JUN 18 1970

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
(Indian Point Nuclear Generating Unit No. 2)

Docket No. 50-247

Chief,
Water & Gas System
Branch RDT
Room F-309

Amendment No. 18, dated June 3, 1970, to Final Safety Analysis Report (FSAR) filed by the above Company for the Indian Point Nuclear Generating Unit No. 2, is enclosed for your information.

Original signed by
Nan M. Blunt

R. C. DeYoung
Asst. Director for
PWR Projects
Division of Reactor
Licensing, BETH-008

7401 6/16/70

Distribution:
Docket File ✓
PWR-1 Reading
DRL Reading
RCDeYoung
NMBlunt

Identicall route slip sent to:
Mr. Warren Nyer
Idaho Falls, Idaho 83401
Idaho Nuclear Corp Bx 1845

8111140280 700618
ADOCK 05000247
cf

OFFICE ▶	DRL:PWR					memo
SURNAME ▶	x7401 NMB Blunt/pjf					
DATE ▶	6/16/70					

Form AEC-318 (Rev. 9-53) U.S. GOVERNMENT PRINTING OFFICE: 1969—O-364-598

F. J. Nolan

INDIAN POINT 2 - DOCKET NO. 50-247

There is not much to be concerned about so far as the stagger of the cadweld's is concerned. It would have been better construction practice to increase the spacing. The major concern is that there is insufficient concrete cover over the splices. This cover should vary from 1½" to 3" depending on the use and environmental exposure.

Leon L. Beratan

6/15/70

OFFICE ▶	CO:TSB					
SURNAME ▶	LLBeratan LLBeratan:dm					
DATE ▶	6/15/70					

MEMO ROUTE SLIP
Form AEC-93 (Rev. May 14, 1947) AECM

See me about this.	For concurrence.	For action.
Note and return.	For signature.	For information.

TO (Name and unit)	INITIALS	REMARKS
H. Denton, CO		RE: CONSOLIDATED EDISON COMPANY - INDIAN POINT 2
	DATE 6/3	The licensee and his contractors are evaluating the results of a survey of the as-built rein-
TO (Name and unit)	INITIALS	REMARKS forcement bar and Cadweld installation for the north access opening at the subject facility.
	DATE	During a preliminary review of this information, the assigned inspector noted numerous conditions
		where the staggering of adjacent Cadwelds was limited or nonexistent. In addition, it appears
TO (Name and unit)	INITIALS	REMARKS that a problem may exist concerning concrete coverage of the exterior bars.
	DATE	The FSAR does not establish requirements for
		Cadweld stagger. However, we have been in-
FROM (Name and unit)	REMARKS	terested in Cadweld staggering at other facili-
J. P. O'Reilly, CO		ties. Accordingly, please review the enclosed information and develop Compliance recommenda-
		tions concerning the adequacy of the proposed operation. It should be noted that concrete
		placement is scheduled for June 1970 and that
PHONE NO. 7421 / DATE 6/1/70		

USE OTHER SIDE FOR ADDITIONAL REMARKS

GPO : 1968 O—294-619

MEMO ROUTE SLIP
Form AEC-93 (Rev. May 14, 1947) AECM

See me about this.	For concurrence.	For action.
Note and return.	For signature.	For information.

TO (Name and unit)	INITIALS / DATE	REMARKS
H. Denton, CO		- 2 -
		similar surveys will be available to our inspector for the personnel and equipment hatch openings in the near future. Please let me know if we can obtain any further information to assist you.
		Enclosures:
		Survey Information - UE&C, Inc. memo of 4/3/70 and UE&C, Inc. ltr to WH of 1/12/70 w/encls

FROM (Name and unit)	REMARKS
J. P. O'Reilly, CO	

PHONE NO.	DATE
7421	6/1/70

USE OTHER SIDE FOR ADDITIONAL REMARKS

GPO : 1968 O—294-619

UNITED STATES
ATOMIC ENERGY COMMISSION
DIVISION OF COMPLIANCE
REGION I
970 BROAD STREET
NEWARK, NEW JERSEY 07102

201 645-3942

May 19, 1970

J. P. O'Reilly, Chief, Reactor Inspection and Enforcement Branch, Division of Compliance, HQ

CONSOLIDATED EDISON COMPANY, INDIAN POINT NO. 2 (IP-2)
DOCKET NO. 50-247
CONTAINMENT BUILDING REINFORCEMENT BAR PLACEMENT

Closure of the three temporary construction openings for the IP-2 Containment Building* is in progress and concrete placement is scheduled for June, 1970.

A survey of the as-built reinforcement bar and cadweld placement for the north access opening has been completed and is presently being evaluated by the UE&C design engineers. A cursory review of the survey information, by the assigned inspector, revealed numerous conditions where stagger of adjacent cadwelds does not exist. In addition, a possible problem exists relative to concrete coverage of the exterior bars. Attached is the survey information for this access opening. CO:HQ assistance is requested in the evaluation of the adequacy of the as-built condition to the design requirements for this structure.

The personnel and equipment hatch areas are the two remaining construction openings to be closed. Work is in progress and a similar survey of the reinforcement bar and cadweld placement is to be performed and will be available to Compliance.

It is noted that the FSAR for Unit No. 2 does not establish any requirements for cadweld stagger.

N. C. Moseley
Senior Reactor Inspector

Enclosure:
Survey Information

*CO Report No. 247/69-11, Section II. E.

01732

RECEIVED

1970 MAY 25 AM 10 16

U.S. ATOMIC ENERGY COMM.
DIVISION OF COMPLIANCE

FORM 101

MEMORANDUM

UNITED ENGINEERS & CONSTRUCTORS INC.

JOB NO. 9321-01

DEPT. Construction

TO: Reimar F. Duerr

FROM: R. A. Meschke

OFFICE: Buchanan, New York

DATE: April 3, 1970

COPIES: J. Silverwood
R. Vurpillat
E. S. Clark - Wedco
J. D. Stevenson - PWR
H. J. Nichols - Wedco
O. M. Hauge - PWR
E. J. Staffel - PWR
T. A. Wilson - PWR
R. A. Ambrose - PWR - Phila.
A. A. Simmons - PWR

SUBJECT Westinghouse Electric Corporation
Indian Point Generating Station - Unit No. 2
Temporary Opening North Face
Containment Building

Reference A: Interoffice letter to Mr. Simmons from R. F. Duerr dated 1-12-70 (copy attached)

Reference A reveals the engineering recommendations to resolve the difficulties arrived at in placing reinforcing steel in the temporary opening North Face of the Unit No. 2 Containment Building.

As per your request we are forwarding three copies "as built" drawings for your review.

Additional difficulties were found during construction; the results of which can be viewed on the attached drawings.

The approval of Engineering, Westinghouse, and Con-Ed is requested before concrete be placed in this area.

R. A. Meschke

R. A. MESCHKE

RAM/bkc

UNITED ENGINEERS & CONSTRUCTORS INC.
1401 ARCH STREET
PHILADELPHIA, PA. 19105

January 12, 1970
APD No. 8475

9321-01

Cadweld folder

Mr. A. A. Simmons, Engineering Manager
Westinghouse Electric Corporation
PWR Systems Division
P. O. Box 355
Pittsburgh, Pennsylvania 15230

Attention: Mr. O. M. Hauge/Dr. J. D. Stevenson

Dear Mr. Simmons:

Indian Point Generating Station
Unit No. 2
Temporary Opening North Face
Containment Building

Reference A - Interoffice Memo to J. B. Silverwood from J. E. Fant dated 12-2-69 (copy attached)

Reference A indicated Containment reinforcement at the Temporary Opening, was not installed in accordance with UE&C drawings and the following is our Engineering recommendations to resolve the problem. Our numbering system is identical to that used in Reference A.

Item A. We do not feel it is necessary to chip out the concrete where there are four No. 11 rebars (inside vertical secondaries) extending 4" out of the concrete at the top of the opening. It will be acceptable to run #18S bars from the base to a maximum elevation of 66'-6" ± as shown on Sketch A (± to allow sufficient space between the top of the bar and the underside of the concrete to make a cadweld splice). All #18S bars should be bent as shown on drawing 9321-F-1159. At this point a No. 11 bar can be cadwelded to the No. 18 bars and hooked with the same hook detail shown for the No. 11 bars on drawing 9321-F-1159. If necessary to make the splices, the four bars extending 4" below the concrete may be cut to suit. Since the discontinuity moment from the fixed base is positive (tension on the outside of the Containment) at this elevation, the bars in question will resist only membrane tensile stresses reduced by the compression on the inside face from the moment. The cross section will be able to resist the load if these four bars are not carried to the elevation shown on drawing 9321-F-1159. Since the four bars are not adjacent (as shown on Sheet No. 2 of Reference A) redistribution of stresses will occur between the disconnected rebar and the properly reinforced areas.

Drawing 9321-F-1159 shows no secondary vertical rebars (inside or outside) spliced from #18S to No. 11 below elevation 67'-2". Only 4 - #11 bars are mentioned as having only 4" clearance, the sketch on Sheet No. 2 in Reference A indicates all secondary vertical bars extending below the concrete are No. 11 and the construction pictures show No. 11 bars extending well below the top of the opening. Based on this evidence, we assume there are secondary vertical bars extending below elevation 67'-2" which does not conform to the drawings. We recommend that No. 11 bars extending out of the concrete at the top of the opening be cut back so that all splices to #18S bars will be above elevation 64'-0. The splices should be staggered between elevation 64'-2" and elevation 66'-6", (See Sketch A).

Item B. We recommend that the outside secondary bars be spliced to achieve stagger by splicing alternate bars 5" to 6" above the curved radius of the bend and in the center of the 4'-6" wall in the 45° straight portion of the bar before the radius begins. Our large scale layout of these bent bars indicates a straight portion of 1'-8" before the radius begins which should allow adequate space for a cadweld splice which is 9" long (See Sketch B). The 1'-0 to 1'-2" stagger on the straight inside and outside secondary and primaries is acceptable.

Item C. The one #18S inside secondary vertical bar which rises from the bottom concrete should be bent as shown on drawing 9321-F-1159 and spliced to a hooked No. 11 at elevation 66'-6" ± as recommended in A and shown on Sketch C.

Seven of the eight #18S outside secondary bars which rise from the bottom concrete should be bent as shown on drawing 9321-F-1159 and spliced to a hooked No. 11 at elevation 66'-6" ± as recommended in A and shown on Sketch C. The remaining #18S outside secondary bar should be bent as shown on drawing 9321-F-1159 and spliced to the #18S outside primary bar which protrudes from the top without a visible terminus at the bottom as shown on Sketch C.

A stress check was performed at an elevation above the Temporary Opening where secondary vertical bars have been eliminated by splicing them to a hooked No. 11 bar below the top of the opening. The elimination of five inside vertical secondary bars and eight outside vertical secondary bars will cause the membrane stress to increase from 23.9 ksi to 25 ksi. This 4.5% change can be conservatively considered to be the effect on the inside vertical secondary bars when five are eliminated. The stress level will actually be lower since the discontinuity moment from the fixed base will cause compression on the inside of the Containment Wall which will subtract from the membrane stress. In addition to the membrane stress change from 23.9 ksi to 25 ksi the termination of the eight outside vertical secondary bars will cause the bending stress from the discontinuity moment to increase from 12.5 ksi to 13.8 ksi. The total stress change in the vertical outside secondary bars will

be 36.4 ksi to 39 ksi. The maximum rebar stress of 39 ksi represents only a 7% increase in stress and is within acceptable ultimate strength design limits. It is on this basis that we make the above recommendations.

We request that when the rebar work is completed in the Temporary Opening area the field send us an "as built" drawing for our records and information.

This Engineering acceptance requires Westinghouse's approval (Dr. J. D. Stevenson) and then Consolidated Edison's acceptance before the rebar is installed as suggested above.

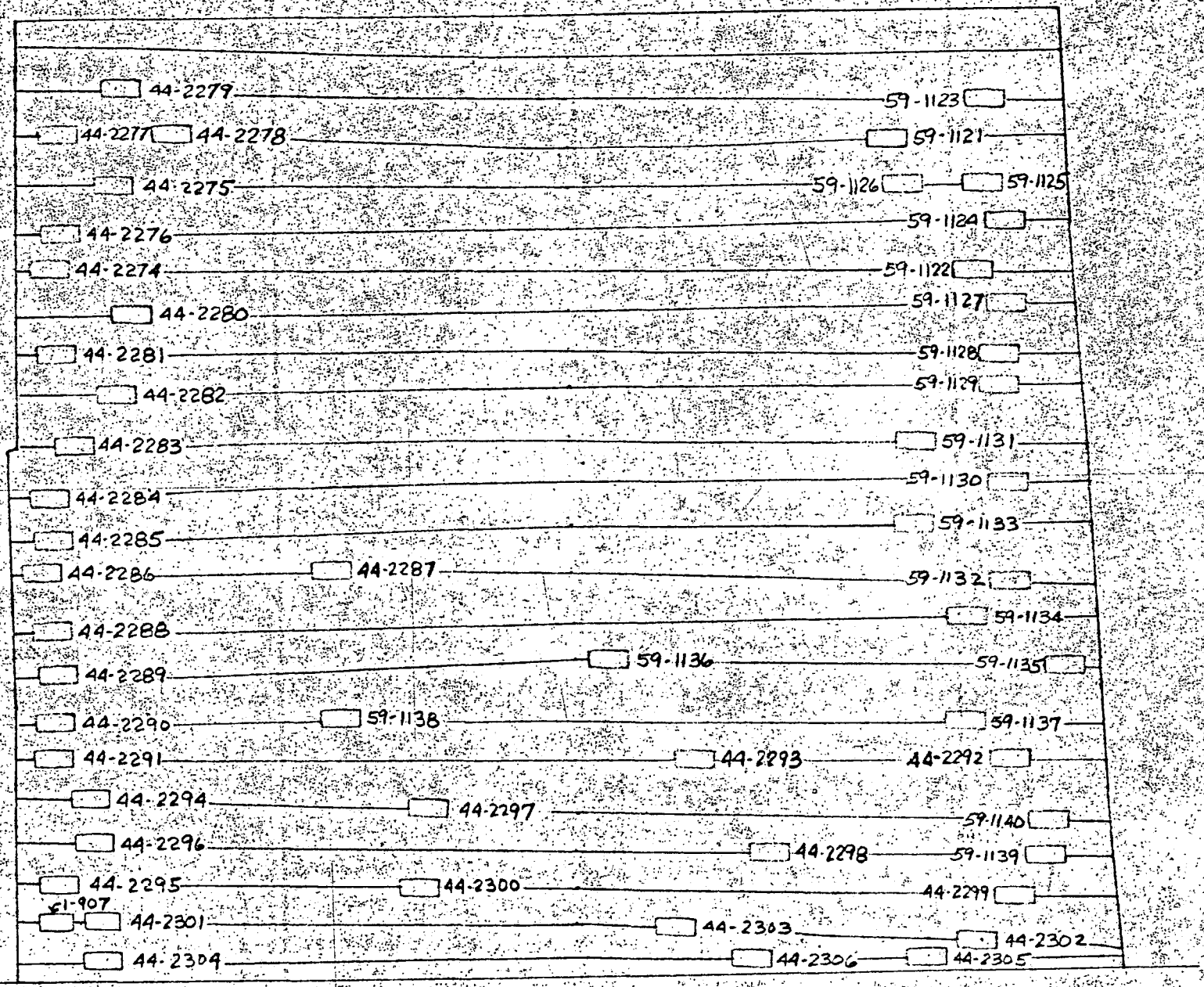
Very truly yours,

Reimar F. Duerr/B.S.

Reimar F. Duerr
Supervising Engineer

Enclosures
BBS:lds

cc:	A. A. Simmons, PWR	-1L, 1A
	R. A. Ambrose, PWR Phila.	-1L, 1A
	T. A. Wilson, PWR	-1L, 1A
	E. J. Staffel, PWR	-1L, 1A
	O. M. Hauge, PWR	-4L, 1A
	J. D. Stevenson, PWR	-1L, 1A
	E. S. Clark, WEDCO	-1L, 1A
	H. J. Nichols, WEDCO	-1L, 1A



EL- 43'-0"

℄2

CADWELD SPLICES ~ TEMPORARY OPENING OUTSIDE PRIMARY HOOPS

DEVELOPED FROM OUTSIDE V/C WALL

SCALE ~ 1/4" = 1'-0"

DEVELOPED CADWELD SPLICE LOCATIONS
VIEWED FROM OUTSIDE V/C WALL
OUTSIDE PRIMARY HOOPS

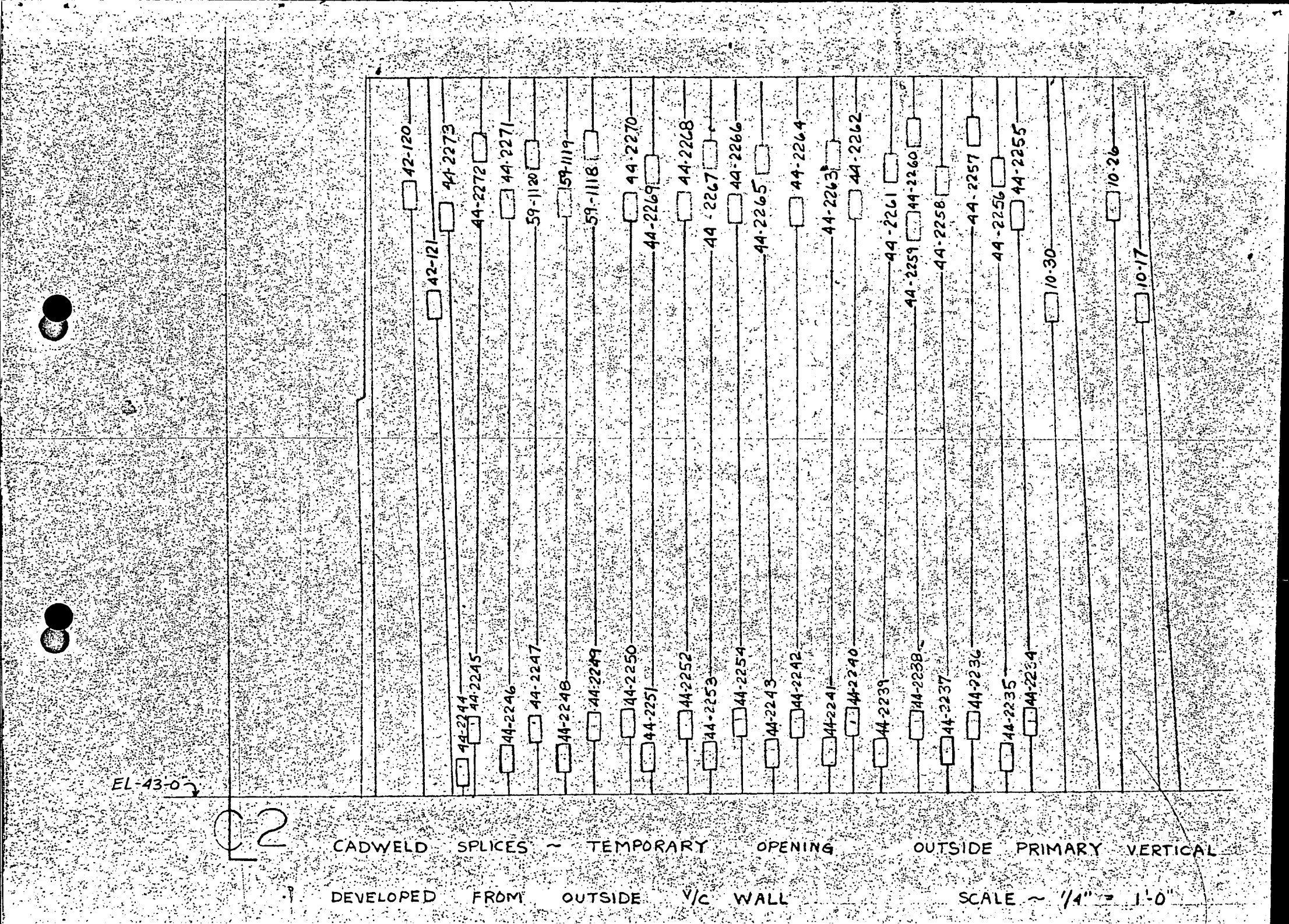
Crew & Cadweld Number	Location	
1-907	6'-0"	R42
44-2274	6'-1"	"
44-2275	7'-9"	"
44-2276	6'-5"	"
44-2277	6'-4"	"
44-2278	9'-4"	"
44-2279	8'-0"	"
44-2280	8'-3"	"
44-2281	6'-3"	"
44-2282	7'-11"	"
44-2283	6'-8"	"
44-2284	6'-0"	"
44-2285	6'-3"	"
44-2286	5'-11"	"
44-2287	13'-4"	"
44-2288	6'-2"	"
44-2289	6'-3"	"
44-2290	6'-2"	"
44-2291	6'-1"	"
44-2292	30'-6"	"
44-2293	22'-4"	"
44-2294	7'-1"	"
44-2295	6'-3"	"
44-2296	7'-1"	"
44-2297	15'-4"	"
44-2298	24'-4"	"
44-2299	30'-7"	"
44-2300	15'-5"	"
44-2301	7'-3"	"
44-2302	29'-8"	"
44-2303	21'-10"	"
44-2304	7'-5"	"
44-2305	28'-3"	"
44-2306	23'-10"	"
59-1121	27'-6"	"
59-1122	29'-7"	"
59-1123	29'-11"	"
59-1124	30'-6"	"
59-1125	29'-11"	"
59-1126	27'-10"	"
59-1127	30'-5"	"
59-1128	30'-5"	"
59-1129	30'-3"	"
59-1130	30'-5"	"
59-1131	28'-1"	"
59-1132	30'-6"	"
59-1133	28'-2"	"
59-1134	29'-4"	"
59-1135	31'-10"	"

-continued-

DEVELOPED CADWELD SPLICE LOCATIONS
VIEWED FROM OUTSIDE V/C WALL
OUTSIDE PRIMARY HOOPS

(Continued)

Crew & Cadweld Number	Location
59-1136	20'-4" R & 2
59-1137	29'-3" "
59-1138	13'-5" "
59-1139	31'-5" "
59-1140	31'-5" "



C2

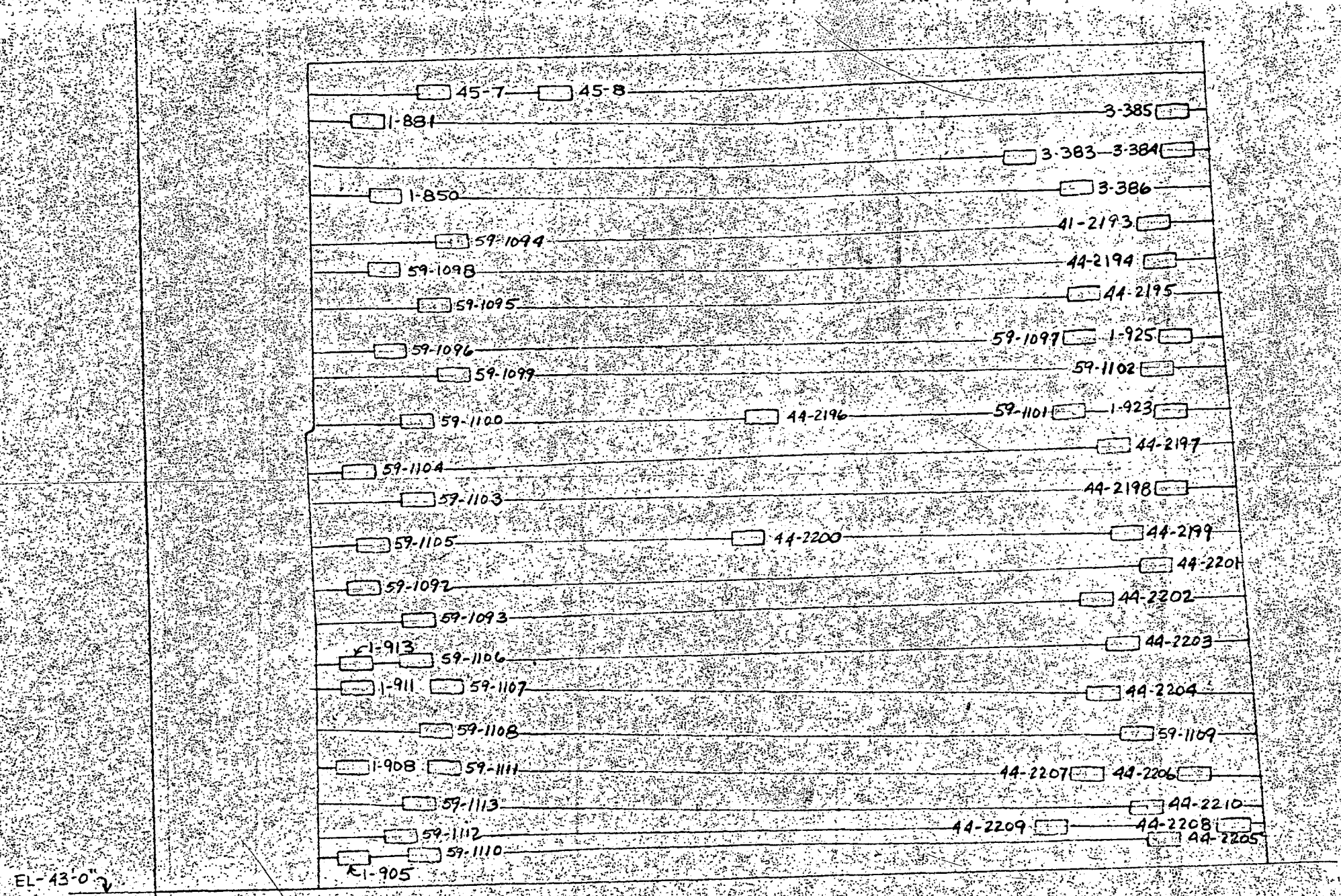
CADWELD SPLICES ~ TEMPORARY OPENING OUTSIDE PRIMARY VERTICAL

DEVELOPED FROM OUTSIDE V/C WALL

SCALE ~ 1/4" = 1'-0"

DEVELOPED CADWELD SPLICE LOCATIONS
VIEWED FROM OUTSIDE V/C WALL
OUTSIDE PRIMARY VERTICAL

Crew & Cadweld Number	Location		Elevation
10-17	31'-3"	R℄2	60'-3"
10-26	30'-3"	"	63'-10"
10-30	28'-3"	"	60'-4"
42-120	6'-3"	"	64'-5"
42-121	7'-2"	"	60'-6"
44-2234	27'-6"	"	45'-6"
44-2235	26'-9"	"	44'-3"
44-2236	25'-7"	"	45'-5"
44-2237	24'-8"	"	44'-5"
44-2238	23'-8"	"	45'-5"
44-2239	22'-5"	"	44'-4"
44-2240	21'-5"	"	45'-6"
44-2241	20'-7"	"	44'-5"
44-2242	19'-6"	"	45'-6"
44-2243	18'-8"	"	44'-5"
44-2244	8'-0"	"	44'-1"
44-2245	8'-5"	"	45'-7"
44-2246	9'-7"	"	44'-3"
44-2247	10'-6"	"	45'-7"
44-2248	11'-6"	"	44'-3"
44-2249	12'-6"	"	45'-4"
44-2250	13'-9"	"	45'-6"
44-2251	14'-5"	"	44'-3"
44-2252	15'-8"	"	45'-5"
44-2253	6'-6"	"	44'-4"
44-2254	17'-6"	"	45'-6"
44-2255	27'-1"	"	63'-7"
44-2256	26'-5"	"	65'-0"
44-2257	25'-6"	"	66'-5"
44-2258	24'-6"	"	64'-9"
44-2259	23'-6"	"	63'-2"
44-2260	23'-6"	"	66'-5"
44-2261	22'-8"	"	65'-2"
44-2262	21'-6"	"	63'-11"
44-2263	20'-8"	"	65'-8"
44-2264	19'-6"	"	63'-9"
44-2265	18'-3"	"	65'-7"
44-2266	17'-4"	"	63'-9"
44-2267	16'-6"	"	65'-9"
44-2268	15'-8"	"	63'-11"
44-2269	14'-7"	"	65'-2"
44-2270	13'-10"	"	63'-10"
44-2271	9'-7"	"	64'-1"
44-2272	8'-8"	"	66'-0"
44-2273	7'-6"	"	63'-7"
59-1118	12'-5"	"	66'-1"
59-1119	11'-6"	"	64'-0"
59-1120	10'-5"	"	65'-9"



C2

CADWELD SPLICES ~ TEMPORARY OPENING OUTSIDE SECONDARY HOOPS

DEVELOPED FROM OUTSIDE V/C WALL

SCALE ~ 1/4" = 1'-0"

DEVELOPED CADWELD SPLICE LOCATIONS
VIEWED FROM OUTSIDE V/C WALL
OUTSIDE SECONDARY HOOPS

Crew & Cadweld Number	Location	
1-850	7'-4"	R&2
1-881	8'-10"	"
1-905	5'-10"	"
1-908	5'-11"	"
1-911	6'-0"	"
1-913	6'-1"	"
1-923	30'-6"	"
1-925	30'-9"	"
3-383	26'-3"	"
3-384	30'-11"	"
3-385	30'-10"	"
3-386	27'-10"	"
44-2193	30'-1"	"
44-2194	30'-3"	"
44-2195	28'-0"	"
44-2196	18'-6"	"
44-2197	28'-9"	"
44-2198	30'-5"	"
44-2199	29'-2"	"
44-2200	18'-0"	"
44-2201	29'-10"	"
44-2202	28'-2"	"
44-2203	28'-10"	"
44-2204	28'-3"	"
44-2205	29'-11"	"
44-2206	30'-11"	"
44-2207	27'-9"	"
44-2208	32'-1"	"
44-2209	26'-8"	"
44-2210	29'-5"	"
45-7	8'-11"	"
45-8	12'-6"	"
59-1092	6'-5"	"
59-1093	8'-0"	"
53-1094	9'-3"	"
59-1095	8'-9"	"
59-1096	7'-6"	"
59-1097	27'-10"	"
59-1098	7'-3"	"
59-1099	9'-5"	"
59-1100	8'-3"	"
59-1101	27'-6"	"
59-1102	30'-1"	"
59-1103	8'-1"	"
59-1104	6'-4"	"
59-1105	6'-9"	"
59-1106	7'-11"	"
59-1107	8'-9"	"
59-1108	8'-4"	"

-continued-

DEVELOPED CADWELD SPLICE LOCATIONS
VIEWED FROM OUTSIDE V/C WALL
OUTSIDE SECONDARY HOOPS

(continued)

Crew & Cadweld Number	Location
59-1109	29'-3" R&2
59-1110	8'-0" "
59-1111	8'-7" "
59-1112	7"-3" "
59-1113	7'-11" "

Notes: 1 - INDICATES HOOK BAR

SPLICES AT R = 68'-9" ~ R = 70'-9" ~

C2

CADWELD SPLICES ~ TEMPORARY OPENING OUTSIDE SECONDARY VERTICAL

DEVELOPED FROM OUTSIDE V/C WALL

SCALE ~ 1/4" = 1'-0"

DEVELOPED CADWELD SPLICE LOCATIONS
VIEWED FROM OUTSIDE V/C WALL
OUTSIDE SECONDARY VERTICAL

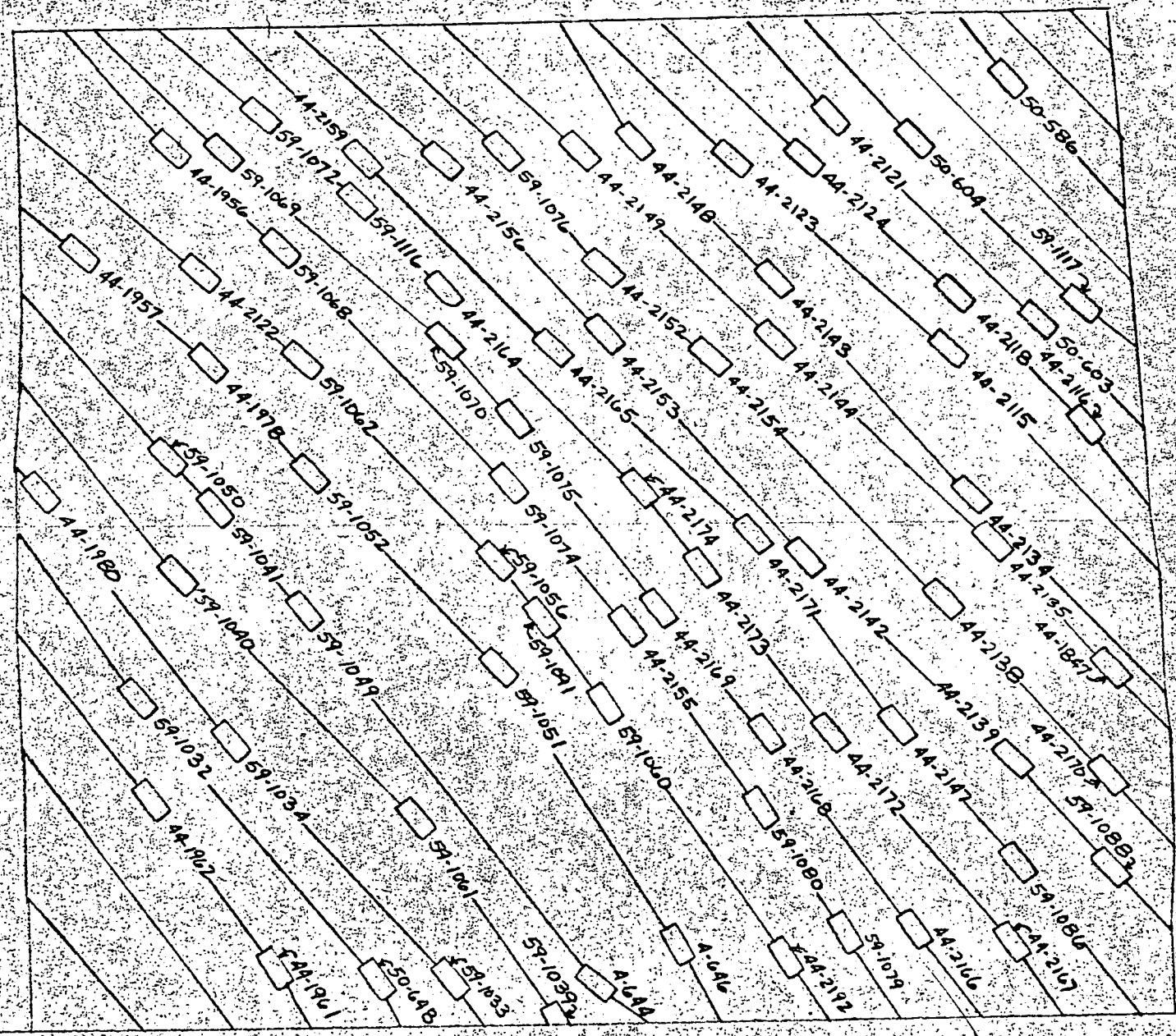
Crew & Cadweld Number	Location		Elevation
1-398	29'-11"	R℄2	46'-7"
1-1267	6'-10"	"	66'-2"
1-1321	6'-4"	"	62'-11"
1-1485	30'-11"	"	51'-6"
4-168	29'-1"	"	48'-10"
23-171	32'-1"	"	48'-6"
23-186	31'-0"	"	66'-10"
25-28	5'-4"	"	54'-0"
25-29	6'-10"	"	48'-7"
25-35	6'-2"	"	47'-0"
44-1840	29'-4"	"	62'-6"
44-1841	28'-4"	"	66'-10"
44-1931	7'-9"	"	54'-3"
44-1933	8'-6"	"	47'-1"
44-1937	8'-4"	"	66'-8"
44-1938	7'-4"	"	64'-5"
44-1942	9'-1"	"	48'-11"
44-1947	10'-0"	"	53'-3"
44-1963	10'-2"	"	45'-0"
44-1964	10'-11"	"	45'-4"
44-1965	11'-9"	"	45'-1"
44-1970	11'-1"	"	56'-7"
44-1971	12'-2"	"	59'-9"
44-1973	9'-7"	"	66'-0"
44-1974	12'-4"	"	65'-7"
44-1975	11'-2"	"	66'-11"
44-1981	13'-3"	"	45'-6"
44-1982	13'-11"	"	45'-0"
44-1988	14'-11"	"	45'-3"
44-1989	16'-0"	"	45'-0"
44-1992	17'-0"	"	45'-3"
44-1993	17'-9"	"	45'-0"
44-1994	19'-1"	"	45'-4"
44-1995	23'-2"	"	45'-4"
44-1996	20'-2"	"	44'-11"
44-1997	21'-3"	"	45'-3"
44-1998	22'-2"	"	44'-11"
44-1999	13'-3"	"	56'-8"
44-2001	15'-2"	"	55'-6"
44-2003	14'-0"	"	56'-8"
44-2005	13'-3"	"	62'-11"
44-2006	14'-2"	"	66'-7"
44-2007	14'-6"	"	65'-7"
44-2011	17'-1"	"	66'-5"
44-2012	15'-11"	"	55'-5"
44-2016	18'-2"	"	66'-7"
44-2020	15'-9"	"	63'-8"
44-2021	18'-6"	"	64'-2"
44-2024	20'-2"	"	64'-2"
44-2025	20'-2"	"	66'-7"

-continued-

DEVELOPED CADWELD SPLICE LOCATIONS
VIEWED FROM OUTSIDE V/C WALL
OUTSIDE SECONDARY VERTICAL

(Continued)

Crew & Cadweld Number	Location		Elevation
44-2026	19'-2"	R℄ 2	62'-6"
44-2027	17'-3"	"	66'-6"
44-2223	7'-3"	"	66'-0"
44-2224	9'-0"	"	66'-1"
44-2225	13'-2"	"	65'-2"
44-2226	15'-9"	"	64'-9"
44-2228	19'-3"	"	65'-0"
44-2229	21'-3"	"	65'-7"
44-2232	27'-9"	"	63'-10"
44-2233	24'-7"	"	65'-2"
50-572	28'-0"	"	51'-1"
50-581	27'-4"	"	45'-0"
50-582	26'-4"	"	44'-10"
50-583	25'-4"	"	45'-1"
50-584	27'-0"	"	63'-6"
50-585	26'-3"	"	66'-7"
50-587	25'-2"	"	56'-6"
50-597	25'-0"	"	64'-3"
50-612	24'-3"	"	44'-11"
50-613	23'-3"	"	55'-8"
50-614	22'-1"	"	55'-7"
50-615	21'-3"	"	56'-9"
50-616	24'-7"	"	53'-5"
50-617	23'-3"	"	66'-7"
50-618	21'-9"	"	63'-7"
50-619	21'-3"	"	66'-8"
50-621	20'-2"	"	54'-10"
50-623	19'-3"	"	56'-6"
54-571	24'-6"	"	55'-11"



EL-43'-0"

C2

CADWELD SPLICES - TEMPORARY OPENING #18 SEISMIC ~ OUTER LAYER

DEVELOPED FROM OUTSIDE V/C WALL

SCALE ~ 1/4" = 1'-0"

DEVELOPED CADWELD SPLICE LOCATIONS
VIEWED FROM OUTSIDE V/C WALL
#18 SEISMIC - OUTER LAYER

Crew & Cadweld Number	Location		Elevation
4-644	18'-11"	R℄2	44'-0"
4-646	20'-11½"	"	45'-0"
44-1847	31'-5½"	"	51'-9"
44-1956	8'-10"	"	65'-3"
44-1957	6'-8½"	"	62'-6"
44-1961	11'-2"	"	44'-6"
44-1962	8'-2½"	"	48'-10"
44-1978	9'-9½"	"	59'-9"
44-1980	5'-8"	"	56'-7"
44-2115	27'-7½"	"	59'-10"
44-2116	30'-11½"	"	57'-10"
44-2118	27'-9½"	"	61'-3"
44-2121	24'-11"	"	65'-9"
44-2122	9'-7½"	"	62'-0"
44-2123	22'-5½"	"	64'-9"
44-2124	24'-2½"	"	64'-7"
44-2134	28'-2"	"	56'-2"
44-2135	28'-9"	"	55'-0"
44-2138	27'-5"	"	53'-6"
44-2139	29'-1"	"	49'-5"
44-2142	24'-2"	"	54'-8"
44-2143	23'-5"	"	61'-7"
44-2144	22'-6"	"	60'-2"
44-2147	26'-4"	"	50'-4"
44-2148	20'-2"	"	65'-3"
44-2149	18'-10¼"	"	65'-0"
44-2152	19'-5"	"	62'-1"
44-2153	19'-4½"	"	60'-4"
44-2154	21'-11"	"	59'-9"
44-2155	19'-9½"	"	52'-11"
44-2156	15'-6"	"	64'-9"
44-2159	13'-7½"	"	64'-9"
44-2164	15'-5"	"	61'-5"
44-2165	18'-2"	"	60'-0"
44-2166	26'-8"	"	45'-3"
44-2167	28'-11½"	"	44'-10"
44-2168	23'-1"	"	50'-3"
44-2169	20'-6½"	"	53'-4"
44-2170	31'-4"	"	49'-0"
44-2171	22'-10"	"	55'-3"
44-2172	24'-7½"	"	50'-3"
44-2173	21'-8"	"	54'-4"
44-2174	20'-3"	"	56'-4"
44-2192	23'-6½"	"	44'-7"

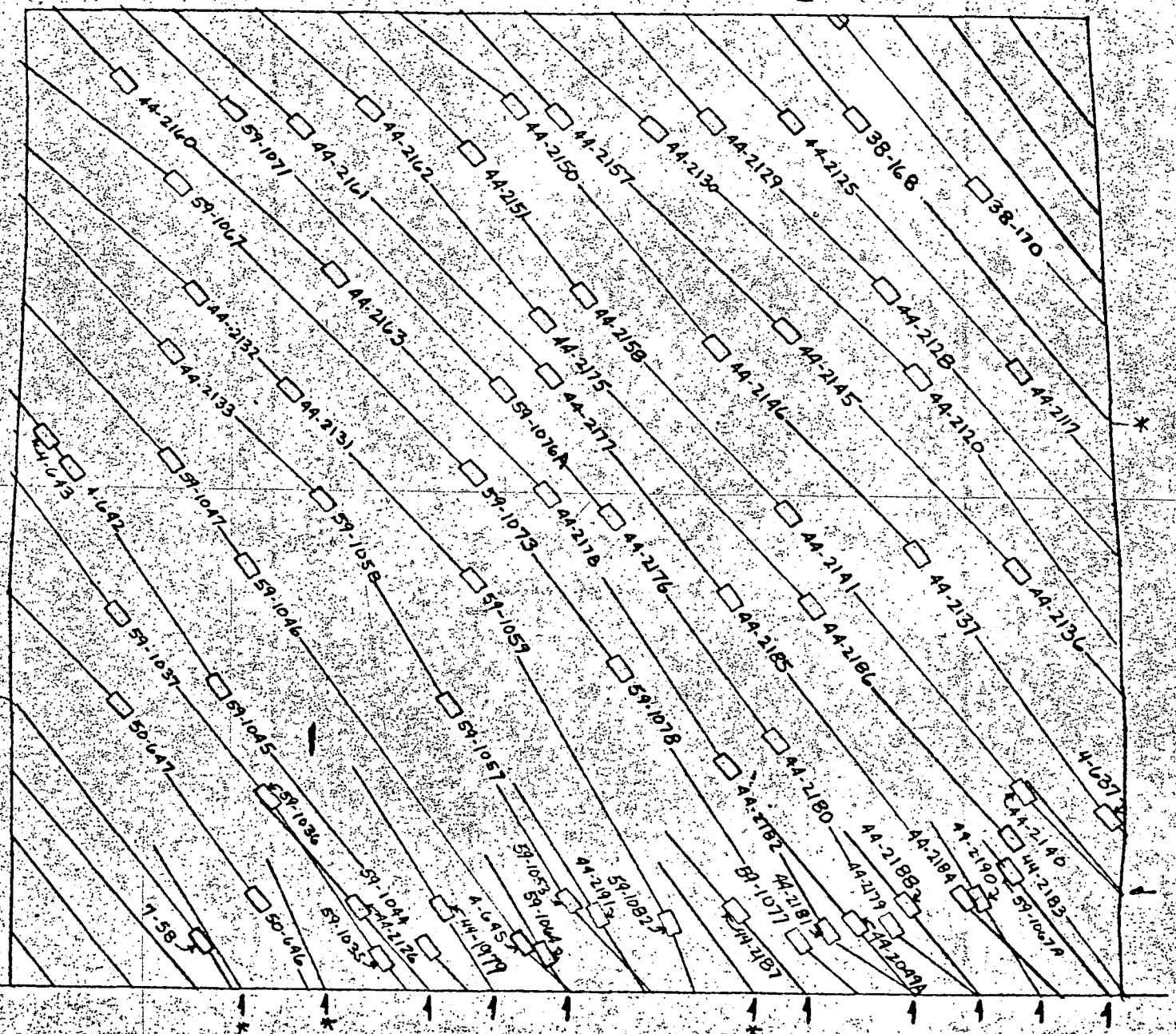
- continued -

DEVELOPED CADWELD SPLICE LOCATIONS
VIEWED FROM OUTSIDE V/C WALL
#18 SEISMIC - OUTER LAYER

(continued)

Crew & Cadweld Number	Location		Elevation
50- 586	29'-2½"	R&2	66'-7"
50- 603	29'-10"	"	60'-6"
50- 604	26'-10½"	"	65'-1"
50- 648	13'-7"	"	44'-3"
59-1032	7'-10½"	"	51'-3"
59-1033	15'-4"	"	44'-3"
59-1034	10'-3"	"	50'-3"
59-1039	18'-0½"	"	43'-0"
59-1040	8'-11"	"	54'-5"
59-1041	9'-11"	"	56'-1"
59-1049	12'-0"	"	53'-6"
59-1050	8'-9½"	"	57'-6"
59-1051	16'-8½"	"	51'-10"
59-1052	12'-2"	"	56'-11"
59-1056	16'-7½"	"	54'-8"
59-1060	19'-3½"	"	51'-1"
59-1061	14'-7½"	"	48'-3"
59-1062	12'-0"	"	59'-9"
59-1068	11'-6"	"	62'-7"
59-1069	10'-3¼"	"	65'-0"
59-1070	15'-5"	"	60'-3"
59-1072	11'-2"	"	66'-0"
59-1074	17'-0"	"	56'-7"
59-1075	17'-1½"	"	58'-3"
59-1076	17'-0"	"	64'-11"
59-1079	25'-0"	"	45'-3"
59-1080	22'-10½"	"	48'-4"
59-1086	29'-2½"	"	46'-9"
59-1088	31'-5"	"	46'-9"
59-1091	17'-9½"	"	53'-3"
59-1116	13'-5½"	"	63'-9"
59-1117	30'-11"	"	60'-10"

NOTES: 1 ~ INDICATES HOOKED BAR
* ~ INDICATES BAR NOT IMBEDDED IN CONCRETE



EL. - 43'-0"

C2

CADWELD SPLICES ~ TEMPORARY OPENING #9 SEISMIC ~ OUTER LAYER

DEVELOPED FROM OUTSIDE Y/C WALL SCALE ~ 1/4" = 1'-0"

DEVELOPED CADWELD SPLICE LOCATIONS
VIEWED FROM OUTSIDE V/C WALL
#9 SEISMIC OUTER LAYER

Crew & Cadweld Number	Location		Elevation
4-637	32'-6"	R℄2	47'-6"
4-642	6'-8"	"	56'-5"
4-643	5'-11½"	"	57'-2"
4-645	18'-0½"	"	44'-3"
7-58	10'-0½"	"	44'-3"
38-168	26'-0"	"	65'-6"
38-170	29'-1"	"	64'-0"
44-1979	15'-10½"	"	44'-10"
44-2049A	26'-2"	"	44'-10"
44-2117	30'-3"	"	59'-1"
44-2120	27'-7"	"	58'-11"
44-2125	24'-5"	"	65'-6"
44-2126	14'-0½"	"	44'-10"
44-2128	26'-9½"	"	61'-1"
44-2129	22'-5"	"	65'-5"
44-2130	20'-11½"	"	65'-3"
44-2131	12'-0"	"	58'-4"
44-2132	9'-7"	"	60'-10"
44-2133	9'-1"	"	59'-5"
44-2136	30'-2"	"	53'-11"
44-2137	27'-8"	"	54'-4"
44-2140	30'-4½"	"	48'-3"
44-2141	24'-4½"	"	55'-4"
44-2145	24'-4"	"	60'-1"
44-2146	22'-8"	"	59'-8"
44-2150	17'-5"	"	65'-9"
44-2151	16'-5"	"	64'-6"
44-2157	18'-7½"	"	65'-8"
44-2158	19'-3½"	"	60'-10"
44-2160	7'-9½"	"	66'-4"
44-2161	12'-3"	"	65'-4"
44-2162	13'-10½"	"	65'-7"
44-2163	13'-1½"	"	61'-4"
44-2175	18'-4½"	"	60'-3"
44-2176	20'-1"	"	55'-3"
44-2177	18'-7"	"	58'-10"
44-2178	18'-6"	"	55'-10"
44-2179	27'-1½"	"	44'-9"
44-2180	24'-3"	"	49'-6"
44-2181	25'-6½"	"	44'-7"
44-2182	23'-0"	"	48'-10"
44-2183	30'-1"	"	47'-1"
44-2184	29'-0"	"	45'-6"
44-2185	23'-1"	"	53'-1"
44-2186	25'-1"	"	53'-0"
44-2187	23'-3"	"	45'-2"
44-2188	27'-10½"	"	45'-0"
44-2190	29'-3"	"	44'-0"
44-2191	19'-10"	"	45'-0"
50-646	11'-6"	"	45'-3"
50-647	7'-11½"	"	50'-3"

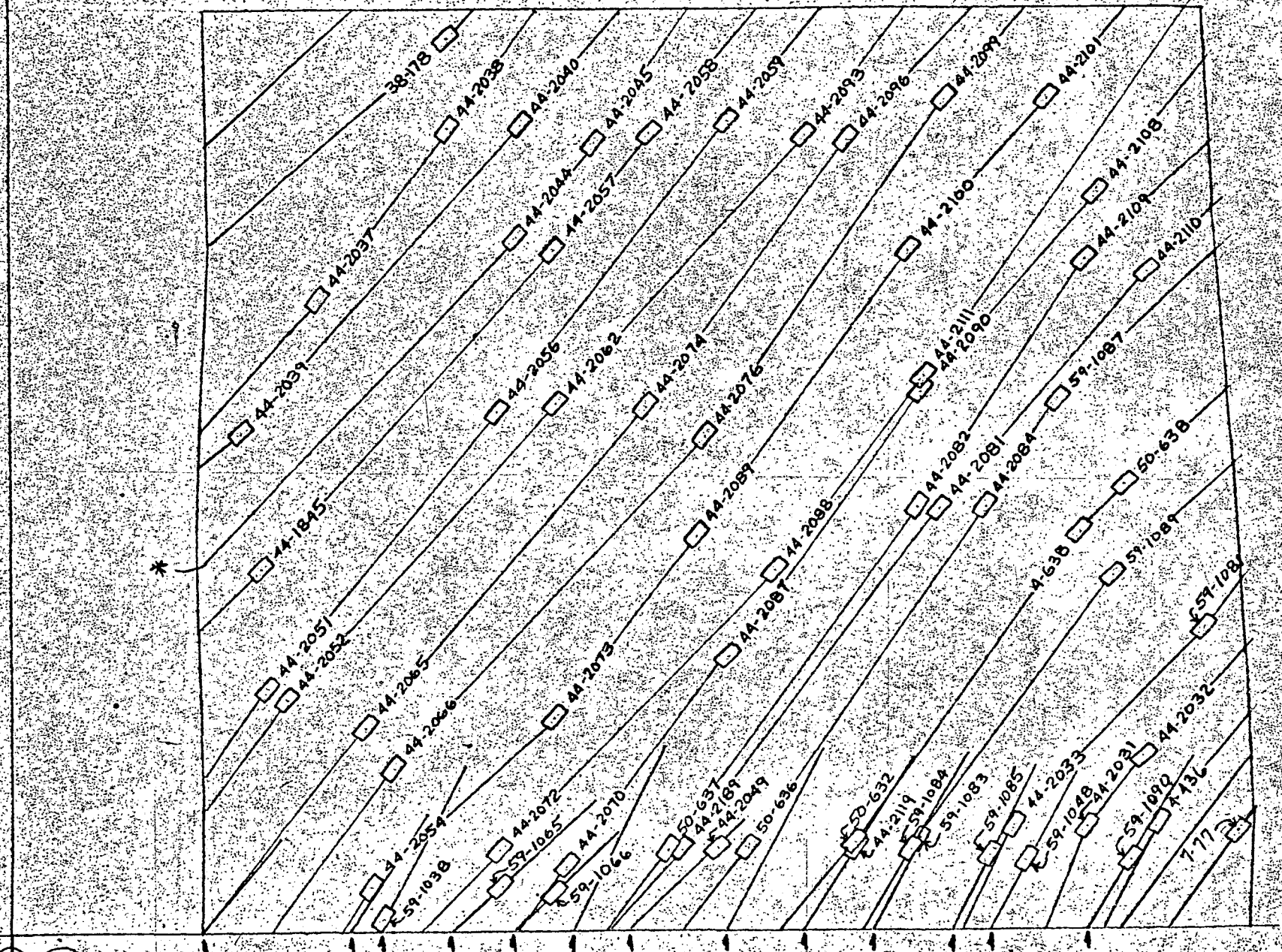
-continued-

DEVELOPED CADWELD SPLICE LOCATIONS
VIEWED FROM OUTSIDE V/C WALL
#9 SEISMIC OUTER LAYER

(continued)

Crew & Cadweld Number	Locations		Elevation
59-1035	14'-5"	R℄ 2	43'-9"
59-1036	11'-8"	"	47'-11"
59-1037	7'-10"	"	52'-7"
59-1044	15'-8½"	"	44'-1"
59-1045	10'-4"	"	50'-9"
59-1046	11'-1"	"	53'-10"
59-1047	9'-1"	"	56'-7"
59-1053	18'-3"	"	45'-3"
59-1057	16'-1"	"	50'-4"
59-1058	12'-10"	"	55'-7"
59-1059	16'-7½"	"	53'-7"
59-1067	9'-3½"	"	63'-9"
59-1067A	30'-2½"	"	46'-2"
59-1071	10'-6"	"	65'-8"
50-1073	16'-7"	"	56'-3"
59-1076A	17'-4"	"	58'-6"
59-1077	24'-11"	"	44'-5"
59-1078	20'-4½"	"	51'-4"
59-1082	21'-9"	"	44'-10"

NOTES: 1 ~ INDICATES HOOKED BAR
* ~ INDICATES BAR NOT EMBEDDED IN CONCRETE



CADWELD SPLICES ~ TEMPORARY OPENING

DEVELOPED FROM OUTSIDE V/C WALL

#9 SEISMIC ~ INNER LAYER

SCALE ~ 1/4" = 1'-0"

DEVELOPED CADWELD SPLICE LOCATIONS
VIEWED FROM OUTSIDE V/C WALL
#9 SEISMIC INNER LAYER

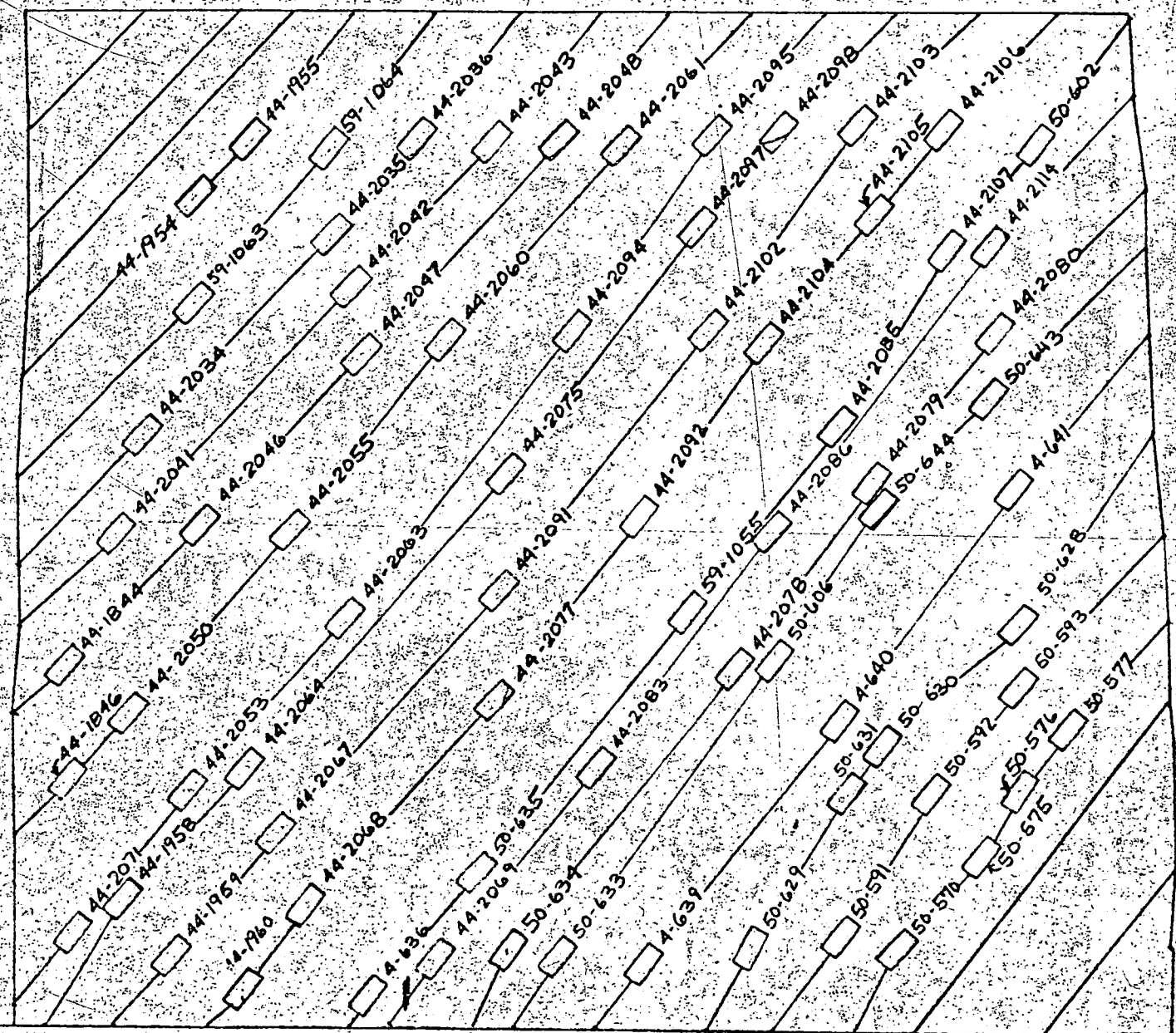
Crew & Cadweld Number	Location		Elevation
4-436	30'-3½"	R℄2	46'-0"
4-638	28'-4"	"	53'-11"
7-77	32'-5"	"	45'-9"
38-178	11'-7½"	"	67'-6"
44-1845	6'-8½"	"	53'-0"
44-2031	28'-6"	"	45'-10"
44-2032	30'-0"	"	47'-9"
44-2033	26'-6½"	"	45'-10"
44-2037	8'-3"	"	60'-5"
44-2038	11'-7½"	"	65'-1"
44-2039	6'-2"	"	56'-9"
44-2040	13'-7½"	"	65'-2"
44-2044	13'-5"	"	62'-1"
44-2045	15'-7½"	"	64'-8"
44-2049	18'-9½"	"	45'-3"
44-2051	6'-10"	"	49'-9"
44-2052	7'-5"	"	49'-5"
44-2054	9'-7½"	"	44'-3"
44-2056	12'-11"	"	57'-3"
44-2057	14'-5"	"	61'-9"
44-2058	17'-1"	"	64'-11"
44-2059	19'-1"	"	65'-3"
44-2062	14'-6"	"	57'-6"
44-2065	9'-5½"	"	48'-8"
44-2066	10'-2½"	"	47'-6"
44-2070	14'-9"	"	44'-9"
44-2072	12'-11½"	"	45'-3"
44-2073	14'-4½"	"	48'-10"
44-2074	16'-10½"	"	57'-5"
44-2076	18'-5½"	"	56'-7"
44-2081	24'-8"	"	54'-7"
44-2082	24'-1"	"	54'-8"
44-2084	25'-10"	"	54'-8"
44-2087	19'-1½"	"	50'-7"
44-2088	20'-3"	"	52'-11"
44-2089	18'-2½"	"	53'-10"
44-2090	24'-2½"	"	57'-10"
44-2093	21'-1½"	"	64'-11"
44-2096	22'-3½"	"	64'-9"
44-2099	24'-10½"	"	65'-10"
44-2100	23'-10"	"	61'-8"
44-2101	27'-6½"	"	65'-10"
44-2108	28'-10"	"	63'-3"
44-2109	28'-6½"	"	61'-5"
44-2110	30'-2½"	"	61'-1"
44-2111	24'-3½"	"	58'-3"
44-2119	22'-4½"	"	45'-3"
44-2189	17'-9½"	"	45'-3"
50-632	22'-5"	"	45'-5"
50-636	19'-7½"	"	45'-3"
50-637	17'-5½"	"	45'-3"

-continued-

DEVELOPED CADWELD SPLICE LOCATIONS
VIEWED FROM OUTSIDE V/C WALL
#9 SEISMIC INNER LAYER

(continued)

Crew & Cadweld Number	Location		Elevation
50-638	29'-6"	R℄2	55'-3"
59-1038	9'-11½"	"	43'-4"
59-1048	26'-11½"	"	44'-11"
59-1065	13'-0½"	"	44'-3"
59-1066	14'-5½"	"	44'-0"
59-1081	31'-8½"	"	51'-3"
59-1083	24'-1"	"	45'-6"
59-1084	23'-10½"	"	45'-3"
59-1085	26'-0"	"	45'-1"
59-1087	27'-9"	"	57'-7"
59-1089	29'-3½"	"	52'-9"
59-1090	29'-8"	"	44'-11"



EL. - 43'-0"

C2

CADWELD SPLICES ~ TEMPORARY OPENING #18 SEISMIC ~ INNER LAYER

DEVELOPED FROM OUTSIDE - V/C WALL SCALE ~ 1/4" = 1'-0"

DEVELOPED CADWELD SPLICE LOCATIONS
VIEWED FROM OUTSIDE V/C WALL
#18 SEISMIC - INNER LAYER

Crew & Cadweld Number	Location	Elevation
4-636	13'-9½" R℄2	43'-9"
4-639	20'-3½" "	44'-7"
4-640	24'-10½" "	50'-7"
4-641	29'-0½" "	56'-4"
44-1844	6'-4" "	51'-11"
44-1846	6'-5" "	49'-1"
44-1954	9'-4½" "	63'-7"
44-1955	10'-7½" "	65'-0"
44-1958	7'-10¼" "	46'-1"
44-1959	9'-0½" "	44'-8"
44-1960	10'-7" "	43'-11"
44-2034	8'-1½" "	57'-8"
44-2035	12'-7½" "	62'-8"
44-2036	14'-7½" "	65'-0"
44-2041	7'-6" "	55'-2"
44-2042	13'-1½" "	61'-4"
44-2043	16'-5½" "	64'-11"
44-2046	9'-6½" "	55'-4"
44-2047	13'-5" "	59'-7"
44-2048	18'-0½" "	65'-0"
44-2050	7'-11" "	50'-9"
44-2053	9'-4" "	48'-10"
44-2055	11'-8" "	55'-3"
44-2060	15'-5½" "	60'-0"
44-2061	19'-7½" "	64'-10"
44-2063	13'-0½" "	53'-1"
44-2064	10'-8" "	49'-5"
44-2067	11'-6½" "	47'-8"
44-2068	12'-2½" "	45'-11"
44-2069	15'-3½" "	44'-8"
44-2071	6'-7½" "	45'-3"
44-2075	16'-9¼" "	56'-7"
44-2077	16'-7" "	51'-1"
44-2078	22'-4½" "	51'-11"
44-2079	25'-7½" "	56'-6"
44-2080	28'-6½" "	60'-3"
44-2083	19'-1½" "	49'-4"
44-2085	24'-10" "	57'-11"
44-2086	23'-3" "	55'-3"
44-2091	16'-6½" "	53'-9"
44-2092	20'-1" "	55'-8"
44-2094	18'-5" "	60'-3"
44-2095	21'-8½" "	65'-2"
44-2097	21'-6" "	62'-9"
44-2098	23'-4¼" "	65'-2"
44-2102	21'-7½" "	60'-3"
44-2103	25'-3½" "	65'-4"
44-2104	23'-1¼" "	59'-11"
44-2105	25'-7½" "	63'-1"

- continued -

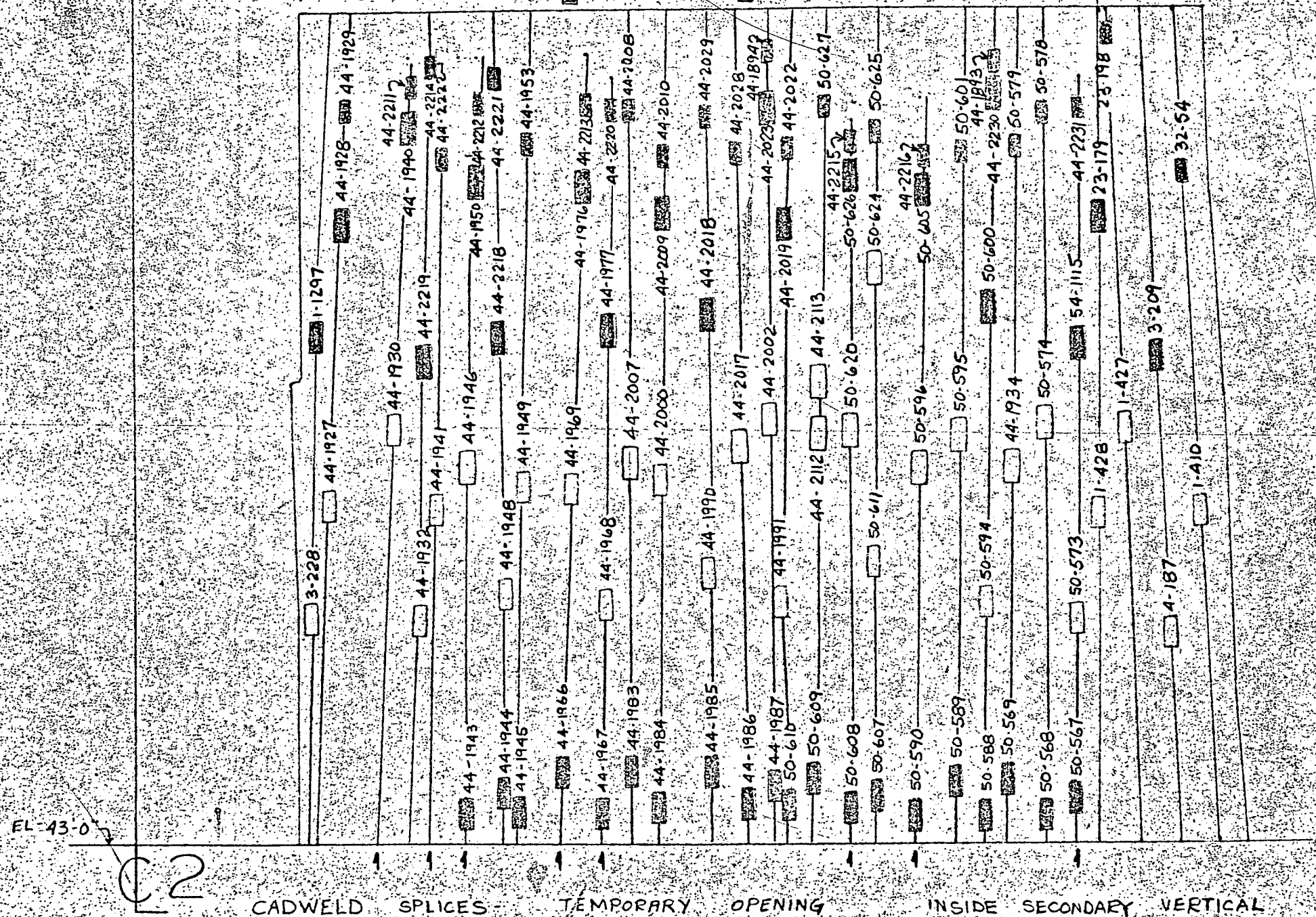
DEVELOPED CADWELD SPLICE LOCATIONS
VIEWED FROM OUTSIDE V/C WALL
#18 SEISMIC - INNER LAYER

(Continued)

Crew & Cadweld Number	Location		Elevation
44-2106	27'-4"	R&2	65'-3"
44-2107	27'-4½"	"	62'-3"
44-2114	28'-6¼"	"	62'-5"
50- 570	26'-4"	"	44'-11"
50- 575	28'-3½"	"	47'-3"
50- 576	29'-2½"	"	48'-9"
50- 577	29'-5"	"	50'-5"
50- 591	24'-11½"	"	45'-3"
50- 592	27'-0½"	"	48'-9"
50- 593	29'-1¼"	"	51'-5"
50- 602	29'-5"	"	64'-10"
50- 606	23'-5"	"	52'-1"
50- 628	29'-4"	"	53'-1"
50- 629	22'-10"	"	45'-0"
50- 630	25'-11½"	"	50'-1"
50- 631	25'-1½"	"	48'-9"
50- 633	18'-2½"	"	44'-9"
50- 634	16'-11½"	"	44'-11"
50- 635	16'-2½"	"	46'-9"
50- 643	28'-4½"	"	58'-7"
50- 644	25'-9½"	"	55'-10"
59-1055	21'-2½"	"	53'-3"
59-1063	9'-3½"	"	60'-11"
59-1064	12'-6¼"	"	64'-9"

NOTES: 1 - INDICATES HOOK BAR

Splices at R=68'-9" ~ R=70'-9" ~



CADWELD SPLICES - TEMPORARY OPENING INSIDE SECONDARY VERTICAL

DEVELOPED FROM OUTSIDE V/C WALL

SCALE ~ 1/4" = 1'-0"

DEVELOPED CADWELD SPLICE LOCATIONS
VIEWED FROM OUTSIDE V/C WALL
INSIDE SECONDARY VERTICAL

Crew & Cadweld Number	Location		Elevation
1-410	31'-4"	R&2	53'-3"
1-427	29'-1"	"	55'-9
1-428	28'-4"	"	53'-2"
1-1297	5'-4"	"	58'-7"
3-209	30'-0"	"	58'-0"
3-228	5'-2"	"	50'-0"
4-187	30'-5"	"	49'-6"
23-179	28'-3"	"	62'-2"
23-198	28'-6"	"	67'-8"
32-54	30'-9"	"	63'-6"
44-1893	25'-3"	"	66'-11"
44-1894	18'-7"	"	67'-3"
44-1927	5'-8"	"	53'-5"
44-1928	6'-1"	"	62'-1"
44-1929	6'-2"	"	65'-6"
44-1930	7'-7"	"	55'-9"
44-1932	8'-4"	"	50'-0"
44-1934	25'-10"	"	54'-6"
44-1940	8'-1"	"	64'-11"
44-1941	8'-10"	"	53'-4"
44-1943	9'-8"	"	44'-1"
44-1944	10'-10"	"	44'-8"
44-1945	11'-3"	"	44'-1"
44-1946	9'-9"	"	54'-8"
44-1948	10'-11"	"	50'-9"
44-1949	11'-5"	"	54'-0"
44-1950	10'-0"	"	63'-4"
44-1953	11'-6"	"	64'-5"
44-1966	12'-6"	"	45'-4"
44-1967	13'-9"	"	44'-1"
44-1968	13'-9"	"	50'-5"
44-1969	12'-10"	"	54'-0"
44-1976	13'-2"	"	63'-3"
44-1977	13'-10"	"	58'-10"
44-1983	14'-7"	"	45'-4"
44-1984	15'-4"	"	44'-3"
44-1985	16'-11"	"	45'-4"
44-1986	18'-0"	"	44'-4"
44-1987	18'-9"	"	44'-11"
44-1990	16'-9"	"	51'-4"
44-1991	18'-11"	"	50'-6"
44-2000	15'-4"	"	54'-3"
44-2002	18'-6"	"	56'-1"
44-2007	14'-6"	"	54'-8"
44-2008	14'-6"	"	65'-5"
44-2009	15'-6"	"	62'-4"
44-2010	15'-6"	"	64'-2"
44-2017	17'-8"	"	55'-2"
44-2018	16'-9"	"	59'-3"
44-2019	19'-0"	"	62'-0"

-continued-

DEVELOPED CADWELD SPLICE LOCATIONS
VIEWED FROM OUTSIDE V/C WALL
INSIDE SECONDARY VERTICAL

(Continued)

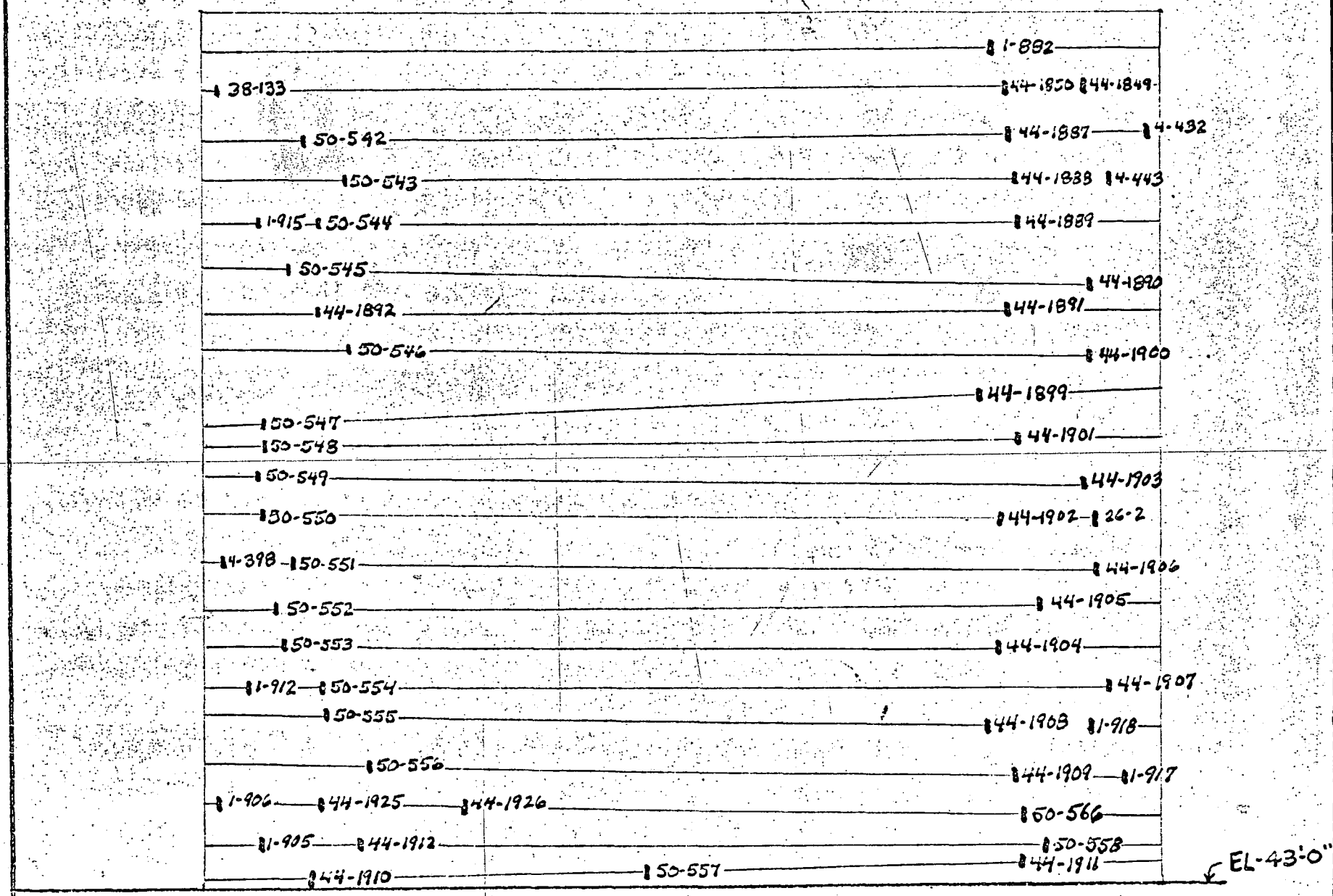
Crew & Cadweld Number	Location		Elevation
44-2022	19'-2"	R&2	64'-4"
44-2023	18'-7"	"	65'-7"
44-2028	17'-8"	"	64'-3"
44-2029	16'-8"	"	65'-3"
44-2112	20'-0"	"	55'-8"
44-2113	20'-0"	"	57'-2"
44-2211	8'-1"	"	66'-2"
44-2212	10'-1"	"	65'-8"
44-2213	13'-3"	"	65'-9"
44-2214	8'-8"	"	66'-10"
44-2215	20'-11"	"	64'-6"
44-2216	23'-2"	"	64'-1"
44-2218	10'-8"	"	58'-7"
44-2219	8'-6"	"	57'-10"
44-2220	13'-11"	"	65'-6"
44-2221	10'-7"	"	66'-4"
44-2222	9'-0"	"	64'-0"
44-2230	25'-3"	"	65'-11"
44-2231	27'-8"	"	65'-7"
50-567	27'-8"	"	44'-6"
50-568	26'-10"	"	43'-11"
50-569	25'-8"	"	45'-1"
50-573	27'-8"	"	49'-11"
50-574	26'-10"	"	55'-10"
50-578	26'-8"	"	65'-4"
50-579	25'-10"	"	64'-4"
50-588	25'-0"	"	44'-0"
50-589	24'-2"	"	45'-0"
50-590	22'-11"	"	44'-0"
50-594	25'-1"	"	50'-7"
50-595	24'-3"	"	55'-7"
50-596	23'-0"	"	54'-7"
50-600	25'-1"	"	59'-6"
50-601	24'-3"	"	64'-3"
50-605	23'-2"	"	63'-0"
50-607	21'-9"	"	44'-7"
50-608	21'-0"	"	44'-3"
50-609	19'-11"	"	45'-1"
50-610	19'-2"	"	44'-4"
50-611	21'-8"	"	51'-8"
50-620	21'-0"	"	55'-9"
50-624	21'-8"	"	60'-8"
50-625	21'-8"	"	64'-10"
50-626	20'-11"	"	63'-8"
50-627	20'-2"	"	65'-6"
54-1115	27'-9"	"	58'-4"

GENERAL COMPUTATION SHEET
UNION ENGINEERS & CONSTRUCTORS INC.

J. O. NO. _____ OF _____
SHEET NO. _____
DATE _____
COMP. BY _____ C'K'D BY _____

NAME OF COMPANY _____
SUBJECT _____

FORM 501



℄ 2

CADWELD SPLICES - TEMPORARY OPENING INSIDE SECONDARY HOOPS

DEVELOPED FROM OUTSIDE V/C WALL

SCALE ~ 1/4" = 1'-0"

SKETCH 10

INSIDE SECONDARY HOOPS

CREW & CADWELD NUMBER	LOCATION
1-882	26'-10" R 2
1-905	6'-11" "
1-906	5'-9" "
1-912	6'-6" "
1-915	6'-10" "
1-917	30'-6" "
1-918	29'-8" "
4-398	5'-10" "
4-432	31'-2" "
4-443	30'-1" "
26-2	29'-9" "
38-133	5'-9" "
44-1849	29'-4" "
44-1850	27'-3" "
44-1887	27'-4" "
44-1888	27'-6" "
44-1889	27'-7" "
44-1890	29'-7" "
44-1891	27'-3" "
44-1892	8'-6" "
44-1899	26'-6" "
44-1900	29'-6" "
44-1901	27'-7" "
44-1902	27'-2" "
44-1903	29'-5" "
44-1904	27'-1" "
44-1905	28'-3" "
44-1906	29'-9" "
44-1907	30'-1" "
44-1908	26'-9" "
44-1909	27'-7" "
44-1910	8'-4" "
44-1911	27'-9" "
44-1912	9'-7" "
44-1925	8'-7" "
44-1926	12'-6" "
50-542	8'-1" "
50-543	9'-3" "
50-544	8'-6" "
50-545	7'-9" "
50-546	9'-4" "
50-547	7'-0" "
50-548	7'-0" "
50-549	6'-10" "
50-550	7'-0" "
50-551	7'-10" "
50-552	7'-4" "
50-553	7'-7" "
50-554	8'-8" "
50-555	8'-9" "
50-556	9'-10" "
50-557	17'-8" "
50-558	28'-5" "
50-566	27'-9" "

FORM 501

GENERAL COMPUTATION SHEET
UNION ENGINEERS & CONSTRUCTORS INC.

NAME OF COMPANY _____ J. O. NO. _____

SHEET NO. _____ OF _____

SUBJECT _____ DATE _____

COMP. BY _____ C'K'D BY _____

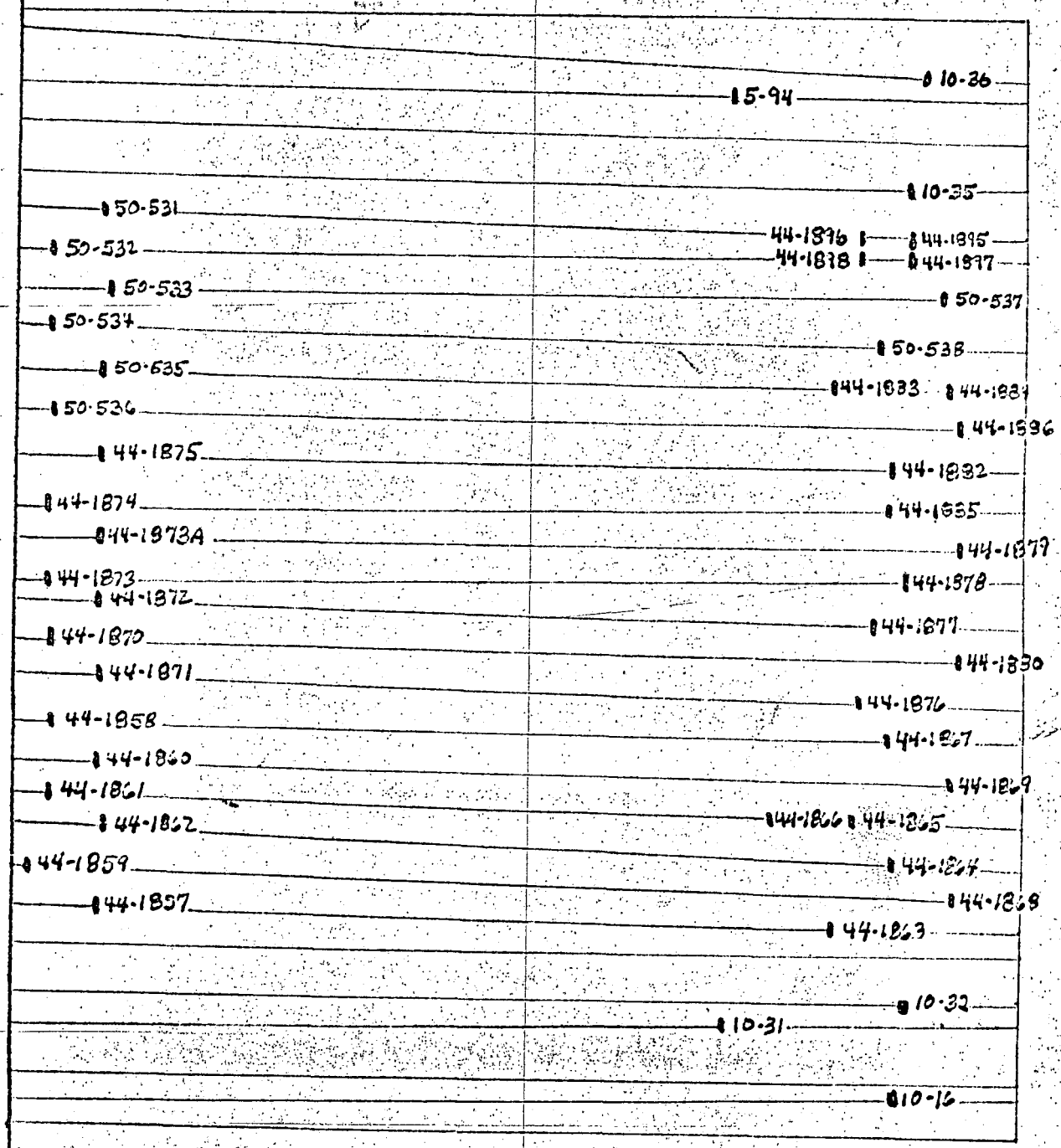
E2

CADWELD SPLICES - TEMPORARY OPENING

DEVELOPED FROM OUTSIDE V/C WALL

INSIDE PRIMARY VERTICAL

SCALE ~ 1/4" = 1'-0"



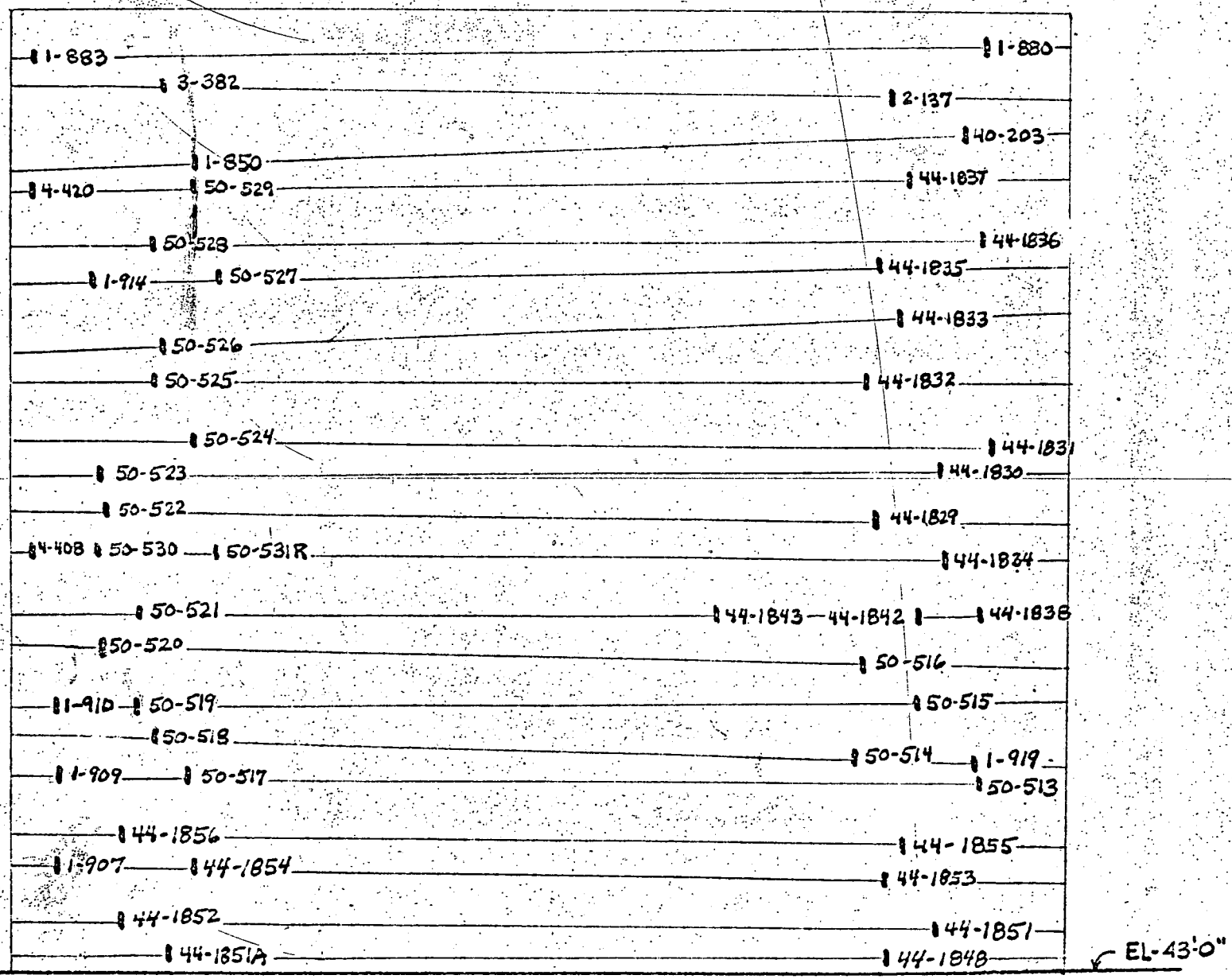
EL-43'-0"

INSIDE PRIMARY VERTICAL

Crew & Cadweld Number	Location		Elevation
5-94	7'-1"	R 2	60'-8"
10-16	30'-8"	"	64'-11"
10-31	28'-11"	"	60'-7"
10-32	28'-5"	"	65'-1"
10-35	9'-4"	"	65'-0"
10-36	6'-7"	"	65'-4"
44-1857	26'-6"	"	45'-3"
44-1858	22'-0"	"	44'-1"
44-1859	25'-8"	"	43'-8"
44-1860	23'-0"	"	45'-3"
44-1861	23'-10"	"	44'-1"
44-1862	24'-8"	"	45'-5"
44-1863	26'-9"	"	63'-2"
44-1864	25'-3"	"	64'-9"
44-1865	24'-2"	"	63'-9"
44-1866	24'-2"	"	61'-9"
44-1867	22'-4"	"	64'-7"
44-1868	26'-0"	"	66'-3"
44-1869	23'-3"	"	66'-2"
44-1870	20'-0"	"	44'-1"
44-1871	20'-11"	"	45'-3"
44-1872	19'-2"	"	45'-3"
44-1873	18'-7"	"	44'-0"
44-1873A	17'-8"	"	45'-3"
44-1874	16'-10"	"	44'-0"
44-1875	15'-8"	"	45'-3"
44-1876	21'-5"	"	63'-11"
44-1877	19'-7"	"	64'-3"
44-1878	18'-6"	"	65'-0"
44-1879	17'-9"	"	66'-4"
44-1880	20'-4"	"	66'-4"
44-1882	15'-11"	"	64'-8"
44-1883	14'-0"	"	63'-2"
44-1884	14'-0"	"	66'-0"
44-1885	16'-10"	"	64'-7"
44-1886	14'-11"	"	66'-3"
44-1895	10'-4"	"	65'-1"
44-1896	10'-4"	"	63'-8"
44-1897	10'-11"	"	65'-1"
44-1898	10'-11"	"	63'-8"
50-531	10'-0"	"	45'-3"
50-532	10'-11"	"	44'-0"
50-533	11'-9"	"	45'-5"
50-534	12'-8"	"	44'-0"
50-535	13'-9"	"	45'-3"
50-536	14'-8"	"	44'-1"
50-537	11'-11"	"	65'-10"
50-538	13'-0"	"	64'-4"

GENERAL COMPUTATION SHEET
UNION ENGINEERS & CONSTRUCTORS INC.

J. O. NO. _____ SHEET NO. _____ OF _____
DATE _____ COMP. BY _____ C'K'D BY _____
NAME OF COMPANY _____ SUBJECT _____



C2

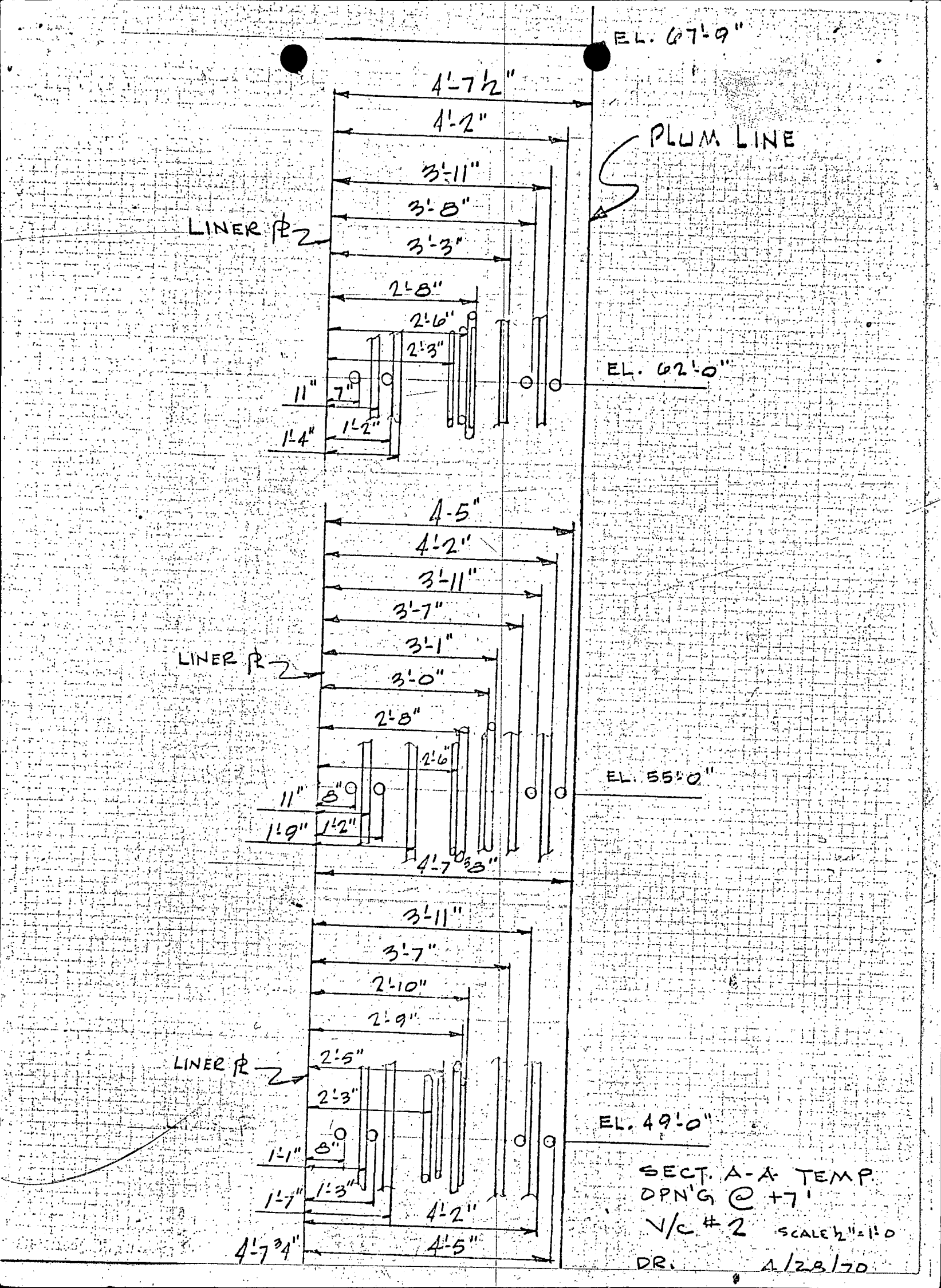
CADWELD SPLICES - TEMPORARY OPENING INSIDE PRIMARY HOOPS

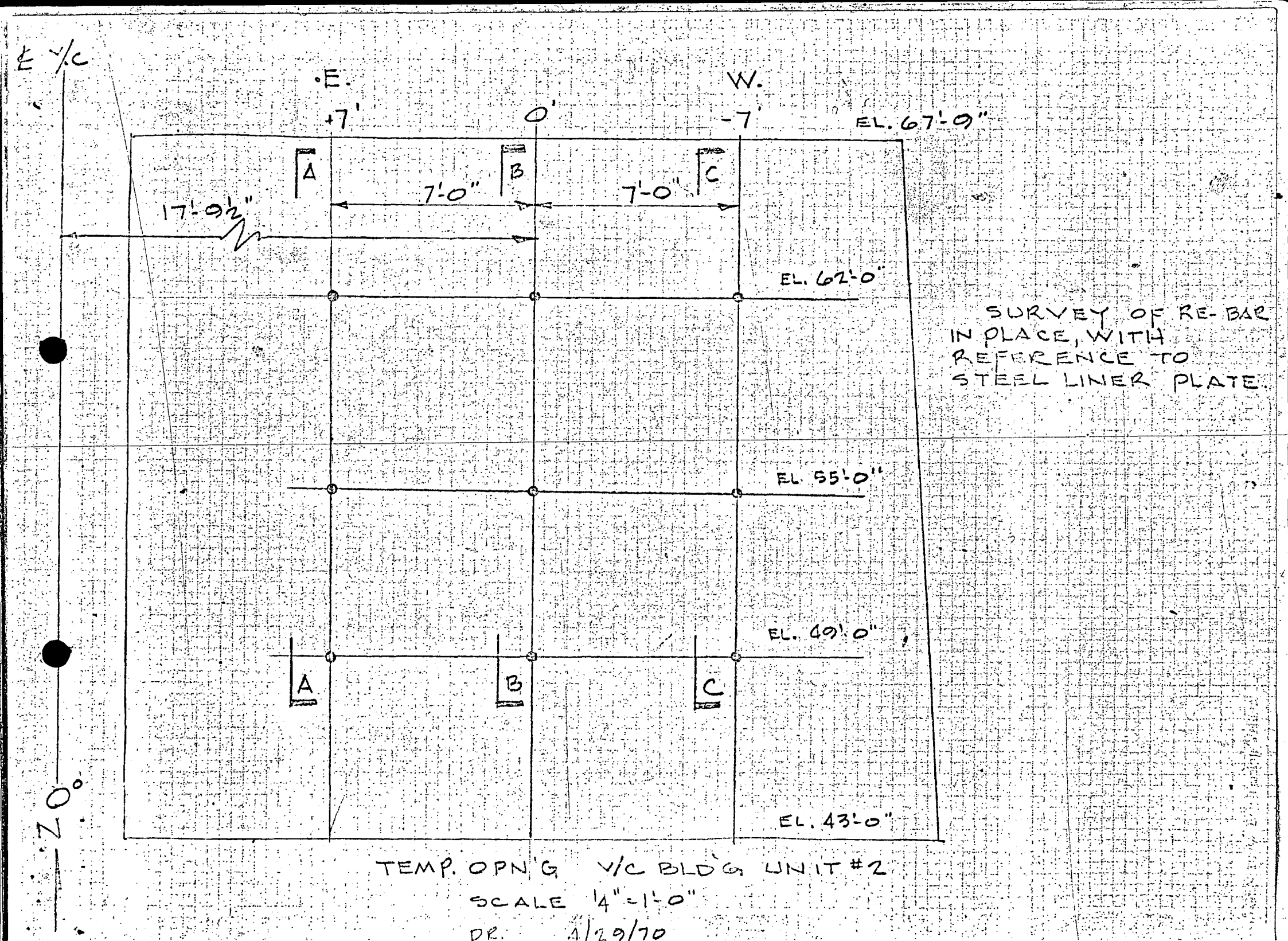
DEVELOPED FROM OUTSIDE V/C WALL SCALE ~ 1/4" = 1'-0"

FORM 501

DEVELOPED CADWELD SPLICE LOCATIONS
VIEWED FROM OUTSIDE V/C WALL
IS PRIMARY HOOPS

CREW & CADWELD NUMBER	LOCATION
1-850	9'-11" R℄ 2
1-880	29'-7" "
1-883	5'-11" "
1-907	6'-6" "
1-909	6'-7" "
1-910	6'-6" "
1-914	7'-4" "
1-919	29'-7" "
2-137	27'-4" "
3-382	9'-1" "
4-408	5'-10" "
4-420	5'-10" "
40-203	29'-1" "
44-1829	27'-0" "
44-1830	28'-7" "
44-1831	29'-10" "
44-1832	26'-9" "
44-1833	27'-7" "
44-1834	28'-9" "
44-1835	27'-0" "
44-1836	29'-7" "
44-1837	27'-9" "
44-1838	29'-8" "
44-1842	28'-1" "
44-1843	23'-0" "
44-1848	27'-4" "
44-1851	28'-7" "
44-1851A	9'-3" "
44-1852	8'-1" "
44-1853	27'-3" "
44-1854	9'-11" "
44-1855	27'-9" "
44-1856	8'-2" "
50-513	29'-8" "
50-514	26'-7" "
50-515	28'-0" "
50-516	26'-9" "
50-517	9'-9" "
50-518	9'-0" "
50-519	8'-6" "
50-520	7'-7" "
50-521	8'-7" "
50-522	7'-9" "
50-523	7'-7" "
50-524	9'-11" "
50-525	8'-11" "
50-526	9'-1" "
50-527	10'-6" "
50-528	8'-11" "
50-529	9'-10" "
50-530	7'-7" "
50-531R	10'-5" "

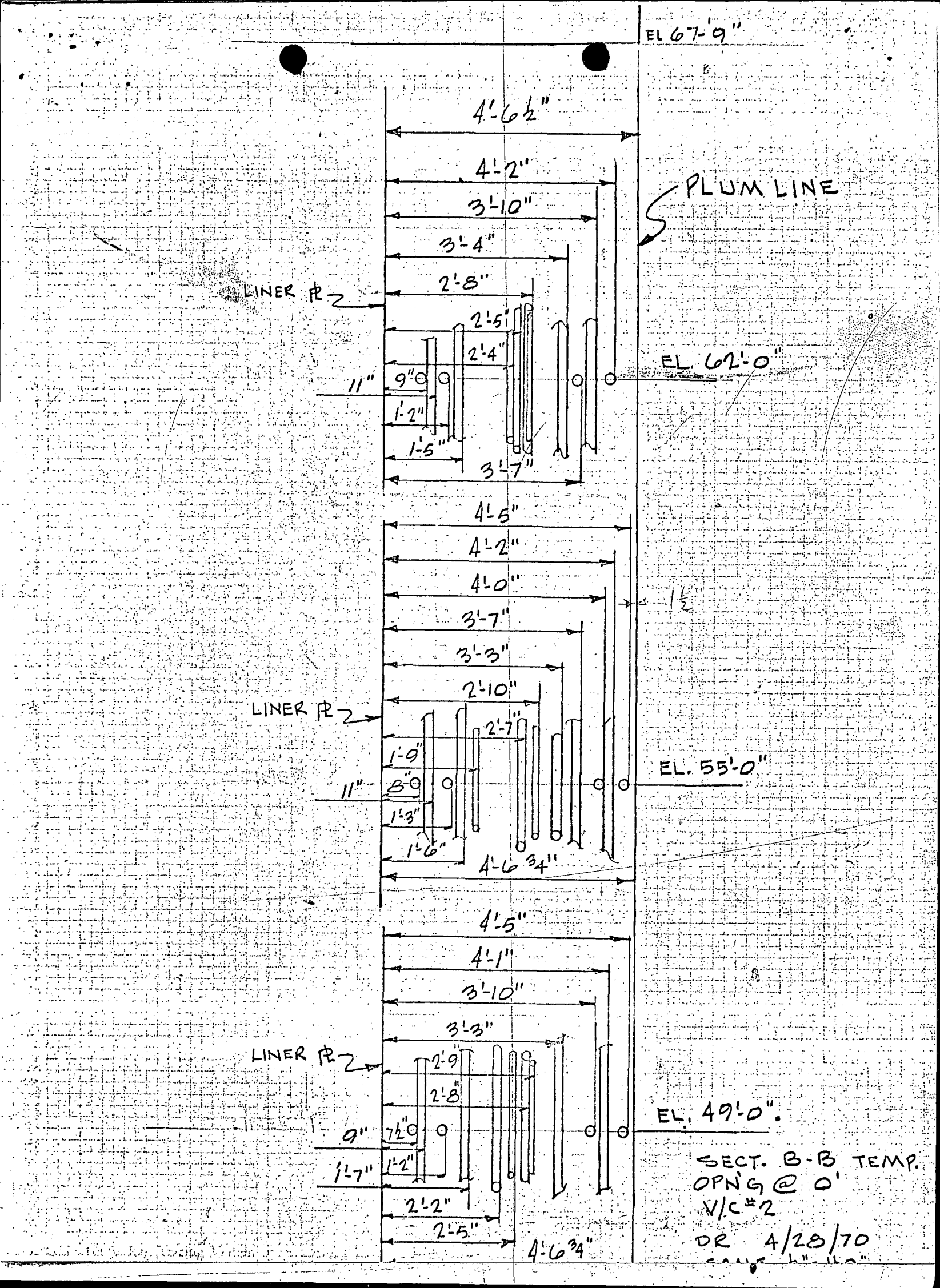

EL. 67'-9"
4'-7½"
4'-2"
PLUM LINE
3'-11"
3'-8"
LINER ℞
3'-3"
2'-8"
2'-6"
2'-3"
EL. 62'-0"
11"
7"
1'-4"
1'-2"
4'-5"
4'-2"
3'-11"
3'-7"
3'-1"
LINER ℞
3'-0"
2'-8"
2'-6"
EL. 55'-0"
11"
8"
1'-9"
1'-2"
4'-7⅜"
3'-11"
3'-7"
2'-10"
2'-9"
2'-5"
LINER ℞
2'-3"
EL. 49'-0"
1'-1"
8"
1'-7"
1'-3"
4'-2"
4'-7¾"
4'-5"
SECT. A-A TEMP.
OPN'G @ +7'
V/C #2
SCALE ½"=1'-0
DR. 4/28/70

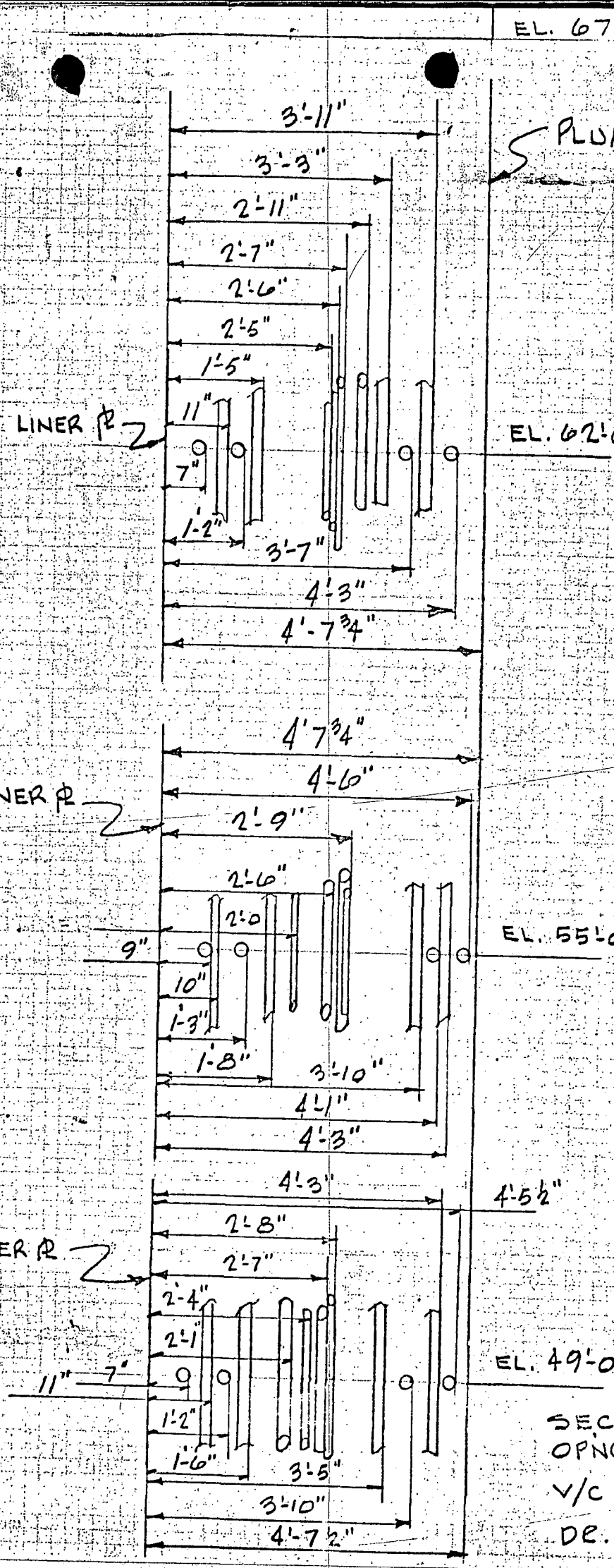


TEMP. OPN'G V/C BLD'G UNIT #2

SCALE 1/4" = 1'-0"

DR. 4/29/70


EL 67'-9"
4'-6½"
4'-2"
3'-10"
3'-4"
2'-8"
2'-5"
2'-4"
PLUM LINE
LINER PL 2
EL. 62'-0"
11"
9"
1'-2"
1'-5"
3'-7"
4'-5"
4'-2"
4'-0"
3'-7"
3'-3"
2'-10"
2'-7"
1½
LINER PL 2
1'-9"
EL. 55'-0"
11"
8"
1'-3"
1'-6"
4'-6¾"
4'-5"
4'-1"
3'-10"
3'-3"
LINER PL 2
2'-9"
2'-8"
EL. 49'-0".
9"
7½"
1'-7"
1'-2"
2'-2"
2'-5"
4'-6¾"
SECT. B-B TEMP.
OPN'G @ 0'
V/C #2
DR 4/28/70



SECT. C-C TEMP.
OPNG @ -7'
V/C #2 SCALE ½"=1'
DR. 4/28/70

N. C. Moseley, CO:I X

RE: CONSOLIDATED EDISON COMPANY - INDIAN POINT 2

Enclosed for your information is a brief memorandum report from the Technical Support Branch concerning their review of the Cadweld stagger problem at the subject facility.

Enclosure:
Memo Beratan to
Nolan dtd 6/15/70

OFFICE ▶	CO	CO	CO			
SURNAME ▶	FJNOLAN:mlc	JCKeppler	JPO'Reilly	J. P. O'Reilly, CO:HQ		
DATE ▶	6/16/70	6/16/70	6/16/70		6/16/70	