Public Utilities
Commission of Ohio

Memo

To: Docketing Division

From: Jill Henry, Rail Specialist, Rail Division

Cc: PUCO Legal Department

Date: 6/6/2019

Re: PUCO Case No. 19-1292-RR-FED- In the Matter of a Request for the Installation of Active Warning Devices at the Wheeling & Lake Erie Railroad Grade Crossing, DOT# 001-943M, at Kibler Street/SR 602 in Crawford County, Ohio.

On September 7, 2018, the Ohio Rail Development Commission (ORDC) authorized funding for Wheeling & Lake Erie Railroad (WE) to install cantilevered lights and gates at Kibler Street/SR 602 in Crawford County, Ohio. The crossing was surveyed, on May 14, 2018, and was found to warrant the upgrade. The electric utility provider for this crossing is North Central Electric Cooperative.

The project will be paid for with federal funds and is actual cost. The plans and estimates for the project in the amount of $265,712.94 have been approved. Construction may commence at once. **Staff requests a Finding & Order with completion of the project in nine months.** Staff requests that the following language be incorporated in the Finding & Order:

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.**

Please serve the following parties of record:

Wheeling & Lake Erie Railway Company
Tim Andrews
Signals & Communications Supervisor
100 E. First Street
Brewster, Ohio 44613

Ohio Rail Development Commission
Cathy Stout
1980 West Broad Street
Mail Stop #3140
Columbus, OH 43223

Village of New Washington
Mayor
119 E. Mansfield Street
New Washington, OH 44854

North Central Electric Cooperative
350 Stump Pike Road
P.O. Box 475
Attica, OH 44807

OHIO RAIL DEVELOPMENT COMMISSION
INTER-OFFICE COMMUNICATION

TO: **Randall Schumacher, Supervisor, Rail Division, PUCO**

FROM: **Cathy Stout, Manager, Safety Section, ORDC**

BY: **James Tucker, Project Manager, ORDC** J.T.

SUBJECT: **Crawford County, SR602/Kibler Street, Wheeling & Lake Erie DOT#001943M, PID#108511**

DATE: **May 28, 2019**

The Ohio Rail Development Commission (ORDC) established a diagnostic survey at the subject location on May 14, 2018. The Diagnostic Team recommended that the crossing be upgraded from flashers only to flashing lights and roadway gates with cantilevers. Copies of the diagnostic review form and 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 for nine months. This construction authorization is made with the stipulation and understanding that any field work needs prior approval before 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: Jill Henry, PUCO
Heather Hamilton, ORDC
ORDC Project Manager (file)

OHIO RAIL DEVELOPMENT COMMISSION
Mail Stop #3140, 1980 West Broad Street, Columbus OH 43223
Mike DeWine, Governor • Mark Policinski, ORDC Chairman

May 28, 2019

Mr. Tim Andrews
Wheeling & Lake Erie Railway
100 East First Street
Brewster, OH 44613

RE: Crawford County, SR602/Kibler St.
DOT#001943M, PID#108511

Dear: Mr. Andrews

The bid process for the referenced project is acceptable. The Wheeling & Lake Erie (WLE) may proceed with the construction of the proposed grade crossing warning system in accordance with the abbreviated plan stamped March 21, 2019. This authorization is made with the stipulation and understanding that the approved estimate dated May 17, 2019 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 $265,712.94. 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 but must be confirmed 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 James Tucker, ORDC, email james.tucker@dot.ohio.gov, and to the Public Utilities Commission of Ohio, email Jill.henry@puco.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. **If determined during preliminary engineering that there are utilities that need to be relocated, WLE needs to start that coordination work as soon as possible to avoid project delays.**

3. WLE's project foremen will notify James Tucker at 614-398-6897 (telephone) or james.tucker@dot.ohio.gov (email) 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.

4. Open cut of roadways is *not permitted* except in unusual circumstances and must be coordinated with the local highway authority and preapproved by ORDC.

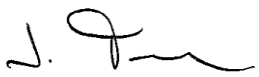
5. WLE will furnish two (2) copies of each partial bill to ORDC. Please find the enclosed Purchase Order to reference when billing.

6. WLE will furnish two (2) copies 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.

7. This installation will include any ancillary work to make the warning devices function as designed and meet MUTCD.

Thank you for your assistance with these matters.

Sincerely,



James Tucker
Project Manager

Attachment: ODOT P.O.

C: Randall Schumacher, Supervisor, Rail Division, PUCO
Jill Henry, Rail Division Specialist, PUCO
ORDC (file)

WHEELING & LAKE ERIE RAILWAY COMPANY

Tim Andrews
Signal & Communication Supervisor
Tel. 330-767-7255 **tandrews@wlerwy.com**
100 East First Street
Brewster, OH 44613
Fax: 330-767-3213

May 17, 2019

Ohio Rail Development Commission
Attn: Jim Tucker
Mail Stop #3140
1980 W. Broad St
Columbus, Ohio 43223

Re: Estimate for Railroad Crossing Warning System at SR 602

Dear Mr. Tucker,

I am providing this revised estimate for the crossing package and installation at SR602. 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.

Property Survey	$5,085.00
CTC Labor (breakout attached)	$43,310.43
CTC Material (breakout attached)	$145,773.06
Fill Materials, transport, hauling	$10,500.00
Preliminary Installation, Crosier	$44,016.45
Electric Service, Emery	$6,950.00
Electric Utility fees	$5,000.00
WLE Direct Signal & MOW Labor	$3,900.00
Galvanized signal foundations	$1,178.00
TOTAL:	$265,712.94

Sincerely,

Tim Andrews
Signal & Communication Supervisor

Direct purchase of 60" galvanized foundation, $589.00ea.

BID TABULATION SHEET BY VENDOR

PROJECT NAME: WLE Railway: Kibler St (SR-602)

BID DUE DATE: Wednesday, May 8, 2019

COMPANY NAME	BID
Alstom Signalling Operation, LLC	**NO BID**
Herzog Technology	**NO BID**
L&W Industries	**$198,590.00**
Progress Rail Services	**$145,773.06**
TCR Rail Systems	**$197,700.00**

OHIO RAIL DEVELOPMENT COMMISSION
Mail Stop #3140, 1980 West Broad Street, Columbus OH 43223
Mike DeWine, Governor • Mark Policinski, ORDC Chairman

April 8, 2019

Mr. Tim Andrews
Wheeling & Lake Erie Railway
100 E. First St.
Brewster, Oh 44613

RE: Crawford County, SR 602/Kibler St, DOT #001943M, PID#108511

Dear Mr. Andrews:

The plan dated March 21, 2019 and estimate dated April 6, 2019 for the referenced project has been reviewed and is acceptable. Wheeling & Lake Erie may proceed with soliciting bids for 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.

A construction authorization will be sent once the bid documents have been received and approved. No field work may be started without a construction authorization from this office.

Sincerely,

James Tucker, Project Manager
Ohio Railroad Development Commission

C: Randall Schumacher, Supervisor, Rail Division, PUCO
Jill Henry, PUCO, Grade Crossing Planner
ORDC (file)

Bid Template

Name of Bidder:	CTC Inc.
Address:	9601 Camp Bowie West
Phone:	817-886-8243
Fax:	817-886-8225
Date:	
Project Location(s):	Kibler Street (SR-602) - New Washington, OH. MP. 83.05 DOT# 001943M

LABOR		Hours	Rate	Ext.
Signal Engineer		5	$ 100.00	$ 500.00
Signal Designer		16	$ 33.65	$ 538.40
Project Engineer				
Project Administrator				
Signal Circuit Checker		4	$ 52.88	$ 211.52
CAD Draftsman		36	$ 33.65	$ 1,211.40
Engineering Assistant				
Construction Manager		40	$ 43.27	$ 1,730.80
Project Manager		6	$ 33.65	$ 201.90
Signal Supervisor				
Signal Foreman		80	$ 28.50	$ 2,280.00
Assistant Foreman		80	$ 26.00	$ 2,080.00
Signalman				
Signal Helper		160	$ 20.00	$ 3,200.00
Accountant/Billing Clerk		8	$ 25.48	$ 203.84
Other 1				
Other 2				
Other 3				
Total Labor Bid				$ 12,157.86

MEALS, LODGING AND TRAVEL	Days	Rate	Amount
Meal Per Diem	32	$ 30.00	$ 960.00
Lodging Per Diem	32	$ 70.00	$ 2,240.00
Airfare			
	Miles	Rate	
Vehicle Mileage			
Total Meals, Lodging and Travel			$ 3,200.00

EQUIPMENT		Days/Hours	Rate	Amount
Pickup Truck/Foreman's Truck		8	$ 150.00	$ 1,200.00
Backhoe		8	$ 150.00	$ 1,200.00
Other 1	High Reach Forklift	8	$ 175.00	$ 1,400.00
Other 2	Equipment Delivery/Pickup	2	$ 200.00	$ 400.00
Other 3	Crew Trailer	80	$ 7.55	$ 604.00
Other 4				
Other 5				
Other 6				
Other 7				
Other 8				
Other 9				
Other 10				
Total Equipment				$ 4,804.00

SUBCONTRACTORS	Name	Amount
Subcontractor 1		
Subcontractor 2		
Subcontractor 3		
Subcontractor 4		
Subcontractor 5		
Subcontractor 6		
Subcontractor 7		
Subcontractor 8		
Total Subcontractors		$ -

ADDITIVES/RATES	Rate	Amount
Fringe Benefit Rate to Labor	30.61%	$ 3,721.52
General and Administrative Overhead Rate to Labor	120.46%	$ 14,645.36
General Liability Rate to Labor	12.93%	$ 1,572.01
Other Approved Additive Rate		
Total Additives		$ 19,938.89
Profit/Fee Rate to Labor and Additives	10.00%	$ 3,209.68

TOTAL AMOUNT OF ESTIMATE	***$ 43,310.43***

Please complete all relevant fields shaded in gray.
Orange, blue and yellow cells contain formulas that cannot be edited.
Per ODOT/ORDC policy, overheads are reimbursable only when applied to direct labor dollars.
Per ODOT/ORDC policy, profit is reimbursable only when applied to direct labor and overhead.
Other cost items such as meals, subcontractors, equipment, etc., are not eligible for profit.

Total Materials Estimate =	$131,768.83

W&LE/ABC House Materials

DESCRIPTION	QTY	UOM	UNIT PRICE	TOTAL PRICE
Bungalow, Alum. 6 X6 w/Heater P/N 91000564 D-1, PTMW	1	EA	$9,477.00	$9,477.00
Wrench, AAR terminal - 11", P/N 032619-9X, Siemens	1	EA	$43.63	$43.63
Sensor, Hermetic Door Switch, P/N 70168986, Allied Electric	2	EA	$4.99	$9.98
Actuator, Hermetic Door Switch, P/N 70168991, Allied Electric	2	EA	$1.99	$3.98
Decal, Danger 240V (5"X3.5"), P/N 3XDU5, Grainger	1	EA	$2.94	$2.94
Decal, MUTCD Emergency Notification, 30"X18", Eagle Traffic	1	EA	$68.00	$68.00
Wire, Case, #16AWG 1000' spool, Blue, P/N 152-11-3002, Okonite	0.5	FT	$198.00	$99.00
Wire, Case, #10AWG 1000' spool, Blue, P/N 152-11-3038. Okonite	0.5	FT	$407.00	$203.50
Wire, Case, #6AWG, Green, P/N N6GNM, Reynolds	100	FT	$0.35	$35.00
Wire, Case, #6AWG, Black, P/N N6BM, Reynolds	100	FT	$0.35	$35.00
Wire, Case, #6AWG. Red, P/N N6RD, Reynolds	100	FT	$0.35	$35.00
MDA-ll With Current Sensors DTMF Radio and GFD, P/N NAS-WLE, NAS	1	EA	$6,431.00	$6,431.00
MDSA-1X Surge arrestor panel, P/N 250204-100, Alstom	1	EA	$474.00	$474.00
XP4 Chassis P/N 16-220000433, GE - AS SHOWN ON PRINTS	1	EA	$27,450.00	$27,450.00
XIP-20 w/Lamp Resistor, P/N 227561-000, Alstom	1	EA	$602.00	$602.00
Cable, XIP 8 ft (cable #1) (need 1 for XP4 Assy) P/N 075046-001, Alstom	1	EA	$104.00	$104.00
Cable, XIP 8 ft (cable #2) (need 1 for XP4 Assy) P/N 075047-001, Alstom	1	EA	$104.00	$104.00
Relay, 500 Ohm, 6PT, Nuetral relay, plug-in, P/N A62-0262, Alstom	3	EA	$1,257.00	$3,771.00
Plugboard, Kit (1E/3E test posts) P/N 59686-019-02, Alstom	3	EA	$125.00	$375.00
Wrench, 3E test tool, P/N P03-0320, Alstom	1	EA	$51.10	$51.10
Extractor Tool, Terminal clip, P/N 032619-25, Siemens	1	EA	$1.18	$1.18
Relay, 8-pin KRPA style, 10A/240V, P/N 70198711, Allied	1	EA	$18.62	$18.62
Relay, 8-pin KRPA style, 10A/12VDC, P/N 70199265, Allied	2	EA	$16.00	$32.00
Socket, 8-pin KRPA style, P/N 70199343, Allied	3	EA	$5.75	$17.25
Spring, Hold down for KRPA style relay, P/N 70198576, Allied	3	EA	$0.50	$1.50
Battery Charger, ETC-12V 40AMP, P/N 520740, Railway Equipment	2	EA	$590.00	$1,180.00
Battery, NiCad 340 A.H., P/N SPL-340, Saft	9	EA	$312.00	$2,808.00
Battery, NiCad 420 A.H., P/N SPL-420, Saft	10	EA	$395.00	$3,950.00
Terminal, Battery, 3-PT, P/N 225481-000, J&A Industries	4	EA	$25.00	$100.00
Battery Tray 12'x27", Holds (3) Batteries, P/N 027002-001, J&A	4	EA	$48.00	$192.00
Nema Plug, Locking, 15 Amp/240V, P/N L6-15P, Reynolds	2	EA	$15.50	$31.00
Power Indicator, 2 Eye/4 Wire w/wago conn, P/N LC2-001WB-WG4, Velcorp Gems	1	EA	$140.00	$140.00
SO Cord, 14 AWG/4 Conductor, P/N SJOOW-14-4-BLK-250R, Graybar	100	FT	$0.75	$75.00
Tie-wrap, 11 1/2", PKG 100, Black, P/N LTS11-0, Vantex	1	EA	$20.25	$20.25
Tie-wrap, mounting, PKG 100, P/N TYM, Vantex	1	EA	$28.00	$28.00
Loom, Spiral Wrap 100', Black, P/N SW38-0, Vantex	1	EA	$49.00	$49.00
Panduit, Wire Duct, 2"X3"X6' Gray, P/N G2X3LG6, Graybar	3	EA	$4.75	$14.25
Panduit, Cover, 6' Gray, P/N C2LG6, Graybar	3	EA	$1.25	$3.75
Terminal, 2X6 W/ Flat nut/washer, P/N 220-0101, Rebel	10	EA	$10.45	$104.50
Terminal, Block, 2 3/8" center - 2 post w/hardware, P/N 220-0301, Rebel	8	EA	$4.00	$32.00
Terminal, 4-post, Block Kit, w/ 14-24 AAR Hardware, P/N B2700A2C1WH, Erico	19	EA	$21.25	$403.75
RailSurge Plane Strip Busbar (36"), P/N B2700HC36, Erico	2	EA	$37.00	$74.00
Connector, 2 3/8", strap style, P/N 220-0507, Rebel	8	EA	$0.75	$6.00
Arrestor, Air Gap, With Cover, P/N 4000-44585-001X, Siemens	23	EA	$25.00	$575.00
Equalizer, Air Gap, with Cover/Hardware , P/N 4000-44700-001X, Siemens	2	EA	$24.00	$48.00
Binding Nut, P/N 13073-000, Rebel	200	EA	$0.25	$50.00
Clamp Nut, P/N 13079-000, Rebel	200	EA	$0.20	$40.00
Insulated Nut, 1 3/16" , P/N 023408-1X, Safetran	25	EA	$4.00	$100.00
Washer, P/N 013074-000, Rebel	200	EA	$0.10	$20.00
Gold Test Nut, P/N 13296-001, Rebel	100	EA	$0.75	$75.00
1' Test Link, Flat, P/N 32257-002, Rebel	100	EA	$1.75	$175.00
Terminal Ring, HD, 1/4", insulated, #14 - #16, P/N NC-10HDB, Vantex	100	EA	$0.95	$95.00
Terminal, Ring, 1/4", insulated #14 - #16 (100 pk), P/N NB14, Vantex	1	EA	$30.00	$30.00
Terminal, Ring, 1/4" insulated, #10 - #12 (100 pk), P/N NC14, Vantex	1	EA	$32.00	$32.00
Terminal, Ring, 1/4" insulated, #6, Blue, P/N T6-14N, Vantex	25	EA	$0.75	$18.75
Terminal, Ring, 3/8" non-insulated, #6, Battery Lug, P/N T6-38, Vantex	10	EA	$1.00	$10.00
			TOTAL:	**$59,925.93**

W&LE/ABC Field Materials				
DESCRIPTION	***QTY***	***UOM***	***UNIT PRICE***	***TOTAL PRICE***
Cable, 7/C#6, Armored, 206-11-6247, Okonite	450	FT	$8.11	$3,649.50
Cable, 7C#14, Armored, 206-11-6887, Okonite	250	FT	$2.99	$747.50
Cable, 3C#6, Armored, #206-11-6243, Okonite	150	FT	$6.00	$900.00
Wire, Track, 2C/#6, Twist, Solid, 113-12-3933, Okonite	250	FT	$2.50	$625.00
Bootleg Kit - Complete **(IE. Sleeves, Heat shrink, Rubber tape, electrical tape)**	1	EA	$500.00	$500.00
Bond Wire, 7 1/2" XS Style, P/N SBS24883, Erico	100	EA	$5.50	$550.00
Connector, Track, Web of Rail, P/N SBTBBU4A, Erico	100	EA	$4.95	$495.00
Wheel, grinding, P/N SB22122, Erico	3	EA	$36.00	$108.00
5/8" X 8' Copper Ground Rod P/N 615880. Erico	7	EA	$9.75	$68.25
5/8" Ground Rod Weld, P/N SBNT1161G, Erico	7	EA	$4.95	$34.65
Wire, Ground, #6AWG, Bare Copper, Graybar	100	FT	$0.75	$75.00
FSS-IA, Tunable NBS. P/N 250850-000, GE	2	EA	$900.00	$1,800.00
Shunt Enclosure, Orange, P/N 500-400-100-09-Orange, G&B	2	EA	$395.00	$790.00
16' Cantilever/20' Gate Combo Kit w/WCH 3597 Mech, Progress Rail	1	EA	$25,000.00	$25,000.00
16' Cantilever Kit, Progress Rail	1	EA	$16,000.00	$16,000.00
Blankout sign, "NO LEFT TURN", w/hardware, Trans-Tech	1	EA	$2,600.00	$2,600.00
Mast, Gate, 18'X5" w/pigtail (single-sided Jct Box), P/N 715-324-2-GS, WCH	1	EA	$595.00	$595.00
Jct box, Gate, 5" single hole w/24 terminals, P/N 2149-A-139, WCH	1	EA	$475.00	$475.00
Pinnacle, 5", P/N 010-9034, Rebel	2	EA	$20.00	$40.00
Gate, Model 3597, P/N 3597-131-P-H-M1, WCH- WLE P/N	1	EA	$3,800.00	$3,800.00
Crossarm Assy, 5" Mtg., 1 Way, WCH	1	EA	$395.00	$395.00
Lights, 12" LED, P/N 433121680XLTC-00, Arms	18	EA	$75.00	$1,350.00
Counterweight Package, P/N 070755-18X, Siemens	1	EA	$3,300.00	$3,300.00
Sign, Crossbuck, No brackets/hardware, P/N 070-0065, Rebel Railway	4	EA	$90.00	$360.00
5" Sign Kit, Brackets/extensions/Ubolts/hardware, P/N 070-5008, Rebel Railway	6	EA	$75.00	$450.00
Wind Bracket, 36", Tusk style, P/N 2010-001-01, RDG	2	EA	$145.00	$290.00
Bell, Electronic, 5" Base, P/N EB-3-360-5, GSI	2	EA	$175.00	$350.00
Gate Keeper, 2-Way, w/Hardware & Buffer Spring, P/N SK-1000-2W, GSI	1	EA	$1,300.00	$1,300.00
E-Z Gate (Vertical stripe) LED gate w/lamp kit, P/N 9298-6154, Railway Equip	2	EA	$649.00	$1,298.00
Sleeve, 4' Aluminum, P/N 92958, Railway Equipment	1	EA	$45.00	$45.00
Wrench, Torque (KIT), P/N 2590-K-9, WCH	1	EA	$210.00	$210.00
Sign, Emergency, ENS, 15"X9" Blue, Eagle Traffic	2	EA	$45.00	$90.00
Field cable Tag Kit.	1	EA	$500.00	$500.00
Schedule 40 2" & 4" PVC Conduit Kit with Elbows	1	LOT	$2,500.00	$2,500.00
Duct seal, 5lb, P/N 31-605, Graybar	6	EA	$42.00	$252.00
Lock, Barrel Style	6	EA	$50.00	$300.00
			TOTAL:	**$71,842.90**

DWG. NO.	DESCRIPTION
00	INDEX
01	SITE LAYOUT
02	CROSSING SIGNAL ALIGNMENT
03	SITE LAYOUT NOTES
04	XP4/VIO CIRCUITS
05	XP4 SETUP SHEET
06	TRACK CONNECTION CIRCUITS
07	A–ENTRANCE GATE CONTROL CIRCUIT
08	B–ENTRANCE GATE CONTROL CIRCUIT
09	RECORDER
10	BGD
11	ARRESTOR PANEL
12	CTP
13	GATE #1 MECHANISM (NEAR SIDE)
14	GATE/CANTILEVER #1 LIGHTS (NEAR SIDE)
15	GATE #2 MECHANISM (FAR SIDE)
16	GATE #2 LIGHTS (FAR SIDE)
17	CANTILEVER #1 LIGHTS (NEAR SIDE)
18	BATTERY CHARGERS
19	AC POWER DISTRIBUTION
20	RACK FRONT VIEW
21	RACK BACK VIEW
22	SIDE "A"
23	SIDE "C"

REV.	GENERAL NOTES

THE OPERATION OF THE CIRCUITS AND EQUIPMENT REPRESENTED HEREIN CANNOT BE FULLY CHECKED UNTIL ALL CIRCUITS AND DEVICES ARE CONNECTED TO FORM A COMPLETE SYSTEM, OR AN EFFECTIVE SUBSYSTEM. SUCH SYSTEM OR SUBSYSTEM MUST BE GIVEN COMPLETE CIRCUIT AND OPERATIONAL TESTS BEFORE BEING PLACED IN REGULAR OPERATION.

REVISION BLOCK

CHANGE FROM TYPICAL: Y

STATE OF OHIO
JOHN T. SHARKEY
75147
REGISTERED PROFESSIONAL ENGINEER

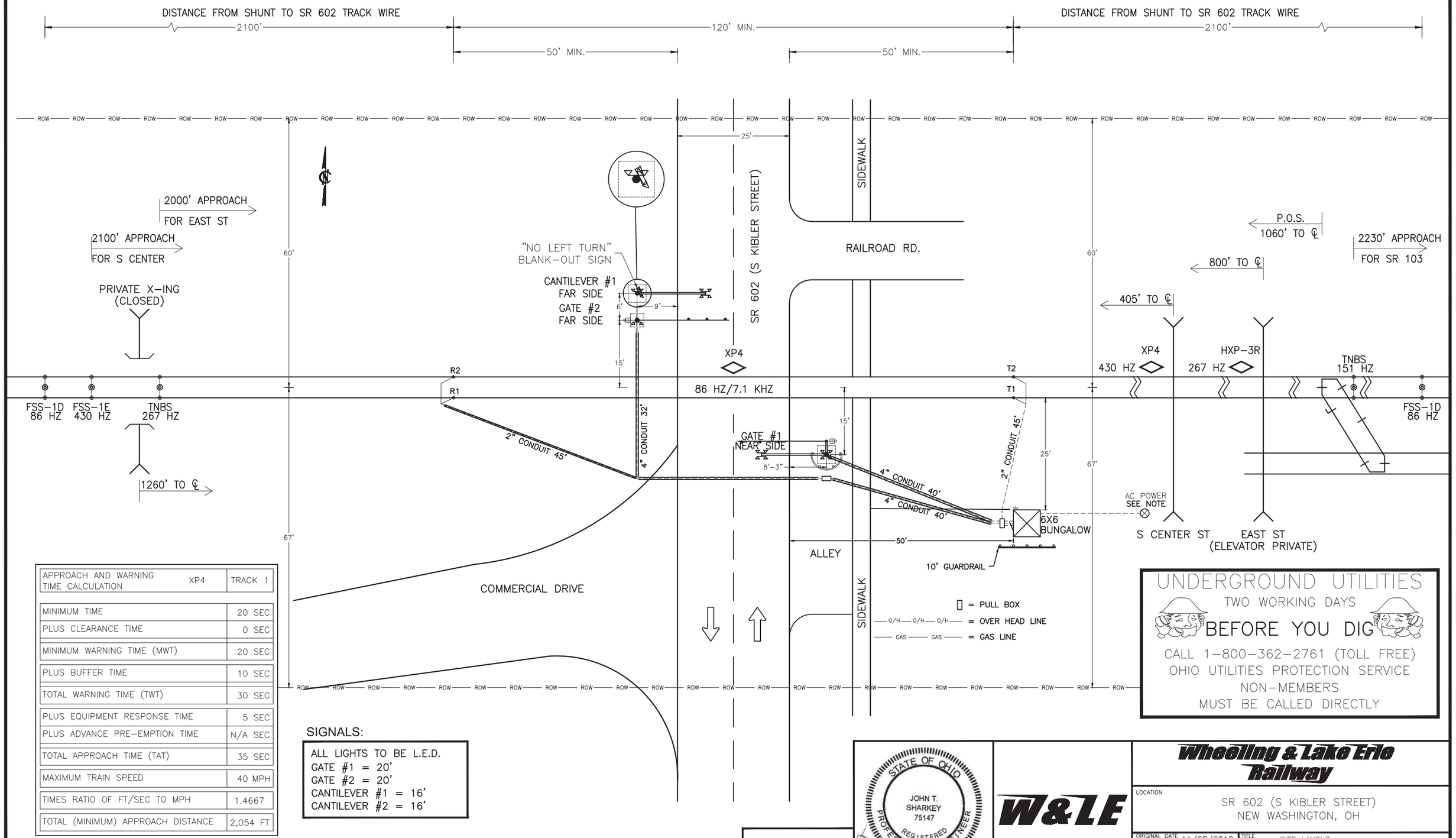
John T. Sharkey
3/21/19

W&LE

Wheeling & Lake Erie Railway

LOCATION
SR 602 (S KIBLER STREET)
NEW WASHINGTON, OH

ORIGINAL DATE 11/28/2018	TITLE INDEX	
DESIGNER CTC	SUB CAREY	CTC NO. CN18155
DRAFTSMAN CTC	RRMP N – 83.05	SCALE N.T.S.
CHECKER CTC	DOT NO. 001 943M	SHEET 00 OF 23



APPROACH AND WARNING TIME CALCULATION XP4	TRACK 1
MINIMUM TIME	20 SEC
PLUS CLEARANCE TIME	0 SEC
MINIMUM WARNING TIME (MWT)	20 SEC
PLUS BUFFER TIME	10 SEC
TOTAL WARNING TIME (TWT)	30 SEC
PLUS EQUIPMENT RESPONSE TIME	5 SEC
PLUS ADVANCE PRE-EMPTION TIME	N/A SEC
TOTAL APPROACH TIME (TAT)	35 SEC
MAXIMUM TRAIN SPEED	40 MPH
TIMES RATIO OF FT/SEC TO MPH	1.4667
TOTAL (MINIMUM) APPROACH DISTANCE	2,054 FT

SIGNALS:

ALL LIGHTS TO BE L.E.D.
GATE #1 = 20'
GATE #2 = 20'
CANTILEVER #1 = 16'
CANTILEVER #2 = 16'

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

STATE OF OHIO
JOHN T. SHARKEY
75147
REGISTERED
PROFESSIONAL ENGINEER
3/21/19

W&LE

Wheeling & Lake Erie Railway

LOCATION
SR 602 (S KIBLER STREET)
NEW WASHINGTON, OH

ORIGINAL DATE 11/28/2018	TITLE SITE LAYOUT		
DESIGNER CTC	SUB CAREY	CTC NO. CN18155	
DRAFTSMAN CTC	RRMP N - 83.05	SCALE 1"=20'	
CHECKER CTC	DOT NO. 001 943M	SHEET 01 OF 23	

REVISION BLOCK

CONSTRUCTION NOTES

1.) INSTALL NEW 6' X 6' BUNGALOW IN SOUTHEAST QUADRANT.

2.) INSTALL (1) NEW FLASHING LIGHTS WITH GATES, (1) NEW CANTILEVER ASSEMBLY, AND (1) GATE/CANT COMBO ASSEMBLY.

3.) INSTALL "NO LEFT TURN" BLANK OUT SIGN ON CANTILEVER #1.

4.) INSTALL GUARD RAIL AS SHOWN ON LAYOUT.

5.) METER POLE TO BE CENTRALLY LOCATED BETWEEN CROSSINGS SR 602 AND S CENTER STREET. BOTH CROSSINGS TO SHARE POWER ARE APPROXIMATELY 150' FROM BUNGALOW TO METER POLE.

6.) BUNGALOW LOCATION SHOWN ON THE PLAN IS SUBJECT TO CHANGE WITHIN RAILROAD RIGHT-OF-WAY IF UNDERGROUND OBSTRUCTIONS PREVENT THE INSTALLATION OF THE BUNGALOW IN THE LOCATION SHOWN.

7.) INSTALL 10' STRAIGHT GUARDRAIL BY BUNGALOW AS SHOWN ON LAYOUT.

REVISION BLOCK								

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LOCATION
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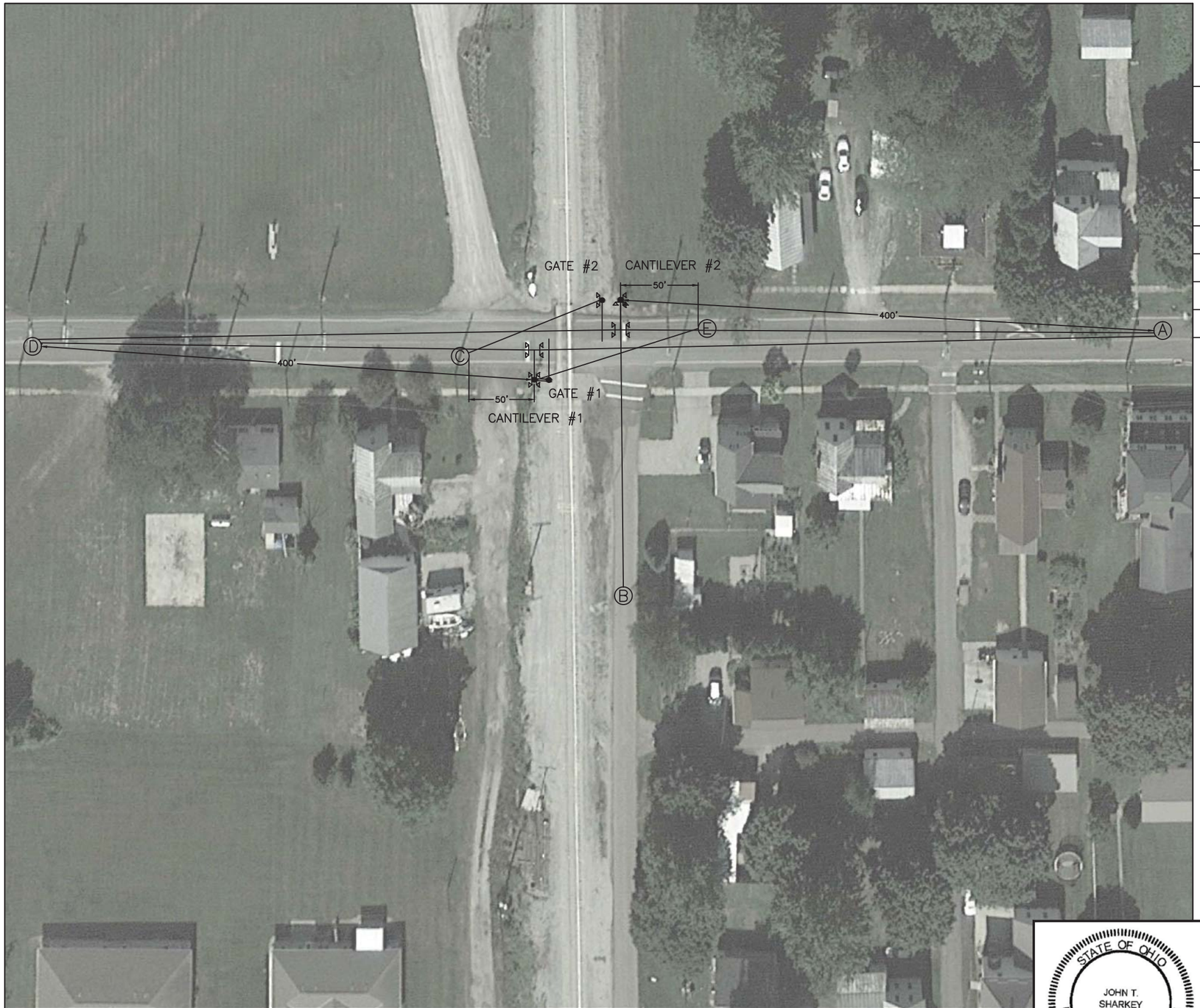
NEW WASHINGTON, OH

ORIGINAL DATE 11/28/2018	TITLE CONSTRUCTION NOTES		
DESIGNER CTC	SUB CAREY	CTC NO. CN18155	
DRAFTSMAN CTC	RRMP N – 83.05	SCALE N.T.S.	
CHECKER CTC	DOT NO. 001 943M	SHEET 01A OF 23	



CROSSING SIGNAL ALIGNMENT

LEGEND

Ⓐ	CANTILEVER #2 FRONT MAST & FRONT TIP LIGHTS
Ⓐ	CANTILEVER #1 BACK TIP LIGHTS
Ⓑ	CANTILEVER #2 MAST SIDE LIGHTS
Ⓒ	GATE #2 BACK MAST LIGHTS
Ⓓ	GATE #1 FRONT MAST LIGHTS & CANTILEVER #2 BACK TIP LIGHTS
Ⓓ	CANTILEVER #1 FRONT TIP LIGHTS
Ⓔ	CANTILEVER/GATE #1 BACK MAST LIGHTS

ALIGNMENT

FRONT LIGHTS
ADJUST LIGHT UNIT VERTICALLY TO ALIGN AXIS OF BEAM 5FT. 6IN. ABOVE PAVEMENT AT SELECTED ALIGNMENT DISTANCE. BOTH LAMPS SHOULD BE ALIGNED TO SAME POINT.

ADJUST LIGHT UNIT HORIZONTALLY TO ALIGN AXIS OF BEAM TO CENTER OF APPROACH LANE IN APPROACH TO SIGNAL AT SELECTED ALIGNMENT DISTANCE, MAINTAINING VERTICAL ALIGNMENT. BOTH LAMPS SHOULD BE ALIGNED TO SAME POINT.

BACK LIGHTS
ADJUST LIGHT UNIT VERTICALLY TO ALIGN AXIS OF BEAM 5 FT. 6 IN. ABOVE PAVEMENT AT A POINT 50 FT. IN APPROACH TO THE SIGNAL ON OPPOSITE SIDE OF TRACK.

ADJUST LIGHT UNIT HORIZONTALLY TO ALIGN AXIS OF BEAM TO A POINT 50 FT. IN APPROACH TO THE SIGNAL ON OPPOSITE SIDE OF TRACK AND IN CENTER OF APPROACH TRAVEL WAY.

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LOCATION
SR 602 (S KIBLER STREET)
NEW WASHINGTON, OH

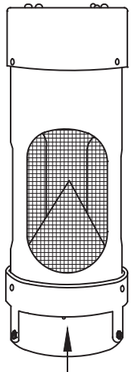
ORIGINAL DATE 11/28/2018	TITLE CROSSING SIGNAL ALIGNMENT	
DESIGNER CTC	SUB CAREY	CTC NO. CN18155
DRAFTSMAN CTC	RRMP N – 83.05	SCALE N.T.S.
CHECKER CTC	DOT NO. 001 943M	SHEET 02 OF 23

REVISION BLOCK

SITE LAYOUT NOTES

1.) CROSSING IS LOCATED: LATITUDE 40.9581225
LONGITUDE −82.8536221

ELECTRONIC CROSSING BELL
GSI MODEL EB−3−360−5



THIS SIDE FACING ROADWAY

CHANGE FROM TYPICAL: Y

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Wheeling & Lake Erie Railway

LOCATION
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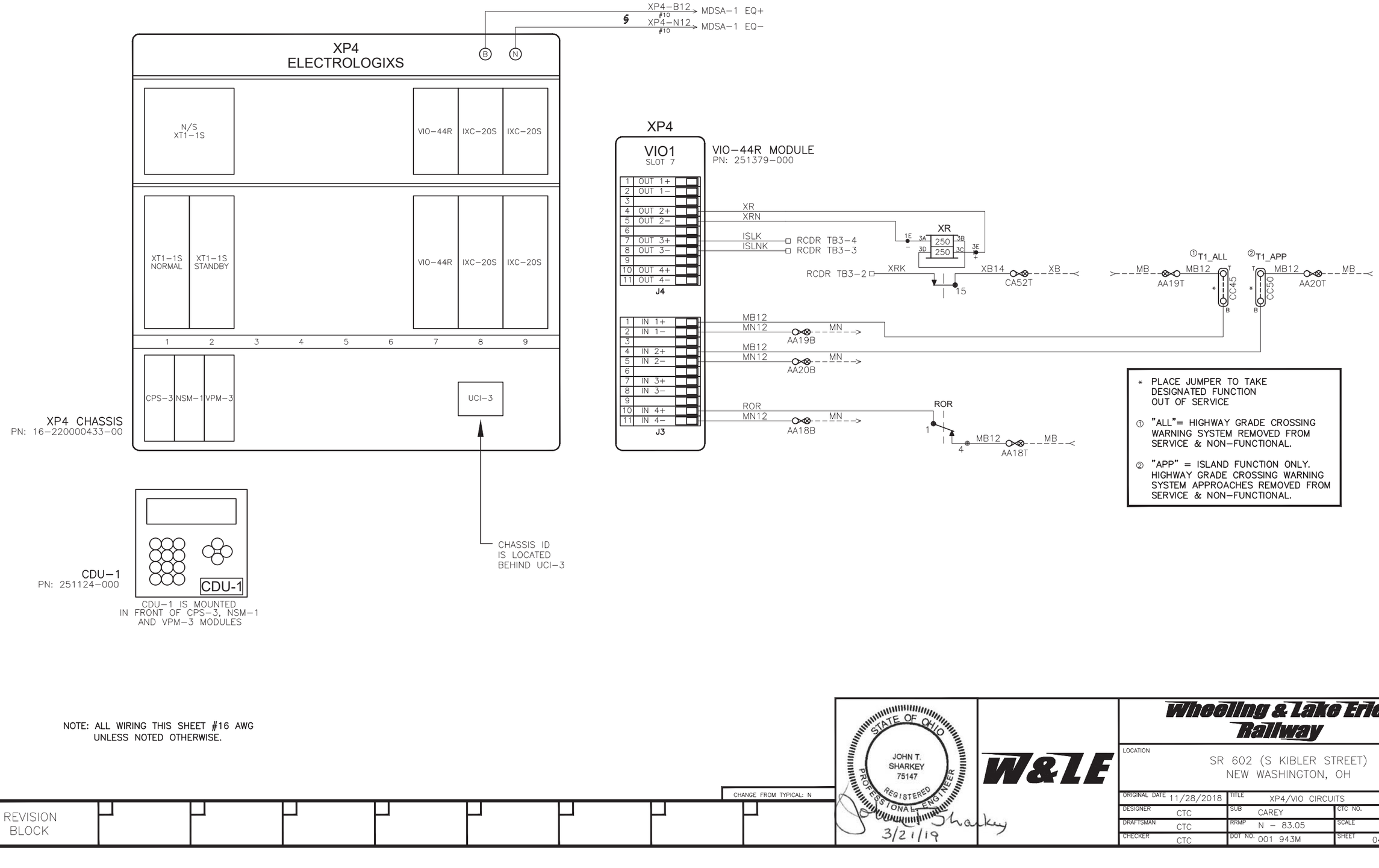
NEW WASHINGTON, OH

ORIGINAL DATE 11/28/2018	TITLE SITE LAYOUT NOTES		
DESIGNER CTC	SUB CAREY	CTC NO. CN18155	
DRAFTSMAN CTC	RRMP N − 83.05	SCALE N.T.S.	
CHECKER CTC	DOT NO. 001 943M	SHEET 03 OF 23	



NOTE: ALL WIRING THIS SHEET #16 AWG UNLESS NOTED OTHERWISE.

CHANGE FROM TYPICAL: N

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Wheeling & Lake Erie Railway

LOCATION
SR 602 (S KIBLER STREET)
NEW WASHINGTON, OH

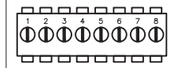
ORIGINAL DATE 11/28/2018	TITLE XP4/VIO CIRCUITS		
DESIGNER CTC	SUB CAREY	CTC NO. CN18155	
DRAFTSMAN CTC	RRMP N – 83.05	SCALE N.T.S.	
CHECKER CTC	DOT NO. 001 943M	SHEET 04 OF 23	

ADJUSTMENT NAME		MDR1				MDR2			
NAME		HIGHWAY CROSSING				HIGHWAY CROSSING			
WARNING TIME		30 SEC				25 SEC			
CW/MD		CW				CW			
AP TIME		00 SEC				00 SEC			
CWE–WT		00 SEC				00 SEC			
AUX RECOVERY DELAY		05 SEC				05 SEC			
		TK1	TK2	TK3	TK4	TK1	TK2	TK3	TK4
TRACK ASSIGNED		ASSIGN				ASSIGN			
OFFSET DISTANCE		0 FT				0 FT			
MD RESTART		*				*			
SUDDEN SHUNT ZONE		*				*			
POSITIVE START	PSEN	DISABLE				DISABLE			
	PSRX	NA				NA			
	PST	NA				NA			
POST JOINT DETECT	PJEN	DISABLE				DISABLE			
	PJRX	NA				NA			
	PJDT	NA				NA			

APPLICATION SOFTWARE INFORMATION	
NAME	*
REV.	1
CHECKSUM	
CRC	
CHASSIS ID	

LOCATED BEHIND UCI–3

CHASSIS ID



◐ = TAB INTACT
● = TAB PUNCHED OUT

EXECUTIVE INFORMATION		
VPM–3	VERSION	PART NUMBER
CROSSING SOFTWARE	*	083024–716

BASIC TRACK SETUP				
	TK1	TK2	TK3	TK4
FREQUENCY	86 HZ			
MASTER/SLAVE	MASTER			
RX ADJUST	100			
TCA	*			
DIRECTION MODE	BI			
LIA	*			
ADVANCED APR. CAL	INACTIVE			
NBS COMP RX	*			
TRK ISLAND ASSIGN	ISL1			
APPROACH LENGTH	2100 FT			
AUTO RX	ENABLE			

IXC SETUP				
CROSSING TEST MODE	OFF			
FLASH RATE	55FPM			
	IXC–1	IXC–2	IXC–3	IXC–4
VOLTAGE REGULATION	ON			
L1 VOLTAGE	* 10.0			
L2 VOLTAGE	* 10.0			
GATE 1 DELAY	3 SEC			
GATE 2 DELAY	3 SEC			

IXC SETUP				
CROSSING TEST MODE	OFF			
FLASH RATE	55FPM			
	IXC–1	IXC–2	IXC–3	IXC–4
VOLTAGE REGULATION	ON			
L1 VOLTAGE	* 10.0			
L2 VOLTAGE	* 10.0			
GATE 1 DELAY	3 SEC			
GATE 2 DELAY	3 SEC			

ADVANCED TRACK SETUP					
		TK1	TK2	TK3	TK4
MOTION DET TIMER	MDEN	DISABLE			
	MDTT	10 MIN			
FALSE SHUNT	FSEN	DISABLE			
	FSRX	NA			
	FST	NA			
APPROACH RELEASE	AREN	DISABLE			
	ARRX	NA			
	ART	NA			
LOS TIME		16 SEC			
IJ–LOS TIME		5 SEC			
NRML_SHHTR_VRSHRT		NRML *			

ISLAND SETUP				
	TK1	TK2	TK3	TK4
ENABLE/DISABLE	ENABLE			
FREQUENCY	7.1 KHZ			
LOSS OF SHUNT	4 SEC			
FAULT DELAY	1			

SHUNT RECORDS

APPROACH 1 (EAST)		NO SHUNT		100% SHUNT		50% SHUNT			LIA ADDED
		RX	PHASE	RX	PHASE		RX	PHASE	± 1 to ±9
Track 1	Normal								
	Standby								
Track 2	Normal								
	Standby								
APPROACH 2 (WEST)									
Track 1	Normal								
	Standby								
Track 2	Normal								
	Standby								

INITIAL VALUES WHEN PLACED IN SERVICE

NOTES:
* = FIELD ADJUSTMENT
NA = NOT APPLICABLE

CHANGE FROM TYPICAL: Y

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3/21/19

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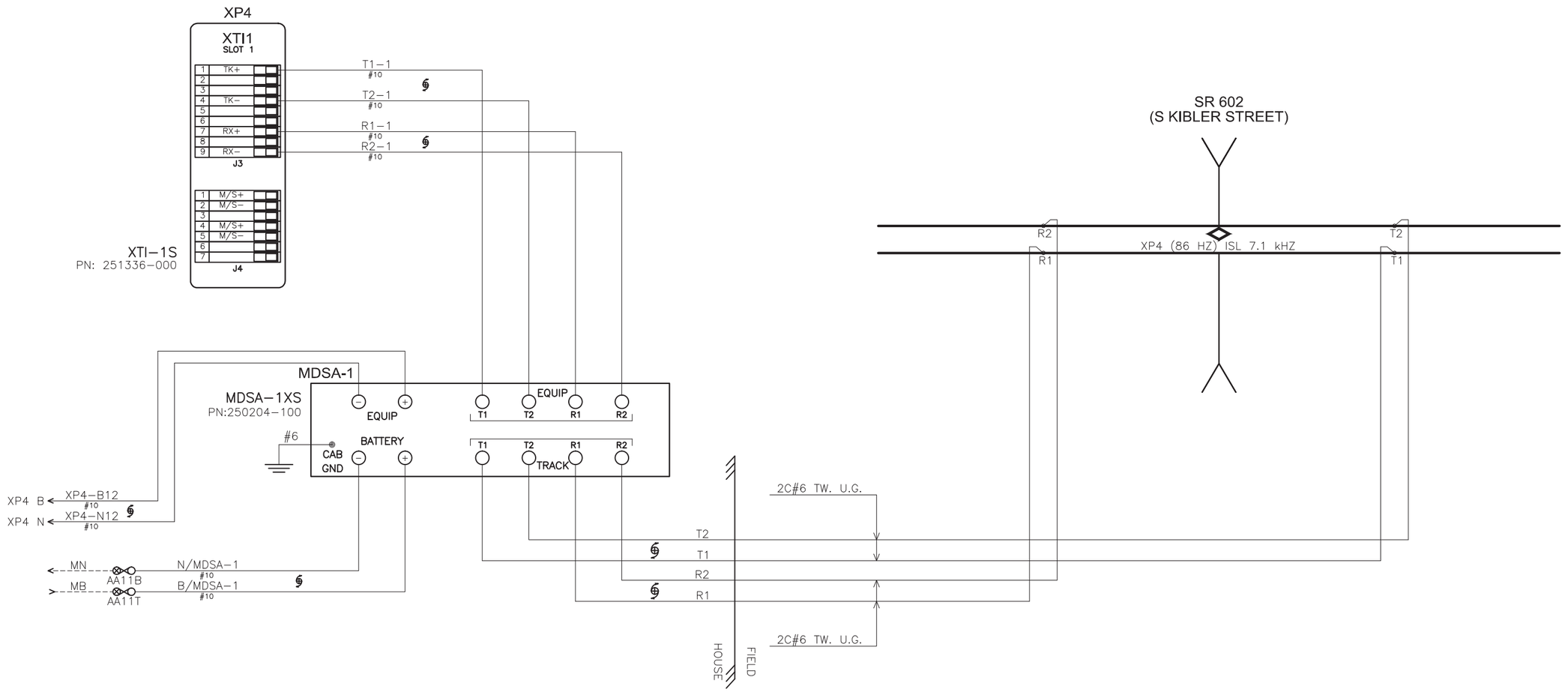
Wheeling & Lake Erie Railway

LOCATION
SR 602 (S KIBLER STREET)
NEW WASHINGTON, OH

ORIGINAL DATE 11/28/2018	TITLE XP4 SETUP SHEET		
DESIGNER CTC	SUB CAREY	CTC NO. CN18155	
DRAFTSMAN CTC	RRMP N – 83.05	SCALE N.T.S.	
CHECKER CTC	DOT NO. 001 943M	SHEET 05 OF 23	



CHANGE FROM TYPICAL: Y

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3/21/19

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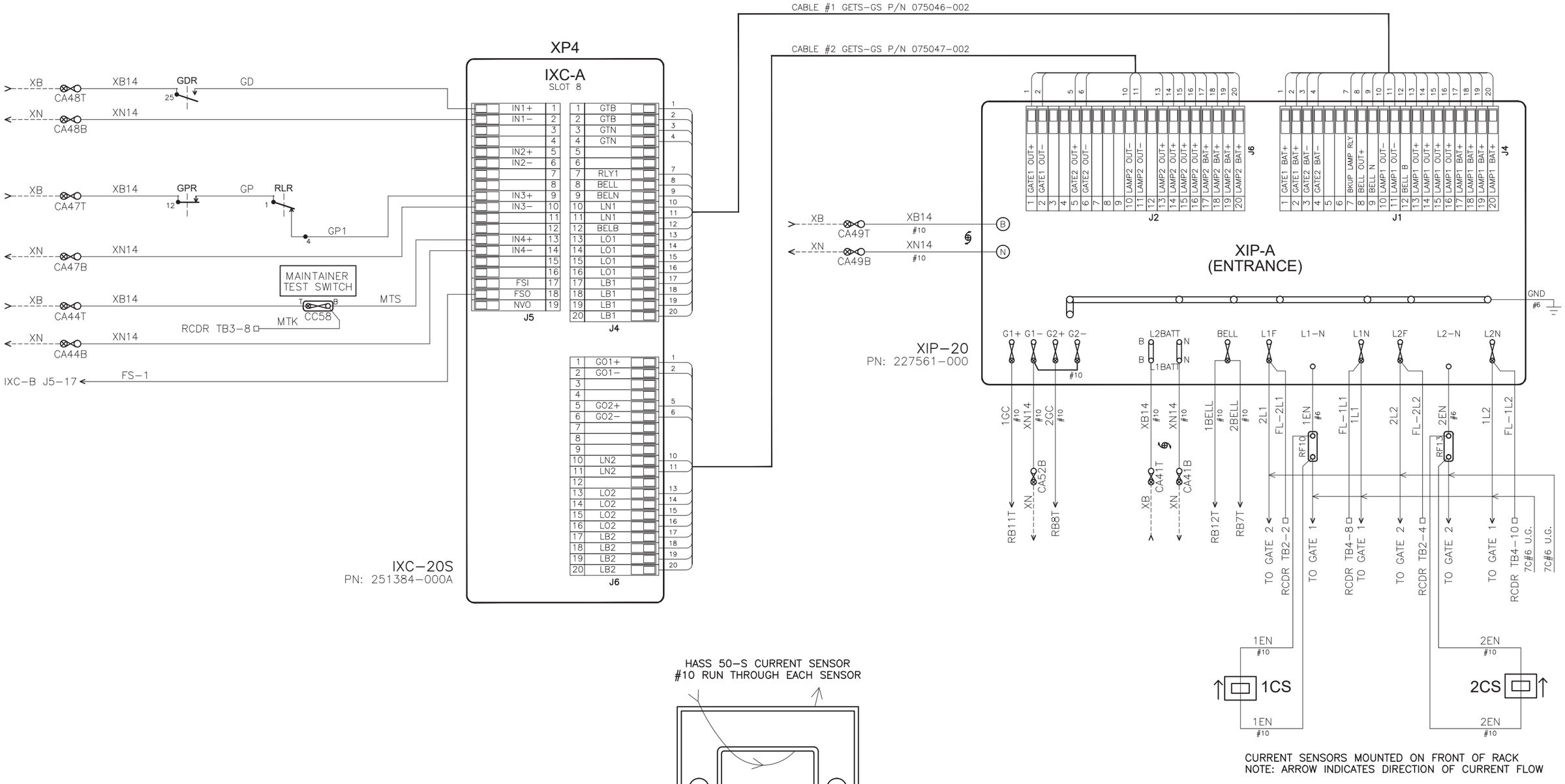
Wheeling & Lake Erie Railway

LOCATION
SR 602 (S KIBLER STREET)
NEW WASHINGTON, OH

ORIGINAL DATE 11/28/2018	TITLE TRACK CONNECTION CIRCUITS		
DESIGNER CTC	SUB CAREY	CTC NO. CN18155	
DRAFTSMAN CTC	RRMP N − 83.05	SCALE N.T.S.	
CHECKER CTC	DOT NO. 001 943M	SHEET 06 OF 23	



HASS 50-S CURRENT SENSOR
#10 RUN THROUGH EACH SENSOR

TO RCDR
TB5

CURRENT SENSORS MOUNTED ON FRONT OF RACK
NOTE: ARROW INDICATES DIRECTION OF CURRENT FLOW

NOTES: ALL WIRING THIS SHEET #16 AWG
UNLESS NOTED OTHERWISE.

CHANGE FROM TYPICAL: Y

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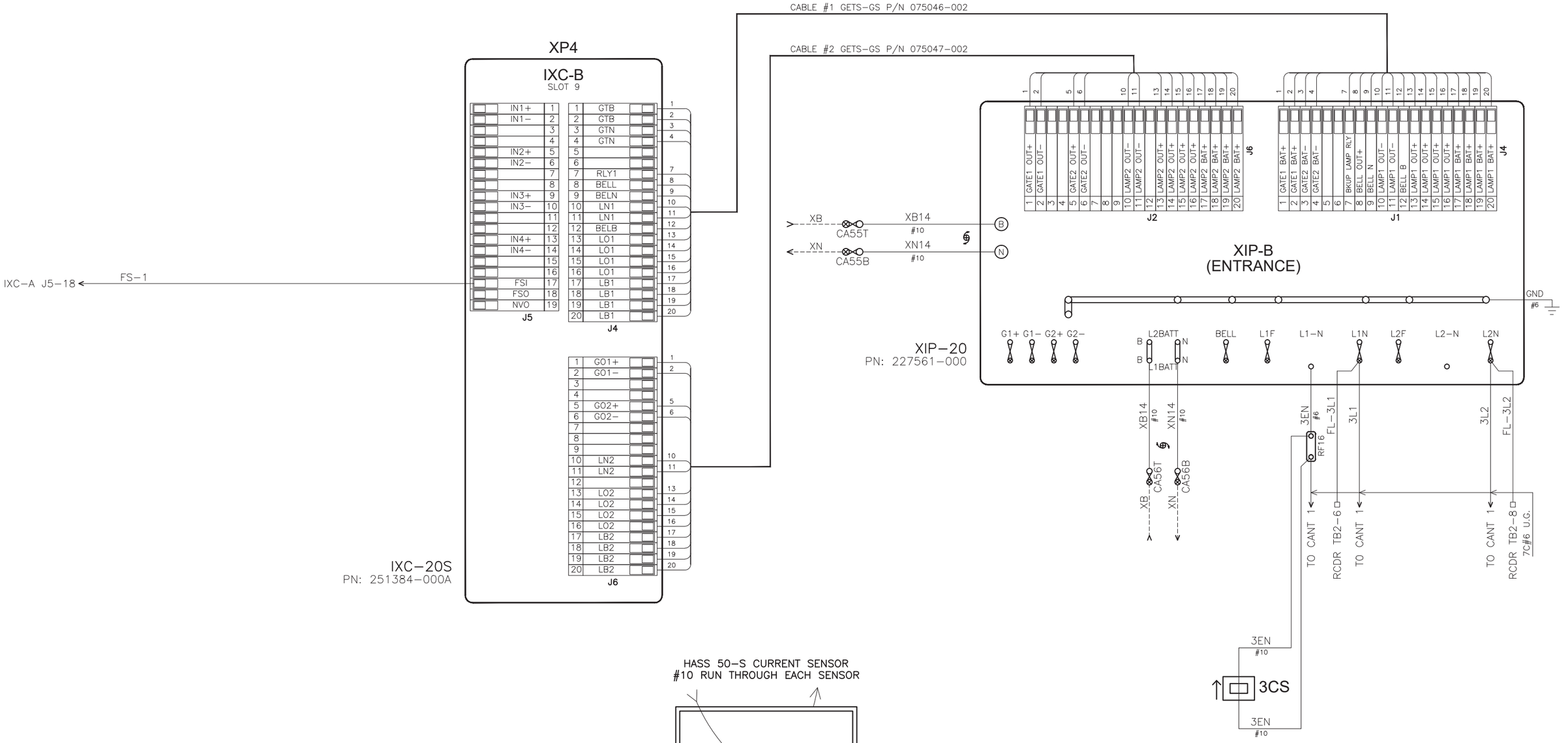
Wheeling & Lake Erie Railway

LOCATION
SR 602 (S KIBLER STREET)
NEW WASHINGTON, OH

ORIGINAL DATE 11/28/2018	TITLE ENTRANCE GATE CONTROL CIRCUIT		
DESIGNER CTC	SUB CAREY	CTC NO. CN18155	
DRAFTSMAN CTC	RRMP N – 83.05	SCALE N.T.S.	
CHECKER CTC	DOT NO. 001 943M	SHEET 07 OF 23	

REVISION BLOCK



NOTES: ALL WIRING THIS SHEET #16 AWG
UNLESS NOTED OTHERWISE.

CHANGE FROM TYPICAL: Y

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3/21/19

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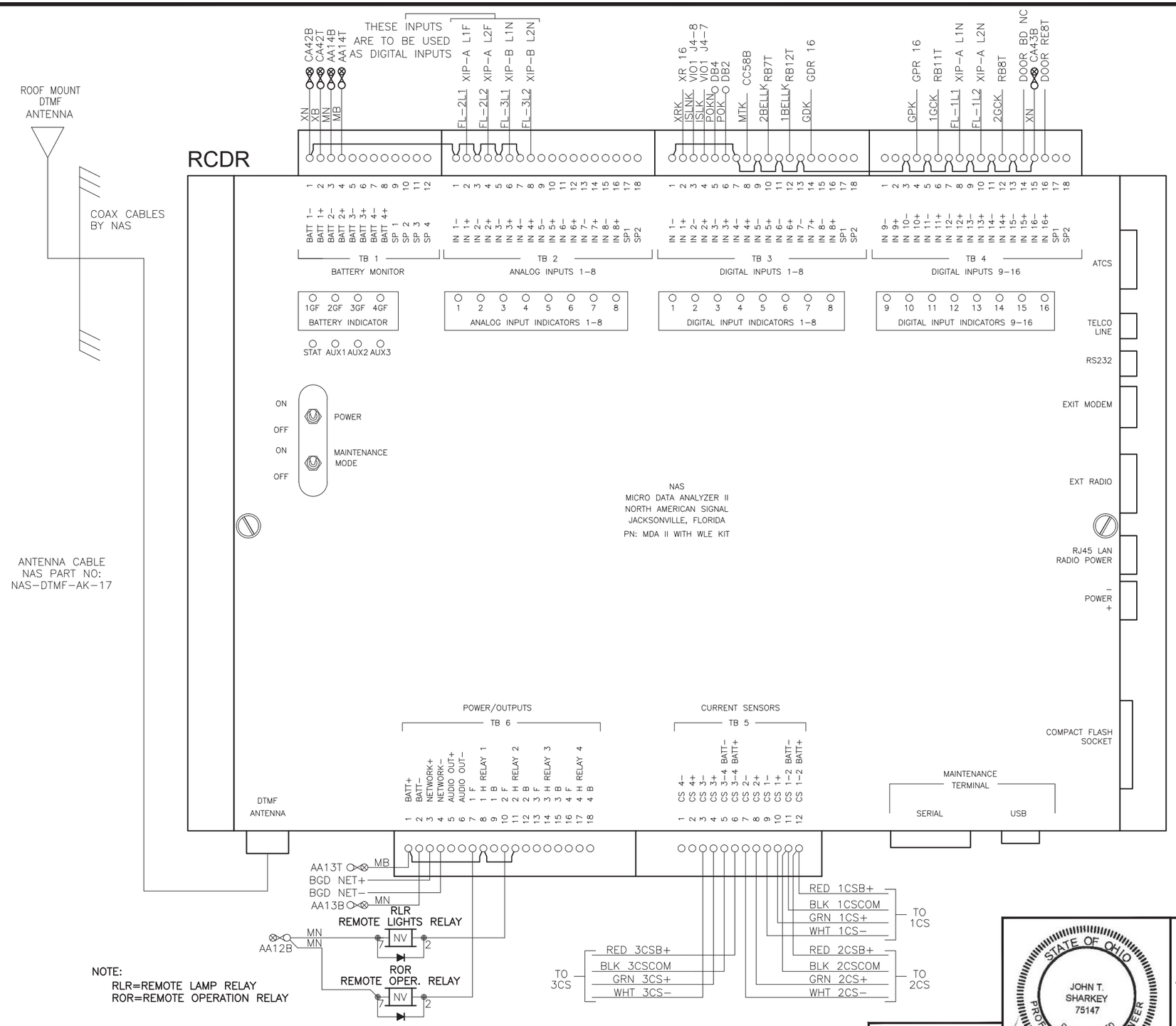
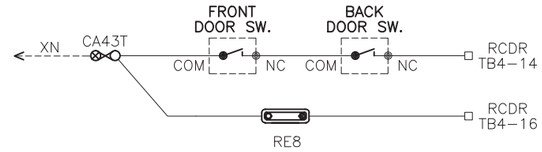
Wheeling & Lake Erie Railway

LOCATION
SR 602 (S KIBLER STREET)
NEW WASHINGTON, OH

ORIGINAL DATE 11/28/2018	TITLE ENTRANCE GATE CONTROL CIRCUIT		
DESIGNER CTC	SUB CAREY	CTC NO. CN18155	
DRAFTSMAN CTC	RRMP N - 83.05	SCALE N.T.S.	
CHECKER CTC	DOT NO. 001 943M	SHEET 08 OF 23	

REVISION BLOCK



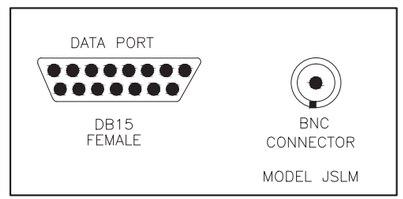


NOTES: ALL WIRING THIS SHEET #16 AWG UNLESS NOTED OTHERWISE.

#22 AWG WIRE FOR ALL RCDR JUMPERS

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

VHF ACTIVATION CODES:
LIGHTS ON = 9431#
LIGHTS OFF = 9431*
GATES DOWN = 943#
GATES UP = 943*



MOUNTED INTERNAL ON MDA UNIT

DTMF RADIO FRONT VIEW

CHANGE FROM TYPICAL: N

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3/21/19

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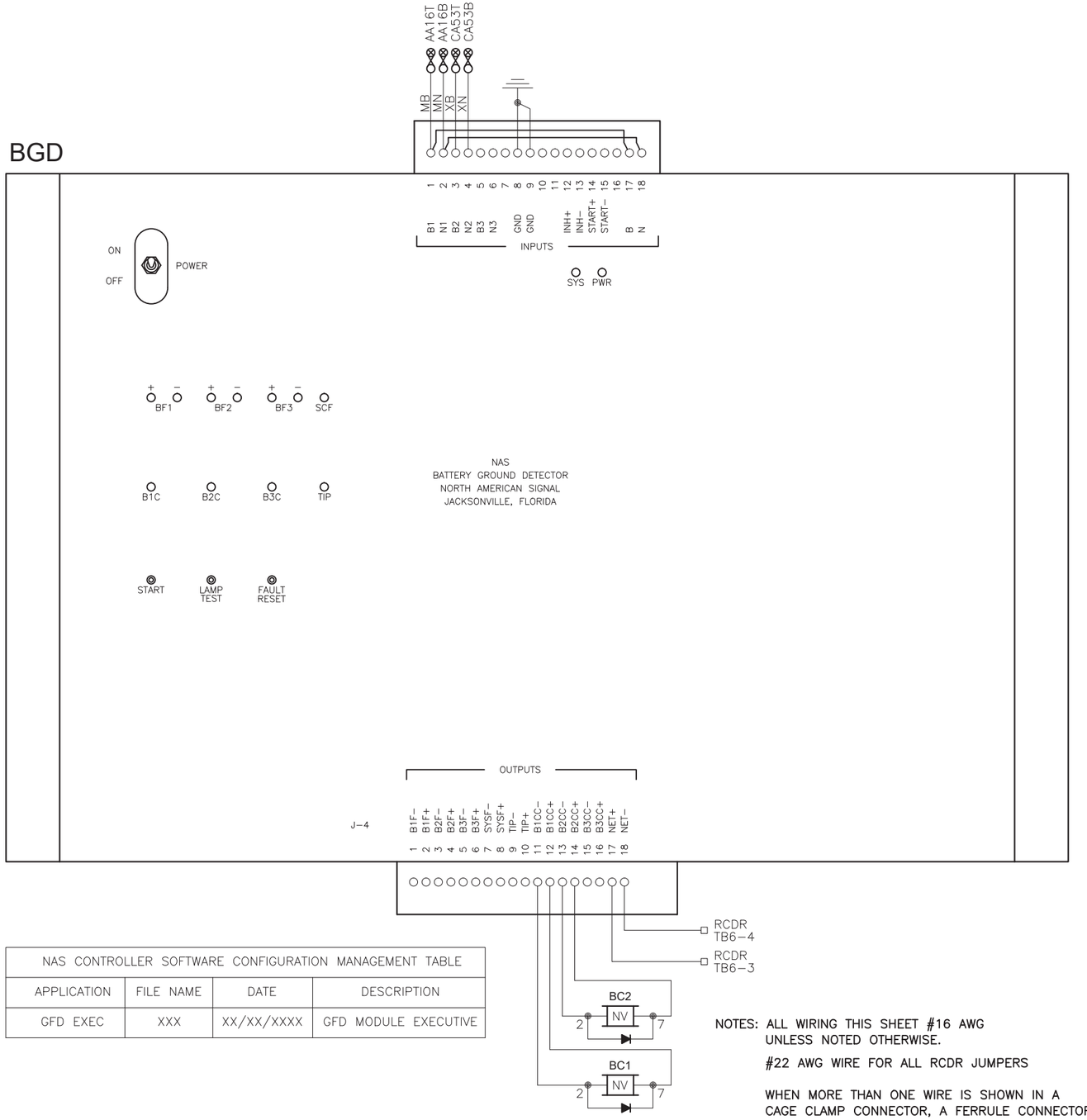
Wheeling & Lake Erie Railway

LOCATION: SR 602 (S KIBLER STREET) NEW WASHINGTON, OH

ORIGINAL DATE 11/28/2018	TITLE RECORDER		
DESIGNER CTC	SUB CAREY	CTC NO. CN18155	
DRAFTSMAN CTC	RRMP N - 83.05	SCALE N.T.S.	
CHECKER CTC	DOT NO. 001 943M	SHEET 09 OF 23	

REVISION BLOCK



BGD

SW1 CURRENT 1/10 MA

POSITION	1	2	3	4	5	6	7	8
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

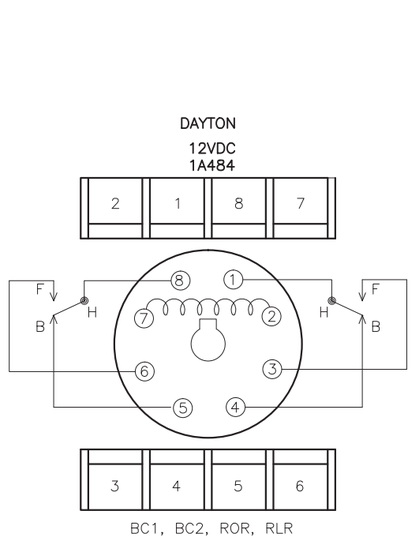
POSITION	1	2	3	4	5	6	7	8
CLOSED			■	■				
OPEN								■

DAYS
HOURS

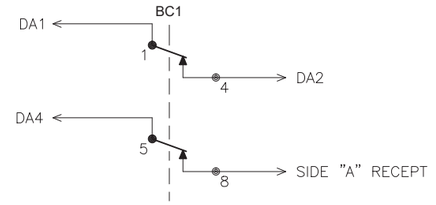
(12 HOURS)

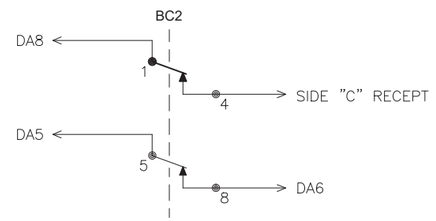
SWITCH VALUES CLOSED POSITION (BINARY)

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



BC1, BC2, ROR, RLR





NAS CONTROLLER SOFTWARE CONFIGURATION MANAGEMENT TABLE			
APPLICATION	FILE NAME	DATE	DESCRIPTION
GFD EXEC	XXX	XX/XX/XXXX	GFD MODULE EXECUTIVE

NOTES: ALL WIRING THIS SHEET #16 AWG UNLESS NOTED OTHERWISE.

#22 AWG WIRE FOR ALL RCDR JUMPERS

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

CHANGE FROM TYPICAL: N

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3/21/19

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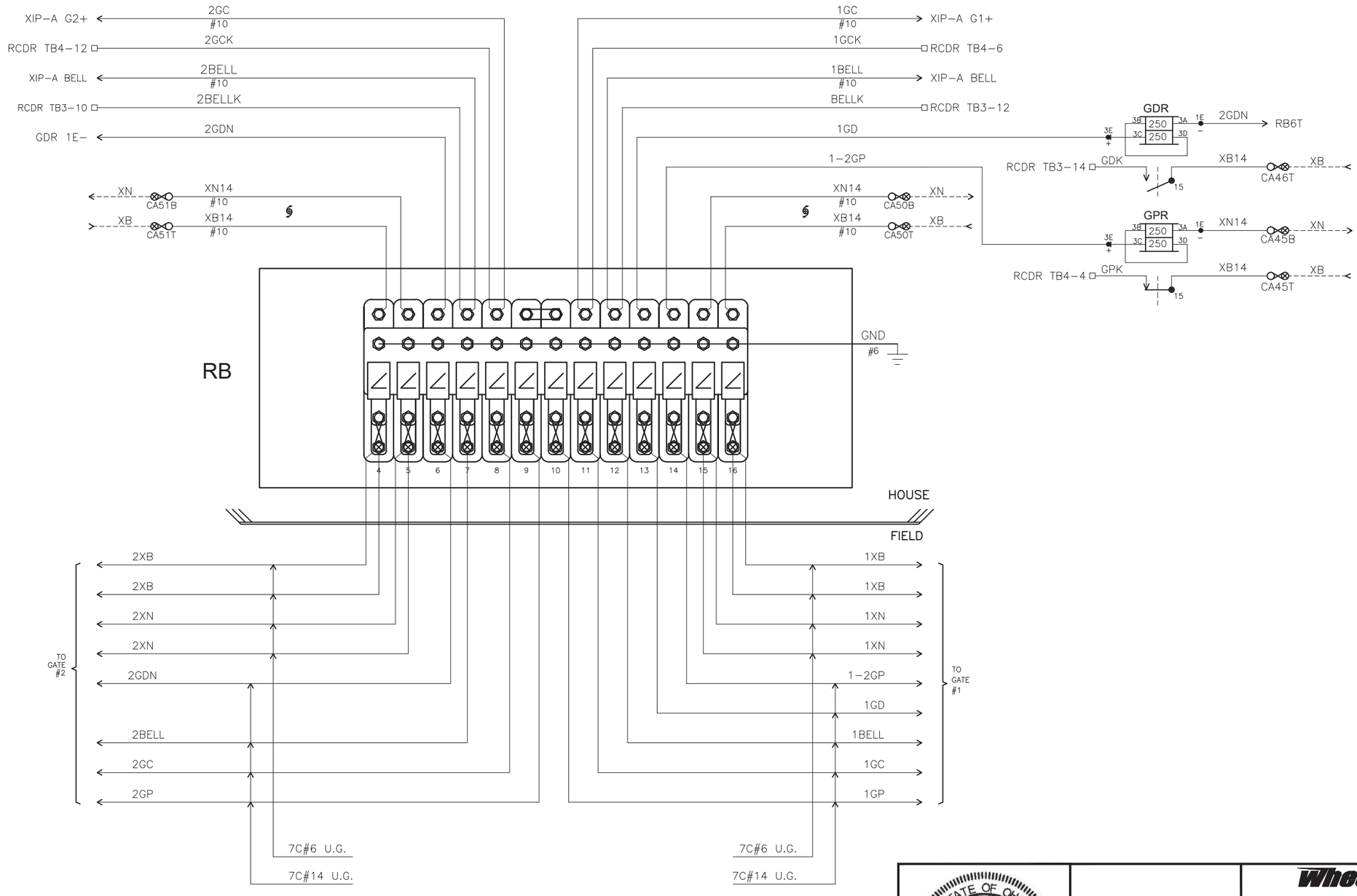
Wheeling & Lake Erie Railway

LOCATION
SR 602 (S KIBLER STREET)
NEW WASHINGTON, OH

ORIGINAL DATE 11/28/2018	TITLE BGD		
DESIGNER CTC	SUB CAREY	CTC NO. CN18155	
DRAFTSMAN CTC	RRMP N – 83.05	SCALE N.T.S.	
CHECKER CTC	DOT NO. 001 943M	SHEET 10 OF 23	

REVISION BLOCK



NOTES: ALL WIRING THIS SHEET #16 AWG UNLESS NOTED OTHERWISE.

CHANGE FROM TYPICAL: N

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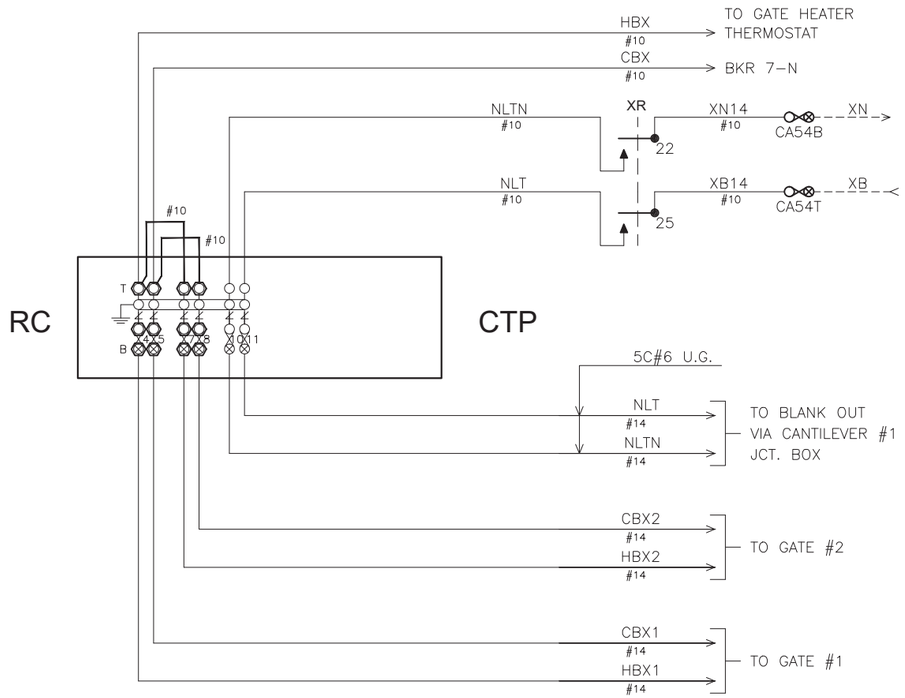
LOCATION
SR 602 (S KIBLER STREET)
NEW WASHINGTON, OH

ORIGINAL DATE 11/28/2018	TITLE ARRESTOR PANEL		
DESIGNER CTC	SUB CAREY	CTC NO. CN18155	
DRAFTSMAN CTC	RRMP N – 83.05	SCALE N.T.S.	
CHECKER CTC	DOT NO. 001 943M	SHEET 11 OF 23	



LEGEND:

⬡ = INSULATED NUT

CHANGE FROM TYPICAL: N

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Wheeling & Lake Erie Railway

LOCATION
SR 602 (S KIBLER STREET)
NEW WASHINGTON, OH

ORIGINAL DATE 11/28/2018	TITLE CTP		
DESIGNER CTC	SUB CAREY	CTC NO. CN18155	
DRAFTSMAN CTC	RRMP N – 83.05	SCALE N.T.S.	
CHECKER CTC	DOT NO. 001 943M	SHEET 12 OF 23	

CONTACT	CLOSED	FUNCTION	TENSION
1B	75–90 DEG.	POWER DOWN	18–28 OZ.
1F	0–70 DEG.	SNUB DOWN	18–28 OZ.
2	0–86 DEG.	POWER UP	18–28 OZ.
3	0–10 DEG.	GATE DOWN	16–24 OZ.
4	82–90 DEG.	GATE CLEAR	16–24 OZ.
5	10–90 DEG.	BELL	16–24 OZ.
6	SPARE	SPARE	16–24 OZ.
7	0–2 DEG.	SNUB	16–24 OZ.

LEGEND:

⬡ = INSULATED NUT

NOTES:

* BELL TO BE ELECTRONIC.

X = INTERNAL GATE WIRES THAT SHARE ELECTRICAL CONNECTIONS WITH OTHER WIRES THAT ARE ASSIGNED THE SAME NUMBER.

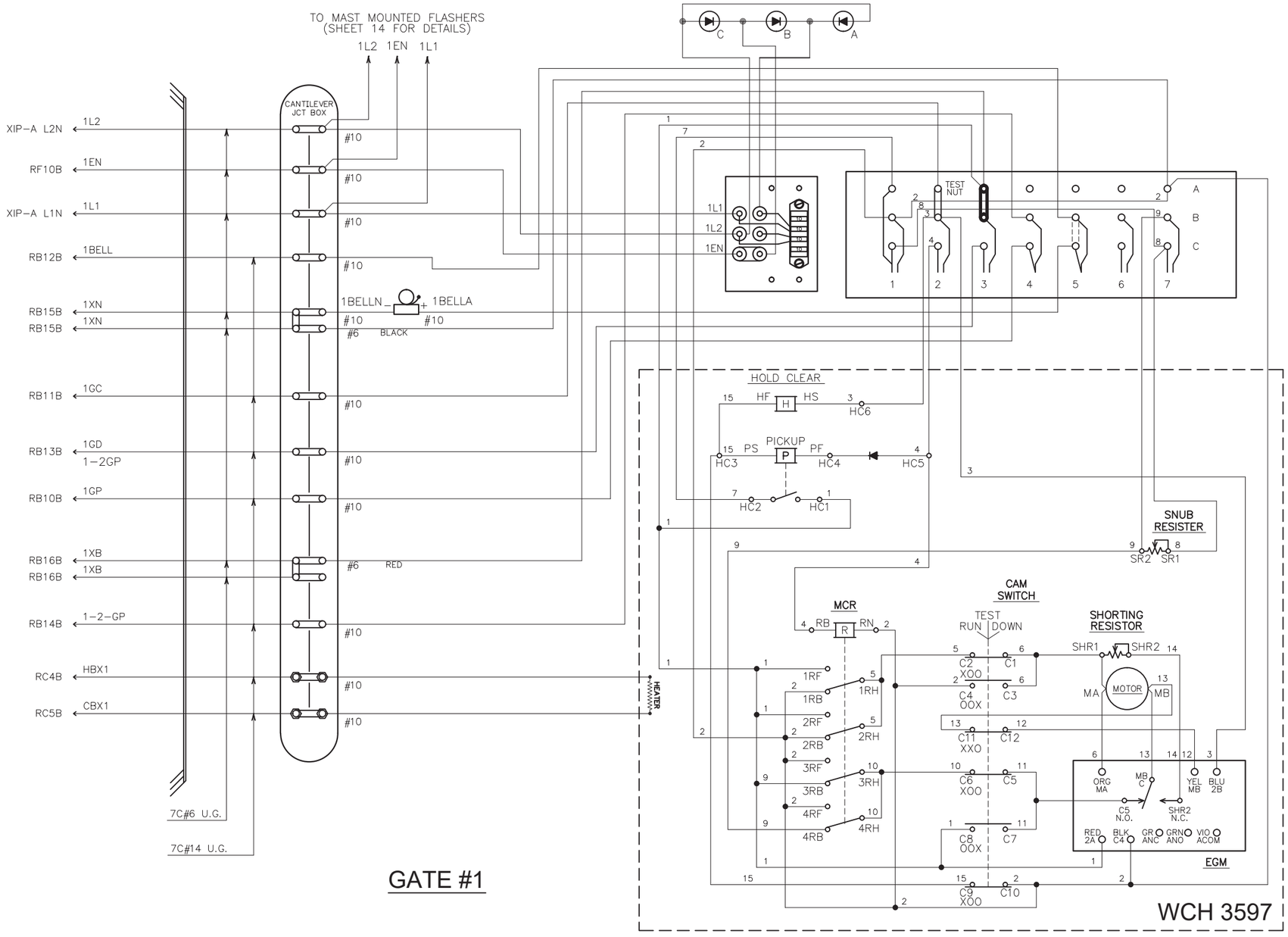
REFER TO SHEET 14 FOR GATE ARM LIGHT WIRING

ADD BOLD STRAPS AND JUMPERS AS SHOWN

NOTE:

* USE ATC 10 AMP FUSES ONLY

⏮ IS LED SYMBOL ONLY. INSTALL ACCORDING TO MANUFACTURER'S INSTRUCTIONS.



GATE #1

WCH 3597

CHANGE FROM TYPICAL: Y

REVISION BLOCK								

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REGISTERED
PROFESSIONAL ENGINEER
3/21/19

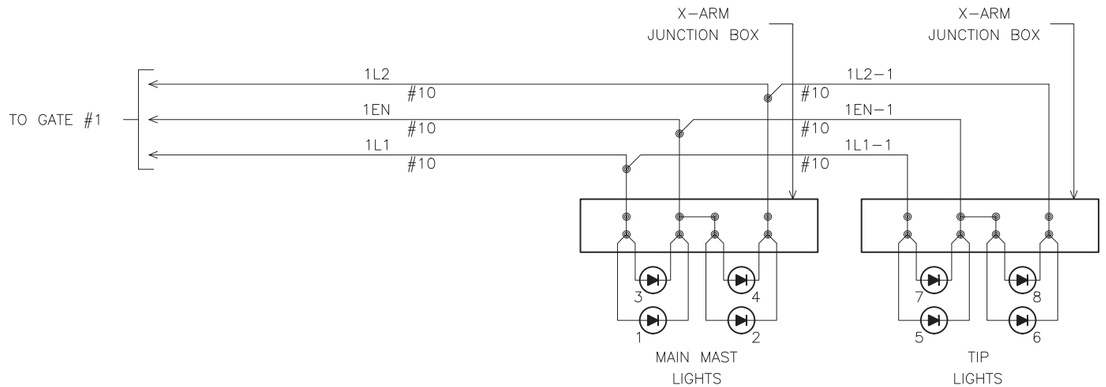
W&LE

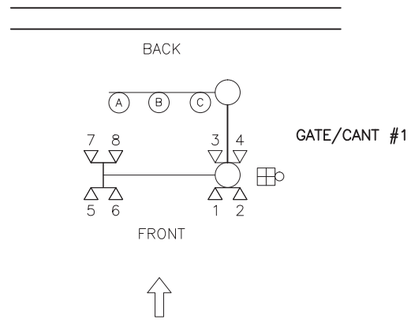
Wheeling & Lake Erie Railway

LOCATION
SR 602 (S KIBLER STREET)
NEW WASHINGTON, OH

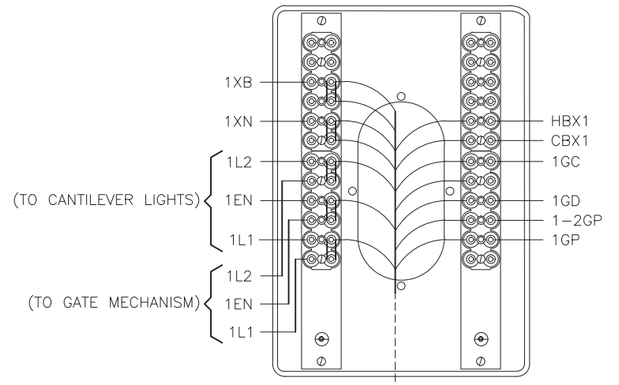
ORIGINAL DATE 11/28/2018	TITLE GATE #1 MECHANISM (NEAR SIDE)		
DESIGNER CTC	SUB CAREY	CTC NO. CN18155	
DRAFTSMAN CTC	RRMP N – 83.05	SCALE N.T.S.	
CHECKER CTC	DOT NO. 001 943M	SHEET 13 OF 23	

GATE/CANT #1





GATE/CANTILEVER #1
JCT BOX



NOTE:
* USE ATC 10 AMP FUSES ONLY

IS LED SYMBOL ONLY. INSTALL ACCORDING TO MANUFACTURER'S INSTRUCTIONS.

CHANGE FROM TYPICAL: Y

REVISION BLOCK

STATE OF OHIO
JOHN T. SHARKEY
75147
REGISTERED
PROFESSIONAL ENGINEER
3/21/19

W&LE

Wheeling & Lake Erie Railway

LOCATION
SR 602 (S KIBLER STREET)
NEW WASHINGTON, OH

ORIGINAL DATE 11/28/2018	TITLE	GATE/CANTILEVER #1 LIGHTS (NEAR SIDE)	
DESIGNER CTC	SUB CAREY	CTC NO. CN18155	
DRAFTSMAN CTC	RRMP N – 83.05	SCALE N.T.S.	
CHECKER CTC	DOT NO. 001 943M	SHEET 14 OF 23	

CONTACT	CLOSED	FUNCTION	TENSION
1B	75–90 DEG.	POWER DOWN	18–28 OZ.
1F	0–70 DEG.	SNUB DOWN	18–28 OZ.
2	0–86 DEG.	POWER UP	18–28 OZ.
3	0–10 DEG.	GATE DOWN	16–24 OZ.
4	82–90 DEG.	GATE CLEAR	16–24 OZ.
5	10–90 DEG.	BELL	16–24 OZ.
6	SPARE	SPARE	16–24 OZ.
7	0–2 DEG.	SNUB	16–24 OZ.

LEGEND:

= INSULATED NUT

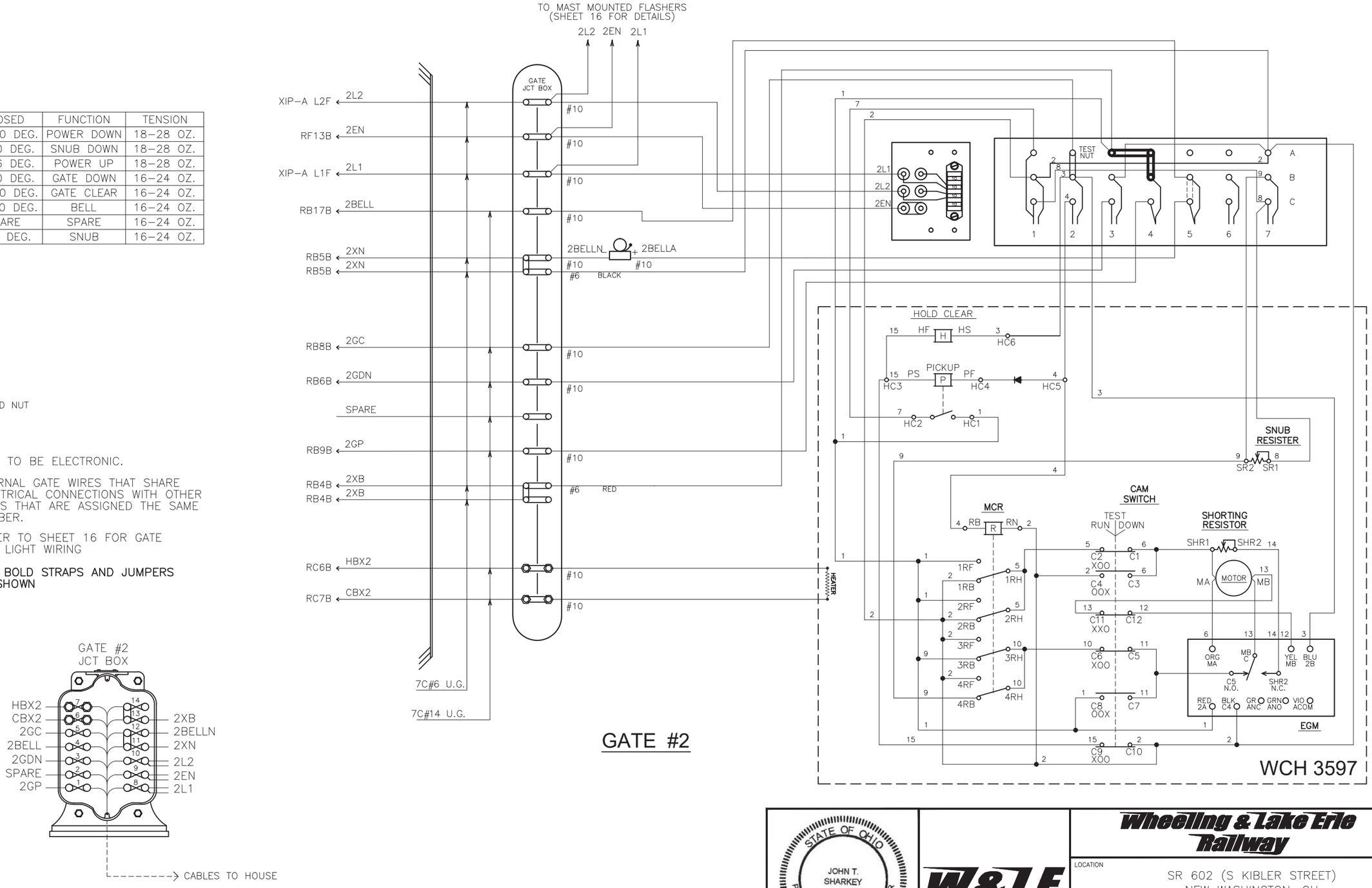
NOTES:

* BELL TO BE ELECTRONIC.

X = INTERNAL GATE WIRES THAT SHARE ELECTRICAL CONNECTIONS WITH OTHER WIRES THAT ARE ASSIGNED THE SAME NUMBER.

REFER TO SHEET 16 FOR GATE ARM LIGHT WIRING

ADD BOLD STRAPS AND JUMPERS AS SHOWN



GATE #2

CHANGE FROM TYPICAL: N

STATE OF OHIO
JOHN T. SHARKEY
75147
REGISTERED
PROFESSIONAL ENGINEER
3/21/19

W&LE

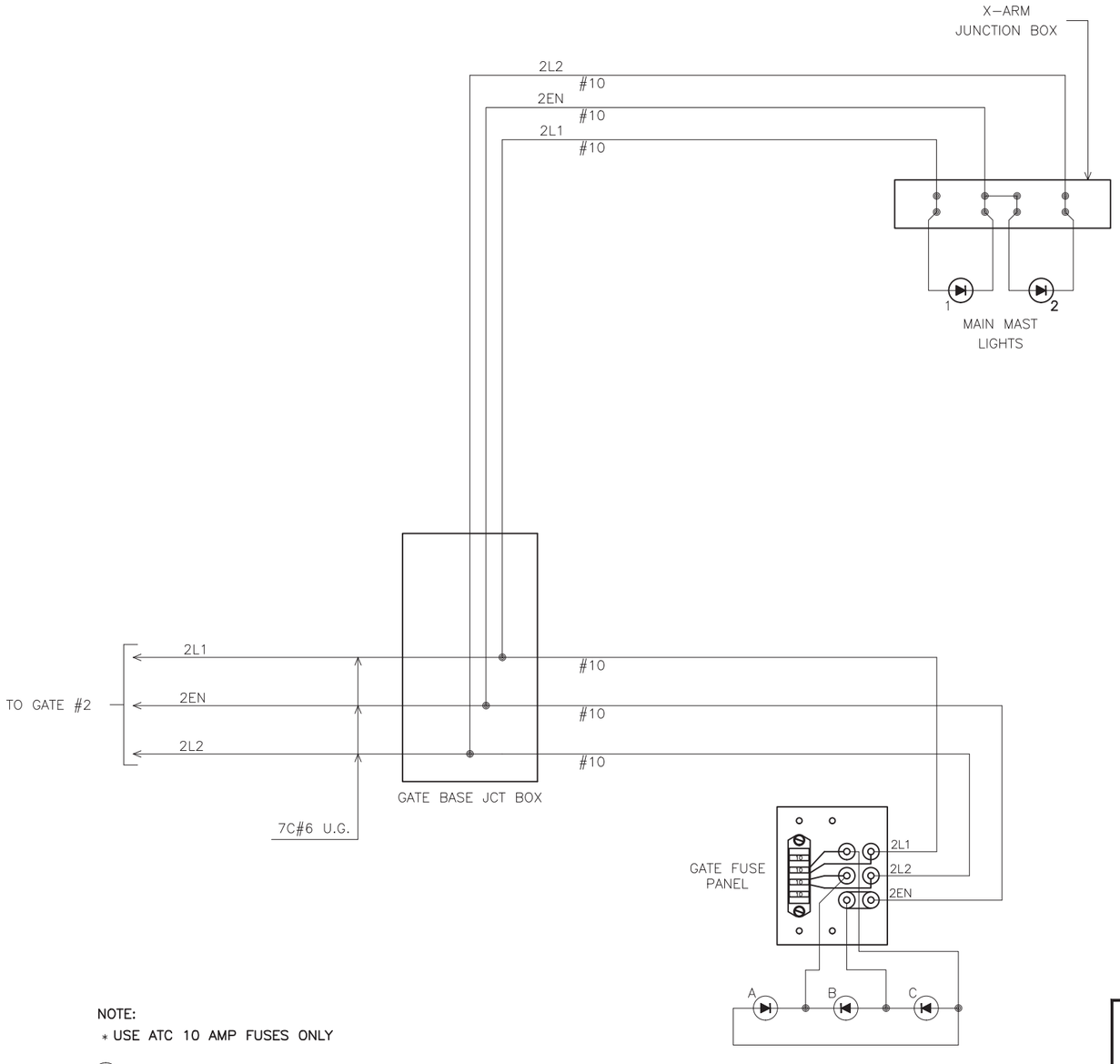
Wheeling & Lake Erie Railway

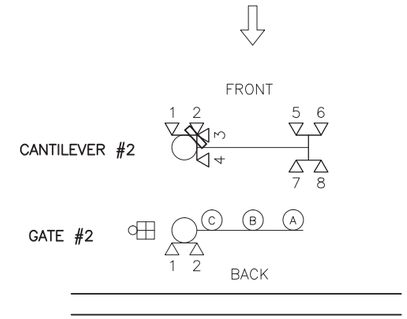
LOCATION
SR 602 (S KIBLER STREET)
NEW WASHINGTON, OH

ORIGINAL DATE 11/28/2018	TITLE GATE #2 MECHANISM (FAR SIDE)		
DESIGNER CTC	SUB CAREY	CTC NO. CN18155	
DRAFTSMAN CTC	RRMP N – 83.05	SCALE N.T.S.	
CHECKER CTC	DOT NO. 001 943M	SHEET 15 OF 23	

REVISION BLOCK

GATE #2





NOTE:

* USE ATC 10 AMP FUSES ONLY

(◀) IS LED SYMBOL ONLY. INSTALL ACCORDING TO MANUFACTURER'S INSTRUCTIONS.

CHANGE FROM TYPICAL: N

REVISION BLOCK								

STATE OF OHIO
JOHN T. SHARKEY
75147
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PROFESSIONAL ENGINEER
3/21/19

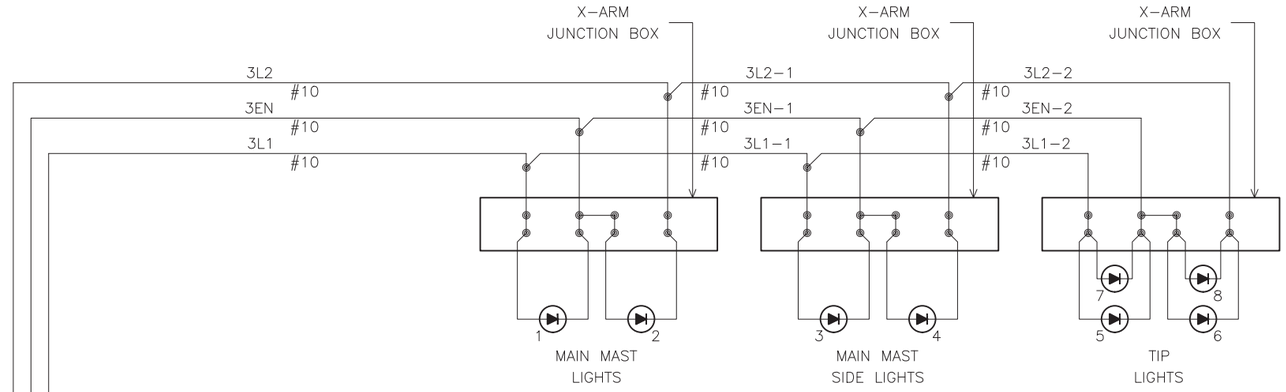
W&LE

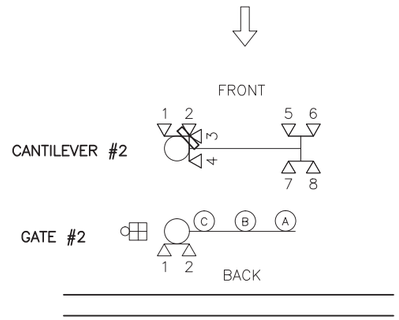
Wheeling & Lake Erie Railway

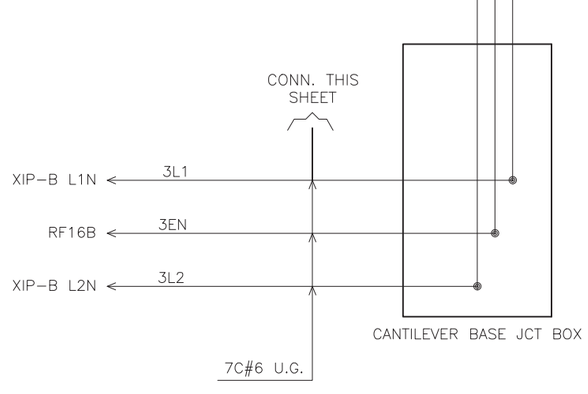
LOCATION
SR 602 (S KIBLER STREET)
NEW WASHINGTON, OH

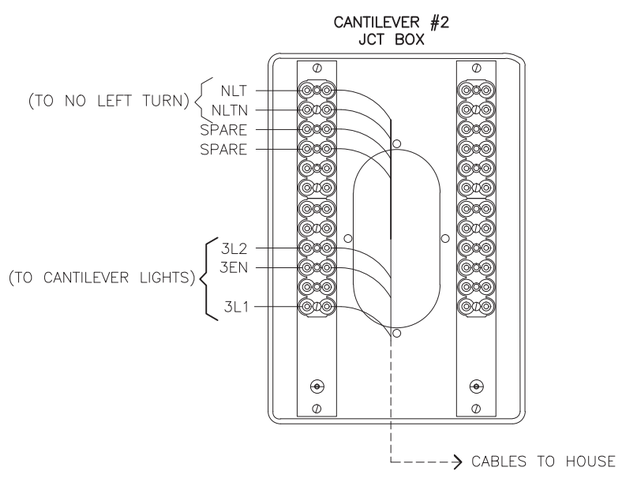
ORIGINAL DATE 11/28/2018	TITLE GATE #2 LIGHTS (FAR SIDE)		
DESIGNER CTC	SUB CAREY	CTC NO. CN18155	
DRAFTSMAN CTC	RRMP N – 83.05	SCALE N.T.S.	
CHECKER CTC	DOT NO. 001 943M	SHEET 16 OF 23	

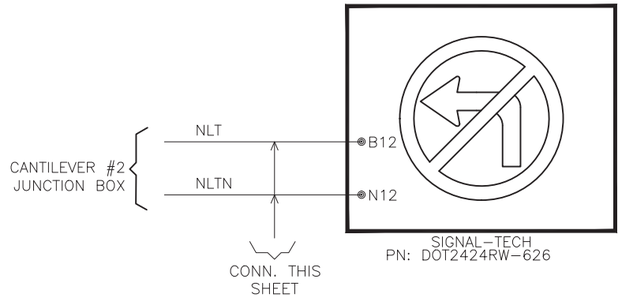
CANTILEVER #2











NOTE:

(K) IS LED SYMBOL ONLY. INSTALL ACCORDING TO MANUFACTURER'S INSTRUCTIONS.

CHANGE FROM TYPICAL: Y

REVISION BLOCK

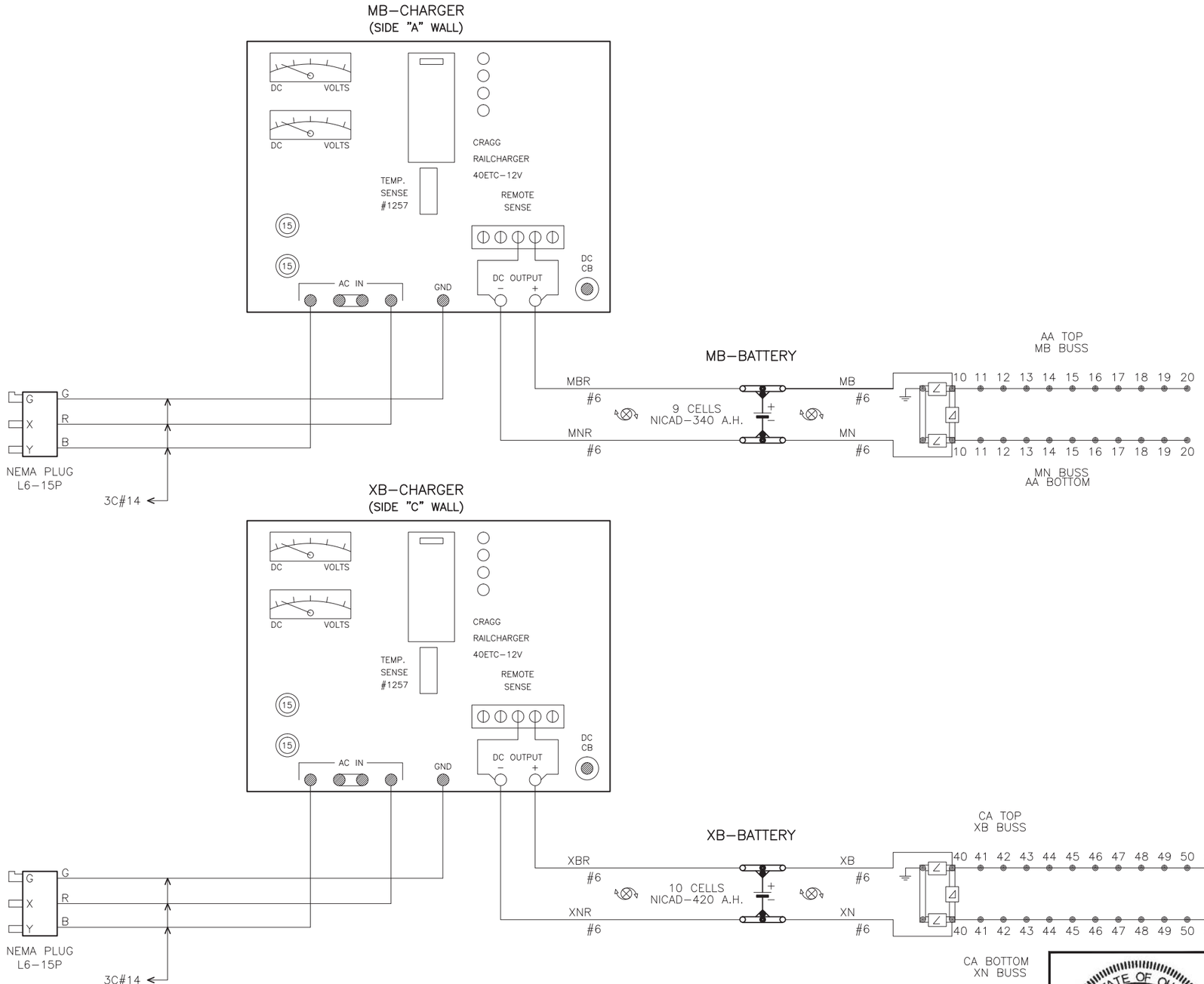
STATE OF OHIO
JOHN T. SHARKEY
75147
REGISTERED
PROFESSIONAL ENGINEER
3/21/19

W&LE

Wheeling & Lake Erie Railway

LOCATION
SR 602 (S KIBLER STREET)
NEW WASHINGTON, OH

ORIGINAL DATE 11/28/2018	TITLE CANTILEVER #2 LIGHTS (FAR SIDE)		
DESIGNER CTC	SUB CAREY	CTC NO. CN18155	
DRAFTSMAN CTC	RRMP N – 83.05	SCALE N.T.S.	
CHECKER CTC	DOT NO. 001 943M	SHEET 17 OF 23	



BATTERY BUSS DETAILS

T1_APP CC50T	20	VIO1 J3–5
T1_ALL CC45T	19	VIO1 J3–2
ROR–4	18	VIO1 J3–11
PO DB1	17	PO DB3
BGD B1	16	BGD N1
SPARE	15	SPARE
RCDR TB1–4	14	RCDR TB1–3
RCDR TB6–1	13	RCDR TB6–2
SPARE	12	RLR–7
MDSA–1 B+	11	MDSA–1 B–
MB BATT+	10	MN BATT–

MB BUSS (TOP) — AA — MN BUSS (BOTTOM)

BATTERY BUSS DETAILS

SPARE	57	SPARE
XIP–B L1B–B	56	XIP–B L1B–N
XIP–B B	55	XIP–B N
XR 25	54	XR 22
BGD B2	53	BGD N2
XR 15	52	XIP–A G1–
RB4T	51	RB5T
RB16T	50	RB15T
XIP–A B	49	XIP–A N
GDR 25	48	IXC–A J5–2
GPR 12	47	IXC–A J5–10
GDR 15	46	SPARE
GPR 15	45	GPR 1E
CC58T	44	IXC–A J5–14
FD COM	43	RCDR TB4–15
RCDR TB1–2	42	RCDR TB1–1
XIP–A L1B–B	41	XIP–A L1B–N
XB BATT+	40	XN BATT–

XB BUSS (TOP) — CA — XN BUSS (BOTTOM)

CHANGE FROM TYPICAL: Y

REVISION BLOCK

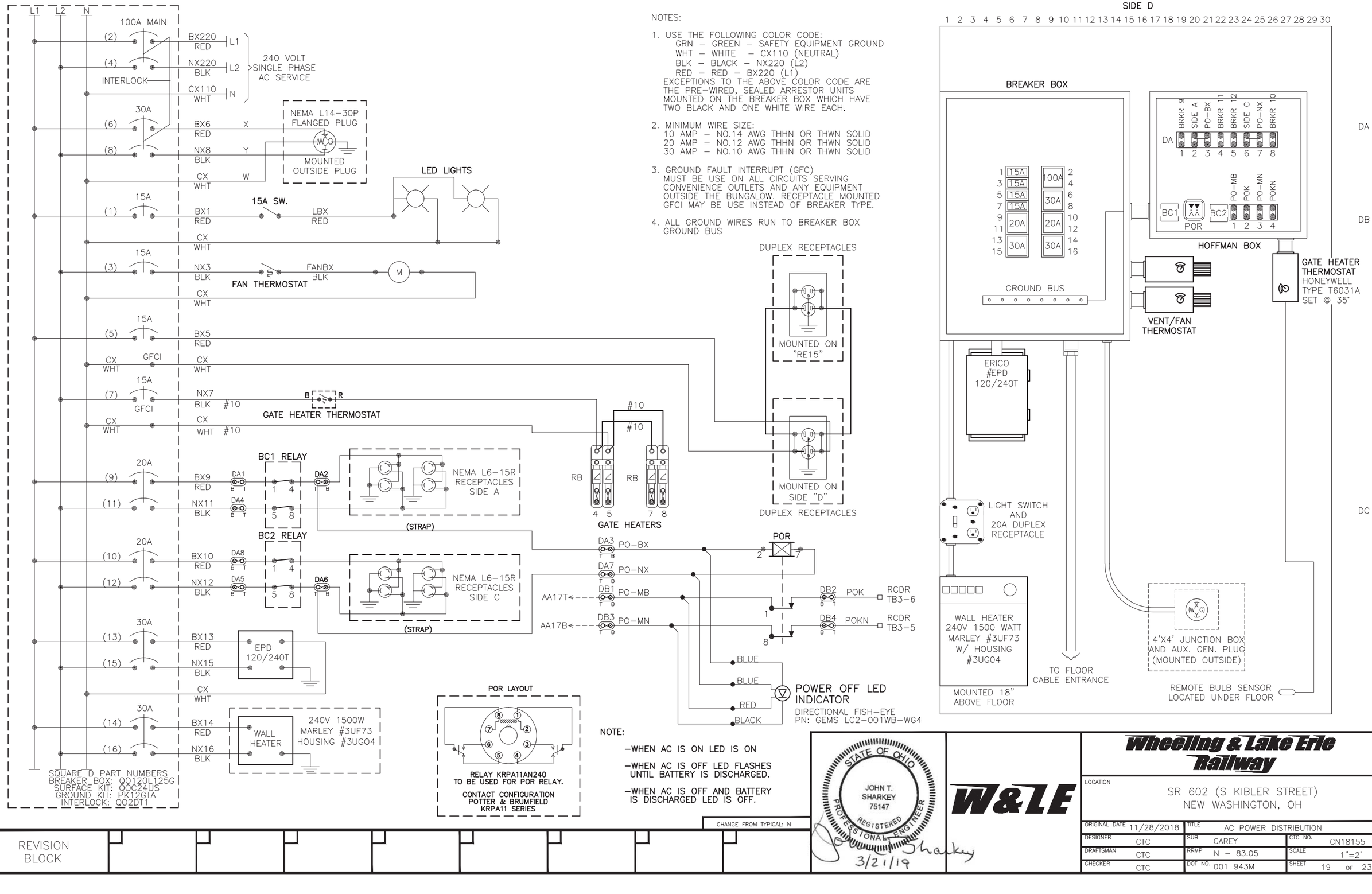
STATE OF OHIO
JOHN T. SHARKEY
75147
REGISTERED
PROFESSIONAL ENGINEER
3/21/19

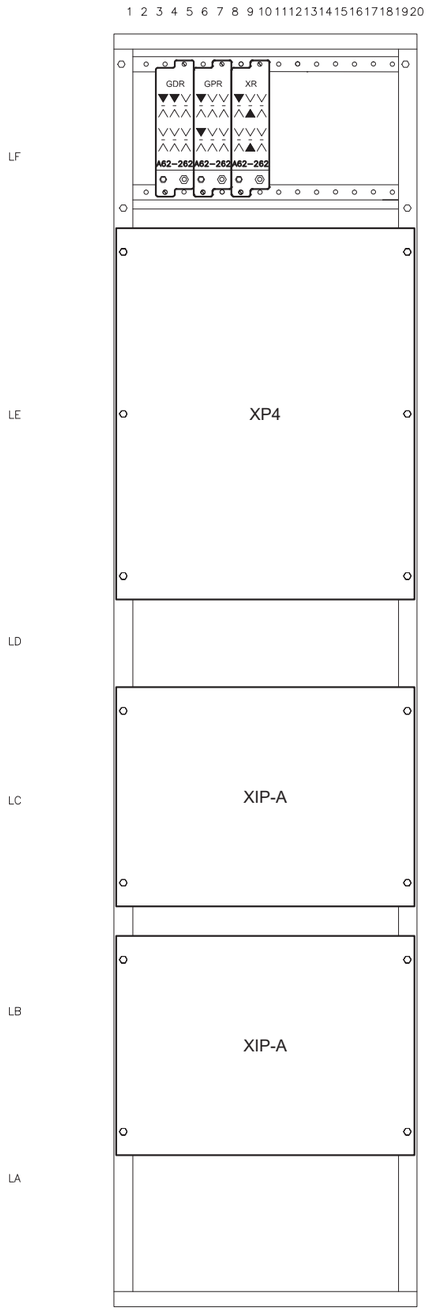
W&LE

Wheeling & Lake Erie Railway

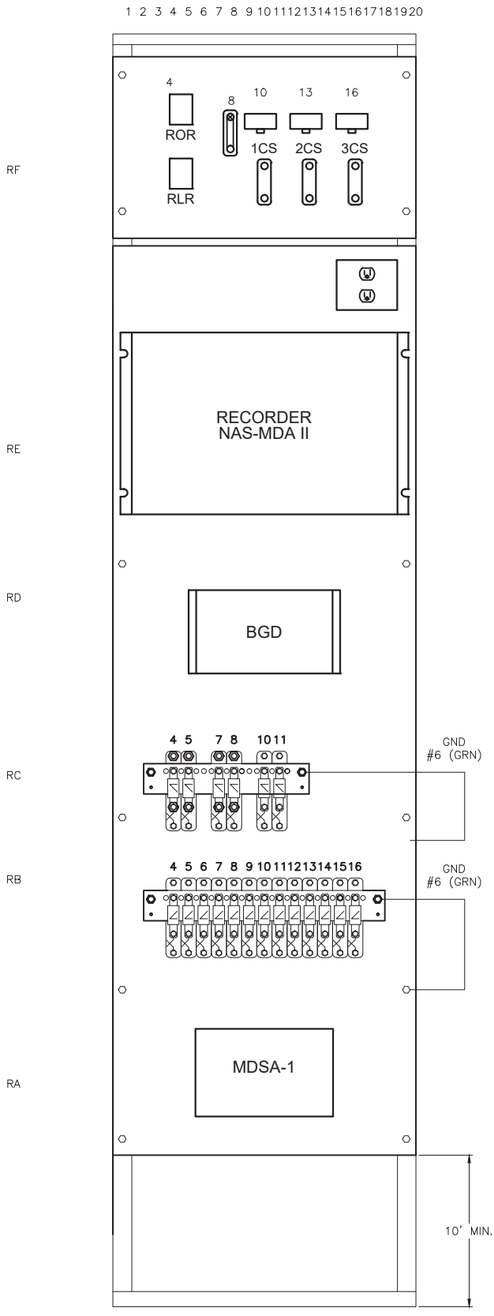
LOCATION
SR 602 (S KIBLER STREET)
NEW WASHINGTON, OH

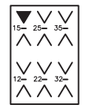
ORIGINAL DATE 11/28/2018	TITLE BATTERY CHARGERS		
DESIGNER CTC	SUB CAREY	CTC NO. CN18155	
DRAFTSMAN CTC	RRMP N – 83.05	SCALE 1"=2'	
CHECKER CTC	DOT NO. 001 943M	SHEET 18 OF 23	


L1
L2
N
100A MAIN
(2)
BX220
RED
L1
(4)
NX220
BLK
L2
240 VOLT
SINGLE PHASE
AC SERVICE
INTERLOCK
CX110
WHT
N
30A
(6)
BX6
RED
X
NEMA L14-30P
FLANGED PLUG
(8)
NX8
BLK
Y
MOUNTED
OUTSIDE PLUG
CX
WHT
W
LED LIGHTS
15A
(1)
BX1
RED
15A SW.
LBX
RED
CX
WHT
15A
(3)
NX3
BLK
FANBX
BLK
M
FAN THERMOSTAT
CX
WHT
15A
(5)
BX5
RED
CX
WHT
GFCI
CX
WHT
15A
(7)
GFCI
NX7
BLK
#10
B
R
GATE HEATER THERMOSTAT
CX
WHT
WHT
#10
BC1 RELAY
20A
(9)
BX9
RED
DA1
DA2
(11)
NX11
BLK
DA4
1 4
5 8
NEMA L6-15R
RECEPTACLES
SIDE A
(STRAP)
BC2 RELAY
20A
(10)
BX10
RED
DA8
DA6
(12)
NX12
BLK
DA5
1 4
5 8
NEMA L6-15R
RECEPTACLES
SIDE C
(STRAP)
30A
(13)
BX13
RED
EPD
120/240T
(15)
NX15
BLK
CX
WHT
30A
(14)
BX14
RED
WALL
HEATER
240V 1500W
MARLEY #3UF73
HOUSING #3UG04
(16)
NX16
BLK
SQUARE D PART NUMBERS
BREAKER BOX: QO120L125G
SURFACE KIT: QOC24US
GROUND KIT: PK12GTA
INTERLOCK: QO2DT1
#10
#10
RB
RB
4 5
7 8
GATE HEATERS
DUPLEX RECEPTACLES
MOUNTED ON
"RE15"
MOUNTED ON
SIDE "D"
DUPLEX RECEPTACLES
DA3
PO-BX
DA7
PO-NX
AA17T
DB1
PO-MB
AA17B
DB3
PO-MN
POR
2
7
1
8
DB2
POK
RCDR
TB3-6
DB4
POKN
RCDR
TB3-5
BLUE
BLUE
RED
BLACK
POWER OFF LED
INDICATOR
DIRECTIONAL FISH-EYE
PN: GEMS LC2-001WB-WG4
POR LAYOUT
RELAY KRPA11AN240
TO BE USED FOR POR RELAY.
CONTACT CONFIGURATION
POTTER & BRUMFIELD
KRPA11 SERIES
NOTE:
-WHEN AC IS ON LED IS ON
-WHEN AC IS OFF LED FLASHES
UNTIL BATTERY IS DISCHARGED.
-WHEN AC IS OFF AND BATTERY
IS DISCHARGED LED IS OFF.
NOTES:
1. USE THE FOLLOWING COLOR CODE:
GRN – GREEN – SAFETY EQUIPMENT GROUND
WHT – WHITE – CX110 (NEUTRAL)
BLK – BLACK – NX220 (L2)
RED – RED – BX220 (L1)
EXCEPTIONS TO THE ABOVE 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 AMP – NO.14 AWG THHN OR THWN SOLID
20 AMP – NO.12 AWG THHN OR THWN SOLID
30 AMP – NO.10 AWG THHN OR THWN SOLID
3. GROUND FAULT INTERRUPT (GFC) MUST BE USE ON ALL CIRCUITS SERVING CONVENIENCE OUTLETS AND ANY EQUIPMENT OUTSIDE THE BUNGALOW. RECEPTACLE MOUNTED GFCI MAY BE USE INSTEAD OF BREAKER TYPE.
4. ALL GROUND WIRES RUN TO BREAKER BOX GROUND BUS
SIDE D
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
BREAKER BOX
1 15A
3 15A
5 15A
7 15A
9 20A
11 20A
13 30A
15
100A 2
30A 4
30A 6
20A 8
20A 10
30A 12
14
16
GROUND BUS
DA
BRKR 9
SIDE A
PO-BX
BRKR 11
BRKR 12
SIDE C
PO-NX
BRKR 10
1 2 3 4 5 6 7 8
BC1
BC2
POR
PO-MB
POK
PO-MN
POKN
1 2 3 4
HOFFMAN BOX
DA
DB
DC
GATE HEATER
THERMOSTAT
HONEYWELL
TYPE T6031A
SET @ 35°
VENT/FAN
THERMOSTAT
ERICO
#EPD
120/240T
LIGHT SWITCH
AND
20A DUPLEX
RECEPTACLE
WALL HEATER
240V 1500 WATT
MARLEY #3UF73
W/ HOUSING
#3UG04
MOUNTED 18"
ABOVE FLOOR
TO FLOOR
CABLE ENTRANCE
4'X4' JUNCTION BOX
AND AUX. GEN. PLUG
(MOUNTED OUTSIDE)
REMOTE BULB SENSOR
LOCATED UNDER FLOOR
STATE OF OHIO
JOHN T.
SHARKEY
75147
REGISTERED
PROFESSIONAL ENGINEER
3/21/19
W&LE
Wheeling & Lake Erie Railway
LOCATION
SR 602 (S KIBLER STREET)
NEW WASHINGTON, OH
ORIGINAL DATE 11/28/2018
TITLE AC POWER DISTRIBUTION
DESIGNER CTC
SUB CAREY
CTC NO. CN18155
DRAFTSMAN CTC
RRMP N – 83.05
SCALE 1"=2'
CHECKER CTC
DOT NO. 001 943M
SHEET 19 OF 23
CHANGE FROM TYPICAL: N
REVISION
BLOCK



SIDE 'B' FRONT





A62-262

▼ = CONTACT USED

V =-CONTACT NOT USED

RELAY CROSS REFERENCE

GRS	SAFETRAN
A62-262	400000

CHANGE FROM TYPICAL: Y

REVISION BLOCK

STATE OF OHIO
JOHN T. SHARKEY
75147
REGISTERED
PROFESSIONAL ENGINEER
3/21/19

W&LE

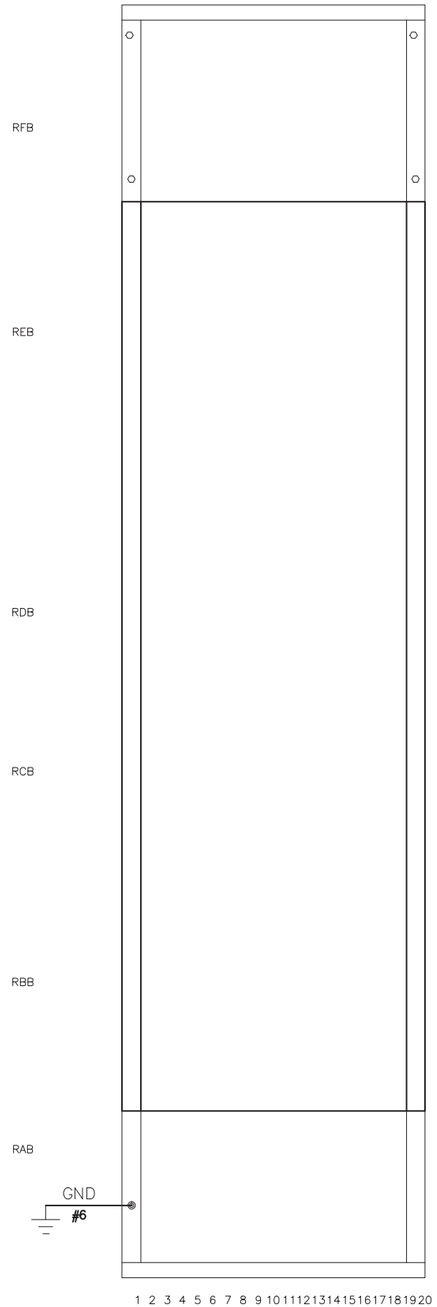
Wheeling & Lake Erie Railway

LOCATION
SR 602 (S KIBLER STREET)
NEW WASHINGTON, OH

ORIGINAL DATE 11/28/2018	TITLE RACK FRONT VIEW		
DESIGNER CTC	SUB CAREY	CTC NO. CN18155	
DRAFTSMAN CTC	RRMP N – 83.05	SCALE 1"=2'	
CHECKER CTC	DOT NO. 001 943M	SHEET 20 OF 23	

BACK OF RIGHT SIDE

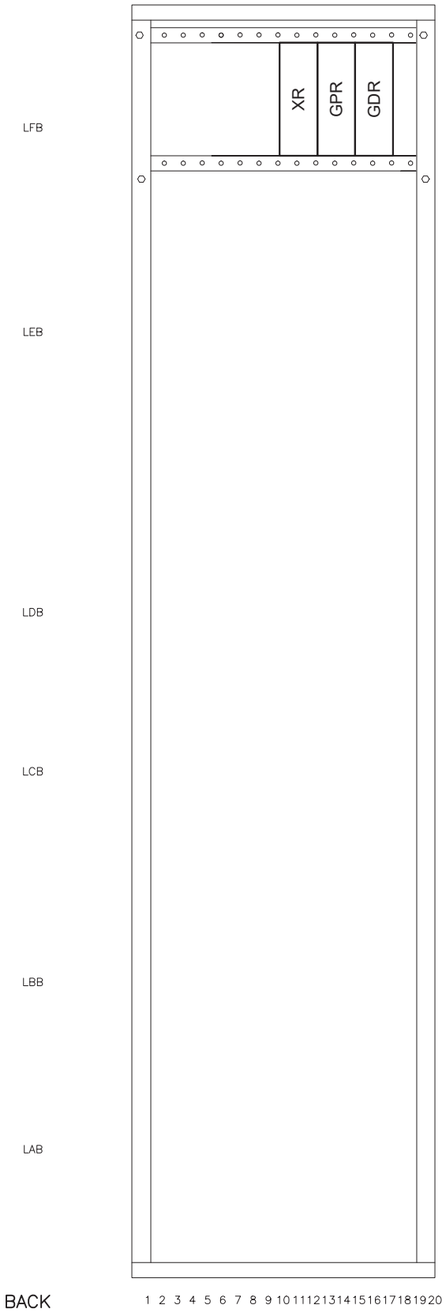
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20



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

BACK OF LEFT SIDE

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



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

SIDE 'B' BACK

CHANGE FROM TYPICAL: Y

REVISION BLOCK								

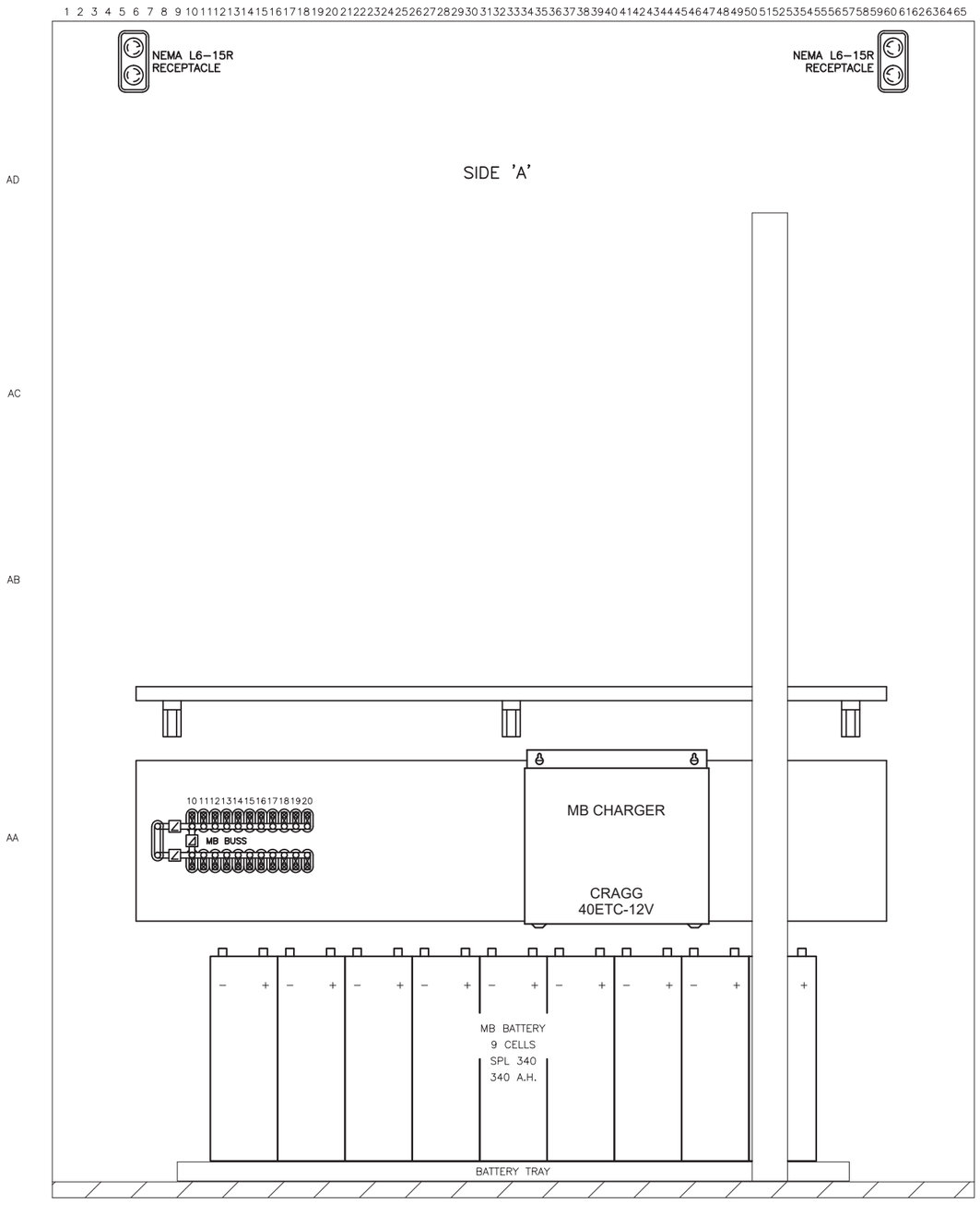
STATE OF OHIO
JOHN T. SHARKEY
75147
REGISTERED
PROFESSIONAL ENGINEER
3/21/19

W&LE

Wheeling & Lake Erie Railway

LOCATION
SR 602 (S KIBLER STREET)
NEW WASHINGTON, OH

ORIGINAL DATE 11/28/2018	TITLE RACK BACK VIEW		
DESIGNER CTC	SUB CAREY	CTC NO. CN18155	
DRAFTSMAN CTC	RRMP N – 83.05	SCALE 1"=2'	
CHECKER CTC	DOT NO. 001 943M	SHEET 21 OF 23	



CHANGE FROM TYPICAL: N

REVISION BLOCK

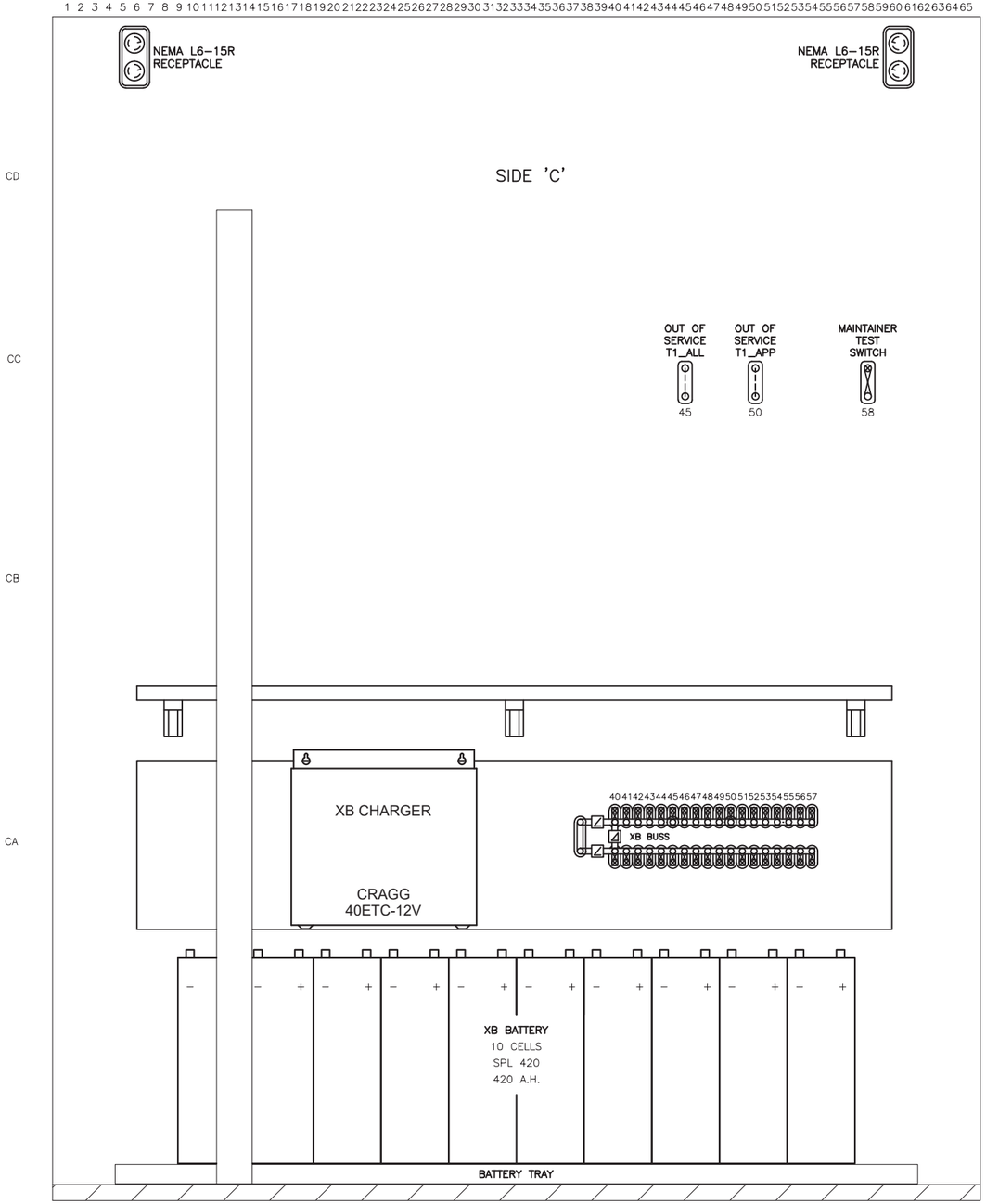
STATE OF OHIO
JOHN T. SHARKEY
75147
REGISTERED
PROFESSIONAL ENGINEER
3/21/19

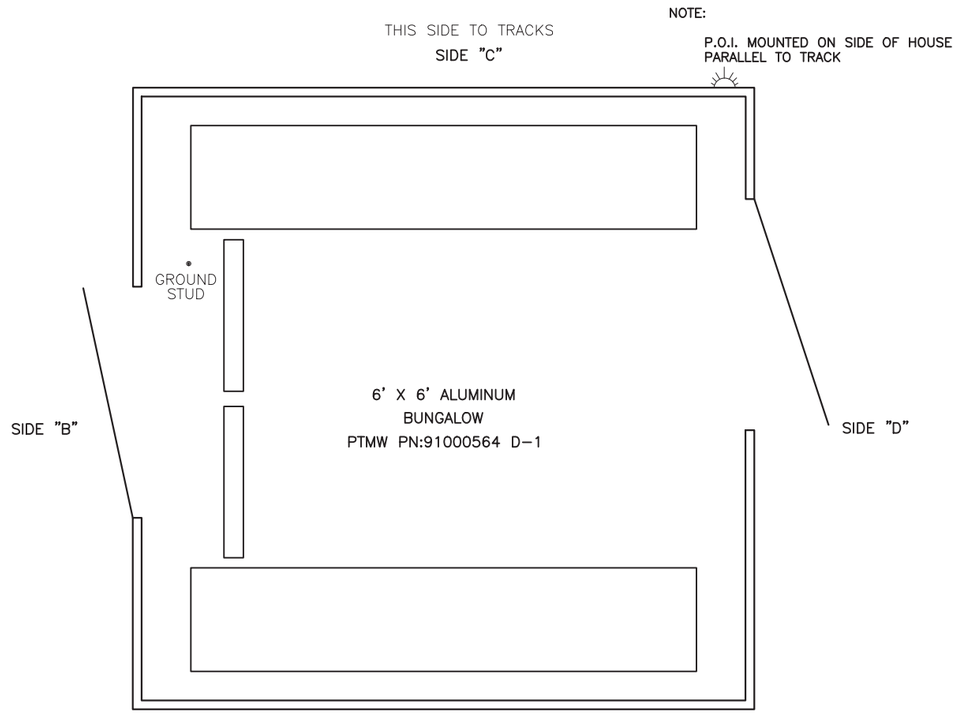
W&LE

Wheeling & Lake Erie Railway

LOCATION
SR 602 (S KIBLER STREET)
NEW WASHINGTON, OH

ORIGINAL DATE 11/28/2018	TITLE SIDE "A"		
DESIGNER CTC	SUB CAREY	CTC NO. CN18155	
DRAFTSMAN CTC	RRMP N – 83.05	SCALE 1"=2'	
CHECKER CTC	DOT NO. 001 943M	SHEET 22 OF 23	





CHANGE FROM TYPICAL: N

REVISION BLOCK

STATE OF OHIO
JOHN T. SHARKEY
75147
REGISTERED
PROFESSIONAL ENGINEER
3/21/19

W&LE

Wheeling & Lake Erie Railway

LOCATION
SR 602 (S KIBLER STREET)
NEW WASHINGTON, OH

ORIGINAL DATE 11/28/2018	TITLE SIDE "C"		
DESIGNER CTC	SUB CAREY	CTC NO. CN18155	
DRAFTSMAN CTC	RRMP N - 83.05	SCALE 1"=2'	
CHECKER CTC	DOT NO. 001 943M	SHEET 23 OF 23	

OHIO RAIL DEVELOPMENT COMMISSION

Mail Stop #3140, 1980 West Broad Street, Columbus OH 43223
John R. Kasich, Governor • Mark Policinski, ORDC Chairman

September 7, 2018

Mr. Tim Andrews
Wheeling & Lake Erie
100 East First St.
Brewster Oh, 44613

RE: Crawford County, SR 602/Kibler St, DOT# 001943M, PID# 108511

Dear Mr. Andrews:

A diagnostic review was held at the above grade crossing on May 14, 2018. As a result, the devices will be upgraded to automatic flashing lights and roadway gates to include cantilevers.

Wheeling & Lake Erie (WE) is authorized to proceed with the site plans and cost estimates (PE) or bid package for this project. This authorization is made with the stipulation and understanding that any field work needs prior approval before 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.

The diagnostic review form is attached. Please note any recommendations (page 5), if any, made by the team with regard to requirements for this location. Any minor roadway work necessary for MUTCD compliance should be incorporated into the PE and such costs will flow through the railroad reimbursement process.

The Project Manager for this project is James Tucker. James can be reached at (614) 398-6897, or james.tucker@dot.ohio.gov, if you have any questions.

Sincerely,

J. Tucker

Project Manager

C: Randall Schumacher, Supervisor, Rail Division, PUCO
Jill Henry, Grade Crossing Planner, PUCO
Susan Arduini, ORDC
ORDC (file)

Attachment: 1 (diagnostic review form)

OHIO RAIL DEVELOPMENT COMMISSION

Mail Stop #3140, 1980 West Broad Street, Columbus OH 43223
John R. Kasich, Governor • Mark Policinski, ORDC Chairman

July 31, 2018

Wheeling & Lake Erie Railroad
Mr. Tim Andrews
Signals & Communications Supervisor
100 E. First Street
Brewster, Ohio 44613

Subject: Grade Crossing Warning Device Improvements
Crawford County, SR 602-14.25/Kibler St., DOT# 001943M, PID 108511
Crawford County, SR 4-19.61, DOT# 001936C, PID 108506
Huron County, SR 99-14.43/Ridge St., DOT# 473647D, PID 108606

Dear Mr. Andrews:

Three (3) diagnostic reviews were conducted at the subject grade crossings on 5/14/2018 and 5/16/2018. As a result of these reviews, the devices will be upgraded to automatic flashing lights and roadway gates.

These projects shall be completed in compliance with Agreement No. 0001-A, dated September 17, 1990, entered into by the State of Ohio and Wheeling & Lake Erie Railroad (WE) and incorporated as if fully rewritten herein. The construction shall also meet the general terms and conditions under the Fixing America's Surface Transportation Act and subsequent amendments and the State of Ohio's Federally Funded Warning Device Program.

Preliminary engineering (PE) and construction costs shall be borne one hundred percent (100%) by ORDC. Reimbursable costs will be limited by the ORDC based on approved estimates and bid tabulations, if applicable. These limits will be quantified by the ORDC in its construction authorization to WE and may be amended by the ORDC based on revised estimates and bid tabulations.

This Letter Agreement and the approved plans constitute the scope of the projects. WE shall notify ORDC in writing of any changes in the scope of work which are not in the approved plans and estimates and secure approval in writing of same before the work is performed.

PE will not be commenced by WE prior to ORDC issuing a PE authorization. PE will be submitted by WE to ORDC within ninety (90) days or other time specified by ORDC in the PE authorization. Construction will not be commenced by WE prior to ORDC issuing a construction authorization. Construction will be completed by WE within nine (9) months or other time specified in the time specified by ORDC in the construction authorization.

Please indicate your acceptance of the terms and conditions of this Letter Agreement by signing and returning one (1) copy to me at the address listed above and retain a copy for your files. This Agreement may be executed in one or more counterparts, each of which shall be deemed to be a duplicate original, but all of which taken together shall be deemed to constitute a single Agreement.

Sincerely,

Matthew R. Dietrich
Executive Director

Wheeling & Lake Erie Railroad:

By: _____

Title: S.C. Supervisor

Date: 8-21-18

CRA SR602 Kibler St. WE PID 108511 DOT#001943M
CRA SR 4-19.61 PID 108506 DOT#001936C
HUR SR 99-14.43 Ridge St PID 108606 DOT#473647D

OHIO RAIL DEVELOPMENT COMMISSION

Ohio Rail Development Commission
Mail Stop 3140, 1980 W. Broad Street,
Columbus, OH 43223

Diagnostic Review Team Survey

Reason for Survey: (e.g. formula, accident, constituent, etc.) Constituent

Date: 5/14/2018

Location Data

Street or Road Name:	Kibler Street		
Route/Road Number (i.e. Twp., Co., SR or US)	SR 602-14.25	US DOT No.:	001943M
County: CRA	Township:	City: (In or Near)	Village of New Washington
Railroad Name: Wheeling & Lake Erie Railway	Railroad Division:	Branch/Line Name:	Main
Nearest RR Timetable Station: New Washington		RR Milepost:	83.05

On-Site Review Team

(Include: Name – Organization – Phone Number – Email)

1. James Tucker ODOT 614-358-6877 James.tucker@dot.ohio.gov
2. Randy Johr PUCO 330-453-3710 Randy.Johr@puc.state.oh.us
3. Ben Lash Mayor 419 543 2121 NWMAYOR@WOH.RR.COM
4. Mark Baker 419-563-1521 markb@crawford-ca.org
5. Joe Blum 419 492 2829 jblum@woh.rr.com
6. Norman Lucius 419-689-0068 NGLucius@YAHOO.COM
7. Tim Andrews WLE 330-417-5541 tandrews@wlerwy.com
8.
9.

Existing Traffic Control Devices

Type of Warning Devices	Installed?		Quantity/Comments
Advance Warning Signs (condition?)	☒ Yes	☐ No	2
'Stop' Signs	☐ Yes	☒ No	
'Stop Ahead' Signs	☐ Yes	☒ No	
Pavement Markings (condition?)	☒ Yes	☐ No	
Crossbucks	☒ Yes	☐ No	2
Number of Tracks Signs	☐ Yes	☒ No	
Inventory Tags	☒ Yes	☐ No	2
Interconnected Highway Traffic Signal	☐ Yes	☒ No	
Mast-Mounted Flashing Lights	☒ Yes	☐ No	4 each MAST
Cantilever Flashing Lights	☐ Yes	☒ No	Number: Length:
Side Lights	☐ Yes	☒ No	
Automatic Gates	☐ Yes	☒ No	Number: Length:
Bells	☐ Yes	☒ No	Number:
Sidewalk Gate Arms	☐ Yes	☒ No	
'No Turn' Signs	☐ Yes	☒ No	
Illumination	☐ Yes	☒ No	
Is crossing flagged by train crew?	☐ Yes	☒ No	
Other	☐ Yes	☐ No	

Safety Data (Obtain crash reports, if possible, prior to review)

	Initial Information (from database)	Revised
Number & dates of crashes in previous 5 years	0	
Hazard Ranking	2839 Date Run: 3/31/2018	

Railroad Data

Railroad Characteristics	Initial Information (from database)	Revised
Total trains per day	4	6
< 1 per day		
Day thru trains	1	3
Night thru trains	3	3
Daytime switching movements		
Nighttime switching movements		
Total number of tracks	1	
Number of main tracks	1	
Number of other tracks		
Maximum train speed	40	
Typical train speed	40	
Amtrak		

If non-gated crossing, is clearing sight distance adequate in all quadrants? (See Table 1) ☒ Yes ☐ No

If multiple tracks, can two trains occupy crossing at the same time? ☐ Yes ☒ No

Can one train block the motorists' view of another train at crossing? ☐ Yes (Explain below) ☒ No

Can one or more tracks be eliminated through the crossing? ☐ Yes ☒ No

Are there other track(s) crossing this same roadway within 100 ft of this crossing? ☐ Yes ☒ 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: Village of New Washington

Roadway Characteristics	Initial Information (from database)	Revised
Average daily traffic	2303 (2010)	
Highway paved	X Yes ☐ No	☐ Yes ☐ No

Roadway Surface: ☒ Blacktop ☐ Gravel ☐ Concrete ☐ Other _____

Roadway width: 25 ft.

Number of highway lanes	2	
Urban or Rural	Rural	
Vehicle Speed: 35 MPH		

School Bus Operation: ☐ No ☒ Yes 8 Amount

Hazardous Materials Trucks: ☐ No X Yes .06 Amount

Shoulders: ☐ No ☒ Yes

Is the shoulder surfaced? ☐ No ☒ Yes

Is there existing guardrail along roadway in crossing vicinity? ☒ No ☐ Yes

Is stopping site distance adequate? (See Table 2) ☒ Yes ☐ No If no, deficient approach(es) _____

Quadrant _____ Curb and Gutter:	Quadrant _____ Curb and Gutter:
☐ Functional (Curb height = 4" or more)	☐ Functional (Curb height = 4" or more)
☐ Non-functional (Curb height = Less than 4")	☐ Non-functional (Curb height = Less than 4")
☒ None	☒ None

Pedestrians: ☐ No ☒ Yes

Is sidewalk present? ☐ No ☒ Yes East side only goes to school

Is there a nearby intersection that could cause queuing over the crossing? ☒ No ☐ Yes

If yes,

Distance _____

Is this intersection signalized? ☒ No ☐ Yes

Are the signals currently interconnected with the existing crossing warning devices? ☒ No ☐ Yes

Is there a 'Do not Stop on Track' sign? ☒ No ☐ Yes

Is a roadway improvement project (e.g. widening, turn lanes, nearby new or upgraded traffic signal, sidewalk) planned at or near this location in the foreseeable future? ☒ No ☐ Yes

If yes,

Improvement type_____ Lead Agency _____ Timeline/completion - _____

Is it the consensus of the Diagnostic Review Team that this is a potential closure project: ☒ No ☐ Yes

Explain reasons:

Type of Development

☐ Open Space	☐ Institutional	Location of nearby schools:
☐ Industrial	☒ Commercial	1/4m Buckeye Central
☒ Residential		

Utility Information

Is commercial power available? ☐ No ☒ Yes

Utility Provider (Company Name) North Central electric Phone Number _____

Nearest Available Power Source @ crossing

What other utilities are present? (add locations to sketch)

☒ Gas ☒ Cable ☒ Telephone ☐ Fiber Optic Cable

☐ Petroleum ☒ Water ☒ Sanitary Sewer

☐ Other _____

Is(are) there potential utility conflict(s) ☐ Yes ☐ No ☒ Unknown

Comments:

Potential Red Flags / Project Challenges

Traffic Signal Preemption (include traffic signal intersection name and LHA with jurisdiction over traffic signal, if known):

N/A

Crossing Consolidation or Closure:

N/A

Real Estate or ROW:

Wheeling to have R.O.W. Survey done to address Railroad way + Alley

Culverts / Drainage / Ballast Conditions:

N/A

Roadway and/or Sidewalks:

N/A

Circuitry (e.g. reaches out to other crossings, specific needs, etc.):

overlap w/ Center Street project, private xing and SR103

Environmental:

N/A

Other:

Diagnostic Team Recommendations

	Quadrants Needed
☒ Install/upgrade active devices	
☐ Automatic Flashing Lights (AFLS)	
☐ AFLS /Cants	
☐ AFLS / Gates	
☒ AFLS / Gates / Cants	Cants for both approaches
☒ Bells / number	1
☐ Upgrade circuitry / type	
☒ Sidelights	for Railroad way if stays open
☐ Guardrail Needed	
☐ Install/Replace curb	
☒ Bungalow placement & offset from rail & highway	N W Quad
☐ Other (define)	no left Turn Blank out sign if Railroad way stays open

Comments:

☐ Install/upgrade traffic signal preemption	
☐ No improvements needed	

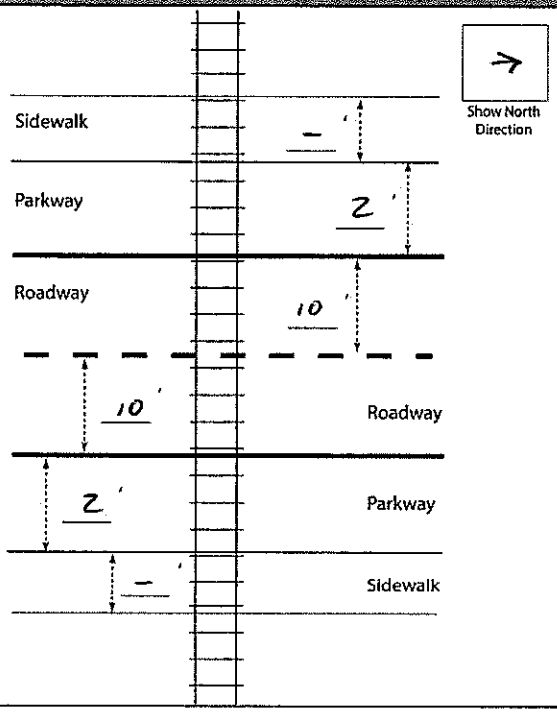
☐ Other (define)

Acknowledgement of Recommendations (each entity represented at the diagnostic must have at least one signature acknowledgement):

J. Tom — Norman Lucius — Landry a. Jokl

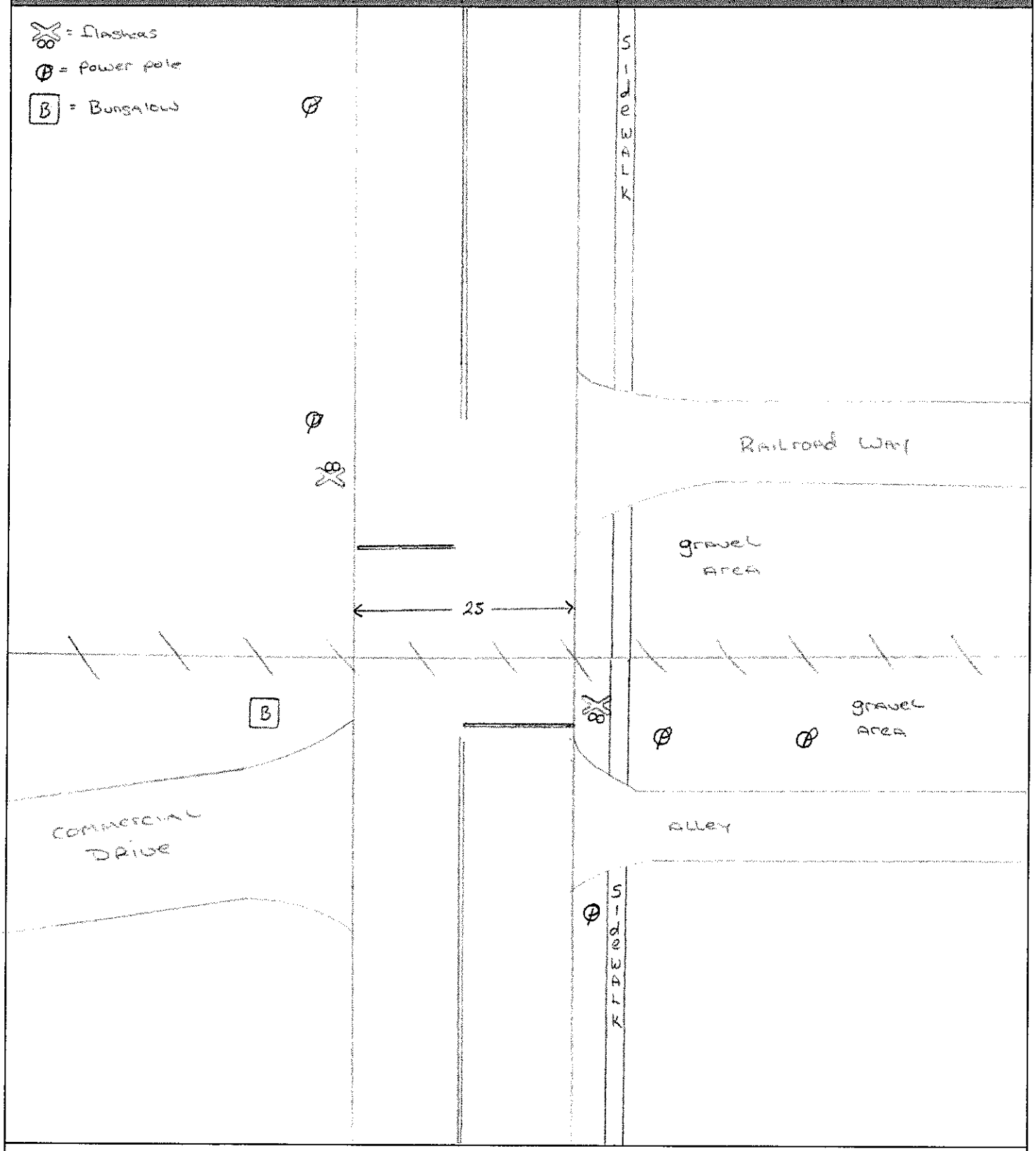
Ben Lusk — Joseph R. Blum — T. [illegible]

Field Dimensions



#001943M

Field Sketch



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

Sketch by: JT

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.

Summary: Application In the Matter of a Request for the Installation of Active Warning Devices at the Wheeling & Lake Erie Railroad Grade Crossing, DOT# 001-943M, at Kibler Street/SR 602 in Crawford County, Ohio. electronically filed by Mrs. Jill A Henry on behalf of PUCO/Rail Division