

FILE

10-2786-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

Dear PUCO Docketing Division:

The materials included with this cover letter as submitted to your office as per the instructions within the Stipulation for the installation of the identified crossing warning device installation.

Thank you,

Dan Reinsel

Dan Reinsel

(4 Projects)

PUCO

2011 APR -4 PM 3:58

RECEIVED-DOCKETING DIV

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28 March 2011

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

Re: Estimate for Railroad Crossing Warning System at SR 91, Darrow Rd. DOT 475-950G

Dear Mr. Forte,

I am providing this estimate for the crossing package and installation at Darrow Rd. 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 & Package Installation	\$31,526.07
RSS Supplied Package	\$77,375.15
Fill Materials	\$4,000.00
Fill Material Transport	\$1,400.00
Two Gate Foundations (note 1)	\$1,377.00
Site Preparation (foundations, bores)	\$19,000.00
Electric Service	\$3,500.00
Cutout relay (note 2)	\$1,245.00
<u>Insulated Joints + Installation + Cutover</u>	<u>\$27,803.61</u>
Estimated Total	\$167,226.83

Please contact me if additional details are required.

Respectfully,



Dan Reinsel

Notes

- 1: Direct purchase from Fabricated Metals, 60' galvanized gate foundation, \$459 ea.
2. Cutout relay missed on original material list, includes support bracket and wiring.

c: PUCO, Jill Henry
PUCO, George Martin

Wheeling & Lake Erie Railway Co.
Twinsburg, Ohio - Darrow Rd (SR91) DOT# 475 950G
Project Estimate - CT10172

ENGINEERING					
Description	Qty	UOM	Unit Price		Amount
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					\$384.57
ENGINEERING TOTAL					\$4,340.27

PROJECT MANAGEMENT					
Description	Qty	UOM	Unit Price		Amount
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, LEVEL 1	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					
Description	Qty	UOM	Unit Price		Amount
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					
Description	Qty	UOM	Unit Price		Amount
EMPLOYEE MEALS (PER DIEM)	19	EA	\$30.00		\$570.00
EMPLOYEE TRAVEL & LODGING	16	EA	\$60.00		\$960.00
SUBTOTAL					\$1,530.00
CONSTRUCTION LABOR EXPENSES TOTAL					\$1,530.00

Wheeling & Lake Erie Railway Co.
Twinsburg, Ohio - Darrow Rd (SR91) DOT# 475 950G
Project Estimate - CT10172

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	\$690.00		\$690.00
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			\$33,948.05
FIELD MATERIAL(SEE ATTACHED DETAIL)	1	LS			\$31,927.10
HOUSE AND SIGNAL WIRING	1	LS			\$7,500.00
FILL DIRT		TN	\$7.50		\$0.00
CONCRETE		YD	\$500.00		\$0.00
COVER ROCK		TN	\$26.50		\$0.00
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					\$77,375.15
MATERIAL TOTAL					\$77,375.15

TOTAL PROJECT ESTIMATE	\$108,901.22
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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 TSA-1A W/TTA3 ARRESTORS	4	EA	250787-000	\$134.00	\$536.00
EPC TD-4 TRACK DRIVER	1	EA	800-081033-100	\$712.00	\$712.00
RECTIFIER 5/5 CRAGG 5LA-N1	1	EA	5LA-N1	\$348.00	\$348.00
CHARGER 40A 12V CRAGG 40ETC12V	2	EA	017061-203	\$673.27	\$1,346.53
RECTIFIER POWER CORD 14/4 SJE BLK	70	FT		\$1.00	\$70.00
BATTERY GNB 150AH	1	EA		\$500.00	\$500.00
BATTERY NICAD 250 AH SPL-250	19	EA		\$290.00	\$5,510.00
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	\$52.88
SCKT RLY 8-PIN OCT SCREW PNLMT	4	EA	132248-001	\$4.48	\$17.91
POWER OFF LIGHT KIT	1	EA		\$116.40	\$116.40
NUT INSULATED HARMON	20	EA	013886-000	\$2.97	\$59.40
SSCCIII PLUS 40 AMP 19" BASE	1	EA	91190-0101	\$5,628.00	\$5,628.00
PANEL LTG SURGE SSCC 91170-01	1	EA	201756-015	\$608.75	\$608.75
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
RELAY 4 OHM 8FB NEUTRAL	3	EA	ST1 400010	\$670.00	\$2,610.00
RELAY PLUGBOARD B1 W/10-14 CRIMP TERMINALS	3	EA		\$203.00	\$609.00
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	\$215.00
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 3/4AWG PWR 300V	30	FT	012690-010	\$0.77	\$23.10
RES ADJ WW 15W 10 OHM	2	EA		\$30.00	\$60.00
RES ADJ WW 15W 5.69 OHM PNLMT	5	EA	002238-101	\$26.09	\$130.46
CONN PLUG LB-15 250V 15A 2P3W	3	EA	132286-001	\$11.53	\$34.58
ASSY 2WAY TERM BLK W/AAR HARD	6	EA	202810-000	\$15.82	\$94.91
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 18-32' UHI LED LGHTS	2	EA	078045-014	\$613.73	\$1,227.47
SLEEVE 4 ALUMINUM REC #92958	2	EA	14187-01	\$44.33	\$88.66
DECAL, DOT STRIP	2	EA		\$18.00	\$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	400	FT	1094-02	\$1.46	\$585.20
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	4	EA	D&W SB7100090	\$42.10	\$168.40
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
TRACK RECTIFIER, RING-10	2	EA	800-004080-000	\$119.00	\$238.00
PLATE SHUNT 24"X26"X1/4" GALV.	2	EA	6193-01	\$67.06	\$134.11
SCREW LAG 3/4" X 6" BLACK GRIMLET PO	6	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 M# 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	12	EA	1118-01	\$1.97	\$23.63
COMPOUND DUCT SEAL 5 LB PLUG PERMAGUM #	5	PK	1179-01	\$10.68	\$53.41
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

WHEELING & LAKE ERIE RAILWAY COMPANY**Estimate for installation of 8 insulated joints and crossing cutover****Materials, Labor, and Purchased Services**

DOT #	475-950G
Mile Post	Q-19.2
Subdivision	Cleveland
City / Township	Twinsburg
Road Name	Darrow Rd.

Materials (see page 2):	17,085.60
Labor (see page 3):	4,551.43
Equipment (see page 4):	2,830.00
Purchased Services (see page 4):	0.00
Accounting (2% of Labor):	91.03
Contingencies (15% of Material & Labor):	<u>3,245.55</u>
TOTAL	\$27,803.61

TRACK MATERIALS:

<u>Track Material Description</u>	<u>No. of Units</u>	<u>Price Per Unit</u>	<u>Total Amount</u>
Insulated Bonded Rail Section, 110RE	8.00	\$1,825.00	14,600.00
Rail cutting wheel 16"	16.00	\$38.00	608.00
115# Weld Kit	16.00	115.00	1,840.00
<u>Cutting Wheels</u>	<u>2.00</u>	<u>18.80</u>	<u>37.60</u>
TOTAL			\$17,085.60

LABOR:

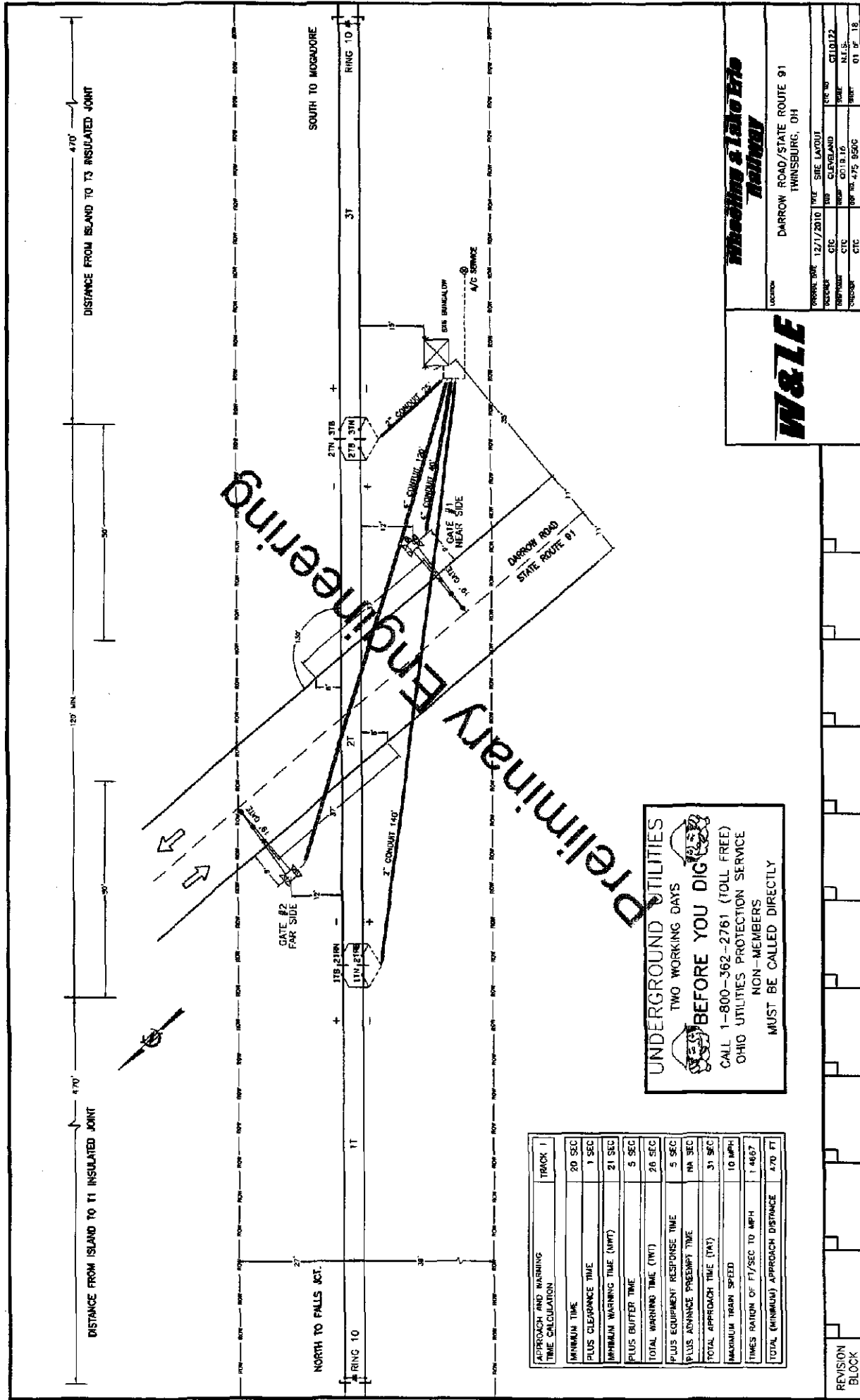
<u>Description</u>	<u>No. of Men</u>	<u>No. of Days</u>	<u>No. of Hours</u>	<u>Hourly Rate</u>	<u>Total Amount</u>
Track Supervisor	0.0	0.0	0.00	\$33.50	0.00
Track Foreman	1.0	2.0	16.00	\$15.38	246.08
B&B Foreman	0.0	0.0	0.00	\$15.38	0.00
B&B Mechanic/Journeyman	0.0	0.0	0.00	\$14.44	0.00
Welder	1.0	6.0	48.00	\$14.44	693.12
Welder Helper	1.0	6.0	48.00	\$14.08	675.84
Backhoe Operator Class A	0.0	0.0	0.00	\$14.44	0.00
Tamper Operator Class A	0.0	0.0	0.00	\$14.44	0.00
Regulator Operator Class A	0.0	0.0	0.00	\$14.44	0.00
Prentice Truck Operator, Class A	0.0	0.0	0.00	\$14.44	0.00
Prentice Truck, Assist. Operator Class	0.0	0.0	0.00	\$14.44	0.00
Ohio Crane Operator Class A	1.0	0.5	5.00	\$14.44	72.20
Ohio Crane Assist. Operator Class A	1.0	0.5	5.00	\$14.44	72.20
Track Laborer	2.0	2.0	32.00	\$12.00	384.00
Signal Supervisor	0.0	0.0	0.00	\$33.50	0.00
Signal Foreman	0.0	0.0	0.00	\$19.32	0.00
System Signal Technician	1.0	3.0	24.00	\$18.20	436.80
S&C Technician	0.0	0.0	0.00	\$16.75	0.00
Laborer, S&C Dept.	0.0	0.0	0.00	\$10.85	0.00
SUB TOTAL OF LABOR					2,580.24
Additives & Benefits on Labor	74.12%				1,912.47
Per Diem, Signal Rate 1		0.0		\$30.64	0.00
Per Diem, Signal Rate 2		0.0		\$22.98	0.00
Per Diem, Signal Rate 3		0.0		\$15.35	0.00
Per Diem, Signal Meal Allowance		0.0		\$10.22	0.00
Per Diem Track		1.0		\$58.72	58.72
Flagger (up to 8 hours)		0.0		\$500.00	0.00
Flagger (over 8 hours)		0.0		\$650.00	0.00
Flagger (weekend)		0.0		\$800.00	0.00
TOTAL LABOR:					\$4,551.43

EQUIPMENT:

<u>Description</u>	<u>No. of Days</u>	<u>Price Per 10 Hr Day</u>	<u>Total Amount</u>
Section Hyrail Boom Truck \$35 hr	2.00	\$350.00	700.00
B&B Hyrail Boom Truck \$35 hr	0.00	\$350.00	0.00
Welder Truck \$23 hr	6.00	\$230.00	1,380.00
Hyrail Dump Truck \$20 hr	0.00	\$200.00	0.00
Backhoe \$22 hr	0.00	\$220.00	0.00
Ohio Crane, locomotive \$40	0.50	\$400.00	200.00
Tamper \$105 hr	0.00	\$1,050.00	0.00
Prentice Truck \$35 hr	0.00	\$350.00	0.00
Regulator \$35 hr	0.00	\$350.00	0.00
Rail Drill \$5 hr	2.00	\$50.00	100.00
Rail Saw \$5 hr	6.00	\$50.00	300.00
Air Compressor \$5 hr	0.00	\$50.00	0.00
Lowboy Trailer \$13 hr	0.00	\$130.00	0.00
Sig. Bucket Truck \$26.80 hr	0.00	\$268.00	0.00
Sig. Maintainers Truck 3/4 ton (Hi-Rail) \$7.30 hr	0.00	\$73.00	0.00
Sig. Maintainers Truck (Pickup) \$5 hr	3.00	\$50.00	150.00
Supervisor Pickup \$5 hr	0.00	\$50.00	0.00
Hi rail pickup crew cab \$11.80 hr	0.00	\$118.00	0.00
TOTAL EQUIPMENT			\$2,830.00

PURCHASED SERVICES:

<u>Description (American Demolition Apr. 2009)</u>	<u>No. of Hours</u>	<u>Price Per Hour</u>	<u>Total Amount</u>
Haul & Dispose of Debris	0.00	\$65.00	0.00
Haul Dump Truck (in or out no disposal)	0.00	\$55.00	0.00
Haul Quad Truck	0.00	\$75.00	0.00
Hyrail Dump Truck	0.00	\$100.00	0.00
Loader w/Operator	0.00	\$85.00	0.00
Mobilization/Trailer Time	0.00	\$75.00	0.00
TOTAL PURCHASED SERVICES			\$0.00



APPROACH AND WARNING TIME CALCULATION	
MINIMUM TIME	20 SEC
PLUS CLEARANCE TIME	1 SEC
MINIMUM WARNING TIME (MWT)	21 SEC
PLUS BUFR TIME	5 SEC
TOTAL WARNING TIME (TWT)	26 SEC
PLUS EQUIPMENT RESPONSE TIME	5 SEC
PLUS ADVANCE PREEMPT TIME	NA SEC
TOTAL APPROACH TIME (TAT)	31 SEC
MAXIMUM TRAIN SPEED	10 MPH
TIMES RATION OF FT/SEC TO MPH	1.4667
TOTAL (MINIMUM) APPROACH DISTANCE	470 FT

UNDERGROUND UTILITIES
 TWO WORKING DAYS
BEFORE YOU DIG
 CALL 1-800-362-2761 (TOLL FREE)
 OHIO UTILITIES PROTECTION SERVICE
 NON-MEMBERS
 MUST BE CALLED DIRECTLY

Wheeling & Lake Erie
Railway

LOCATION: DARRON ROAD/STATE ROUTE 91
 TWINSBURG, OH

PROJECT SHE: 12/1/2010
 DESIGNED BY: CFC
 CHECKED BY: CFC
 DATE: 07/13/16
 SCALE: N.T.S.
 SHEET NO: 01 OF 18

REVISION
BLOCK

CONSTRUCTION NOTES

- 1) REMOVE EXISTING FLASHERS AND CASE
- 2) PROPOSED SITE ADDRESS IS
LAT: 41.3224028 LONG: -81.4402780
- 3) NEW METER SERVICE REQUIRED. SERVICE
PROVIDER IS FIRST ENERGY ELECTRIC

Preliminary Engineering

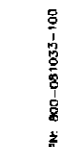
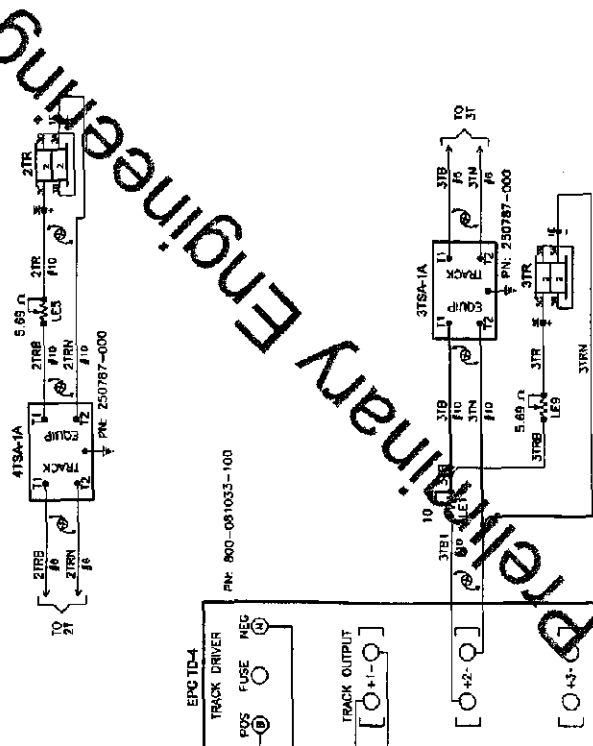
W&LE

**Wheeling & Lake Erie
Railway**

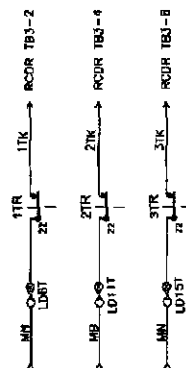
LOCATION: DARROW ROAD/STATE ROUTE 91
TWINSBURG, OH

ISSUED FOR	12/1/2010	DATE	SITE LAYOUT NOTES
DESIGNED BY	CTC	DATE	CLEVELAND
CHECKED BY	CTC	DATE	0018.16
DATE	0018.16	SCALE	N.T.S.
PROJECT NO.	0018.16	DATE	01A OF 18

REVISION
BLOCK



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



**Winning & Laid Ego
Railway**

7784

DARROW ROAD/STATE ROUTE 91
TWINSBURG, OH

ORIGINAL DATE	12/1/2010	TITLE	CROSSING CONTROL CIRCUITS
DESIGNER	JTC	SUB	CLEVELAND
DRAWN BY	JTC	APP'D	0019.18
CHECKED BY	JTC	DATE	475.9508
		TIME	02 PM 18
		ONE INCH	CT10172
		SCALE	N.T.S.
		TRAY	

CHANGE FROM FROM: Y

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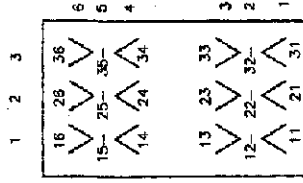
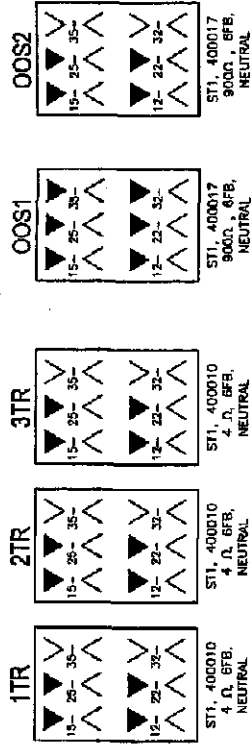
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REVEREND
BLOCK

ST RELAY LAYOUT



EXAMPLE

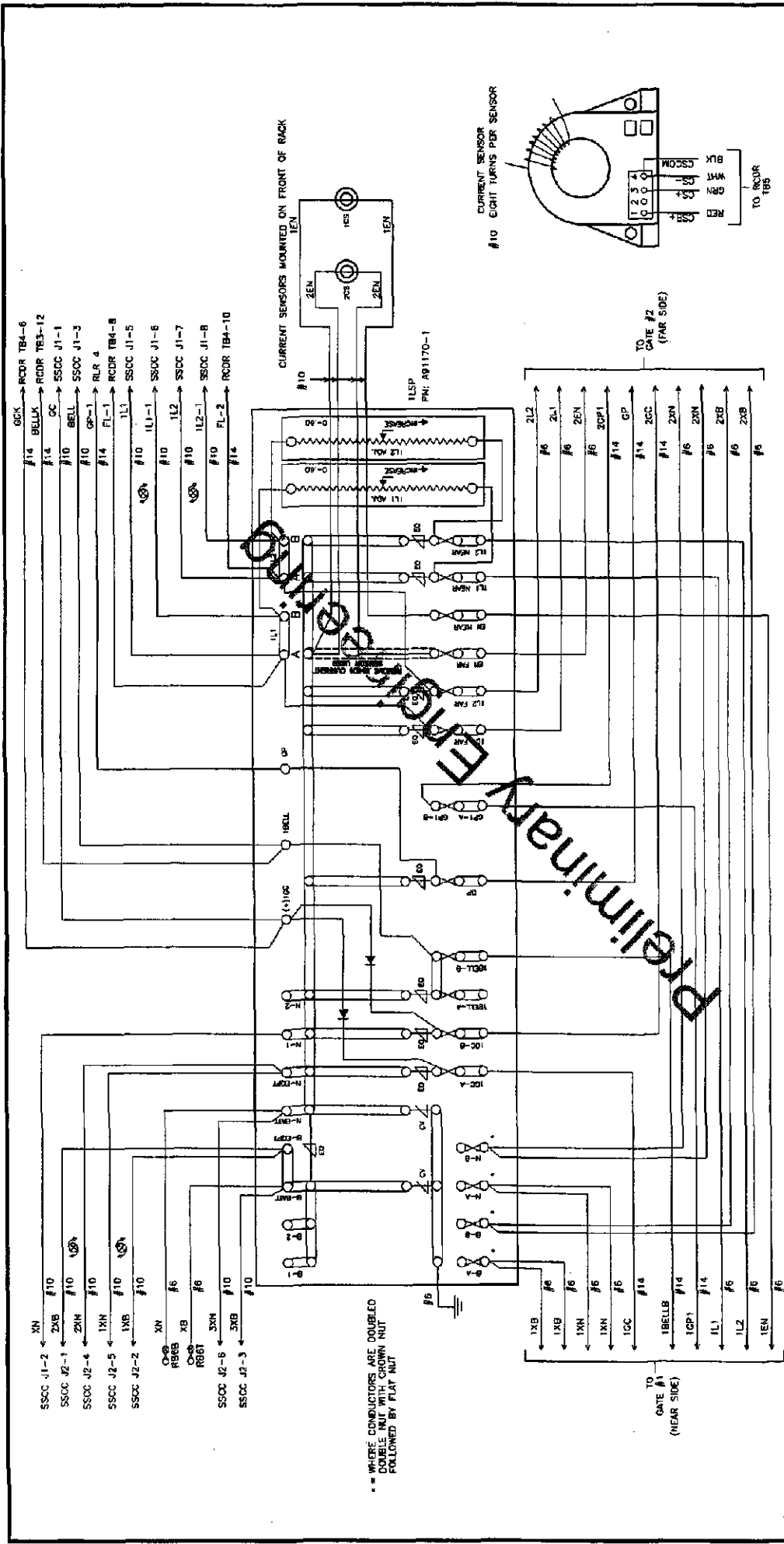
ST1, 400000
500Ω, 6FB,
NEUTRAL

V CONTACT, NOT USED
> CONTACT, USED

V FRONT
- HEEL
^ BACK

		Wheeling & Lake Erie Railway	
LOCATION DARROW ROAD/STATE ROUTE 91 TWINSEBURG, OH		RELAY DATE 12/1/2010 BY CLELAND FOR 001520 BY 478 950 G 03 of 18	
REVISION 0001 3/29/2011	0001 RELAYS ASSED 3/29/2011		





W&LE

Wheeling & Lake Erie
Railway

LOCATION: DARROW ROAD/STATE ROUTE 91
TWINSBURG, OH

DATE: 12/1/2010

DRAWN BY: CTE

CHECKED BY: CTE

APPROVED BY: CTE

SHEET: 01 OF 12

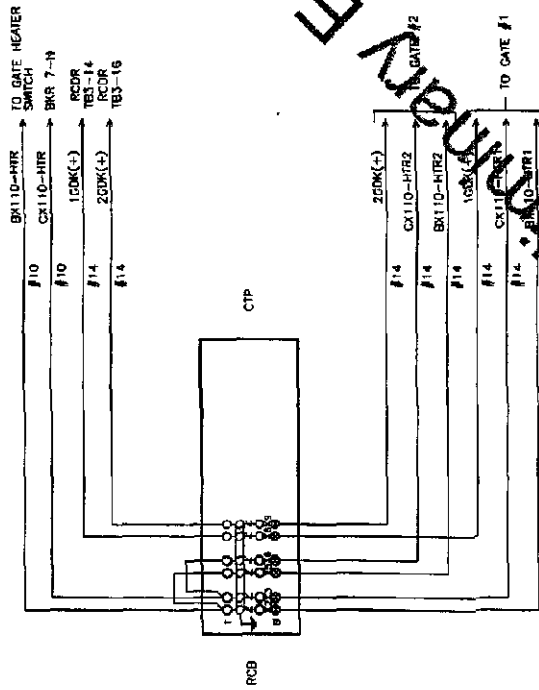
PROJECT: 0019.15

DRAWN BY: CTE

CHECKED BY: CTE

APPROVED BY: CTE

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



Preliminary Engineering

**Wheeling & Lake Erie
Railway**

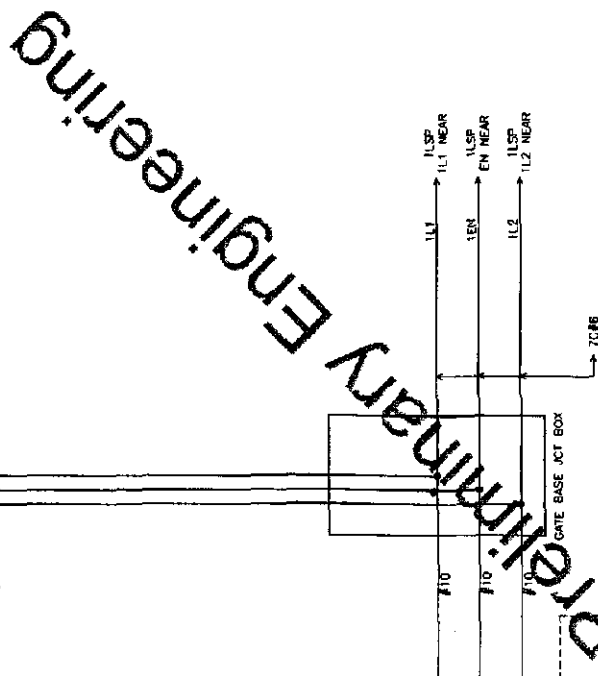
LOCATION: DARROW ROAD/STATE ROUTE 91
TWINSBURG, OH

W&LE

CHANGE FROM PRELIM. IS

REVISION	DATE	BY	CHK'D	DATE	BY	CHK'D
1	12/1/2010	CTP				
2		CTC				
3		CTC				
4		CTC				
5		CTC				
6		CTC				
7		CTC				
8		CTC				
9		CTC				
10		CTC				
11		CTC				
12		CTC				
13		CTC				
14		CTC				
15		CTC				
16		CTC				
17		CTC				
18		CTC				

REVISION
DATE



**Wheeling & Lake Erie
Railway**

W&L

DARROW ROAD/STATE ROUTE 91
TWINSBURG, OH

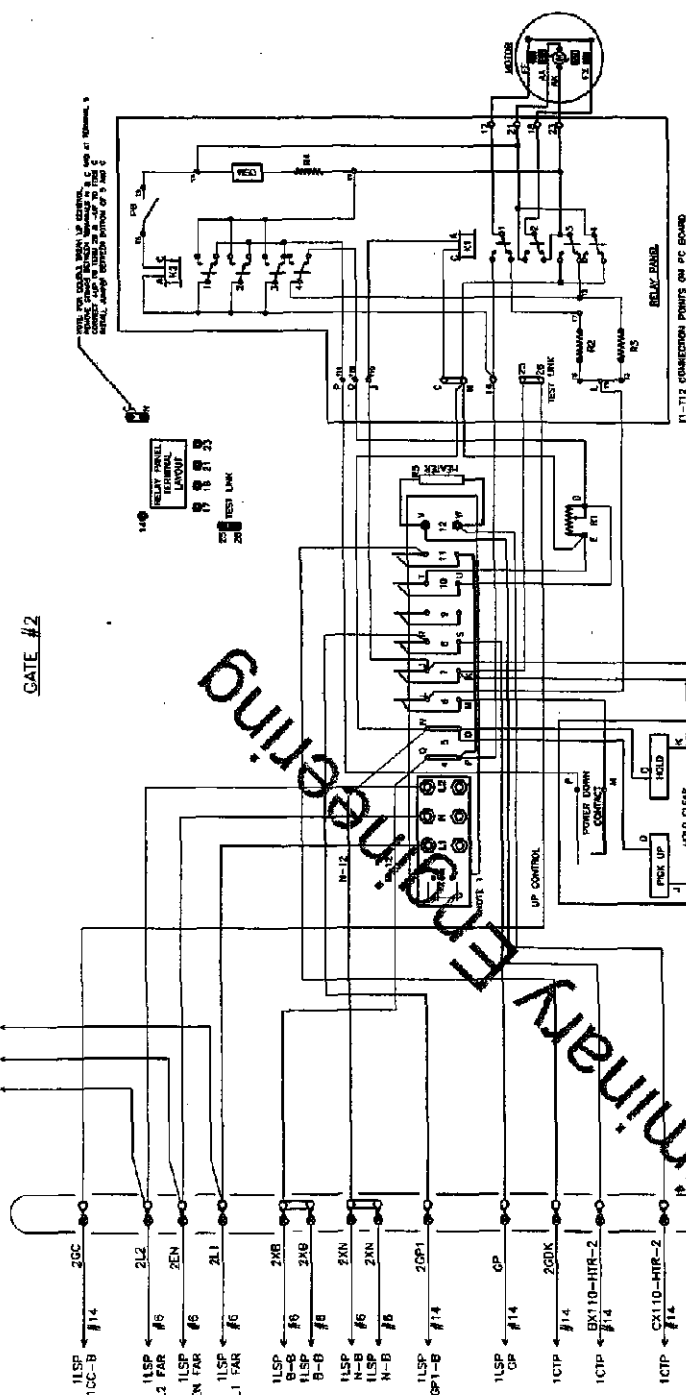
OSCAR DATE	12/1/2010	WIRE	GATE #1 LIGHTS (NEAR SIDE)
CORRECTION	NOW	CLEVELAND	THE WAI
QUESTIONS	WHEN	0019.16	POLE
0002-50N		DOOR 476 BSCC	SHEET
			15 OF 18

MODEL 1

CONTRACT	CLOSED	FUNCTION
6	45°-90°	POWER DOWN
7	0°-80°	POWER UP
8	83°-90°	FLASHING LIGHT
9	5°-80°	BELL (NOT USED)
10	0°-5°	HORIZONTAL SWAB
11	0°-5°	GATE DOWN INDICATION

TO MAST MOUNTED FLASHERS
(SHEET 12 FOR DETAILS)

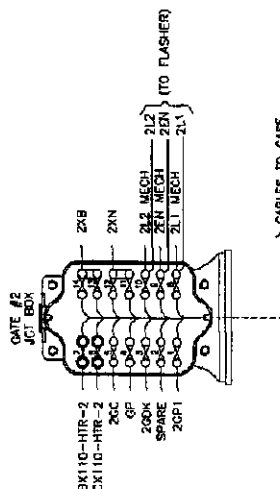
GATE #2



MODEL S-40 GATE WIRING DIAGRAM

S-40 PN: Q74000-W00172
INCLUDES: ZINC PLATED HARDWARE PKG, MAINT. PANEL
& SWITCH, QD CONTACT, 115V HEATER AND GATE ARM
FUSE BLOCK

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



**Wheeling & Lake Erie
Railway**

1784

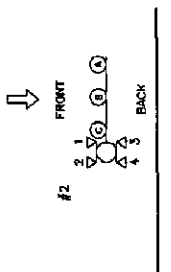
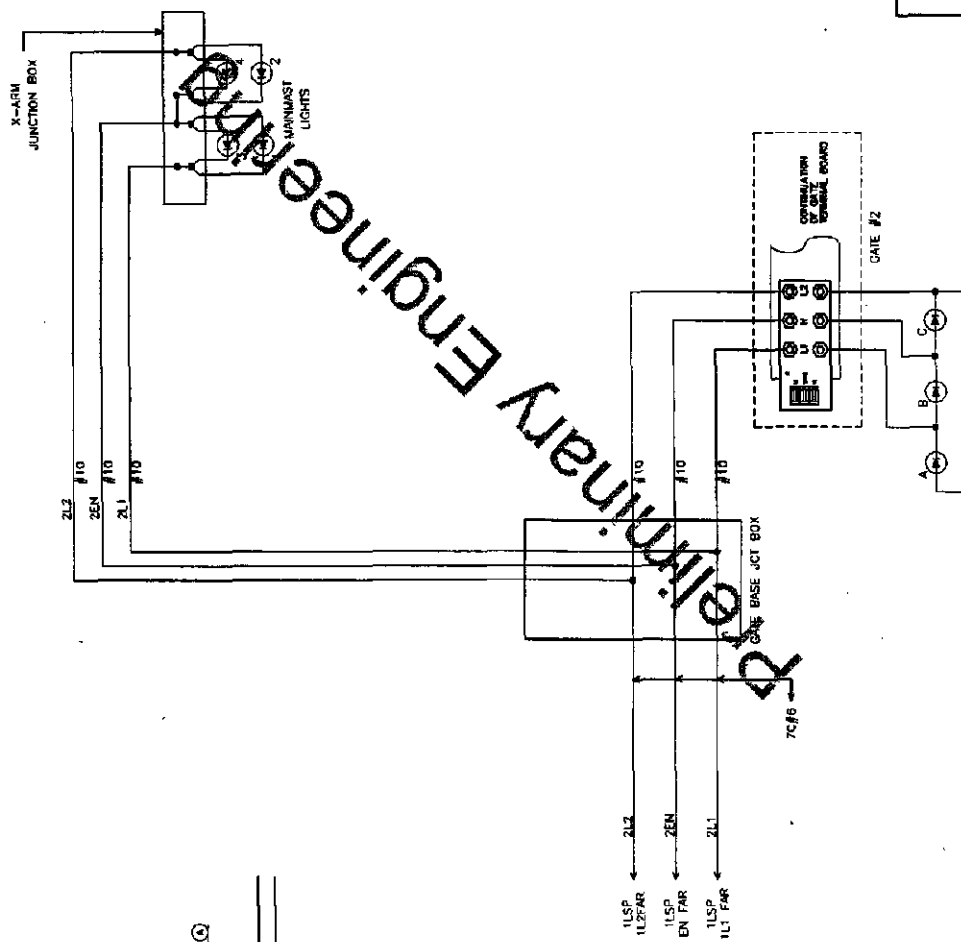
DARROW ROAD/STATE ROUTE 91
TWINSBURG, OH

ORIGINAL DATE	12/11/2010	FILE	GATE #2 MECHANISM (FAR SIDE)
REPORT	CIC	SW	CLEVELAND
PROJECT	0001000	CIC	0019.18
PROJECT	0001000	SCALF	N.T.S.
PROJECT	0001000	SCALE	1" = 4' 0" 18

Source: Survey from 1982, N

REVISION

GATE #2



NOTE:
• USE MINI AUTO 10 AMP FUSES ONLY

W&LE
Wheeling & Lake Erie
Railway

LOCATION: DARROW ROAD/STATE ROUTE 91
TWINSBURG, OH

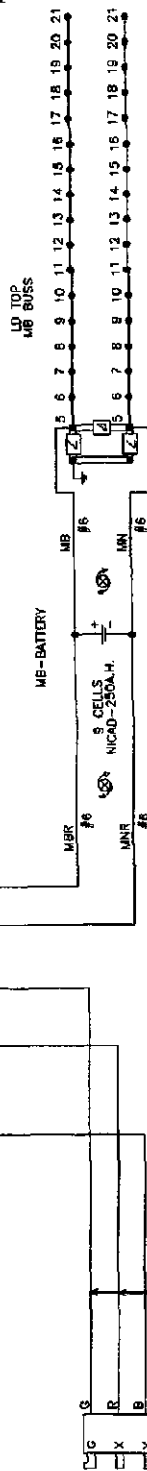
PROJECT NO.	12/1/2010	DATE	12/1/2010	BY	CTD/72
DESIGNED BY	CTC	DATE	12/1/2010	BY	CTD/72
CHECKED BY	CTC	DATE	12/1/2010	BY	CTD/72
APPROVED BY	CTC	DATE	12/1/2010	BY	CTD/72

REGION
EAST

BATTERY BUSS DETAILS

21	OC52R-25	21	OC52R-22
20	LB21	20	LB19
19	OC51R-35	19	OC51R-32
18	LB17	18	LB15
17	CC588	17	SPARE
16	EPC TD-4+	16	EPC TD-4-
15	JTR 22	15	SPARE
14	JTR 15	14	JTR 12
13	JTR 15	13	JTR 12
12	JTR 15	12	JTR 12
11	JTR 22	11	RCDR TB4-1
10	BOD INPUT 3	10	BOD INPUT 2
9	ROR 4	9	ROR 7
8	RCDR TB6-1	8	RCDR TB6-2
7	RCDR TB1-4	7	RCDR TB1-3
6	1TR 22	6	SSDC J3-9
5	MB BATT+	5	MN BATT-

LD
MB BUSS
(TOP)



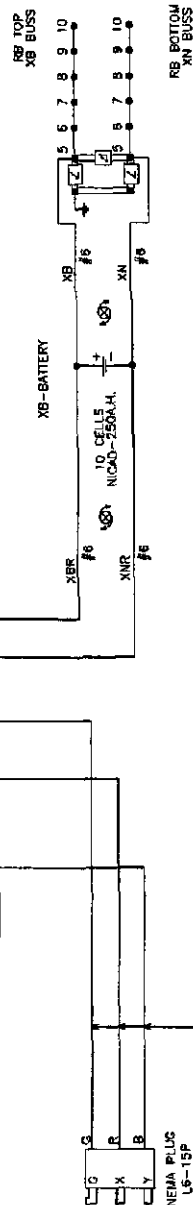
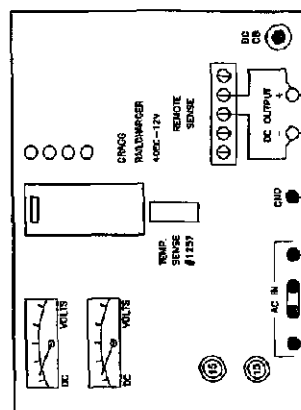
BATTERY BUSS DETAILS

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

RB
XB BUSS
(TOP)

RB
XN BUSS
(BOTTOM)

XB-CHARGER



Wheeling & Lake Erie
Railway

LOCATION
DARROW ROAD/STATE ROUTE 91
TWINSBURG, OH

W&LE

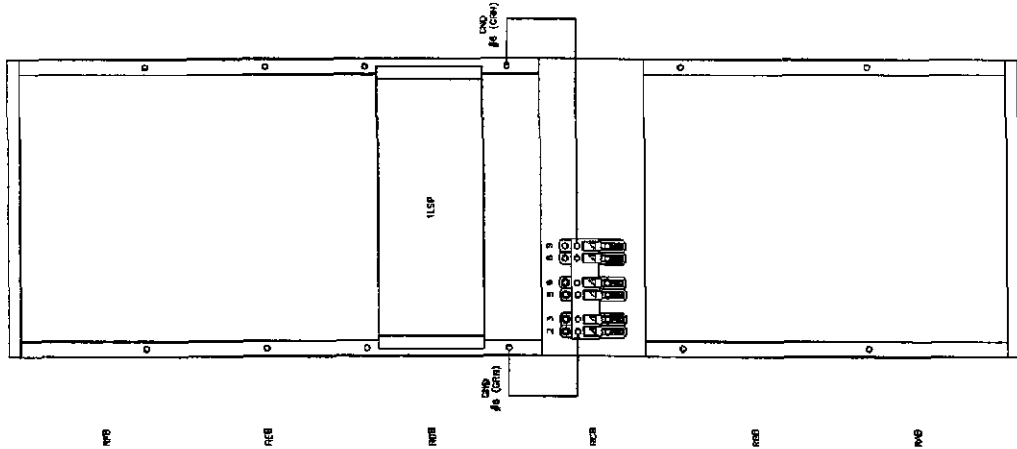
CHARGE FROM WHEELING

RETURN
BUSS
OR CONNECTIONS
2-3-2011

ISSUE DATE	12/1/2010	TYPE	BATTERY CHARGER
DESIGNED BY	CTC	BY	CLEVELAND
DRAWN BY	CTC	DATE	01/18/20
CHECKED BY	CTC	SCALE	1"=2'
PROJECT	10010-475	10010	13 OF 18

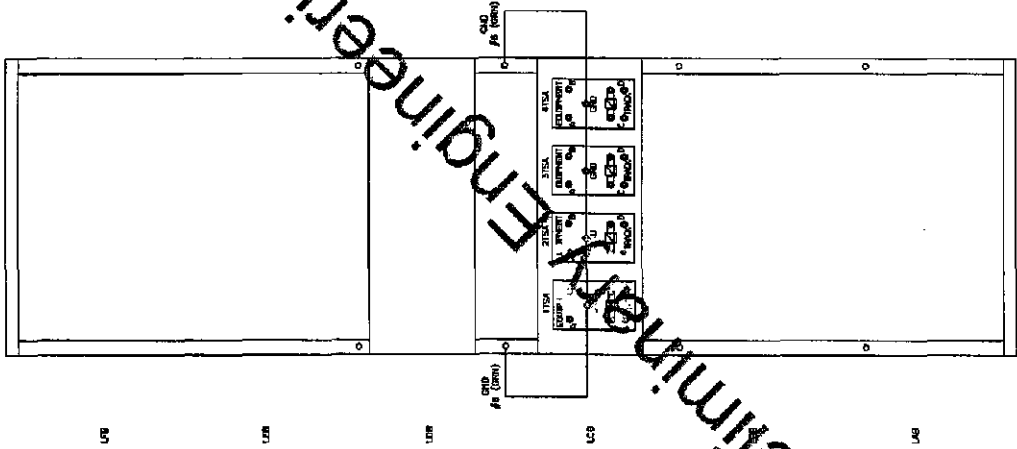
BACK OF RIGHT SIDE

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24



BACK OF LEFT SIDE

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24



SIDE 'B' BACK

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

CHASSIS FROM TOP-24, Y

W&LE

**Wheeling & Lake Erie
Railway**

LOCATION: DARROW ROAD/STATE ROUTE 91
TWINSBURG, OH

DATE: 12/1/2010	REV: 001	REV: 001	REV: 001	REV: 001
DESIGN: CTC	APP: CLEVELAND	REV: 001	REV: 001	REV: 001
REVISION: CTC	REV: 001	REV: 001	REV: 001	REV: 001
PROJECT: CTC	REV: 001	REV: 001	REV: 001	REV: 001

Preliminary Engineering

SIDE 'A'

27-BATTERY
8 CELLS
SPL. 250
250 A.H.
132 B.A.

NEG. BATTERY
POS. BATTERY

DARROW ROAD/STATE ROUTE 91
TWINSBURG, OH

1784

CHARGE FROM TYPICAL Y

PERSONAL DATA	12/1/2010	INLT	SIDE "A"	UNIT NO.	CT
DESIGNER	CTC	330	CLEVELAND	10010172	
CONTRACTOR	CTC	1100	CON 1.16	10010172	1-2'
REVISION	MTF	10010172	9500	17	10

MEMBERSHIP



Black & Veatch