

NC
FILE

45

**Public Utilities
Commission of Ohio**

12-2066-RR-FED

Memo

To: Docketing Division
From: George Martin, Grade Crossing Planner, Rail Division *GM*
Re: In the matter of the authorization of the Wheeling & Lake Erie Railway to install an active grade crossing warning device in Medina County
Date: July 12, 2012

The Ohio Rail Development Commission (ORDC) has authorized funding for the Wheeling & Lake Erie Railway to install mast-mounted flashing lights and four roadway gates at the Sharon Copley Rd/SR 162/Boneta Rd/CR 53 grade crossing, DOT# 002096Y, located in Sharon Township, Medina County. The crossing was surveyed on February 26 and April 2, 2009, and was found to warrant the upgrade.

The project will be paid for with federal funds, and is actual cost. As the plan and estimate has already been submitted and approved, staff requests an Entry with completion of the projects in nine months. Construction may commence at once. Staff requests that the following language be incorporated in the Entry:

It is expected that all work necessary for FHWA acceptance of the warning devices will be completed by the in-service due date and that the railroad will be responsible for this work. This work includes, but is not limited to:

Any ancillary work to make the warning devices function as designed and visible to the roadway user, and

MUTCD compliance, including minor roadway work if necessary.

A suggested case coding and heading would be:

PUCO Case No. 12- *2066* -RR-FED In the matter of the authorization of the Wheeling & Lake Erie Railway to install an active grade crossing warning device in Medina County

C: Legal Department

Please serve the following parties of record

PUCO

2012 JUL 12 PM 1:01

RECEIVED-DOCKETING DIV

Ms Susan Kirkland

Ohio Rail Development Commission

1980 West Broad St, 2nd Floor

Columbus, Oh 43223

Mr Dan Reinsel

Wheeling & Lake Erie Railway

100 East First St

Brewster, Oh 44613

Mr Pat Crouch

Medina County Highway Department

6100 Wedgewood Road

Medina OH 44256

Mr Craig Devore

ODOT District 3

906 Clark Ave

Ashland, Oh 44805

Ohio Edison

**OHIO RAIL DEVELOPMENT COMMISSION
INTER-OFFICE COMMUNICATION**

TO: Leah Thomas-Dalton, Rail Division Chief, PUCO
FROM: Susan Kirkland, Manager, Safety Section, ORDC
BY: Mike Forte', Project Manager, ORDC
SUBJECT: MED-162-22.19, Sharon-Copely Rd. & MED-CR 53, Boneta Rd./WLE
US DOT 002 096Y
DATE: July 12, 2012

The Ohio Rail Development Commission (ORDC) established a diagnostic survey at the subject location on February 26, 2009 and April 2, 2009. The Public Utilities Commission of Ohio (PUCO) attended the first review. The Diagnostic Team recommended the improvement of warning devices to flashing lights and roadway gates. Copies of the diagnostic review form and the plan and estimate are attached.

PE has already been provided by the railroad. ORDC approves the site plans and estimates as provided. Please issue a construction-only order for the project outlined above. This construction authorization is made with the stipulation and understanding that any field work needs prior approval before the work begins. This authorization is made with the stipulation and understanding that an approved estimate may contain entries for items or activities that may be cited and found to be ineligible for federal participation during the project audit.

It is expected that all work necessary for FHWA acceptance of the warning devices will be completed by the in-service due date and that the railroad will be responsible for this work. This work includes, but is not limited to:

- any ancillary work to make warning devices function as designed and visible to the roadway user, and
- MUTCD compliance – including minor roadway work if necessary.

Thank you for your assistance with these matters.

Attachment: Diagnostic Review
Plan & Estimate

c: George Martin, PUCO
ORDC Project Manager (file)



RECEIVED
ORDC
Diagnostic Review Team Survey

2010 OCT 16 PM 3:58

Date: 2.26.09

Location Data			
Street or Road Name: SHARON COPLEYS RD. / BONETA RD.			
Route/Road Number (i.e. Twp., Co./SR or US) 162		(include SLM if State or US route) 22.19	
AAR-DOT No.: 002 096Y			
County: MED	Township: SHARON	City: (In or Near) MEDINA	
Railroad Name: W+LE	Railroad Division: AKRON SUBDIVISION	Branch/Line Name:	
Nearest RR Timetable Station: BONETA		RR Milepost: 145.98	

On-Site Review Team

(Include: Name - Organization - Phone Number)

- * 1. MIKE FORTÉ ORDC 614-644-0283
- 2. SHAWN ZURFLEY PUCO 614-466-1150
- * 3. DAN RENSEL WLE 330-767-7202
- * 4. Kimberly Conklin MEDINA ODOT 330 723 0091
- * 5. SAMUEL YENIC MEDINA ODOT 330 723 0091
- * 6. CRAIG DEVORE D-3 ODOT 419-207-7169
- 7. Pat Crouch Medina County Engineers 330-764-8780
- 8.
- 9.

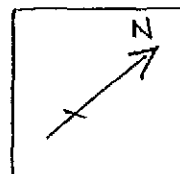
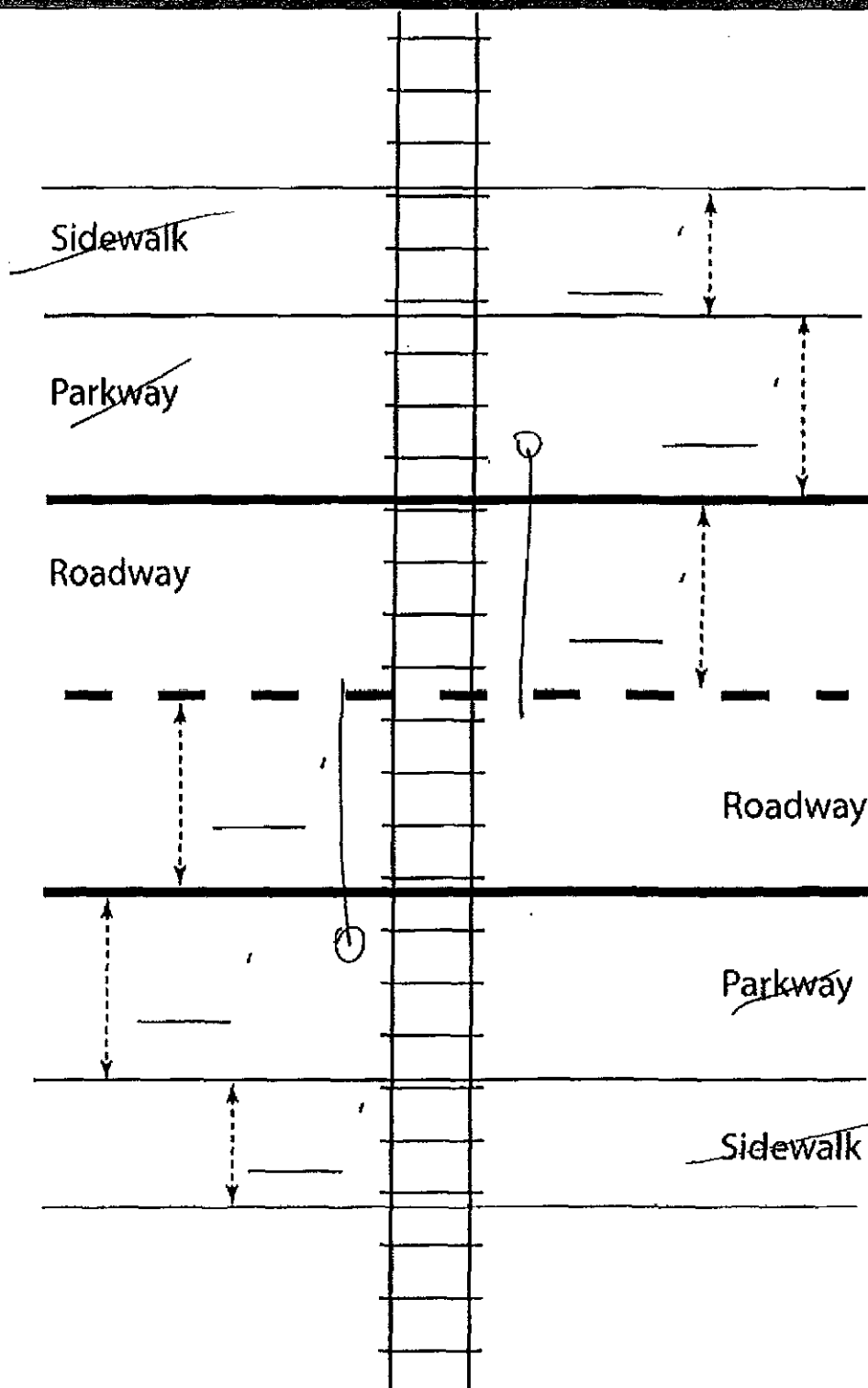
Existing Traffic Control Devices

Type of Warning Devices	Installed?		Quantity/Comments
Advance Warning Signs	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	4
'Stop' Signs	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	4
'Stop Ahead' Signs	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	2
Pavement Markings	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	4
Crossbucks	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	2
Number of Tracks Signs	<input type="checkbox"/> Yes	<input type="checkbox"/> No	NA
Inventory Tags	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
Interconnected Highway Traffic Signal	<input type="checkbox"/> Yes	<input type="checkbox"/> No	NA
Mast-Mounted Flashing Lights	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	2
Cantilever Flashing Lights	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Number: Length:
Side Lights	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	2
Automatic Gates	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Number: Length:
Bells	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
Sidewalk Gate Arms	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
'No Turn' Signs	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
Illumination	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
Is crossing flagged by train crew?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
Other	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	3 LARGE ARROW SIGNS

Safety Data (Obtain crash reports, if possible, prior to review)		
	Initial Information (from database)	Revised
Number & dates of crashes in previous 5 years		
Hazard Ranking	1845 AT 40 MPH ^{TRAIN} SPEED	
Railroad Data		
Railroad Characteristics	Initial Information (from database)	Revised
Total trains per day	5	
< 1 per day		
Day thru trains	2	3
Night thru trains	1	2
Daytime switching movements	1	
Nighttime switching movements	1	
Total number of tracks	1	
Number of main tracks	1	
Number of other tracks		TO BE 40
Maximum train speed	25	40
Typical train speed		25
Amtrak	NO	
If non-gated crossing, is clearing sight distance adequate in all quadrants? (See Table 1) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
If multiple tracks, can two trains occupy crossing at the same time? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Can one train block the motorists' view of another train at crossing? <input type="checkbox"/> Yes (Explain below) <input type="checkbox"/> No NA		
Are there other track(s) crossing this same roadway within 100 ft of this crossing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
If yes, Crossing DOT # (if different) _____		
If yes, distance _____ (take measurement between track centerlines at closest point along roadway)		
Roadway Data		
Local Highway Authority: ODOT - 162, SHARON TWP - BONETA		
Roadway Characteristics	Initial Information (from database)	Revised
Average daily traffic	3,015 (2007)	3300 ON 162 AFD - BONETA
Highway paved	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Roadway Surface: <input checked="" type="checkbox"/> Blacktop <input type="checkbox"/> Gravel <input type="checkbox"/> Concrete <input type="checkbox"/> Other _____		
Roadway width: _____ ft. 22' - BONETA 24' - 162		
Number of highway lanes	2	
Urban or Rural		
Vehicle Speed: 3 MPH		55 MPH - 162 45
School Bus Operation: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes 13 Amount		
Hazardous Materials Trucks: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes ? Amount		
Shoulders: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes		
Is the shoulder surfaced? <input type="checkbox"/> No <input type="checkbox"/> Yes NA		
Is there existing guardrail along roadway in crossing vicinity? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes SW QUAD		
Is stopping site distance adequate? (See Table 2) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If no, deficient approach(es) STOP SIGNS		

Quadrant _____ Curb and Gutter: <u>NO</u> <input type="checkbox"/> Functional (Curb height = 4" or more) <input type="checkbox"/> Non-functional (Curb height = Less than 4") <input checked="" type="checkbox"/> None	Quadrant _____ Curb and Gutter: <u>NO</u> <input type="checkbox"/> Functional (Curb height = 4" or more) <input type="checkbox"/> Non-functional (Curb height = Less than 4") <input checked="" type="checkbox"/> None
Pedestrians: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	
Is sidewalk present? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	
Is there a nearby intersection that could cause queuing over the crossing? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, Distance _____	
Is this intersection signalized? <input type="checkbox"/> No <input type="checkbox"/> Yes	
Are the signals currently interconnected with the existing crossing warning devices? <input type="checkbox"/> No <input type="checkbox"/> Yes	
Is it the consensus of the Diagnostic Review Team that this is a potential closure project: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes Explain reasons:	
Type of Development	
<input type="checkbox"/> Open Space <input type="checkbox"/> Industrial <input checked="" type="checkbox"/> Residential	<input type="checkbox"/> Institutional <input type="checkbox"/> Commercial Location of nearby schools: <u>HIGHLAND SCHOOLS 2.5 MI</u>
Utility Information	
Is commercial power available? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes	
Utility Provider (Company Name) <u>OHIO ED.</u> Phone Number _____	
Nearest Available Power Source <u>AT XING</u>	
What other utilities are present? <u>F.O.C. GAS ELEC.</u>	
Is there potential utility conflict(s) <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
Diagnostic Team Recommendations	
	Quadrants Needed
<input checked="" type="checkbox"/> Install/upgrade active devices	
<input type="checkbox"/> Automatic Flashing Lights (AFLS)	
<input type="checkbox"/> AFLS / Cants	
<input checked="" type="checkbox"/> AFLS / Gates	<u>NW + SE</u>
<input type="checkbox"/> AFLS / Gates / Cants	
<input type="checkbox"/> Upgrade circuitry	
<input checked="" type="checkbox"/> Sidelights	<u>NW + SE</u>
<input type="checkbox"/> Guardrail Needed	
<input checked="" type="checkbox"/> Install/Replace curb	<u>SE</u>
<input type="checkbox"/> Other (define)	
Comments: <u>ORIGINAL DIAGNOSTIC TEAM SELECTED 4 LIGHT AND GATES IF GUARDRAIL COULD BE INSTALLED. IT WAS DETERMINED THAT IT COULD NOT BE. FOLLOW UP DIAGNOSTIC WAS HELD.</u>	
<input type="checkbox"/> Install/upgrade traffic signal preemption	
<input type="checkbox"/> No improvements needed	
<input type="checkbox"/> Other (define)	

Field Dimensions



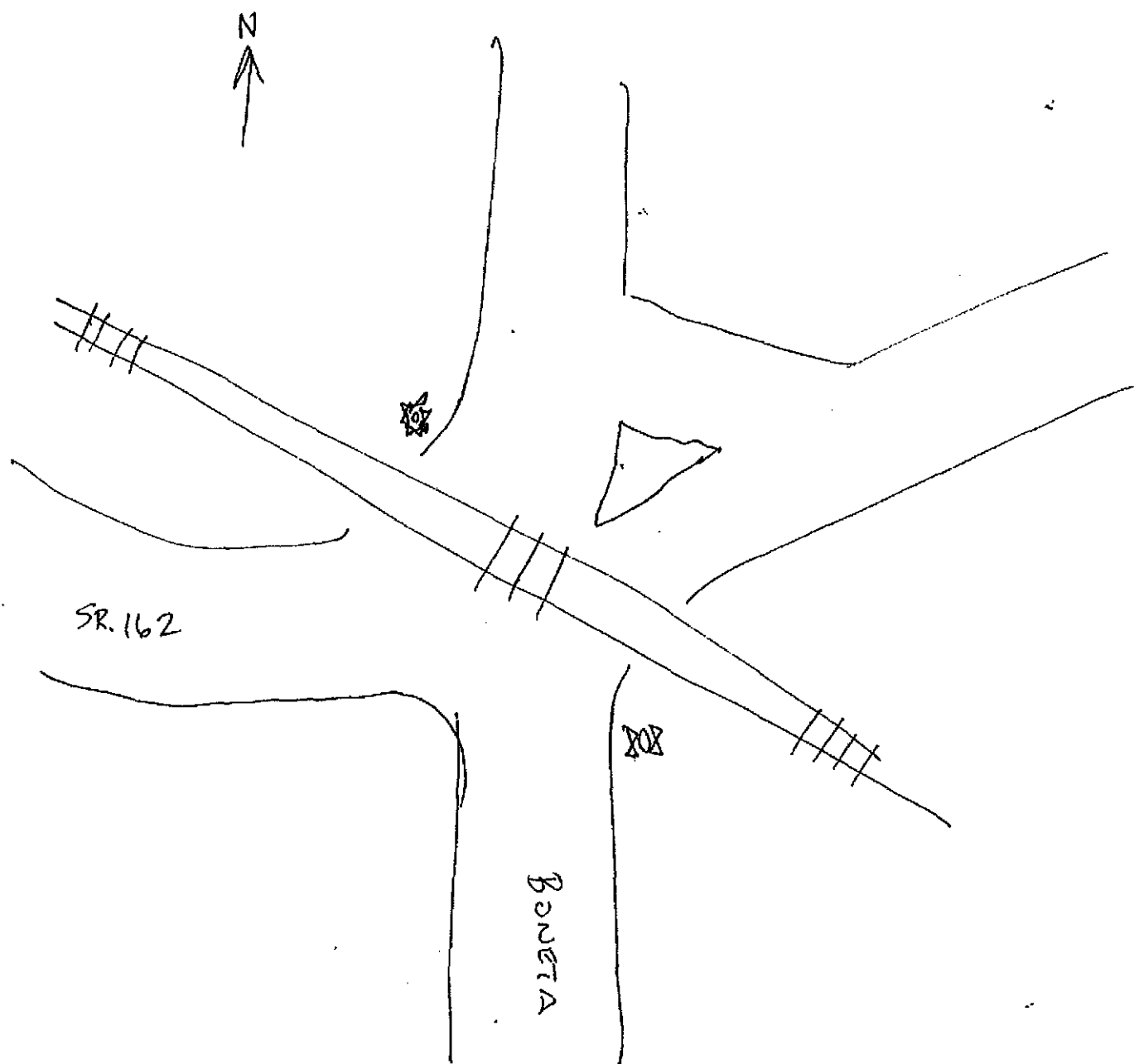
Show North Direction

2 LTS + GTA
PARALLEL TO
TRACKS (AS
DETERMINED AT
FOLLOW UP
DIAGNOSTIC)

Crossing Angle ☐ 0-29° ☐ 30-59° ☐ 60-90° Measured in _____ Quadrant?

Measurements by: _____

Field Sketch



Crossing Angle ☐ 0-29° ☐ 30-59° ☐ 60-90° Measured in _____ Quadrant?

Sketch by: MDE

TABLE 1

Clearing Sight Distances

Maximum Authorized Train Speed	Distance (dT) Along Railroad from Crossing (ft)
1 - 10	240
15	360
20	480
25	600
30	720
35	840
40	960
45	1080
50	1200
55	1320
60	1440
65	1560
70	1680
75	1800
80	1920
85	2040
90	2160

Source: R-H Grade Crossing Handbook Table 36 (pp. 132-133)

Notes:

All calculated distances are rounded up to the next higher 5-foot increment.

Distances indicated are for 65-ft double bottom semi-tractor trailers and level single track 90 degree crossings; and may need to be adjusted for multiple tracks, skewed crossings or approaches on grades.

Clearing Sight Distance is to be measured in each vehicle travel direction at non-gated crossings as viewed from a point 25 feet from centerline of nearest track in the center of whichever travel lane is nearest the direction along track being measured.

Table 2

Stopping Sight Distances

Highway Vehicle Speed	Distance (dH) Along Roadway from Crossing (ft)
0	n/a
5	50
10	70
15	105
20	135
25	180
30	225
35	280
40	340
45	410
50	490
55	570
60	660
65	760
70	865

Source: R-H Grade Crossing Handbook Table 36 (pp. 132-133)

Notes:

All calculated distances are rounded up to the next higher 5-foot increment.

Distances indicated are for 65-ft double bottom semi-tractor trailers on dry level pavements.

Stopping Sight Distance is to be measured on each roadway approach to crossing from stop bar.



OHIO RAIL DEVELOPMENT COMMISSION

1980 West Broad Street, Columbus OH 43223

John R. Kasich, Governor • James G. Bradley, ORDC Chairman

July 12, 2012

Dan Reinsel
S & C Supervisor
Wheeling & Lake Erie Railway Company
100 East First Street
Brewster, OH 44613

Re: Grade Crossing Warning Project
State Route 162/Boneta Rd., Medina County
US DOT 002 096Y

Dear Mr. Reinsel:

The plan and estimate transmitted in your November 3, 2011 email, for the referenced project has been reviewed and is acceptable. Wheeling & Lake Erie Railway Company (WLE) may proceed with the construction of the proposed grade crossing warning system in accordance with the abbreviated plan. This authorization is made with the stipulation and understanding that the approved estimate may contain entries for items or activities that may be cited and found to be ineligible for federal participation during the project audit. Reimbursement of eligible actual cost is limited to \$253,752.15. Additional costs must be approved in writing by the Ohio Rail Development Commission (ORDC) prior to being incurred. Emergency verbal authorizations by ORDC may be permitted and will be confirmed by ORDC in writing within ten (10) business days of the verbal approval.

This authorization is contingent upon WLE accepting the following instructions:

1. WLE's project foreman will furnish written notification five (5) working days prior to the date work will start at the project site to ORDC, email mike.forte@dot.state.oh.us, and to the Public Utilities Commission of Ohio at George.martin@puc.state.oh.us. WLE's project foreman will also notify the same of any stops and re-starts of the work activity and of the date work was completed for the project.
2. WLE will arrange for utilities to be located at the project site by the Ohio Utilities Protection Service (OUPS) prior to any construction activities at the site. Utilities that are not participating members of the service must be contacted directly by WLE.
3. WLE's project foremen will notify Mike Forte at 614-374-9287 or mike.forte@dot.state.oh.us of any changes in the scope of work, cost overruns, material changes, etc. which are not included in the approved plan and estimate and secure approval of same before the work is performed.



www.rail.ohio.gov

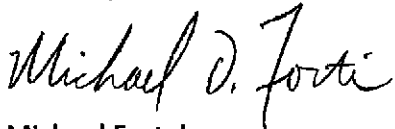
phone: 614.644.0306

IMPROVING RAIL TODAY FOR TOMORROW'S ECONOMY

4. WLE will furnish one (1) copy of each partial bill to ORDC. Please find the enclosed ODOT P.O. Number to reference when billing.
5. WLE will furnish one (1) copy of the final all-inclusive bill to ORDC stating the exact dates of starting and completing work, the initial and final dates of construction and location where the accounts may be audited.

Thank you for your assistance with these matters.

Sincerely,

A handwritten signature in cursive script that reads "Michael D. Forte".

Michael Forte'
Project Manager

C: Leah Thomas-Dalton, Rail Division Chief, PUCO
George Martin, PUCO, Grade Crossing Planner
ORDC (file)

Attachment: 1 (Purchase Order)

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

3 November 2011

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

Re: Estimate for Crossing Warning System at SR162 & Boneta Road, DOT 002-096Y

Dear Mr. Forte,

I am providing this estimate for the crossing package and installation at Boneta 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 performed under our continuing construction agreement with CTC LLC.

CTC Managed Services, Material Package, & Installation	\$183,340.14
Fill Materials & Transport (note 3)	\$8,200.00
Berm Wall, 6' x 15' w/o handrail (note 2)	\$3,650.00
Four Gate Foundations (note 1)	\$1,836.00
Electric Service	\$5,500.00
Culvert pipe, steel, 18" x 25'	\$1,250.00
Site Preparation (foundations, bores)	\$45,776.01
<u>WLE Direct Labor</u>	<u>\$4,200.00</u>
Estimated Total	\$253,752.15

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: Dixie Precast Berm Wall for southwest gate assembly.
3. Fill materials estimated at \$13/ton, 20 tons per load, 20 loads

Attachments

Wheeling & Lake Erie Railway Co.
Sharon, Ohio - Sharon-Copely Rd DOT# 002 096Y
Project Estimate - CT11063

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	40	HR	\$36.06		\$1,442.40
ACCOUNTING, LEVEL1	16	HR	\$39.81		\$636.96
ADMINISTRATIVE	4	HR	\$25.48		\$101.92
SUBTOTAL					\$3,796.60
G&A BURDEN FOR LABOR					\$6,947.78
FIXED FEE					\$1,074.44
PROJECT MANAGEMENT TOTAL					\$11,818.82

CONSTRUCTION LABOR					
<i>Description</i>	<i>Qty</i>	<i>UOM</i>	<i>Unit Price</i>		<i>Amount</i>
SIGNAL FOREMAN	80	HR	\$28.50		\$2,280.00
SIGNALMAN	80	HR	\$19.50		\$1,560.00
SIGNAL HELPER	80	HR	\$19.00		\$1,520.00
SUBTOTAL					\$5,360.00
G&A BURDEN FOR LABOR					\$9,808.80
FIXED FEE					\$1,516.88
CONSTRUCTION LABOR TOTAL					\$16,685.68

CONSTRUCTION LABOR EXPENSES					
<i>Description</i>	<i>Qty</i>	<i>UOM</i>	<i>Unit Price</i>		<i>Amount</i>
EMPLOYEE MEALS (PER DIEM)	24	EA	\$30.00		\$720.00
EMPLOYEE TRAVEL & LODGING	24	EA	\$60.00		\$1,440.00
SUBTOTAL					\$2,160.00
CONSTRUCTION LABOR EXPENSES TOTAL					\$2,160.00

Wheeling & Lake Erie Railway Co.
Sharon, Ohio - Sharon-Copely Rd DOT# 002 096Y
Project Estimate - CT11063

CONSTRUCTION EQUIPMENT					
<i>Description</i>	<i>Qty</i>	<i>UOM</i>	<i>Unit Price</i>		<i>Amount</i>
TRUCK, PU, 1 TON CREW CAB	80	HR	\$11.78		\$942.40
TRUCK, BOOM, ART, TELESCOPING	20	HR	\$55.95		\$1,119.00
TRAILER, UTILITY, 4 TIRE, 12,000lbs SC410	80	HR	\$7.55		\$604.00
RENTAL EQUIPMENT (FORK LIFT/BACKHOE/SKYTRAK)	1	WK	\$690.00		\$690.00
EQUIPMENT DELIVERY/PICKUP	1	LS	\$150.00		\$150.00
SUBTOTAL					\$3,505.40
CONSTRUCTION EQUIPMENT TOTAL					\$3,505.40

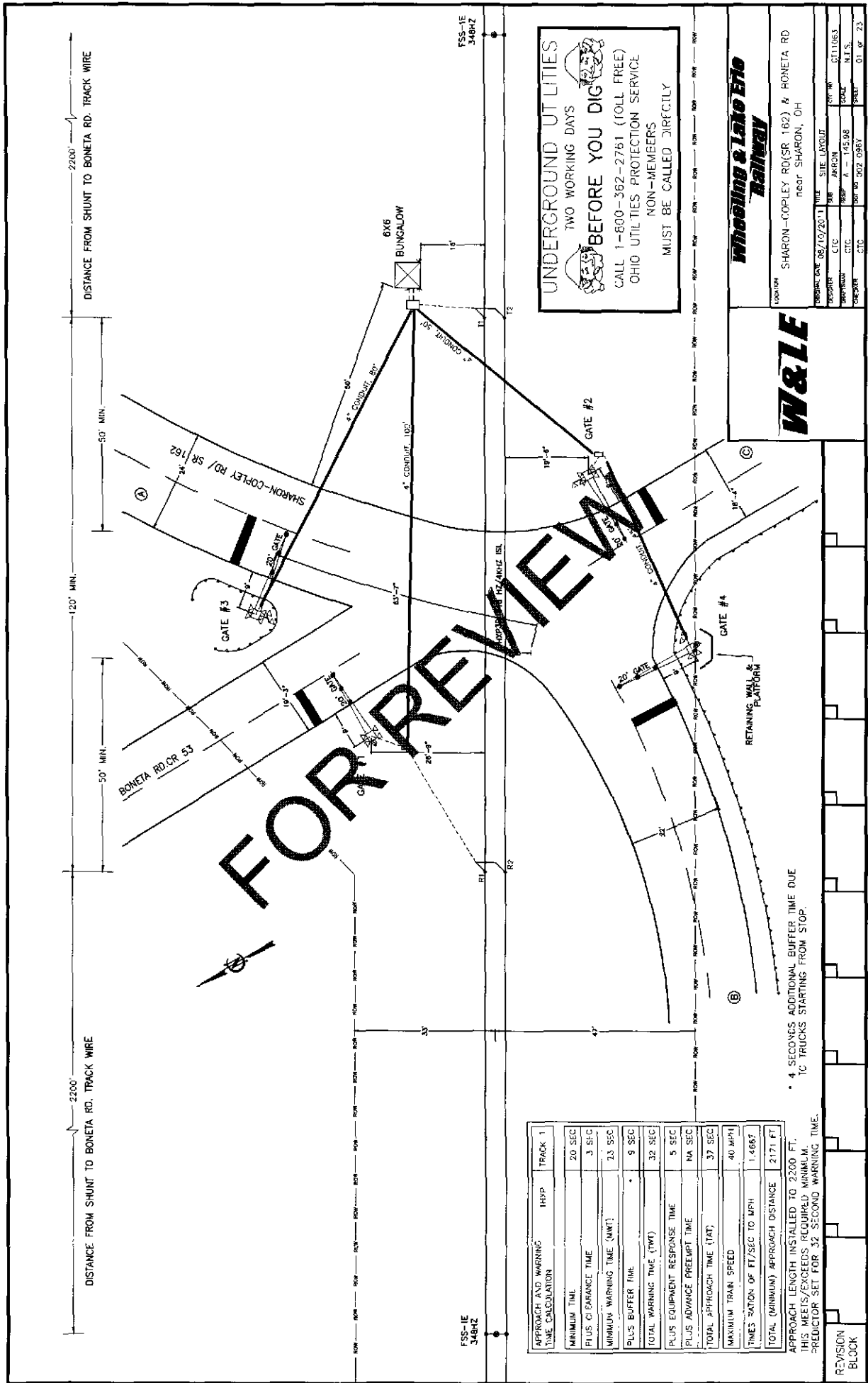
MATERIAL					
<i>Description</i>	<i>Qty</i>	<i>UOM</i>	<i>Unit Price</i>		<i>Amount</i>
HOUSE MATERIAL (SEE ATTACHED DETAIL)	1	LS			\$57,427.59
FIELD MATERIAL(SEE ATTACHED DETAIL)	1	LS			\$75,402.38
HOUSE AND SIGNAL WIRING	1	LS			\$8,000.00
FILL DIRT		TN	\$7.50		\$0.00
CONCRETE		YD	\$500.00		\$0.00
COVER 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					\$144,829.97
MATERIAL TOTAL					\$144,829.97

TOTAL PROJECT ESTIMATE	\$183,340.14
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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	\$10,700.00	\$10,700.00
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
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 NICAD 425 AH SPL-425	10	EA		\$390.00	\$3,900.00
BATTERY NICAD 250 AH SPL-250	9	EA		\$310.00	\$2,790.00
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
ASSY AGA-1 ARRESTOR	16	EA	202216-001	\$20.76	\$332.11
ASSY AGE-1 EQUALIZER	8	EA	202217-000	\$21.75	\$173.98
POWER OFF LIGHT KIT	1	EA	LC2-005WD	\$116.40	\$116.40
NUT INSULATED HARMON	20	EA	013986-000	\$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	2	EA	201756-015	\$608.75	\$1,217.50
MICRO DATA ANALYZER II WLE PK	1	EA	072113-100	\$3,450.00	\$3,450.00
MDA CURRENT SENSOR	4	EA		\$220.00	\$880.00
BATTERY GROUND DETECTOR	1	EA	NAS	\$1,250.00	\$1,250.00
RELAY 500 OHM 6FB NEUTRAL	2	EA	ST1 400000	\$750.00	\$1,500.00
RELAY PLUGBOARD B1 W/10-14 CRIMP TERMINALS	2	EA		\$203.00	\$406.00
2 POS RELAY RACK	1	EA	PTMW	\$200.00	\$200.00
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	1	EA	002238-101	\$26.09	\$26.09
CONN PLUG L6-15 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	14	EA	203032-000	\$43.48	\$608.76
ASSY TERM STRIP DBL POST 12	5	EA	250094-300	\$19.77	\$98.84
GROUND POST P5-162	4	EA	113047-000	\$25.94	\$103.75
WRENCH AAR TERMINAL	1	EA	095058-001	\$15.28	\$15.28
KIT APRVD SM PARTS/SL XING	1	EA	180394-590	\$1,058.90	\$1,058.90
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	120	FT		\$0.90	\$108.00
GATE ARM 16-32' UHI LED LGHTS	4	EA	076045-014	\$613.73	\$2,454.94
BRKT EXT F/SIDELT 4"-5" MASTS	3	EA	005961-005	\$289.36	\$868.07
SLEEVE 4 ALUMINUM REC #92958	4	EA	14187-01	\$44.33	\$177.32
1-WAY CROSSARM, LESS LED'S (06)	3	EA	076048-116	\$980.00	\$2,940.00
LED INSERT DIALIGHT FLX4000	6	EA	076048-109	\$247.76	\$1,486.58
DECAL, DOT STRIP	4	EA		\$16.00	\$64.00
BELL ELECTRONIC CROSSING 4/5"	2	EA	6147-01	\$210.03	\$420.07
ASSY WLE STANDARD FLASHER/GATE W/O ARM, GATE ARM LIGHTS, GATE KEEPER	4	ASSY	CTC	\$13,500.00	\$54,000.00
GATE MAINTENANCE PLATFORM	1	EA	PROGRESS	\$2,000.00	\$2,000.00
TAPE MARKER BURIED RR CABLE	1	EA	029989-000	\$21.43	\$21.43
CABLE UG 3 COND #6 AWG SOLID	150	FT	1013-02	\$4.06	\$608.85
CABLE UG 7 COND #6 AWG SOLID	600	FT	1077-02	\$6.29	\$3,775.20
CABLE UG 7 COND #14 AWG SOLID	600	FT	1023-02	\$2.22	\$1,333.20
WIRE UG TRK #6 AWG DUPLEX	250	FT	1094-02	\$1.46	\$365.75
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	2	EA	D&W SB7100090	\$42.10	\$84.20
BOND JOINT 5/16" X 7" TAB ERICO #SB-	300	EA	2161-01	\$5.41	\$1,623.60
WIRE #6 SOFT BARE COPPER	60	FT	1436-01	\$0.40	\$23.76
CARTRIDGE SB25 POWDER W/ATTACHMETAL FOR	300	EA	1026-39	\$1.55	\$465.30
ROD 5/8 X 8 NS GRD***USE-02***	8	EA	1357-01	\$14.72	\$117.74
CONNECTION SBNT1-161G ONE-SHOTFOR 5/8 IN	8	EA	1029-01	\$6.17	\$49.37
CADWELD TYPE GR 5/8GRDX#6WIRE	8	EA	005755-002	\$7.10	\$56.76
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
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	10	EA	1118-01	\$1.97	\$19.69
COMPOUND DUCT SEAL 5 LB PLUG PERMAGUM #	5	PK	1179-01	\$10.68	\$53.41
LOCK MASTER	6	EA	MLCK	\$28.41	\$170.48
EMERGENCY SIGN SIGNAL	1	EA	SIG SIGN	\$113.65	\$113.65
FIELD TAG KIT	1	EA	FLDTGKT	\$170.48	\$170.48



APPROACH AND WARNING TIME CALCULATION	THVP	TRACK 1
MINIMUM TIME	20 SEC	
PLUS CLEARANCE TIME	3 SEC	
MINIMUM WARNING TIME (MWT)	23 SEC	
PLUS BUFFER TIME	9 SEC	
TOTAL WARNING TIME (TWT)	32 SEC	
PLUS EQUIPMENT RESPONSE TIME	5 SEC	
PLUS ADVANCE PREEMPT TIME	NA SEC	
TOTAL APPROACH TIME (TAT)	37 SEC	
MAXIMUM TRAIN SPEED	40 MPH	
TIMES RATION OF FT/SEC TO MPH	1.4667	
TOTAL (MINIMUM) APPROACH DISTANCE	2171 FT	

* 4 SECONDS ADDITIONAL BUFFER TIME DUE TO TRUCKS STARTING FROM STOP.

APPROACH LENGTH INSTALLED TO 2200 FT.
THIS MEETS/EXCEEDS REQUIRED MINIMUM
PREDICTOR SET FOR 32 SECOND WARNING TIME.

REVISION
BLOCK

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 SHARON-COPLEY RD (SR 162) & BONETA RD
near SHARON, OH

DESIGN DATE	08/10/2011	TITLE	SITE LAYOUT
DESIGNER	CIC	APP'N	AKRON
CHECKER	CIC	SCALE	1" = 145.36'
DATE	08/10/2011	SHEET	01 OF 23

W&LE

CONSTRUCTION NOTES

- 1.) BACK LIGHTS GATE #4 ON JURY MAST AIMED TOWARDS POINT A 50' IN ADVANCE OF STOP BAR.
- 2.) GATE #2 ADDITIONAL SIDELIGHTS MOUNTED ON JURY MAST ON THE BACK AIMED AT POINT C 50' IN ADVANCE OF STOP BAR.
- 3.) GATE #3 ADDITIONAL SIDELIGHTS MOUNTED ON JURY MAST ON THE BACK AIMED AT POINT C 50' IN ADVANCE OF STOP BAR.
- 4.) STOP BARS AND STOP SIGNS TO BE RELOCATED TO 8' IN ADVANCE OF EACH GATE BY HIGHWAY AUTHORITY.

FOR REVIEW

**Wheeling & Lake Erie
Railway**

LOCATION SHARON-COPLEY RD(SR 162) & BONETA RD
near SHARON, OH

SHEET LAYOUT NOTES			
DATE: 08/10/2011	FILE: SHARON	FILE NO: C111063	
DESIGNED: CTC	PROJECT: A - 145.38	SCALE: N.T.S.	
DRAWN: CTC	DATE: 08/09/07	SHEET: 23	

W&LE

REVISION
BLOCK

CONSTRUCTION NOTES

- 1.) SHARON-COPELY ROAD LOCATED AT LAT 41.0990592
LON -81.7758745.
- 2.) GATE #4 REQUIRES A MAINTENANCE PLATFORM TO BE
BOLTED TO THE FOUNDATION.
- 3.) GATE #4 REQUIRES RETAINING WALL TO BE INSTALLED
BY RAILROAD.
- 4.) GATE #3 REQUIRES GUARDRAIL AS DEPICTED ON SHEET
01 OF 23 INSTALLED BY RAILROAD.
- 5.) ALL CONSTRUCTION NOTES PLACED HERE.

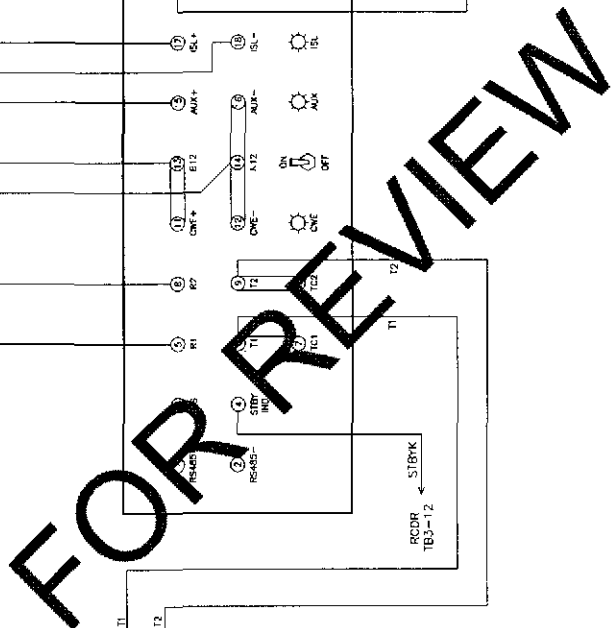
FOR REVIEW

**Wheeling & Lake Erie
Railway**

Location SHARON-COPELY RD(SR 162) & SONCTA RD
near SHARON, OH

DATE		TIME		SITE LAYOUT NOTES	
DESIGN	08/19/2011	BY	AKRON	DATE	CT1106LJ
REVISION	CTC	DATE	AKRON	DATE	CT1106LJ
DESCRIPTION	CTC	DATE	AKRON	DATE	CT1106LJ
DATE	08/19/2011	DATE	08/19/2011	DATE	08/19/2011

REVISION
BLOCK



**Wheeling & Lake Erie
Railway**

SHARON-COPLEY RD(SR 162) & BONETA RD
near SHARON, OH

ORIGINAL DATE	08/10/2011	DATE	
DESCRIPTION	CTC	908	AKRON
TRANSMAN	CTC	RRP	A = 145.98
CHECKNO	CTC	007	ENRY
			SHEET
			02 OF 23
			N.T.S.
			904C
			CT11063
			DATE
			CROSSING CONTROL CIRCUITS

CHANGE FROM TYPICAL Y

NO. 5-136

PROGRAM
INFORMATION

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

HXP-3R ADJUSTMENTS

NO.	ADJUSTMENT NAME	TRACK 1	TRACK 2
1	AS ² LENGTH	2200'	
2	WARNING TIME	32 SEC	
3	IA	*	
4	TC	*	
5	MD RESTART	0	

OPTION ADJUSTMENTS

NO.	ABBREVIATION	TRACK 1	TRACK 2
1	TK-EMA	UP	
2	TK-FO	525 HZ	
3	CW/MD	C	
4	UNI-BI	b (B)	
5	NGS-C	*	
6	CWEVT	DL (80 SEC)	
7	LOS	DL (16 SEC)	
8	U-LOS	DL (5 SEC)	
9	HC	*	
10	P-COMP	*	
11	AX1	N/A	
12	AX2	N/A	
13	AX3	N/A	
17	MUR-AX	16"	
18	OF-TK 1 OR 2	DL (0)	
19	CJ-LOS	DL (0)	
20	PJ-DET	DL (15)	
21	PJ-RX	DL (15)	
22	MD TMR	DL (10)	
23	MN-WT	DL (0)	
24	FS-DET	16"	
25	PS-RX	DL (0)	
26	PS-TM	DL (10)	
27	PDS-SI	16"	
28	PDS-RX	DL (0)	
29	PDS-TM	DL (0)	
30	AR-TMR	16"	
31	AR-RX	DL (0)	
32	AR-TM	DL (10)	
33	AIO-RX	UP	
34	PF-EMA	16"	

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

AX ADJUSTMENTS

NO.	ABBREVIATION	AX 1	AX 2	AX 3
1	TK-ASN			
2	OF-IR1			
3	OF-IR2			
4	WT			
5	MD-RST			
6	CW/NO			
7	U-LOS			
8	PJ-DET			
9	PJ-RX			
10	PDS-SI			

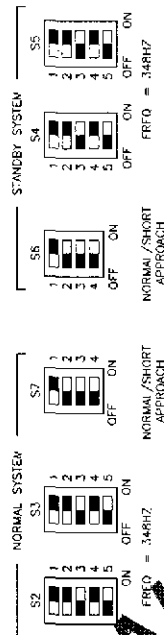
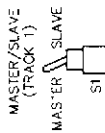
SWITCH INFORMATION

SWITCH	TRACK 1	TRACK 2
MASTER/SLAVE	MASTER	0
RSI FAULT JUMPER		1
PSI-LOS JUMPER		1
TLM W1 JUMPER	PINS 1-2	
TLM W2 JUMPER	PINS 2-3	
TLM W3 JUMPER	PINS 2-3	
MINUTE TIMEOUT	5 MIN	
CW/NO	CW	
STANDBY/AUTO/NORMAL	AUTO	

NOTE: DL = DEFAULT LEVEL
NA = NON APPLICABLE

SHUNT RECORDS

APPROACH 1		NO SHUNT	100% SHUNT	50% SHUNT	UA ADDED
Track 1	Track 2	RX	PHASE	RX	PHASE
Normal	Standby				± 1 to ± 9
Normal	Standby				
Normal	Standby				
APPROACH 2					
Normal	Standby				
Normal	Standby				
Normal	Standby				



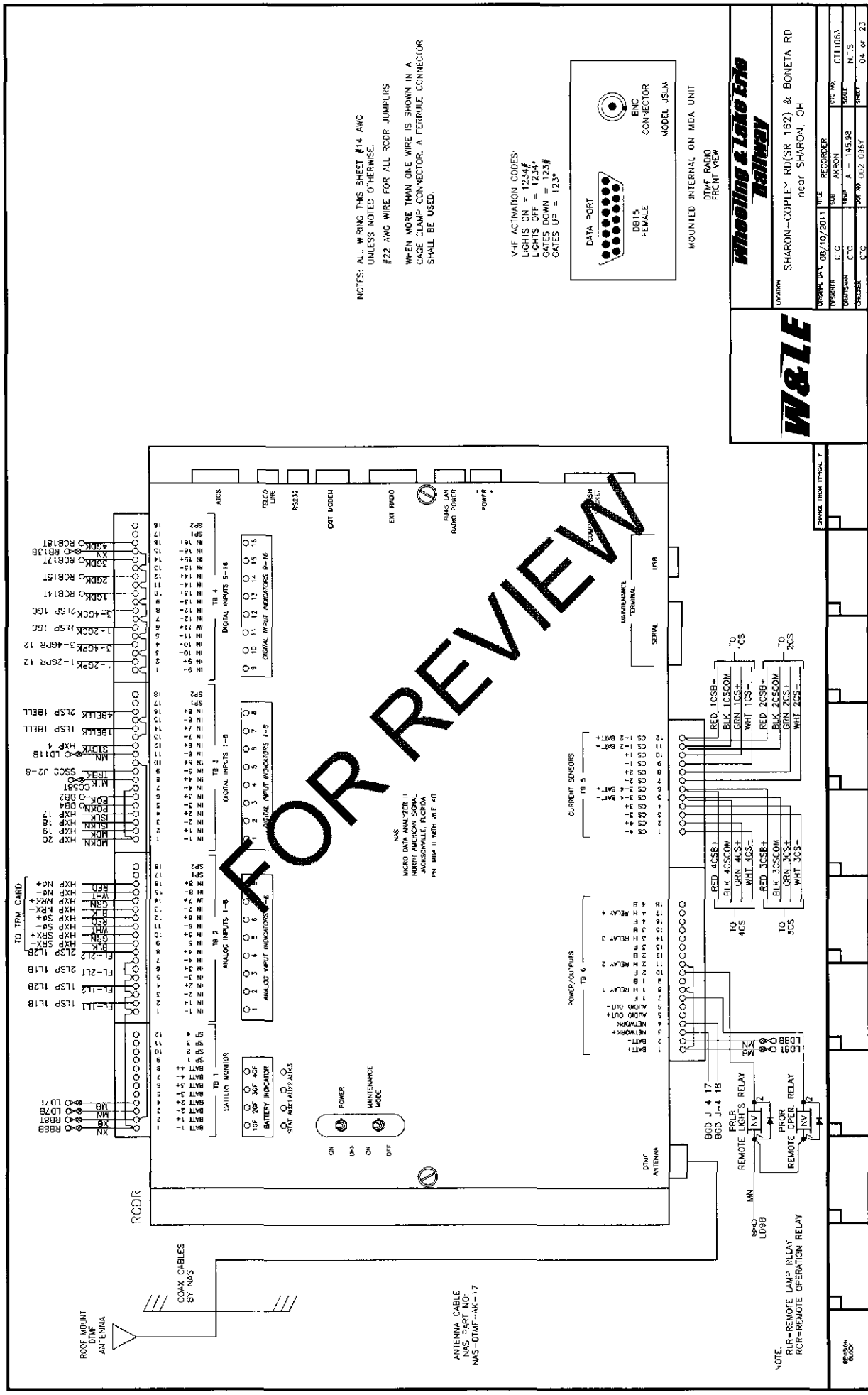
W&LE

**Wheeling & Lake Erie
Railway**

LOCATION SHARON-COPLEY RD (SR 162) & BONETA RD
near SHARON, OH

DATE	BY	REV	DESCRIPTION
05/10/2011	CTC	1	CTC NO. 1003
05/10/2011	CTC	2	CTC NO. 1003
05/10/2011	CTC	3	CTC NO. 1003
05/10/2011	CTC	4	CTC NO. 1003
05/10/2011	CTC	5	CTC NO. 1003

REVISION

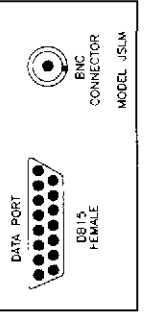


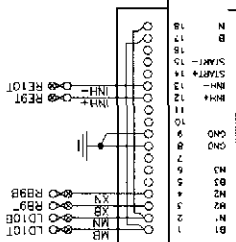
NOTES: ALL WIRING THIS SHEET #14 AWG
UNLESS NOTED OTHERWISE.

#22 AWG WIRE FOR ALL RCOR JUMPLIS

WHEN MORE THAN ONE WIRE IS SHOWN IN A
CAGE CLAMP CONNECTOR, A FERRULE CONNECTOR
SHALL BE USED.

V-HF ACTIVATION CODES:
LIGHTS ON = 1234
LIGHTS OFF = 1234
GATES DOWN = 1234
GATES UP = 1234





FOR REVIEW

SW1 CURRENT 1/10 MA

POSITION	1	2	3	4	5	6	7	8
CLOSED								
OPEN								

(2 MA)

SW1 CURRENT 1/10 MA

POSITION	1	2	3	4	5	6	7	8
CLOSED								
OPEN								

(12 HOURS)

SWITCH VALUES CLOSED POSITION (BINARY)

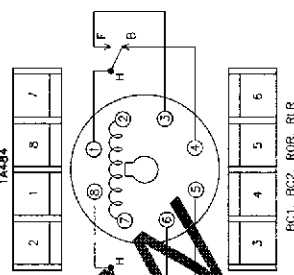
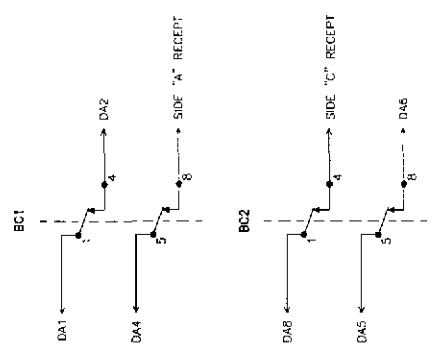
SW1 = 1
SW2 = 2
SW3 = 4
SW4 = 8
SW5 = 16
SW6 = 32
SW7 = 64
SW8 = 128

SWITCH VALUES CLOSED POSITION (BINARY)

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

SW8 OPEN=HOUR CLOSED=DAYS

BATTERY GROUND DETECTOR
NORTH AMERICAN SIGNAL
JACKSONVILLE, FLORIDA



MAS CONTROLLER SOFTWARE CONFIGURATION MANAGEMENT TABLE

APPLICATION	FILE NAME	DATE	DESCRIPTION
GFD EXFC	xxx	xx/xx/xxxx	GFD MODULE EXECUTIVE

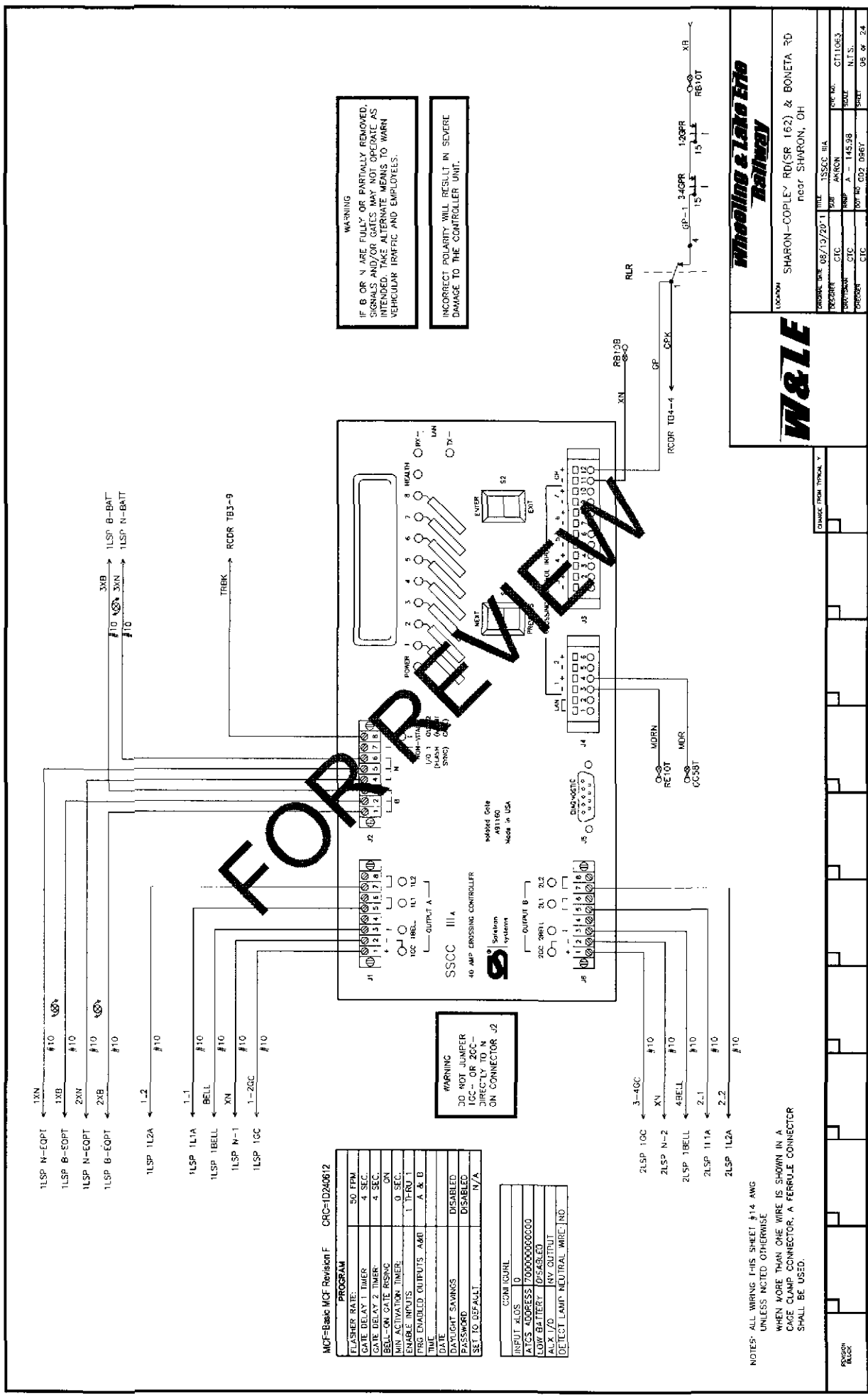
NOTES: ALL WIRING THIS SHEET #14 AWG
UNLESS NOTED OTHERWISE
#22 AWG WIRE FOR ALL RCOR JUMPEES
WHEN MORE THAN ONE WIRE IS SHOWN IN A
CAGE CLAMP CONNECTOR, A FERRULE CONNECTOR
SHALL BE USED

Wheeling & Lake Erie
Railway

LOCATION SHARON-CORLEY RD(SR 162) & BONETA RD
near SHARON, OH

ISSUED DATE	08/10/2011	FILE	BCD
ISSUED BY	CIC	REV	AKRON
DESIGNER	CIC	REV A	145.98
PROJECT	CIC	DATE	07/10/13
PROJECT	CIC	DATE	07/10/13

SECTION BLOCK



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.

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

MCF-Basic MCF Revision F CRC=1D260612

PROGRAM	
FLASH RATE:	50 FPM
GATE DELAY 1 TIMER:	4 SEC
GATE DELAY 2 TIMER:	4 SEC
BELL-ON GATE RISING:	ON
MIN ACTIVATION TIMER:	0 SEC
ENABLE INPUTS:	1, TRU 1
FRG ENABLED OUTPUTS:	A & B
TIME:	
DAYLIGHT SAVINGS:	DISABLED
PASSWORD:	DISABLED
SET TO DEFAULT:	N/A

CONFIGURE	
INPUT ALDS:	10
ATCS ADDRESS:	700000000000
LOW BATTERY:	DISABLED
ALX I/O:	RV OUTPUT
DETECT LAMP NEUTRAL WIRE:	NO

WARNING
DO NOT JUMPER 10C- OR 20C- DIRECTLY TO N ON CONNECTOR J2

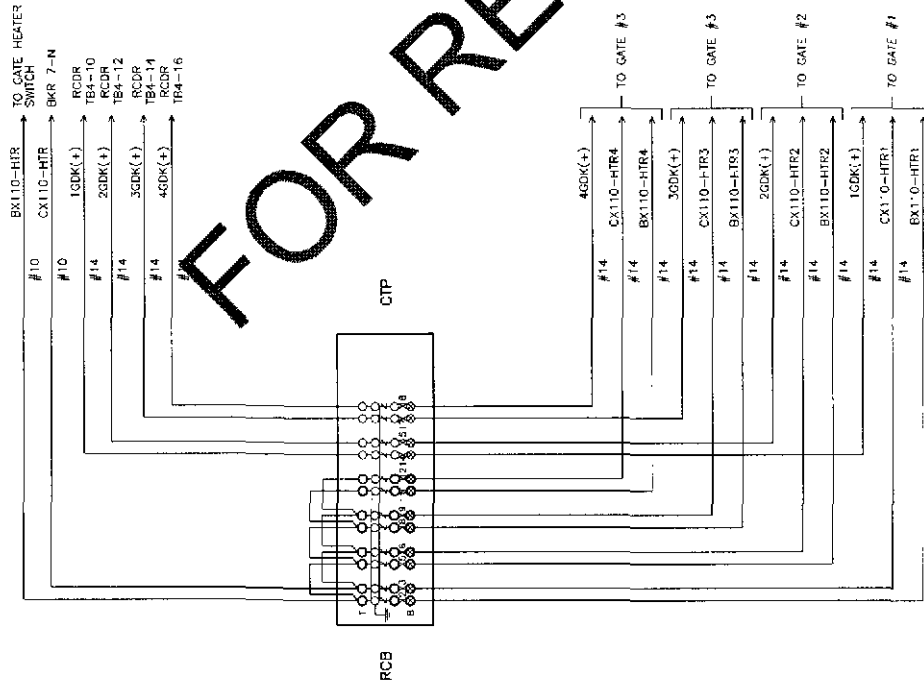
NOTES: ALL WIRING THIS SHEET #14 AWG UNLESS NOTED OTHERWISE
WHEN MORE THAN ONE WIRE IS SHOWN IN A CAGE CLAMP CONNECTOR, A FERRULE CONNECTOR SHALL BE USED.

W&LE

Wheeling & Lake Erie Railway

LOCATION: SHARON-COPELY RD(SR 162) & BONETA RD near SHARON, OH

DATE: 08/13/2011 TIME: 13:55:00
PROJECT: CTC
DESIGNER: CTC
CHECKED: CTC
DRAWN: CTC
SHEET: 06 OF 24



FOR REVIEW

Wheeling & Lake Erie
Railway

LOCATION SHARON-COPLEY RD(SR 162) & BONETA RD
near SHARON, OH

W&LE

CHOOSE FROM TYPICAL 7

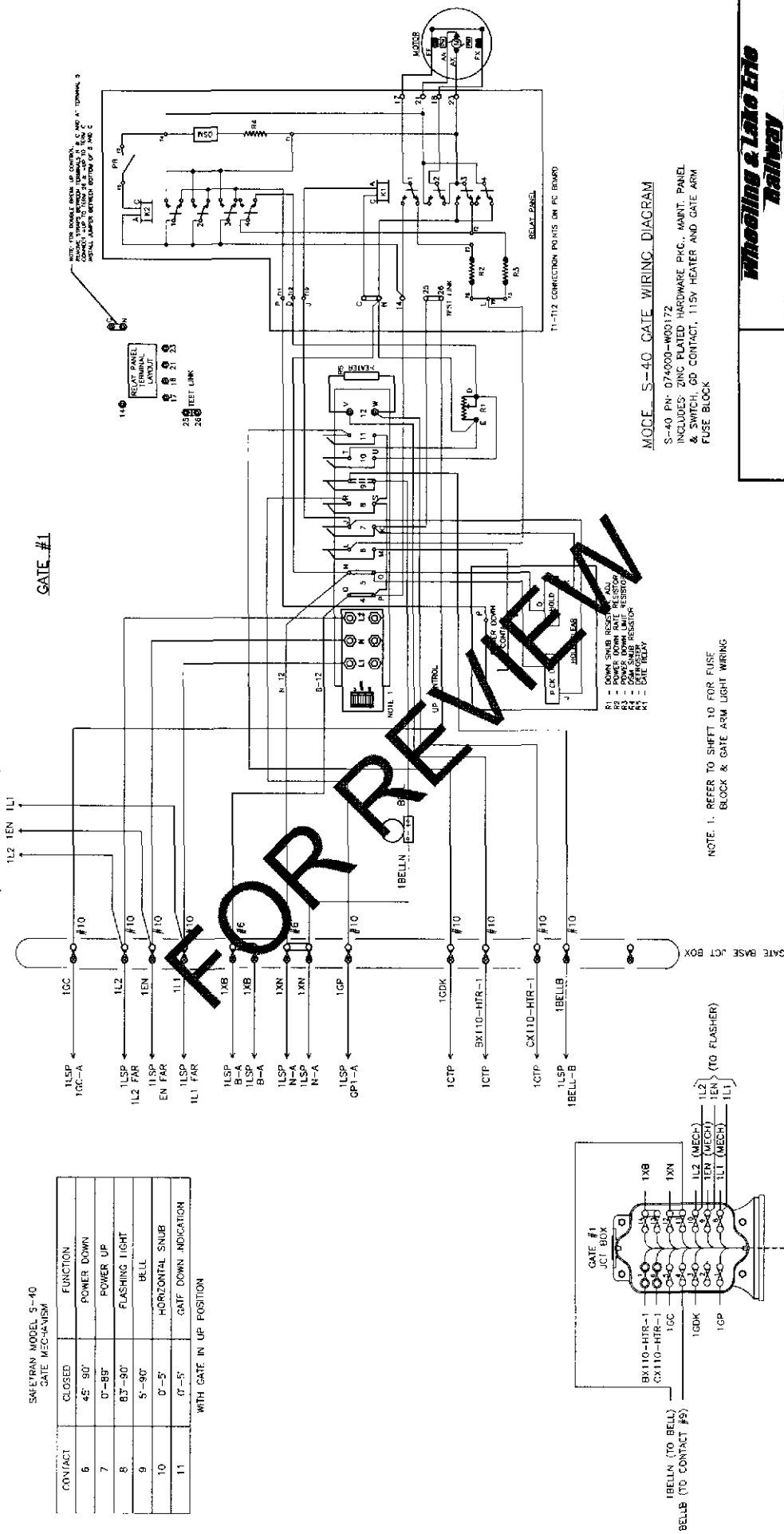
DESIGNED BY	08/10/2011	W&LE	CTP
DRAWN BY	CTC	W&LE	AMRON
CHECKED BY	CTC	W&LE	CTC
DATE	08/10/2011	W&LE	CTC
PROJECT	SHARON-COPLEY RD(SR 162) & BONETA RD	W&LE	CTC
SHEET	001 OF 01	W&LE	CTC

SAFETRAIN MODEL S-40
GATE MECHANISM

CONTACT	CLOSED	FUNCTION
6	45°-90°	POWER DOWN
7	0°-89°	POWER UP
8	83°-90°	FLASHING LIGHT
9	5°-90°	BELL
10	0°-5°	HORIZONTAL SNUB
11	0°-5°	GATE DOWN INDICATION

WITH GATE IN UP POSITION

TO MASTER MOUNTED FLASHERS
(SHEET #1 FOR DETAILS)



GATE #1

MODE S-40 GATE WIRING DIAGRAM

S-40 PN-074000-W00172
INCLUDES ZINC PLATED HARDWARE PKG., MANT. PANEL
& SWITCH, 60 CONTACT, 115V HEATER AND GATE ARM
FUSE BLOCK

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

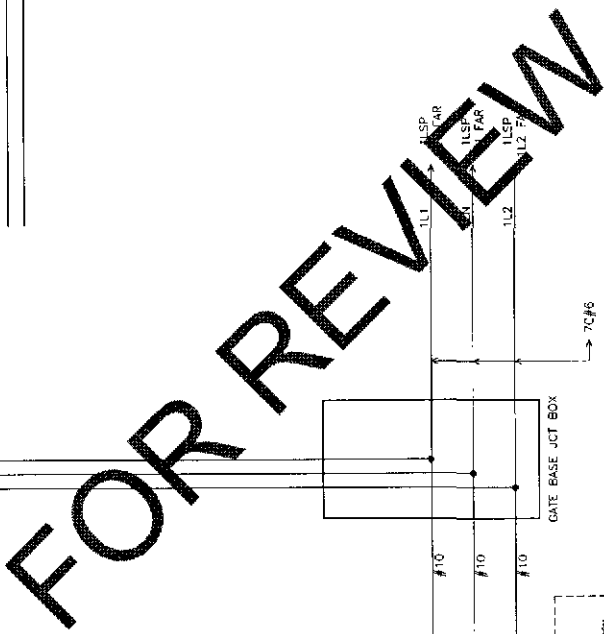
Whooling & Late Erie
Railway

SHARON-COPLEY RD (SR 162) & BONCTA RD
near SHARON, OH

W&LE

CHANGE FROM TYPICAL N

DATE	08/10/2011	FILE	GATE #1 MECHANISM (NEAR SIDE)
DESIGNED BY	CIC	CHKD BY	AKRON
DRAWN BY	CIC	APP'D BY	AKRON
CHECKED BY	CIC	DATE	08/10/2011
SCALE	1" = 14.58'	TOTAL	19
SHEET	19	OF	23



Ⓜ IS LEAD SYMBOL ONLY. INSTALL ACCORDING TO MANUFACTURER'S INSTRUCTIONS.

HARON-COPLEY RD(SR 162) & BONETA

DATE	08/10/2011	TIME	
		GATE #1 LIGHTS (NEAR SIDE)	

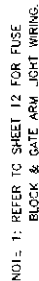
CHARGE	CTC	SUR	AKROM	CHC NO	CT11D63
DOCK-TURN	CTC	RRPS	A - 145.98	SCALE	N - 5
CHARGE	CTC	DOT NO	002 0967	SHEET	12 OF 24

NO 50/3

CONTACT	CLOSED	FUNCTION
6	45°-90°	POWER DOWN
7	0°-85°	POWER UP
8	83°-90°	FLASHING LIGHT
9	5°-90°	BELL (NOT USED)
10	C°-5°	HORIZONTAL SNUB
11	C°-5°	GATE DOWN INDICATION

WITH GATE IN UP POSITION

GATE #2



MODEL S-40 GATE WIRING DIAGRAM

S-40 PN: 074000-W01173

S-40 PN: 074000-W0017Z
INCLUDES: ZINC PLATED HARDWARE PKG., MAIN". PANEL
& SWITCH, 60 CONTACT, 115V HEATER AND GATE ARM
FUSE BLOCK

Whooling & Loko Edo Railway

WILEY

SHARON-COPLEY RD(SR 162) & BONETA RD
near SHARON, OH

ORIGINAL DATE 08/10/2011	TITLE	GATE #2 MECHANISM (FAIR SIDE)		
DESIGNER	CIC	AKRON	CIC NO.	CT11063
DRAWN	CIC	AKRON	SCALE	N.T.S.
CHECKER	CIC	AKRON	DATE	10/20/11

CHANGE FROM PRECAL - N

MONSIEUR

FOR REVIEW

Wiring Diagram Details:

- Battery:** 70A/6V, 12VDC. Terminals: 1LSP, 1L2 NEAR, 1LSP, 1L2 NEAR, 2EN, 2EN, 2L1, 2L1.
- Gate Base Jct Box:** Receives power from the battery terminals. Outputs: 2L2, 2EN, 2L1.
- Control Terminal Board:** Contains a battery symbol and terminals L1, L2, N, C. Connected to the 2L2, 2EN, and 2L1 lines. A gate #2 is indicated.
- Junction Box X-ARM:** Receives power from the 2L1 line. Controls: MAIN MAST LIGHTS (terminals 1, 2, 3, 4), JURY LIGHTS (terminals 5, 6).
- Junction Box X-ARM:** Receives power from the 2L1 line. Controls: MAIN MAST LIGHTS (terminals 1, 2, 3, 4), JURY LIGHTS (terminals 5, 6).

Inset Diagram: Shows the battery terminal layout with labels BACK, FRONT, and #2.

NOTE
* USE MINI ATO 10 AMP FUSLS ONLY
(M) IS LED SYMBOL ONLY INSTALL ACCORDING TO MANUFACTURER'S INSTRUCTIONS.

**Wheeling & Lake Erie
Railway**

SHARON-COPLEY RD(SR 162) & BONETA RD
near SHARON, OH

ORIGINAL DATE	FILE	GATE #2 LIGHTS (FAR SIDE)	CIC NO	CT10A3
08/10/2011	40R	AKRON		
	CIC			
	PROB	A - 145.98	SCALE	N.T.S.
	CIC			
	DOF NO	Q32 0966Y	SWEEP	13.06 23

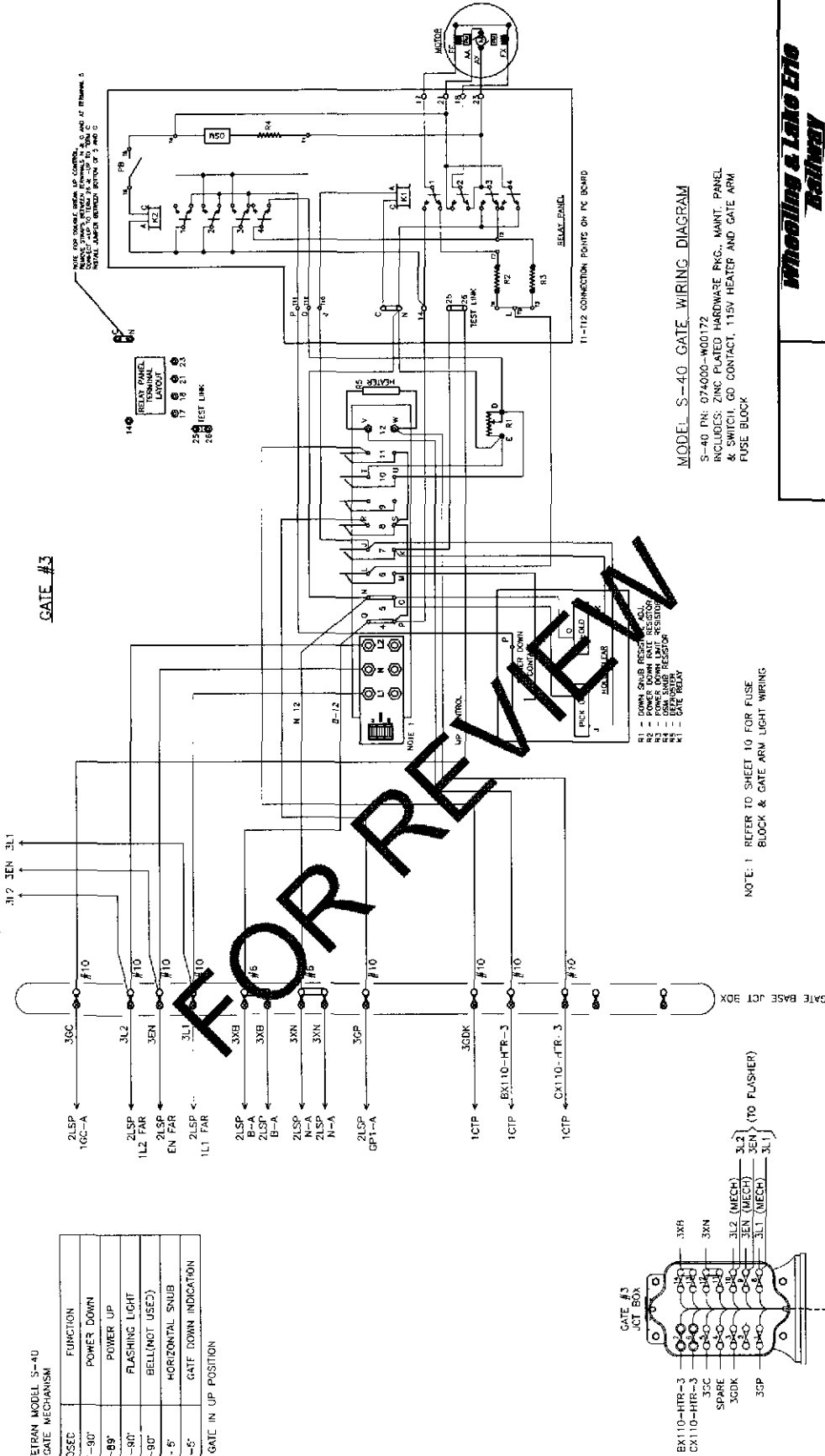
NO. 5 236

SAFETRAIN MODEL S-40
GATE MECHANISM

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	C°-5°	HORIZONTAL SNUB
11	C°-5°	GATE DOWN INDICATION

WITH GATE IN UP POSITION

TO MOUNT MOUNTED FLASHERS
(SHEET 15 FOR DETAILS)



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

MODEL S-40 GATE WIRING DIAGRAM
S-40 FPN: 074000-W00172
INCLUDES: ZINC PLATED HARDWARE PKG., MANT. PANEL
& SWITCH, GO CONTACT, 115V HEATER AND GATE ARM
FUSE BLOCK

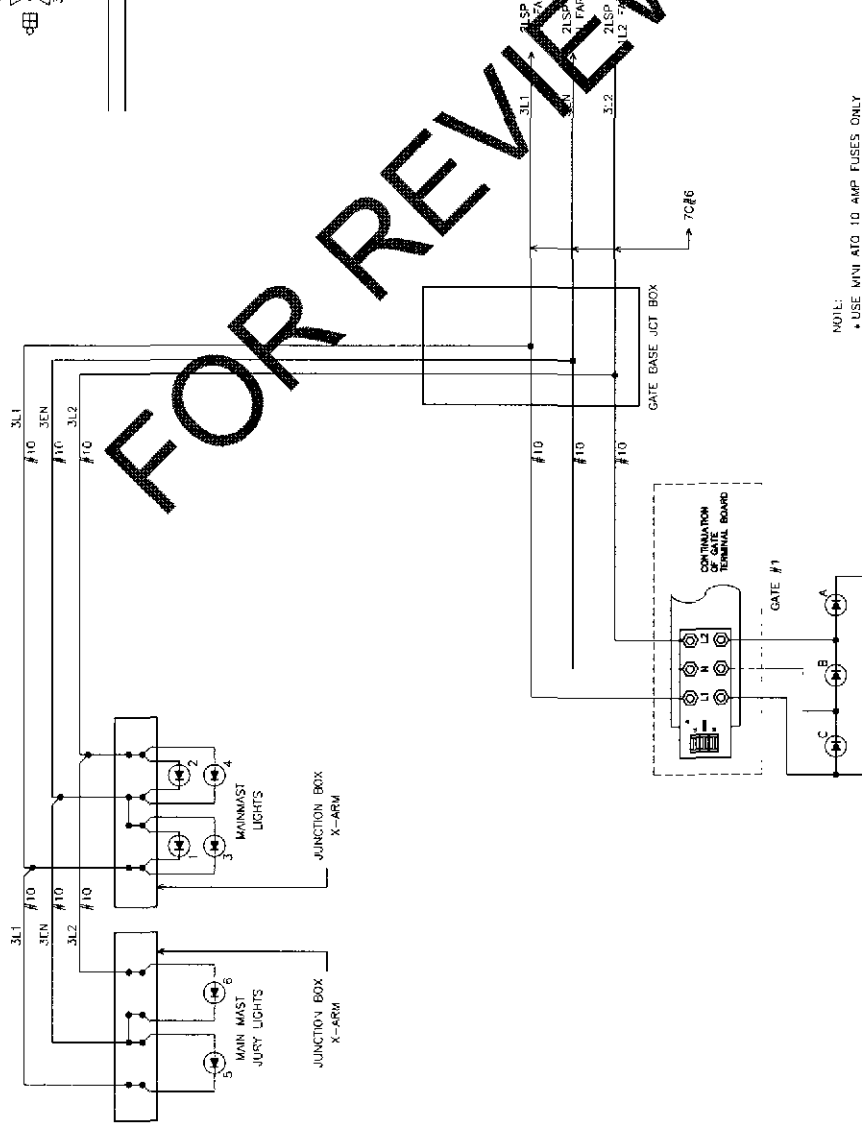
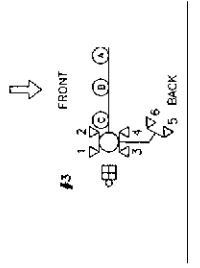
W&LE

LOCATION: SHARON-COPLEY RD(SR 162) & BONETA RD
near SHARON, OH

ORIGINAL DATE: 08/10/2011 TIME: 10:00 AM
DESIGNED BY: JTC
CHECKED BY: JTC
APPROVED BY: JTC
SCALE: N.T.S.
SHEET: 14 OF 23

REVISION	DATE	DESCRIPTION
1	08/10/2011	ISSUED FOR CONSTRUCTION

GATE #3



NOTE:
 • USE MINI ATO 10 AMP FUSES ONLY
 (M) IS LED SYMBOL ONLY. INSTALL ACCORDING TO MANUFACTURER'S INSTRUCTIONS.

W&LE

Wheeling & Lake Erie
Railway

LOCATION SHARON - COPLEY RD (SR 162) & BONETA RD
 near SHARON, OH

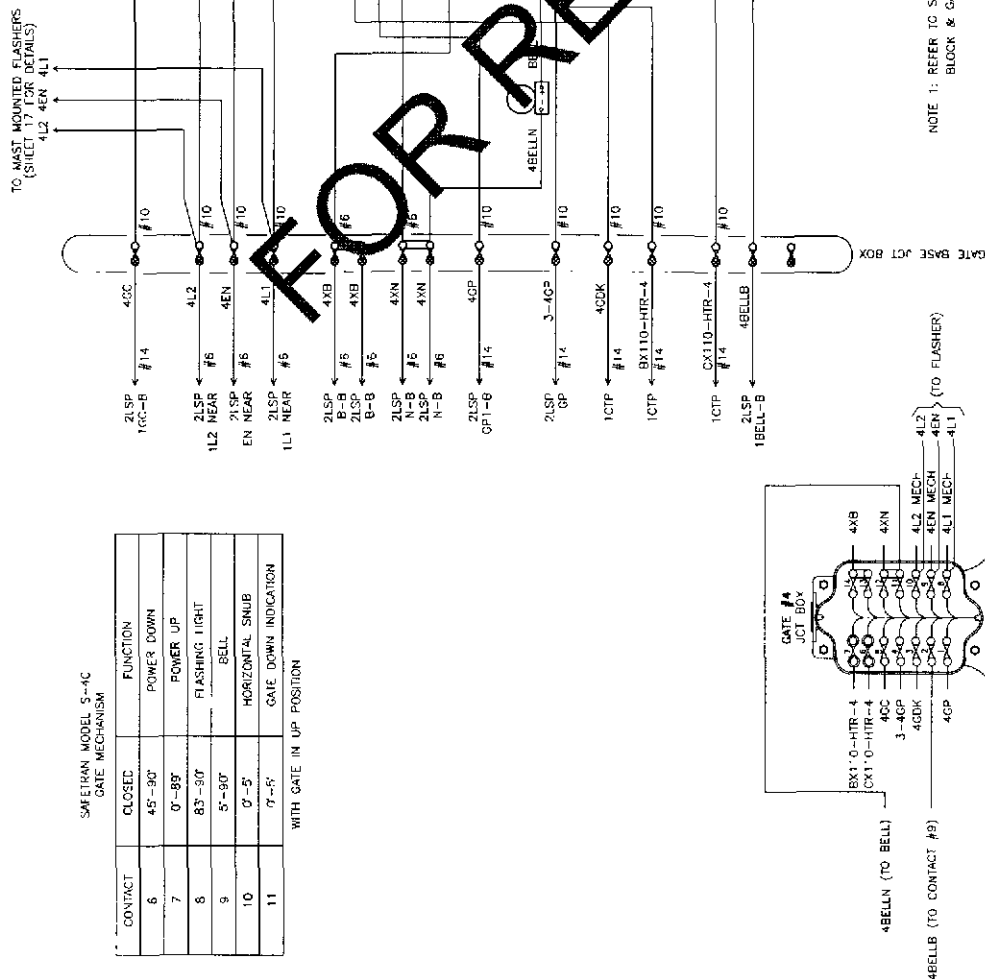
ORIGINAL DATE	08/10/2011	DATE	GATE #3 LIGHTS (N.A.S. SIDE)
PROJECT	CITC	DESIGN	SHARON
REVISION	CITC	DATE	08/10/2011
BY	W&LE	SCALE	N.T.S.
CHECKED	CITC	DATE	08/10/2011
APPROVED	CITC	DATE	08/10/2011
SHEET	15	OF	23

REVISION
 BLOCK

SAFETRAN MODEL S-4C
GATE MECHANISM

CONTRACT	CLOSED	FUNCTION
6	45°-90°	POWER DOWN
7	0°-88°	POWER UP
8	85°-90°	FLASHING LIGHT
9	5°-90°	SELL
10	0°-5°	HORIZONTAL SNUB
11	7°-5°	GATE DOWN INDICATION

WITH GATE IN UP POSITION



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

----- } CABLES TO CASE

MODEL S-40 GATE WIRING DIAGRAM

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

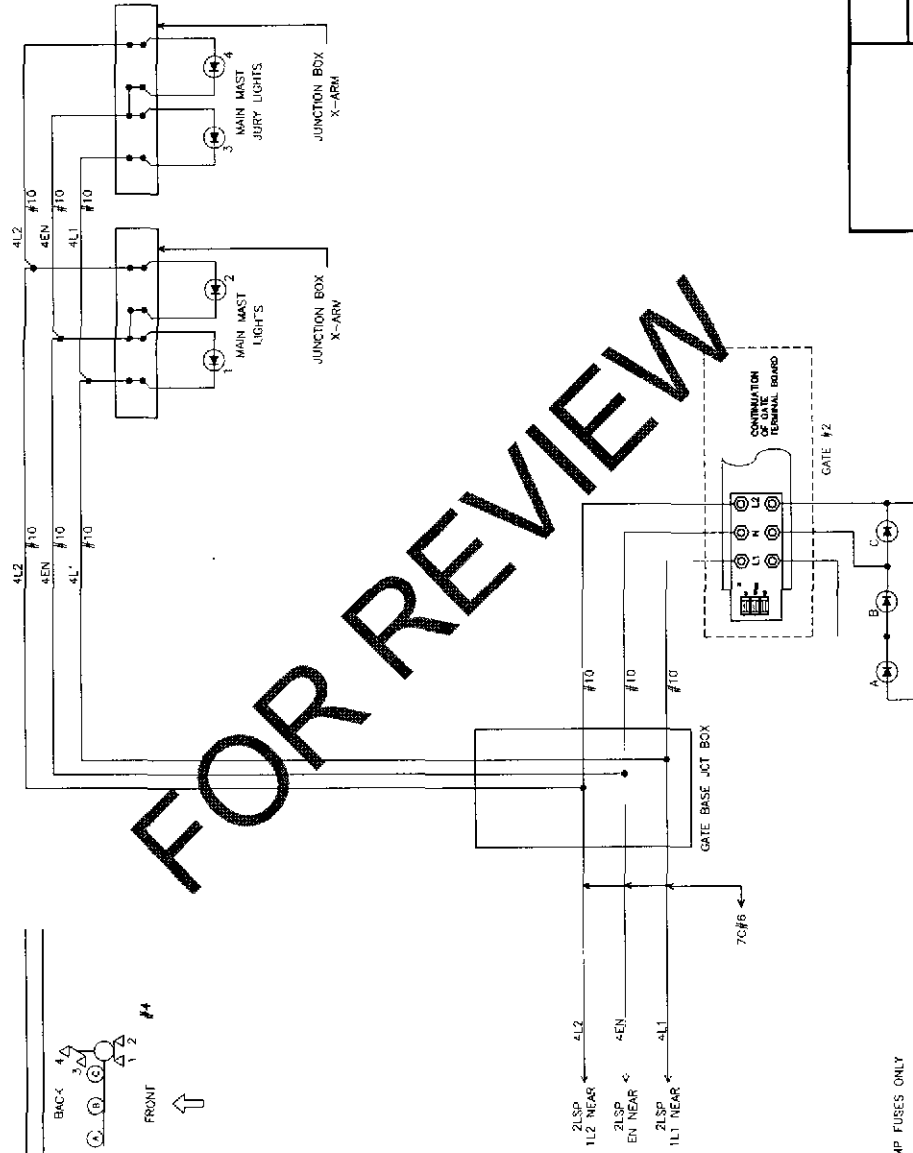
Available Wholesale & Retail

SHARON-COPLEY RD(SR 162) & BONETA RD
near SHARON, OH

ORIGINAL DATE	08/10/2011	TITLE	GATE #4 MECHANISM (FAR SIDE)
DRAWN BY	CYC	DATE	06/NOV
CHECKED BY	CYC	SCALE	N.T.S.
PROJECT NO.	002-09B6	SHEET	16 OF 23

181

GATE #4



NOTE:
 • USE MINI ATO 10 AMP FUSES ONLY
 (M) IS LED SYMBOL ONLY. INSTALL ACCORDING TO MANUFACTURER'S INSTRUCTIONS.

Wheeling & Lake Erie
Railway

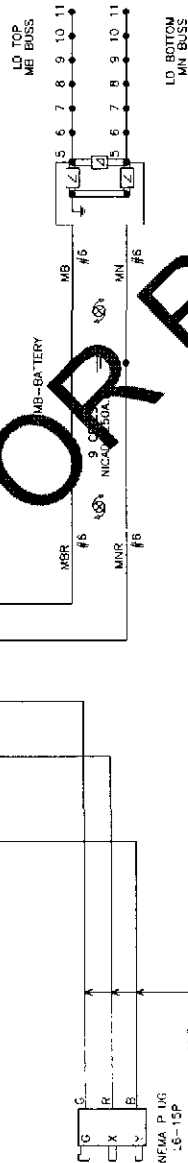
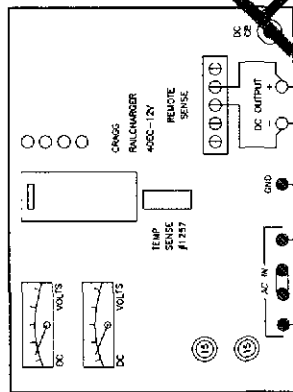
LOCATION: SHARON - COPLEY RD(SR 162) & BONETA RD
 near SHARON, OH

PROJECT DATE	08/10/2011	FILE	GATE #4 LIGHTS (FAN SIDE)
DESIGNER	CTC	DATE	01/10/03
REVISOR	CTC	PROJECT	A - 145-98
REVISION	CTC	DATE	08/10/02 (960)
		SHEET	17 of 23

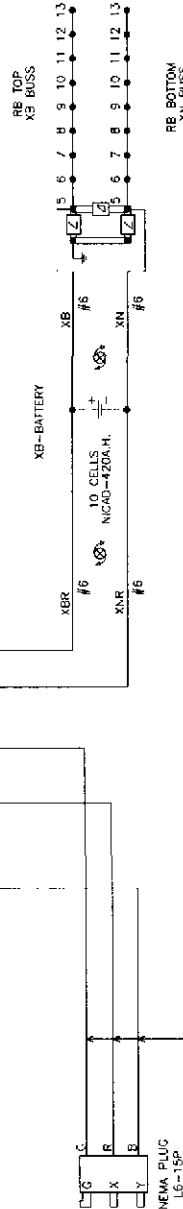
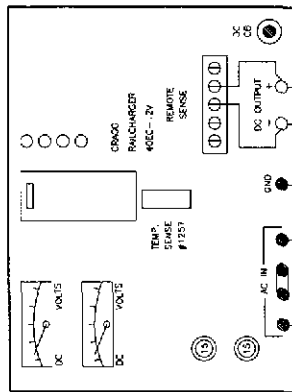
W&LE

SHARON
 BOX

MB-CHARGER



XB-CHARGER



BATTERY BUSS DC TAILS

12	SPARE
11	BGD INPUT 1
10	RDR 4
9	RDR 3
8	RDR TB6-1
7	RDR TB1-4
6	MDSA-1 BATT+
5	MB BATT+

MB BUSS (TOP)

MN BUSS (BOTTOM)

BATTERY BUSS DETAILS

13	3-4GPR
12	3-4GPR 1E
11	1-20PR 1E
10	SSCC J3-11
9	BGD INPUT 4
8	RDR TB1-2
7	2LSP B-BATT
6	1LSP B-BATT
5	XB BATT+

XB BUSS (TOP)

XN BUSS (BOTTOM)

Wheeling & Lake Erie
Railway

S-HARON-COPLEY RD(SR 162) & BONETA RD
near SHARON, OH

W&LE

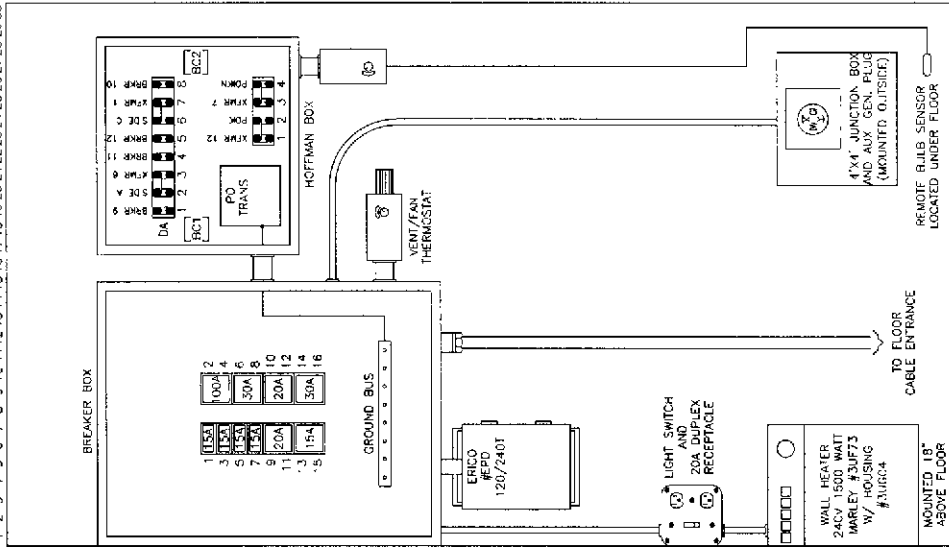
DATE	08/10/2011
TIME	11:05:33
USER	CTC
FILE	11-27
PRINT	15 OF 23

LOCATION	SHARON-COPLEY RD(SR 162) & BONETA RD near SHARON, OH
DATE	08/10/2011
TIME	11:05:33
USER	CTC
FILE	11-27
PRINT	15 OF 23

REVISION	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	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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1. USE THE FOLLOWING COLOR CODE:
 GRN - GREEN - SAFETY EQUIPMENT
 WHIT - WHITE - NX110 (NEUTRAL)
 BLK - BLACK - NX210 (L2)
 BRN - BROWN - BREAKER BOX
 EXCEPT FOR THE COLOR CODE ARE
 THE PRE-WIRED, SEALED ARRESTOR UNITS
 MOUNTED ON THE BREAKER BOX WHICH
 HAVE TWO BLACK- AND ONE WHITE WIRE EACH.
2. MINIMUM WIRE SIZE:
 10 AWG - NO.14 AWG THIN OR THIN SOLID
 20 AWG - NO.12 AWG THIN OR THIN SOLID
 30 AWG - NO.10 AWG THIN OR THIN SOLID
3. CONTROL FAULT INTERRUPT (GFC) - SERVING
 MUST BE USED ON ALL CIRCUITS
 OUTSIDE THE DUNGALOW RECEPTACLE MOUNTED
 GFCI MAY BE USED INSTEAD OF BREAKER TYPE.
 A-1. GROUND WIRES RUN TO BREAKER BOX
 A-2. GROUND BUS

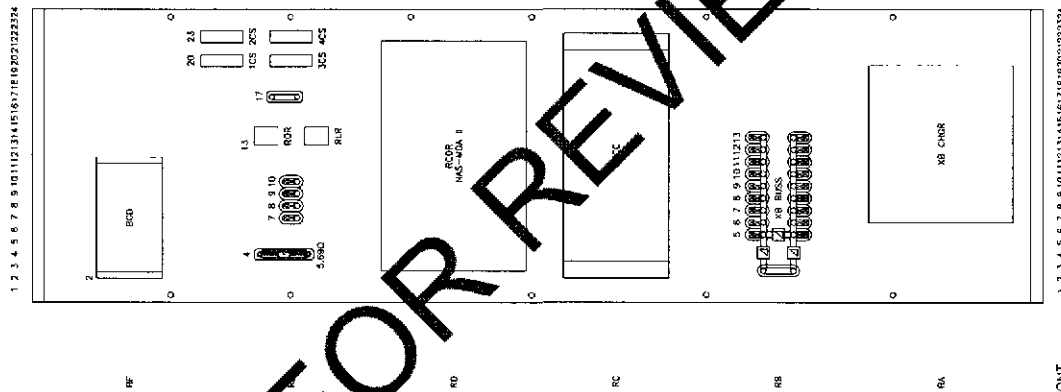
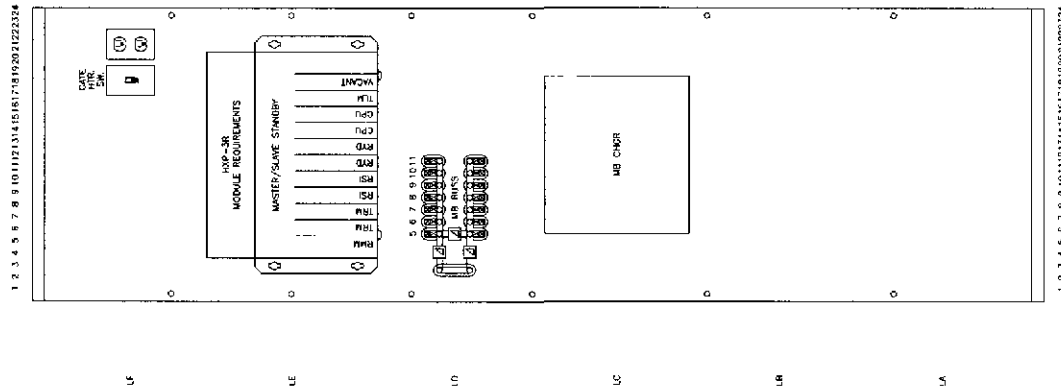


Lehigh Valley Railway

SHARON-COPLEY RD(SR 162) & BONEITA RD
near SHARON, OH

W81E

ORIGINAL DATE	08/10/2011	MILE	AC POWER DISTRIBUTION	MPH	C11:1063
BOOKING	CIC	SUB	AKRON		
OFFENSE	CIC	REAR	A - 145.98	SQUAD	1 = 2'
OFFICER	C13	OFF NO	002	SHEET	9 of 23



SIDE 'B' FRONT

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

W8

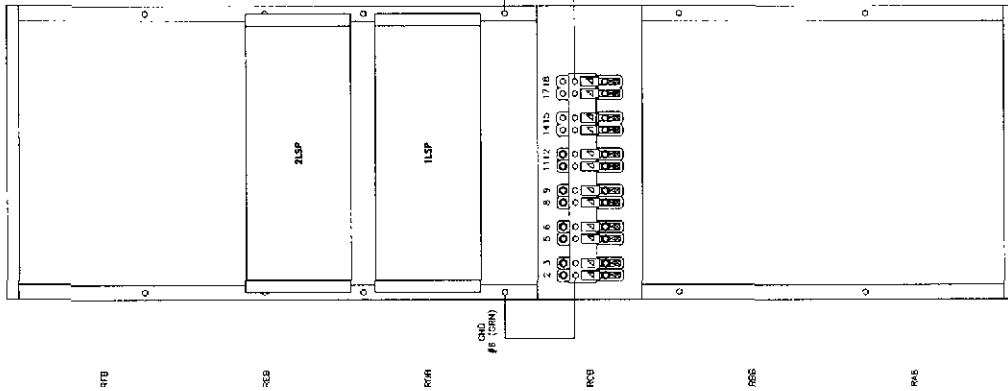
Amtrak Whooing & Loko Eto

SHARON-COPLEY RD(SR 162) & BONETA RD
near SHARON, OH

ORIGINAL DATE	10/28/10/2011	TITLE	BACK FRONT VIEW	CIT NO	CIT 104-3
DESCRIPTION	CITC	NO	ARROW		
COMPARISON	CITC	REAP	A - 145.98	SCALE	1"=2'
CHECKER	CITC	SOT NO.	002 0987	SHEET	20 OF 23

BACK OF RIGHT SIDE

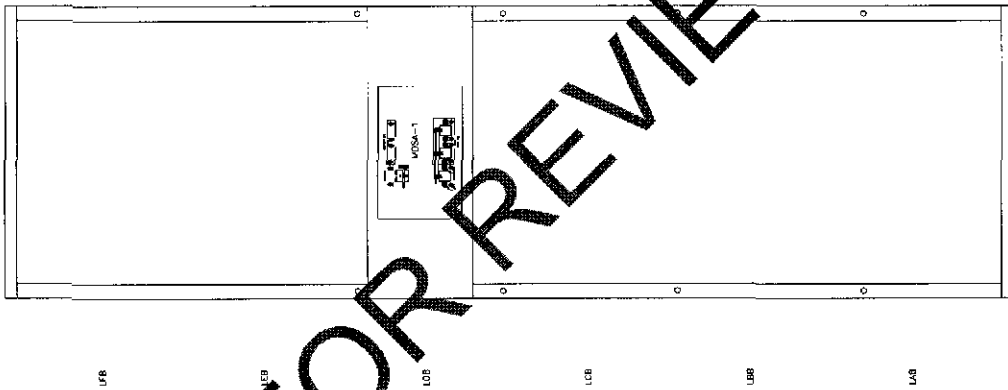
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24



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



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

**Wheeling & Lake Erie
Railway**

LOCATION
SHARON-COPLEY RD(SR 162) & BONETA RD
near SHARON, OH

W&LE

CHANGE FROM TYPICAL -

REVISION BLOCK

ORIGINAL DATE	DATE	BACK BACK VIEW	DATE	DATE
REVISION	DATE	DATE	DATE	DATE
REVISION	DATE	DATE	DATE	DATE
REVISION	DATE	DATE	DATE	DATE

21 of 23

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



CD

CC

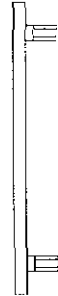
CB

CA

SIDE "C"

MANTAINER
SWITCH
56

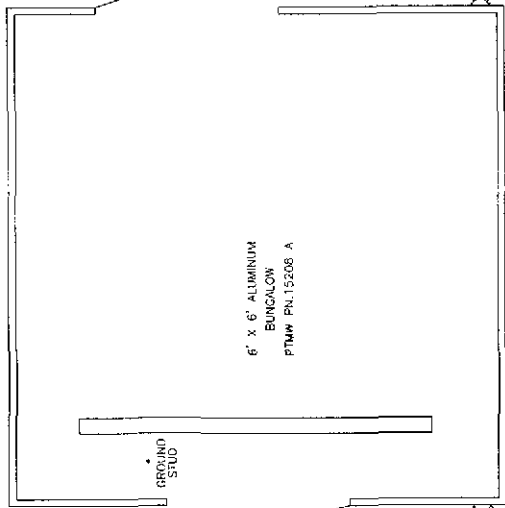
FOR REVIEW



10 BATTERY
10 CELLS
420 420
420 420

BATTERY TRAY

THIS SIDE TO FIELD
SIDE "C"



6' X 6' ALUMINUM
BUNGALOW
PTM# PL15208 A

SIDE "B"

SIDE "A"

THIS SIDE TO TRACKS

SIDE "D"

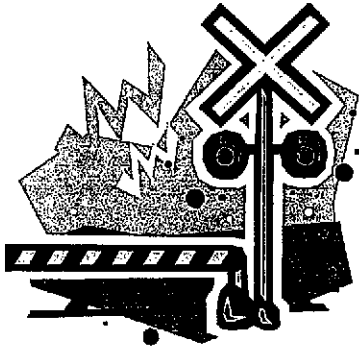
W&LE

Wheeling & Lake Erie
Railway

LOCATION
SHARON-COPELY RD(SR 162) & BONITA RD
near SHARON, OH

CHANGES FROM PREVIOUS

PROJECT DATE	08/10/2011	DATE	08/10/2011
DESIGNED BY	CTC	DATE	08/10/2011
CHECKED BY	CTC	DATE	08/10/2011
DATE	08/10/2011	DATE	08/10/2011
SCALE	1"=2'	SCALE	1"=2'
DATE	08/10/2011	DATE	08/10/2011
DATE	08/10/2011	DATE	08/10/2011



From the desk of Bob Crosier

TO: Wheeling and Lake Erie Railway
ATTENTION: Dan Reinsel
RE: Bonita Road Estimate

Attached you will find my proposal for pre-installation work for warning devices at Bonita Road and SR 162 in Sharon Township, Medina County.

Please call me with questions and/or concerns.

Thank you for the opportunity to do business with WLE.

Crosier Industrial Construction, LLC
8938 Peck Road
Ravenna, OH 44266
phone/fax: 330.297.5567
cell: 330.592.3082
trailnrnrbob@hotmail.com

Crosier Industrial Construction Ltd

8938 Peck Rd
Ravenna, Ohio 44266
Ph (330) 592-3082
trailmrbob@hotmail.com

Crosier Industrial Construction, LLC

Date submitted: 10/31/2011

Project Estimate: Bonita

LABOR	Rate/Hr	Hours	sub-total
Project Manager	\$50.00	100	\$ 5,000.00
Equipment Operator	\$22.00	265	\$ 5,830.00
Laborer, skilled	\$22.00	145	\$ 3,190.00
Accounting	\$185.00	1	185.00
Administrative	\$25.00	3	75.00
Sub-Total			14,280.00
G&A Burden for Labor		160%	22,848.00

EQUIPMENT	Quantity	rate/hr	Hours	Total
Case Backhoe		\$ 42.33	100	4,233.00
Excavator, Bobcat E32 (331)		\$ 31.20	145	\$ 4,524.00
Drill		\$ 59.62	20	1,192.40
Chipper		\$ 42.40	30	\$ 1,272.00
Truck, 4wd, pickup, 1 ton, on road		\$ 21.35	145	\$ 3,095.75
Auger		\$ 7.40	8	59.20
Tamper		\$ 4.25	16	68.00
Traffic control cones		\$ 0.13	145	18.85
Traffic control signs		\$ 0.23	# 145	\$ 33.35
Subtotal				\$ 14,496.55

MATERIALS	Quantity	Price/Each	Total
Stone, approx 18 ton each load	Supplied by WLE 12 loads	#	
Guardrail			\$1,150.00
Pull Box	1 large	150	150.00
Pull Box	3 small	\$295.00	885.00
Conduit, 5"	220'	\$2.46	541.20
Conduit, 4"	130'	\$1.95	253.50
Conduit, 2"	200'	\$0.80	160.00
Culvert, 18"	Supplied by WLE 25'		
Sections of 6' berm wall w/o guard wire	Supplied by WLE 3 sections		
PVC 5" 45 degree	4 bends	\$17.30	69.20
PVC 5" coup	15 coups	\$4.88	73.20
PVC 5" 90 degree	4 bends	\$18.10	72.40
PVC 5" 22 degree	1 bend	\$17.90	17.90
PVC 4" 45 degree	10 bends	\$11.50	115.00
PVC 4" coup	20 coups	\$2.10	42.00
PVC 4" 22 degree	4 bends	\$16.50	66.00
PVC 2" 45 degree	8 bends	\$1.95	15.60
Ground rods	4 rods	\$16.25	65.00
Glue	2 cans	\$8.20	16.40
Pull rope	600'	\$0.13	\$78.00
Subtotal			4,270.40

Project sub-total \$ 41,614.55

Project Cost Sub-total \$ 41,614.55
10% Profit Addition \$ 4,161.46

Total Project \$ 45,776.01

Terms for Invoices are Net 30 days. Thank you.

Project Notes for Bonita Road

Scope of Work:

- Days 1-3 Clear trees, brush and vegetation
Clear sight obstructions for gates and along tracks
Remove stumps, large rocks, etc. to eliminate walking hazard.
- Days -5 Locate and expose existing utilities, signal cables, culverts, sewers to verify location
Bore roads and track to install pvc conduit.
- Day 6 Excavate site to improve drainage, build drainage swails, spread gravel for drive.
- Day 7 Excavate and install conduits for bungalow location, install main pull box.
Spread and tamp gravel.
- Days 8-9 Excavate and install berm wall, foundation and conduit.
- Day 10 Excavate and install near side foundation and conduit and pull box.
- Days 11-12 Excavate and install far side foundations, conduit and pull box.
Install far side track wire conduit. Spread and tamp gravel.
- Day 13 Install guard rail around gate/flasher in island.
- Day 14 Spread gravel to finish height; finish grade site
- Day 15 (1/2 day) Install 18" culvert approx 80' east of pavement under tracks.

ADDITIONAL DUTIES PERFORMED THROUGHOUT THE 14 DAY PROJECT

- * Coordinate delivery of fill material
- * Transport foundations, culverts and berm wall material to site.
- * Install AC conduit run
- * Removal of spoils and debris
- * Supply and erect traffic control devices for work zone safety
- * Establish Railroad Roadway Worker Protection daily to comply with Federal Regs
- * Existing warning devices to remain in operation throughout the pre-installation process