Design Features for Descanso Bay Gangway Replacement

Aluminum frame gangway (19.7m long, Ref. Herold Eng. Dwg. S02 R1) c/w rollers and aluminum or stainless roller guides on float and sliding hinges at connection to steel approach.

Include pressure-treated fir kickplate and mid-rail, as shown here.

Include aluminum handrails both sides

1.7m clear space between handrails

Pressure treated fir decking with stainless steel extruded metal surface. Do not include wood slats shown on left side of ramp in this image.

Aluminum wheelchair ramp c/w high-traction surface coating, rollers and aluminum or stainless roller guides on float.

DESCANSO BAY

WHARF AND FLOAT REPAIRS

REGIONAL DISTRICT OF NANAIMO

DRAWING LIST

DRAWING NUMBER	DESCRIPTION
0837-033-S00	COVER SHEET
0837-033-S01	GENERAL NOTES AND KEY PLAN
0837-033-S02	SITE PLAN
0837-033-S03	APPROACH AND ABUTMENT - PLAN, ELEVATION AND DETAILS
0837-033-S04	GANGWAY ELEVATION AND FLOAT - PLAN AND SECTION
0837-033-S05	SECTIONS AND DETAILS

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HEROLD PROJECT No.
0837-033
DRAWING No.: S00

File: H:\Projects\0837-033 Descanso Bay - Wharf & Float Repairs\045 Drawings\Active\0837-033 S00.dwg Plot Time: Jun 18, 2015 - 11:09am User: punghy
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GENERAL NOTES:

1. READ STRUCTURAL DRAWINGS IN CONJUNCTION WITH ALL OTHER CONTRACT DRAWINGS AND DOCUMENTS. REPORT ANY CONFLICTS TO THE ENGINEER BEFORE COMMENCING WORK.
2. LOCATIONS AND ELEVATIONS OF EXISTING ELEMENTS AS SHOWN ON THE DRAWINGS ARE APPROXIMATE VALUES ONLY AND ARE SUBJECT TO CONSTRUCTION VARIATIONS. THE CONTRACTOR SHALL VISIT THE SITE OF THE WORK, TAKE HIS OWN MEASUREMENTS OF ALL EXISTING STRUCTURES, GROUND AND OTHER WORK. ALL DIMENSIONS AND DETAILS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO FABRICATION AND CONSTRUCTION. DISCREPANCIES SHALL PROMPTLY BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
3. CONTRACTOR'S RESPONSIBILITY: THESE DRAWINGS SHOW COMPLETED STRUCTURAL COMPONENTS OF THE BREAKWATER. THE REQUIRED TEMPORARY BRACING AND SHORING TO PERFORM THE WORK SAFELY IS THE RESPONSIBILITY OF THE CONTRACTOR.
4. 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 ENVIRONMENT.
5. SUBMIT SHOP DRAWINGS FOR REVIEW PRIOR TO FABRICATION.
6. NO GEOTECHNICAL ASSESSMENT PERFORMED FOR THIS PROJECT.
7. NO HYDROLOGY AND HYDRAULIC ASSESSMENT PERFORMED FOR THIS PROJECT.
8. REFERENCE DIMENSIONS OBTAINED FROM FIELD MEASUREMENTS
9. UNLESS NOTED OTHERWISE, DIMENSIONS ARE IN MILLIMETERS

FIELD REVIEWS

1. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A MINIMUM OF 48 HOURS (2 WORKING DAY) ADVANCE NOTICE FOR FIELD REVIEWS.
2. THE FOLLOWING FIELD REVIEWS ARE CONSIDERED TO BE THE MINIMUM NUMBER OF STRUCTURAL FIELD REVIEWS REQUIRED FOR THE PROJECT:

   REVIEW OF STRUCTURAL STEEL ONCE PREPARED AND READY FOR PAINT.

   FINAL REVIEW OF ALL REPAIRS.
3. IF THE ENGINEER IS NOT PROVIDED WITH THE OPPORTUNITY TO PERFORM THE REQUIRED FIELD REVIEWS, FINAL CERTIFICATION OF THE PROJECT WILL NOT BE ISSUED.

STRUCTURAL STEEL:

1. ALL STEEL WORK SHALL BE IN ACCORDANCE WITH CSA–S16–09 AND THE REVIEWED SHOP DRAWINGS.
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 W47.1–09 AND CSA W55.3–08 FOR RESISTANCE WELDING OF STRUCTURAL COMPONENTS. THE FABRICATOR SHALL SUBMIT PROOF OF CERTIFICATION PRIOR TO START OF WORK.
4. DO NOT FIELD BURN BASE PLATE HOLES OR CONNECTION BOLT HOLES UNLESS APPROVED IN WRITING BY THE ENGINEER. NO FIELD CUTTING OR ALTERATION OF STRUCTURAL MEMBERS IS TO OCCUR WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ENGINEER
5. IF ANCHOR BOLTS ARE MISPLACED OR BOLT HOLES MISALIGNED, INFORM THE ENGINEER.
6. EXCEPT PARTS OF MEMBERS TO BE EMBEDDED IN CONCRETE OR GALVANIZED ALL STEEL SHALL BE PRIMED/PAINTED AND SHALL BE COMPLETED IN ACCORDANCE WITH CISC/CPMA–2–75 THE PRIMER SHALL BE SELECTED ENSURING COMPATIBILITY WITH THE SPECIFIED SYSTEM. ITEMS SPECIFIED TO BE GALVANIZED SHALL BE HOT DIPPED GALVANIZED TO ASTM A–123–12, MINIMUM ZINC COATING OF 600g/sq.m. FIELD TOUCH–UP ALL ABRASIONS, SCRATCHES, WELDS OR BOLTS WITH GALVACON OR EQUIVALENT. PAINT SYSTEM COLOUR TO MATCH EXISTING UNLESS NOTED OTHERWISE.
7. GROUT UNDER BASE PLATES TO BE NON–SHRINK 48 MPa (7000 psi) AT 28 DAYS.
8. PROVIDE STRUCTURAL STEEL SECTIONS TO CSA G40.21–04 (R2009) OR ASTM A572 GRADE 50 OR ASTM A992 WITH THE FOLLOWING GRADES U.N.O:

PIPE RAILINGS	240W (35W) TO ASTM A53
STRUCTURAL STEEL SECTIONS	300W (44W)
MISCELLANEOUS STEEL PLATES	300W (44W)
9. ALL STEEL SPECIFIED TO BE GALVANIZED SHALL BE 350W (50W) STEEL.
10. BOLT SIZING SHALL BE AS NOTED ON DRAWINGS AND DETAILS. PROVIDE ANCHORS TO CSA G40.21–04 (R2009) WITH THE FOLLOWING GRADES:

    ERECTION BOLTS TO ASTM A325M–10
    ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM F1554, GRADE 36 (36ksi YIELD STRENGTH) UNLESS NOTED OTHERWISE.
11. 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 PERMANENT ROOF AND FLOOR DIAPHRAGMS, SHEAR WALLS AND BRACING ARE COMPLETE.
12. THE CONTRACTOR SHALL PROVIDE SEAL WELDED CLOSURE PLATES AT ALL OPEN ENDS OF HSS MEMBERS. PLATE THICKNESS SHALL BE A MINIMUM OF 6 mm (1/4") UNLESS NOTED OTHERWISE.

CONCRETE:

1. CONCRETE TO BE HIGH STRENGTH NON–SHRINK GROUT, 50MPa (MIN.).

TIMBER:

1. ALL WOOD FRAMING, INCLUDING BRIDGING, NAILING AND OTHER DETAILS SHALL BE AS INDICATED ON THE STRUCTURAL DRAWINGS AND COMPLY WITH CAN/CSA–O86–09.
2. ALL TIMBER TO BE TO BE PRESSURE TREATED D.FIR#2 OR BETTER UNLESS NOTED OTHERWISE, BEARING THE GRADE STAMP OF AN AGENCY CERTIFIED BY THE CANADIAN LUMBER STANDARDS ACCREDITATION BOARD.
3. TIMBER TREATMENT TO BE 'ACQ' (AMINE COPPER QUAT). CUT SURFACES OF TREATED TIMBER ARE TO RECEIVE A BRUSH APPLIED COAT OF COLOURED PRESERVATIVE. WORK SHALL BE IN ACCORDANCE WITH CSA–O80 SERIES–08. 'CCA' (CHROMATED COPPER ARSENATE) IS NOT TO BE USED. TREATED WOOD PRODUCTS SHALL BEAR THE STAMP OF THE CANADIAN WOOD PRESERVERS BUREAU (CWPB).
4. FASTENERS FOR USE IN TREATED TIMBER SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A153, CONNECTORS SHALL HAVE A G185 GALVANIZED DESIGNATION OR MEET ASTM A653. ALTERNATIVELY ALL METAL CONNECTORS INCLUDING NAILS, BOLTS, HANGERS, HOLD–DOWNS, STEEL STRAPS, POST BASES, ETC. SHALL BE STAINLESS STEEL. REFER ALSO TO THE PRESERVATIVE MANUFACTURER'S WRITTEN RECOMMENDATIONS.
5. FIELD TREAT ALL CUT ENDS WITH APPROVED PRODUCT.

ADHESIVE ANCHORS:

1. ALL ANCHORS ARE TO BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
2. ALL ANCHORS ARE TO BE THE ADHESIVE TYPE. MECHANICAL ANCHORS ARE ONLY TO BE USED WHEN SPECIFICALLY CALLED–UP ON THE DRAWINGS. SUBSTITUTIONS MUST BE APPROVED BY THE PROJECT ENGINEER PRIOR TO USE.
3. UNLESS NOTED OTHERWISE ADHESIVE ANCHORS SHALL BE HILTI 'HAS' ROD. REFER TO DRAWINGS FOR ANCHOR LOCATIONS, SIZES, CENTRES AND EMBEDMENT LENGTH. USE HILTI HIT HY200 MAX, HILTI HIT ICE OR HILTI HIT RE500 ADHESIVE AS NOTED BELOW.

   USE HILTI HIT HY200 WHEN;
   A QUICK CURE IS REQUIRED,
   CONDITIONS ARE DRY,
   HOLES ARE HAMMER DRILLED,
   HOLES ARE NOT OVER–SIZED,
   BASE MATERIAL TEMPERATURE IS ABOVE 5° CELCIUS.

   USE HILTI HIT–ICE UNDER THE SAME CONDITIONS AS HY200 MAX BUT BASE MATERIAL TEMPERATURE IS 5° CELCIUS AND BELOW

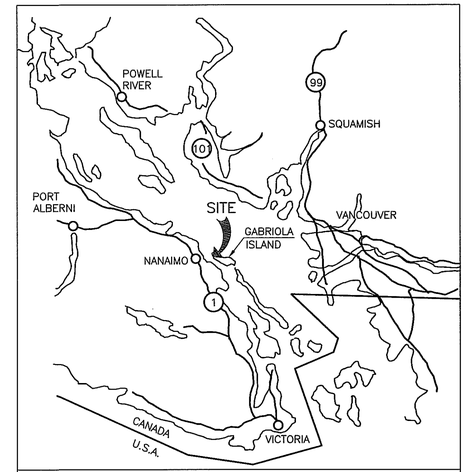
   USE HILTI HIT RE500 WHEN;
   EXTENDED WORKING TIME IS REQUIRED AND CURE TIME IS NOT CRITICAL,
   HOLES ARE DRILLED USING DIAMOND CORE, PNEUMATIC OR HAMMER DRILLS,
   DEEP EMBEDMENT IS SPECIFIED,
   THE APPLICATION IS UNDERWATER, OR
   HOLES ARE OVERSIZED.
4. HOLES FOR ADHESIVE ANCHORS SHALL BE CLEANED OUT WITH HIGH PRESSURE AIR AND THEN A BRUSH PRIOR TO ANCHOR INSTALLATION.
5. REFER TO DRAWINGS FOR MECHANICAL ANCHOR LOCATIONS, SIZES, CENTRES AND EMBEDMENT LENGTH.
6. HOLES FOR MECHANICAL ANCHORS SHALL BE CLEANED OUT WITH HIGH PRESSURE AIR OR BRUSH PRIOR TO ANCHOR INSTALLATION.
7. INSTALLERS OF HILTI PRODUCTS SHALL HAVE RECEIVED TRAINING BY HILTI (CANADA) CORP. IN THE USE OF THE SPECIFIED PRODUCTS. THE GENERAL CONTRACTOR SHALL PROVIDE THE DESIGN ENGINEER WITH A LETTER STATING THAT THIS TRAINING HAS BEEN COMPLETED.

ENVIRONMENTAL:

1. ALL REMOVED PAINT AND DEBRIS MUST BE FULLY CONTAINED AND DISPOSED OF IN ACCORDANCE WITH LOCAL, PROVINCIAL AND FEDERAL REGULATIONS.
2. NO CONCRETE OR DEBRIS SHALL ENTER THE WATERWAY.

ANODES:

1. ANODES:
   1.1. 152 MM OD AND 25 MM THICK ZINC ANODES. PROVIDE OWNER WITH METALLURGICAL LADLE ANALYSIS CERTIFICATION OF THE ANODE MATERIAL.
2. MATERIAL:
   2.1. SACRIFICIAL (GALVANIC) ANODES SHALL BE ALUMINIUM AND CONFORM TO THE FOLLOWING ALLOY COMPOSITION:
   2.1.1. COPPER 0.002%
   2.1.2. INDIUM 0.015% TO 0.04%
   2.1.3. ZINC 3.0% TO 6.0%
   2.1.4. SILICON 0.1%
   2.1.5. ALUMINUM REMAINDER.
3. SHAPE:
   3.1. CIRCULAR.
4. MOUNTING:
   4.1. SINGLE CENTRAL THROUGH BOLT.
   4.2. ANTI–SEIZE COMPOUND FOR METALLIC CONTACT SURFACES. COMPOUND SHALL BE LOCTITE # 242, OR ALTERNATE APPROVED BY OWNER.
   4.3. PROVIDE PLASTIC WHEEL ON BOTTOM OF ANODE, WHEEL TO BE RUBBER TIRED AND BE 175mm DIAMETER OR BETTER TO PREVENT ANODE WEAR ON PILE.



KEY PLAN

ISSUED FOR RECORD

ISSUES								
No.	DATE YYYY.MM.DD	ISSUED FOR	No.	DATE YYYY.MM.DD	ISSUED FOR	No.	DATE YYYY.MM.DD	ISSUED FOR
A	2014.11.28	CLIENT REVIEW						
B	2014.12.10	TENDER						
0	2015.04.16	CONSTRUCTION						
1	2015.06.18	RECORD						

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JUNE 18, 2015

GENERAL NOTES AND KEY PLAN

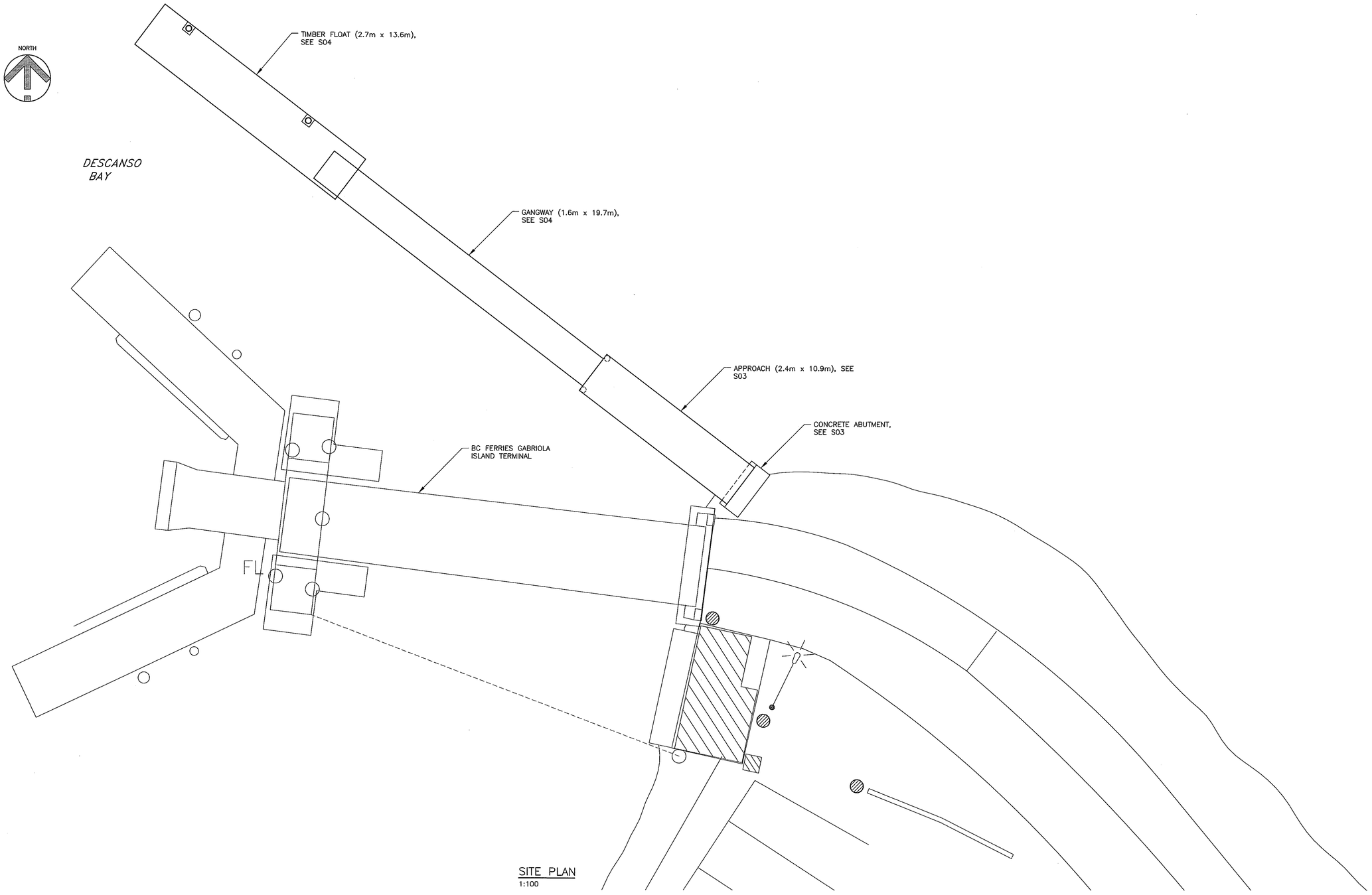
DESCANSO BAY
WHARF AND FLOAT REPAIRS
GABRIOLA ISLAND
REGIONAL DISTRICT OF NANAIMO

HEL PROJECT No. 0837–033
CLIENT DWG. No. N/A
SCALE NONE
PERMIT No. N/A
HEL DRAWING No. S01
REVISION 1

DESTROY ALL DRAWINGS SHOWING PREVIOUS REVISION

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ARCHITECTURAL D 24" x 36"



SITE PLAN
1:100

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ISSUES								
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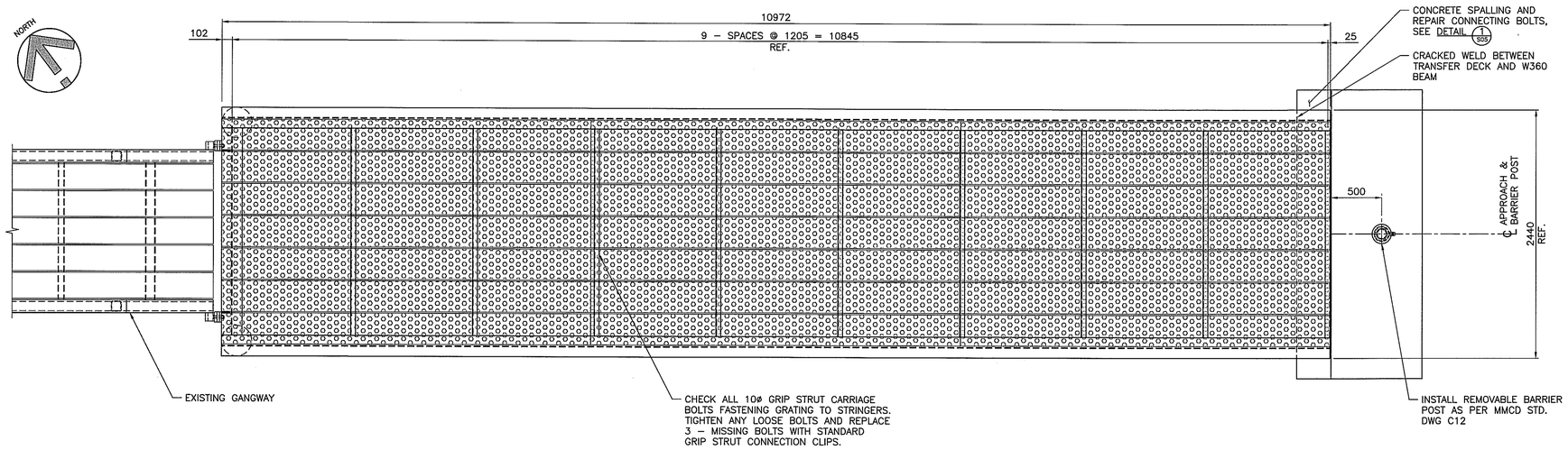
SITE PLAN

DESCANSO BAY
WHARF AND FLOAT REPAIRS
GABRIOLA ISLAND
REGIONAL DISTRICT OF NANAIMO

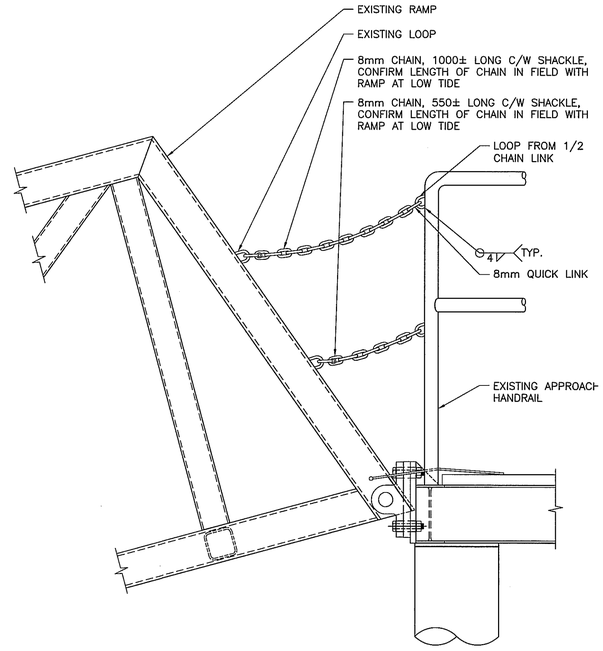
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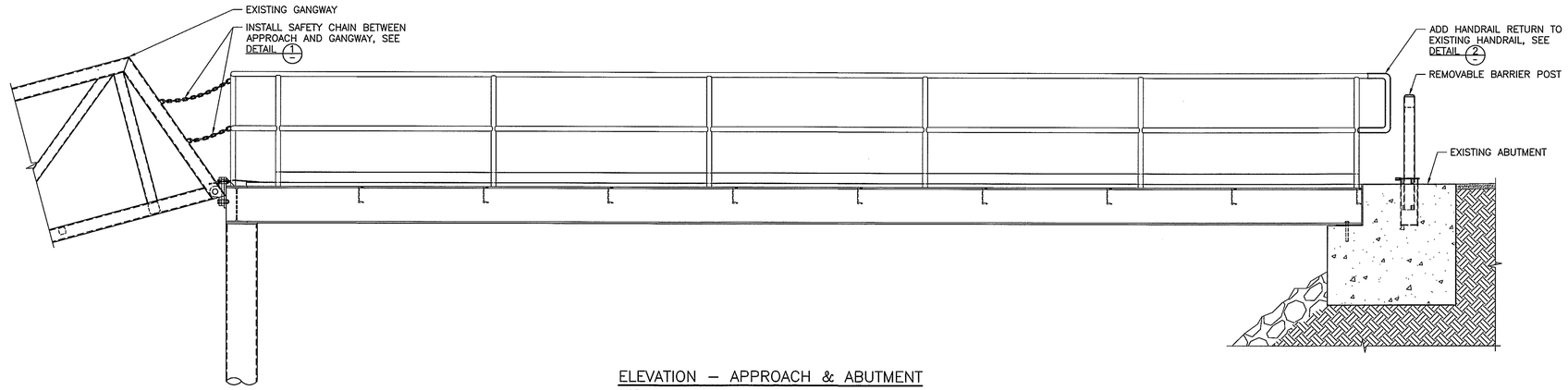
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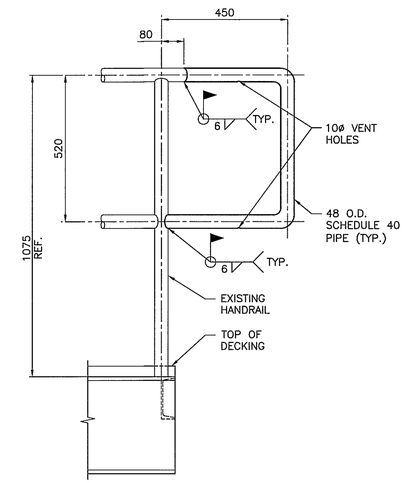
PLAN – APPROACH & ABUTMENT
1:25



1 – DETAIL
1:10



ELEVATION – APPROACH & ABUTMENT
1:25



2 – DETAIL
1:10

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ISSUES											
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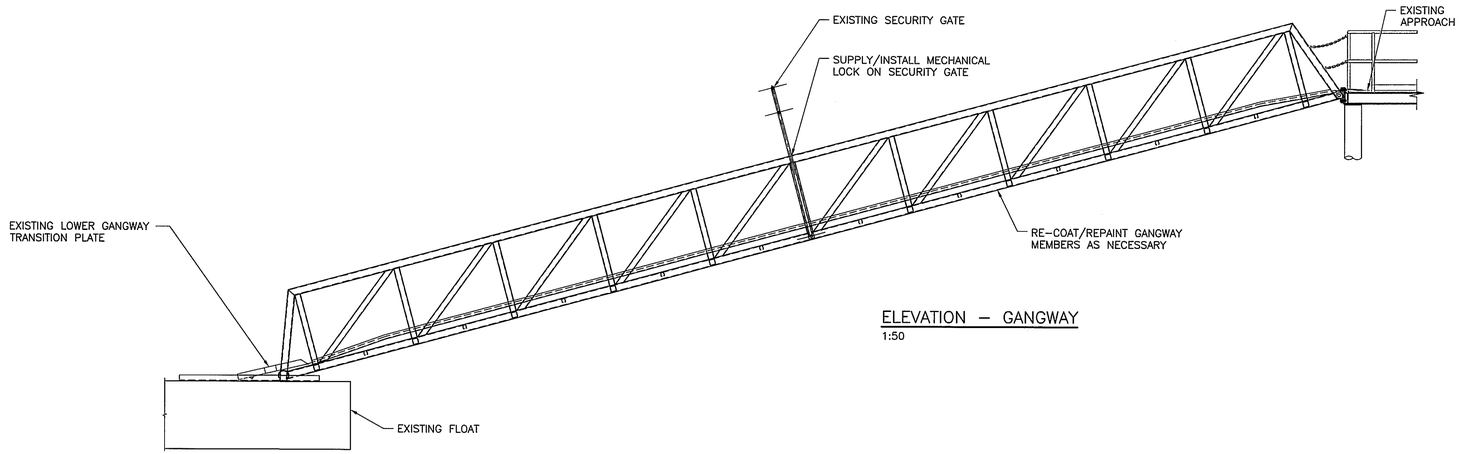
APPROACH AND ABUTMENT - PLAN, ELEVATION AND DETAILS

DESCANSO BAY
WHARF AND FLOAT REPAIRS
GABRIOLA ISLAND
REGIONAL DISTRICT OF NANAIMO

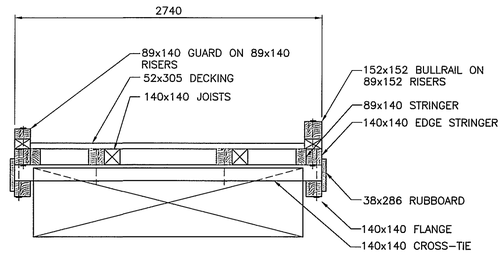
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CLIENT DWG. No. N/A
SCALE AS SHOWN
PERMIT No. N/A
HEL DRAWING No. S03
REVISION 1

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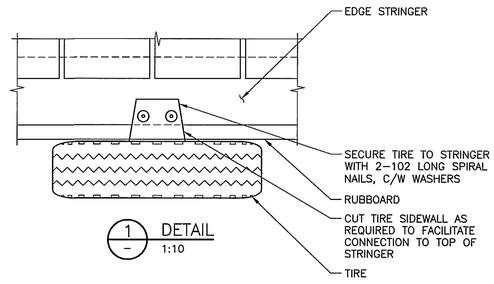
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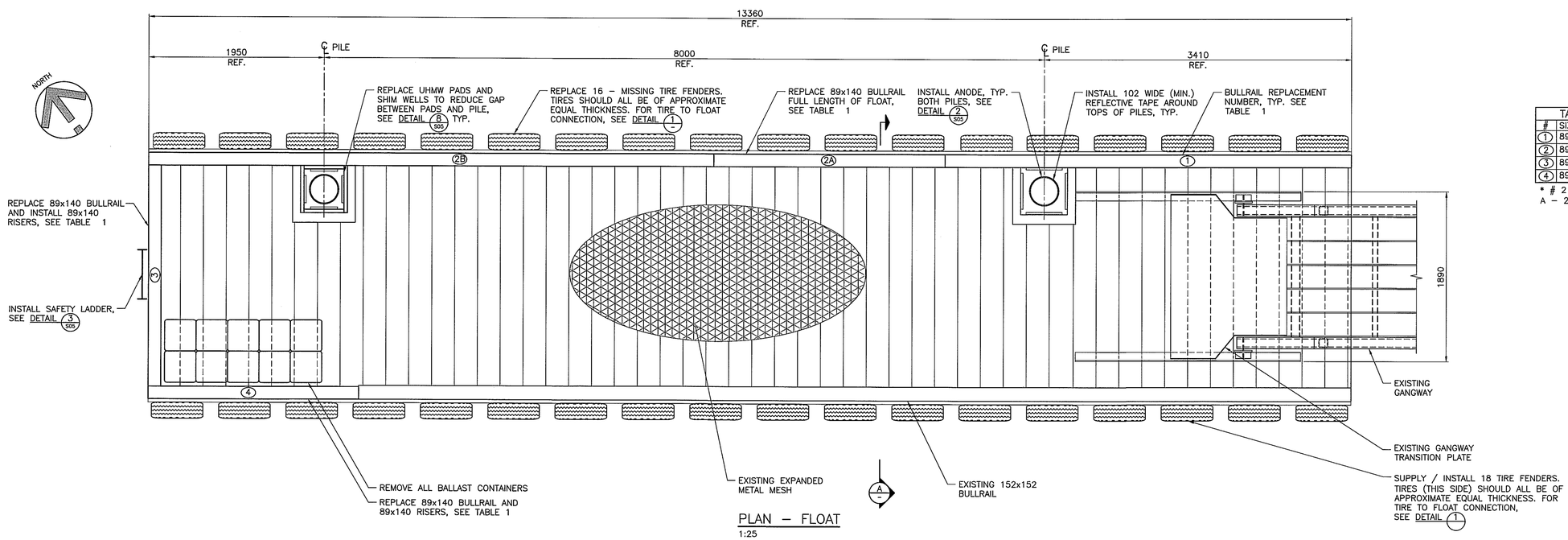
ELEVATION – GANGWAY
1:50



A – TYPICAL SECTION
1:25



1 – DETAIL
1:10



PLAN – FLOAT
1:25

TABLE: 1 – BULLRAIL REPLACEMENT			
#	SIZE	LOCATION	LENGTH
1	89x140	NORTH SIDE EAST END	4.750m
2	89x140	NORTH SIDE MID TO WEST END	8.407m*
3	89x140	EAST END FULL LENGTH	2.460m
4	89x140	SOUTH SIDE WEST END	2.340m

* # 2 SECTION MAY BE INSTALLED IN TWO PIECES, A – 2.570m (MID FLOAT) AND B – 5.837m (WEST END)

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ISSUES								
No.	DATE YYYY.MM.DD	ISSUED FOR	No.	DATE YYYY.MM.DD	ISSUED FOR	No.	DATE YYYY.MM.DD	ISSUED FOR
A	2014.11.28	CLIENT REVIEW						
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JUNE 8, 2015

GANGWAY ELEVATION AND FLOAT - PLAN AND SECTION

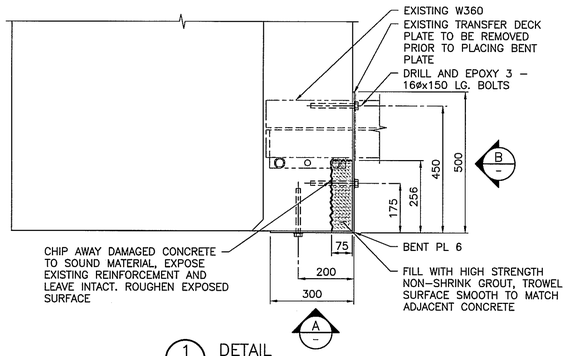
DESCANSO BAY WHARF AND FLOAT REPAIRS

GABRIOLA ISLAND
REGIONAL DISTRICT OF NANAIMO

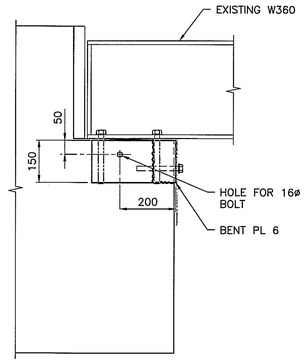
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0837-033	N/A
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HEL DRAWING No.: S04	REVISION: 1

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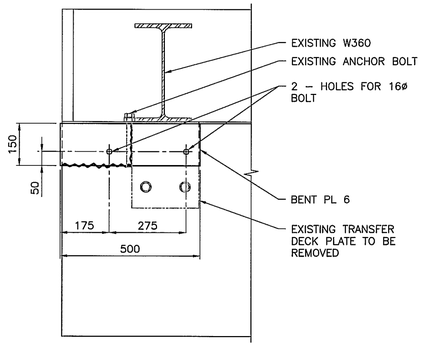
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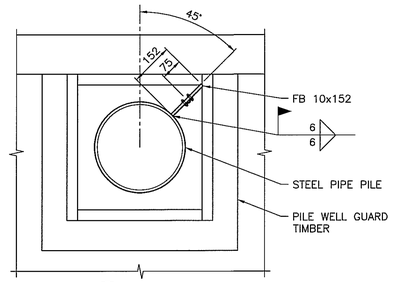
1 / S03 DETAIL 1:10



A / – VIEW 1:10

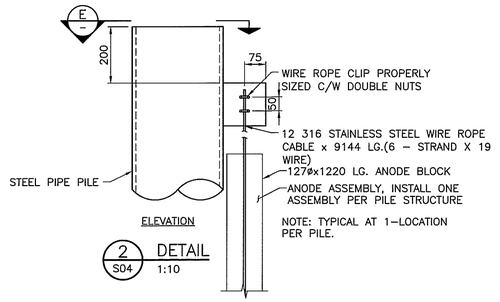


B / – VIEW 1:10

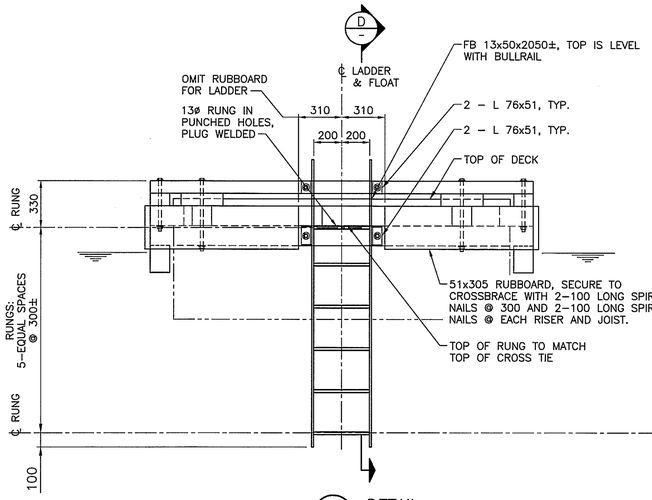


C / – SECTION 1:10

NOTES:
1. REMOVE ALL LOOSE CONCRETE AND DEBRIS. PROPERLY DISPOSE OF ALL SUCH MATERIAL PRIOR TO CONDUCTING REPAIRS TO THE DAMAGED CONCRETE.
2. APPLY CONCRETE BONDING AGENT TO CLEARED SURFACE PRIOR TO PLACING GROUT.
3. FIELD COAT ALL DAMAGED REINFORCING WITH EPOXY PAINT.
4. USE WATERTIGHT FORM WORK ALONG VERTICAL EDGE OF FOOTING TO CONTAIN GROUT.

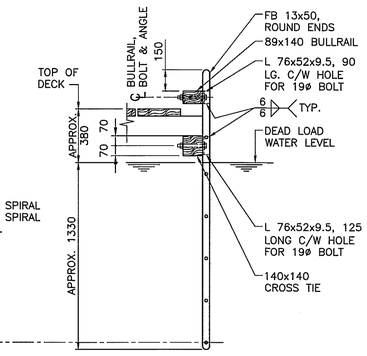


2 / S04 DETAIL 1:10

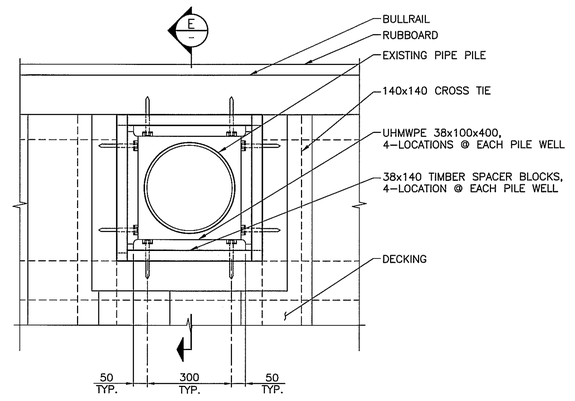


3 / S04 DETAIL 1:20

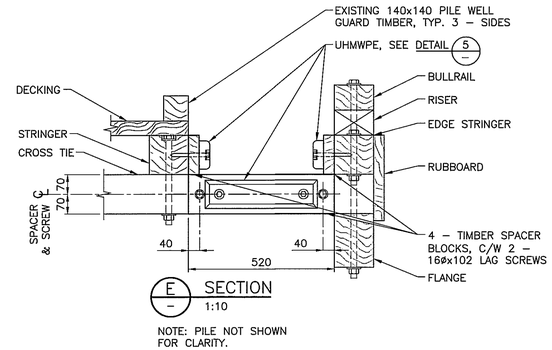
NOTE: ENTIRE LADDER ASSEMBLY TO BE HOT DIPPED GALVANIZED.



D / – SECTION 1:20

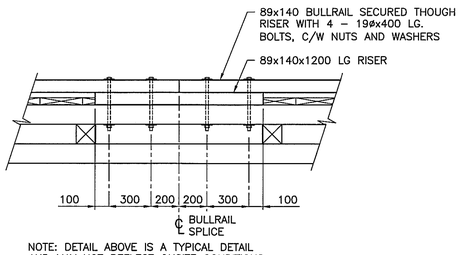


4 / S04 DETAIL 1:10



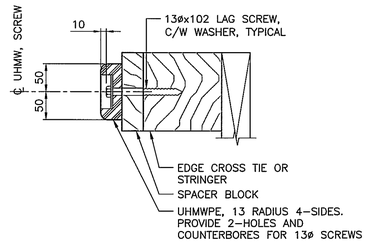
E / – SECTION 1:10

NOTE: PILE NOT SHOWN FOR CLARITY.



NOTE: DETAIL ABOVE IS A TYPICAL DETAIL AND MAY NOT REFLECT ONSITE CONDITIONS

TYPICAL BULLRAIL SPLICE DETAIL 1:20



5 / – DETAIL 1:5

ISSUED FOR RECORD

ISSUES								
No.	DATE YYY.MM.DD	ISSUED FOR	No.	DATE YYY.MM.DD	ISSUED FOR	No.	DATE YYY.MM.DD	ISSUED FOR
A	2014.11.28	CLIENT REVIEW						
B	2014.12.10	TENDER						
0	2015.04.16	CONSTRUCTION						
1	2015.06.18	RECORD						

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ENGINEERS SEAL
PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA C. D. WORK # 37508
JUNE 18, 2015

SECTIONS AND DETAILS

DESCANSO BAY WHARF AND FLOAT REPAIRS

GABRIOLA ISLAND
REGIONAL DISTRICT OF NANAIMO

HEL PROJECT No. 0837–033	CLIENT DWG. No. N/A
SCALE AS SHOWN	PERMIT No. N/A
HEL DRAWING No. S05	REVISION 1

DESTROY ALL DRAWINGS SHOWING PREVIOUS REVISION

File: I:\Projects\0837–033 Descanso Bay – Wharf & Float Repair\CAD Drawings\Arch\0837–033 S05.dwg Plot Time: Jun. 18, 15 11:11 AM User: Peter Voigt