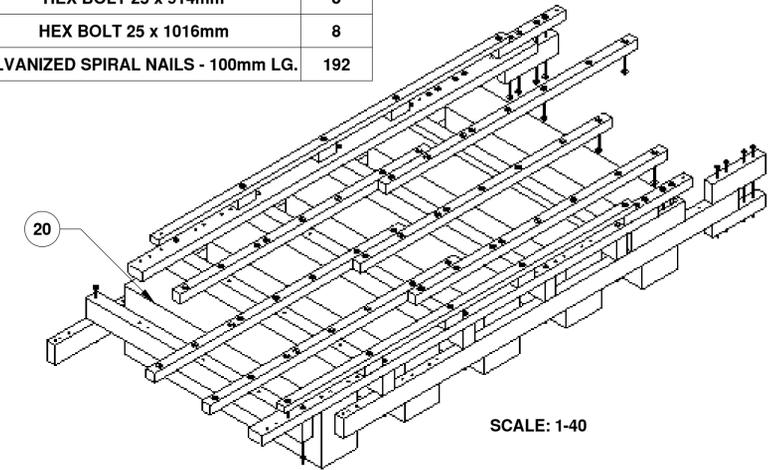
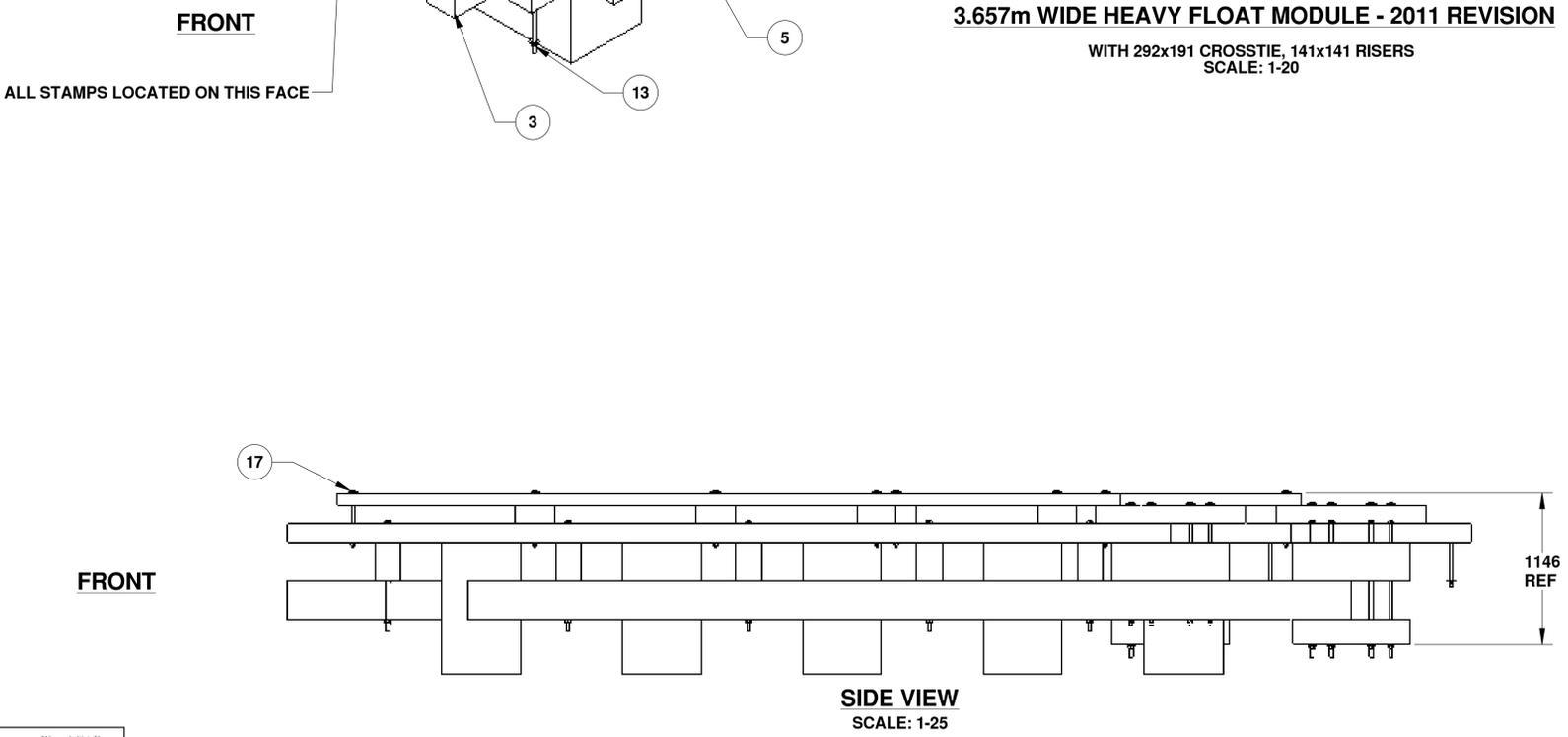


TIMBER MEMBERS

ITEM NO.	QTY.	TIMBER MEMBERS	DESCRIPTION	MATERIAL
1	2	FLANGE	(12x6) 292 X 141 x 6706 LG.	14 LB CREOSOTE TREATMENT #1 BTR FIR
2	5	CROSSTIE	(12x8) 292 x 191 x 3658 LG.	14 LB CREOSOTE TREATMENT #1 BTR FIR
3	2	STRINGER	(10x6) 241 X 141 X 6706 LG.	14 LB. CREOSOTE TREATMENT #1 BTR FIR
4	6	JOIST	(6x6) 141 x 141 x 4267 LG.	14 LB. CREOSOTE TREATMENT #1 BTR FIR
5	6	RISERS	(6x6) 141 x 141 x 300 LG.	ACZA
6	2	RAIL	(4x6) 89 x 141 x 5950 LG.	ACZA
7	2	UPPER STRINGER SPLICE	(6x6) 141 x 141 x 1140 LG.	ACZA
8	2	LOWER STRINGER SPLICE	(6x12) 141 x 292 x 900 LG.	14 LB CREOSOTE TREATMENT #1 BTR FIR
9	2	UPPER FLANGE SPLICE	(6x12) 141 x 292 X 900 LG.	14 LB CREOSOTE TREATMENT #1 BTR FIR
10	2	LOWER FLANGE SPLICE	(6x8) 141 x 191 x 900 LG.	14 LB CREOSOTE TREATMENT #1 BTR FIR
20	5	FOAM BOUYANCY BILLET	1000 x 597 x 3352 LG.	
21	28	DECK PLATES	(12x2) 305 x 38 x 2440 LG.	ACZA

HARDWARE

ITEM NO.	HARDWARE	QTY
11	HEX BOLT 25 x 812mm	10
12	WASHERS 25mm	112
13	HEX NUTS 25mm	56
14	HEX BOLT 25 x 457mm	21
17	HEX BOLT 25 x 406mm	9
18	HEX BOLT 25 x 914mm	8
19	HEX BOLT 25 x 1016mm	8
22	GALVANIZED SPIRAL NAILS - 100mm LG.	192



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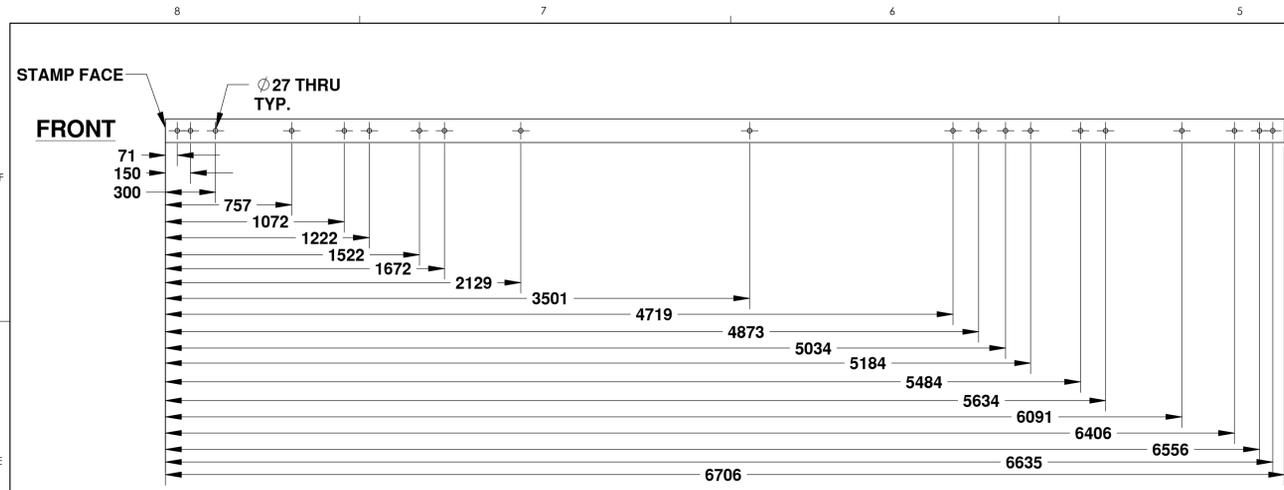
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ANGULAR: MATCH BEND ±	TWO PLACE DECIMAL: ±		
THREE PLACE DECIMAL: ±			
INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
MATERIAL:			
FINISH:			
APPLICATION:	DO NOT SCALE DRAWING		

Small Craft
Harbours Branch

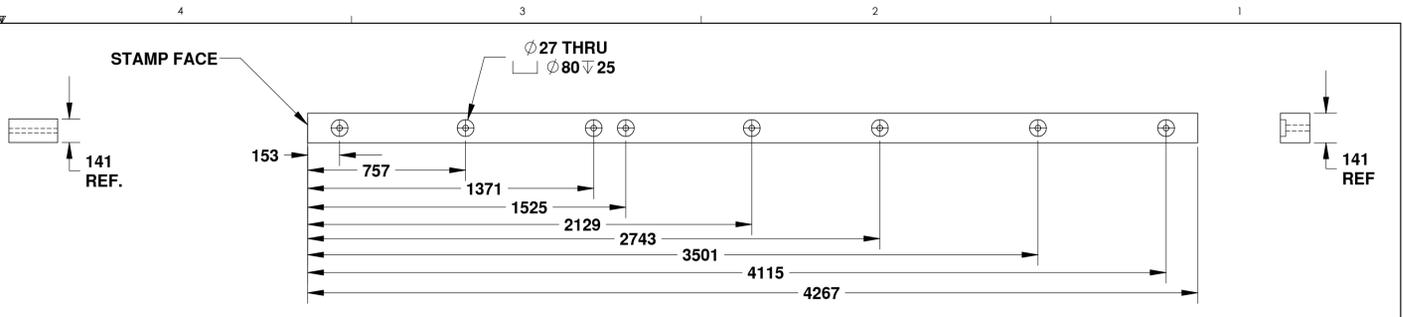
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3.657m WIDE HEAVY
FLOAT MODULE ASSEMBLY

SIZE DWG. NO. REV
D FM12-HV-000 **G**

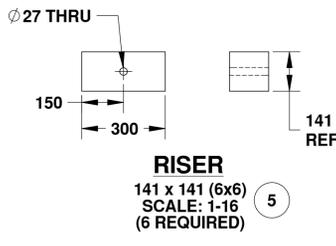
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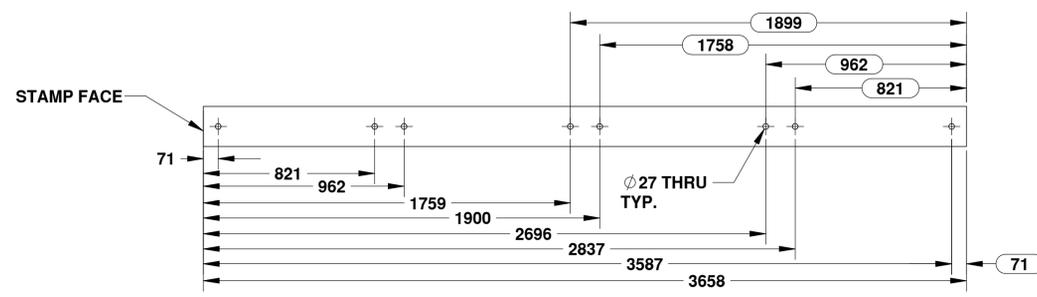
FLANGE
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SCALE: 1-20
(2 REQUIRED) 1



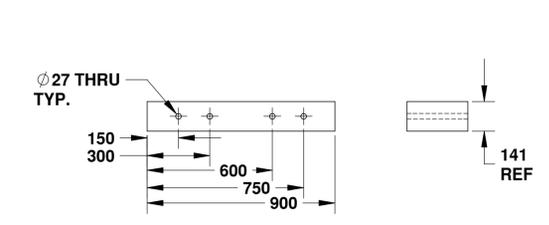
JOIST
141 x 141 (6x6)
SCALE: 1-16
(6 REQUIRED) 4



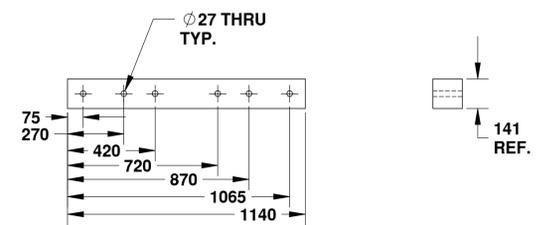
RISER
141 x 141 (6x6)
SCALE: 1-16
(6 REQUIRED) 5



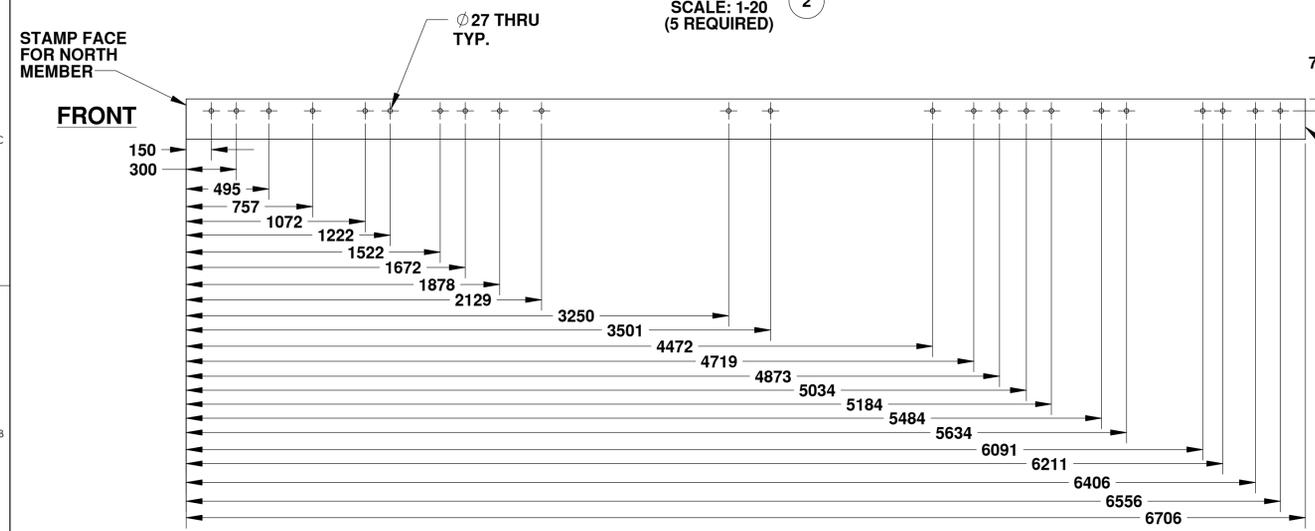
CROSTIE (Reversible)
292 x 191 (12x8)
SCALE: 1-20
(5 REQUIRED) 2



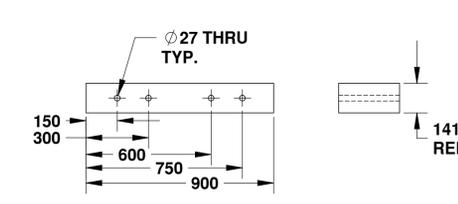
LOWER STRINGER SPLICE
292 x 141 (12x6)
SCALE: 1-16
(2 REQUIRED) 8



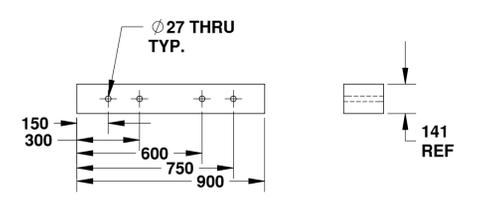
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141 x 141 (6x6)
SCALE: 1-16
(2 REQUIRED) 7



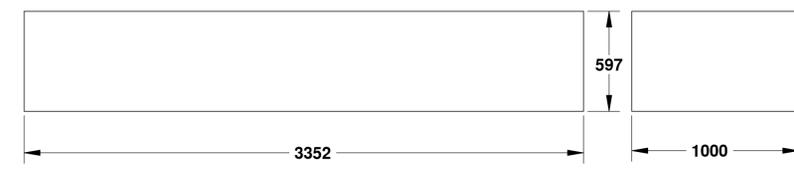
STRINGER
241 x 141 (10x6)
SCALE: 1-20
(2 REQUIRED) 3



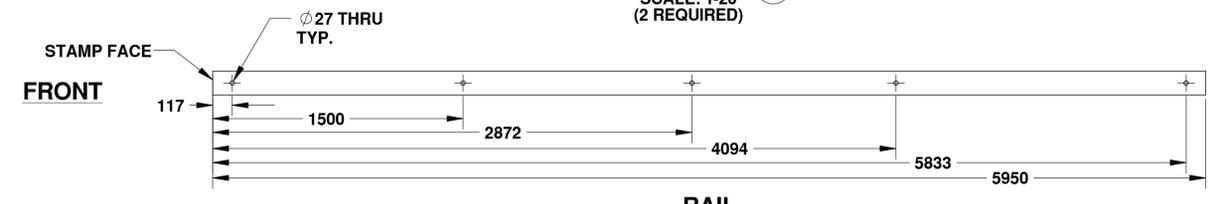
UPPER FLANGE SPLICE
292 x 141 (12x6)
SCALE: 1-16
(2 REQUIRED) 9



LOWER FLANGE SPLICE
141 x 191 (6x8)
SCALE: 1-16
(2 REQUIRED) 10



FOAM BUOYANCY FLOAT
1000 x 597 x 2438 LG.
SCALE: 1-20
(5 REQUIRED) 20



RAIL
89 x 141 (4x6)
SCALE: 1-20
(2 REQUIRED) 6

HOLES ARE TO BE DRILLED CENTER LINE UNLESS OTHERWISE NOTED

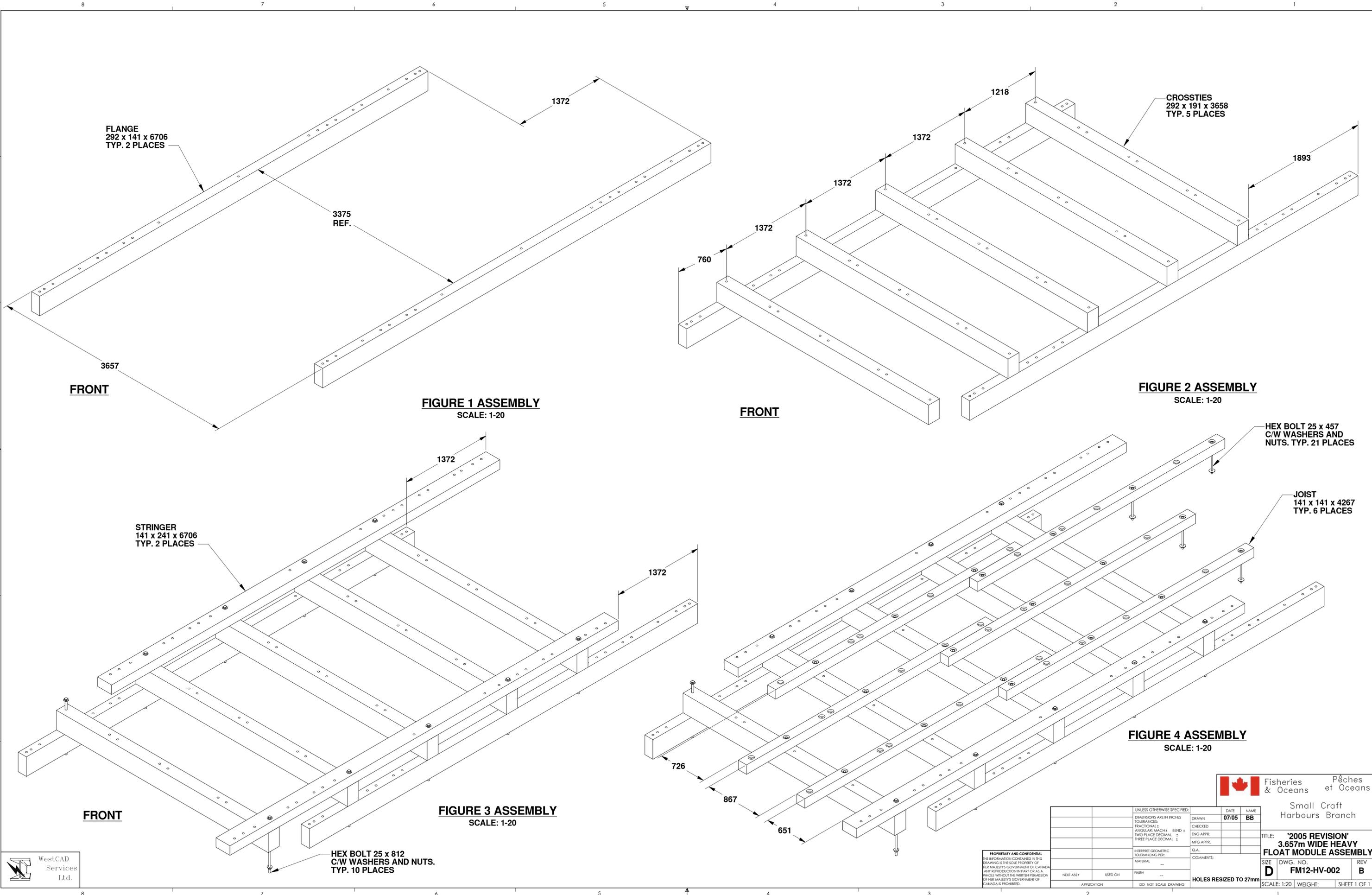


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DIMENSIONS ARE IN INCHES		12/11	WSL
TOLERANCES:			
FRACTIONAL: ±	CHECKED		
ANGULAR: MACH 1: ±	ENG APPR.		
TWO PLACE DECIMAL: ±	MFG APPR.		
THREE PLACE DECIMAL: ±			
INTERPRET GEOMETRIC TOLERANCING PER:			
ASME			
ISO			
OTHER:			
FINISH:			
APPLICATION	DO NOT SCALE DRAWING		

Fisheries & Oceans / Pêches et Océans
Small Craft Harbours Branch

TITLE: '2011 REVISION' 3.657m WIDE HEAVY FLOAT MODULE ASSEMBLY		
SIZE: D	DWG. NO.: FM12-HV-001	REV: G
SCALE: 1:16	WEIGHT:	SHEET 1 OF 1



FLANGE
292 x 141 x 6706
TYP. 2 PLACES

3375
REF.

CROSTIES
292 x 191 x 3658
TYP. 5 PLACES

FRONT

FIGURE 1 ASSEMBLY
SCALE: 1-20

FRONT

FIGURE 2 ASSEMBLY
SCALE: 1-20

STRINGER
141 x 241 x 6706
TYP. 2 PLACES

HEX BOLT 25 x 457
C/W WASHERS AND
NUTS. TYP. 21 PLACES

JOIST
141 x 141 x 4267
TYP. 6 PLACES

FRONT

FIGURE 3 ASSEMBLY
SCALE: 1-20

FIGURE 4 ASSEMBLY
SCALE: 1-20

HEX BOLT 25 x 812
C/W WASHERS AND NUTS.
TYP. 10 PLACES

Fisheries & Oceans / Pêches et Océans

Small Craft Harbours Branch

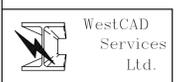
TITLE: '2005 REVISION'
3.657m WIDE HEAVY
FLOAT MODULE ASSEMBLY

SIZE DWG. NO. REV
D FM12-HV-002 B

SCALE: 1:20 WEIGHT: SHEET 1 OF 1

UNLESS OTHERWISE SPECIFIED:		DATE	NAME
DIMENSIONS ARE IN INCHES		07/05	BB
TOLERANCES:			
FRACTIONAL ±			
ANGULAR: MACH ±			
TWO PLACE DECIMAL ±			
THREE PLACE DECIMAL ±			
INTERPRET GEOMETRIC TOLERANCING PER:			
MATERIAL			
NEXT ASSEY		USED ON	FINISH
APPLICATION			DO NOT SCALE DRAWING

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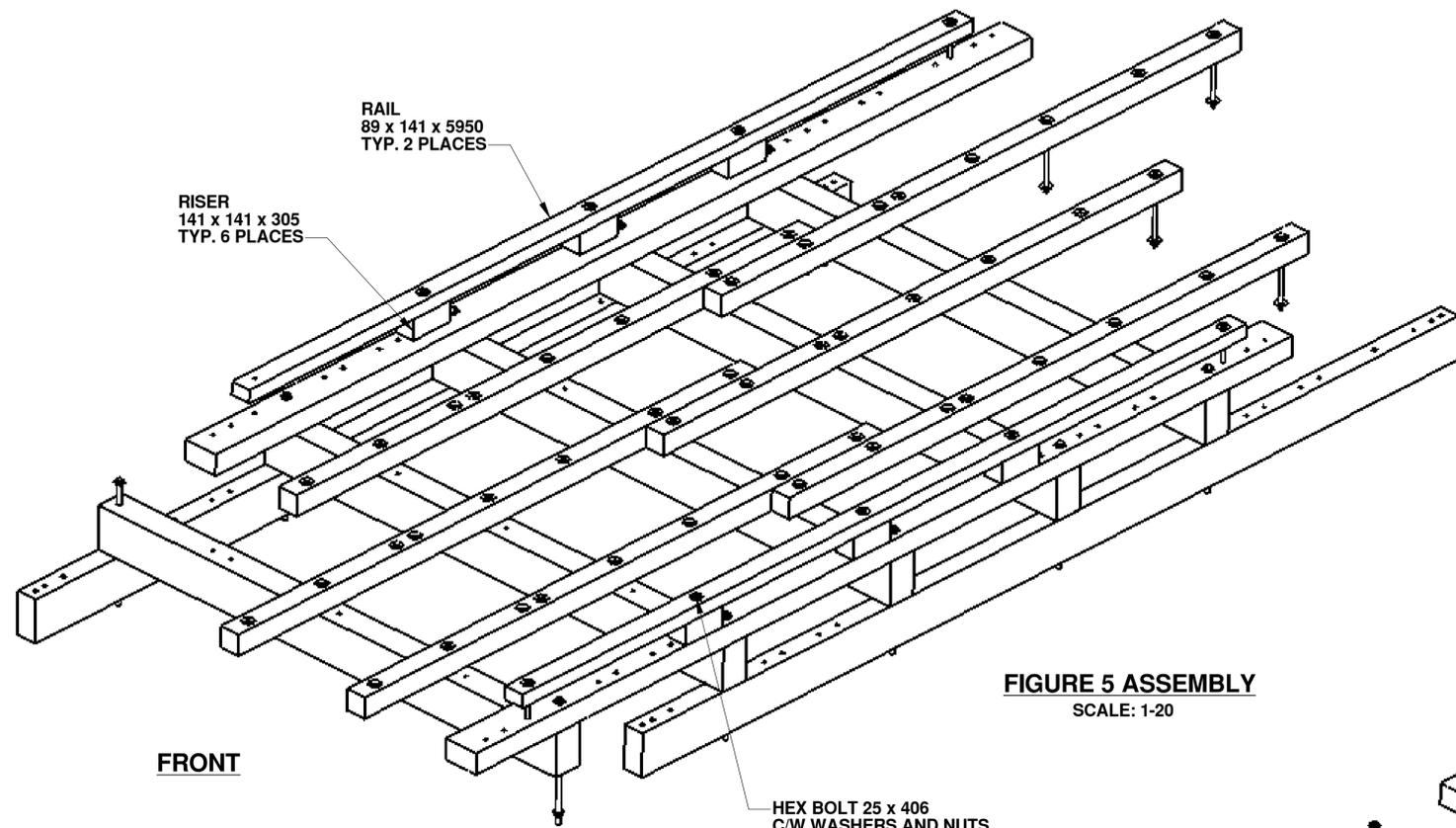


FIGURE 5 ASSEMBLY
SCALE: 1-20

HEX BOLT 25 x 406
C/W WASHERS AND NUTS
TYP. 9 PLACES

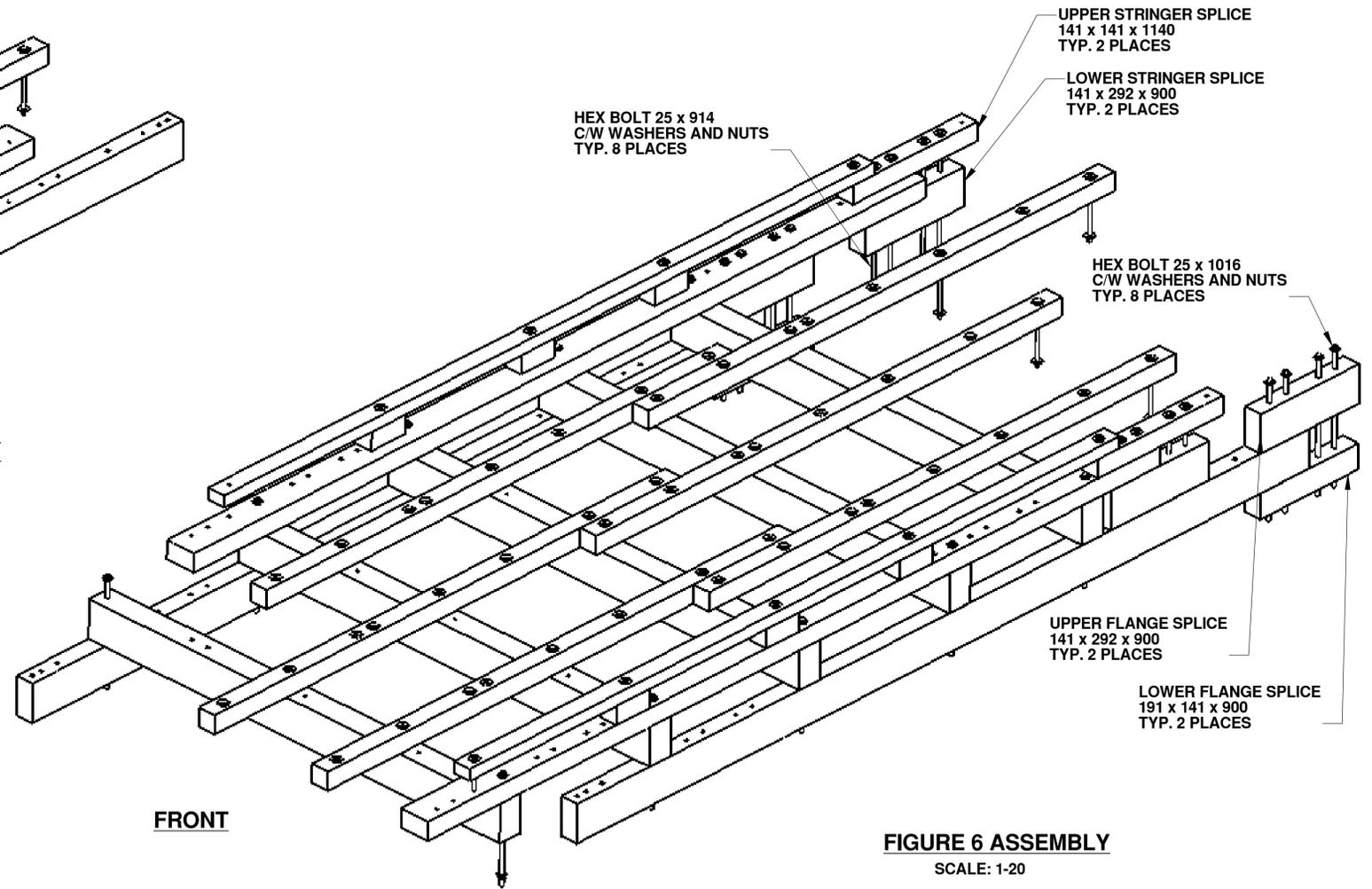


FIGURE 6 ASSEMBLY
SCALE: 1-20

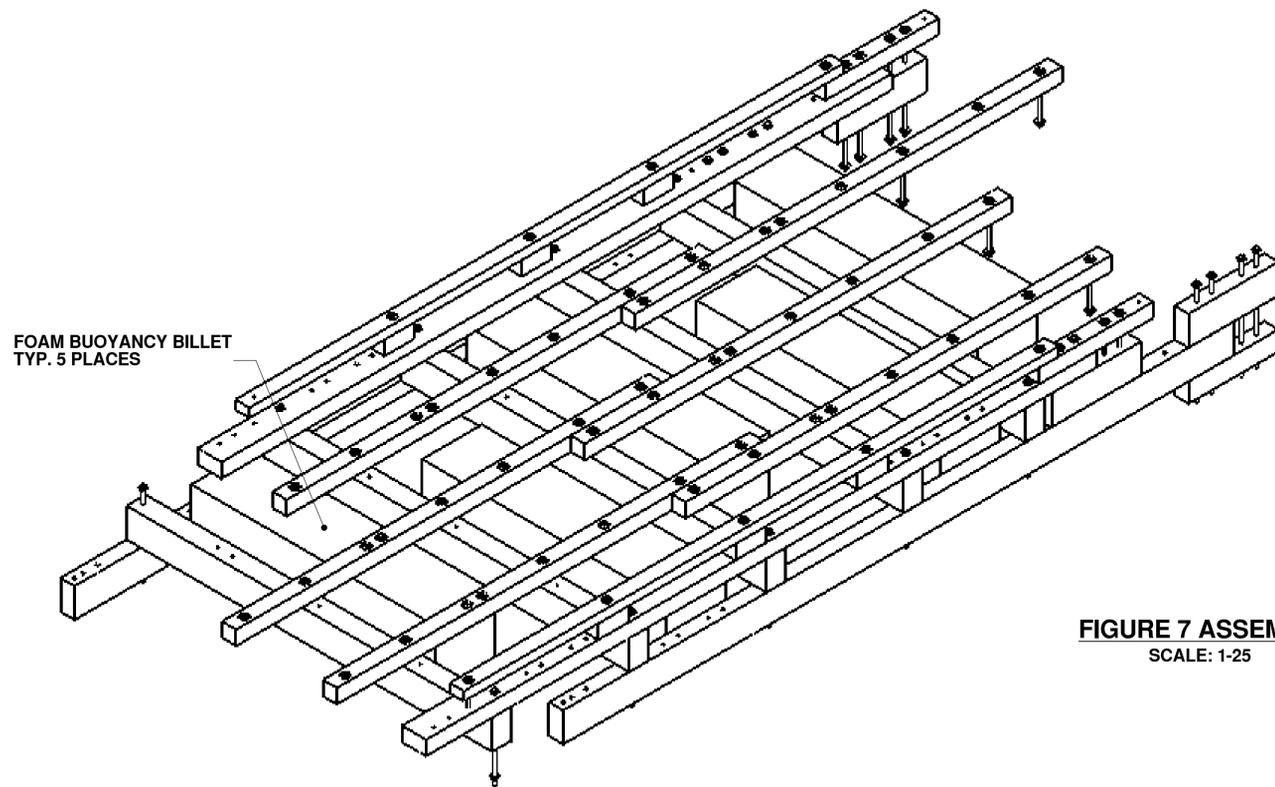
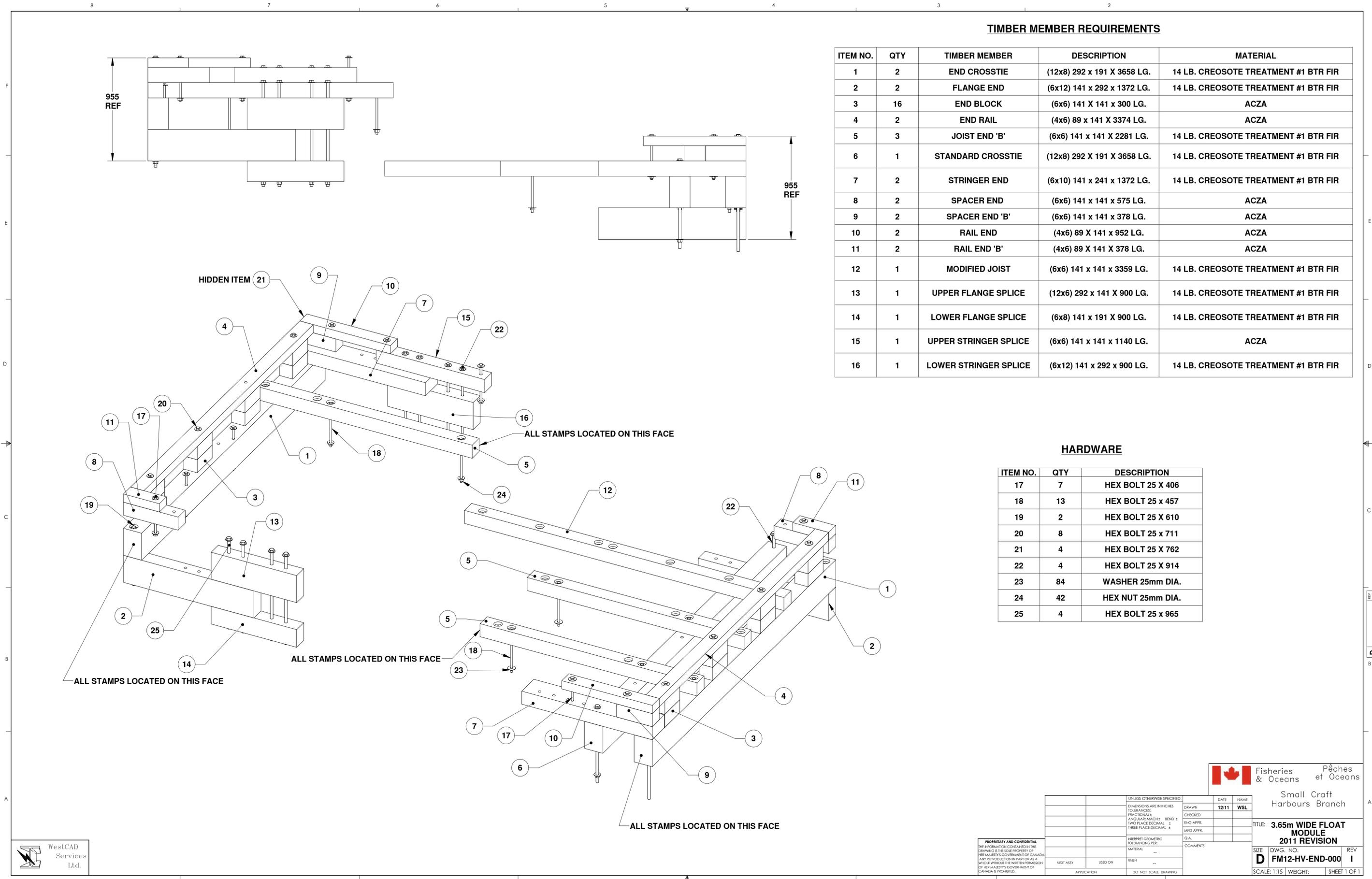


FIGURE 7 ASSEMBLY
SCALE: 1-25

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UNLESS OTHERWISE SPECIFIED:		DATE	NAME
DIMENSIONS ARE IN INCHES		07/05	BB
TOLERANCES:			
FRACTIONAL ±			
ANGULAR: MACH ±			
TWO PLACE DECIMAL ±			
THREE PLACE DECIMAL ±			
INTERPRET GEOMETRIC TOLERANCING PER:			
MATERIAL			
NEXT ASSY		USED ON	FINISH
APPLICATION	DO NOT SCALE DRAWING		

TITLE: '2005 REVISION' 3.657m WIDE HEAVY FLOAT MODULE ASSEMBLY		
SIZE	DWG. NO.	REV
D	FM12-HV-003	B
SCALE: 1:20	WEIGHT:	SHEET 1 OF 1



TIMBER MEMBER REQUIREMENTS

ITEM NO.	QTY	TIMBER MEMBER	DESCRIPTION	MATERIAL
1	2	END CROSSTIE	(12x8) 292 x 191 X 3658 LG.	14 LB. CREOSOTE TREATMENT #1 BTR FIR
2	2	FLANGE END	(6x12) 141 x 292 x 1372 LG.	14 LB. CREOSOTE TREATMENT #1 BTR FIR
3	16	END BLOCK	(6x6) 141 X 141 x 300 LG.	ACZA
4	2	END RAIL	(4x6) 89 x 141 X 3374 LG.	ACZA
5	3	JOIST END 'B'	(6x6) 141 x 141 X 2281 LG.	14 LB. CREOSOTE TREATMENT #1 BTR FIR
6	1	STANDARD CROSSTIE	(12x8) 292 X 191 X 3658 LG.	14 LB. CREOSOTE TREATMENT #1 BTR FIR
7	2	STRINGER END	(6x10) 141 x 241 x 1372 LG.	14 LB. CREOSOTE TREATMENT #1 BTR FIR
8	2	SPACER END	(6x6) 141 x 141 x 575 LG.	ACZA
9	2	SPACER END 'B'	(6x6) 141 x 141 x 378 LG.	ACZA
10	2	RAIL END	(4x6) 89 X 141 x 952 LG.	ACZA
11	2	RAIL END 'B'	(4x6) 89 X 141 X 378 LG.	ACZA
12	1	MODIFIED JOIST	(6x6) 141 x 141 x 3359 LG.	14 LB. CREOSOTE TREATMENT #1 BTR FIR
13	1	UPPER FLANGE SPLICE	(12x6) 292 x 141 X 900 LG.	14 LB. CREOSOTE TREATMENT #1 BTR FIR
14	1	LOWER FLANGE SPLICE	(6x8) 141 x 191 X 900 LG.	14 LB. CREOSOTE TREATMENT #1 BTR FIR
15	1	UPPER STRINGER SPLICE	(6x6) 141 x 141 x 1140 LG.	ACZA
16	1	LOWER STRINGER SPLICE	(6x12) 141 x 292 x 900 LG.	14 LB. CREOSOTE TREATMENT #1 BTR FIR

HARDWARE

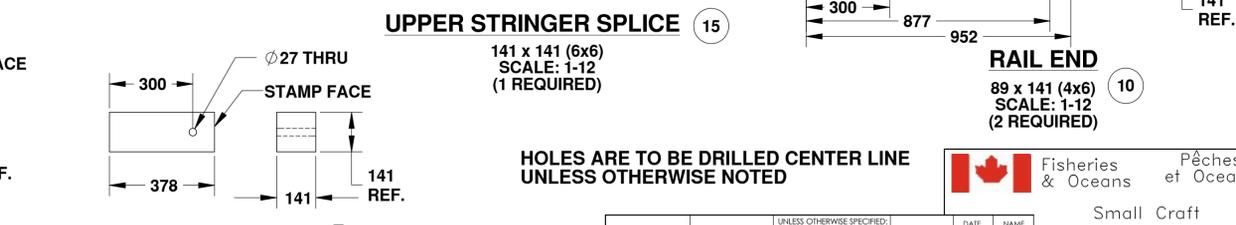
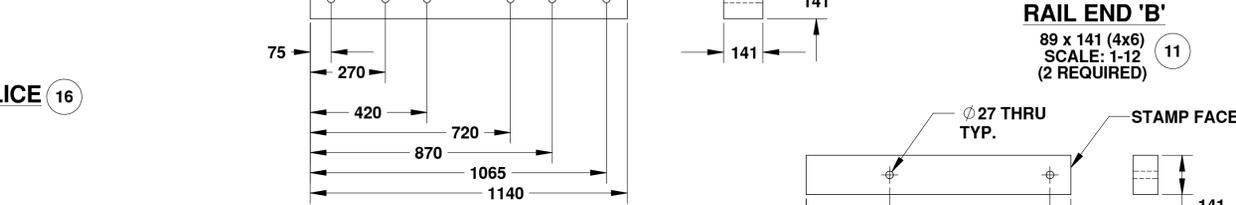
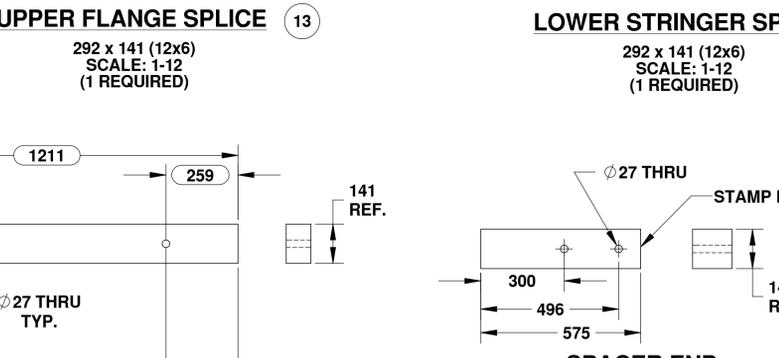
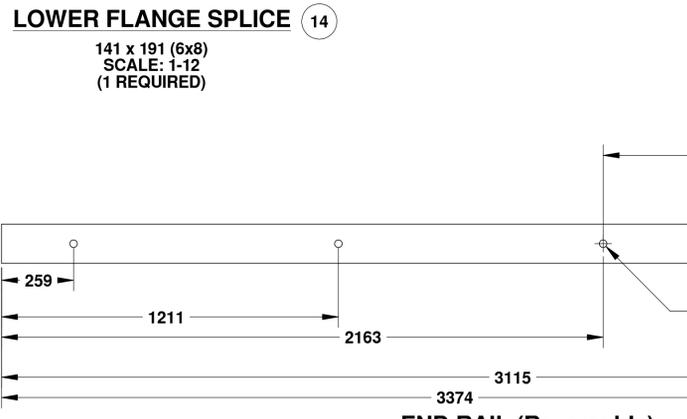
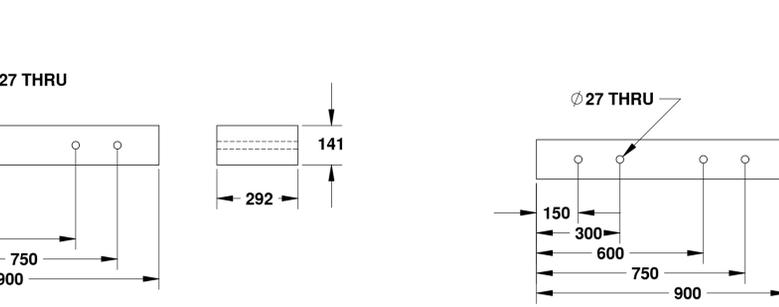
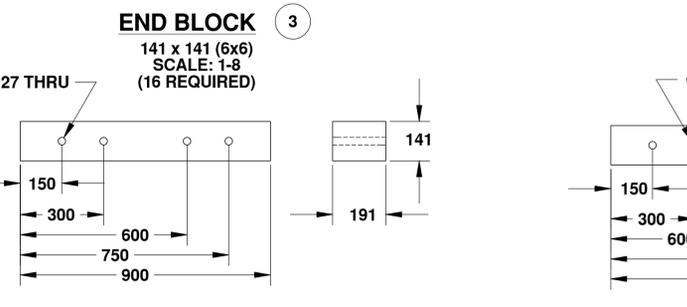
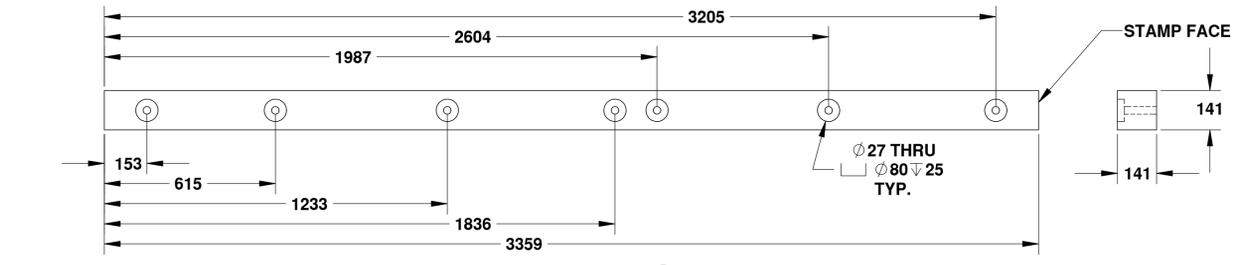
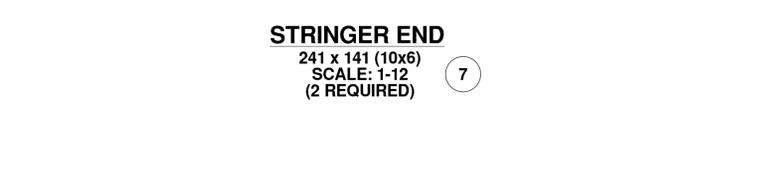
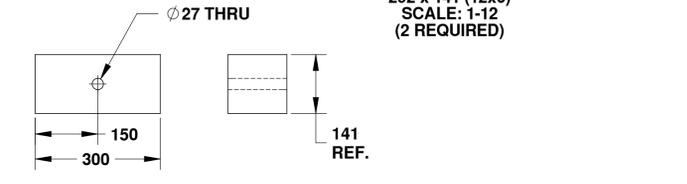
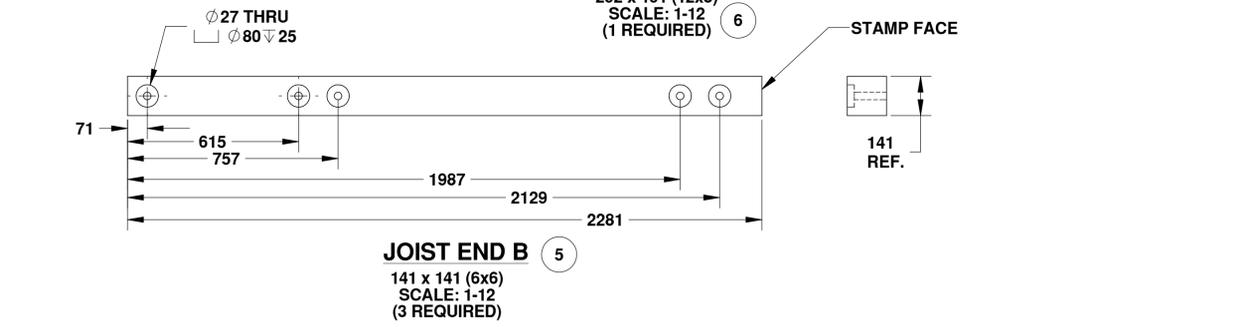
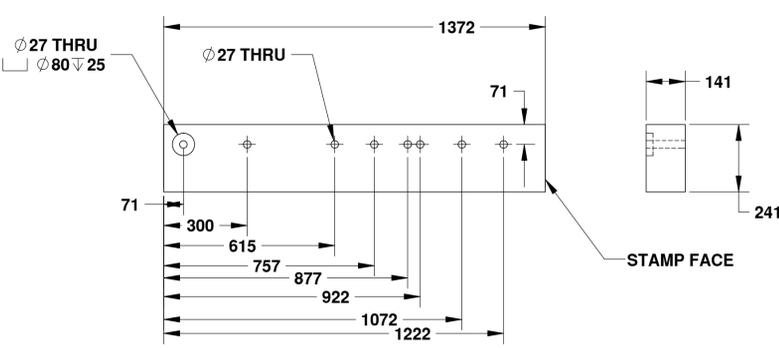
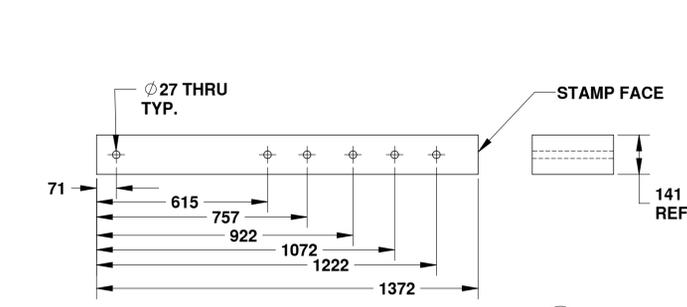
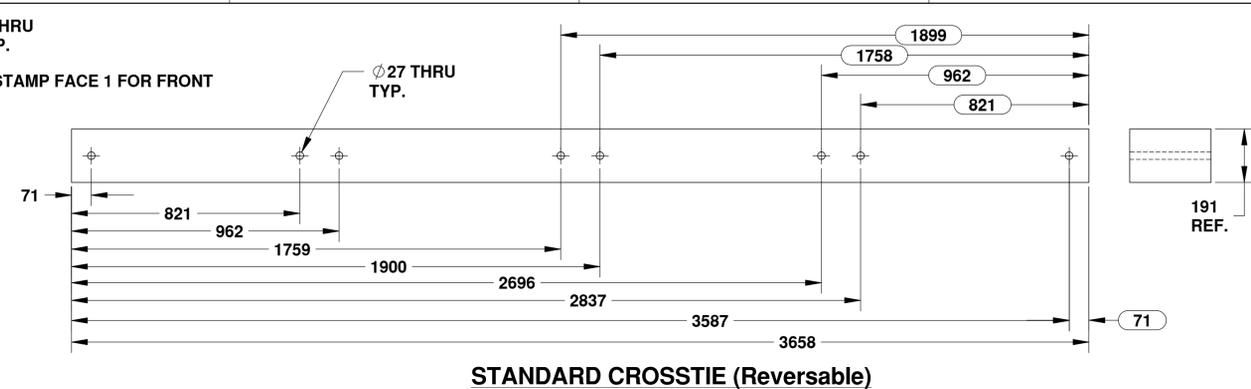
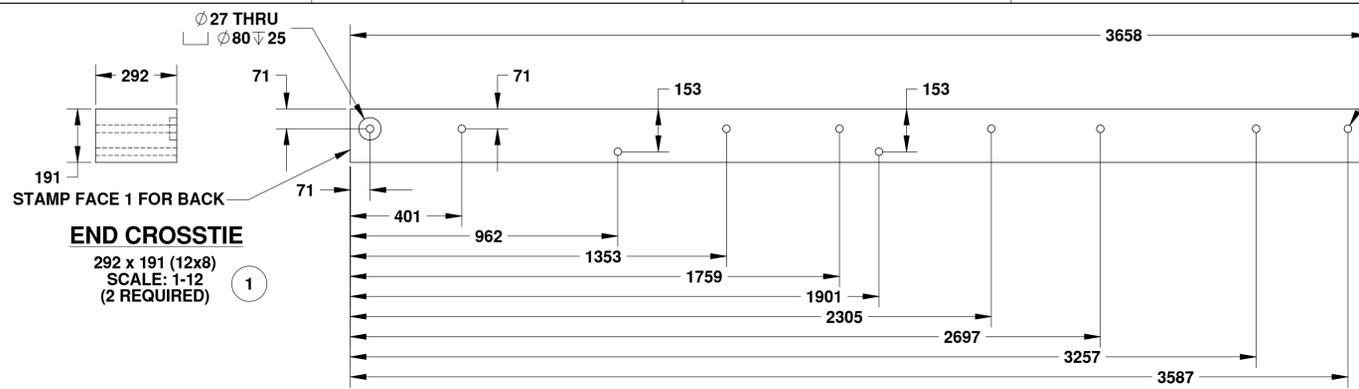
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18	13	HEX BOLT 25 x 457
19	2	HEX BOLT 25 X 610
20	8	HEX BOLT 25 x 711
21	4	HEX BOLT 25 X 762
22	4	HEX BOLT 25 X 914
23	84	WASHER 25mm DIA.
24	42	HEX NUT 25mm DIA.
25	4	HEX BOLT 25 x 965


Fisheries & Oceans / **Pêches et Océans**
 Small Craft Harbours Branch

UNLESS OTHERWISE SPECIFIED:		DATE	NAME
DIMENSIONS ARE IN INCHES	DRAWN	12/11	WSL
TOLERANCES:	CHECKED		
FRACTIONAL: ±	ENG APPR.		
ANGULAR: MATCH BEND ±	MFG APPR.		
TWO PLACE DECIMAL: ±			
THREE PLACE DECIMAL: ±			
INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
MATERIAL:	COMMENTS:		
FINISH:			
APPLICATION	DO NOT SCALE DRAWING		

TITLE: **3.65m WIDE FLOAT MODULE**
2011 REVISION
 SIZE: DWG. NO. REV
D FM12-HV-END-000 I
 SCALE: 1:15 | WEIGHT: | SHEET 1 OF 1

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WestCAD Services Ltd.

HOLES ARE TO BE DRILLED CENTER LINE UNLESS OTHERWISE NOTED



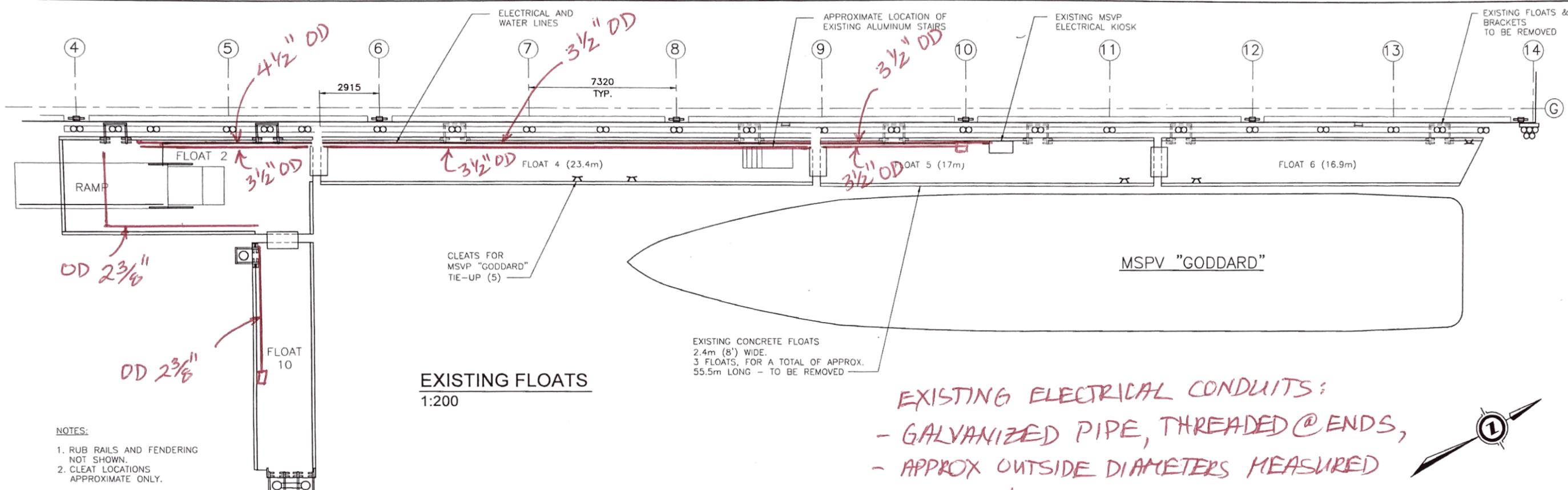
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TWO PLACE DECIMAL: ±	BEND ±	ENG APPR.	
THREE PLACE DECIMAL: ±		MFG APPR.	
INTERPRET GEOMETRIC TOLERANCING PER:		Q.A.	
MATERIAL: --		COMMENTS:	
FINISH: --			
NEXT ASSY:	USED ON:		
APPLICATION:	DO NOT SCALE DRAWING		

TITLE: **2011 REVISION 3.657m WIDE HEAVY END MODULES ASSEMBLY**

SIZE: **D** DWG. NO.: **FM12-HV-END-001** REV: **I**

SCALE: 1:12 WEIGHT: SHEET 1 OF 1

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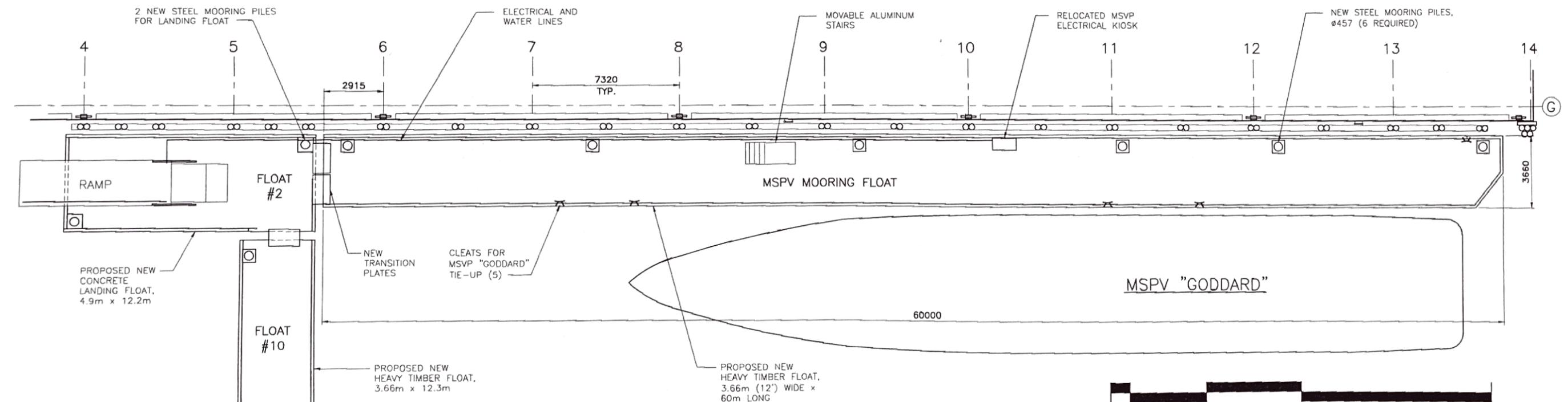


EXISTING FLOATS
1:200

EXISTING ELECTRICAL CONDUITS:
 - GALVANIZED PIPE, THREADED @ ENDS,
 - APPROX OUTSIDE DIAMETERS MEASURED
 JULY 15/20

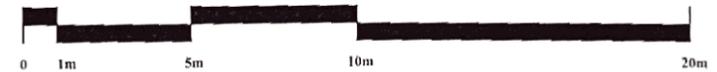


- NOTES:**
1. RUB RAILS AND FENDERING NOT SHOWN.
 2. CLEAT LOCATIONS APPROXIMATE ONLY.



PROPOSED NEW FLOATS
1:200

- NOTES:**
1. RUB RAILS AND FENDERING NOT SHOWN.
 2. CLEAT LOCATIONS MAY BE SHIFTED UP TO 500mm TO ALLOW STEEL REINFORCING TO FIT BETWEEN FLOAT TIMBERS.

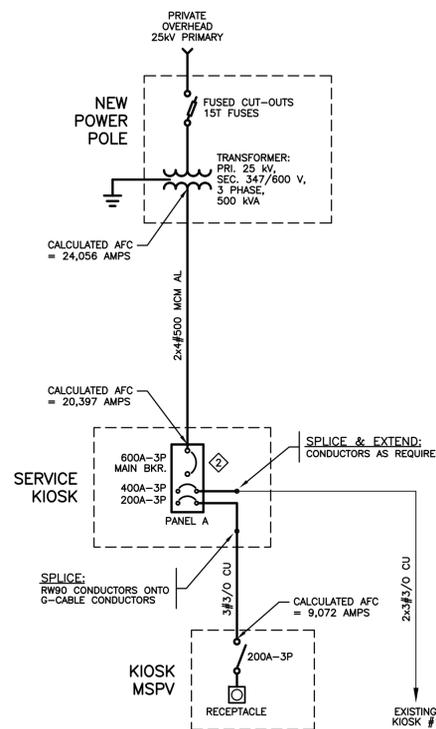
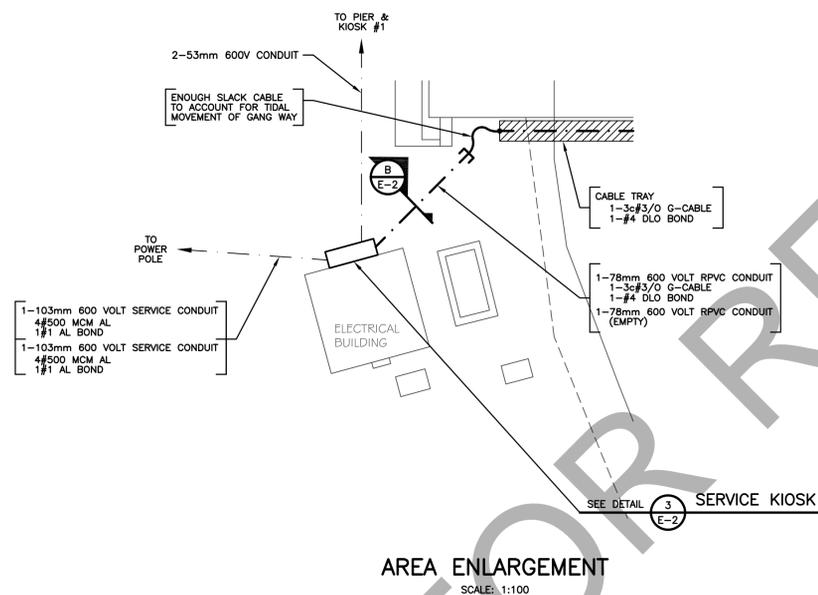
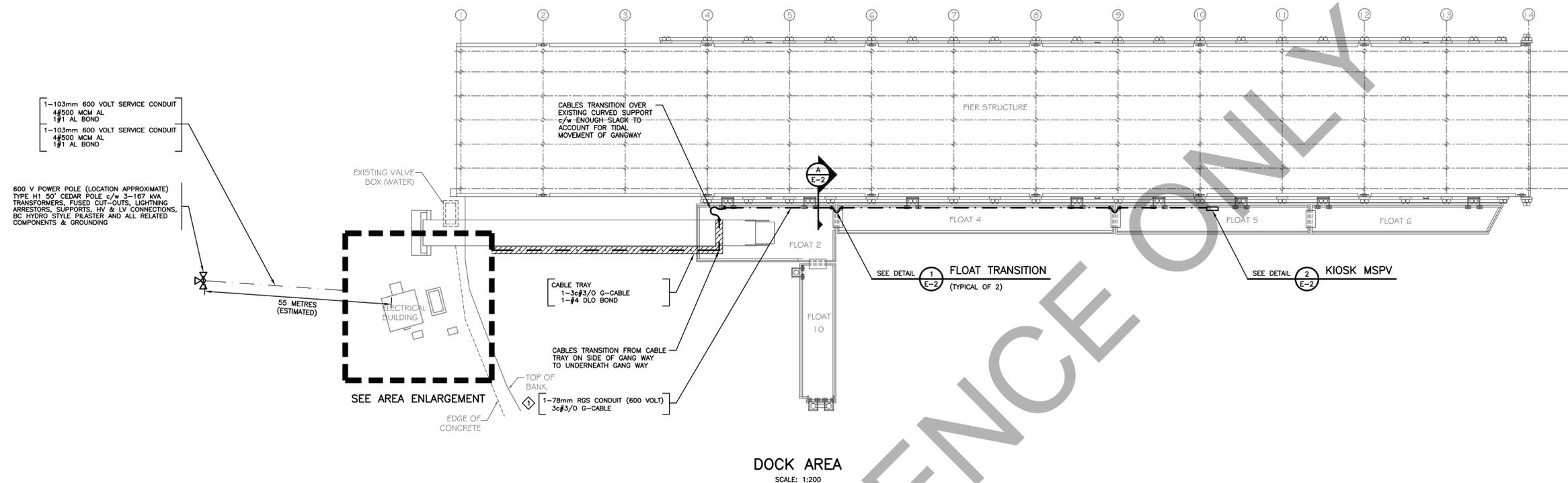


PRINCE RUPERT COAST GUARD BASE, NEW FLOATS		COAST ISLE ENGINEERING LTD.		Title: NEW FLOATS - PLANS: NEW VS. EXISTING	
A ISSUED FOR TENDER FEB. 2020		B FLOAT NUMBER CLARIFICATION JUL. 2020		Client: DFO - REAL PROPERTY	
Revisions				Scale: 1:200	
				Drawn: LB/CW Date: JAN. 2019	
				Checked: J. Date: FEB. 2020	
				DWR: EG68-02	

TURNSOL 2020.01.15.2020.3.06.17 PM

KEY NOTES:

- ◇ BUSHINGS AND ADAPTORS FOR CONDUIT TRANSITIONS AS REQUIRED.
- ◇ BREAKER SHALL INCLUDE GROUND FAULT PROTECTION.



NO.	DATE	COMMENT
3	DEC 17 2014	RECORD DRAWINGS BASED ON CONTRACTORS MARKUPS
2	MAR 18 2014	ISSUED FOR TENDER
1	MAR 06 2014	ISSUED FOR REVIEW

REVISION

RB ENGINEERING LTD
ELECTRICAL CONSULTING ENGINEERS
#4 4488 WELLINGTON ROAD TEL 250-756-4444
NANAIMO, BC, V9T 2H3 FAX 250-756-4228

CLIENT
Fisheries and Oceans Canada

PROJECT
SEAL COVE MARINE WORKS PRINCE RUPERT, B.C.

TITLE
ELECTRICAL LAYOUT

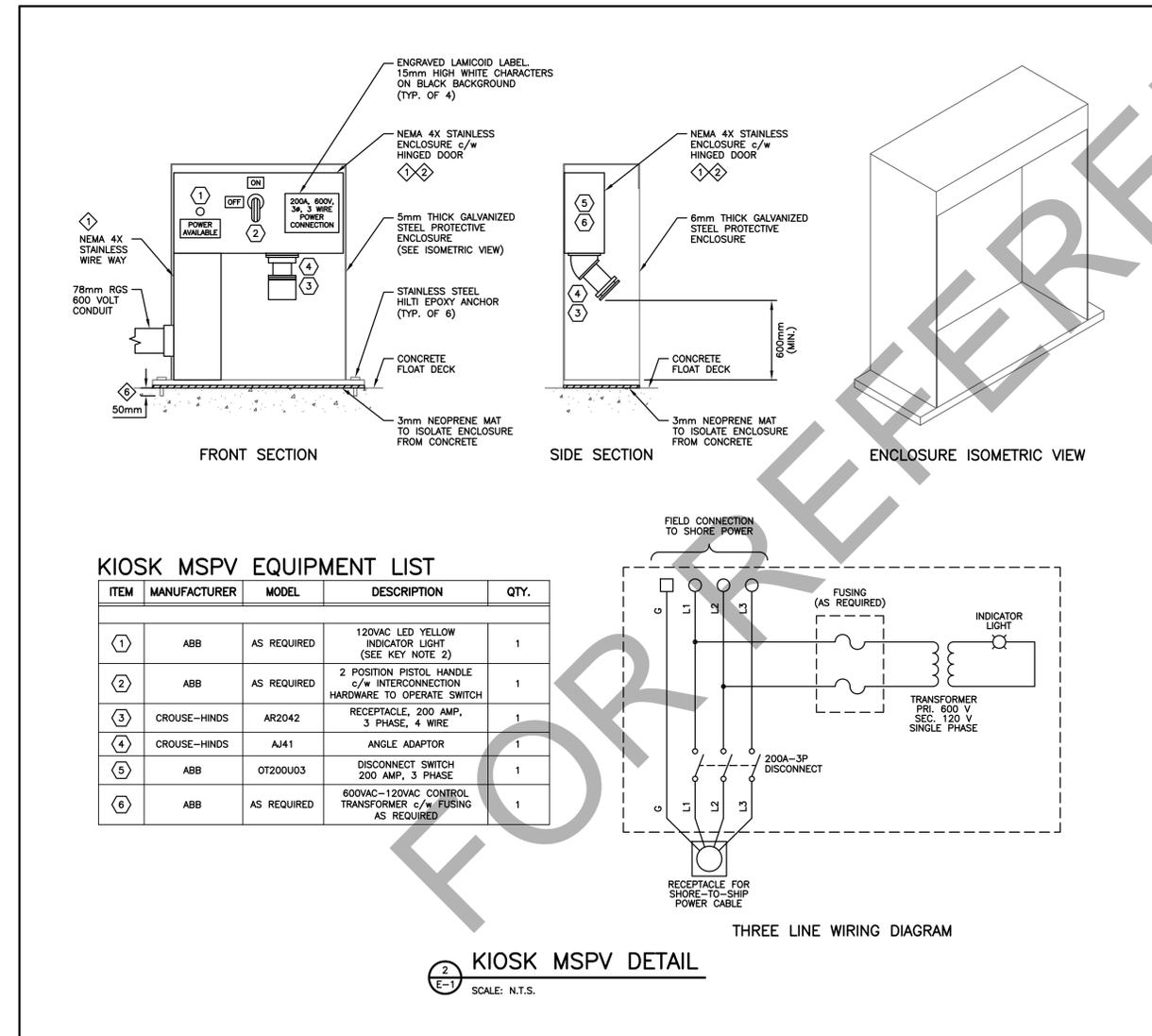
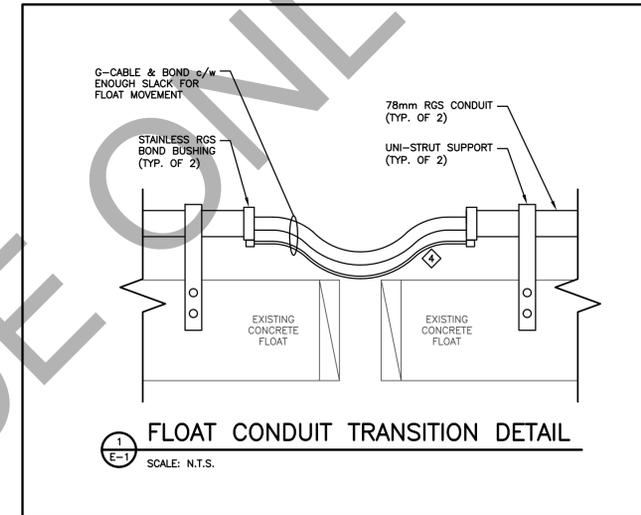
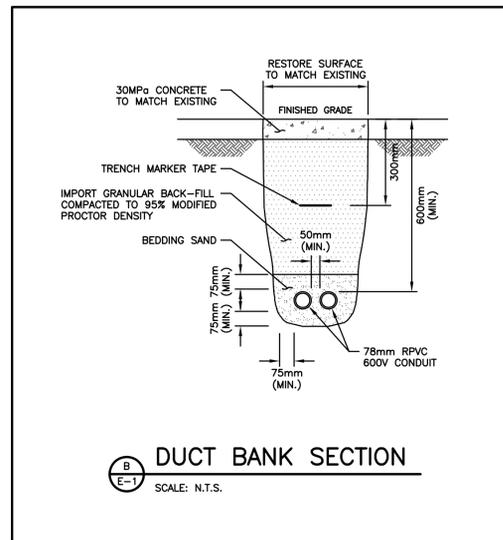
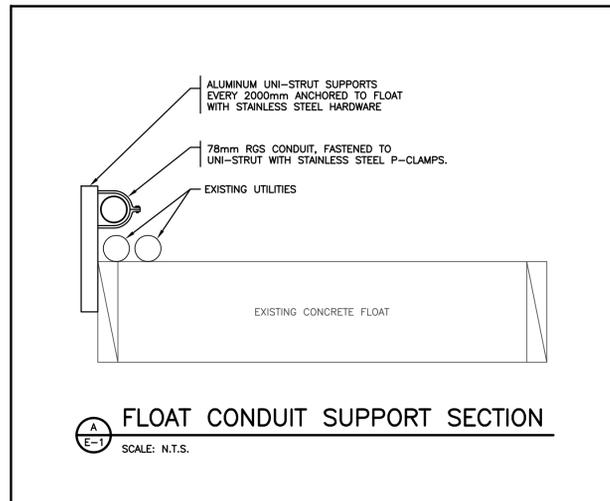
SCALE AS SHOWN DATE JANUARY, 2014

DRAWN AT SEAL
DESIGNED DM
CHECKED LB

PROJECT NO. 14-1818

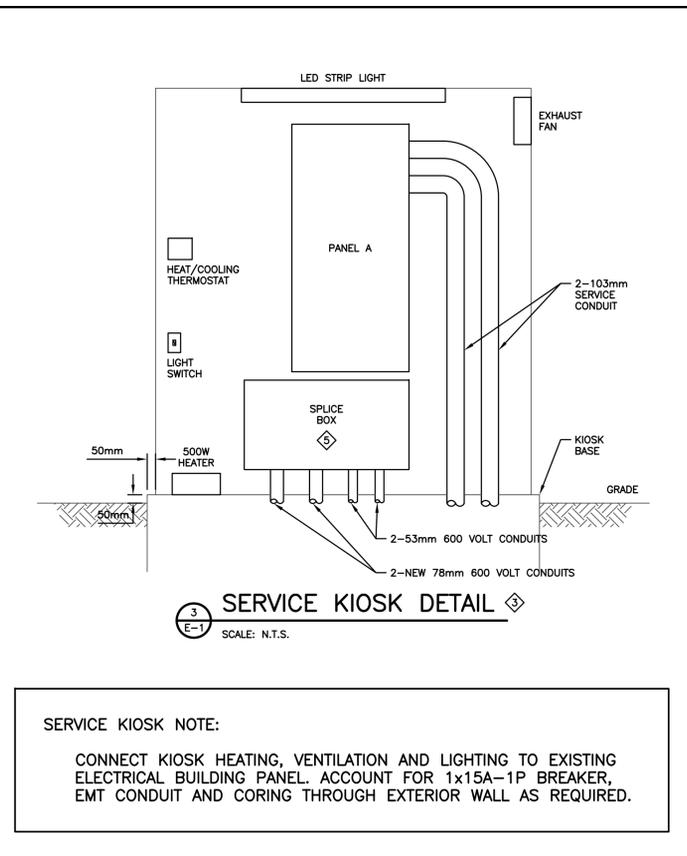
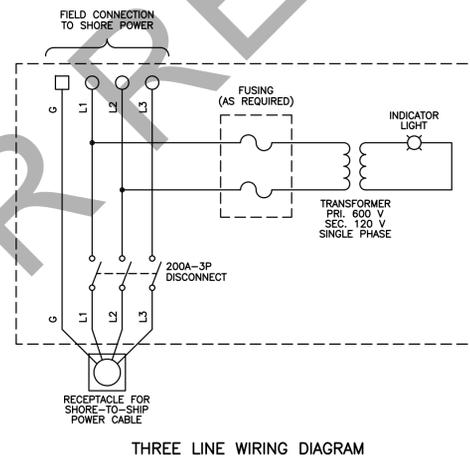
DRAWING NO.

E-1



KIOSK MSPV EQUIPMENT LIST

ITEM	MANUFACTURER	MODEL	DESCRIPTION	QTY.
①	ABB	AS REQUIRED	120VAC LED YELLOW INDICATOR LIGHT (SEE KEY NOTE 2)	1
②	ABB	AS REQUIRED	2 POSITION PISTOL HANDLE c/w INTERCONNECTION HARDWARE TO OPERATE SWITCH	1
③	CROUSE-HINDS	AR2042	RECEPTACLE, 200 AMP, 3 PHASE, 4 WIRE	1
④	CROUSE-HINDS	AJ41	ANGLE ADAPTOR	1
⑤	ABB	OT200U03	DISCONNECT SWITCH 200 AMP, 3 PHASE	1
⑥	ABB	AS REQUIRED	600VAC-120VAC CONTROL TRANSFORMER c/w FUSING AS REQUIRED	1



SERVICE KIOSK NOTE:
CONNECT KIOSK HEATING, VENTILATION AND LIGHTING TO EXISTING ELECTRICAL BUILDING PANEL. ACCOUNT FOR 1x15A-1P BREAKER, EMT CONDUIT AND CORING THROUGH EXTERIOR WALL AS REQUIRED.

- KEY NOTES:**
- ENCLOSURE SHALL BE CSA CERTIFIED AS A COMPLETE ASSEMBLY FOR ELECTRICAL USE. SIZE AS REQUIRED TO SUIT EQUIPMENT.
 - INCLUDE ALL WIRING AND DEVICES AS PER THREE LINE DRAWING.
 - CONTRACTOR TO FIELD MEASURE EXISTING INCOMING AND OUTGOING CONDUIT LOCATIONS TO FINALISE KIOSK LAYOUT. CONTRACTOR TO SPLICE EXISTING CABLES AS REQUIRED.
 - TYPE - W BOND CONNECTED TO SERVICE KIOSK MAIN GROUND SYSTEM.
 - SPLICE AND EXTEND FEEDERS TO NEW PANEL WITH RW90 CONDUCTORS.
 - ANCHOR HOLE SHALL NOT PENETRATE FURTHER THAN 50mm INTO DECK SURFACE.

NO.	DATE	COMMENT
3	DEC 17 2014	RECORD DRAWINGS BASED ON CONTRACTORS MARKUPS
2	MAR 18 2014	ISSUED FOR TENDER
1	MAR 06 2014	ISSUED FOR REVIEW

RB ENGINEERING LTD
ELECTRICAL CONSULTING ENGINEERS
#4 4488 WELLINGTON ROAD TEL 250-756-4444
NANAIMO, BC, V9T 2H3 FAX 250-756-4228

CLIENT

PROJECT
SEAL COVE MARINE WORKS PRINCE RUPERT, B.C.

TITLE
ELECTRICAL DETAILS

SCALE	DATE
AS SHOWN	JANUARY, 2014

DRAWN	SEAL
AT	
DESIGNED	
DM	
CHECKED	
LB	

PROJECT NO.
14-1818

DRAWING NO.
E-2

VOLTS	347/600 V	PANEL	A	MAIN BREAKER	600 A									
PHASE	3Ø	LOCATION	SERVICE KIOSK	MIN. BUS AMPACITY	600 A									
		MOUNTING	SURFACE											
DESCRIPTION	WATTAGE			BKR	CIRC	A	B	C	CIRC	BKR	WATTAGE			DESCRIPTION
	#A	#B	#C								#A	#B	#C	
KIOSK #1	111040			400	1	•			2	200	55520			KIOSK MSPV
		111040			3		•		4			55520		
			111040	3P	5			•	6	3P			55520	
					7			•	8					
					9			•	10					
					11			•	12					
TOTAL A	166,560 VA													
TOTAL B	166,560 VA													
TOTAL C	166,560 VA													
TOTAL LOAD	499,680 VA	481	AMPS											

SPECIFICATIONS

REFERENCE STANDARDS

- MATERIAL SHALL CARRY CSA APPROVAL AND CONFORM WITH EEMAC STANDARDS.
- EQUIPMENT WIRING AND WIRING DEVICES SHALL MEET THE REQUIREMENTS OF THE CURRENT EDITION OF THE CANADIAN ELECTRICAL CODE 22.1, PART 1.
- ALL CIVIL WORK TO CONFORM TO MMCD PLATINUM.
- ALL OVERHEAD SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH CSA C22.3 No. 1-10 OVERHEAD SYSTEMS.

GENERAL REQUIREMENTS

- THE ELECTRICAL CONTRACTOR SHALL SUPPLY ALL LABOUR, MATERIALS, TOOLS, EQUIPMENT, TRANSPORTATION REQUIRED FOR THE COMPLETE INSTALLATION, WIRING AND TESTING OF THE SYSTEM SHOWN ON THE DRAWINGS AND DESCRIBED HEREIN & IS RESPONSIBLE TO REVIEW ARCHITECTURAL, MECHANICAL, STRUCTURAL DRAWINGS FOR DISCREPANCIES AND REPORT TO THE ENGINEER.
- THE ELECTRICAL DRAWINGS INDICATE THE GENERAL LOCATION AND ROUTE CONDUIT AND/OR WIRING SHALL BE INSTALLED TO PROVIDE A COMPLETE OPERATING SYSTEM AND SHALL BE INSTALLED PHYSICALLY TO CONSERVE HEADROOM, FURRING SPACES ETC.
- THE WORK TO BE DONE IS DESCRIBED IN THE DRAWINGS.
- THE DRAWINGS AND SPECIFICATIONS COMPLEMENT EACH OTHER AND WHAT IS CALLED FOR BY ONE IS BINDING AS IF CALLED FOR BY BOTH. IF THERE IS ANY DOUBT AS TO THE MEANING OR TRUE INTENT DUE TO A DISCREPANCY BETWEEN THE DRAWINGS AND SPECIFICATIONS, OBTAIN RULING FROM ENGINEER PRIOR TO TENDER CLOSING. FAILING THIS, ALLOW FOR THE MOST EXPENSIVE ALTERNATIVE.
- ELECTRICAL DRAWINGS ARE DIAGRAMMATIC AND DO NOT SHOW ALL CONDUIT, WIRE, CABLE, ETC., THE ELECTRICAL CONTRACTOR IS TO PROVIDE CONDUIT, WIRE, CABLE, ETC. FOR A COMPLETE OPERATING JOB TO MEET IN ALL RESPECTS THE INTENT OF THE DRAWINGS AND SPECIFICATIONS. ELECTRICAL DRAWINGS DO NOT SHOW ALL ARCHITECTURAL, STRUCTURAL AND MECHANICAL DETAILS.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE AS TO WHICH TRADE PROVIDES SPECIFIC LABOUR AND MATERIALS. EXTRAS WILL NOT BE CONSIDERED BASED ON DIFFERENCES IN INTERPRETATION AS TO WHICH TRADE IS TO PROVIDE CERTAIN ITEMS.

SHOP DRAWINGS

- PRIOR TO ORDERING OF ANY EQUIPMENT, THIS CONTRACTOR SHALL SUBMIT DIGITAL COPIES OF SHOP DRAWINGS AND DETAIL DRAWINGS FOR REVIEW BY THE ENGINEER. THE ENGINEER SHALL THEN RETURN COPIES OF THE REVIEWED SHOP DRAWINGS TO THE CONTRACTOR. SHOP DRAWINGS SHALL BE SUBMITTED ON ALL MAJOR EQUIPMENT.
- ALL SHOP DRAWINGS SUBMITTED TO THE ENGINEER MUST BEAR THE CONTRACTOR'S APPROVALS.
- ALL SHOP DRAWINGS SHALL BEAR THE NAME OF THE MANUFACTURER AND/OR MANUFACTURER'S REPRESENTATIVE.
- SUBMIT SHOP DRAWINGS FOR AT LEAST THE FOLLOWING ITEMS:
 - ALL DISTRIBUTION PANEL BOARDS, DISCONNECT SWITCHES, CIRCUIT BREAKERS, INSTRUMENT TRANSFORMERS AND RELAYS, ETC.
 - SERVICE KIOSK FABRICATION AND LAYOUT DRAWINGS.
 - KIOSK MSPV FABRICATION AND LAYOUT DRAWINGS.

MAINTENANCE AND OPERATION MANUAL

- CONTRACTOR TO SUBMIT ONE COPY OF MAINTENANCE AND OPERATION MANUALS IN THREE RING BINDER TO ENGINEER FOR APPROVAL AT TIME OF SUBSTANTIAL COMPLETION.
- MANUALS TO INCLUDE THE FOLLOWING:
 - PROJECT CONTACT INFORMATION
 - APPROVED SHOP DRAWINGS
 - WARRANTIES AND GUARANTEES
 - TEST RESULTS
 - AS BUILT DRAWINGS
- ON APPROVAL CONTRACTOR TO PROVIDE THREE COPIES OF THE MAINTENANCE AND OPERATION MANUALS IN THREE RING BINDERS & 1/4" CD OF ALL DOCUMENTS IN PDF FORMAT.

PERMITS, CERTIFICATES, AND FEES

- ON COMPLETION OF THE WORK, SUBMIT CERTIFICATE OF ACCEPTANCE FROM INSPECTION AUTHORITY TO THE ENGINEER.
- PRIOR TO COMMENCEMENT OF WORK, SUBMIT THE NECESSARY DRAWINGS TO THE ELECTRICAL INSPECTION DEPARTMENT AND THE ELECTRICAL SUPPLY AUTHORITY.
- PAY ALL ASSOCIATED FEES, AND OBTAIN DOCUMENTS POSTING AS REQUIRED.

ALTERNATIVES

- ALL MATERIALS OR EQUIPMENT AS CALLED FOR ON THE DRAWINGS AND IN THE SPECIFICATIONS BY TRADE NAMES OR BY CATALOGUE REFERENCE NUMBERS, ARE THE MATERIALS ON WHICH THIS TENDER IS TO BE BASED. ALL EQUIPMENT MUST BE INSTALLED AS SHOWN ON THE DRAWINGS OR IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. THE REQUEST FOR APPROVAL SHALL BE ACCOMPANIED BY COMPLETE SPECIFICATIONS OF PROPOSED SUBSTITUTION, SHOWING DIMENSIONS, RATINGS, PHOTO METRIC DATA, ETC. IT SHALL BE THIS SUB-CONTRACTOR'S RESPONSIBILITY TO MAKE AND ALLOW FOR ANY CHANGES AND CHARGES WHICH WILL OCCUR IF HE WISHES TO SUBMIT ALTERNATIVE EQUIPMENT. NO SUBSTITUTION BY THIS CONTRACTOR WILL BE PERMITTED AFTER CLOSING OF THE TENDERS.
- THE ENGINEER RESERVES THE RIGHT TO ACCEPT OR REJECT ANY ALTERNATIVES PROPOSED.

GUARANTEE

- AFTER THE WORK IS COMPLETED BUT BEFORE FINAL PAYMENT, FURNISH TO THE OWNER A WRITTEN GUARANTEE THAT FOR ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION, ANY DEFECTS IN MATERIALS OR WORKMANSHIP WILL BE CORRECTED AT NO COST TO THE OWNER, EXCEPT WHERE, IN THE OPINION OF THE ENGINEER, SUCH DEFECTS ARE DUE TO MIS-USE OR NEGLIGENCE BY THE OWNER.

MINOR FIELD CHANGES

- THE LOCATION, ARRANGEMENT AND CONNECTION OF EQUIPMENT AND MATERIAL AS SHOWN ON THE DRAWINGS REPRESENTS A CLOSE APPROXIMATION OF THE INTENT AND REQUIREMENTS OF THE CONTRACT. THE RIGHT IS RESERVED BY THE ENGINEERS TO MAKE REASONABLE CHANGES REQUIRED TO ACCOMMODATE CONDITIONS ARISING DURING THE PROGRESS OF THE WORK. SUCH CHANGES SHALL BE DONE AT NO EXTRA COST TO THE OWNER, UNLESS THE LOCATION, ARRANGEMENT OR CONNECTION IS MORE THAN TEN FEET FROM THAT SHOWN AND THE ITEM IN QUESTION HAS BEEN INSTALLED. CONFIRM FINAL LOCATION PRIOR TO INSTALLATION.

CONDUIT

- INSTALL CONDUIT CONCEALED IN ALL AREAS EXCLUDING MECHANICAL AND ELECTRICAL ROOMS, OR WHERE SPECIFICALLY NOTED AS BEING EXPOSED. RUN PARALLEL OR PERPENDICULAR TO BUILDING LINES.
- INSTALL AND ATTACH SURFACE MOUNTED CONDUIT WITH TWO HOLE GALVANIZED STEEL STRAPS. GROUP CONDUITS WHEREVER POSSIBLE ON CHANNELS.
- DUCTS USED BELOW GRADE AND NOT UNDER A FLOOR SLAB SHALL BE RIGID P.V.C. CONDUIT INSTALLATION SHALL CONFORM TO THE CURRENT EDITION OF THE CANADIAN ELECTRICAL CODE. WHERE A CONDUIT CROSSES A FOUNDATION WALL OR EXPANSION JOINT, SLEEVING AND APPROPRIATE FITTINGS SHALL BE PROVIDED.
- FACTORY ELBOWS FOR 90 DEGREE BENDS FOR 2" OR LARGER CONDUITS.
- DO NOT INSTALL CONDUIT LARGER THAN (1") IN POURED CONCRETE SLABS.
- WHERE 1-1/4" CONDUIT OR LARGER IS SHOWN "UNDER FLOOR", RUN UNDER SLAB ABOVE VAPOUR BARRIER OR IN CEILING SPACE BELOW.
- WHERE CONDUIT IS INSTALLED IN OR PASSES THROUGH SPECIAL AREAS SUCH AS WATERPROOF OR ISOLATION SLABS, THE INSTALLATION SHALL BE TO THE SATISFACTION AND SPECIFICATIONS OF THE SLAB SUPPLIER OR GUARANTOR.
- A SEPARATE BONDING CONDUCTOR SHALL BE INSTALLED IN ALL CONDUITS.
- FISH CORD SHALL BE INSTALLED IN ALL EMPTY CONDUIT SYSTEMS. FISH CORD TO BE POLYPROPYLENE.

WIRE AND CABLE

- GENERAL WIRE: 98% CONDUCTIVITY COPPER, 90°C RATED 600V INSULATION, RW90 X-LINK FOR DAMP LOCATIONS UNLESS OTHERWISE NOTED. COPPER CONDUCTORS SHALL BE STRANDED WHEN LARGER THAN #8 AWG OR AS NOTED.
- C-CABLE SHALL BE CUL OR CSA LISTED WITH 75° C (OR HIGHER) 2000V INSULATION. CABLE SHALL HAVE OPERATING RANGE FROM -40° C TO +90° C AND BE SUN-LIGHT AND OIL RESISTANT. CABLE TO INCLUDE BONDING CONDUCTOR IN ADDITION TO STATED CONDUCTOR COUNT.
- BRANCH CIRCUIT WIRING: THE MINIMUM SIZE OF CONDUCTORS TO BE NO. 12 AWG CU.
- LOW VOLTAGE SIGNAL WIRING SHALL BE SEPARATED FROM POWER WIRING AND RUN IN SEPARATE RACEWAYS. THIS INCLUDES PANEL WIRWAYS.
- AC90 CABLE ALLOWED IN STEEL FRAME CONSTRUCTION AND LUMINAIRE DROPS. NO SURFACE AC90 CABLE ALLOWED.
- SURFACE WIRING ALLOWED IN MECH/ELEC ROOMS ONLY.
- COLOUR CODE TO CSA C22.1 CURRENT EDITION.
- ALUMINUM CONDUCTORS CAN NOT BE USED.

SWITCHES

- SWITCHES: QUIET, SLOW MAKE, SLOW BREAK DESIGN, TOGGLE HANDLE, WITH TOTALLY ENCLOSED CASE RATED AT 15A, 120 VAC.
- COLOUR: PROVIDE WHITE SWITCHES IN ALL FINISHED AREAS. ONE MANUFACTURER THROUGHOUT PROJECT.

PLATES

- GALVANIZED STEEL.
- WEATHERPROOF AS NOTED.

DISCONNECT SWITCHES

- SWITCHES: HEAVY DUTY RATED.
- PROVIDE FUSES FOR ALL DISCONNECTS AS SHOWN.

NAME TAGS

- PROVIDE LAMICOID NAME TAG INDICATING AMPACITY, VOLTAGE AND PHASE OR INDICATED SYSTEM.
- LAMICOID TO BE 1/8" THICK PLASTIC ENGRAVING SHEET, BLACK FACE, WHITE CORE.
- LETTERS TO BE 1/4" HIGH UNLESS SPECIFIED OTHERWISE.
- ALLOW FOR AVERAGE OF 25 LETTERS PER NAMEPLATE.
- PROVIDE LAMICOID NAME TAG FOR BREAKERS METERS, DISCONNECTS, MOTOR PROTECTION SWITCHES, PANEL BOARDS ETC. NAME TAGS SHALL BE MECHANICALLY FASTENED.

PANEL BOARDS

- PANEL BOARDS: 3 PHASE, SOLID NEUTRAL DESIGN WITH SEQUENCE STYLE BUSSING AND FULL CAPACITY NEUTRAL OF CAPACITY INDICATED.
- PROVIDE A TYPED WRITTEN DIRECTORY FOR EACH PANEL BOARD.
- BRANCH CIRCUIT BREAKERS TO BE BOLT-ON, NA RATED AT STATED AMPS SYM FAULT CURRENT AT THE OPERATING VOLTAGE, UNLESS NOTED OTHERWISE. THERMAL AND MAGNETIC TRIP. TWO AND THREE POLE BREAKERS TO HAVE A COMMON SIMULTANEOUS TRIP.
- PANELS SHALL BE FPE, S.Q.D., EATON OR SIEMENS.

SERVICE KIOSK

- KIOSK SHALL BE DESIGNED AND BUILT TO MOTI ELECTRICAL SIGNING AND MATERIAL SPECIFICATION SECTION 402 REQUIREMENTS INCLUDING INSULATION, HEATING AND VENTILATION REQUIREMENTS.
- KIOSK DIMENSIONS ON DRAWINGS ARE APPROXIMATE ONLY. CONTRACTOR TO DETERMINE FINAL KIOSK DIMENSIONS TO LAYOUT ALL OF PROPOSED EQUIPMENT.
- KIOSK SHALL BE A DOUBLE DOOR UNIT.
- KIOSK SHALL HAVE A SWITCH TO CONTROL KIOSK LIGHTING.
- KIOSK DOOR TO INCLUDE LAMICOID LABEL WITH 15mm HIGH WHITE CHARACTERS ON RED BACKGROUND THAT READS "KIOSK FED FROM SEPARATE 120V & 600V SERVICES. DE-ENERGIZE BOTH SERVICES TO RENDER SAFE."
- KIOSK LIGHT SHALL BE LITHONIA ZL2N-L24-2000LM-MDD-MVOLT-40K-80CRI-WH LED STRIP LIGHT OR APPROVED ALTERNATE.
- KIOSK SHALL BE BUILT WITH MARINE GRADE ALUMINUM AND BE POWDER COATED GREY.
- ALL KIOSK POWER AND COMMUNICATIONS WIRING SHALL BE CONTAINED IN EMT CONDUIT.
- INSTALL KIOSK IN ACCORDANCE WITH MOTI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
- KIOSK BASE SHALL BE 600mm THICK 30 MPa CONCRETE THAT EXTENDS 50mm BEYOND PERIMETER OF KIOSK. BASE SHALL BE 50mm PROUD OF SURROUNDING GRADE. PROVIDE 25mm CHAMFER ON EXPOSED EDGES. POSITION CONDUIT AND PIPE ENTRY IN BASE TO SUIT EQUIPMENT WITHIN KIOSK.
- ALL INTERNAL CONTROL WIRING, DEVICE INSTALLATION, AND CONDUIT WORK SHALL BE COMPLETED PRIOR TO SHIPPING TO SITE.
- KIOSK MANUFACTURERS SHALL BE VALID MANUFACTURING, WEST COAST ELECTRIC OR APPROVED ALTERNATE.

SUPPORTS AND HARDWARE

- ALL FASTENING HARDWARE SHALL BE MARINE GRADE 316 STAINLESS STEEL.
- ALL ITEMS IDENTIFIED AS STAINLESS SHALL BE MARINE GRADE 316 STAINLESS STEEL.
- ALL ITEMS IDENTIFIED AS ALUMINUM SHALL BE MARINE GRADE 6061 ALUMINUM ALLOY.
- ALL ITEMS IDENTIFIED AS GALVANIZED SHALL BE HOT DIPPED GALVANIZED. ANY FIELD CUTS OR SCRATCHES SHALL BE TREATED WITH 2 COATS OF GALVACON.

AS BUILT DRAWINGS

- PROVIDE A CLEAN SET OF DRAWINGS AT THE JOB SITE, FOR AS BUILT MODIFICATIONS ONLY.
- MARK ALL MODIFICATIONS IN RED, IN A NEAT, LEGIBLE MANNER.
- SUBMIT AS BUILTS TO ENGINEER FOR APPROVAL.

EQUIPMENT REMOVALS

- REMOVE CONDUIT AND WIRE FOR ASSOCIATED ELECTRICAL EQUIPMENT. POWER WIRING TO BE REMOVED BACK TO NEAREST JUNCTION BOX OR BREAKER. COMM. WIRING TO BE REMOVED BACK TO TERMINATION POINT. LIMIT THE FOREGOING SO AS NOT TO DEMOLISH WALL OR CEILINGS THAT WOULD OTHERWISE REMAIN.
- DISPOSE OF REMOVED ITEMS OFF SITE IN ACCORDANCE WITH APPLICABLE RECYCLING AND DISPOSAL GUIDELINES.
- REPAIR AFFECTED AREAS TO MATCH SURROUNDING FINISHES.

PROJECT CLOSE OUT PROCEDURES

- PROVIDE 7 DAY NOTICE TO THE ENGINEER FOR FINAL FIELD REVIEW FOR ELECTRICAL DISCIPLINE. ELECTRICAL CONTRACTOR TO ENSURE ALL LIFE SAFETY DEVICES ARE INSTALLED AND OPERATIONAL. ELECTRICAL CONTRACTOR TO ENSURE ALL ELECTRICAL WORKS NOT INSTALLED ARE MADE SAFE.
 - MAINTENANCE MANUALS
 - FIELD SAFETY REPRESENTATIVE (FSR) DECLARATION
- THE FOLLOWING DOCUMENTS TO BE FORWARDED TO THE ENGINEER PRIOR TO FINAL FIELD REVIEW:

KEY NOTES:

- MAIN BREAKER TO INCLUDE GROUND FAULT PROTECTION.

4	DEC 17 2014	RECORD DRAWINGS BASED ON CONTRACTORS MARKUPS
3	MAY 26 2014	REVISED BREAKER SIZES
2	MAR 18 2014	ISSUED FOR TENDER
1	MAR 06 2014	ISSUED FOR REVIEW
NO.	DATE	COMMENT
REVISION		



CLIENT



PROJECT

SEAL COVE
MARINE WORKS
PRINCE RUPERT, B.C.

TITLE

ELECTRICAL
SPECIFICATIONS

SCALE	DATE
N.T.S.	JANUARY, 2014

DRAWN	SEAL
AT	
DESIGNED	
DM	
CHECKED	
LB	

PROJECT NO.
14-1818

DRAWING NO.

E-3