VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

December 4, 1978

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
Attn: Mr. O. D. Parr, Chief
Light Water Reactors Branch No. 3
Division of Project Management
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Serial No. 651
PO/KEB:scj
Docket No. 50-339

Dear Mr. Denton:

As stated in our letter of July 7, 1978, Serial No. 380, the preservice inspection for North Anna Power Station, Unit No. 2, is being performed, to the extent practical, in accordance with the requirements of Section XI of the 1974 Edition of the ASME Code, with Addenda through the Summer of 1975.

Since the North Anna Unit No. 2 system design and ordering of long lead time components were well underway by the time the first Edition of the ASME Section XI inservice inspection rules became effective, full compliance with the access and inspectability requirements would be difficult to achieve. Therefore, pursuant to 10 CFR 50.55a(g)(6)(i), we request specific exceptions to preservice examination requirements.

At the present time the preservice examination is approximately 80% complete on Unit No. 2. The request for relief is based on 100% completion. Consequently some of the requests are based on design and the results of the Unit No. 1 examinations.

The attached request for relief is based on ASME Section XI Table IWB - 2600 and is in the format used for the Unit No. 1 submittal including the additional information requested by your staff. Table 1 lists the percentage of preservice examination requirements which were met in those areas for which relief has been requested as well as the measures required to make the welds accessible for preservice examination. Table 2 lists the specific welds, in categories B-F and B-J, which were not subjected to complete preservice examination. Reference sketches showing the location of each weld are also provided.

The code addenda to which North Anna Unit No. 2 was constructed, required complete radiographic examinations of the welds in the reactor vessel and piping systems. In addition field pipe welds received a surface examination.

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Since for North Anna Unit No. 2, 10 CFR 50.55a(g)(2) requires that the preservice inspection conform with Section XI, 1970 Edition, the requests for relief of Class 2 and 3 components will be submitted with our initial inservice inspection program description. This is consistant with your evaluation of our Unit No. 1 submittals.

We trust that the enclosed information is sufficient for you to approve our request for specific exemptions from the requirements of ASME Section XI for preservice inspection for North Anna Unit No. 2.

Very truly yours,

C. M. Stallings

C. M. Stallings
Vice President-Power Supply
and Production Operations

Attachments

Table 1
North Anna Unit 2
Preservice Inspection
ASME CODE Class 1 Components

Table IWB-2600 Item No.	Table IWB-2500 Examination Category	System or Component	Area to be Examined	Examination Requirement	Section XI Code Relief Request	Extent of PSI Coverage vs. Section XI	Measures required for accessability
B1.3	B-C	Reactor vessel	Closure Head to Flange Weld	Volumetric	See Notes 1&2	95%	See Note 4
B1.18	B-O		Control Rod Drive Housings	Volumetric	See Notes 1&3	100%	N/A
B2.1	B-B	Pressurizer	Longitudinal and circumferential welds	Volumetric	See Note 5	92%	Removal of seismic restraints
B2.2	B-D		Nozzle to Vessel welds	Volumetric	See Note 6	80%	See Note 7
B2.4	B-F		Nozzle to safe-end welds	Volumetric and Surface	See Note 8	90%	See Note 7
B2.8	B-H		Integrally-welded supports	Volumetric	See Note 9	92%	See Note 4
B3.3	B-F	Steam Generators	Nozzle-to-safe end welds	Volumetric and surface	See Note 8	80%	See Note 7
B4.1	B-F	Piping Pressure Boundary	Safe end to pipe welds	Volumetric and surface	See Note 8	88%	See Note 7
B4.5	B-J		Circumferential and longitudinal pipe welds	Volumetric	See Notes 8 & 10	95%	See Note 7
B4.6	B-J		Branch Connections exceeding six inches diameter	Volumetric	See Note 11	20%	See Note 7
B4.9	B-K-1		Integrally welded supports.	Volumetric	See Note 12	20%	See Note 7

Table 1 (cont.)
North Anna Unit 2
reservice Inspection
ASME CODE Class 1 Components

Table IWB-2600 Item No.	Table IWB-2500 Examination Category	System or Component	Area to be Examined	Examination Requirement	Section XI Code Relief Request	Extent of PSI Coverage vs. Section XI	Measures required for accessability
B5.1	B-G-1	Reactor Cool- and Pump	Pressure Retaining Bolting, in place	Volumetric	See Note 13	N/A	N/A
B5.2	B-G-1		Pressure Retaining Bolting	Volumetric and Surface	See Note 14	N/A	N/A
B6.2	B-G-1	Valve Pressure Boundary	Pressure Retaining Bolting	Volumetric and surface	See Note 14	N/A	N/A

Notes:

1) This item has not been examined at the time of this submittal. The request for relief is based upon design review of the item and examination results of the Unit no. 1 preservice inspection; and, is believed to be accurate due to similar designs and configurations between the two Units.

2) The geometric configuration of the flange limits the extent to which ultrasonic examinations can be performed from the lower side of the weld. Examinations as required by I-2300 will be performed to the extent practical.

3) IWB-2100 states that for preservice examinations essentially 100% of the peripheral housings shall be examined. Several of the peripheral housings may not be accessible due to special insulation construction. Housings on the inner portion of the head which are not accessible will be substituted for the peripheral ones not examined. The equivalent total of the peripheral housings will be examined.

4) Examination coverage limited by design, no additional work could improve examination coverage.

5) In instances where the location of insulation supports and seismic supports restrict the access available for the examination of pressurizer welds as required by IWB-2600, examinations were performed to the extent practical.

6) The weld and adjacent base on the head side was completely examined by angle beam as required by I-2310. The geometric configuration of the nozzle is such that no examination can be performed from the nozzle side of the weld. This limitation is reported in the examination data as required by I-5121.

7) Examination coverage limited due to configuration, no additional work would improve examination coverage.

8) The arrangements and details of the piping systems and components are such that some examinations as required by IWB-2600 are limited due to geometric configuration or accessibility. Generally, these limitations exist at pipe to fitting welds, where examinations can only be fully performed from the pipe side, the fitting geometry limiting or even precluding examination from the opposite side. Welds having such restrictions were examined to the extent practical. Relief request is for the volumetric method.

9) The pressurizer support skirt weld could not be examined to the extent required by IWB-2500 due to the design of the support member. Examination was performed to the extent practical.

10) In instances where the location of pipe supports or hangers restricts the access available for the examination of pipe welds as required by IWB-2600, examinations were performed to the extent practical unless removal of the support was permissible without unduly stressing the system. Of the welds that did not meet the requirements of Section XI, 94% were due to piping configuration and fitting welds; 3% were due to nonremovable supports; and 3% were due to miscellaneous items, i.e. floor grating, etc.

11) The geometric configuration of the weld surface prevents ultrasonic examinations from being performed to the extent required by IWB-2000. Examinations were performed to the extent practical from the pipe and nozzle surfaces adjacent to the weld. Surface examination of the welds were performed to supplement the volumetric examination.

12) The piping system integrally welded supports are attached to the pipe by fillet welds. The configurations of such welds was such that examinations could not be performed to the extent required by IWB-2600 and only the base material of the pipe wall could be examined by ultrasonic techniques. Surface examinations were performed on the integrally welded attachments to supplement the limited volumetric examinations.

13) The reactor coolant pump seal housing bolts are of the socket head type and the configuration is such that ultrasonic examinations as required by IWB-2600 could not be performed when bolting is in place. Examinations can only be performed to the extent required by IWB-2600 when the seal housing is disassembled for maintenance.

14) This examination to the extent required by IWB-2600 will only be performed when the pump or valve is disassembled for maintenance purposes or at the end of the 10 year interval when disassembly is undertaken for the performance of pump casing or valve body examinations.

Table 2
Sketches Showing Location of Welds
In Examination Categories B-F and B-J
For Which Relief Has Been Requested
Preservice Inspection for North Anna Unit 2

Sketch No.	Weld No.	Sketch No.	Weld No.
VGB-1-4100	2	VGB-1-4106	16
	3		17
	8		
	9	VGB-1-4107	18
	10		
	11	VGB-1-4108	2
	12		3
	13		6
			7
VGB-1-4101	1		8
	3		12
			13
VGB-1-4102	1		14
	9		
	10	VGB-1-4109	1
	11		
	12	VGB-1-4110	19
	13		
	15	VGB-1-4111	2
			3
			4
VGB-1-4103	1		5
	6		6
	7		7
	10		10
			11
VGB-1-4104	1		12
	2		13
	3		14
	7		15
			19
VGB-1-4105	1		20
	3		21
	6		22
	8		30
	9		
	12	VGB-1-4114	64
	19		65
	26		
	28	VGB-1-4200	2
	31		3
	41		8
	42		9
	43		10
			11
VGB-1-4106	2		12
	3		13
	6		
	10	VGB-1-4201	1
	11		6

Table 2 (cont.)
Sketches Showing Location of Welds
In Examination Categories B-F and B-J
For Which Relief Has Been Requested
Preservice Inspection for North Anna Unit 2

Sketch No.	Weld No.	Sketch No.	Weld No.
VGB-1-4201	7	VGB-1-4207	14
	14		15
	15		16
	17		17
			18
VGB-1-4202	1		19
	2		20
	5		21
			22
VGB-1-4203	1		
	6	VGB-1-4208	18
	7		
	10	VGB-1-4209	1
VGB-1-4204	1	VGB-1-4210	19
	2		
	3	VGB-1-4211	5
	7		8
			9
VGB-1-4205	1		11
	8		12
	12		13
	14		14
	40		15
	41		16
			37
VGB-1-4206	1		40
	2		41
	3		42
	4		
	5	VGB-1-4214	63
	6		
	7	VGB-1-4300	2
	8		3
	9		8
			9
VGB-1-4207	1		10
	2		11
	3		12
	4		13
	5		14
	6		
	7	VGB-1-4301	1
	8		10
	9		11
	10		
	11	VGB-1-4302	1
	12		4
	13		5

Table 2 (cont.)
Sketches Showing Location of Welds
In Examination Categories B-F and B-J
For Which Relief Has Been Requested
Preservice Inspection for North Anna Unit 2

Sketch No.	Weld No.	Sketch No.	Weld No.
VGB-1-4302	6	VGB-1-4307	18
	8		19
	13		20
	14		21
	16		22
			23
VGB-1-4303	1		
	7	VGB-1-4308	20
VGB-1-4304	1	VGB-1-4309	1
	6		
	7	VGB-1-4310	19
	10		
		VGB-1-4311	8
VGB-1-4305	1		9
	2		10
	3		11
	6		12
	7		13
			14
VGB-1-4306	1		15
	3		
	14	VGB-1-4500	1
	16		2
	17		8
	18		9
	22		10
	23		11
	25		17
	34		18
	35		19
	36		20
			26
VGB-1-4307	1		27
	2		
	3	VGB-1-4501	1
	4		15
	5		16
	6		17
	7		21
	8		22
	9		23
	11		28
	12		29
	13		
	14	VGB-1-4502	1
	15		2
	16		3
	17		4

Table 2 (cont.)
Sketches Showing Location of Welds
In Examination Categories B-F and B-J
For Which Relief Has Been Requested
Preservice Inspection for North Anna Unit 2

Sketch No.	Weld No.
VGB-1-4502	5
	6
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	32
	33
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	36
	37
	38
	39
	40
	41
	42
	43
VGB-1-4503	1
	6
	7
	8
	9
	11
	12
	13
	14
	15
	16
VGB-1-4504	1
	24
	25
	26
	27
	30

Sketch No.	Weld No.
VGB-1-4600	1
	3
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	9
	10
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	14
	15
	16
	18
	19
	20
	21
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	44

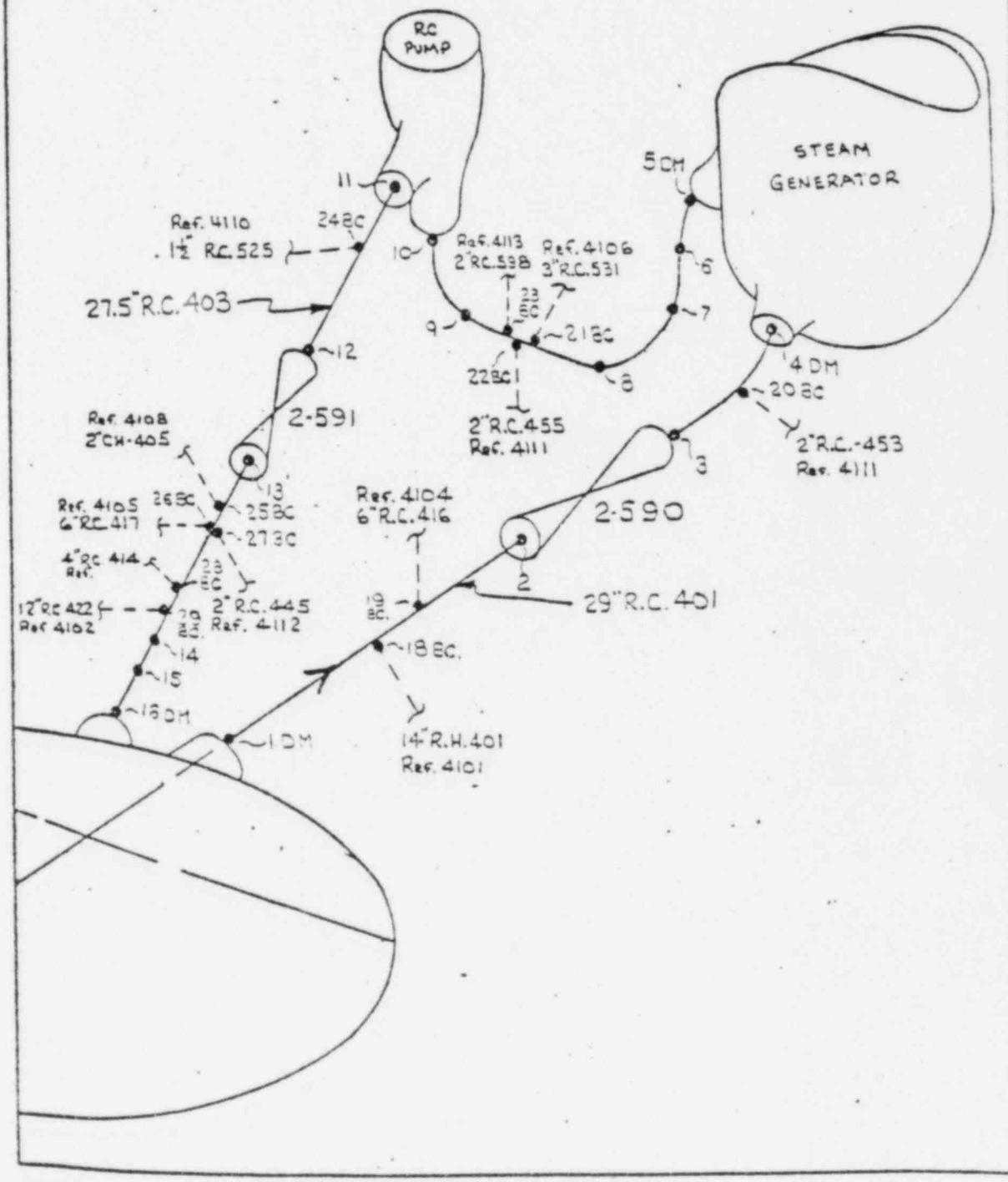
SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4100

LOOP 1 REACTOR COOLANT PIPE

REACTOR COOLANT



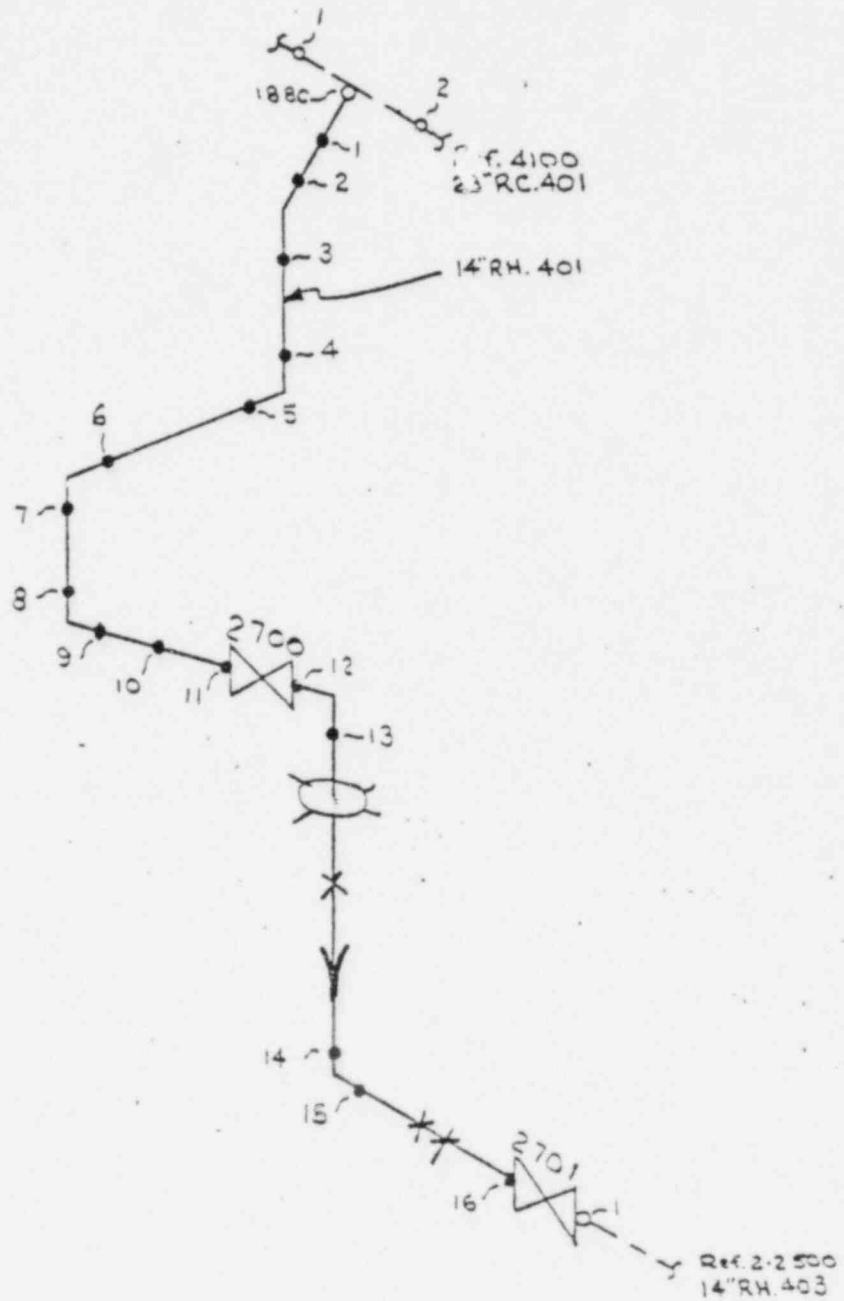
SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4101

LOOP 1 R.H.R. HOT LEG

14" Sch. 140
1.250"T

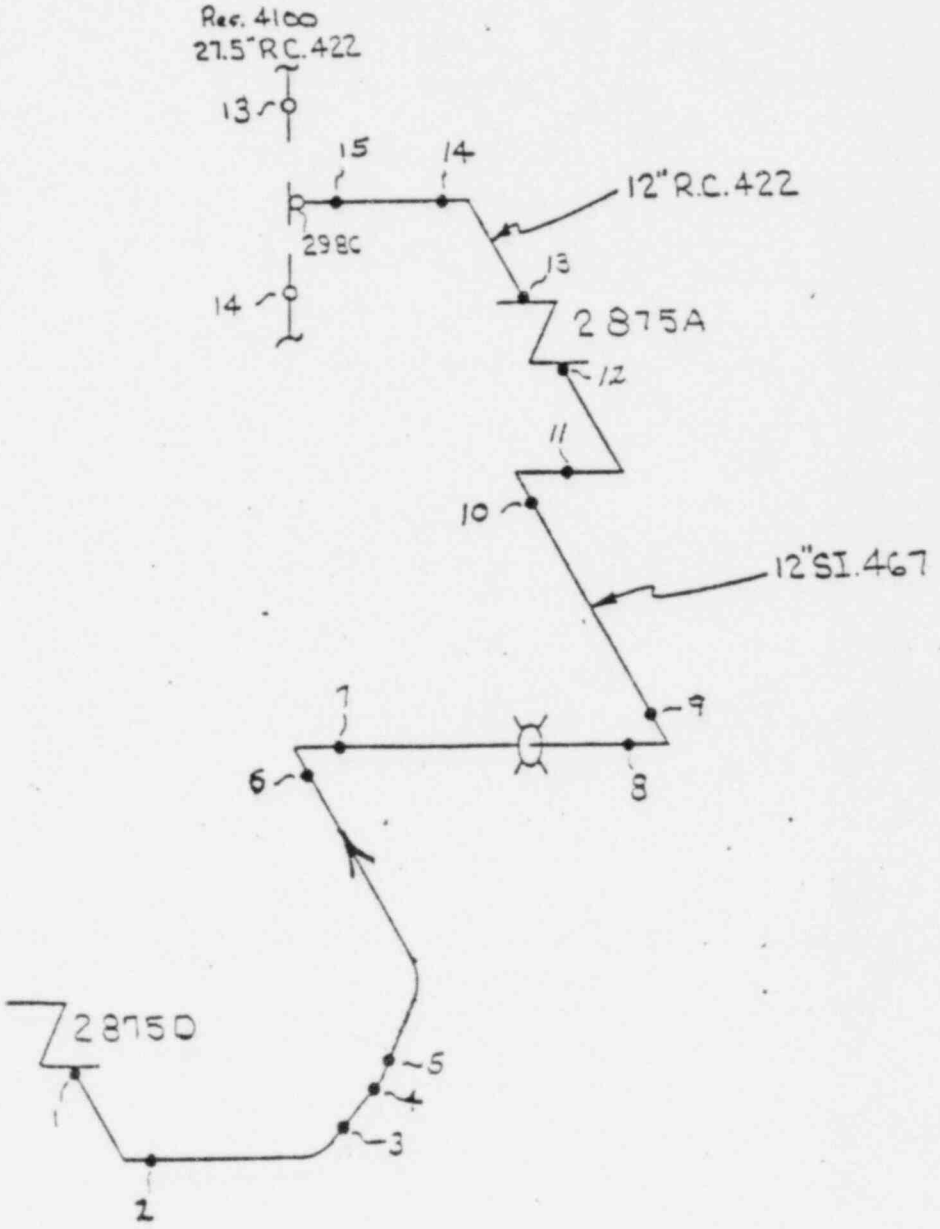


SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4102
LOOP 1 ACCUMULATOR DISCHARGE

12" Sch. 140
1.125"T



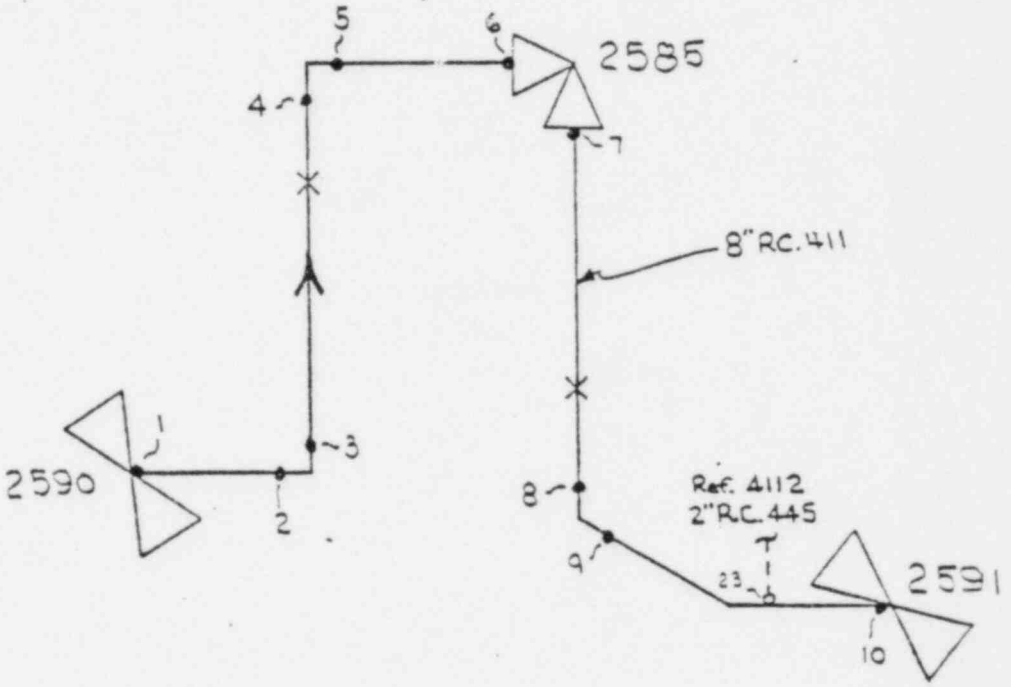
SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4103

LOOP 1 BY-PASS

8" Sch. 160
.906"T



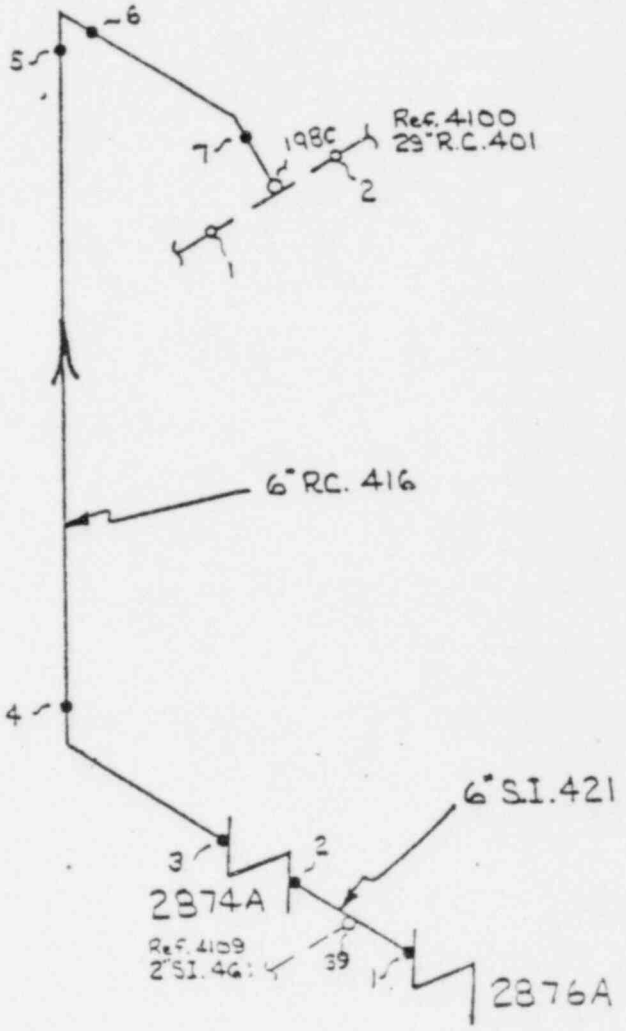
SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4104

LOOP 1 SIS LOW HEAD HOT LEG

6" Sch. 160
.719"T



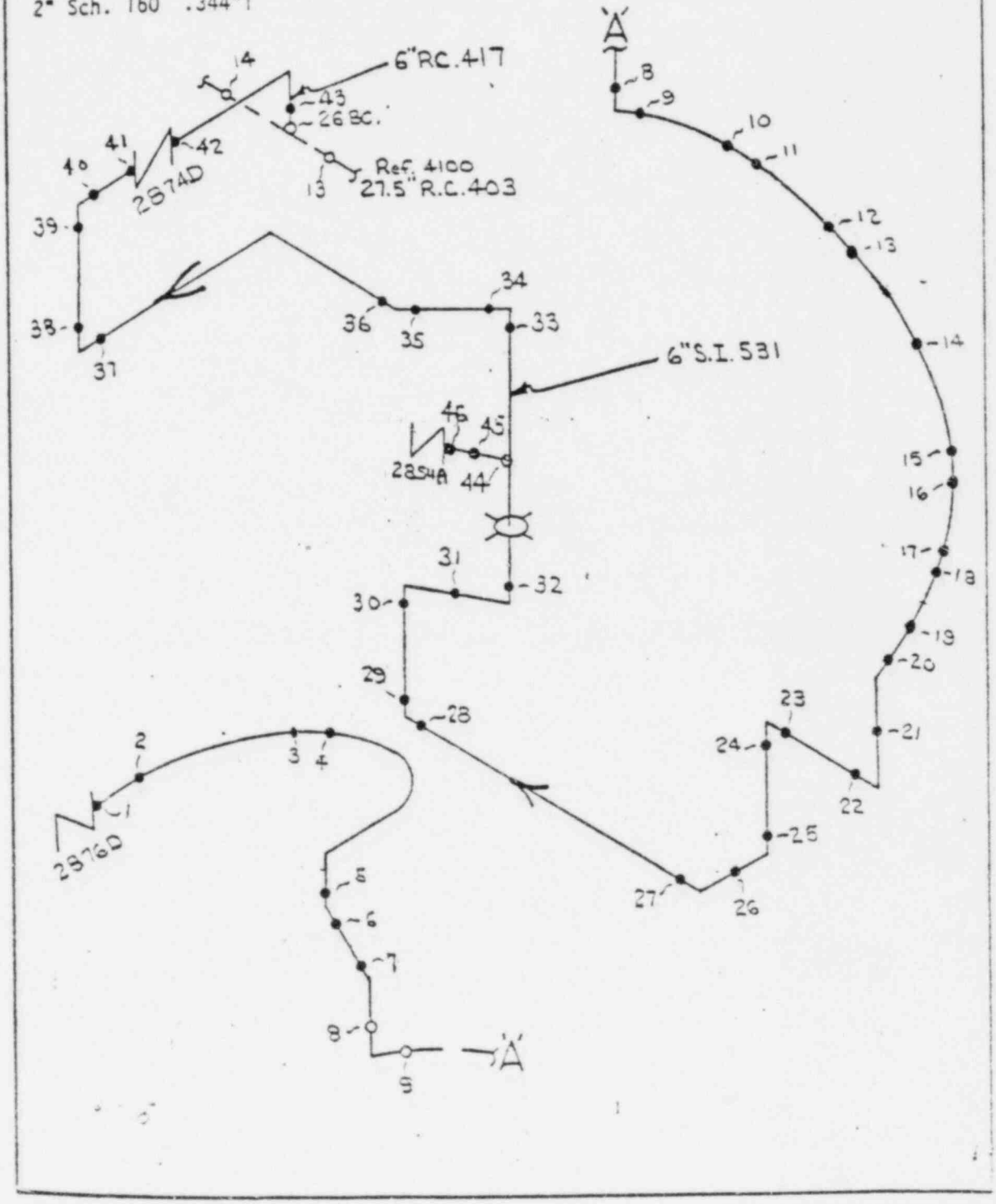
SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4105

LOOP 1 SIS LOW HEAD COLD LEG

6" Sch. 160 .719"T
2" Sch. 160 .344"T



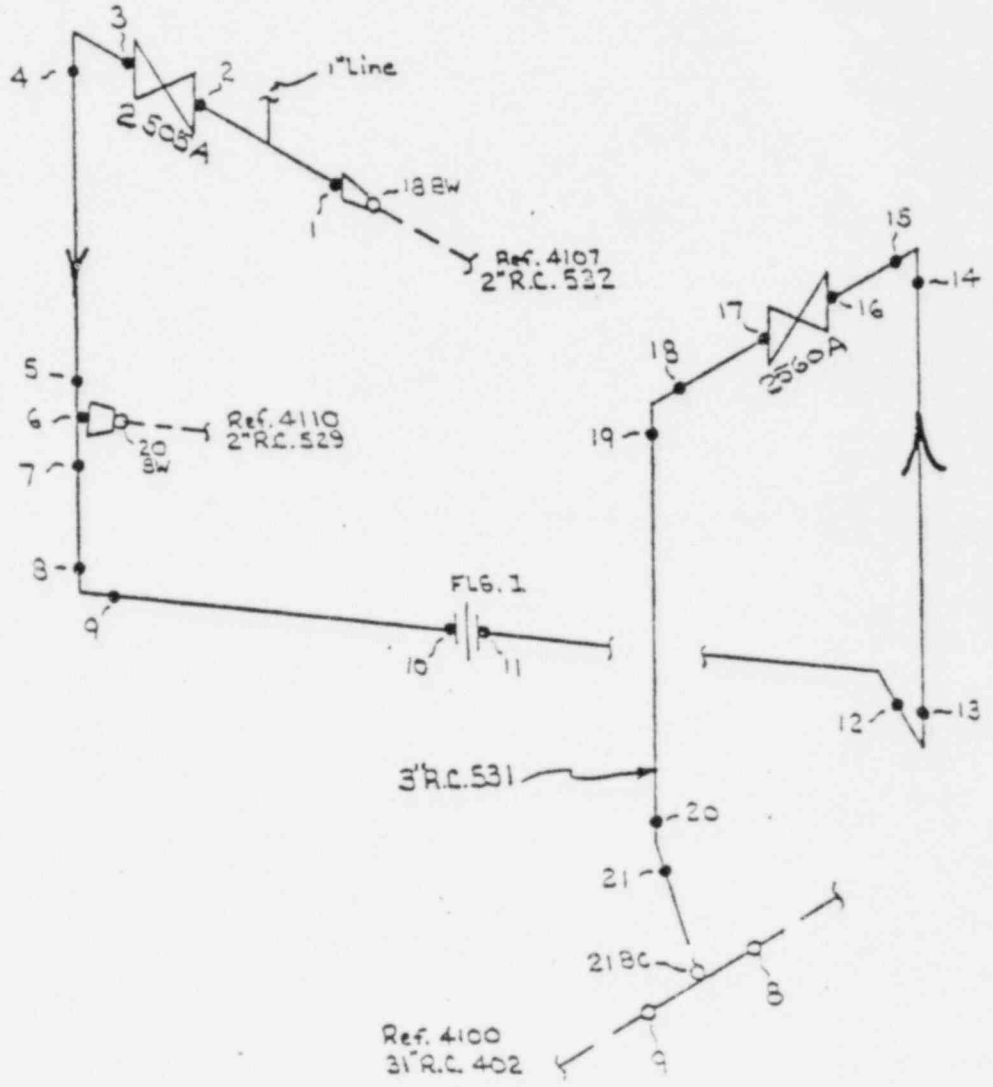
SKETCH SHEET
Form 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4106

LOOP 1 R.T.D. RETURN

3" Sch. 160
.438"T



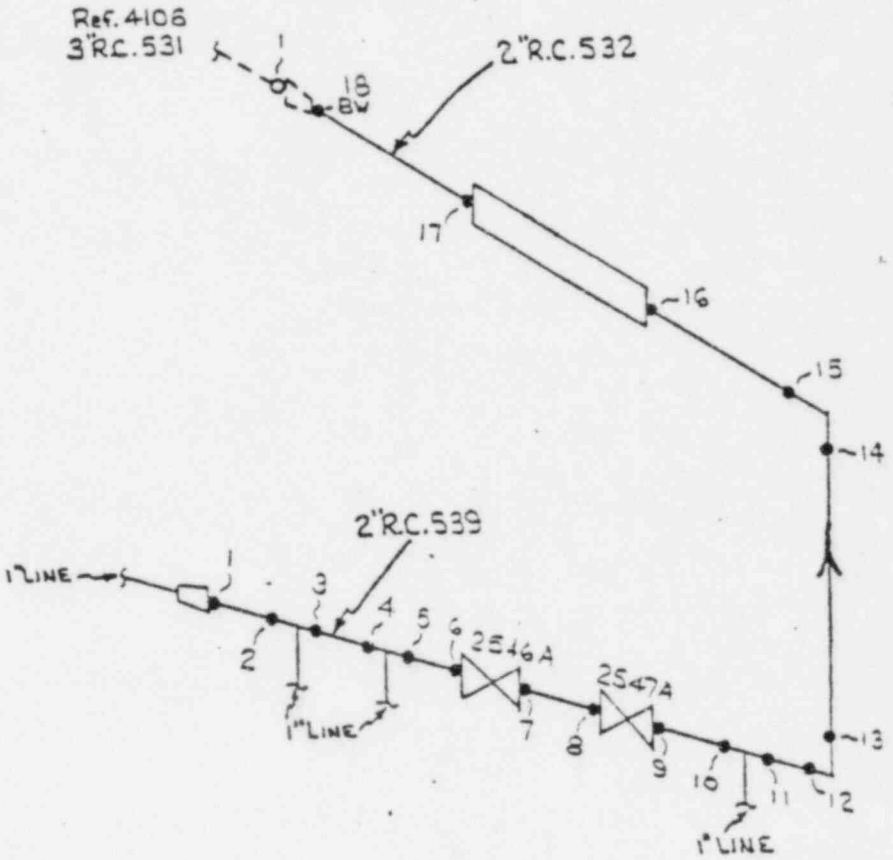
SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4107

LOOP 1 R.T.D. TAKE-OFF

2" Sch. 160
.344"T



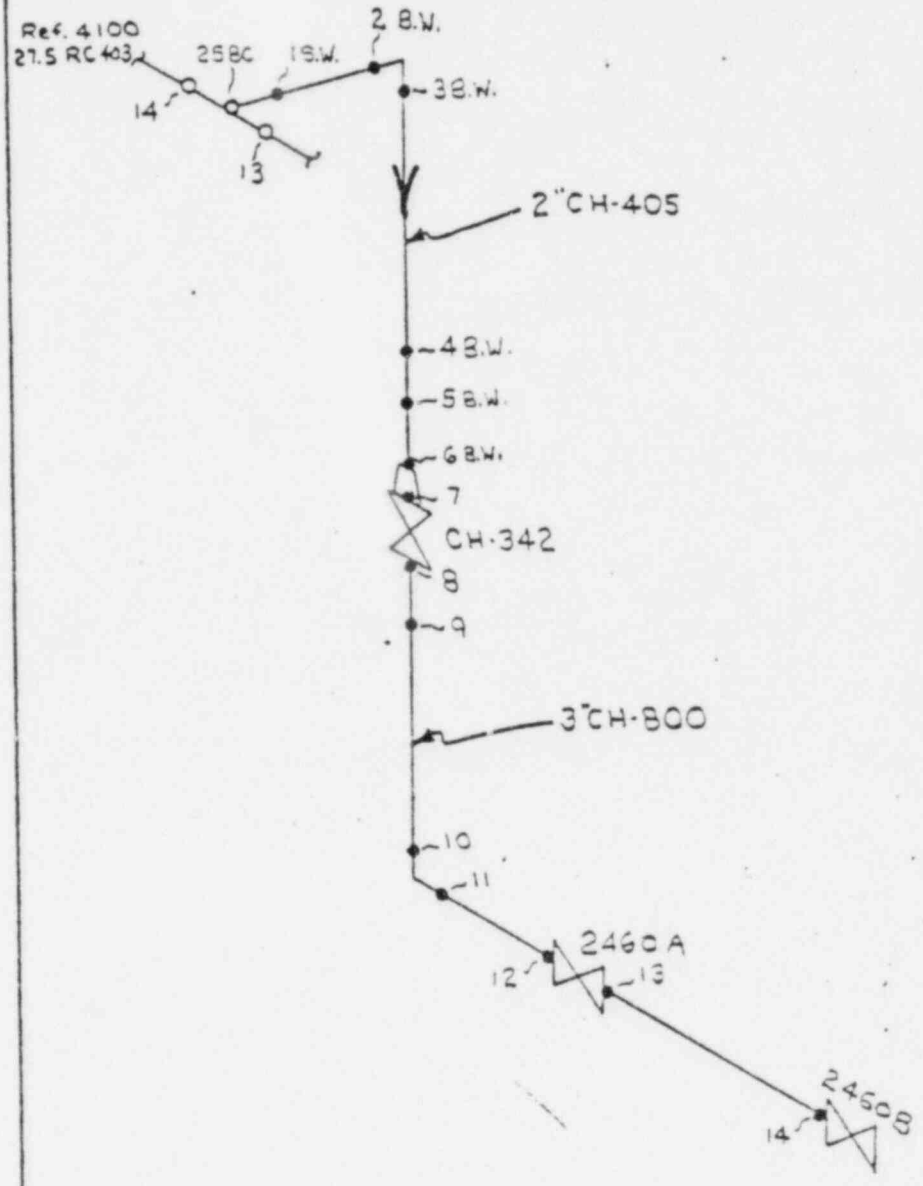
SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4108

LOOP 1 C.V.C.S. LETDOWN

3" Sch. 160 .438"T
2" Sch. 160 .344"T



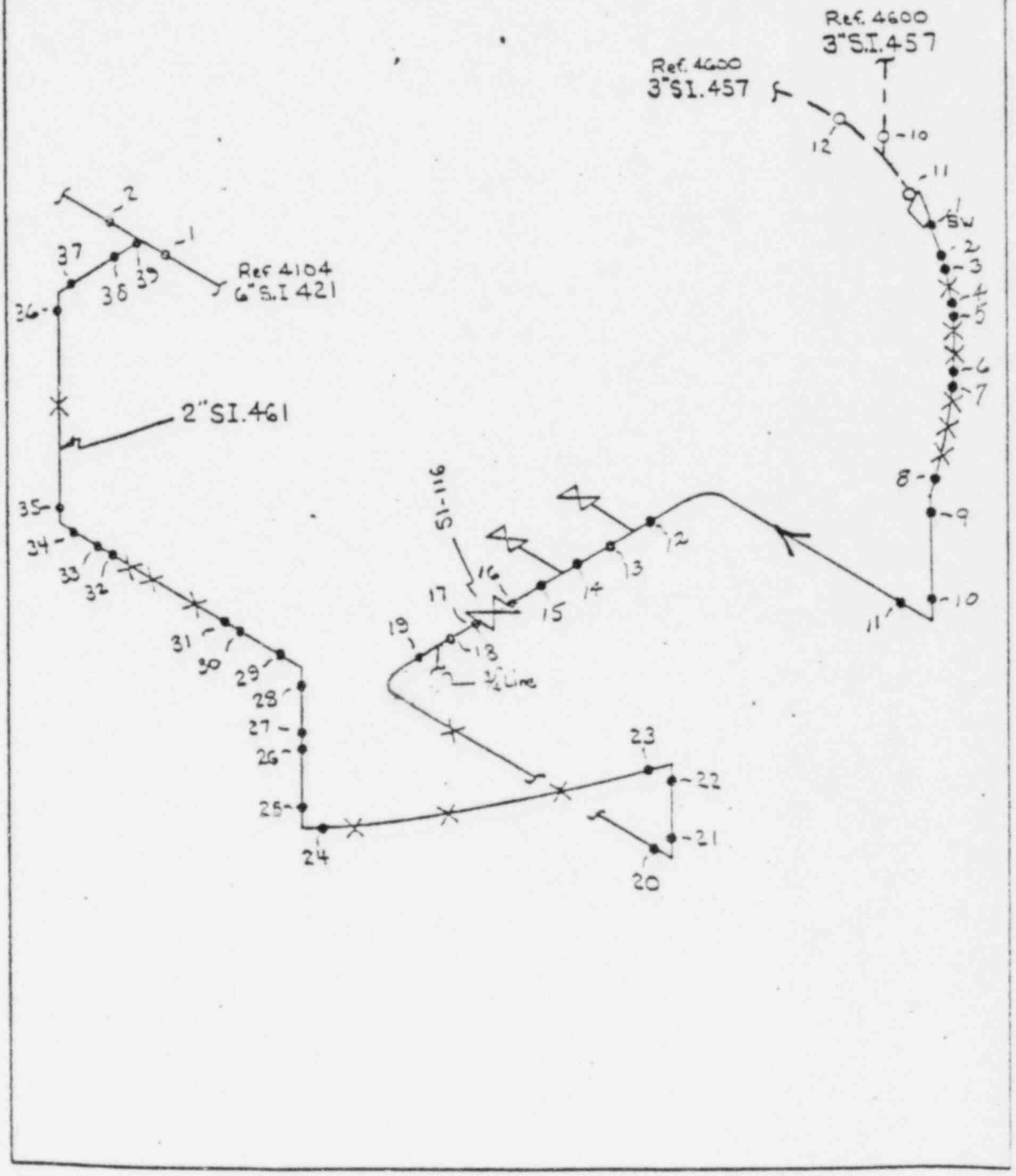
SKETCH SHEET
FORM 29577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-409

LOOP 1 S.I.S. LOW HEAD HOT LEG

2" Sch. 160
.344"T



SKETCH SHEET
FORM 28577

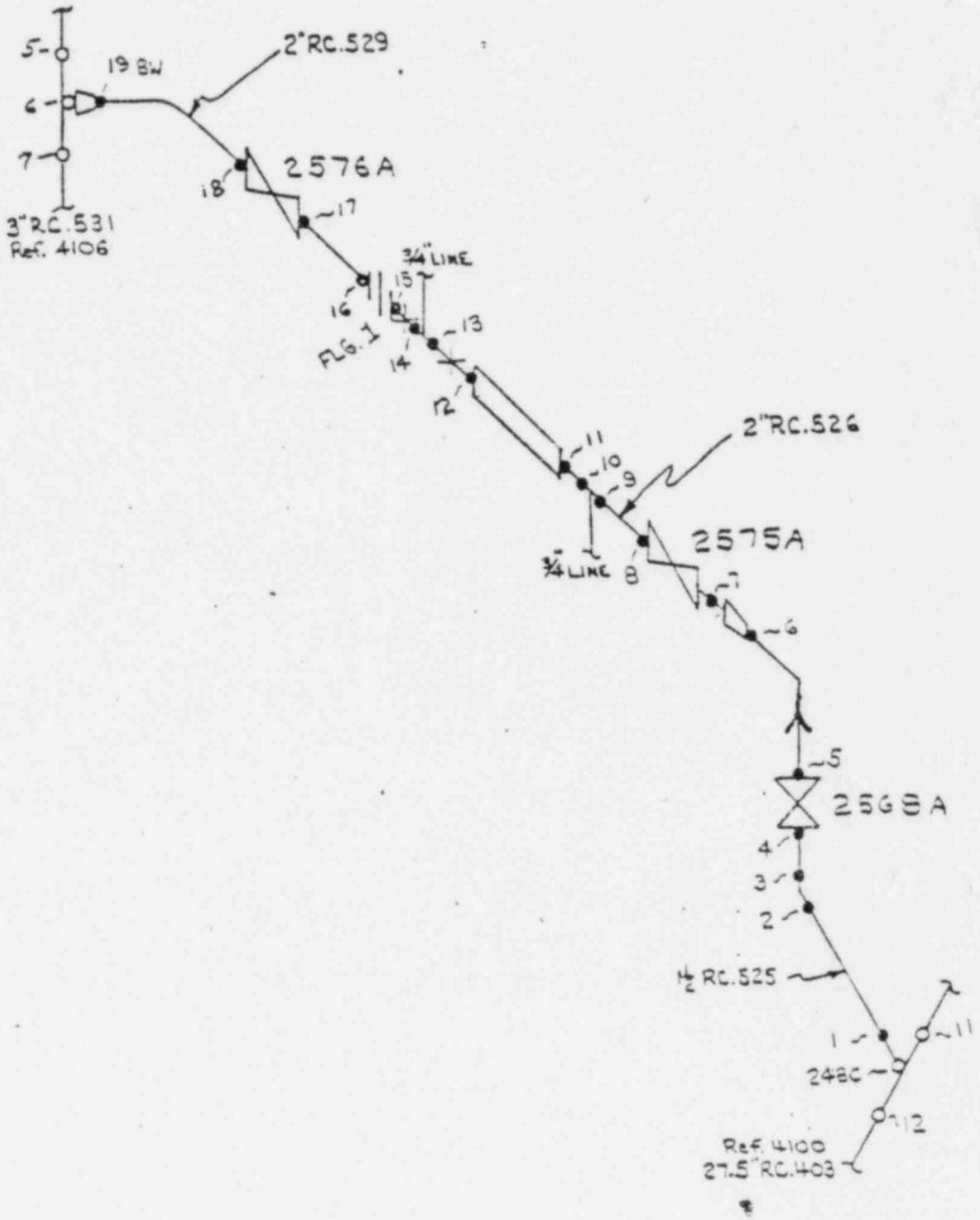
WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4110

LOOP 1 RTD TAKE-OFF

2" Sch. 160 .344"T

1 1/2 Sch. 160 .281"T



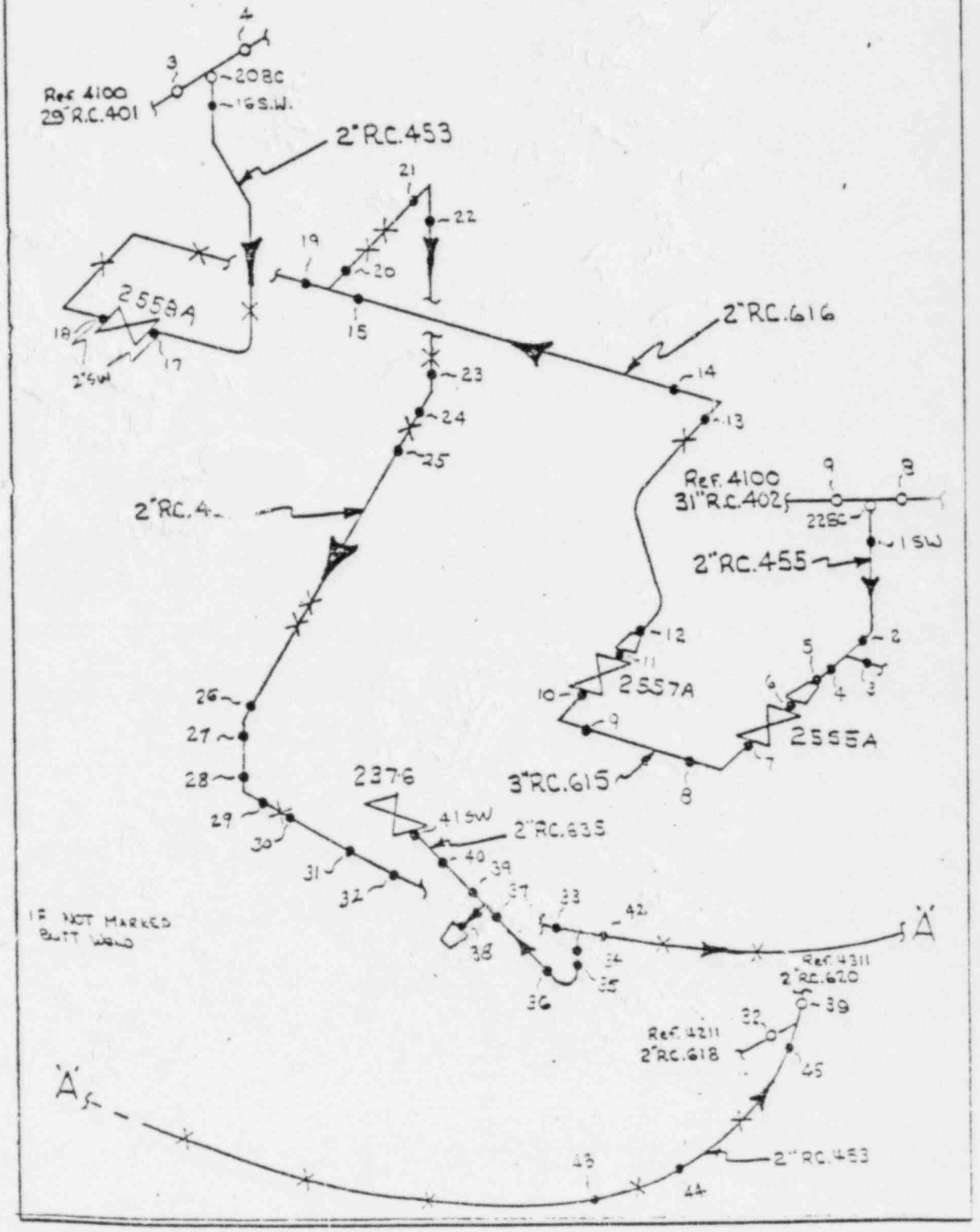
SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4111

3" Sch. 160 .438"T
2" Sch. 160 .344"T

LOOP 1 DRAIN



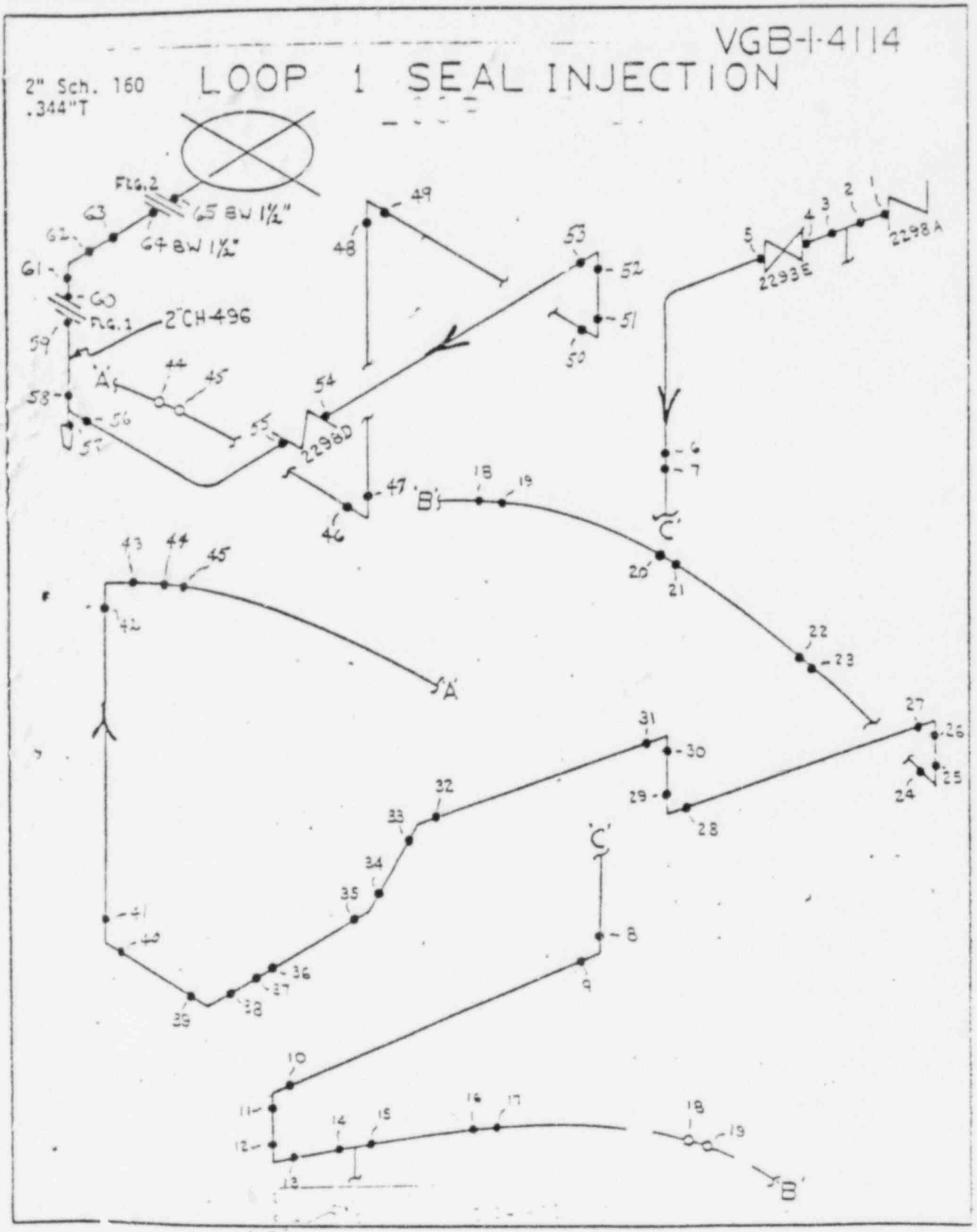
SKETCH SHEET
Form 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4114

LOOP 1 SEAL INJECTION

2" Sch. 160
.344"T



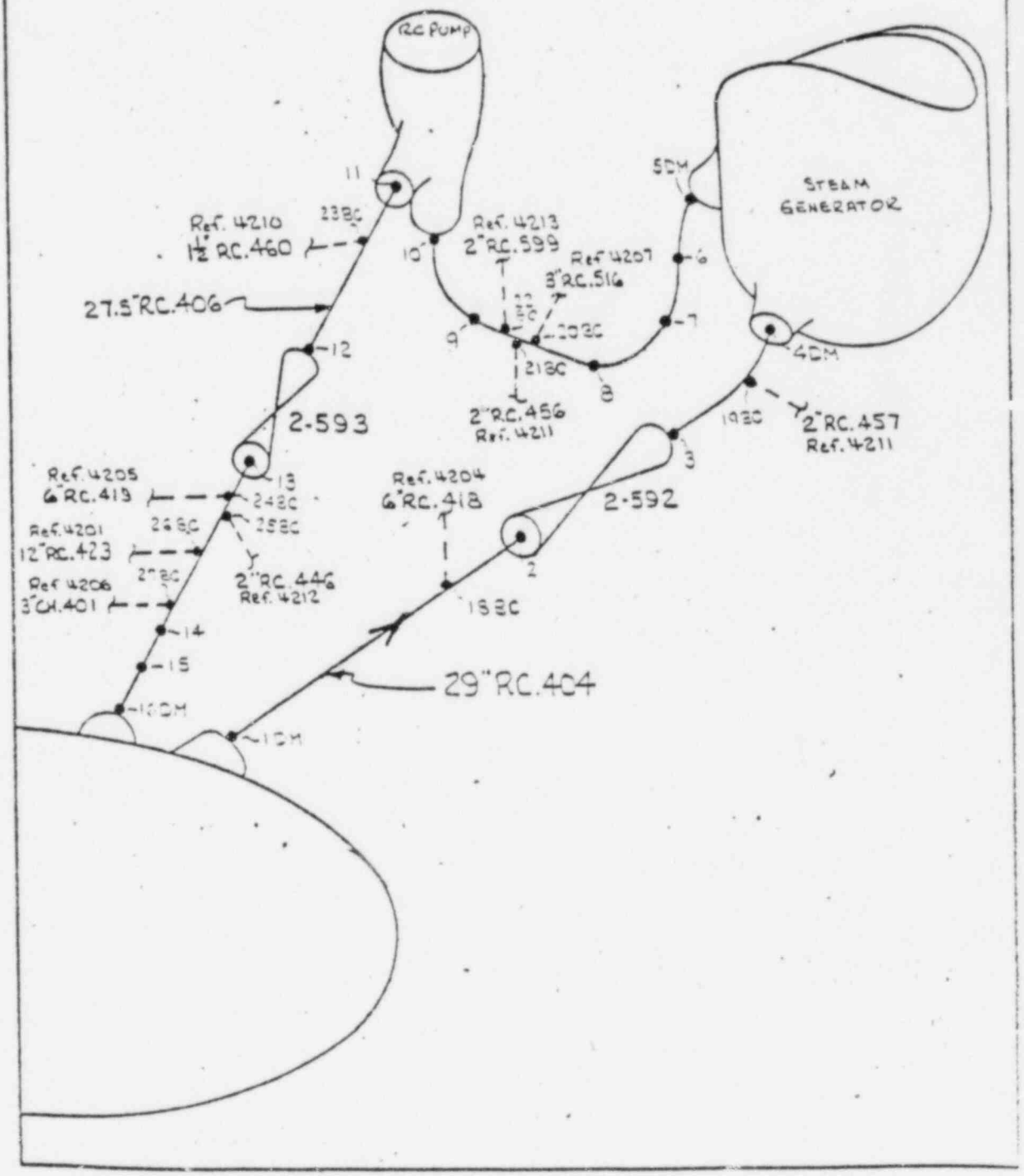
SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4200

LOOP 2 REACTOR COOLANT PIPE

Reactor Coolant



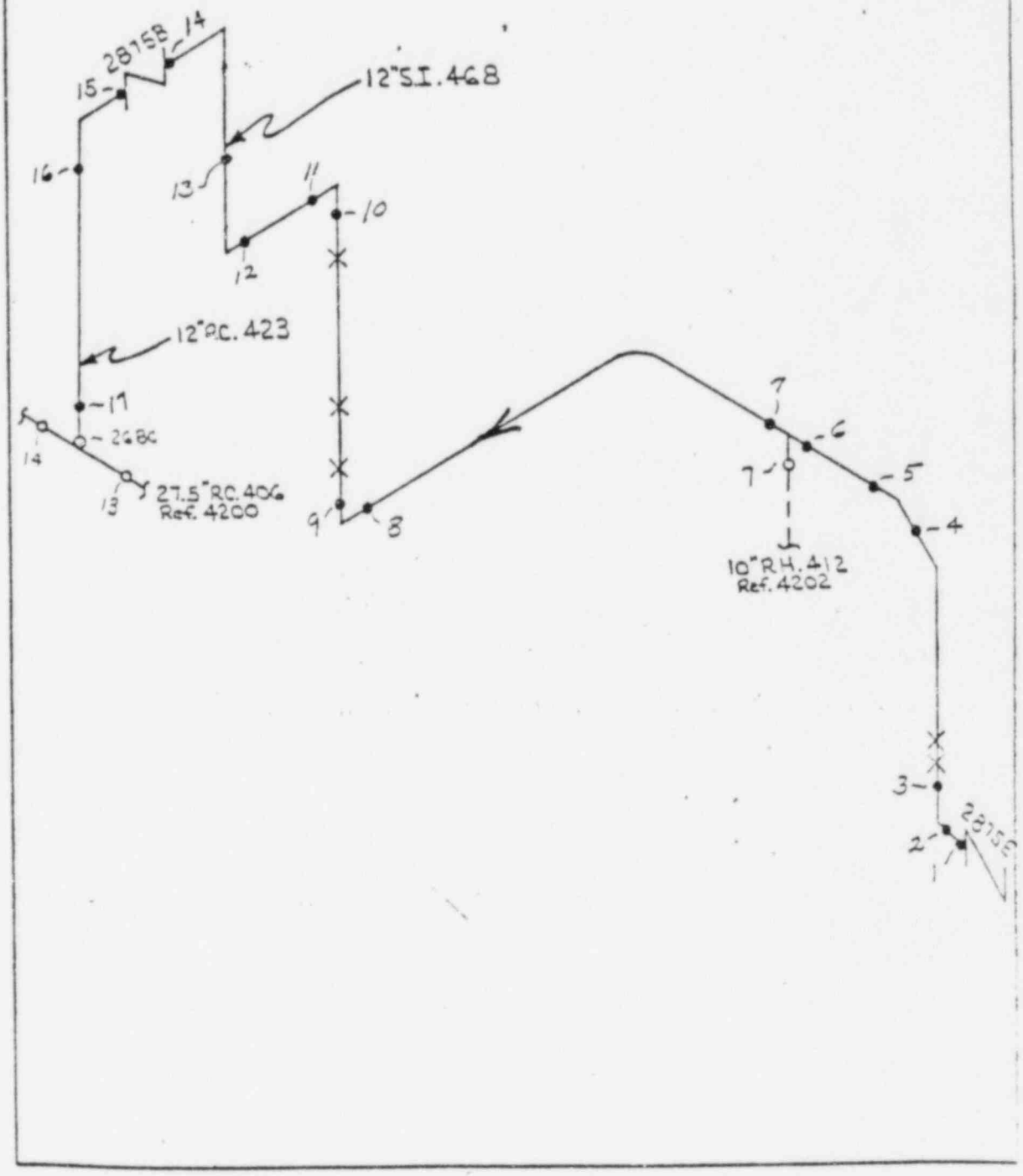
SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4201

LOOP 2 ACCUMULATOR DISCHARGE

12" Sch. 140
1.125"T



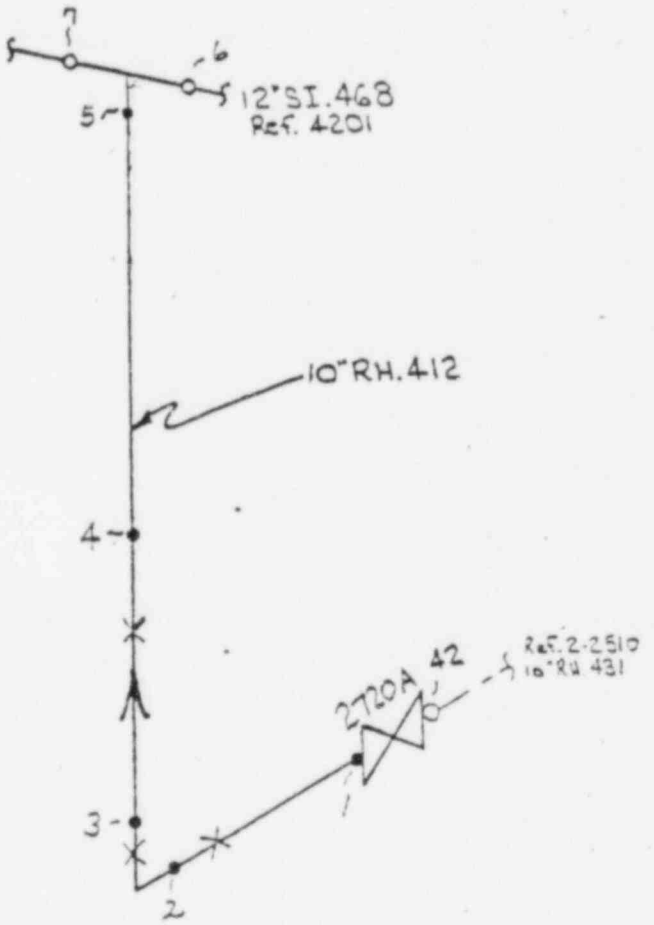
SKETCH SHEET
FORM 2N577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4202

- - - 2 - LOOP-2-R.H.R. - - -

10" Sch. 140
1.00" I



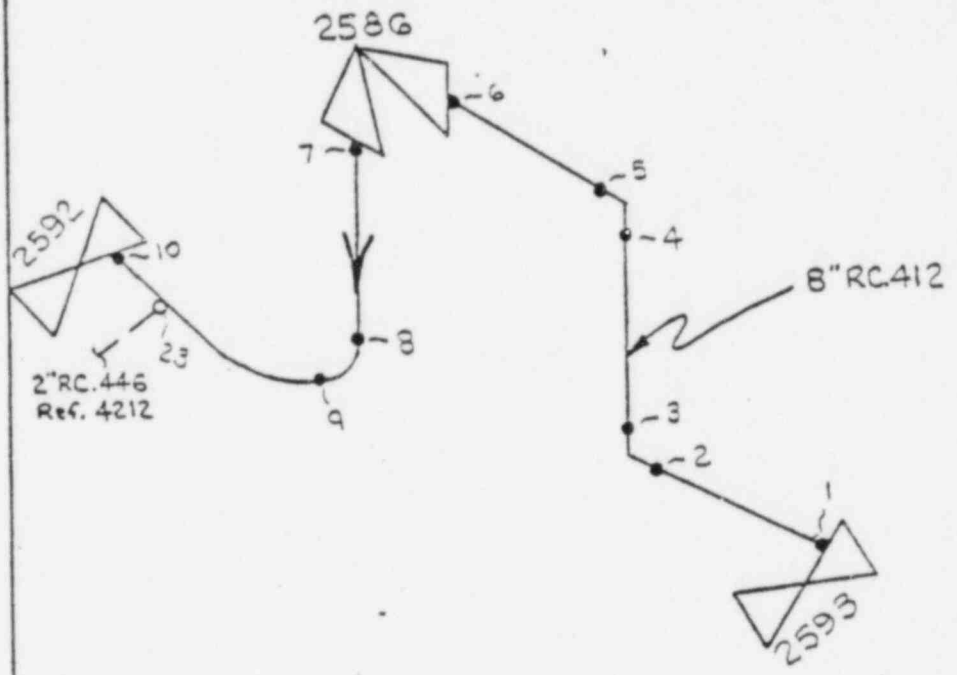
SKETCH SHEET
Form 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4203

LOOP 2 BY-PASS

8" Sch. 160
.906"T



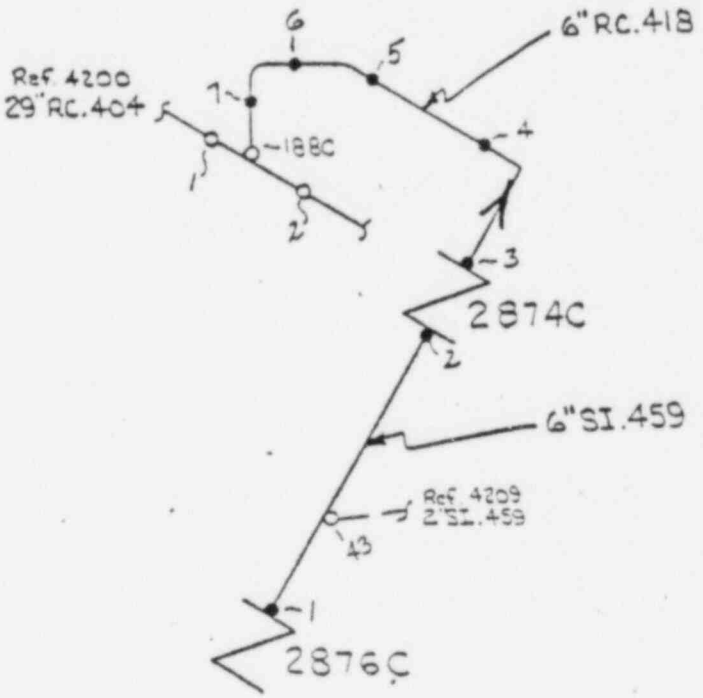
SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4204

LOOP 2 SIS LOW HEAD HOT LEG

6" Sch. 160
.719"T



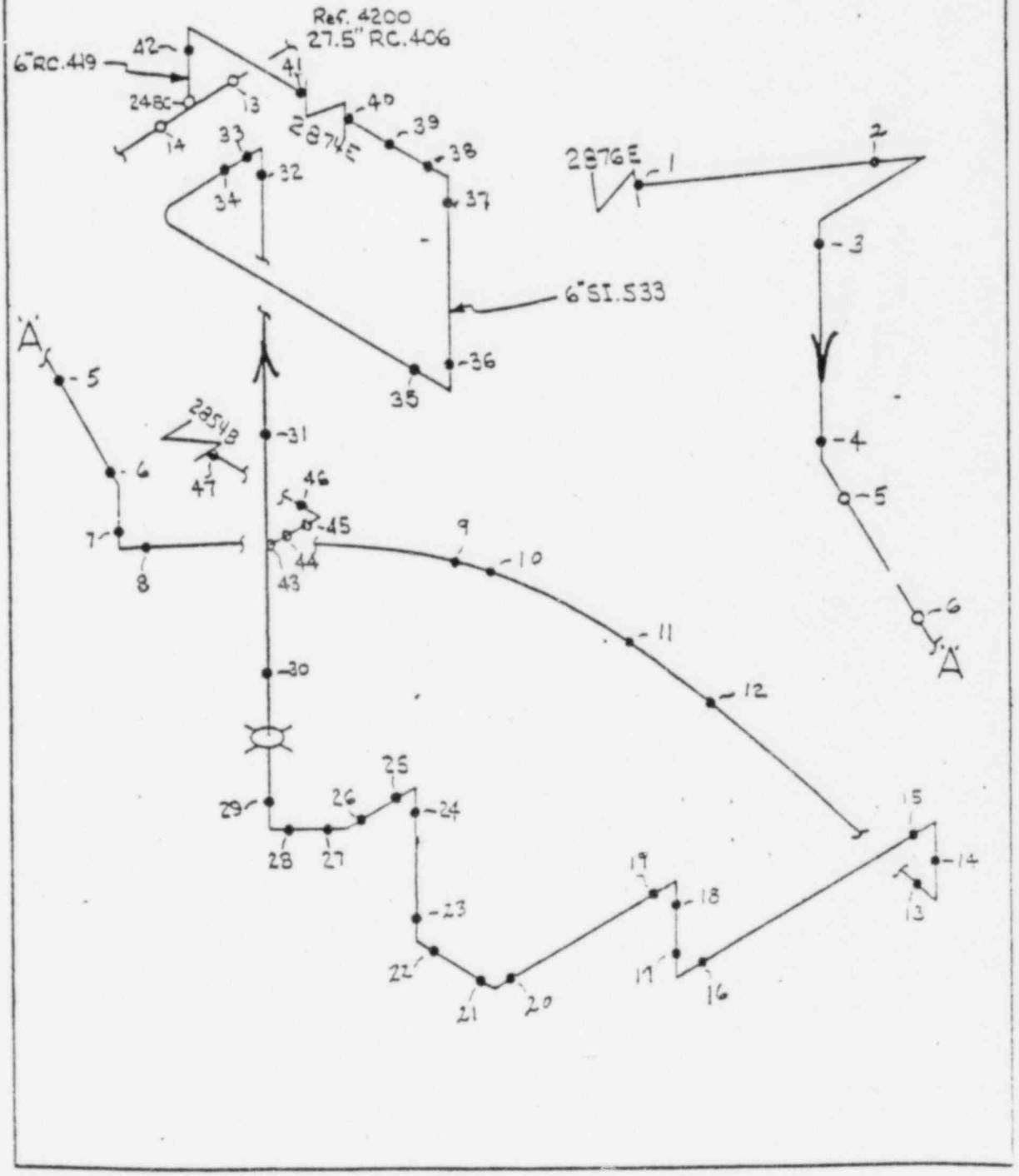
SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4205

LOOP 2 S 3 LOW HEAD COLD LEG

6" Sch. 160 .719"T
2" Sch. 160 .344"T



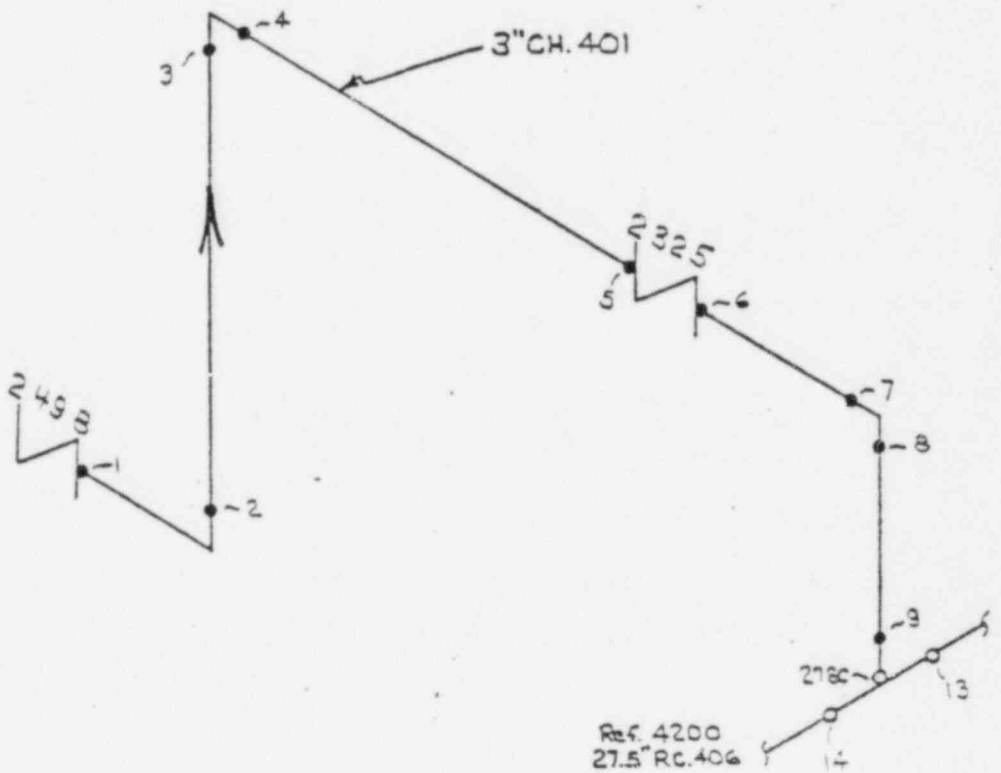
SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4206

LOOP 2 CHARGING

3" Sch. 160
.438"T



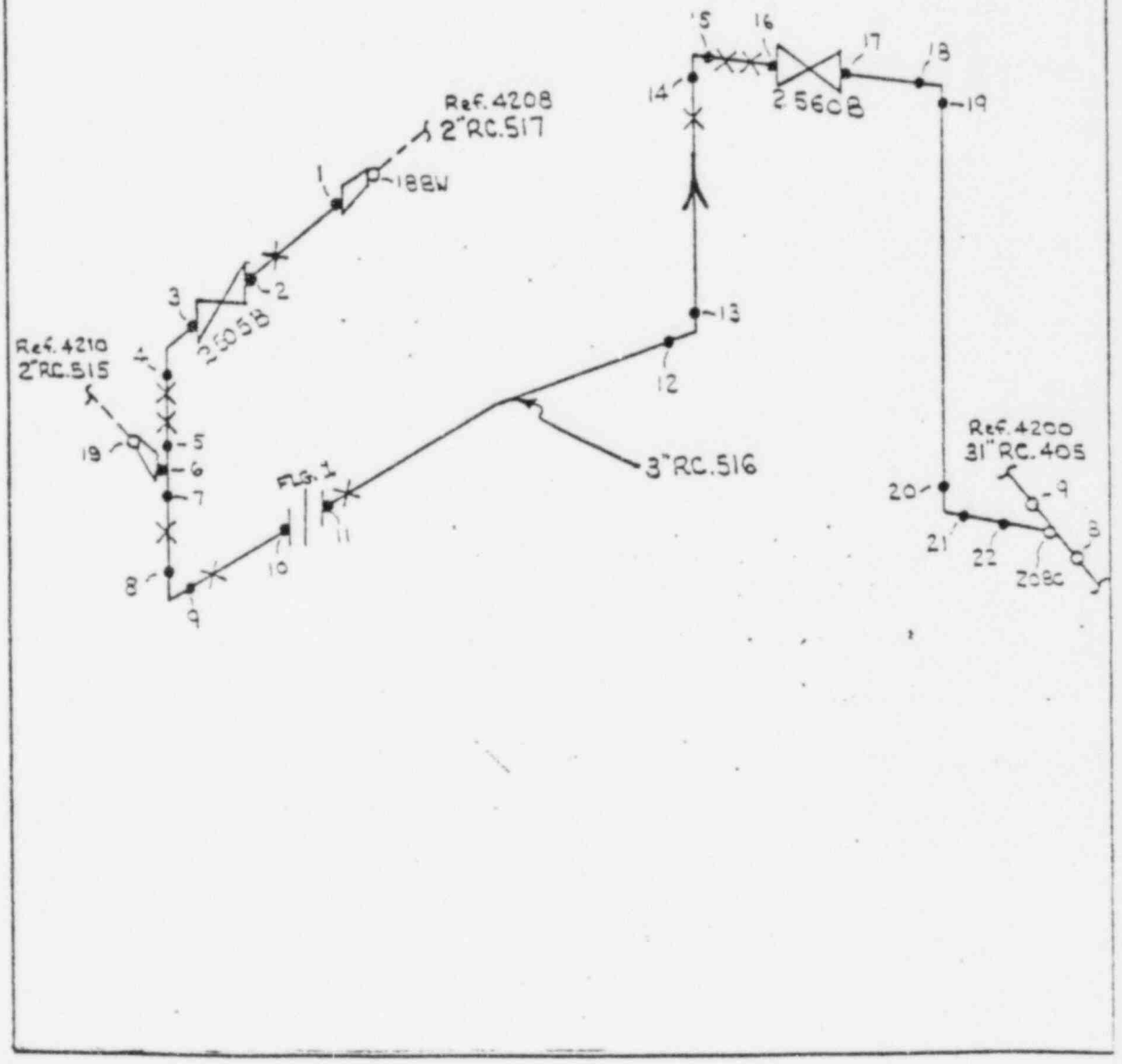
SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4207

LOOP 2 R.T.D. RETURN

3" Sch. 160
.438"T



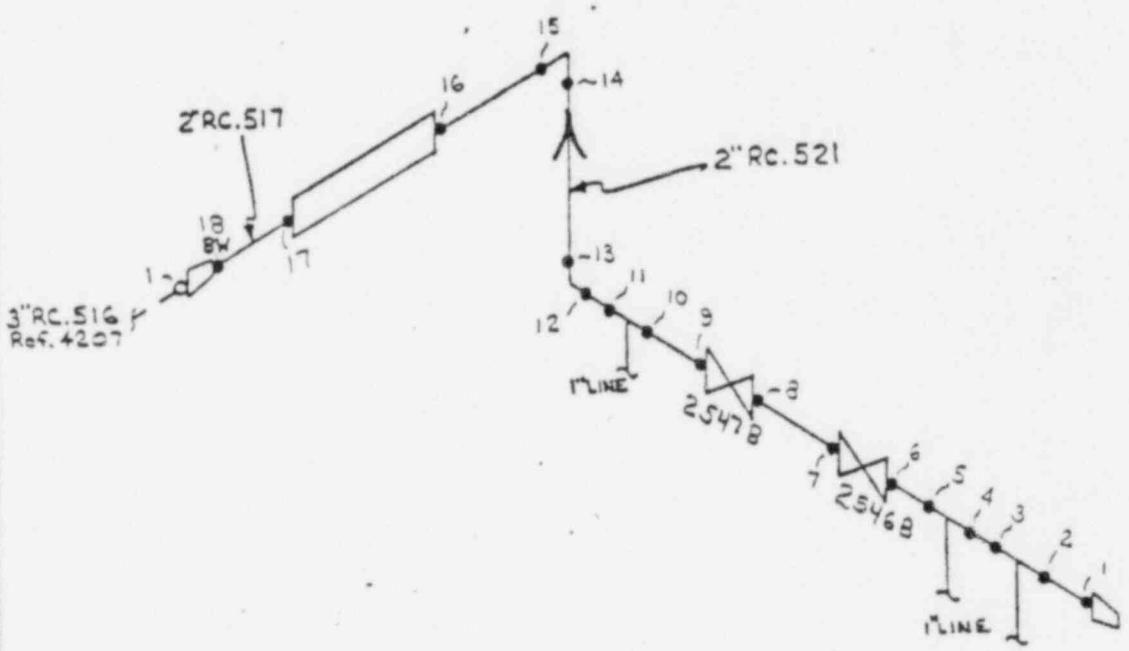
SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4208

LOOP 2 R.T.D. TAKE-OFF

2" Sch. 160
.344"T



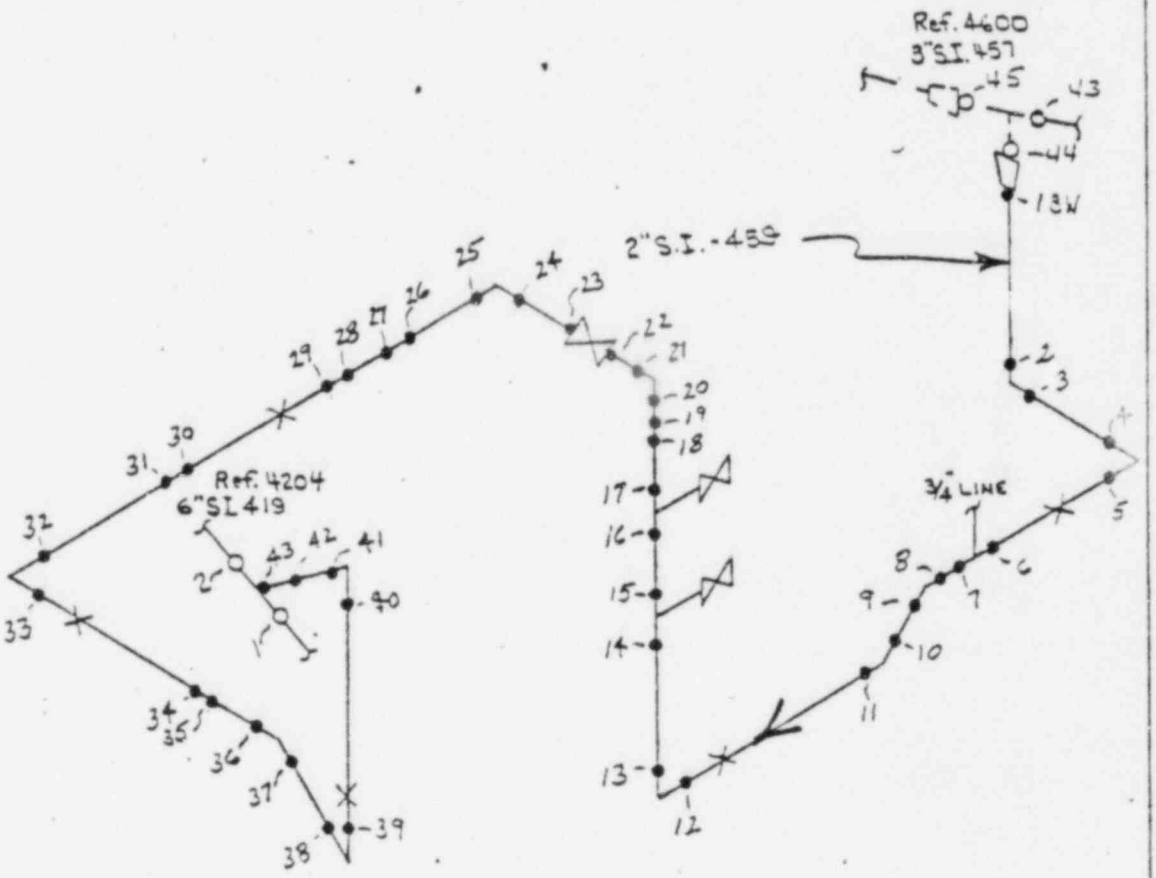
SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4209

LOOP 2 SIS LOW HEAD HOT LEG

2" Sch. 160
.344"T



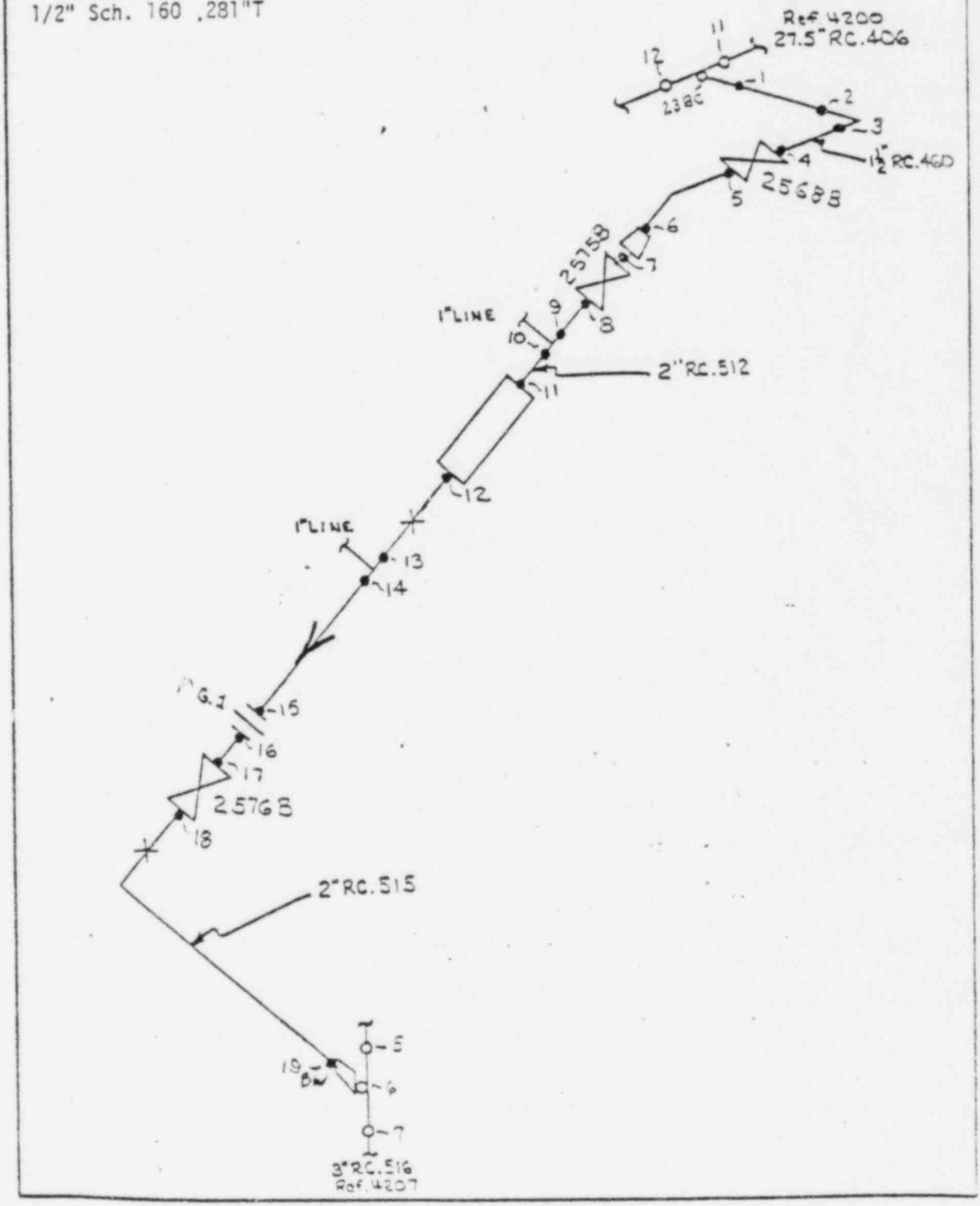
SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4210

LOOP 2 RTD TAKE-OFF

2" Sch. 160 .344"T
1/2" Sch. 160 .281"T



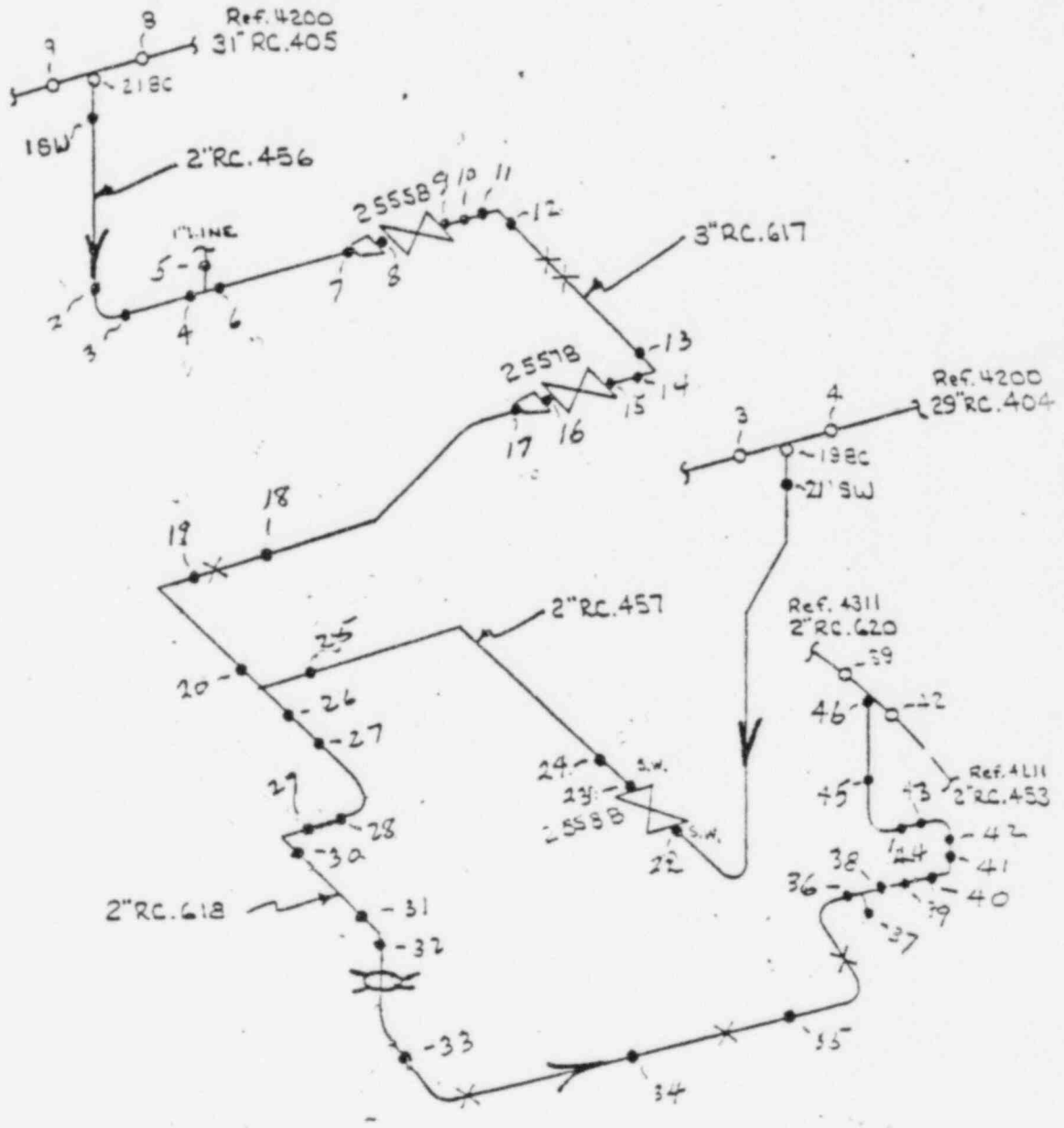
SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4211

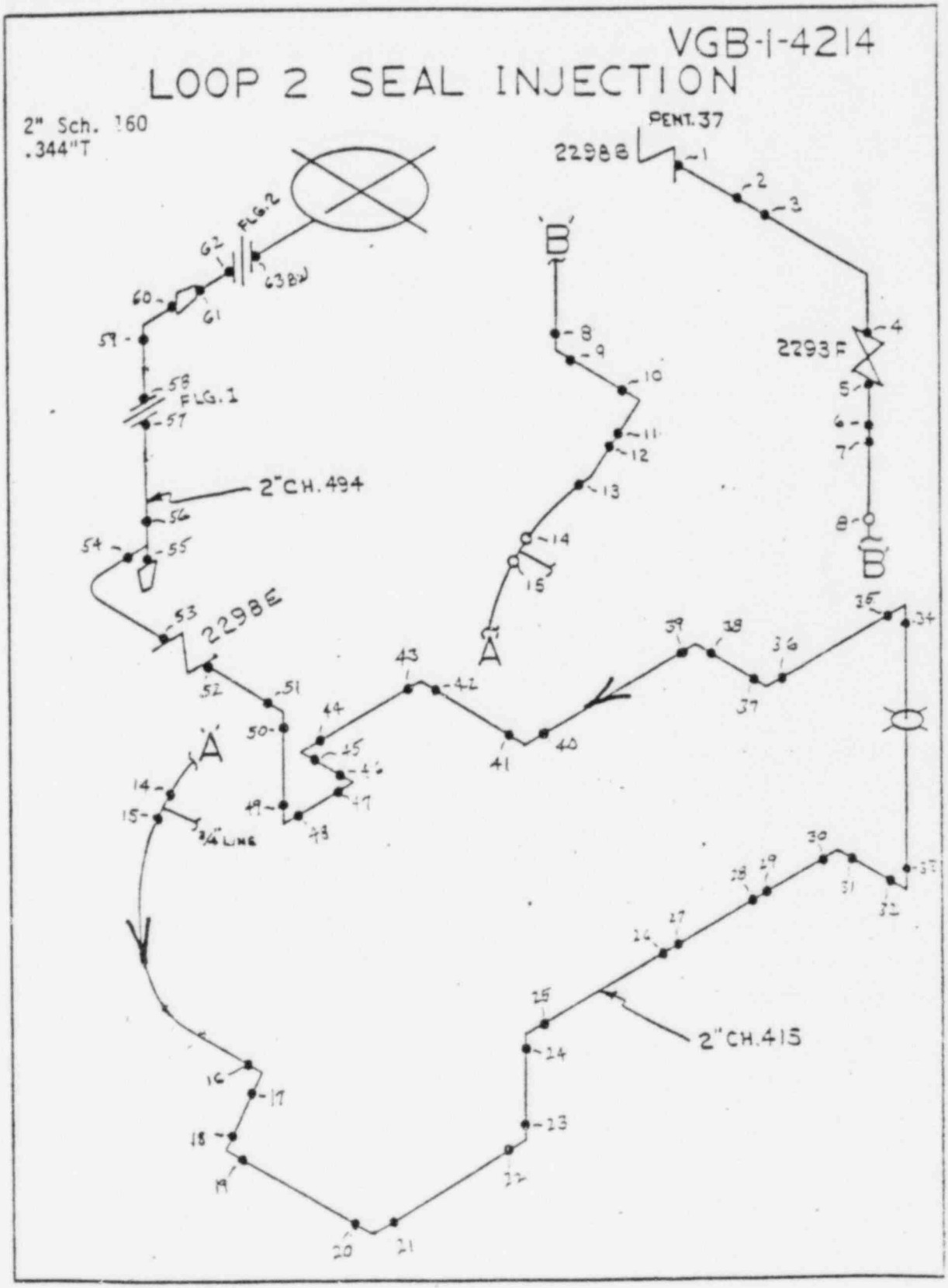
LOOP 2 DRAIN

3" Sch. 160 .438"T
2" Sch. 160 .344"T



SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION



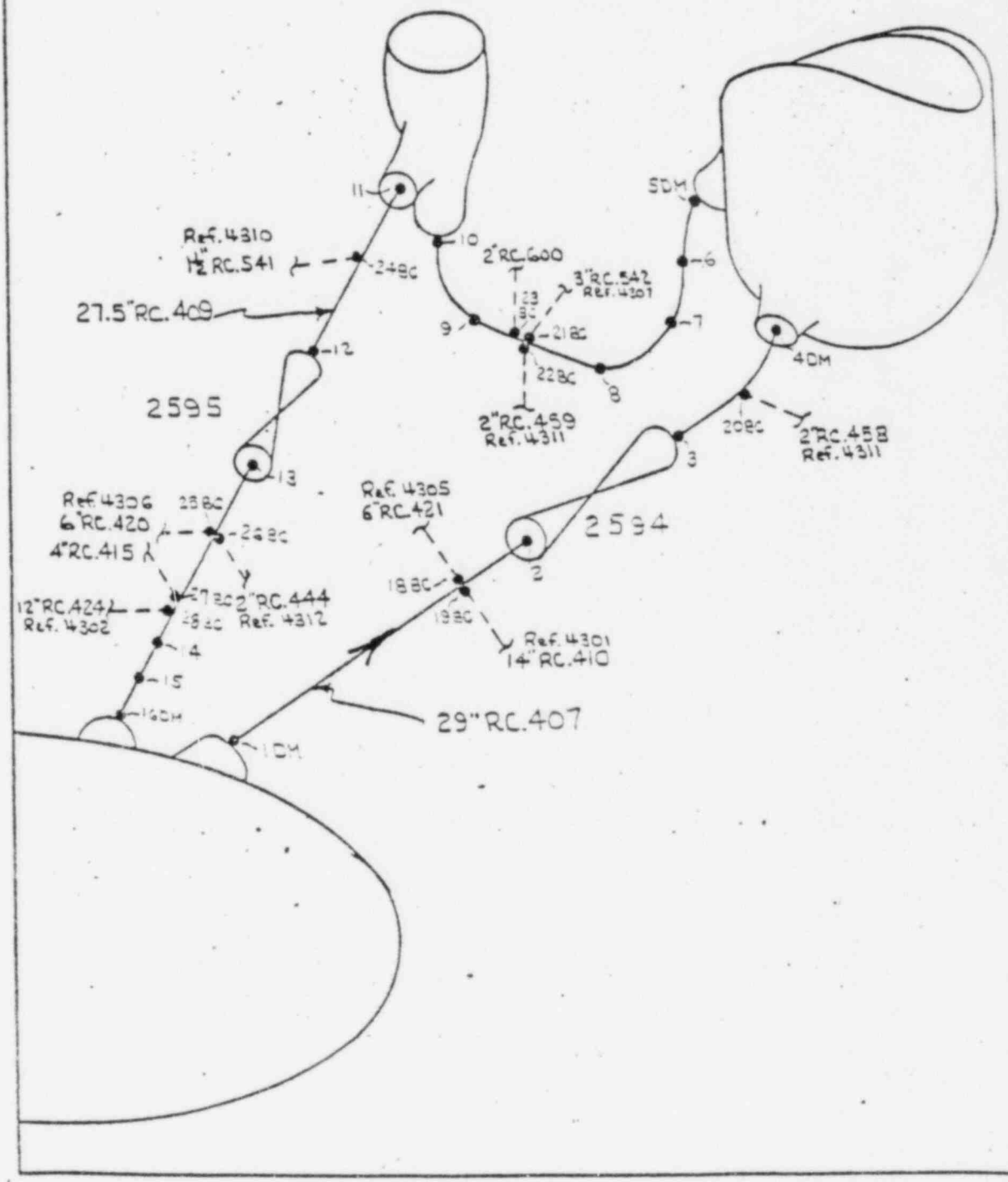
SKETCH SHEET
FORM 18577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4300

LOOP 3 REACTOR COOLANT PIPE

Reactor Coolant

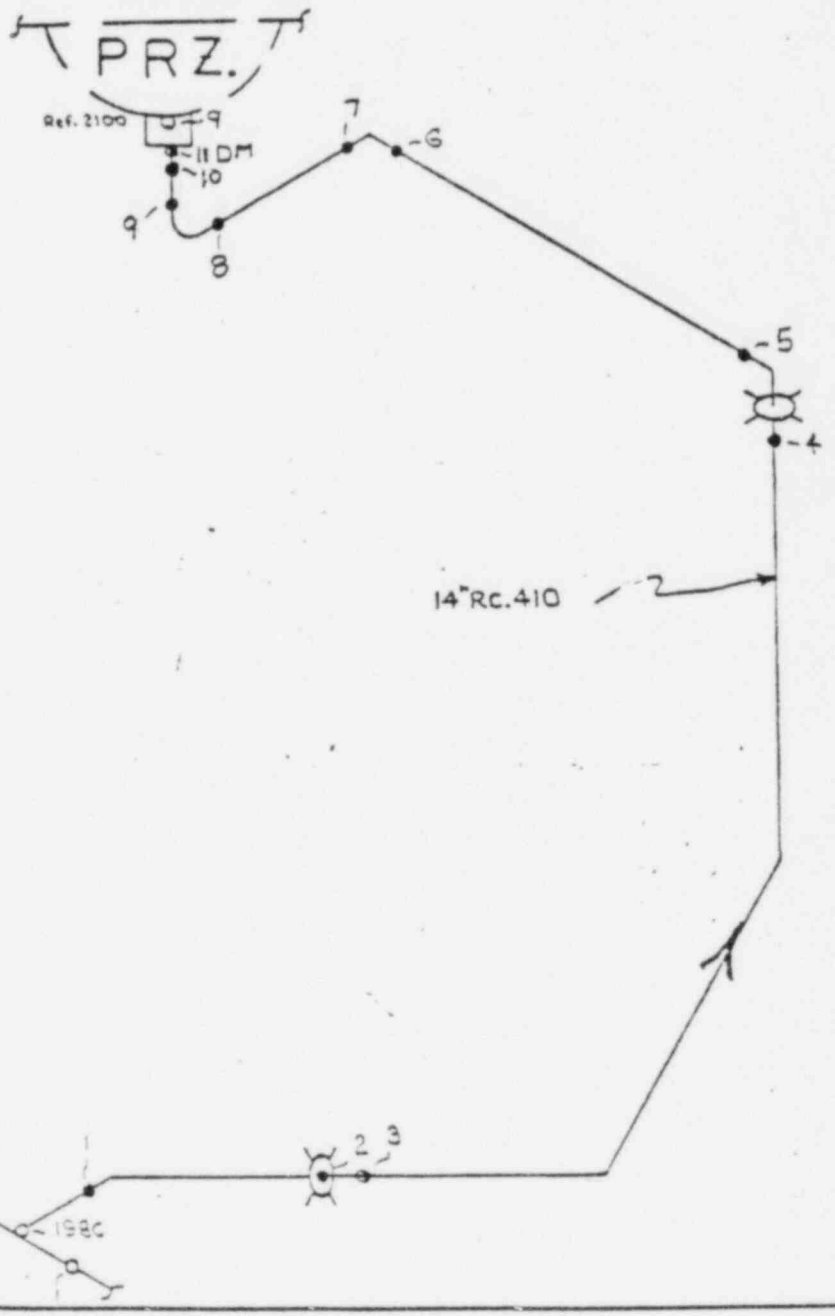


SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4301
PRESSURIZER SURGE

14" Sch. 160
1.406"T



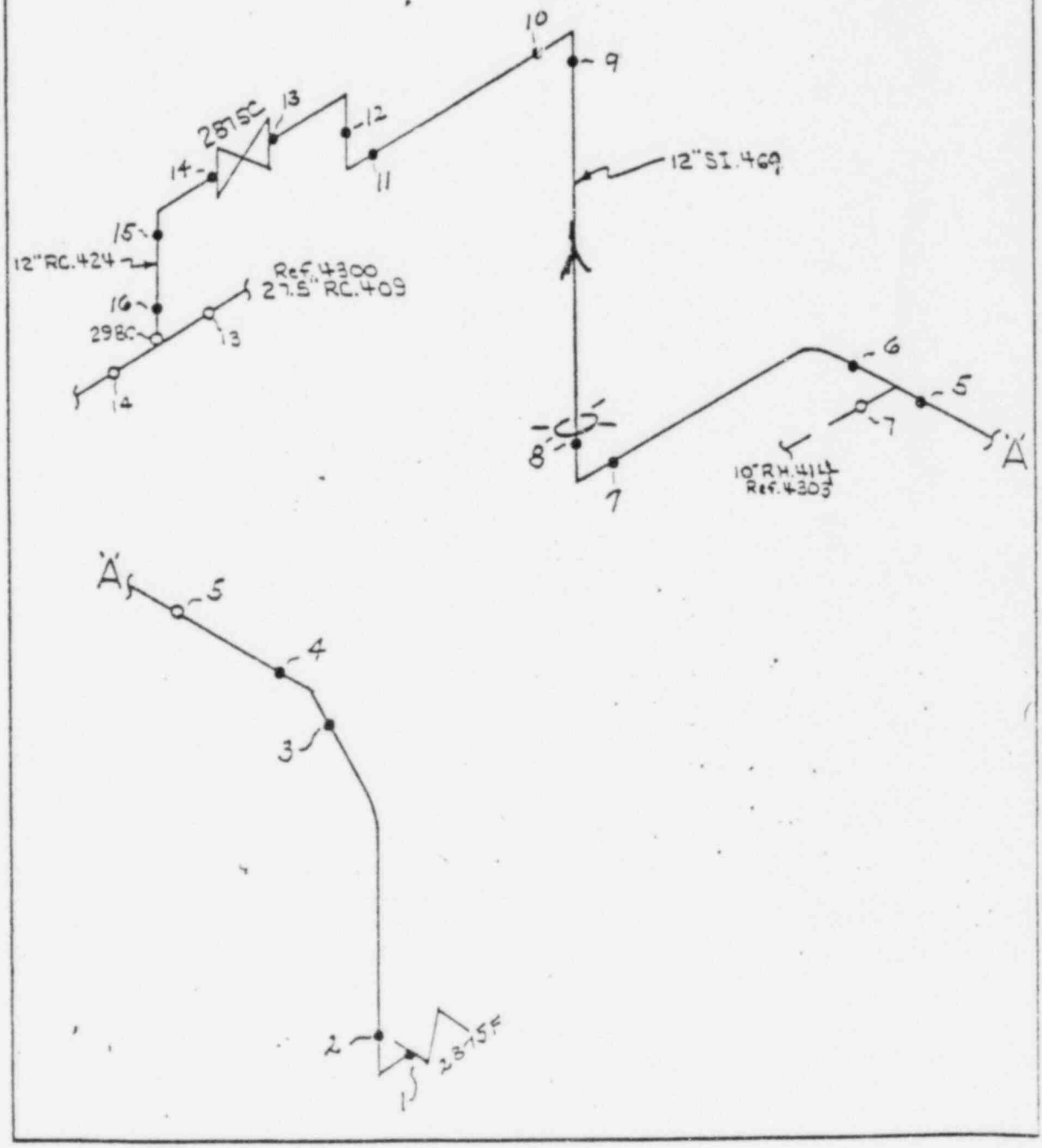
SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4302

LOOP 3 ACCUMULATOR DISCHARGE

12" Sch. 140
1.125"T



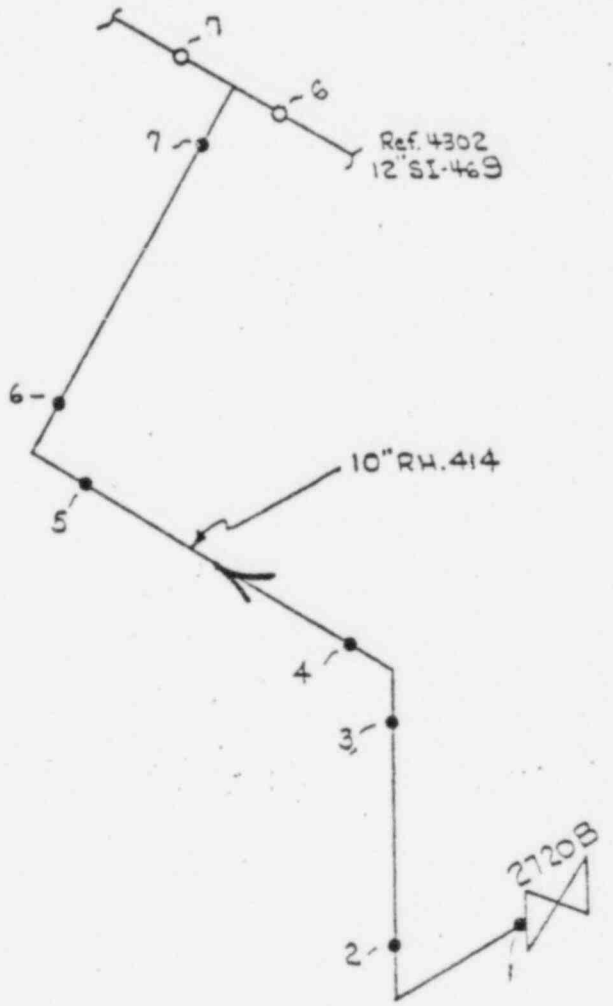
SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4303

LOOP 3 R.H.R.

10" Sch. 140
1.00"T

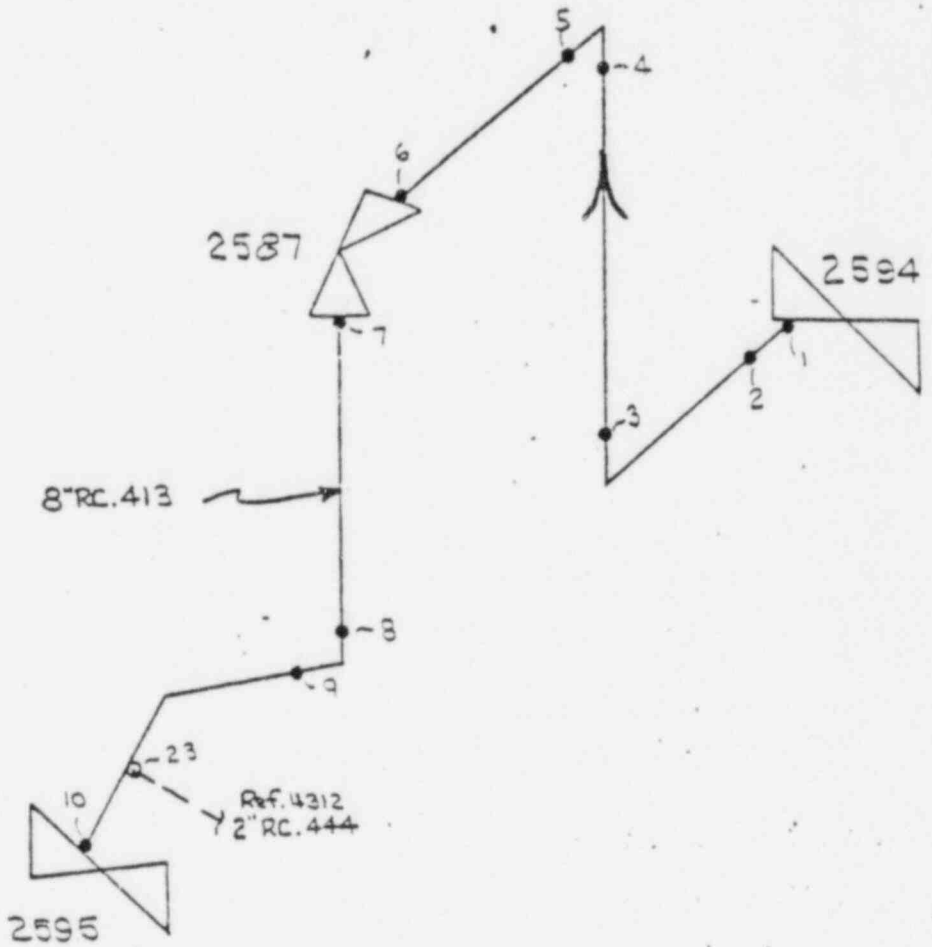


SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION

LOOP 3 BY-PASS VGB-1-4304

8" Sch. 160
.906"T



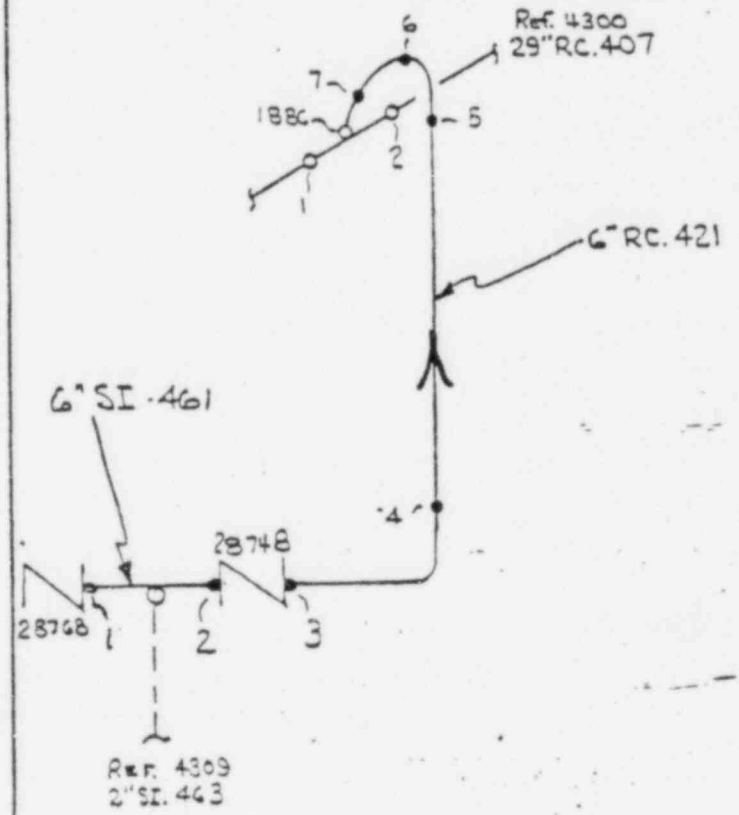
SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4305

LOOP 3 SIS LOW HEAD HOT LEG

6" Sch. 160
.719"T



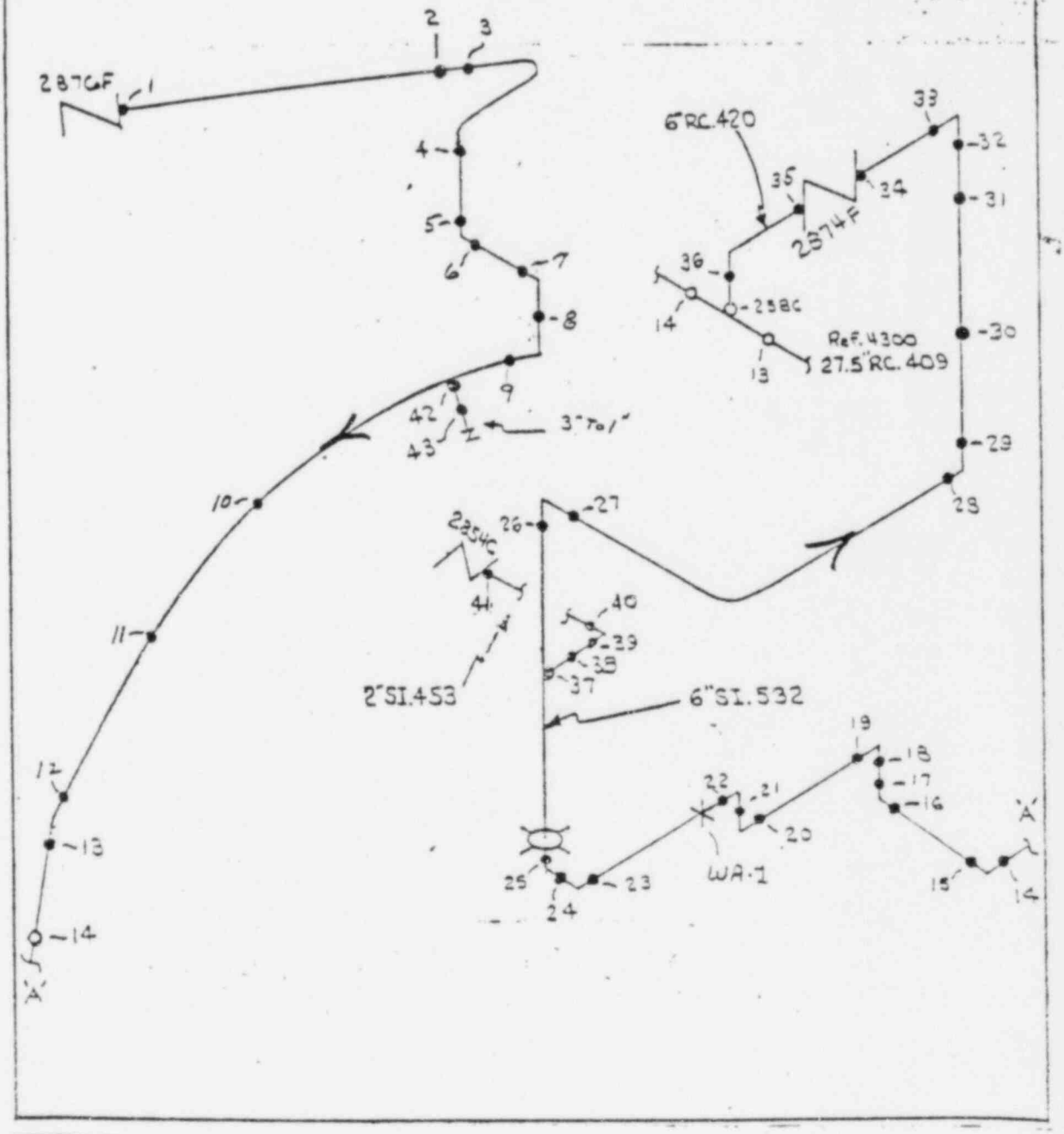
SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4306

LOOP 3 SIS LOW HEAD COLD LEG

6" Sch. 160 .719"T
2" Sch. 160 .344"T



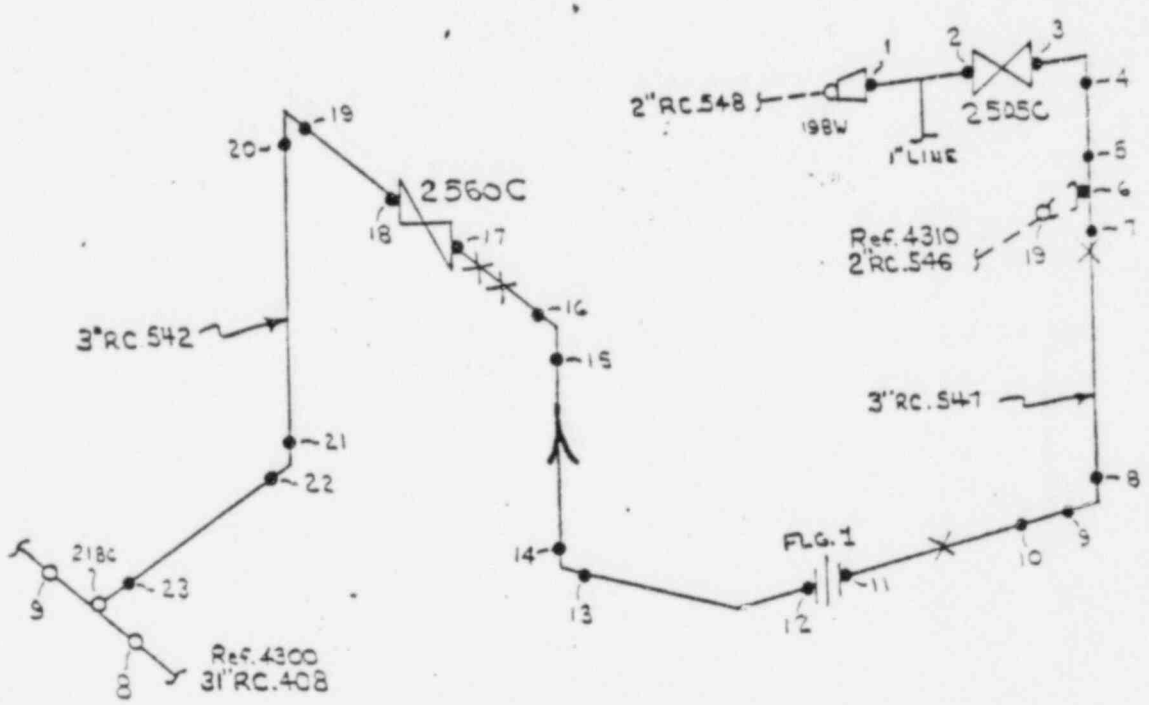
SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4307

LOOP 3 R.T.D. RETURN

3" Sch. 160
.438"T



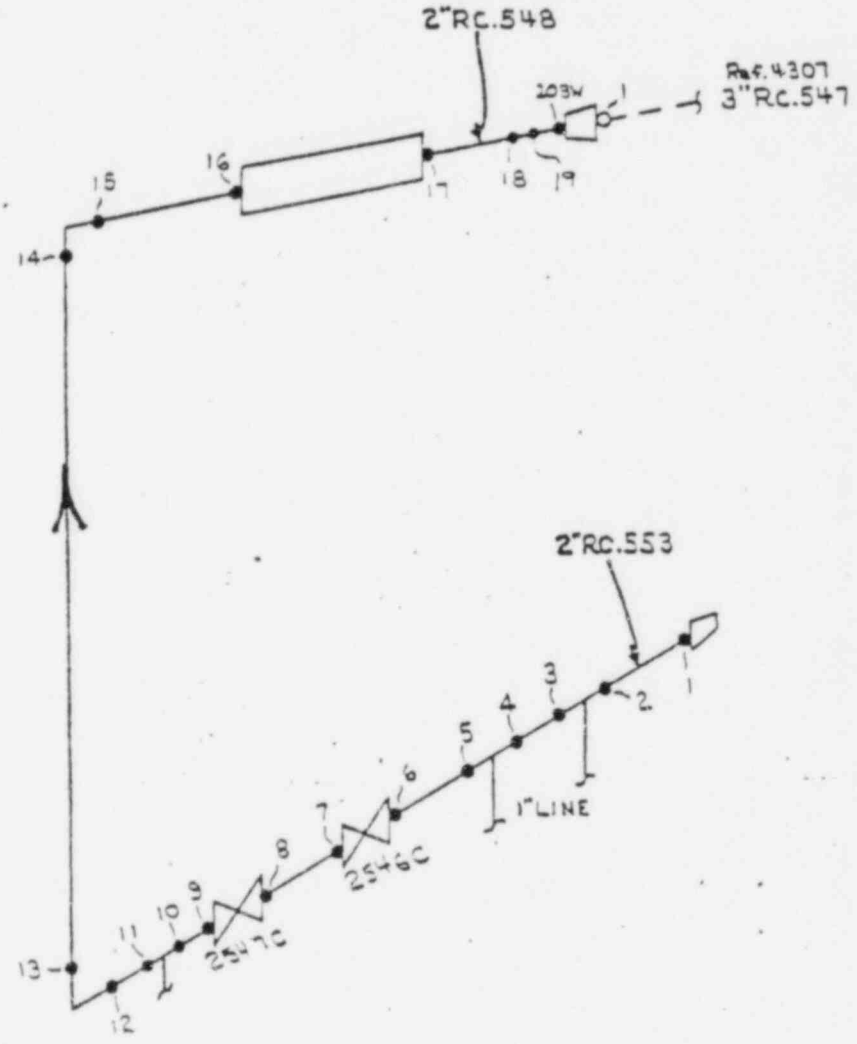
SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-I-4308

LOOP 3 R.T.D. TAKE-OFF

2" Sch. 160
.344"T



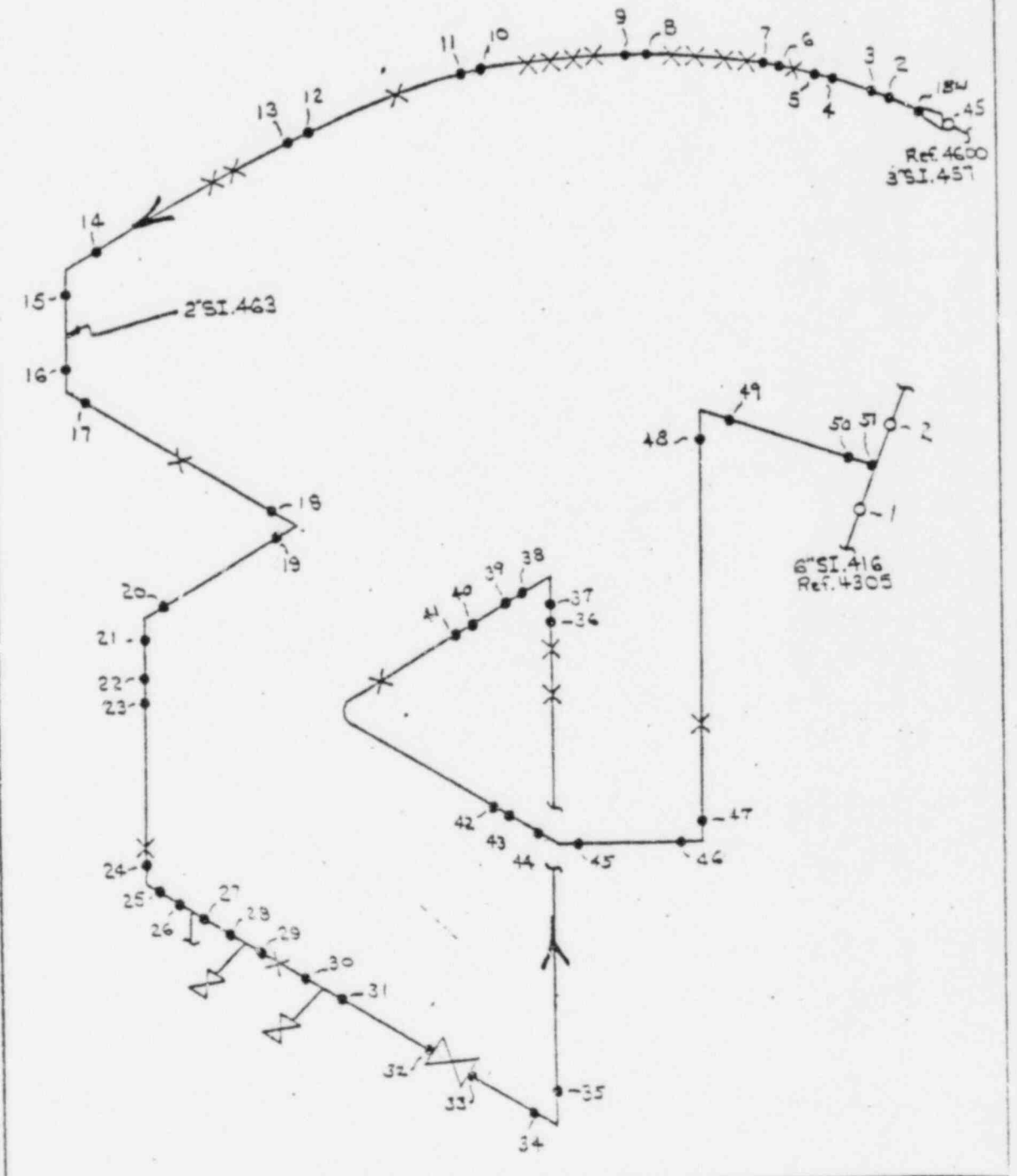
SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4309

LOOP 3 SIS LOW HEAD HOT LEG

2" Sch. 160
.344"T



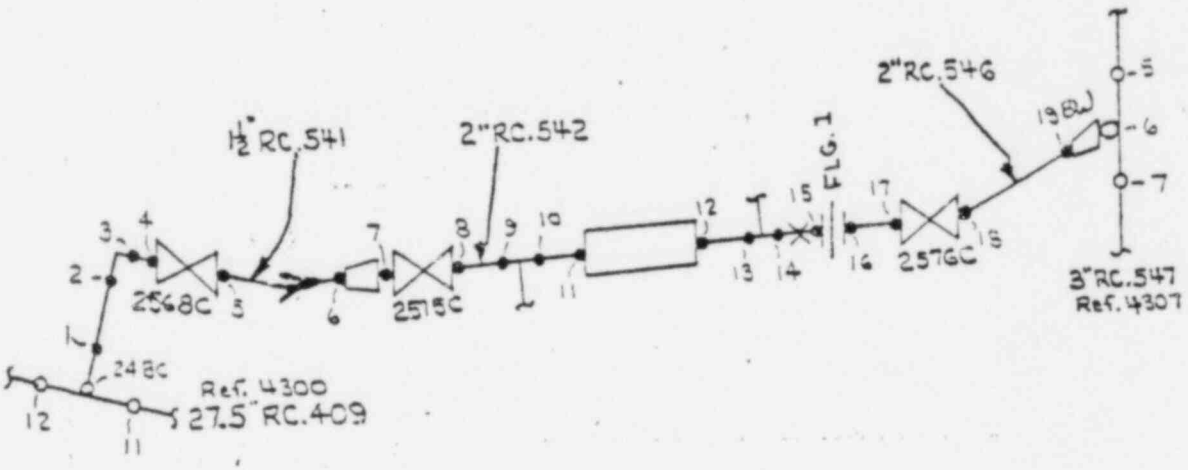
SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4310

LOOP 3 R.T.D. TAKE-OFF

2" Sch. 160 .344"T
1/2" Sch. 160 .281"T



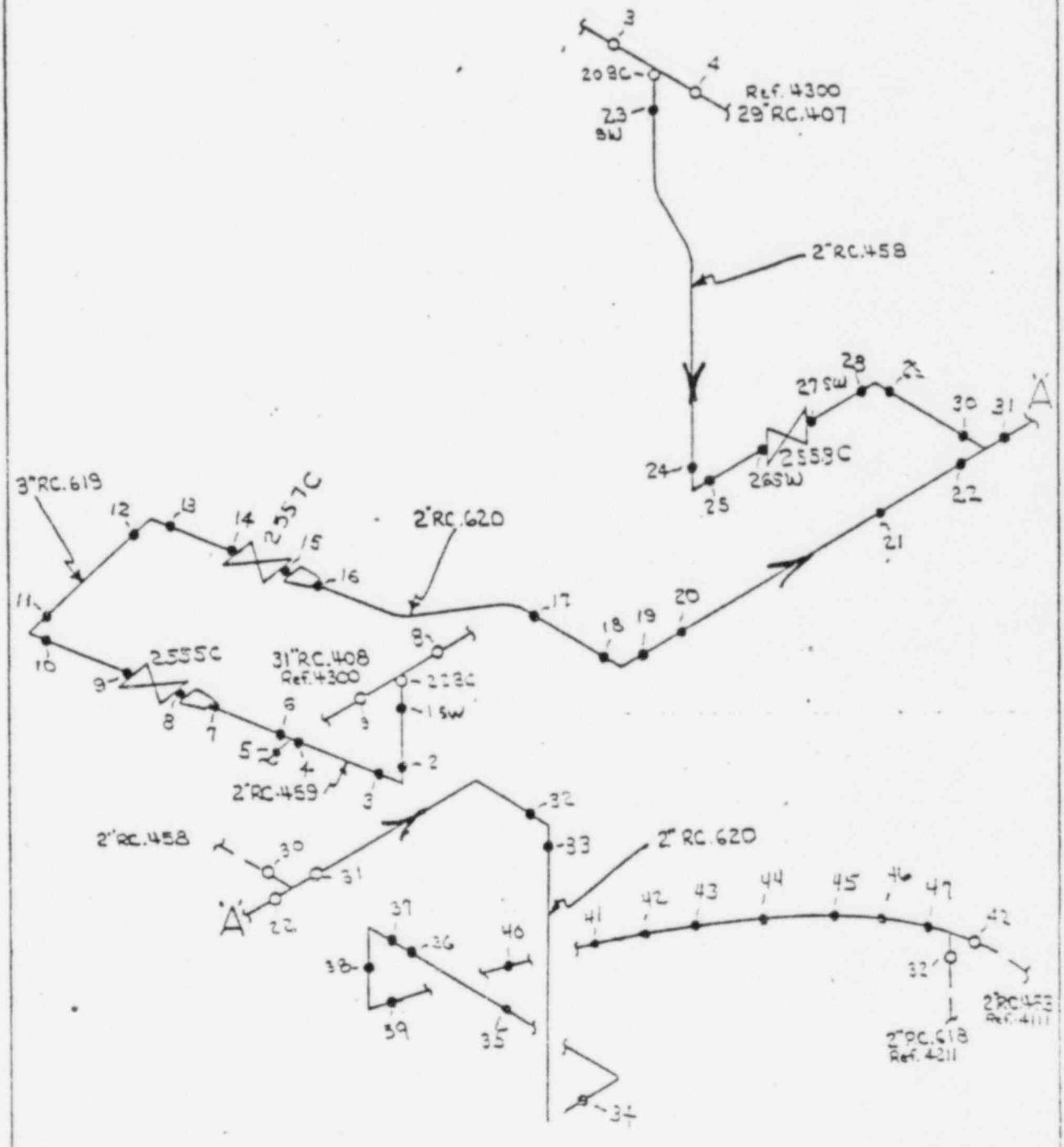
SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4311

LOOP 3 DRAIN

2" Sch. 160
.344"T



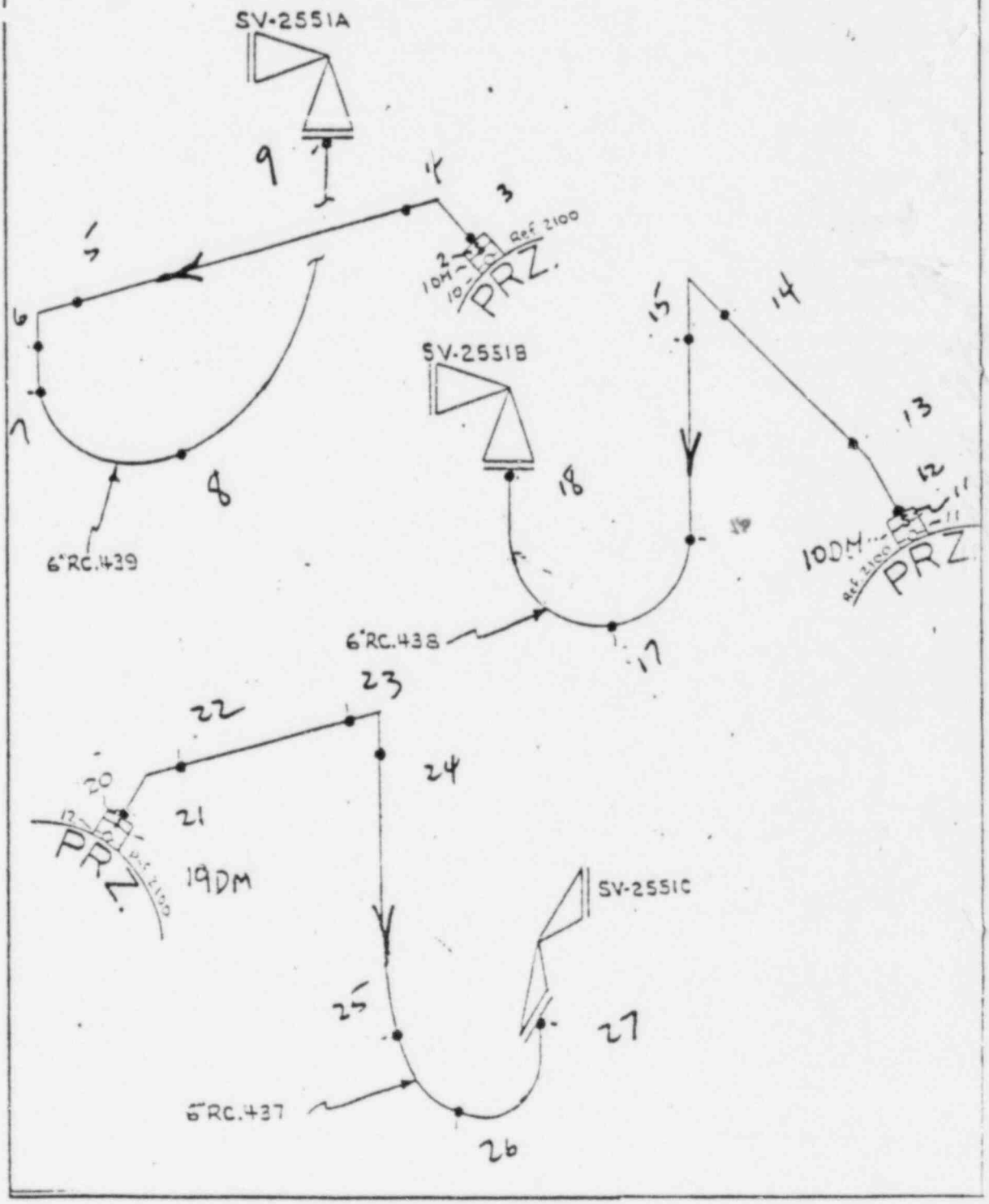
SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4500

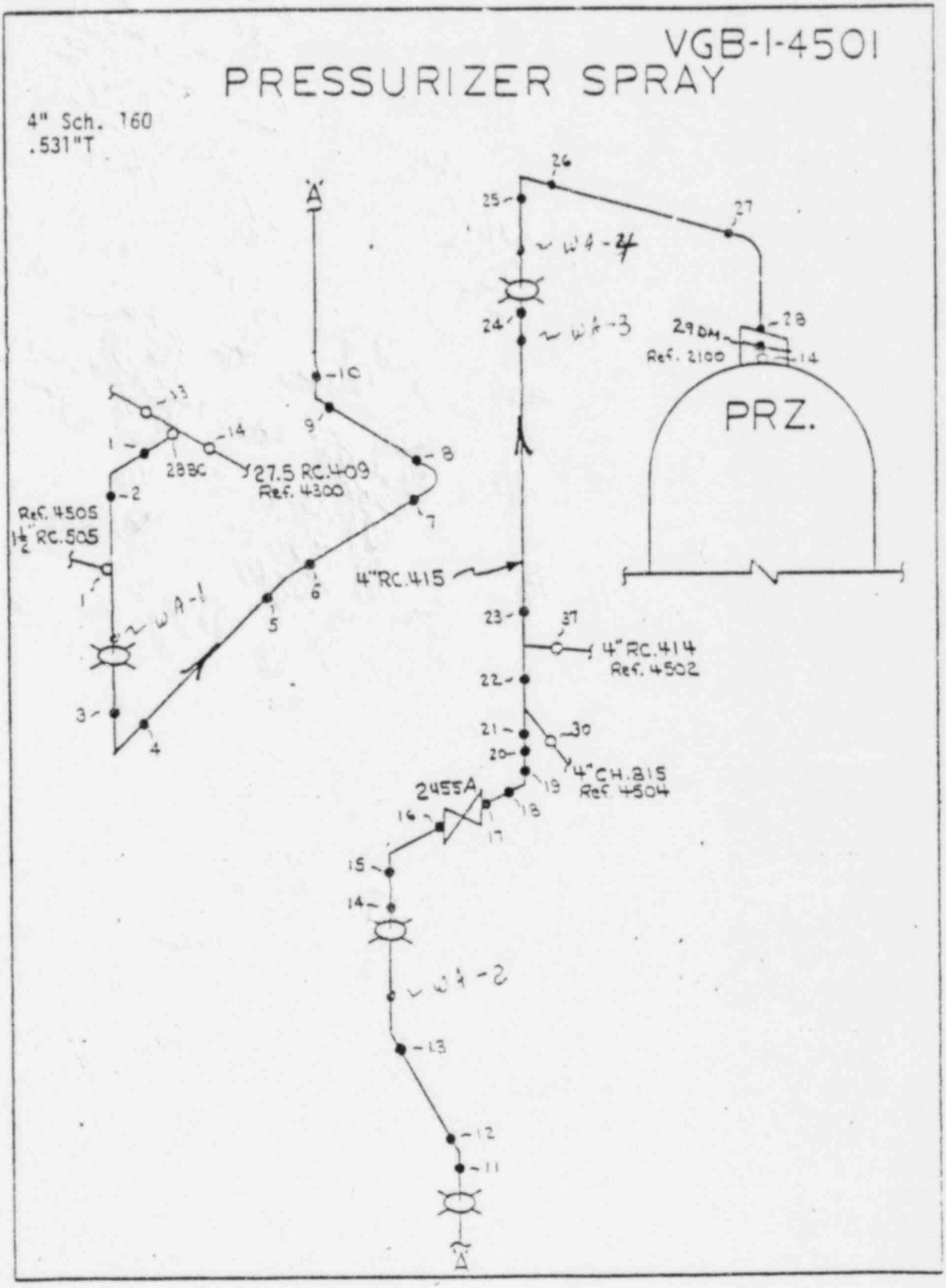
PRESSURIZER SAFETY

6" Sch. 160
.719"T



SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION



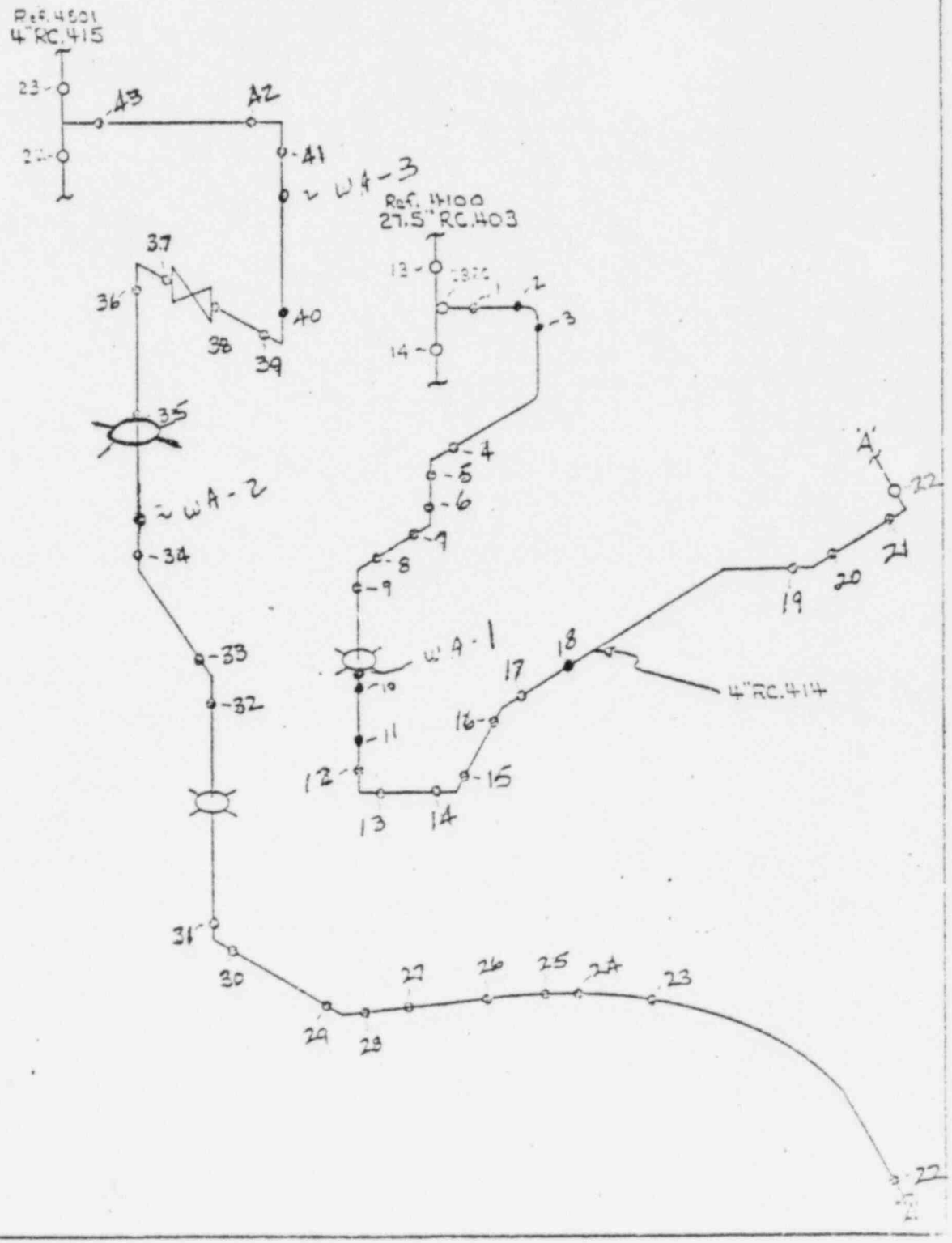
SKETCH SHEET
Form 28977

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4502

PRESSURIZER SPRAY

4" Sch. 160
.531"T



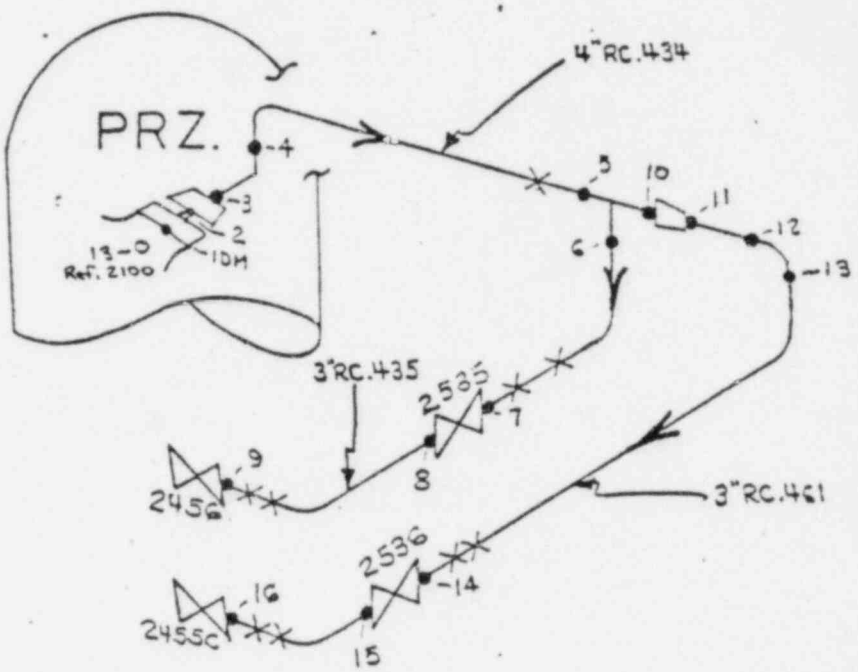
SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4503

PRESSURIZER RELIEF

4" Sch. 160 .531"T
3" Sch. 160 .438"T



"2 WELD 6"

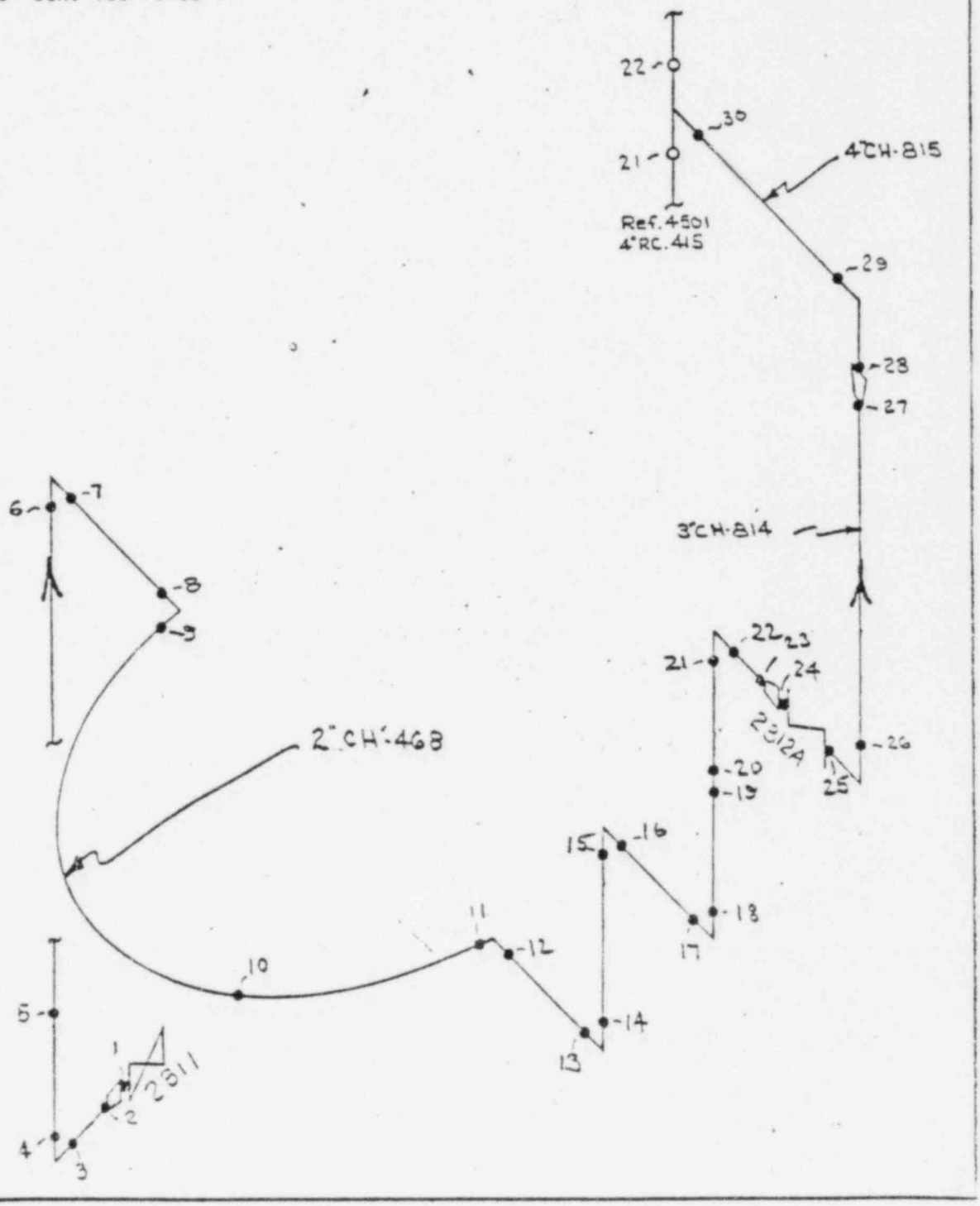
SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4504

AUXILIARY SPRAY

4" Sch. 160 .531"T
3" Sch. 160 .438"T



SKETCH SHEET
FORM 28577

WESTINGHOUSE ELECTRIC CORPORATION

VGB-1-4600

S.I.S. LOW HEAD HOT LEG

3" Sch. 160
.438"T