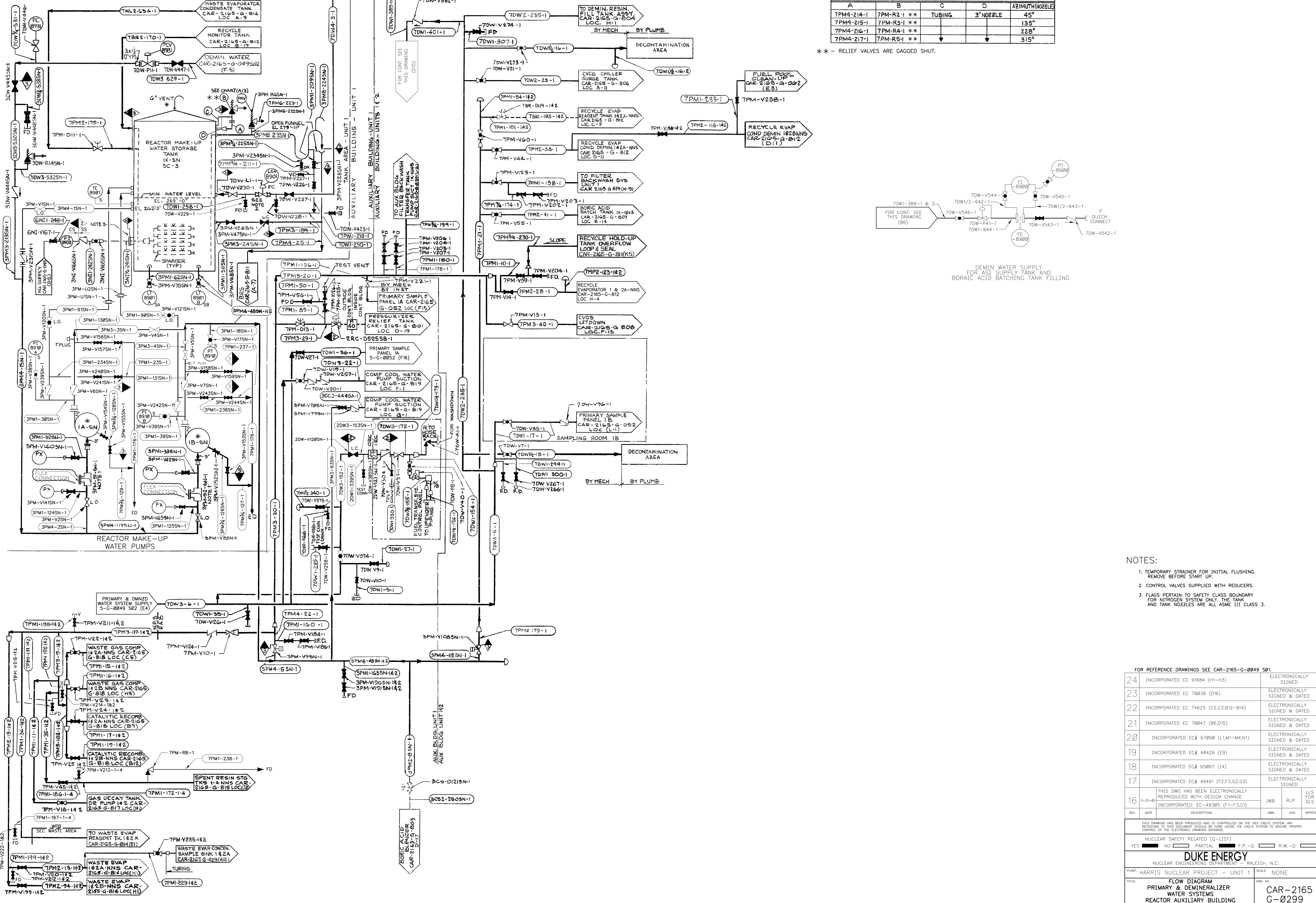


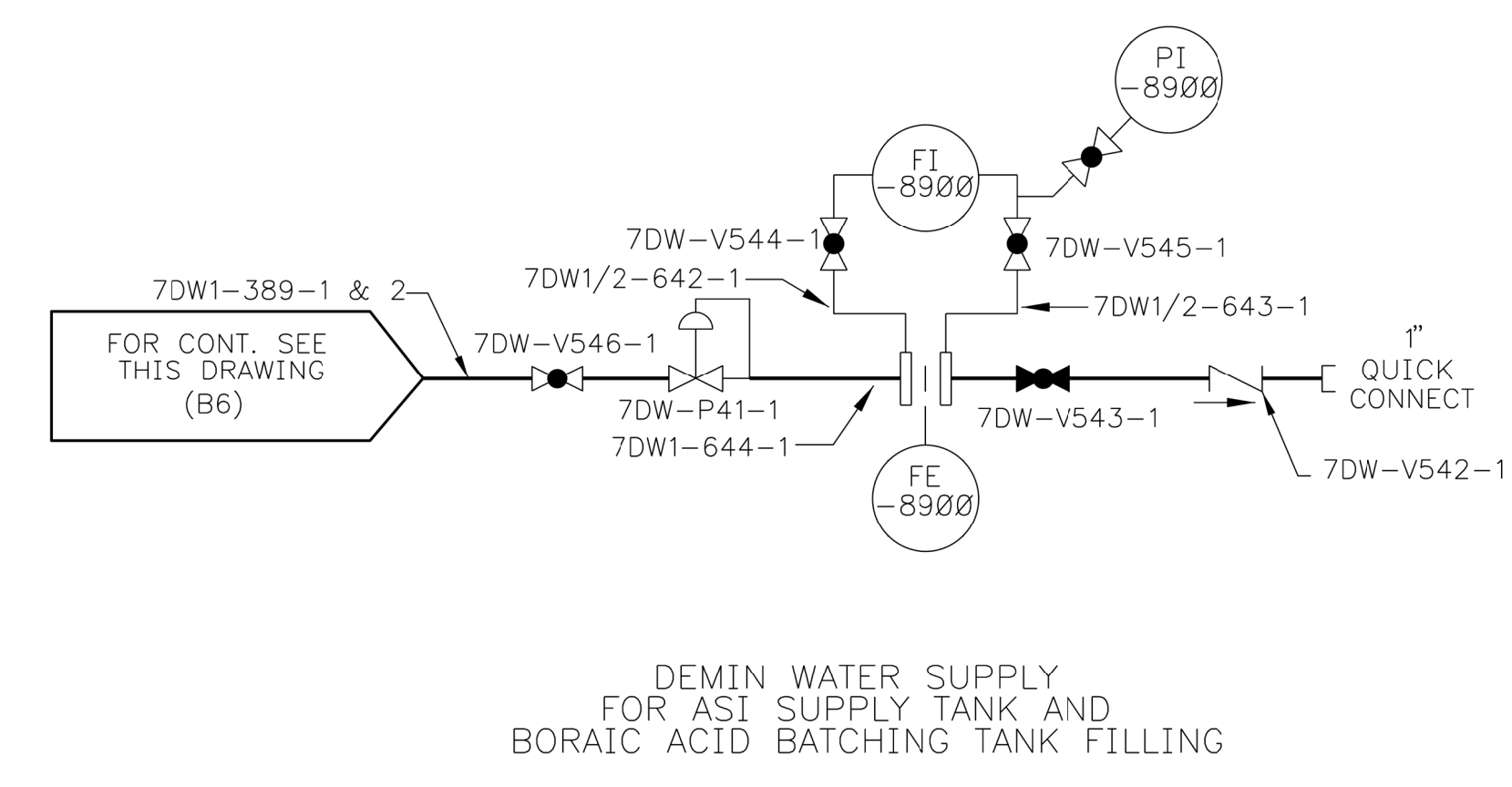
CAR-2165
G-0299



RMWST RELIEF VALVE CHART

A	B	C	D	AZIMUTH (NOZZLE)
7PM4-214-1	7PM-R2-1 **	TUBING	3" NOZZLE	45°
7PM4-215-1	7PM-R3-1 **			135°
7PM4-216-1	7PM-R4-1 **			225°
7PM4-217-1	7PM-R5-1 **			315°

** - RELIEF VALVES ARE GAGGED SHUT.



- NOTES:
- TEMPORARY STRAINER FOR INITIAL FLUSHING REMOVE BEFORE START UP.
 - CONTROL VALVES SUPPLIED WITH REDUCERS.
 - FLAGS PERTAIN TO SAFETY CLASS BOUNDARY FOR NITROGEN SYSTEM ONLY. THE TANK AND TANK NOZZLES ARE ALL ASME III CLASS 3.

FOR REFERENCE DRAWINGS SEE CAR-2165-G-0049 S01.

24	INCORPORATED EC 91684 (H1-H3)	ELECTRONICALLY SIGNED
23	INCORPORATED EC 78836 (D16)	ELECTRONICALLY SIGNED & DATED
22	INCORPORATED EC 74625 (C2,C3,B12-B14)	ELECTRONICALLY SIGNED & DATED
21	INCORPORATED EC 78847 (B6,D15)	ELECTRONICALLY SIGNED & DATED
20	INCORPORATED EC# 67868 (L1M1-M4,N1)	ELECTRONICALLY SIGNED & DATED
19	INCORPORATED EC# 48426 (E9)	ELECTRONICALLY SIGNED & DATED
18	INCORPORATED EC# 65867 (14)	ELECTRONICALLY SIGNED & DATED
17	INCORPORATED EC# 49491 (F2,F3,G2,G3)	ELECTRONICALLY SIGNED
16	5-23-82 INCORPORATED: EC-49395 (F1-F3,G1)	JWB RLP LLS FOR DLS

THIS DRAWING HAS BEEN PRODUCED AND IS CONTROLLED ON THE AED CAD/S SYSTEM AND REVISIONS TO THIS DOCUMENT SHOULD BE DONE USING THE CAD/S SYSTEM TO ASSURE PROPER CONTROL OF THE ELECTRONIC DRAWING DATABASE.

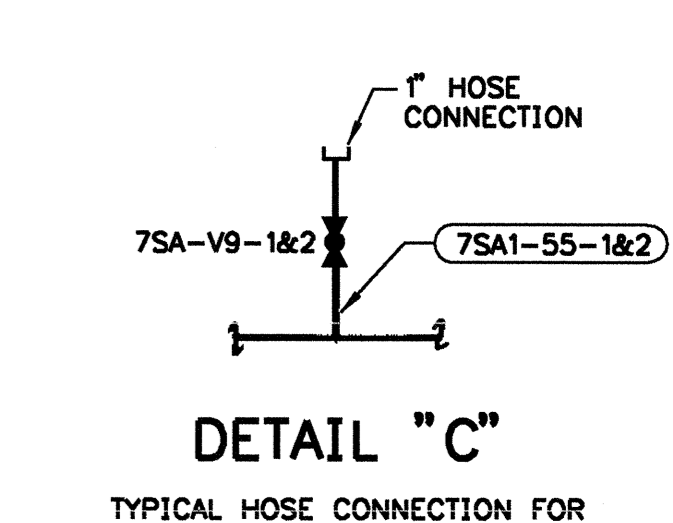
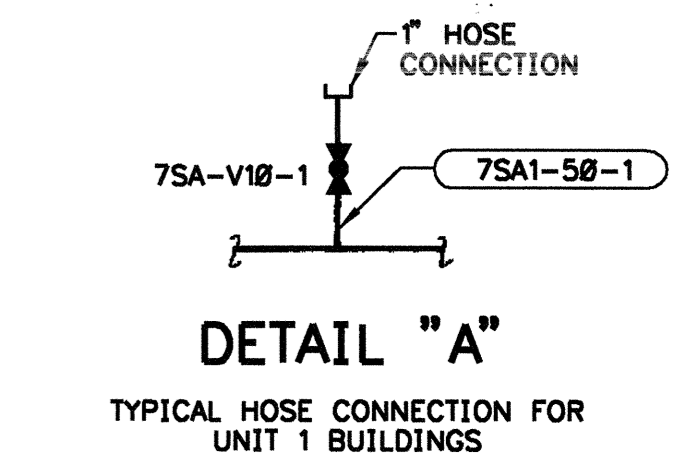
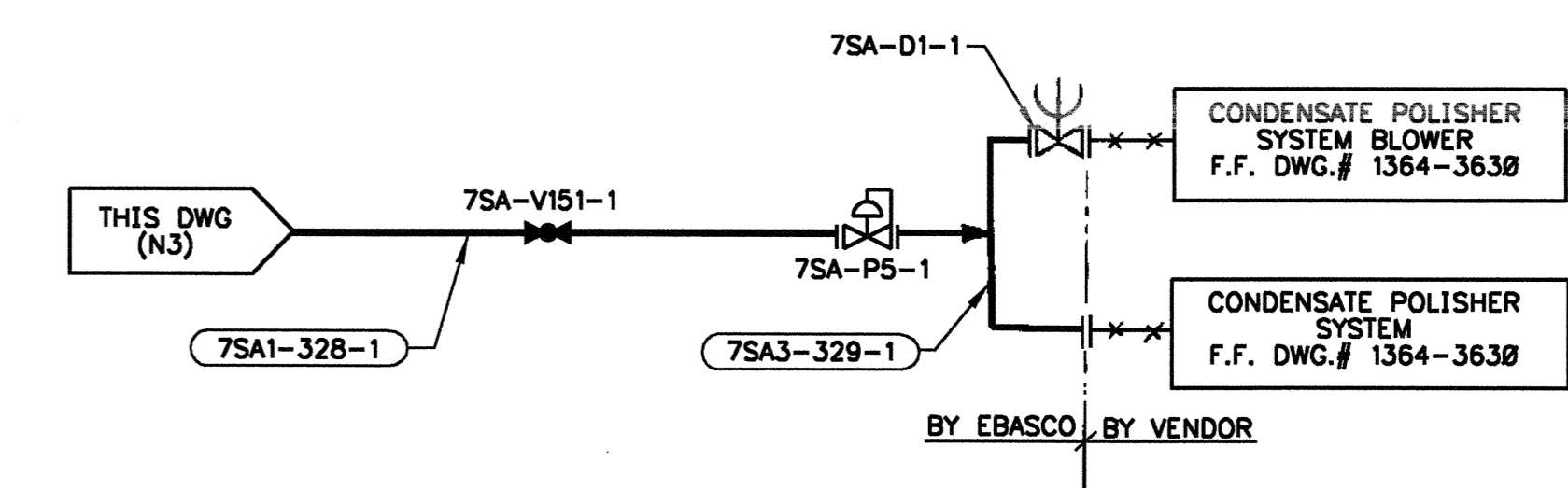
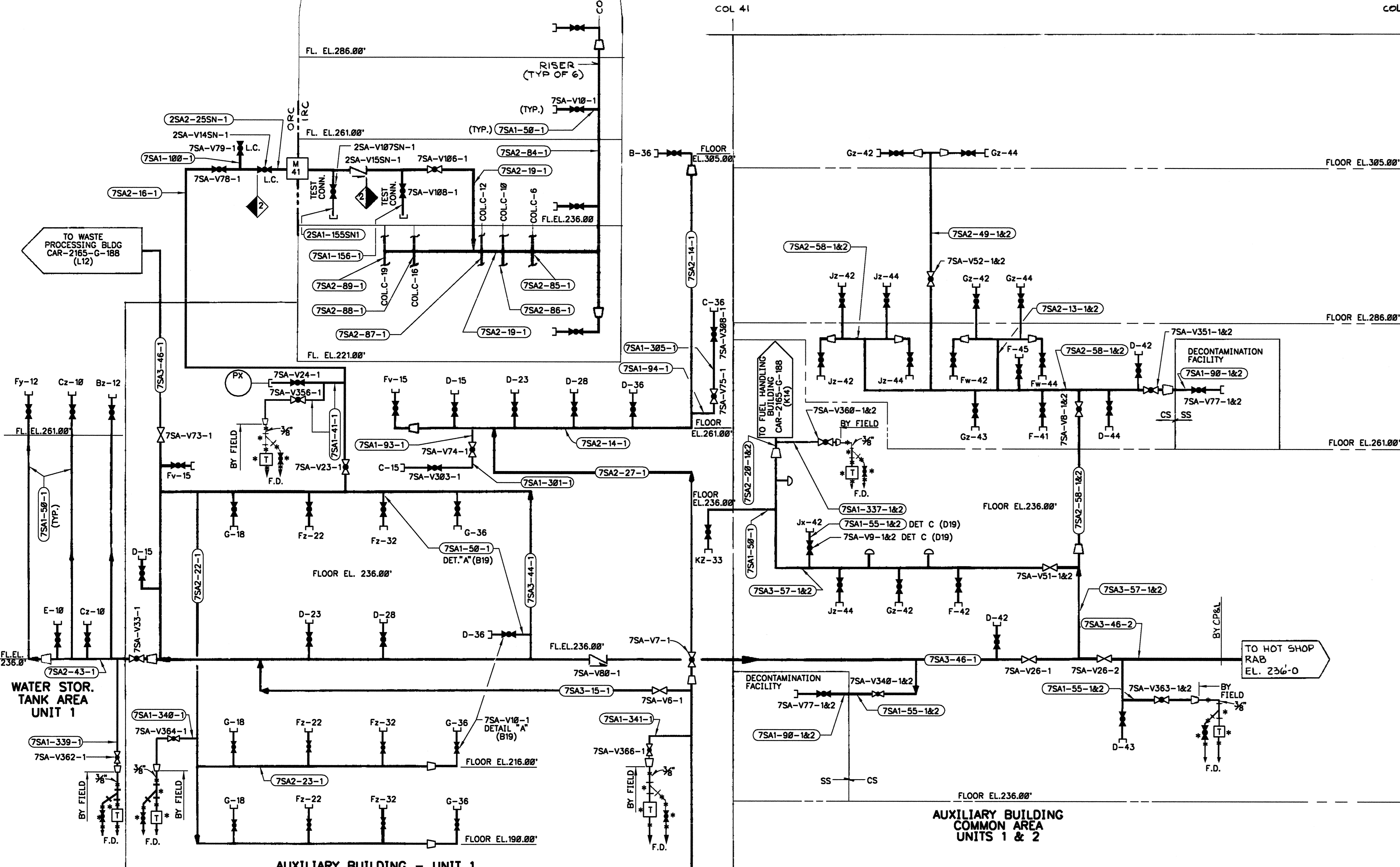
NUCLEAR SAFETY RELATED (O-LIST)
YES NO PARTIAL F.P.-O R.W.-O

DUKE ENERGY
NUCLEAR ENGINEERING DEPARTMENT - RALEIGH, N.C.

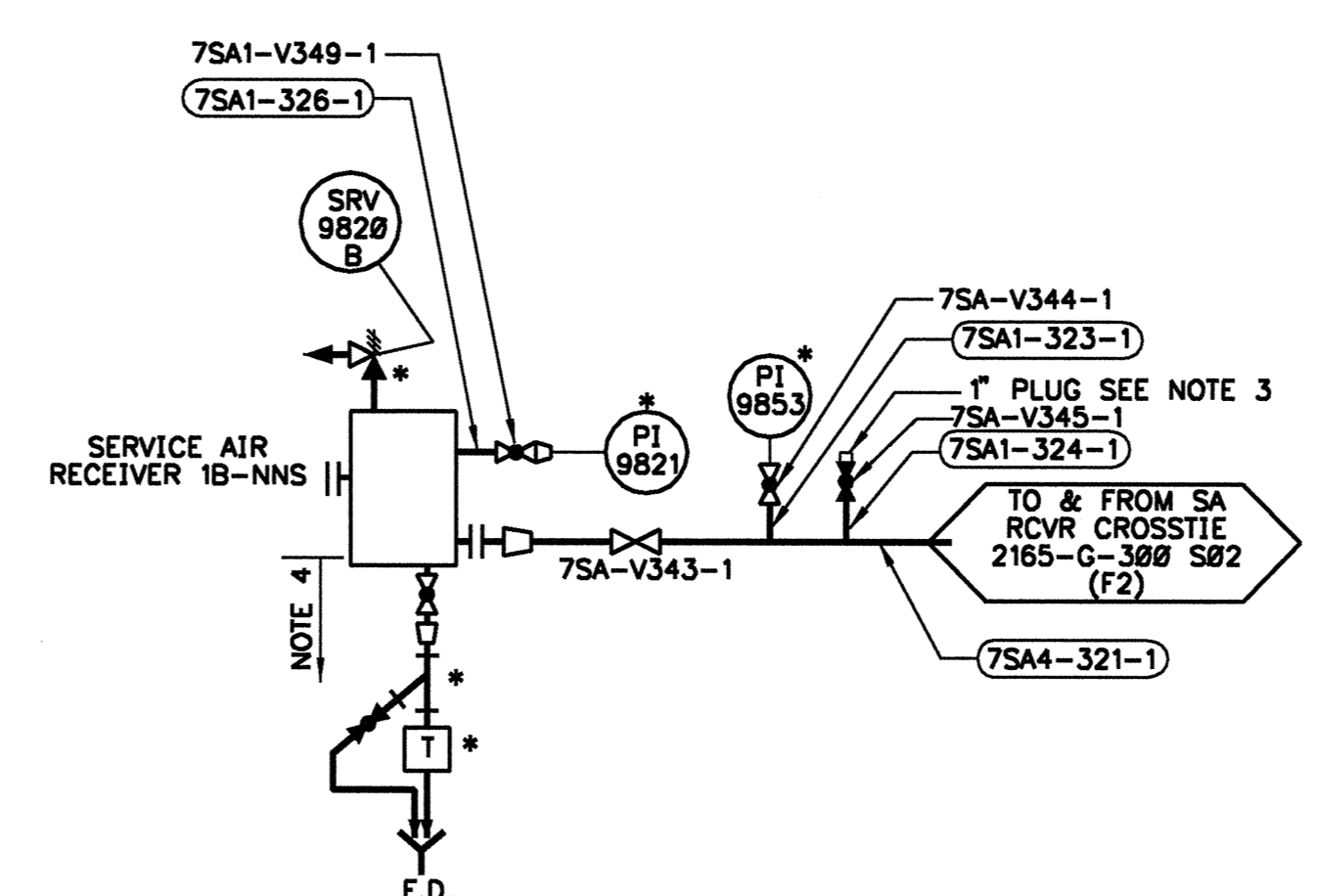
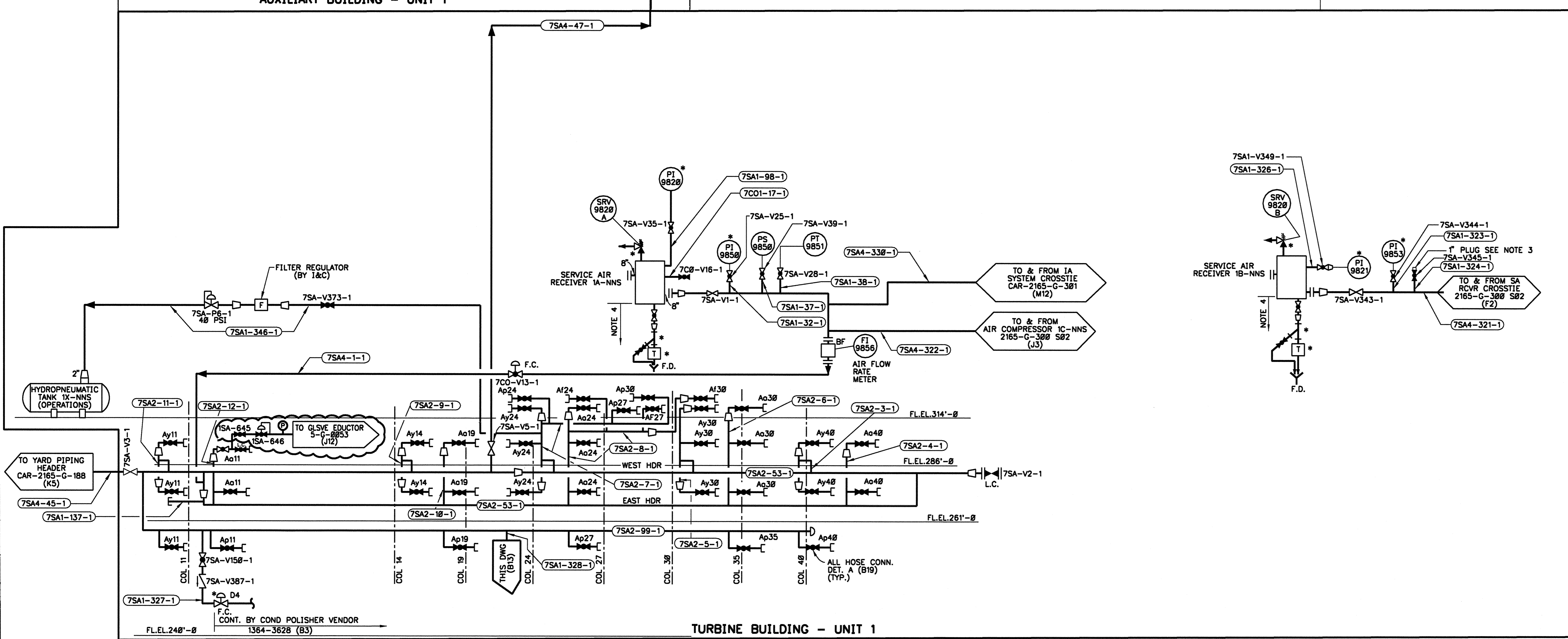
PLANT: HARRIS NUCLEAR PROJECT - UNIT 1 SCALE: NONE
TITLE: FLOW DIAGRAM PRIMARY & DEMINERALIZER WATER SYSTEMS REACTOR AUXILIARY BUILDING UNIT 1 DWG NO: CAR-2165 G-0299

CAR-2165
G-300

CONTAINMENT BUILDING
UNIT 1

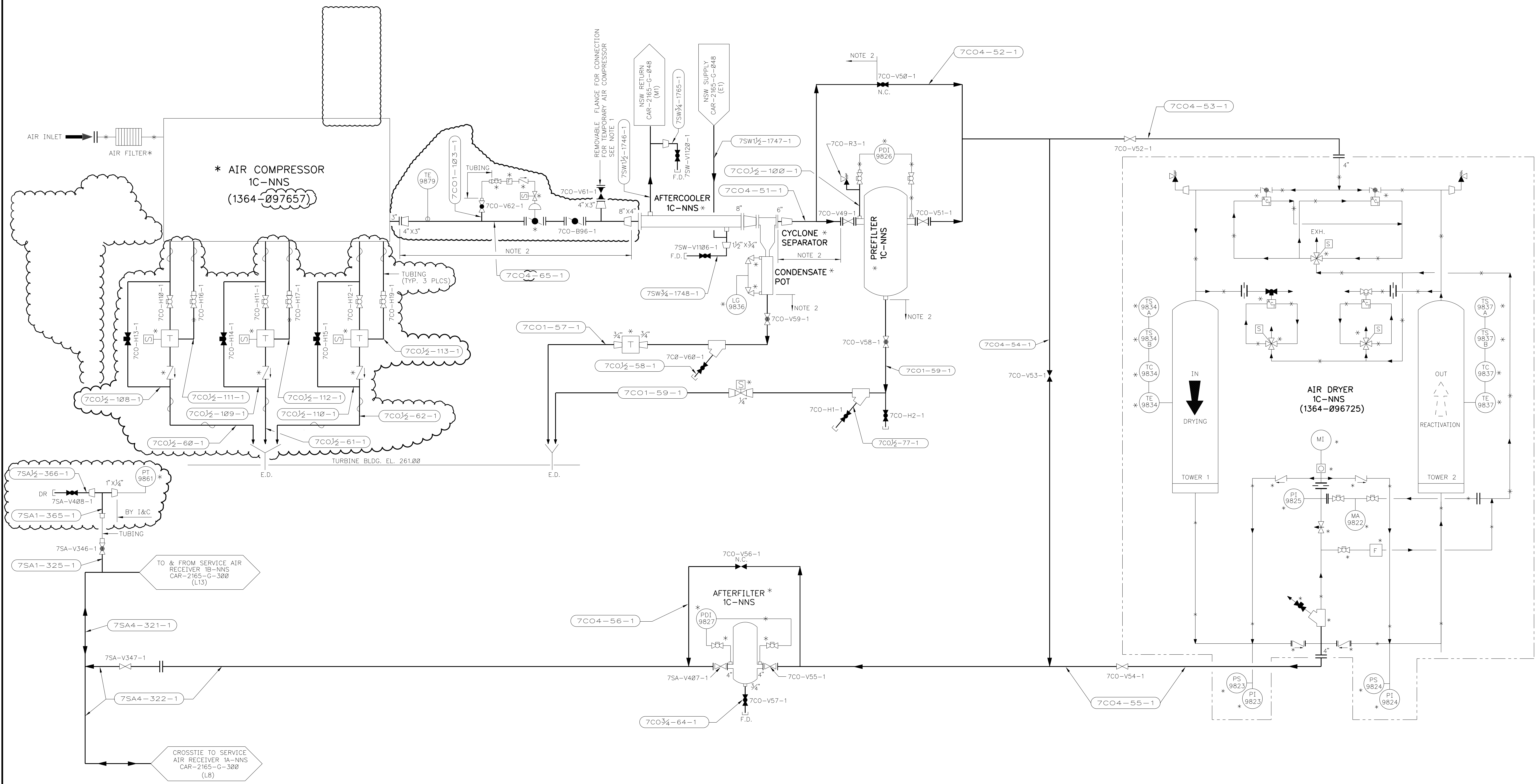


- NOTES:
- THIS DRAWING SUPERSEDES DRAWING CAR-2165-G-859
 - DURING CONSTRUCTION THE TYPICAL SERVICE AIR OUTLET CONNECTION MAY BE REPLACED BY EITHER A MAINFOLD STATION OR CAP. THE VALVE AND FITTING SHALL BE INSTALLED WHEN CONSTRUCTION USE IS NO LONGER REQUIRED.
 - A TEMPORARY AIR COMPRESSOR UNLOADER MAY BE CONNECTED AT 7SA-V345-1 IF THE CRITERIA IN DDD-133 FOR A TEMPORARY AIR COMPRESSOR IS FOLLOWED.
 - MOISTURE TRAP ASSEMBLY REPLACED WITH STAINLESS STEEL PIPING. CARBON STEEL COMPONENTS REMAIN.
- FOR ADDITIONAL NOTES AND REFERENCE DRAWINGS SEE 5-G-188 & 5-G-841.



22	INCORPORATED: EC# 78527 (M2,M3)	ELECTRONICALLY SIGNED			
21	INCORPORATED: EC# 65195 (E6)	ELECTRONICALLY SIGNED			
20	INCORPORATED: EC# 65194 (E3)	ELECTRONICALLY SIGNED			
19	7/3/88 INCORPORATED: ESR 99-00145 (11-14,18-112,11-16,17-113,141-42, K7-K13,11-15,17-111,M1,M7-M18)	ARM RPP DLS			
18	5/31/88 THIS DRAWING HAS BEEN ELECTRONICALLY REPRODUCED WITH DESIGN CHANGE INCORPORATED: ESR 00-00013 (M7,M8)	ARM RPP DLS			
REV	DATE	DESCRIPTION	DWN	CHK	APPRD
THIS DRAWING HAS BEEN PRODUCED AND IS CONTROLLED ON THE HD CAD/E SYSTEM. ANY REVISIONS TO THIS DOCUMENT SHOULD BE DONE USING THE CAD/E SYSTEM TO ASSURE PROPER CONTROL OF THE ELECTRONIC DRAWING SOURCE.					
NUCLEAR SAFETY RELATED (0-1 LIST)					
YES <input type="checkbox"/> NO <input type="checkbox"/> PARTIAL <input type="checkbox"/> F.P.-0 <input type="checkbox"/> R.W.-0 <input type="checkbox"/>					
CAROLINA POWER & LIGHT COMPANY NUCLEAR ENGINEERING DEPARTMENT - RALEIGH, N.C.				CP&L	
PLANT: HARRIS NUCLEAR PROJECT - UNIT 1				SCALE: NONE	
TITLE: FLOW DIAGRAM SERVICE AIR SYSTEM				CAR-2165-G-300	

CAR-2165
G-0300S02



NOTES:

1. A TEMPORARY AIR COMPRESSOR MAY BE CONNECTED AT 7CO-V51-1 IF THE CRITERIA IN DBO-133 FOR A TEMPORARY AIR COMPRESSOR IS FOLLOWED.
2. CARBON STEEL PIPING REPLACED WITH STAINLESS STEEL. CARBON STEEL COMPONENTS REMAIN.

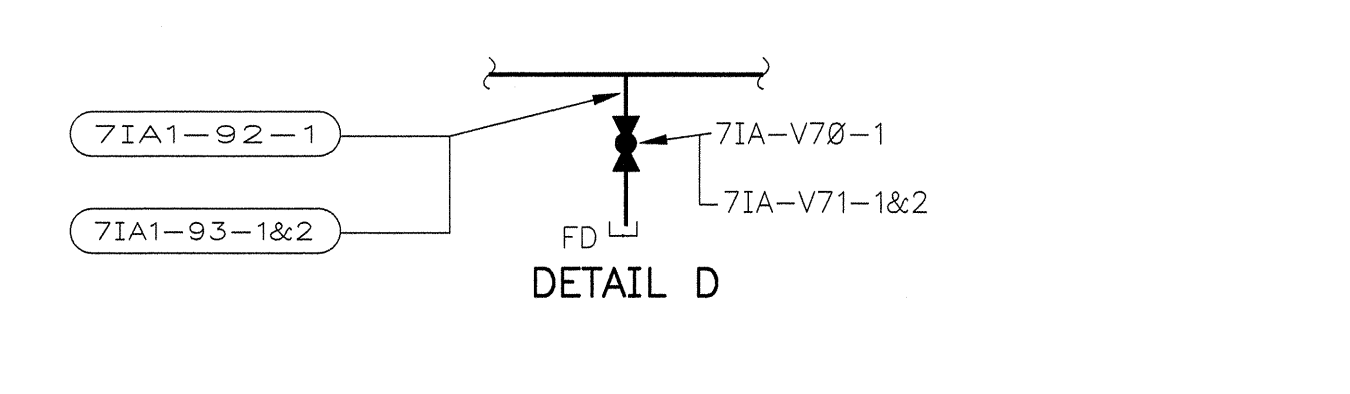
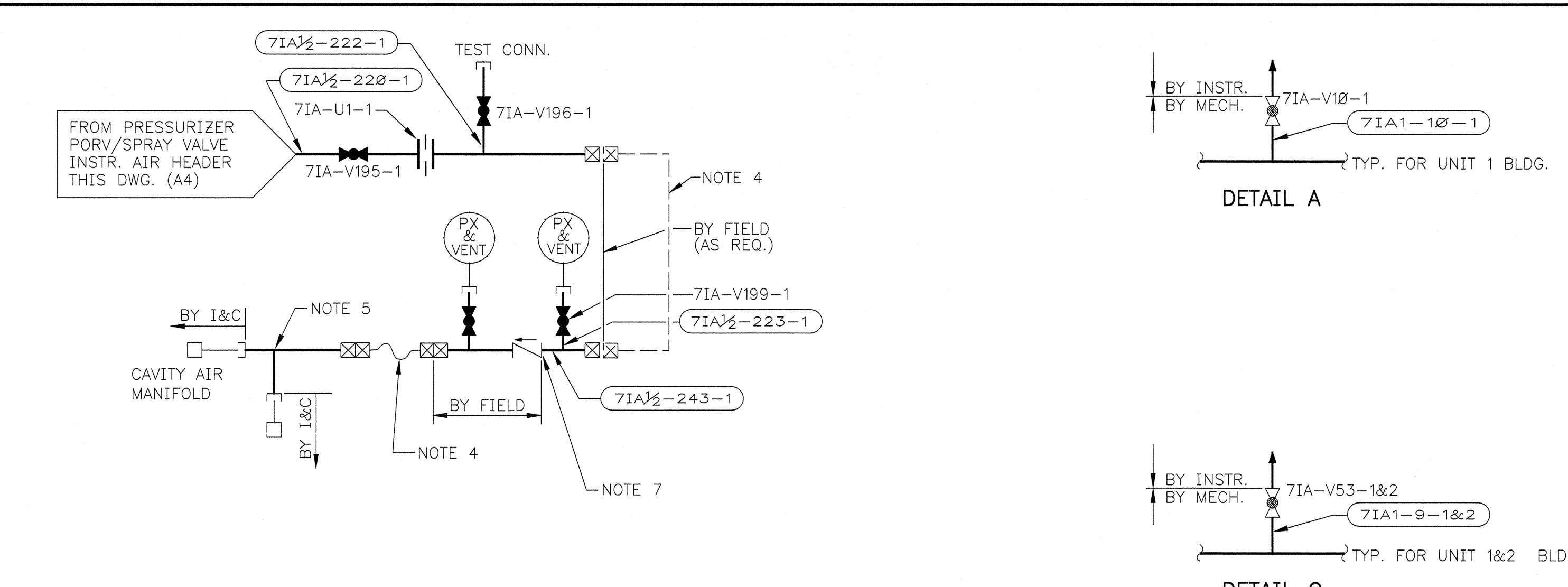
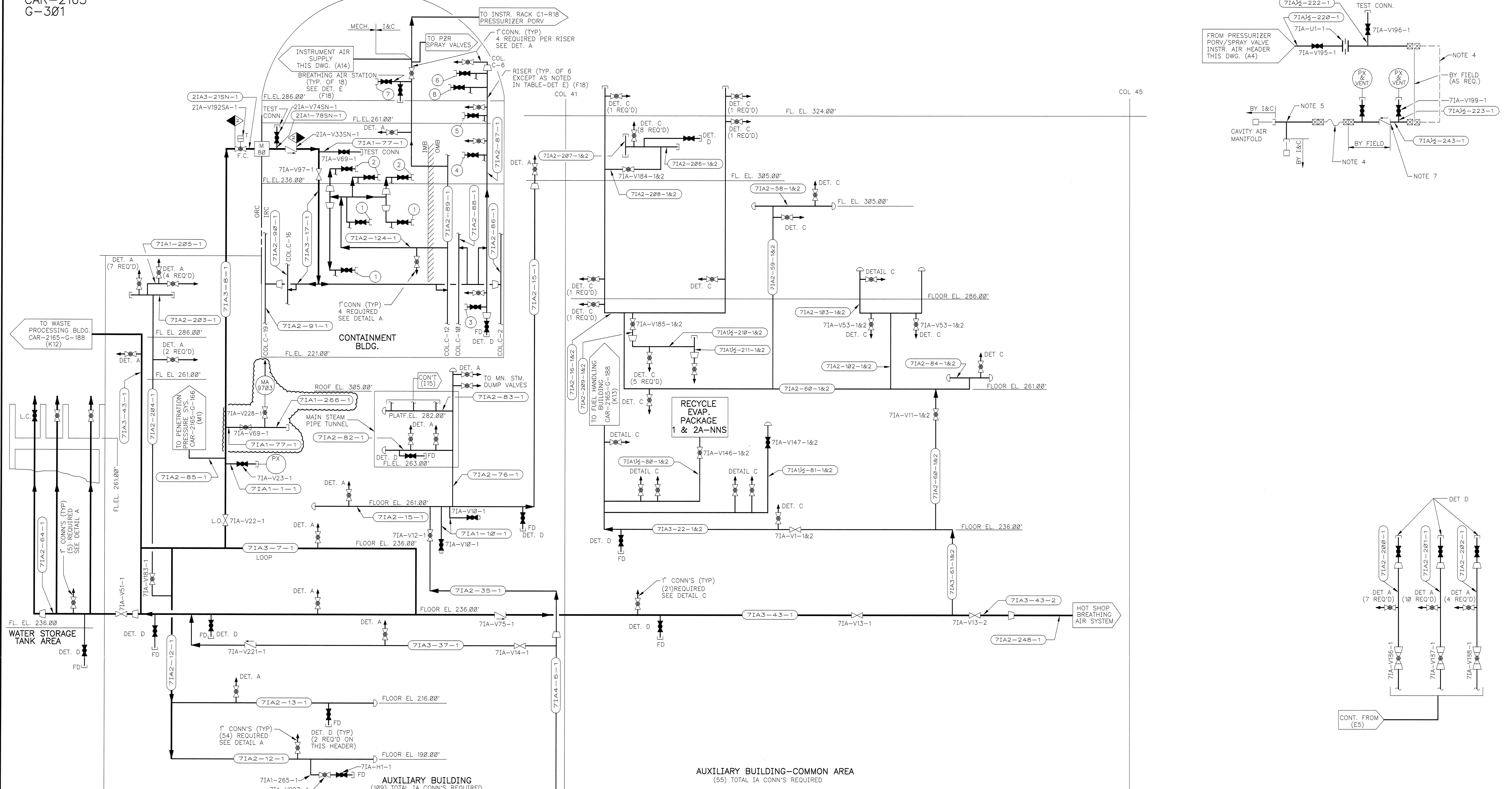
6	INCORPORATED: EC#89462 (B4,C1,D1,D5,D6,E1-E4,F2-F4)	ELECTRONICALLY SIGNED				
5	INCORPORATED: EC#77473 (B7,C7,D4-D7,E6-E8,F6-F8,J17-J19)	ELECTRONICALLY SIGNED				
4	7/3/08 INCORPORATED: ESR 99-00145 (B5,C3,C5,C6,C7,F3,G1,I1,I2)	ARM RPP N/A DLS				
3	3/5/98 INCORPORATED: ESR-9780148 (C4,D4,J17-J19)	LLS RPP DLS DLS				
2	7/15/93 INCORPORATED: PCR-6520 (B4,C4,D4)	GRS RPP GOW WAS				
1	12/14/92 INCORPORATED: PCR-1639FR5 (C7, E6,E9,E13,F9,F13,G10,G11,H6,I10,I12)	GRS LLS GOW MMP				
REV	DATE	DESCRIPTION	DNW	CHK	DPE	DRPE

THIS DRAWING HAS BEEN PRODUCED AND IS CONTROLLED ON THE NEP CAD/VE SYSTEM. ANY REVISIONS TO THIS DOCUMENT SHOULD BE DONE USING THE CAD/VE SYSTEM TO ASSURE PROPER CONTROL OF THE ELECTRONIC DRAWING DATABASE.

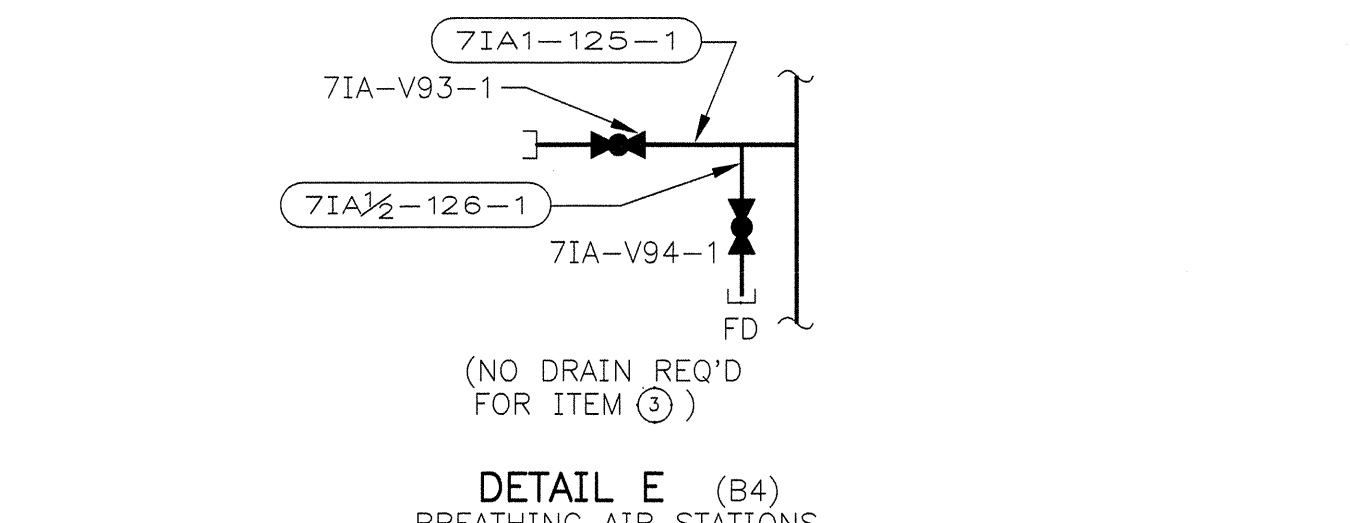
NUCLEAR SAFETY RELATED (Q-LIST)
 YES NO PARTIAL F.P.-Q R.W.-Q

DUKE ENERGY

PLANT: HARRIS NUCLEAR PROJECT - UNIT 1 SCALE: NONE
 TITLE: FLOW DIAGRAM SERVICE AIR SYSTEM DWG NO: CAR-2165-G-0300S02

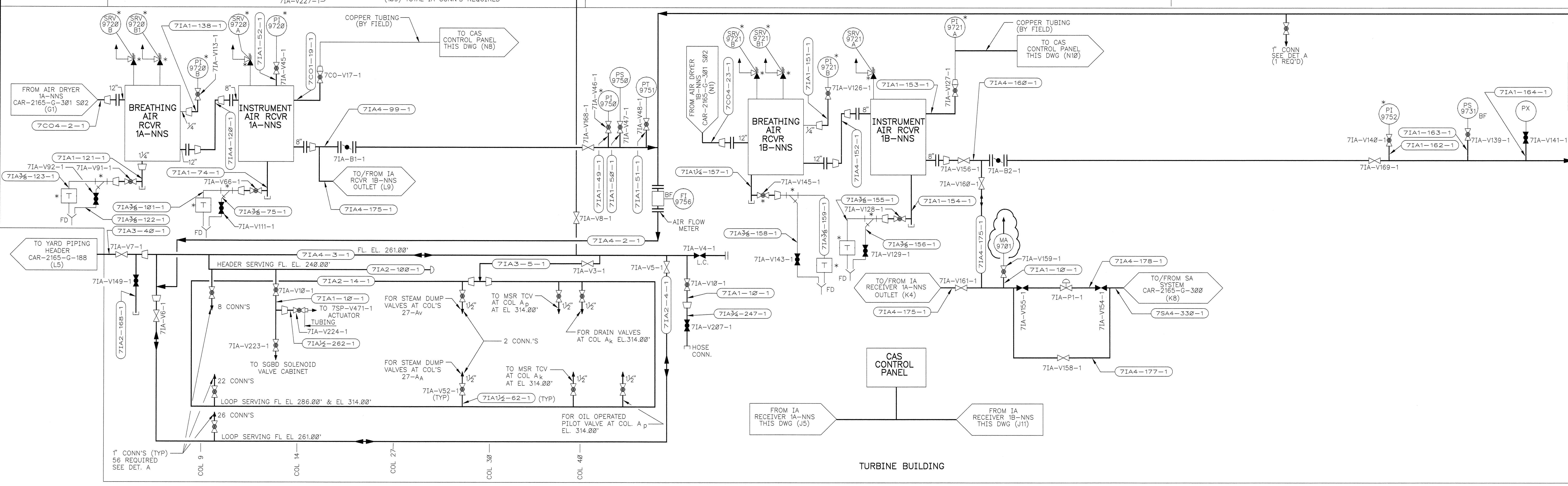


ITEM	AT FL. EL.	BREATHING AIR STATION LOCATION	TOTAL
①	221.00'	(1) AT EA STM. GEN. (FROM RISER AT COL C-12 ONLY)	3
②	236.00'	(1) AT EA STM. GEN. (FROM RISER AT COL C-12 ONLY)	3
③	221.00'	(1) AT EA COL. C-2, 6, 12, 16, 19	6
④	236.00'	(1) AT EA COL. C-2, 6, 12, 16, 19	6
⑤	261.00'	(1) AT EA COL. C-2, 6, 12, 16, 19	6
⑥	286.00'	(1) AT EA COL. C-2, 6, 12, 16, 19	6
⑦	286.00'	(1) AT PRESSURIZER (FROM RISER AT COL C-12 ONLY)	1
⑧	286.00'	(1) AT EA STM. GEN. (FROM RISER AT COL C-6, 12, 16 ONLY)	3

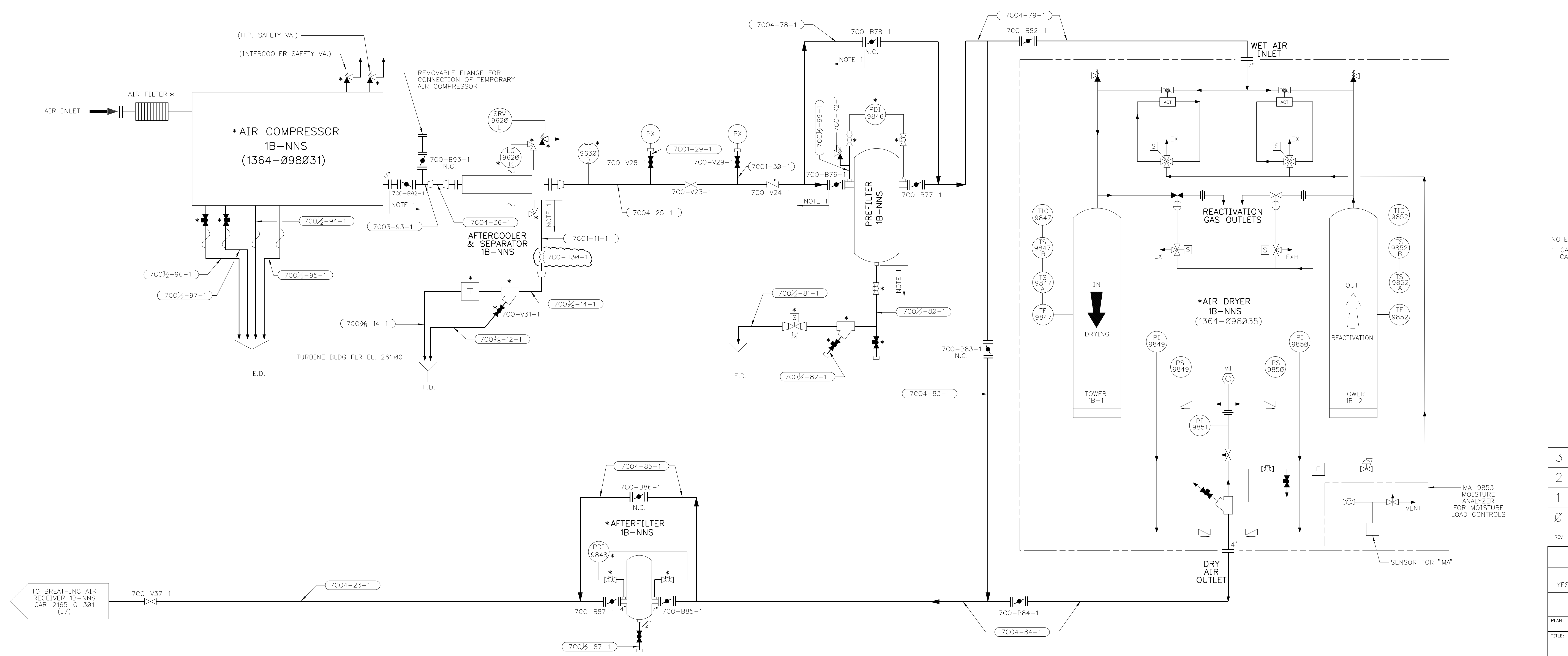
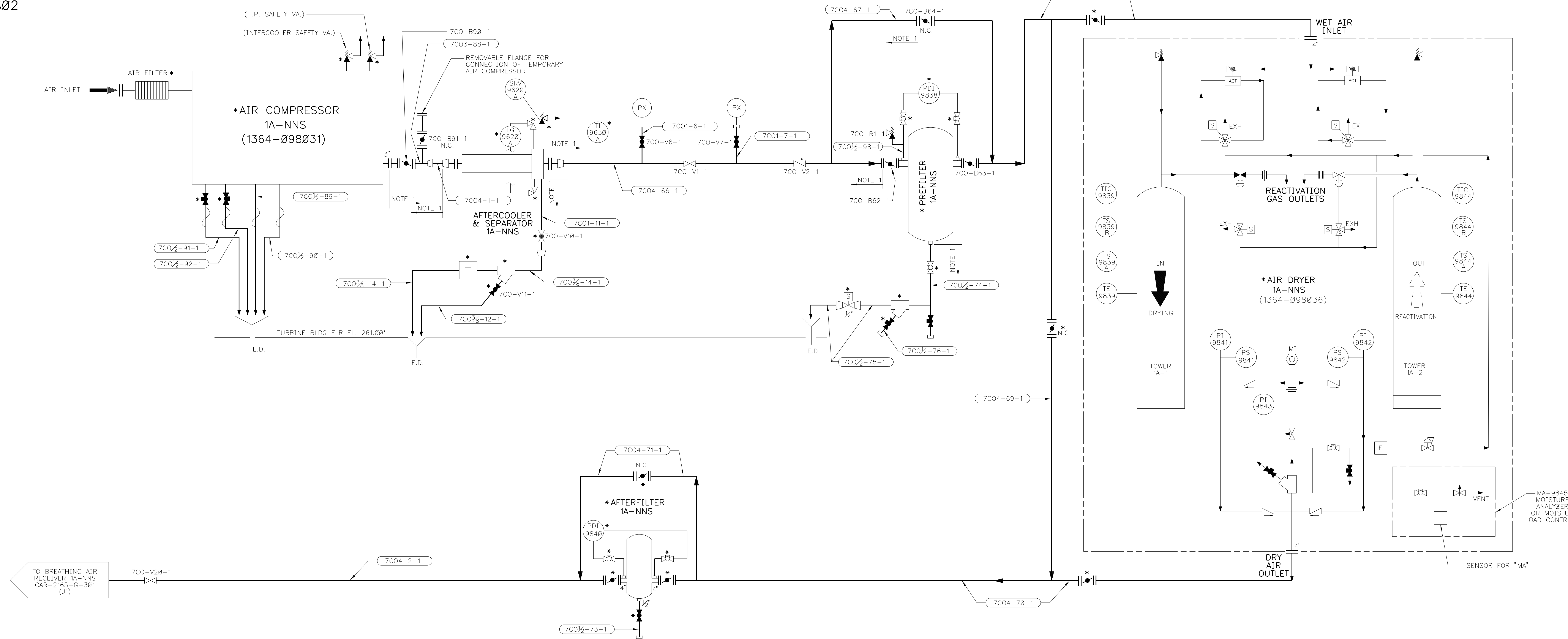


FOR NOTES AND REFERENCE DRAWINGS SEE G-188 & G-041
THIS DRAWING SUPERSEDES DRAWING CAR-2165-G-060

- NOTES:**
- THIS FLOW DIAGRAM IS SCHEMATIC AND IS NOT INTENDED TO REPRESENT THE ACTUAL SEQUENCE OF CONNECTIONS, WHICH IS SHOWN ON THE APPROPRIATE PIPING DRAWINGS.
 - * SUPPLIED BY VENDOR
 - BREATHING AIR SYSTEM HOSE CONNECTIONS ARE TO BE SCHRADER MODEL 3512, 3/4" NPT FEMALE COUPLER.
 - STEEL REINFORCED HIGH PRESSURE HOSES TO BE PROVIDED BY MAINTENANCE, 1/2" SIZE.
 - TEE VALVES AND TUBING AT ELEV. 260.2' TO BE REMOVABLE.
 - THREADED END TO BE CAPPED WHEN FIELD PIPING IS REMOVED.



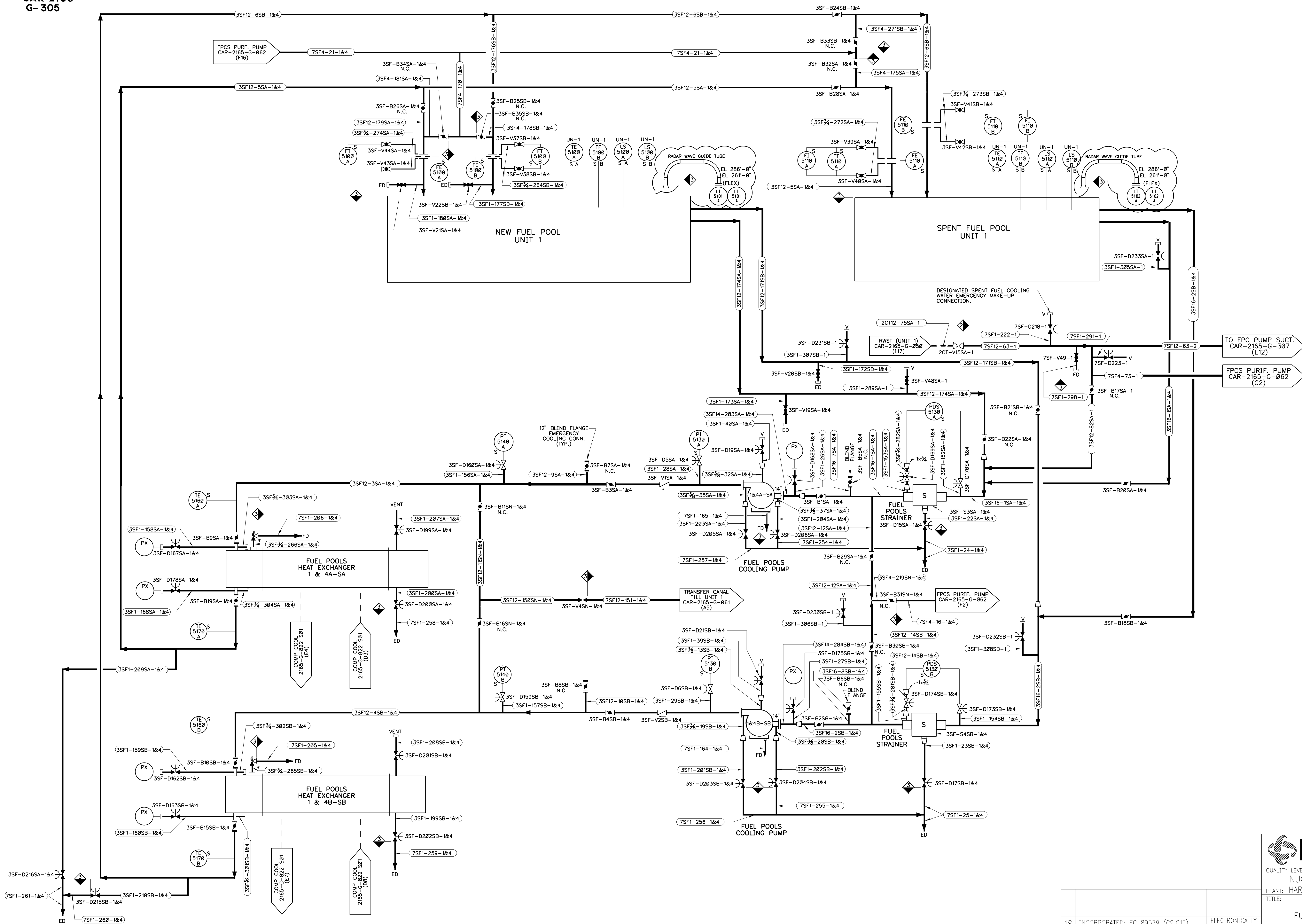
37	INCORPORATED: EC# 83992 (E3,L10)	ELECTRONICALLY SIGNED			
36	INCORPORATED: EC# 72502 (I3,I4)	ELECTRONICALLY SIGNED			
35	INCORPORATED: EC# 48426 (E8)	ELECTRONICALLY SIGNED			
34	INCORPORATED: ESR 99-20145 (J1,J3-J5,J7,J9-J11,K3-K5,K7,K9-K14,L3-L5,L10,L11-L14,M9,M12,M13,N8-N11)	ARM RPP DLS			
33	INCORPORATED: ESR-2002013 (L7,L8)	ARM WFL DLS			
32	INCORPORATED: ESR-9500153 (W3)	ARM RPP DLS			
REV	DATE	DESCRIPTION	OWN	CHK	OPPE
THIS DRAWING HAS BEEN PRODUCED AND IS CONTROLLED ON THE NED CAD/E SYSTEM. ANY REVISIONS TO THIS DOCUMENT SHOULD BE DONE USING THE CAD/E SYSTEM TO ASSURE PROPER CONTROL OF THE ELECTRONIC DRAWING DATABASE.					
NUCLEAR SAFETY RELATED (Q-LIST)					
YES <input type="checkbox"/> NO <input type="checkbox"/> PARTIAL <input type="checkbox"/> F.P.-Q <input type="checkbox"/> R.W.-Q <input type="checkbox"/>					
CAROLINA POWER & LIGHT COMPANY NUCLEAR ENGINEERING DEPARTMENT - RALEIGH, N.C.					
PLANT: HARRIS NUCLEAR PROJECT - UNIT 1					
SCALE: NONE					
TITLE: FLOW DIAGRAM INSTRUMENT AIR SYSTEM					
DWO NO. CAR-2165 G-301					



NOTES:
1. CARBON STEEL PIPING REPLACED WITH STAINLESS STEEL. CARBON STEEL COMPONENTS REMAIN.

3	INCORPORATED EC# 293026 (J6)	ELECTRONICALLY SIGNED			
2	INCORPORATED EC# 77634 (A10,C5,C6,C9,C10)	ELECTRONICALLY SIGNED			
1	INCORPORATED EC# 77635 (H10,I5,I9,I10,I18)	ELECTRONICALLY SIGNED			
0	7/3/88 NEW DRAWING, ISSUED PER ESR 98-00145	ARM RPP DLS			
REV	DATE	DESCRIPTION	DWN	CHK	APPROV
THIS DRAWING HAS BEEN PRODUCED AND IS CONTROLLED ON THE MED CAD/E SYSTEM AND REFERRED TO THIS DOCUMENT SHOULD BE DONE USING THE CAD/E SYSTEM TO ASSURE PROPER CONTROL OF THE ELECTRONIC DRAWING DATABASE.					
NUCLEAR SAFETY RELATED (O-LIST)					
YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> PARTIAL <input type="checkbox"/> F.P.-O <input type="checkbox"/> R.W.-O <input type="checkbox"/>					
DUKE ENERGY NUCLEAR ENGINEERING DEPARTMENT - RALEIGH, N.C.					
PLANT: HARRIS NUCLEAR PROJECT - UNIT 1 SCALE: NONE					
TITLE: SIMPLIFIED FLOW DIAGRAM INSTRUMENT AIR SYSTEM				DWS NO: CAR-2165-G-0301 S02	

CAR-2165
G-305



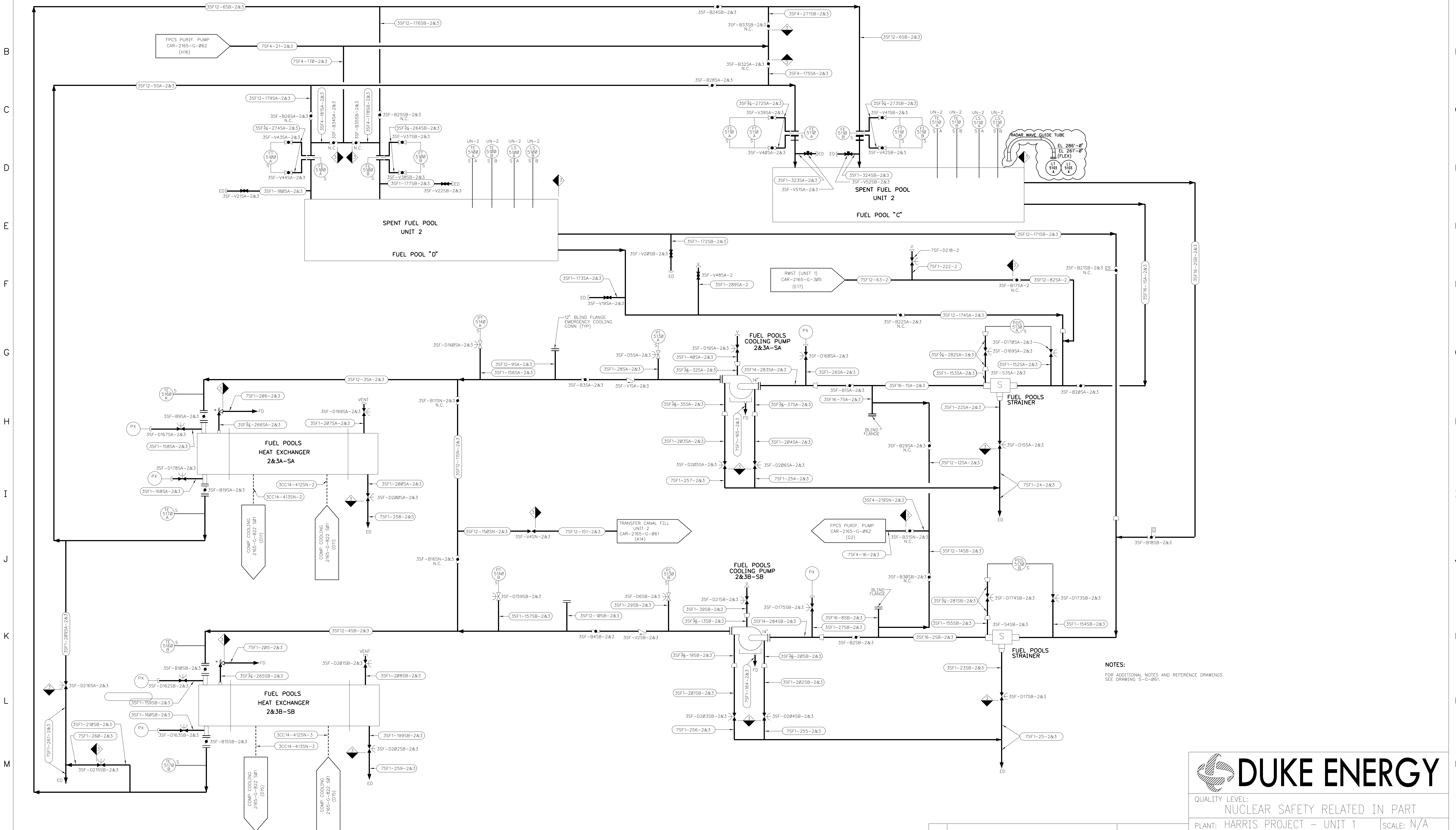
NOTE:
FOR NOTES AND REFERENCE DWGS.
SEE DWG. CAR-2165-G-061



QUALITY LEVEL:
NUCLEAR SAFETY RELATED IN PART
PLANT: HARRIS PROJECT - UNIT 1 SCALE: N/A
TITLE:

FLOW DIAGRAM
FUEL POOLS COOLING SYSTEM
UNIT 1
PLANT DWG. NO: 5-G-0305

18	INCORPORATED: EC 89579 (C9,C15)	ELECTRONICALLY SIGNED
REV	DESCRIPTION	APPROVED



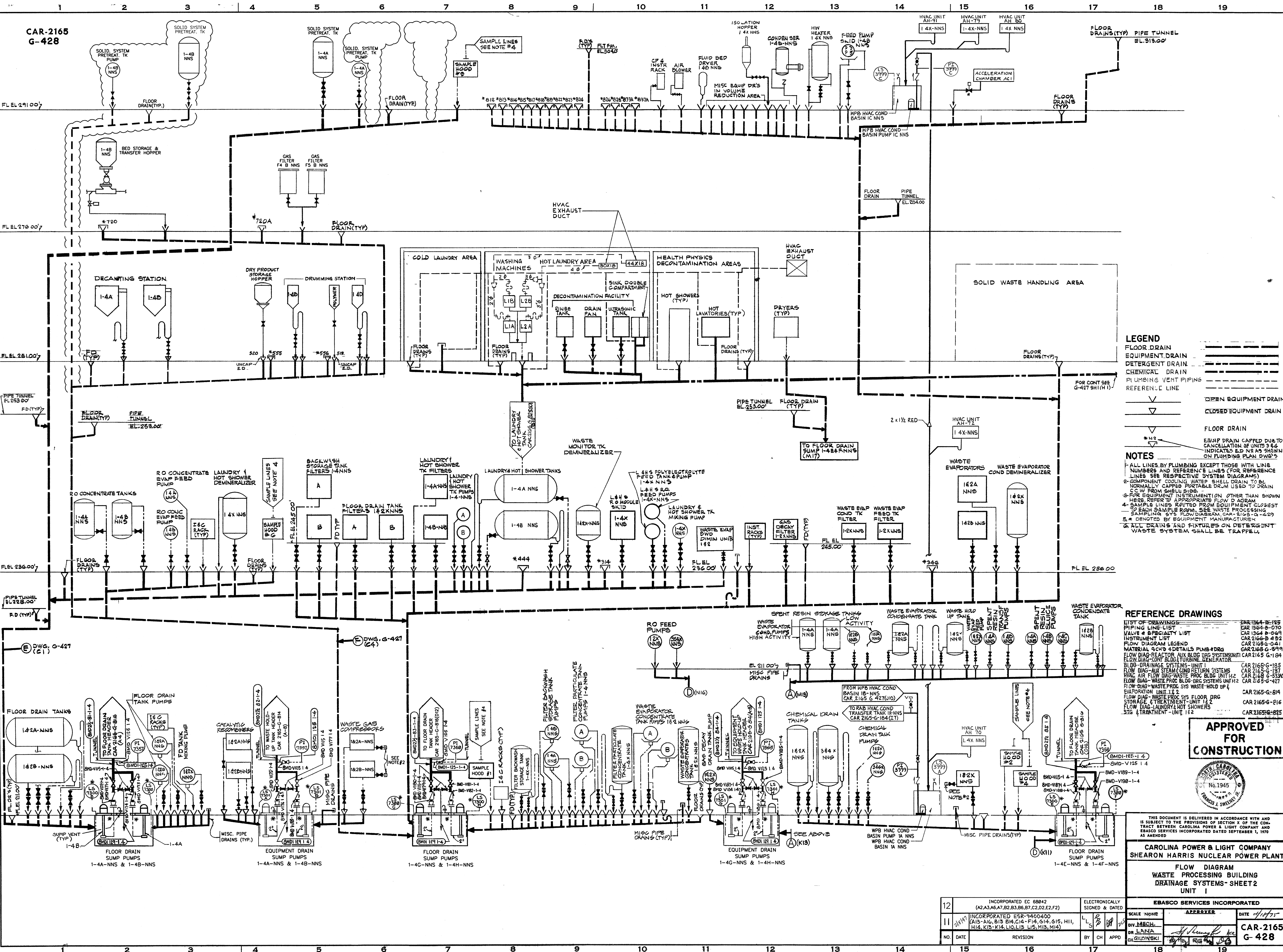
NOTES:
FOR ADDITIONAL NOTES AND REFERENCE DRAWINGS
SEE DRAWING 5-C-061.



QUALITY LEVEL:
NUCLEAR SAFETY RELATED IN PART
PLANT: HARRIS PROJECT - UNIT 1 SCALE: N/A
TITLE: FLOW DIAGRAM
FUEL POOL COOLING SYSTEM
UNIT 2
PLANT DWG. NO: 5-G-0307

12	INCORPORATED: EC# 89579	ELECTRONICALLY SIGNED
REV	DESCRIPTION	APPROVED

CAR-2165
G-428



LEGEND

FLOOR DRAIN
EQUIPMENT DRAIN
DETERGENT DRAIN
CHEMICAL DRAIN
PLUMBING VENT PIPING
REFERENCE LINE

OPEN EQUIPMENT DRAIN
CLOSED EQUIPMENT DRAIN
FLOOR DRAIN
EQUIP DRAIN CAPPED DUE TO CANCELLATION OF UNITS 3 & 4 INDICATED E.D. NO. AS SHOWN ON PLUMBING PLAN DWG'S

NOTES

1- ALL LINES BY PLUMBING EXCEPT THOSE WITH LINE NUMBERS AND REFERENCE LINES (FOR REFERENCE LINES SEE RESPECTIVE SYSTEM DIAGRAMS)
2- COMPONENT COOLING WATER SHELL DRAIN TO BE NORMALLY CAPPED PORTABLE DRAIN USED TO DRAIN C.C.W. FROM SHELL SIBS
3- FOR EQUIPMENT INSTRUMENTATION OTHER THAN SHOWN HERE REFER TO APPROPRIATE FLOW DIAGRAM
4- SAMPLE LINES RUPUTED FROM EQUIPMENT CLOSEST TO EACH SAMPLE ROOM. SEE WASTE PROCESSING MATERIAL S.C.W.D. DETAILS PLUMB & DRG CAR 2165-G-819
5- * DENOTES BY EQUIPMENT MANUFACTURER
6- ALL DRAINAGE AND FILTERS ON DETERGENT WASTE SYSTEM SHALL BE TRAPPED

REFERENCE DRAWINGS

LIST OF DRAWINGS
CAR 1264-B-125
CAR 1264-B-070
CAR 1264-B-069
CAR 2165-B-432
CAR 2165-G-041
CAR 2165-G-819
CAR 2165-G-104
CAR 2165-G-185
CAR 2165-G-187
CAR 2165-G-532
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CAR 2165-G-597
CAR 2165-G-598
CAR 2165-G-599
CAR 2165-G-600

APPROVED FOR CONSTRUCTION

NO. 1945

THIS DOCUMENT IS DELIVERED IN ACCORDANCE WITH AND IS SUBJECT TO THE PROVISIONS OF SECTION X OF THE CONTRACT BETWEEN CAROLINA POWER & LIGHT COMPANY AND EBASCO SERVICES INCORPORATED DATED SEPTEMBER 1, 1979 AS AMENDED

CAROLINA POWER & LIGHT COMPANY
SHEARON HARRIS NUCLEAR POWER PLANT

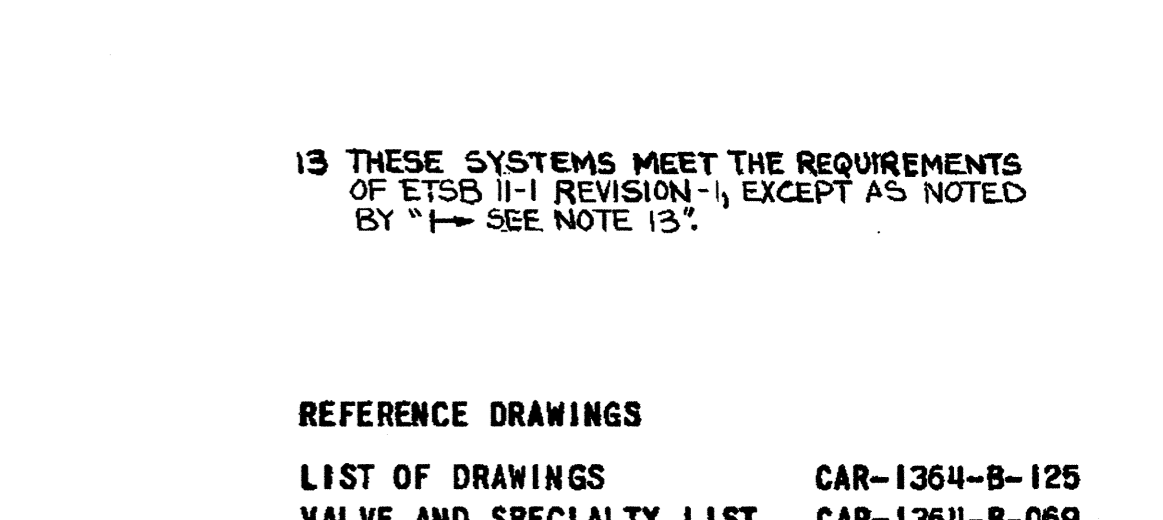
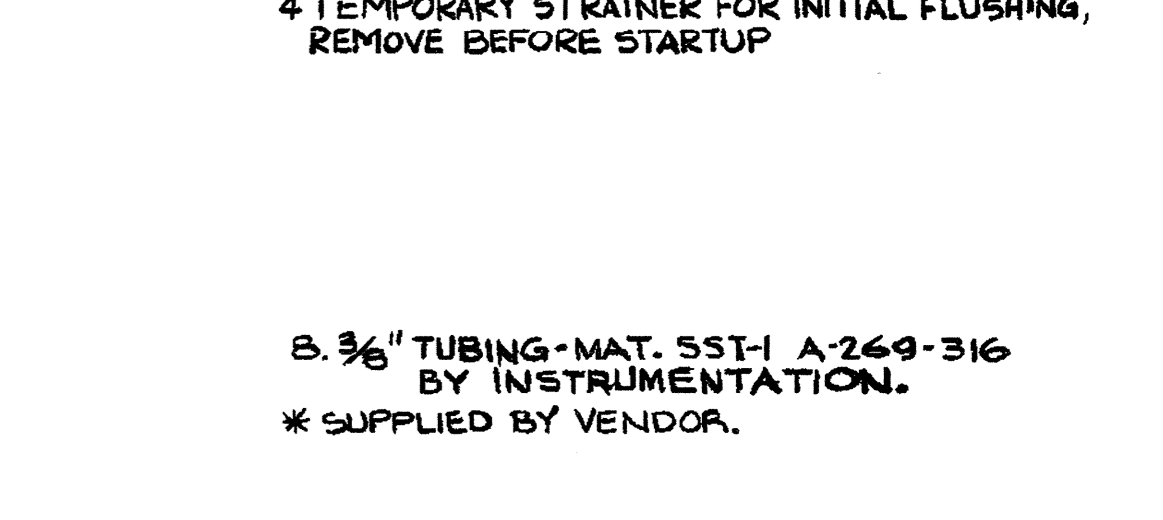
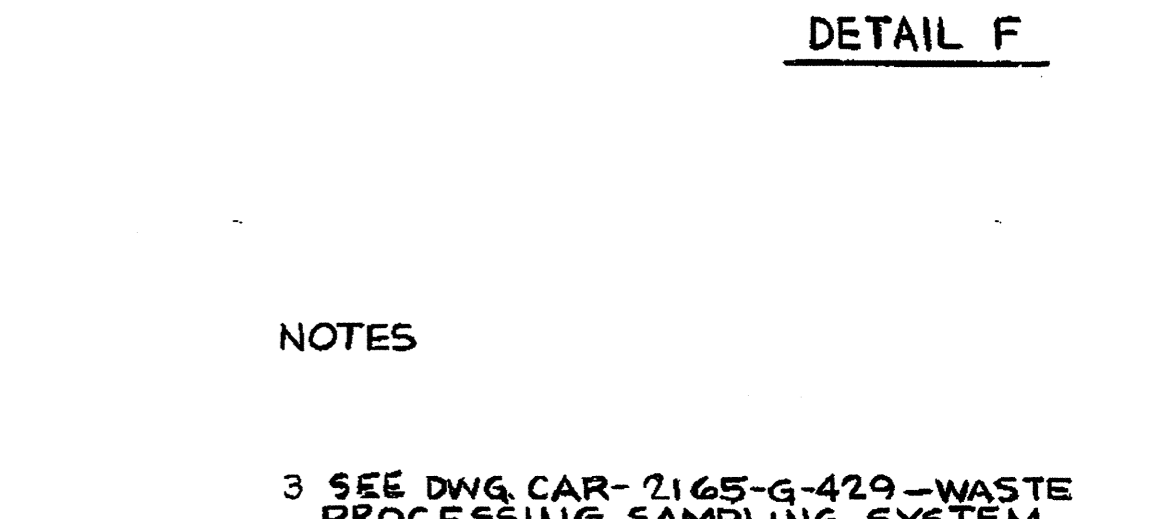
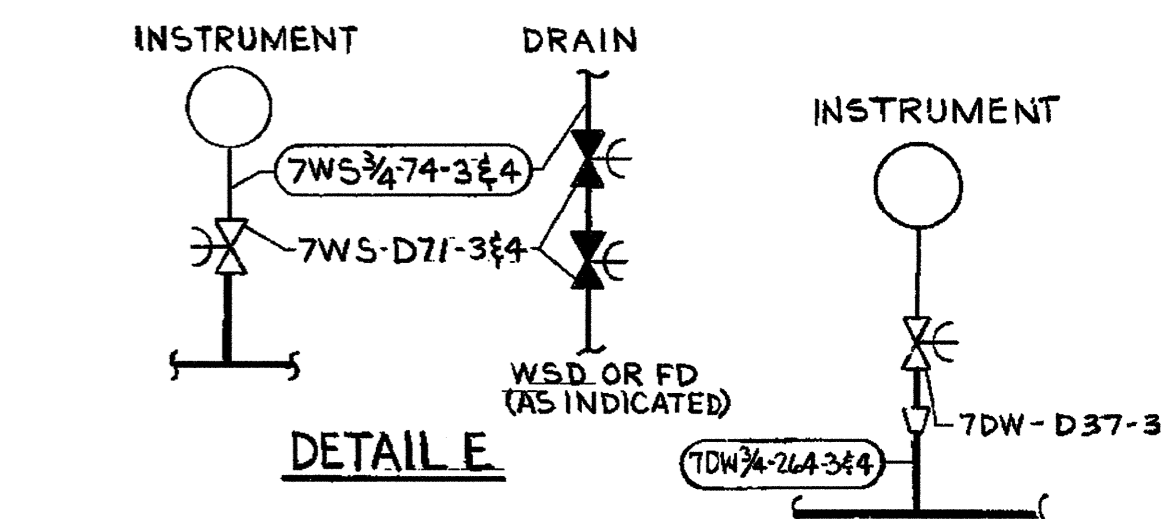
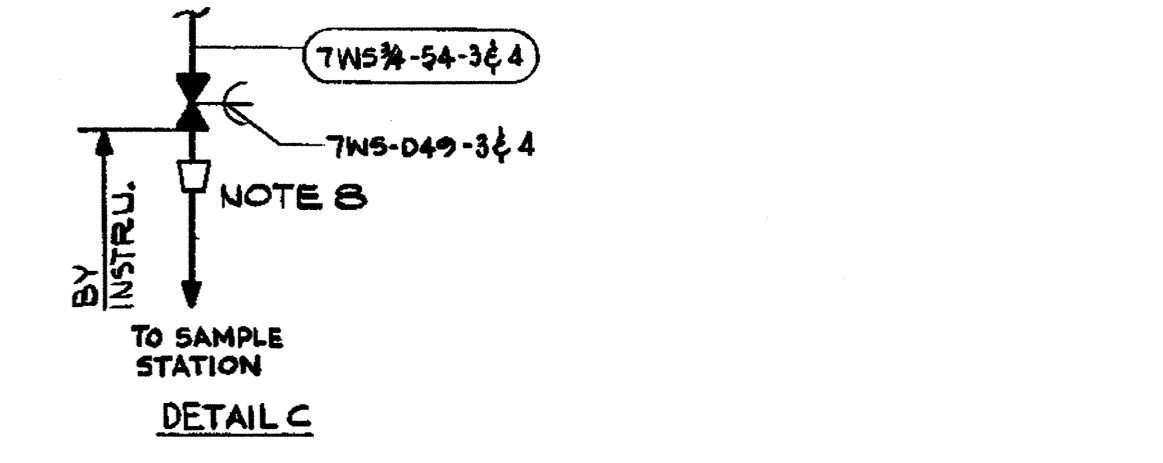
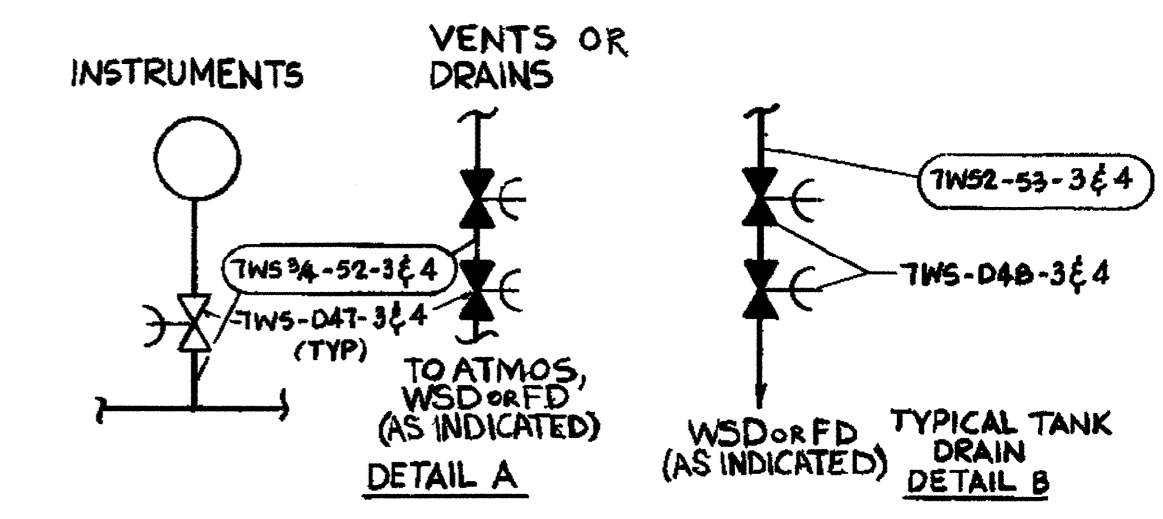
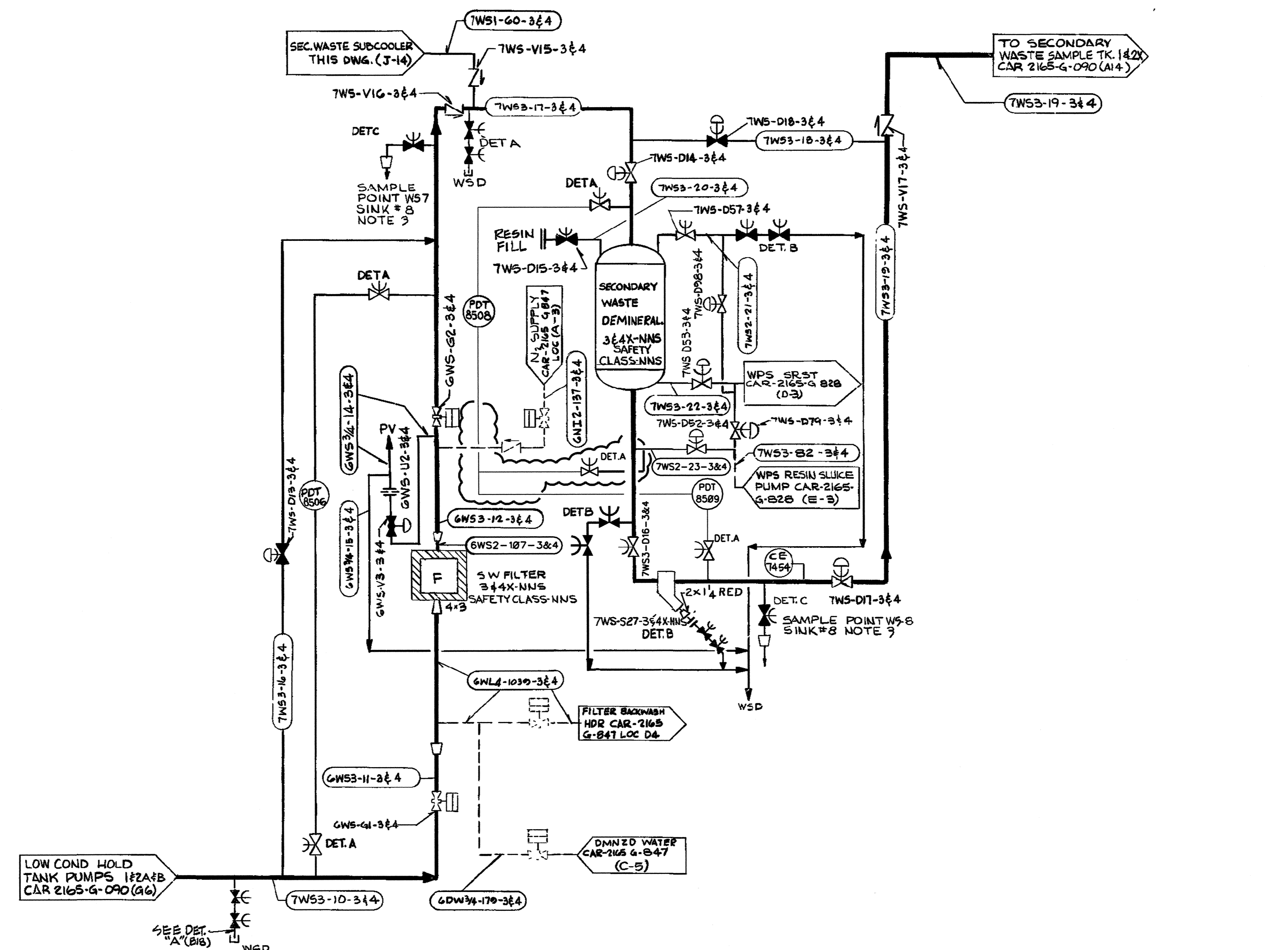
FLOW DIAGRAM
WASTE PROCESSING BUILDING
DRAINAGE SYSTEMS-SHEET 2
UNIT 1

12	INCORPORATED EC 68042 (A2,A3,A6,A7,B2,B3,B6,B7,C2,D2,E2,F2)	ELECTRONICALLY SIGNED & DATED	SCALE: NONE	DATE: 11/27/75
11	INCORPORATED ESR-9400400 (A13-A16, B13, B14, C14-F14, G14, H14, I14, K13-K16, L10, L13, M13, M14)	BY: CH APPD	DIV. MECH.	CAR-2165 G-428
NO.	DATE	REVISION	BY	CH APPD

EBASCO SERVICES INCORPORATED

SCALE: NONE
DATE: 11/27/75
DIV. MECH.
DR. LANA
CH. GILSONSKI

CAR-2165
G-480



NOTES

3 SEE DWG CAR-2165-G-429-WASTE PROCESSING SAMPLING SYSTEM

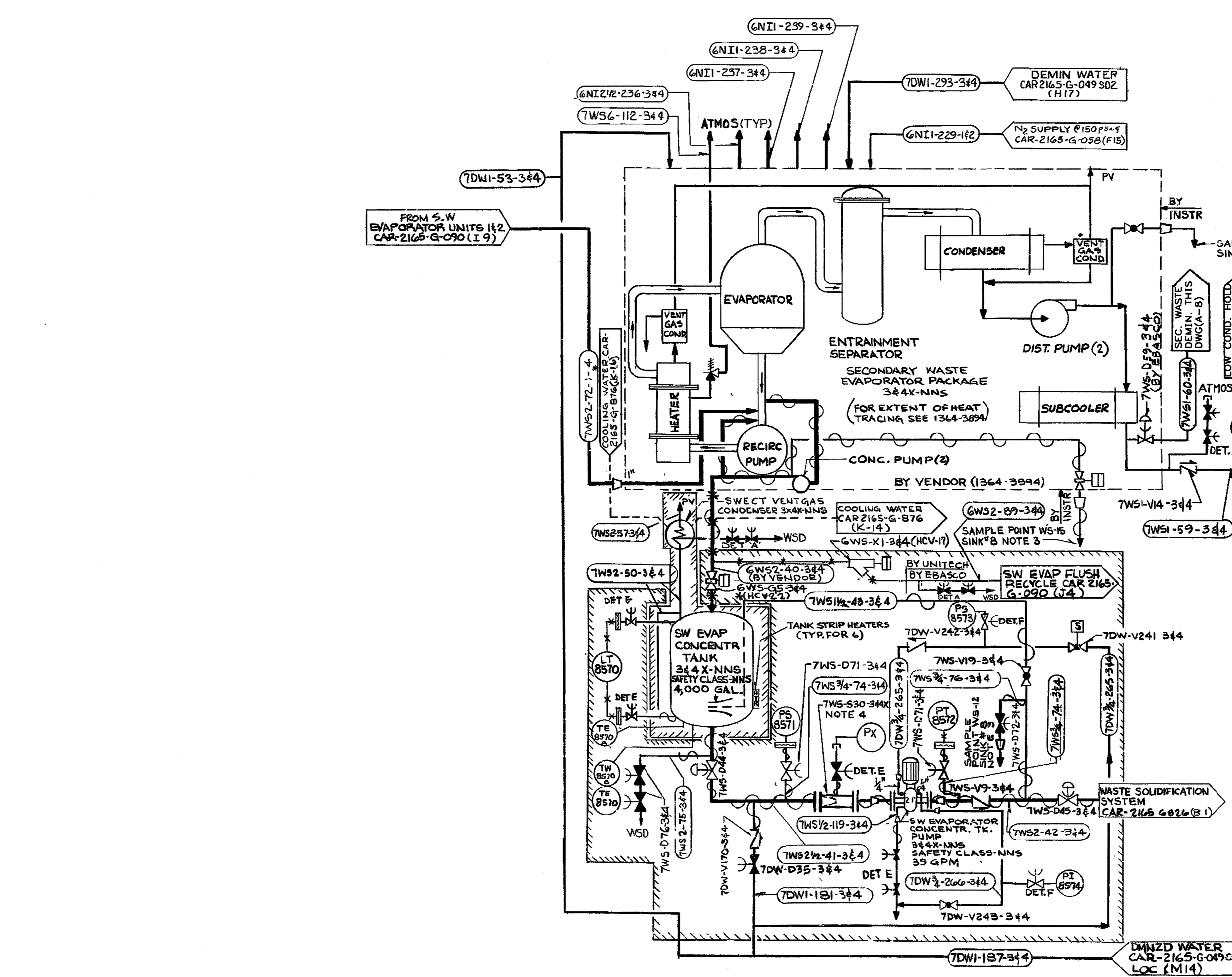
4 TEMPORARY STRAINER FOR INITIAL FLUSHING, REMOVE BEFORE STARTUP

8. 3/8" TUBING-MAT. SST-1 A-269-316 BY INSTRUMENTATION.
* SUPPLIED BY VENDOR.

13 THESE SYSTEMS MEET THE REQUIREMENTS OF ETSB 11-1 REVISION-1, EXCEPT AS NOTED BY "I" SEE NOTE 13.

REFERENCE DRAWINGS

LIST OF DRAWINGS CAR-1364-B-125
VALVE AND SPECIALTY LIST CAR-1364-B-059
PIPING LINE LIST CAR-1364-B-070
INSTRUMENT LIST CAR-2165-B-432
FLOW DIAGRAM LEGEND CAR-2165-G-041
SECONDARY WASTE TREATMENT SYSTEM UNIT 1 CAR-2165-G-090



**CAR-2165
G-480**

APPROVED FOR CONSTRUCTION

THIS DOCUMENT IS DELIVERED IN ACCORDANCE WITH AND IS SUBJECT TO THE PROVISIONS OF SECTION X OF THE CONTRACT BETWEEN CAROLINA POWER & LIGHT COMPANY AND EBASCO SERVICES INCORPORATED DATED SEPTEMBER 1, 1976, AS AMENDED.

**CAROLINA POWER & LIGHT COMPANY
SHEARON HARRIS NUCLEAR POWER PLANT**

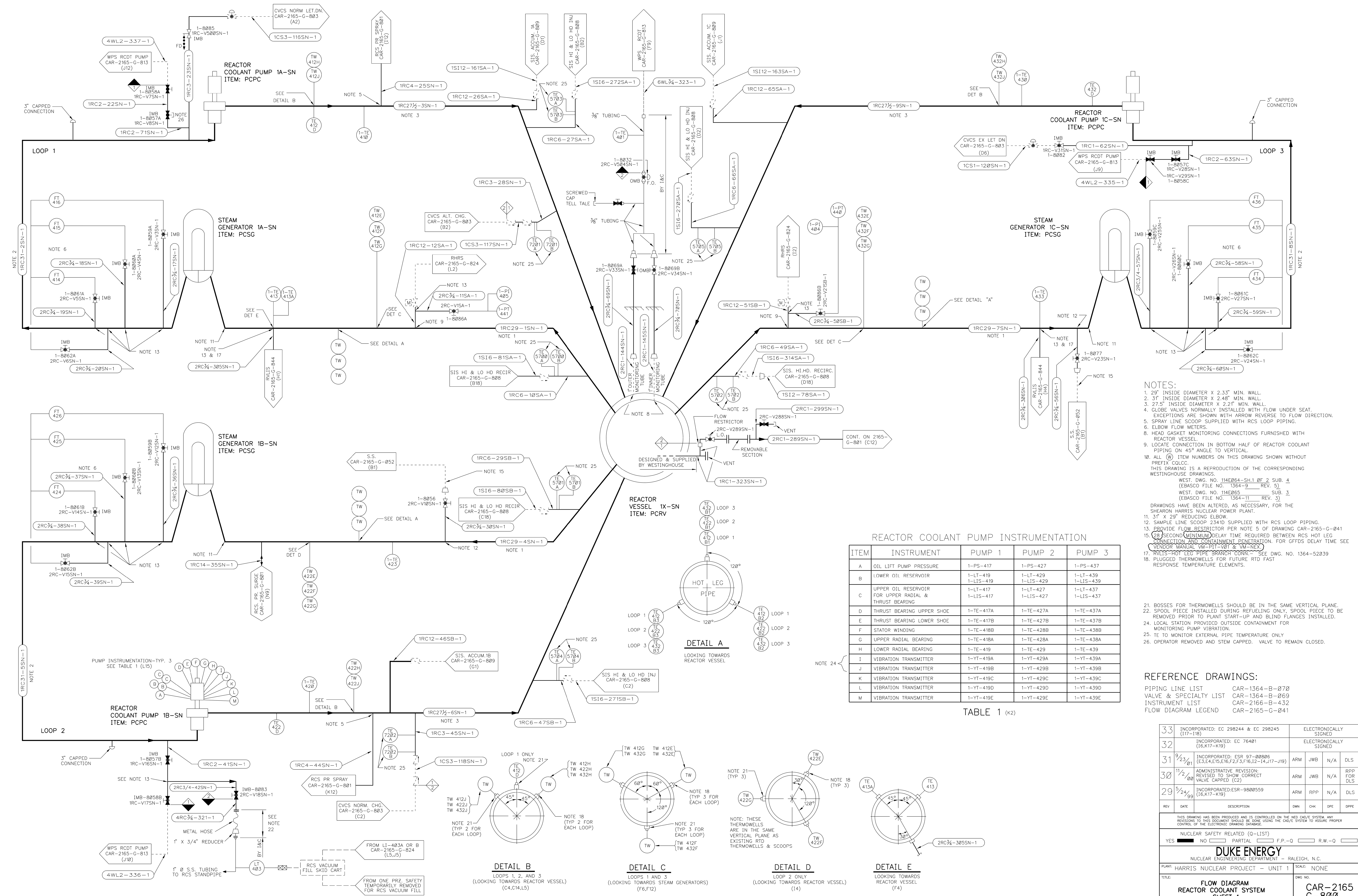
**FLOW DIAGRAM
SECONDARY WASTE TREATMENT SYSTEM
SHEET 2 - UNIT 1**

EBASCO SERVICES INCORPORATED

SCALE 1/4"	APPROVED	DATE 3-31-77
DR. MECH	ELECTRONICALLY SIGNED AND DATED	
DR. WORTHY	APPROVED	
CH. J. SULLIVAN	NO. 13	REVISION

CAR-2165
G-480

CAR-2165
G-800

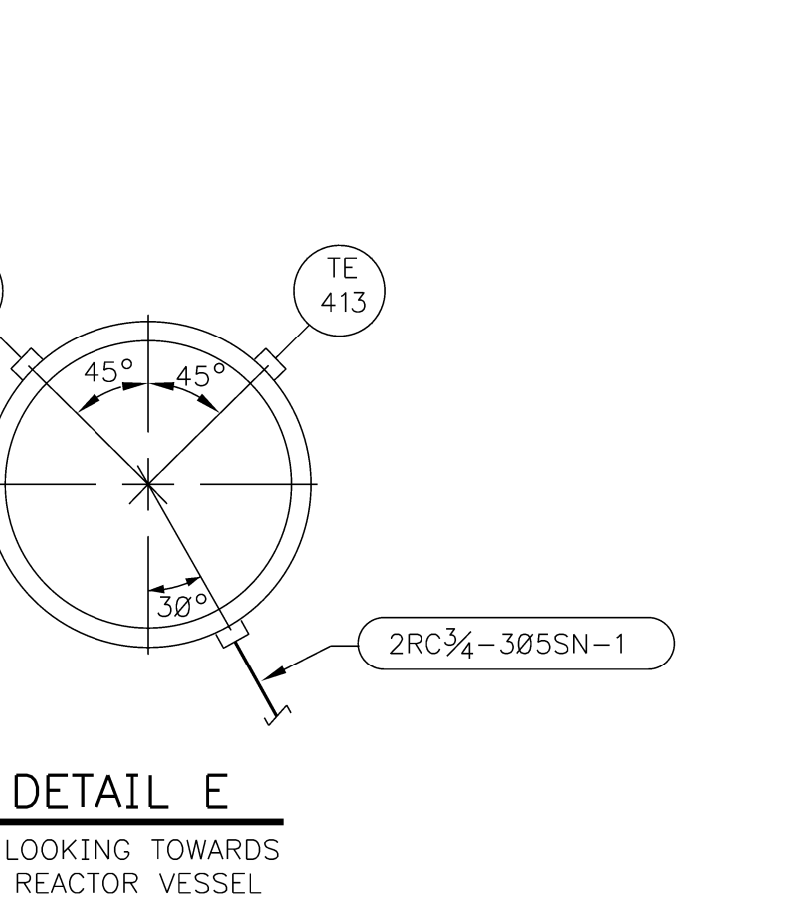
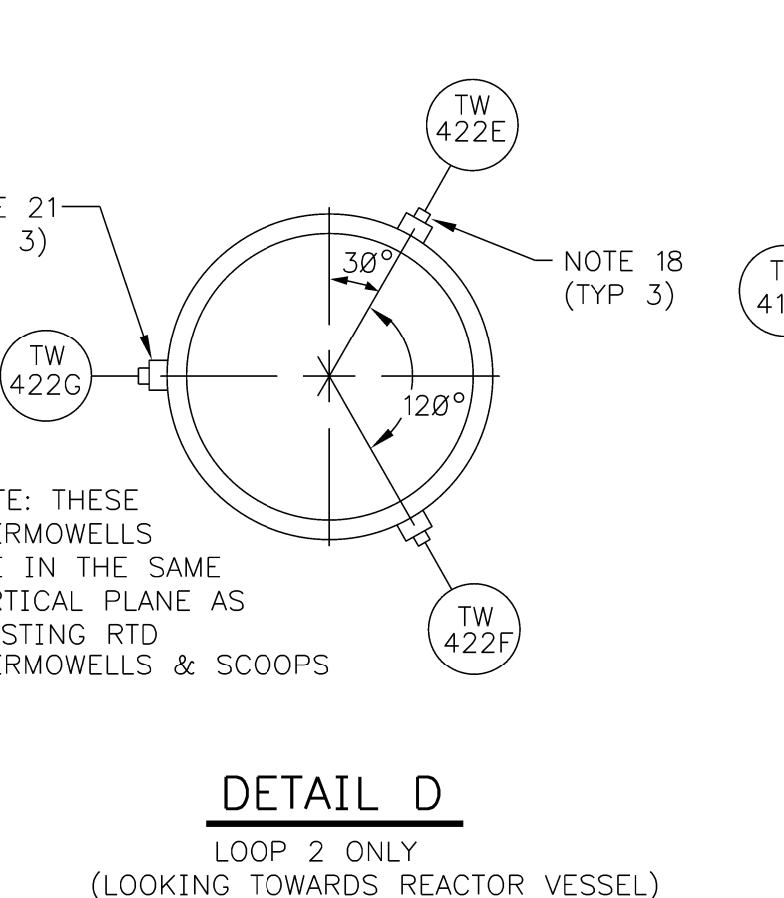
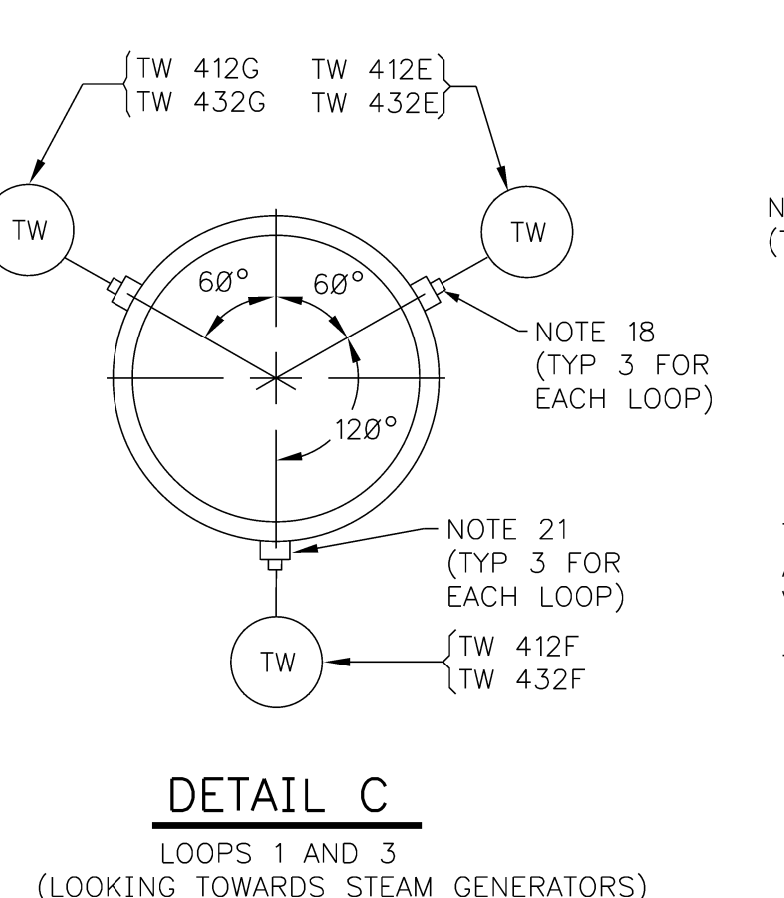
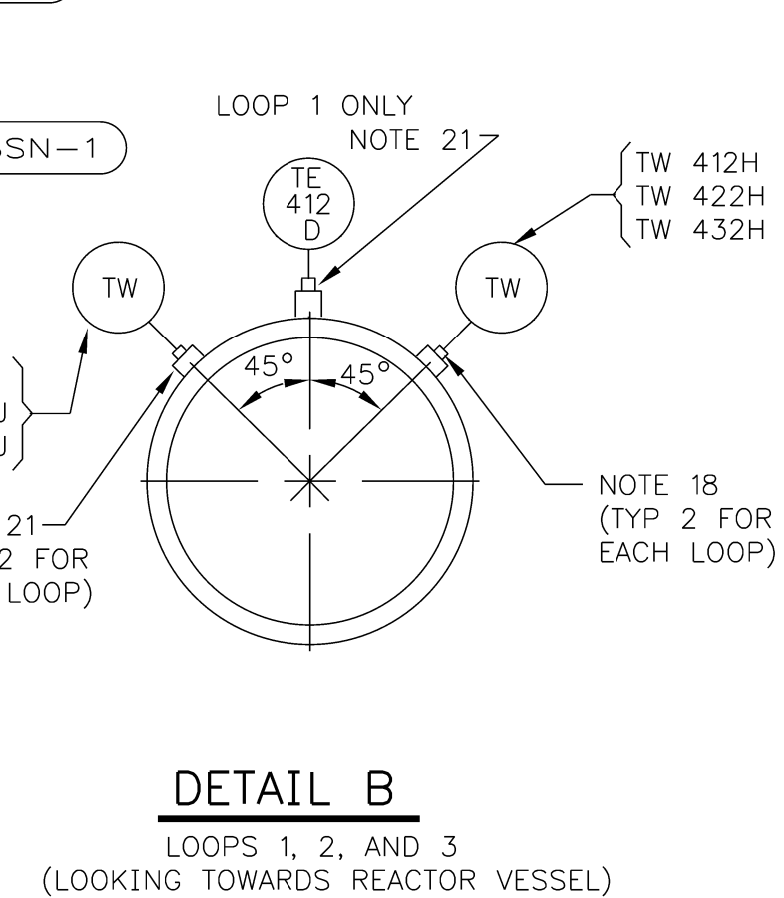
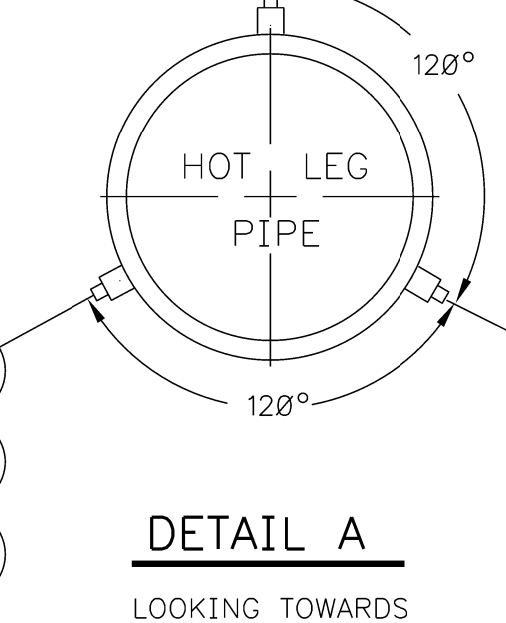


- NOTES:**
- 2.3" INSIDE DIAMETER X 2.33" MIN. WALL.
 - 3.75" INSIDE DIAMETER X 2.48" MIN. WALL.
 - 2.75" INSIDE DIAMETER X 2.21" MIN. WALL.
 - GLOBE VALVES NORMALLY INSTALLED WITH FLOW UNDER SEAT. EXCEPTIONS ARE SHOWN WITH ARROW REVERSE TO FLOW DIRECTION.
 - SPRAY LINE SCOOP SUPPLIED WITH RCS LOOP PIPING.
 - ELBOW FLOW METERS.
 - HEAD GASKET MONITORING CONNECTIONS FURNISHED WITH REACTOR VESSEL.
 - LOCATE CONNECTION IN BOTTOM HALF OF REACTOR COOLANT PIPING ON 45° ANGLE TO VERTICAL.
 - ALL (M) ITEM NUMBERS ON THIS DRAWING SHOWN WITHOUT PREFIX CQCC.
 - THIS DRAWING IS A REPRODUCTION OF THE CORRESPONDING WESTINGHOUSE DRAWINGS.
WEST. DWG. NO. 114E84-SN.1 OF 2 SUB. 4 (EASCO FILE NO. 1364-9 REV. 5)
WEST. DWG. NO. 114E85-SN.1 OF 2 SUB. 3 (EASCO FILE NO. 1364-11 REV. 3)
 - DRAWINGS HAVE BEEN ALTERED, AS NECESSARY, FOR THE SHEARON HARRIS NUCLEAR POWER PLANT.
 - 3" X 29" REDUCING ELBOW.
 - SAMPLE LINE SCOOP 23410 SUPPLIED WITH RCS LOOP PIPING.
 - PROVIDE FLOW RESTRICTOR PER NOTE 5 OF DRAWING CAR-2165-G-041
 - 28" SECOND MINIMUM DELAY TIME REQUIRED BETWEEN RCS HOT LEG CONNECTION AND CONTAINMENT PENETRATION. FOR OFFDS DELAY TIME SEE CONTAINMENT MANUAL (M-PT-001 & M-MS-005)
 - RLIS-HOT LEG PIPE BRANCH CONN. SEE DWG. NO. 1364-52839
 - PLUGGED THERMOWELLS FOR FUTURE RTD FAST RESPONSE TEMPERATURE ELEMENTS.

REACTOR COOLANT PUMP INSTRUMENTATION

ITEM	INSTRUMENT	PUMP 1	PUMP 2	PUMP 3
A	OIL LIFT PUMP PRESSURE	1-PS-417	1-PS-427	1-PS-437
B	LOWER OIL RESERVOIR	1-LT-419	1-LT-429	1-LT-439
C	UPPER OIL RESERVOIR	1-LT-417	1-LT-427	1-LT-437
D	THRUST BEARING UPPER SHOE	1-TE-417A	1-TE-427A	1-TE-437A
E	THRUST BEARING LOWER SHOE	1-TE-417B	1-TE-427B	1-TE-437B
F	STATOR WINDING	1-TE-418B	1-TE-428B	1-TE-438B
G	UPPER RADIAL BEARING	1-TE-418A	1-TE-428A	1-TE-438A
H	LOWER RADIAL BEARING	1-TE-419	1-TE-429	1-TE-439
I	VIBRATION TRANSMITTER	1-YT-419A	1-YT-429A	1-YT-439A
J	VIBRATION TRANSMITTER	1-YT-419B	1-YT-429B	1-YT-439B
K	VIBRATION TRANSMITTER	1-YT-419C	1-YT-429C	1-YT-439C
L	VIBRATION TRANSMITTER	1-YT-419D	1-YT-429D	1-YT-439D
M	VIBRATION TRANSMITTER	1-YT-419E	1-YT-429E	1-YT-439E

TABLE 1 (K2)



- REFERENCE DRAWINGS:**
- PIPING LINE LIST CAR-1364-B-070
 - VALVE & SPECIALTY LIST CAR-1364-B-069
 - INSTRUMENT LIST CAR-2166-B-432
 - FLOW DIAGRAM LEGEND CAR-2165-G-041

33	INCORPORATED: EC 298244 & EC 298245 (I17-118)	ELECTRONICALLY SIGNED
32	INCORPORATED: EC 76401 (16,K17-K19)	ELECTRONICALLY SIGNED
31	INCORPORATED: ESR 97-80806 (E3,E4,E15,E16,F2,F3,F16,I2-14,J17-J19)	ARM JWB N/A DLS
30	ADMINISTRATIVE REVISION: REVISED TO SHOW CORRECT VALVE CAPPED (C2)	ARM JWB N/A RPP FOR DLS
29	INCORPORATED: ESR-9808559 (16,K17-K19)	ARM RPP N/A DLS
REV	DATE	DESCRIPTION

DUKE ENERGY
NUCLEAR ENGINEERING DEPARTMENT - RALEIGH, N.C.

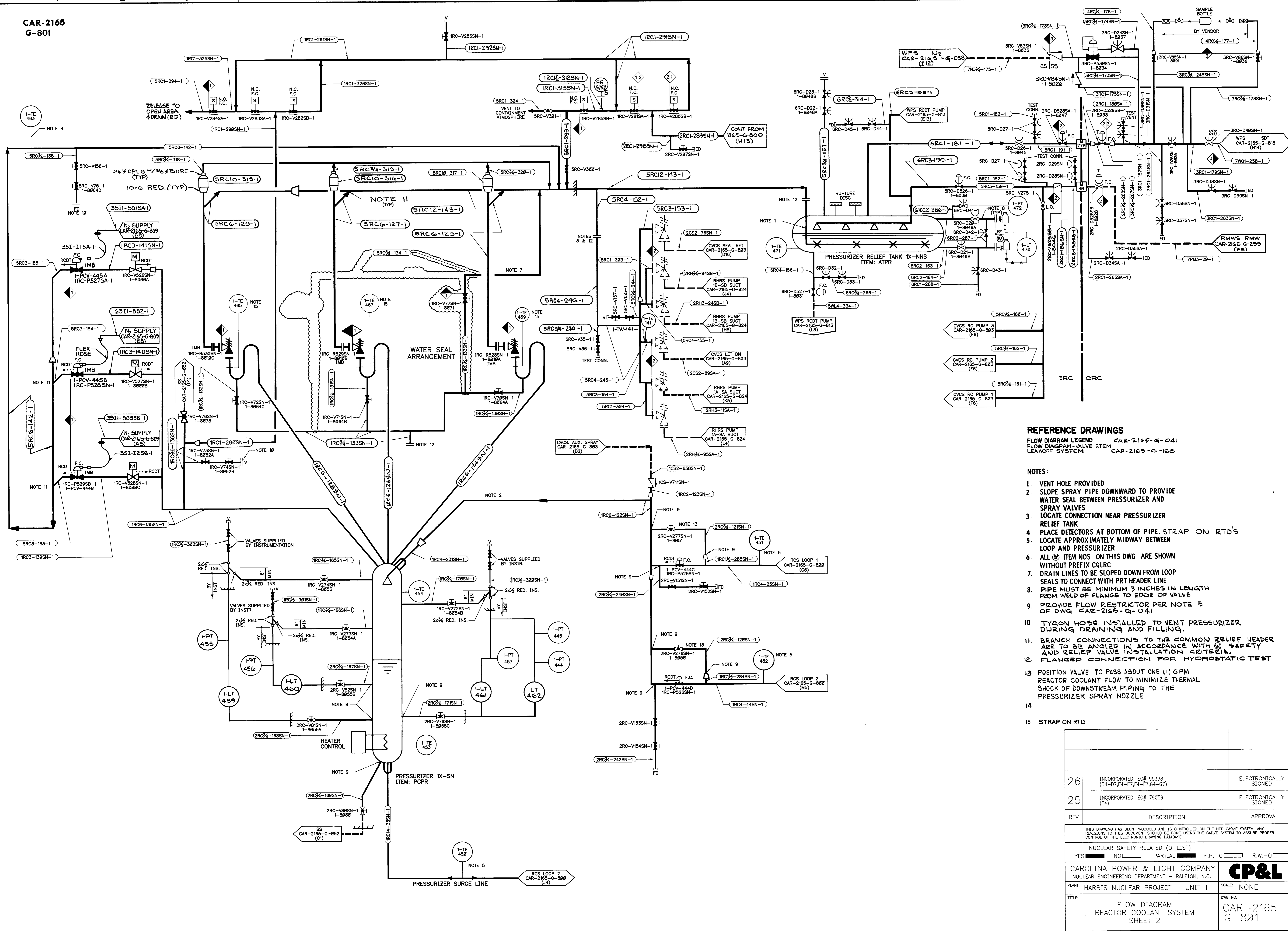
HARRIS NUCLEAR PROJECT - UNIT 1

SCALE: NONE

FLOW DIAGRAM REACTOR COOLANT SYSTEM SHEET 1

CAR-2165 G-800

CAR-2165
G-801



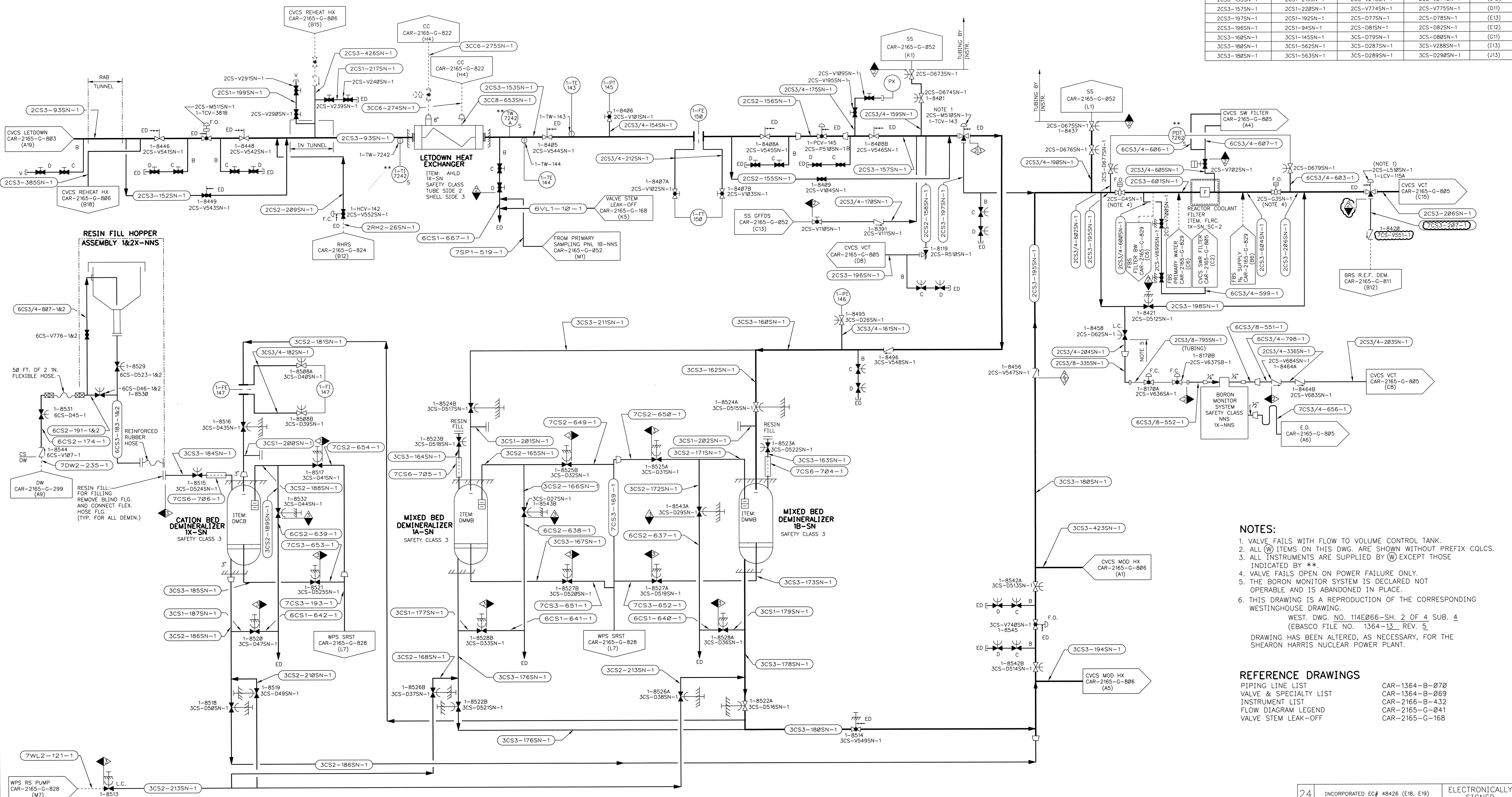
REFERENCE DRAWINGS
 FLOW DIAGRAM LEGEND CAR-2165-G-041
 FLOW DIAGRAM-VALVE STEM CAR-2165-G-041
 LEAKOFF SYSTEM CAR-2165-G-168

- NOTES:**
1. VENT HOLE PROVIDED
 2. SLOPE SPRAY PIPE DOWNWARD TO PROVIDE WATER SEAL BETWEEN PRESSURIZER AND SPRAY VALVES
 3. LOCATE CONNECTION NEAR PRESSURIZER RELIEF TANK
 4. PLACE DETECTORS AT BOTTOM OF PIPE. STRAP ON RTD'S
 5. LOCATE APPROXIMATELY MIDWAY BETWEEN LOOP AND PRESSURIZER
 6. ALL @ ITEM NOS ON THIS DWG ARE SHOWN WITHOUT PREFIX CQLRC
 7. DRAIN LINES TO BE SLOPED DOWN FROM LOOP SEALS TO CONNECT WITH PRT HEADER LINE
 8. PIPE MUST BE MINIMUM 3 INCHES IN LENGTH FROM WELD OF FLANGE TO EDGE OF VALVE
 9. PROVIDE FLOW RESTRICTOR PER NOTE 5 OF DWG CAR-2165-G-041
 10. TYGON HOSE INSTALLED TO VENT PRESSURIZER DURING DRAINING AND FILLING.
 11. BRANCH CONNECTIONS TO THE COMMON RELIEF HEADER ARE TO BE ANGLED IN ACCORDANCE WITH @ SAFETY AND RELIEF VALVE INSTALLATION CRITERIA.
 12. FLANGED CONNECTION FOR HYDROSTATIC TEST
 13. POSITION VALVE TO PASS ABOUT ONE (1) GPM REACTOR COOLANT FLOW TO MINIMIZE THERMAL SHOCK OF DOWNSTREAM PIPING TO THE PRESSURIZER SPRAY NOZZLE
 - 14.
 15. STRAP ON RTD

26	INCORPORATED: EC# 85338 (D4-D7,E4-E7,F4-F7,G4-G7)	ELECTRONICALLY SIGNED
25	INCORPORATED: EC# 79859 (E4)	ELECTRONICALLY SIGNED
REV	DESCRIPTION	APPROVAL

THIS DRAWING HAS BEEN PRODUCED AND IS CONTROLLED ON THE NED CAD/E SYSTEM. ANY REVISIONS TO THIS DOCUMENT SHOULD BE DONE USING THE CAD/E SYSTEM TO ASSURE PROPER CONTROL OF THE ELECTRONIC DRAWING DATABASE.		
NUCLEAR SAFETY RELATED (Q-LIST) YES <input type="checkbox"/> NO <input type="checkbox"/> PARTIAL <input type="checkbox"/> F.P.-Q <input type="checkbox"/> R.W.-Q <input type="checkbox"/>		
CAROLINA POWER & LIGHT COMPANY NUCLEAR ENGINEERING DEPARTMENT - RALEIGH, N.C.		CP&L
PLANT: HARRIS NUCLEAR PROJECT - UNIT 1	SCALE: NONE	
TITLE: FLOW DIAGRAM REACTOR COOLANT SYSTEM SHEET 2	DWG NO. CAR-2165-G-801	

HEADER LINE NO. A	LINE NO. B	VALVE NO. C(1st)	VALVE NO. D(2nd)	LOCATION
2CS3-93SN-1	2CS1-214SN-1	2CS-V231SN-1	2CS-V232SN-1	(D1)
2CS3-93SN-1	2CS1-215SN-1	2CS-V233SN-1	2CS-V234SN-1	(D2)
2CS3-93SN-1	2CS1-216SN-1	2CS-V235SN-1	2CS-V236SN-1	(D3)
2CS3-153SN-1	2CS1-218SN-1	2CS-V241SN-1	2CS-V242SN-1	(D6)
2CS3-153SN-1	2CS1-219SN-1	2CS-V243SN-1	2CS-V244SN-1	(D10)
2CS3-157SN-1	2CS1-220SN-1	2CS-V774SN-1	2CS-V775SN-1	(D11)
2CS3-197SN-1	2CS1-192SN-1	2CS-D77SN-1	2CS-D78SN-1	(E13)
2CS3-196SN-1	2CS1-94SN-1	2CS-D81SN-1	2CS-D82SN-1	(E12)
3CS3-160SN-1	3CS1-145SN-1	3CS-D79SN-1	3CS-D80SN-1	(G11)
3CS3-180SN-1	3CS1-562SN-1	3CS-D287SN-1	3CS-V288SN-1	(J13)
3CS3-180SN-1	3CS1-563SN-1	3CS-D289SN-1	3CS-D290SN-1	(J13)



NOTES:

1. VALVE FAILS WITH FLOW TO VOLUME CONTROL TANK.
2. ALL (W) ITEMS ON THIS DWG. ARE SHOWN WITHOUT PREFIX COLCS.
3. ALL INSTRUMENTS ARE SUPPLIED BY (W) EXCEPT THOSE INDICATED BY (**).
4. VALVE FAILS OPEN ON POWER FAILURE ONLY.
5. THE BORON MONITOR SYSTEM IS DECLARED NOT OPERABLE AND IS ABANDONED IN PLACE.
6. THIS DRAWING IS A REPRODUCTION OF THE CORRESPONDING WESTINGHOUSE DRAWING.

WEST. DWG. NO. 114E066-SH. 2 OF 4 SUB. 4
(EBASCO FILE NO. 1364-13 REV. 5)

DRAWING HAS BEEN ALTERED, AS NECESSARY, FOR THE SHEARON HARRIS NUCLEAR POWER PLANT.

REFERENCE DRAWINGS

PIPING LINE LIST	CAR-1364-B-070
VALVE & SPECIALTY LIST	CAR-1364-B-069
INSTRUMENT LIST	CAR-2166-B-432
FLOW DIAGRAM LEGEND	CAR-2165-G-041
VALVE STEM LEAK-OFF	CAR-2165-G-168

REV	DATE	DESCRIPTION	OWN	CHK	DPE	DPPE
24		INCORPORATED EC# 48426 (E18, E19)				ELECTRONICALLY SIGNED
23	2/24/98	EDITORIAL CORRECTION: CORRECTED SAFETY CLASS DESIGNATION (D6) (REF. CR-97-00998-2)	LLS	PPP	DLS	DLS
22	1-27-95	INCORPORATED: PCR-7236(B3-B5, B16-B19, C3, H7, J6, J7, K6, K7)	LLS	PPP	MMP	MMP
21	11-5-92	THIS DWG HAS BEEN ELECTRONICALLY REDRAWN WITH DESIGN CHANGE. INCORPORATED: PCR-6547(L2, L3, M1-M3, N1-N3) NON-DESIGN CHANGE: REVISED VALVE LEAK-OFF DESIG. AS CIRCLED	TRW	PPP	GOW	MMP

THIS DRAWING HAS BEEN PRODUCED AND IS CONTROLLED ON THE NED CAD/E SYSTEM. ANY REVISIONS TO THIS DOCUMENT SHOULD BE DONE USING THE CAD/E SYSTEM TO ASSURE PROPER CONTROL OF THE ELECTRONIC DRAWING DATABASE.

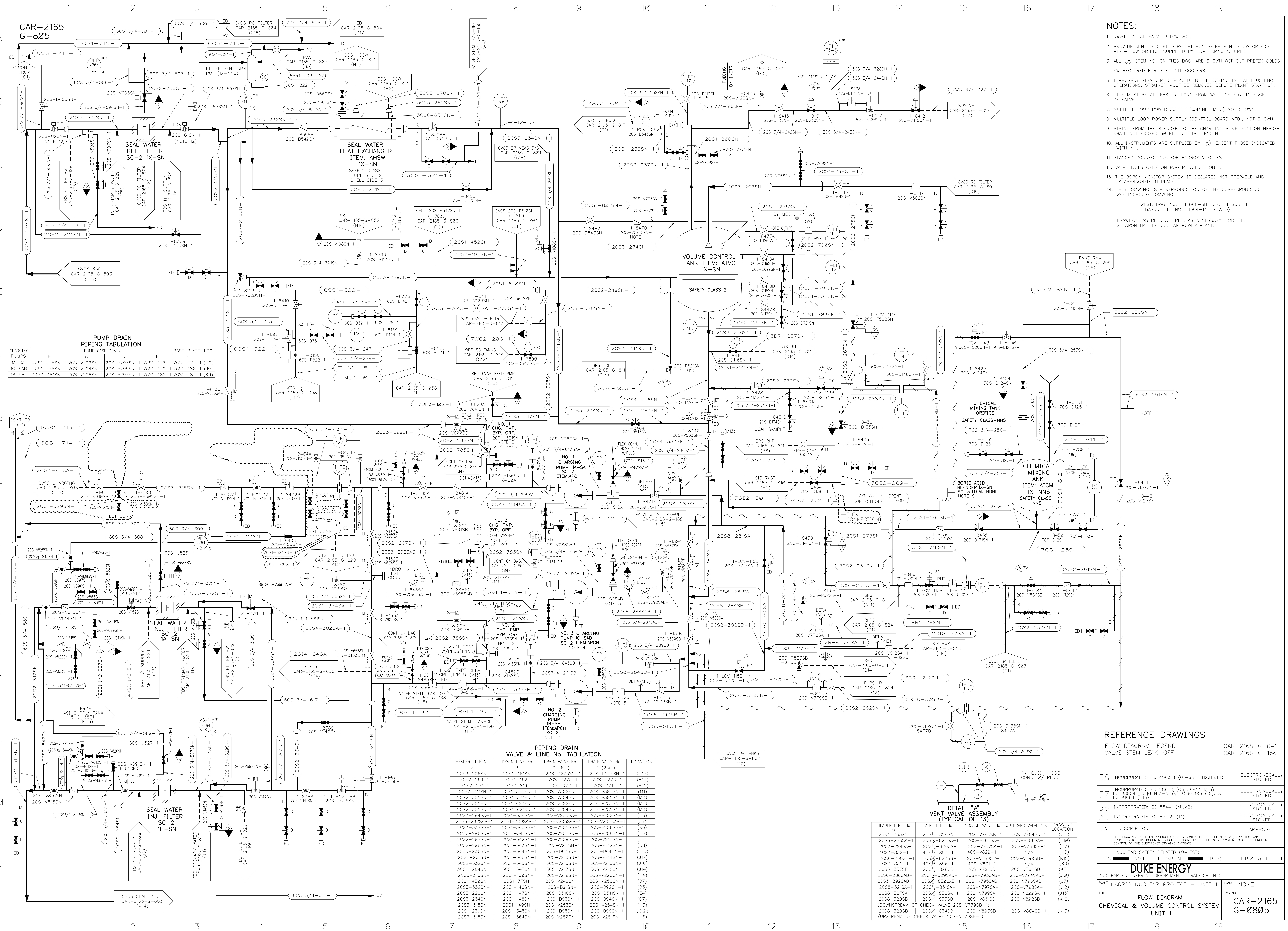
NUCLEAR SAFETY RELATED (Q-LIST)
 YES NO PARTIAL F.P.-O R.W.-O

CAROLINA POWER & LIGHT COMPANY
 NUCLEAR ENGINEERING DEPARTMENT - RALEIGH, N.C.

PLANT: HARRIS NUCLEAR PROJECT - UNIT 1
 SCALE: NONE

TITLE: FLOW DIAGRAM
 CHEMICAL & VOLUME CONTROL SYSTEM
 SHEET 2

DWG NO.: CAR-2165
 G-804



- NOTES:**
- LOCATE CHECK VALVE BELOW VCT.
 - PROVIDE MIN. OF 5 FT. STRAIGHT RUN AFTER MINI-FLOW ORIFICE. MINI-FLOW ORIFICE SUPPLIED BY PUMP MANUFACTURER.
 - ALL "W" ITEM NO. ON THIS DWG. ARE SHOWN WITHOUT PREFIX COLCS.
 - SW REQUIRED FOR PUMP OIL COOLERS.
 - TEMPORARY STRAINER IS PLACED IN TEE DURING INITIAL FLUSHING OPERATIONS. STRAINER MUST BE REMOVED BEFORE PLANT START-UP.
 - PUMP MUST BE AT LEAST 3" LONG FROM WELD OF FLG. TO EDGE OF VALVE.
 - MULTIPLE LOOP POWER SUPPLY (CABINET MTD.) NOT SHOWN.
 - MULTIPLE LOOP POWER SUPPLY (CONTROL BOARD MTD.) NOT SHOWN.
 - PIPING FROM THE BLENDER TO THE CHARGING PUMP SECTION HEADER SHALL NOT EXCEED 50 FT. IN TOTAL LENGTH.
 - ALL INSTRUMENTS ARE SUPPLIED BY (W) EXCEPT THOSE INDICATED WITH **.
 - FLANGED CONNECTIONS FOR HYDROSTATIC TEST.
 - VALVE FAILS OPEN ON POWER FAILURE ONLY.
 - THE BORON MONITOR SYSTEM IS DECLARED NOT OPERABLE AND IS ABANDONED IN PLACE.
 - THIS DRAWING IS A REPRODUCTION OF THE CORRESPONDING WESTINGHOUSE DRAWING.
- WEST. DWG. NO. 114E066-SH. 3 OF 4 SUB. 4
(EASCO FILE NO. 1364-11 REV. 3)
- DRAWING HAS BEEN ALTERED, AS NECESSARY, FOR THE SHEARON HARRIS NUCLEAR POWER PLANT.

PUMP DRAIN PIPING TABULATION

CHARGING PUMPS	B	C	D	E	BASE PLATE	LOC.
1A-SA	2CS1-475SN-1	2CS-V29SN-1	2CS-V29SN-1	7CS1-476-1	7CS1-477-1	(H9)
1C-SAB	2CS1-478SN-1	2CS-V29SN-1	2CS-V29SN-1	7CS1-479-1	7CS1-480-1	(J9)
1B-SB	2CS1-481SN-1	2CS-V29SN-1	2CS-V29SN-1	7CS1-482-1	7CS1-483-1	(K9)

PIPING DRAIN VALVE & LINE No. TABULATION

HEADER LINE No.	DRAIN LINE No.	DRAIN VALVE No.	DRAIN VALVE No.	LOCATION
A	B	C (1st)	D (2nd)	
2CS3-286SN-1	2CS1-461SN-1	2CS-D273SN-1	2CS-D274SN-1	(D15)
7CS2-269-1	2CS1-462-1	7CS-D121-1	7CS-D122-1	(H13)
7CS2-271-1	2CS1-819-1	7CS-D711-1	7CS-D712-1	(H12)
2CS2-311SN-1	2CS1-330SN-1	2CS-V302SN-1	2CS-V303SN-1	(M1)
2CS2-305SN-1	2CS1-331SN-1	2CS-V304SN-1	2CS-V305SN-1	(M3)
2CS2-305SN-1	2CS1-620SN-1	2CS-V282SN-1	2CS-V283SN-1	(M4)
2CS2-305SN-1	2CS1-621SN-1	2CS-V284SN-1	2CS-V285SN-1	(M3)
2CS3-294SA-1	2CS1-338SA-1	2CS-V200SA-1	2CS-V202SA-1	(H6)
2CS1-292SAB-1	2CS1-339SAB-1	2CS-V203SAB-1	2CS-V204SAB-1	(J6)
2CS3-337SB-1	2CS1-340SB-1	2CS-V205SB-1	2CS-V206SB-1	(K6)
2CS2-296SN-1	2CS1-341SN-1	2CS-V207SN-1	2CS-V208SN-1	(H8)
2CS2-297SN-1	2CS1-342SN-1	2CS-V209SN-1	2CS-V210SN-1	(J4)
2CS2-298SN-1	2CS1-343SN-1	2CS-V211SN-1	2CS-V212SN-1	(M3)
2CS3-286SN-1	2CS1-344SN-1	2CS-D63SN-1	2CS-D64SN-1	(D13)
2CS2-261SN-1	2CS1-348SN-1	2CS-V213SN-1	2CS-V214SN-1	(J17)
2CS2-532SN-1	2CS1-346SN-1	2CS-V215SN-1	2CS-V216SN-1	(H4)
2CS3-324SN-1	2CS1-347SN-1	2CS-V217SN-1	2CS-V218SN-1	(J4)
2CS3-315SN-1	2CS1-150SN-1	2CS-V219SN-1	2CS-V220SN-1	(H6)
2CS1-450SN-1	2CS1-77SN-1	2CS-V249SN-1	2CS-V250SN-1	(D7)
2CS3-332SN-1	2CS1-146SN-1	2CS-D91SN-1	2CS-D92SN-1	(J3)
2CS3-299SN-1	2CS1-147SN-1	2CS-D93SN-1	2CS-D94SN-1	(E4)
2CS3-244SN-1	2CS1-148SN-1	2CS-D93SN-1	2CS-D94SN-1	(C7)
2CS3-315SN-1	2CS1-149SN-1	2CS-V253SN-1	2CS-V254SN-1	(H3)
2CS1-239SN-1	2CS1-345SN-1	2CS-D95SN-1	2CS-D96SN-1	(C10)
2CS3-315SN-1	2CS1-564SN-1	2CS-V280SN-1	2CS-V281SN-1	(H6)

VENT VALVE ASSEMBLY (TYPICAL OF 13)

HEADER LINE No.	VENT LINE No.	INBOARD VALVE No.	OUTBOARD VALVE No.	DRAWING LOCATION
2CS4-333SN-1	2CS3-824SN-1	2CS-V783SN-1	2CS-V784SN-1	(G11)
2CS6-285SA-1	2CS3-825SA-1	2CS-V785SA-1	2CS-V786SA-1	(H10)
2CS3-294SA-1	2CS3-826SA-1	2CS-V787SA-1	2CS-V788SA-1	(H1)
4CS3-852-1	4CS3-853-1	4CS-V829-1	N/A	(H6)
2CS6-298SB-1	2CS3-827SB-1	2CS-V790SB-1	2CS-V790SB-1	(K10)
4CS3-855-1	4CS3-856-1	4CS-V831-1	N/A	(K6)
2CS3-337SB-1	2CS3-828SB-1	2CS-V791SB-1	2CS-V792SB-1	(K7)
2CS6-288SAB-1	2CS3-829SAB-1	2CS-V793SAB-1	2CS-V794SAB-1	(J10)
2CS3-292SAB-1	2CS3-830SAB-1	2CS-V795SAB-1	2CS-V796SAB-1	(J7)
2CS8-321SA-1	2CS3-831SA-1	2CS-V797SA-1	2CS-V798SA-1	(J12)
2CS8-322SA-1	2CS3-832SA-1	2CS-V799SA-1	2CS-V800SA-1	(J13)
2CS9-320SB-1	2CS3-833SB-1	2CS-V801SB-1	2CS-V802SB-1	(K12)
2CS8-328SB-1	2CS3-834SB-1	2CS-V803SB-1	2CS-V804SB-1	(K13)

REFERENCE DRAWINGS

FLOW DIAGRAM LEGEND CAR-2165-G-041
VALVE STEM LEAK-OFF CAR-2165-G-168

38	INCORPORATED: EC 406318 (G1-G5,H1,H2,H5,H4)	ELECTRONICALLY SIGNED
37	INCORPORATED: EC 98003 (G6,G9,M13-M16), EC 98004 (J6,J9,K13-N16), EC 98005 (I9,I1), & EC 91684 (H13)	ELECTRONICALLY SIGNED
36	INCORPORATED: EC 85441 (M1M2)	ELECTRONICALLY SIGNED
35	INCORPORATED: EC 85439 (I1)	ELECTRONICALLY SIGNED

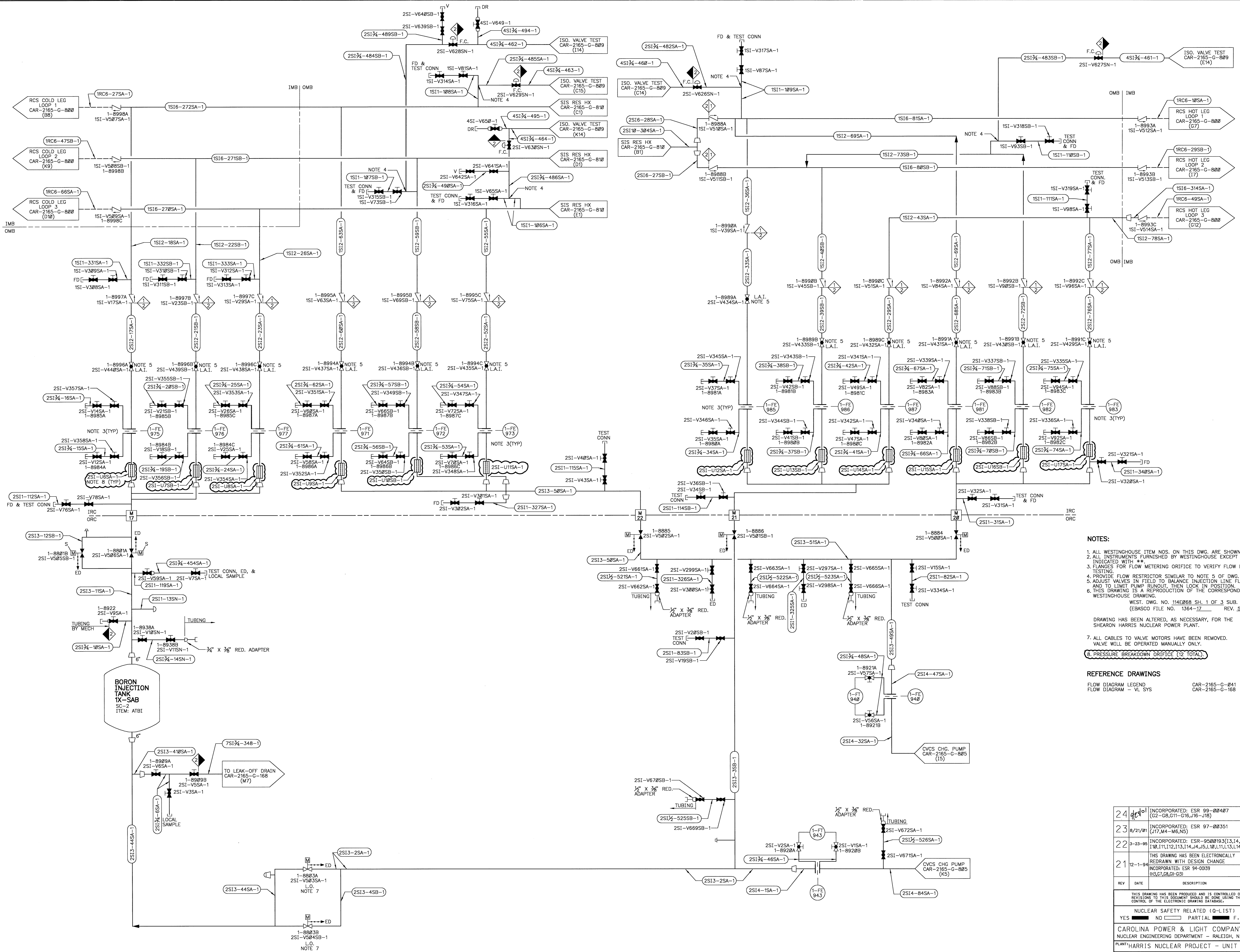
THIS DRAWING HAS BEEN PRODUCED AND IS CONTROLLED ON THE MED CAD/E SYSTEM. ANY REVISION TO THIS DOCUMENT SHOULD BE DONE USING THE CAD/E SYSTEM TO ASSURE PROPER CONTROL OF THE ELECTRONIC DRAWING DATABASE.

DUKE ENERGY
NUCLEAR ENGINEERING DEPARTMENT, RALEIGH, N.C.

PLANT: HARRIS NUCLEAR PROJECT - UNIT 1 SCALE: NONE

TITLE: FLOW DIAGRAM CHEMICAL & VOLUME CONTROL SYSTEM UNIT 1 DWG NO: CAR-2165 G-0805





- NOTES:**
1. ALL WESTINGHOUSE ITEM NOS. ON THIS DWG. ARE SHOWN WITHOUT PREFIX COLSI.
 2. ALL INSTRUMENTS FURNISHED BY WESTINGHOUSE EXCEPT THOSE INDICATED WITH **.
 3. FLANGES FOR FLOW METERING ORIFICE TO VERIFY FLOW DURING PRE-OPERATIONAL TESTING.
 4. PROVIDE FLOW RESTRICTOR SIMILAR TO NOTE 5 OF DWG. CAR-2165-G-841.
 5. ADJUST VALVES IN FIELD TO BALANCE INJECTION LINE FLOW AND TO LIMIT PUMP RUNOUT, THEN LOCK IN POSITION.
 6. THIS DRAWING IS A REPRODUCTION OF THE CORRESPONDING WESTINGHOUSE DRAWING.
WEST. DWG. NO. 114E066 SH. 1 OF 3 SUB. 4
(EASCO FILE NO. 1364-17 REV. 5)
 7. ALL CABLES TO VALVE MOTORS HAVE BEEN REMOVED.
VALVE WILL BE OPERATED MANUALLY ONLY.
 8. PRESSURE BREAKDOWN ORIFICE (2 TOTAL).

REFERENCE DRAWINGS
 FLOW DIAGRAM LEGEND CAR-2165-G-841
 FLOW DIAGRAM - V. SYS. CAR-2165-G-168

REV	DATE	DESCRIPTION	DNW	CHK	DPE	DPPE
24	4/14/81	INCORPORATED: ESR 89-88487 (G2-G5,G11-G16,J16-J18)	ARM	enl	N/A	LS
23	8/21/81	INCORPORATED: ESR 97-88351 (J17,M4-M6,S5)	ARM	JWB	N/A	DL5
22	3-23-98	INCORPORATED: ESR-9509193(13,14,18,11,112,113,114,4,4,5,10,11,13,14)	LLS	RPP	MWP	MMP
21	12-1-89	THIS DRAWING HAS BEEN ELECTRONICALLY REDRAWN WITH DESIGN CHANGE INCORPORATED: ESR 94-0039 (H3,G7,G8,G9-G3)	LLS	RPP	MMP	MP FOR WAS

THIS DRAWING HAS BEEN PRODUCED AND IS CONTROLLED ON THE RED CAD/E SYSTEM. ANY REVISIONS TO THIS DOCUMENT SHOULD BE DONE USING THE CAD/E SYSTEM TO ASSURE PROPER CONTROL OF THE ELECTRONIC DRAWING DATABASE.

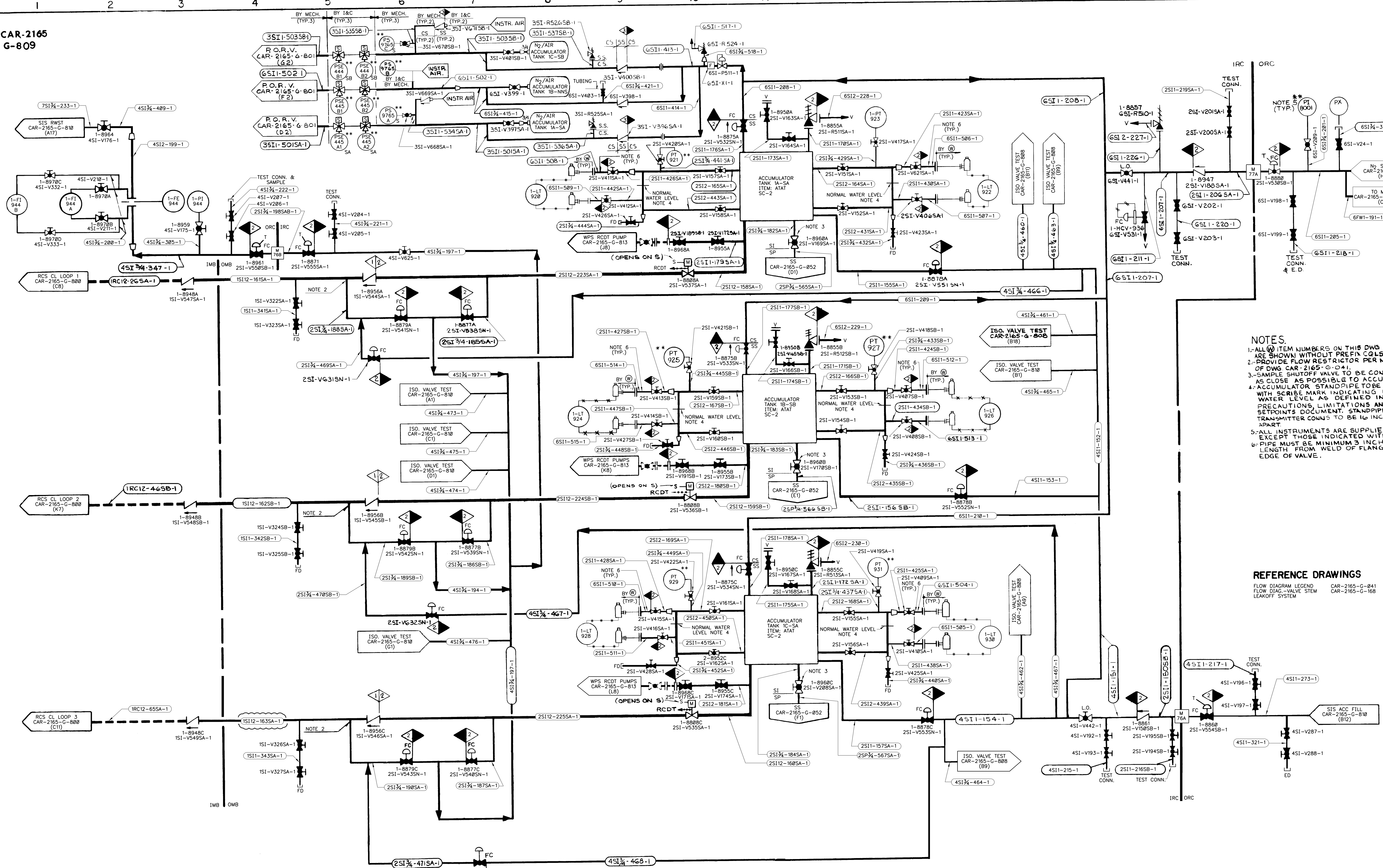
NUCLEAR SAFETY RELATED (O-LIST)
 YES NO PARTIAL F.P.-O R.W.-O

CAROLINA POWER & LIGHT COMPANY
 NUCLEAR ENGINEERING DEPARTMENT - RALEIGH, N.C.

PLANT: HARRIS NUCLEAR PROJECT - UNIT 1
 TITLE: FLOW DIAGRAM SAFETY INJECTION SYSTEM
 SCALE: NONE

CP&L
 CAR-2165
 G-808

CAR-2165
G-809



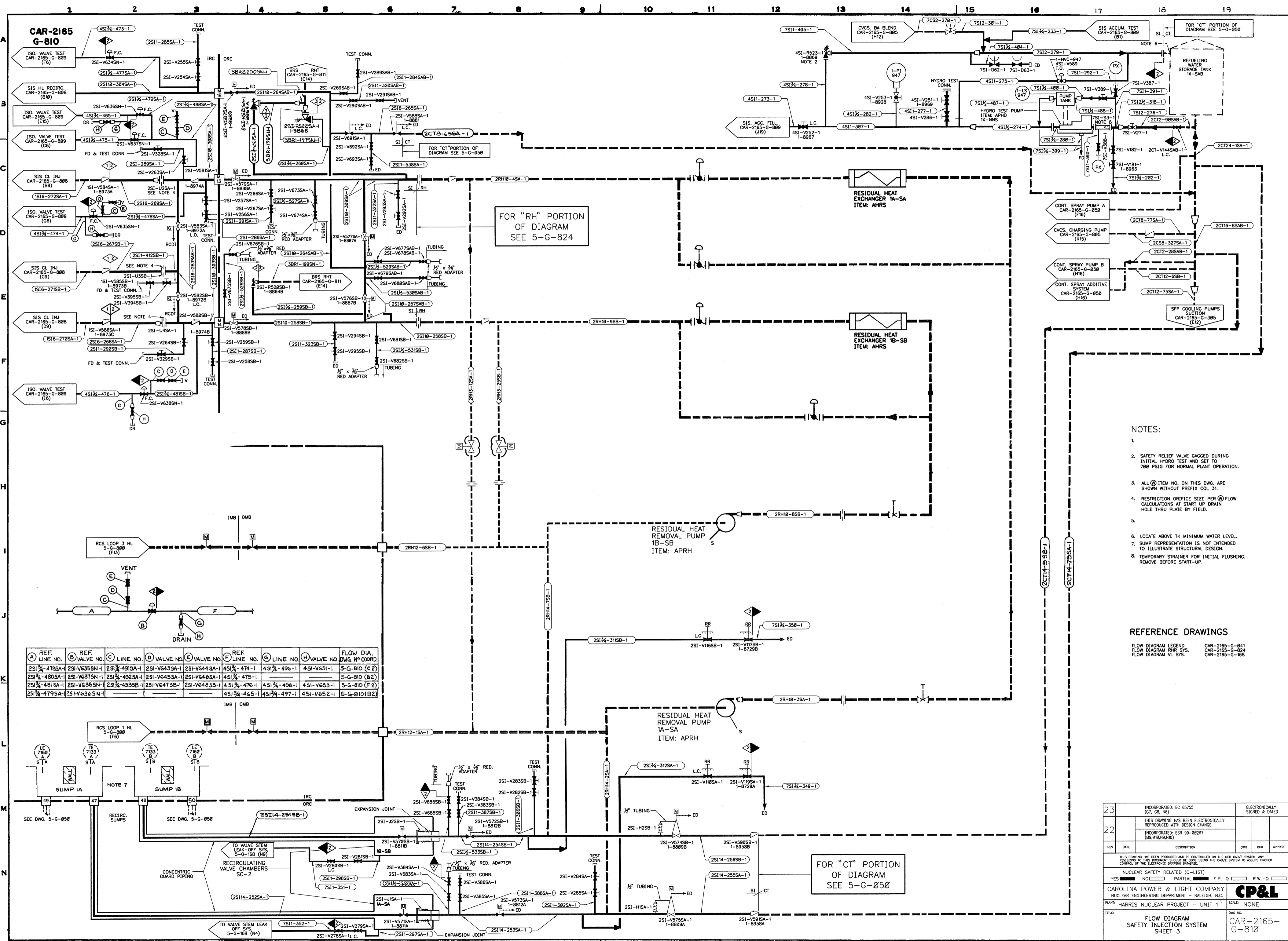
NOTES.

- 1-ALL ITEM NUMBERS ON THIS DWG ARE SHOWN WITHOUT PREFIX COLSI.
- 2-PROVIDE FLOW RESTRICTOR PER NOTE 5 OF DWG CAR-2165-G-041.
- 3-SAMPLE SHUTOFF VALVE TO BE CONNECTED AS CLOSE AS POSSIBLE TO ACCUMULATORS.
- 4-ACCUMULATOR STANDPIPE TO BE PROVIDED WITH SERIES MARK INDICATING NORMAL WATER LEVEL AS DEFINED IN THE PRECAUTIONS, LIMITATIONS AND SETPOINTS DOCUMENT. STANDPIPE LEVEL TRANSMITTER CONNS TO BE 1/2 INCHES APART.
- 5-ALL INSTRUMENTS ARE SUPPLIED BY (W) EXCEPT THOSE INDICATED WITH (F).
- 6-PIPE MUST BE MINIMUM 3 INCHES IN LENGTH FROM WELD OF FLANGE TO EDGE OF VALVE.

REFERENCE DRAWINGS

FLOW DIAGRAM LEGEND CAR-2165-G-041
 FLOW DIAG-VALVE STEM CAR-2165-G-168
 LEAKOFF SYSTEM

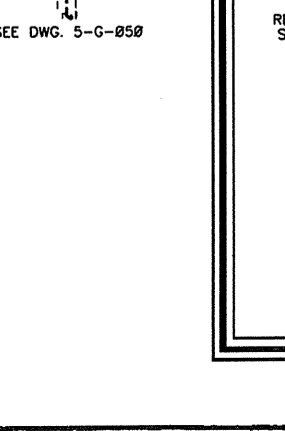
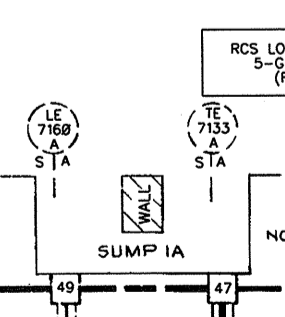
26	INCORPORATED: EC 98342 (J4)	ELECTRONICALLY SIGNED
25	12/12/04 INCORPORATED: EC 59619 (F10)	JWB LLS JAM
24	5/4/00 THIS DRAWING HAS BEEN ELECTRONICALLY REPRODUCED WITH DESIGN CHANGE INCORPORATED: ESR 97-00233 (C19)	ARM RPP DLS
REV	DATE	DESCRIPTION
THIS DRAWING HAS BEEN PRODUCED AND IS CONTROLLED ON THE AED CAD/CAM SYSTEM AND PERMISSION TO THIS DOCUMENT SHOULD BE OBTAINED USING THE CAD/CAM SYSTEM TO ASSURE PROPER CONTROL OF THE ELECTRONIC DRAWING DATABASE.		
NUCLEAR SAFETY RELATED (G-LIST) YES <input type="checkbox"/> NO <input type="checkbox"/> PARTIAL <input type="checkbox"/> F.P.-Q <input type="checkbox"/> R.W.-Q <input type="checkbox"/>		
DUKE ENERGY NUCLEAR ENGINEERING DEPARTMENT - RALEIGH, N.C.		
PLANT:	HARRIS NUCLEAR PROJECT - UNIT 1	SCALE: NONE
TITLE:	FLOW DIAGRAM SAFETY INJECTION SYSTEM SHEET 2	DWG NO: CAR-2165-G-809



**CAR-2165
G-810**

- ISO. VALVE TEST CAR-2165-G-809 (F6)
- SIS HL RECIRC. CAR-2165-G-808 (B8)
- ISO. VALVE TEST CAR-2165-G-809 (E15)
- ISO. VALVE TEST CAR-2165-G-809 (C8)
- SIS CL INJ CAR-2165-G-808 (B9)
- ISO. VALVE TEST CAR-2165-G-809 (G6)
- SIS CL INJ CAR-2165-G-808 (C9)
- ISO. VALVE TEST CAR-2165-G-808 (D9)
- ISO. VALVE TEST CAR-2165-G-809 (I6)

REF. LINE NO.	REF. VALVE NO.	REF. LINE NO.	REF. VALVE NO.	REF. LINE NO.	REF. VALVE NO.	REF. LINE NO.	REF. VALVE NO.	REF. LINE NO.	REF. VALVE NO.	FLOW DIA.
2SI-V478SA-1	2SI-V635SN-1	2SI-V491SA-1	2SI-V643SA-1	2SI-V644SA-1	4SI-V474-1	4SI-V496-1	4SI-V651-1	5-G-810 (C2)		
2SI-V480SA-1	2SI-V637SN-1	2SI-V492SA-1	2SI-V645SA-1	2SI-V646SA-1	4SI-V475-1			5-G-810 (B2)		
2SI-V481SA-1	2SI-V638SN-1	2SI-V493SB-1	2SI-V647SB-1	2SI-V648SB-1	4SI-V476-1	4SI-V498-1	4SI-V653-1	5-G-810 (F2)		
2SI-V479SA-1	2SI-V636SN-1				4SI-V465-1	4SI-V497-1	4SI-V652-1	5-G-810 (E2)		



FOR "RH" PORTION OF DIAGRAM SEE 5-G-824

FOR "CT" PORTION OF DIAGRAM SEE 5-G-850

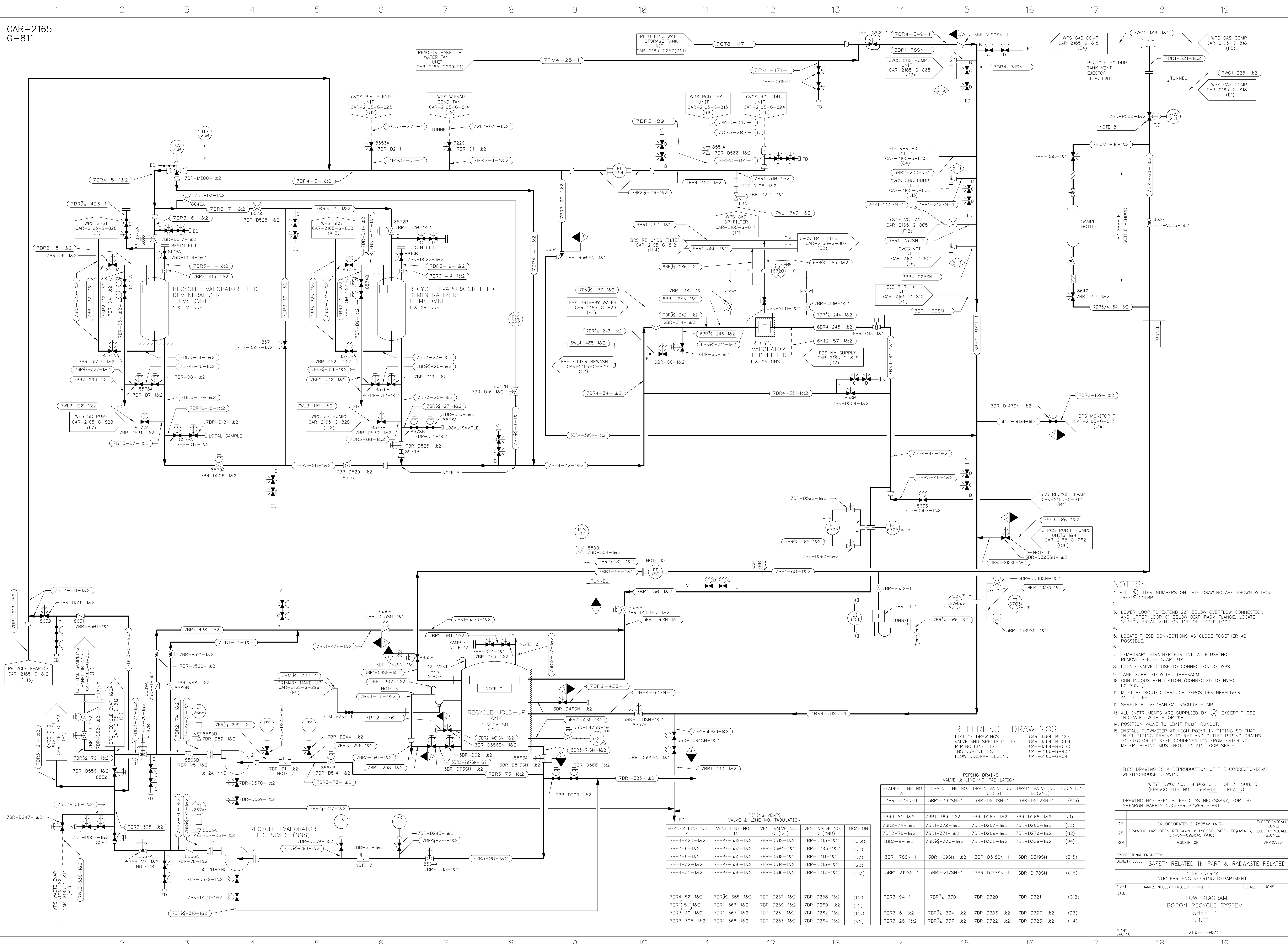
- NOTES:**
- SAFETY RELIEF VALVE GAGGED DURING INITIAL HYDRO TEST AND SET TO 700 PSIG FOR NORMAL PLANT OPERATION.
 - ALL ITEM NO. ON THIS DWG. ARE SHOWN WITHOUT PREFIX COL 31.
 - RESTRICTION ORIFICE SIZE PER @ FLOW CALCULATIONS AT START UP DRAIN HOLE THRU PLATE BY FIELD.
 - LOCATE ABOVE TK MINIMUM WATER LEVEL. SLUMP REPRESENTATION IS NOT INTENDED TO ILLUSTRATE STRUCTURAL DESIGN.
 - TEMPORARY STRAINER FOR INITIAL FLUSHING. REMOVE BEFORE START-UP.

REFERENCE DRAWINGS

FLOW DIAGRAM LEGEND CAR-2165-G-841
 FLOW DIAGRAM RHR SYS. CAR-2165-G-824
 FLOW DIAGRAM VL SYS. CAR-2165-G-168

23	INCORPORATED: EC 65755 (G7, G8, N6)	ELECTRONICALLY SIGNED & DATED
22	THIS DRAWING HAS BEEN ELECTRONICALLY REPRODUCED WITH DESIGN CHANGE INCORPORATED: ESR 99-00267 (M5, M10, M2, N10)	
REV	DATE	DESCRIPTION
YES	NO	PARTIAL
NUCLEAR SAFETY RELATED (Q-LIST)		F.P.-Q R.W.-Q
CAROLINA POWER & LIGHT COMPANY NUCLEAR ENGINEERING DEPARTMENT - RALEIGH, N.C.		CP&L
PLANT: HARRIS NUCLEAR PROJECT - UNIT 1		SCALE: NONE
TITLE: FLOW DIAGRAM SAFETY INJECTION SYSTEM SHEET 3		DWG NO. CAR-2165-G-810

CAR-2165
G-811



- NOTES:
- ALL (R) ITEM NUMBERS ON THIS DRAWING ARE SHOWN WITHOUT PREFIX COLOR.
 - LOWER LOOP TO EXTEND 20" BELOW OVERFLOW CONNECTION AND UPPER LOOP 6" BELOW DIAPHRAGM FLANGE. LOCATE SYPHON BREAK VENT ON TOP OF UPPER LOOP.
 - LOCATE THESE CONNECTIONS AS CLOSE TOGETHER AS POSSIBLE.
 - TEMPORARY STRAINER FOR INITIAL FLUSHING REMOVE BEFORE START UP.
 - LOCATE VALVE CLOSE TO CONNECTION OF WPS.
 - TANK SUPPLIED WITH DIAPHRAGM.
 - CONTINUOUS VENTILATION (CONNECTED TO HVAC EXHAUST.)
 - MUST BE Routed THROUGH SFPCS DEMINERALIZER AND FILTER.
 - SAMPLE BY MECHANICAL VACUUM PUMP.
 - ALL INSTRUMENTS ARE SUPPLIED BY (W) EXCEPT THOSE INDICATED WITH * OR **
 - POSITION VALVE TO LIMIT PUMP RUNOUT.
 - INSTALL FLOWMETER AT HIGH POINT IN PIPING SO THAT INLET PIPING DRAINS TO RIGHT AND OUTLET PIPING DRAINS TO LEFT TO KEEP CONDENSATION FROM ENTERING METER. PIPING MUST NOT CONTAIN LOOP SEALS.

REFERENCE DRAWINGS

LIST OF DRAWINGS CAR-1364-B-125
VALVE AND SPECIALTY LIST CAR-1364-B-069
PIPING LINE LIST CAR-1364-B-070
INSTRUMENT LIST CAR-2166-B-432
FLOW DIAGRAM LEGEND CAR-2165-G-041

PIPING VENTS VALVE & LINE NO. TABULATION

HEADER LINE NO.	VENT LINE NO.	VENT VALVE NO.	VENT VALVE NO.	LOCATION
A	B	C (1ST)	D (2ND)	
7BR3-81-1&2	7BR1-369-1&2	7BR-D265-1&2	7BR-D266-1&2	(J1)
7BR2-74-1&2	7BR1-378-1&2	7BR-D267-1&2	7BR-D268-1&2	(L2)
7BR2-76-1&2	7BR1-371-1&2	7BR-D269-1&2	7BR-D270-1&2	(N2)
7BR3-9-1&2	7BR3-336-1&2	7BR-D308-1&2	7BR-D309-1&2	(D4)
3BR1-78SN-1	3BR1-69SN-1&2	3BR-D318SN-1	3BR-D319SN-1	(B15)
3BR1-212SN-1	3BR1-217SN-1	3BR-D177SN-1	3BR-D178SN-1	(C15)
7BR4-50-1&2	7BR3-365-1&2	7BR-D257-1&2	7BR-D258-1&2	(I11)
7BR1-51-1&2	7BR1-366-1&2	7BR-D259-1&2	7BR-D260-1&2	(J5)
7BR3-49-1&2	7BR1-367-1&2	7BR-D261-1&2	7BR-D262-1&2	(I15)
7BR3-395-1&2	7BR1-368-1&2	7BR-D263-1&2	7BR-D264-1&2	(M2)

PIPING DRAINS VALVE & LINE NO. TABULATION

HEADER LINE NO.	DRAIN LINE NO.	DRAIN VALVE NO.	DRAIN VALVE NO.	LOCATION
A	B	C (1ST)	D (2ND)	
3BR4-31SN-1	3BR1-362SN-1	3BR-D251SN-1	3BR-D252SN-1	(A15)
7BR3-81-1&2	7BR1-369-1&2	7BR-D265-1&2	7BR-D266-1&2	(J1)
7BR2-74-1&2	7BR1-378-1&2	7BR-D267-1&2	7BR-D268-1&2	(L2)
7BR2-76-1&2	7BR1-371-1&2	7BR-D269-1&2	7BR-D270-1&2	(N2)
7BR3-9-1&2	7BR3-336-1&2	7BR-D308-1&2	7BR-D309-1&2	(D4)
3BR1-78SN-1	3BR1-69SN-1&2	3BR-D318SN-1	3BR-D319SN-1	(B15)
3BR1-212SN-1	3BR1-217SN-1	3BR-D177SN-1	3BR-D178SN-1	(C15)
7BR3-94-1	7BR3-338-1	7BR-D320-1	7BR-D321-1	(C12)
7BR3-6-1&2	7BR3-334-1&2	7BR-D306-1&2	7BR-D307-1&2	(D3)
7BR3-28-1&2	7BR3-337-1&2	7BR-D322-1&2	7BR-D323-1&2	(H4)

THIS DRAWING IS A REPRODUCTION OF THE CORRESPONDING WESTINGHOUSE DRAWING.

WEST. DWG. NO. 114E069 SH. 1 OF 2 SUB. 3
(EASCO FILE NO. 1364-19 REV. 3)

NO.	DESCRIPTION	APPROVED
26	INCORPORATES EC#89548 (A13)	ELECTRONICALLY SIGNED
25	DRAWING HAS BEEN REDRAWN & INCORPORATES EC#48426, FCR-SM-020245 (K10)	ELECTRONICALLY SIGNED
REV	DESCRIPTION	APPROVED

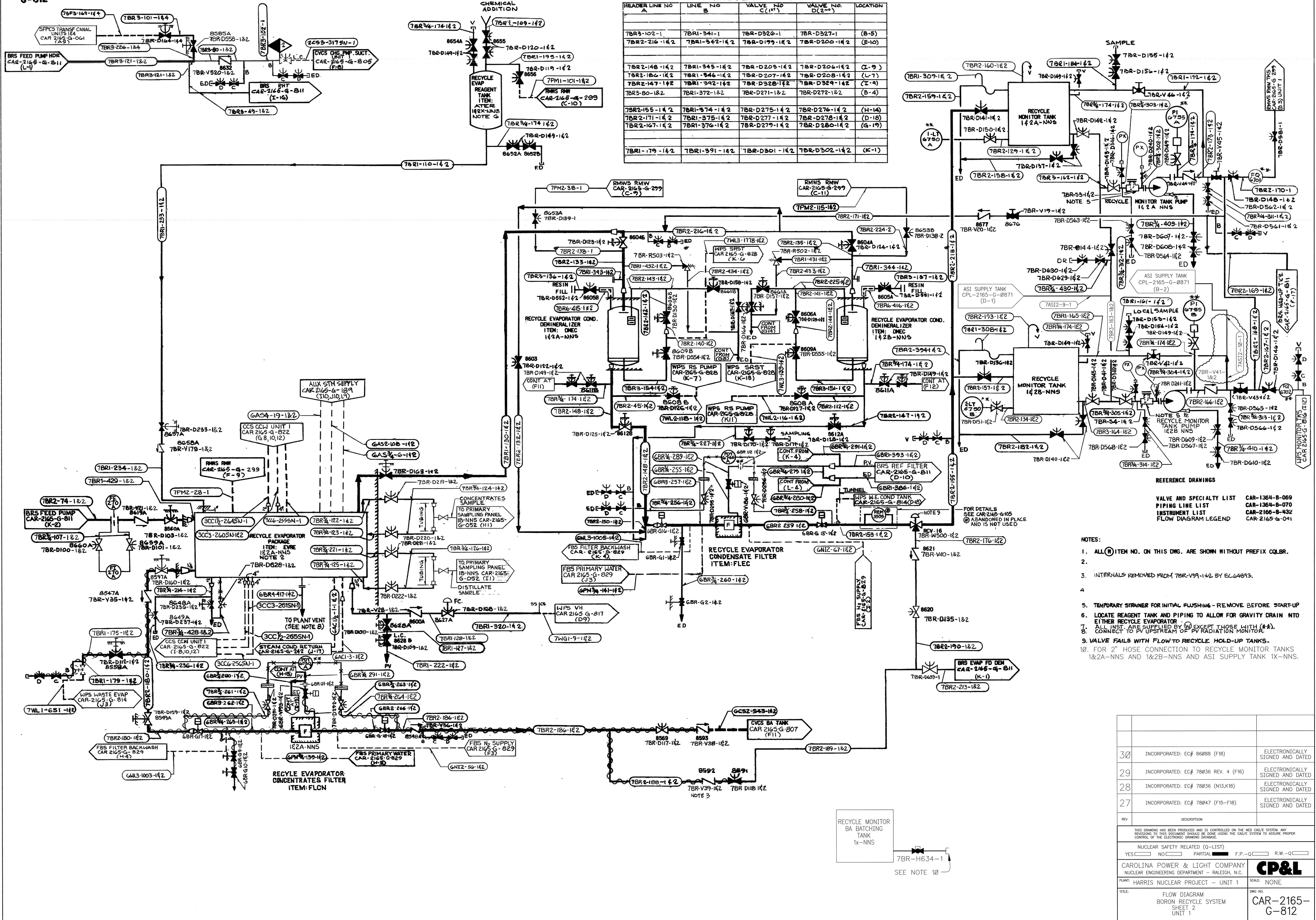
PROFESSIONAL ENGINEER: _____
QUALITY LEVEL: SAFETY RELATED IN PART & RADWASTE RELATED

DUKE ENERGY
NUCLEAR ENGINEERING DEPARTMENT
HARRIS NUCLEAR PROJECT - UNIT 1
SCALE: NONE

TITLE: FLOW DIAGRAM
BORON RECYCLE SYSTEM
SHEET 1
UNIT 1

PLANT DWG NO.: 2165-G-0811

HEADER LINE NO. A	LINE NO. B	VALVE NO. C (1 ST)	VALVE NO. D (2 ND)	LOCATION
7BR3-102-1	7BR1-341-1	7BR-D320-1	7BR-D327-1	(B-5)
7BR2-216-142	7BR1-342-142	7BR-D199-142	7BR-D220-142	(E-10)
7BR2-148-142	7BR1-345-142	7BR-D205-142	7BR-D206-142	(A-9)
7BR2-104-142	7BR1-346-142	7BR-D207-142	7BR-D208-142	(L-7)
7BR2-147-142	7BR1-342-142	7BR-D320-142	7BR-D329-142	(I-9)
7BR3-80-182	7BR1-372-182	7BR-D271-182	7BR-D272-182	(B-4)
7BR2-155-142	7BR1-374-142	7BR-D275-142	7BR-D276-142	(H-14)
7BR2-171-142	7BR1-375-142	7BR-D277-142	7BR-D278-142	(D-18)
7BR2-167-142	7BR1-376-142	7BR-D279-142	7BR-D280-142	(G-19)
7BR1-179-142	7BR1-391-142	7BR-D301-142	7BR-D302-142	(K-1)



- REFERENCE DRAWINGS
- VALVE AND SPECIALTY LIST CAR-1364-B-069
 - PIPING LINE LIST CAR-1364-B-070
 - INSTRUMENT LIST CAR-2165-B-032
 - FLOW DIAGRAM LEGEND CAR-2165-G-041

- NOTES:
- ALL ITEM NO. ON THIS DNG. ARE SHOWN WITHOUT PREFIX COLBR.
 -
 - INTERNALS REMOVED FROM 7BR-V39-142 BY EL-64893.
 -
 - TEMPORARY STRAINER FOR INITIAL FLUSHING - REMOVE BEFORE START-UP
 - LOCATE REAGENT TANK AND PIPING TO ALLOW FOR GRAVITY DRAIN INTO EITHER RECYCLE EVAPORATOR
 - ALL INST. ARE SUPPLIED BY (W) EXCEPT THOSE WITH (##).
 - CONNECT TO UPSTREAM OF PV RADIATION MONITOR.
 - VALVE FAILS WITH FLOW TO RECYCLE HOLD-UP TANKS.
 - FOR 2" HOSE CONNECTION TO RECYCLE MONITOR TANKS 1&2A-NNS AND 1&2B-NNS AND ASI SUPPLY TANK 1X-NNS.

REV	DESCRIPTION
30	INCORPORATED: EC# 86888 (F18)
29	INCORPORATED: EC# 78836 REV. 4 (F16)
28	INCORPORATED: EC# 78836 (N13,K18)
27	INCORPORATED: EC# 78847 (F15-F18)

THIS DRAWING HAS BEEN PRODUCED AND IS CONTROLLED BY THE NED CAD/E SYSTEM. ANY REVISIONS TO THIS DOCUMENT SHOULD BE DONE USING THE CAD/E SYSTEM TO ASSURE PROPER CONTROL OF THE ELECTRONIC DRAWING DATABASE.

NUCLEAR SAFETY RELATED (0-1121)

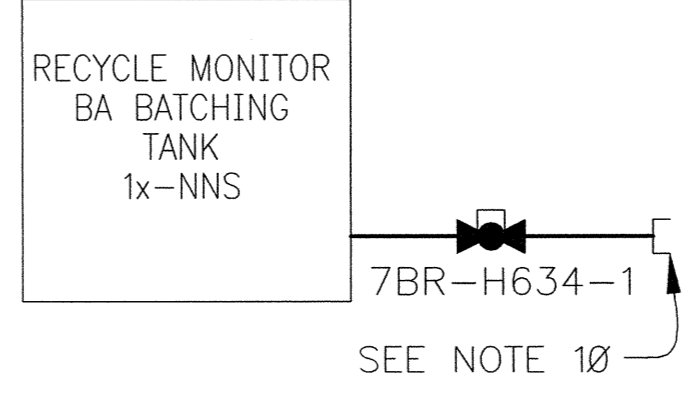
YES NO PARTIAL F.P. R.W.

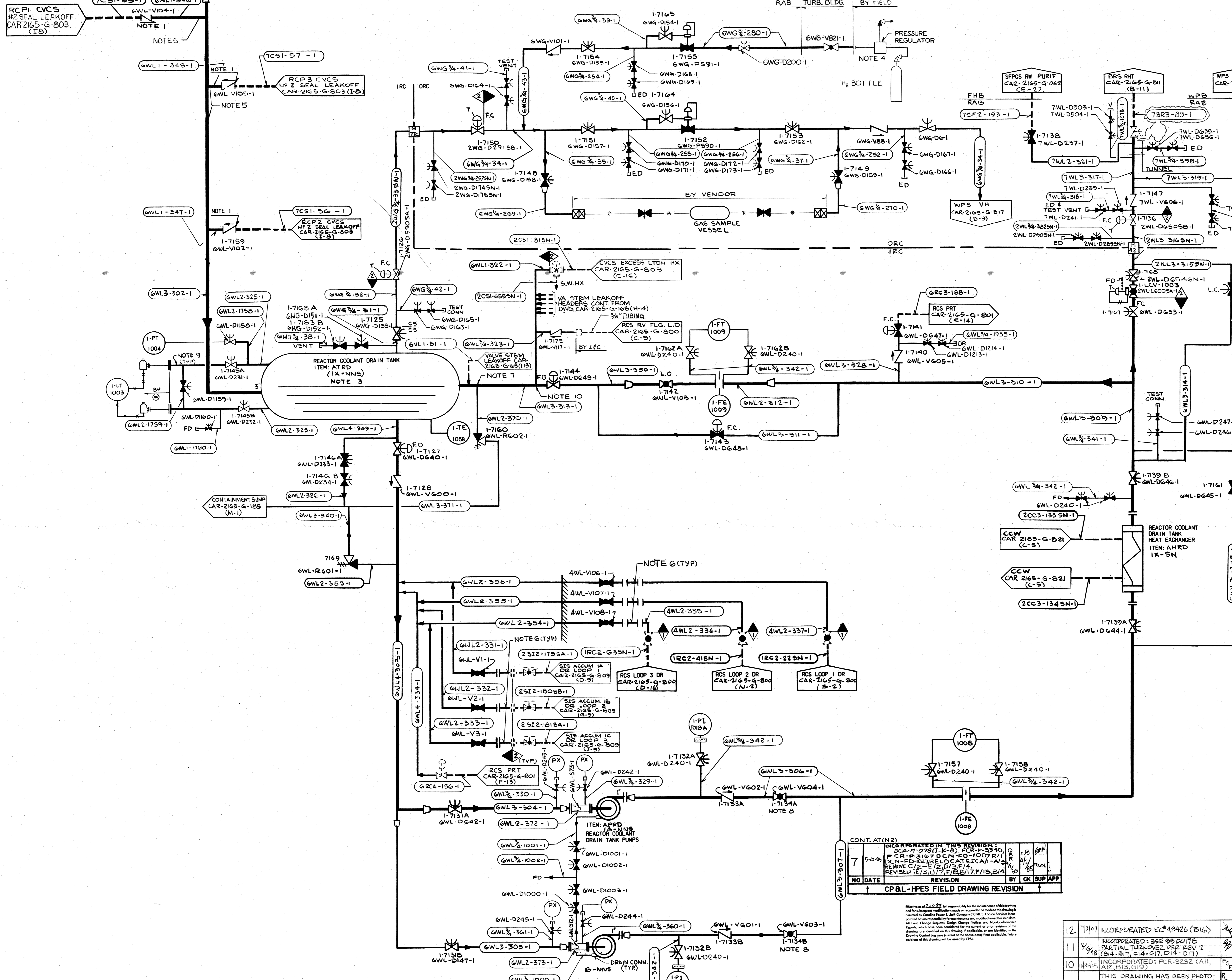
CAROLINA POWER & LIGHT COMPANY
NUCLEAR ENGINEERING DEPARTMENT - RALEIGH, N.C.

PLANT: HARRIS NUCLEAR PROJECT - UNIT 1
SCALE: NONE

TITLE: FLOW DIAGRAM
BORON RECYCLE SYSTEM
SHEET 2
UNIT 1

DWG NO: CAR-2165-G-812





- NOTES:**
1. LOCATE CHECK VALVE IN HORIZONTAL RUN AT RCDDT ELEV.
 2. ALL (W) ITEM NO'S. ON THIS DWG. ARE SHOWN WITHOUT PREFIX CQLWP.
 3. TANK INLET AND RECIRCULATION CONNECTIONS ARE BELOW THE NORMAL WATER LEVEL.
 4. FIELD TO PROVIDE ONE (1) STANDARD SIZE HYDROGEN BOTTLE (99.95% PURITY) WITH ONE 2-STAGE PRESSURE REGULATOR (0-15 PSIG RANGE) SET AT 5 PSIG (REQUIRED FLOW RATE 6.5 SCFM). PROVIDE A RELIEF VALVE AT EXIT OF THE REGULATOR SET AT 100 PSIG.
 5. THIS PIPING SHOULD BE SLOPED DOWNWARD THROUGHOUT THE RUN TO THE DRAIN TANK.
 6. SPOOL PIECE TO BE INSTALLED FOR DRAINING ONLY DURING SHUTDOWN AND AFTER DEPRESSURIZATION. SPOOL PIECE MUST BE REMOVED PRIOR TO ANY TEST OVER 200°F AND/OR PLANT START-UP.
 7. MAKE CONNECTION ON SIDE OR BOTTOM.
 8. USE VALVE TO LIMIT PUMP RUNOUT.
 9. PIPE MUST BE MINIMUM 3 INCHES IN LENGTH FROM WELD OF FLANGE TO EDGE OF VALVE.
 10. PIPE LENGTH DOWNSTREAM OF THIS POINT TO BE AS LONG AS PRACTICABLE.

**NUCLEAR SAFETY
RELATED IN PART ONLY**

- REFERENCE DRAWINGS**
- LIST OF DRAWINGS CAR-1364-B-125
 - PIPING LINE LIST CAR-1364-B-070
 - VALVE & SPECIALTY LIST CAR-1364-B-069
 - INSTRUMENT LIST CAR-2165-G-432
 - FLOW DIAGRAM LEGEND CAR-2165-G-041
 - FLOW DIAGRAM-VALVE STEM LEAKOFF SYSTEM CAR-2165-G-168

APPROVED FOR CONSTRUCTION

CAR-2165
G-813

THIS DRAWING IS A REPRODUCTION OF THE CORRESPONDING WESTINGHOUSE DRAWING.
WEST. DWG. NO. 1093E59 SUB. 2
(EASCO FILE NO. 1504-25 REV. 2)
DRAWING HAS BEEN ALTERED, AS NECESSARY, FOR THE SHEARON HARRIS NUCLEAR POWER PLANT.

THIS DOCUMENT IS DELIVERED IN ACCORDANCE WITH AND IS SUBJECT TO THE PROVISIONS OF SECTION 3 OF THE CONTRACT BETWEEN CAROLINA POWER & LIGHT COMPANY AND EASCO SERVICES INCORPORATED DATED SEPTEMBER 1, 1970, AS AMENDED.

**CAROLINA POWER & LIGHT COMPANY
SHEARON HARRIS NUCLEAR POWER PLANT**

**FLOW DIAGRAM
CONTAINMENT BUILDING
WASTE PROCESSING SYSTEM
UNIT 1**

EASCO SERVICES INCORPORATED

SCALE NONE
APPROVER
DATE 8-6-74
DIV. MECH
DR. S. DESJARDINS
CH. E. ARMEL
CAR-2165
G-813

CONT. AT (N15)

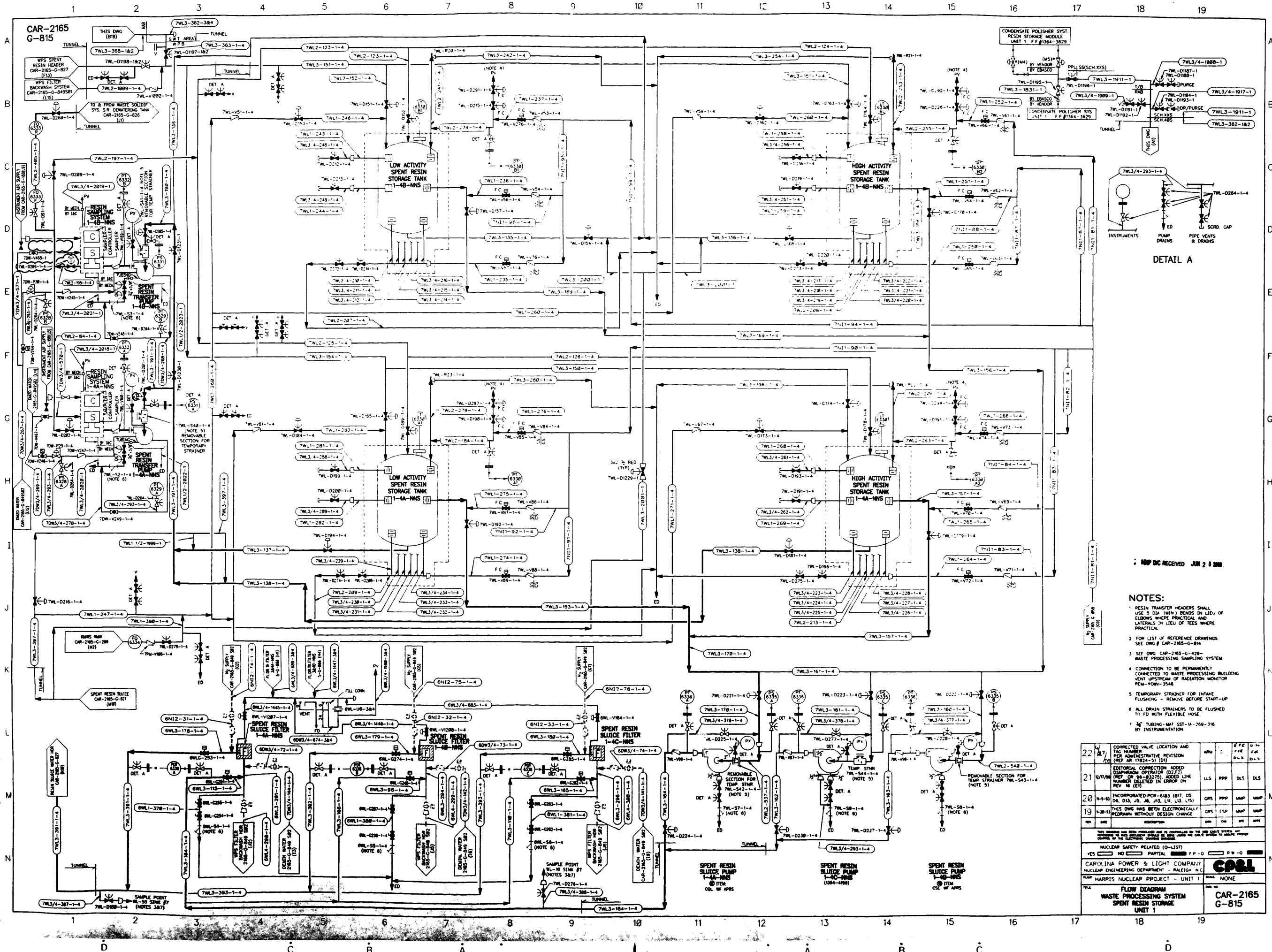
NO	DATE	REVISION	BY	CHK	SUP	APP
8		INCORPORATED: DCA-M-531(B16) H15, I15, K12) FCR-I-3093(E8, E9, I18, I19) FCR-P-4661(E13, E14) 4855 (H18, H19)	JLL	R		
CP&L-HPES FIELD DRAWING REVISION						

CONT. AT (N2)

NO	DATE	REVISION	BY	CHK	SUP	APP
7	5-20-85	INCORPORATED IN THIS REVISION: DCA-M-078(D-K-3), FCR-P-3240, FCR-P-3167 DCN-FD-1007 R/1 DCN-FD-1022 RELOD CAT. DR. A1-N/3 REMOVE C/2-E/2 D/3 F/4 REVISED: E/3, U/7, F/B/17, F/18, B/4	WV	WV		
CP&L-HPES FIELD DRAWING REVISION						

Effective as of 2-22-87 full responsibility for the maintenance of this drawing and for subsequent modifications rests with the user of this drawing. Ebasco Services Incorporated has no responsibility for maintenance and modification after and date. All Field Change Requests, Design Change Notices and Non-Conformance Reports, which have been considered for the current or prior revisions of this drawing, are identified on this drawing if applicable, or are identified in the Drawing Control Log located at the close of this drawing. Future revisions of this drawing will be issued by CP&L.

12	7/1/07	INCORPORATED ECR 48426 (B16)	JLL	WV	DL	
11	4/14/8	INCORPORATED: ESR 9500178 PARTIAL TURNOVER PER REV 2 (B4, B11, C4, C17, D14, D17)	JLL	WV	DL	
10	11/2/81	INCORPORATED: FCR-3232 (A11, A12, B13, B19)	JLL	WV	DL	
9	4/14/8	THIS DRAWING HAS BEEN PHOTO- GRAPHICALLY REPRODUCED THIS DRAWING WAS ORIGINALLY SEALED BY SIMONI GLASSMAN INCORPORATED: DCN-251-415 (B8, E9, F8, F9)	JLL	WV	DL	
NO DATE REVISION BY CHK SUP APP						



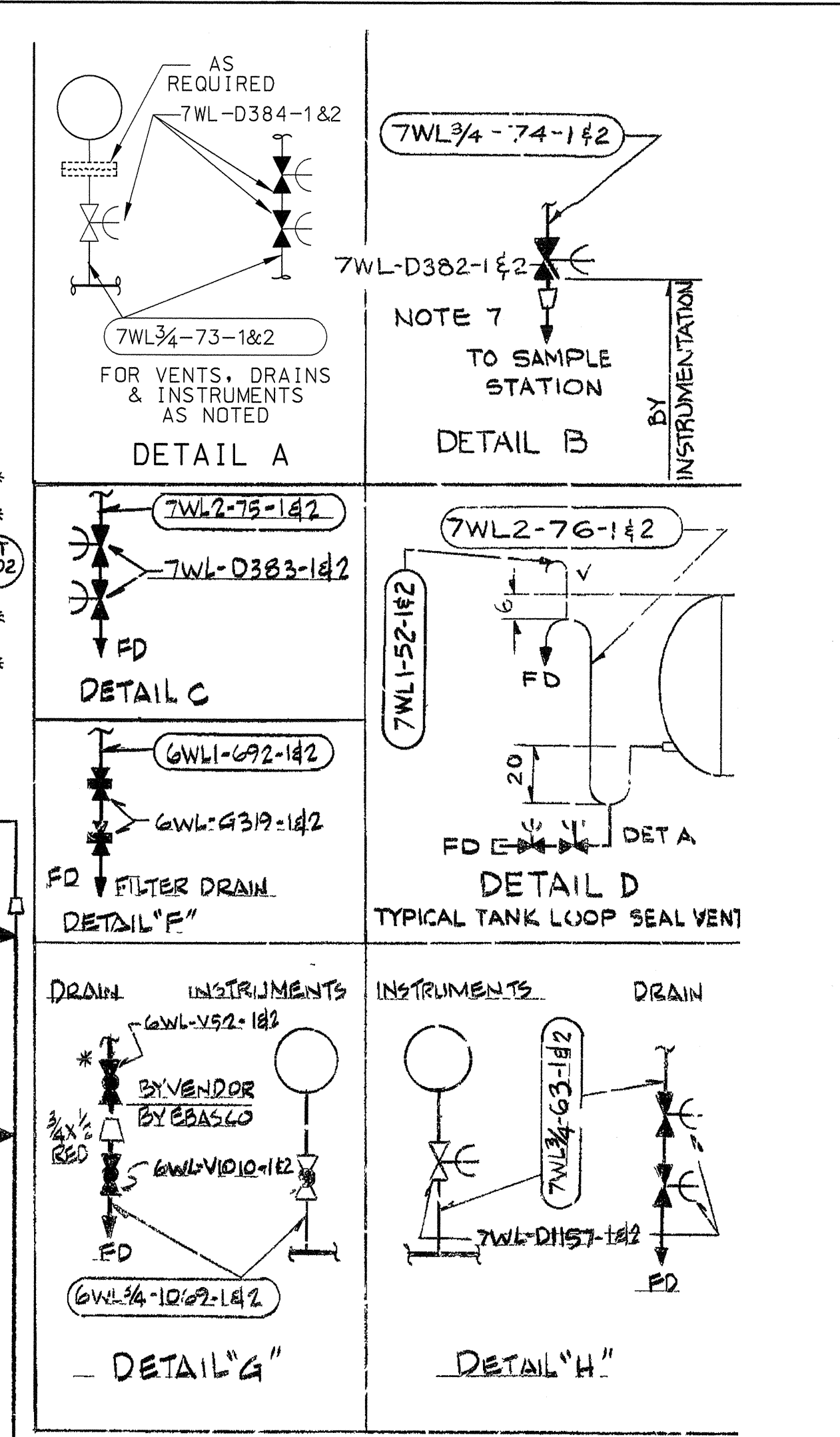
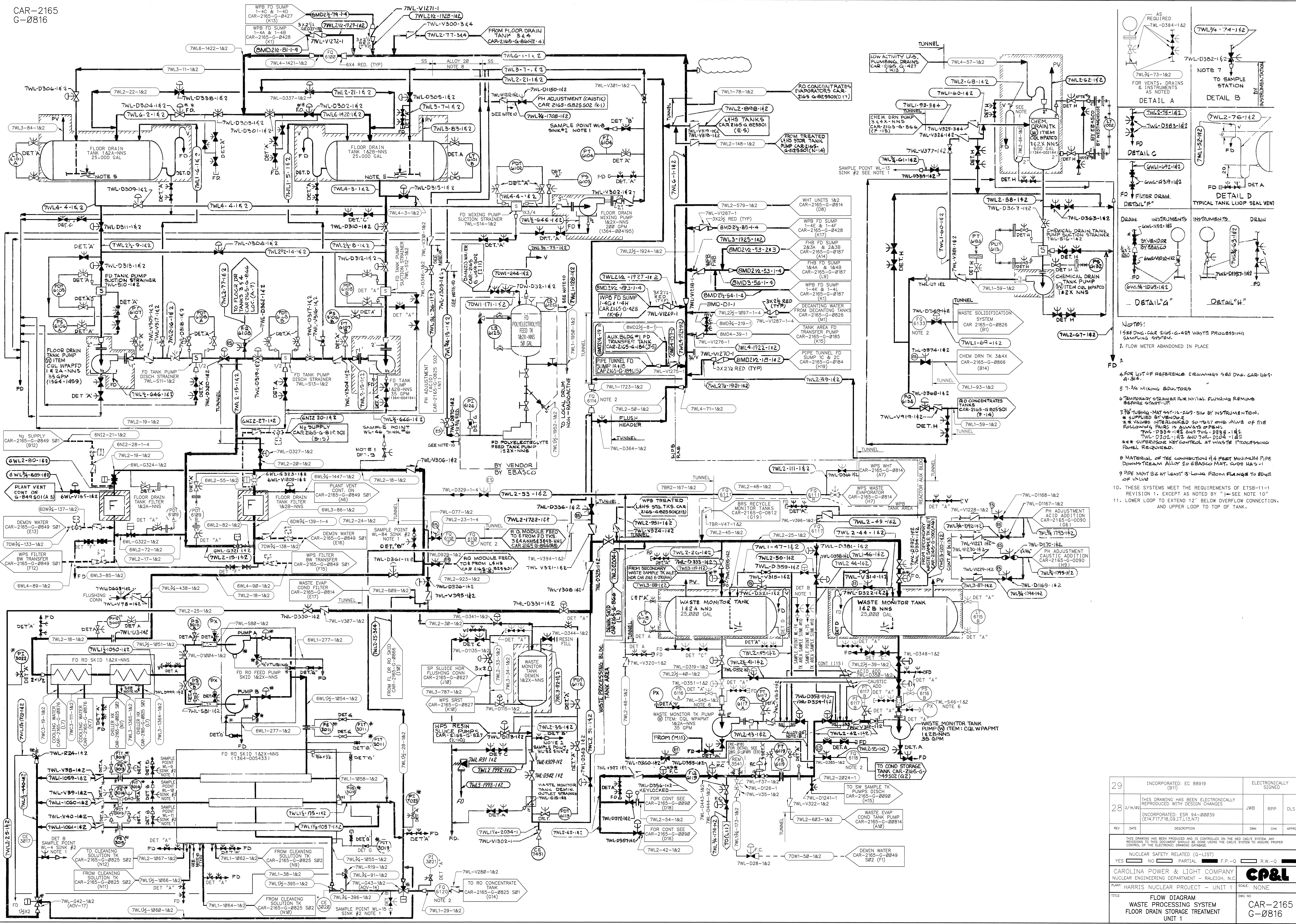
DETAIL A

NOV 80 RECEIVED JUN 2 8 2000

- NOTES:**
- RESIN TRANSFER HEADERS SHALL USE 5 DIA (MIN) BENDS IN LIEU OF ELBOWS WHERE PRACTICAL AND LATERALS IN LIEU OF TEES WHERE PRACTICAL.
 - FOR LIST OF REFERENCE DRAWINGS SEE DWG # CAR-2165-G-814
 - SEE DWG CAR-2165-G-429 WASTE PROCESSING SAMPLING SYSTEM
 - CONNECTION TO BE PERMANENTLY CONNECTED TO WASTE PROCESSING BUILDING VENT UPSTREAM OF RADIATION MONITOR REM-11WV-3546
 - TEMPORARY STRAINER FOR INTAKE FLUSHING - REMOVE BEFORE START-UP
 - ALL DRAIN STRAINERS TO BE FLUSHED TO FD WITH FLEXIBLE HOSE
 - 1/2" TUBING - MAT S51-U-269-316 BY INSTRUMENTATION

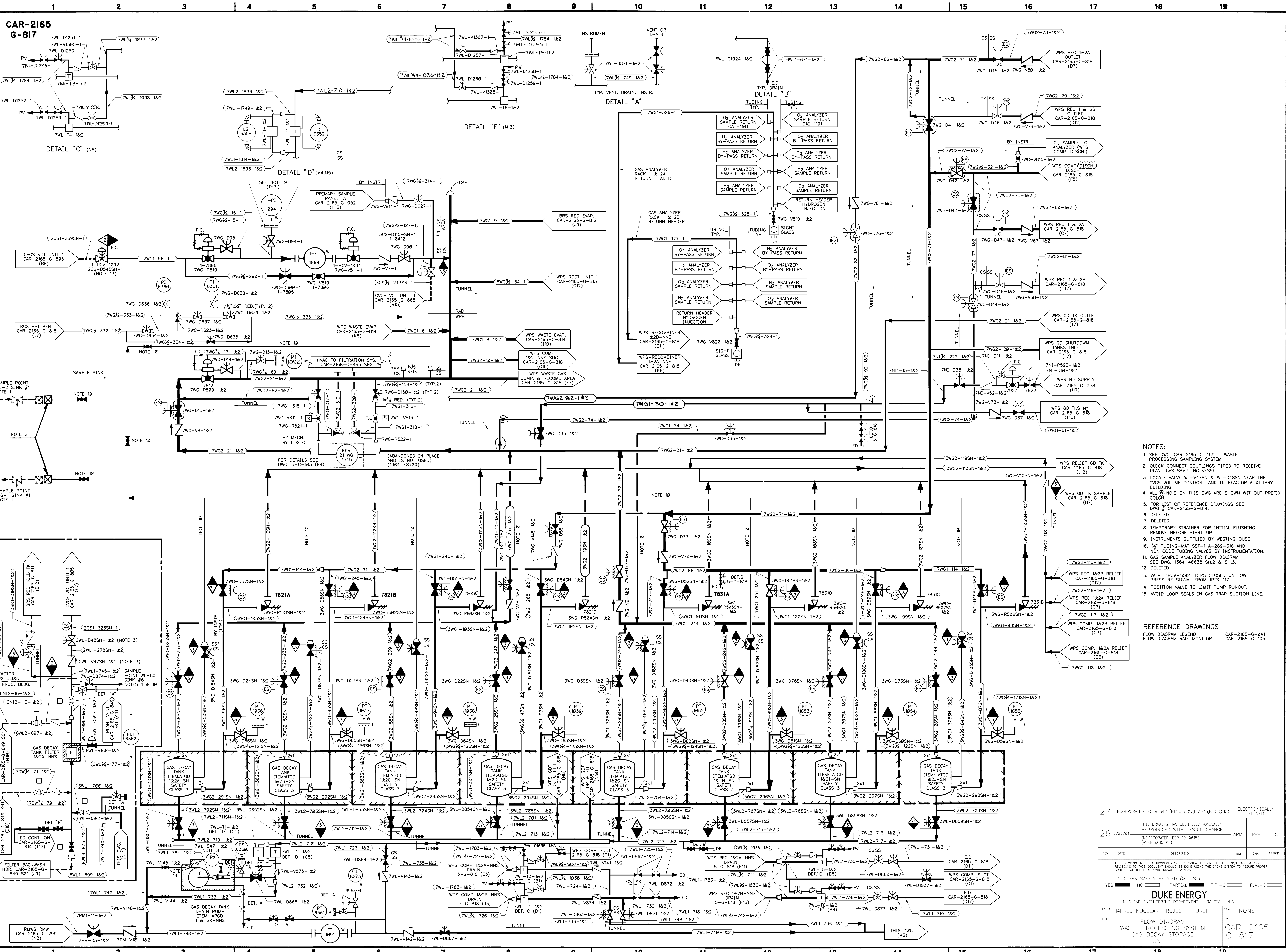
REV	DATE	DESCRIPTION	APPV	EFF DATE
22	12/17/99	CORRECTED VALVE LOCATION AND TAG NUMBER PER ADMINISTRATIVE REVISION (REF. REV 17824-3) (D1)	LLS	12/17/99
21	12/17/99	EDITORIAL CORRECTION ADDED DIAPHRAGM OPERATOR (D27) (REF. ON 98-83275). ADDED LINE NUMBER DELETED IN ERROR ON REV 16 (E1)	LLS	12/17/99
20	6-4-93	INCORPORATED PCR-6183 (BIT, DS, DR, D13, J5, J6, J13, L11, L13, L15)	GPS	6/4/93
19	1-28-93	THIS DWG HAS BEEN ELECTRONICALLY REDESIGNED WITHOUT DESIGN CHANGE	GPS	1/28/93

NUCLEAR SAFETY RELATED (O-LIST)		APPV	EFF DATE
YES	NO	PARTIAL	F P O
CAROLINA POWER & LIGHT COMPANY NUCLEAR ENGINEERING DEPARTMENT - RALEIGH, NC		APPV	EFF DATE
HARRIS NUCLEAR PROJECT - UNIT 1		APPV	EFF DATE
FLOW DIAGRAM WASTE PROCESSING SYSTEM SPENT RESIN STORAGE UNIT 1		APPV	EFF DATE
CAR-2165 G-815		APPV	EFF DATE



- NOTES:**
1. SEE DWG. CAR 2165-G-0829 WASTE PROCESSING SAMPLING SYSTEM.
 2. FLOW METER ABANDONED IN PLACE.
 - 3.
 4. FOR LIST OF REFERENCE DRAWINGS SEE DWG. CAR-145-A-314.
 5. 7-3/4" MIXING EDUCTORS.
 6. TEMPORARY STRAINER FOR INITIAL FLUSHING REMOVE BEFORE START-UP.
 7. 3/8" TUBING MAT 95-1-169-310 BY INSTRUMENTATION.
 8. VALVES INTERLOCKED SO THAT ONE VALVE OF THE FOLLOWING PAIRS IS ALWAYS OPEN:
 - 7WL-D334-1-2 AND 7WL-D335-1-2
 - 7WL-D332-1-2 AND 7WL-D333-1-2
 - 7WL-D330-1-2 AND 7WL-D331-1-2
 9. SUPERVISOR KEY CONTROL AT WASTE PROCESSING PANEL REQUIRED.
 10. MATERIAL OF THE CONNECTION 1/4 FEET MINIMUM PIPE DOWNSTREAM ALLOY 20 EBA500 MAT. CUDS HAS 1-1
 11. LOWER LOOP TO EXTEND 12" BELOW OVERFLOW CONNECTION, AND UPPER LOOP TO TOP OF TANK.

29	INCORPORATED: EC 88919 (611)	ELECTRONICALLY SIGNED
28	2/14/92 THIS DRAWING HAS BEEN ELECTRONICALLY REPRODUCED WITH DESIGN CHANGES	JWB RPP DLS
REV	DATE	DESCRIPTION
		DWN CHK APPR
THIS DRAWING HAS BEEN PRODUCED AND IS CONTROLLED ON THE CAD/E SYSTEM ANY REVISIONS TO THIS DOCUMENT SHOULD BE DONE USING THE CAD/E SYSTEM TO ASSURE PROPER CONTROL OF THE ELECTRONIC DRAWING DATABASE.		
NUCLEAR SAFETY RELATED (Q-1317) YES NO PARTIAL F.P.-Q R.W.-Q		
CAROLINA POWER & LIGHT COMPANY NUCLEAR ENGINEERING DEPARTMENT - RALEIGH, N.C.		
PLANT: HARRIS NUCLEAR PROJECT - UNIT 1 SCALE: NONE		
TITLE: FLOW DIAGRAM WASTE PROCESSING SYSTEM FLOOR DRAIN TANK STORAGE TREATMENT UNIT 1		
		CAR-2165 G-0816

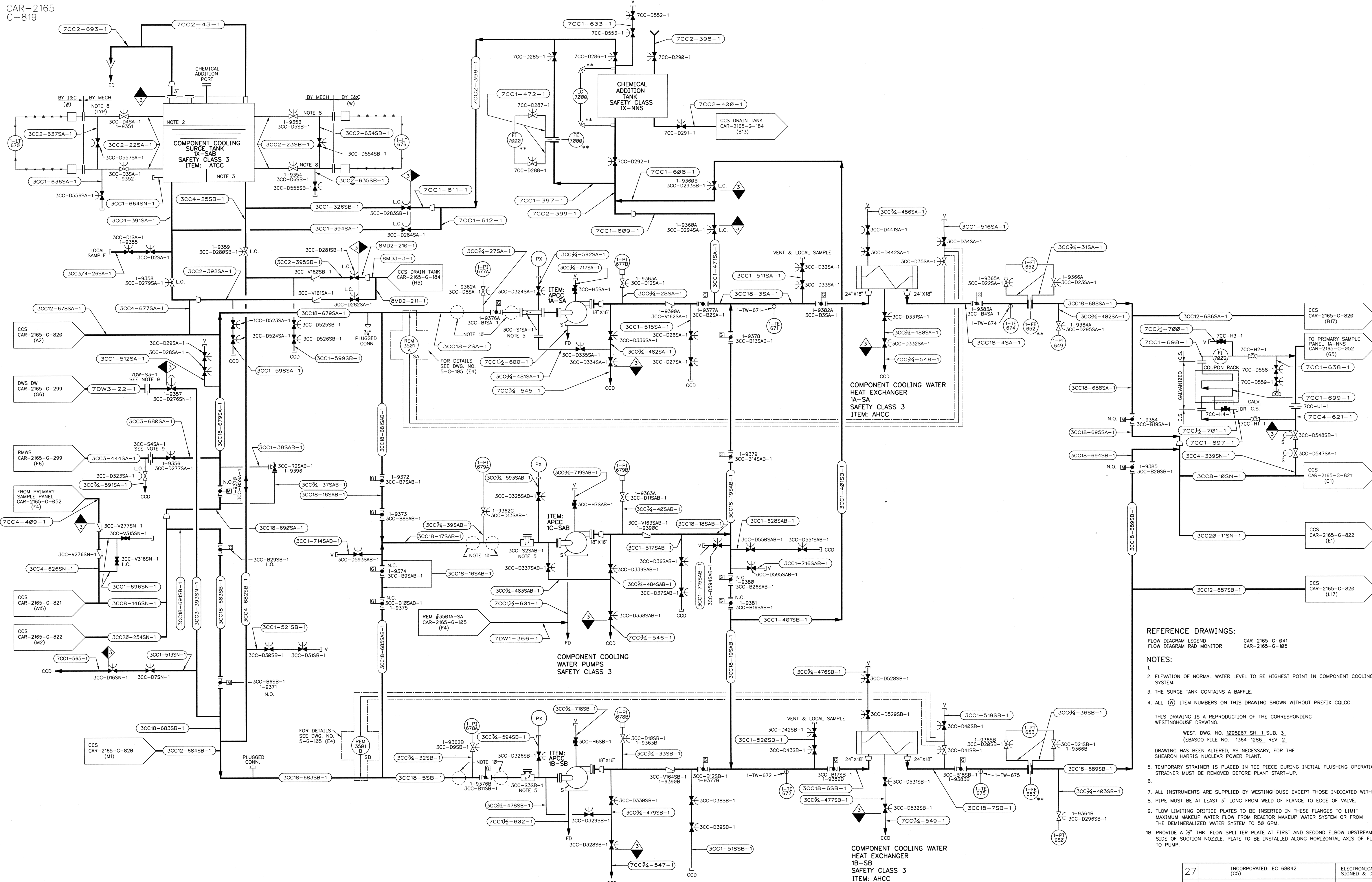


- NOTES:**
- SEE DWG. CAR-2165-G-459 - WASTE PROCESSING SAMPLING SYSTEM
 - QUICK CONNECT COUPLINGS PIPED TO RECEIVE PLANT GAS SAMPLING VESSEL.
 - LOCATE VALVE WL-V475N & WL-D485N NEAR THE CVCS VOLUME CONTROL TANK IN REACTOR AUXILIARY BUILDING
 - ALL (M) NO'S ON THIS DWG ARE SHOWN WITHOUT PREFIX
 - FOR LIST OF REFERENCE DRAWINGS SEE DWG # CAR-2165-G-814.
 - DELETED
 - DELETED
 - TEMPORARY STRAINER FOR INITIAL FLUSHING REMOVE BEFORE START-UP.
 - INSTRUMENTS SUPPLIED BY WESTINGHOUSE.
 - 3/4" TUBING-MAT SST-1 A-269-316 AND NON CODE TUBING VALVES BY INSTRUMENTATION.
 - GAS SAMPLE ANALYZER FLOW DIAGRAM SEE DWG. 1364-48638 SH.2 & SH.3.
 - DELETED
 - VALVE IPV-1892 TRIPS CLOSED ON LOW PRESSURE SIGNAL FROM IPIS-117.
 - POSITION VALVE TO LIMIT PUMP RUNOUT.
 - AVOID LOOP SEALS IN GAS TRAP SUCTION LINE.

REFERENCE DRAWINGS

FLOW DIAGRAM LEGEND CAR-2165-G-841
 FLOW DIAGRAM RAD. MONITOR CAR-2165-G-105

27	INCORPORATED: EC 98342 (B14,C15,D17,C15,F3,G8,G15)	ELECTRONICALLY SIGNED			
26	8/29/91 INCORPORATED: ESR 99-0955 (A15,B15,C15,D15)	ARM RPP DLS			
REV	DATE	DESCRIPTION	DWN	CHK	APPROV
THIS DRAWING HAS BEEN PRODUCED AND IS CONTROLLED ON THE MED CODE SYSTEM AND REVISIONS TO THIS DOCUMENT SHOULD BE DONE USING THE CAD SYSTEM TO ASSURE PROPER CONTROL OF THE ELECTRONIC DRAWING.					
NUCLEAR SAFETY RELATED (G-1157)					
YES <input type="checkbox"/> NO <input type="checkbox"/> PARTIAL <input type="checkbox"/> F.P.-0 <input type="checkbox"/> R.W.-0 <input type="checkbox"/>					
DUKE ENERGY					
NUCLEAR ENGINEERING DEPARTMENT - RALEIGH, N.C.					
PLANT: HARRIS NUCLEAR PROJECT - UNIT 1					
SCALE: NONE					
TITLE: FLOW DIAGRAM WASTE PROCESSING SYSTEM CAR-2165-G-817					
UNIT 1					

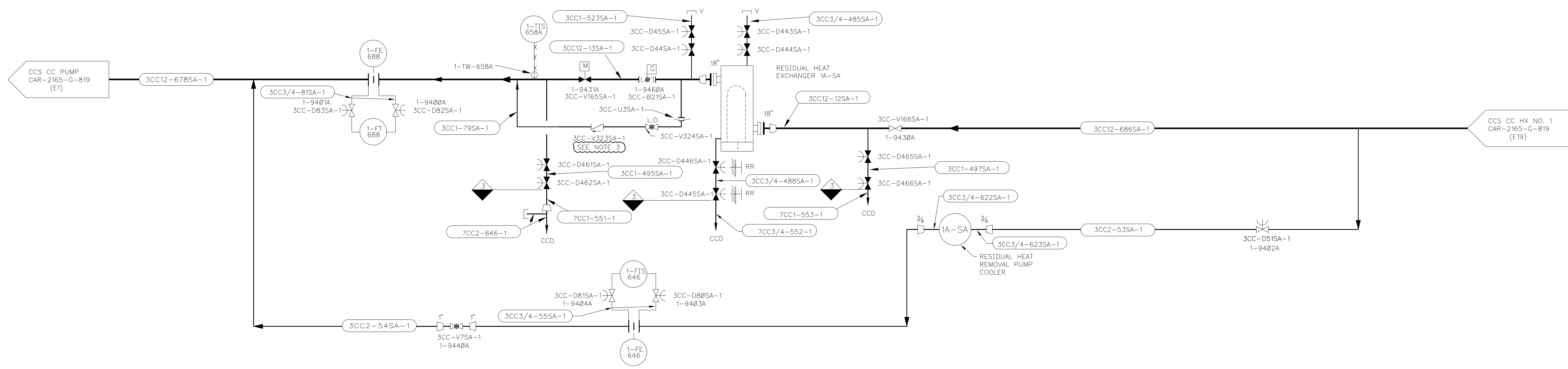


REFERENCE DRAWINGS:
 FLOW DIAGRAM LEGEND CAR-2165-G-841
 FLOW DIAGRAM RAD MONITOR CAR-2165-G-105

NOTES:
 1.
 2. ELEVATION OF NORMAL WATER LEVEL TO BE HIGHEST POINT IN COMPONENT COOLING SYSTEM.
 3. THE SURGE TANK CONTAINS A BAFFLE.
 4. ALL (M) ITEM NUMBERS ON THIS DRAWING SHOWN WITHOUT PREFIX COLCC.
 THIS DRAWING IS A REPRODUCTION OF THE CORRESPONDING WESTINGHOUSE DRAWING.
 WEST. DWG. NO. 1095E67 SH. 1 SUB. 3 (EASCO FILE NO. 1364-1286 REV. 2)
 DRAWING HAS BEEN ALTERED, AS NECESSARY, FOR THE SHEARON HARRIS NUCLEAR POWER PLANT.
 5. TEMPORARY STRAINER IS PLACED IN TEE PIECE DURING INITIAL FLUSHING OPERATIONS. STRAINER MUST BE REMOVED BEFORE PLANT START-UP.
 6.
 7. ALL INSTRUMENTS ARE SUPPLIED BY WESTINGHOUSE EXCEPT THOSE INDICATED WITH **.
 8. PIPE MUST BE AT LEAST 3" LONG FROM WELD OF FLANGE TO EDGE OF VALVE.
 9. FLOW LIMITING ORIFICE PLATES TO BE INSERTED IN THESE FLANGES TO LIMIT MAXIMUM MAKEUP WATER FLOW FROM REACTOR MAKEUP WATER SYSTEM OR FROM THE DEMINERALIZED WATER SYSTEM TO 50 GPM.
 10. PROVIDE A 1/2" THK. FLOW SPLITTER PLATE AT FIRST AND SECOND ELBOW UPSTREAM SIDE OF SUCTION NOZZLE. PLATE TO BE INSTALLED ALONG HORIZONTAL AXIS OF FLOW TO PUMP.

27	INCORPORATED: EC 68042 (CS)	ELECTRONICALLY SIGNED & DATED
REV	DESCRIPTION	APPROVED
<small>THIS DRAWING HAS BEEN PRODUCED AND IS CONTROLLED ON THE MED CAD/E SYSTEM. ANY REVISIONS TO THIS DOCUMENT SHOULD BE DONE USING THE CAD/E SYSTEM TO ASSURE PROPER CONTROL OF THE ELECTRONIC DRAWING DRAWING.</small>		
<small>NUCLEAR SAFETY RELATED (0-11ST)</small> YES <input type="checkbox"/> NO <input type="checkbox"/> PARTIAL <input type="checkbox"/> F.P.-0 <input type="checkbox"/> R.W.-0 <input type="checkbox"/>		
CAROLINA POWER & LIGHT COMPANY NUCLEAR ENGINEERING DEPARTMENT - RALEIGH, N.C.		
PLANT: HARRIS NUCLEAR PROJECT - UNIT 1 TITLE: FLOW DIAGRAM COMPONENT COOLING WATER SYSTEM SHEET 1	SCALE: NONE DWG NO: CAR-2165 G-819	

CAR-2165
G-820

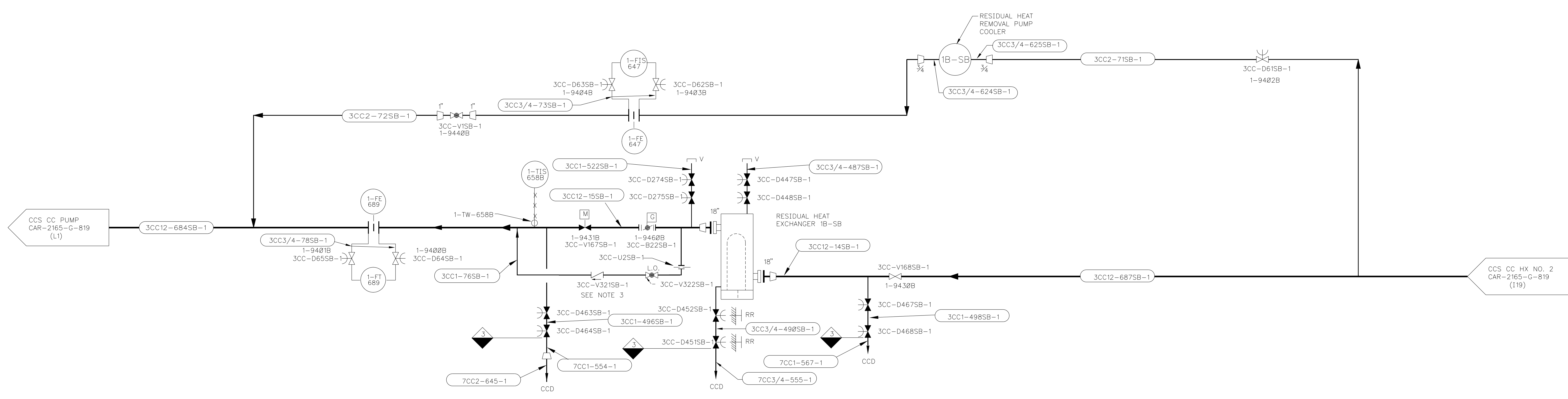


NOTES:
1. ALL ITEM NUMBERS ON THIS DRAWING SHOWN WITHOUT PREFIX COLLOC.
2. THIS DRAWING IS A REPRODUCTION OF THE CORRESPONDING WESTINGHOUSE DRAWING.
WEST. DWG. NO. 1095667 SH. 2 SUB. 3
(EBASCO FILE NO. 1364-1287 REV. 2)
3. CHECK VALVE INTERNALS REMOVED.
DRAWING HAS BEEN ALTERED, AS NECESSARY, FOR THE SHEARON HARRIS NUCLEAR POWER PLANT.

NUCLEAR SAFETY RELATED

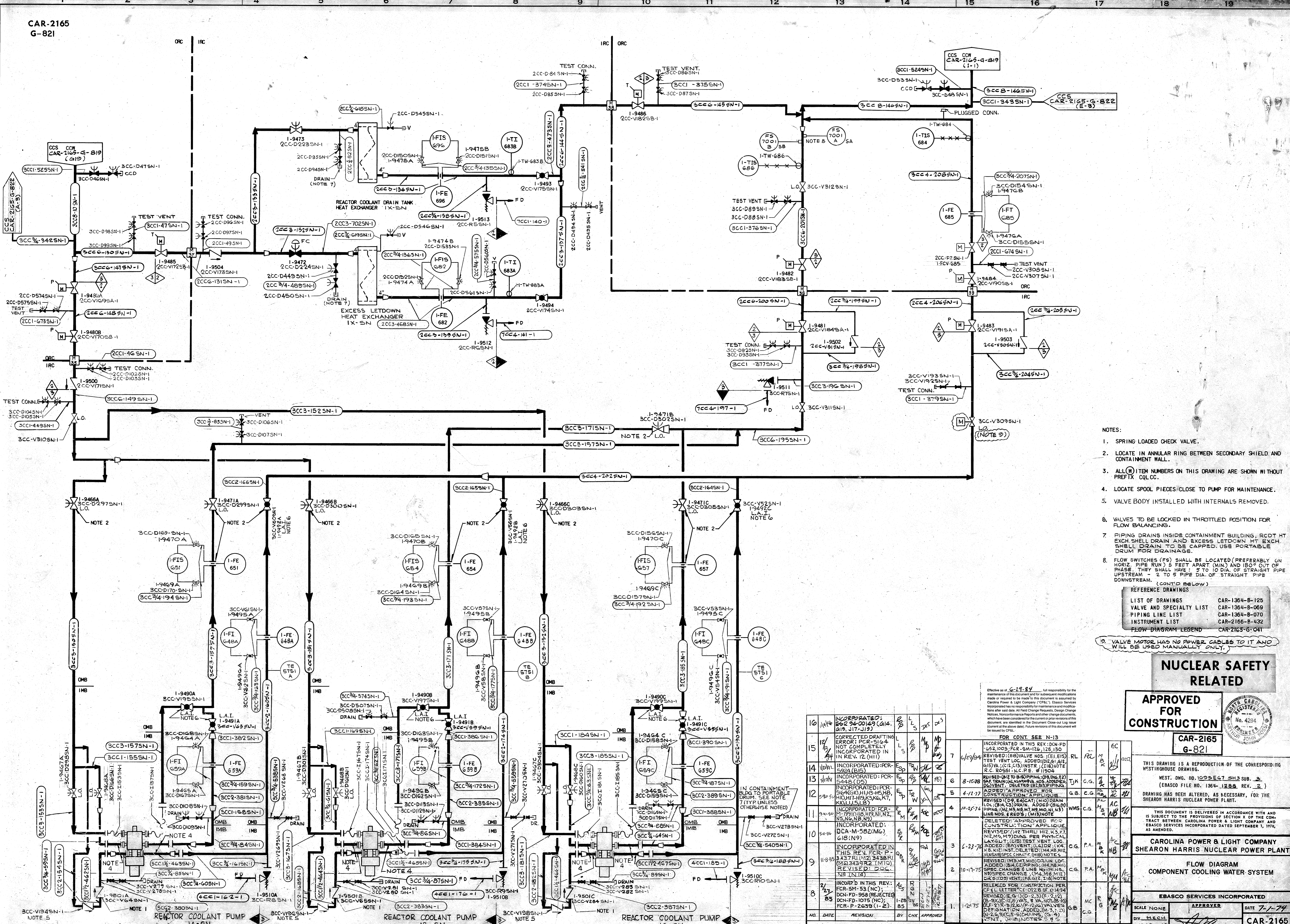
REFERENCE DRAWINGS
LIST OF DRAWINGS VALVE AND SPECIALTY LIST CAR-1364-B-125
PIPING LINE LIST CAR-1364-B-069
INSTRUMENT LIST CAR-1364-B-070
FLOW DIAGRAM LEGEND CAR-2166-B-432
CAR-2165-G-041

APPROVED FOR CONSTRUCTION



15	INCORPORATED EC 100246 (87)	ELECTRONICALLY SIGNED
14	INCORPORATED EC 94774 (L7,H17,H18)	ELECTRONICALLY SIGNED
13	INCORPORATED EC 88050 (05)	ELECTRONICALLY SIGNED
12	INCORPORATED EC 88051 (K5)	ELECTRONICALLY SIGNED
11	5/26/92 INCORP-PCR-5748(A6,A8,B6,B7,B8) TRW/BFR C6,L6,L7,L8,M6)REVISED:TAG NO,(DB) GPR	KDB GOW JT RE DRE DPK LE

THIS DRAWING HAS BEEN PRODUCED AND IS CONTROLLED ON THE MED CAD/E SYSTEM AND REVISIONS TO THIS DOCUMENT SHOULD BE DONE USING THE CAD/E SYSTEM TO ASSURE PROPER CONTROL OF THE ELECTRONIC DRAWING DATABASE.	
NUCLEAR SAFETY RELATED (Q-LIST)	
YES	NO PARTIAL F.P.-Q R.W.-Q
DUKE ENERGY NUCLEAR ENGINEERING DEPARTMENT - RALEIGH, N.C.	
PLANT: HARRIS NUCLEAR PROJECT - UNIT 1	SCALE: NONE
TITLE: FLOW DIAGRAM COMPONENT COOLING WATER SYSTEM SHEET 2	DWG NO. CAR-2165 G-820



- NOTES:
1. SPRING LOADED CHECK VALVE.
 2. LOCATE IN ANNULAR RING BETWEEN SECONDARY SHIELD AND CONTAINMENT WALL.
 3. ALL ITEM NUMBERS ON THIS DRAWING ARE SHOWN WITHOUT PREFIX CQLCC.
 4. LOCATE SPOOL PIECES CLOSE TO PUMP FOR MAINTENANCE.
 5. VALVE BODY INSTALLED WITH INTERNALS REMOVED.
 6. VALVES TO BE LOCKED IN THROTTLED POSITION FOR FLOW BALANCING.
 7. PIPING DRAINS INSIDE CONTAINMENT BUILDING, RCOT HT EXCH SHELL DRAIN AND EXCESS LETDOWN HT EXCH SHELL DRAIN TO BE CAPPED. USE PORTABLE DRUM FOR DRAINAGE.
 8. FLOW SWITCHES (FS) SHALL BE LOCATED (PREFERABLY ON HORIZ. PIPE RUN) 5 FEET APART (MIN.) AND 180° OUT OF PHASE. THEY SHALL HAVE 2 TO 10 DIA. OF STRAIGHT PIPE UPSTREAM - 2 TO 5 PIPE DIA. OF STRAIGHT PIPE DOWNSTREAM. (CONT'D BELOW)
- REFERENCE DRAWINGS
- | | |
|--------------------------|----------------|
| LIST OF DRAWINGS | CAR-1364-B-125 |
| VALVE AND SPECIALTY LIST | CAR-1364-B-069 |
| PIPING LINE LIST | CAR-1364-B-070 |
| INSTRUMENT LIST | CAR-2166-B-432 |
| FLOW DIAGRAM LEGEND | CAR-2165-G-041 |
9. VALVE MOTOR HAS NO POWER CABLES TO IT AND WILL BE USED MANUALLY ONLY.

NUCLEAR SAFETY RELATED

APPROVED FOR CONSTRUCTION

CAR-2165-G-821

NO.	DATE	REVISION	BY	CHK	APPROVED
10	1/16/74	INCORPORATED: P-5294-00149 (G14, G19, J17-J19)	L	S	MS
11	1/23/74	CORRECTED DRAFTING ERROR: P-5164 (D5) INCORPORATED IN IN REV. 12 (H11)	L	S	MS
12	1/23/74	INCORPORATED: P-5294-00149 (G14, G19, J17-J19)	L	S	MS
13	1/23/74	INCORPORATED: P-5294-00149 (G14, G19, J17-J19)	L	S	MS
14	1/23/74	INCORPORATED: P-5294-00149 (G14, G19, J17-J19)	L	S	MS
15	1/23/74	INCORPORATED: P-5294-00149 (G14, G19, J17-J19)	L	S	MS
16	1/23/74	INCORPORATED: P-5294-00149 (G14, G19, J17-J19)	L	S	MS
17	1/23/74	INCORPORATED: P-5294-00149 (G14, G19, J17-J19)	L	S	MS
18	1/23/74	INCORPORATED: P-5294-00149 (G14, G19, J17-J19)	L	S	MS
19	1/23/74	INCORPORATED: P-5294-00149 (G14, G19, J17-J19)	L	S	MS

THIS DRAWING IS A REPRODUCTION OF THE CORRESPONDING WESTINGHOUSE DRAWING.

WEST. DWG. NO. 102567 SH3 SUB. 2 (EASCO FILE NO. 1364-1288 REV. 2)

DRAWING HAS BEEN ALTERED, AS NECESSARY, FOR THE SHEARON HARRIS NUCLEAR POWER PLANT.

THIS DOCUMENT IS DELIVERED IN ACCORDANCE WITH AND IS SUBJECT TO THE PROVISIONS OF SECTION 3 OF THE CONTRACT BETWEEN CAROLINA POWER & LIGHT COMPANY AND EASCO SERVICES INCORPORATED DATED SEPTEMBER 1, 1970, AS AMENDED.

CAROLINA POWER & LIGHT COMPANY
SHEARON HARRIS NUCLEAR POWER PLANT

FLOW DIAGRAM COMPONENT COOLING WATER SYSTEM

EASCO SERVICES INCORPORATED

SCALE NONE

APPROVED

DATE 7-1-74

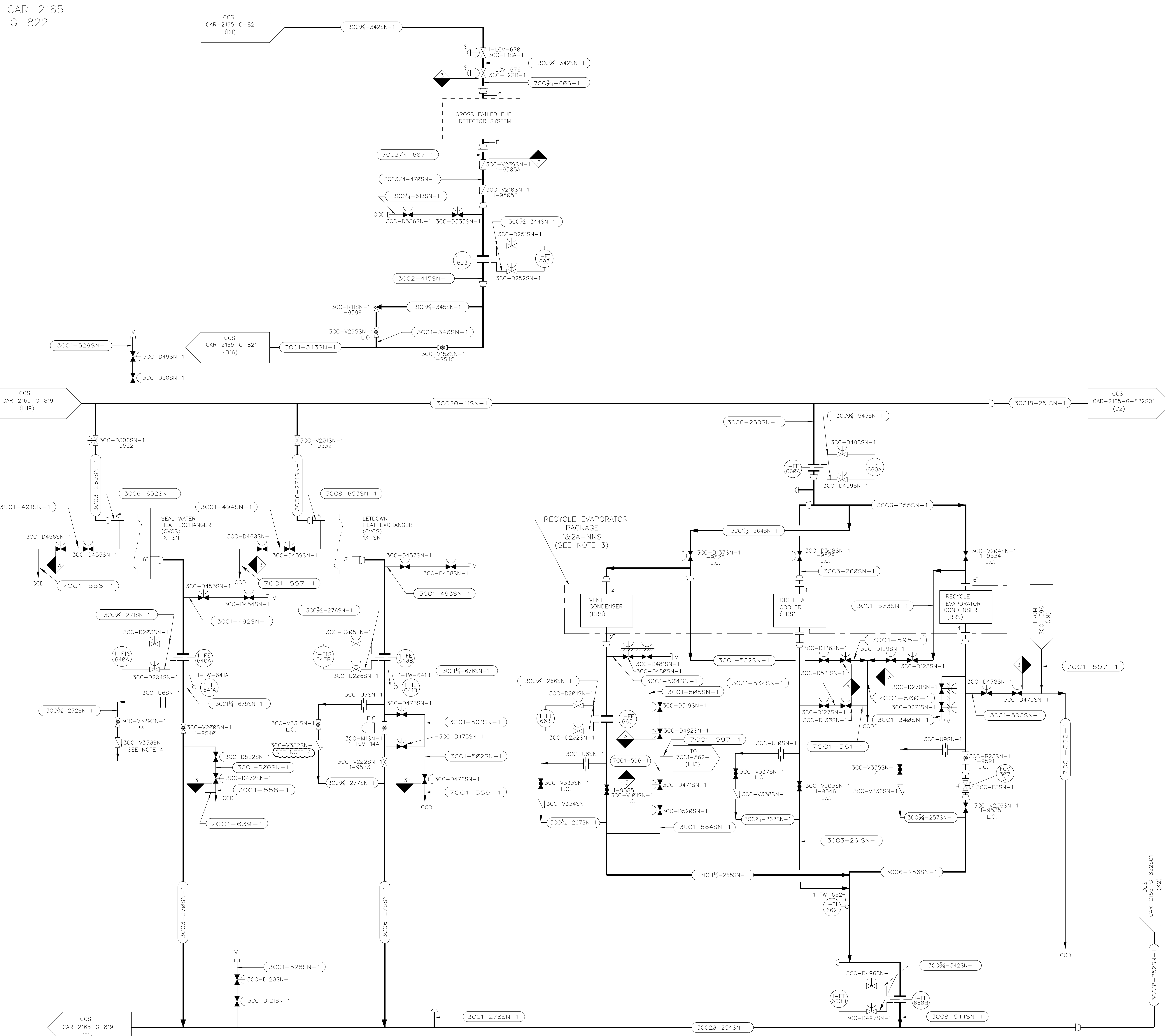
DIV. MECH

DR. BRESTINE

CH. CARBALLA

CAR-2165-G-821

CAR-2165
G-822



NOTES:
 1. ALL (M) ITEM NUMBERS ON THIS DRAWING SHOWN WITHOUT PREFIX COLCC.
 2. THIS DRAWING IS A REPRODUCTION OF THE CORRESPONDING WESTINGHOUSE DRAWING.
 WEST. DWG. NO. 1095667 SH. 4 SUB. 3
 (EBASCO FILE NO. 1364-1289 REV. 2)
 3. THE ASME III, CLASS 3 BOUNDARY APPLIES ONLY TO THE CCW PRESSURE BOUNDARY FOR THE BRS EVAPORATOR CONDENSER, BRS VENT CONDENSER AND BRS DISTILLATE COOLER.
 4. CHECK VALVE INTERNALS REMOVED.

DRAWING HAS BEEN ALTERED, AS NECESSARY, FOR THE SHEARON HARRIS NUCLEAR POWER PLANT.

REFERENCE DRAWINGS
 FLOW DIAGRAM LEGEND CAR-2165-G-841

20	INCORPORATED: EC 100150 (J4)	ELECTRONICALLY SIGNED				
19	INCORPORATED: EC 94774 (H17,H18,J2)	ELECTRONICALLY SIGNED				
18	INCORPORATED: EC# 48426 (G7,H17,H18,H19)	ELECTRONICALLY SIGNED				
17	9-23-01 [INCORPORATED: ESR 00-00322 (J7,J9,J11)]	ARM RPP N/A DLS				
16	5-8-01 [INCORPORATED: ESR 98-00219 (G8,G10,G12,J7,J10,J12)]	ARM RPP N/A DLS				
15	9-28-92 THIS DRAWING HAS BEEN ELECTRONICALLY REDRAWN WITHOUT DESIGN CHANGES.	TRW RPP MMP MMP				
REV	DATE	DESCRIPTION	OWN	CHK	DPE	DRPE

THIS DRAWING HAS BEEN PRODUCED AND IS CONTROLLED ON THE MED CAD/E SYSTEM AND REVISIONS TO THIS DOCUMENT SHOULD BE DONE USING THE CAD/E SYSTEM TO ASSURE PROPER CONTROL OF THE ELECTRONIC DRAWING DATABASE.

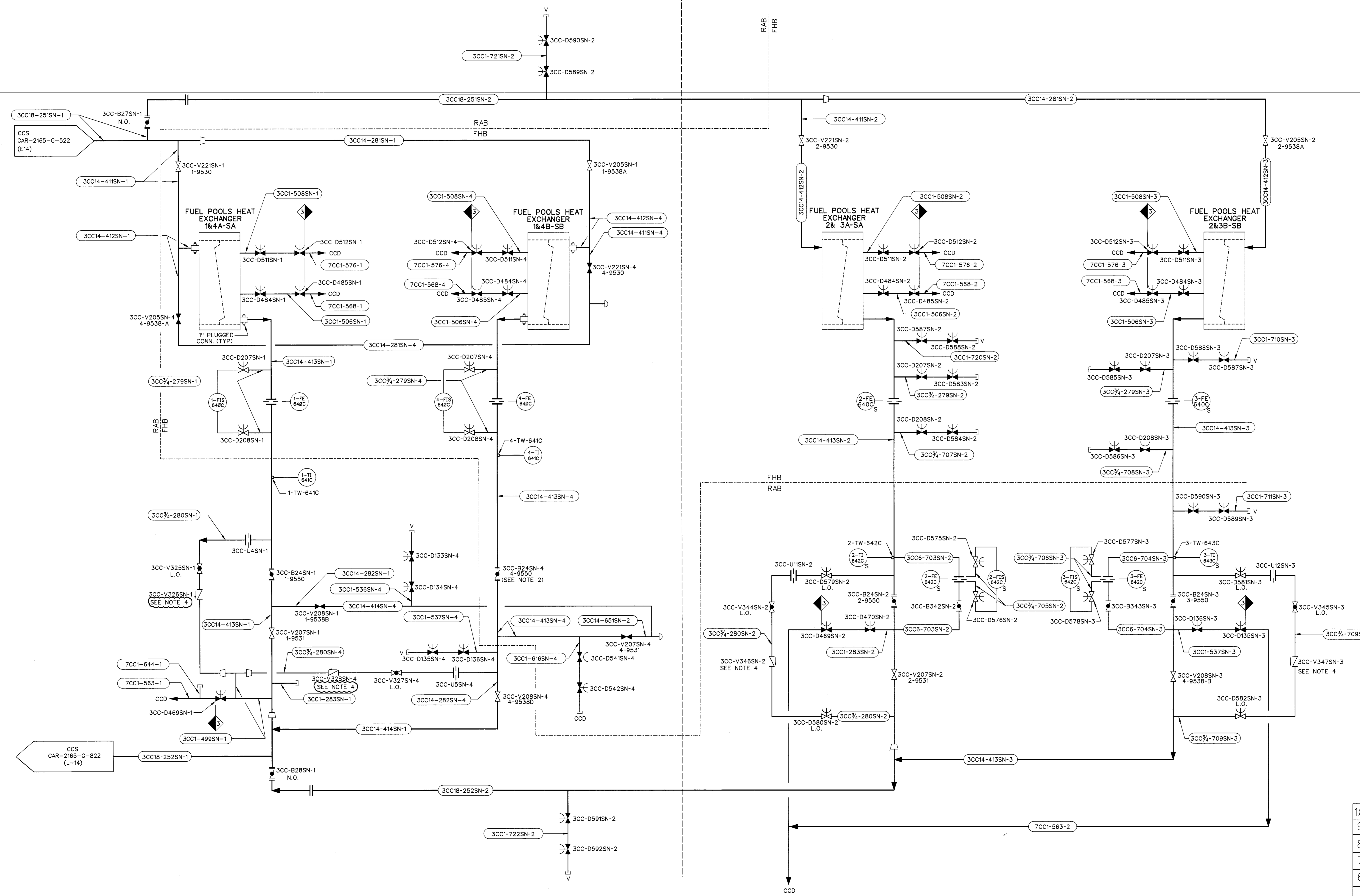
NUCLEAR SAFETY RELATED (Q-LIST)
 YES NO PARTIAL F.P.-Q R.W.-Q

DUKE ENERGY
 NUCLEAR ENGINEERING DEPARTMENT - RALEIGH, N.C.

PLANT: HARRIS NUCLEAR PROJECT - UNIT 1 SCALE: NONE

TITLE: FLOW DIAGRAM COMPONENT COOLING WATER SYSTEM SHEET 4 DWG NO. CAR-2165-G-822

SOUTH END NORTH END
UNIT 1 UNIT 2



- NOTES:
- ALL ITEM NUMBERS ON THIS DRAWING SHOWN WITHOUT PREFIX CQLCC.
 - VALVE DISC HAS .25" ±.05" ORIFICE FOR SYS. THERMAL OVER PRESSURE PROTECTION.
 - THIS DRAWING IS A REPRODUCTION OF THE CORRESPONDING WESTINGHOUSE DRAWING.
WEST. DWG. NO. 1095E67 SH.4 SUB. 3
(EBCASCO FILE NO. 1364-1289 REV. 2)
DRAWING HAS BEEN ALTERED, AS NECESSARY, FOR THE SHEARON HARRIS NUCLEAR POWER PLANT.
 - CHECK VALVE INTERNALS REMOVED.

REFERENCE DRAWINGS:
FLOW DIAGRAM LEGEND CAR-2165-G-041

10	INCORPORATED: EC 93178 (H3,I5)	ELECTRONICALLY SIGNED			
9	INCORPORATED: EC*92940 (J1, I14,F18)	ELECTRONICALLY SIGNED			
8	11/7/01 INCORPORATED: ESR 00-00301 (H11, H5)	MW RPP DLS			
7	10/17/01 INCORPORATED: ESR 98-00219, R13 (G15)	ACK JWB DLS			
6	5/14/01 INCORPORATED: ESR 98-00219 R11 (A7,K8-K8,L7)	ARM RPP DLS			
5	5/8/01 THIS DRAWING HAS BEEN ELECTRONICALLY REDRAWN WITH DESIGN CHANGE INCORPORATED: ESR 98-00219 R10 (AS CIRCLED) REMOVED "CONSTRUCTION HOLD"	ARM RPP DLS			
REV	DATE	DESCRIPTION	DWN	CHK	APPR'D

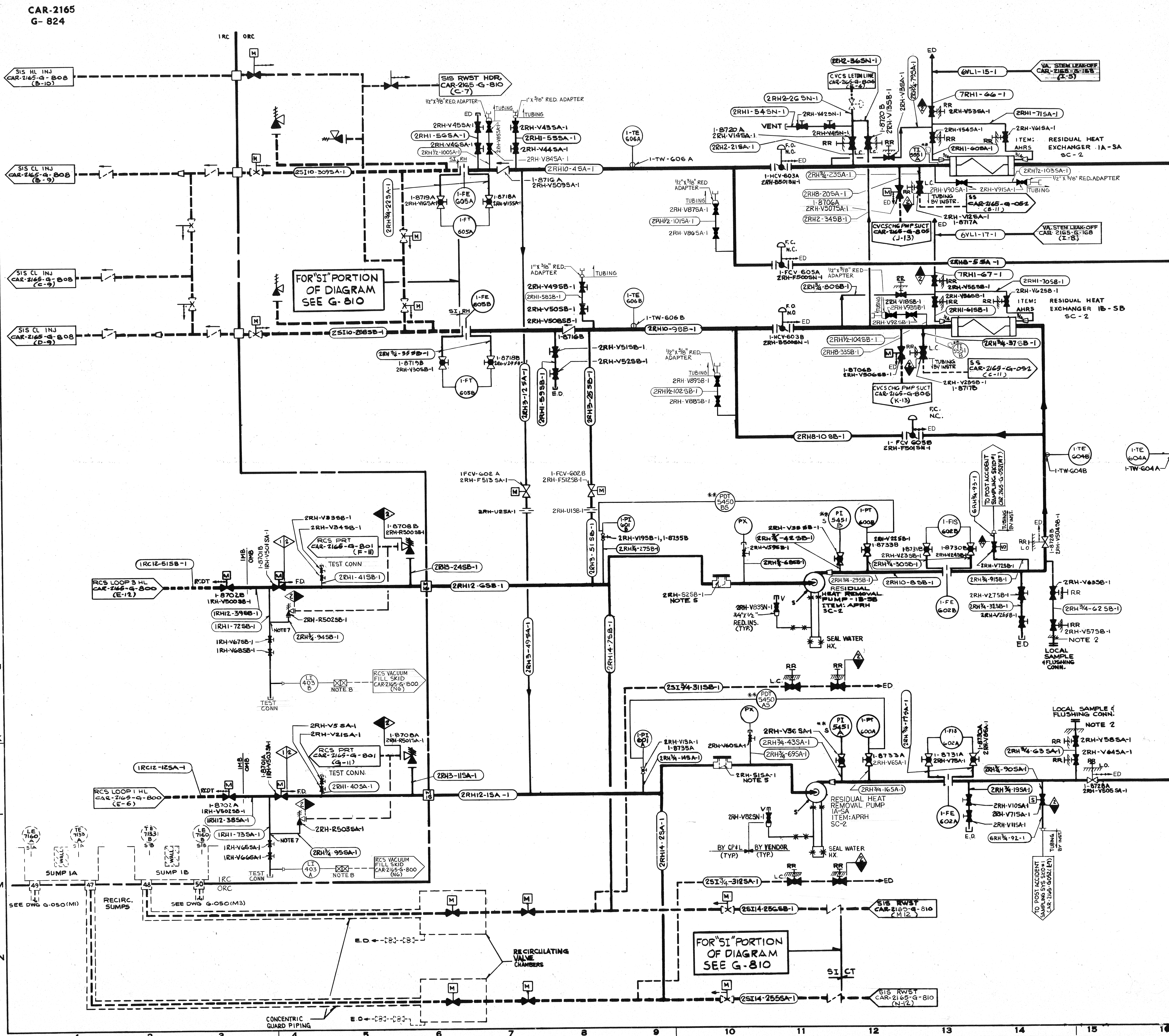
THIS DRAWING HAS BEEN PRODUCED AND IS CONTROLLED ON THE NEW CAD/E SYSTEM. ANY REVISIONS TO THIS DOCUMENT SHOULD BE DONE USING THE CAD/E SYSTEM TO ASSURE PROPER CONTROL OF THE ELECTRONIC DRAWING DATABASE.

NUCLEAR SAFETY RELATED (Q-LIST)
YES NO PARTIAL F.P. -0 R.W. -0

CAROLINA POWER & LIGHT COMPANY
NUCLEAR ENGINEERING DEPARTMENT - RALEIGH, N.C. **CP&L**

PLANT: HARRIS NUCLEAR PROJECT - UNIT 1 SCALE: NONE

TITLE: FLOW DIAGRAM COMPONENT COOLING WATER SYSTEM SHEET 5 DWG NO: CAR-2165-G-822 S01



NO.	DATE	REVISION	BY	CHK	APPR.
20	8/16	INCORPORATED EC-28174 (12, E13)	JAC	JAC	
19	5/22/91	INCORPORATED: ESR-9400099 I16-I19, J3-J5, L3-L5	LS	LS	CM/MP
18	3/21/85	INCORPORATED: ESR-950093 (B5-B8, C9, C14, C15, D7, D8, L11, D12, E10, E12)	LS	LS	MP/MP
17	11/1/72	NON DESIGN CHANGE: REVISED VALVE LEAK-OFF DESIGN (C11, C12, D11, E12, G5, H11, I15)	EP	EP	MP/MP
16	9/1/72	INCORPORATED IN THIS REV.: PCR-4489 (H5, H12, K9, K12)	EP	EP	MP/MP
15	4/1/77	THIS DRAWING HAS BEEN PHOTOGRAPHICALLY REPRODUCED. THIS DRAWING WAS ORIGINALLY SAILED BY J. A. ROSSI N.C.	RR	RR	MP/MP
14	9/11/75	INCORPORATED: PCR-423 (B7, B8, C10, C14, C15, D10, E12, E13, F10)	RR	RR	MP/MP
13	6/1/75	INCORPORATED IN THIS REVISION: PCR-346 (H5, K6)	RR	RR	MP/MP
12	1/1/75	INCORPORATED: DCA-M-483 (H9, K9) REVISED: VALVE POS. (B4, B5, C4) ADDED: COORD (M1, M4)	RR	RR	MP/MP
11	10/1/75	INCORPORATED: M-195 (H11, K11) REV. M-186 (C11, I12, L11, L12) REVISED: CONT COORD (C12, K2, M1B)	RR	RR	MP/MP
10	4/2/75	INCORP'D IN THIS REV.: PCR-F-2121 (1/14)	RR	RR	MP/MP

Effective as of 6-23-84. All responsibility for the maintenance of this document and for subsequent modifications made or required to be made to this document is assumed by Carolina Power & Light Company (CP&L). Ebasco Services Incorporated has no responsibility for the reproduction and modification after said date. All Field Change Requests, Design Change Notices, Nonconformance Reports, and other documents which have been considered for this current or prior revisions of this document are identified in the Document Change Log (located at the above date). Future revisions of this document will be issued by CP&L.

- NOTES:
1. SAMPLE LINE MUST BE AT A LOWER ELEVATION THAN RHR TYPE TO ALLOW GRAVITY FLOW.
 2. ALL ITEM NO. ON THIS DWG. ARE SHOWN WITHOUT PREFIX COLOR.
 3. TEMPORARY STRAINER IS PLACED IN TEE DURING INITIAL FLUSHING OPERATIONS. STRAINER MUST BE REMOVED BEFORE PLANT START-UP.
 4. ALL INSTRUMENTS ARE SUPPLIED BY (W) EXCEPT THOSE INDICATED WITH (**).
 5. PROVIDE FLOW RESTRICTOR PER NOTE 5 OF DRAWING CAR-2165-G-041.
 6. HOSE CONNECTION TO BE REMOVED PRIOR TO PLANT START-UP. HOSE CONNECTION INSTALLED DURING RCS VACUUM FILL ONLY.

REFERENCE DRAWINGS

LIST OF DRAWINGS	CAR-1364-B-125
PIPING LINE LIST	CAR-1364-B-070
VALVE & SPECIALTY LIST	CAR-1364-B-069
INSTRUMENT LIST	CAR-2165-B-452
FLOW DIAGRAM LEGEND	CAR-2165-G-041
FLOW DIAGRAM - VALVE LEAK-OFF	CAR-2165-G-168

NUCLEAR SAFETY RELATED

APPROVED FOR CONSTRUCTION

CAR-2165 G-824

THIS DRAWING IS A REPRODUCTION OF THE CORRESPONDING WESTINGHOUSE DRAWING. WEST. DWG. NO. 1145067 SUB 4 (EASCO FILE NO. 1984-16 REV. 5)

DRAWING HAS BEEN ALTERED, AS NECESSARY, FOR THE SHEARON HARRIS NUCLEAR POWER PLANT.

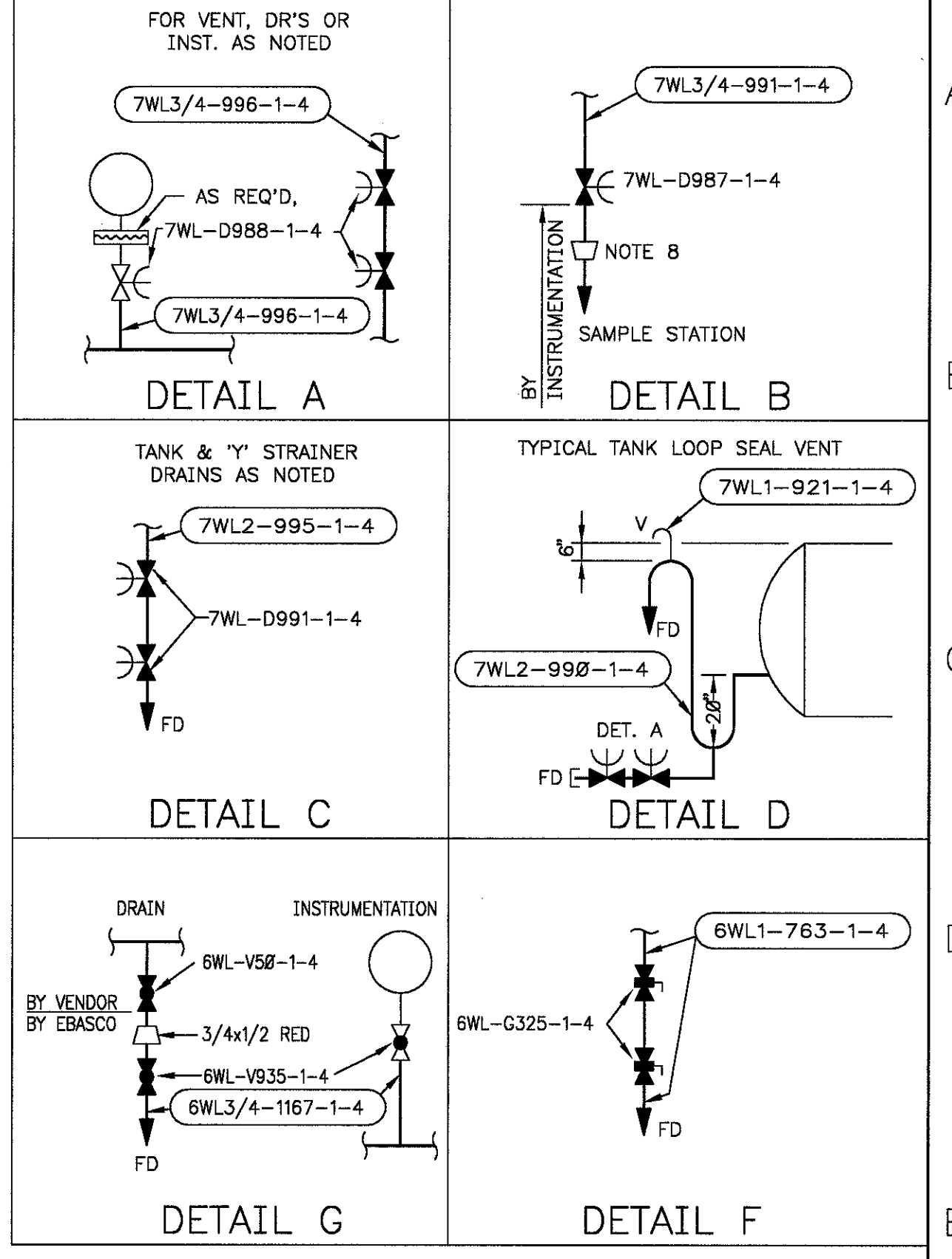
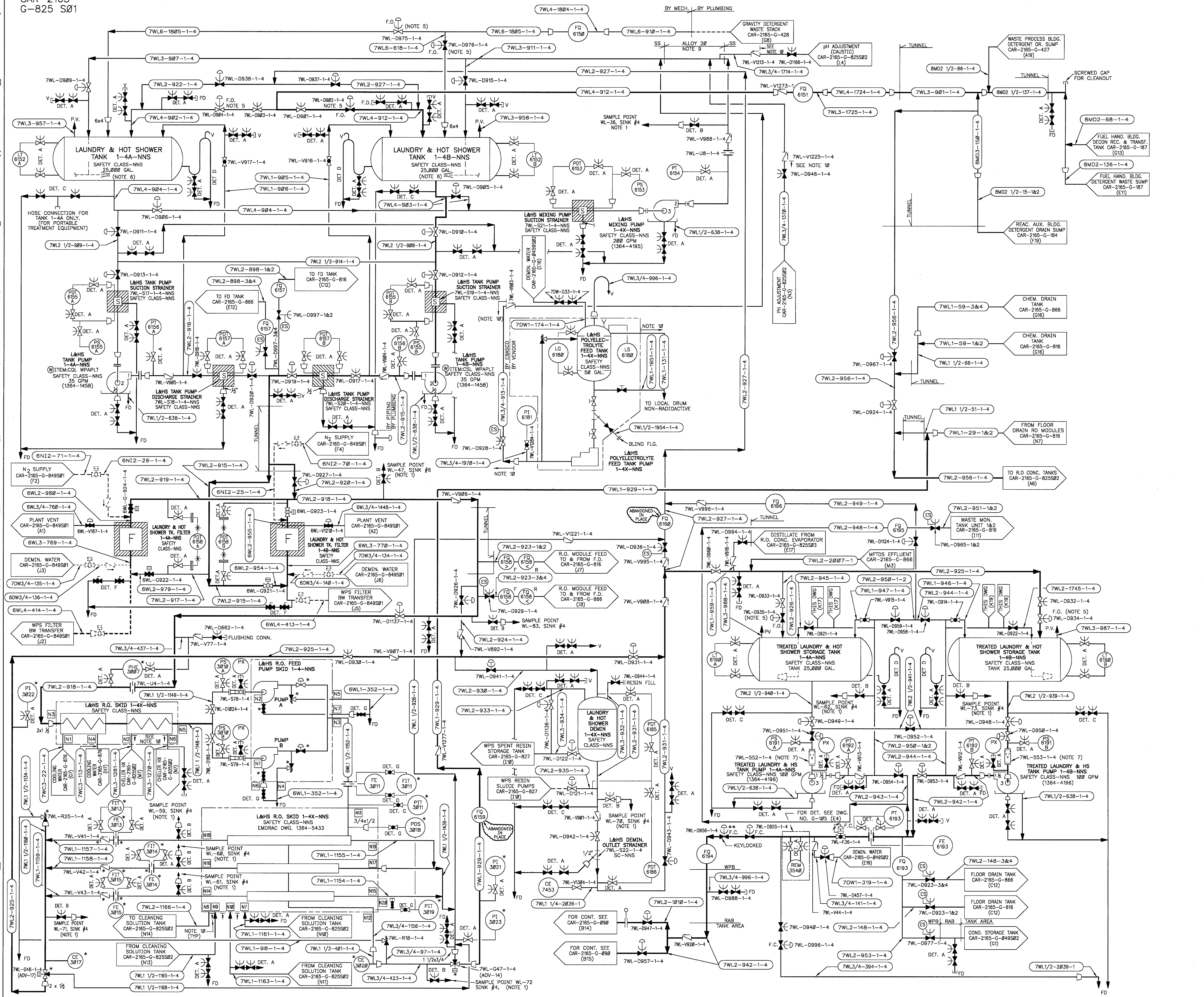
THIS DOCUMENT IS DELIVERED IN ACCORDANCE WITH AND IS SUBJECT TO THE PROVISIONS OF SECTION 8 OF THE CONTRACT BETWEEN CAROLINA POWER & LIGHT COMPANY AND EASCO SERVICES INCORPORATED DATED SEPTEMBER 1, 1970, AS AMENDED.

**CAROLINA POWER & LIGHT COMPANY
SHEARON HARRIS NUCLEAR POWER PLANT**

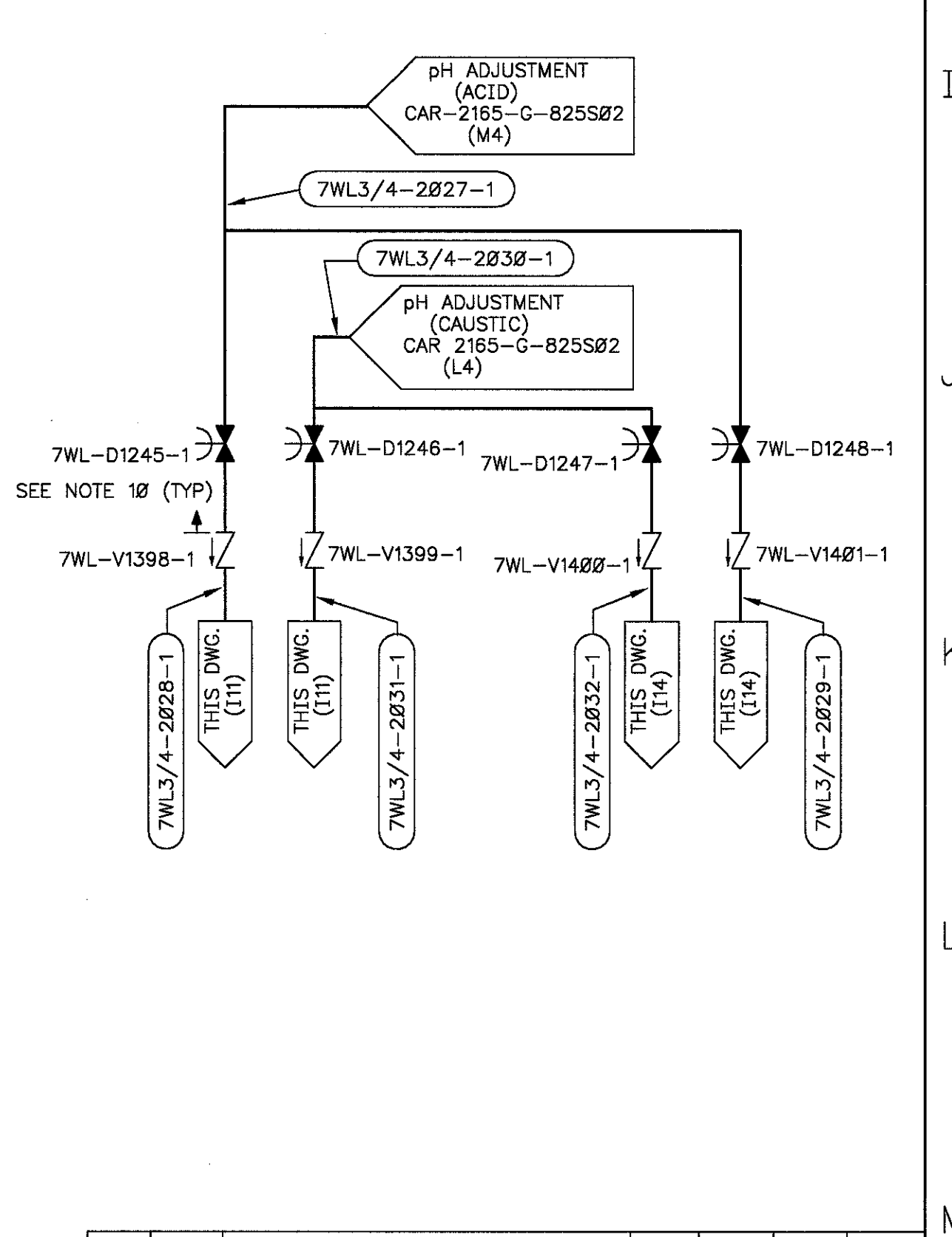
**FLOW DIAGRAM
RESIDUAL HEAT REMOVAL SYSTEM**

EASCO SERVICES INCORPORATED

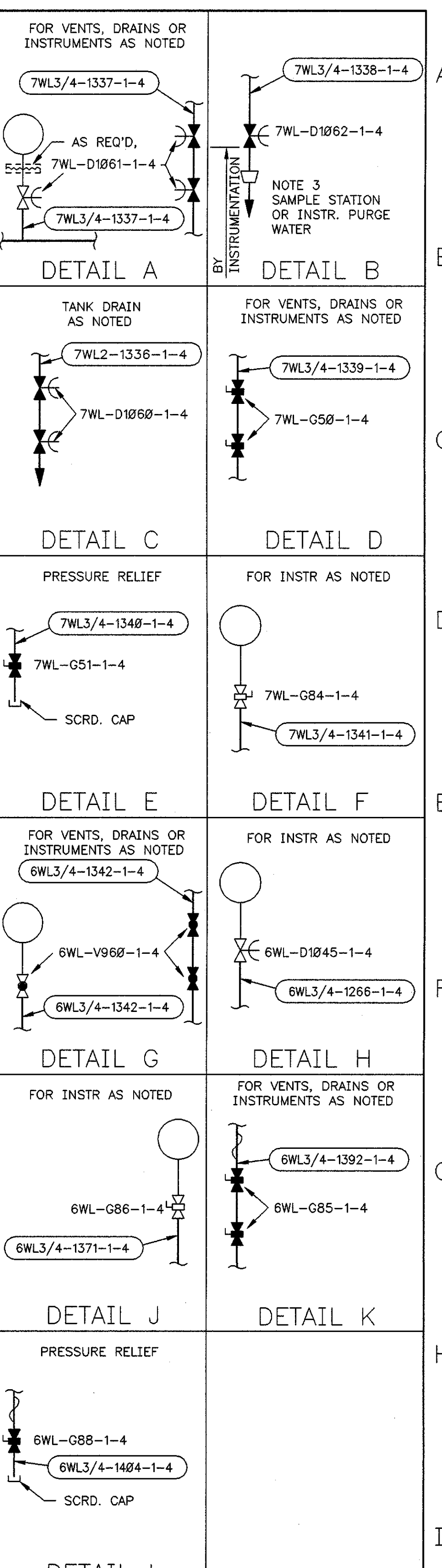
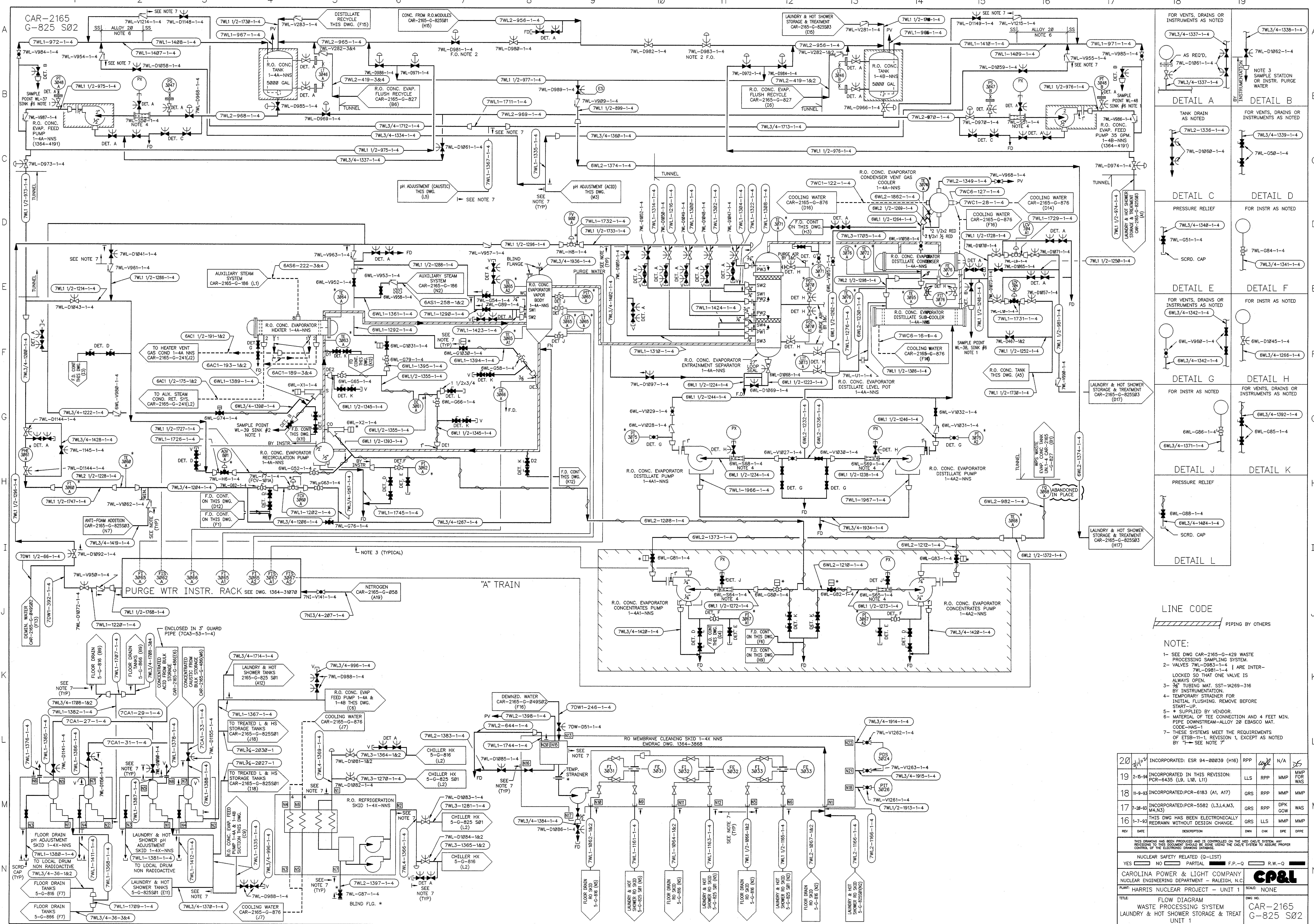
SCALE NONE	APPROVER	DATE 8-10-73
BY MECH.		CAR-2165 G-824
CH. 2		



- NOTES:**
- SEE DWG. CAR-2165-G-429 WASTE PROCESSING SAMPLING SYSTEM.
 - [N] DENOTES VENDOR NOZZLE DESIGNATION.
 - FOR LIST OF REFERENCE DRAWINGS SEE CAR-2165-G-814.
 - THESE VALVES INTERLOCKED SO THAT ONE VALVE OF THE FOLLOWING PAIRS IS ALWAYS OPEN.
7WL-D934-1-4 AND 7WL-D935-1-4
7WL-D982-1-4 AND 7WL-D984-1-4
7WL-D975-1-4 AND 7WL-D976-1-4
7-3/4" MIXING EDUCTORS.
 - TEMPORARY STRAINER FOR INITIAL FLUSHING, REMOVE BEFORE START-UP.
 - 3/4" TUBING MAT. SST-1-A-269-316 BY INSTRUMENTATION.
 - MATERIAL OF THE CONN. & 4 FEET MIN. PIPE DOWNSTREAM-ALLOY 2B-EBASCO CODE HAS-1
 - THESE SYSTEMS MEET THE REQUIREMENTS OF ESTB 11-1 REVISION-1, EXCEPT AS NOTED BY '1'-SEE NOTE 10
 - **SUPERVISOR KEY CONTROL AT WASTE PROCESSING PANEL REQUIRED.
 - * SUPPLIED BY VENDOR.



23	1/11/82	INCORPORATED: ESR 94-02039 (H9, L7)	JAP	WJL	NA	DES
REV	DATE	DESCRIPTION	DRN	CHK	DPC	DPPE
THIS DRAWING HAS BEEN PRODUCED AND IS CONTROLLED ON THE MFD CAD/SYSTEM. ANY DEVIATIONS TO THIS DOCUMENT SHOULD BE DONE USING THE CAD/SYSTEM TO ASSURE PROPER CONTROL OF THE ELECTRONIC DRAWING DATABASE.						
NUCLEAR SAFETY RELATED (Q-LIST)						
YES	NO	PARTIAL	F.P.-Q	R.W.-Q		
CAROLINA POWER & LIGHT COMPANY NUCLEAR ENGINEERING DEPARTMENT - RALEIGH, N.C.						
PLANT: HARRIS NUCLEAR PROJECT - UNIT 1						
TITLE: FLOW DIAGRAM						
WASTE PROCESSING SYSTEM						
LAUNDRY & HOT SHOWER STORAGE & TREAT UNIT 1						
DRAWING NO.: CAR-2165 G-825 S01						



LINE CODE
 PIPING BY OTHERS

NOTE:
 1- SEE DWG CAR-2165-G-429 WASTE PROCESSING SAMPLING SYSTEM
 2- VALVES 7WL-D983-1-4 ARE INTER-LOCKED SO THAT ONE VALVE IS ALWAYS OPEN
 3- 3" TUBING MAT. SST-1A269-316 BY INSTRUMENTATION.
 4- TEMPORARY STRAINER FOR INITIAL FLUSHING. REMOVE BEFORE START-UP
 5- * SUPPLIED BY VENDOR.
 6- MATERIAL OF TEE CONNECTION AND 4 FEET MIN. PIPE DOWNSTREAM-ALLOY 20 EBASCO MAT.
 7- THESE SYSTEMS MEET THE REQUIREMENTS OF ETSB-11-1, REVISION 1, EXCEPT AS NOTED BY "7"-SEE NOTE 7

REV	DATE	DESCRIPTION	DRW	CHK	DPE	DPPE
20	11-10-93	INCORPORATED: ESR 94-00039 (H16)	RPD	apf	N/A	DS
19	2-5-94	INCORPORATED IN THIS REVISION: PCR-6435 (L9, L10, L11)	LLS	RPD	MMP	MMP FOR WAS
18	11-9-93	INCORPORATED: PCR-6183 (A1, A17)	GRS	RPD	MMP	MMP
17	7-28-93	INCORPORATED: PCR-5582 (L3, L4, M3, M4, N3)	GRS	RPD	DPK	WAS
16	1-7-93	THIS DWG HAS BEEN ELECTRONICALLY REDRAWN WITHOUT DESIGN CHANGE.	GRS	LLS	GMP	MMP

THIS DRAWING HAS BEEN PRODUCED AND IS CONTROLLED ON THE MDS CAD/E SYSTEM. ANY REVISIONS TO THIS DOCUMENT SHOULD BE DONE USING THE CAD/E SYSTEM TO ASSURE PROPER CONTROL OF THE ELECTRONIC DRAWING DATABASE.

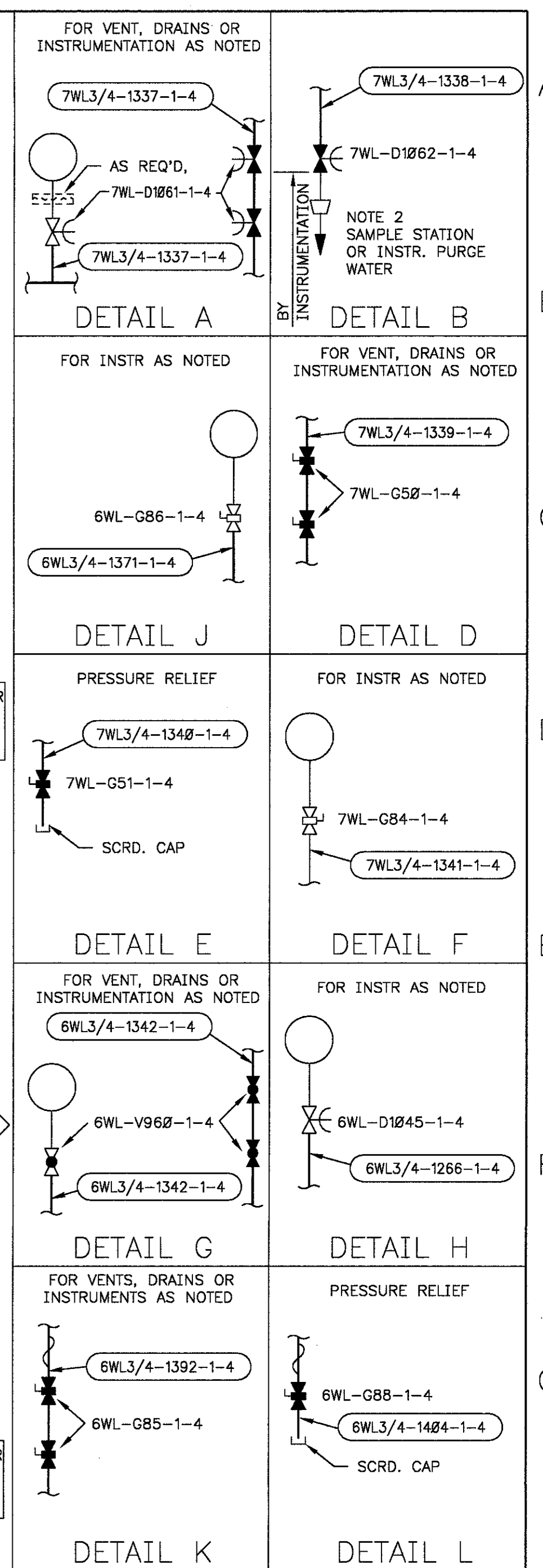
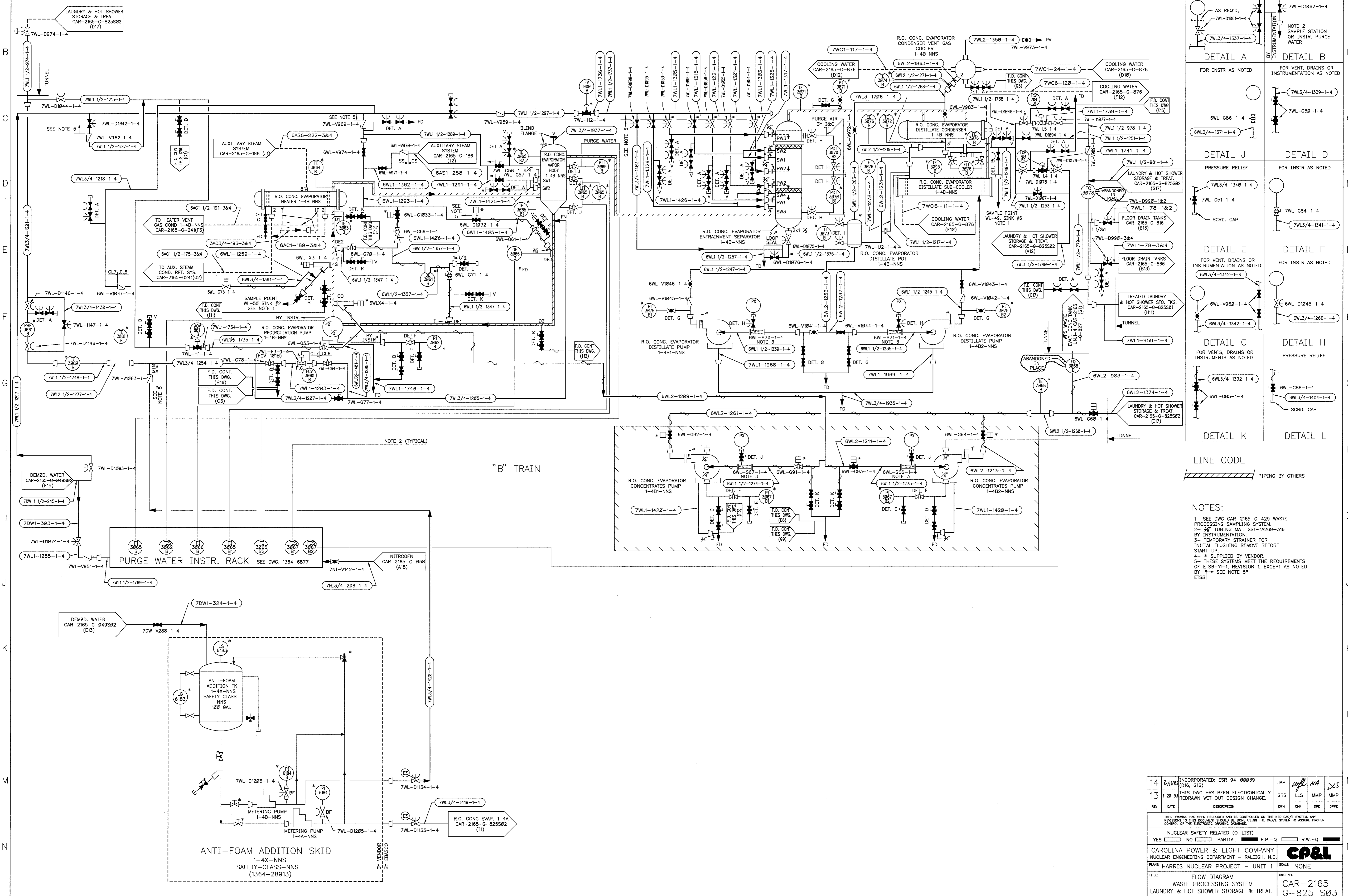
NUCLEAR SAFETY RELATED (Q-LIST)
 YES NO PARTIAL F.P.-Q R.W.-Q

CAROLINA POWER & LIGHT COMPANY
 NUCLEAR ENGINEERING DEPARTMENT - RALEIGH, N.C.
 HARRIS NUCLEAR PROJECT - UNIT 1

CP&L

TITLE: FLOW DIAGRAM WASTE PROCESSING SYSTEM LAUNDRY & HOT SHOWER STORAGE & TREAT UNIT 1
 DWG NO: NONE
 CAR-2165 G-825 S02

CAR-2165
G-825 S03



LINE CODE
 PIPING BY OTHERS

NOTES:
 1- SEE DWG CAR-2165-G-429 WASTE PROCESSING SAMPLING SYSTEM.
 2- 3/8" TUBING MAT. SST-14269-316 BY INSTRUMENTATION.
 3- TEMPORARY STRAINER FOR INITIAL FLUSHING REMOVE BEFORE START-UP.
 4- * SUPPLIED BY VENDOR.
 5- THESE SYSTEMS MEET THE REQUIREMENTS OF ETSB-11-1, REVISION 1, EXCEPT AS NOTED BY - SEE NOTE 5* ETSB

14	2/1/92	INCORPORATED: ESR 94-00239 (D16, C16)	JAP	WJL	NA	XS
13	1-28-93	THIS DWG HAS BEEN ELECTRONICALLY REDRAWN WITHOUT DESIGN CHANGE.	GRS	LLS	MMP	MMP
REV	DATE	DESCRIPTION	OWN	CHK	DPE	DPPE
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NUCLEAR SAFETY RELATED (Q-LIST)						
YES <input type="checkbox"/> NO <input type="checkbox"/> PARTIAL <input type="checkbox"/> F.P.-Q <input type="checkbox"/> R.W.-Q <input type="checkbox"/>						
CAROLINA POWER & LIGHT COMPANY NUCLEAR ENGINEERING DEPARTMENT - RALEIGH, N.C. CP&L						
PLANT: HARRIS NUCLEAR PROJECT - UNIT 1 SCALE: NONE						
TITLE: FLOW DIAGRAM WASTE PROCESSING SYSTEM LAUNDRY & HOT SHOWER STORAGE & TREAT. UNIT 1						
DWG NO: CAR-2165 G-825 S03						

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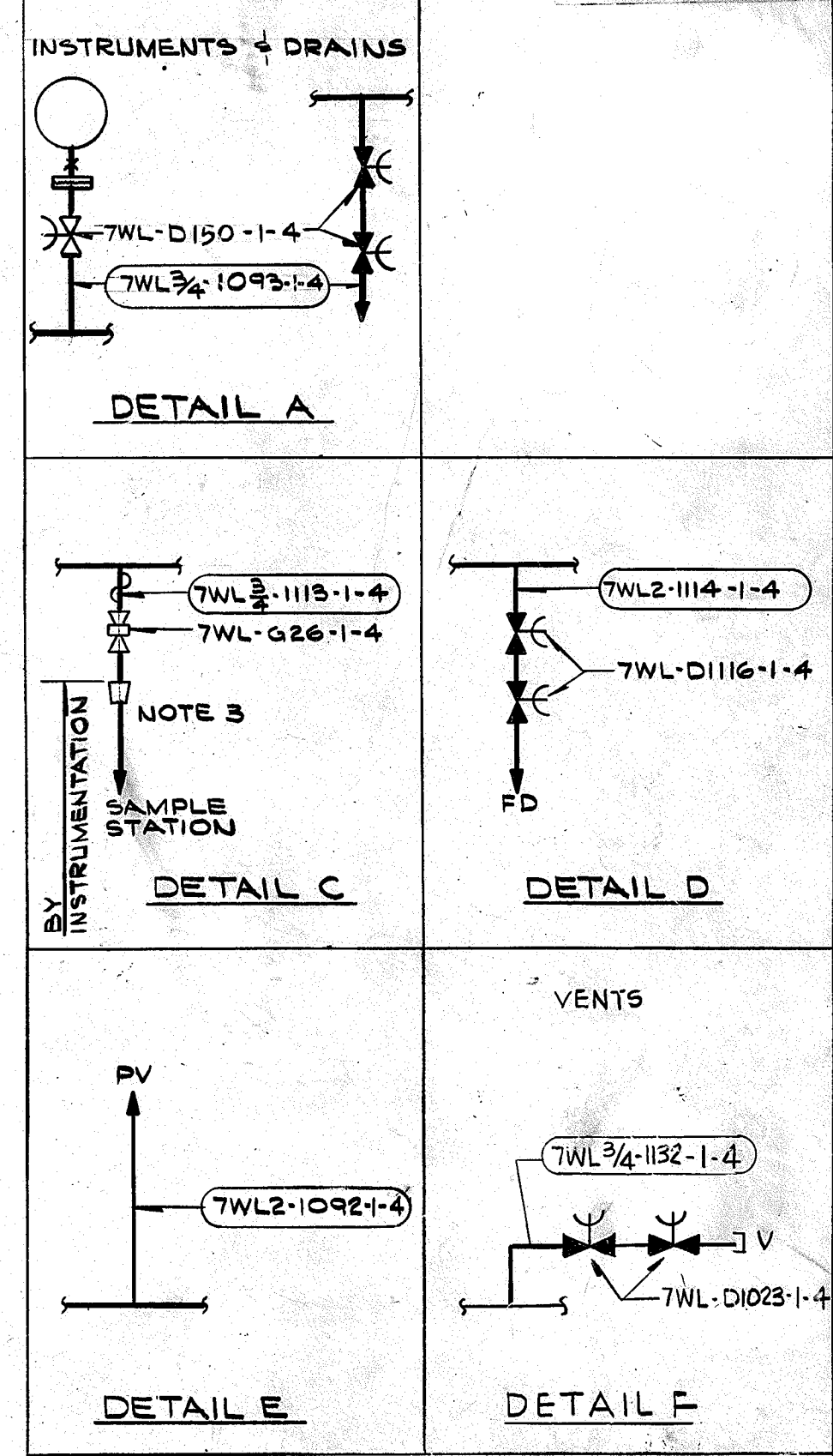
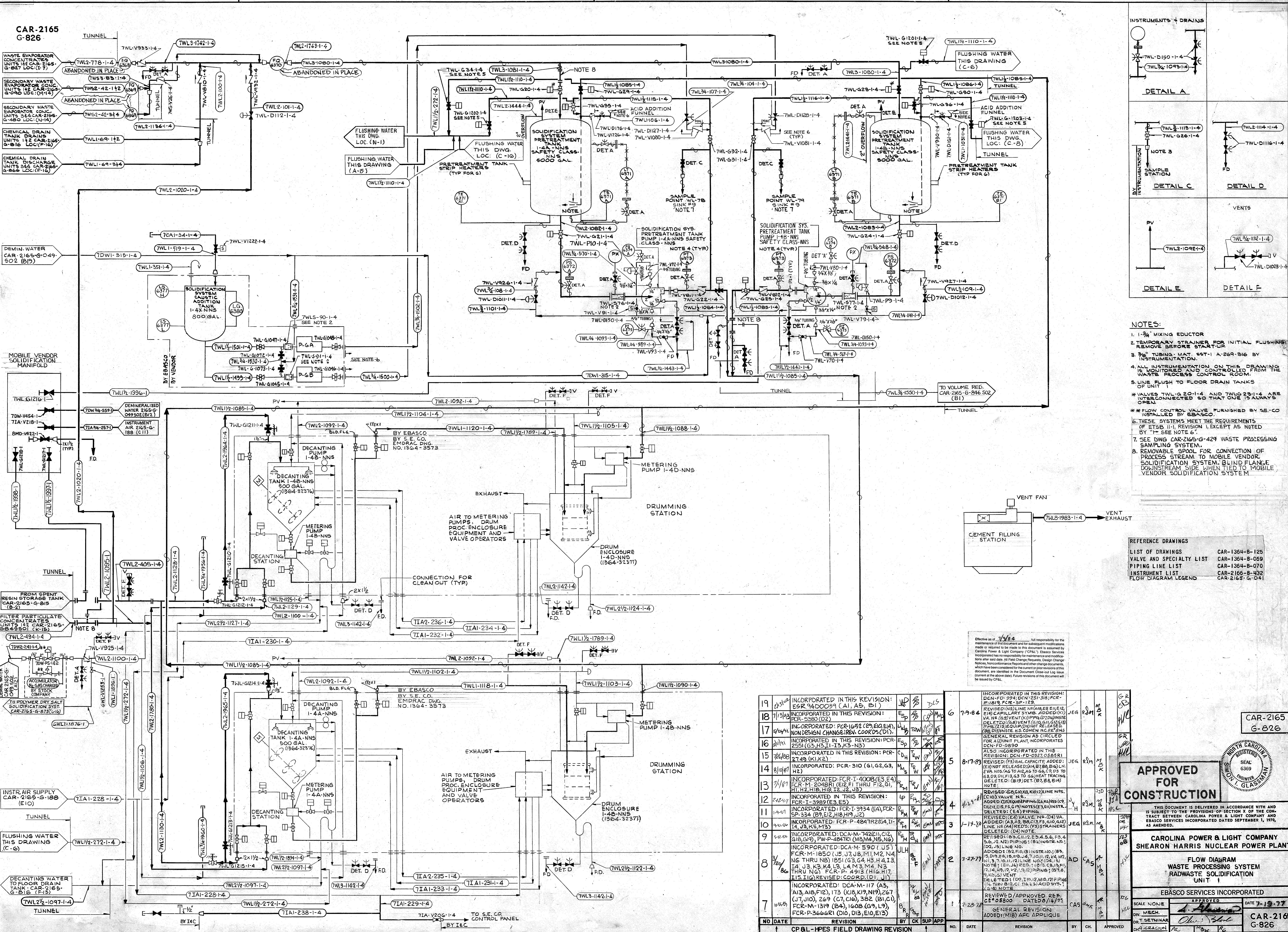
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- NOTES:**
1. 1-3/4" MIXING EDUCATOR REMOVE BEFORE START-UP
 2. TEMPORARY STRAINER FOR INITIAL FLUSHING
 3. 3/4" RUBBER MAT 68T-1 A-269-316 BY INSTRUMENTATION
 4. ALL INSTRUMENTATION ON THIS DRAWING IS MONITORED AND CONTROLLED FROM THE WASTE PROCESS CONTROL ROOM
 5. LINE FLUSH TO FLOOR DRAIN TANKS OF UNIT 1
- * VALVES TWL-920-1-4 AND TWL-921-1-4 ARE INTERCONNECTED SO THAT ONE IS ALWAYS OPEN
- * FLOW CONTROL VALVE FURNISHED BY S.E. CO. INSTALLED BY EBASCO
- * THESE SYSTEMS MEET THE REQUIREMENTS OF ETSB II-1, REVISION 1, EXCEPT AS NOTED BY "I" - SEE NOTE 6
7. SEE DWG CAR-2165-G-429 WASTE PROCESSING SAMPLING SYSTEM
8. REMOVABLE SPOOL FOR CONNECTION OF SOLIDIFICATION STREAM TO MOBILE VENDOR DOWNSTREAM SIDE WHEN TIED TO MOBILE VENDOR SOLIDIFICATION SYSTEM

- REFERENCE DRAWINGS**
- LIST OF DRAWINGS CAR-1364-B-125
 - VALVE AND SPECIALTY LIST CAR-1364-B-059
 - PIPING LINE LIST CAR-1364-B-070
 - INSTRUMENT LIST CAR-2165-B-432
 - FLOW DIAGRAM LEGEND CAR-2165-G-041

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NO	DATE	REVISION	BY	CHK	APP	NO	DATE	REVISION	BY	CHK	APP
19	10/23/77	INCORPORATED IN THIS REVISION: ESR 9400039 (A1, A5, B1)	WJ	WJ	WJ	6	7-9-84	INCORPORATED IN THIS REVISION: DCN-FD-394, DCN-251-315, FCR-21819, FCR-SP-123	WJ	WJ	WJ
18	7/13/77	INCORPORATED IN THIS REVISION: FCR-5360 (D2)	WJ	WJ	WJ	6	7-9-84	REVISED (N3) LINE N#168, E1, E2, E3, E4, E5, E6, E7, E8, E9, E10, E11, E12, E13, E14, E15, E16, E17, E18, E19, E20, E21, E22, E23, E24, E25, E26, E27, E28, E29, E30, E31, E32, E33, E34, E35, E36, E37, E38, E39, E40, E41, E42, E43, E44, E45, E46, E47, E48, E49, E50, E51, E52, E53, E54, E55, E56, E57, E58, E59, E60, E61, E62, E63, E64, E65, E66, E67, E68, E69, E70, E71, E72, E73, E74, E75, E76, E77, E78, E79, E80, E81, E82, E83, E84, E85, E86, E87, E88, E89, E90, E91, E92, E93, E94, E95, E96, E97, E98, E99, E100, E101, E102, E103, E104, E105, E106, E107, E108, E109, E110, E111, E112, E113, E114, E115, E116, E117, E118, E119, E120, E121, E122, E123, E124, E125, E126, E127, E128, E129, E130, E131, E132, E133, E134, E135, E136, E137, E138, E139, E140, E141, E142, E143, E144, E145, E146, E147, E148, E149, E150, E151, E152, E153, E154, E155, E156, E157, E158, E159, E160, E161, E162, E163, E164, E165, E166, E167, E168, 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