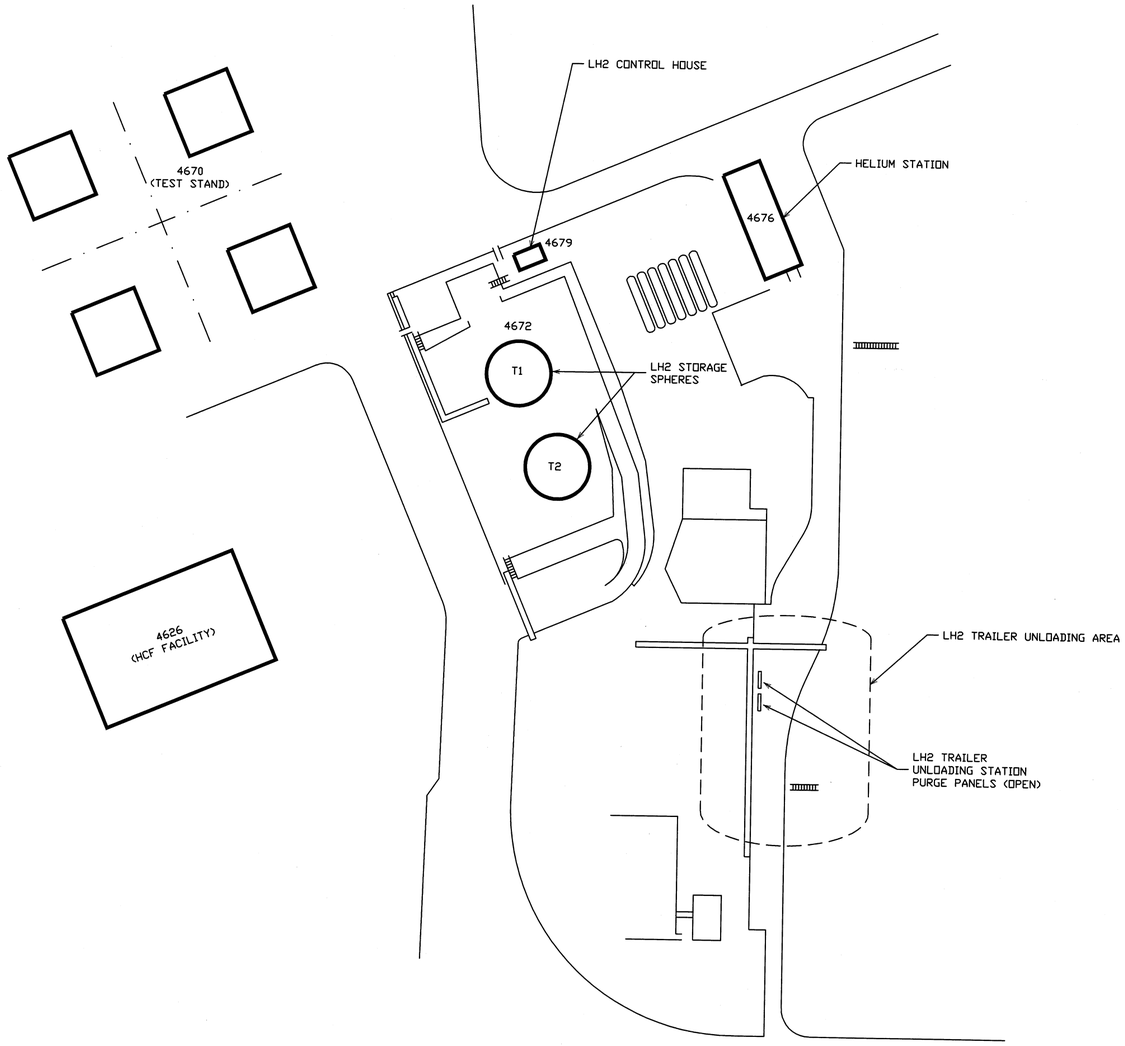
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER SCR A25-07-02-0213	1/7/03	ADF/RJC/JVB
B	TPS# 4670-TPS-10038D	7/20/7	N. HENSLEY
C	#4670-101870, removed misc. abbreviations Removed misc. panels, burnstocks, ect from dwg.	2/9/09 5/7/09	N. HENSLEY



N

OVERALL LAYOUT
LH2 STORAGE FACILITY AT BLDG. 4672
IN THE WEST TEST AREA

ABBREVIATIONS:

- BJ — BELLOWS JOINT
- BLDG — BUILDING
- CV — CHECK VALVE
- DLR — DOME LOADED REGULATOR
- DP — DELTA PRESSURE TRANSMITTER
- EV — ELECTRICALLY OPERATED VALVE
- F — FILTER
- FI — FLOW INDICATOR
- FJ — FLEX JOINT
- GH2 — GASEOUS HYDROGEN
- GHE — GASEOUS HELIUM
- GHV — GASEOUS HYDROGEN VALVE
- GN2 — GASEOUS NITROGEN
- HCF — HYDROGEN COLD FLOW
- HEF — HELIUM FILTER
- HEV — HELIUM VALVE
- HOV — HAND OPERATED VALVE
- IF — INTERFACE
- IF/CC — INTERFACE/CROSS-COUNTRY
- IP — CURRENT TO PRESSURE REGULATOR
- LH2 — LIQUID HYDROGEN
- NC — NORMALLY CLOSED
- NF — NITROGEN FILTER
- NO — NORMALLY OPEN
- PS — PRESSURE SWITCH
- PSIG — POUNDS PER SQUARE INCH GAGE
- R — RELAY
- ROV — REMOTE OPERATED VALVE
- SOV — SOLENOID OPERATED VALVE
- T1 — SPHERE DESIGNATION
- T2 — SPHERE DESIGNATION
- VPV — VARIABLE POSITION VALVE
- WG — WATER GAGE
- W.G. IN. — INCHES OF WATER GAGE PRESSURE
- WV — WATER VALVE

SYMBOLOGY:

- CHECK VALVE
- 3-WAY VALVE
- REMOTE OPERATED VALVE
- HAND OPERATED VALVE OR MANUAL INSTRUMENT VALVE
- SAFETY VALVE
- FILTER
- PRESSURE CONTROL VALVE
- DOME LOADED REGULATOR
- SOLENOID OPERATED VALVE
- CURRENT TO PRESSURE REG.
- PRESSURE GAGE
- PRESSURE SWITCH
- REDUCER/EXPANDER
- PNEUMATIC RELAY
- VARIABLE POSITION VALVE
- FLOW INDICATOR
- FLANGE CONNECTION
- GRAYLOC CONNECTION
- BURNSTACK
- BELLOWS JOINT
- FLEX JOINT
- PRESSURE TRANSMITTER
- DELTA PRESSURE TRANSMITTER
- VENT

- GASEOUS HELIUM
- GASEOUS NITROGEN
- WATER
- LH2/GH2 SECONDARY LINE
- LH2/GH2 PRIMARY LINE
- PROPANE

REFERENCE DRAWINGS:

88M00019, GHe DISTRIBUTION SYSTEM.
88M00026, GN2 DISTRIBUTION SYSTEM.
88M00009, GH2 DISTRIBUTION SYSTEM.

88M04672
B

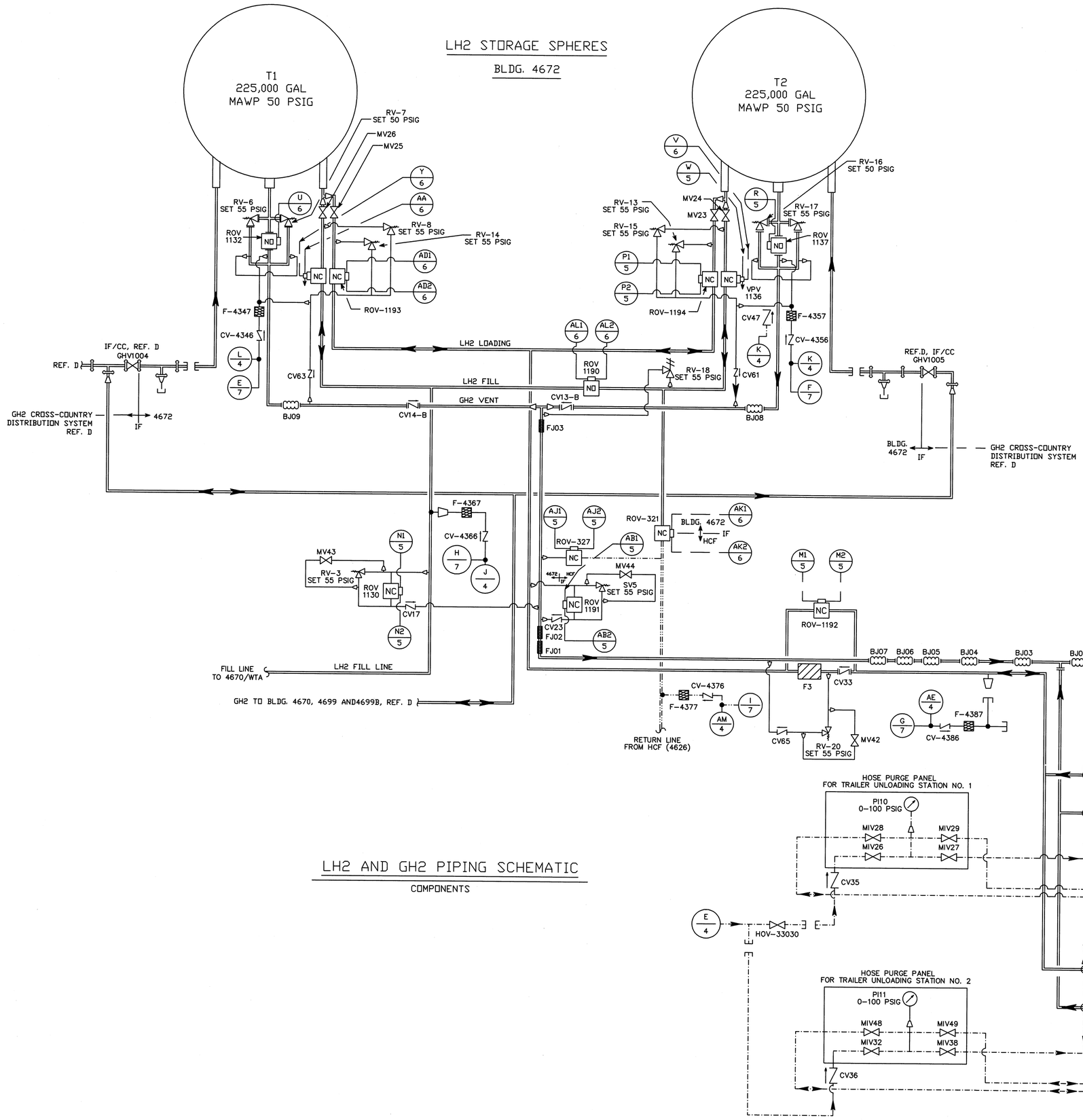
SEE ENGINEERING RECORDS	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES; TOLERANCES ON FRACTIONS / DECIMALS / ANGLES	ORIGINAL DATE OF DRAWING 7-30-99	WEST TEST AREA BLDG. 4672 LH2 STORAGE AND TRANSFER SYSTEMS SCHEMATICS
NEXT ASSY / USED ON	MATERIAL	DRAFTSMAN JAM / CHECKER	GEORGE C. MARSHALL SPACE FLIGHT CENTER NATIONAL AERONAUTICS AND SPACE ADMINISTRATION HUNTSVILLE, ALABAMA
APPLICATION	HEAT TREATMENT	ENGINEER ADF / ENGINEER	SIZE E — 88M04672
	FINAL PROTECTIVE FINISH	SUBMITTED J. A. RICHARD	WEIGHT / CHECKER / DATE / CODE
		APPROVED J. CAUDLE DIRECTOR	SCALE NTS / UNIT WEIGHT

DISTR CODE

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	SEE SHEET 1	1/7/03	ADF/RJC/JWB
B	REVISED PER TPS# 4670-4670-10038D	7/25/7	N. HENSLEY
C	4670-4670-10157M, removed T1,T2,comp,tubing	3/24/8	N. HENSLEY
D	4670-10173M, remove SVs 13A,14A, CVs 82,64, FJ 04,05; 4670-10136M, cap lines at bubble E, & PT1161 Removed MV35, added HOV-33030	5/18/09	N. HENSLEY
E	4670-10335D, removed bubbles AD & AN, added notes	6/12/09	N. HENSLEY
F	#4670-10339M, added CVs 4346, 4356, 4366, 4376, & 4386, Filters 4347, 4357, 4367, 4377, & 4387 removed CV47, CV48, and PT116; TPS# 4670-10357 changed SV no.'s to RV 3, 6, 7, 8, 13, 14, 15, 16, 17, 18, 20	10/30/09	N. HENSLEY

LH2 STORAGE SPHERES

BLDG. 4672



LH2 AND GH2 PIPING SCHEMATIC

COMPONENTS

88M04672
E

SEE ENGINEERING RECORDS		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES; TOLERANCES ON FRACTIONS / DECIMALS / ANGLES; MATERIAL; HEAT TREATMENT; FINAL PROTECTIVE FINISH	ORIGINAL DATE OF DRAWING 7-30-99
NEXT ASSY	USED ON		DRAFTSMAN JAM CHECKER
APPLICATION			DESIGNER GKH STRESS
			ENGINEER ADF ENGINEER
			SUBMITTED J. A. RICHARD
			APPROVED J. CAUDLE
			DIRECTOR

WEST TEST AREA
BUILDING 4672
LH2 STORAGE AND TRANSFER SYSTEMS SCHEMATICS
LH2 PIPING SYSTEM

WEIGHT CHECKER | DATE | CODE
SCALE NONE | UNIT WEIGHT

GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

DISTR CODE

SIZE E | 88M04672

SHEET 2 OF 11

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	SEE SHEET 1	1-7-03	ADF/RJF/JVB
B	4670-TPS-10035M, Add Vac. Port locations	7/13/07	N. HENSLEY
C	4670-10173M, remove SV's 13A,14A, CV's 62,64, FJ 04,05	2/9/09	N. HENSLEY
D	4670-10335D, removed bubbles AD & AN, added notes	6/12/09	N. HENSLEY

PIPE IDENTIFICATION CODES:

AA — FAC-M-4670, ADVANCED TECHNOLOGY ENGINE TEST STAND.

AB — FAC-B-4670, LH2 EXTERNAL TANK STRENGTH TEST FACILITY.

AC — SK030178JB, WEST AREA GH2 REGULATION STATIONS TANKS 13 AND 14, BUILDING 4672.

AD — SK022478GS, VENT, SPHERE LH2 FILL STATION, BLDG. 4672.

AE — 36854-01-0073, SPOOL PIECES, FIRST STAGE GH2 DOME LOADERS, BUILDING 4672.

AF — 90M09731, LH2-17 IN. DISCONNECT TEST POSITION.

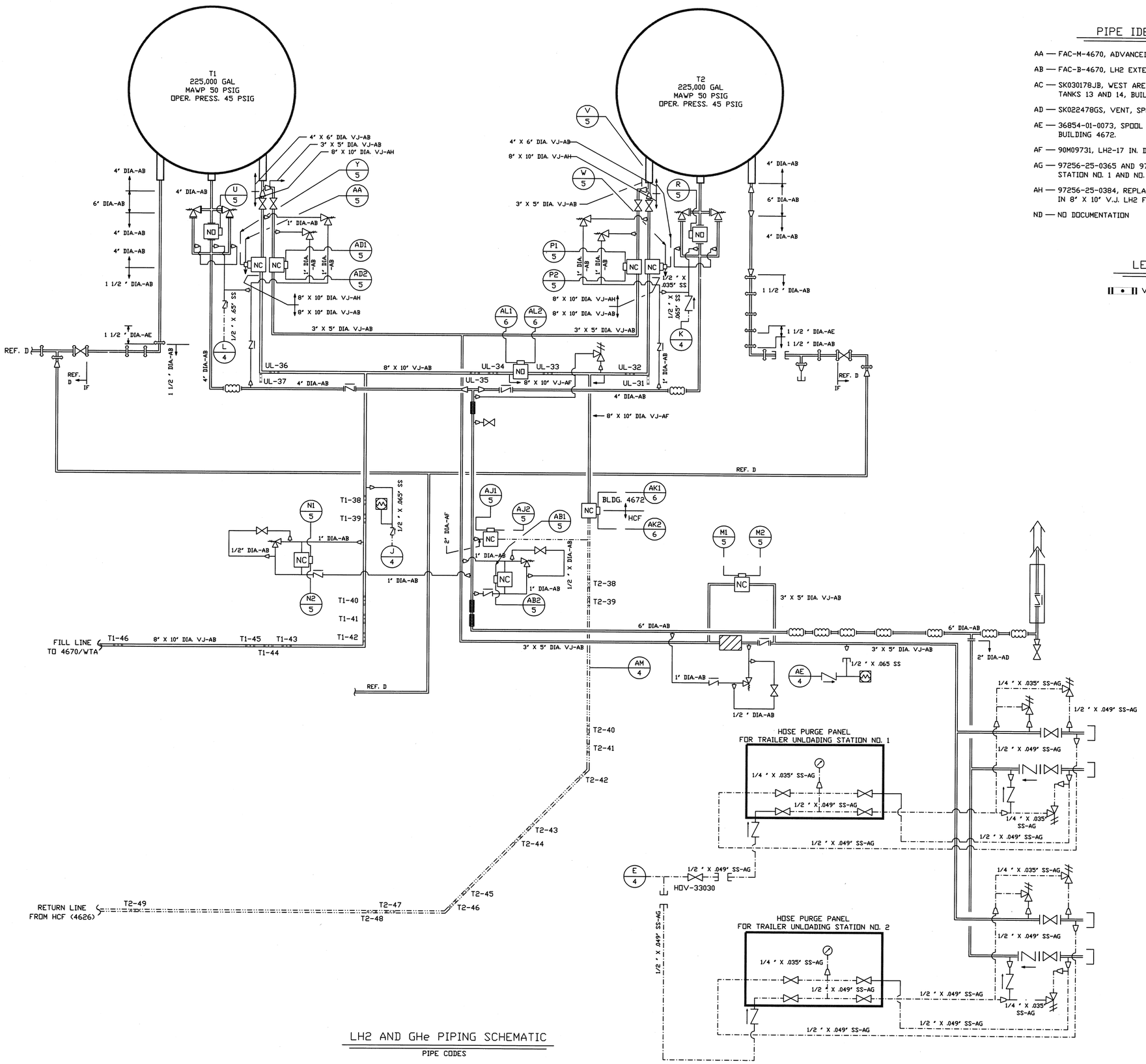
AG — 97256-25-0365 AND 97256-25-0366, LH2 TRAILER UNLOADING STATION NO. 1 AND NO. 2 HOSE PURGE PANEL MODS, BLDG. 4672.

AH — 97256-25-0384, REPLACE VARIABLE POSITION VALVE ASSEMBLIES IN 8' X 10' V.J. LH2 FILL LINES AT BLDG. 4672.

ND — NO DOCUMENTATION

LEGEND

VACUUM PORTS



LH2 AND GHe PIPING SCHEMATIC

PIPE CODES

88M04672
D

		UNLESS OTHERWISE SPECIFIED	ORIGINAL DATE OF DRAWING 7-30-99	WEST TEST AREA	GEORGE C. MARSHALL SPACE FLIGHT CENTER
		DIMENSIONS ARE IN INCHES	DRAFTSMAN JAM CHECKER	BLDG. 4672	NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
SEE ENGINEERING RECORDS		TOLERANCES ON FRACTIONS DECIMALS ANGLES	CHECKER GKH STRESS	LH2 STORAGE AND TRANSFER SYSTEMS - PIPING SIZES AND VACUUM PORT LOCATIONS	HUNTSVILLE, ALABAMA
		MATERIAL	ENGINEER ADF ENGINEER		
			SUBMITTED J. A. RICHARD		
		HEAT TREATMENT	APPROVED J. CAUDLE		
NEXT ASSY	USED ON	FINAL PROTECTIVE FINISH	DIRECTOR	HEIGHT CHECKER DATE CODE	SIZE E 88M04672
APPLICATION				SCALE NONE UNIT WEIGHT	SHEET 3 OF 11

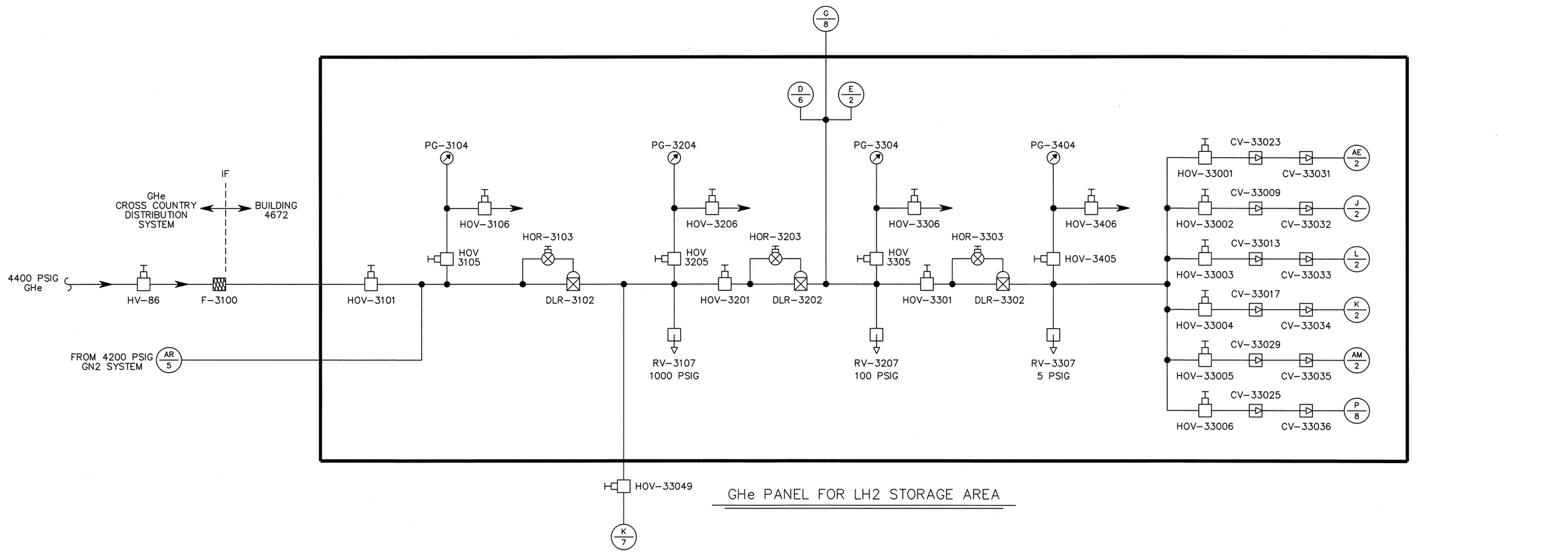
DISTR CODE

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
CREA	TED PER TPS# 4670-10164M, replaces previous dwg.	5/18/09	N. HENSLEY
A	TPS# 4670-10331M,added CV-'s 33031 thru 33036	6/11/09	N. HENSLEY
A	TPS# 4670-10356M,added HOV-33049 & bub K/7	10/22/09	N. HENSLEY

LEGEND

⊠ NORMALLY CLOSED VALVE

□ NORMALLY OPEN VALVE



GHe PANEL FOR LH2 STORAGE AREA

SEE ENGINEERING RECORDS		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES MATERIAL HEAT TREATMENT FINAL PROTECTIVE FINISH	ORIGINAL DATE OF DRAWING 18-MAY-09 DRAFTSMAN PKW CHECKER CHECKER STRESS ENGINEER ENGINEER SUBMITTED APPROVED DIRECTOR	WEST TEST AREA BUILDING 4672 LH2 STORAGE & TRANSFER AREA GHe SYSTEM	GEORGE C. MARSHALL SPACE FLIGHT CENTER NATIONAL AERONAUTICS AND SPACE ADMINISTRATION HUNTSVILLE, ALABAMA
NEXT ASSY USED ON APPLICATION				WEIGHT CHECKER DATE CODE SCALE UNIT WEIGHT	DWG SIZE D 88M04672 SHEET 4 OF 11

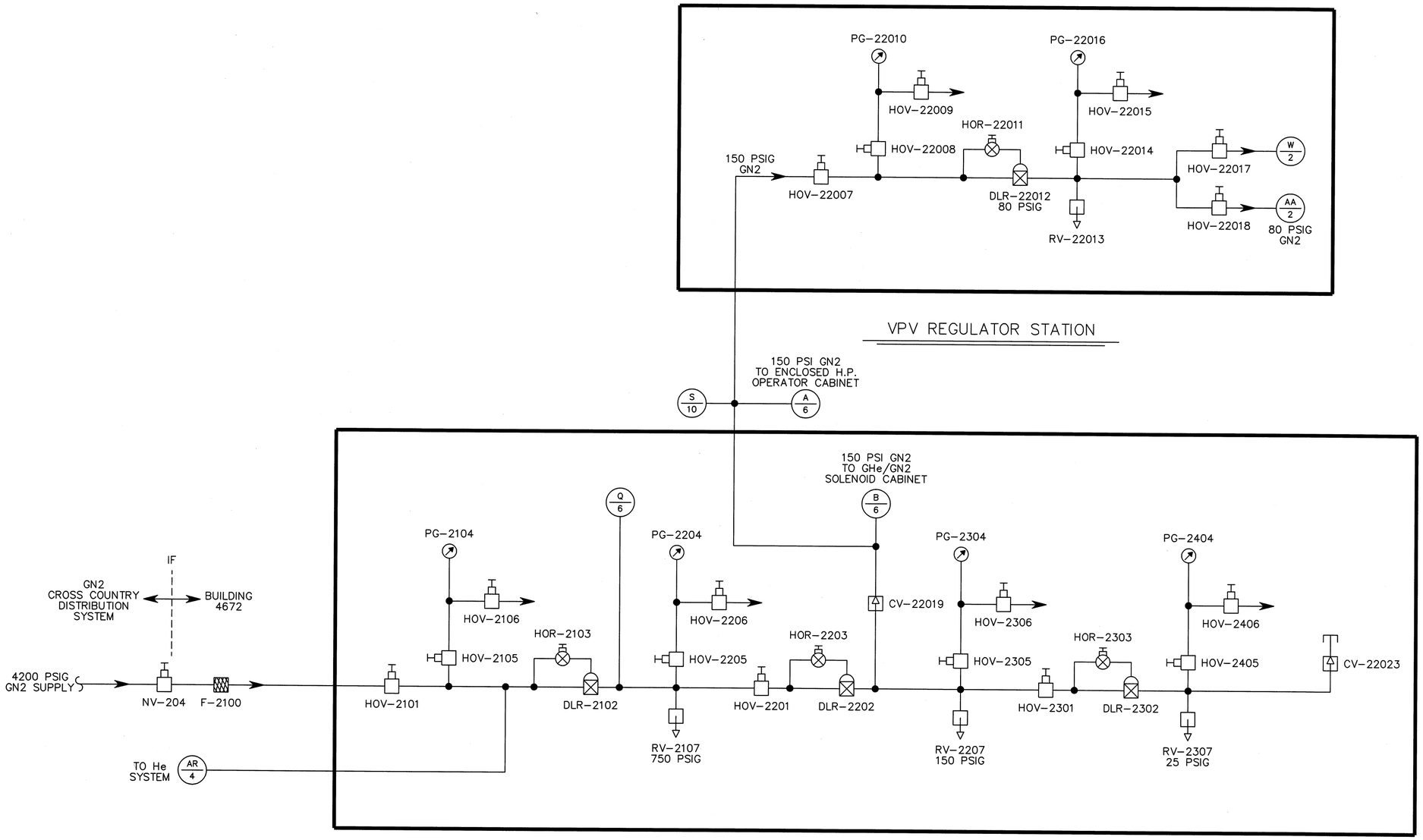
DISTR CODE

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
	CREATED PER TPS# 4670-10164M, replaces previous dwg.	2/9/09	N. HENSLEY
	TPS# 4670-10197M, install Filter 2100	2/9/09	N. HENSLEY
	TPS# 4670-10221M,add bubble A/6, Q/6, & P/11,	2/9/09	S. CHARTIER
	Changed component numbers per engineers redlines	5/18/09	N. HENSLEY
A	#4670-10335D, move line from bubble AR/4 to tie in between HOV-2105 & HOR-2103	10/22/09	N. HENSLEY

LEGEND

⊠ NORMALLY CLOSED VALVE

□ NORMALLY OPEN VALVE



GN2 PANEL FOR LH2 STORAGE AREA

SEE ENGINEERING RECORDS	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES MATERIAL HEAT TREATMENT FINAL PROTECTIVE FINISH	ORIGINAL DATE OF DRAWING 09-FEB-09 DRAFTSMAN PKW CHECKER CHECKER STRESS ENGINEER ENGINEER SUBMITTED APPROVED DIRECTOR
NEXT ASSY USED ON APPLICATION		

WEST TEST AREA BUILDING 4672 LH2 STORAGE & TRANSFER AREA GN2 SYSTEM	WEIGHT CHECKER / DATE / CODE SCALE / UNIT WEIGHT	DISTR CODE GEORGE C. MARSHALL SPACE FLIGHT CENTER NATIONAL AERONAUTICS AND SPACE ADMINISTRATION HUNTSVILLE, ALABAMA DWG SIZE D 88M04672 SHEET 5 OF 11

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
	CREATED PER TPS# 4670-4670-10164M	8/6/08	N. HENSLEY
	4670-10252M,mod Encl. HP Op. Cab & moved from sh.11	2/9/09	S. CHARTIER
	Revised component numbers per engnieers redlines	5/18/09	N. HENSLEY
A	TPS# 4670-10333M,added CV's 33037 thru 33048	6/9/09	N. HENSLEY
B	#4670-10334M, added Sol Cab for GH2 HP Purges	10/22/09	N. HENSLEY

150 PSIG GN2 (U/–)
150 PSIG GN2 (B/5)
HOV-22001
CV-22002
HOV-22003
VENT
VENT
VENT
BOX PURGE
CV-33028
HOV-33007
D/4 100 PSIG GHe

HCF RETURN LINE VENT — ROV 327 — SOV-327
LH2 FILL LINE VENT — 1130 — SOV-1130
LH2 LOADING LINE — 1191 — SOV-1191
LH2 LOADING LINE FILTER BYPASS — 1192 — SOV-1192
LH2 LOADING LINE T2 ISOLATION — 1194 — SOV-1194
T2 VENT — 1137 — SOV-1137
LH2 LOADING LINE T1 ISOLATION — 1193 — SOV-1193
T1 VENT — 1132 — SOV-1132
T2 PRESSURIZATION — 1135 — SOV-1135
T2 VENT — 1133 — SOV-1133
LOW PRESSURE INDUSTRIAL WATER — 440/10 — SOV-440
LH2 FILL LINE — 1190 — SOV-1190
T1 PRESSURIZATION — 1139 — SOV-1139
T1 PRESSURIZATION — 1140 — SOV-1140
T2 PRESSURIZATION — 1195 — SOV-1195

I/P 1136 → SOV 1136 (NC CYL NO) NC
I/P 1131 → SOV 1131 (NC CYL NO) NC

SOV 1161 (NC CYL NO) NC → CV-33037 / CV-33038 → AE/2 LH2 TRANSFER LOADING/UNLOADING LINE PURGE
SOV 1165 (NC CYL NO) NC → CV-33039 / CV-33040 → H/8 FILTER RACK PURGE
SOV 1163 (NC CYL NO) NC → CV-33041 / CV-33042 → J/2 LH2 STORAGE T2 VENT LINE PURGE
SOV 1162 (NC CYL NO) NC → CV-33043 / CV-33044 → L/2 LH2 STORAGE T1 VENT LINE PURGE
SOV 1164 (NC CYL NO) NC → CV-33045 / CV-33046 → K/2 LH2 TRANSFER LINE PURGE
SOV 341 (NC CYL NO) NC → CV-33047 / CV-33048 → AM/2 HCF RETURN LINE PURGE

V/2
Y/2

PG 22005
HOR-22004 25 PSIG
RV 22006
VENT

GHe/GN2 SOLENOID CABINET
(LH STORAGE AND TRANSFER AREA)

150 PSI GN2 (A/5)
HOV-22022
SOV-1190A (NO) → AL1/2
SOV-1190B (NC) → AL2/2
SOV-321A (NO) → AK1/2
SOV-321B (NC) → AK2/2
750 PSI GN2 (Q/5)
CV-22021
HOV-22020

ENCLOSED HIGH PRESSURE OPERATOR CABINET

150 PSI GN2 (U/–)
HOV-22023
HOV-22024
SOV-4419 → AA/7
SOV-4519 → AB/7
SOV-4619 → AC/7
SOV-4719 → AD/7
SPARE
SPARE
SPARE

SOLENOID CABINET for GH2 H.P. PURGES
(LH STORAGE AND TRANSFER AREA)

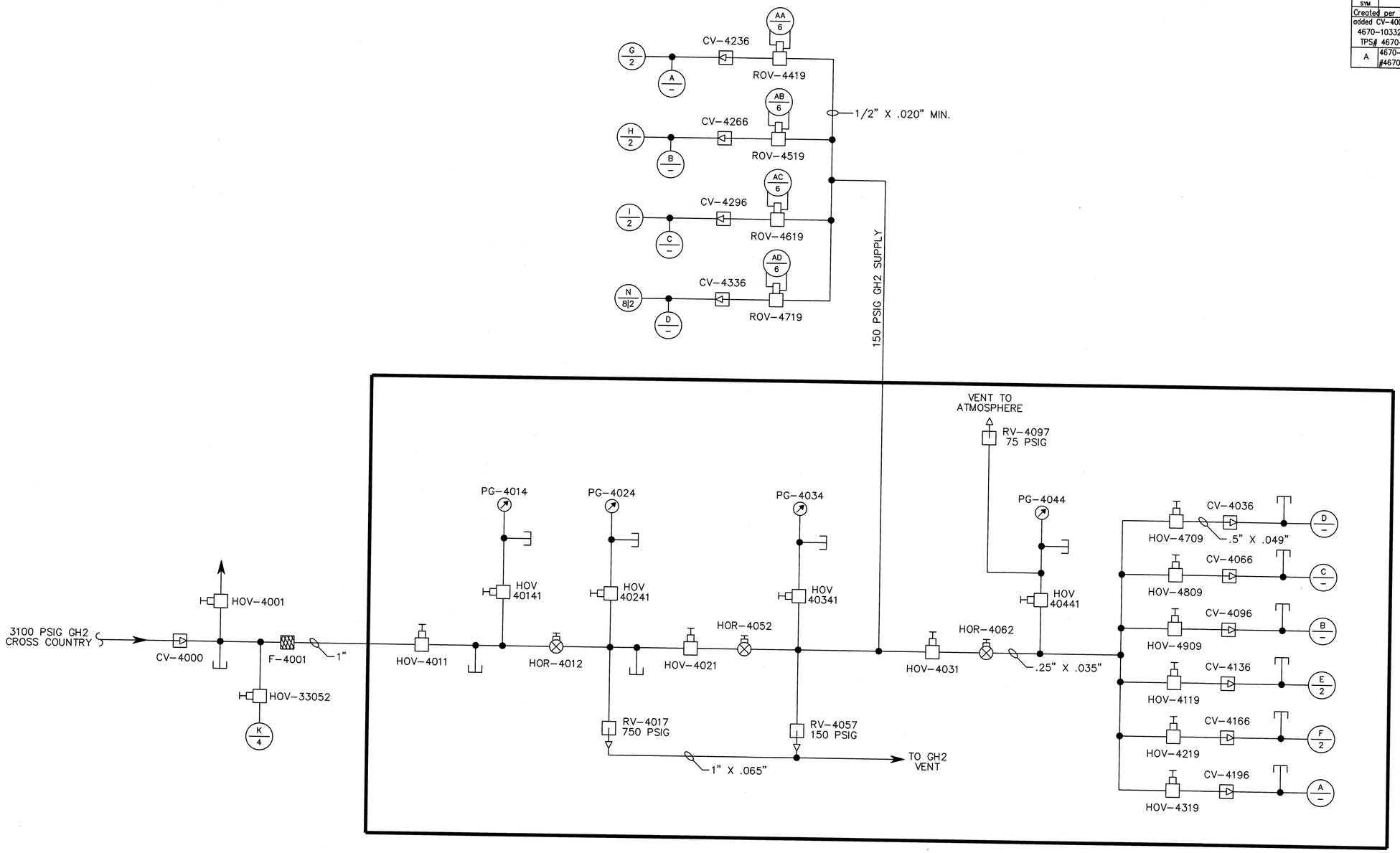
SEE ENGINEERING RECORDS	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES; TOLERANCES ON FRACTIONS / DECIMALS / ANGLES; MATERIAL; HEAT TREATMENT; FINAL PROTECTIVE FINISH	ORIGINAL DATE OF DRAWING 06-AUG-08; DRAFTSMAN PKW; CHECKER; ENGINEER; SUBMITTED; APPROVED; DIRECTOR	WEST TEST AREA; BUILDING 4672; LH STORAGE & TRANSFER SYSTEM GHe/GN2 SOLENOID CABINET	GEORGE C. MARSHALL SPACE FLIGHT CENTER; NATIONAL AERONAUTICS AND SPACE ADMINISTRATION; HUNTSVILLE, ALABAMA	DISTR CODE
NEXT ASSY / USED ON; APPLICATION			WEIGHT CHECKER / DATE / CODE; SCALE / UNIT WEIGHT	SIZE D	880M04672
				SHEET 6 OF 11	

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
	Created per TPS# 4670-10248M - GH2 Panel, 4670-10328M added CV-4000 & F-4001, previous dwg. sh. 7 now sh.8 1 of 2 4670-10332M added CV's 4236-4336 & ROV's 4419-4719 TPS# 4670-10336M, added HOV-4001 to GH2 supply line	6/16/09	N. HENSLEY
A	4670-10336M,add HOV-33052, bub K, move HOV-4001 #4670-10332M, added bubbles A,B,C,D,E,F,G,H,I, & N	10/22/09	N. HENSLEY

LEGEND

⊠ NORMALLY CLOSED VALVE

□ NORMALLY OPEN VALVE

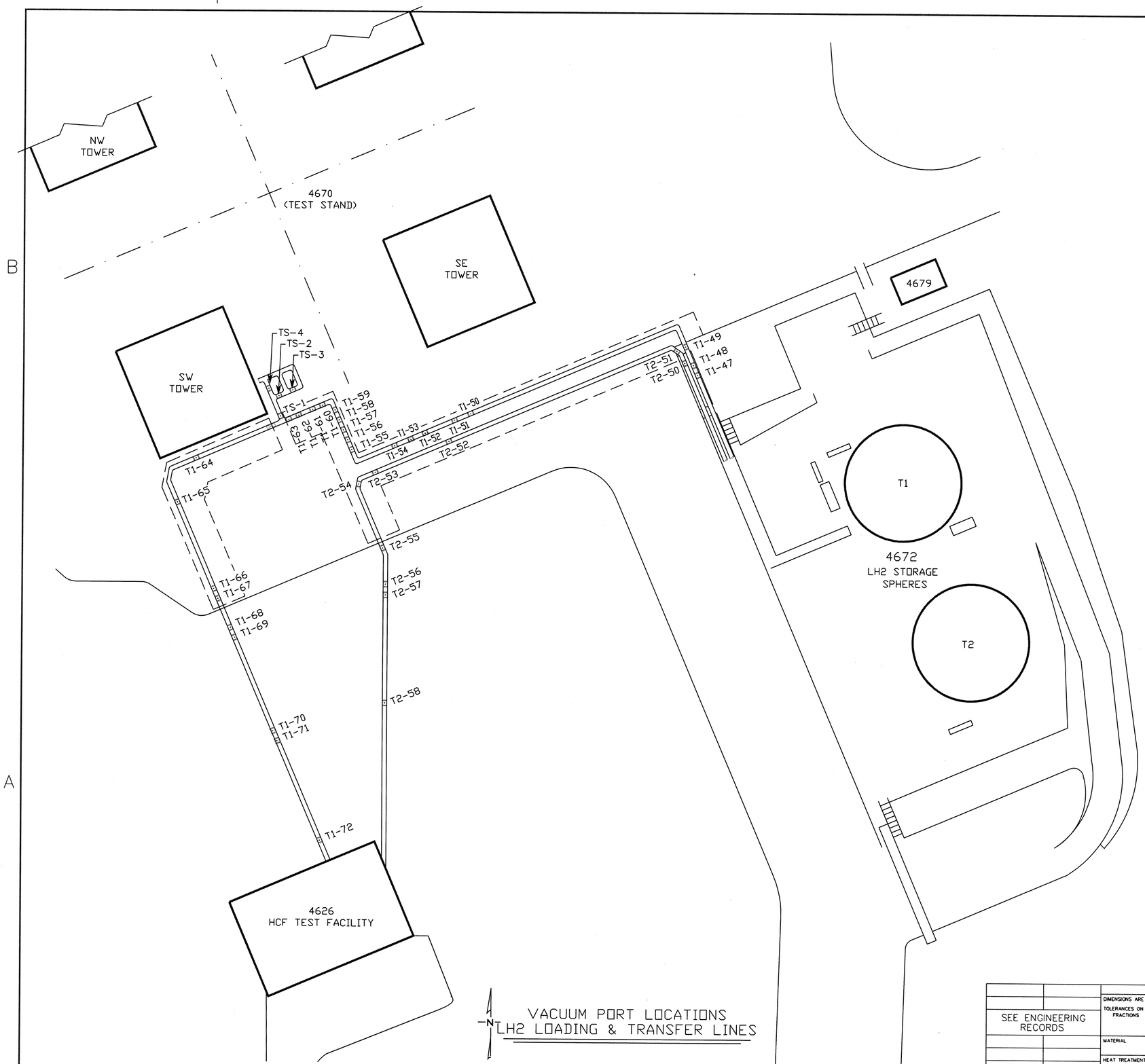


GH2 PANEL FOR LH2 STORAGE AREA

SEE ENGINEERING RECORDS		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS / DECIMALS / ANGLES MATERIAL HEAT TREATMENT FINAL PROTECTIVE FINISH	ORIGINAL DATE OF DRAWING 16-JUN-09 DRAFTSMAN PKW / CHECKER CHECKER / STRESS ENGINEER / ENGINEER SUBMITTED APPROVED DIRECTOR	WEST TEST AREA BUILDING 4672 LH2 STORAGE & TRANSFER AREA GH2 SYSTEM	GEORGE C. MARSHALL SPACE FLIGHT CENTER NATIONAL AERONAUTICS AND SPACE ADMINISTRATION HUNTSVILLE, ALABAMA
NEXT ASSY / USED ON APPLICATION			WEIGHT CHECKER / DATE / CODE SCALE / UNIT WEIGHT		DWG SIZE D 88M04672 SHEET 7 OF 11

DISTR CODE

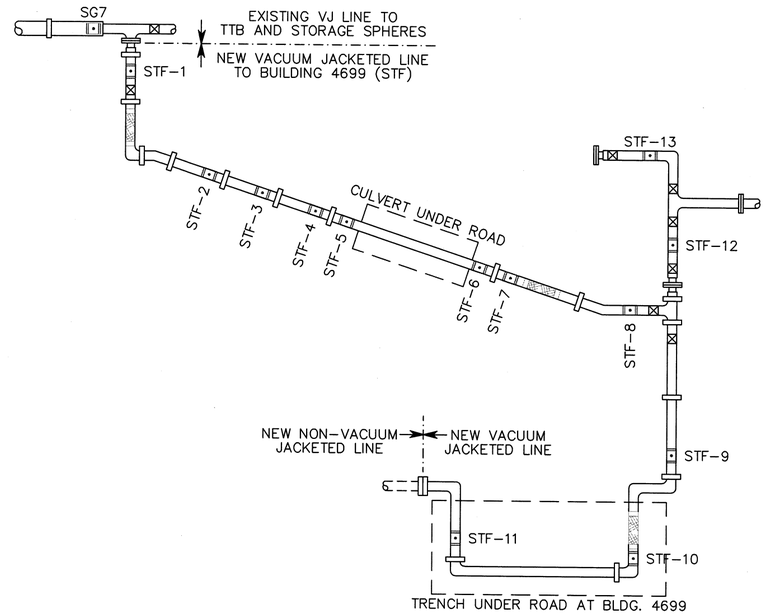
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	SEE SHEET 1	1-7-03	ADF/RJC/JWB
B	4670-TPS-10038D,new dwg showing Vacuum Port Locations, moved HCF Cabinet to sh.11	7/30/7	N. HENSLEY
C	4670-10187D, new D-size format & title	2/9/09	N. HENSLEY
D	4670-10248M, renumber dwg., was sh. 7	6/9/09	N. HENSLEY



VACUUM PORT LOCATIONS
LH2 LOADING & TRANSFER LINES

LEGEND

VACUUM PORTS

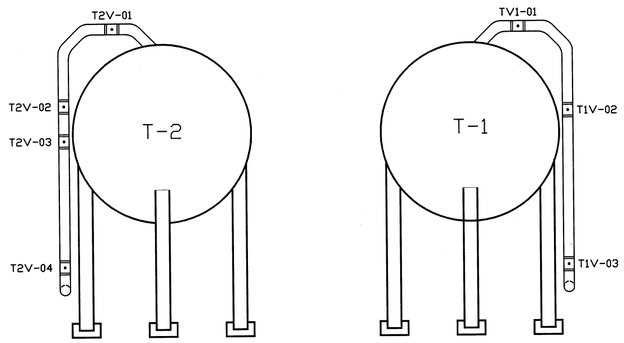


VACUUM JACKETED
LH2 LINE FROM HCF TO STF

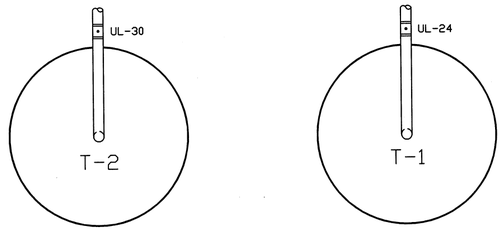
SEE ENGINEERING RECORDS		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES; TOLERANCES ON FRACTIONS / DECIMALS / ANGLES; MATERIAL; HEAT TREATMENT; FINAL PROTECTIVE FINISH	ORIGINAL DATE OF DRAWING 7-30-99	WEST TEST AREA BLDG. 4672 LH2 STORAGE AND TRANSFER SYSTEMS SCHEMATICS VACUUM PORT LOCATIONS	GEORGE C. MARSHALL SPACE FLIGHT CENTER NATIONAL AERONAUTICS AND SPACE ADMINISTRATION HUNTSVILLE, ALABAMA
NEXT ASSY	USED ON		DRAFTSMAN JAM CHECKER		DWG SIZE D 88M04672
APPLICATION			CHECKER GKH STRESS		
			ENGINEER ADF ENGINEER		
			SUBMITTED J. A. RICHARD		
			APPROVED J. CAUDLE DIRECTOR	WEIGHT CHECKER / DATE / CODE	SHEET 8 -1 OF 11
				SCALE NONE / UNIT WEIGHT	(1 of 2)

DISTR CODE

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	SEE SHEET 1	1-7-03	ADF/RJC/JWB
B	4670-TPS-100335M, Add Vac. Port locations	8/20/77	N. HENSLEY
C	4670-TPS-101870, remove 4 valves & cap lines Added bubble P/4 per engineers redlines	6/8/08 5/18/09	N. HENSLEY N. HENSLEY
D	4670-10248M, renumber dwg. to sh. 8 (2 of 2)	6/9/09	N. HENSLEY
E	TPS# 4670-10335D, change bubble H/4 to N/7	10/22/09	N. HENSLEY



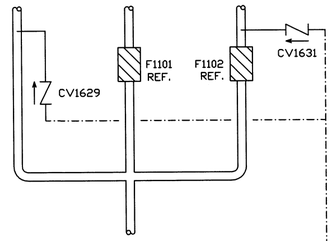
T1 AND T2 ELEVATION - DETAIL 'B'



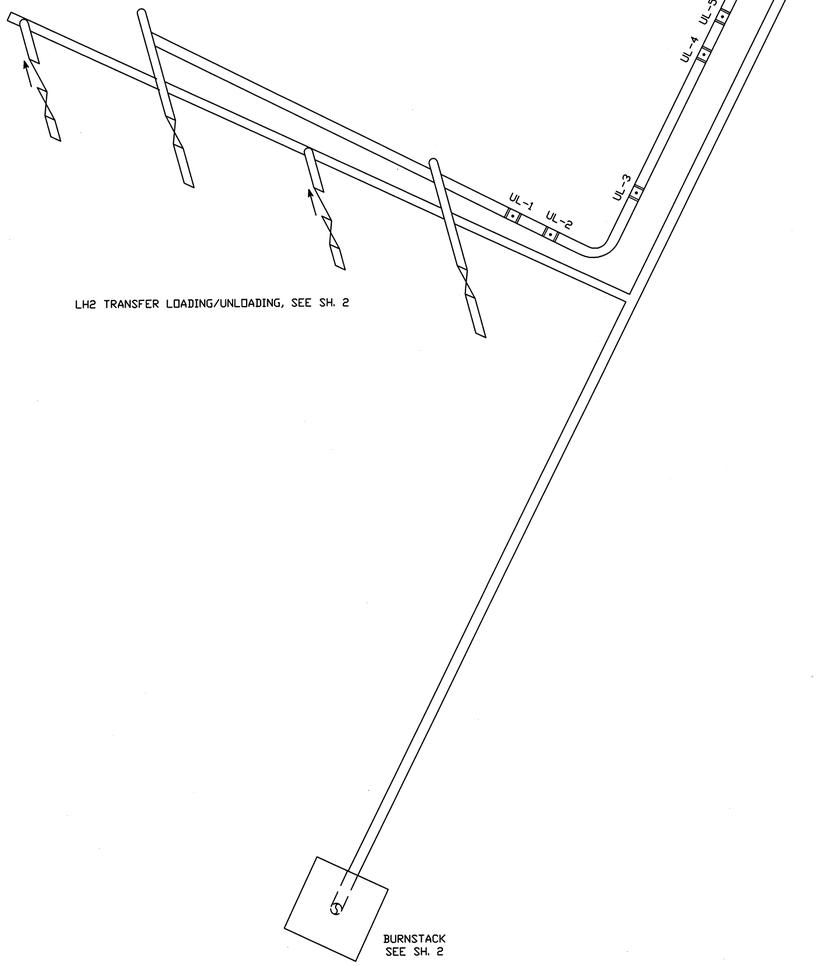
T1 AND T2 ELEVATION - DETAIL 'A'

LEGEND

VACUUM PORTS



TEST STAND AREA



GHe PURGE TO T21 AND T2 BUBBLER SYSTEM

AND TO THE BLDG. 4670 FILTER RACK

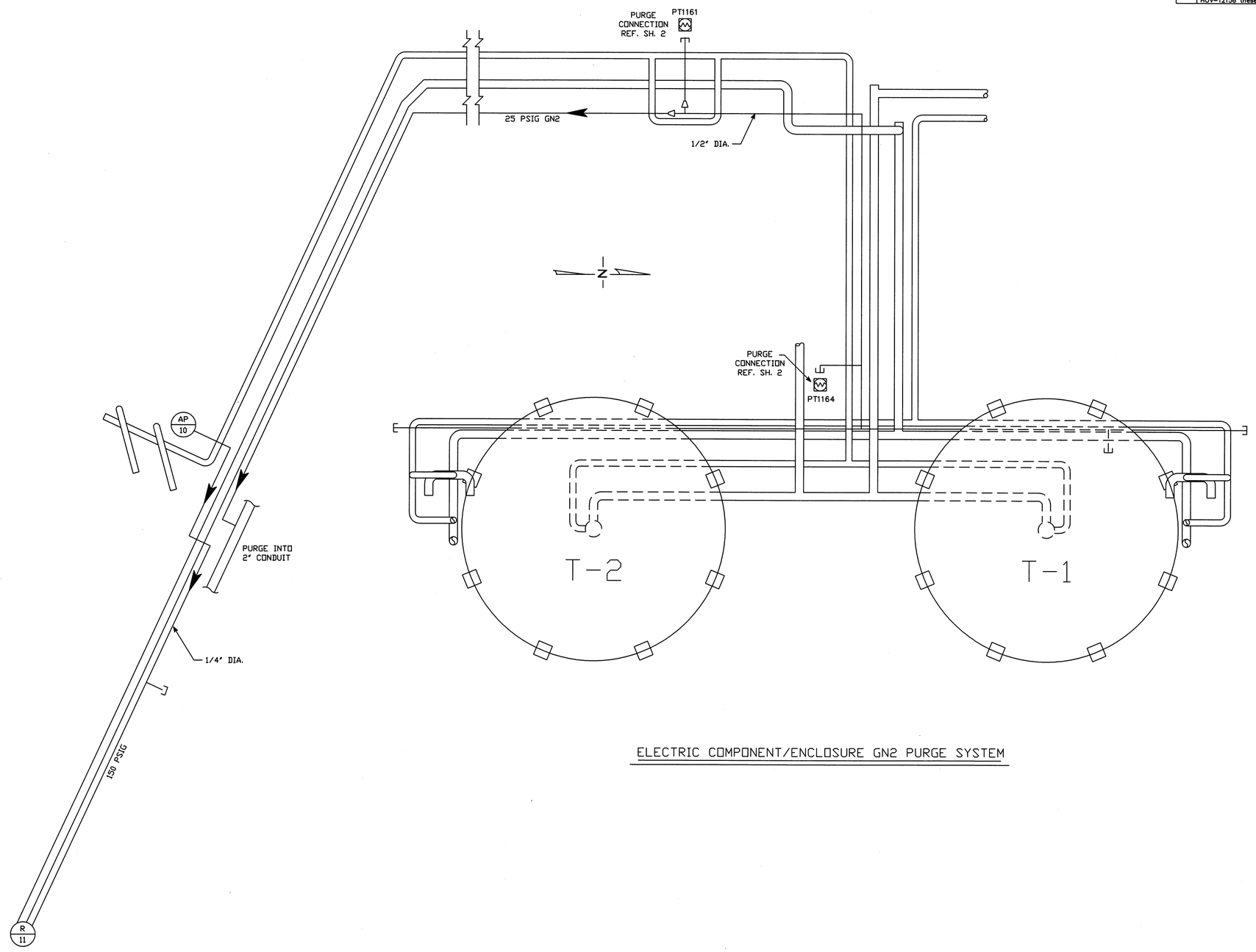
88M04672
D

SEE ENGINEERING RECORDS	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS / DECIMALS / ANGLES MATERIAL HEAT TREATMENT FINAL PROTECTIVE FINISH	ORIGINAL DATE OF DRAWING 7-30-99 DRAFTSMAN JAM / CHECKER CHECKER GKH / STRESS ENGINEER / ENGINEER SUBMITTED J.A RICHARD APPROVED J. CAUDLE / DIRECTOR	WEST TEST AREA BLDG. 4672 LH2 STORAGE & TRANSFER AREA VACUUM PORT LOCATIONS
NEXT ASSY / USED ON APPLICATION		WEIGHT CHECKER / DATE / CODE SCALE NONE / UNIT WEIGHT	GEORGE C. MARSHALL SPACE FLIGHT CENTER NATIONAL AERONAUTICS AND SPACE ADMINISTRATION HUNTSVILLE, ALABAMA SIZE E 88M04672 SHEET 8 -2 OF 11

DISTR CODE

(2 of 2)

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	SEE SHEET 1	1-7-03	ADF/RJC/JWB
B	TPS# HCF-1427-M (P2391),Change out PT's	3/18/04	P. SWOFFORD
C	4670-10187D, remove STF/HCF Burnstack Det. 'G', bubble C/S, show line capped near PT1139 & PT1134 remove Sol. Cab, Ignitor & Reiller Box, Bldg Burnstack	2/9/09 5/7/09 5/18/09	N. HENSLEY
D	#4670-10335D, removed PT1139, PT1134 & HOV-12156 these are shown on sh. 2 & 11	10/22/09	N. HENSLEY

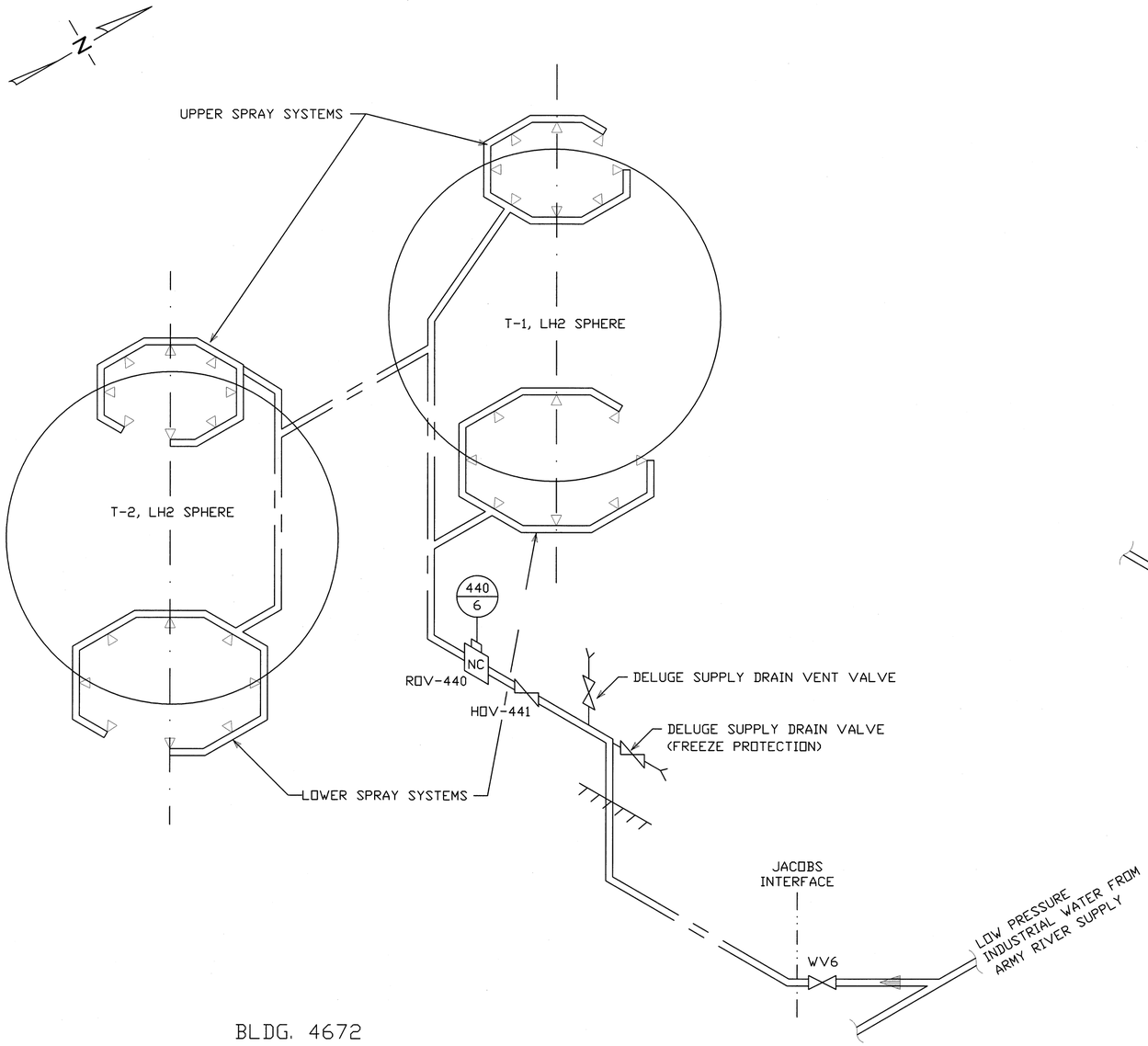


ELECTRIC COMPONENT/ENCLOSURE GN2 PURGE SYSTEM

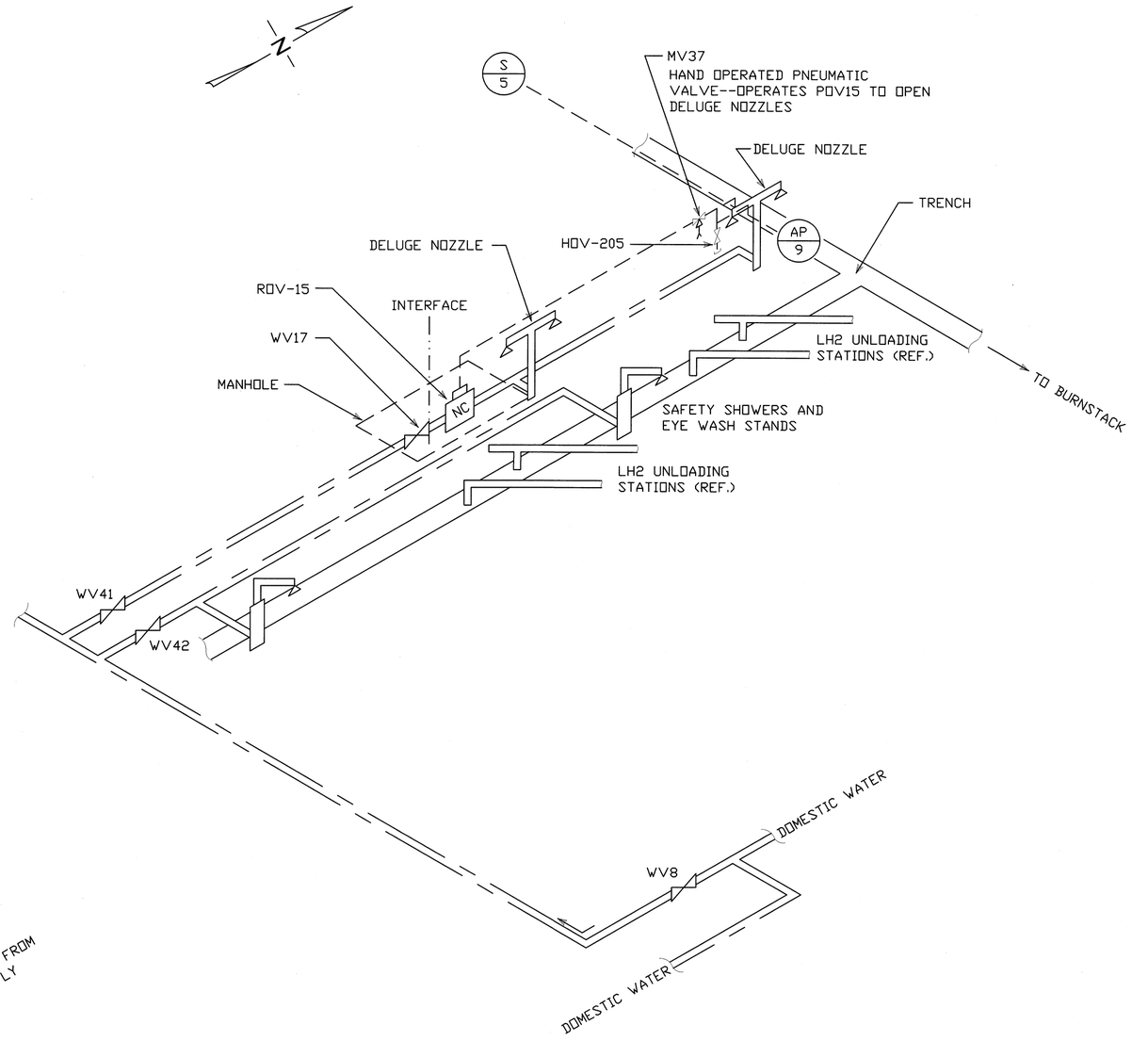
88M04672
C

		UNLESS OTHERWISE SPECIFIED	ORIGINAL DATE OF DRAWING 7-30-99	WEST TEST AREA	GEORGE C. MARSHALL SPACE FLIGHT CENTER
		DIMENSIONS ARE IN INCHES			NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
SEE ENGINEERING RECORDS		TOLERANCES ON FRACTIONS / DECIMALS / ANGLES	DRAFTSMAN JAM CHECKER	BLDG. 4672 LH2 STORAGE AND TRANSFER SYSTEMS SCHEMATICS	HUNTSVILLE, ALABAMA
			CHECKER GKH STRESS		
			ENGINEER ADF ENGINEER		DWG E 88M04672
		MATERIAL	SUBMITTED J. A. RICHARD		
		HEAT TREATMENT	APPROVED J. CAUDLE		SHEET 9 OF 11
NEXT ASSY	USED ON	FINAL PROTECTIVE FINISH	DIRECTOR	WEIGHT CHECKER / DATE / CODE	DISTR CODE
APPLICATION				SCALE NONE / UNIT WEIGHT	

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	SEE SHEET 1	1-7-03	AOF/RJC/JWB
B	TPS# 4670-10176M, change WV2 to HOV-441 POV to ROV-15, MIV to HOV-205, bubbles A1 & A2 to 440/6 & B/5 to S/5	8/21/8 5/7/09	N. HENSLEY



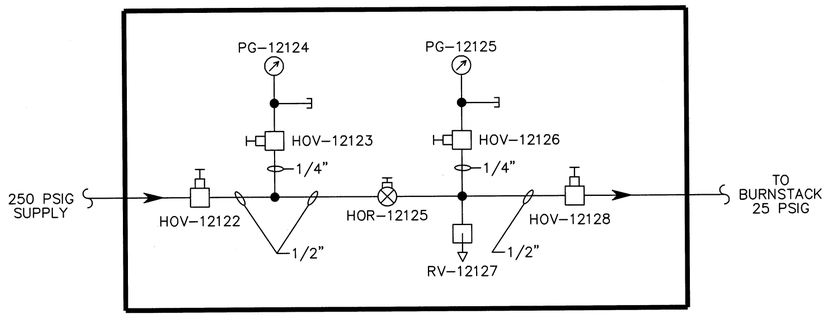
BLDG. 4672
DELUGE WATER SYSTEM



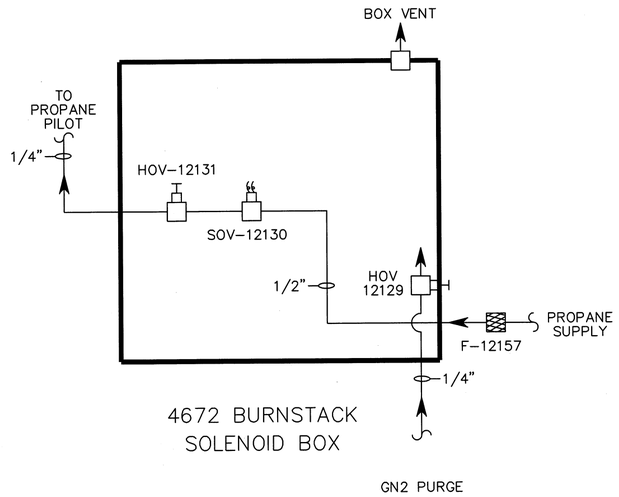
LH2 UNLOADING STATIONS (2)
DELUGE WATER SYSTEM

SEE ENGINEERING RECORDS		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES	ORIGINAL DATE OF DRAWING 7-30-99 DRAFTSMAN JAM CHECKER CHECKER GKH STRESS ENGINEER AOF ENGINEER SUBMITTED J.A RICHARD	WEST TEST AREA BLDG. 4672 LH2 STORAGE AND TRANSFER SYSTEMS SCHEMATICS DELUGE WATER SYSTEMS	GEORGE C. MARSHALL SPACE FLIGHT CENTER NATIONAL AERONAUTICS AND SPACE ADMINISTRATION HUNTSVILLE, ALABAMA
NEXT ASSY	USED ON	MATERIAL HEAT TREATMENT FINAL PROTECTIVE FINISH	APPROVED DIRECTOR	WEIGHT CHECKER / DATE / CODE SCALE / UNIT WEIGHT	DWG SIZE D 88M04672 SHEET 10 OF 11
APPLICATION					DISTR CODE

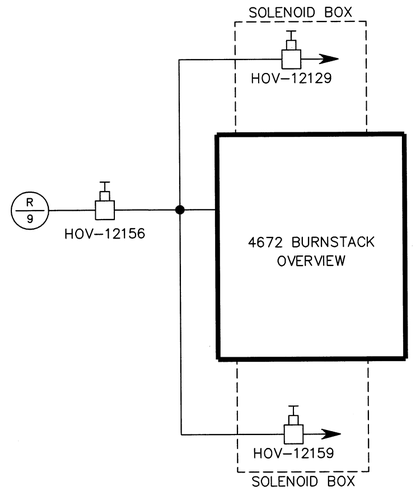
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
	CREATED PER TPS# P4670-TPS-10187D	6/10/8	N. HENSLEY
A	4626-TPS-10003M, add HCF Burnstack Sol Box	6/19/8	N. HENSLEY
B	4670-TPS-10187D, mods at 4672, HCF,& 4699	7/22/8	N. HENSLEY
C	4670-10164M,moved Enclosed HCF Cab. from sh.11	8/5/8	N. HENSLEY
	TPS# 4670-10221M, add HOV-2060 & bubble A	8/12/8	S. CHARTIER
	TPS# 4699-10114M, added HOV's 12158 & 12159	10/3/8	N. HENSLEY
	4670-10252M,mod Enclosed HP Op. Cab & move to sh.6	2/9/09	S. CHARTIER
	Removed 4670, 4699, and HCF Systems from this dwg.	5/18/09	N. HENSLEY



4672 PROPANE SUPPLY PANEL FOR BURNSTACK



4672 BURNSTACK SOLENOID BOX



SEE ENGINEERING RECORDS		UNLESS OTHERWISE SPECIFIED	ORIGINAL DATE OF DRAWING 10-JUN-08	WEST TEST AREA	GEORGE C. MARSHALL SPACE FLIGHT CENTER
		DIMENSIONS ARE IN INCHES		LH2 STORAGE AND TRANSFER SYSTEM SCHEMATICS 4672 BURNSTACK DETAILS	NATIONAL AERONAUTICS AND SPACE ADMINISTRATION HUNTSVILLE, ALABAMA
		TOLERANCES ON FRACTIONS / DECIMALS / ANGLES	DRAFTSMAN PKW / CHECKER		DWG SIZE D 88M04672
			CHECKER / STRESS		
			ENGINEER / ENGINEER		
		MATERIAL	SUBMITTED		
		HEAT TREATMENT	APPROVED		
NEXT ASSY / USED ON		FINAL PROTECTIVE FINISH	DIRECTOR	WEIGHT CHECKER / DATE / CODE	SHEET 11 OF 11
APPLICATION				SCALE / UNIT WEIGHT	

DISTR CODE