

FILE

26

10-2532-RR-FED

WHEELING & LAKE ERIE RAILWAY COMPANY

Dan Reinsel
Signal & Communication Supervisor

100 East First Street
Brewster, OH 44613

Tel. 330-767-7202

dreinsel@wlerwy.com

Fax: 330-767-3213

22 January 2011

Public Utilities Commission of Ohio
Attn: Docketing Division 13th Floor
180 East Broad Street
Columbus, OH 43215-3793

Re: Estimates for crossing warning systems at:
Smith Road, DOT 002-071D
* Jones Road, DOT 473-586P
SR103, DOT 001-964F

PUCO

2011 JAN 25 PM 12:35

RECEIVED-DOCKETING DIV

Dear Docketing,

Please file this letter and the accompanying materials in the dockets for the identified crossing projects. As required by the Finding and Order this letter is notice that the W&LE has submitted plans and estimates to the Commission for the above identified project.

Respectfully,

Dan Reinsel

Dan Reinsel

encl.

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Technician SUB Date Processed 1/25/11

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22 Jan. 2011

Ohio Rail Development Commission
Mr. Joe Reinhardt
1980 West Broad Street, Room 2B
Columbus, OH 43223

RECEIVED-DOCKETING DIV
2011 JAN 25 PM 12:36
PUCO

Re: Estimate for Railroad Crossing Warning System at Jones Road, DOT 473-585H

Dear Mr. Reinhardt,

I am providing this estimate for the crossing package and installation at Jones Road. Award of the material package will be the result of a competitive bid; copies of the submitted quotes will be forwarded to your office when they are completed. Installation will be preformed under our continuing construction agreement with CTC LLC.

CTC Managed Services, Material Package, & Installation	\$130,540.30
Fill Materials	\$1,500.00
Fill Material Transport	\$1,100.00
Two Gate Foundations (note 1)	\$1,377.00
Electric Service	\$3,500.00
Insulated Joints	\$4,500.00
Site Preparation (foundations, bores)	\$18,000.00
<u>WLE Direct Labor</u>	<u>\$3,000.00</u>
Estimated Total	\$163,517.30

Please contact me if additional details are required.

Respectfully,

Dan Reinsel

Dan Reinsel

Notes

1: Direct purchase from Fabricated Metals, 60' galvanized gate foundation, \$459 ea.

c: PUCO, Jill Henry
PUCO, George Martin

Wheeling & Lake Erie Railway Co.
Wellington, Ohio - Jones Rd (TWP5) DOT# 473 585H
Project Estimate - CT10154

ENGINEERING					
<i>Description</i>	<i>Qty</i>	<i>UOM</i>	<i>Unit Price</i>		<i>Amount</i>
SIGNAL DESIGNER	40	HR	31.25		\$1,250.00
SIGNAL CHECKER, LEVEL 1	4	HR	36.06		\$144.24
SIGNAL CHECKER, LEVEL 2/FIELD ENGINEER		HR	36.06		\$0.00
SUBTOTAL					\$1,394.24
G&A BURDEN FOR LABOR					\$2,551.46
FIXED FEE					\$394.57
ENGINEERING TOTAL					\$4,340.27

PROJECT MANAGEMENT					
<i>Description</i>	<i>Qty</i>	<i>UOM</i>	<i>Unit Price</i>		<i>Amount</i>
SENIOR SIGNAL ENGINEER	12	HR	\$72.11		\$865.32
PROJECT MANAGER	24	HR	\$31.25		\$750.00
CONSTRUCTION MANAGER	24	HR	\$36.06		\$865.44
ACCOUNTING, LEVEL1	16	HR	\$39.81		\$636.96
ADMINISTRATIVE	4	HR	\$25.48		\$101.92
SUBTOTAL					\$3,219.64
G&A BURDEN FOR LABOR					\$5,891.94
FIXED FEE					\$911.16
PROJECT MANAGEMENT TOTAL					\$10,022.74

CONSTRUCTION LABOR					
<i>Description</i>	<i>Qty</i>	<i>UOM</i>	<i>Unit Price</i>		<i>Amount</i>
SIGNAL FOREMAN	60	HR	\$28.50		\$1,710.00
SIGNALMAN	60	HR	\$19.50		\$1,170.00
SIGNAL HELPER	60	HR	\$19.00		\$1,140.00
SUBTOTAL					\$4,020.00
G&A BURDEN FOR LABOR					\$7,356.60
FIXED FEE					\$1,137.66
CONSTRUCTION LABOR TOTAL					\$12,514.26

CONSTRUCTION LABOR EXPENSES					
<i>Description</i>	<i>Qty</i>	<i>UOM</i>	<i>Unit Price</i>		<i>Amount</i>
EMPLOYEE MEALS (PER DIEM)	19	EA	\$30.00		\$570.00
EMPLOYEE TRAVEL & LODGING	18	EA	\$60.00		\$960.00
SUBTOTAL					\$1,530.00
CONSTRUCTION LABOR EXPENSES TOTAL					\$1,530.00

Wheeling & Lake Erie Railway Co.
Wellington, Ohio - Jones Rd (TWP5) DOT# 473 585H
Project Estimate - CT10154

CONSTRUCTION EQUIPMENT					
<i>Description</i>	<i>Qty</i>	<i>UOM</i>	<i>Unit Price</i>		<i>Amount</i>
TRUCK, PU, 1 TON CREW CAB	60	HR	\$11.78		\$706.80
TRUCK, BOOM, ART, TELESCOPING	20	HR	\$55.95		\$1,119.00
TRAILER, UTILITY, 4 TIRE, 12,000lbs SC410	60	HR	\$7.55		\$453.00
RENTAL EQUIPMENT (FORK LIFT/BACKHOE/SKYTRAK)	1	WK	\$680.00		\$680.00
EQUIPMENT DELIVERY/PICKUP	1	LS	\$150.00		\$150.00
SUBTOTAL					\$3,118.80
CONSTRUCTION EQUIPMENT TOTAL					\$3,118.80

MATERIAL					
<i>Description</i>	<i>Qty</i>	<i>UOM</i>	<i>Unit Price</i>		<i>Amount</i>
HOUSE MATERIAL (SEE ATTACHED DETAIL)	1	LS			\$54,313.47
FIELD MATERIAL (SEE ATTACHED DETAIL)	1	LS			\$32,860.76
HOUSE AND SIGNAL WIRING	1	LS			\$7,500.00
FILL DIRT	10	TN	\$7.50		\$75.00
CONCRETE		YD	\$500.00		\$0.00
COVER ROCK	10	TN	\$26.50		\$265.00
BORING 4"		FT	\$35.00		\$0.00
ELECTRICAL PERMITS		EA	\$3,500.00		\$0.00
METER POLE ASSY AND INSTALLATION		EA	\$2,500.00		\$0.00
FREIGHT & CONTAINER PRICE	1	LS			\$4,000.00
SUBTOTAL					\$98,014.23
MATERIAL TOTAL					\$98,014.23

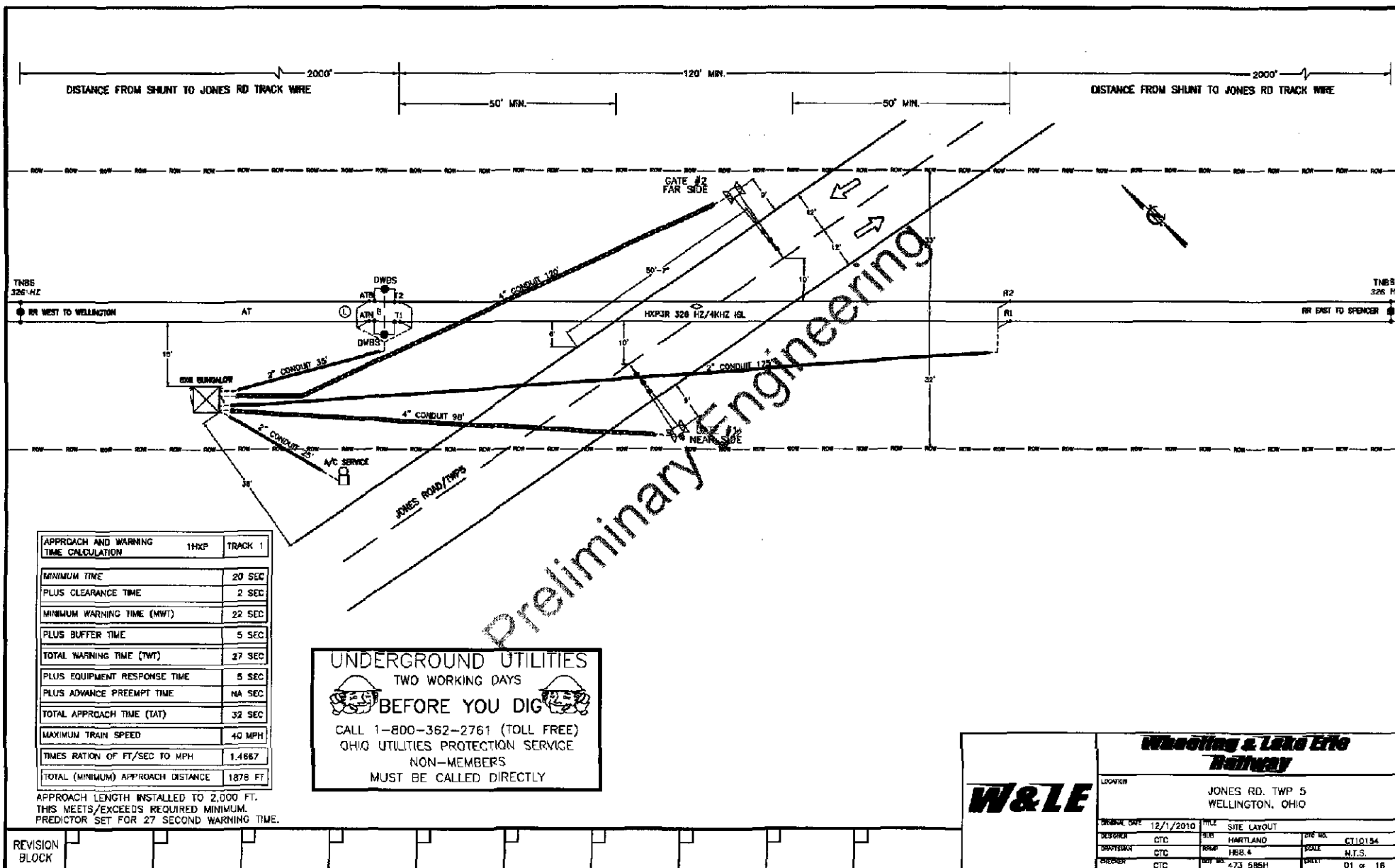
TOTAL PROJECT ESTIMATE	\$130,548.30
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HOUSE MATERIALS

Description	QTY	UOM	MANUFACTURER PN	Unit Price	Total Price
HOUSE 6X6 AL WLE W/2-23" RKS	1	EA	PTMW	\$8,500.00	\$8,500.00
ASSY HXP-3R W/IDK/(2)4KHZ/RSI/RMM	1	EA	250811-2B01	\$20,063.60	\$20,063.60
ASSY MDSA-1A	1	EA	250204-001C	\$301.43	\$301.43
ASSY TSA-1A W/TTA3 ARRESTORS	1	EA	250787-000	\$134.00	\$134.00
3TC DC CONVERTER	1	EA	800-003502-000	\$628.00	\$628.00
5025A TRACK BATTERY REACTOR	1	EA	250141-001	\$180.00	\$180.00
CHARGER 40A 12V CRAGG 40ETC12V	2	EA	017061-203	\$673.27	\$1,346.53
BATTERY GNB 250AH	19	EA		\$643.00	\$12,217.00
TRAY BATTERY 12 X 27" POLYETHYLE	4	EA	7438-01	\$32.96	\$131.82
THERMOSTAT SPDT REMOTE BULB 8A	1	EA	009186-004	\$73.94	\$73.94
RLY DPDT 12VDC 5A OCT	4	EA	007192-032	\$13.22	\$52.89
SCKT RLY 8-PIN OCT SCREW PNLMT	4	EA	132246-001	\$4.48	\$17.91
POWER OFF LIGHT KIT	1	EA		\$116.40	\$116.40
NUT INSULATED HARMON	20	EA	013986-000	\$2.97	\$59.40
SSCCIII DUAL 40A 19" BASE	1	EA	201772-200	\$3,577.46	\$3,577.46
PANEL LTG SURGE SSCC 91170-01	1	EA	201756-015	\$808.75	\$808.75
MICRO DATA ANALYZER II WLE PK	1	EA	072113-100	\$3,450.00	\$3,450.00
MDA CURRENT SENSOR	2	EA		\$220.00	\$440.00
BATTERY GROUND DETECTOR	1	EA	NAS	\$1,250.00	\$1,250.00
WIRE 16AWG/19 TC EPR/PVC BLU	300	FT	012092-002	\$0.22	\$66.00
WIRE 10AWG/19 TC EPR/PVC BLU	350	FT	012092-000	\$0.62	\$215.60
WIRE 6AWG/19THHN BLK	50	FT	012253-000	\$0.79	\$39.60
WIRE 6AWG/19 THHN RED	50	FT	012253-003	\$0.84	\$41.80
WIRE 6AWG/19 THHN GRN	30	FT	012253-002	\$0.75	\$22.44
CABLE RAW 3/14AWG PWR 300V	30	FT	012690-010	\$0.77	\$23.10
RES ADJ WW 15W 5.69 OHM PNLMT	2	EA	002238-101	\$26.09	\$52.18
CONN PLUG L6-15 250V 15A 2P3W	2	EA	132286-001	\$11.53	\$23.06
ASSY 2WAY TERM BLK W/AAR HARD	2	EA	202810-000	\$15.82	\$31.64
ASSEMBLY, 4 POST TERMINALBLOCK	4	EA	203032-000	\$43.48	\$173.93
ASSY TERM STRIP DBL POST 12	2	EA	250094-300	\$19.77	\$39.53
GROUND POST P5-162	4	EA	113047-000	\$25.94	\$103.75
WRENCH AAR TERMINAL	1	EA	095058-001	\$15.28	\$15.28
LABEL, DANGER 240 V, 1.75 X 2.	1	EA	SQS109	\$3.86	\$3.86
NOTIFICATION SIGN HSE	1	EA	HSE SIGN	\$312.55	\$312.55

FIELD MATERIALS

Description	QTY	UOM	MANUFACTURER PN	Unit Price	Total Price
KIT TORQUE WRENCH S/T 070981X	1	EA	2587-01	\$256.38	\$256.38
SO CORD 10/3	60	FT		\$0.90	\$54.00
GATE ARM 16-32' UHI LED LGHTS	2	EA	076045-014	\$613.73	\$1,227.47
DECAL, DOT STRIP	2	EA		\$16.00	\$32.00
ASSY WLE STANDARD FLASHER/GATE W/O ARM, GATE ARM LIGHTS, GATE KEEPER	2	ASSY	CTC	\$12,000.00	\$24,000.00
TAPE MARKER BURIED RR CABLE	1	EA	029989-000	\$21.43	\$21.43
CABLE UG 7 COND #6 AWG SOLID	300	FT	1077-02	\$6.29	\$1,887.60
CABLE UG 7 COND #14 AWG SOLID	300	FT	1023-02	\$2.22	\$666.60
WIRE UG TRK #6 AWG DUPLEX	300	FT	1094-02	\$1.48	\$438.90
PVC CEMENT, 1QT W/BRUSH TOP	1	EA		\$7.15	\$7.15
GRINDING WHEEL 6IN X 1IN	4	EA		\$30.00	\$120.00
BOOTLEG KIT/1 PR TRACKWIRE WLE STANDARD	3	EA	D&W SB7100090	\$42.10	\$126.30
BOND JOINT 5/16" X 7" TAB ERICO #SB-	200	EA	2161-01	\$5.41	\$1,082.40
WIRE #6 SOFT BARE COPPER	30	FT	1436-01	\$0.40	\$11.88
CARTRIDGE SB25 POWDER W/ATTACHMETAL FOR	200	EA	1026-39	\$1.55	\$310.20
ROD 5/8 X 8 NS GRD***USE-02***	6	EA	1357-01	\$14.72	\$88.31
CONNECTION SBNT1-161G ONE SHOTFOR 5/8 IN	6	EA	1029-01	\$6.17	\$37.03
CADWELD TYPE GR 5/8GRDX#6WIRE	6	EA	005755-002	\$7.10	\$42.57
BOND STRAND 8-STR 3/16" TINNEDSBS8TINSUL	100	FT	4133-01	\$1.21	\$121.00
ASSY FSS-1B 267HZ-560HZ	2	EA	250849-001	\$460.00	\$920.00
DUAL WIDE BAND SHUNT	2	EA	250121-003	\$295.00	\$590.00
PLATE SHUNT 24"X26"X1/4" GALV.	2	EA	6193-01	\$67.06	\$134.11
SCREW LAG 3/4" X 6" BLACK GRIMLET PO	8	EA	2000-01	\$0.81	\$6.51
TAPE ELECTRICAL 3M #33+ 3/4" PLASTIC	2	RL	1190-01	\$3.62	\$7.24
DUCTSEAL 1LB BLOCK	10	EA		\$3.30	\$33.00
FOAM INSULATING SPRAY	4	EA		\$12.25	\$49.00
STAPLE GROUND WIRE 1-1/16"X3"	50	EA	113005-000	\$0.32	\$15.95
TIE CABLE .184 X 7.31" HIG TEMSELF LOCKI	100	EA	4125-01	\$0.04	\$4.40
LUG RNG 1/4" 12-10AWG INS BLK	100	EA	032114-008	\$0.01	\$1.10
TAG ST-5 SNAPOUT 11 TAGS/CARD MI# 010301	50	EA	2090-01	\$2.28	\$113.85
STAPLE COPPERWELD 3/8 X 1-3/4 144 IN. RO	50	EA	1148-01	\$0.26	\$13.20
GREASE RUST PREVENTIVE NO OXID*A SPECIAL	1	EA	1906-01	\$9.83	\$9.83
SLEEVE NICO 3/16"-#6 AWG REDUC#2363-J	20	EA	1145-01	\$0.89	\$17.82
CLIP TRACK WIRE RETAINER - ERICO #SBA	8	EA	1118-01	\$1.97	\$15.75
LOCK MASTER	4	EA	MLCK	\$28.41	\$113.65
EMERGENCY SIGN SIGNAL	1	EA	SIG SIGN	\$113.65	\$113.65
FIELD TAG KIT	1	EA	FLDTGKT	\$170.48	\$170.48



Preliminary Engineering

CONSTRUCTION NOTES

- 1.) REMOVE EXISTING DHWS FOR VANDERMARK RD. AND INSTALL NEW 210HZ SHUNT 75' FROM CENTER OF STONE RD.
- 2.) RECALIBRATE AT VANDERMARK RD. FOR NEW TNBS
- 3.) NEAREST ADDRESSES TO THE WEST OF CROSSING IS 8518 STONE ROAD AND TO THE EAST OF CROSSING IS 8523 STONE RD.
- 4.) NEAREST ELECTRIC POLE IS APPROX. 600±; PROVIDER OF SERVICE IS LORAIN MEDINA RURAL ELECTRIC, 2_15_18

REVISION
BLOCK

W&LE

Wheeling & Lake Erie Railway

LOCATION

JONES RD. TWP 5
WELLINGTON, OHIO

DATE 12/1/2010

TITLE SITE LAYOUT NOTES

DESIGNER CTC

SUB

HARTLAND

CTC NO. C110154

DRAWN BY CTC

BRGP

H68.4

SCALE

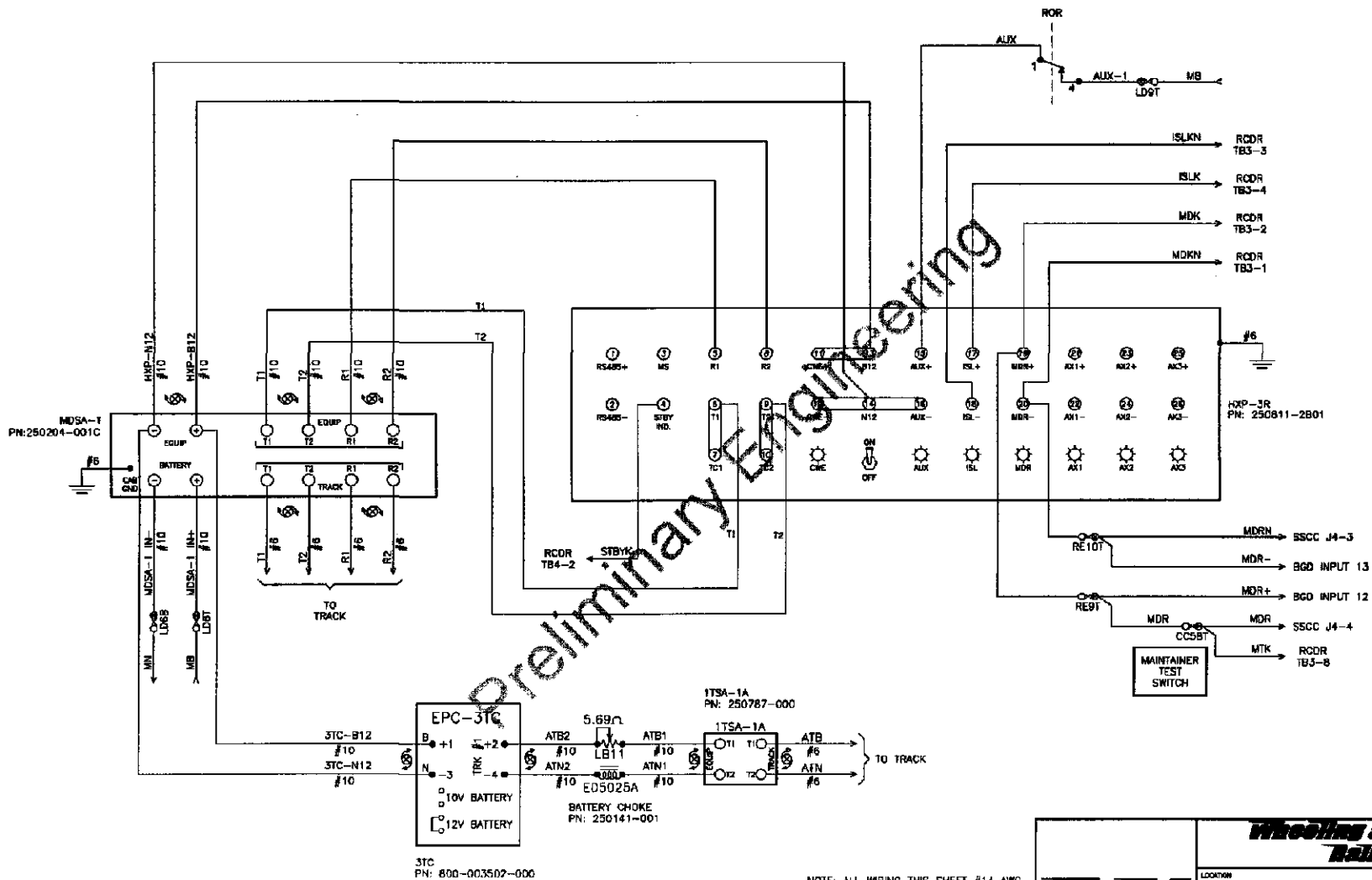
N.T.S.

CHECKED CTC

BOX NO. 473 586H

SHEET

01A of 18



Woodling & Lake Erie Railway			
LOCATION		JONES RD. TWP 5 WELLINGTON, OHIO	
DATE	12/1/2010	BY	CROSSING CONTROL CIRCUITS
DESIGNED	CTC	BY	HARTLAND
DRAWN	CTC	BY	H88.4
CHECKED	CTC	BY	473 555H
		SCALE	N.T.S.
		SHEET	02 of 18

PROGRAM INFORMATION

* = FIELD ADJUSTMENT TO BE MADE ACCORDING
TO THE HXP-3 INSTRUCTION MANUAL.

HXP-3R ADJUSTMENTS

NO.	ADJUSTMENT NAME	TRACK 1	TRACK 2
1	APP. LENGTH	2000'	
2	WARNING TIME	27 SEC	
3	LIA	*	
4	TC	*	
5	MD RESTART	0	

OPTION ADJUSTMENTS

NO.	ABBREVIATION	TRACK 1	TRACK 2
1	TK-ENA	UP	
2	TK FO	328 HZ	
3	CW/MD	C	
4	UN-BI	b (BI)	
5	NBS-C	*	
6	CWMT	DL (80 SEC.)	
7	LOS	DL (15 SEC.)	
8	U-LOS	DL (5 SEC.)	
9	BC	133 *	
10	P-COMP	*	
11	AK1	N/A	
12	AK2	N/A	
13	AK3	N/A	
17	MDR-AX	"dn"	
	OF-TK 1 OR 2	DL (0)	
	CJ-LOS	DL (0)	
	PJ-DET	DL (15)	
	PJ-RX	DL (15)	
18	MD-TMR	DL (10)	
19	MIN-WT	DL (0)	
20	FS-DET	"dn"	
	FS-RX	DL (0)	
	FS-TM	DL (10)	
21	POS-ST	"dn"	
	POS-RX	DL (0)	
	POS-TM	DL (0)	
22	AR-TMR	"dn"	
	AR-RX	DL (0)	
	AR-TM	DL (10)	
47	ATO-RX	UP	
48	PF-ENA	"dn"	

AX ADJUSTMENTS

NO.	ABBREVIATION	AX 1	AX 2	AX 3
1	TK-ABN			
2	OF-TK1			
3	OF-TK2			
4	WT			
5	MD-RST			
6	CW/MD			
7	CL-LOS			
8	PJ-DET			
9	PJ-RX			
10	POS-ST			

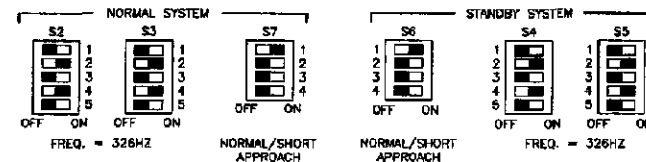
SWITCH INFORMATION

SWITCH	TRACK 1	TRACK 2
MASTER/SLAVE	MASTER	
RSI FAULT JUMPER	0	
RSI-LOS JUMPER	1	
TLM W1 JUMPER	PINS 1-2	
TLM W2 JUMPER	PINS 1-2	
TLM W3 JUMPER	PINS 2-3	
MINUTE TIMEOUT	5 MIN	
CW/MD	CW	
STANDBY/AUTO/NORMAL	AUTO	

NOTE: DL= DEFAULT LEVEL
NA= NON APPLICABLE

SHUNT RECORDS

APPROACH 1		NO SHUNT		100% SHUNT		50% SHUNT		LIA ADDED
		RX	PHASE	RX	PHASE	RX	PHASE	
Track 1	Normal							
Track 1	Standby							
Track 2	Normal							
Track 2	Standby							
APPROACH 2								
Track 1	Normal							
Track 1	Standby							
Track 2	Normal							
Track 2	Standby							



NOTES FOR S6 AND S7:

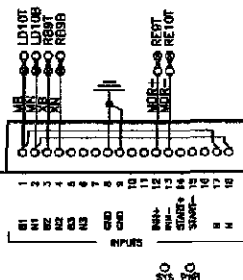
- 1) ACTUATOR 1 SELECTS NORMAL APPROACH WHEN SET TO ON POSITION.
- 2) WITH ACTUATOR 1 IN OFF POSITION ACTUATOR 2 SELECTS SHORT APPROACH WHEN OFF AND SELECTS VERY SHORT WHEN ON.
- 3) ACTUATOR 3 AND 4 RESERVED FOR FUTURE USE.

		Wheeling & Lake Erie Railway	
		LOCATION JONES RD. TWP 5 WELLINGTON, OHIO	
REVISION BLOCK	DATE 12/1/2010	TITLE HXP PROGRAM INFORMATION	DRAWN CTC
CHECKED CTC	SUB HARTLAND	SCALE N.T.S.	SHEET 03 of 16



The diagram illustrates the SHOTTERY GROUND DETECTOR system. It includes a power section with ON and OFF controls. The input section features a 12-pin connector with pins 1 through 12 labeled: 12, 11, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1. The output section has a 12-pin connector with pins 1 through 12 labeled: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12. The internal components are organized into several functional blocks: 1. POWER: Includes a power switch and a power supply unit. 2. INPUTS: A 12-pin connector for external inputs. 3. OUTPUTS: A 12-pin connector for external outputs. 4. SHOTTERY GROUND DETECTOR: The main processing unit, which includes a NORTH AMERICAN SIGNAL and JACKSONVILLE, FLORIDA. 5. START, LAMP TEST, and PAUSE RESET: Control buttons for the detector. 6. B1C, B2C, B3C, and B4C: Internal components or indicators. 7. B1F, B2F, B3F, and B4F: Internal components or indicators. 8. B1, B2, B3, B4, B5, B6, B7, B8, B9, B10, B11, B12: A series of internal components or indicators. 9. B13, B14, B15, B16, B17, B18, B19, B20, B21, B22, B23, B24, B25, B26, B27, B28, B29, B30, B31, B32, B33, B34, B35, B36, B37, B38, B39, B40, B41, B42, B43, B44, B45, B46, B47, B48, B49, B50, B51, B52, B53, B54, B55, B56, B57, B58, B59, B60, B61, B62, B63, B64, B65, B66, B67, B68, B69, B70, B71, B72, B73, B74, B75, B76, B77, B78, B79, B80, B81, B82, B83, B84, B85, B86, B87, B88, B89, B90, B91, B92, B93, B94, B95, B96, B97, B98, B99, B100, B101, B102, B103, B104, B105, B106, B107, B108, B109, B110, B111, B112, B113, B114, B115, B116, B117, B118, B119, B120, B121, B122, B123, B124, B125, B126, B127, B128, B129, B130, B131, B132, B133, B134, B135, B136, B137, B138, B139, B140, B141, B142, B143, B144, B145, B146, B147, B148, B149, B150, B151, B152, B153, B154, B155, B156, B157, B158, B159, B160, B161, B162, B163, B164, B165, B166, B167, B168, B169, B170, B171, B172, B173, B174, B175, B176, B177, B178, B179, B180, B181, B182, B183, B184, B185, B186, B187, B188, B189, B190, B191, B192, B193, B194, B195, B196, B197, B198, B199, B200, B201, B202, B203, B204, B205, B206, B207, B208, B209, B210, B211, B212, B213, B214, B215, B216, B217, B218, B219, B220, B221, B222, B223, B224, B225, B226, B227, B228, B229, B230, B231, B232, B233, B234, B235, B236, B237, B238, B239, B240, B241, B242, B243, B244, B245, B246, B247, B248, B249, B250, B251, B252, B253, B254, B255, B256, B257, B258, B259, B260, B261, B262, B263, B264, B265, B266, B267, B268, B269, B270, B271, B272, B273, B274, B275, B276, B277, B278, B279, B280, B281, B282, B283, B284, B285, B286, B287, B288, B289, B290, B291, B292, B293, B294, B295, B296, B297, B298, B299, B300, B301, B302, B303, B304, B305, B306, B307, B308, B309, B310, B311, B312, B313, B314, B315, B316, B317, B318, B319, B320, B321, B322, B323, B324, B325, B326, B327, B328, B329, B330, B331, B332, B333, B334, B335, B336, B337, B338, B339, B340, B341, B342, B343, B344, B345, B346, B347, B348, B349, B350, B351, B352, B353, B354, B355, B356, B357, B358, B359, B360, B361, B362, B363, B364, B365, B366, B367, B368, B369, B370, B371, B372, B373, B374, B375, B376, B377, B378, B379, B380, B381, B382, B383, B384, B385, B386, B387, B388, B389, B390, B391, B392, B393, B394, B395, B396, B397, B398, B399, B400, B401, B402, B403, B404, B405, B406, B407, B408, B409, B410, B411, B412, B413, B414, B415, B416, B417, B418, B419, B420, B421, B422, B423, B424, B425, B426, B427, B428, B429, B430, B431, B432, B433, B434, B435, B436, B437, B438, B439, B440, B441, B442, B443, B444, B445, B446, B447, B448, B449, B450, B451, B452, B453, B454, B455, B456, B457, B458, B459, B460, B461, B462, B463, B464, B465, B466, B467, B468, B469, B470, B471, B472, B473, B474, B475, B476, B477, B478, B479, B480, B481, B482, B483, B484, B485, B486, B487, B488, B489, B490, B491, B492, B493, B494, B495, B496, B497, B498, B499, B500, B501, B502, B503, B504, B505, B506, B507, B508, B509, B510, B511, B512, B513, B514, B515, B516, B517, B518, B519, B520, B521, B522, B523, B524, B525, B526, B527, B528, B529, B530, B531, B532, B533, B534, B535, B536, B537, B538, B539, B540, B541, B542, B543, B544, B545, B546, B547, B548, B549, B550, B551, B552, B553, B554, B555, B556, B557, B558, B559, B560, B561, B562, B563, B564, B565, B566, B567, B568, B569, B570, B571, B572, B573, B574, B575, B576, B577, B578, B579, B580, B581, B582, B583, B584, B585, B586, B587, B588, B589, B590, B591, B592, B593, B594, B595, B596, B597, B598, B599, B600, B601, B602, B603, B604, B605, B606, B607, B608, B609, B610, B611, B612, B613, B614, B615, B616, B617, B618, B619, B620, B621, B622, B623, B624, B625, B626, B627, B628, B629, B630, B631, B632, B633, B634, B635, B636, B637, B638, B639, B640, B641, B642, B643, B644, B645, B646, B647, B648, B649, B650, B651, B652, B653, B654, B655, B656, B657, B658, B659, B660, B661, B662, B663, B664, B665, B666, B667, B668, B669, B670, B671, B672, B673, B674, B675, B676, B677, B678, B679, B680, B681, B682, B683, B684, B685, B686, B687, B688, B689, B690, B691, B692, B693, B694, B695, B696, B697, B698, B699, B700, B701, B702, B703, B704, B705, B706, B707, B708, B709, B710, B711, B712, B713, B714, B715, B716, B717, B718, B719, B720, B721, B722, B723, B724, B725, B726, B727, B728, B729, B730, B731, B732, B733, B734, B735, B736, B737, B738, B739, B740, B741, B742, B743, B744, B745, B746, B747, B748, B749, B750, B751, B752, B753, B754, B755, B756, B757, B758, B759, B760, B761, B762, B763, B764, B765, B766, B76

NOTE: ALL WIRING THIS SHEET $\frac{3}{4}$ 14 AWG
UNLESS NOTED OTHERWISE.



SW1 CURRENT 1/10 MA

POSITION	1	2	3	4	5	6	7
CLOSED							
OPEN							

(2 MA)

SWITCH VALUES CLOSED
POSITION (BINARY)

- SW1 = 1
SW2 = 2
SW3 = 4
SW4 = 8
SW5 = 16
SW6 = 32
SW7 = 64
SW8 = 128

SW1 CURRENT 1/10 MA

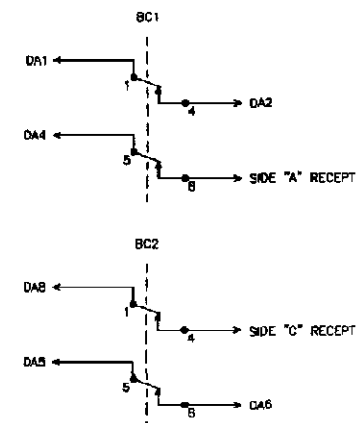
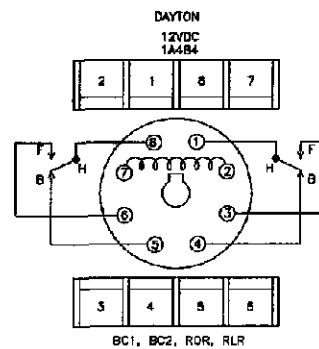
	POSITION	1	2	3	4	5	6	7	8
CLOSED									
OPEN									

(12 HOURS)

← DAYS
← HOURS

SWITCH VALUES CLOSED
POSITION (BINARY)

- ```
SW1 = 1
SW2 = 2
SW3 = 4
SW4 = 8
SW5 = 16
SW6 = 32
SW7 = 64
SW8 OPEN-HOUR CLOSED-DAYS
```



CHANGE FROM TYPICAL: N/A

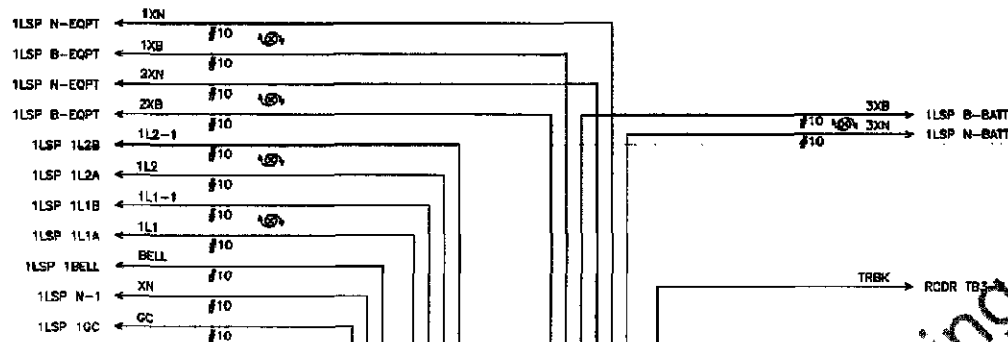
**REVISION:**

**W&L**

## Whooling & Lake Erie Railway

|          |                                     |
|----------|-------------------------------------|
| LOCATION | JONES RD. TWP 5<br>WELLINGTON, OHIO |
|----------|-------------------------------------|

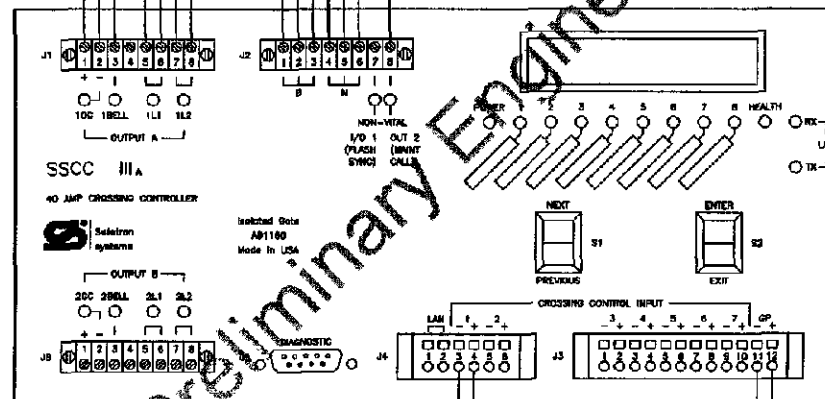
|               |           |         |          |
|---------------|-----------|---------|----------|
| ORIGINAL DATE | 12/1/2010 | TITLE   | BGD      |
| DESIGNER      | CYC       | SUB     | HARTLAND |
| DRAWN         | CYC       | RRFP    | HRB.4    |
| CHECKER       | CYC       | DOT NO. | 473 585H |
|               |           | ETC NO. | CT10154  |
|               |           | SCALE   | N.T.S.   |
|               |           | SHEET   | 05 OF 18 |



MCF-Basic MCF Revision F CRC=1D240612

| PROGRAM                   |          |
|---------------------------|----------|
| FLASHER RATE:             | 50 FPM   |
| GATE DELAY 1 TIMER:       | 4 SEC.   |
| GATE DELAY 2 TIMER:       | 4 SEC.   |
| BELL-ON GATE RISING:      | ON       |
| MDR ACTIVATION TIMER:     | 0 SEC.   |
| ENABLE INPUTS:            | 1 THRU 1 |
| PRG ENABLED OUTPUTS: AMB: | A        |
| TIME:                     |          |
| DATE:                     |          |
| DAYLIGHT SAVINGS:         | DISABLED |
| PASSWORD:                 | DISABLED |
| SET TO DEFAULT:           | N/A      |

| CONFIGURE                 |              |
|---------------------------|--------------|
| INPUT XLOS:               | 0            |
| ATCS ADDRESS:             | 700000000000 |
| LOW BATTERY:              | DISABLED     |
| AUX I/O:                  | NV OUTPUT    |
| DETECT LAMP NEUTRAL WIRE: | NO           |



INCORRECT POLARITY WILL RESULT IN SEVERE DAMAGE TO THE CONTROLLER UNIT.

**WARNING**  
IF B OR N ARE FULLY OR PARTIALLY REMOVED, SIGNALS AND/OR GATES MAY NOT OPERATE AS INTENDED. TAKE ALTERNATE MEANS TO WARN VEHICULAR TRAFFIC AND EMPLOYEES.

NOTE: ALL WIRING THIS SHEET #14 AWG UNLESS NOTED OTHERWISE.

|                          |                   |                                            |  |
|--------------------------|-------------------|--------------------------------------------|--|
|                          |                   | <b>Wheeling &amp; Lake Erie Railway</b>    |  |
|                          |                   | LOCATION: JONES RD. TWP 5 WELLINGTON, OHIO |  |
| ORIGINAL DATE: 12/1/2010 | TITLE: SSCC IIIA  | DESIGNED BY: HARTLAND                      |  |
| DRAWN BY: CTC            | CHECKED BY: HBB,4 | DATE: N.T.S.                               |  |
| DATE: 473 585H           | SHEET: 06 of 18   | CHANGE FROM PREVIOUS:                      |  |





| CONTACT | CLOSED  | FUNCTION             |
|---------|---------|----------------------|
| 6       | 45°-90° | POWER DOWN           |
| 7       | 0°-89°  | POWER UP             |
| 8       | 83°-90° | FLASHING LIGHT       |
| 9       | 5°-90°  | BELL (NOT USED)      |
| 10      | 0°-5°   | HORIZONTAL SNUB      |
| 11      | 0°-5°   | GATE DOWN INDICATION |

**GATE #1**

**TO MAST MOUNTED FLASHERS  
(SHEET 10 FOR DETAILS)**

**RELAY PANEL TERMINAL LAYOUT**

**TEST BANK**

**RELAY PANEL**

**MOTOR**

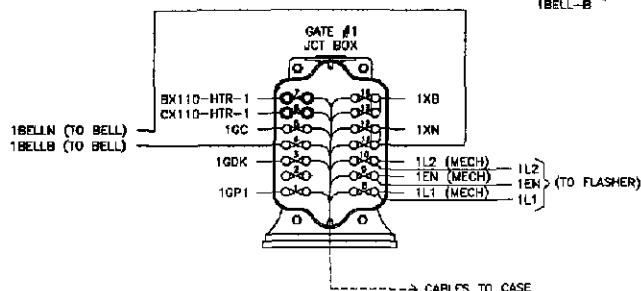
**TI-T12 CONNECTION POINTS ON PC BOARD**

**NOTE 1:** REFER TO SHEET 10 FOR FUSE BLOCK & GATE ARM LIGHT WIRING.

**MODEL S-40 GATE WIRING DIAGRAM**

S-40 PN: 074000-W00172

INCLUDES: ZINC PLATED HARDWARE PKG., MAINT. PANEL & SWITCH, CO CONTACT, 115V HEATER AND GATE ARM FUSE BLOCK

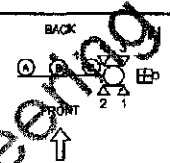
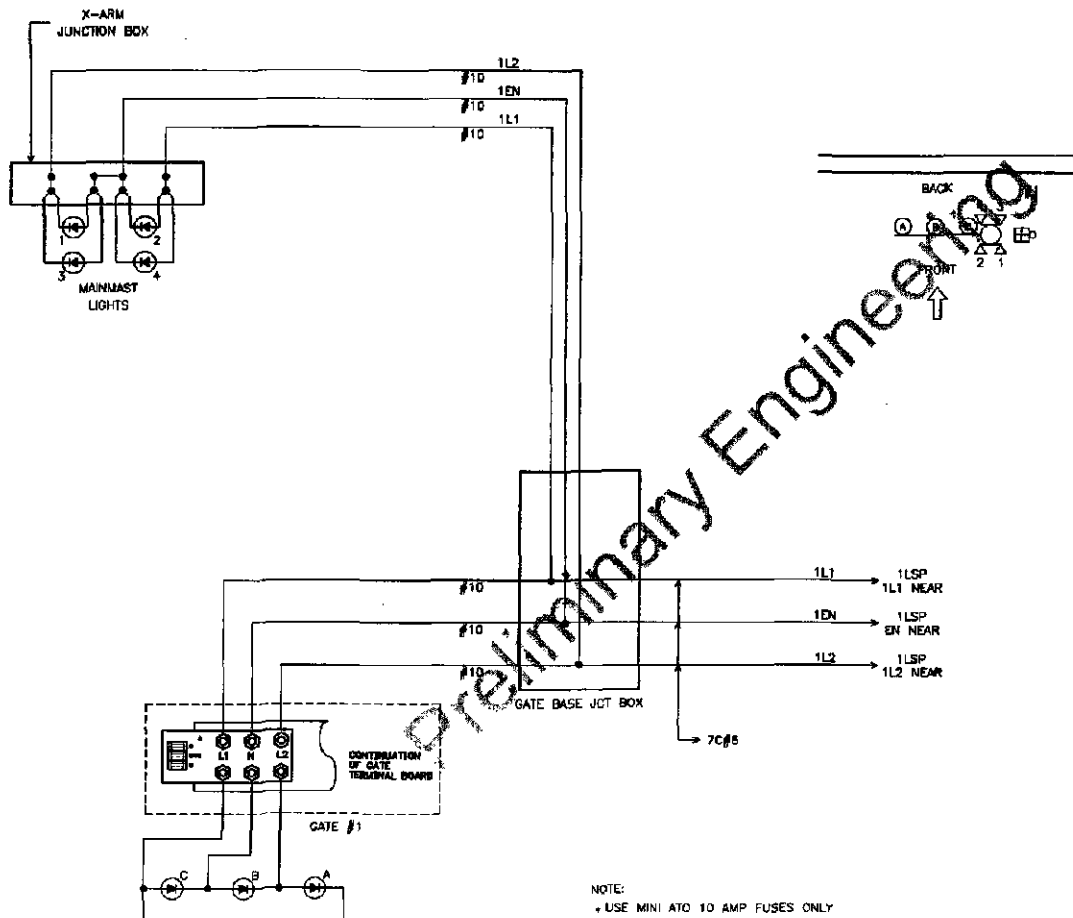


NOTE 1: REFER TO SHEET 10 FOR FUSE  
BLOCK & GATE ARM LIGHT WIRING.

S-40 PN: 074000-W00172  
INCLUDES: ZINC PLATED HARDWARE PKG., MAINT. PANEL  
& SWITCH, GD CONTACT, 115W HEATER AND GATE ARM  
FUSE BLOCK

|                                                                                       |                                                 |                                                                 |                                           |
|---------------------------------------------------------------------------------------|-------------------------------------------------|-----------------------------------------------------------------|-------------------------------------------|
|  | <b>Wheeling &amp; Lake Erie<br/>Railway</b>     |                                                                 |                                           |
|                                                                                       | LOCATION<br>JONES RD. TWP 5<br>WELLINGTON, OHIO |                                                                 |                                           |
| ORIGINAL DATE<br>12/1/2010                                                            | WRL<br>SUB<br>DIST. DIV.<br>CREATOR             | GATE #1 MECHANISM (NEAR SIDE)<br>HARTLAND<br>1600.4<br>473 585H | CTC NO.<br>CT1015+<br>N.T.S.<br>DRG OF 18 |

# GATE #1

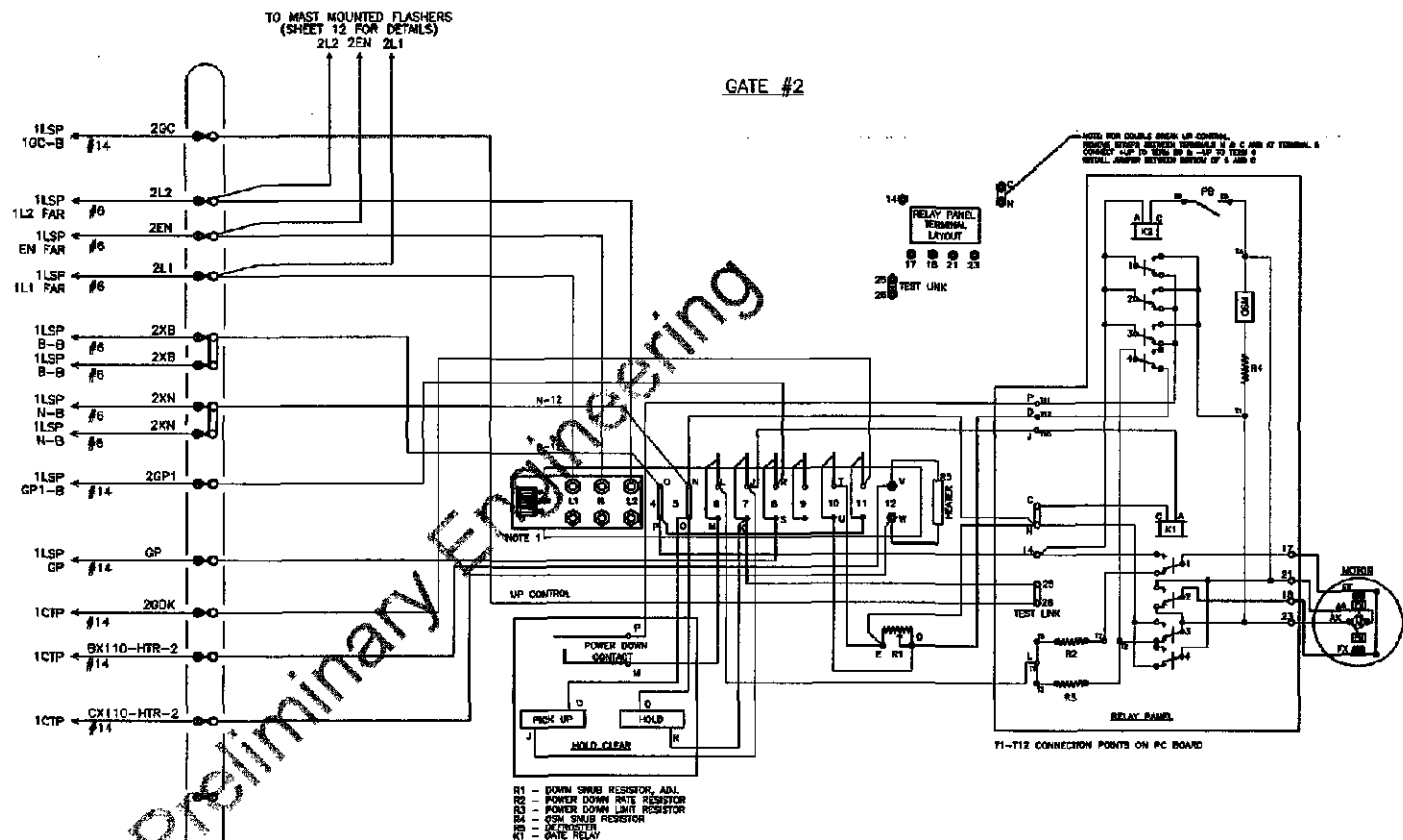
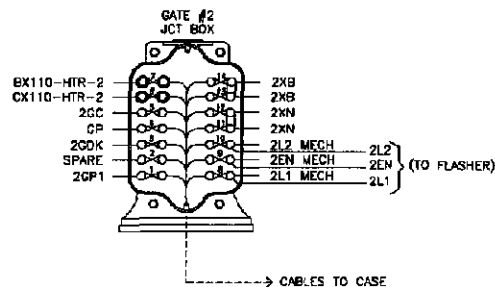


|                          |                                   |                                               |                 |
|--------------------------|-----------------------------------|-----------------------------------------------|-----------------|
| <b>W&amp;LE</b>          |                                   | <b>Wheeling &amp; Lake Erie<br/>Railway</b>   |                 |
|                          |                                   | LOCATION: JONES RD. TWP 5<br>WELLINGTON, OHIO |                 |
| ORIGINAL DATE: 12/1/2010 | TITLE: GATE #1 LIGHTS (NEAR SIDE) | DESIGNED BY: HARTLAND                         | DTD NO: CT10154 |
| DRAWN BY: HSB            | SCALE: N.T.S.                     | CHECKED BY: 473 SSS                           | SHEET: 10 of 15 |

SAFETRAN MODEL S-40  
GATE MECHANISM

| CONTACT | CLOSED  | FUNCTION             |
|---------|---------|----------------------|
| 6       | 45°-90° | POWER DOWN           |
| 7       | 0°-89°  | POWER UP             |
| 8       | 63°-90° | FLASHING LIGHT       |
| 9       | 5°-90°  | BELL (NOT USED)      |
| 10      | 0°-5°   | HORIZONTAL SNUB      |
| 11      | 0°-5°   | GATE DOWN INDICATION |

WITH GATE IN UP POSITION

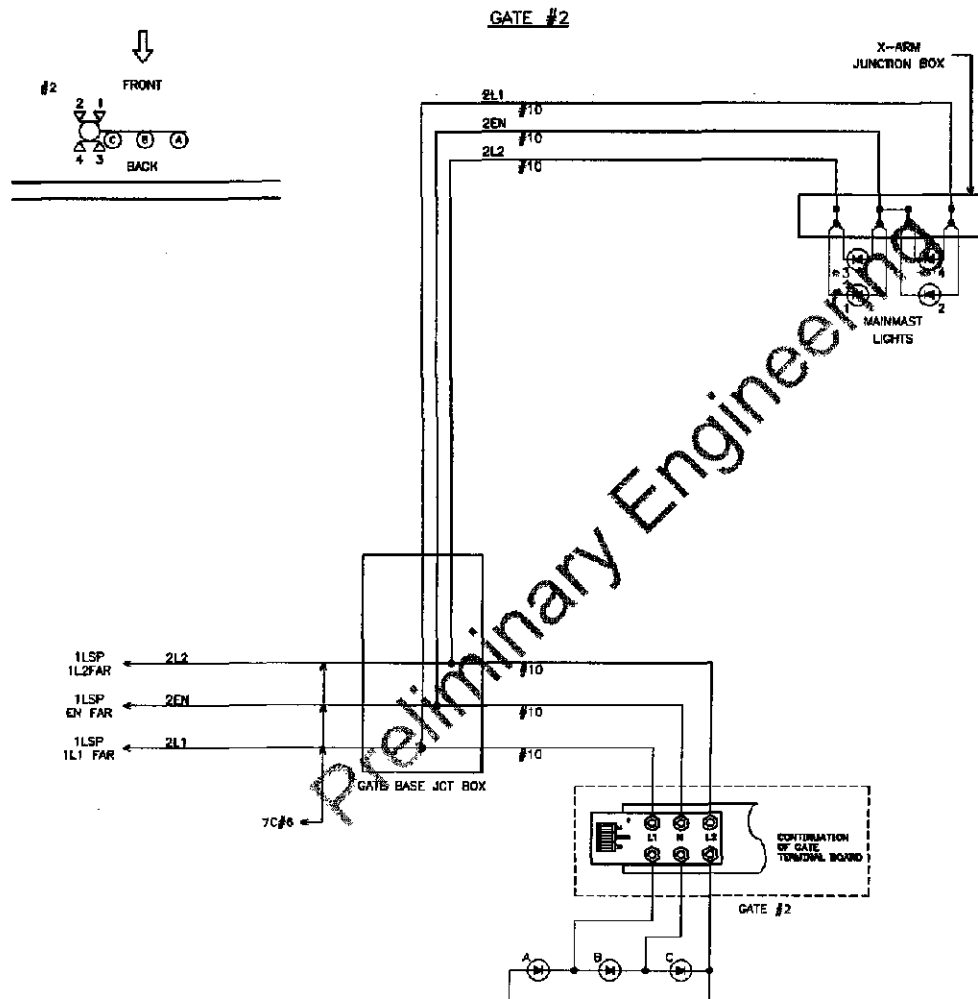


NOTE 1: REFER TO SHEET 12 FOR FUSE  
BLOCK & GATE ARM LIGHT WIRING.

MODEL S-40 GATE WIRING DIAGRAM

S-40 PN: 074000-W00172  
INCLUDES: ZINC PLATED HARDWARE PKG., MAINT. PANEL  
& SWITCH, GO CONTACT, 115V HEATER AND GATE ARM  
FUSE BLOCK

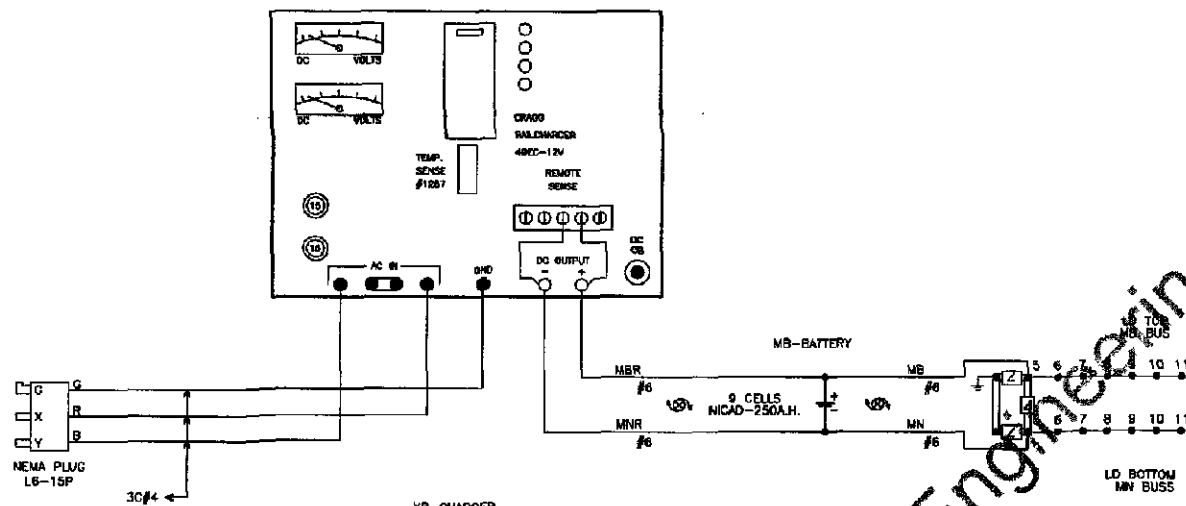
|                                                                                  |                                                                                                         |                                                      |                                               |
|----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|------------------------------------------------------|-----------------------------------------------|
|                                                                                  |                                                                                                         | <b>Whooling &amp; Lake Erie<br/>Railway</b>          |                                               |
|                                                                                  |                                                                                                         | LOCATION: JONES RD. TWP 5<br>WELLINGTON, OHIO        |                                               |
| ORIGINAL DATE: 12/1/2010<br>DESIGNED BY: CJC<br>DRAWN BY: CJC<br>CHECKED BY: CJC | TITLE: GATE #2 MECHANISM (FAR SIDE)<br>DESIGNED BY: HARTLAND<br>DRAWN BY: HEB.4<br>CHECKED BY: 473 555H | DTD NO.: CT10154<br>SCALE: N.T.S.<br>SHEET: 11 of 18 | DATE: 12/1/2010<br>BY: HARTLAND<br>FOR: HEB.4 |



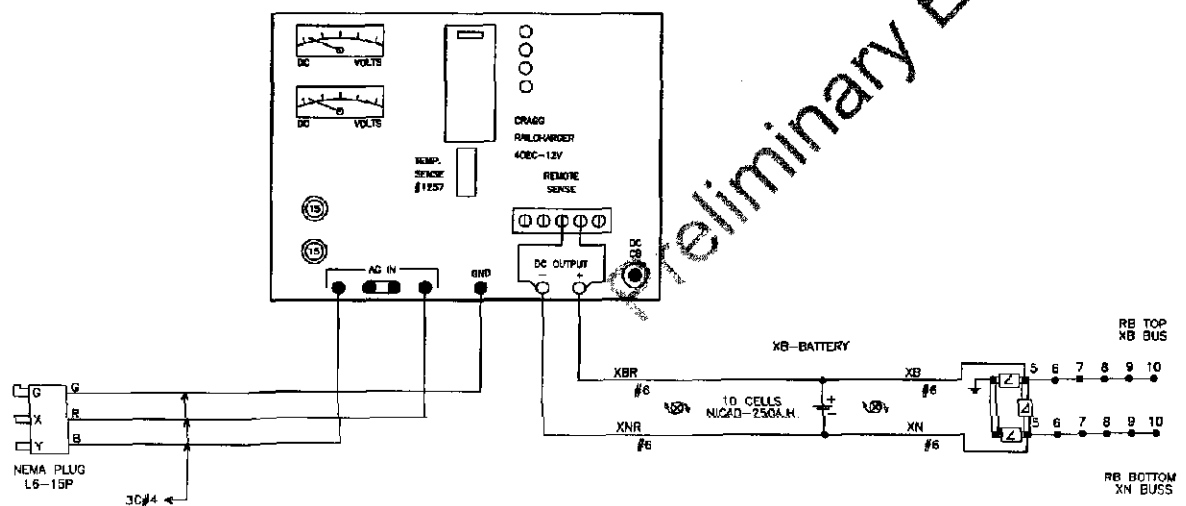
NOTE:  
• USE MINI ATO 10 AMP FUSES ONLY

|                 |           |                                               |                           |
|-----------------|-----------|-----------------------------------------------|---------------------------|
| <b>W&amp;LE</b> |           | <b>Wheeling &amp; Lake Erie<br/>Railway</b>   |                           |
|                 |           | LOCATION: JONES RD. TWP 5<br>WELLINGTON, OHIO |                           |
| DESIGN DATE     | 12/1/2010 | TYPE                                          | GATE #2 LIGHTS (FAR SIDE) |
| DESIGNER        | CTC       | SUB                                           | HARTLAND                  |
| DRAWN BY        | CTC       | REVISION                                      | HSB-4                     |
| CHECKED BY      | CTC       | DATE                                          | 4/3/2011                  |
|                 |           | SCALE                                         | N.T.S.                    |
|                 |           | SHEET                                         | 12 of 18                  |

# MB-CHARGER



# XB-CHARGER



## BATTERY BUSS DETAILS

|              |    |              |
|--------------|----|--------------|
| SPARE        | 12 | RCDR TB4-1   |
| BGD INPUT 1  | 11 | BGD INPUT 2  |
| ROR 4        | 10 | ROR 7        |
| RCDR TB6-1   | 9  | RCDR TB6-2   |
| RCDR TB1-4   | 8  | RCDR TB1-3   |
| MDSA-1 BATT+ | 7  | MDSA-1 BATT- |
| MB BATT+     | 6  | MN BATT-     |
| MB BATT-     | 5  |              |

MB BUSS  
(TOP)

LD

MN BUSS  
(BOTTOM)

## BATTERY BUSS DETAILS

|             |    |             |
|-------------|----|-------------|
| DOOR SWITCH | 10 | SSCC J3-11  |
| BGD INPUT 3 | 9  | BGD INPUT 4 |
| RCDR TB1-2  | 8  | RCDR TB1-1  |
| SPARE       | 7  | RCDR TB4-15 |
| 1LSP B-BATT | 6  | 1LSP N-BATT |
| XB BATT+    | 5  | XN BATT-    |

XB BUSS  
(TOP)

RB

XN BUSS  
(BOTTOM)

|                 |           |                                             |                 |
|-----------------|-----------|---------------------------------------------|-----------------|
| <b>W&amp;LE</b> |           | <b>Wheeling &amp; Lake Erie<br/>Railway</b> |                 |
| LOCATION        |           | JONES RD. TWP 5<br>WELLINGTON, OHIO         |                 |
| ISSUAL DATE     | 12/1/2010 | TITLE                                       | BATTERY CHARGER |
| DESIGNER        | CTC       | SUB                                         | HARTLAND        |
| DRAWN           | CTC       | SCALE                                       | HBB 4           |
| CHECKED         | CTC       | BY                                          | MA 473 585H     |
| SCALE           |           | 1"=2'                                       |                 |
| SHEET           |           | 13 of 18                                    |                 |

REVISION  
BLOCK

SOURCE FROM TYPICAL N









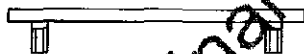
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65

NEHA 18-18W  
RECEPTACLE

NEHA 18-18W  
RECEPTACLE

SIDE 'C'

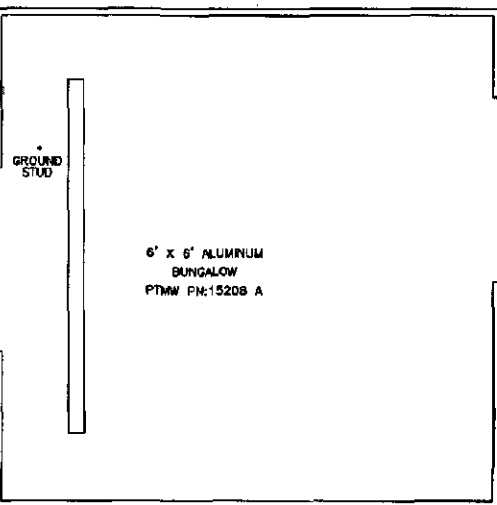
MAINTAINER  
TEST  
SWITCH  
ON



10 BATTERY  
10 CELLS  
50L 250  
280 A.H.

BATTERY TRAY

THIS SIDE TO TRACKS  
SIDE "C"



GROUND  
STUD

6' X 6' ALUMINUM  
BUNGALOW  
PTWW PN:15208 A

SIDE "A"  
THIS SIDE TO FIELD

SIDE "D"

SIDE "B"

**W&LE**

**Wheeling & Lake Erie  
Railway**

LOCATION JONES RD. TWP 5  
WELLINGTON, OHIO

|                |                  |                 |
|----------------|------------------|-----------------|
| DATE 12/1/2010 | FILE             | SIDE "C"        |
| DESIGNER CTC   | DRAWN HARTLAND   | CTC NO. CT10154 |
| CHECKER CTC    | TRAP HBLA        | SCALE 1"=2'     |
|                | OUT NO. 473 58SH | SHEET 18 of 18  |

CHANGE FROM TYPICAL V

REVISION  
BLOCK