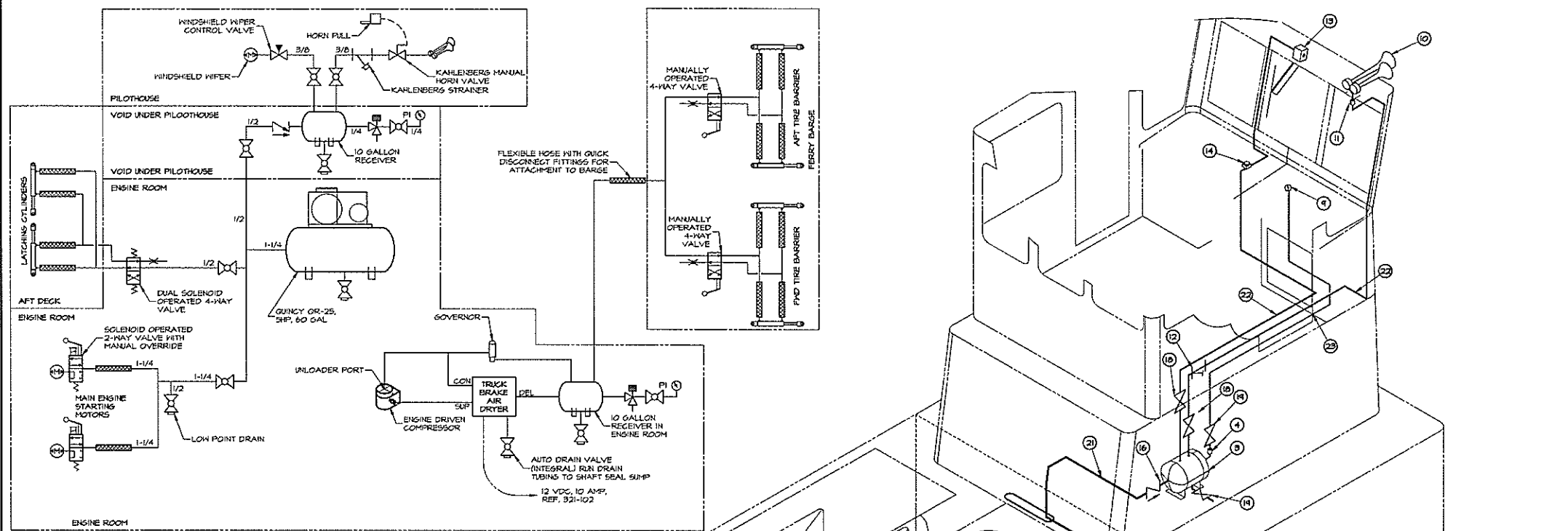
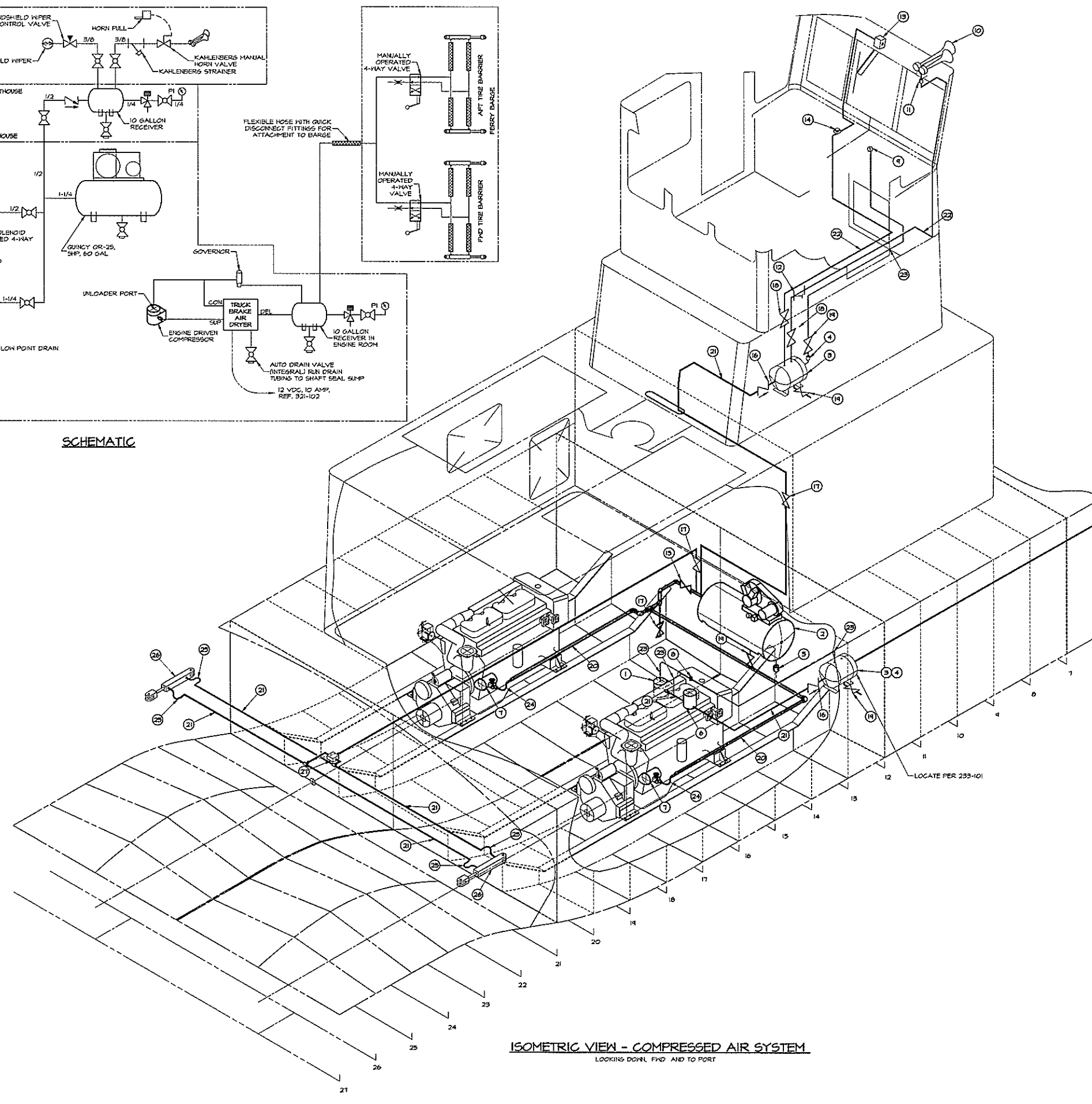


REVISIONS			
NO.	DESCRIPTION	DATE	APPROVED
1	FIRST ISSUE	09/29/99	



SCHEMATIC



ISOMETRIC VIEW - COMPRESSED AIR SYSTEM  
LOOKING DOWN, FWD AND TO PORT

- GENERAL NOTES:**
1. AIR LINES MUST BE COPPER TUBING (ASTM B 75) OR SYNTHETIC RUBBER MATERIAL, EXCEPT AS NOTED.
  2. BULK PIPE TO BE SCH 40 SEAMLESS ASTM-A106, FITTINGS TO BE MALLEABLE IRON 300 LB. - QUANTITIES AS REQUIRED.
  3. BLOW DOWN ALL AIR LINES TO ENSURE THEY ARE FREE OF DEBRIS BEFORE MAKING FINAL CONNECTIONS.
  4. LINE GOES TO UNLOADER VALVE ON COMPRESSOR.
  5. SET CONTROL FOR 100 PSI - ON / 140 PSI-OFF.
  6. THE LOCATIONS OF VALVES AND EQUIPMENT MAY BE MODIFIED FROM AS SHOWN LOCATIONS TO IMPROVE ACCESSIBILITY AND MAINTENANCE.
  7. ROUTE AUTO DRAINS TO SHAFT LOG SUMP.
  8. INSTALLATION OF AIR DRYER SHALL BE TO MANUFACTURER'S REQUIREMENTS.
  9. AIR LINE CONNECTIONS SHALL BE PROVEN TO HAVE NO LEAKS.
  10. PIPE AND TUBING DESIGNATIONS ARE AS FOLLOWS:

- ===== 1/4" MIN. I.D. TUBING (COPPER OR SYNTHETIC)
- ===== 3/8" MIN. I.D. TUBING (COPPER OR SYNTHETIC)
- ===== 1/2" SCH 40 SEAMLESS PIPE ASTM-A106
- ===== 1 1/4" SCH 40 SEAMLESS PIPE ASTM-A106

FORWARD TO HEADLOGS AND HOSE CONNECTION TO BARGE. EACH TIRE BARRIER INSTALLATION SIMILAR TO LATCHING CYLINDERS EXCEPT FOR MANUAL VALVES VS. SOLENOID OPERATED VALVES.

ITEM	QTY.	DESCRIPTION	MATERIAL/SPECIFICATION/REMARKS
34	-	-	-
33	-	-	-
32	-	-	-
31	1	QUICK DISCONNECT AIR COUPLER WITH SHUT OFF	COMMERCIAL, TO FIT ITEM 28 & 30, GRAINGER 6X41D OR EQUAL, 1/2" BODY SIZE
30	1	QUICK DISCONNECT AIR PLUG	COMMERCIAL TO FIT ITEM 31, GRAINGER 6X42I OR EQUAL, 1/2" BODY SIZE
29	2	MANUALLY OPERATED 4-WAY VALVE	VARIOUS
28	1	HOSE, AEROGUIP 2556 OR EQUAL	SYNTHETIC RUBBER WITH BRASS FITTINGS AND LENGTHS TO SUIT
27	1	DUAL SOLENOID OPERATED 4-WAY VALVE	VARIOUS
26	6	PNEUMATIC CYLINDER, REF. 161-201 & 564-201	FOR TIRE BARRIERS AND LATCHES
25	12	OSE, AEROGUIP 2556 OR EQUAL	SYNTHETIC RUBBER WITH BRASS FITTINGS AND LENGTHS TO SUIT
24	2	HOSE, AEROGUIP 2556 OR EQUAL	SYNTHETIC RUBBER WITH BRASS FITTINGS AND LENGTHS TO SUIT
23	A/R	TUBING, 1/4" MIN I.D.	COPPER ASTM B-75, OR SYNTHETIC (LENGTHS TO SUIT)
22	A/R	TUBING, 3/8" MIN I.D.	COPPER ASTM B-75, OR SYNTHETIC (LENGTHS TO SUIT)
21	A/R	PIPE, SCH 40 SEAMLESS 1/2"	BLACK ASTM A-106 (LENGTHS TO SUIT)
20	A/R	PIPE, SCH 40 SEAMLESS 1-1/4"	BLACK ASTM A-106 (LENGTHS TO SUIT)
19	4	VALVE, BALL, 1/4"	300# HOS THREADED BRONZE / BRASS
18	2	VALVE, BALL, 3/8"	300# HOS THREADED BRONZE / BRASS
17	2	VALVE, CHECK, 1/2"	300# HOS THREADED BRONZE / BRASS
16	2	VALVE, CHECK, 1/2"	300# HOS THREADED BRONZE / BRASS
15	1	VALVE, BALL, 1-1/4"	300# HOS THREADED BRONZE / BRASS
14	1	WIPER CONTROL VALVE	SPRASIE
13	1	WINDSHIELD WIPER AND BLADE	SPRASIE PARALLELOGRAM AIR OPERATED
12	1	STRAINER	KAHLEBERG H-100
11	1	MANUAL CONTROL VALVE	KAHLEBERG V-110B
10	1	DUAL TRUMPET AIRHORN	KAHLEBERG D-0A
9	2	GAUGE, 0-300 PSI	2" DIAL, 1/8"-21 NPT REAR PIPE CONNECTION, WABCO #P411B-0001 OR EG
8	1	GOVERNOR CONTROL	ALLIEDSIGNAL / BENDIX D-2
7	2	PNEUMATIC ENGINE STARTERS WITH LUBRICATOR, SOLENOID VALVE AND MANUAL OVERRIDE	ORDER WITH ENGINES
6	1	TRUCK AIR BRAKE AIR DRYER WITH COALESCING FILTER, AUTO DRAIN VALVE, ETC.	ALLIEDSIGNAL / BENDIX PAD1
5	1	AUTOMATIC DRAIN VALVE	QUINCY OPH-T1
4	2	PRESSURE RELIEF VALVE, 150 PSI	ASME CODE FOR ITEM 3
3	2	AIR RECEIVER TANK - 10 GALLON	ASME CODE, MASTER-CARR MISSKIT
2	1	AIR COMPRESSOR, 5 HP, 60 GAL	QUINCY GR-25 HYDRAULIC PRESSURE UNLOADING
1	1	ENGINE DRIVEN AIR COMPRESSOR	T5 OPH - TO SUIT MAIN ENGINE

BILL OF MATERIALS

DWN. CJB. / WGH.	<b>TGMD, Inc. / Timothy Graul marine design</b>	
APPD.	naval architects marine engineers	
DATE 20 SEPT 1999	Slurgeon Bay, WI 54235	
PROJECT 55'-0"x18'-0"x6'-4" BRUSSELS FERRY PUSHBOAT	Project No. 99005	
IDOT JOB D-48-016-99	Scale: 1/2" = 1'-0"	
ILLINOIS DEPARTMENT OF TRANSPORTATION	REV. - Date: 09/20/99	
TITLE COMPRESSED AIR SYSTEM	Drawing No. 551-101	

Proj. 99005, Dwg. 551-101 Rev. - Title COMPRESSED AIR SYSTEM