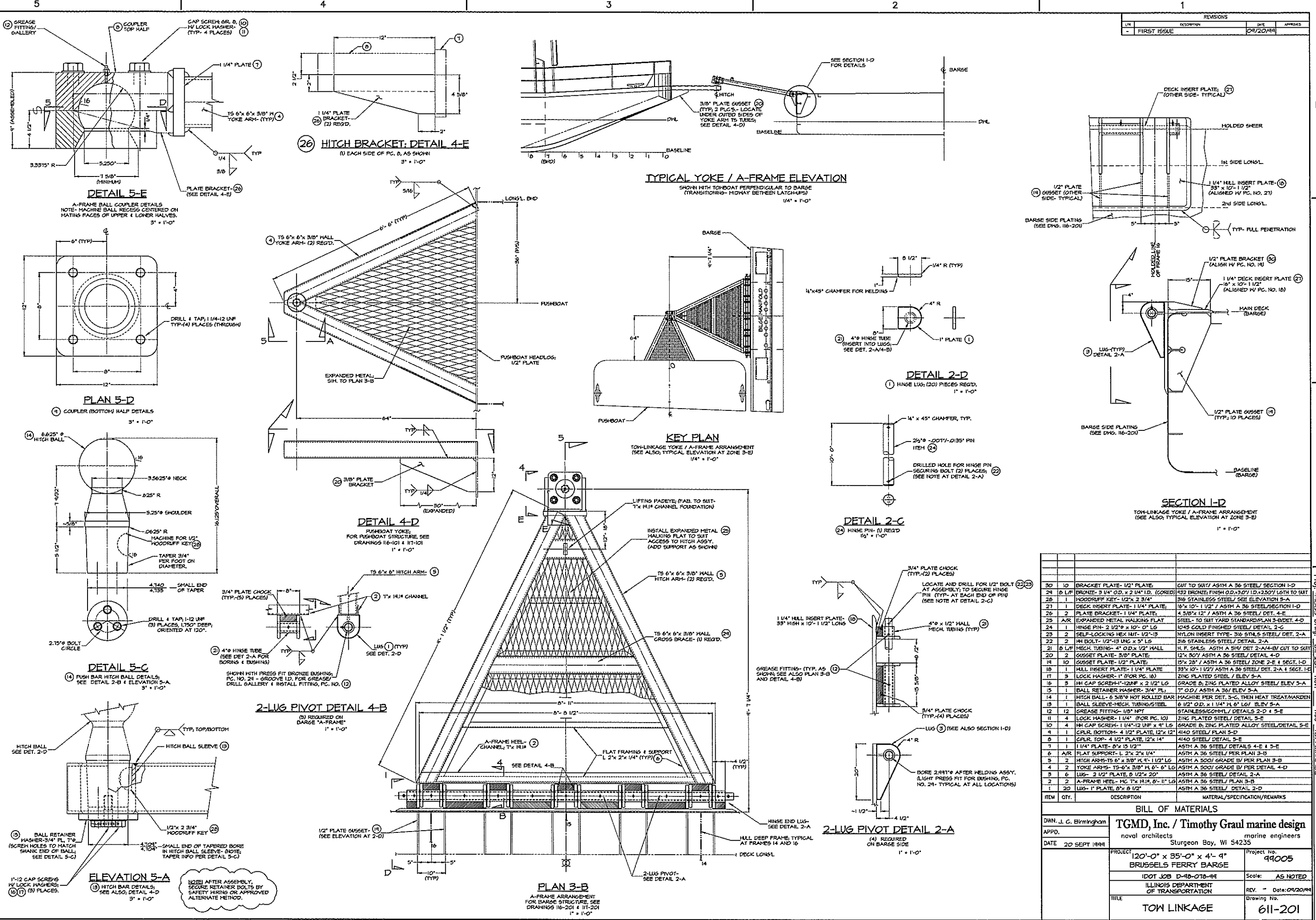


REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
1	FIRST ISSUE	09/20/99	



ITEM	QTY.	DESCRIPTION	MATERIAL/SPECIFICATION/REMARKS
30	10	BRACKET PLATE- 1/2" PLATE	CUT TO SUIT/ ASTM A 36 STEEL/ SECTION 1-D
24	8	L.F. BRONZE- 3/4" O.D. x 2 1/4" L.D. (CORED)	#32 BRONZE, FINE SH. O.D. +0.01" I.D. +2.507" L6TH TO SUIT
28	1	HOODRUFF KEY- 1/2" x 2 3/4"	316 STAINLESS STEEL/ SEE ELEVATION 5-A
27	1	DECK INSERT PLATE- 1/4" PLATE	16" x 10" x 1/2" / ASTM A 36 STEEL/ SECTION 1-D
26	2	PLATE BRACKET- 1 1/4" PLATE	4 3/8" x 12" / ASTM A 36 STEEL/ DET. 4-E
25	1	EXPANDED METAL WALKING PLAT	STEEL TO SUIT YARD STANDARD/ PLAN 3-B/ DET. 4-D
24	1	HINGE PIN- 2 1/2" x 10" x 2" L.G.	1045 COLD FINISHED STEEL/ DETAIL 2-C
23	2	SELF-LOCKING HEX NUT- 1/2"-13	NYLON INSERT TYPE- 316 STNLS STEEL/ DET. 2-A
22	2	H. BOLT- 1/2"-13 UNC x 5" L.G.	316 STAINLESS STEEL/ DETAIL 2-A
21	2	M.ECH. TUBING- 4" O.D. x 1/2" WALL	H. F. SMLS. ASTM A 514/ DET. 2-A/4-B/ CUT TO SUIT
20	2	GUSSET PLATE- 3/8" PLATE	12" x 30" / ASTM A 36 STEEL/ DETAIL 4-D
19	10	GUSSET PLATE- 1/2" PLATE	15" x 20" / ASTM A 36 STEEL/ ZONE 2-E & SECT. 1-D
18	1	MILL INSERT PLATE- 1/4" PLATE	38" x 10" x 1/2" / ASTM A 36 STEEL/ DET. 2-A & SECT. 1-D
17	3	LOCK WASHER- 1" (FOR PG. 16)	ZINC PLATED STEEL / ELEV 5-A
16	3	H. CAP SCREW- 1" DIA. x 2 1/2" L.G.	GRADE 8/ ZINC PLATED ALLOY STEEL/ ELEV 5-A
15	1	BALL RETAINER WASHER- 3/4" PL.	17" O.D. / ASTM A 36/ ELEV 5-A
14	1	HIGH BALL- 6 5/8" HOT ROLLED BAR	MACHINE PER DET. 5-C, THEN HEAT TREAT/HARDEN
13	1	BALL SLEEVE- MECH. TUBING/STEEL	6 1/2" O.D. x 1 1/4" H. 6" L.G. / ELEV 5-A
12	12	GREASE FITTING- 1/8" NPT	STAINLESS/CONMIL/ DETAILS 2-D & 5-E
11	4	LOCK WASHER- 1/4" (FOR PG. 10)	ZINC PLATED STEEL/ DETAIL 5-E
10	4	H. CAP SCREW- 1 1/4"-12 UNF x 9" L.G.	GRADE 8/ ZINC PLATED ALLOY STEEL/ DETAIL 5-E
9	1	CPLR. BOTTOM- 4 1/2" PLATE, 12" x 12"	4140 STEEL/ PLAN 5-D
8	1	CPLR. TOP- 4 1/2" PLATE, 12" x 14"	4140 STEEL/ DETAIL 5-E
7	1	1 1/4" PLATE- 8" x 15 1/2"	ASTM A 36 STEEL/ DETAILS 4-E & 5-E
6	1	PLAT SUPPORT- L. 2" x 2" x 1/4"	ASTM A 36 STEEL/ PER PLAN 3-B
5	2	HIGH ARM- 6" x 3/8" H. 1" x 1 1/2" L.G.	ASTM A 500/ GRADE BY PER PLAN 3-B
4	2	YOKE ARM- TS- 6" x 3/8" H. 6" L.G.	ASTM A 500/ GRADE BY PER DETAIL 4-D
3	6	LUG- 3 1/2" PLATE, 6 1/2" x 20"	ASTM A 36 STEEL/ DETAIL 2-A
2	2	A-FRAME HEEL- MC 7" x 1 1/4" 8" L.G.	ASTM A 36 STEEL/ PLAN 3-B
1	20	LUGS- 1" PLATE, 8" x 1/2"	ASTM A 36 STEEL/ DETAIL 2-D

BILL OF MATERIALS			
DRW. J. G. Birmingham	TGMD, Inc. / Timothy Graul marine design		novel architects
APPD.	novel architects		marine engineers
DATE 20 SEPT 1999	Sturgeon Bay, WI 54235		
PROJECT	120'-0" x 35'-0" x 4'-9" BRUSSELS FERRY BARGE	Project No.	99005
SCALE	IDOT JOB D-18-078-99	Scale:	AS NOTED
TITLE	TOW LINKAGE	REV. - Date:	09/20/99
		Drawing No.	611-201

Proj. 611-201 Rev. 1 Title TOW LINKAGE