

Memo

To: Docketing Division
From: Jill Henry, Rail Specialist, Rail Division
Cc: PUCO Legal Department
Date: 1/12/17

Re: PUCO Case No. 17-109-RR-FED- In the Matter of a Request for the Installation of Active Warning Devices at the Norfolk Southern Railway Crossing at County Line Road/CR 15, DOT# 476-869X, in Hancock County, Ohio.

On August 12, 2016, the Ohio Rail Development Commission (ORDC) authorized funding for Norfolk Southern Railway to install new lights and gates and a surface at County Line Road/CR 15, DOT# 476-869X, in Hancock County, Ohio. The crossing was surveyed on April 29, 2016 and was found to warrant the upgrades. The electric utility provider for this crossing is American Electric Power (AEP).

The project will be paid for with federal funds and is actual cost. The plans and estimates for the project in the amount of \$376,933.00 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:

Norfolk Southern Railway Company
Stephen Klinger
Public Projects Engineer
1200 Peachtree Street NE
Atlanta, GA 30309-3597

Norfolk Southern Railway Company
Cayela Wimberly
Director Grade Crossing Safety
1200 Peachtree Street NE
Atlanta, GA 30309-3597

Eastman & Smith LTD.
Mr. Casey Talbott
Attorney for Norfolk Southern
One SeaGate 24th Floor
P.O. Box 10032
Toledo, Ohio 43699-0032

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

Village of Bluffton
James Mehaffie
Village Administrator
P.O. Box 228
154 N Main Street
Bluffton, Ohio 45817

Hancock County Engineer
Douglas Cade
Deputy Engineer
1900 Lima Avenue
P.O. Box 828
Findlay, Ohio 45839-0828

American Electric Power (AEP)

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

TO: Randall Schumacher, Supervisor, Rail Division, PUCO
FROM: Cathy Stout, Manager, Safety Section, ORDC
BY: Don Damron, Project Manager, ORDC
SUBJECT: Hancock County, CR 15, County Line Rd. / Norfolk Southern
DOT# 476869X, PID# 103464
DATE: December 29, 2016

The Public Utilities Commission of Ohio (PUCO) established a Diagnostic Review Team Survey at the subject highway/railroad crossing location on 4/29/2016 and the Ohio Rail Development Commission (ORDC) attended the Diagnostic.

The Diagnostic Review Team recommended the installation of new active warning devices, flashing lights and gates and replacement of the roadway surface to remove the rail joints in the traveled-way. The Diagnostic Review Team Survey form is attached.

The proposed Crossing Site Layout and Cost Estimates for this project have already been provided by Norfolk Southern and ORDC approved the plans and estimates as provided. Please issue a construction-only order for the project outlined above. 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.

Attachments:

Diagnostic Review Team Survey dated 4/29/2016
NS Plans and Estimates dated 11/1/2016

c: Jill Henry, PUCO
ORDC Project Manager (file)



OHIO RAIL DEVELOPMENT COMMISSION

Mail Stop #3140, 1980 West Broad Street, Columbus OH 43223

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

December 29, 2016

Mr. Stephen Klinger
Norfolk Southern Corporation
Administrator Grade Crossing Program
1200 Peachtree St. NE, Box 123
Atlanta, GA 30309

RE: Automatic Grade Crossing Warning System – Construction Authorization
CR 15, County Line Rd., Hancock County, DOT# 476869X
Ohio PID# 103464, NS S&E Project # 10.2205

Dear Mr. Klinger:

The plan and estimate dated 11/1/2016 for the referenced project has been reviewed and is acceptable. This project is authorized for construction under the master agreement between Ohio Rail Development Commission (ORDC), Public Utilities Commission of Ohio (PUCO) and Norfolk Southern executed on December 19, 2012. Norfolk Southern 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 \$376,933.00. (\$314,753.00 for the warning system and \$62,180 for the roadway surface). Additional costs must be approved in writing by the 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 Norfolk Southern accepting the following instructions:

1. Norfolk Southern's project foreman will furnish written notification five (5) working days prior to the date work will start at the project site to Don Damron, ORDC, Mail Stop #3140, 1980 West Broad Street, 2nd Floor, Columbus Ohio 43223, or email don.damron@dot.state.oh.us, or by cell phone at 614-917-8466, office phone at 614-466-2509; and to the Public Utilities Commission of Ohio at George.martin@puc.state.oh.us (phone 614-752-9107). The Norfolk Southern 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. Norfolk Southern 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 Norfolk Southern.



www.rail.ohio.gov

phone: 614.644.0306

IMPROVING RAIL TODAY FOR TOMORROW'S ECONOMY

3. Norfolk Southern's project foremen will notify Don Damron at 614-917-8466 (cell) or don.damron@dot.state.oh.us (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. The construction of this automatic grade crossing warning system includes the replacement of the existing timber/asphalt roadway surface to eliminate the rail joints within the traveled-way. The closure of the roadway and establishment of a detour must be coordinated with the local highway authority and preapproved by ORDC.
5. Norfolk Southern will furnish two (2) copies of each partial bill to ORDC. Please find the enclosed ODOT Purchase Order to reference when billing.
6. Norfolk Southern 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. The installation of the new warning device system will include any ancillary work needed to make the warning devices function as designed and to satisfy MUTCD requirements.

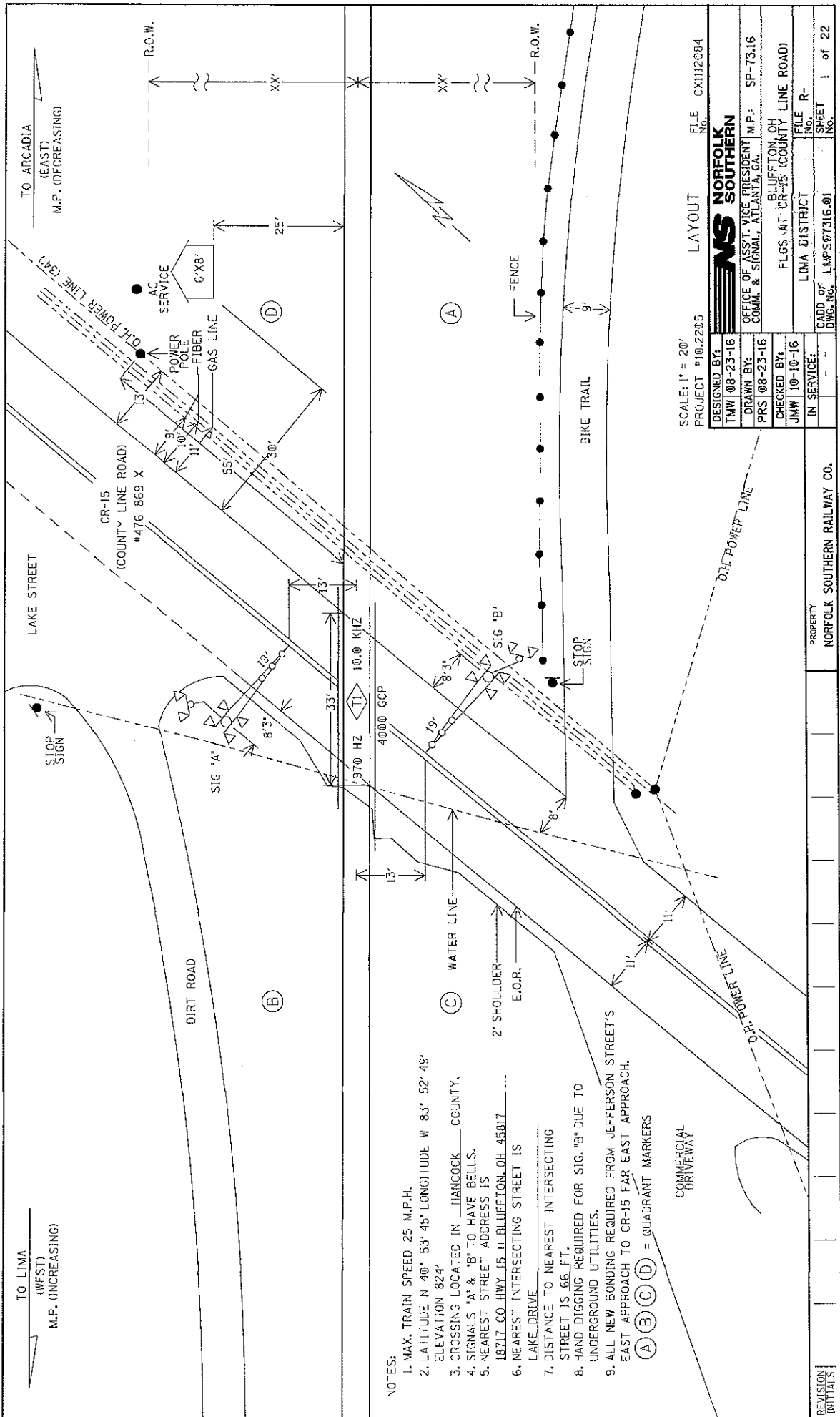
Thank you for your assistance with these matters.

Sincerely,



Donald J. Damron
Project Manager

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



NOTES:

1. MAX. TRAIN SPEED 25 M.P.H.
2. LATITUDE N 40° 53' 45" LONGITUDE W 83° 52' 49" ELEVATION 824'
3. CROSSING LOCATED IN HANCOCK COUNTY.
4. SIGNALS 'A' & 'B' TO HAVE BELLS.
5. NEAREST STREET ADDRESS IS 18717 CO HWY. 15 IN BLUFFTON, OH 45817
6. NEAREST INTERSECTING STREET IS LAKE DRIVE
7. DISTANCE TO NEAREST INTERSECTING STREET IS 66 FT.
8. HAND DIGGING REQUIRED FOR SIG. 'B' DUE TO UNDERGROUND UTILITIES.
9. ALL NEW BONDING REQUIRED FROM JEFFERSON STREET'S EAST APPROACH TO CR-15 FAR EAST APPROACH.

(A) (B) (C) (D) = QUADRANT MARKERS

COMMERCIAL DRIVEWAY

SCALE: 1" = 20'
 PROJECT #10.2205
 LAYOUT
 FILE NO. CX112084

| | | |
|--------------|--------------|---|
| DESIGNED BY: | INW 08-23-16 | NORFOLK SOUTHERN OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. BLUFFTON, OH FLOS AT CR-15 (COUNTY LINE ROAD) LIMA DISTRICT FILE R- CADD OF DWG. NO. LUP507316.01 SHEET 1 of 22 |
| DRAWN BY: | PRS 08-23-16 | |
| CHECKED BY: | JMW 10-10-16 | |
| IN SERVICE: | | |
| | | |

PROPERTY
 NORFOLK SOUTHERN RAILWAY CO.

REVISION
 INITIALS

APPROVED AS TO SIGNAL
 DISPLAY LAYOUT ONLY
Thomas R. [Signature]
 11/6/16

**Round Figure Estimate for Grade Crossing Warning Devices**

City/State: BLUFFTON, OH

Road: CR-15 (COUNTY LINE
RD)

MilePost: SP-73.16

DOT/AAR: 476869X

State Proj. No.: PID# 103464

County: HANCOCK

S&E Proj. No.: 10.2205

File Number:

Man Days: 180

| | |
|---|---------------------|
| ***Purchases - Others*** | |
| Meals and Lodging: | \$24,621.41 |
| Rental of Equipment: | \$33,657.37 |
| (2 Trucks, 1 Backhoe w/ Trailer and 1 Pipe-Pusher for 30 Days) | |
| Construction Supervision Vehicle: | \$5,148.45 |
| Purchases - Other Total: | \$63,427.23 |
| ***Material And Additives*** | |
| Material Cost: | \$94,111.00 |
| Sales and Use Tax: | \$7,529.00 |
| Material Handling Freight: | \$9,411.11 |
| Material Total: | \$111,051.11 |
| ***Labor And Additives*** | |
| Labor Cost: | \$57,960.00 |
| (6 man crew at \$1,932.00 a day for: 30 days) | |
| Payroll Tax & Overheads: | \$49,416.70 |
| Preliminary Engineering: | \$15,967.46 |
| Construction Supervision: | \$16,930.12 |
| Labor Total: | \$140,274.28 |
| Project Cost: | \$314,752.62 |
| Scrap / Salvage Credit: | \$0.00 |
| Project Total: | \$314,753.00 |

Estimated on: 01-Nov-16

Estimated by: ndney

Estimate valid for 1 year from date of estimate



Highway Crossing Signalization Program - Material List

Do not substitute items without permission from S & E Engineering

| | |
|--|------------------------|
| City: | BLUFFTON |
| Road: | CR-15 (COUNTY LINE RD) |
| Mile Post: | SP-73.16 |
| Drawing Number: | LMPS07316 |
| State ProjectNumber: | PID# 103464 |
| County: | HANCOCK |
| A A R Number: | 476869X |
| Project Number: | 10.2205 |
| File Number: | |
| New File Number: | CX1112084 |
| WBS: | F-03567 |
| Store Number: | |
| Supervisor: | Z. McCARTNEY |
| Tax Code: | |
| Vendor to supply the following copies after pricing: 1 Set - Material Management with original Invoice 2 Sets - with plans shipped in car with material 1 Set - S&E Gen. Supt. Construction w/copy of invoice | |

| Location: BLUFFTON | | | | | OH | S&E Proj. No.: 10.2205 | AFE No.: F-03567 | Drawing No.: LMPS07316 | | | |
|--------------------|---------------|----|-------------------|-------------|--|------------------------|---|------------------------|--------------------------------|----------------------------------|-------------------------|
| Store No.: | | | | | P.O.Number: | | Date Required: | Date Shipped: | Vendor: Progress Rail Services | | |
| Qty. | Class-Item-CD | UI | Price per Item | Total Price | Item Description | Quantity Shipped | Quantity Installed Date Quan. Date Quan. Date Quan. | | | Quantity Returned (Credit) | Special Instructions |
| 3 | 670-360693-4 | EA | \$5.55 | \$16.65 | AAR/DOT NUMBER PLATE/DECAL, ORDER 3 PER PROJECT. 60 DAY LEAD TIME. SUPPLIED BY S'TRAN. | | | | | | |
| 1 | 165-006505-4 | EA | \$1,075.23 | \$1,075.23 | AC SERVICE, COMPLETE LESS METER BASE, ASSEMBLED ON 30' POLE | | | | | | |
| 4 | 670-119241-4 | EA | \$25.01 | \$100.04 | ARRESTOR, LIGHTNING HEAVY DUTY CLEAR VIEW SAFETRAN 022585-1X | | | | | | |
| 20 | 105-002620-4 | EA | \$302.42 | \$6,048.40 | BATTERY, NICAD 340AH, MODEL SPL340 | | | | | | |
| 1 | 670-503047-4 | EA | \$181.50 | \$181.50 | BELL, CROSSING ELECTRONIC GENERL SIGNAL, EB-3-360-5 CR 02-044350 | | | | | | |
| 2 | 670-005125-4 | EA | \$7.24 | \$14.48 | BLOCK, TERMINAL BAKELITE FOR MOUNTING LIGHTING ARRESTOR EQUALIZER OR RESISTANCE UNIT | | | | | | |
| 2 | 670-980689-4 | EA | \$75.48 | \$150.96 | BRACKET HIGH WIND, (RIGID 3'), WIG- 191036, WALRUS TUSK TYPE | | | | | | |
| 2 | 670-561375-4 | EA | \$1,197.90 | \$2,395.80 | BRACKET, GATE SAVER, NEG385102GS, SPRING LOADED SWING AWAY ADAPTER FOR FIBERGLASS/ALUMINUM GATES, USE WITH GATE 38' AND LESS | | | | | | |
| 1 | 670-356949-4 | EA | \$94.05 | \$94.05 | CABLE, 10' GENERATOR HOOK UP, SERRMI P/N 40524. FEMALE CONNECTOR | | | | | | |
| 500 | 465-939422-4 | LF | \$2.93 | \$1,465.00 | CABLE, UG 12 CONDUCTOR NO 14 AWG SOLID EACH CONDUCTOR WITH 5/64 IN INSULATION 10 MIL | | | | | | |
| 350 | 465-292862-4 | LF | \$1.36 | \$476.00 | CABLE, UG 2-6 TWISTED, S-23 OKONITE 113-12-3933 SOLID TINNED CONDUCTOR | | | | | | |
| 500 | 465-292929-4 | LF | \$4.55 | \$2,275.00 | CABLE, UG 5 COND. NO. 6 AWG SOLID COPPER CABLE TO MEET NS CORP. SPEC. FOR SIGNAL | | | | | | |
| 350 | 465-791835-4 | FT | \$3.84 | \$1,344.00 | CABLE, UG AC ENTRANCE 3C#6-7X OKONITE FMPF-L 094-078 TR W/G 1 X 8 7X W010 BRZ TAPE 600V PRODUCT CODE 206-11-6070 | | | | | | |
| 2 | 670-010671-4 | EA | \$738.15 | \$1,476.30 | CHARGER, BATTERY CRAGG MODEL 40 DTC-12V, 40 AMP, P/N 520940 | | | | | | |
| 120 | 165-544477-4 | FT | \$3.22 | \$386.40 | CONDUIT, 4"x10' PVC, SCHEDULE 80 BELL CONNECTOR AT ONE END, 1/2 PT. GLUE IN KIT 670-123298-4 | | | | | | |

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| APPROVED BY STATE | APPROVED BY RAILROAD | CAR NUMBER | SEAL NUMBER |
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| Qty. | Class-Item-CD | UI | Price per Item | Total Price | Item Description | Quantity Shipped | Quantity Installed | | | Quantity Returned (Credit) | Special Instructions |
|------|---------------|----|-------------------|-------------|--|---------------------|--------------------|---------------|---------------|----------------------------------|-------------------------|
| 4 | 670-664917-4 | EA | \$90.11 | \$360.44 | CONNECTOR KIT, WELDED FAR RAIL, CONSISTING OF RUBBER HOSE PROPERLY DRILLED, BONDSTRAND, 1 SPLICING SLEEVE, 1 REDUCING SLEEVE, 3 CLAMPS, 1 TRACK CLIP, 1 WEB WELDED TRACK CONNECTOR, 1 WELD METAL, SAFETRAN 111359-2X | | Date Quan. | Date Quan. | Date Quan. | | |
| 4 | 670-632520-4 | EA | \$77.63 | \$310.52 | CONNECTOR KIT, WELDED NEAR RAIL, CONSISTING OF, RUBBER HOSE PROPERLY DRILLED, BONDSTRAND, SPLICING SLEEVE, 1 REDUCING SLEEVE, 5 CLAMPS, 1 TRACK CLIP, 1 WEB WELDED TRACK CONNECTOR, 1 WELD METAL, SAFETRAN 111359-1X | | | | | | |
| 2 | 670-793404-4 | EA | \$1,205.32 | \$2,410.64 | COUNTERWEIGHT PKAGE, 17-24'GATE S'TRAN S- MECH ONLY, STAINLESS, TO INCLUDE HUB, SUPPORT ARMS | | | | | | |
| 6 | 670-760012-4 | EA | \$9.95 | \$59.70 | COVER, FOR 1 WAY FLASHING LIGHT ASSY. 18 OZ. BLACK VINYL COATED NYLON. ====TO COVER 2 LAMPS===== | | | | | | |
| 1 | 670-986650-4 | EA | \$354.27 | \$354.27 | DISPOSAL, CONSTRUCTION DEBRIS AND CLEANING X'ING EQUIPMENT CONTAINER | | | | | | |
| 2 | 670-228165-4 | EA | \$12.25 | \$24.50 | EQUALIZER, SAFETRAN 022700-1X LESS BASE, MODERN NO. 700-1 SHUNT ARRESTER TRACK CIRCUITS CR 02-197950 | | | | | | |
| 1 | 670-000004-4 | EA | \$700.00 | \$700.00 | FCC LICENSE FOR MONITOR/RADIO | | | | | | |
| 12 | 670-000003-4 | EA | \$255.85 | \$3,070.20 | FILL/STONE #57, QUANTITY IS BASED ON TRUCK LOAD PLUS DELIVERY COST | | | | | | |
| 2 | 670-015231-4 | EA | \$599.40 | \$1,198.80 | FOUNDATION, DIXIE,S-2 GATE 2'6"X2'6"X5'6" ASSEMBLED | | | | | | |
| 2 | 670-005377-4 | EA | \$338.00 | \$676.00 | GATE ARM, ALUMINUM, 17-24 FT, ARM ASSEMBLY, INCLUDES GATE GUARD FOR GATE LIGHT CABLE. HIGH INTENSITY VERTICAL STRIPES. | | | | | | |
| 1 | 670-675667-4 | EA | \$30,238.53 | \$30,238.53 | GCP4000 - 1 TRK (2TC) - REDUNDANT - 40/40 AMP WIRED RACK EQUIP. FOR 6X8 XING SHELTER, (INCL. 2 TRK CHASSIS A80465, 2 TRK MODS. A80418, 2-SSCC A80405, 2 CPU A80403, 1 SEAR A80410, 1 DISPLAY A80407, , 2-40 AMP CHARGERS) IPN: 003131-1X | | | | | | |
| 1 | 670-477991-4 | EA | \$410.00 | \$410.00 | KIT, GROUNDING ASSY FOR AL I/S INCLUDES 8 GRD RDS,200'4WIRE,12 4 WIRE ONE-SHOTS. ERICO SBK206 | | | | | | |
| 1 | 670-123298-4 | EA | \$361.54 | \$361.54 | KIT, HARDWARE SUPPLIES REQUIRED X'ING P'CKAGES. WEB CONNECTORS FOR SHUNT(8EA) TAPE, AMPS,P'GUM PAINT,SLEEVES,TAGS,GLUE, 100 EA WHITE TAGS,)NE CAN BLUE MARKING PAINT ETC... | | | | | | |

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| Qty. | Class-Item-CD | UI | Price per Item | Total Price | Item Description | Quantity Shipped | Quantity Installed | | | Quantity Returned (Credit) | Special Instructions |
|------|---------------|----|----------------|-------------|---|------------------|--------------------|------------|------------|----------------------------|----------------------|
| | | | | | | | Date Quan. | Date Quan. | Date Quan. | | |
| 2 | 670-092155-4 | EA | \$160.00 | \$320.00 | LAMP ASSY, LED GATE ARM KIT (INCLUDES 3 LAMPS COMPLETE WITH CABLES AND MTG. HARDWARE) REC #: 9298-1120 | | | | | | |
| 2 | 670-005063-4 | EA | \$952.05 | \$1,904.10 | LAMP ASSY, LED, 4" MAST 1 WAY LIGHTS (IPN: 042003-L484XNS) | | | | | | |
| 2 | 670-005058-4 | EA | \$1,786.08 | \$3,572.16 | LAMP ASSY, LED, 5" MAST BACK TO BACK LIGHTS (IPN: 042003-L487XNS) | | | | | | |
| 5 | 255-590880-4 | EA | \$17.52 | \$87.60 | LOCK, AMERICAN LOCK MODEL H-10KA KEYED ALIKE TO PRIVATE KEYWAY D456 AND STAMPED "NS SIG" | | | | | | |
| 2 | 610-165863-4 | EA | \$1,400.00 | \$2,800.00 | MAST, 5" ALUMINUM (0&45) RIGHT FOR LIGHT UNIT & BRACKET @ 45 DEG. RIGHT W/DBL. JCT. BOX BASE #070519-43AX-2 | | | | | | |
| 2 | 670-000985-4 | EA | \$312.09 | \$624.18 | MAST, SIDELIGHT BRACKET F/5"MT. HARMON @225834-XXX, SAFETRAN 041442-26X, | | | | | | |
| 2 | 670-875060-4 | EA | \$2,596.32 | \$5,192.64 | MECHANISM, GATE MODEL S-60, WITH DEFROSTER , WITHOUT MINI TRACKSIDE SENSOR S'TRAN # 0740007-X002A3 | | | | | | |
| 2 | 670-000007-4 | EA | \$307.02 | \$614.04 | MISC. EXPENSE, TRACK WORK (I.E. INS JTS, RODS, ETC.) | | | | | | |
| 1 | 000-000000-4 | EA | \$5,000.00 | \$5,000.00 | MISC. EXPENSE, UNDERGROUND BORING | | | | | | |
| 1 | 670-008555-4 | EA | \$3,250.00 | \$3,250.00 | MS4000 - 1TRK (1TC) - REDUNDANT (INCL. 1 TRK CHASSIS A80495, 1CPU A80403, 1 TRK MOD A80418) | | | | | | |
| 2 | 670-001347-4 | EA | \$59.67 | \$119.34 | PACKAGE, HARDWARE SIGN 5 IN. MOUNTING, SERRMI A1250-5, HARMON @200965-000, OR | | | | | | |
| 1 | 255-646807-4 | EA | \$32.59 | \$32.59 | PADLOCK, SAFETRAN PART NO. 030399-29X SCREW TYPE FOR CIR CONTROLLER AND BTY. BOX | | | | | | |
| 1 | 670-514605-4 | EA | \$11.11 | \$11.11 | PINNACLE, W-C SECT 1-11, 4"& 5" REF K1 110-8 OR SAFETRAN NO. @035045-503X | | | | | | |
| 2 | 165-103293-4 | EA | \$75.42 | \$150.84 | PROTECTOR, LIGHTNING & SURGE LPC 10560-51, 3 ELECTRODE WITH SPADE TERMINAL | | | | | | |
| 1 | 165-902002-4 | EA | \$297.48 | \$297.48 | PROTECTOR, SURGE 120/240VAC, ERICO P/N EPD120/240TDFL | | | | | | |
| 4 | 465-002899-4 | EA | \$40.24 | \$160.96 | REEL, CABLE DISPOSABLE FOR CROSSING SIGNAL PACKAGES | | | | | | |
| 2 | 435-805560-4 | EA | \$2.78 | \$5.56 | SAND, 25LB BAG FOR CABLE ENTRANCE INTO THE SHELTER | | | | | | |
| 1 | 670-113448-4 | EA | \$910.23 | \$910.23 | SEARIII, (VHFC w/ANTENNA) - VHF COMMUNICATOR, SAFETRAN P/N A80276, 1/ PER CROSSING | | | | | | |

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| APPROVED BY STATE | APPROVED BY RAILROAD | CAR NUMBER | SEAL NUMBER |
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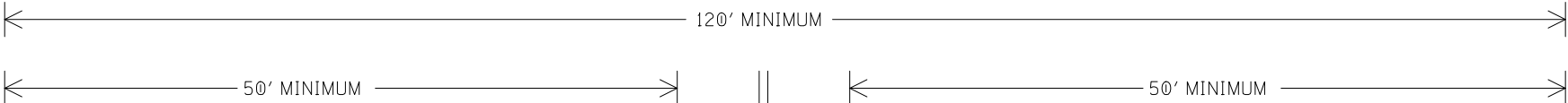
| Qty. | Class-Item-CD | UI | Price per Item | Total Price | Item Description | Quantity Shipped | Quantity Installed | | | Quantity Returned (Credit) | Special Instructions |
|------|---------------|----|-------------------|-------------|--|---------------------|--------------------|---------------|---------------|----------------------------------|-------------------------|
| 1 | 670-749325-4 | EA | \$226.97 | \$226.97 | SHELF, FOLDING, FOR LAPTOP USE IN FARADAY 6X8 SHELTER, SAFETRAN 052852-128X | | Date Quan. | Date Quan. | Date Quan. | | |
| 1 | 670-755523-4 | EA | \$9,325.16 | \$9,325.16 | SHELTER, 6'X8' ALUMN FARADAY W/1EA EQUIPMENT RACK, W/CABLE CHUTES BEHIND TERMINAL BOARD, W/GEN RECEPTICAL, BREAKER BOX GFI OUTLET FOR LAPTOP SHELF SAFETRAN 058400-68-85 | | | | | | |
| 3 | 670-586967-4 | EA | \$44.91 | \$134.73 | SHUNT COVER W/LAG SCREWS, 19"X19", SERRMI #40271, ORDER 1 PER SHUNT | | | | | | |
| 3 | 670-688850-4 | EA | \$369.89 | \$1,109.67 | SHUNT, MULTI-FREQ. #62775-3497 SAFETRAN NARROW BAND | | | | | | |
| 2 | 670-393331-4 | EA | \$53.74 | \$107.48 | SIGN CROSSING MALFUNCTION ASSEMBLY FOR 4" AND 5" MAST, SAFETRAN #T17215 | | | | | | |
| 2 | 670-016346-4 | EA | \$149.68 | \$299.36 | SIGN, X-BUCK, HI-INTENSIVE REFLECTIVE FRT. & BACK FOR ALL STATES, SAFETRAN# 035200-91X | | | | | | |
| 1 | 670-682221-4 | EA | \$21.63 | \$21.63 | SWITCH, MCKEEN KNIFE TEST W-C 0250-101, SAFETRAN 130078-T00478 | | | | | | |
| 1 | 670-330382-4 | RL | \$18.06 | \$18.06 | TAPE, THOR 3" DURATEC, ORANGE 1000' LENGTHS. "WARNING STOP DIGGING" | | | | | | |
| 4 | 670-478560-4 | EA | \$20.56 | \$82.24 | TERMINAL BLOCK, ERICO 4 POST P/N B2700A2C1WH W/HARDWARE LESS LIGHTNING ARRESTOR | | | | | | |
| 100 | 465-999111-4 | LF | \$0.38 | \$38.00 | WIRE, NO.10, 1 CONDUCTOR, CASE, FLEXIBLE 37 STRAND, 3/64 IN. INSULATION-ORDER EXT.AMT. NEEDED CR 02-620502 | | | | | | |
| 100 | 465-458198-4 | FT | \$0.20 | \$20.00 | WIRE, NO.16, 1 CONDUCTOR, CASE, FLEXIBLE, 19 STRAND, 2/64 IN. INSULATION | | | | | | |

Total Material: \$94,111.08

| | | | |
|-------------------|----------------------|------------|-------------|
| APPROVED BY STATE | APPROVED BY RAILROAD | CAR NUMBER | SEAL NUMBER |
|-------------------|----------------------|------------|-------------|

TO LIMA
(WEST)

TO ARCADIA
(EAST)



DIRT ROAD

SIG "A

UG-1 (5C#6) & UG-1A (12C#14)

UIG-4 (2C#6 TW. PR.)

RCV-2

RCV-2

● AC SERVICE

6'Y9'

UUG-3 (3C#6, W/#8 GND)

UG-4 (2C#6 TW. PR.

UG-5 (2C#6 TW. PR

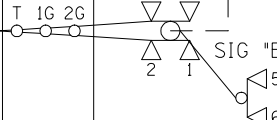
UG-1 (5C#6) & UG-1A (12C#14)

UG-2 (5C#6) & UG-2A (12C#14)

XMT-

XMT-

MAIN




BIKE TRAIN

| |
|-------------------|
| CR-15 |
| (COUNTY LINE ROAD |
| #476 869 X |

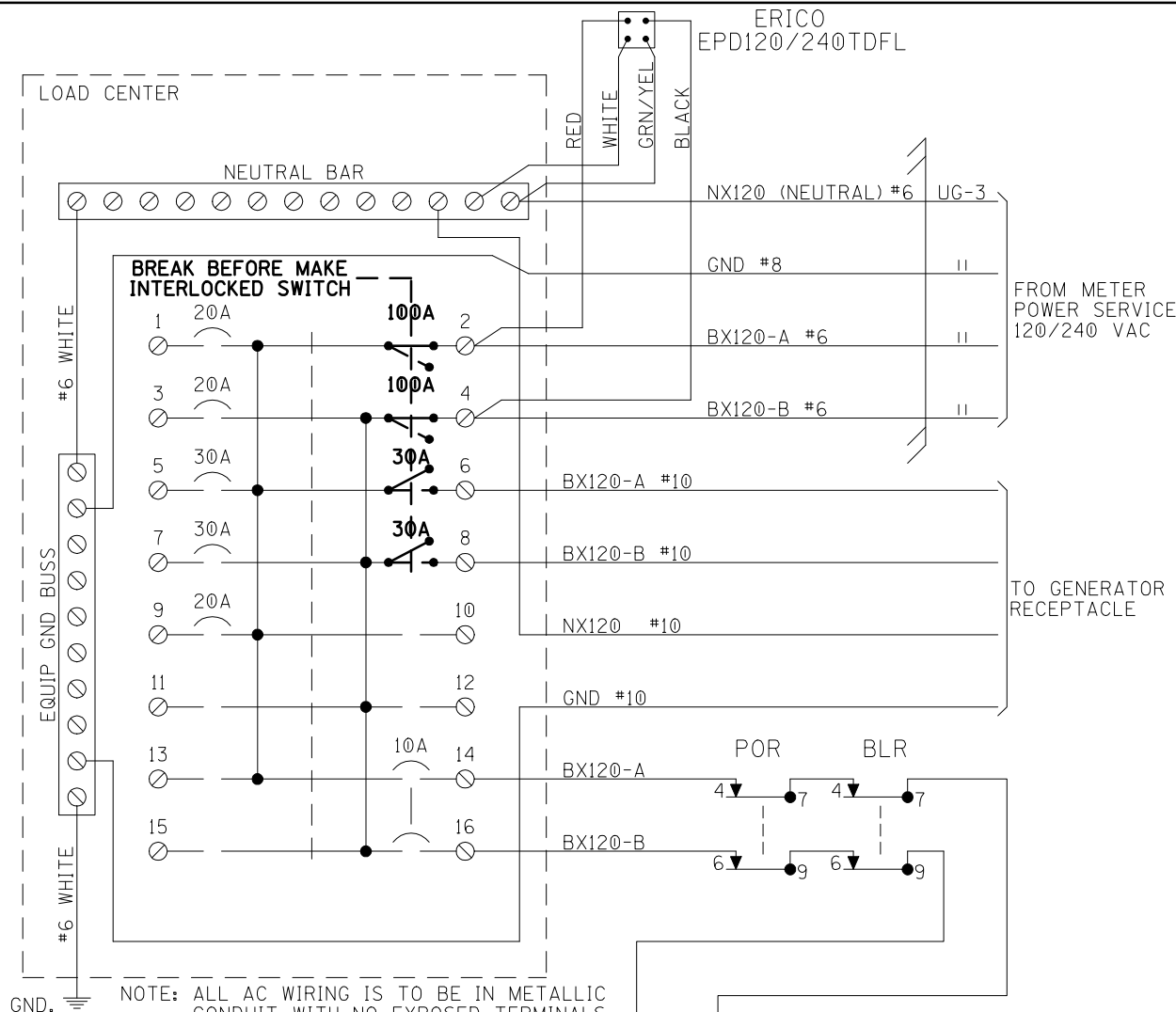
| | | | |
|--------------|-----------------|-----------------|-----------------|
| UG-1-5CUG #6 | UG-1A-12CUG #14 | UG-2A-12CUG #14 | W/#8 GND |
| AEC | AXG | BXG | BX120-A |
| AEZ | NAXG | NBXG | BX120-B |
| AEB | AXX | BXX | NX120 |
| B16-A | 1AXX | 1BXX | GND |
| N16-A | XGP1 | XGP1 | |
| | AGD | XGP | |
| | SPARE | BCD | UG-4-TW. PR. #6 |
| UG-2-5CUG #6 | AGBX120 | SPARE | RCV-1 |
| BEC | AGNX120 | BCBX120 | RCV-2 |
| BEZ | SPARE | BGNX120 | |
| BEB | SPARE | SPARE | |
| B16-B | SPARE | SPARE | UG-5-TW. PR. #6 |
| N16-B | | | XMT-1 |
| | | | XMT-2 |

CABLE PLAN

| | | | |
|--------------|--|---|-------------------|
| DESIGNED BY: | |  NORFOLK SOUTHERN | |
| TMW 08-23-16 | | | |
| DRAWN BY: | | OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. | M.P.: SP-73.16 |
| PRS 08-23-16 | | BLUFFTON, OH FLGS AT CR-15 (COUNTY LINE ROAD) | |
| CHECKED BY: | | | |
| JMW 10-10-16 | | | |
| IN SERVICE: | | LIMA DISTRICT | FILE No. R- |
| - - | | CADD or DWG. No. LMPS07316.03 | SHEET No. 3 of 22 |

[illegible]

ERICO
EPD120/240TDFL



NOTE: ALL AC WIRING IS TO BE IN METALLIC CONDUIT WITH NO EXPOSED TERMINALS. ALL AC 120V AND 240V EQUIPMENT IS TO BE PROPERLY GROUNDED.

SQUARE "D" PART NUMBERS:

LOAD CENTER — Q0116L125G

10A 1P CIR BKR — Q0110

10A 2P CIR BKR — Q0210

15A 2P CIR BKR — Q0215

20A 1P CIR BKR — Q0120

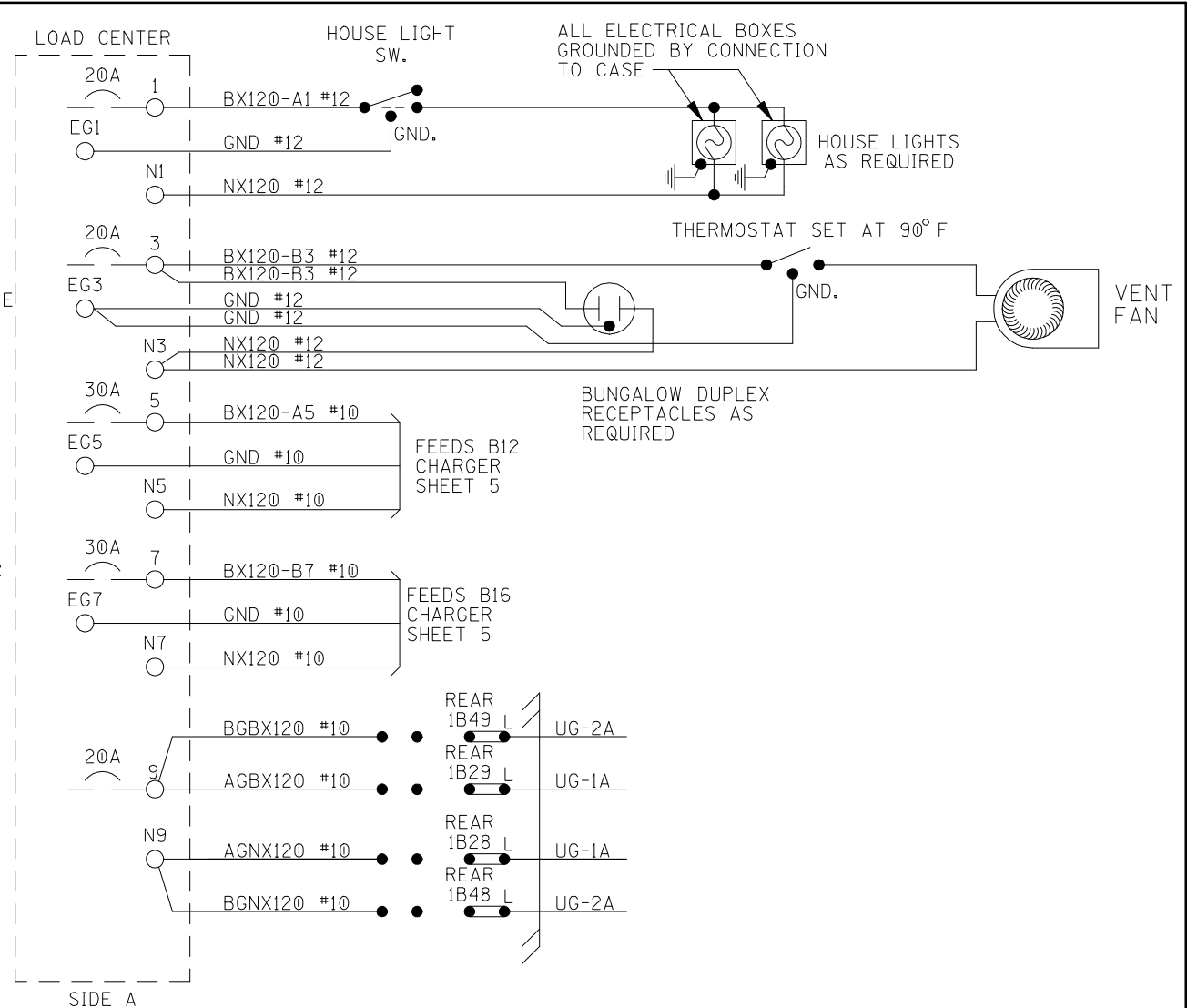
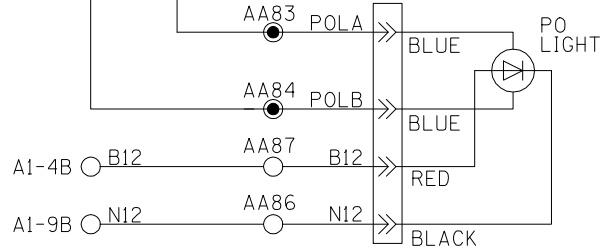
30A 1P CIR BKR — Q0130

30A 2P CIR BKR — Q0230

40A 2P CIR BKR — Q0240

100A 2P CIR BKR — Q02100

MECH INTERLOCK — PK4DTIM4LA




NOTE:

ALL WIRING TO BE #16AWG
UNLESS NOTED OTHERWISE.

GENERATOR RECEPTACLE:
MALE CONNECTOR - NEMA L1430-F1

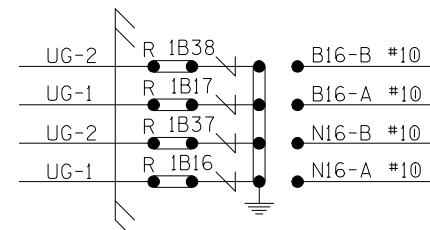
LOAD CENTER

| | | | |
|--------------|--------------|---|----------------------|
| DESIGNED BY: | TMW 08-23-16 |  NORFOLK SOUTHERN | |
| DRAWN BY: | PRS 08-23-16 | OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. | M.P.: SP-73.16 |
| CHECKED BY: | JMW 10-10-16 | BLUFFTON, OH FLGS AT CR-15 (COUNTY LINE ROAD) | |
| IN SERVICE: | - - | LIMA DISTRICT | FILE R- |
| | | CADD or DWG. No. LMPS07316.04 | SHEET No. 4 of 22 |


REVISION
INITIALS

PROPERTY

NORFOLK SOUTHERN RAILWAY CO.



 = TWIST

| | | |
|--------------|---|----------------------|
| DESIGNED BY: |  NORFOLK SOUTHERN | |
| TMW 08-23-16 | | |
| DRAWN BY: | OFFICE OF ASS'T. VICE PRESIDENT | M.P.: SP-73.16 |
| PRS 08-23-16 | COMM. & SIGNAL, ATLANTA, GA. | |
| CHECKED BY: | BLUFFTON, OH | |
| JMW 10-10-16 | FLGS AT CR-15 (COUNTY LINE ROAD) | |
| IN SERVICE: | LIMA DISTRICT | FILE NO. R- |
| | CADD or DWG. No. LMPS07316.05 | SHEET NO. 5 of 22 |


POR

| | | |
|-----|-----|-----|
| (6) | (5) | (4) |
| (3) | (2) | (1) |

BACK 3 2 1

FRONT 6 5 4

HEEL 9 8 7




B A

POTTER BRUMFIELD
RELAY
(FRONT VIEW)
KUP-14A15-240

| | | |
|-----|-----|-----|
| (B) | | (A) |
| (9) | (8) | (7) |

[illegible]

PROPERTY
NORFOLK SOUTHERN RAILWAY CO.

| | | | |
|--------------|----------|---|----------------------|
| DESIGNED BY: | |  NORFOLK SOUTHERN | |
| TMW | 08-23-16 | | |
| DRAWN BY: | | OFFICE OF ASST. VICE PRESIDENT | M.P.: SP-73.16 |
| PRS | 08-23-16 | COMM. & SIGNAL, ATLANTA, GA. | |
| CHECKED BY: | | BLUFFTON, OH | |
| JMW | 10-10-16 | FLGS AT CR-15 (COUNTY LINE ROAD) | |
| IN SERVICE: | | LIMA DISTRICT | FILE No. R- |
| | - - | CADD or DWG. No. LMPS07316.07 | SHEET No. 7 of 22 |

IN 8.4 = Not Used
IN 8.5 = Not Used

SEAR
SEAR Subnode = 3
DI 1 = Not Used
DI 2 = Not Used
Rly 1 = General1
Rly 2 = Not Used

SEAR: inputs
SP 2.1 = POK 1
SP 3.1 = Not Used
SP 4.1 = Not Used
SP 5.1 = Not Used
SP 6.1 = Not Used

SEAR: slot 1-4 inputs
IN 1.1 = Not Used
IN 1.2 = Not Used
IN 2.1 = Not Used
IN 2.2 = Not Used
IN 3.1 = Not Used
IN 3.2 = Not Used
IN 4.1 = Not Used
IN 4.2 = Not Used

SEAR: inputs slot 5
IN 5.1 = Not Used
IN 5.2 = Not Used

SEAR: inputs slot 6
IN 6.1 = Not Used
IN 6.2 = Not Used

SEAR: slot 7-8 inputs
IN 7.1 = Not Used
IN 8.2 = Not Used
IN 8.3 = Not Used
IN 8.4 = Not Used
IN 8.5 = Not Used

SITE: programming
Radio Subnode = 1
Field Password = Off
Low Battery Enabled = Off


Configuration Package File


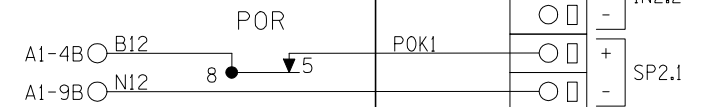
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Date/Time: 10/07/2016 10:52:54
DT Version: 5.7.3


4000 GCP PROGRAMMING SETUP

REVISION
INITIALS

PROPERTY
NORFOLK SOUTHERN RAILWAY CO.

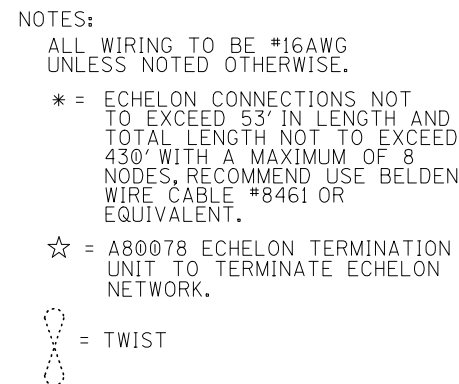
| | | | | |
|--------------|----------|---|-------------------|--|
| DESIGNED BY: | |  NORFOLK SOUTHERN | | |
| TMW | 08-23-16 | | | |
| DRAWN BY: | | OFFICE OF ASS'T. VICE PRESIDENT | M.P.: SP-73.16 | |
| PRS | 08-23-16 | COMM. & SIGNAL, ATLANTA, GA. | | |
| CHECKED BY: | | BLUFFTON, OH | | |
| JMW | 10-10-16 | FLGS AT CR-15 (COUNTY LINE ROAD) | | |
| IN SERVICE: | | LIMA DISTRICT | FILE No. R- | |
| | - - | CADD or DWG. No. LMPS07316.08 | SHEET No. 8 of 22 | |


 = TWIST

| | | | |
|--------------|---|---|-------------------|
| DESIGNED BY: | |  NORFOLK SOUTHERN | |
| TMW 08-23-16 | | | |
| DRAWN BY: | | OFFICE OF ASS'T. VICE PRESIDENT | M.P.: SP-73.16 |
| PRS 08-23-16 | | COMM. & SIGNAL, ATLANTA, GA. | |
| CHECKED BY: | | BLUFFTON, OH | |
| JMW 10-10-16 | | FLGS AT CR-15 (COUNTY LINE ROAD) | |
| IN SERVICE: | | LIMA DISTRICT | FILE NO. R- |
| - | - | CADD or DWG. No. LMPS07316.09 | SHEET No. 9 of 22 |


[illegible]

PROPERTY
NORFOLK SOUTHERN RAILWAY CO.



| | | |
|--|-----|-----|
| BLR | | |
| (6) | (5) | (4) |
| (3) | (2) | (1) |
| <p>BACK <u>3</u> <u>2</u> <u>1</u></p> <p>FRONT <u>6</u> <u>5</u> <u>4</u></p> <p>HEEL <u>9</u> <u>8</u> <u>7</u></p> <p><u>B</u>  <u>A</u></p> <p>POTTER BRUMFIELD RELAY (FRONT VIEW) KUMP-14D18-12</p> | | |
| (B) | | (A) |
| (9) | (8) | (7) |

CPU MODULE, SEAR III
& VHF HOOK-UPS

| | | | |
|--------------|----------|---|--------------------|
| DESIGNED BY: | |  NORFOLK SOUTHERN | |
| TMW | 08-23-16 | | |
| DRAWN BY: | | OFFICE OF ASST. VICE PRESIDENT | M.P.: SP-73.16 |
| PRS | 08-23-16 | COMM. & SIGNAL, ATLANTA, GA. | |
| CHECKED BY: | | BLUFFTON, OH | |
| JMW | 10-10-16 | FLGS AT CR-15 (COUNTY LINE ROAD) | |
| IN SERVICE: | | LIMA DISTRICT | FILE No. R- |
| | - - | CADD or DWG. No. LMPS07316.10 | SHEET No. 10 of 22 |

| SITE SET UP PROCEDURE | |
|----------------------------|--------------------------|
| FUNCTION | LED DISPLAY |
| DATE/TIME | |
| AUTOMATIC DST ADJUSTMENT | YES |
| TIME ZONE | EST |
| SITE NAME | CR-15 (COUNTY LINE ROAD) |
| MILEPOST | SP-73.16 |
| DOT # | 476 869X |
| TESTER TYPE | CROSSING |
| DATE FORMAT | MM-DD-YYYY |
| TEMP FORMAT | FAHRENHEIT |
| INDICATE HOLD (SEC) | 0 |
| INDICATE REFRESH (SEC) | 60 |
| SITE ATCS | 7.550.235.068.03.01 |
| SITE TYPE | NO COMMUNICATION |
| ** OFFICE ATCS ADDRESS | 2.550.00.0000 |
| ** PRIMARY HOP ADDR | 7.RRR.LLL.GGG.XX.XX |
| ** BACKUP HOP ADDR 1 | 7.RRR.LLL.GGG.XX.XX |
| ** BACKUP HOP ADDR 2 | 7.RRR.LLL.GGG.XX.XX |
| ** POLL ID | 1 |
| ** MODE | GEN/ATCS |
| ** WAMS XID | DISABLED |
| ** OFFICE COMM DEVICE | MCM (ECHELON) |
| ** RADIO ATCS ADDR | 7.RRR.LLL.GGG.01.01 |
| ** PHONE # | (OFFICE NUMBER) |
| ** INIT STRING | |
| ** FIELD COMM DEVICE | NONE |
| *** USER PORT BAUD | 57600 |
| *** USER PORT DATA BITS | 8 |
| *** USER PORT PARITY | NONE |
| *** USER PORT STOP BITS | 1 |
| *** USER PORT FLOW CONTROL | NONE |
| *** AUX PORT BAUD | 9600 |
| *** AUX PORT DATA BITS | 8 |
| *** AUX PORT PARITY | NONE |
| *** AUX PORT STOP BITS | 1 |
| *** AUX PORT FLOW CONTROL | NONE |

| CONTROL SYSTEM CONFIGURATION MENU QUESTIONS | |
|---|-------------------------|
| THE QUESTION | SELECT FROM MENU OPTION |
| RESET NAMES AND MODULES? | YES |
| RAILROAD NUMBER | 550 |
| CROSSING CONFIGURATION | NORMAL |
| AND 1 USED AS XR? | YES |
| AND 2 USED AS XR? | NO |
| AND 3 USED AS XR? | NO |
| AND 4 USED AS XR? | NO |
| AND 5 USED AS XR? | NO |
| AND 6 USED AS XR? | NO |
| AND 7 USED AS XR? | NO |
| AND 8 USED AS XR? | NO |
| * XR CONTROLLED BY FOREIGN RR | NO |
| ENTRANCE GATES | 2 |
| 85% VOLTAGE RELAY OUT | YES |
| * GATES CONTROLLED BY FOREIGN RR | 0 |
| BATTERY BANKS | 2 |
| BATTERY MON USED | NO |
| PREEMPTION | NO |
| INTERNAL CROSSING CONTROLLERS | 2 |
| EXTERNAL CROSSING CONTROLLERS | 0 |
| VHF COMMUNICATOR | YES |
| DTMF ACTIVATION | YES |
| **** ACTIVATION CODE | 869 |
| ACTIVATION TIMEOUT (SECONDS) | 60 |
| ILOD MODULES | 0 |
| ***** ANY LED BULBS USED | NO |
| VHF VOICE CHANNEL | 2 |
| VHF DATA CHANNEL | 2 |
| USE CELL MODEM NON-CRITICAL FEATURE | NO |

| PROGRAM MENU QUESTIONS | PROGRAM |
|------------------------|---------|
| EDIT DIGITAL INPUTS | NO |
| EDIT BATTERIES | NO |
| EDIT RELAYS | NO |
| EDIT INDICATOR LEDS | NO |
| EDIT TEST LEDS | NO |
| EDIT ILOD SENSORS | NO |
| EDIT VHF SETTINGS | NO |
| GCP4K ATCS SUBNODE | 16 |

NOTES:

* = DISPLAYED IF CROSSING CONFIGURATION IS SPLIT GATE.

** = IF SITE TYPE = NO COMMUNICATION, THEN THESE OPTIONS ARE NOT DISPLAYED.

*** = THESE SETTINGS SHOULD BE LEFT AT THE DEFAULT SETTING.

**** = USE LAST 3 NUMBERS FROM DOT NUMBER.

***** = IF ILOD MODULE >0.

TO CONFIGURE SEARIII PRESS SITE SETUP KEY.
USE ARROW KEYS TO MAKE SELECTION.
PRESS ENTER AFTER SELECTION HAS BEEN MADE.


PROPERTY
NORFOLK SOUTHERN RAILWAY CO.

DESIGNED BY:
TMW | 08-23-16

DRAWN BY:
PRS | 08-23-16

CHECKED BY:
JMW | 10-10-16

IN SERVICE:
- -

**NORFOLK SOUTHERN**

OFFICE OF ASS'T. VICE PRESIDENT
COMM. & SIGNAL, ATLANTA, GA. | M.P.: SP-73.16

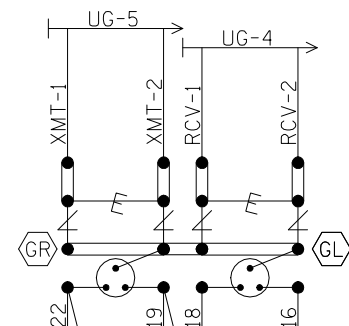
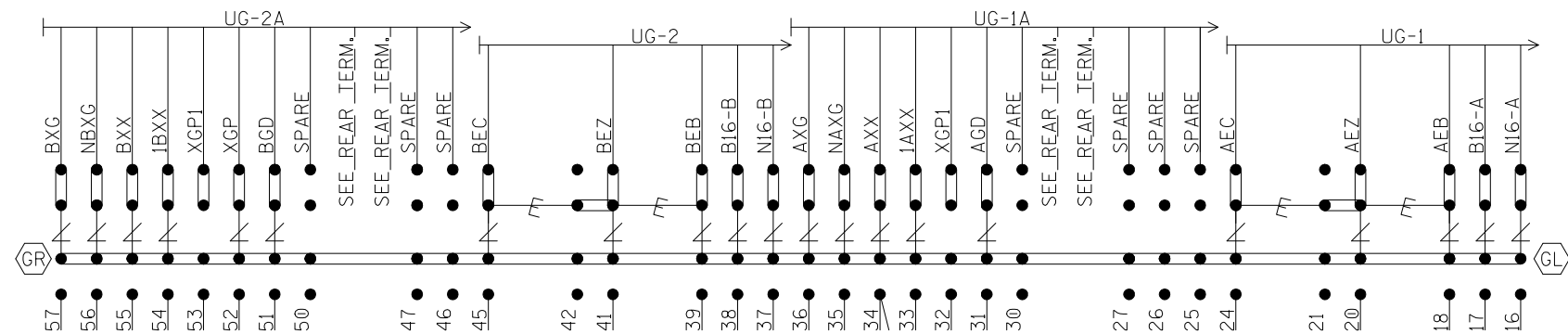
BLUFFTON, OH
FLGS AT CR-15 (COUNTY LINE ROAD)


LIMA DISTRICT | FILE No. R-



CADD or DWG. No. LMPS07316.11 | SHEET No. 11 of 22

"1B"


SEE FARADAY SHIELD DETAILS - 1A & 1B
FOR HOW THIS PORTION OF THE FARADAY
SHIELD IS PREDRILLED. ONLY INSTALL AND
USE THE TERMINALS NEEDED.



 = LPC-10560-51

 = TERMINALS GROUNDED TO SHIELD.
 4 POST BLOCKS USE EITHER -
 GR - SERRMI PART NO. 61278
 GL - SERRMI PART NO. 61278-1.

BACKBOARD 1A & 1B

| | | | |
|--------------|---|---|----------------|
| DESIGNED BY: |  NORFOLK SOUTHERN | | |
| TMW 08-23-16 | | | |
| DRAWN BY: | | OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. | M.P.: SP-73.16 |
| PRS 08-23-16 | | | |
| CHECKED BY: | | BLUFFTON, OH FLGS AT CR-15 (COUNTY LINE ROAD) | |
| JMW 10-10-16 | | | |
| IN SERVICE: | LIMA DISTRICT | FILE NO. | R- |
| - - | CADD or DWG. No. | LMPS07316.16 | SHEET 16 of 22 |

[illegible]


PROPERTY
NORFOLK SOUTHERN RAILWAY CO.

REAR VIEW OF LEFT TWO ROWS TERMINAL BOARD 1



* = CLOSED DURING WINTER MONTHS

REAR BACKBOARD 1A & 1B

| | | |
|--------------|---|-----------------------|
| DESIGNED BY: |  NORFOLK SOUTHERN | |
| TMW 08-23-16 | | |
| DRAWN BY: | OFFICE OF ASS'T. VICE PRESIDENT | M.P.: SP-73.16 |
| PRS 08-23-16 | COMM. & SIGNAL, ATLANTA, GA. | |
| CHECKED BY: | BLUFFTON, OH | |
| JMW 10-10-16 | FLGS AT CR-15 (COUNTY LINE ROAD) | |
| IN SERVICE: | LIMA DISTRICT | FILE R- |
| | CADD or DWG. No. LMPS07316.17 | SHEET No. 17 of 22 |

[illegible]

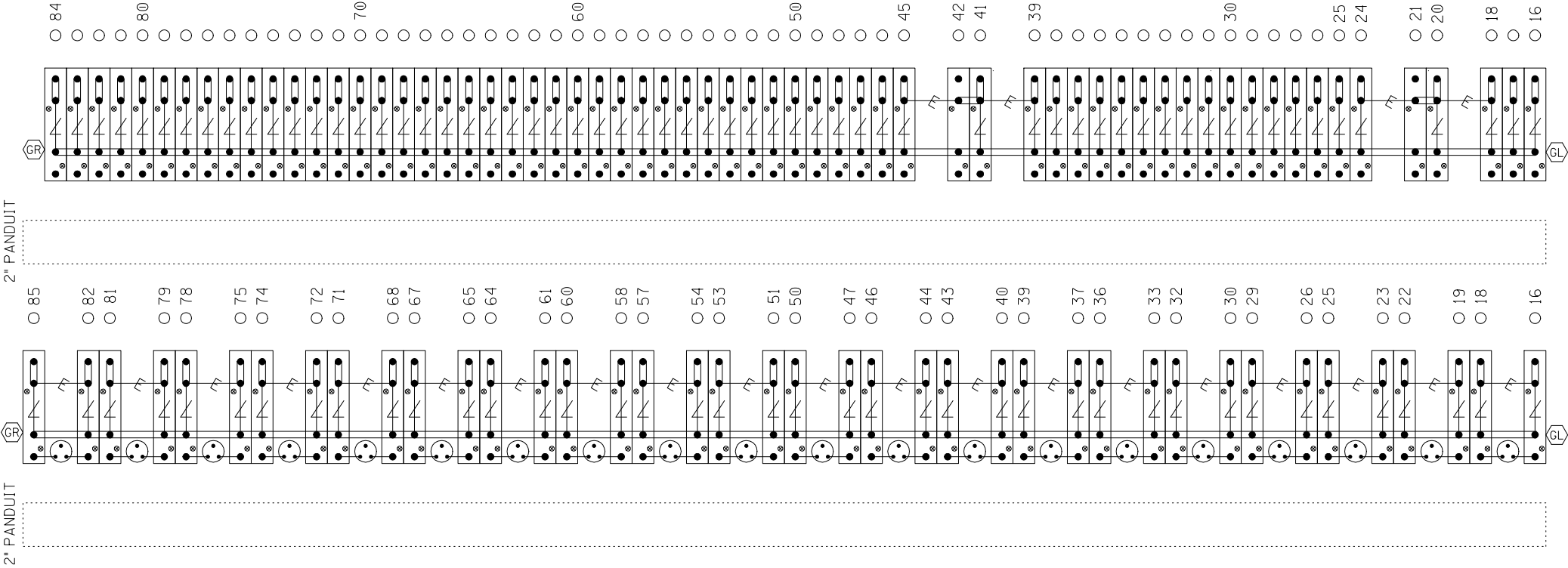
NOTE: IF THE FARADAY SHIELD WOULD EVER NEED TO BE DRILLED IN THE FIELD, PROPER PRECAUTIONS MUST BE TAKEN TO INSURE METAL SHAVINGS DO NOT GET INTO EXISTING TERMINALS/WIRES.

AREA BELOW IS SCALED WITH AS=.75

TERMINAL BOARD 1
LEFT HALF

"1A"

"1B"



⚡ = Heavy Duty Equalizer
(022700-1X)

Clearview
⚡ = Lightning Arrester
(022585-1X)

⦿ = LPC-10560-51

⦿ = TERMINALS GROUNDED TO SHIELD.
4 POST BLOCKS USE EITHER -
GR - SERRMI PART NO. 61278
GL - SERRMI PART NO. 61278-1.


FARADAY SHIELD 1A & 1B

= INDICATES PLACEMENT
OF PANDUIT

THIS SHEET IS FOR REFERENCE ONLY,
TO REFLECT HOW THE FARADAY SHIELD
IS PREDRILLED. ONLY INSTALL AND USE
THE TERMINALS NEEDED.

REVISION
INITIALS

PROPERTY
NORFOLK SOUTHERN RAILWAY CO.

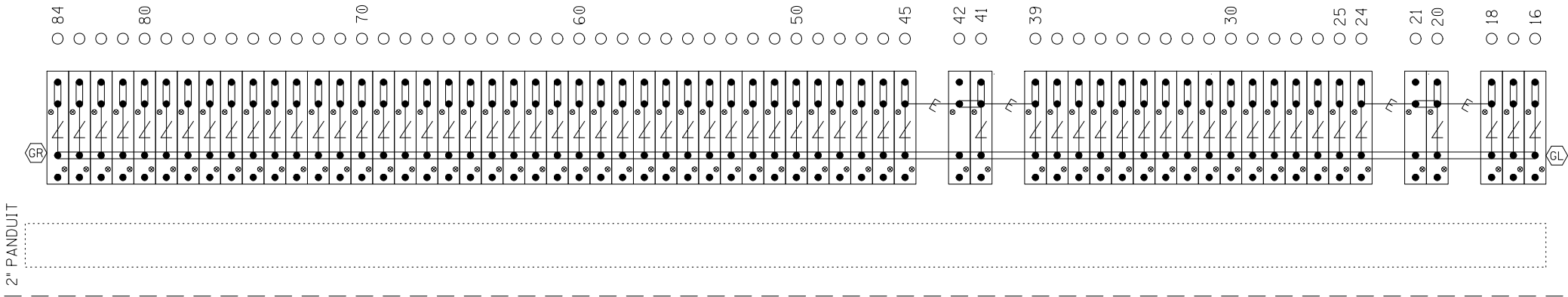
| | | |
|------------------------------|---|--------------------|
| DESIGNED BY: TMW 08-23-16 |  NORFOLK SOUTHERN | |
| DRAWN BY: PRS 08-23-16 | OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. | M.P.: SP-73.16 |
| CHECKED BY: JMW 10-10-16 | BLUFFTON, OH FLGS AT CR-15 (COUNTY LINE ROAD) | |
| IN SERVICE: - - | LIMA DISTRICT | FILE No. R- |
| | CADD or DWG. No. LMPS07316.18 | SHEET No. 18 of 22 |

NOTE: IF THE FARADAY SHIELD WOULD EVER NEED TO BE DRILLED IN THE FIELD, PROPER PRECAUTIONS MUST BE TAKEN TO INSURE METAL SHAVINGS DO NOT GET INTO EXISTING TERMINALS/WIRES.

AREA BELOW IS SCALED WITH AS=.75

TERMINAL BOARD 1
RIGHT HALF

"1C"



⚡ = Heavy Duty Equalizer
(022700-1X)

∠ = Clearview
Lightning Arrester
(022585-1X)

⦿ = LPC-10560-51


⦿ = TERMINALS GROUNDED TO SHIELD.
4 POST BLOCKS USE EITHER -
GR - SERRMI PART NO. 61278
GL - SERRMI PART NO. 61278-1.

FARADAY SHIELD 1C



= INDICATES PLACEMENT
OF PANDUIT

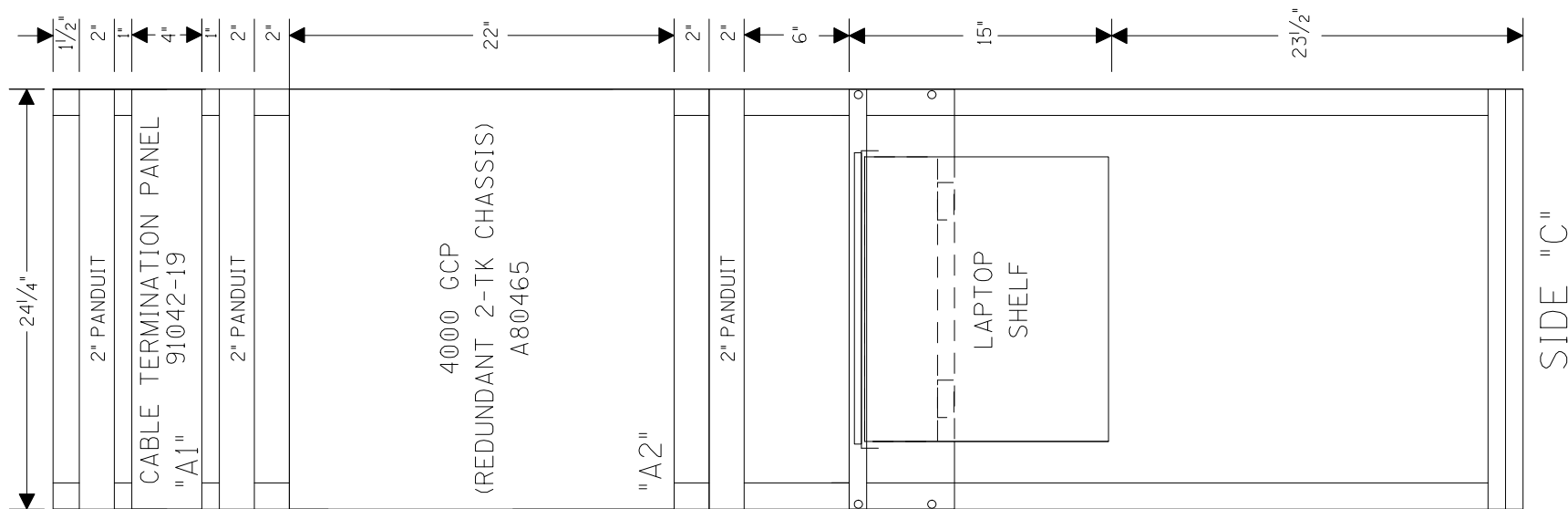
THIS SHEET IS FOR REFERENCE ONLY,
TO REFLECT HOW THE FARADAY SHIELD
IS PREDRILLED. ONLY INSTALL AND USE
THE TERMINALS NEEDED.

| | | | |
|--------------|---|--|----------------|
| DESIGNED BY: |  NORFOLK SOUTHERN | | |
| TMW 08-23-16 | | | |
| DRAWN BY: | OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. | | M.P.: SP-73.16 |
| PRS 08-23-16 | | | |
| CHECKED BY: | BLUFFTON, OH FLGS AT CR-15 (COUNTY LINE ROAD) | | |
| JMW 10-10-16 | | | |
| IN SERVICE: | LIMA DISTRICT | | FILE R- |
| | CADD or DWG. No. LMP07316.19 | | SHEET 19 of 22 |

REVISION
INITIALS

PROPERTY
NORFOLK SOUTHERN RAILWAY CO.

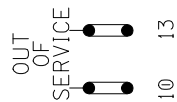
EQUIPMENT RACK #1
FRONT



2" PANDUIT



GFI
RECPT.

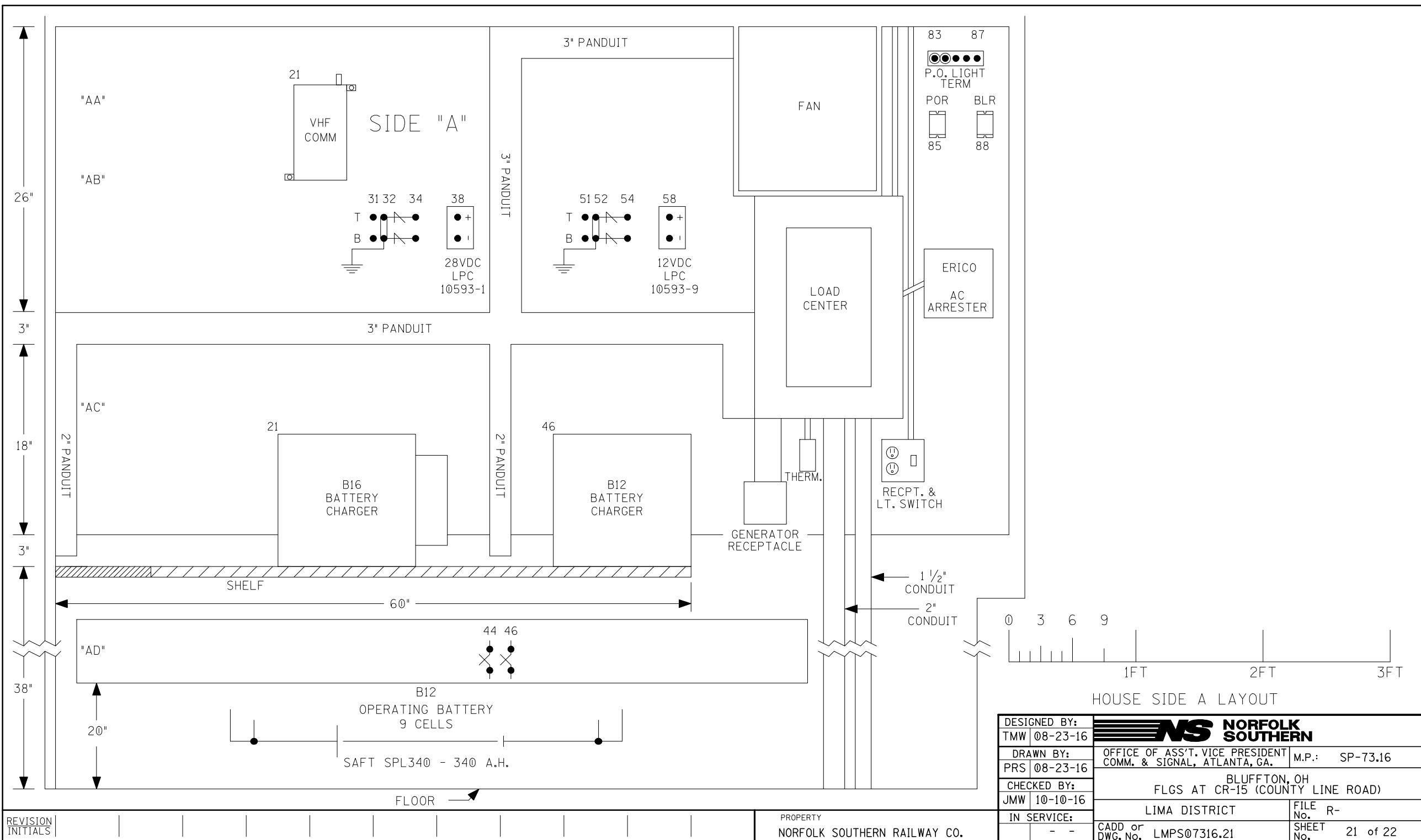


HOUSE SIDE C LAYOUT
& RACK PLACEMENT


| REVISION INITIALS | | | | | | | | | | | | | | |
|----------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
|----------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|

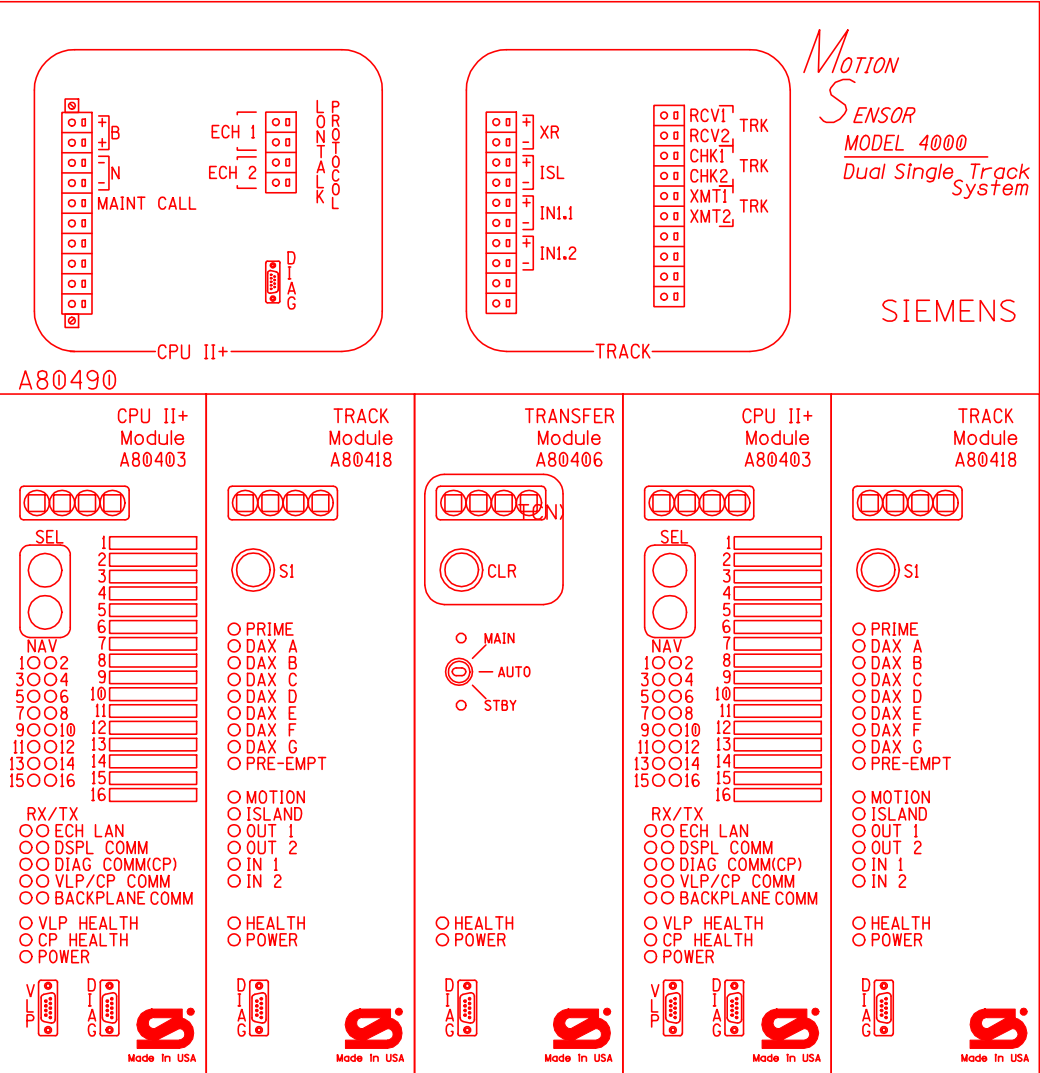
PROPERTY
NORFOLK SOUTHERN RAILWAY CO.

| | | | |
|------------------------------|---|-----------|----------|
| DESIGNED BY: TMW 08-23-16 | NORFOLK SOUTHERN | | |
| DRAWN BY: PRS 08-23-16 | OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. | M.P.: | SP-73.16 |
| CHECKED BY: JMW 10-10-16 | BLUFFTON, OH FLGS AT CR-15 (COUNTY LINE ROAD) | | |
| IN SERVICE: | LIMA DISTRICT | FILE No. | R- |
| - - | CADD or DWG. No. LMPs07316.20 | SHEET No. | 20 of 22 |





| | | | |
|--------------|----------|---|----------------|
| DESIGNED BY: | |  NORFOLK SOUTHERN | |
| TMW | 08-23-16 | | |
| DRAWN BY: | | OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. | |
| PRS | 08-23-16 | | |
| CHECKED BY: | | BLUFFTON, OH FLGS AT CR-15 (COUNTY LINE ROAD) | |
| JMW | 10-10-16 | | |
| IN SERVICE: | | LIMA DISTRICT | FILE No. R- |
| | - - | CADD or DWG. No. LMP07316.22 | SHEET 22 of 22 |



Program Report

Location and SIN

DOT Number: 476870S
Milepost Number: SP-73.50
Site Name: JEFFERSON STREET

SIN: 762010010016

MCF and Template Selection

MCF Name: GCP-T6X-02-6.mcf
MCF Revision: 26
MCFCRC: 494D2656

Template = 6:Motion Sensor (OCCN)

Check Numbers

Office Check Number: 35A36DF2
Config. Check Number: 220FBEF6
(Based on MCF Revision 26)

Program

MS4000 configuration
Track 1: GCP Frequency = 645 Hz (OCCN TCN)
Track 1: GCP Transmit Level= Medium (Field TCN)
Track 1: Uni/Bi/Sim-Bidirnl= Unidirnl(OCCN TCN)
Track 1: Directionally Wired = No (OCCN)
Track 1: Prime Pickup Delay = 15 sec (OCCN)
Track 1: Prime UAX = Not Used (OCCN)
Track 1: Island Used = No (OCCN)
IN 1.1 = Out Of Service IP 1 (OCCN)
IN 1.2 = Not Used (OCCN)

MS4000 Predictor
Track 1: Prime MS/GCP Mode = MS (OCCN)

MS4000 Advanced
Track 1: Positive Start = Off (OCCN)
Track 1: Sudden Shnt Det Used = No (OCCN)
Track 1: Low EZ Detection Used = No (OCCN)
Track 1: MS Sensitivity Level= 36 (Field)
Track 1: Compensation Level= 1300 (Field TCN)
Track 1: Low EX Adjustment = 39 (Field)
Track 1: Inbound PS Sensitivity = Off (Field)
Track 1: Speed Limiting Used = Yes (Field)
Track 1: Outbound False Act Lvl= Normal(Field)

MS4000 Other
OOS Timeout = 1 hrs (Field)
Daylight Savings = On (Field)
EZ/EX Logging = Change (Field)
EZ/EX Point Change = 3 (Field)

ADVANCED: out of service 2
TI OOS Control= OOS Input 1 (OCCN)

Express:MS4000 configuration
Track 1:GCP Frequency = 645 Hz (OCCN TCN)
Track 1:GCP Transmit Level= Medium (Field TCN)
Track 1:Uni/Bi/Sim-Bidirnl= Unidirnl(OCCN TCN)
Track 1:Directionally Wired = No (OCCN)
Track 1:Prime Pickup Delay = 15 sec (OCCN)
Track 1:Prime UAX = Not Used (OCCN)
Track 1:Island Used = No (OCCN)
IN 1.1 = Out Of Service IP 1 (OCCN)
IN 1.2 = Not Used (OCCN)

Express:MS4000 Predictor
Track 1:Prime MS/GCP Mode = MS (OCCN)

Express:MS4000 Advanced
Track 1:Positive Start = Off (OCCN)
Track 1:Sudden Shnt Det Used = No (OCCN)
Track 1:Low EZ Detection Used = No (OCCN)
Track 1:MS Sensitivity Level= 36 (Field)
Track 1:Compensation Level= 1300 (Field TCN)
Track 1:Low EX Adjustment = 39 (Field)
Track 1:Inbound PS Sensitivity = Off (Field)
Track 1:Speed Limiting Used = Yes (Field)
Track 1:Outbound False Act Lvl= Normal(Field)


Express:MS4000 Other
OOS Timeout = 1 hrs (Field)
Daylight Savings = On (Field)
EZ/EX Logging = Change (Field)
EZ/EX Point Change = 3 (Field)

Configuration Package File

Filename: LMPS07350.pac
Date/Time: 10/17/2016 8:58:26
DT Version: 5.7.3


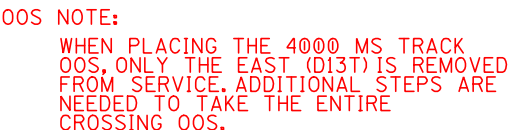
NEW SHEET
RED = IN

4000 MS CHASSIS AND MODULE LAYOUT


| | | | |
|--------------|----------|---|-------------------|
| DESIGNED BY: | |  | |
| TMW | 08-23-16 | | |
| DRAWN BY: | | OFFICE OF ASS'T. VICE PRESIDENT | M.P.: SP-73.50 |
| PRS | 08-23-16 | COMM. & SIGNAL, ATLANTA, GA. | |
| CHECKED BY: | | BLUFFTON, OH | |
| JMW | 10-10-16 | FLS AT JEFFERSON STREET | |
| IN SERVICE: | | LIMA DISTRICT | FILE R- |
| | - - | CADD or DWG. No. LMPS07350.05 | SHEET No. 5 of 12 |

REVISION
INITIALS

PROPERTY
NORFOLK SOUTHERN RAILWAY CO.

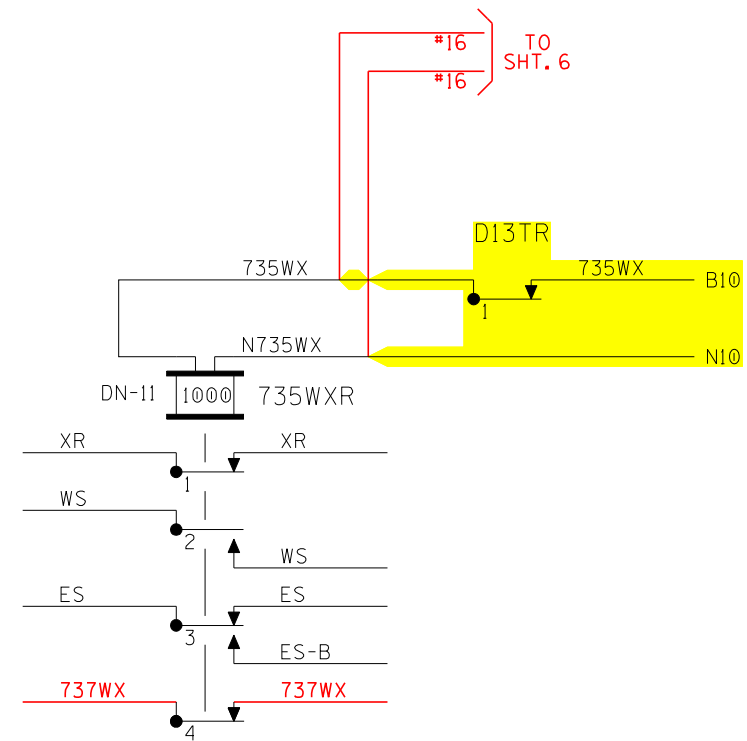
 =TWIST

4000 MS MODULE HOOK-UP

| | | | |
|--------------|----------|---|----------------|
| DESIGNED BY: | |  NORFOLK SOUTHERN | |
| TMW | 08-23-16 | | |
| DRAWN BY: | | OFFICE OF ASS'T. VICE PRESIDENT | M.P.: SP-73.50 |
| PRS | 08-23-16 | COMM. & SIGNAL, ATLANTA, GA. | |
| CHECKED BY: | | BLUFFTON, OH | |
| JMW | 10-10-16 | FLS AT JEFFERSON STREET | |
| IN SERVICE: | | LIMA DISTRICT | FILE No. R- |
| | - - | CADD or DWG. No. LMPS07350.06 | SHEET 6 of 12 |

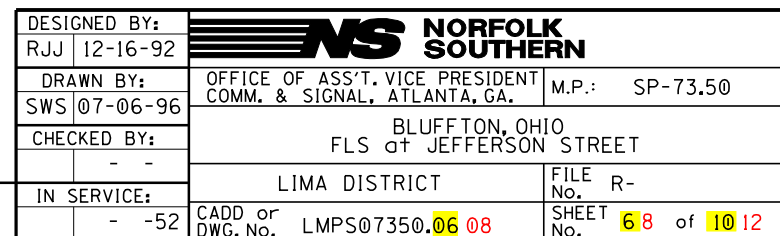
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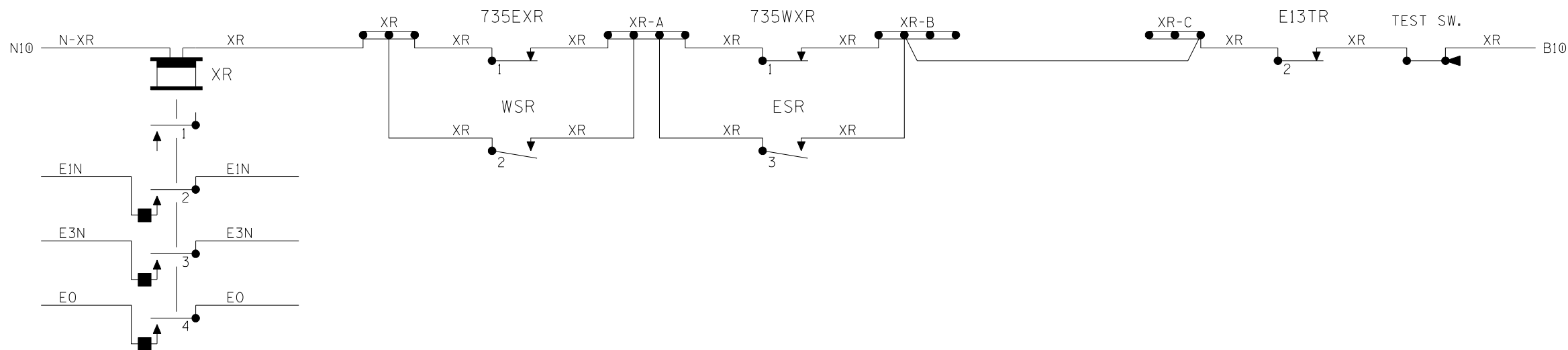
PROPERTY
NORFOLK SOUTHERN RAILWAY CO.



LINE CIRCUITS

[illegible]





#10.2205
08-23-16
PRS
RED = IN
YELLOW = OUT

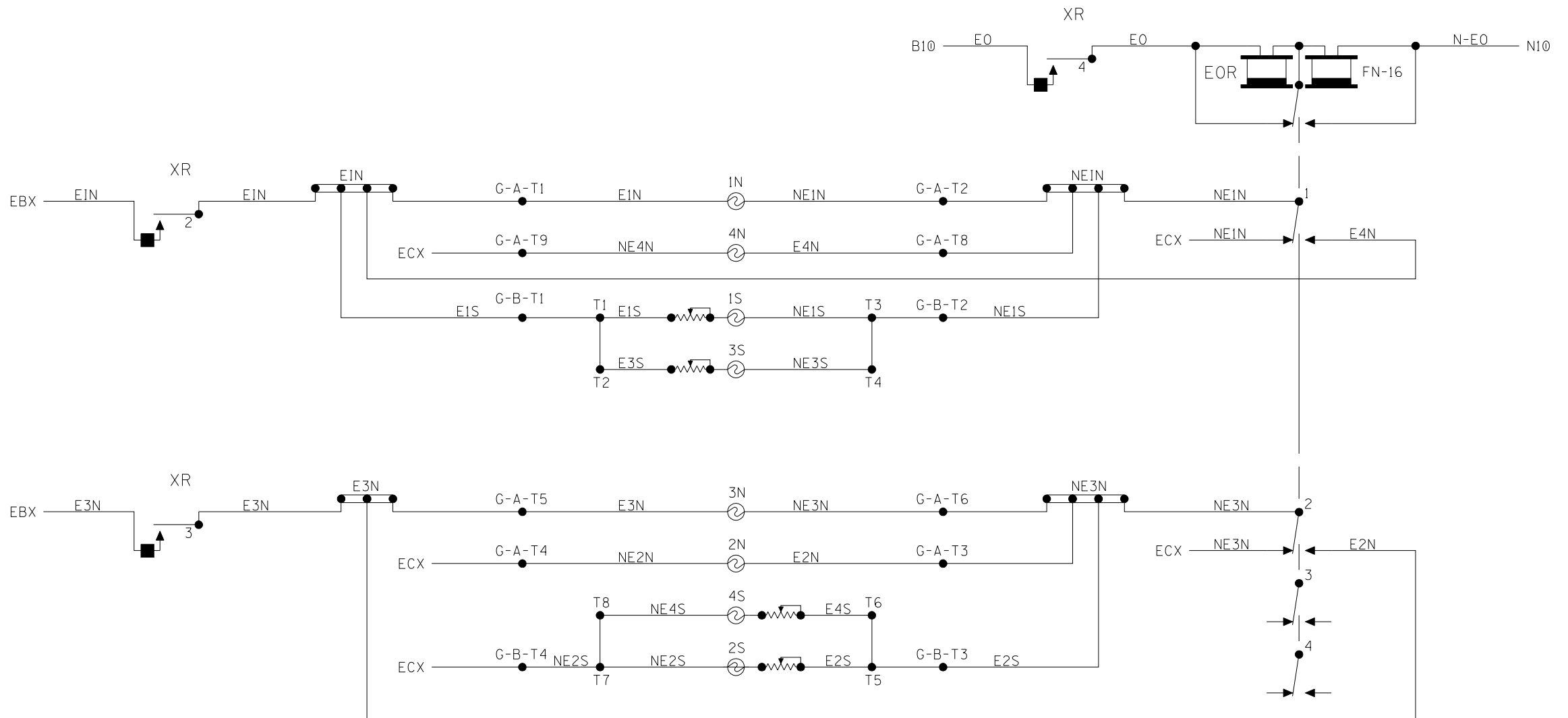
XR

REVISION
INITIALS

02-25-97
EGC


PROPERTY
NORFOLK SOUTHERN RAILWAY CO.

| | | |
|---------------------------------|--------------|-------------|
| DESIGNED BY: | RJJ 12-16-92 | |
| DRAWN BY: | SWS 07-06-96 | |
| CHECKED BY: | - - | |
| IN SERVICE: | - -52 | |
| CADD or DWG. No. LMP07350.07 09 | | FILE No. R- |
| SHEET No. 79 of 1012 | | |



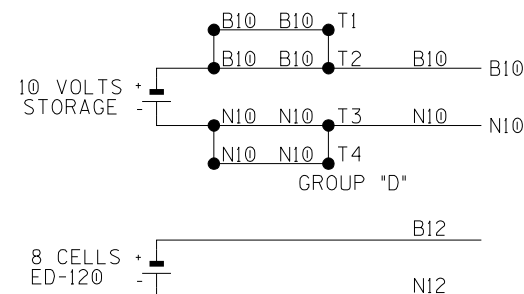
#10.2205
08-23-16
PRS
RED = IN
YELLOW = OUT

EOR - FLASHERS


| | | | |
|--------------|----------|---|-------------------------|
| DESIGNED BY: | |  NORFOLK SOUTHERN | |
| RJJ | 12-16-92 | | |
| DRAWN BY: | | OFFICE OF ASST. VICE PRESIDENT | M.P.: SP-73.50 |
| SWS | 07-06-96 | COMM. & SIGNAL, ATLANTA, GA. | |
| CHECKED BY: | | BLUFFTON, OHIO | |
| - - | | FLS at JEFFERSON STREET | |
| IN SERVICE: | | LIMA DISTRICT | FILE No. R- |
| | - -52 | CADD or DWG. No. LMP07350.08 10 | SHEET No. 8 10 of 10 12 |

REVISION
INITIALS

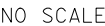
PROPERTY
NORFOLK SOUTHERN RAILWAY CO.

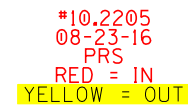


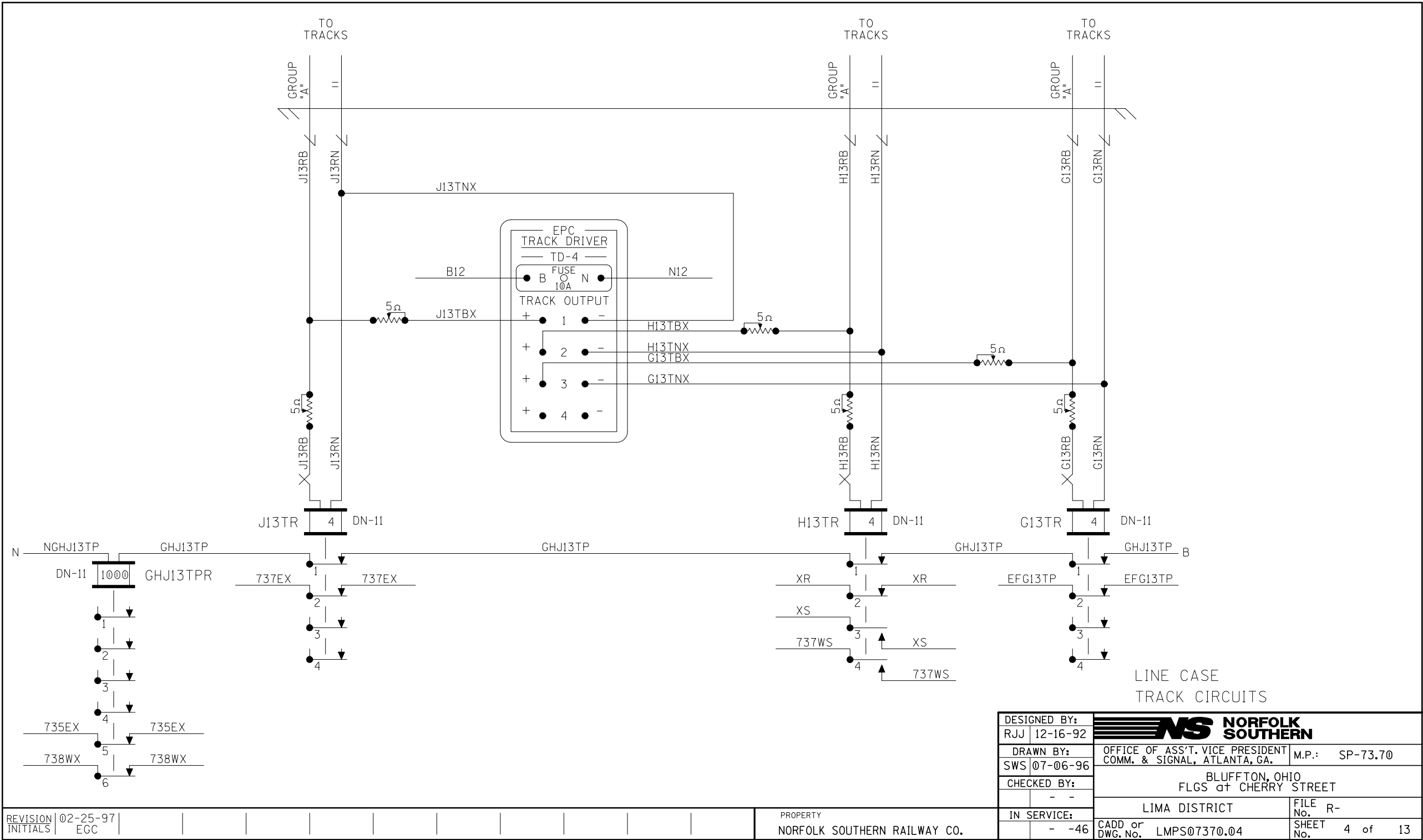
POR - POWER

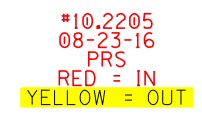
| | | | |
|------------------------------|--|---|-------------------------|
| DESIGNED BY: RJJ 12-16-92 | |  NORFOLK SOUTHERN | |
| DRAWN BY: SWS 07-06-96 | | OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. | M.P.: SP-73.50 |
| CHECKED BY: - - | | BLUFFTON, OHIO FLS at JEFFERSON STREET | |
| IN SERVICE: - -52 | | LIMA DISTRICT | FILE No. R- |
| CADD or DWG. No. -52 | | LMPS07350.09 11 | SHEET No. 9 11 of 10 12 |


[illegible]



[illegible]



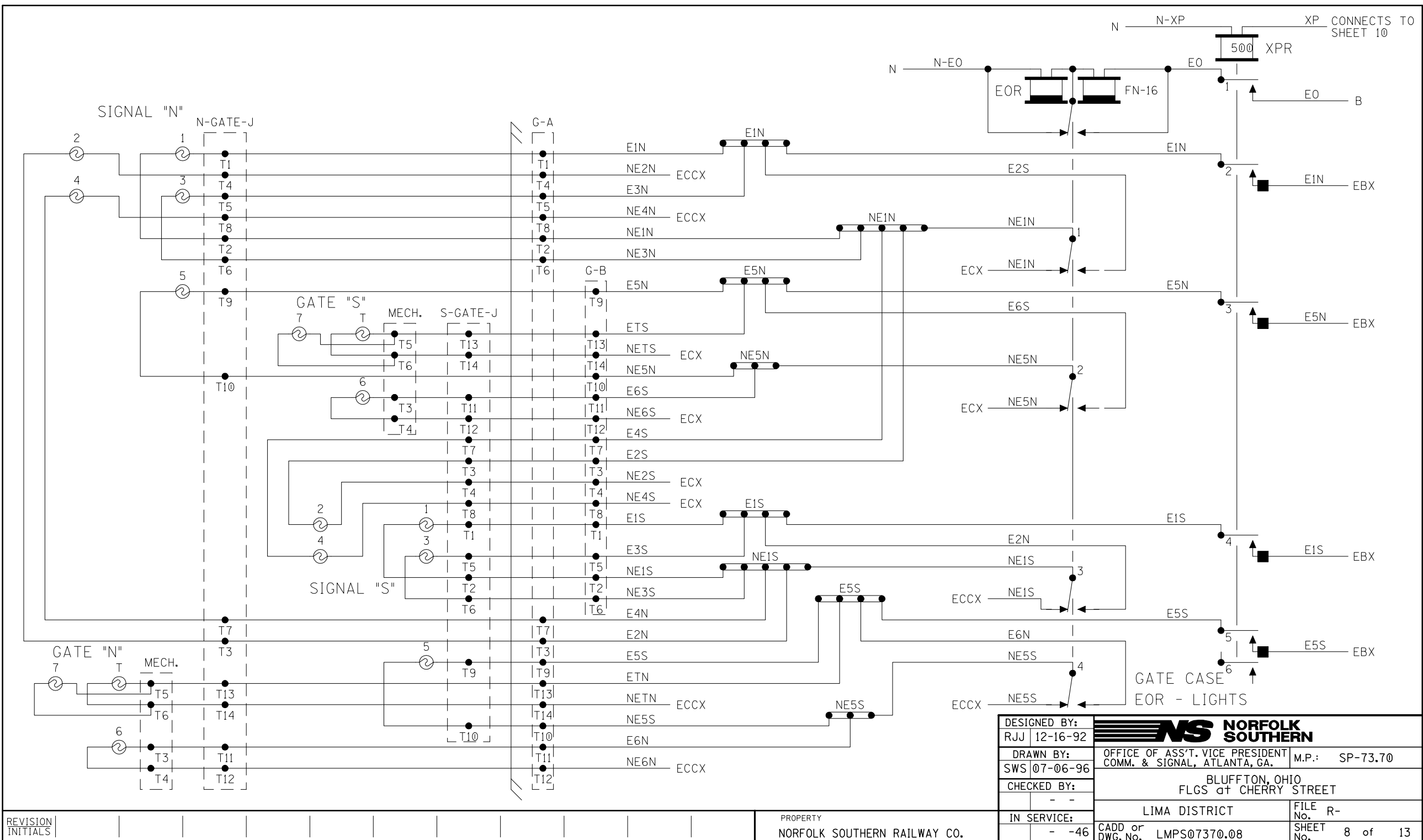



| | | | |
|--------------|----------|---|-------------------|
| DESIGNED BY: | |  NORFOLK SOUTHERN | |
| RJJ | 12-16-92 | | |
| DRAWN BY: | | OFFICE OF ASS'T. VICE PRESIDENT | |
| SWS | 07-06-96 | COMM. & SIGNAL, ATLANTA, GA. | |
| CHECKED BY: | | M.P.: SP-73.70 | |
| | - | BLUFFTON, OHIO | |
| | - | FLGS at CHERRY STREET | |
| IN SERVICE: | | LIMA DISTRICT | FILE NO. R- |
| | - -46 | CADD or DWG. No. LMPS07370.05 | SHEET NO. 5 of 13 |

[illegible]

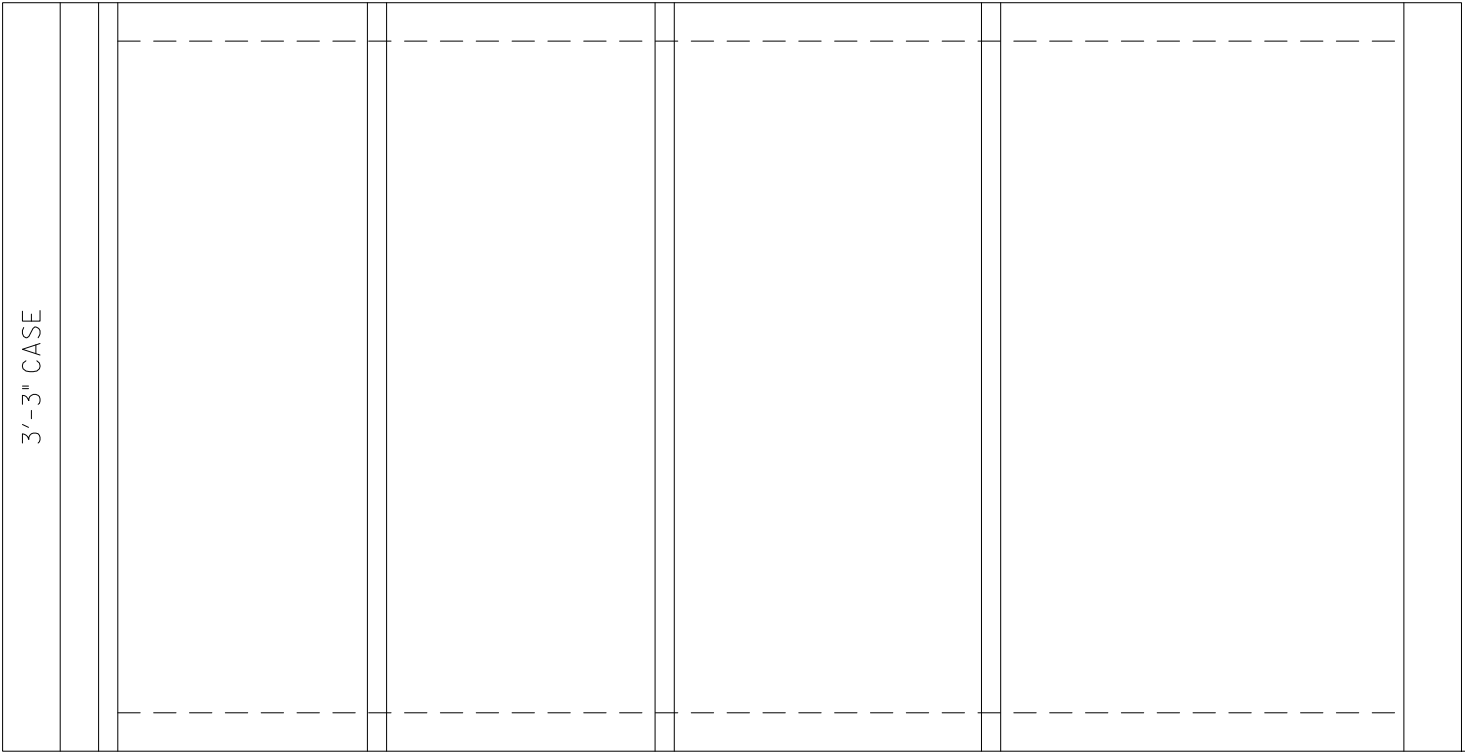
[illegible]

[illegible]



| | | | |
|--------------|----------|---|------------------|
| DESIGNED BY: | |  NORFOLK SOUTHERN | |
| RJJ | 12-18-92 | | |
| DRAWN BY: | | OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. | M.P.: SP-73.70 |
| SWS | 07-06-96 | BLUFFTON, OHIO FLGS at CHERRY STREET | |
| CHECKED BY: | | | |
| | - - | | |
| IN SERVICE: | | LIMA DISTRICT | FILE No. R- |
| | - -46 | CADD or DWG. No. LMPS07370.08 | SHEET 8 of 13 |


[illegible]



GATE CASE
LAYOUT


REVISION
INITIALS

PROPERTY
NORFOLK SOUTHERN RAILWAY CO.

| | | | |
|--------------|----------|---|--------------------|
| DESIGNED BY: | |  NORFOLK SOUTHERN | |
| RJJ | 12-16-92 | | |
| DRAWN BY: | | OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. | M.P.: SP-73.70 |
| SWS | 07-06-96 | | |
| CHECKED BY: | | BLUFFTON, OHIO FLGS at CHERRY STREET | |
| | - - | | |
| IN SERVICE: | | LIMA DISTRICT | FILE No. R- |
| | - -46 | CADD or DWG. No. LMPS07370.12 | SHEET No. 12 of 13 |



LINE CASE
LAYOUT

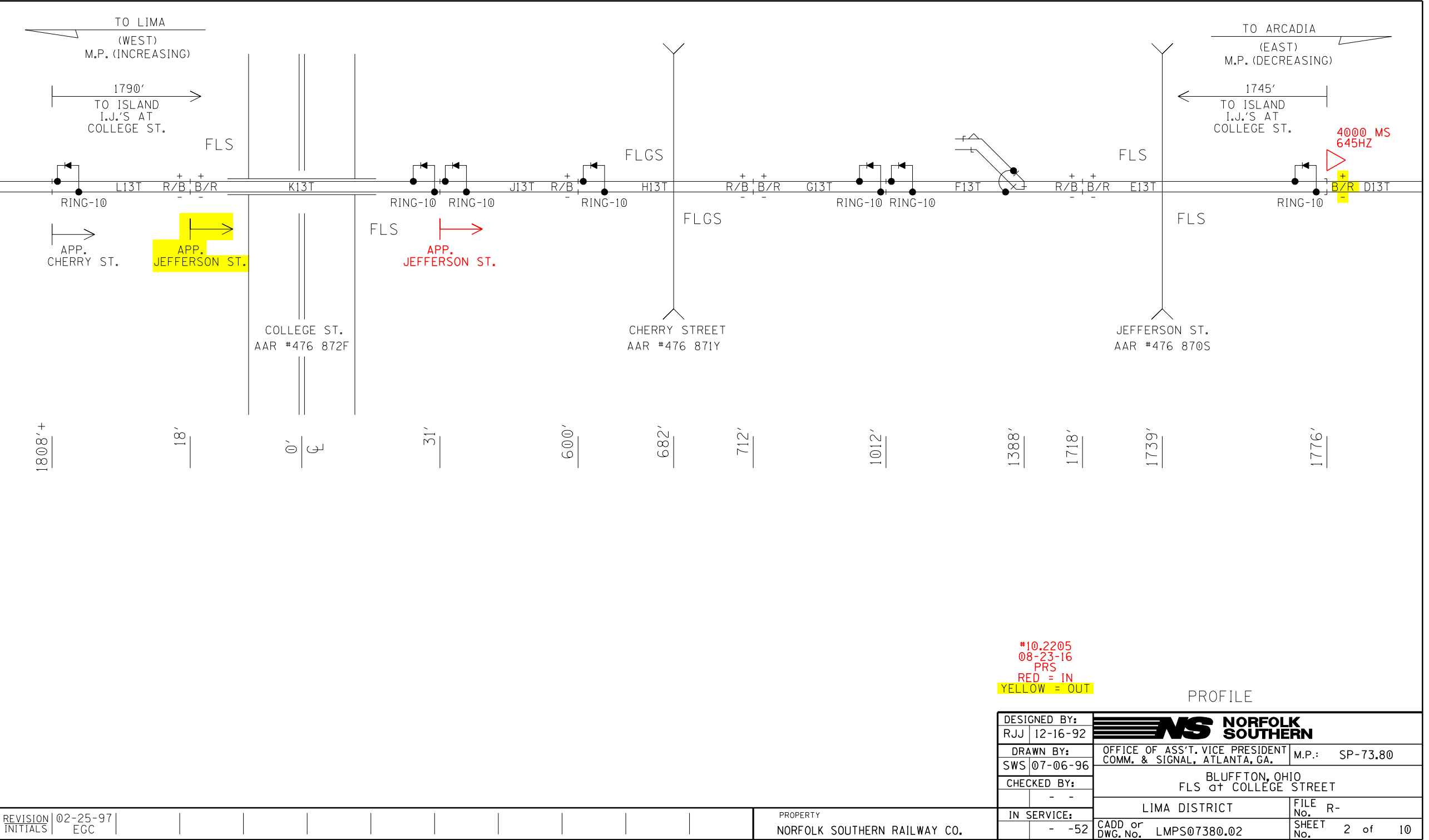
| | | | |
|--------------|----------|---|--------------------|
| DESIGNED BY: | |  NORFOLK SOUTHERN | |
| RJJ | 12-16-92 | | |
| DRAWN BY: | | OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. | M.P.: SP-73.70 |
| SWS | 07-06-96 | | |
| CHECKED BY: | | BLUFFTON, OHIO FLGS at CHERRY STREET | |
| | - - | | |
| IN SERVICE: | | LIMA DISTRICT | FILE No. R- |
| | - -46 | CADD or DWG. No. LMPS07370.13 | SHEET No. 13 of 13 |

REVISION
INITIALS

PROPERTY
NORFOLK SOUTHERN RAILWAY CO.

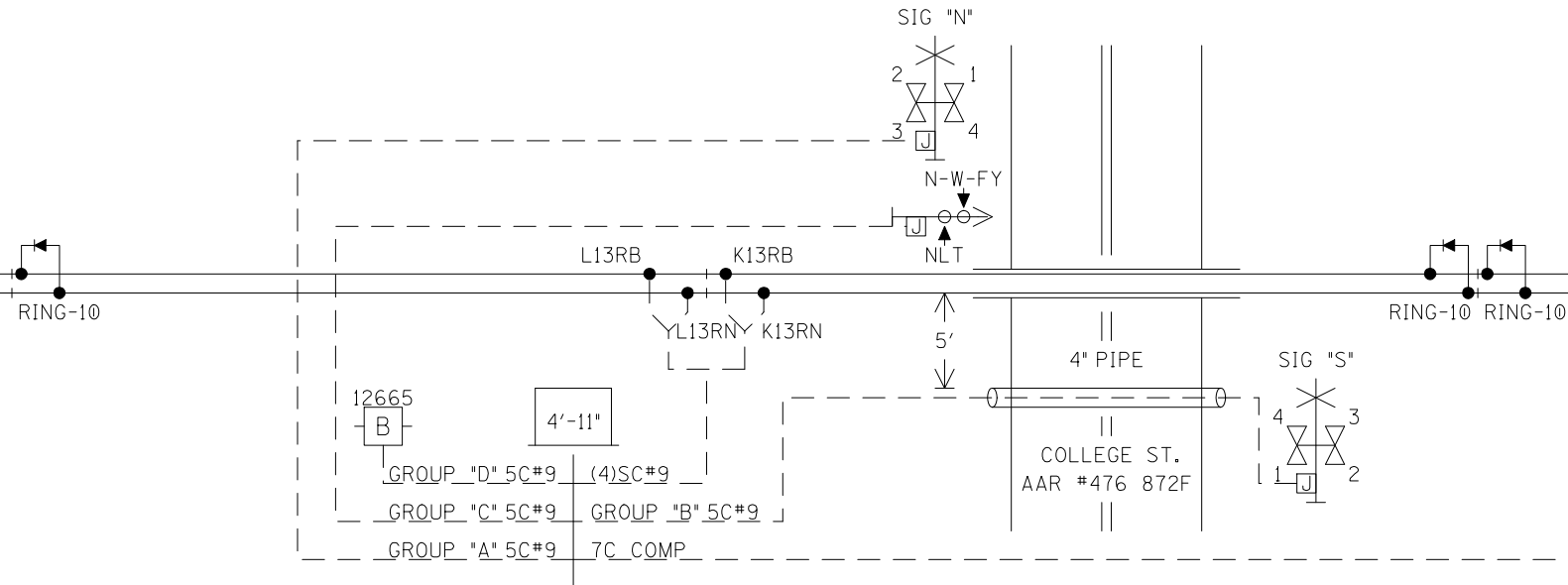


| | | | | | | | | | | | | | | |
|----------------------|--|--|--|--|--|--|--|--|--|--|------------------------------|-------------|---------------------------------|----------------------|
| REVISION INITIALS | | | | | | | | | | | PROPERTY | IN SERVICE: | LIMA DISTRICT | No. |
| | | | | | | | | | | | NORFOLK SOUTHERN RAILWAY CO. | - -52 | CADD or DWG. No. LMP07380.01 | SHEET No. 1 of 10 |




TO LIMA
(WEST)

TO ARCADIA
(EAST)

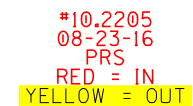



| | | |
|-------------------------------------|---|---|
| GROUP "A" - 5CUG#9 | GROUP "C" - 5CUG#9 | GROUP "D" 5CUG#9 |
| E1N NE1N E2N NE2N SPARE | N-W-FY N-N-W-FY NLT N-NLT SPARE | B B N N SPARE |
| GROUP "B" - 5CUG#9 | (4)SC#9 | 7C COMP |
| E1S NE1S E2S NE2S SPARE | K13RB K13RN L13RB L13RN | BX110 CX110 737EX N737EX 738WX N738WX SPARE |

CABLE

| | | | |
|--------------|----------|---|-------------------|
| DESIGNED BY: | |  NORFOLK SOUTHERN | |
| RJJ | 12-16-92 | | |
| DRAWN BY: | | OFFICE OF ASS'T. VICE PRESIDENT | M.P.: SP-73.80 |
| SWS 07-06-96 | | COMM. & SIGNAL, ATLANTA, GA. | |
| CHECKED BY: | | BLUFFTON, OHIO | |
| | | FLS at COLLEGE STREET | |
| IN SERVICE: | | LIMA DISTRICT | FILE NO. R- |
| | - -52 | CADD or DWG. No. LMPs07380.03 | SHEET No. 3 of 10 |

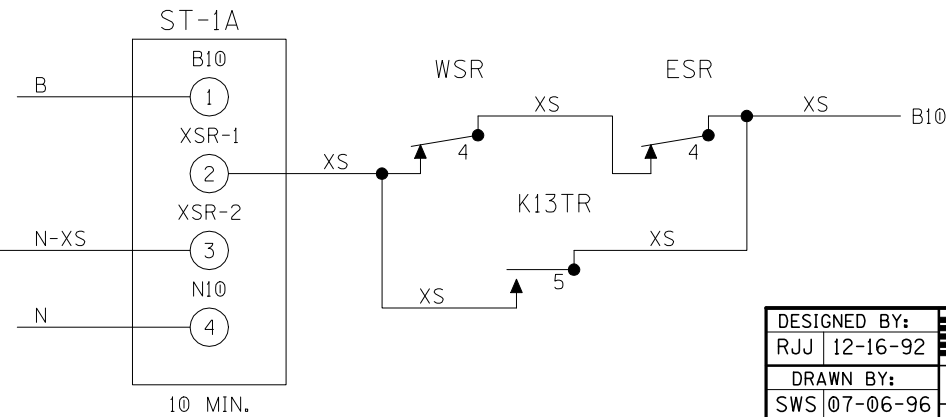
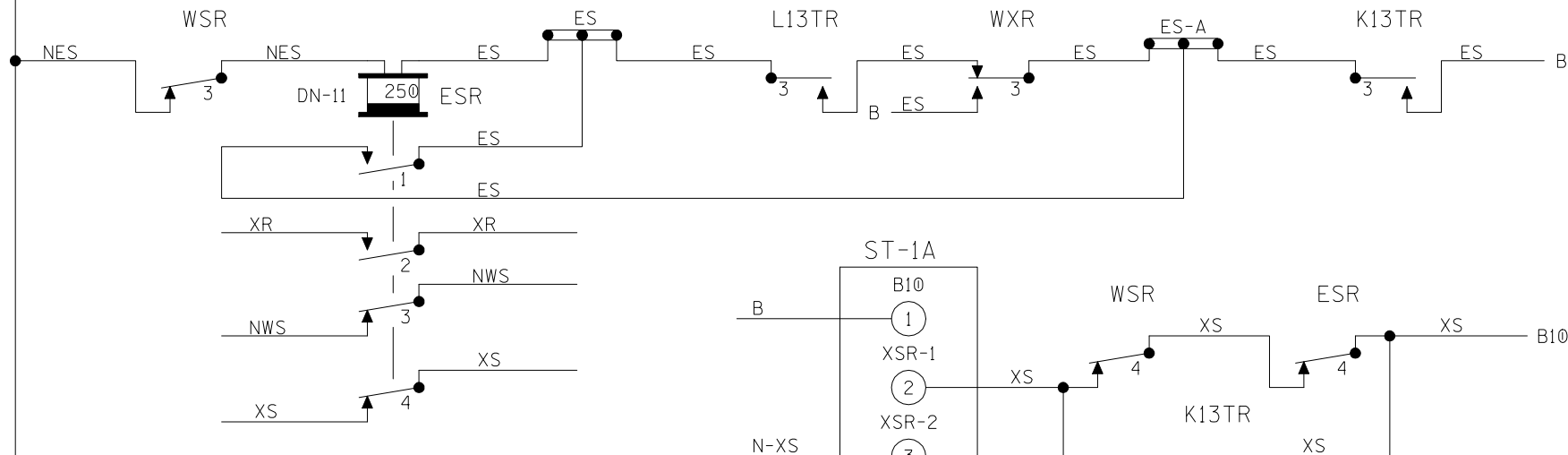
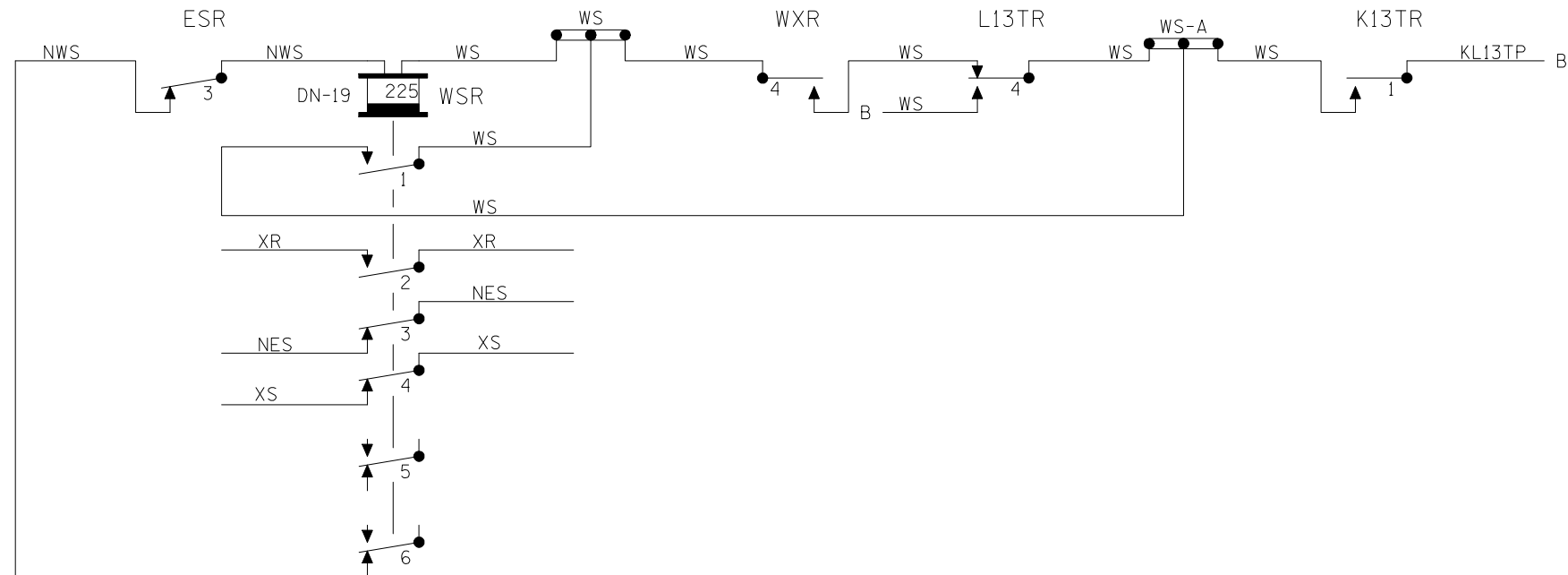
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| | | | |
|--------------|----------|---|-------------------|
| DESIGNED BY: | |  NORFOLK SOUTHERN | |
| RJJ | 12-16-92 | | |
| DRAWN BY: | | OFFICE OF ASS'T VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. | M.P.: SP-73.80 |
| SWS | 07-06-96 | BLUFFTON, OHIO FLS at COLLEGE STREET | |
| CHECKED BY: | | | |
| - | | LIMA DISTRICT | |
| - | | | |
| IN SERVICE: | | FILE No. | R- |
| | - -52 | CADD or DWG. No. LMPS07380.05 | SHEET No. 5 of 10 |

[illegible]

PROPERTY
NORFOLK SOUTHERN RAILWAY CO.



STICK CIRCUITS

| | | | |
|--------------|----------|---|----------------------|
| DESIGNED BY: | |  NORFOLK SOUTHERN | |
| RJJ | 12-16-92 | | |
| DRAWN BY: | | OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. | M.P.: SP-73.80 |
| SWS 07-06-96 | | BLUFFTON, OHIO FLS at COLLEGE STREET | |
| CHECKED BY: | | | |
| - - | | | |
| IN SERVICE: | | LIMA DISTRICT | FILE No. R- |
| - -52 | | CADD or DWG. No. LMPS07380.06 | SHEET No. 6 of 10 |

REVISION
INITIALS


PROPERTY
NORFOLK SOUTHERN RAILWAY CO.

[illegible]

[illegible]



LAYOUT

| | | | |
|----------------|---|--|--------------------|
| DESIGNED BY: |  | | |
| RJJ 12-16-92 | | | |
| DRAWN BY: | OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. | | M.P.: SP-73.80 |
| SWS 07-06-96 | | | |
| CHECKED BY: | BLUFFTON, OHIO FLS at COLLEGE STREET | | |
| | | | |
| IN SERVICE: | LIMA DISTRICT | | FILE R- |
| | | | |
| | CADD or DWG. No. LMPS07380.10 | | SHEET No. 10 of 10 |

REVISION
INITIALS

PROPERTY
NORFOLK SOUTHERN RAILWAY CO.

Norfolk Southern Railway Company

Lake Division

Bluffton, Hancock County, OH

ESTIMATE FOR CROSSING IMPROVEMENT (ASPHALT SURFACE)

Co. Rd 15

Existing Crossing

DOT Number: 476869X

1 TRACK(S);

24 CROSSING LENGTH

| MATERIAL | QUANTITY | UNIT | UNIT COST | AMOUNT |
|---------------------------------------|----------|----------|-----------|--------|
| SURFACE MATERIAL (Rubber Flangeways) | 24 | TRK. FT. | 65.00 | 1,560 |
| ASPHALT (BY CONTRACTOR) | 182 | TONS | 110.00 | 20,053 |
| RAIL, 132-LB RE | 80 | LIN FT. | 23.00 | 1,840 |
| TRANSITION RAIL | 4 | EA. | 1140.00 | 4,560 |
| INSULATED JOINTS | 4 | EA. | 500.00 | 2,000 |
| RAIL ANCHORS | 171 | EA. | 1.50 | 256 |
| SPIKES | 2.0 | KEG | 115.00 | 230 |
| TIE PLATES | 85 | EA. | 12.00 | 1,024 |
| CROSSTIES (10') | 0 | EA. | 75.00 | 0 |
| CROSSTIES (GRADE 5) | 43 | EA. | 55.00 | 2,347 |
| BALLAST AND GRAVEL | 76 | TONS | 35.00 | 2,660 |
| GEOTEXTILE | 44 | LIN FT. | 7.00 | 308 |
| THERMITE WELDS | 8 | EA. | 550.00 | 4,400 |
| ASPHALT (DISPOSAL) | 1 | LUMPS | 2500.00 | 2,500 |

TOTAL (INCLUDES 5% INVENTORY OR TAX ADDITIVES)

48,698

LABOR

| | | | | |
|-----------------------------|----|-----------|-------|-------|
| REMOVE EXISTING CROSSING | 20 | MAN HOURS | 25.00 | 500 |
| REHABILITATE TRK. STRUCTURE | 40 | MAN HOURS | 25.00 | 1,000 |
| INSTALL NEW CROSSING | 30 | MAN HOURS | 25.00 | 750 |

TOTAL

2,250

OTHER ITEMS

| | | | |
|-------|----------|----|------|
| Rail | -1.5 TON | 35 | (54) |
| Scrap | -0.5 TON | 35 | (17) |
| | | | (71) |

COMPOSITE LABOR ADDITIVE (185.81)

4,181

EQUIPMENT RENTAL & TRANSPORTATION

1,463

PRELIMINARY & CONSTRUCTION ENGINEERING SERVICES AND INVOICE

5,659

TOTAL (TO BE BILLED TO PROJECT SPONSOR)

\$62,180

ESTIMATE BASED ON TRAFFIC CONTROL AND BARRICADES BEING PROVIDED BY OTHERS, AND FULL CLOSURE OF ROAD. PAVING BY CONTRACTOR.

This estimate is valid for one (1) year after the date of estimate. If work is not performed within this time frame the Railway may revise the estimate to include work not previously deemed necessary.

This estimate shall not be considered as an approval for a temporary crossing. Information provided is an estimation of the anticipated cost for the construction of the crossing only. All temporary construction crossings require a separate approval from Norfolk Southern's General Manager and Division Superintendent, a separate stand alone temporary construction crossing agreement with associated real estate fees, and all required insurances as noted in the in the temporary construction crossing agreement.

OFFICE OF CHIEF ENGINEER, BRIDGES AND STRUCTURES - ATLANTA, GEORGIA

Date: 8/23/2016

File: CX1112084



OHIO RAIL DEVELOPMENT COMMISSION

Mail Stop #3140, 1980 West Broad Street, Columbus OH 43223

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

August 12, 2015

Mr. Stephen Klinger
Norfolk Southern Corporation
Administrator Grade Crossing Program
1200 Peachtree St. NE, Box 123
Atlanta, GA 30309

RE: Grade Crossing Warning Device Improvements
Hancock County, TR 15, County Line Rd.
DOT# 476869X; PID# 103464

Dear Mr. Klinger:

A diagnostic review was held at the above grade crossing on 4/29/2016. The crossing has been recommended for the installation of automatic flashing lights and gates.

Norfolk Southern Corporation is authorized to proceed with the site plans and cost estimates (PE) 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 ORDC is not requesting that the PUCO issue an Order at this time. When the ORDC receives the PE it will be evaluated and a construction-only Order will be requested from PUCO. Please submit the PE to ORDC within 90 days of receipt of this letter.

The diagnostic review form is attached. **Please note that this project includes the removal of a rail joint in the roadway surface along with the replacement of the roadway surface at this crossing location.** Also, please note any other 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 ORDC Project Manager for this project is Don Damron. Don can be reached at 614-466-2509 (office), or 614-917-8466 (cell), or don.damron@dot.state.oh.us, if you have any questions.

Sincerely,

Donald J. Damron
Project Manager

C: Randall Schumacher, Supervisor, Rail Division, Transportation Department, PUCO
George Martin, Grade Crossing Planner, PUCO
ORDC (file)

Attachments: Diagnostic Review Team Survey dated 4/29/2016
ORDC/NS Letter Agreement dated 6/10/2016



www.rail.ohio.gov

phone: 614.644.0306

IMPROVING RAIL TODAY FOR TOMORROW'S ECONOMY



Diagnostic Review Team Survey

Reason for Survey:

(e.g. formula, accident, constituent, etc.)

PUCO Formula Spring Pick

Date: 4/29/2016

Location Data

| | | | |
|---|-------------------------|-----------------------|------------------|
| Street or Road Name: County Line Road | | US DOT No.: 476869X | |
| Route/Road Number (i.e. Twp., Co., SR or US) | TR 15 | | |
| County: HAN | Township: | City: (In or Near) | City of Bluffton |
| Railroad Name: Norfolk Southern | Railroad Division: Lake | Branch/Line Name: | Lima Dist. |
| Nearest RR Timetable Station: Bluffton Lima District | | RR Milepost: | 73.16 ✓ |

On-Site Review Team

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

1. Don Damron, ORDC, 614-917-8466; don.damron@dot.ohio.gov
2. Shane Hertel NS 419-889-7028
3. Justin Rall N.S. 419-420-5104
4. George Martin PUCO 614-752-9107
5. Doug Cade Hancock Co. Engineer 419-424-5052
6. James Mehalkie Village of Bluffton 419-358-2066 mehalkie@bluffton-ohio.com
- 7.
- 8.
- 9.

Existing Traffic Control Devices

| Type of Warning Devices | Installed? | | Quantity/Comments |
|---------------------------------------|---|--|--------------------------------|
| Advance Warning Signs (condition?) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | BOTH DIRECTIONS |
| 'Stop' Signs | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | STOP SIGNS (2) ON SEP. POSTS |
| 'Stop Ahead' Signs | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| Pavement Markings (condition?) | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | PM - NORTH BOUND - NOT PAINTED |
| Crossbucks | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| Number of Tracks Signs | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | |
| Inventory Tags | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| Interconnected Highway Traffic Signal | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | |
| Mast-Mounted Flashing Lights | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | |
| Cantilever Flashing Lights | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Number: Length: |
| Side Lights | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | |
| Automatic Gates | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Number: Length: |
| Bells | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Number: |
| 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 checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| Is crossing flagged by train crew? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| Other | <input type="checkbox"/> Yes | <input type="checkbox"/> 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 (6/6/95) | |
| Hazard Ranking | 1432 1136 Date Run: 3/30/2016 | 4/15/16 |
| Railroad Data | | |
| Railroad Characteristics | Initial Information (from database) | Revised |
| Total trains per day | 2 | |
| < 1 per day | | |
| Day thru trains | 2 | |
| Night thru trains | | |
| Daytime switching movements | | |
| Nighttime switching movements | | |
| Total number of tracks | 1 | |
| Number of main tracks | 1 | |
| Number of other tracks | | |
| Maximum train speed | 25 | 10 (SP65-LIMA) |
| Typical train speed | 25 | 10 SP89 |
| Amtrak | | |
| If non-gated crossing, is clearing sight distance adequate in all quadrants? (See Table I) <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 checked="" type="checkbox"/> No | | |
| Can one train block the motorists' view of another train at crossing? <input type="checkbox"/> Yes (Explain below) <input checked="" type="checkbox"/> No | | |
| Can one or more tracks be eliminated through the crossing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | |
| 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: | | City of Bluffton |
| Roadway Characteristics | Initial Information (from database) | Revised |
| Average daily traffic | 4122 (2015) | 1255/1201 (ODOT) 2015 |
| Highway paved | X 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: 22 ft. | | |
| Number of highway lanes | 2 | |
| Urban or Rural | Urban | |
| Vehicle Speed: 55 MPH | 35 | |
| School Bus Operation: <input type="checkbox"/> No X Yes 5 Amount 5 2-AM 2-PM 1 NOON | | |
| Hazardous Materials Trucks: <input type="checkbox"/> No X Yes 03 Amount | | |
| Shoulders: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes | | |
| Is the shoulder surfaced? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes | | |
| Is there existing guardrail along roadway in crossing vicinity? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes | | |
| Is stopping site distance adequate? (See Table 2) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If no, deficient approach(es) _____ | | |

| | |
|---|---|
| Quadrant <u>NW</u> Curb and Gutter: <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 <u>SE</u> Curb and Gutter: <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: ☐ No ☒ Yes
 Is sidewalk present? ☒ No ☐ Yes

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 RESURFACE IN NEXT FIVE YEARS
 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 | |
|---|---|
| <input type="checkbox"/> Open Space <input type="checkbox"/> Institutional <input checked="" type="checkbox"/> Industrial <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Residential | Location of nearby schools: <u>BLUFFTON</u> <u>CORY RANSON ~ NO BUSES</u> |

Utility Information

Is commercial power available? ☐ No ☒ Yes
 Utility Provider (Company Name) AEP Phone Number _____
 Nearest Available Power Source AT SITE
 What other utilities are present? (add locations to sketch)

| | | | |
|---|---|---|---|
| <input checked="" type="checkbox"/> Gas | <input type="checkbox"/> Cable | <input type="checkbox"/> Telephone | <input checked="" type="checkbox"/> Fiber Optic Cable |
| <input type="checkbox"/> Petroleum | <input checked="" type="checkbox"/> Water | <input type="checkbox"/> Sanitary Sewer | |
| <input type="checkbox"/> Other _____ | | | |

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

Comments:
MULTIPLE U.G. UTILITIES (WATER, GAS, FIBER)
LOCATED IN SE QUAD AND WATER
LOCATED IN NW QUAD.

Potential Red Flags / Project Challenges

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

NA

Crossing Consolidation or Closure:

NA

Real Estate or ROW:

NA

Culverts / Drainage / Ballast Conditions:

NA

Roadway and/or Sidewalks:

BIKE TRAIL CONNECTION OVER CROSSING
ROADWAY CROSSING SURFACE IS IN POOR CONDITION

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

POSSIBLE CIRCUIT OVERLAP WITH ADJACENT
ACTIVE WARNING DEVICES LOCATED WEST OF XING

Environmental:

NA

Other:

RAIL JOINTS IN ROADWAY SURFACE

Diagnostic Team Recommendations

Quadrants Needed

☒ Install/upgrade active devices

☐ Automatic Flashing Lights (AFLS)

☐ AFLS / Cants

☒ AFLS / Gates

☐ AFLS / Gates / Cants

☒ Bells / number

☐ Upgrade circuitry / type

☒ Sidelights

☐ Guardrail Needed

☐ Install/Replace curb

☐ Bungalow placement & offset from rail & highway

☐ Other (define)

2 BELLS - IN BOTH QUADS

* 2 SETS - NEEDED IN NW+SE QUADS
NEEDED IN BOTH QUADS

NO PREFERENCE

Comments:

RELATIVELY HIGH ADT; UPGRADE WILL ELIMINATE HAZARD

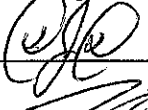

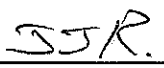
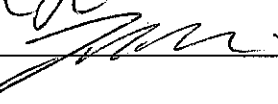


CONSENSUS: UPGRADE TO LIGHTS AND GATE; INSTALL NEW SURFACE.

☐ Install/upgrade traffic signal preemption

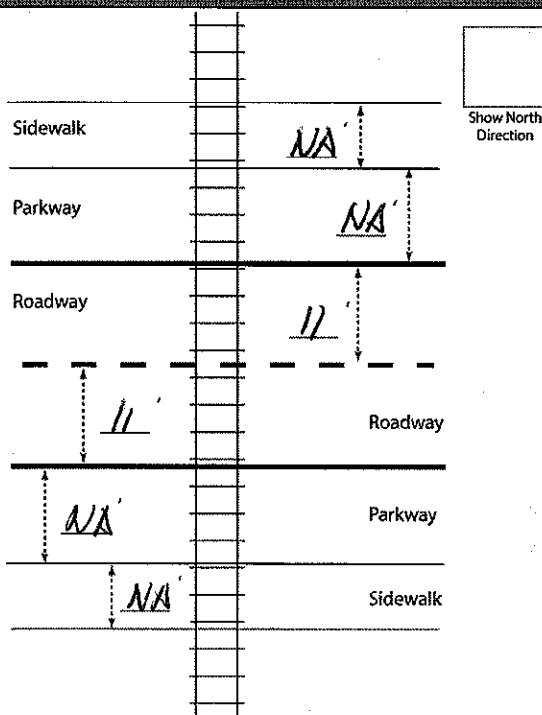
☐ No improvements needed

☐ Other (define)

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

Field Dimensions

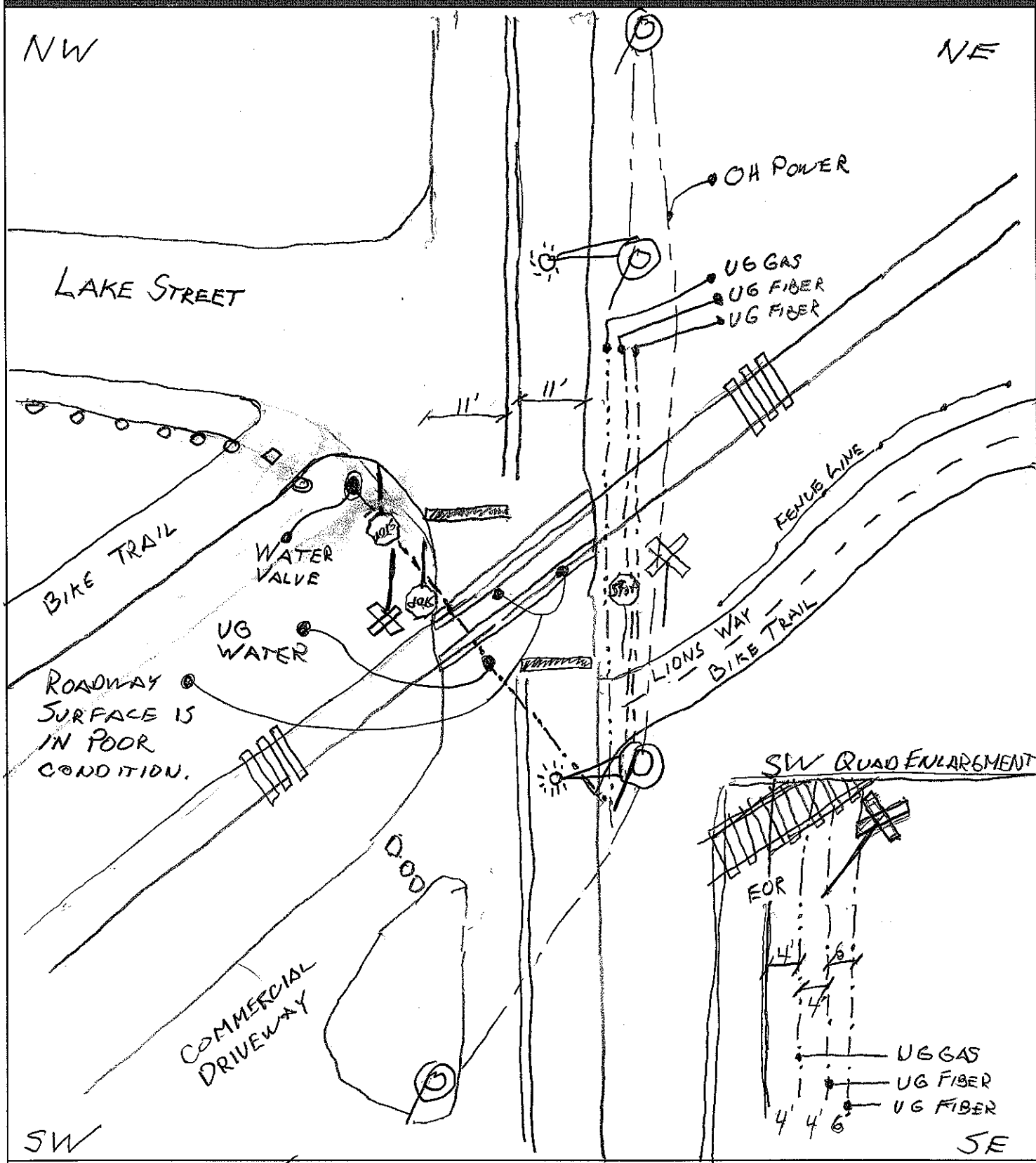


• SURFACE IS IN POOR CONDITION. WILL NEED TO BE REPLACED TO HOLD A GOOD ISLAND CIRCUIT.

• PROJECT TO INCLUDE REPLACEMENT OF ROADWAY CROSSING SURFACE

• SEE ATTACHED CROSSING SURFACE REVIEW FORM.

Field Sketch



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

Sketch by: _____

TABLE I

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.

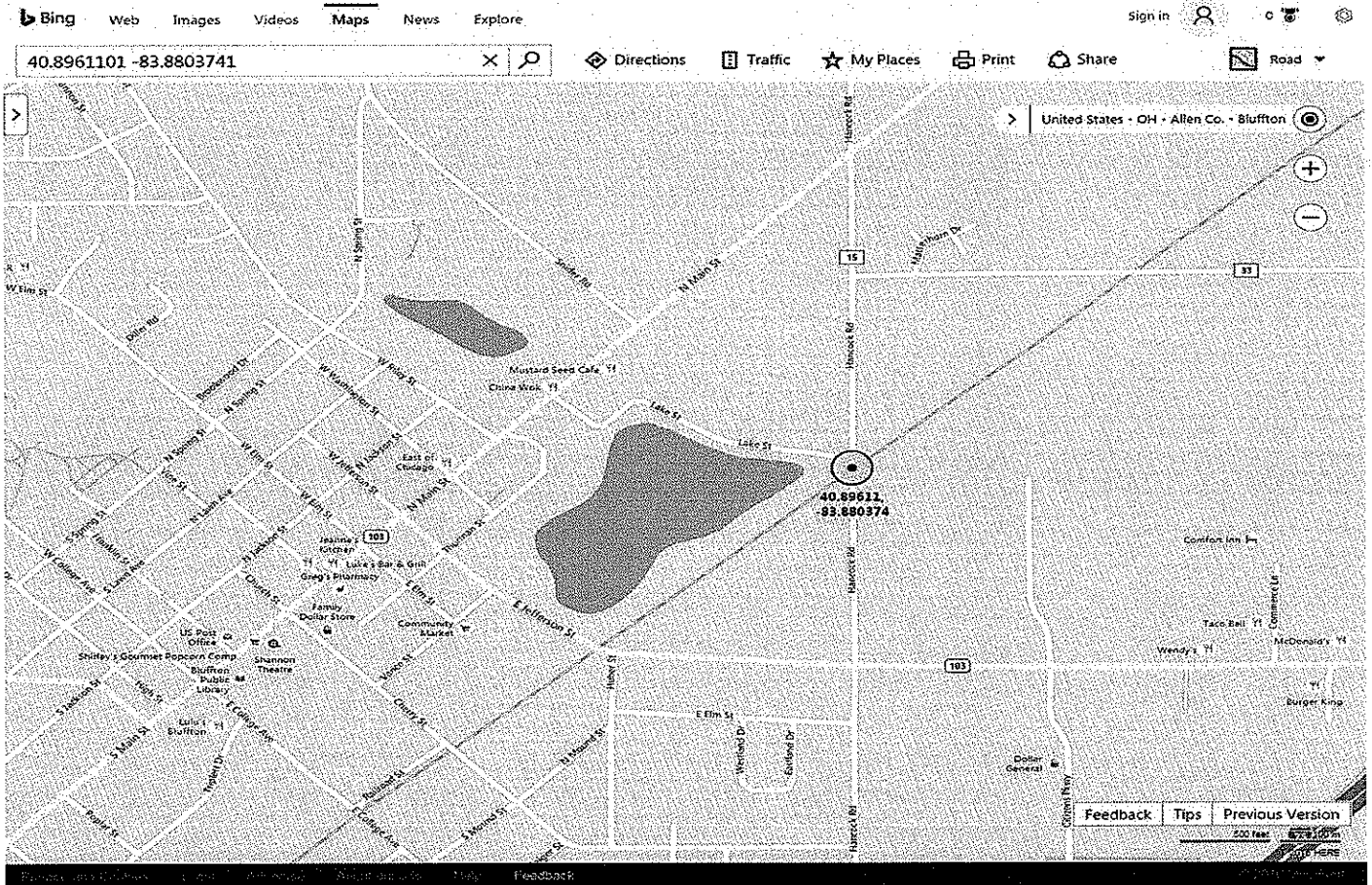
County: HAN Route: TR 15 DOT#: 476869X

| | |
|--|---|
| Surface type <input type="checkbox"/> Rubber seal and asphalt <input type="checkbox"/> Timber and asphalt <input checked="" type="checkbox"/> Asphalt <u>W/RUBBER FLANGE</u> <input type="checkbox"/> Composite <input type="checkbox"/> Concrete panel <input type="checkbox"/> Full-depth timber <input type="checkbox"/> Full-depth rubber <input type="checkbox"/> Other _____ | Condition <input type="checkbox"/> Good <input type="checkbox"/> Fair <input checked="" type="checkbox"/> Poor Comments: <u>ASPHALT SURFACE</u> <u>HAS MULTIPLE PATCHES.</u> |
| Is the surface good and sufficient? Yes / No | |
| Vehicle type (cars, trucks, etc.): | |
| Surface conditions: Can vehicles cross at posted speed? <u>NO CROSSING HAS STOP SIGN.</u> Local observations/driver behaviors: <u>MOST DRIVERS</u> <u>ARE STOPPING AT STOP SIGN</u> Relevant crash history: _____ _____ _____ | |
| Do existing surface conditions have negative effects on the current or proposed warning devices? Explain: <u>YES, JOINTS (2) IN RAIL (IN-SIDE) SURFACE AREA</u> <u>ARE MOVING UNDER PUMPING MUD CONDITIONS</u> <u>(ESP. ON EAST SIDE OF ROADWAY)</u> | |
| Comments: <u>TWO JOINTS INSIDE SURFACE,</u> <u>RUBBER FLANGE IS FAILING.</u> <u>SURFACE SHOULD BE REPLACED.</u> | |

Form completed by: DJO

Date: 5-4-16

HAN – County Line Road/TR 15 – DOT # 476869X



The following is offered as a summary for the crossing conditions at N/S Crossing 476869X.

- Crossing Location: Hancock County Line Road
 - Latitude: 40.8961101
 - Longitude: -83.8803741
- Average Adjusted Daily Traffic (2015) reflects 4,122 vehicles per day.
- Highway speed = 55 MPH
- Roadway width = 22'
- Trains per day = 2 daytime in August 2015 (1 local and 1 grain)
- Train Speed = 40 MPH
- Train Tracks = 1
- Crossing Angle = 39°
- The speed limit is not posted for southbound traffic; it is posted at 35 MPH for northbound traffic.
- There was one injury crash in 2008 at this crossing; however, it did not involve a train.
- Field surveys conducted by this office August 2015 found:
 - Advance warning signs present and in good condition.
 - No advance warning pavement markings for northbound traffic; however, they were present and in good condition for southbound traffic.
 - Stop bars and centerlines present and in good condition.
 - The emergency notification placards present at the crossing; but in poor condition.
 - The condition of the crossing considered to be in fair condition.
 - Advance Warning Sign and Markings Good at 600' (SB); Sign only at 600' (NB).
- Sight distance considered inadequate in 2 quadrants due to structure, trees and vegetation.
 - Limited to 185' in NW quadrant and 240' in SW quadrant.
- The following recommendations are offered to improve the safety of the crossing:
 - Post 35 MPH speed limit sign for southbound traffic.
 - Install advance pavement markings on northbound approach.
 - Install stop bars.
 - Install emergency placards.
 - Install W10-3 advance warning signs on both approaches of bike paths and Lake Drive.
 - Consider upgrading to an active warning system of flashing signals and gates.

School Bus Traffic at N/S Crossing 476869X:

Bluffton School District: Two (2) crossings each morning
One (1) crossing around Noon
Two (2) crossings each afternoon

Cory-Rawson School District: Until this year- two (2) crossings each day
- Changed route this year
- May be utilized in future years/routes

Allen County DD: Did not respond

Trinity Lutheran School: Did not respond

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

1/12/2017 10:54:56 AM

in

Case No(s). 17-0109-RR-FED

Summary: Application In the Matter of a Request for the Installation of Active Warning Devices at the Norfolk Southern Railway Crossing at County Line Road/CR 15, DOT# 476-869X, in Hancock County, Ohio. electronically filed by Mrs. Jill A Henry on behalf of PUCO/Rail Division