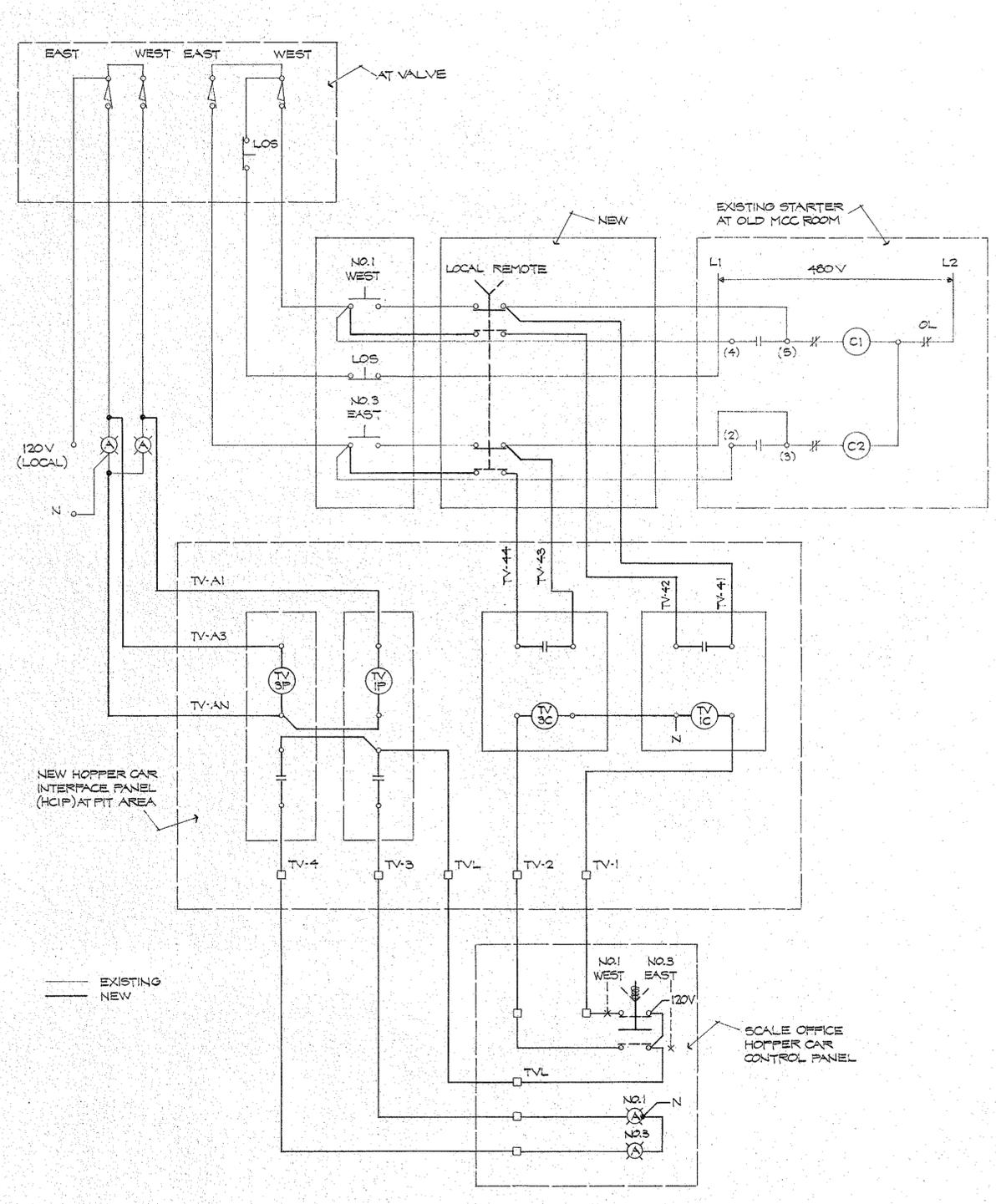
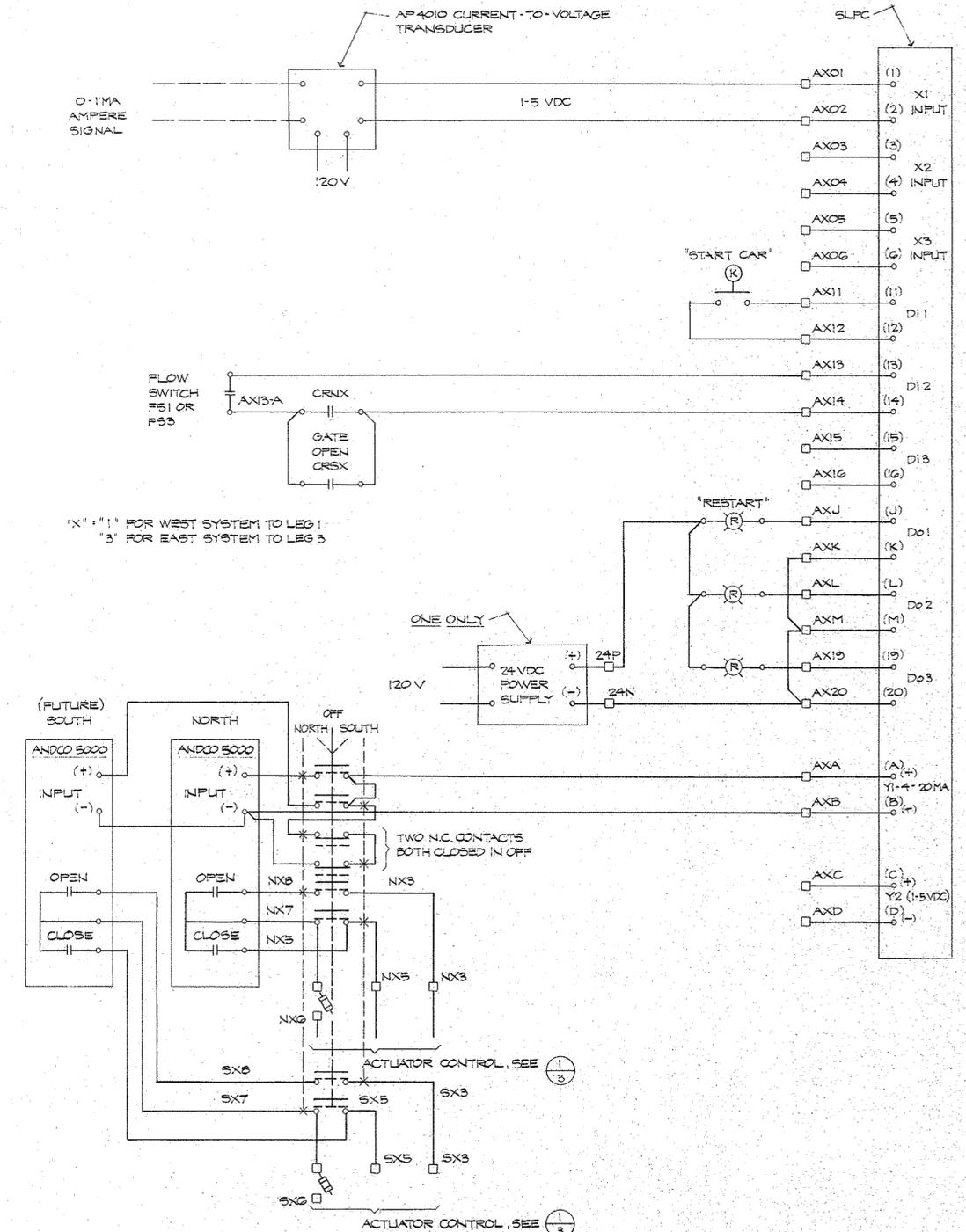


B475



TIPPER VALVE CONTROLS (1/4)



INTERCONNECTION CONTROL DIAGRAM (2/4)
ACTUATOR POSITIONING CONTROL (TYPICAL FOR 2)



NO.	DATE	REVISION	REVISION	BY
				DES. MCW
				DRN. SMB
				CHK. MCW
				SCALE NONE
				DRAWING NO.
				4 OF 7

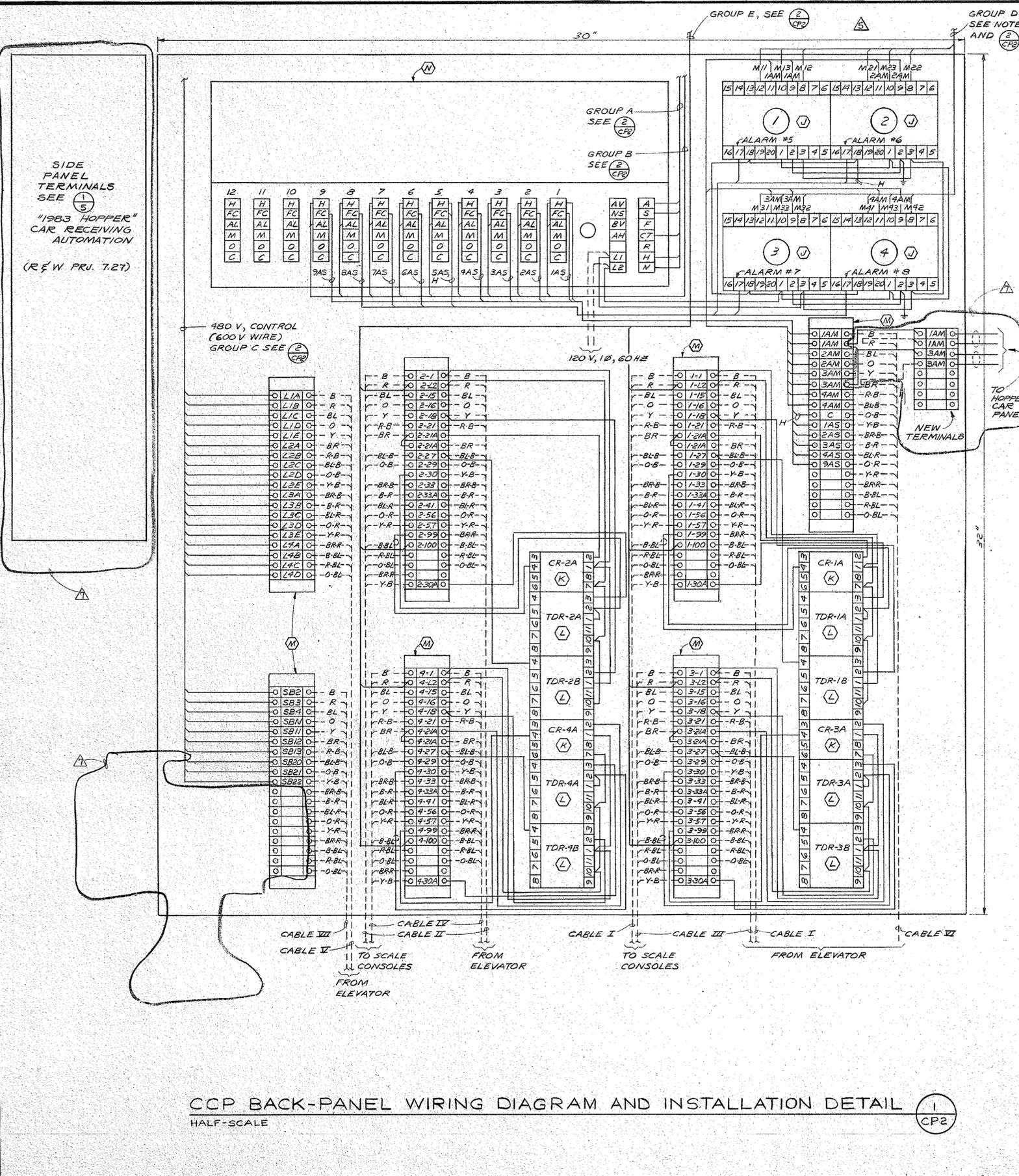
R&W ENGINEERING, INC.
6223 S.W. Canyon Court
Portland, Oregon 97221
Phone: 503-297-5676

CONTINENTAL GRAIN COMPANY
Longview, Washington
1983 HOPPER CAR RECEIVING AUTOMATION

PROJECT NO. 7.27
DATE 6.83

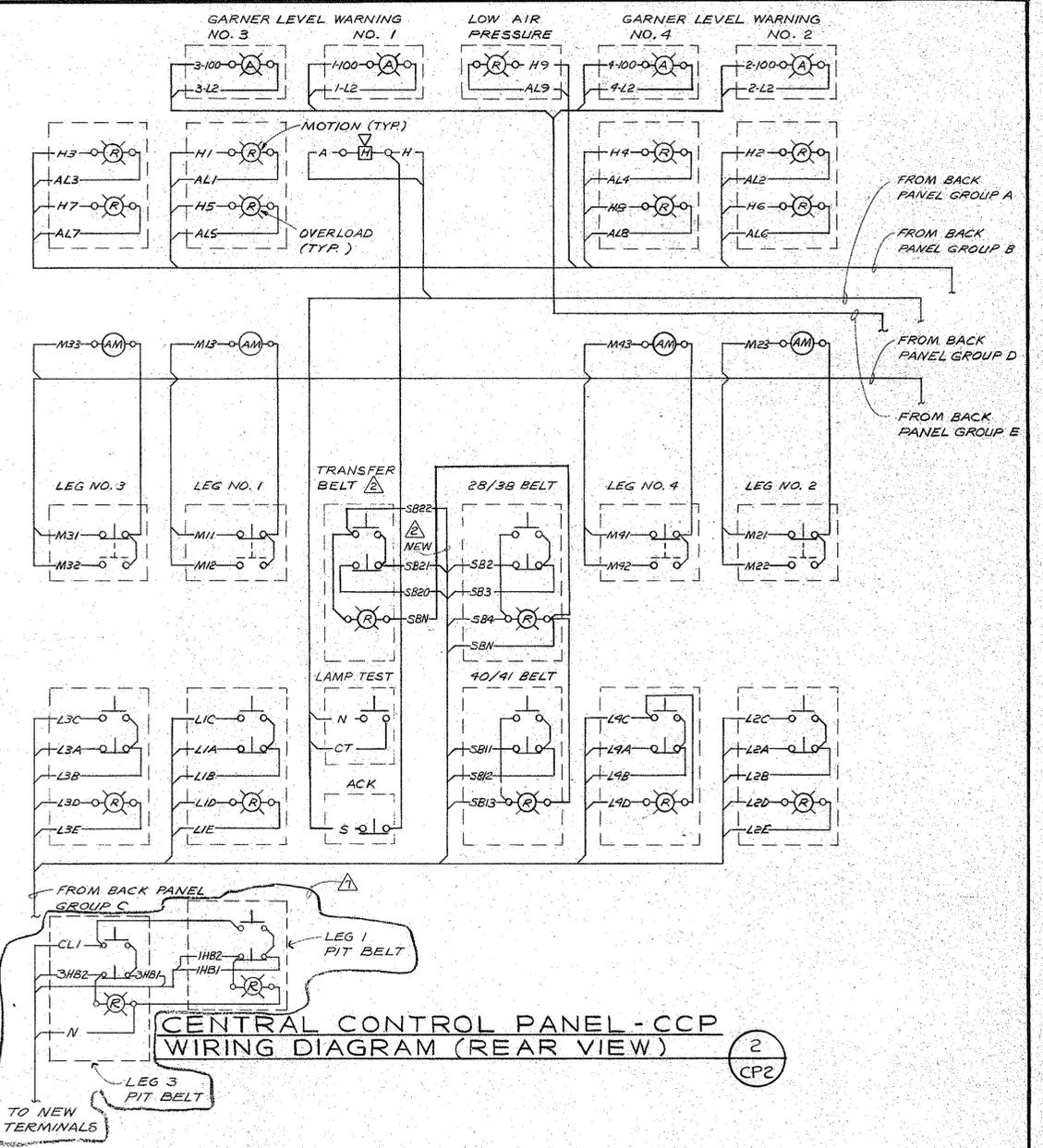
TIPPER VALVE CONTROLS AND ACTUATOR CONTROLLERS

B480



SIDE PANEL TERMINALS SEE (1) 5
 "1983 HOPPER" CAR RECEIVING AUTOMATION (R & W FRU. 7.27)

CCP BACK-PANEL WIRING DIAGRAM AND INSTALLATION DETAIL (1) CP2
 HALF-SCALE



CENTRAL CONTROL PANEL - CCP WIRING DIAGRAM (REAR VIEW) (2) CP2

NOTES

1. LOW VOLTAGE DC WIRING TO BE PROVIDED WITH PHYSICAL SEPARATION FROM ALL AC WIRING. DO NOT BUNDLE WITH OTHER WIRE. WHERE EVER POSSIBLE, MAINTAIN 1-2 INCH SEPARATION WHEN IN PARALLEL WITH AC WIRING RUNS.
2. ALL WIRING FOR GROUP C SHALL BE 600-VOLT, THHN, #14 AWG, ALL OTHER WIRING MAY BE #16 AWG, THWN.

NO.	DATE	REVISION	BY
6-83		DELETED REV. 6, ADDED HOPPER CAR RECEIVING	MCW
2-83		ADDED CONNECTIONS FOR SHIPPING BIN GATE POSITION INDICATORS.	MCW
11-80		ADDITIONS OF PLANT AIR PRESSURE ALARM, GARNER LEVEL WARNING INDICATORS	MCW
4-80		AS BUILT REVISIONS	MCW
4-80		CHANGED TDR SOCKETS TO 11-PIN (AS BUILT) AND MOVED WIRE NO. 99 ON "B" TDR'S TO PIN NO. 3	MCW
3-80		ADDED TRANSFER BELT CONTROL AND CHANGED WIRING AT 28/38 AND 40/41 BELT CONTROLS	MCW
12-79		AT FOUR TERMINAL STRIPS CHANGE WIRE NUMBERS 2 → L2, 58 → 57	MCW



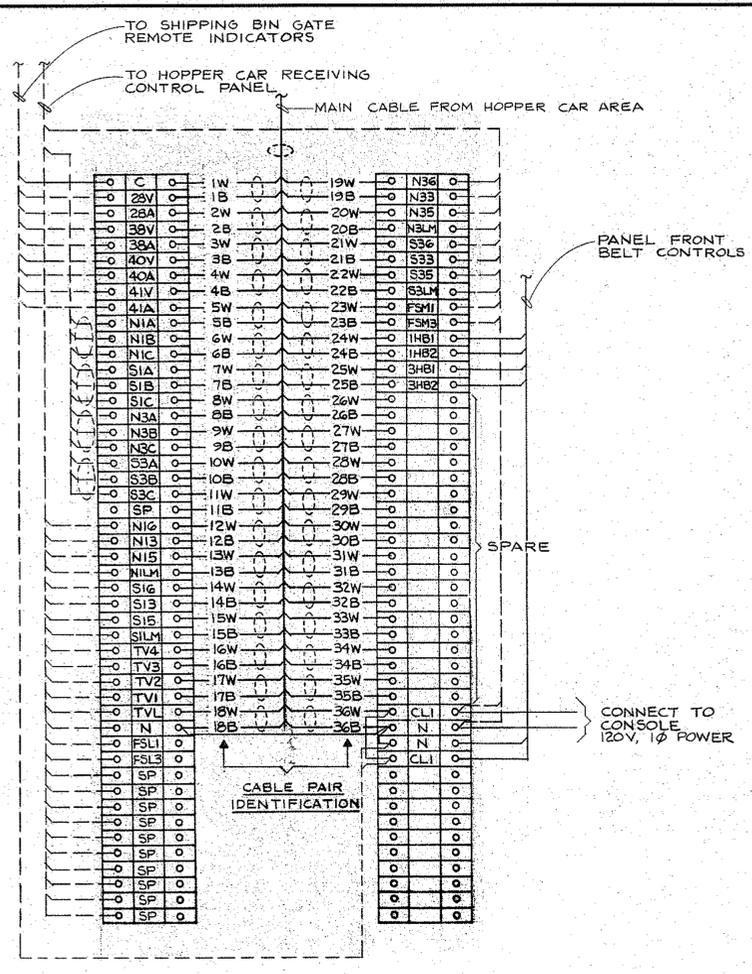
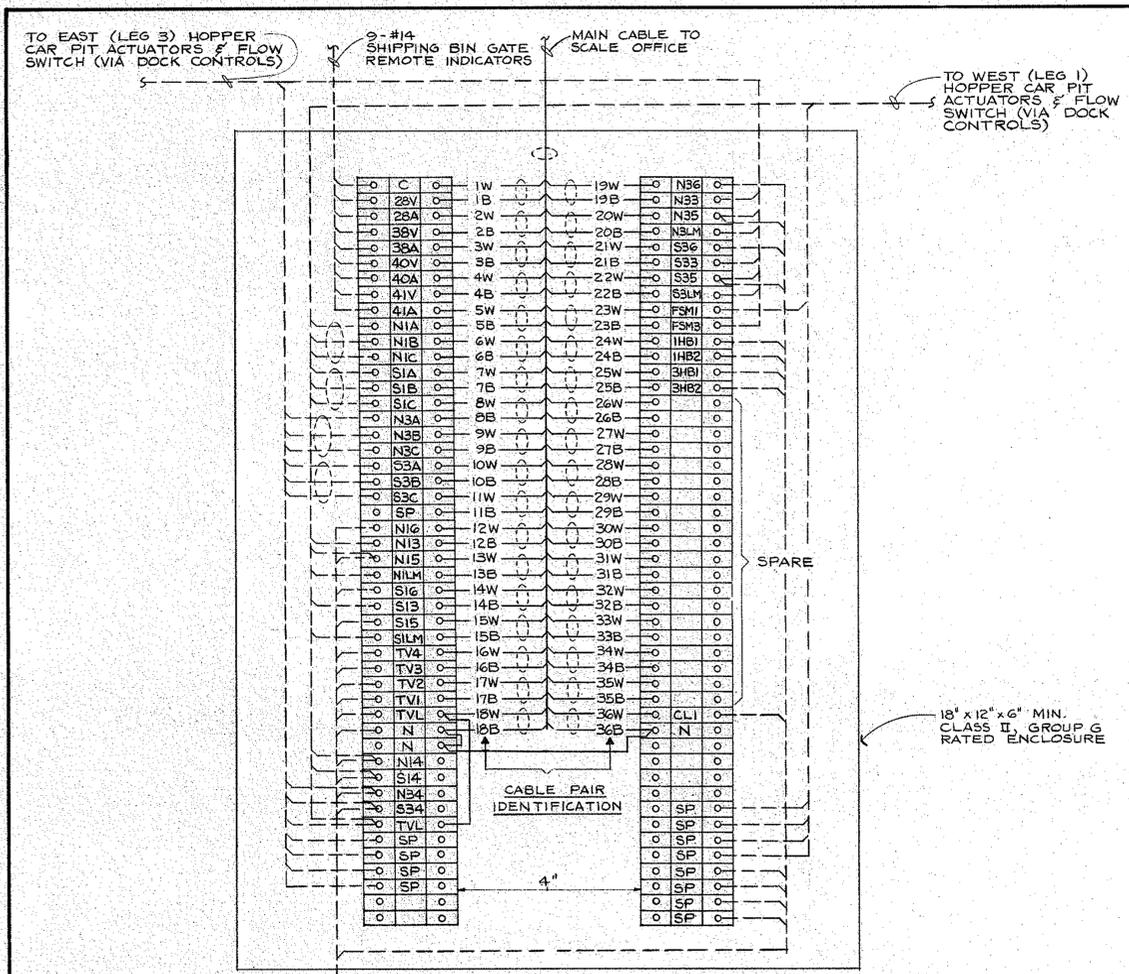
R&W ENGINEERING
 PROJECT NO. 7.10 (7.27)
 DATE OCT. 1979

CONTINENTAL GRAIN COMPANY
 Longview, Washington
SCALE MODIFICATIONS - ELECTRICAL

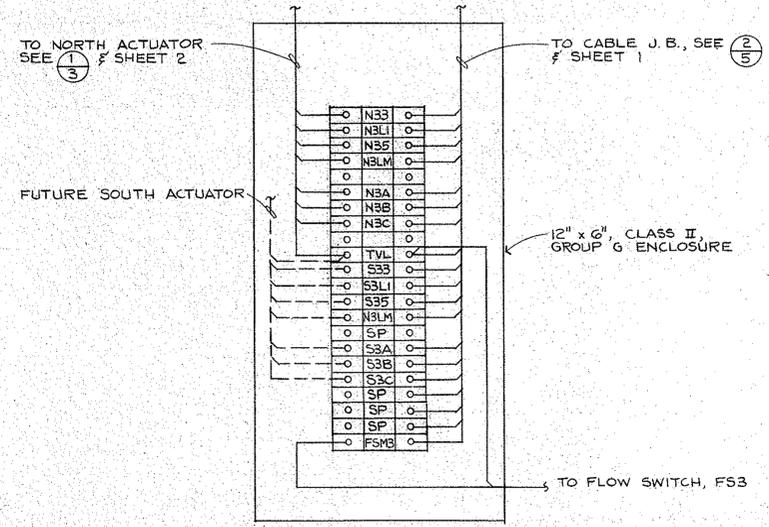
CENTRAL CONTROL PANEL - CCP WIRING DIAGRAMS
 CP-2 of 2

DES. MCW
 DRN. BYM
 CHK. MCW
 SCALE AS SHOWN
 DRAWING NO.

B476

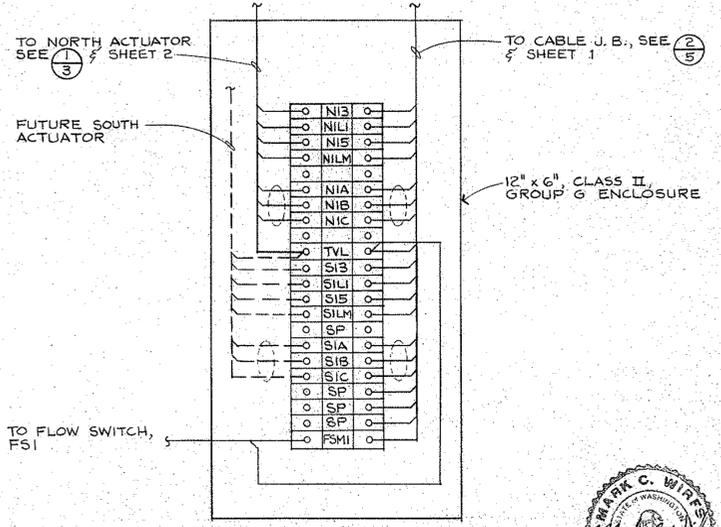


MAIN CABLE TERMINATION AT HOPPER CAR PITS (2/5)
N.T.S.



LEG NO. 3 ACTUATORS TERMINAL J.B. (3/5)
N.T.S.

MAIN CABLE TERMINATION AT CCP (1/5)
N.T.S.

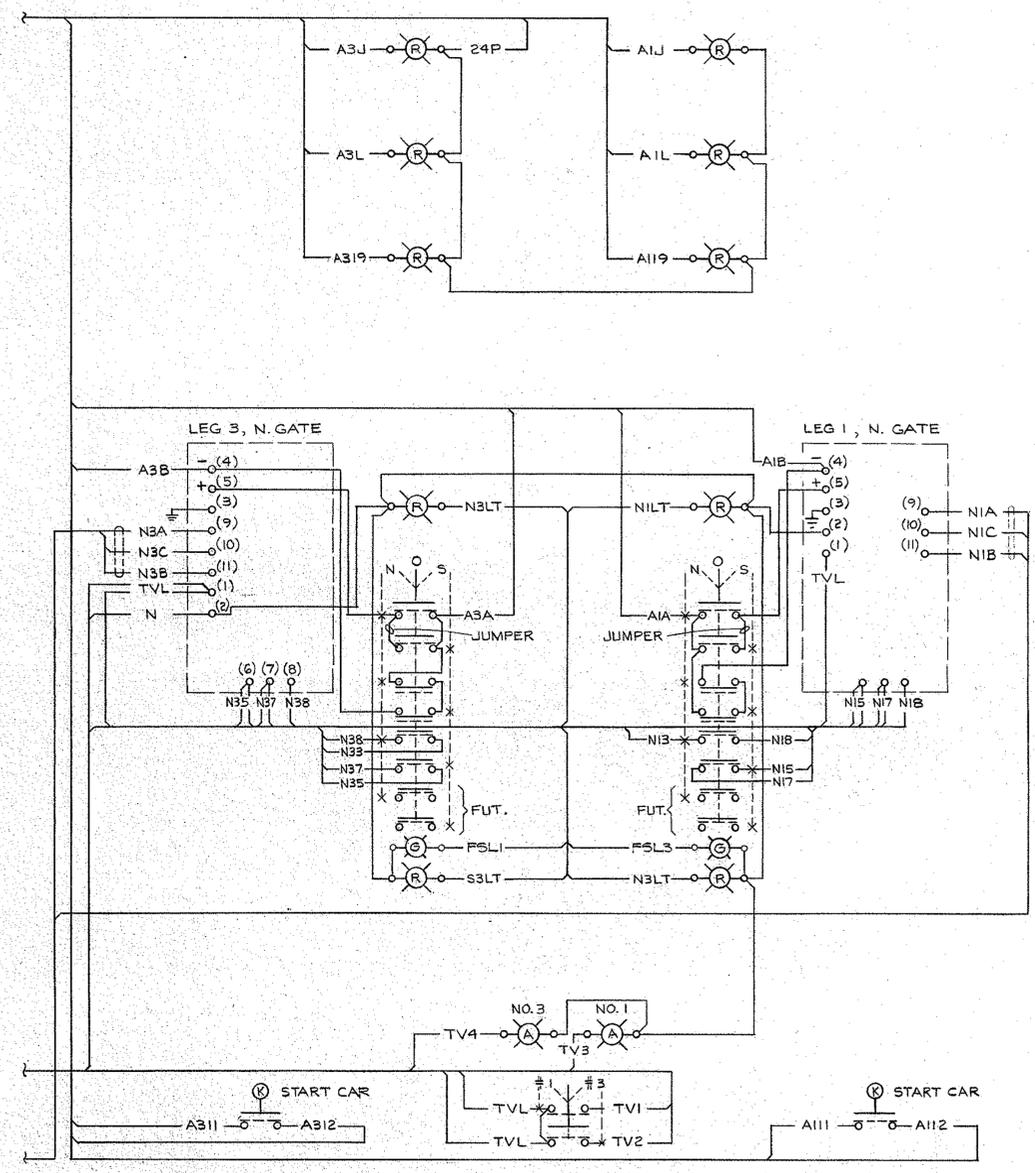


LEG NO. 1 ACTUATORS TERMINAL J.B. (4/5)
N.T.S.



NO.	DATE	REVISION	BY
		CONTINENTAL GRAIN COMPANY Longview, Washington	DES MCW DRN LMK
		1983 HOPPER CAR RECEIVING AUTOMATION	CHK MCW SCALE NONE
			DRAWING NO.
PROJECT NO.	7.27	TERMINAL BLOCK DETAILS	5 of 7
DATE	JUNE, 1983		

8478



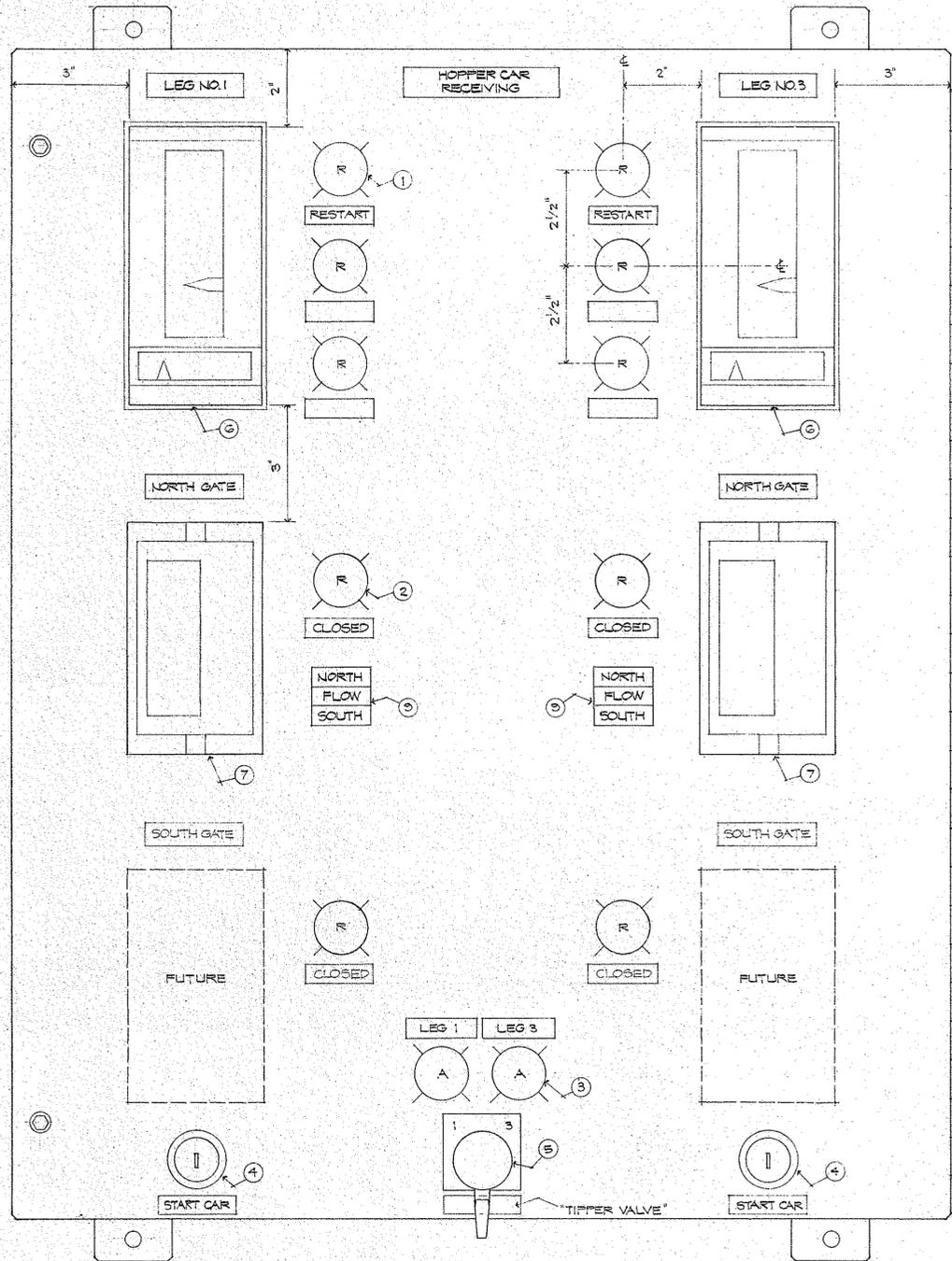
HOPPER CAR CONTROL PANEL DOOR WIRING DIAGRAM (1)
 N.T.S. (REAR VIEW) 7

HOPPER CAR CONTROL PANEL EQUIPMENT SCHEDULE			
ITEM NO.	DESCRIPTION	QUANTITY	REMARKS
①	STAHL, L.E.D. CLUSTER INDICATOR LIGHT. 24 VDC OPERATION. RED. TYPE NO. 8415.	6 EA	
②	SAME AS ① EXCEPT FOR 120 VOLT, A.C. OPERATION.	4 EA	
③	SAME AS ② EXCEPT COLOR TO BE YELLOW.	2 EA	
④	CYLINDER LOCK PUSH-BUTTON UNIT. ALLEN-BRADLEY BULLETIN 800T. CAT. NO. 800T-E11A. LATCHES OR LOCKS IN "OUT" POSITION.	2 EA	
⑤	THREE POSITION SELECTOR SWITCH. SPRING RETURN TO CENTER. WING LEVER OPERATOR. ALLEN-BRADLEY NO. 800T-J631A.	1 EA	
⑥	YOKOGAWA, SLPC CONTROLLER.	2 EA	FURNISHED SEPARATELY BY CONTINENTAL GRAIN COMPANY
⑦	ANDCO MODEL 5000 CONTROLLER.	2 EA (2 FUTURE)	FURNISHED SEPARATELY BY CONTINENTAL GRAIN COMPANY
⑧	24 VDC POWER SUPPLY. 1.2 AMP RATING. COUGAR D.C. POWER SUPPLY COMPANY, MODEL HB24-1.2. PROVIDE WITH OVERVOLTAGE PROTECTION.	1 EA	
⑨	CUTLER-HAMMER SERIES E30 COMBINATION TWO BUTTON OPERATOR WITH ("OFF") RELEASE BARS AND INDICATING LIGHT (TRANSFORMER TYPE). PROVIDE CUSTOM LEGENDS OF: "NORTH" (TOP BAR), "SOUTH" (BOTTOM BAR), AND "FLOW" (LIGHT). LIGHT SHALL BE GREEN. UNIT SHALL BE BASIC OPERATOR #E30GG WITH CONTACTS AS SHOWN.	2 EA	
⑩	OIL-TIGHT, GASKETED PANEL ENCLOSURE. 14 GAUGE BOX WITH 12 GAUGE PANEL. 24-INCH WIDE BY 30-INCH HIGH BY 24-INCHES DEEP. PROVIDE INTERNAL MOUNTING PLATES AND BRACKETS FOR ITEM ⑥. FINISH TO BE SPECIAL COLOR TO MATCH HOWE-RICHARDSON SCALE CO. EQUIPMENT.	1 EA	PAINT SPECS TO BE FURNISHED BY CONTINENTAL GRAIN COMPANY
⑪	ACTION INSTRUMENTS AP4010 D.C. TRANSMITTER. 0-1 MA D.C. INPUT RANGE, 1-5 VDC OUTPUT RANGE. PROVIDE AND MOUNT IN OCTAL SOCKET.	3 EA (1 SPARE)	
⑫	POTTER AND BRUMFIELD SERIES KRP 3PDT, 120 VAC COIL RELAY AND 11-PIN BARRIER TERMINAL SOCKET.	5 EA	
⑬	ENTRELEC SERIES 5000 TERMINAL BLOCKS. TYPE MA/6. FUSE TERMINALS, TYPE 1331CV WITH OPTIONAL FUSE BLOWN INDICATOR.	AS REQUIRED. SEE PLANS.	

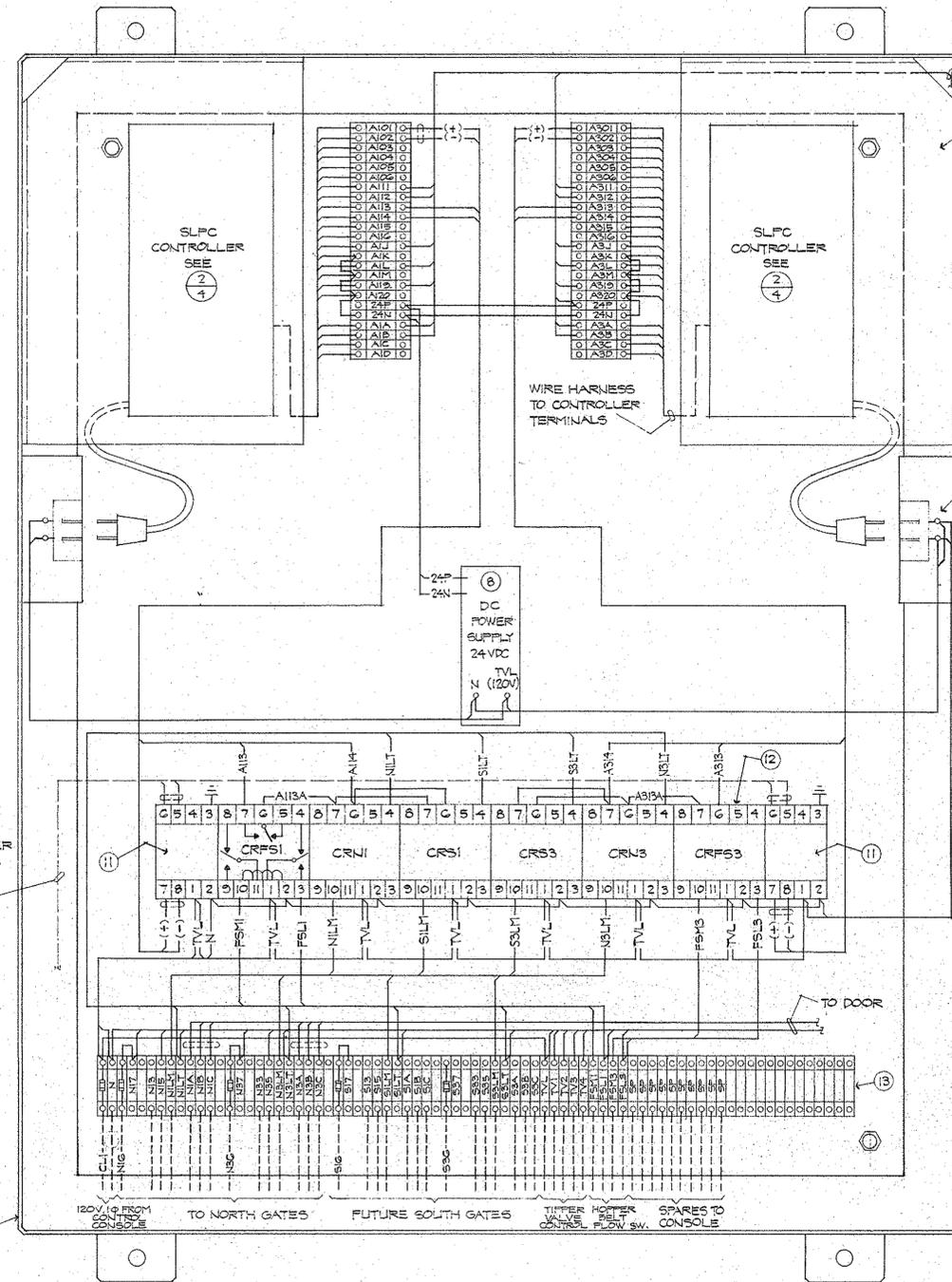


NO.	DATE	REVISION	BY
R&W ENGINEERING, INC. 5223 S.W. Canyon Court Portland, Oregon 97221 Phone: 503-237-5676		CONTINENTAL GRAIN COMPANY Longview, Washington 1983 HOPPER CAR RECEIVING AUTOMATION	DES. MCW DRN. EVM CHK. MCW SCALE NONE DRAWING NO.
PROJECT NO.	7.27	HOPPER CAR CONTROL PANEL (HCCP) WIRING DIAGRAM & EQUIPMENT SCHEDULE	7 OF 7
DATE	JUNE, 1983		

6477



FRONT ELEVATION



INTERIOR ELEVATION (DOOR REMOVED)

TO DOOR

MOUNTING PLATE FOR CONTROLLER, RECESS 1" BEHIND DOOR. (TYPICAL FOR 2)

SINGLE OUTLET IN SHALLOW BOX INSIDE (TYP. FOR 2)

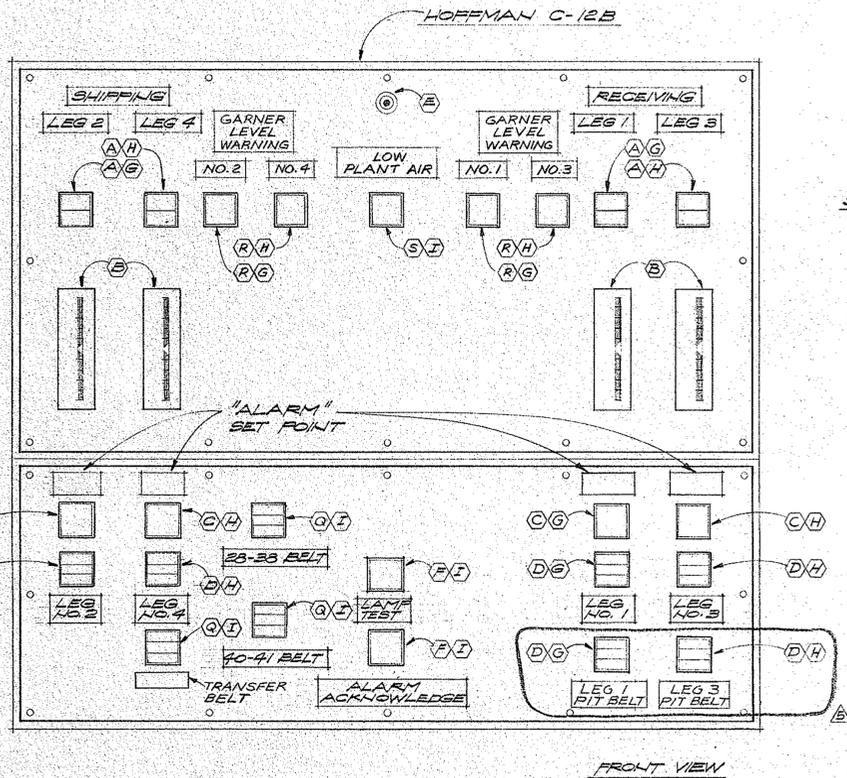
0-1 MA AMMETER SIGNALS FROM CONSOLE

NO.	DATE	REVISION	REVISION	BY
R&W ENGINEERING, INC.		CONTINENTAL GRAIN COMPANY		
6223 S.W. Canyon Court Portland, Oregon 97221 Phone: 503-297-5676		Longview, Washington		
PROJECT NO. 7-27		1983 HOPPER CAR RECEIVING AUTOMATION		
DATE 6-83		HOPPER CAR CONTROL PANEL		SCALE HALF
				DRAWING NO. 6 OF 7

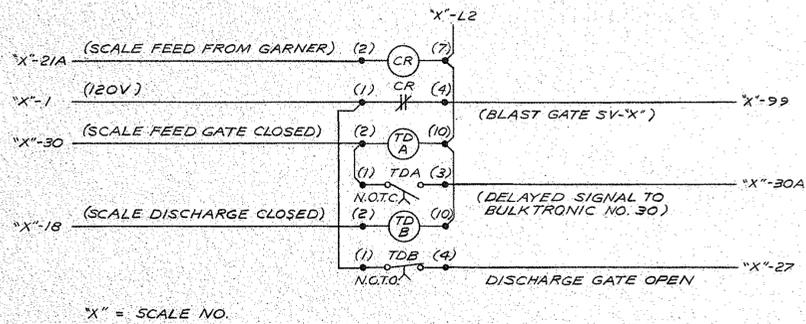


DRAWING SUBJECT: HOPPER CAR RECEIVING AUTOMATION
 DRAWING NO. 6477
 DATE: 6-83
 PROJECT NO. 7-27
 CONTINENTAL GRAIN COMPANY
 LONGVIEW, WASHINGTON
 R&W ENGINEERING, INC.
 6223 S.W. CANYON COURT
 PORTLAND, OREGON 97221
 PHONE: 503-297-5676

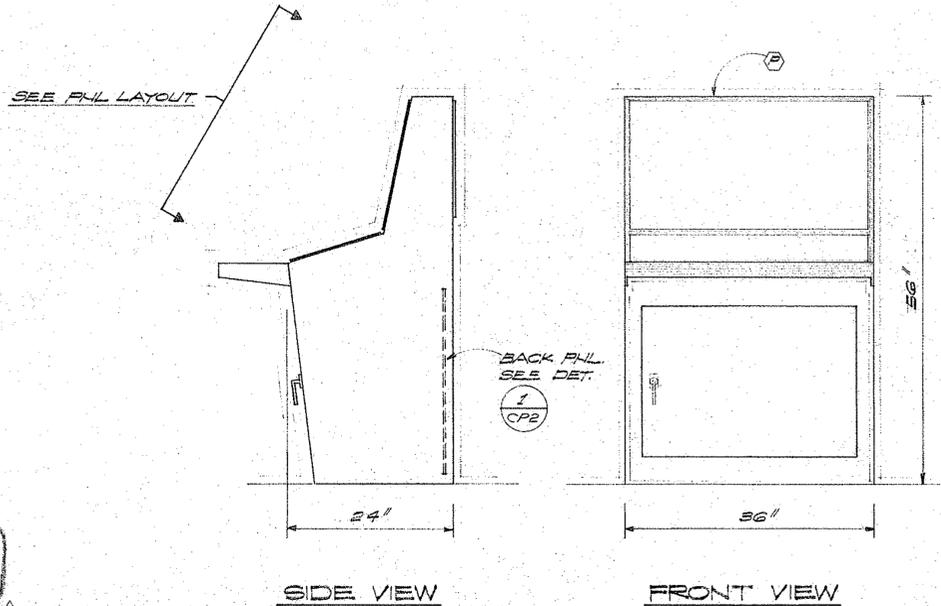
8479



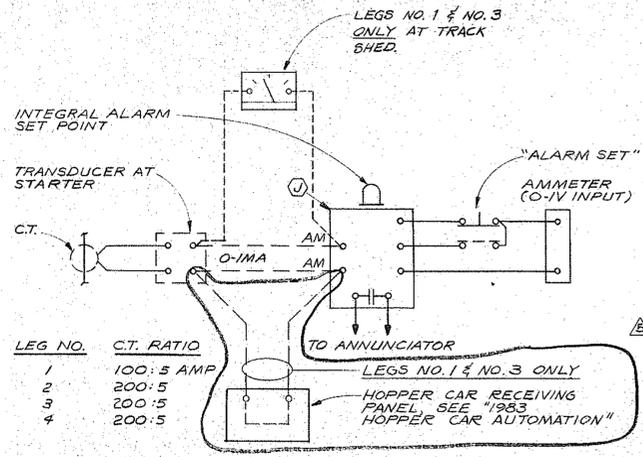
PANEL LAYOUT
SCALE: 1/8" = 1"



SCALE SYSTEM INTERLOCKS
N.T.S. (TYP. FOR 4 EA.)



SCALE: 1/2" = 1'



AMMETER INTERFACE SCHEMATIC
N.T.S.

MATERIAL LIST

ITEM	DESCRIPTION	QUANTITY
(A)	DUAL INDICATING LIGHT UNIT, CUTLER HAMMER NO. E30CA WITH TWO TYPE G LENSES, ONE WITH "MOTION" INSCRIPTION AND ONE WITH "OVERLOAD" INSCRIPTION.	4 EACH
(B)	VERTICAL SELF-CONTAINED CORE MAGNET 1000 OHM/VOLT INDICATING METER. UNITS SHALL BE FOR A FULL SCALE INPUT OF 0-1.0 VOLTS D.C. TWO UNITS (LEGS 1 & 3) SHALL HAVE A SCALE MARKING OF 0-100 AMPERES (AC) AND TWO UNITS (LEGS 2 & 4) SHALL HAVE A SCALE MARKING OF 0-200 AMPERES. UNITS SHALL BE GENERAL ELECTRIC COMPANY CAT. NO. 50-180-013 LALA.	4 EACH
(C)	SINGLE BUTTON OPERATOR, CUTLER HAMMER NO. E30AA WITH NO. KA700 BUTTON & NO. KLA9 CONTACT BLOCK.	4 EACH
(D)	TWO BUTTON OPERATOR WITH INDICATING LIGHT, CUTLER HAMMER CAT. NO. E30ED WITH NO. E30KB130 "START" BUTTON, NO. E30KB231 "STOP" BUTTON AND NO. E30KG11 "MOTOR RUN" INDICATOR LENS.	2 EACH
(E)	ALARM HORN, MALLORY SONALERT, 120 VAC.	1 EACH
(F)	SIMILAR TO (C) EXCEPT WITH NO. KA900 BUTTON.	2 EACH
(G)	CUTLER HAMMER E30KR2 COLLAR (RED).	6 EACH
(H)	CUTLER HAMMER E30KR5 COLLAR (WHITE).	6 EACH
(I)	CUTLER HAMMER E30KR1 COLLAR (BLACK).	4 EACH
(J)	ACTION INSTRUMENTS PROCESS LIMIT ALARM, 0-1 MADIC INPUT, SINGLE SET POINT ALARM TRIP WITH TRANSMITTER OUTPUTS (0-1 VDC). TOP MOUNTED CALIBRATED DIAL FOR SET POINT ADJUSTMENT. UNIT SHALL BE COMPLETE WITH 20 PIN SOCKET. UNIT SHALL BE ACTION INSTRUMENT COMPANY AP1041-3150 W/BTS-20 SOCKET.	5 EACH (1 SPARE)
(K)	POTTER & BRUMFIELD KRP110N RELAY AND OCTAL STYLE SOCKET.	5 EACH (1 SPARE)
(L)	POTTER & BRUMFIELD CDB38-70003 TIME DELAY RELAY AND OCTAL SOCKET.	9 EACH (1 SPARE)
(M)	TERMINAL BLOCKS, SQUARE D COMPANY TYPE GA-6, TRACK MOUNTED.	QUANTITIES AS SHOWN
(N)	RONAN MODEL 12X8SM REMOTE ALARM LOGIC CHASSIS WITH 12 EA. STANDARD "A" SEQUENCE ALARM MODULES, X14D1-PC INTEGRAL CABINET MOUNTED FLASHER AND GENERAL PURPOSE NEMA 1 ENCLOSURE.	1 EACH
(P)	HOFFMAN BULLETIN C-10, CAT. NO. C-12B CONSOLE BODY WITH C-12T TOP AND C-12W WRITING DESK COMPLETE WITH STANDARD 32"x30" SUBPANEL.	1 EACH
(Q)	TWO BUTTON OPERATOR WITH INDICATING LIGHT, CUTLER HAMMER CAT. NO. E30EA WITH NO. E30KB130 "START" BUTTON, NO. E30KB231 "STOP" BUTTON AND NO. E30KG11 "MOTOR RUN" INDICATOR LENS.	3 EACH
(R)	SINGLE INDICATING LIGHT, CUTLER HAMMER TYPE E30 WITH TRANSFORMER TYPE INDICATING LIGHT, 120 VOLT WITH AMBER LENS.	4 EACH
(S)	SAME AS (R) EXCEPT WITH RED LENS	1 EACH

NO.	DATE	REVISION	BY
6-83		ADDED HOPPER CAR PIT BELT CONTROLS & AMM. INTERFACE	MCW
11-80		ADDED TRACK SHED AMMETERS FOR LEGS NO. 1 & 3	MCW
11-80		ADDITIONS OF PLANT AIR PRESSURE ALARM, GARNER LEVEL WARNING INDICATORS	MCW
4-80		AS BUILT REVISIONS	MCW
3-80		ADDED CONTROL FOR TRANSFER BELT	MCW

R&W ENGINEERING
 SCALE BUILDING, SUITE 104
 7000 N. CENTRAL AVENUE
 PORTLAND, OREGON 97221

PROJECT NO. 7.10 (7.27)
 DATE OCT 1978

CONTINENTAL GRAIN COMPANY
 Longview, Washington
 SCALE MODIFICATIONS - ELECTRICAL

CENTRAL CONTROL PANEL - CCP
 PANEL ELEVATIONS AND MATERIAL LIST

DES: MCW
 DRN: AEV
 CHK: MCW
 SCALE AS SHOWN
 DRAWING NO. CP-1 of 2