

HEROLD ENGINEERING LTD. 1000 10th Avenue, Suite 100, Nanaimo, BC V9T 2H1 Tel: 250-751-8558 Fax: 250-751-8559 Email: info@heroldengineering.com

GENERAL:

1. READ STRUCTURAL DRAWINGS IN CONJUNCTION WITH ALL OTHER CONTRACT DRAWINGS 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 DOCKS. 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. HORIZONTAL DATUM U.T.M. NAD 83.
8. VERTICAL DATUM (ELEVATIONS AND CONTOURS) TO CHART DATUM (C.D.).
9. TIDE ELEVATIONS AT THE SITE ARE BASED ON VALUES PUBLISHED BY THE CANADIAN HYDROGRAPHIC SERVICE (CHS) FOR BEDWELL HARBOUR, PENDER ISLAND AND ARE AS FOLLOWS:

HIGHER HIGH WATER, LARGE TIDE (H.H.W.L.T.)	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.T.)	0.1 METRES
10. SUBMIT SHOP DRAWINGS FOR REVIEW PRIOR TO FABRICATION.

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 CSA 080:
 - 4.1. CATEGORY 3.2 EXPOSED TO WEATHER, NOT IN GROUND CONTACT. INCLUDING BULLRAILS AND RISERS.
 - 4.1.1. ACZA, 4.0kg/m³
 - 4.1.2. CCA, 4.0kg/m³
 - 4.2. CATEGORY UC 4.1 CONTACT WITH SPLASH ZONE. INCLUDING WHARF JOISTS, STRINGERS, FISH PLATES, PLYWOOD NOT COVERED UNDER UC5A, PILECAPS & BLOCKING.
 - 4.2.1. ACZA, 6.4kg/m³
 - 4.2.2. CCA, 6.4kg/m³
 - 4.2.3. CREOSOTE:
 - 4.2.3.1. 160kg/m³ IF THICKNESS LESS THAN 115MM
 - 4.2.3.2. 120kg/m³ IF THICKNESS GREATER THAN OR EQUAL TO 115MM
 - 4.3. USE CATEGORY UC5A, MARINE. INCLUDING WOOD PILES, PLYWOOD, CROSS BRACES, WALES.
 - 4.3.1. ACZA, 30kg/m³ OR
 - 4.3.2. CCA, 24kg/m³ OR
 - 4.3.3. CREOSOTE 290kg/m³
 - 4.3.3.1. PENETRATION IN ACCORDANCE WITH 080
 - 4.4. AFTER CUTOFF, TREAT PILE TOPS WITH TWO COATS OF HOT CREOSOTE OIL AND ONE COAT OF APPROVED MASTIC AT LEAST 6mm THICK.
 - 4.5. ALL FENDER PILES TO BE COVERED A SHEET OF 24 GAUGE ANNEALED CORROSION RESISTANT ALUMINUM, CUT 300mm LARGER THAN THE PILE TOP.
 - 4.6. ALL DRILLED BOLT HOLES COMPLETED AFTER TREATMENT MUST BE FIELD TREATED WITH TWO COATS OF HOT CREOSOTE AND BOLTS/PLUGS MUST BE DIPPED IN CREOSOTE PRIOR TO INSTALLATION.
 - 4.7. PLUG ALL UNUSED BOLT HOLES WITH TIGHT FITTING CREOSOTE TREATED BOLTS, AND NEOPRENE GASKET AND WASHER EACH END.
 - 4.8. TIMBER HANDLING
 - 4.8.1. ALL TREATED TIMBER AS TO NOT PUNCTURE THE TREATED LAYER. ANY MEMBERS IDENTIFIED AS BEING DAMAGED THROUGH THE TREATED LAYER EITHER PRIOR TO OR DURING INSTALLATION WILL BE REJECTED AT THE EXPENSE OF THE CONTRACTOR.
 - 4.9. ALL SHIMS MUST BE CREOSOTE 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.
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 TO ACHIEVE A MINIMUM PENETRATION EQUAL TO THAT OF THE REMOVED PILE AND TO SATISFY THE PILE DRIVING CRITERIA NOTED ABOVE.

METAL FABRICATIONS:

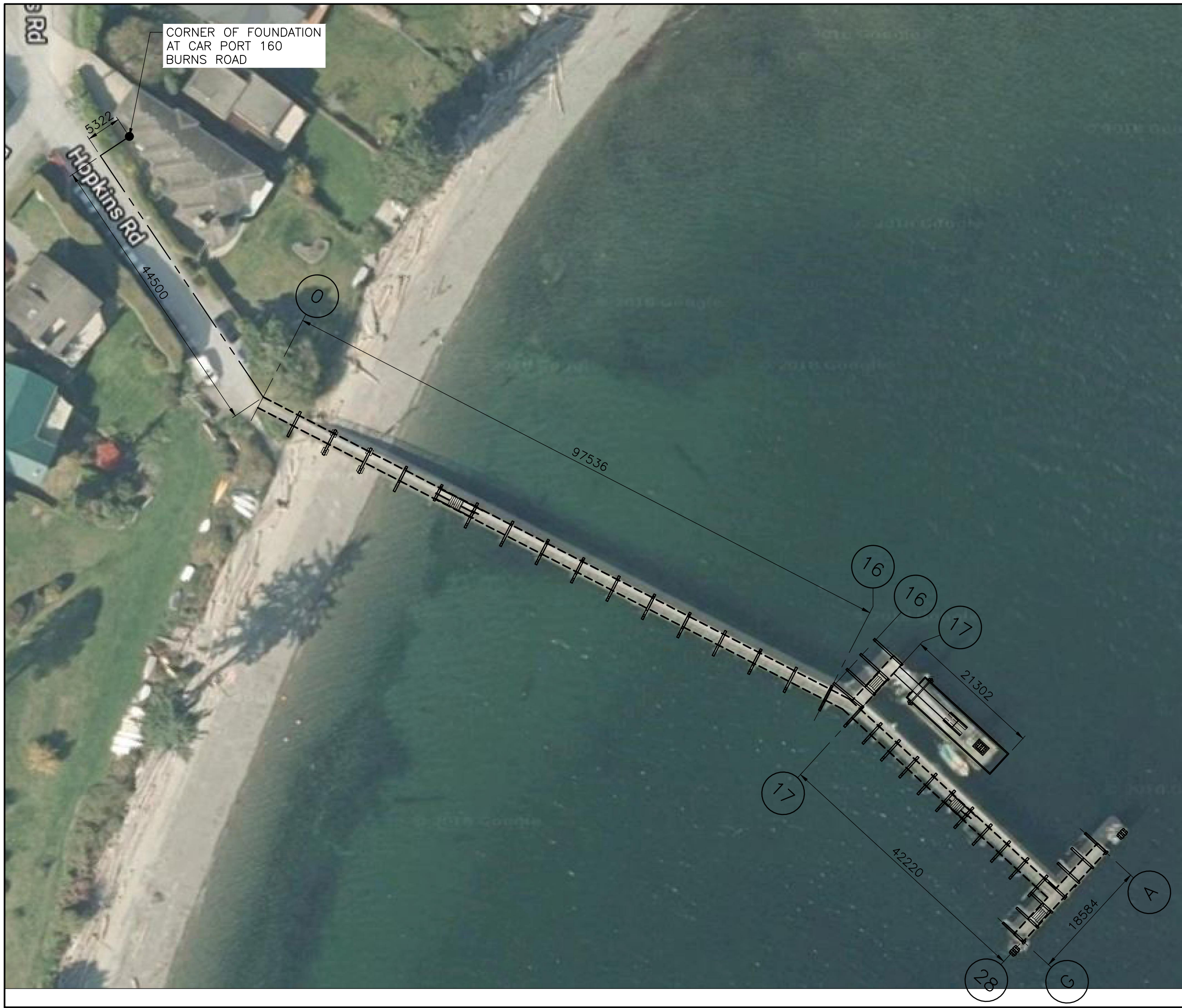
1. UNLESS NOTED OTHERWISE BY THE ENGINEER IN WRITING THE STEEL AND/OR ALUMINUM FABRICATOR SHALL SUPPLY THE ENGINEER WITH SHOP DRAWINGS FOR REVIEW PRIOR TO FABRICATION. SHOP DRAWINGS SHALL INDICATE ALL DETAILS, MATERIAL SPECIFICATIONS AND DESIGN LOADS.
2. A COPY OF THE FABRICATOR'S CANADIAN WELDING BUREAU CERTIFICATES SHALL BE INCLUDED WITH THE SHOP DRAWING SUBMISSION.
3. ALL WELDING SHALL BE IN ACCORDANCE WITH CSA W59–03 (R2008) AND SHALL BE PERFORMED BY FABRICATORS "FULLY APPROVED" BY THE CANADIAN WELDING BUREAU UNDER CSA W55.3–08. FABRICATING SHOP TO HAVE A MINIMUM DIVISION 2.1 CERTIFICATION BY THE CANADIAN WELDING BUREAU TO THE REQUIREMENTS OF CSA W47.1 (STEEL). THE FABRICATOR SHALL SUBMIT PROOF OF CERTIFICATION PRIOR TO START OF WORK.
4. DESIGN FABRICATIONS TO CSA–S16–09, LIMIT STATES DESIGN OF STEEL STRUCTURES.
5. EXCEPT PARTS OF MEMBERS TO BE EMBEDDED IN CONCRETE, GALVANIZED OR UNLESS NOTED OTHERWISE ON THE DRAWINGS, ALL STEEL WORK SHALL BE SHOP PRIMED. PRIMING SHALL BE IN ACCORDANCE WITH CISC/CPMA–1–73A "QUICK DRYING PRIMER" WHEN NO TOP COAT IS REQUIRED AND IN ACCORDANCE WITH CISC/CPMA–2–75 WHEN A TOP COAT IS SPECIFIED. IF A TOP COAT IS SPECIFIED THE PRIMER SHALL BE SELECTED ENSURING COMPATIBILITY WITH THE SPECIFIED SYSTEM. ITEMS SPECIFIED TO BE GALVANIZED SHALL BE HOT DIPPED GALVANIZED TO ASTM A–123–08, MINIMUM ZINC COATING OF 600G/SQ.M. FIELD TOUCH–UP ALL ABRASIONS, SCRATCHES, WELDS OR BOLTS
6. 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.
7. DELIVER, STORE, HANDLE AND PROTECT MATERIALS FROM DAMAGE. INSTALL PLUMB AND TRUE IN EXACT LOCATIONS, SECURELY FASTENED TO THE BUILDING STRUCTURE AS DETAILED.
8. 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.
9. ALL WELDS TO CONTINUOUS SEAL WELDS.
10. ALL STEELWORK SHALL BE COATED PRIOR TO DELIVERY TO THE SITE WHERE POSSIBLE. ONLY FIELD TOUCH–UP SHOULD BE REQUIRED. IF IT IS NECESSARY TO FIELD PAINT, CONTAINMENT MEASURES SATISFACTORY TO THE ENGINEER SHALL BE IN PLACE BEFORE PREPARATION AND PAINTING COMMENCE

ENVIRONMENTAL CONSTRUCTION REQUIREMENTS:

1. ENVIRONMENTAL WORK PROCEDURES, TIMING AND SPECIAL PRECAUTIONS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF FISHERIES AND OCEANS CANADA AND THE PROVINCIAL MINISTRY OF ENVIRONMENT.
2. CONTRACTOR TO FOLLOW THE REQUIREMENTS OF THE "BEST MANAGEMENT PRACTICES FOR CONSTRUCTING DOCKS AND FLOAT 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 AVAILABLE WHENEVER WORKING ON OR NEAR THE WATER.
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 THE 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.
- 11.

ABBREVIATIONS

- | | | |
|--------|---|------------------------|
| CL. | – | CLEAR |
| C | – | CENTRELINE |
| CP. | – | COMPLETE PENETRATION |
| C/W | – | COMPLETE WITH |
| DWG. | – | DRAWING |
| EL. | – | ELEVATION |
| I.D. | – | INSIDE DIAMETER |
| LLH | – | LONG LEG HORIZONTAL |
| LLV | – | LONG LEG VERTICAL |
| 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 |



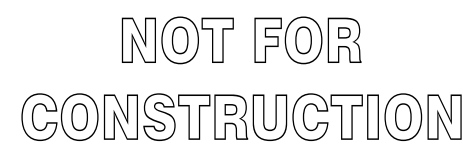
KEY PLAN
1:500

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ISSUES						SUB CONSULTANT	DRAFTED PHU DRAFTING REVIEW DESIGNED SPS DESIGN REVIEW	<div>HEROLD ENGINEERING</div> <div>3701 Shenton Rd, Nanaimo, BC V9T 2H1 Tel: 250–751–8558 Fax: 250–751–8559 Email: mail@heroldengineering.com</div>	ENGINEERS SEAL	HOPKINS LANDING: GENERAL NOTES AND KEY PLAN	SCRD PORT FACILITIES - LOAD LIMIT SAFETY 1975 FIELD ROAD SECHELT BC V0N 3A1 SUNSHINE COAST REGIONAL DISTRICT	HEL PROJECT No. 4551–002		CLIENT DWG. No. N/A	
No.	DATE	ISSUED FOR	No.	DATE	ISSUED FOR							SCALE AS SHOWN		PERMIT No. N/A	
A	2018.12.17	CLIENT REVIEW										HEL DRAWING No.		REVISION	
B	2019.02.15	REPORT										S01		B	

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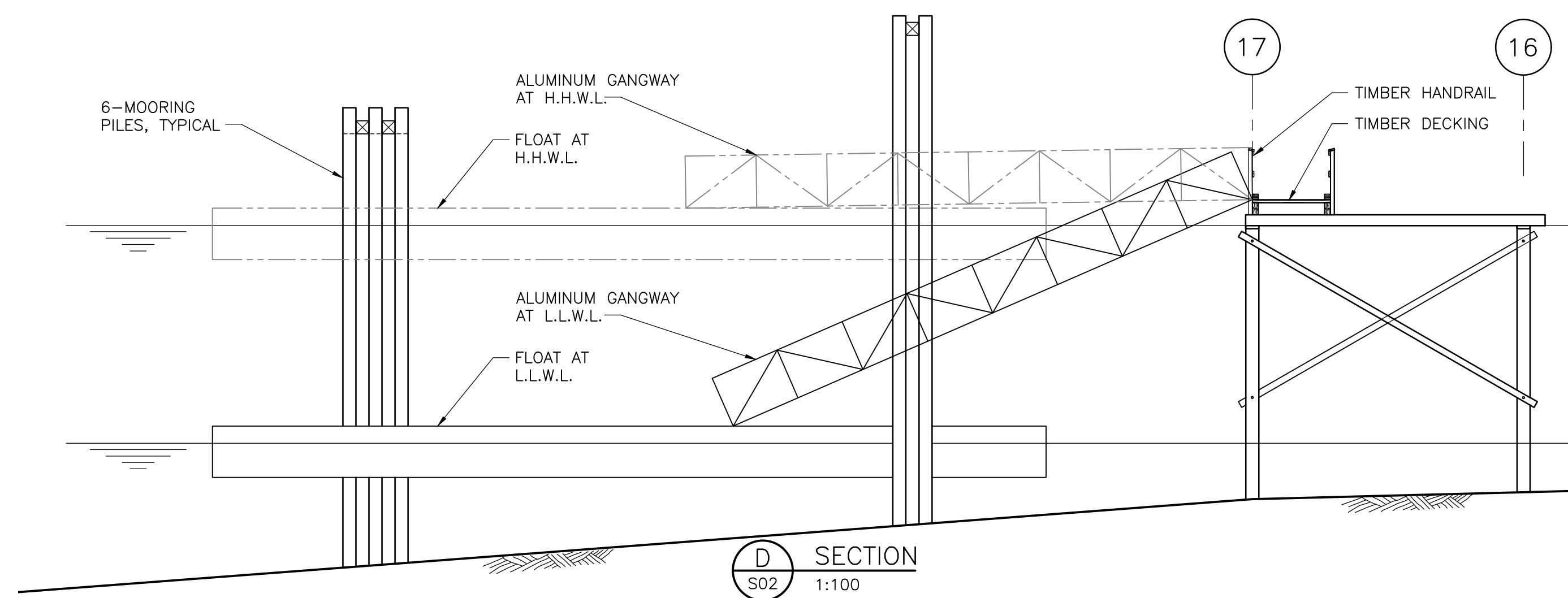
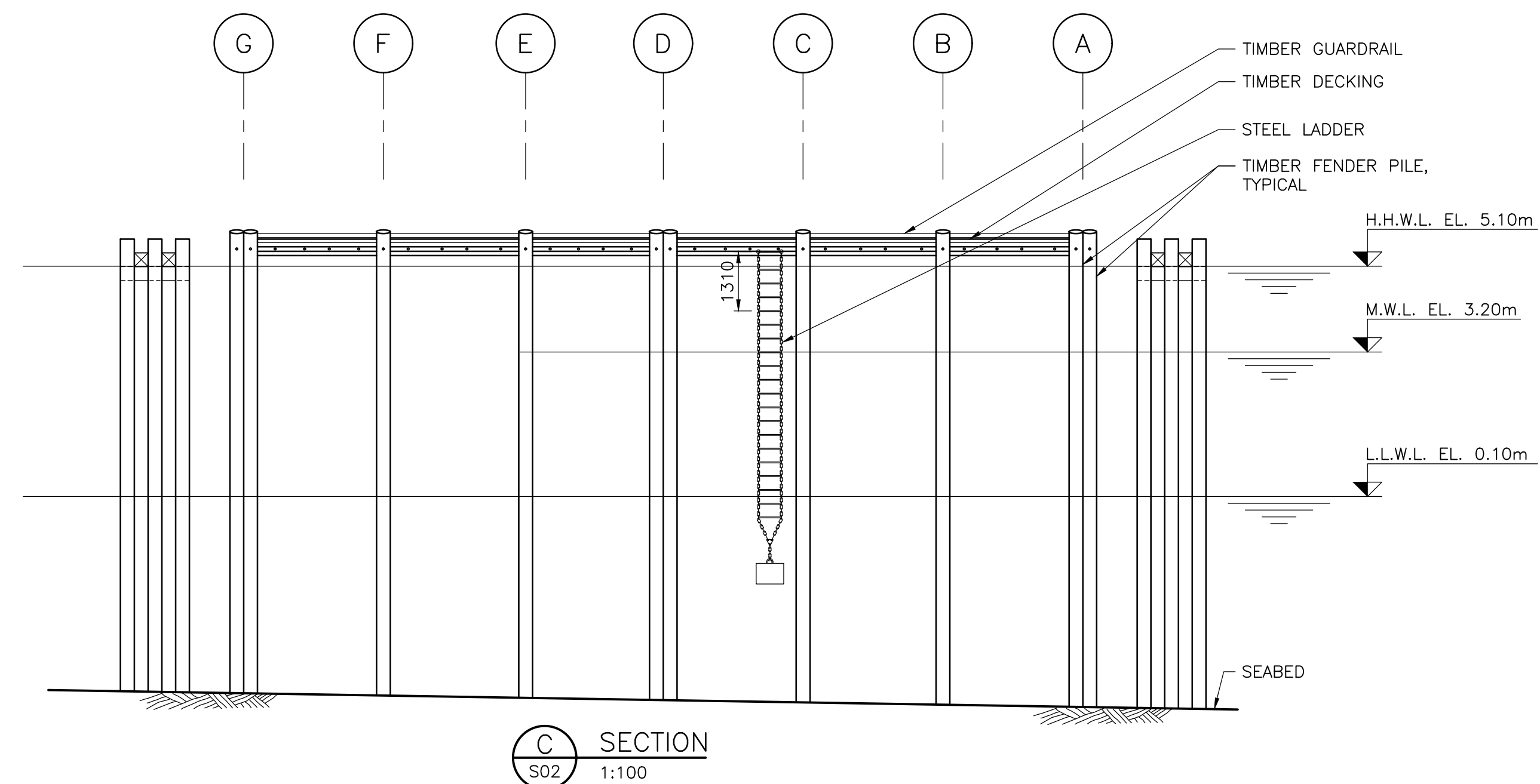
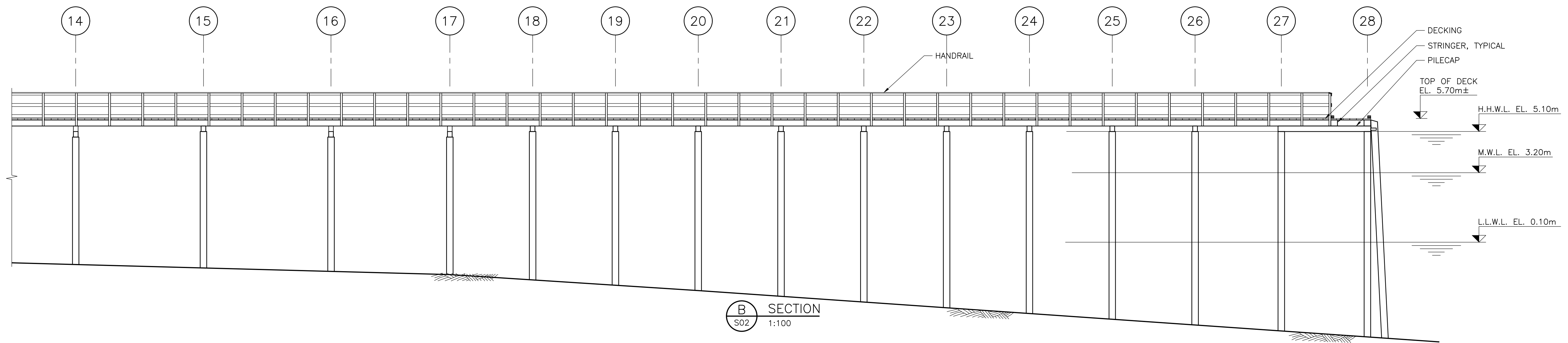
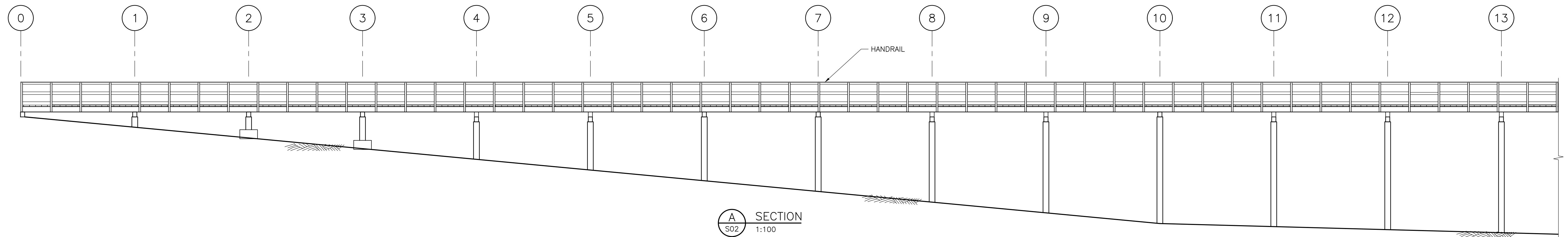
ENGINEERS SEAL

HOPKINS LANDING:
GENERAL
ARRANGEMENT -
SHEET 1

SCRD PORT FACILITIES
- LOAD LIMIT SAFETY
 1975 FIELD ROAD SECHLT BC V0N 3A1
 SUNSHINE COAST REGIONAL DISTRICT



HEL PROJECT No. 4551-002	CLIENT DWG. No. N/A
SCALE AS SHOWN	PERMIT No. N/A
HEL DRAWING No. S02	REVISION B



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ENGINEERS SEAL

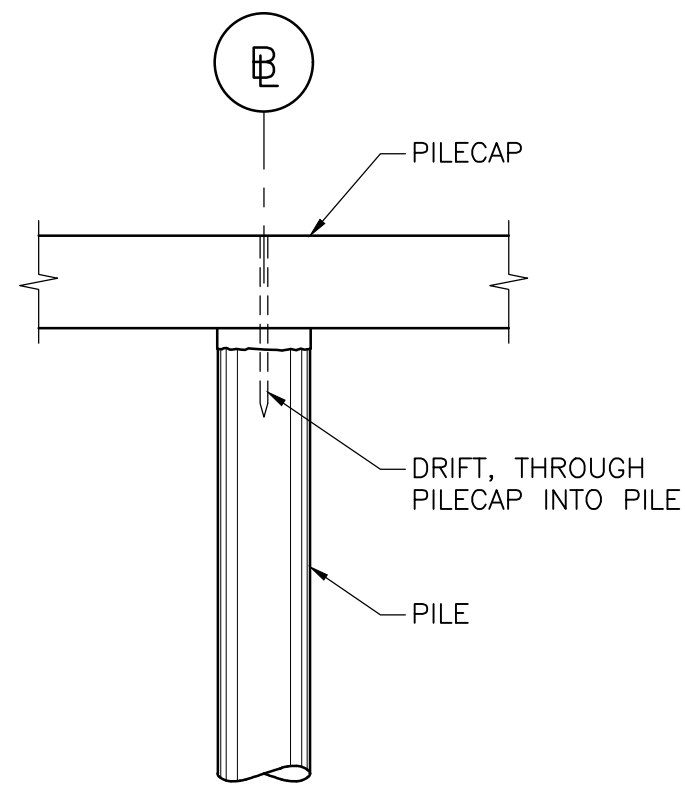
HOPKINS LANDING:
GENERAL
ARRANGEMENT -
SHEET 2

SCRD PORT FACILITIES
- LOAD LIMIT SAFETY
1975 FIELD ROAD SECHELT BC V0N 3A1
SUNSHINE COAST REGIONAL DISTRICT



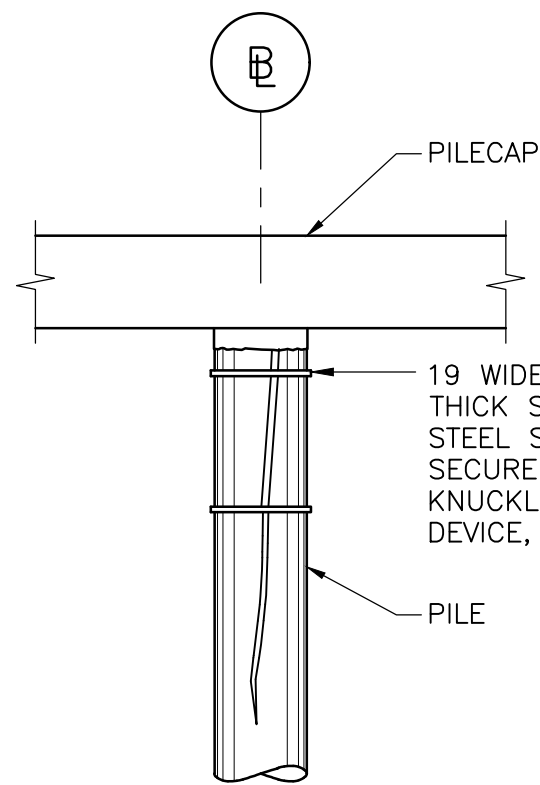
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DESTROY ALL DRAWINGS SHOWING PREVIOUS REVISION



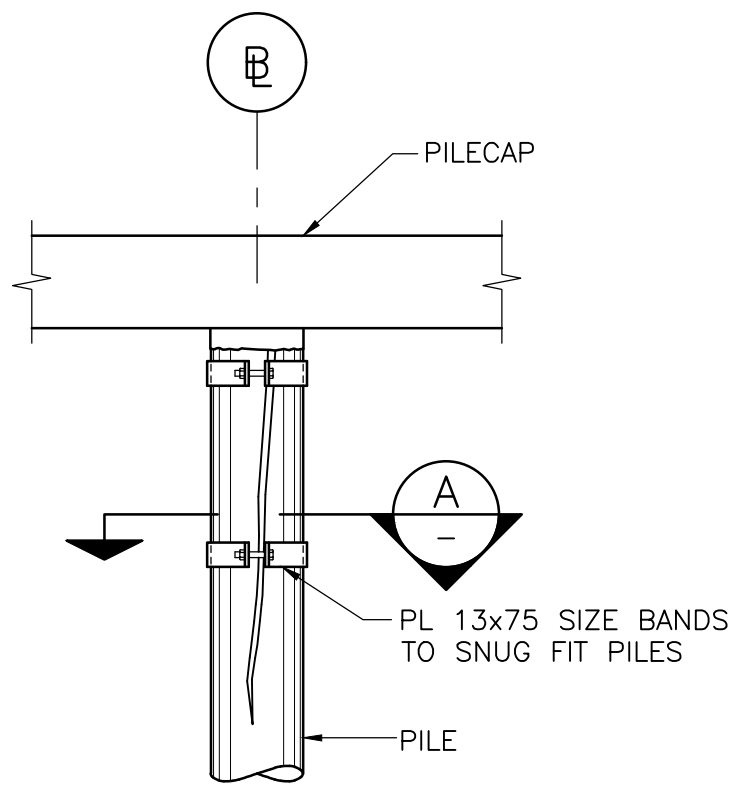
PILE TO PILECAP CONNECTION

1:25

NOTE: STRINGERS, DECKING
AND BRACING NOT SHOWN.

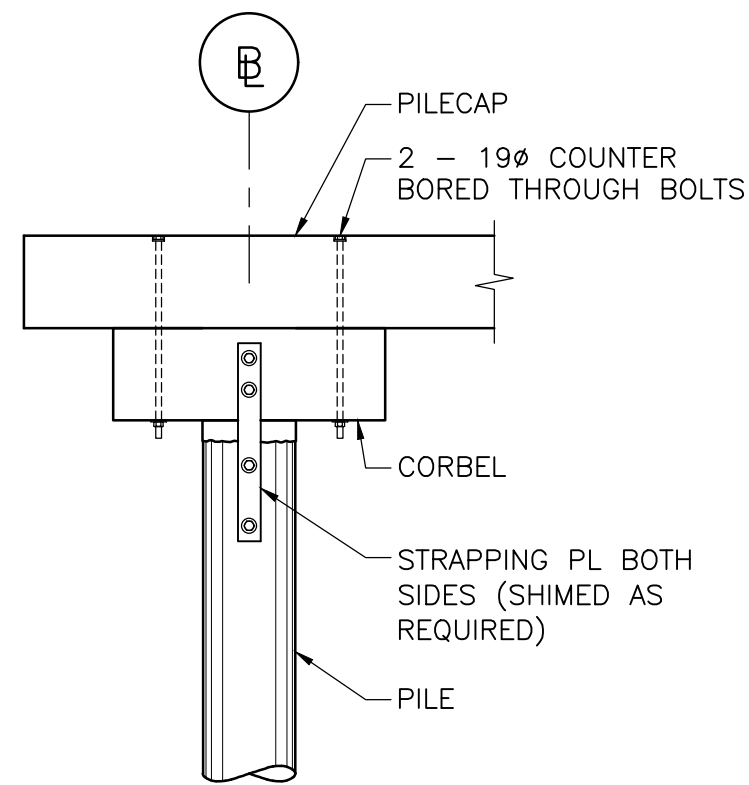
PILE STRAPPING DETAIL

1:25

NOTE: STRINGERS, DECKING
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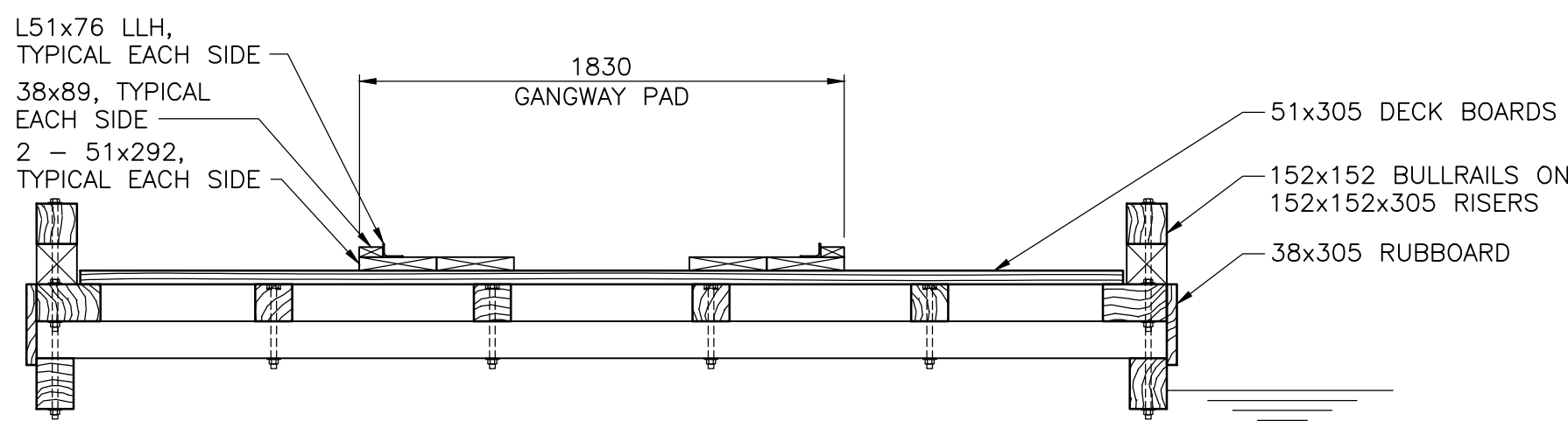
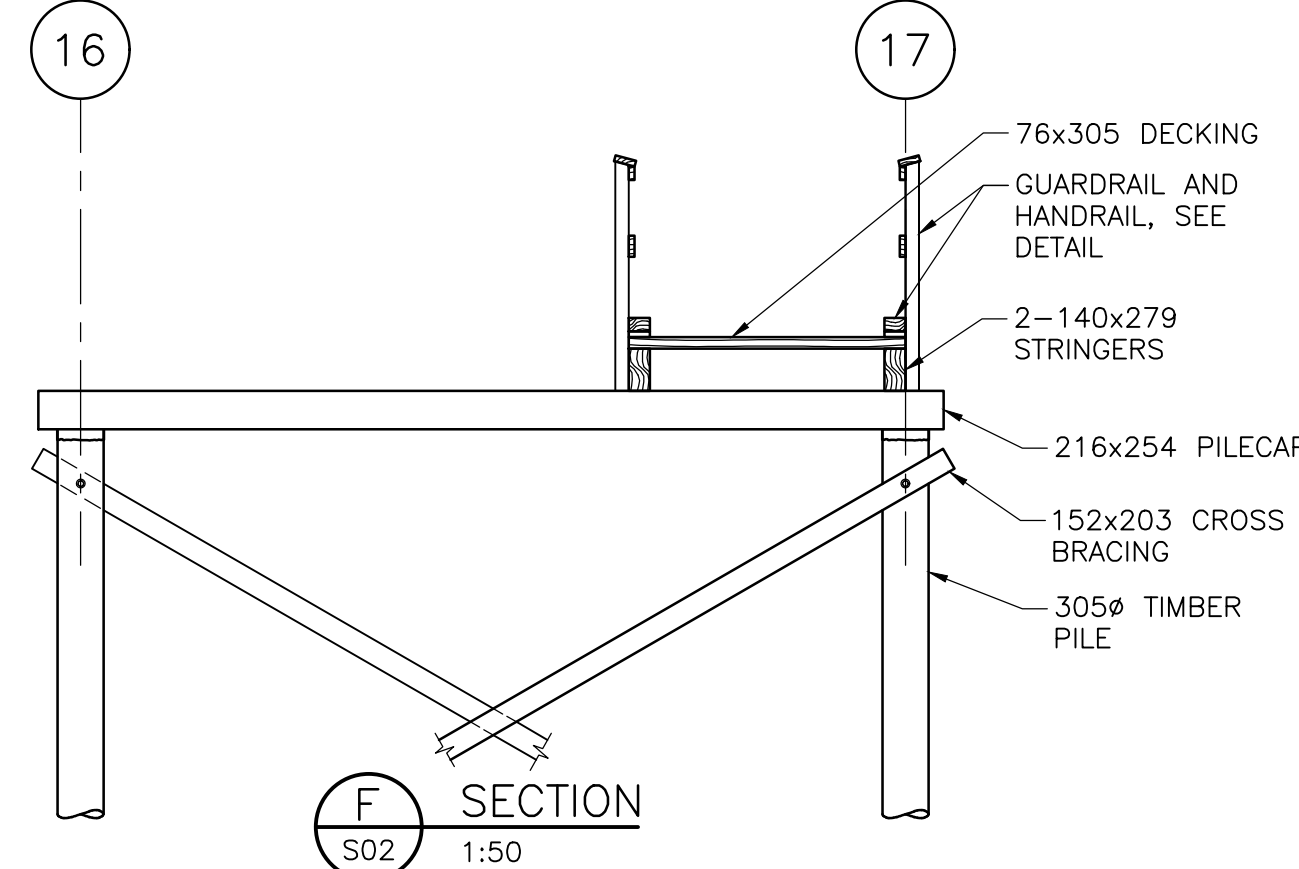
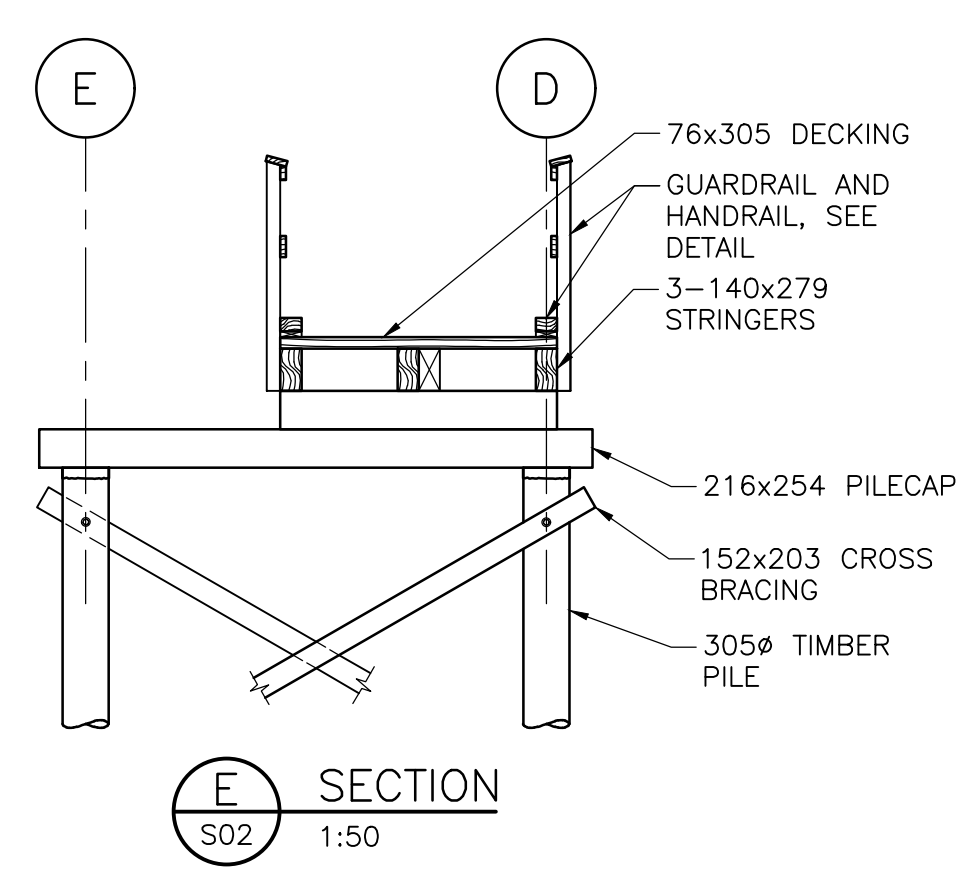
PILE BANDING DETAIL

1:25

NOTE: STRINGERS, DECKING
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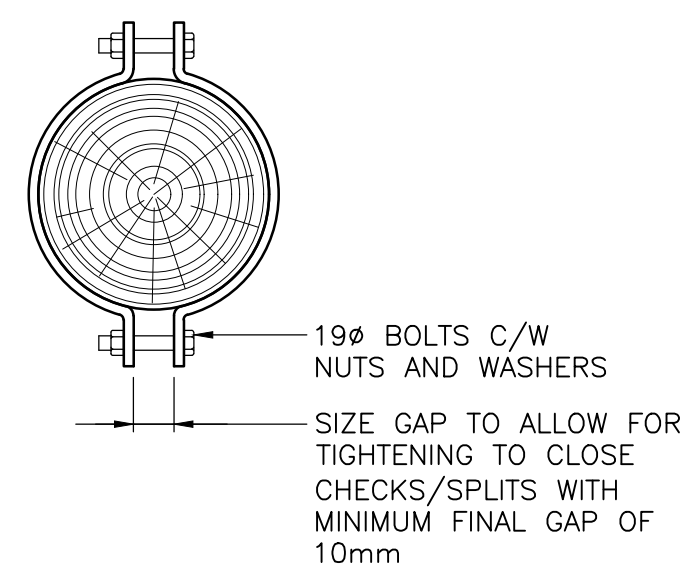
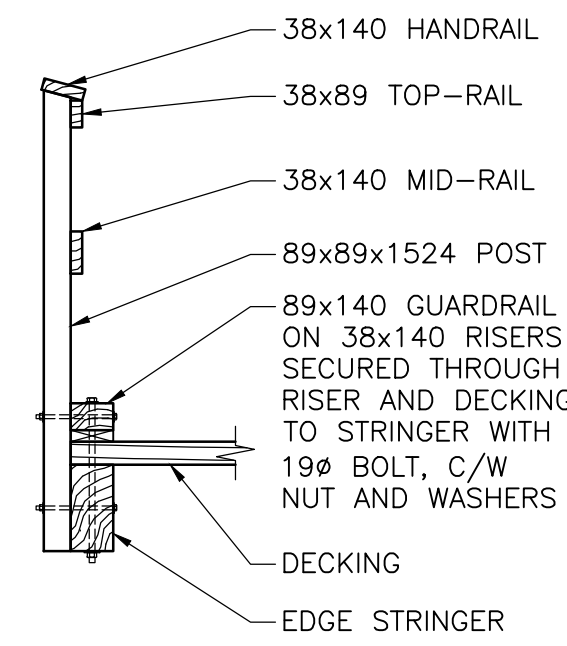
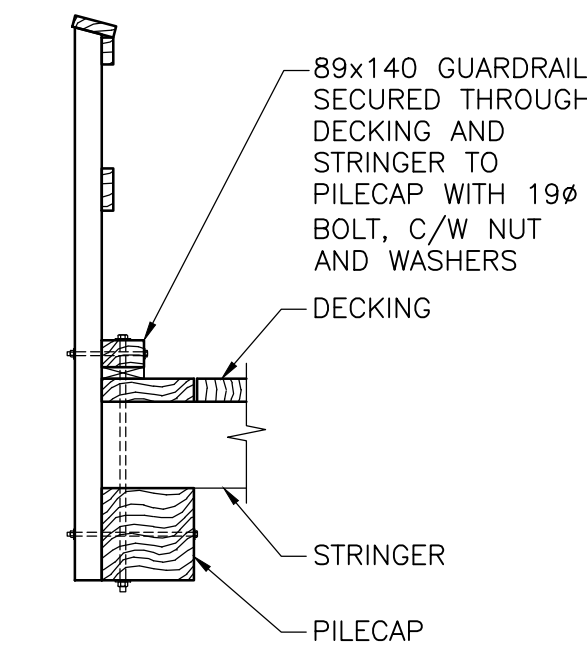
TYPICAL CORBEL DETAIL

1:25

NOTE: STRINGERS, DECKING
AND BRACING NOT SHOWN.

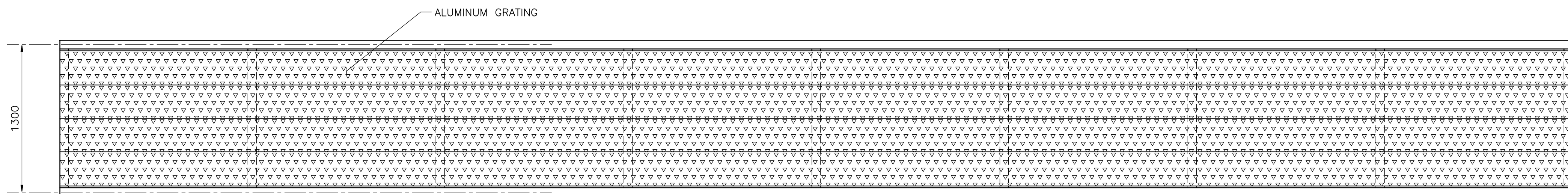
TYPICAL SECTION THROUGH FLOAT

1:25

FLOAT DETAILS BELOW WATERLINE AND DECK NOT
CONFIRMED AS THEY ARE OUTSIDE OF PROJECT SCOPE.
ITEMS BELOW WATERLINE SUCH AS STRINGERS,
FLANGES, ETC. ARE SHOWN MERELY FOR CONVENIENCE.SECTION A
1:10SECTION - HANDRAIL
PARALLEL TO STRINGERSECTION - HANDRAIL
PARALLEL TO PILE CAPNOTE: SIMILAR TO SECTION -
HANDRAIL PARALLEL TO STRINGER,
UNLESS NOTED OTHERWISE.

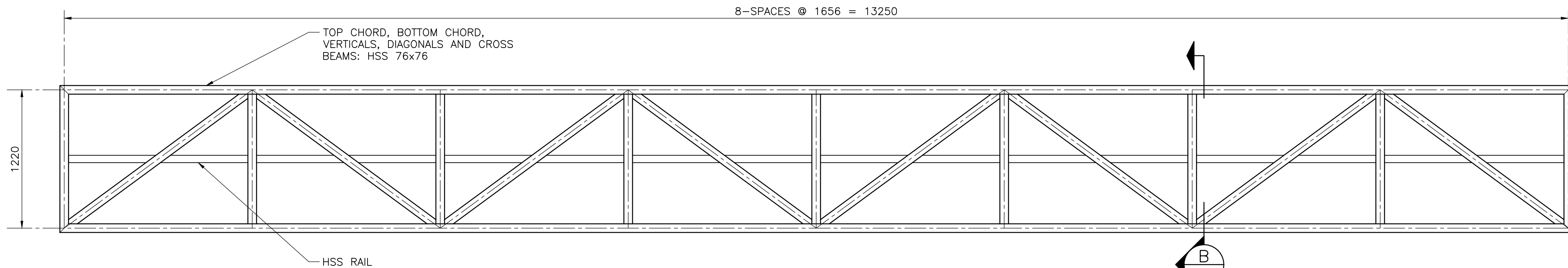
HANDRAIL AND GUARDRAIL DETAILS

1:25



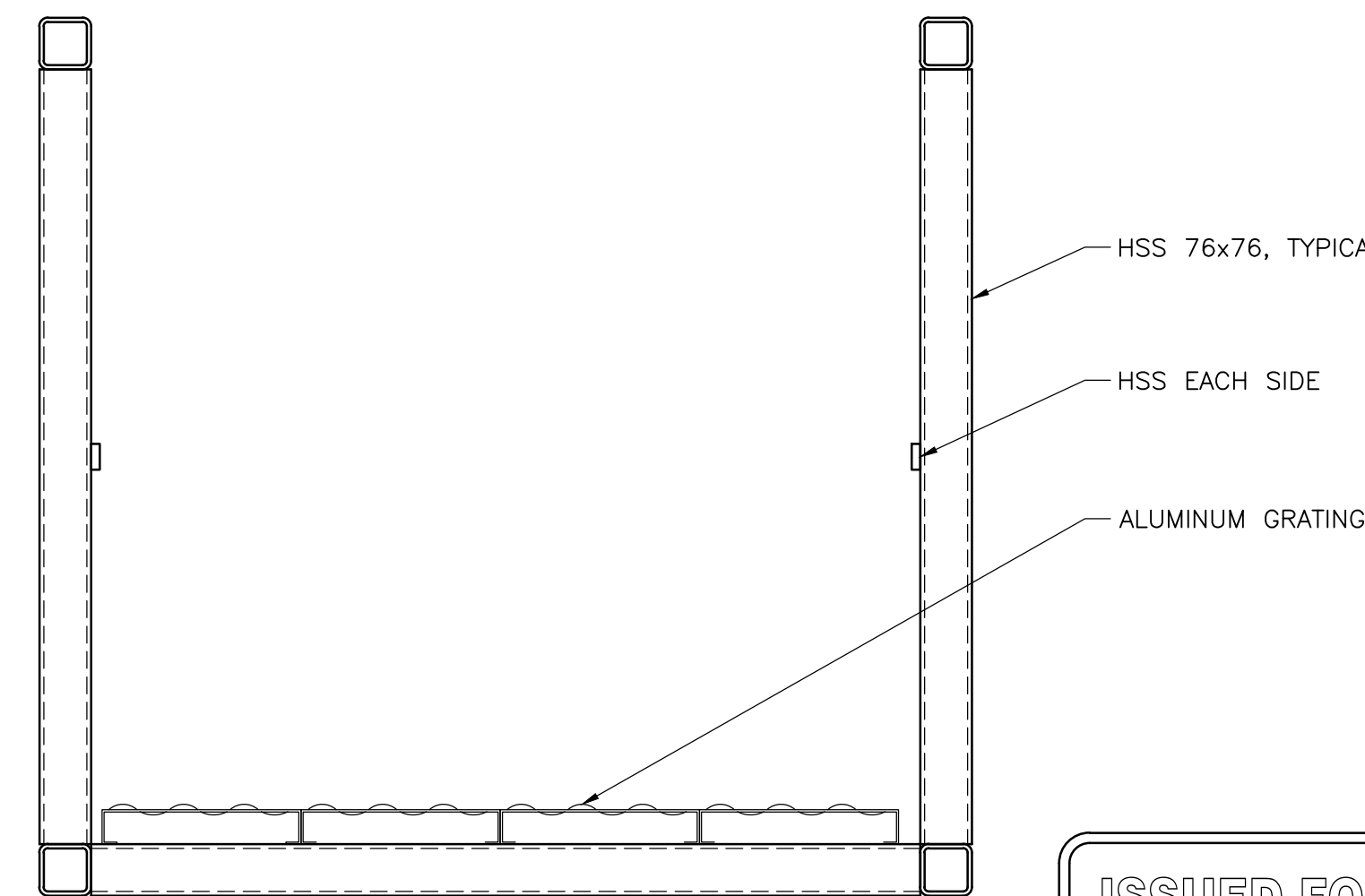
PLAN - ALUMINUM GANGWAY

1:25



ELEVATION - ALUMINUM GANGWAY

1:25

SECTION B
1:10

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DESIGNED SPS

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ENGINEERS SEAL

HOPKINS LANDING:
DETAILSSCRD PORT FACILITIES
- LOAD LIMIT SAFETY
1975 FIELD ROAD SECHELT BC V0N 3A1
SUNSHINE COAST REGIONAL DISTRICT

HEL PROJECT No. 4551-002	CLIENT DWG. No. N/A
SCALE AS SHOWN	PERMIT No. N/A
HEL DRAWING No. S04	REVISION B

DESTROY ALL DRAWINGS SHOWING PREVIOUS REVISION