LENGTHS BETWEEN EXISTING SUPPORTS AND TO CONFIRM FIT AND DIMENSIONS OF PROPOSED CORBELS PRIOR TO FABRICATION. INCLUDE REBAR POSITION ASSESSMENT USING A PACHOMETER (COVER METER).
- CLEAN AND PREPARE CONCRETE MOUNTING SURFACES FOR THE CORBELS,
- INSTALL HILTI HIT HY150 SYSTEM ANCHORS AND RECHECK ANCHOR POSITIONS AFTER INSTALLATION
- MOUNT CORBELS WITH A 10MM GAP BETWEEN CORBEL AND CONCRETE BEAM FACE TO UNDERSIDE OF STEEL BEAM (BOLTED TO STEEL BEAM PROJECTING BOTTOM FLANGE)
- FORM/SEAL EDGES OF CORBEL REAR PLATE AND GROUT INTERFACE
- TIGHTEN ANCHOR BOLT NUTS.

APPROACH (B)

- TAKE SITE MEASUREMENTS AS PER APPROACH (A)
- CLEAN AND PREPARE CONCRETE MOUNTING SURFACES FOR THE CORBELS,
- INSTALL HILTI HIT HY150 SYSTEM ANCHORS AND RECHECK ANCHOR POSITIONS AFTER INSTALLATION
- MOUNT CORBELS WITH A 10MM GAP BETWEEN CORBEL AND CONCRETE BEAM FACE TO UNDERSIDE OF STEEL BEAM (BOLTED TO STEEL BEAM PROJECTING BOTTOM FLANGE)
- FORM/SEAL EDGES OF CORBEL REAR PLATE AND GROUT INTERFACE
- INSTALL ANGLE STRUT/PROP CONNECTING CORBELS ON OPPOSITE SIDES OF THE CONCRETE BEAM AT EACH END (2 NO)
- TIGHTEN ANCHOR BOLT NUTS.
- INSTALL FREYSSINET FLAT JACKS (4 NO - 1 PER CORBEL). THE PAIRS OF JACKS AT EACH END SHALL BE CONNECTED TO A COMMON MANIFOLD. EACH END PAIR MAY BE CONNECTED TO A SEPARATE PUMP.
- PRESSURIZE JACKS TO 10% OF EXPECTED TOTAL LOAD AND INSTALL SHIMS BETWEEN CORBEL AND UNDERSIDE OF STEEL I BEAM
- REMOVE NUTS FROM EXISTING STEEL I BEAM END CONNECTIONS AND IF NECESSARY REMOVE (CUT) END OF I BEAM AT CENTRE LINE OF EXISTING CONNECTION TO FACILITATE REMOVAL OF THE HIDDEN PORTION OF THE STEEL CONNECTION BRACKET. THIS WILL THEN PERMIT FURTHER BEAM JACKING MOVEMENT TO FREELY OCCUR. THE UPPER PORTION OF THE EXISTING CONNECTION BRACKET TOGETHER WITH THE BOLT ANCHOR SHALL REMAIN FOR LATER RECONNECTION TO THE STEEL BEAM TOP FLANGE (FOR LATERAL SUPPORT)
- JACK BEAM AT EACH END SIMULTANEOUSLY UNTIL LIFT OFF OF THE DECK TIMBERS FROM THE TOP OF THE CONCRETE BEAM IS DISCERNIBLE. THIS SHALL BE DONE IN SET PRESSURE/LOAD STAGES WITH MOVEMENT AND GAUGE PRESSURES AT THE END OF EACH STAGE BEING TAKEN. MOVEMENTS SHALL BE MEASURED AT THE ENDS AND AT THE CENTER OF THE STEEL I BEAMS AT THE END OF EACH STAGE. DURING JACKING, SHIMS SHALL BE ADDED TO LIMIT THE GAP SIZE AS JACKING PROGRESSES.
- WHEN LIFT OFF OR INCIPIENT LIFT OFF HAS BEEN IDENTIFIED (LOAD COMPLETELY TRANSFERRED) AND AS APPROVED BY THE CONTRACT ADMINISTRATOR, THE FINAL SHIMS SHALL BE ADDED AND THE JACK PRESSURES SLOWLY RELEASED.
- RECONNECT BY WELDING/BOLTING THE END STEEL I BEAM TOP FLANGES TO THE REMAINING PORTION OF THE ORIGINAL CONNECTION PLATES.
- REMOVE JACKING EQUIPMENT.

CONCRETE BEAM REPAIR NOTES

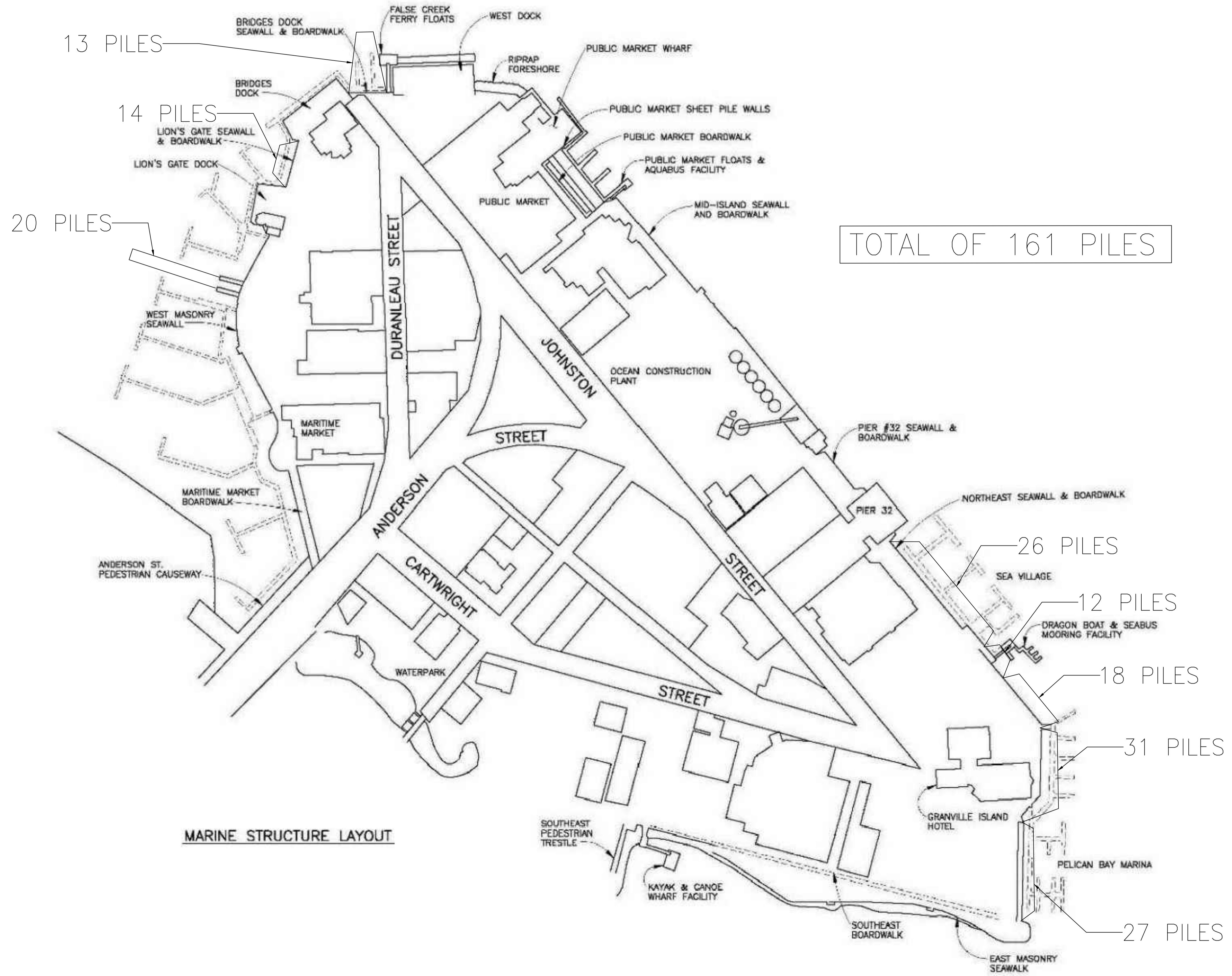
1. CONCRETE BEAM REPAIR WORK REQUIRED FOR SEVERELY CRACKED AND DAMAGED SOFFIT OF REINFORCED CONCRETE BEAM CONNECTING PIERS 1 & 3.
2. CONCRETE REPAIR WORK SHALL NOT COMMENCE UNTIL ADDITIONAL SUPPORT CORBELS AT ENDS OF STEEL I BEAMS ARE FULLY INSTALLED.
3. ERECT TEMPORARY PLATFORM AND SHROUDS FOR CONTAINMENT OF DUST AND DEBRIS BELOW AFFECTED LENGTH OF BEAM SOFFIT.
4. REMOVE ALL SEVERELY CRACKED AND DAMAGED CONCRETE AS AGREED WITH THE CONTRACT ADMINISTRATOR. THERE IS A POSSIBILITY THAT EPOXY CRACK INJECTION MAY BE REQUIRED TO FILL AND SEAL SOME CRACKS. THIS WILL BE DETERMINED UPON INSPECTION. THE CONTRACTOR SHALL ENSURE THAT HE IS ABLE TO PROCURE CRACK INJECTION SERVICES IN A TIMELY MANNER, SHOULD THIS OPTION BE EXERCISED. A PROVISIONAL SUM IS ALLOWED IN THE CONTRACT FOR THIS POSSIBILITY.
5. REMOVE ALL SEVERELY CORRODED AND DAMAGED REINFORCEMENT AS AGREED WITH THE CONTRACT ADMINISTRATOR.
6. THOROUGHLY CLEAN AND PREPARE UNDER SURFACE OF BEAM FOR CONCRETE PATCHING.
7. ON INSPECTION, THE CONTRACT ADMINISTRATOR WILL ADVISE THE EXTENT AND AMOUNT OF STEEL REINFORCEMENT TO BE REPLACED IN THE BEAM SOFFIT.
8. PROVIDE REPLACEMENT REINFORCEMENT AND FIX IN POSITION AS PER DETAILS TO BE PROVIDED.
9. APPLY A BONDING AGENT TO THE PREPARED CONCRETE INTERFACE.
10. REFORM SIDES AND SOFFIT OF STEEL BEAM TO ACCEPT AND ACCOMMODATE A PATCH REPAIR BY GROUTING.
11. SOFFIT FORMS TO REMAIN IN PLACE FOR A MINIMUM OF 7 DAYS OR UNTIL THE REPAIR MATERIAL HAS GAINED AT LEAST 75% OF ITS 28 DAY COMPRESSIVE STRENGTH.
12. AN ALTERNATIVE PATCH REPAIR TECHNIQUE WILL BE CONSIDERED IF GROUTING CAN BE SHOWN TO BE EITHER TOO DIFFICULT OR NOT FEASIBLE FOR THIS CASE.

ACAD2002 2005/02/20 1316 C:\USERS\DKR\STEVE\APPDATA\LOCAL\TEMP\ACADPUB15H.6448.BB3008-SSD-01-02 V2 0733 SUBMISSION.DWG PLOTTED ON 2005/02/20 1333

DESIGN	MS
DRAWN	DK
CHECK	RDT
APPROVED	
DATE	15/02/11
SCALE	AS NOTED
PROJECT No.	BB3502BBA



CMHC	SHEET No.	12
GRANVILLE ISLAND MARINE STRUCTURE REPAIRS	OF	14
REPAIR DETAILS	REV.	A
	DRAWING NO.	SSD-12



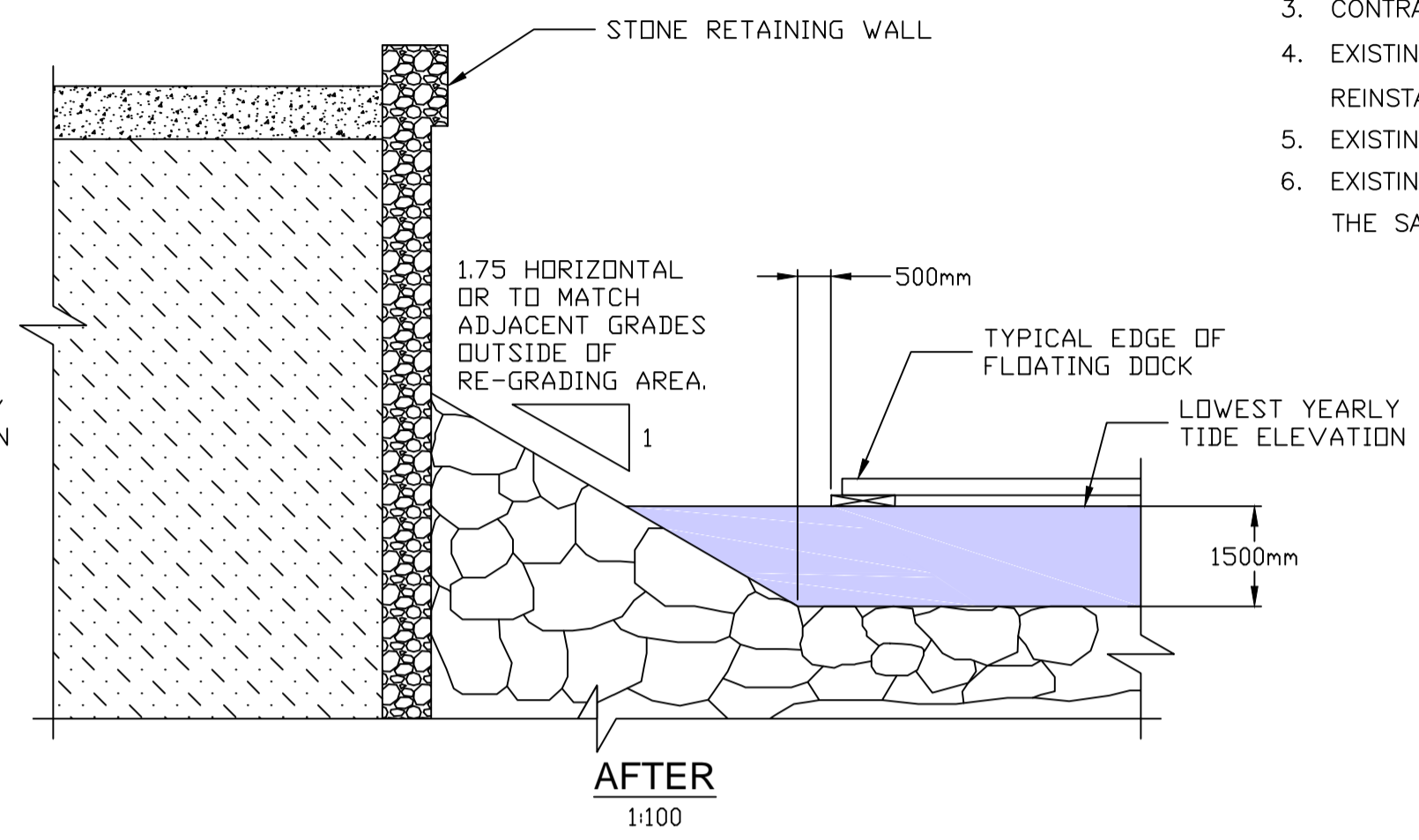
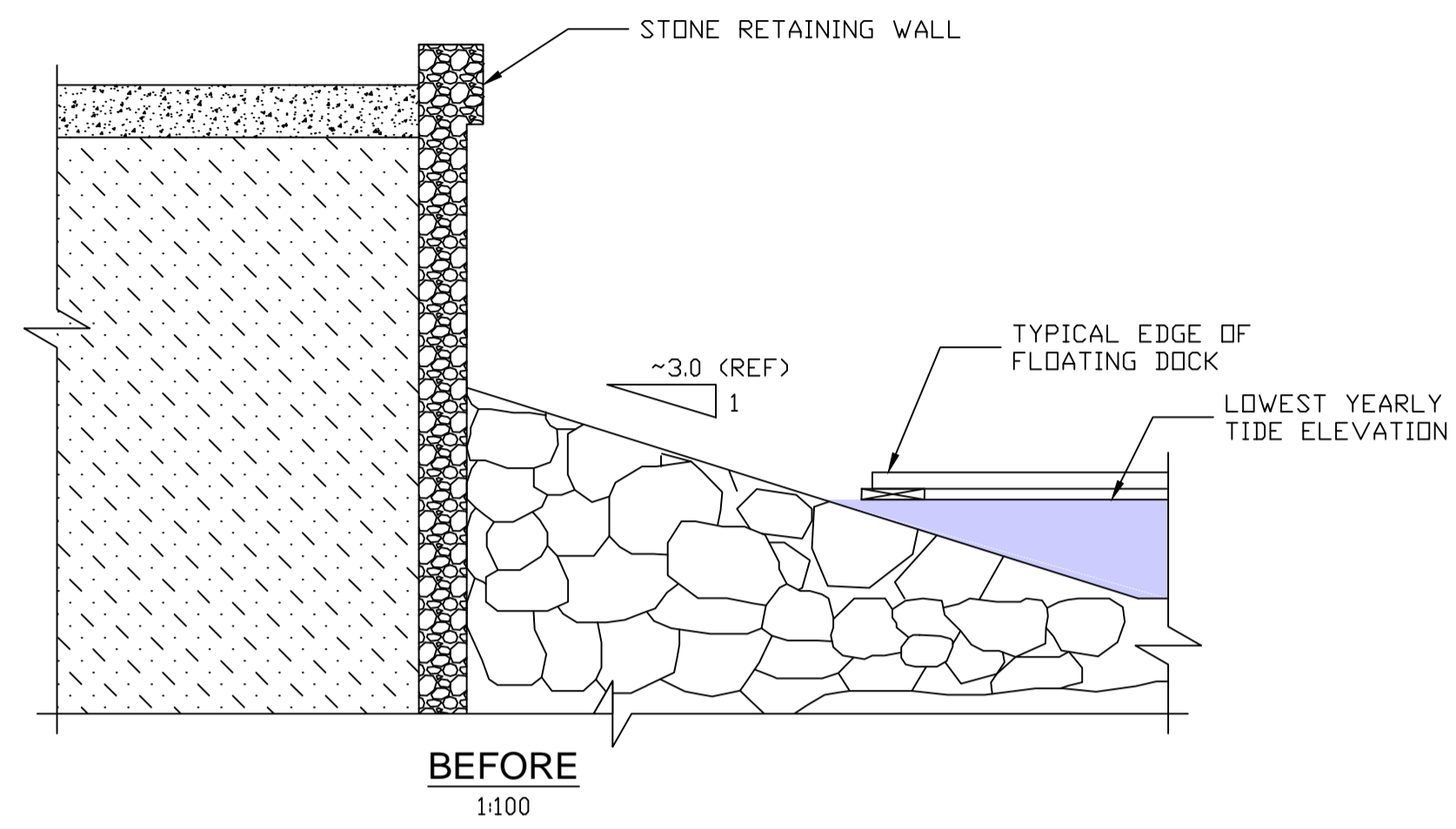
MARINE STRUCTURE LAYOUT

4/24/2005 8:05:07 AM 14442 0:00:00.0000 GRANVILLE ISLAND MARINE WORKS/BB3502BBA/SSD-13-02 1/2 1725 SUBMITTING.DWG PLOTTED ON 2005/02/08 14:47

No.	REVISION DESCRIPTION	DATE (Y/M/D)	BY	CHECK	PROJECT No.
C	ISSUED FOR TENDER	15/02/20	GW	RDT	BB3502BBA
B	95% SUBMISSION	15/01/30	GW	RDT	
A	75% SUBMISSION	14/12/05	GW	RDT	

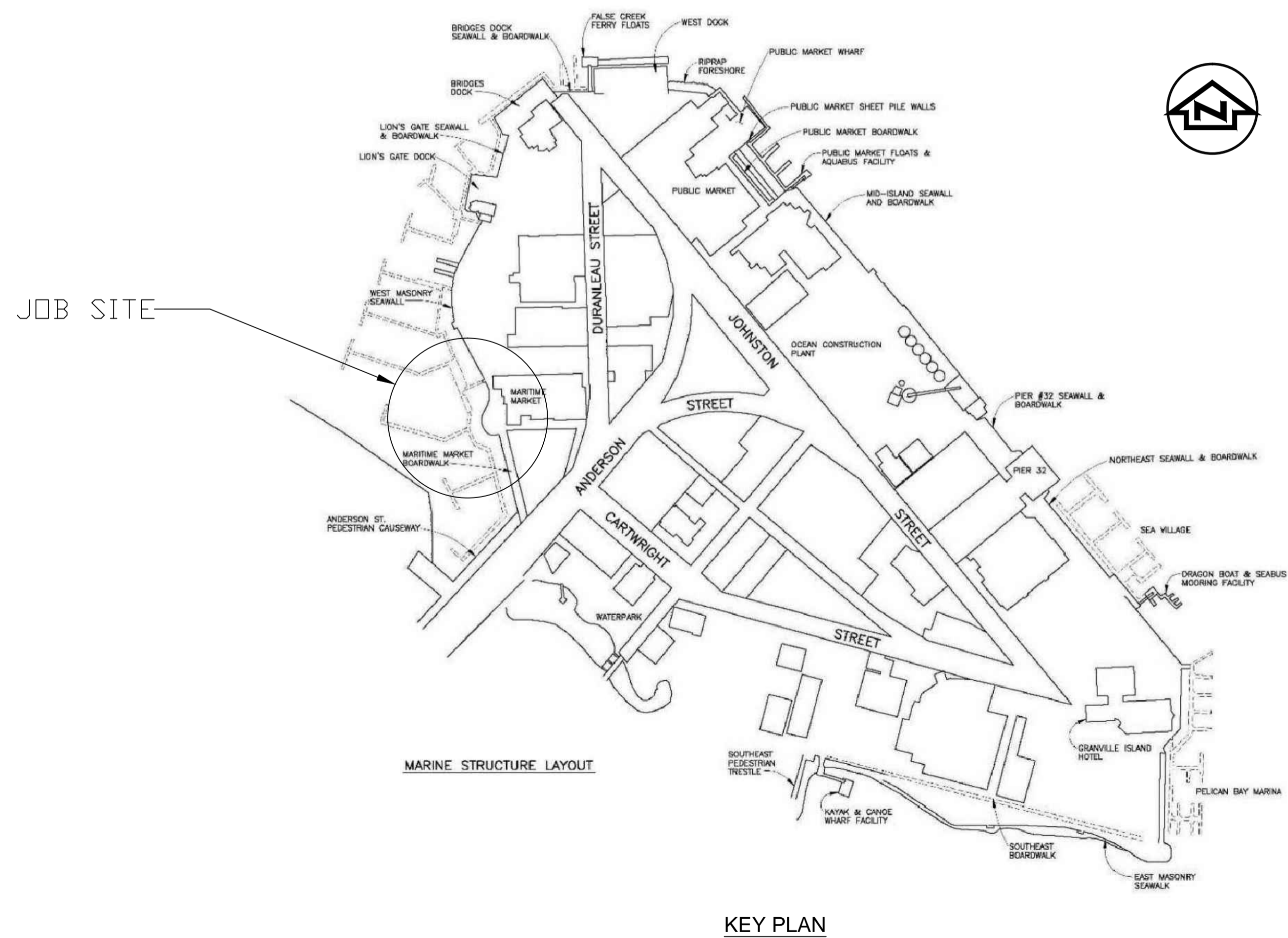
**PARSONS**  
 METROTOWER I, SUITE 2300, 4710 KINGSWAY,  
 BURNABY, BRITISH COLUMBIA, CANADA V5H 4M2  
 TEL: 604-438-5300 FAX: 604-438-5350  
 www.parsons.com

CMHC	SHEET No.	13
GRANVILLE ISLAND MARINE STRUCTURE REPAIRS	OF	14
ANODE LAYOUT	REV.	A
	DRAWING NO.	SSD-13



**NOTES:**

1. REGRADED BANK TO TERMINATE AT LEAST 500 mm BEFORE EDGE OF FLOATING DOCK AT A DEPTH OF 1500 mm. MEASUREMENTS TO BE RELATIVE TO LOWEST YEARLY TIDE ELEVATION.
2. REGRADED BANK TO BE LEFT IN A STABLE CONDITION, NOT SUSCEPTIBLE TO EROSION OR SLOUGHING.
3. CONTRACTOR TO COORDINATE WITH CMHC FOR ACCESS TO SITE.
4. EXISTING GRASS AND LANDSCAPING SHALL BE PROTECTED FROM THE CONSTRUCTION WORKS AND/OR REINSTATED AFTER CONSTRUCTION TO A PRE-CONSTRUCTION CONDITION OR BETTER.
5. EXISTING SLOPE GRADE TO BE CONFIRMED ON SITE.
6. EXISTING RIPRAP SHALL BE REMOVED, PROTECTED, AND PLACED BACK ON THE REGRADED SLOPE AT THE SAME DISTRIBUTION AND COVER AS THE EXISTING CONDITION.



**LEGEND:**

	ACCESS
	1500 mm UNDER DECK
	1.75:1.0 SLOPE

ACAD2002 2015/02/20 17:07 0:43:30:02 CMHC GRANVILLE ISLAND MARINE WORKS/BB3502BBA/SSD-14-02 1/2 (75% SUBMITTAL) DWG PLOTTED ON 2015/02/20 17:08

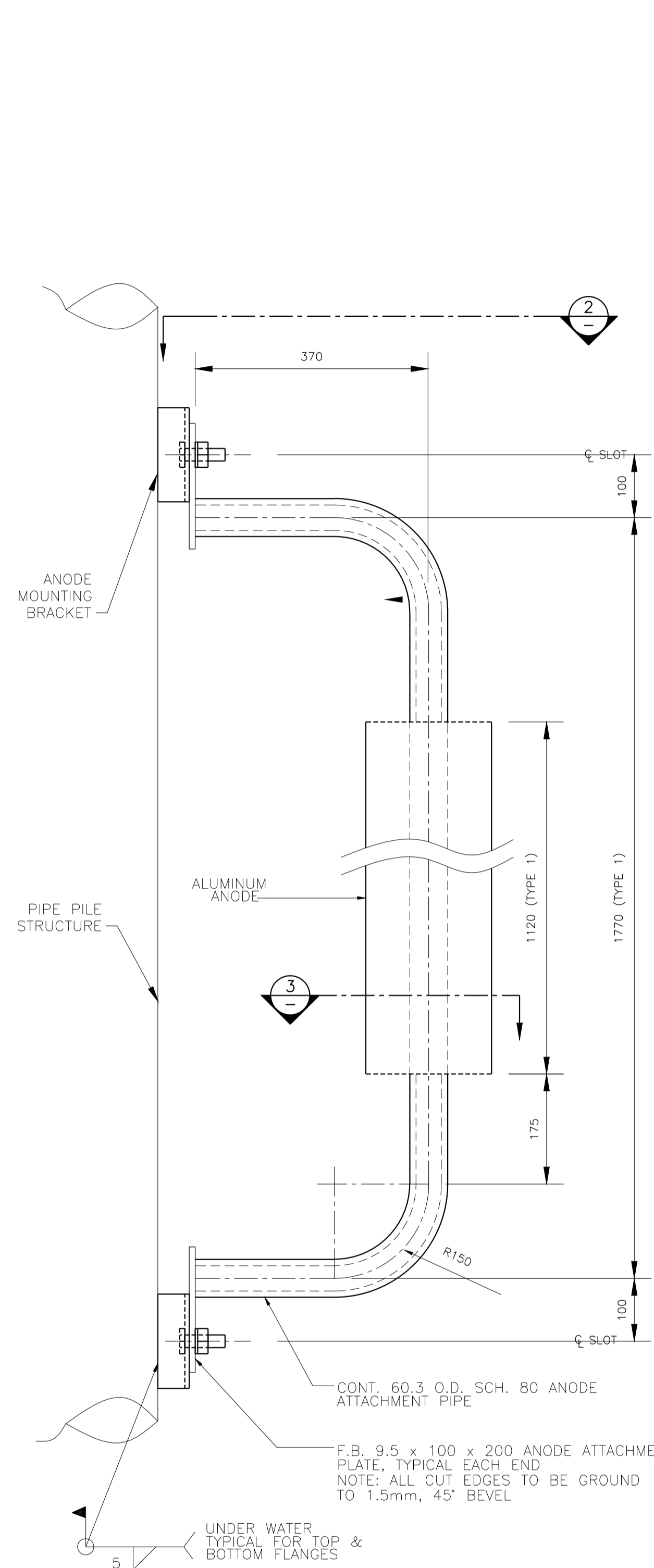
**KEY PLAN**

DESIGN	GW			
DRAWN	GW			
CHECK	RD			
APPROVED				
DATE	15/02/20			
SCALE	AS NOTED			
PROJECT No.	BB3502BBA			

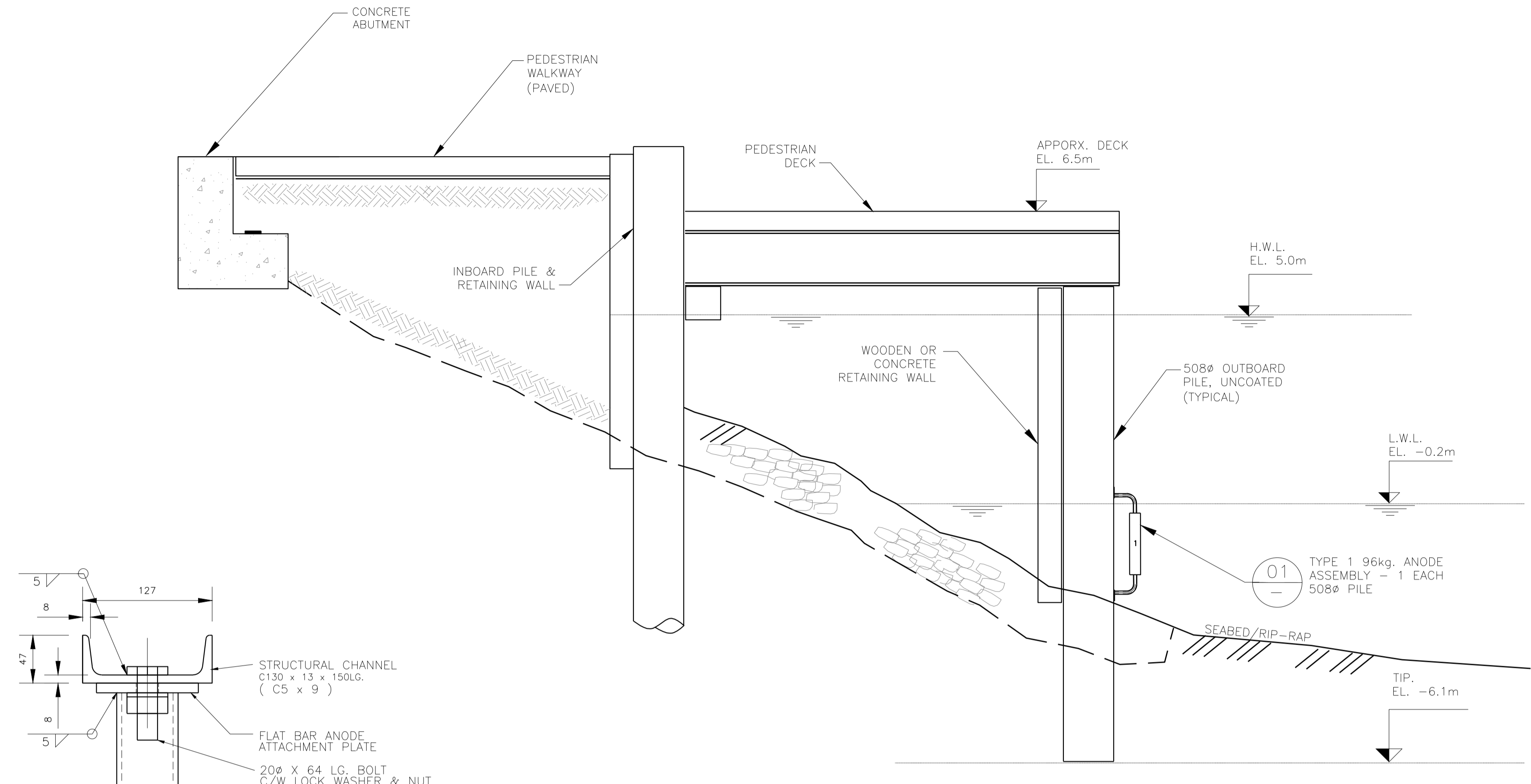
**PARSONS**  
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 BURNABY, BRITISH COLUMBIA, CANADA V5H 4M2  
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CMHC	GRANVILLE ISLAND MARINE STRUCTURE REPAIRS
RIP RAP REGRAIDING	

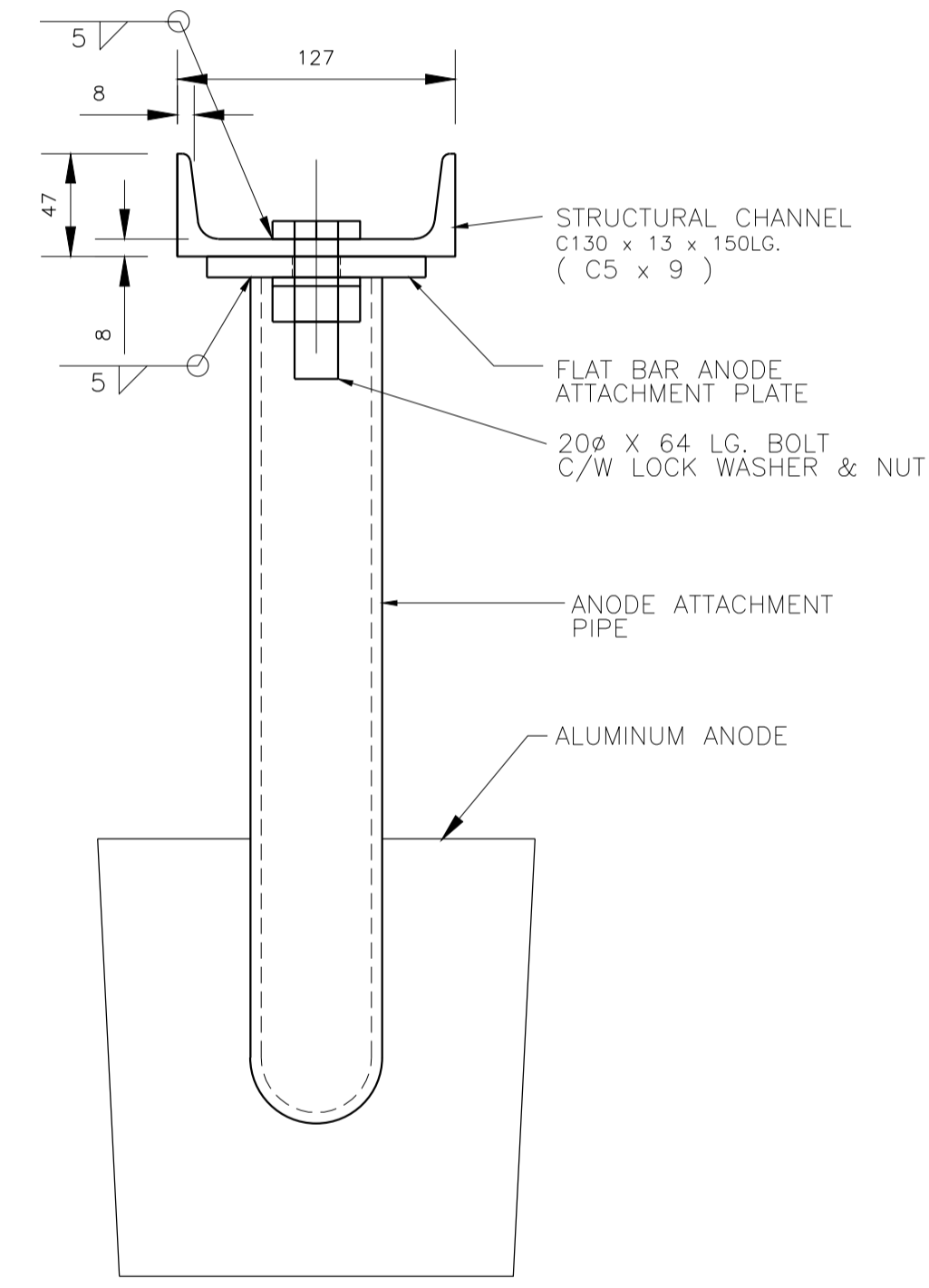
SHEET No.	14
OF	14
REV.	A
DRAWING No.	SSD-14



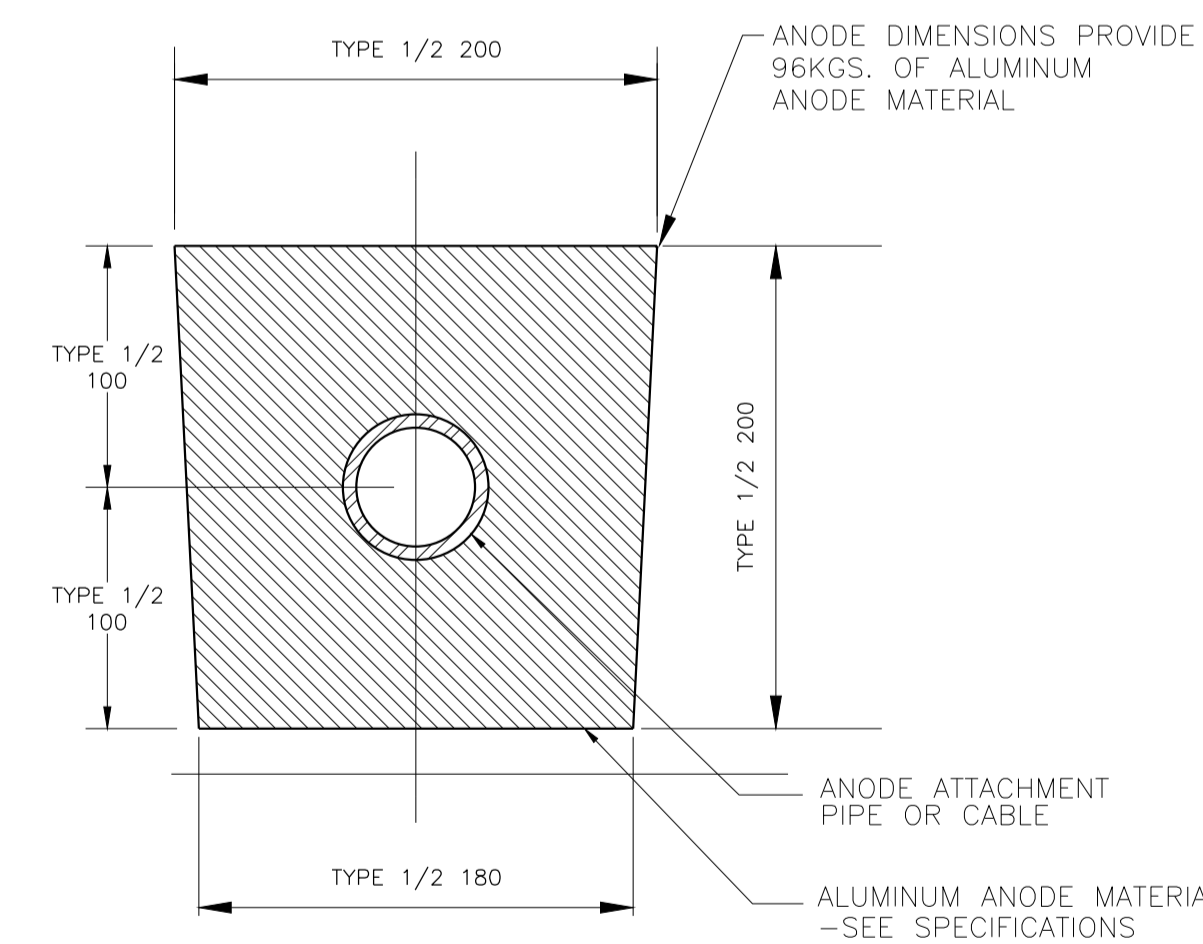
DETAIL 01 TYPE 1 ALUMINUM ANODE DETAILS  
SCALE 1:10



ELEVATION WALKWAY PILES AND RETAINING WALLS (TYP)  
SCALE NTS NOTE: PILE ELEVATIONS AND RELATED STRUCTURE CONFIGURATIONS VARY THROUGHOUT THE SITE



2 AL. ANODE DETAIL  
SCALE 1:3



3 AL TYPE 1 & 2 ANODE SECTION  
SCALE 1:3

NOTES

1. THE PROJECT WORK AT GRANVILLE ISLAND, VANCOUVER, B.C. INCLUDES THE INSTALLATION OF TYPE 1 (96kg.) ALUMINUM ANODE FOR SELECT OUTBOARD PILES. FOR COMPLETE MATERIAL AND INSTALLATION REQUIREMENTS SEE THE WRITTEN SPECIFICATION (0494-01).
2. FOR PILE AND RETAINING WALL DETAILS SEE SWAN WOOSTER CONSTRUCTION DRAWING SET U-3291-01, VARIOUS SHEETS.
3. ONE (1) ANODE ASSEMBLY SHALL BE INSTALLED ON THE PILES AT THE APPROXIMATE CIRCUMFERENTIAL LOCATION AND DEPTH AS NOTED IN THIS DRAWING. FINAL PLACEMENTS TO BE FIELD DETERMINED WITH ANY SIGNIFICANT ALTERNATIONS APPROVED BY THE CATHODIC PROTECTION CONSULTANT.
4. SEABED DEPTH VARIES. IN REGARD TO PLACEMENT ELEVATIONS, THE ALUMINUM ASSEMBLIES SHALL BE INSTALLED AT OR BELOW 0.0 METERS. PILES WITH INSUFFICIENT WATER DEPTH SHALL BE OMITTED FROM THE INSTALLATION PROGRAM.
5. TO ENSURE COMPLIANCE WITH THE CATHODIC PROTECTION DESIGN, ALL INSTALLATION WORK SHALL BE INSPECTED BY THE CATHODIC PROTECTION CONSULTANT. A FINAL COMMISSIONING SURVEY SHALL BE COMPLETED TO CONFIRM PROPER SYSTEM INSTALLATION.

E				J			
D				I			
C				H			
B				G			
A	ISSUED FOR REVIEW	14/12/17	RJA	F			
REVISIONS		Y/M/D	BY	REVISIONS		Y/M/D	BY


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SCALE: 1:10 ONO  
DATE: 14/12/17  
APPROVED FOR USE IN CONSTRUCTION  
DISK No. 0494-01 FILE No. 0494-01

DRAWN BY: EZ  
DESIGNED BY: RJA  
CHECKED BY: JES

GRANVILLE ISLAND MARKET CATHODIC PROTECTION

PEDESTRIAN WALKWAYS  
STRUCTURAL MARINE PILES

SACRIFICIAL ANODE DETAILS DRAWING No. DGIV0494-01 A  
CANCEL PRINTS BEARING EARLIER REVISION