SUNSHINE COAST REGIONAL DISTRICT (SCRD)
KEATS LANDING WHARF REPAIRS 2025
KEATS ISLAND BC

SP#: SP101486

DRAWING LIST

DRAWING NUMBER	DESCRIPTION
4551-014-S00	COVER SHEET
4551-014-S01	GENERAL NOTES AND KEY PLAN
4551-014-S02	GENERAL ARRANGEMENT - SHEET 1
4551-014-S03	GENERAL ARRANGEMENT - SHEET 2 AND REPAIR TABLE
4551-014-S04	DETAILS - SHEET 1
4551-014-S05	DETAILS - SHEET 2

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
S. P. SUMMERSIDE
29834

2025-03-17

NOT FOR CONSTRUCTION

ISSUED FOR TENDER

HEROLD ENGINEERING

#7 1920 Lyche Road Ucluelet, BC V0R 3A0
Tel: 250-534-9145
Email: mail@heroldengineering.com

HEROLD PROJECT No.
4551-014

ARCHITECTURAL D 24" x 36"

GENERAL:

1. READ STRUCTURAL DRAWINGS IN CONJUNCTION WITH ALL OTHER CONTRACT DRAWINGS, SPECIFICATIONS AND DOCUMENTS. REPORT ANY CONFLICTS TO THE ENGINEER BEFORE COMMENCING WORK
2. VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO CONSTRUCTION.
3. NOTIFY THE ENGINEER 48 HOURS IN ADVANCE FOR INSPECTION OF STRUCTURAL CONNECTIONS BEFORE COVERING UP.
4. CONTRACTOR'S RESPONSIBILITY: THESE DRAWINGS SHOW COMPLETED STRUCTURAL COMPONENTS OF THE WHARF. THE REQUIRED TEMPORARY BRACING AND SHORING TO PERFORM THE WORK SAFELY IS THE RESPONSIBILITY OF THE CONTRACTOR.
5. ENVIRONMENTAL WORK PROCEDURES, TIMING AND SPECIAL PRECAUTIONS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS AND LIMITATIONS OF THE FEDERAL DEPARTMENT OF FISHERIES AND OCEANS, AND THE PROVINCIAL MINISTRY OF WATER, LAND AND AIR PROTECTION.
6. DIMENSIONS ARE IN MILLIMETRES AND ELEVATIONS ARE IN METRES, UNLESS OTHERWISE NOTED.
7. VERTICAL DATUM (ELEVATIONS AND CONTOURS) TO CHART DATUM (C.D.).
8. TIDE ELEVATIONS AT THE SITE ARE BASED ON VALUES PUBLISHED BY THE CANADIAN HYDROGRAPHIC SERVICE (CHS) FOR THE SITE AS FOLLOWS:

HIGHER HIGH WATER, LARGE TIDE (H.H.W.L.)	5.1 METRES
HIGHER HIGH WATER, MEAN TIDE (H.H.W.M.T.)	4.6 METRES
MEAN WATER LEVEL (M.W.L.)	3.2 METRES
LOWER LOW WATER, MEAN TIDE (L.L.W.M.T.)	1.3 METRES
LOWER LOW WATER, LARGE TIDE (L.L.W.L.)	0.1 METRES

9. SUBMIT SHOP DRAWINGS FOR REVIEW PRIOR FABRICATION.
10. NOTE THAT THE STRUCTURE IS CURRENTLY CLOSED TO VEHICULAR TRAFFIC. SHOULD THE CONTRACTOR WISH TO UTILIZE MACHINERY AND/OR VEHICLES ON THE STRUCTURE, A LOAD RATING CONFIRMING THE ACCEPTABILITY OF THIS MUST BE PROVIDED AND CERTIFIED BY A STRUCTURAL ENGINEER QUALIFIED TO PRACTICE IN BRITISH COLUMBIA.

DEMOLITION:

1. ALL UNSALVAGEABLE MATERIAL FROM SITE TO BE DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, PROVINCIAL AND FEDERAL REGULATIONS AT THE CONTRACTOR'S EXPENSE.
2. USED TIMBER PILES REMOVED FROM SITE ARE TO BE DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, PROVINCIAL AND FEDERAL REGULATIONS AT THE CONTRACTOR'S EXPENSE.

TIMBER:

1. ALL TIMBER SHALL BE PRESSURE TREATED NLGA NO. 1 COAST DOUGLAS FIR OR BETTER. LUMBER TO BE GRADED TO NLGA STANDARD GRADING RULES FOR CANADIAN LUMBER, 2003.
2. TIMBER PILES TO BE SUPPLIED SIZE 36.
3. ALL TIMBERS SHALL BE CUT TO THE REQUIRED LENGTH PRIOR TO TREATMENT. FIELD CUT TIMBERS WILL BE REJECTED AND REPLACED AT THE CONTRACTOR'S EXPENSE, EXCLUDING CROSS BRACE DRILLING AT THE TOP CONNECTIONS.
4. TREATMENT TO BE IN ACCORDANCE WITH THE MOST CURRENT VERSION OF CSA 080.
   - 4.1. CATEGORY 3.2 EXPOSED TO WEATHER, NOT IN GROUND CONTACT, INCLUDING GUARD RAILS, BULLRAILS AND RISERS.
     - 4.1.1. ACZA, 4.0kg/m^3
     - 4.1.2. CCA, 4.0kg/m^3
   - 4.2. CATEGORY UC 4.1 CONTACT WITH SPLASH ZONE. INCLUDING WHARF JOISTS, STRINGERS, FISH PLATES, PLYWOOD NOT COVERED UNDER UC5A, PILE CAPS & BLOCKING.
     - 4.2.1. ACZA, 6.4kg/m^3
     - 4.2.2. CCA, 6.4kg/m^3
   - 4.3. CATEGORY UC5A, MARINE. INCLUDING WOOD PILES, PLYWOOD, CROSS BRACES AND WALES.
     - 4.3.1. ACZA, 30kg/m^3OR
     - 4.3.2. CCA, 24kg/m^3
   - 4.4 AFTER CUTOFF, TREAT PILE TOPS WITH TWO COATS OF ROOFING TAR OR APPROVED ALTERNATE.
   - 4.5 ALL DRILLED BOLT HOLES COMPLETED AFTER TREATMENT MUST BE FIELD TREATED WITH TWO COATS OF ROOFING TAR AND BOLTS/PLUGS MUST BE DIPPED IN ROOFING TAR PRIOR TO INSTALLATION.
   - 4.6 PLUG ALL UNUSED BOLT HOLES WITH TIGHT FITTING ROOFING TAR TREATED BOLTS, AND NEOPRENE GASKET AND WASHER EACH END.
   - 4.7 TIMBER HANDLING:
     - 4.7.1 ALL TREATED TIMBER MUST BE HANDLED AS TO NOT PUNCTURE THE TREATMENT LAYER.
   - 4.8 ALL SHIMS MUST BE TREATED PLYWOOD AND MUST BE SECURED IN PLACE BY AT LEAST TWO (2) NAILS AT OPPOSITE CORNERS OF THE SHIM OR APPROVED EQUIVALENT.
5. PROPOSED ALTERNATIVES TO THE SUPPLIED DESIGN TO BE APPROVED BY ENGINEER IN ADVANCE OF CONSTRUCTION.
6. PILE DRIVING
   - 6.1. PILES ARE TO BE DRIVEN TIP DOWN UNTIL A DRIVING ENERGY OF 25 – 30 kJ IS ACHIEVED OR TO REFUSAL (5 BLOWS / 25mm).
   - 6.2. DRIVE TO THE FOLLOWING TOLERANCES
     - 6.2.1. LOCATION OF PILES: 25mm ±
     - 6.2.2. VERTICAL TOLERANCE: 2% OR 1:50.
7. PILE REPLACEMENT
   - 7.1. EXISTING PILES TO BE REPLACED SHALL BE FULLY EXTRACTED.
   - 7.2. REPLACEMENT PILES ARE TO ACHIEVE A FINAL EMBEDMENT TO THE MAXIMUM OF 3.05m OR EXISTING EMBEDMENT PLUS 305mm. SHOULD REFUSAL BE MET BEFORE REQUIRED EMBEDMENT IS ACHIEVED, NOTIFY ENGINEER OF RECORD FOR DIRECTION.
   - 7.3. SHOULD REQUIRED EMBEDMENT BE UNACHIEVABLE, NOTIFY ENGINEER OF RECORD FOR DIRECTION.
   - 7.4. CONTRACTOR TO PROVIDE PILE DRIVING RECORDS TO ENGINEER INCLUSIVE OF THE FOLLOWING DATA:
     - EXTRACTED PILE EMBEDMENT DEPTH (m)
     - REPLACEMENT PILE EMBEDMENT DEPTH (m)

METAL FABRICATIONS:

1. UNLESS NOTED OTHERWISE BY THE ENGINEER IN WRITING THE STEEL AND/OR ALUMINUM FABRICATOR SHALL SUPPLY THE ENGINEER WITH SHOP DRAWINGS FOR REVIEW PRIOR TO FABRICATION. SHOP DRAWINGS SHALL INDICATE ALL DETAILS, MATERIAL SPECIFICATIONS AND DESIGN LOADS.
2. PROVIDE MATERIALS TO THE FOLLOWING STANDARDS:
   - STEEL SECTIONS TO CAN/CSA–G40.21 GRADE 300W
   - STEEL PLATE TO CAN/CSA–G40.21 GRADE 300W
3. DESIGN FABRICATIONS TO THE MOST CURRENT VERSION OF CSA–S16, LIMIT STATES DESIGN OF STEEL STRUCTURES.
4. ITEMS SPECIFIED TO BE GALVANIZED SHALL BE HOT DIPPED GALVANIZED TO THE MOST CURRENT VERSION OF ASTM 1–123, MINIMUM ZINC COATING OF 600g/m^2 FIELD TOUCH UP ALL ABRASIONS, SCRATCHES, WELDS OR BOLTS.
5. ISOLATE ALUMINUM FROM DISSIMILAR METALS EXCEPT STAINLESS STEEL, ZINC OR WHITE BRONZE WITH BITUMINOUS PAINT. ALL FASTENERS TO BE COMPATIBLE WITH THE MATERIALS THROUGH WHICH THEY PASS.
6. DELIVER, STORE, HANDLE AND PROTECT MATERIALS FROM DAMAGE. INSTALL PLUMB AND TRUE IN EXACT LOCATIONS, SECURELY FASTENED TO THE BUILDING STRUCTURE AS DETAILED.
7. THE CONTRACTOR SHALL PROVIDE TEMPORARY BRACING DURING CONSTRUCTION. THE BRACING SHALL BE DESIGNED, INSTALLED AND MAINTAINED BY THE CONTRACTOR. THE BRACING SHALL BE REMOVED ONLY AFTER THE INSTALLATION IS COMPLETE.
8. BOLTS, NUTS AND WASHERS TO CONFORM TO ASTM A307; DRIFT PINS SHALL CONFORM TO CSA G40.21 GRADE 260W (38W); ALL SPIKES, NAILS AND STAPLES TO CONFORM TO CSA STANDARD B111; AND ALL LAG SCREWS TO CONFORM TO CSA STANDARD B34. GALVANIZED WIRE ROPE SHALL BE 6x19 FIBRE–CORE.
9. ALL FASTENERS SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH CSA STANDARD G164, UNLESS NOTED OTHERWISE.
10. MALLEABLE IRON WASHERS SHALL BE USED UNDER THE HEADS AND NUTS OF ALL BOLTS BEARING ON TIMBER, UNLESS NOTED OTHERWISE.
11. NEOPRENE GASKETS TO BE USED IN BOLTED CONNECTIONS BELOW HIGHER HIGH WATER LEVEL.

ENVIRONMENTAL CONSTRUCTION REQUIREMENTS:

1. ENVIRONMENTAL WORK PROCEDURES, TIMING AND SPECIAL PRECAUTIONS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE DEPARTMENT OF FISHERIES AND OCEANS CANADA (DFO) AND THE PROVINCIAL MINISTRY OF ENVIRONMENT.
2. CONTRACTOR TO FOLLOW THE REQUIREMENTS OF THE "BEST MANAGEMENT PRACTICES FOR CONSTRUCTING DOCKS AND FLOATS IN THE SOUTH COAST AREA (SUNSHINE COAST – VANCOUVER ISLAND), FISHERIES AND OCEANS CANADA", AND "BEST MANAGEMENT PRACTICES FOR PILE DRIVING AND RELATED OPERATIONS – BC MARINE PILE DRIVING CONTRACTOR'S ASSOCIATION, NOVEMBER 2003", FOR ALL WORK ON THIS PROJECT.
3. SECTION 9 NOTIFICATION AND DFO APPROVAL REQUIRED.
4. CONDITIONS OF MELP AND DFO APPROVALS TO BE FOLLOWED.
5. CONTRACTOR MUST EMPLOY METHODS TO MITIGATE HARM TO FISH AND USE DEBRIS CONTROL DEVICES WHEN DRILLING OR WORKING OVER WATER.
6. ALL DEBRIS, SAWDUST AND SHAVINGS FALLING INTO THE WATER CAUSED BY THE WORK SHALL BE CONTAINED AND PROMPTLY CLEANED UP AND PROPERLY DISPOSED OF.
7. CONTRACTOR MUST HAVE EMERGENCY SPILL EQUIPMENT ON SITE AT ALL TIMES.
8. WHEN GRINDING OR CORING CURED CONCRETE, THE DUST AND FINES ENTERING THE WATER MUST NOT EXCEED THE ALLOWABLE LIMIT FOR SUSPENDED SOLIDS. WHEN GRINDING GREEN OR INCOMPLETELY CURED CONCRETE AND DUST OR FINES ARE ENTERING THE WATER, pH MONITORING SHALL BE CONDUCTED TO ENSURE ALLOWABLE RANGES ARE MAINTAINED. IN THE EVENT THAT THE LEVELS ARE OUTSIDE THE ACCEPTABLE RANGES, PREVENTATIVE MEASURES SHALL BE INTRODUCED. THIS MAY INCLUDE INTRODUCING SILT CURTAINS TO CONTAIN THE SOLIDS AND PREVENT FISH FROM ENTERING A CONTAMINATED AREA OR CONSTRUCTING CATCH BASINS TO COVER THE RUN OFF AND NEUTRALIZING IT PRIOR TO DISPOSAL.
9. SPILLS: WHEN PATCHING CONCRETE, ALL SPILLS MUST BE CONTAINED AND PREVENTED FROM ENTERING THE WATER.
10. WHENEVER THERE IS THE POSSIBILITY OF CONTAMINANTS ENTERING THE WATER, THE CONTRACTOR WILL MONITOR pH LEVELS TO ENSURE ACCEPTABLE LEVELS.

CAST IN PLACE CONCRETE

1. ALL CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF CAN/CSA A23.1 AND A23.2.
2. CONCRETE MIXES SHALL CONFORM TO CAN/CSA A23.1 AND A23.2 AND SHALL HAVE THE FOLLOWING PROPERTIES:

CLASS	28 DAY STRENGTH	EXPOSURE
ALL	35 MPa	C–1

3. CONCRETE TESTING SHALL BE CARRIED OUT IN ACCORDANCE WITH CAN/CSA A23.1 AND A23.2. THE MINIMUM NUMBER OF TESTS PERFORMED SHALL BE AS PER CSA A23.2. ADDITIONAL TESTING SHALL BE PERFORMED AT THE DIRECTION OF THE STRUCTURAL ENGINEER. CONTRACTOR SHALL PROVIDE TESTING AGENCY WITH ADEQUATE NOTICE TO PROVIDE TESTING AS REQUIRED.
4. REINFORCING STEEL TO CONFORM TO CSA SPECIFICATION G30.18M, GRADE 400.
5. ALL LAP SPLICES OF REINFORCING BARS SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE. SPLICES ARE TO BE STAGGERED SO THAT NOT MORE THAN EVERY THIRD BAR IS SPLICED AT ANY CROSS SECTION.

BAR SIZE	UNCOATED BARS, mm
10M	460
15M	685
20M	910
25M	1420

6. PROVIDE A 20mm CHAMFER ON ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE.
7. CONCRETE FINISHES SHALL BE IN ACCORDANCE WITH CAN/CSA A23.1.
8. ALL CONCRETE CURING SHALL BE IN ACCORDANCE WITH CAN/CSA A23.1. SPECIAL PRECAUTIONS SHALL BE TAKEN AS NOTED IN CSA A23.1 FOR PLACING AND CURING CONCRETE ABOVE 27° C AND BELOW 5° C.
9. MINIMUM CONCRETE COVER TO REINFORCING SHALL BE 75mm, UNLESS NOTED OTHERWISE.

REINFORCEMENT ABBREVIATIONS:

H2E	HOOK 2–ENDS, STANDARD HOOK
H1E	HOOK 1–END, STANDARD HOOK
H2E600	HOOK 2–ENDS, 600 LONG HOOKS
15M1600	15M STRAIGHT BAR, 1600 LONG

EPOXY MASTIC:

1. ALL SURFACES TO BE PREPARED FOLLOWING MANUFACTURE'S INSTRUCTIONS.
2. EPOXY MASTIC SYSTEM TO BE DENSO SEASHIELD SZ UNDERWATER EPOXY, OR APPROVED EQUIVALENT.
3. FILL ALL CRACKS AND HOLES THAT ARE 20mm OR DEEPER. EPOXY MASTIC SHOULD FILL THE ENTIRE VOID TO THE SURFACE. FOLLOW MANUFACTURE'S INSTRUCTIONS FOR INSTALLATION.

KEY PLAN
1:500

PILE WRAPPING:

1. PROPOSED PILE WRAP SYSTEM IS TO BE APPROVED FOR USE BY THE OWNER PRIOR TO CONSTRUCTION.
2. CONTRACTOR SHALL COMPLY WITH ALL WRITTEN RECOMMENDATIONS OF THE MANUFACTURER REGARDING SUPPLY, APPLICATION AND FASTENING OF THE SPECIFIED SYSTEM.
3. SYSTEM TO BE COMPRISED OF UNDER–WRAPPED PILING TAPE AND OUTER WRAPPING HDPE COVER TO THE FOLLOWING CHARACTERISTICS:
   - 3.1. PILE TAPE: MARINE PILING TAPE SHALL BE COMPRISED OF A NON–WOVEN SYNTHETIC FABRIC CARRIER FULLY IMPREGNATED AND COATED WITH A NEUTRAL PETROLATUM BASED COMPOUND WITH WATER DISPLACING AGENTS AND WIDE SPECTRUM BIOCIDES AND BACKED WITH A THIN LAYER OF HDPE. THE MARINE PILING TAPE SHALL HAVE A CHARACTER STABLE IN COMPOSITION AND PLASTICITY OVER A WIDE TEMPERATURE RANGE. THE TAPE SHALL BE NON–HARDENING AND NON–CRACKING. THE TAPE SHALL ACCOMMODATE VIBRATION AND EXTREME MOVEMENT OF SUBSTRATE AND BE HIGHLY RESISTANT TO MINERAL ACIDS AND ALKALIS.
   - 3.2. HDPE OUTER COVER: THE FLEXIBLE OUTER COVER SHALL BE HIGH DENSITY POLYETHYLENE (HDPE). IT SHALL BE NEW, SEAMLESS NON–RIGID VIRGIN MATERIAL. THE SHEET SHALL BE UNIFORM THROUGHOUT, FREE FROM DIRT, OIL AND OTHER FOREIGN MATTER AND FREE FROM CRACKS, CREASES, WRINKLES, BUBBLES, PINHOLES AND ANY OTHER DEFECTS THAT MAY AFFECT ITS SERVICE. THE SHEET SHALL CONFORM TO THE FOLLOWING MECHANICAL AND PHYSICAL PROPERTIES (ASTM METHOD/ TYPICAL VALUES).
     - TENSILE STRENGTH: 21 N/MM / ASTM D–638
     - ELONGATION: HDPE 560% MIN. / ASTM D–638
     - SPECIFIC GRAVITY: 0.90–0.96 / ASTM D–1505
     - LOW TEMPERATURE: –73°C / ASTM D–746
     - MIL THICKNESS: +/–10% / ASTM D–1593

SYMBOLS AND ABBREVIATIONS:

CL.	–	CLEAR
℄	–	CENTRELINE
CJP	–	COMPLETE JOINT PENETRATION
C/W	–	COMPLETE WITH
ø	–	DIAMETER
DWG.	–	DRAWING
EL.	–	ELEVATION
GL	–	GRID LINE
HDPE	–	HIGH–DENSITY POLYETHYLENE
I.D.	–	INSIDE DIAMETER
LLH	–	LONG LEG HORIZONTAL
LLV	–	LONG LEG VERTICAL
m	–	METRES
mm	–	MILLIMETRES
MAX.	–	MAXIMUM
MIN.	–	MINIMUM
N.T.S.	–	NOT TO SCALE
OPP.	–	OPPOSITE
PL	–	PLATE
R	–	RADIUS
SIM.	–	SIMILAR
S.S.	–	STAINLESS STEEL
T.O.	–	TOP OF
TYP.	–	TYPICAL
U/S	–	UNDERSIDE
U.N.O.	–	UNLESS NOTED OTHERWISE
WP	–	WORK POINT

A / S05 — SECTION/VIEW LETTER; SHEET WHERE DRAWN. A '–' INDICATES SAME SHEET

A / S05 — SECTION/VIEW LETTER; SECTION 1:100; SHEET WHERE TAKEN FROM. A '–' INDICATES SAME SHEET

2 — REVISION LETTER/NUMBER

GL — GRID LINE

PERMIT TO PRACTICE
Herold Engineering Limited
Signature ____ Date 2025-03-17
PERMIT NUMBER: 1000201
The Association of Professional Engineers and Geoscientists of British Columbia

NOT FOR CONSTRUCTION

ISSUES

No.	DATE YYYY.MM.DD	ISSUED FOR
A	2024.07.16	CLIENT REVIEW
B	2024.10.01	TENDER
C	2025.01.16	CLIENT REVIEW
D	2025.03.17	TENDER

SUB CONSULTANT

DRAFTED JJMC
DRAFTING REVIEW CDW
DESIGNED SPS
DESIGN REVIEW CDW

HEROLD ENGINEERING
#7 1920 Lyche Road Ucluelet, BC V0R 3A0
Tel: 250–534–9145
Email: mail@heroldengineering.com

ENGINEERS SEAL
PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA S. P. SUMMERSIDE
2025-03-17

GENERAL NOTES AND KEY PLAN

KEATS LANDING WHARF REPAIRS 2025 - KEATS ISLAND BC

1975 FIELD ROAD SECHELT BC V0N 3A1
SUNSHINE COAST REGIONAL DISTRICT (SCRD)

HEL PROJECT No. 4551–014	CLIENT DWG. No. N/A
SCALE AS SHOWN	PERMIT No. N/A
HEL DRAWING No. S01	REVISION D

DESTROY ALL DRAWINGS SHOWING PREVIOUS REVISION

File: K:\Projects\4551-014 Keats Landing Wharf Repairs 2024\2025\04 Drawing\Active\4551-014-100-201-202-203-204-205.dwg Plot Time: Mar. 17, 25 4:03 PM User: Jonathon Chatfield

LEGEND:

3 REPAIR REFERENCE NUMBER. FOR DESCRIPTIONS, SEE REPAIR TABLE ON DWG. S03.

PLAN

1:100

NOTE: DECKING AND STRINGERS ARE SHOWN PARTIALLY FOR CLARITY.

A SECTION

1:100

PERMIT TO PRACTICE
Herold Engineering Limited
Signature C.Work, P.Eng., FEC
Date 2025-03-17
PERMIT NUMBER: 1000201
The Association of Professional Engineers and Geoscientists of British Columbia

NOT FOR CONSTRUCTION

NOTES:

1. FOR GENERAL NOTES, SEE DWG. S01.
2. ALL ITEMS ARE TIMBER, UNLESS NOTED OTHERWISE.
3. ALL DIMENSIONS ARE APPROXIMATE AND ARE TO BE VERIFIED PRIOR TO REMEDIATION/CONSTRUCTION ACTIVITIES.

ISSUES

No.	DATE YYYY.MM.DD	ISSUED FOR	No.	DATE YYYY.MM.DD	ISSUED FOR	No.	DATE YYYY.MM.DD	ISSUED FOR
A	2024.07.16	CLIENT REVIEW						
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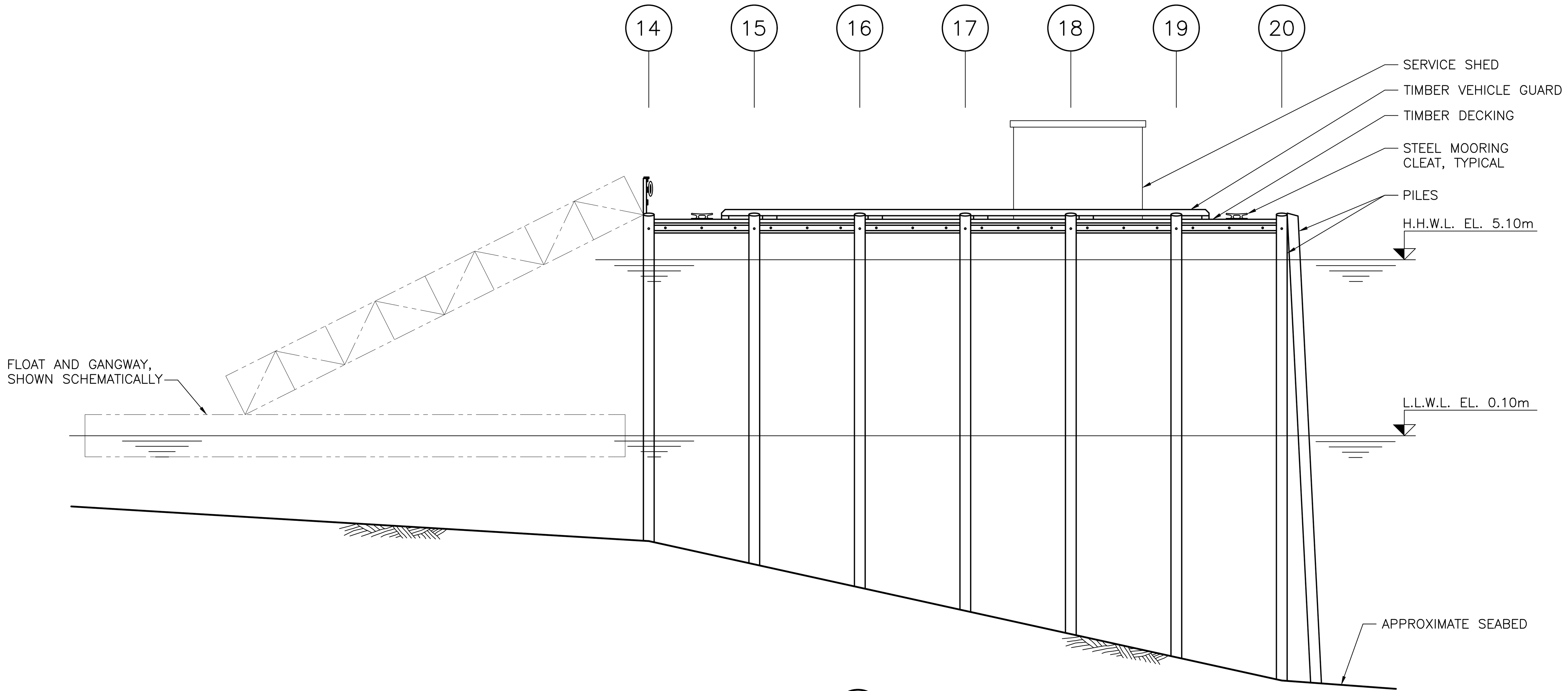
ENGINEERS SEAL
S. P. SUMMERSIDE
2025-03-17

GENERAL ARRANGEMENT - SHEET 1

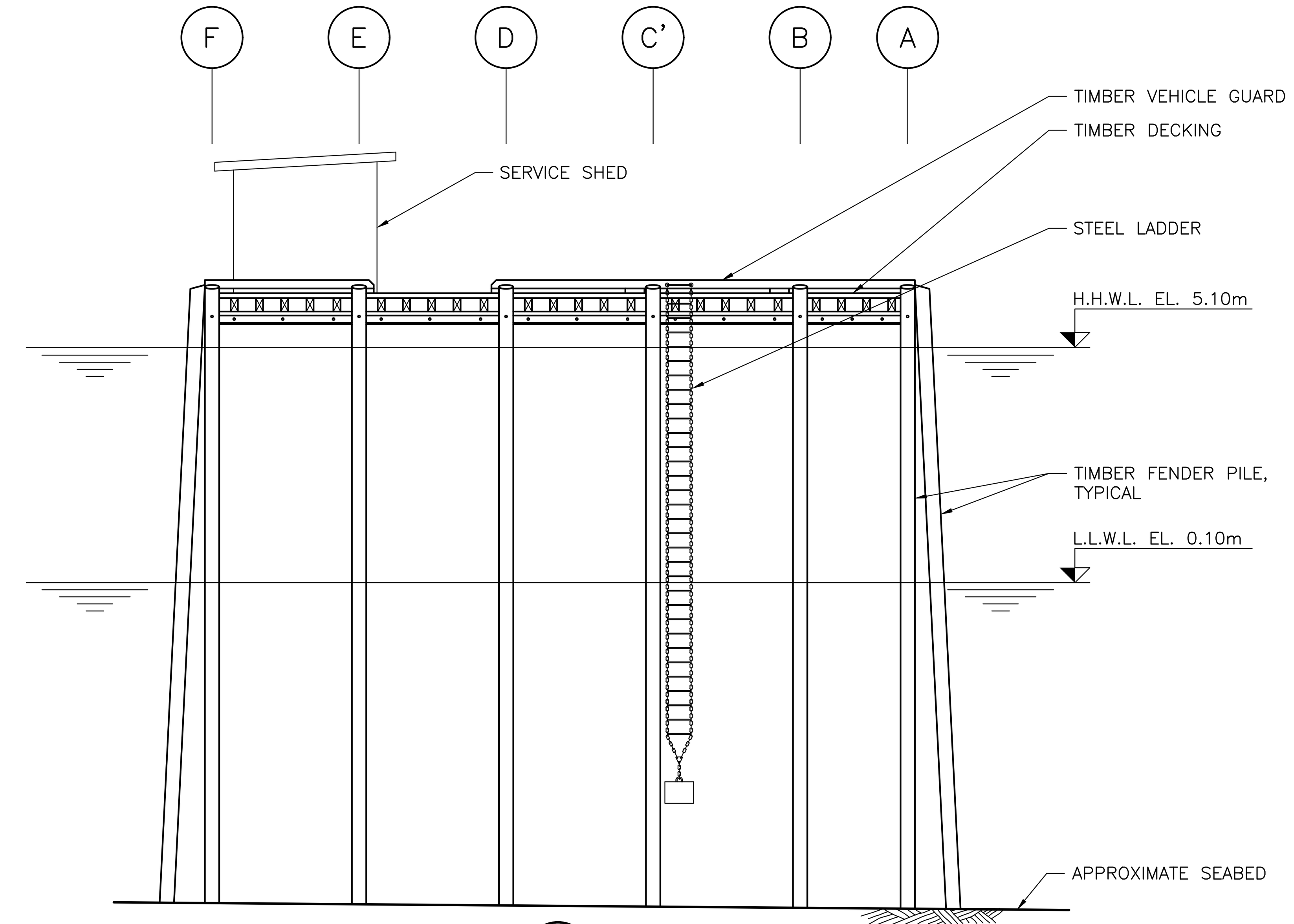
KEATS LANDING WHARF REPAIRS 2025 - KEATS ISLAND BC
1975 FIELD ROAD SECHELT BC V0N 3A1
SUNSHINE COAST REGIONAL DISTRICT (SCRD)

HEL PROJECT No. 4551-014
CLIENT DWG. No. N/A
SCALE AS SHOWN
PERMIT No. N/A
HEL DRAWING No. S02
REVISION D

DESTROY ALL DRAWINGS SHOWING PREVIOUS REVISION



A VIEW
S02 1:100

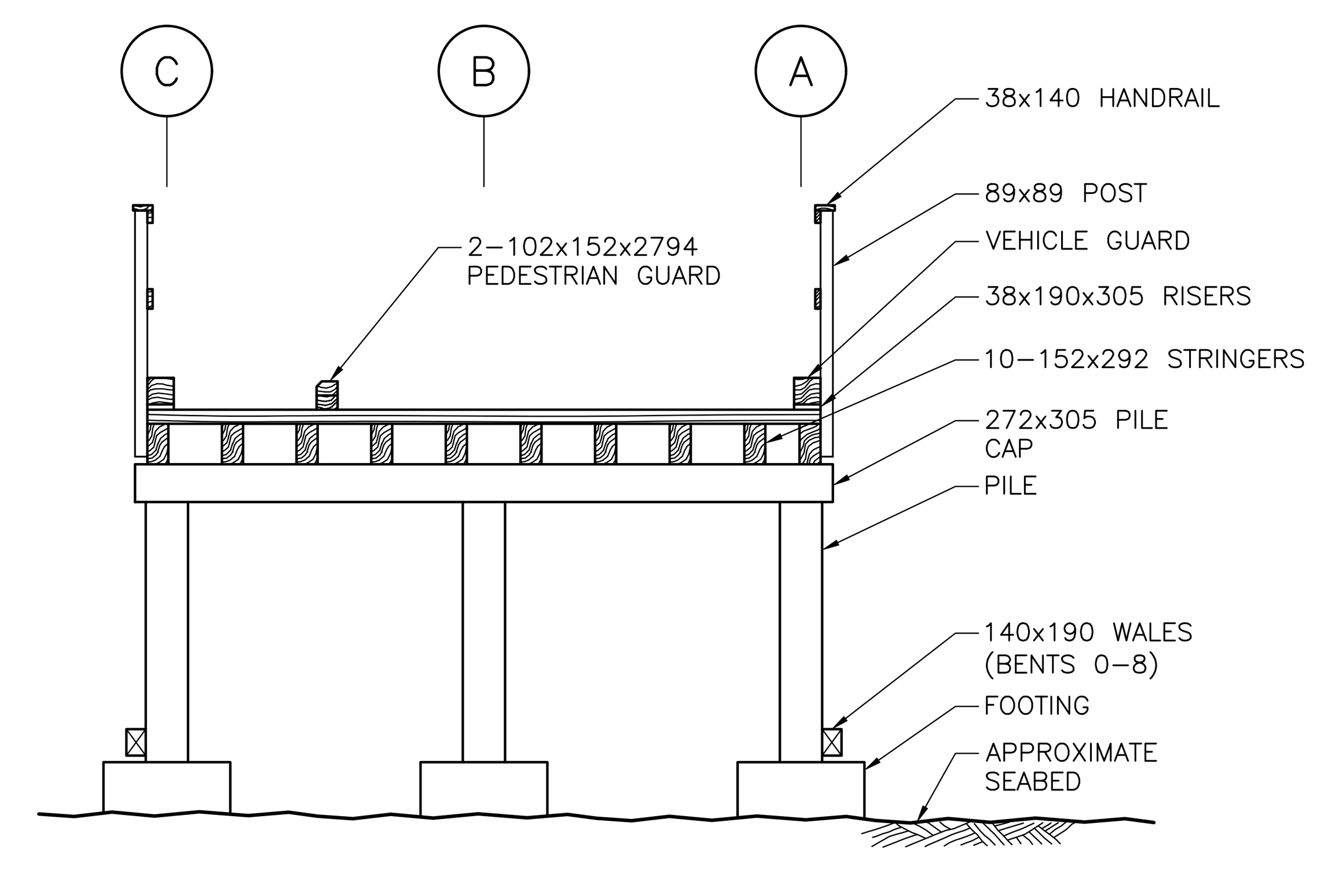


B VIEW
S02 1:100

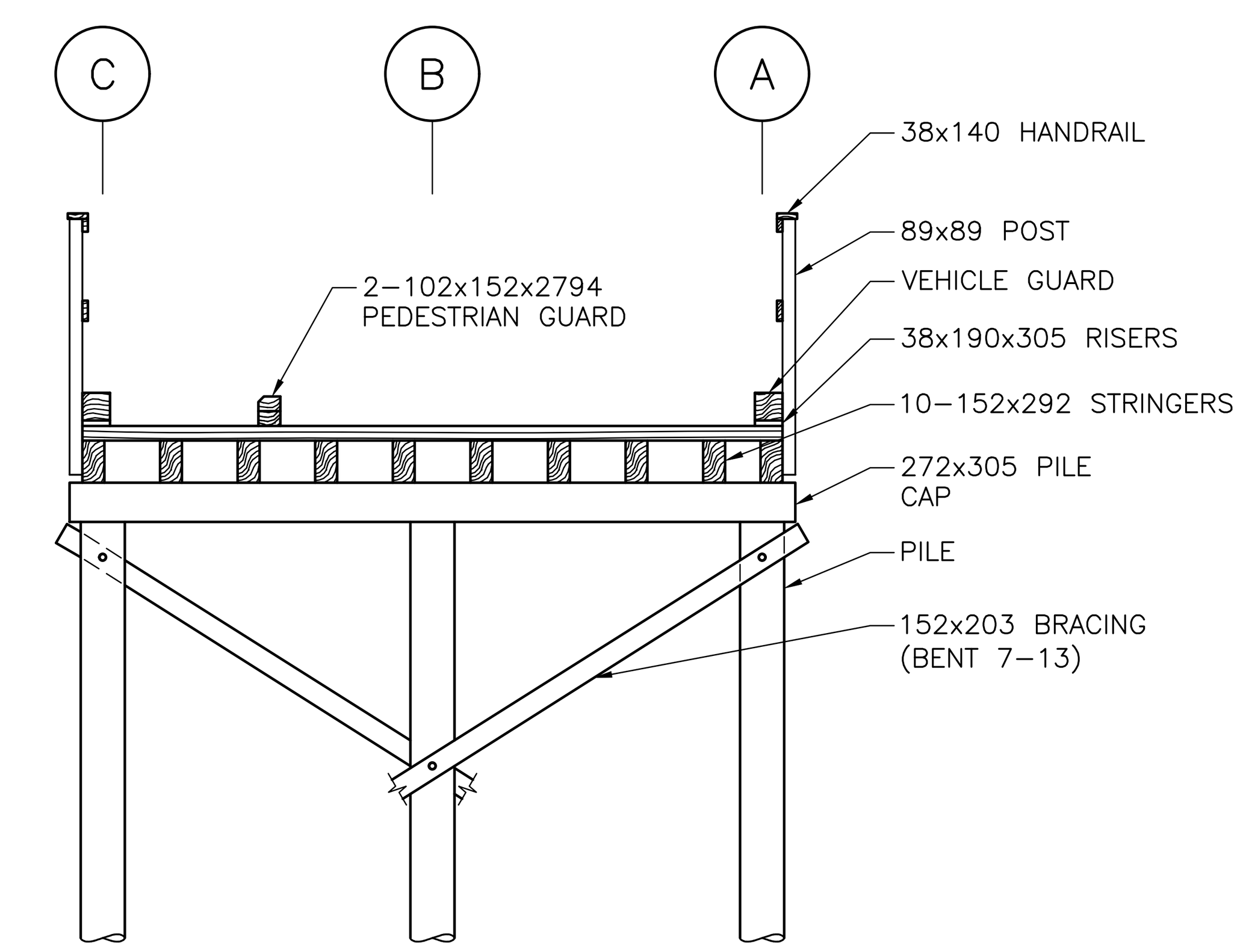
REPAIR TABLE (FOR REPAIR LOCATIONS, SEE PLAN ON DWG. S02)

REF. NO.	ELEMENT	LOCATION	ACTION	SIZE	LENGTH	DETAIL LOCATION
1	VEHICLE GUARD	0m AT A	REPLACE VEHICLE GUARD IN KIND	190mmx190mm	–	SEE DETAIL ON DWG. S05
2	VEHICLE GUARD	30m TO 37m AT C	REPLACE VEHICLE GUARD IN KIND	190mmx190mm	–	SEE DETAIL ON DWG. S05
3	VEHICLE GUARD	35m AT C	INSTALL RISER	38mmx190mm	–	SEE DETAIL ON DWG. S05
4	VEHICLE GUARD	55.5m AT C	REPLACE VEHICLE GUARD IN KIND	190mmx190mm	–	SEE DETAIL ON DWG. S05
5	VEHICLE GUARD	A14 TO A20	REPLACE VEHICLE GUARD IN KIND	190mmx241mm	–	SEE DETAIL ON DWG. S05
6	VEHICLE GUARD	A20 TO F20	REPLACE VEHICLE GUARD IN KIND	190mmx241mm	–	SEE DETAIL ON DWG. S05
7	VEHICLE GUARD	F20 AT F	REPLACE VEHICLE GUARD IN KIND	190mmx241mm	–	SEE DETAIL ON DWG. S05
8	DECKING	0m TO 4.6m	REPLACE 15-DECK BOARDS	102mmx305mm	–	–
9	DECKING	46m	REPLACE DECK BOARD	102mmx305mm	–	–
10	FOOTING	A5	REPLACE FOOTING IN KIND	SEE DETAIL	–	SEE DETAIL ON DWG. S04
11	FOOTING	C5	REPLACE FOOTING IN KIND	SEE DETAIL	–	SEE DETAIL ON DWG. S04
12	FOOTING	B4	REPLACE FOOTING IN KIND	SEE DETAIL	–	SEE DETAIL ON DWG. S04
13	PILE CAP	LINE 5	SECURE PILE TO PILE CAP PER DETAIL	–	–	SEE DETAIL ON DWG. S05
14	PILE CAP	LINE 6	SECURE PILE TO PILE CAP PER DETAIL	–	–	SEE DETAIL ON DWG. S05
15	PILE CAP	LINE 11	REPLACE PILE CAP IN KIND	273mmx305mm	–	SEE DETAIL ON DWG. S05
16	BEARING PILE	B4	REPLACE BEARING PILE IN KIND	SIZE 36 (305mm BUTT DIAMETER)	–	SEE DETAIL ON DWG. S04
17	BEARING PILE	A6	REPLACE BEARING PILE IN KIND	SIZE 36 (305mm BUTT DIAMETER)	–	SEE DETAIL ON DWG. S04
18	BEARING PILE	C16	REPLACE BEARING PILE IN KIND	SIZE 36 (305mm BUTT DIAMETER)	–	SEE DETAIL ON DWG. S04
19	BEARING PILE	F15	INSTALL PILE WRAP ALONG AFFECTED LENGTH PER DETAIL	–	–	SEE DETAIL ON DWG. S04
20	BEARING PILE	D15	INSTALL PILE WRAP ALONG AFFECTED LENGTH PER DETAIL	–	–	SEE DETAIL ON DWG. S04
21	BEARING PILE	C15	INSTALL PILE WRAP ALONG AFFECTED LENGTH PER DETAIL	–	–	SEE DETAIL ON DWG. S04
22	BEARING PILE	F17	INSTALL PILE WRAP ALONG AFFECTED LENGTH PER DETAIL	–	–	SEE DETAIL ON DWG. S04
23	BEARING PILE	B19	INSTALL PILE WRAP ALONG AFFECTED LENGTH PER DETAIL	–	–	SEE DETAIL ON DWG. S04
24	BATTER PILE	A20	INSTALL PILE WRAP ALONG AFFECTED LENGTH PER DETAIL	–	–	SEE DETAIL ON DWG. S04
25	BEARING PILE	A19	INSTALL STAINLESS STEEL PILE STRAPPING PER DETAIL	–	–	SEE DETAIL ON DWG. S04
26	BEARING PILE	D19	INSTALL STAINLESS STEEL PILE STRAPPING PER DETAIL	–	–	SEE DETAIL ON DWG. S04
27	CROSS BRACE	C5	REPLACE CROSS BRACE IN KIND	152mmx203mm	–	SEE DETAIL ON DWG. S04
28	CROSS BRACE	C6-A6	REPLACE CROSS BRACE IN KIND	152mmx203mm	–	SEE DETAIL ON DWG. S04
29	CROSS BRACE	C12	REPLACE CROSS BRACE IN KIND	152mmx203mm	–	SEE DETAIL ON DWG. S04
30	CROSS BRACE	E14-E15	REPLACE CROSS BRACE IN KIND	152mmx203mm	–	SEE DETAIL ON DWG. S04
31	FOOTING	C3	REPLACE FOOTING IN KIND	SEE DETAIL	–	SEE DETAIL ON DWG. S04
32	FOOTING	B5	REPLACE FOOTING IN KIND	SEE DETAIL	–	SEE DETAIL ON DWG. S04
33	WALE	A5 TO A6	REPLACE WALE IN KIND	140mmx190mm	6100	SEE DETAIL ON DWG. S04
34	BEARING PILE	F19	RE-ALIGN BEARING PILE UNDER CAP AND SECURE TO PILE CAP PER PILE CAP REPLACEMENT DETAIL	SEE DETAIL	–	SEE DETAIL ON DWG. S05
35	FENDER CHOCK	A14 TO A20	REPLACE FENDER CHOCKS IN KIND	CONTRACTOR TO CONFIRM	CONTRACTOR TO CONFIRM	SEE DETAIL ON DWG. S04
36	ALUMINUM FLASHING	E20 FENDER PILE	REPLACE ALUMINUM FLASHING	–	–	–
37	ALUMINUM FLASHING	F20 WEST FENDER PILE	REPLACE ALUMINUM FLASHING	–	–	–
38	ALUMINUM FLASHING	F20 EAST FENDER PILE	REPLACE ALUMINUM FLASHING	–	–	–
39	FOOTING	A6	REPLACE FOOTING IN KIND	SEE DETAIL	–	SEE DETAIL ON DWG. S04
40	CROSS BRACE	LINE 11	REPLACE CROSS BRACE IN KIND	152mmx203mm	–	SEE DETAIL ON DWG. S04
41	VEHICLE GUARD	C14 TO F14	REPLACE VEHICLE GUARD IN KIND	190mmx241mm	–	SEE DETAIL ON DWG. S05

NOTE: VEHICLE GUARD AND RISER DIMENSIONS ON THE DRAWINGS ARE PROVIDED FOR TENDERING PURPOSES ONLY. THE EXISTING DIMENSIONS OF THE VEHICLE GUARD AND RISERS ON THE APPROACH AND WHARFHEAD SHALL BE VERIFIED PRIOR TO CONSTRUCTION BY THE CONTRACTOR AND REPLACED IN KIND.



C SECTION
S02 1:50



D SECTION
S02 1:50

PERMIT TO PRACTICE
Herold Engineering Limited
Signature C.Work, P.Eng., FEC
Date 2025-03-17
PERMIT NUMBER: 1000201
The Association of Professional Engineers and Geoscientists of British Columbia

NOT FOR CONSTRUCTION

NOTES:

1. FOR GENERAL NOTES, SEE DWG. S01.
2. ALL ITEMS ARE TIMBER, UNLESS NOTED OTHERWISE.
3. ALL DIMENSIONS ARE APPROXIMATE AND ARE TO BE VERIFIED PRIOR TO REMEDIATION/CONSTRUCTION ACTIVITIES.

ISSUES

No.	DATE YYYY.MM.DD	ISSUED FOR
A	2024.07.16	CLIENT REVIEW
B	2024.10.01	TENDER
C	2025.01.16	CLIENT REVIEW
D	2025.03.17	TENDER

SUB CONSULTANT

DRAFTED JJMC
DRAFTING REVIEW CDW
DESIGNED SPS
DESIGN REVIEW CDW

HEROLD ENGINEERING
#7 1920 Lyche Road Ucluelet, BC V0R 3A0
Tel: 250-534-9145
Email: mail@heroldengineering.com

ENGINEERS SEAL
S. P. SUMMERSIDES #34834 PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA 2025-03-17

GENERAL ARRANGEMENT - SHEET 2 AND REPAIR TABLE

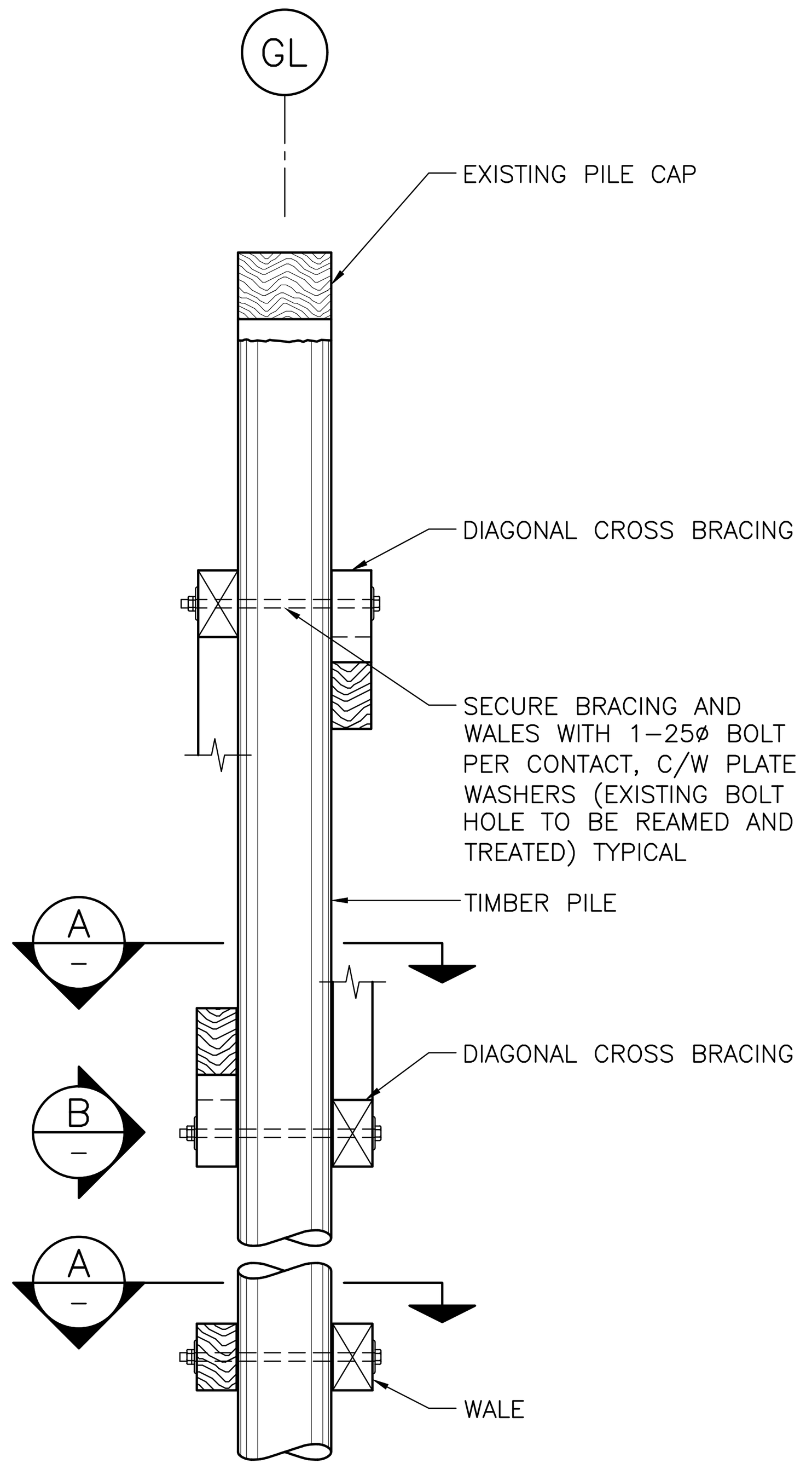
KEATS LANDING WHARF REPAIRS 2025 - KEATS ISLAND BC

1975 FIELD ROAD SECHELT BC V0N 3A1
SUNSHINE COAST REGIONAL DISTRICT (SCRD)

SUNSHINE COAST REGIONAL DISTRICT

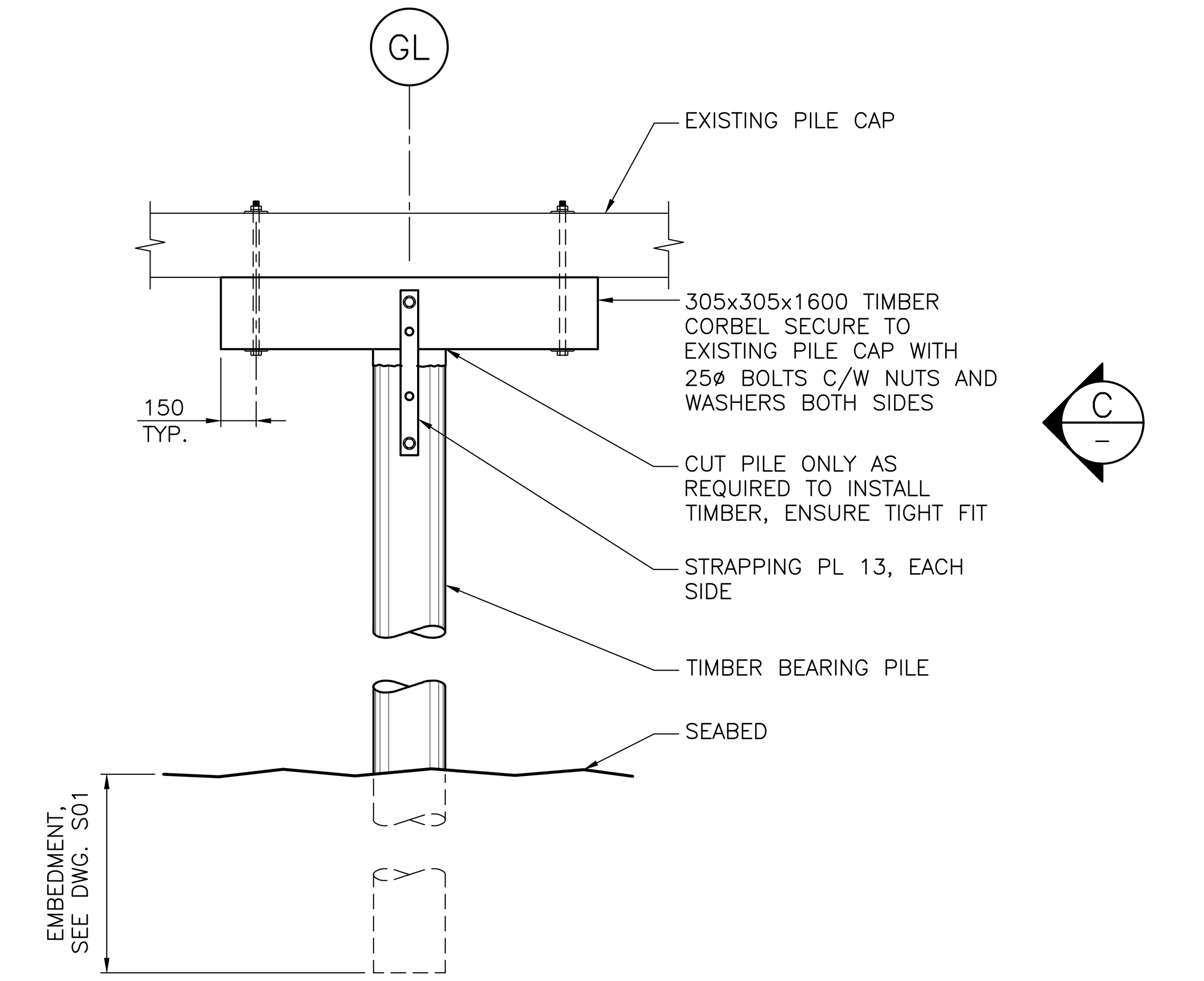
HEL PROJECT No.	CLIENT DWG. No.
4551-014	N/A
SCALE	PERMIT No.
AS SHOWN	N/A
HEL DRAWING No.	REVISION
S03	D

DESTROY ALL DRAWINGS SHOWING PREVIOUS REVISION



DETAIL – DIAGONAL CROSS BRACE AND WALE CONNECTION

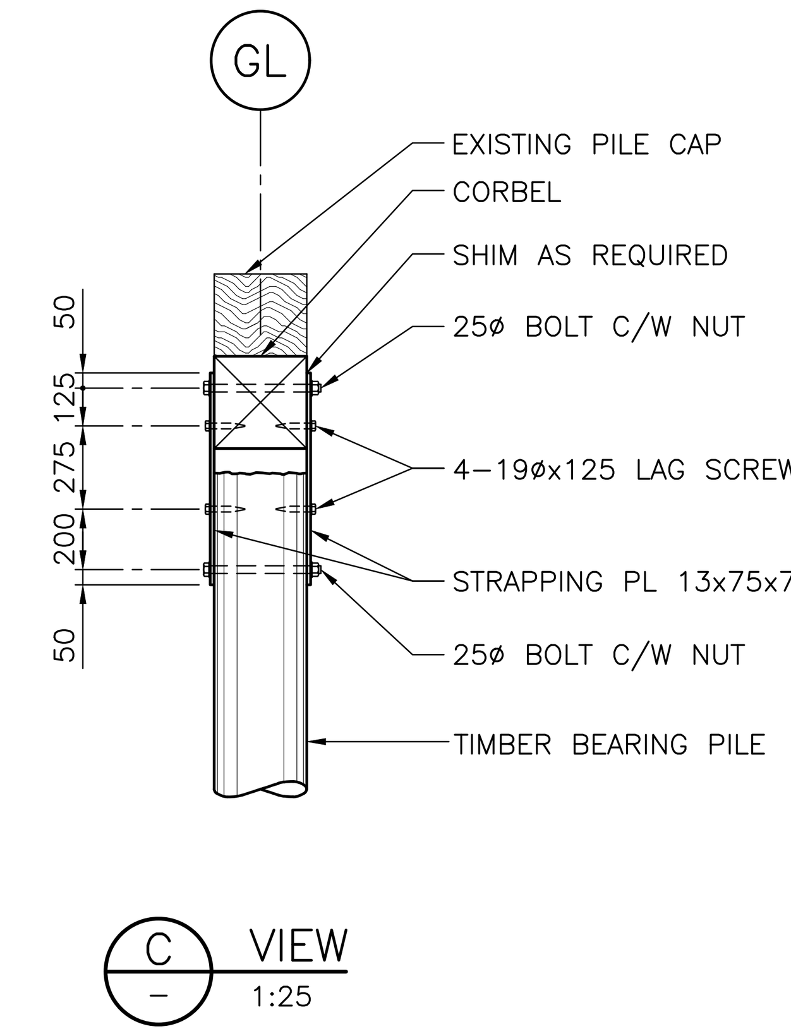
1:25



DETAIL – REPLACEMENT BEARING PILE WITH CORBEL

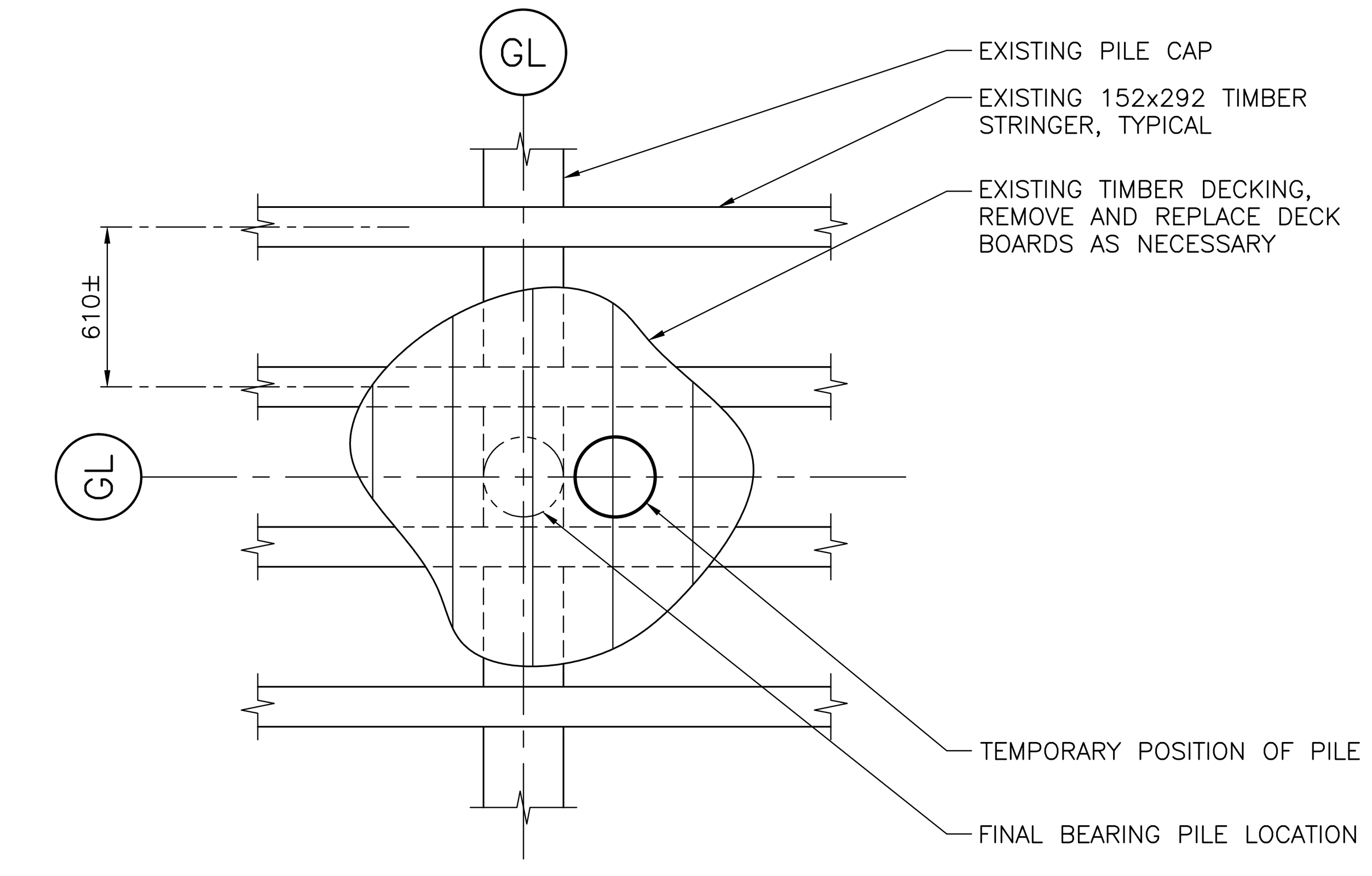
1:25

1. STRINGERS, DECKING AND BRACING NOT SHOWN.
2. SHIMS TO BE CREOSOTE TREATED PLYWOOD.



C VIEW

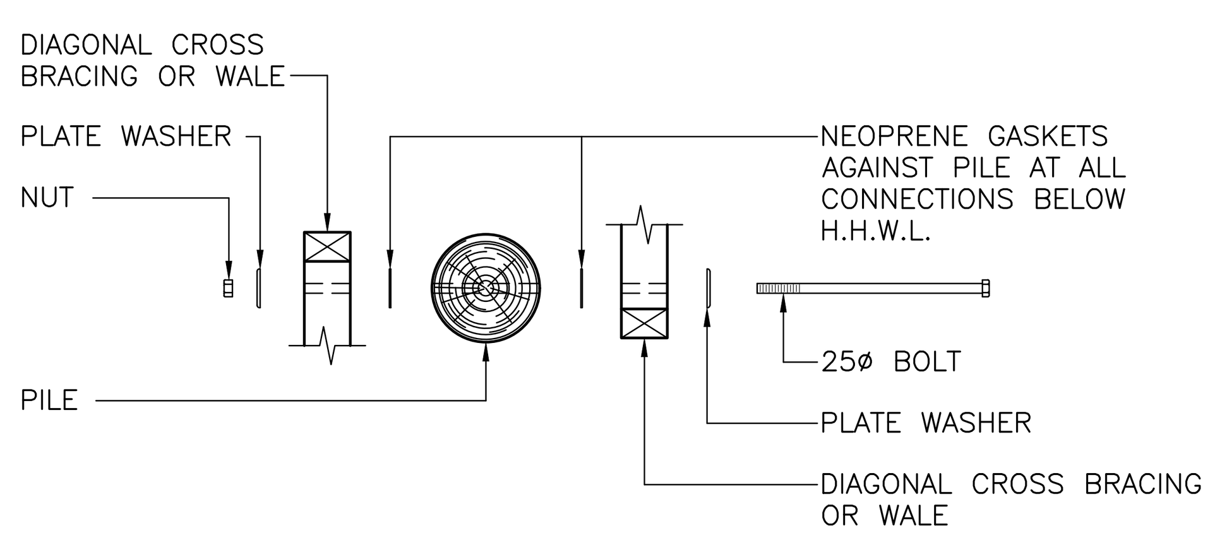
1:25



PLAN – TEMPORARY OPENING IN DECK FOR PILE REPLACEMENT

1:25

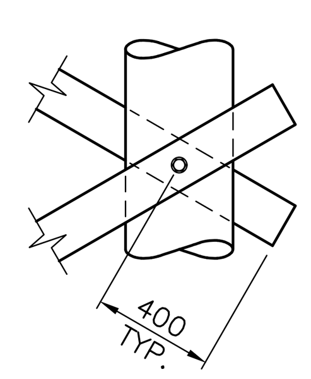
1. REMOVE MINIMUM AREA OF TIMBER DECKING AS REQUIRED TO PERMIT PILE REMOVAL AND INSTALLATION.
2. AVOID CUTTING EXISTING TREATED STRINGERS.
3. INSTALL REPLACEMENT 102x305 (APPROACH) OR 76x305 (WHARFHEAD) DECKING.



A SECTION – EXPLODED VIEW

1:25

NOTE: LOWER CONNECTION FOR DIAGONAL CROSS BRACING AND WALES SHOWN. UPPER CONNECTION FOR DIAGONAL CROSS BRACING, SIMILAR.

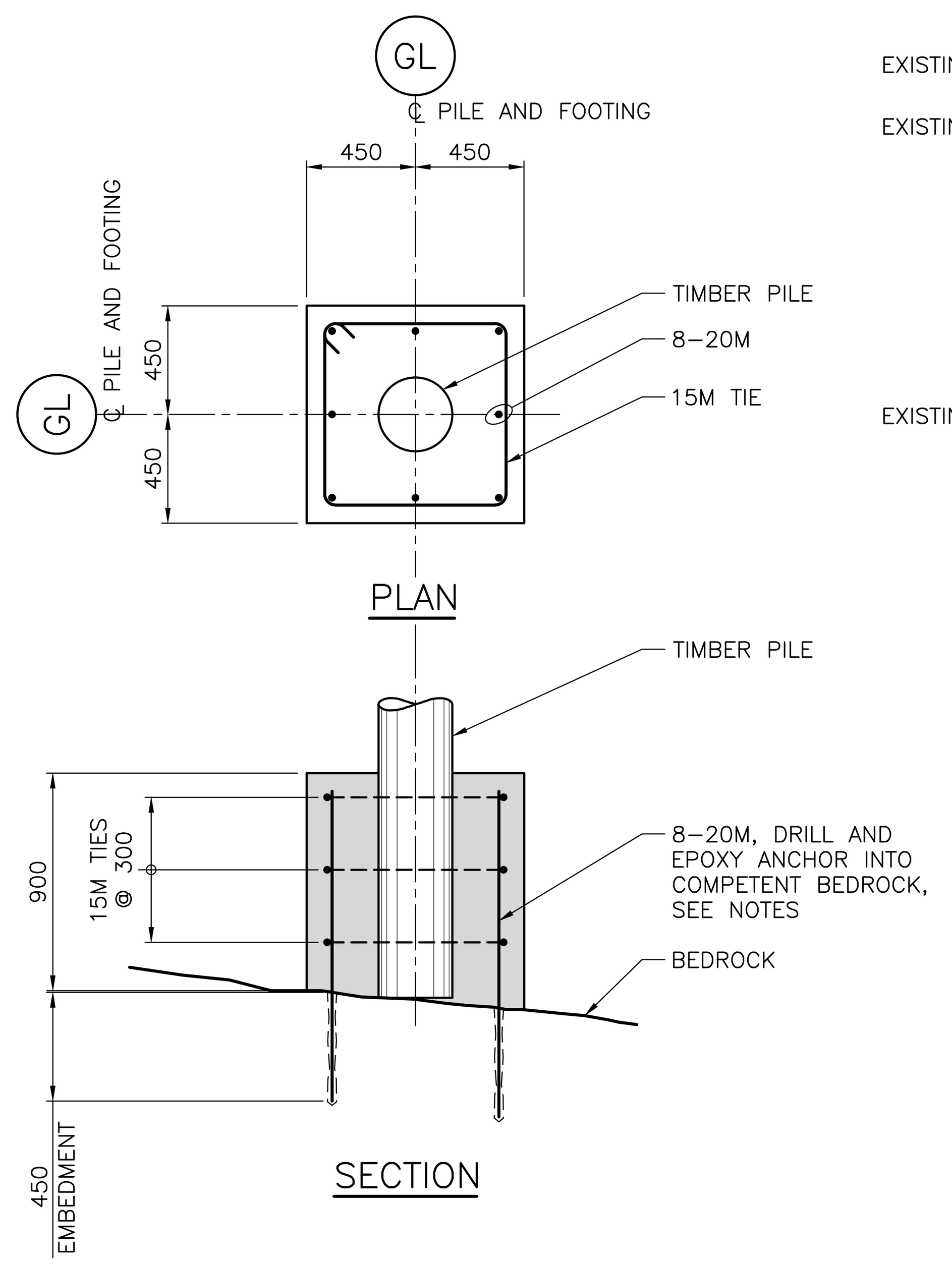


B VIEW

1:25

NOTE: DIAGONAL CROSS BRACING SHOWN. WALE IS SIMILAR.

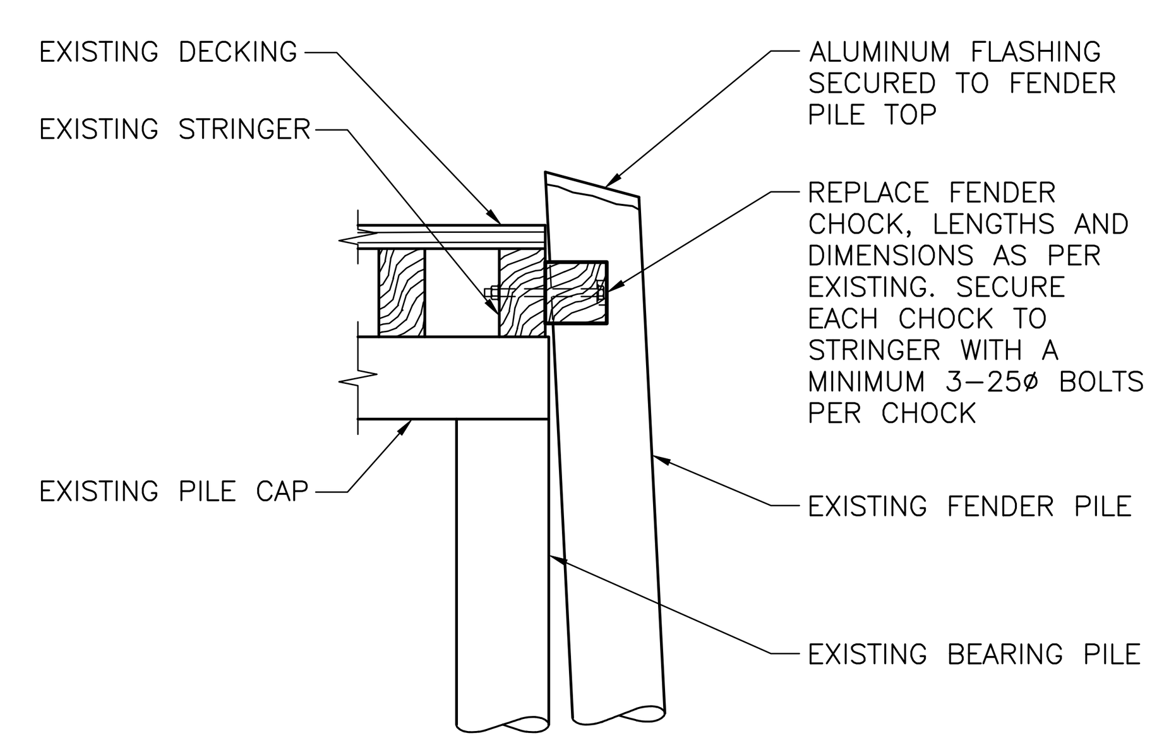
NOTE: WHERE DIAGONAL CROSS BRACE HAS FIELD CUT END, POSITION FIELD CUT AND TREATED END AT TOP OF BRACE.



DETAIL – CONCRETE FOOTING WITH PILE ON BEDROCK

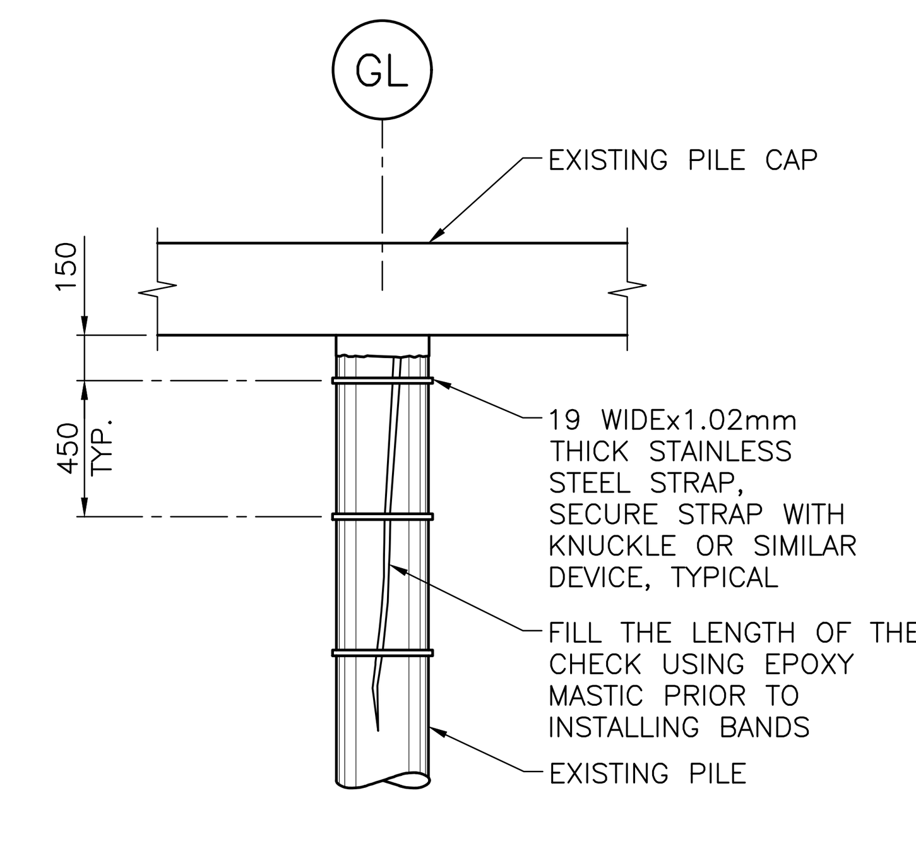
1:25

1. DETAIL ALSO APPLIES SHOULD REFUSAL OCCUR WITHIN 900mm.



DETAIL – FENDER CHOCK

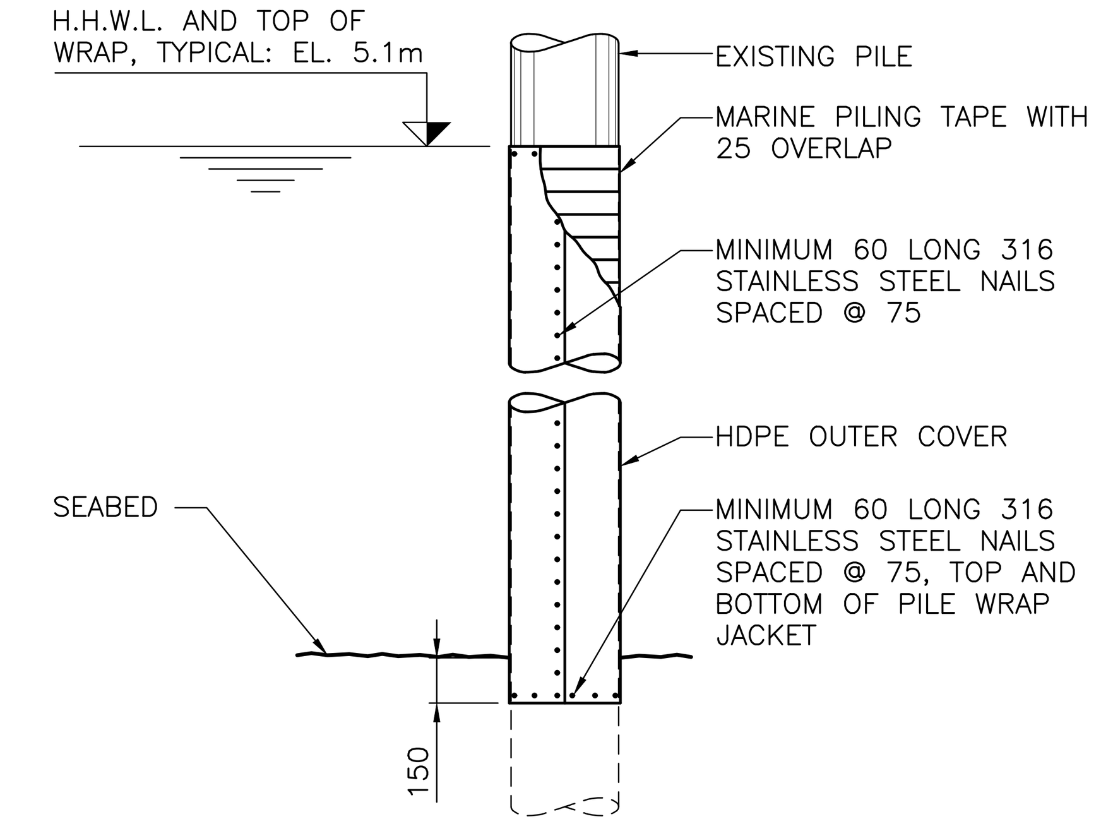
1:25



DETAIL – PILE STRAPPING

1:25

1. CONTRACTOR TO CONFIRM TRUE PILE DIAMETER PRIOR TO FABRICATION OF STRAPS.
2. STRINGERS, DECKING AND BRACING NOT SHOWN.



DETAIL – PILE WRAP

1:25

NOTES:

1. FOR GENERAL NOTES, SEE DWG. S01.
2. ALL ITEMS ARE TIMBER, UNLESS NOTED OTHERWISE.
3. ALL DIMENSIONS ARE APPROXIMATE AND ARE TO BE VERIFIED PRIOR TO REMEDIATION/CONSTRUCTION ACTIVITIES.

ADHESIVE ANCHORS

1. ALL ANCHORS ARE TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
2. POST-INSTALLED ANCHORS SHALL BE AS SHOWN ON THE STRUCTURAL DRAWINGS OR AS APPROVED BY THE PROJECT ENGINEER. REFER TO DRAWINGS FOR ANCHOR LOCATIONS, SIZES, CENTRES AND EMBEDMENT LENGTHS.
3. UNLESS NOTED OTHERWISE ON THE DRAWINGS, ADHESIVE ANCHORS SHALL USE HILTI HIT-RE 500 V3.
4. THE CONTRACTOR SHALL INFORM THE ENGINEER PRIOR TO INSTALLING ANY ADHESIVE ANCHORS. THE ENGINEER MAY BE REQUIRED TO PERFORM AN ON-SITE OBSERVATION DURING THE ENTIRE INSTALLATION PROCESS.

PERMIT TO PRACTICE
Herold Engineering Limited
Signature / Date 2025-03-17
PERMIT NUMBER: 1000201
The Association of Professional Engineers and Geoscientists of British Columbia

FOR REPLACEMENT AND REPAIR LOCATIONS, SEE PLAN ON DWG. S02 AND REPAIR TABLE ON DWG. S03.

NOT FOR CONSTRUCTION

ISSUES

No.	DATE	ISSUED FOR	No.	DATE	ISSUED FOR	No.	DATE	ISSUED FOR
A	2024.07.16	CLIENT REVIEW						
B	2024.10.01	TENDER						
C	2025.01.16	CLIENT REVIEW						
D	2025.03.17	TENDER						

SUB CONSULTANT

DRAFTED: JJMC
DRAFTING REVIEW: CDW
DESIGNED: SPS
DESIGN REVIEW: CDW

HEROLD ENGINEERING
#7 1920 Lyche Road Ucluelet, BC V0R 3A0
Tel: 250-534-9145
Email: mail@heroldengineering.com

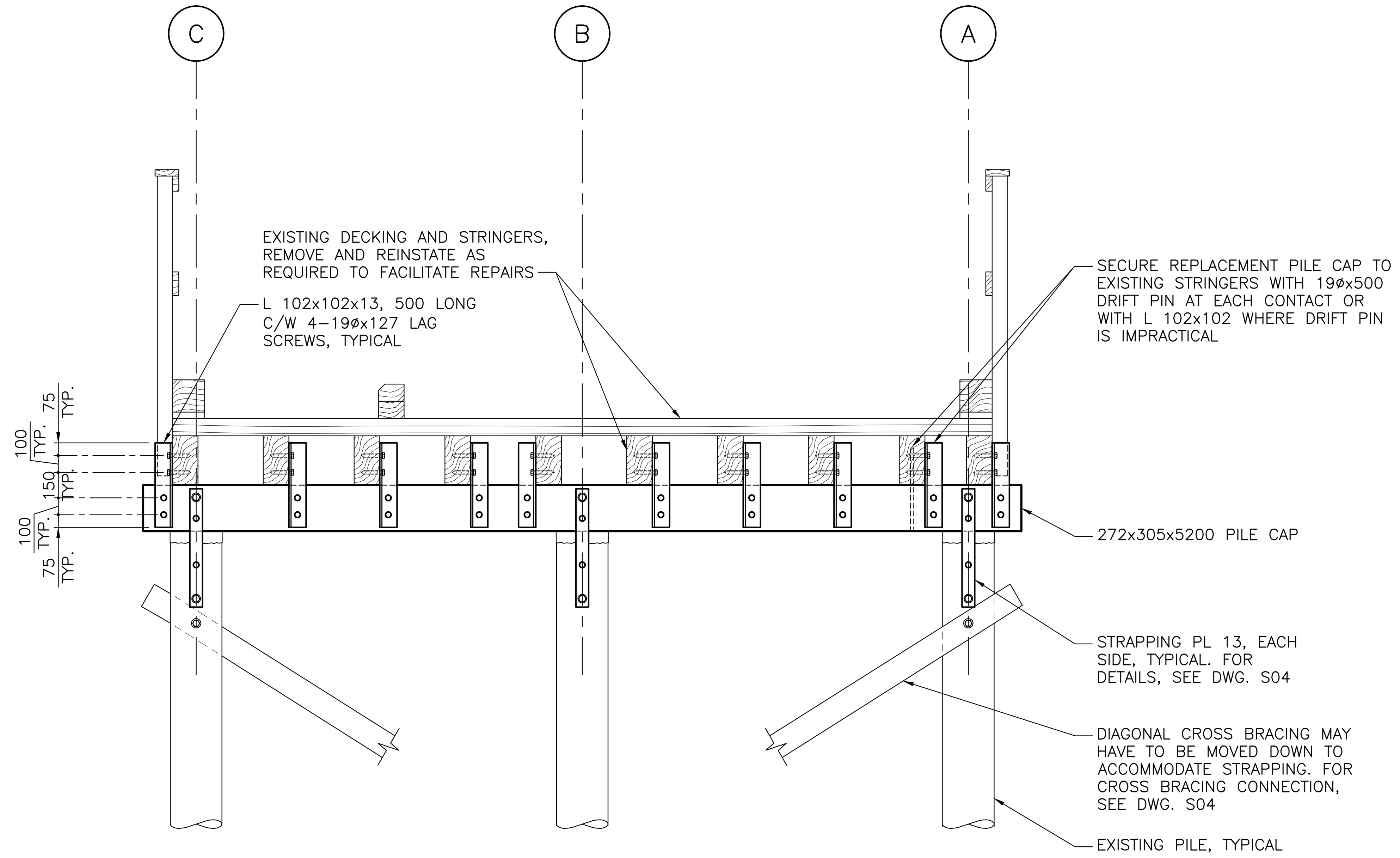
ENGINEERS SEAL
S. P. SUMMERSIDES
2025-03-17

DETAILS - SHEET 1

KEATS LANDING WHARF REPAIRS
2025 - KEATS ISLAND BC
1975 FIELD ROAD SECHELT BC V0N 3A1
SUNSHINE COAST REGIONAL DISTRICT (SCRD)

HEL PROJECT No.	CLIENT DWG. No.	
4551-014	N/A	
SCALE: AS SHOWN	PERMIT No.: N/A	
HEL DRAWING No.: S04		REVISION: D

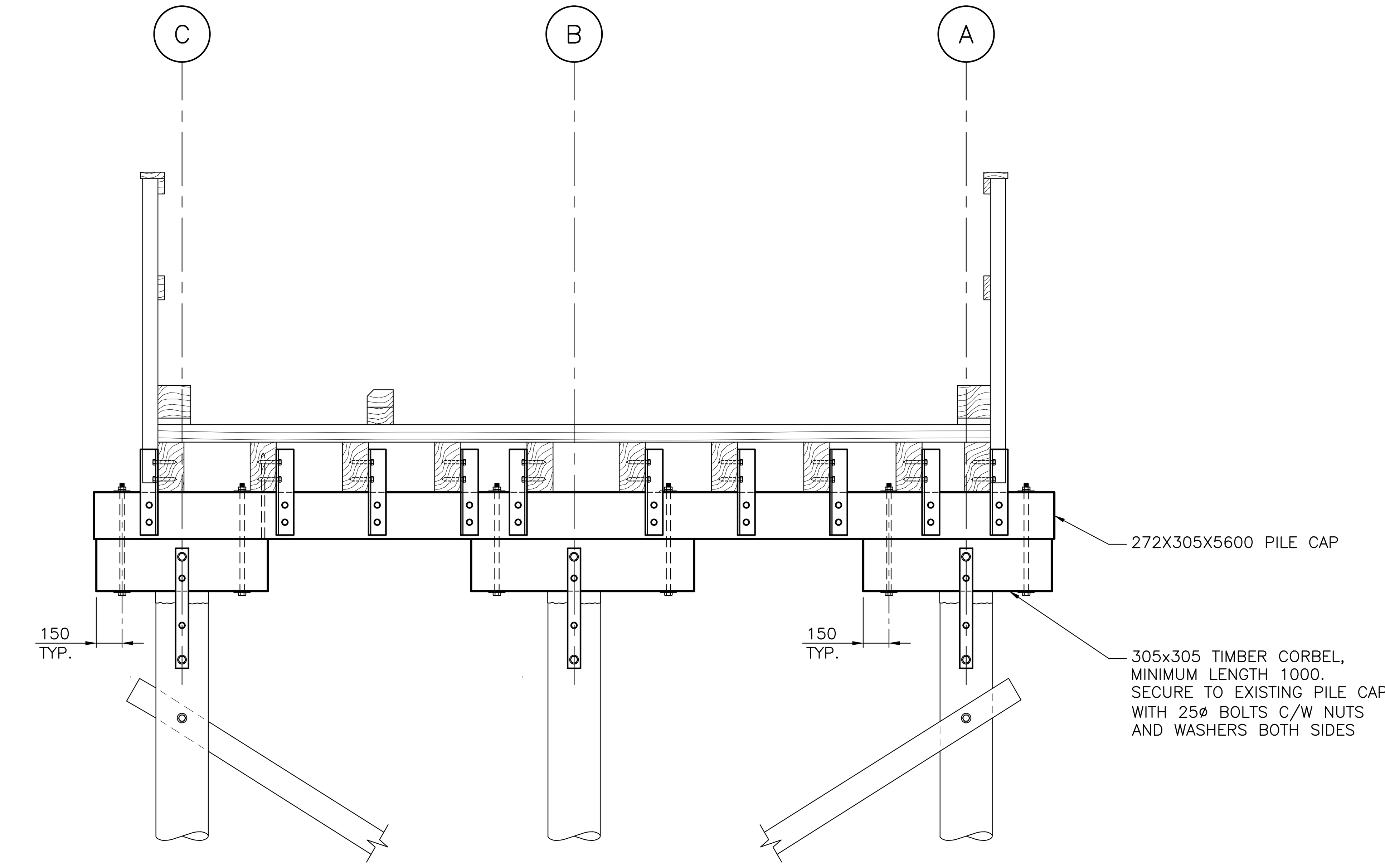
DESTROY ALL DRAWINGS SHOWING PREVIOUS REVISION



DETAIL – PILE CAP REPLACEMENT AT LINE 11

1:25

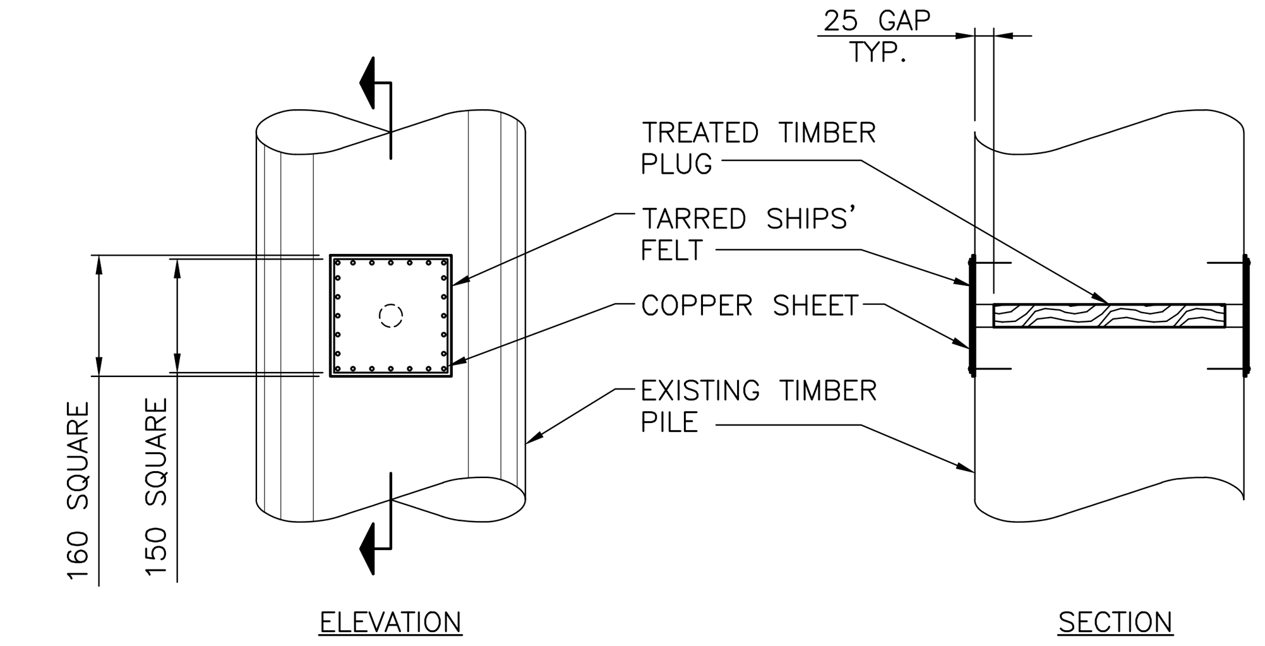
NOTE: ALL ABANDONED BOLT HOLES DUE TO BRACING RELOCATION SHALL BE PATCHED, SEE DETAIL THIS SHEET.



DETAIL – PILE CAP REPLACEMENT AT LINES 5 AND 6

1:25

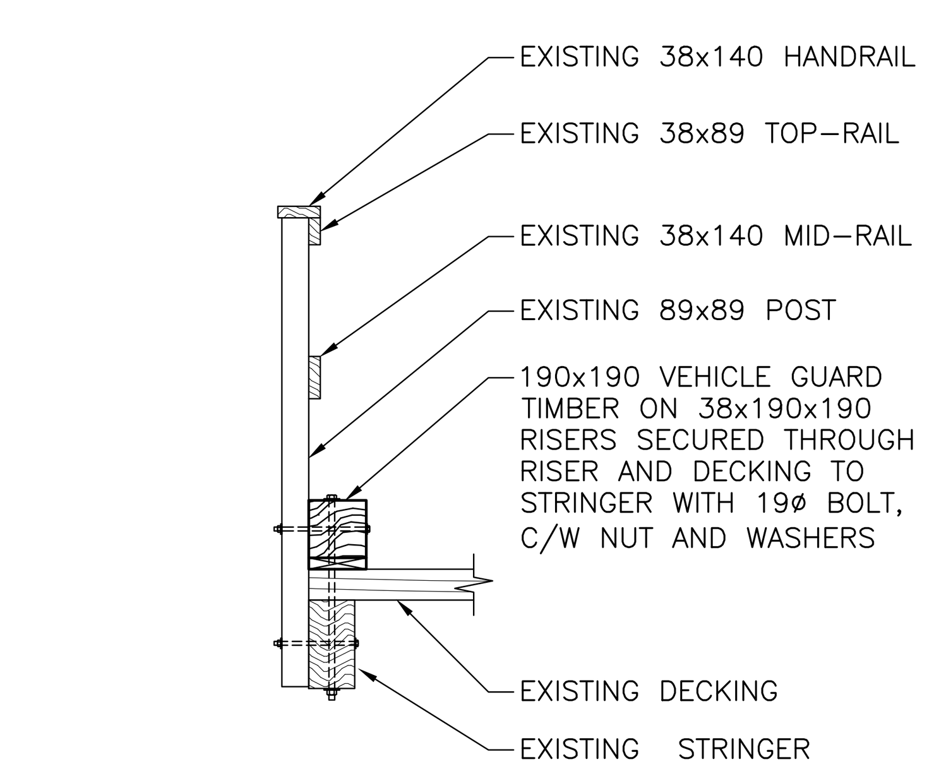
NOTE: SIMILAR TO PILE CAP REPLACEMENT AT LINE 11, UNLESS NOTED OTHERWISE.



BOLT HOLE PATCHING DETAIL

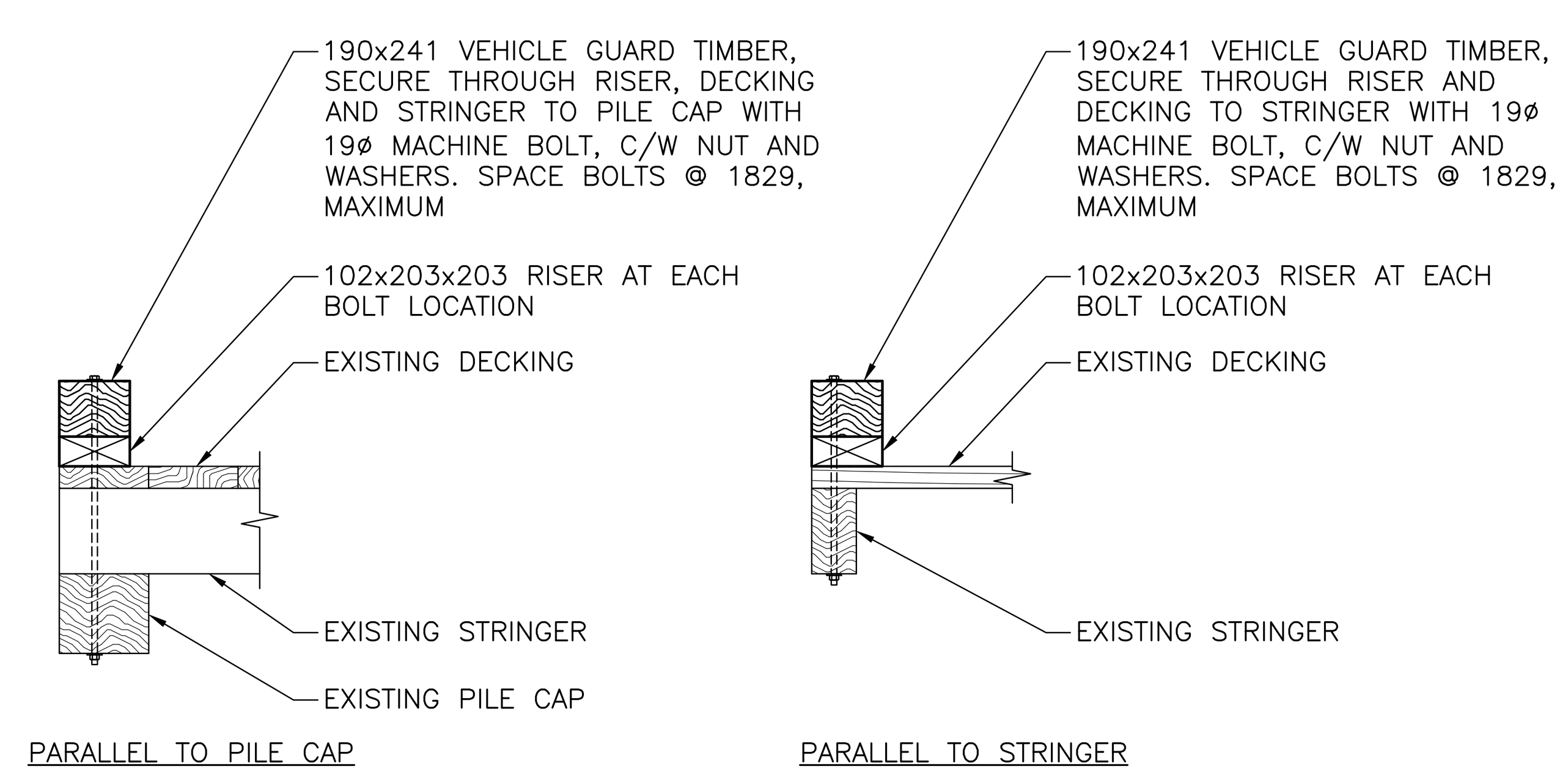
1:10

1. TREAT HOLE WITH ROOFING TAR.
2. PLUG HOLE WITH TIGHT–FITTING TREATED TIMBER PLUG.
3. PATCH BOTH ENDS OF HOLE WITH FIBERBLASS–REINFORCED ROOF PATCHING COMPOUND.
4. COVER BOTH ENDS OF HOLE WITH 160x60 PATCH OF TARRED SHIPS' FELT. COVER BOTH ENDS OF HOLE WITH 150x150 PATCH OF 3mm HARD OR ANNEALED COPPER SHEET OVER SHIPS' FELT AND SECURE EACH SIDE WITH 38 LONG COPPER OR SILICON–BRONZE BOAT NAILS SPACED 25 APART AROUND THE PERIMETER.



DETAIL – HANDRAIL AND AND VEHICLE GUARD ON APPROACH

1:25



DETAIL – VEHICLE GUARD ON WHARFHEAD

1:25

FOR REPLACEMENT AND REPAIR LOCATIONS, SEE PLAN ON DWG. S02 AND REPAIR TABLE ON DWG. S03.

NOT FOR CONSTRUCTION

NOTES:

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SUB CONSULTANT

DRAFTED JJMC
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Tel: 250–534–9145
Email: mail@heroldengineering.com

ENGINEERS SEAL
S. P. SUMMERSIDE
2025-03-17

DETAILS - SHEET 2

KEATS LANDING WHARF REPAIRS
2025 - KEATS ISLAND BC
1975 FIELD ROAD SECHELT BC V0N 3A1
SUNSHINE COAST REGIONAL DISTRICT (SCRD)

HEL PROJECT No. 4551–014
CLIENT DWG. No. N/A
SCALE AS SHOWN
PERMIT No. N/A
HEL DRAWING No. S05
REVISION D

DESTROY ALL DRAWINGS SHOWING PREVIOUS REVISION