

REVISIONS				REVISIONS				NORTH ISLAND ENGINEERING LTD. 2014003 1833 ROBB AVENUE, COMOX, B.C. TEL/FAX (250) 339-2243	APPROVED FOR USE IN CONSTRUCTION  DRAWN BY: RDW DATE: 12 APR 2007 FILE NO.: 2014003 DESIGN BY: RDW CHECKED BY: RDW SCALE: 1:10	DFO-SCH  19800 (65') -WIDE-1800 TRANS-HANDRAIL TOP UPPER TRANSITION	STANDARD GANGWAYS SLIDER  DRAWING No. 2007002-2 CANCEL PRINTS BEARING EARLIER REVISION
E	CONFIRM LINK LENGTH, PIPE FOR EXT. SPLICE	14/04/08	RDW	J							
D	REVISED HINGE STRUT THICKNESS	13/07/25	RDW	I							
C	MINOR REVISIONS	09/08/20	RDW	H							
B	MINOR REVISIONS	09/07/10	RDW	G							
A	REVISED FOR SLIDER	09/06/24	RDW	F							

FOR GENERAL NOTES SEE SHEET 5





DESIGN CRITERIA

THIS STRUCTURE HAS BEEN DESIGNED IN GENERAL ACCORDANCE WITH THE FOLLOWING CODES AND STANDARDS:

- NBC BUILDING CODE 2005, PART 4, EXCEPT LIVE LOAD ONLY 2.4 KPA AND ONLY CONSIDERED LOAD COMBINATION 1.25DL+1.5LL
- WCB OCCUPATIONAL HEALTH AND SAFETY REGULATION, 296/97, AMENDED 185/99
- CSA STANDARD, S16.1 LIMIT STATES DESIGN OF STEEL STRUCTURES, 2001
- AISC LRFD SPEC. FOR DESIGN OF SINGLE-ANGLE MEMBERS, NOV. 2000

DESIGN LOADS (SERVICE)

DEAD LOAD SERVICES	2.0 KN/M (TOTAL BOTH SIDES)
LIVE LOAD	0.6 KN/M (TOTAL BOTH SIDES)
COEFF. OF FRICTION FOR SLIDER	2.4 KPA OR 2.2 KN POINT LOAD
TWIST AT BASE	0.3
LATERAL DEFLECTION AT SLIDER	10 DEGREES
TIDAL RANGE	150 MM
	8.0 M (9.1M APPROACH TO FLOAD DECK)

ENGINEER SHOULD DETERMINE IF

1. THE LIVE LOAD IS APPLICABLE TO THE PROPOSED SITE.
- IN SOME CASES, SNOW LOAD MAY BE HIGHER THAN 2.4 KPA.
2. DIFFERENTIAL OF DECK TO DECK ADEQUATE INCL. ALLOWANCE FOR FLOAD MOTIONS.
3. WHETHER EXTRA PRECAUTIONS ARE REQUIRED FOR WIND LOADS. SEE DESIGN BRIEF.
4. THE LOWER TRANSITION PLATE DETAIL IS NOT SUITABLE IF THE ANGLE FROM THE LINE OF GANGWAY TO THE TRANS. PLATE EXCEEDS ABOUT 30° INCL. WAVE ACTION.

BASED ON PREVIOUS DESIGNS 2004013, 2005006, 2005013

GENERAL NOTES

IMMEDIATELY INFORM THE ENGINEER OF ALL DISCREPANCIES AND PROBLEMS ENCOUNTERED.

AS THIS GANGWAY IS WIDER, IT MAY BE NECESSARY TO PROVIDE SOME FORM OF BARRIER TO PREVENT THE USE BY ALL-TERRAIN VEHICLES.

GREASE ALL PINS WITH LITHIUM EP2 GREASE PRIOR TO ASSEMBLY.

STEEL

MATERIALS TO CONFORM TO THE FOLLOWING:

ROLLED SECTIONS	GRADE 300W, CSA STANDARDS G40.20/G40.21
PLATE	GRADE 300W, CSA STANDARDS G40.20/G40.21
HSS	GRADE 350W, CLASS C CSA STANDARDS G40.20/G40.21
PIPE	ASTM A53 TYPE B, MIN. YIELD 241 MPA (33 KSI)

STEEL FOR SPLICE PLATES NOT TO BE SHEARED ALONG EDGES.

GRATING TO BE DIAMOND-GRIP CHANNEL BY AMICO-ISG OR APPROVED EQUAL.

OBTAIN AND PROVIDE THE ENGINEER WITH COPIES OF ALL MILL CERTIFICATES.

BOLTS TO CONFORM AS FOLLOWS:

STEEL CONNECTIONS	ASTM A325, TYPE 1, GALV.
WOOD/STEEL CONNECTIONS	ASTM A307
LINK PLATES	ASTM A307

ALL BOLTS TO BE SOURCED FROM A CANADIAN OR AMERICAN FACTORY.

WELDING ELECTRODES TO BE E410XX OR E480XX (E60XX OR E70XX) WITH A SILICON CONTENT BELOW 0.35% FOR FABRICATION PRIOR TO GALVANIZING AND E41013 (E6013) IF STEEL GALVANIZED.

A325 BOLTS FOR STEEL CONNECTIONS TO BE SIZED TO EXCLUDE THE THREADS FROM THE SHEAR PLANE AND RESULT IN AT LEAST 1.5 TURNS PROTRUDING FROM THE NUT.

FAYING SURFACES OF BOLTED CONNECTIONS TO BE CLEAN AND FREE OF BURRS, WELD SPLATTER OR OTHER MATERIAL THAT WOULD INTERFERE WITH SOLID BEARING AND/OR FRICTION. HOLES TO BE 2 MM (1/16") LARGER THAN THE BOLT UND.

A325 BOLTS TO BE TIGHTENED BY THE TURN-OF-NUT METHOD. USE A WASHER UNDER THE TURNED ELEMENT, EXCEPT FOR OVERSIZED HOLES USE A WASHER UNDER BOTH THE HEAD AND NUT. IN ACCORDANCE WITH THE STANDARDS, GALV. BOLTS ARE ONLY TO BE TORQUED ONCE. ENSURE GANGWAY IS PROPERLY ALIGNED BEFORE TORQUEING MOST OF THE BOLTS. EXCEPT FOR THOSE ELEMENTS TO BE SHIPPED SEPARATELY TO SITE, WHICH SHOULD ONLY BE SNUG-TIGHT:

1ST FLOORBEAM
LOWER STRUT
SLIDER ASSEMBLY
REMOVABLE HANDRAIL ASSEMBLY

AT SITE, ALL OF THE BOLTS USED ON THE ABOVE ASSEMBLIES - ONCE INSTALLED AND ALIGNED - TO BE TIGHTENED BY THE TURN-OF-NUT METHOD.

WELDING TO BE IN ACCORDANCE WITH CSA W59, INCLUDING CLAUSE 12. WELDERS TO BE QUALIFIED BY THE CANADIAN WELDING BUREAU.

FILLET WELDS, UNLESS NOTED, TO BE 5 MM (3/16) WELDS.

FILLET WELDS LESS THAN OR EQUAL TO 8 MM (5/16) TO BE DONE IN A SINGLE PASS.

TOLERANCES AS PER CSA W59 CLAUSE 5.8. - TO BE CHECKED BY THE FABRICATOR

GALVANIZING OF STEEL - ADDITIONAL REQUIREMENTS

USE BOLTED OPTION

ALL STEELS TO BE SUITABLE FOR GALVANIZING WITH  
A CARBON CONTENT LESS THAN 0.25%  
A PHOSPHORUS CONTENT LESS THAN 0.04%  
A SILICON CONTENT EITHER LESS THAN 0.03% OR BETWEEN 0.15 AND 0.25%,  
AND A MANGANESE CONTENT BELOW 1.35%.

PRIOR TO GALVANIZING THE STEEL IS TO BE CLEANED BY THE FABRICATOR TO REMOVE SURFACE CONTAMINATES, SUCH AS WELDING SLAG, THAT WOULD INTERFERE WITH THE GALVANIZING PROCESS.

STEEL TO BE HOT-DIP GALVANIZED TO CSA STANDARD G164-M1981, WITH THE SPELTER COAT OF AT LEAST 0.61 KG ZINC PER SQUARE METER.

AREAS TO BE WELDED WHICH HAVE BEEN HOT DIPPED GALVANIZED TO BE GROUND TO BARE STEEL.

STEEL TO BE HANDLED CAREFULLY TO AVOID DAMAGING THE GALVANIZING. GALVANIZED COATING WHERE DAMAGED AND WELD AREAS TO BE TOUCHED UP WITH 2 COATING OF ZINGA OR APPROVED EQUAL.

TOLERANCES TO BE CHECKED BEFORE AND AFTER GALVANIZING.

PAINTING OF STEEL- ADDITIONAL REQUIREMENTS

PAINTING PREPARATION AND APPLICATION TO BE IN ACCORDANCE WITH DFO-SCH STANDARD PAINT SPECIFICATION. EXCEPT FOR APPLICATION ON FAYING SURFACES WHICH SHOULD BE PAINTED WITH ONE COAT OF AN INORGANIC ZINC RICH PRIMER WITH A MIN. THICKNESS OF 3 MILS. MASK FAYING SURFACES TO PREVENT OTHER PAINTS BEING APPLIED TO THE FAYING SURFACES.

TOP COAT TO BE SAFETY RED.

STEEL TO BE HANDLED CAREFULLY TO AVOID DAMAGING THE PAINT. TOUCH UP DAMAGE PAINT AS PER PAINT SPEC.

HINGE STRUT TO BE SEALED AT BOTH ENDS EXCEPT FOR ONE 10 MM DRAIN HOLE PER END AT LOW POINT

SLIDER REV A

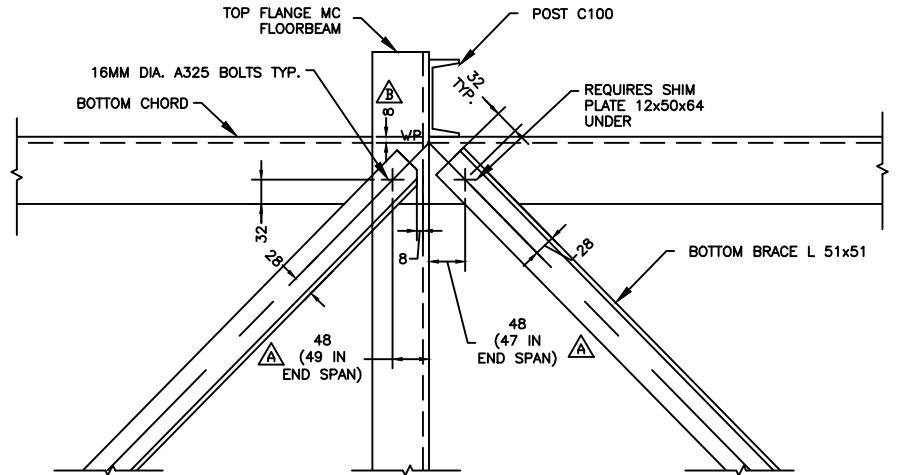
MATERIAL FOR SLIDER TO BE VIRGIN UHMW CONFORMING TO ASTM D 4020, WITH UV STABILIZERS. NOTE: HDPE IS NOT ACCEPTABLE

IF HEAT WILL BE NEEDED TO FORM THE UHMW, THE TEMPERATURE MUST BE LESS THAN 80° C OR 180° F. DRILL HOLES AFTER FORMING TO THE CORRECT RADIUS USING A JIG. ONCE FORMED THE UHMW SHOULD BE KEPT EITHER BOLTED/CLAMPED TO THE SLIDER OR A 2 FT Ø PILE TO RETAIN ITS SHAPE

SLIDER TRACK REV A

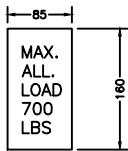
MATERIAL FOR SLIDER TRACK TO BE 6061-T6 ALUMINUM. ALUMINUM THAT MIGHT CONTACT SALT-TREATED TIMBERS TO HAVE A SUITABLE CAULK OR OTHER APPROVED ISOLATING COMPOUND INSERTED BETWEEN THE ALUMINUM AND THE SALT-TREATED WOOD.

CONNECTIONS FOR SLIDER TRACK TO BE 316 STAINLESS STEEL OR HOT DIP GALVANIZED TO CSA STANDARD G164



DETAIL 1  
SCALE 1:5

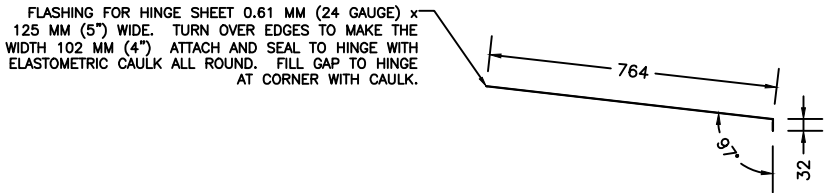
LOWER LATERAL BRACING CONNECTION



DETAIL 2  
SCALE 1:5

NOTES:

1. LOAD LIMIT OF 700 LB BASED ON GRATING.
2. LOAD LIMIT OF 2000 LB WOULD BE APPROPRIATE FOR THE TRUSSES PROVIDED REST OF RAMP CLEAR OF LOADS.
3. LOAD PLAQUE TO BE ATTACHED TO VERTICAL AT TOP END.



DETAIL 3  
SCALE 1:10

FLASHING FOR HINGES

E	ADDED HINGE FLASHING	14/04/09	RDW	J			
D	NOTE CHANGE HINGE STRUT	13/07/23	RDW	I			
C	MINOR REVISIONS	09/08/20	RDW	H			
B	REVISED NOTES	09/07/10	RDW	G			
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REVISIONS				Y/M/D	BY	REVISIONS	
				Y/M/D	BY		

NORTH ISLAND  
ENGINEERING LTD.  
2007002

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APPROVED FOR USE IN CONSTRUCTION	
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DATE 12 APR 2007	CHECKED BY: RDW
FILE No. 2014003	SCALE 1:5

DFO-SCH	STANDARD GANGWAYS SLIDER
19800 (65') -WIDE-1800 TRANS-HANDRAIL TOP	
GENERAL NOTES	DRAWING No. 2007002-5 CANCEL PRINTS BEARING EARLIER REVISION