

NC
FILE

12-2385-RR-FED

**Public Utilities
Commission of Ohio**

107

RECEIVED-DOCKETING DIV

2012 AUG 28 AM 8:22

PUCO

Memo

To: Docketing Division
From: George Martin, Grade Crossing Planner, Rail Division *GM*
Re: In the matter of the authorization of Norfolk Southern Railway and CSX Transportation to install active grade crossing warning devices in Seneca, Hancock, and Wood Counties
Date: August 28, 2012

The Ohio Rail Development Commission (ORDC) has authorized funding for Norfolk Southern Railway (NS) and CSX Transportation (CSX) to install mast-mounted flashing lights and roadway gates at the following locations:

NS

Seneca County, Venice Township, Center Rd/TR 58, DOT# 481602S

CSX

Hancock County, near Arlington, Houcktown Rd/CR 26, DOT# 513732F
Wood County, Montgomery Township, Girton Rd/TR 56, DOT# 228808A
Wood County, Troy Township, Devil's Hole Rd/TR 61, DOT# 228835W

These crossings were surveyed on March 21 and March 22, 2012 due to their hazard ranking, and were found to warrant the upgrades.

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

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

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

A suggested case coding and heading would be:

PUCO Case No. 12- **2385** -RR-FED In the matter of the authorization of Norfolk Southern Railway and CSX Transportation to install active grade crossing warning devices in Seneca, Hancock, and Wood Counties

C: Legal Department

Please serve the following parties of record.

Ms Susan Kirkland

Ohio Rail Development Commission

1980 W Broad St, 2nd Floor

Columbus, Oh 43223

Ms Cayela Wimberly

Norfolk Southern Railway

1200 Peachtree St, Box 123

Atlanta, Ga 30309

Ms Amanda DeCesare

CSX Transportation

1717 Dixie Hwy, Ste. 400

Ft Wright, Ky 41011

Venice Township Trustees

7303 S TR 187

Attica, Oh 44807

Mr Ben Lindhorst

Hancock County Engineer

1900 Lima Ave

PO Box 828

Findlay, Oh 45839-0828

Montgomery Township Trustees

1950 Mermill Rd

PO Box 462

Bradner, Oh 43406

Troy Township Trustees

311 Krotzer Ave

PO Box 128

Luckey, Oh 43443

AEP

Hancock-Wood Electric Co-Op

Toledo Edison

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

TO: Rob Marvin, Director of Transportation, PUCO
Leah Thomas-Dalton, Deputy Chief, PUCO

FROM: Susan Kirkland, Manager, Safety Section, ORDC

BY: Tod Darfus, Project Manager, ORDC

SUBJECT: Seneca County, Norfolk Southern (NS) *CENTER RD*
Township Road 58, 481 602 S, PID 93335

DATE: August 27, 2012

The Public Utilities Commission of Ohio (PUCO) established a diagnostic survey at the subject location on March 21, 2012. The Ohio Rail Development Commission (ORDC) attended the review. The Diagnostic Team recommended the improvement of warning devices to flashing lights and roadway gates. A copy of the diagnostic review form is attached.

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

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

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

Thank you for your assistance with these matters.

Attachment: Diagnostic Review
Plan & Estimate

c: George Martin, PUCO
T.Darfus (file)



OHIO RAIL DEVELOPMENT COMMISSION

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

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

August 27, 2012

Ms. Cayela J. Wimberly
Public Projects Engineer
1200 Peachtree Street, Box 123
Atlanta, GA. 30309

RE: Seneca County
TR-58
DOT 481 602 S
PID # 93335

Dear Ms. Wimberly:

The plan and estimate dated August 1, 2012, for the referenced project has been reviewed and is acceptable. Norfolk Southern (NS) 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 \$248,254.00. Additional costs must be approved in writing by the Ohio Rail Development Commission (ORDC) prior to being incurred. Emergency verbal authorizations by ORDC may be permitted and will be confirmed by ORDC in writing within ten (10) business days of the verbal approval.

This authorization is contingent upon NS accepting the following instructions:

1. NS's project foreman will furnish written notification five (5) working days prior to the date work will start at the project site to Tod Darfus, ORDC, tod.darfus@dot.state.oh.us (email), and to the Public Utilities Commission of Ohio at George.martin@puc.state.oh.us. NS'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. NS 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 NS.
3. NS's project foremen will notify Tod Darfus at 614-374-9298 (telephone) or tod.darfus@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.



www.rail.ohio.gov

phone: 614.644.0306

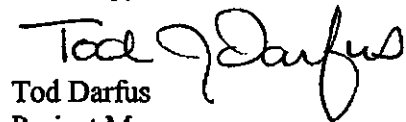
IMPROVING RAIL TODAY FOR TOMORROW'S ECONOMY

August 27, 2012-Cayela Wimberly

4. NS will furnish two (2) copies of each partial bill to ORDC. Please find the enclosed Encumbrance Estimate to reference when billing.
5. NS 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.

Thank you for your assistance with these matters.

Sincerely,


Tod Darfus
Project Manager

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



Diagnostic Review Team Survey

Date: 3/21/2012

Location Data

Street or Road Name: Center Road			
Route/Road Number (i.e. Twp., Co., SR or US) TR 58		US DOT No.: 481602S	
County: Seneca (SEN)	Township: Venice Twp	City: (In or Near)	
Railroad Name: Norfolk Southern	Railroad Division: Lake	Branch/Line Name: Sandusky	
Nearest RR Timetable Station: Attica		RR Milepost: 79.5	

On-Site Review Team

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

1. Tod Darfus - ORDC - 614.374.9298 - tod.darfus@dot.state.oh.us
2. George Martin PUCO 614-752-9107
3. Dennis D. Heiser
4. Ed Whitten
5. Jeff Borden
6. Robert P. Pataczka PUCO 614 466 -1150
7. _____
8. A.J. Pease 419-515-9318
9. _____

Existing Traffic Control Devices

Type of Warning Devices	Installed?		Quantity/Comments
Advance Warning Signs (condition?)	☒ Yes	☐ No	2 Good
'Stop' Signs	☐ Yes	☒ No	
'Stop Ahead' Signs	☐ Yes	☒ No	
Pavement Markings (condition?)	☐ Yes	☒ No	
Crossbucks	☒ Yes	☐ No	2 New
Number of Tracks Signs	☒ Yes	☐ No	2 New
Inventory Tags	☐ Yes	☒ No	
Interconnected Highway Traffic Signal	☐ Yes	☒ No	
Mast-Mounted Flashing Lights	☐ Yes	☒ No	
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	203	Date Run: 3/7/2012

Railroad Data

Railroad Characteristics	Initial Information (from database)	Revised
Total trains per day	30	
< 1 per day		
Day thru trains	14	
Night thru trains	14	
Daytime switching movements	2	
Nighttime switching movements	0	
Total number of tracks		
Number of main tracks	2	2
Number of other tracks	0	
Maximum train speed	60	60
Typical train speed		
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: Venice Twp

Roadway Characteristics	Initial Information (from database)	Revised
Average daily traffic	357 (2011)	357
Highway paved	☒ Yes ☐ No	☒ Yes ☐ No
Roadway Surface: ☒ Blacktop ☐ Gravel ☐ Concrete ☐ Other _____		
Roadway width: 20 ft.		
Number of highway lanes	2	2
Urban or Rural	Rural	Rural
Vehicle Speed: 55 MPH		
School Bus Operation: ☒ No ☐ Yes _____ Amount		
Hazardous Materials Trucks: ☐ No ☒ Yes 2 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: ☐ Functional (Curb height = 4" or more) ☐ Non-functional (Curb height = Less than 4") ☒ None	Quadrant _____ Curb and Gutter: ☐ Functional (Curb height = 4" or more) ☐ Non-functional (Curb height = Less than 4") ☒ 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 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 ☐ Industrial ☐ Residential	☐ Institutional ☐ Commercial Location of nearby schools: Seneca East 2 mile Attica
Utility Information	
Is commercial power available? ☐ No ☒ Yes Utility Provider (Company Name) <u>AEP</u> Phone Number _____ Nearest Available Power Source <u>2 CROSSINGS</u> What other utilities are present? _____ (add locations to sketch)	
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):

No

Crossing Consolidation or Closure:

No

Real Estate or ROW:

Township = 100 Norfolk Southern

Culverts / Drainage / Ballast Conditions:

No

Roadway and/or Sidewalks:

No

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

Overlapping and wayside

Environmental:

No

Other:

No

Diagnostic Team Recommendations

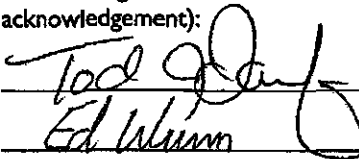
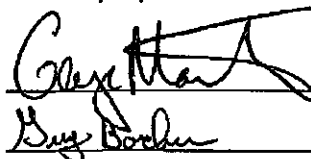
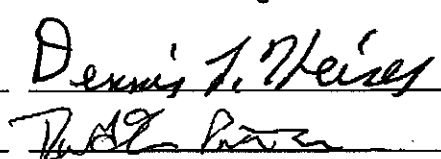
	Quadrants Needed
☒ Install/upgrade active devices	
☐ Automatic Flashing Lights (AFLS)	
☐ AFLS / Cants	
☒ AFLS / Gates	
☐ AFLS / Gates / Cants	
☒ Bells / number	2
☐ Upgrade circuitry / type	
☐ Sidelights	
☐ Guardrail Needed	
☐ Install/Replace curb	
☐ Bungalow placement & offset from rail & highway	NW Quad 25 / 50
☐ Other (define)	

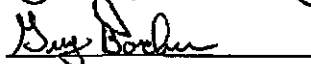
Comments:

Set L&G at least 10' from EOPR due Farm equip

☐ 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):

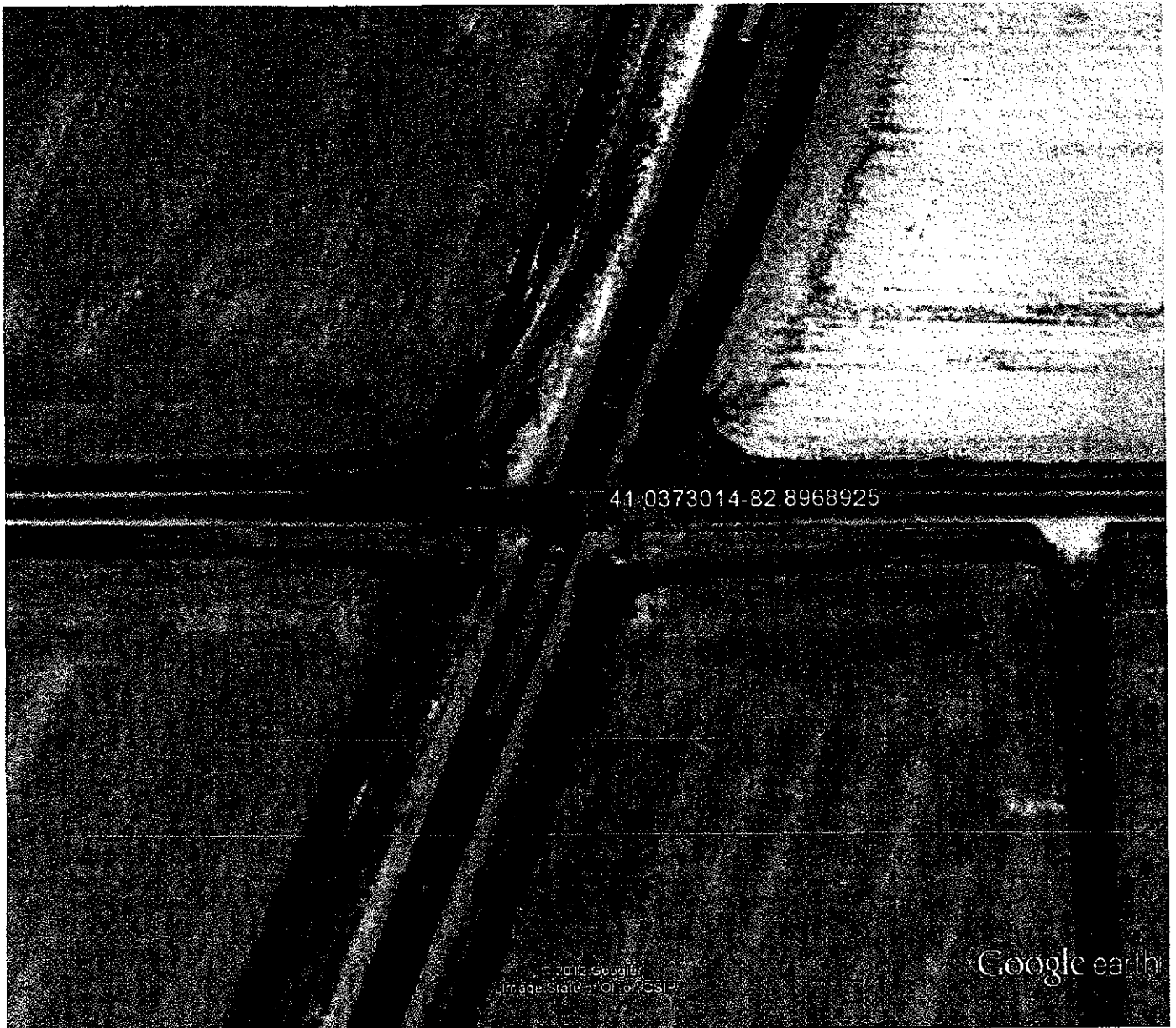



Field Dimensions

The diagram shows a cross-section of a street with a central vertical line representing the centerline. On both sides of the centerline, there are three horizontal lines representing different street features. From top to bottom on the left side, these are labeled: Sidewalk, Parkway, and Roadway. On the right side, from top to bottom, they are labeled: Roadway, Parkway, and Sidewalk. Dashed vertical arrows with horizontal bars at their ends indicate measurement points for each feature. A box in the top right corner is labeled "Show North Direction".

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

Measurements by: _____



Google earth

feet
meters



Field Sketch

Include utilities as marked by OUPS and LHA; include ROW boundaries as indicated by railroad and LHA.

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

Sketch by: _____

TABLE 1

Clearing Sight Distances

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

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

Notes:

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

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

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

Table 2

Stopping Sight Distances

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

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

Notes:

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

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

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

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

TO: Rob Marvin, Director of Transportation, PUCO
Leah Thomas-Dalton, Deputy Chief, PUCO

FROM: Susan Kirkland, Manager, Safety Section, ORDC

BY: Tod Darfus, Project Manager, ORDC

SUBJECT: Hancock County, CSX
Houcktown Road, 513 732 F, PID 93337 CR 26

DATE: August 27, 2012

The Public Utilities Commission of Ohio (PUCO) established a diagnostic survey at the subject location on March 22, 2012. The Ohio Rail Development Commission (ORDC) attended the review. The Diagnostic Team recommended the improvement of warning devices to flashing lights and roadway gates. A copy of the diagnostic review form is attached.

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

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

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

Thank you for your assistance with these matters.

Attachment: Diagnostic Review
Plan & Estimate

c: George Martin, PUCO
T.Darfus (file)



Diagnostic Review Team Survey

Date: 3/22/2012

Location Data			
Street or Road Name: Houcktown Road			
Route/Road Number (i.e. Twp., Co., SR or US) CR 26		US DOT No.: 513732F	
County: Hancock (HAN)	Township:	City: (In or Near) Arlington	
Railroad Name: CSX	Railroad Division: Chicago	Branch/Line Name: Toledo	
Nearest RR Timetable Station: Arlington		RR Milepost: 51.05	

On-Site Review Team	
(Include: Name - Organization - Phone Number - Email)	
1. <u>Tod Darfus - ORDC - 614.374.9298 - tod.darfus@dot.state.oh.us</u> <i>Tod Darfus</i>	
2. <u>Nathan Vance - PUCO</u>	
3. <u>Terry Ludban CSX</u>	
4. <u>Garbe Martin PUCO 614-752-9107</u>	
5. <u>Ben Lindhorst Hancock County Engineer</u>	
6. _____	
7. _____	
8. _____	
9. _____	

Existing Traffic Control Devices			
Type of Warning Devices	Installed?		Quantity/Comments
Advance Warning Signs (condition?)	☒ Yes	☐ No	2 good
'Stop' Signs	☐ Yes	☒ No	
'Stop Ahead' Signs	☐ Yes	☒ No	
Pavement Markings (condition?)	☒ Yes	☐ No	2 fair
Crossbucks	☒ Yes	☐ No	2 fair
Number of Tracks Signs	☐ Yes	☒ No	
Inventory Tags	☒ Yes	☐ No	
Interconnected Highway Traffic Signal	☐ Yes	☒ No	
Mast-Mounted Flashing Lights	☐ Yes	☒ No	
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	1 (8/8/2011)	
Hazard Ranking	122	Date Run: 3/7/2012
Railroad Data		
Railroad Characteristics	Initial Information (from database)	Revised
Total trains per day	8	10
< 1 per day		
Day thru trains	1	1
Night thru trains	5	9
Daytime switching movements	2	2
Nighttime switching movements	0	
Total number of tracks		
Number of main tracks	1	1
Number of other tracks	0	
Maximum train speed	50	50
Typical train speed		45
Amtrak		N/A
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:		Hancock County
Roadway Characteristics	Initial Information (from database)	Revised
Average daily traffic	211 (2011)	400
Highway paved	☒ Yes ☐ No	☒ Yes ☐ No
Roadway Surface: ☒ Blacktop ☐ Gravel ☐ Concrete ☐ Other _____		
Roadway width: 24 ft.		
Number of highway lanes	2	2
Urban or Rural	Rural	Rural
Vehicle Speed: 35 MPH		
School Bus Operation: ☒ No ☒ Yes 16 Amount		
Hazardous Materials Trucks: ☐ No ☒ Yes 2 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: ☐ Functional (Curb height = 4" or more) ☐ Non-functional (Curb height = Less than 4") ☒ None	Quadrant _____ Curb and Gutter: ☐ Functional (Curb height = 4" or more) ☐ Non-functional (Curb height = Less than 4") ☒ 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 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 ☐ Industrial ☐ Commercial ☐ Residential	Location of nearby schools: Arlington 5 mile
Utility Information	
Is commercial power available? ☐ No ☒ Yes Utility Provider (Company Name) <u>AEP</u> Phone Number _____ Nearest Available Power Source <u>@ crossing</u> What other utilities are present? <u>Att Fiber - Telephone GTE roadside N</u> (add locations to sketch)	
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):

No

Crossing Consolidation or Closure:

No

Real Estate or ROW:

Twp - 60' CSX = 60'

Culverts / Drainage / Ballast Conditions:

No

Roadway and/or Sidewalks:

No

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

Wayside Sig - No Overlap

Environmental:

No

Other:

Diagnostic Team Recommendations

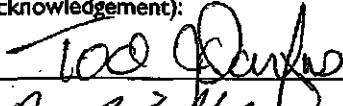
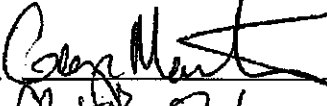
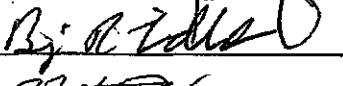
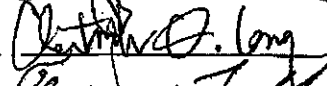
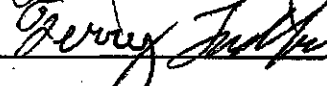
	Quadrants Needed
☒ Install/upgrade active devices	
☐ Automatic Flashing Lights (AFLS)	
☐ AFLS / Cants	
☒ AFLS / Gates	
☐ AFLS / Gates / Cants	
☒ Bells / number	1
☐ Upgrade circuitry / type	
☐ Sidelights	
☐ Guardrail Needed	
☐ Install/Replace curb	
☒ Bungalow placement & offset from rail & highway	NE or SE 2S/50
☐ Other (define)	

Comments:

Set Foundation @ 10' from EoFR

☐ 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

Sidewalk

Parkway

Roadway

Roadway

Parkway

Sidewalk

Show North Direction

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

Measurements by: _____



Image State of Ohio PCSIP

Google earth



Field Sketch

Include utilities as marked by OUPS and LHA; include ROW boundaries as indicated by railroad and LHA.

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

Sketch by: _____

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)

☐ ☐tes:

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.

CSX TRANSPORTATION, INC.
FORCE ACCOUNT ESTIMATE

Page 1

ACCT. CODE : 709 - OH0893

ESTIMATE SUBJECT TO REVISION AFTER:	2/3/2013	DOT NO.: 513732F
CITY: Arlington	COUNTY: Hancock	STATE: OH
DESCRIPTION: Houcktown Rd. - Install FLS&G with a bell.		
DIVISION: Chicago	SUB-DIV: Toledo Branch	MILE POST: QT - 51.05
AGENCY PROJECT NUMBER: PID 93337		

PRELIMINARY ENGINEERING:

200 Additive	31.34%	\$	-
230 Expenses		\$	-
212 Contracted & Administrative Engineering Services		\$	2,000
Subtotal		\$	2,000

CONSTRUCTION ENGINEERING/INSPECTION:

200 Additive	31.34%	\$	-
230 Expenses		\$	-
212 Contracted & Administrative Engineering Services		\$	2,000
Subtotal		\$	2,000

FLAGGING SERVICE: (Contract Labor)

070 Labor (Conductor-Flagman)		\$	-
050 Labor (Foreman/Inspector)		\$	-
070 Additive	73.76% (Transportation Department)	\$	-
050 Additive	97.95% (Engineering Department)	\$	-
230 Per Diem	(Engineering Department)	\$	-
230 Expenses		\$	-
Subtotal		\$	-

<u>SIGNAL & COMMUNICATIONS WORK:</u>	(Details Attached)	\$	182,759
---	--------------------	----	---------

<u>TRACK WORK:</u>	(Details Attached)	\$	-
---------------------------	--------------------	----	---

ACCOUNTING & BILLING:

040 Labor		\$	2,400
040 Additive	63.03%	\$	1,513
Subtotal		\$	3,913

PROJECT SUBTOTAL

900 <u>CONTINGENCIES:</u>		\$	190,672
----------------------------------	--	----	---------

GRAND TOTAL *****	\$	190,672
-------------------	----	---------

DIVISION OF COST:

Agency	100.00%	\$	190,672
Railroad		\$	-
TOTAL *****		\$	190,672

NOTE: Estimate is based on FULL CROSSING CLOSURE during work by Railroad Forces.

This estimate has been prepared based on site conditions, anticipated work duration periods, material prices, labor rates, manpower and resource availability, and other factors known as of the date prepared. The actual cost for CSXT work may differ based upon the agency's requirements, their contractor's work procedures, and/or other conditions that become apparent once construction commences or during the progress of the work

Office of Assistant Chief Engineer Public Projects—Jacksonville, Florida

Estimated prepared by:	BSE	Approved by:	AJD	CSXT Public Project Group
DATE:	8/7/2012	REVISD:	DATE:	8/10/2012

Form Revised 05-05-2010-LLS

Project Summary Sheet

Estimate No. 120713
CSX Transportation

Houcktown Rd. - Install Automatic Flashing Light Signals and Gates.
(near) Arlington, OH

DOT: 513732F

OP: OH0893

CSX Project: OH2012059

Summary

Material	\$ 67,566
Sales Tax	\$ 0
Labor:	
Construction Labor (88 man-days).....	\$ 26,293
Shop Labor (5 man-days).....	\$ 1,050
Subsistence (88 man-days).....	\$ 11,440
Railroad Engineering, Preliminary	\$ 4,345
Railroad Engineering, Construction	\$ 3,944
Additives to Construction Labor	\$ 24,429
Additives to Shop Labor	\$ 931
Additives to Track Labor	\$ 0
Additives to Engineering	\$ 2,598
Equipment Expenses (17 work days).....	\$ 11,050
Waste Management (17 work days).....	\$ 204
Contract Engineering	\$ 18,210
Freight	\$ 4,200
Poleline Removal	\$ 0
AC Power Service	\$ 2,500
Salvage	\$ -1
Vac Truck	\$ 4,000
TOTAL ESTIMATE COST	\$ 182,758

Date: 08/03/2012

Estimated By: John Morrison

NOTE: This estimate should be considered void one year from date of estimate.

Shop Material List for CSX Project: OH2012059 (Effective: 08/03/2012)
INSTALL FLS&G W/HXP-3R
ARLINGTON, OH - QT 51.06

Catalog Num	Cond	Unit Price	Qty	Cost	Description
020-0003386	1	6781.00	1	6781.00	HOUSE 6X6L ALUM INCLUDES 5 SHELF, FARADAY CLOSET, 240V
020-0017120	1	11.52	6	69.12	BLOCK TERMINAL 12 POST SINGLE STRIP AAR 14.1.6 WITH 1 AAR
020-0017125	1	3.54	6	21.24	BLOCK TERMINAL 2 POST AAR 14.1.8 WITH 1 AAR 14.1.11
020-0017211	1	627.20	1	627.20	TRANSFORMER 010520-50X LIGHT 750VA MOD SLT 50 SAFETRAN PRI
020-0017385	1	56.16	1	56.16	CABLE RJ45 TO RJ4 15' GETS P/N 075061-015
020-0021965	1	8.96	1	8.96	EXTRACTOR DWG 59688-4 TERMINAL GRS CAT P3-308 REF
020-0022651	1	55.89	5	279.45	PLUGBOARD KIT TYPE B1 OR ST1 RELAY ASSEMBLY WITH 12 EACH
020-0022701	1	68.00	27	1836.00	ARRESTER LPC 15012-1 0-30V DC OR 0-24V AC RATED AT 15 AMP
020-0025595	1	20.72	1	20.72	WRENCH DWG 55393-3 GR1 "E" TERMINAL POST NUT GRS CAT
020-0053360	1	406.56	3	1219.68	CHARGER BATTERY ELC 12/20 S 20 AMP 10-19.9 VDC ROTARY SW
020-0053510	1	233.11	1	233.11	KIT 240V AC EMERGENCY GENERATOR CABLE AND
020-0055608	1	21.22	1	21.22	RELAY POTTER BRUMFIELD KRP11AG12 OR STRUTHERS-DUNN
020-0056515	1	3.07	1	3.07	SOCKET RELAY 8 PIN OCTAL FOR NON VITAL RELAY CSX SS705 REF
020-0064060	1	16.12	1	16.12	PLATE RELAY MOUNTING FOR 2 EACH TYPE KHAU OR OCTAL RELAY
020-0660077	1	597.41	1	597.41	ARRESTER GE 9L10KAC213 FOR 240 VOLT SINGLE PHASE 3 WIRE
020-0770060	1	13.44	8	107.52	ARRESTER US&S N451552-0201 TRACK SERIES RED LABEL USGA
020-0770105	1	22.40	2	44.80	ARRESTER HARMON 202217-000 AGE-1 TRACK AIR GAP EQUALIZER
020-1940055	1	14.22	1	14.22	CONTAINER CIRCUIT PRINT 24" SCHEDULE 20 4" PVC PIPE WITH
020-2501400	1	987.92	1	987.92	CONTROLLER DTMF RADIO KEY DOWN MODE 6 SET TIMER TO 60
020-2532515	1	32.48	1	32.48	MODULE RESISTOR ISLAND OUTPUT RESISTIVE LOAD ASSEMBLY 560
020-2552672	1	10171.51	1	10171.51	PREDICTOR 250811-2200 HXP-3R W/IDK AND 8KHZ RSI HARMON
020-3430110	1	321.84	1	321.84	RELAY SAFETRAN 400004 500 OHMS CONTACTS 4FB-2F-1B CSX
020-3430115	1	421.20	1	421.20	RELAY SAFETRAN 400005 500 OHMS CONTACTS 4FB HEAVY DUTY
020-3430135	1	362.64	1	362.64	RELAY SAFETRAN 400213 460 OHMS CONTACTS 2FB CSX
020-3430170	1	413.95	1	413.95	RELAY SAFETRAN 400800-CSX 100/100 OHMS CONTACTS 6FB

Shop Material List for CSX Project: OH2012059 (Effective: 08/03/2012)
INSTALL FLS&G W/HXP-3R
ARLINGTON, OH - QT 51.06

Catalog Num	Cond	Unit Price	Qty	Cost Description
020-3430185	1	313.63	1	313.63 RELAY SAFETRAN 400700-X 60 OHMS CONTACTS 4FB CSX
020-4200100	1	6.04	2	12.08 CONNECTOR BUS 1" CENTERS 1/2" X 36" 18 GAGE PUNCHED 1/4" X
020-4200340	1	1.65	8	13.20 LINK TEST ASSEMBLY 1" CENTERS COMPLETE WITH INSULATED
020-4200350	1	2.04	9	18.36 LINK TEST ASSEMBLY 2-3/8" CENTERS COMPLETE WITH
020-8000067	1	14.61	2	29.22 LOCK AMERICAN H10SIGRA CSX SIGNAL PADLOCK WITH BLACK
020-8100031	1	24.38	1	24.38 CABLE EVENT RECORDER HARMON HAWK NETWORK CABLE USED WITH
020-8100044	1	3688.29	1	3688.29 RECORDER EVENT HAWK INCLUDES ETHERNET MODEM AND CURRENT
022-8005160	1	563.90	1	563.90 KIT CDMA AND VHF RADIO MATERIAL FOR USE WITH CSX
Total Cost: \$				29,331.6

Field Material List for CSX Project: OH2012059 (Effective: 08/03/2012)
INSTALL FLS&G W/HXP-3R
ARLINGTON, OH - QT 51.06

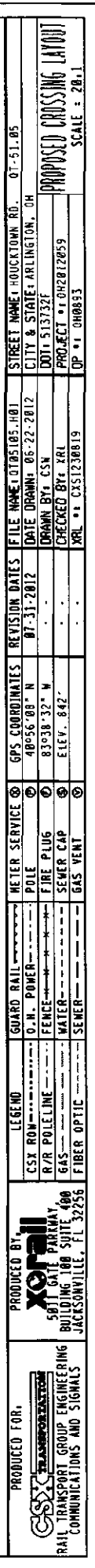
Catalog Num	Cond	Unit Price	Qty	Cost	Description
020-0010447	1	13.02	2	26.04	BOX GROUND ROD CONNECTION ENCLOSURE COMPLETE WITH 7"
020-0010449	1	31.57	1	31.57	BOX, 9 INCH DIA. "FLOWER POT" ENCLOSURE WITH HD
020-0013687	1	17.76	1	17.76	SPLICE TRACK WIRE TO BONDSTRAND (FLOWER POT KIT)
020-0013908	1	6.90	300	2070.00	CABLE UG COMPOSITE 19 CONDUCTOR INCLUDES 13
020-0017120	1	11.52	1	11.52	BLOCK TERMINAL 12 POST SINGLE STRIP AAR 14.1.6 WITH 1 AAR
020-0017605	1	0.31	100	31.00	WIRE CASE 10 AWG FLEX CSX SPEC SS796 OKONITE P/N
020-0025145	1	320.49	4	1281.96	SHUNT ENCLOSURE INTERRAIL P/N IRS-SE8A WAYSIDE MOUNT
020-0052475	1	11.20	4	44.80	ARM EXTENSION 10-1/2" ALUM WITH 3/8" DIAMETER MOUNTING
020-0053066	1	4.10	12	49.20	BOND WEB OF RAIL TRACK CONNECTOR 3/16" DIA X 1" TAB
020-0053220	1	2.44	200	488.00	CABLE POWER UG 3 COND NO 6 AWG - SHOW LENGTH ON EACH
020-0054075	1	1006.88	2	2013.76	GATE GARD NORMAL MOVEMENT COMPLETE WITH SHEAR PIN AND
020-0055421	1	18.61	6	111.66	BRACKET SIGN 4" OR 5" MAST W/1/2" U-BOLT FOR ALL SIGNS
020-0056678	1	6124.91	2	12249.82	SIGNAL 0221-L GCWD GATE ASSY DWG SS222 INCLS ADJ 19 TO 28
020-0057275	1	1.17	300	351.00	WIRE UG TRACK TWISTED PAIR NO. 6 AWG SOLID CONDUCTOR
020-1040322	1	162.40	29	4709.60	BATTERY SAFT SPL165, 165 AH POCKET PLATE NICKEL CADMIUM
020-1040540	1	31.36	4	125.44	TRAY BATTERY FIBER CO 82687-1-P 12" WIDTH 24" LONG
020-1040550	1	45.92	1	45.92	TRAY BATTERY FIBER CO 82687-3-P 12" WIDTH 38"
020-1150750	1	0.86	100	86.00	BOND STRAND 3/16" DIA 7 STRANDS OF 19 STR EACH 6 WITH
020-1360014	1	1013.12	2	2026.24	PACKAGE FOREMANS CARE FOR ALUMINUM TYPICAL BOM FOR USE
020-1360016	1	21.18	1	21.18	PACKAGE SAFETY & SECURMENT WITH 1 EA CAUTION TAG 1 EA
020-1360104	1	1426.31	1	1426.31	LAYOUT METER SERVICE WITH 30' POLE CSX DWG SS351 SH 2 ITEMS
020-2511240	1	180.20	4	720.80	SHUNT ULTRA-TECH 14184-00 WIDEBAND SAFETRAN 8A076
020-2530300	1	190.40	1	190.40	REACTOR TRACK BATTERY MODEL 5025A GETS P/N 250141-001
020-3263656	1	1.67	4	6.68	SLEEVE BONDSTRAND 3/16" TO 3/16" 100 PER BOX, NICOPRESS
020-3901895	1	92.68	2	185.36	TIP FLEX HWY CROSSING GATE 24 IN LONG RED & WHITE STRIPES

Field Material List for CSX Project: OH2012059 (Effective: 08/03/2012)
INSTALL FLS&G W/HXP-3R
ARLINGTON, OH - QT 51.06

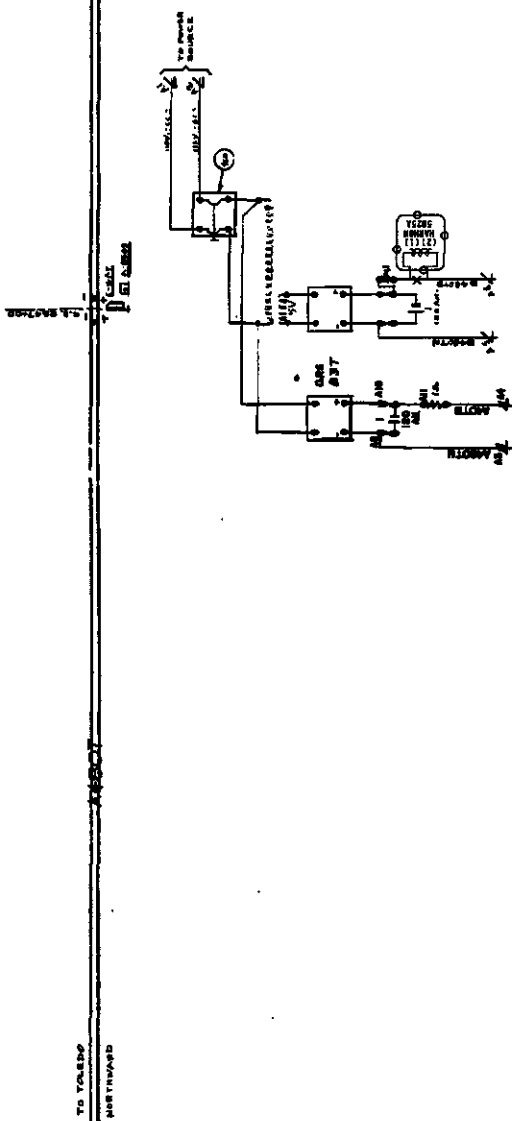
Catalog Num	Cond	Unit Price	Qty	Cost Description
020-3920200	1	181.17	1	181.17 BELL GCWD ELECTRONIC 4" OR 5" MAST 8 TO 13 VOLTS DC GSI PN
020-3930010	1	3.70	2	7.40 KIT GATE ARM WARNING STICKER KIT INCLUDES 1-EA 5"X3"
020-4200340	1	1.65	31	51.15 LINK TEST ASSEMBLY 1" CENTERS COMPLETE WITH INSULATED
020-4200900	1	0.27	6	1.62 CONNECTOR SHEATHING AMP 329860 FOR NO. 14 WIRE
020-7300030	1	189.28	1	189.28 BRACKET BELL FITS SAFETRAN JUNCTION BOX MOUNT, 5" BENT
020-9999991	1	100.00	1	100.00 BLOCKING AND BRACING FOR PROJECTS BURCO DIST
250-0001827	1	14.28	2	28.56 BREAKER CIRCUIT SQ D QO235
250-1680406	1	0.50	80	40.00 CONDUIT LIQUID TIGHT 3/4" FLEXIBLE GREY PVC CARLON P/N
250-1680408	1	1.08	80	86.40 CONDUIT LIQUID TIGHT 3/4" NON-METALLIC ORANGE PVC
360-0006100	1	35.07	2	70.14 STOOL STEP WOOD 14"X 20" SIGNAL MAINTAINERS CSXT
360-0800145	1	4.72	2	9.44 BROOM WAREHOUSE CORN HVY DUTY ID300
Total Cost: \$				29,087.18

Consumables List for CSX Project: OH2012059 (Effective: 08/03/2012)
INSTALL FLS&G W/HXP-3R
ARLINGTON, OH - QT 51.06

<u>Catalog Num</u>	<u>Cond</u>	<u>Unit Price</u>	<u>Qty</u>	<u>Cost Description</u>
N/A		50.00	80	4000.00 FILL MATERIAL, 1 CUBIC YARD
N/A		800.00	1	800.00 WALKWAY ROCK, 10 CUBIC YARDS
020-0017605	1	0.29	350	101.50 WIRE CASE 10 AWG FLEX CSX SPEC SS796 OKONITE
020-0017607	1	0.70	500	350.00 WIRE CASE TW PR NO 10 AWG FLEX CSX SPEC SS796 TWIST 2
020-0017625	1	0.42	150	63.00 WIRE CASE TW PR NO 14 AWG FLEX CSX SPEC SS796 TWIST 2
020-0017630	1	0.13	200	26.00 WIRE CASE NO 16 AWG FLEX CSX SPEC SS796 FURN 1000 FT SPOOL
020-0017635	1	0.80	130	104.00 WIRE SIGNAL DEL 018 NO 6 COPPER STRANDED SINGLE
020-0028610	1	0.22	100	22.00 TERMINAL RING AMP 35628 YELLOW PLASTI-BOND HVY DUTY
020-1710045	1	2.25	250	562.50 CONDUIT SDR 13.5 4" POLYETHYLENE TRENCHLESS
020-2060072	1	750.00	2	1500.00 FOUNDATION HELICAL SCREW-IN ASSEMBLY 7' X 10", USED FOR
020-2060074	1	588.00	2	1176.00 EXTENSION 10" X 3' USE WITH XING GATE AND SIGNAL MAST
020-3261970	1	9.41	2	18.82 DECAL ASSY 2" BLACK PRESSURE SENSITIVE VINYL PRE-MASKED
020-4200880	1	0.53	2	1.06 CONNECTOR TERMINAL 2-3/8" CENTERS AAR 14.1.15-4 NICKEL
020-4200892	1	0.44	27	11.88 CONNECTOR TERMINAL 1" CENTERS AAR 14.1.15-3 NICKEL PLATED
020-4251190	1	0.13	120	15.60 TERMINAL RING AMP 35627 BLACK PLASTI-BOND WIRE SIZE 10-12
020-4251290	1	0.49	30	14.70 TERMINAL WIRE AMP 322051 BLUE WIRE SIZE NO 6 AWG 1/4" STUD
020-4251295	1	0.49	6	2.94 TERMINAL WIRE AMP 322007 BLUE WIRE SIZE NO 6 AWG 3/8" STUD
020-9999992	1	50.00	1	50.00 HOUSE, SIGNAL HANDLING CHARGE, BURCO DISTRIBUTION
022-5290559	1	325.00	1	325.00 CONVERTER WILMORE INPUT 10V DC TO 16V DC OUTPUT 13.6V DC
450-0019212	1	0.02	100	2.00 SCREW 10 X 1" SHT METAL PAN HD TYPE A COARSE THREAD
Total Cost: \$				9,147



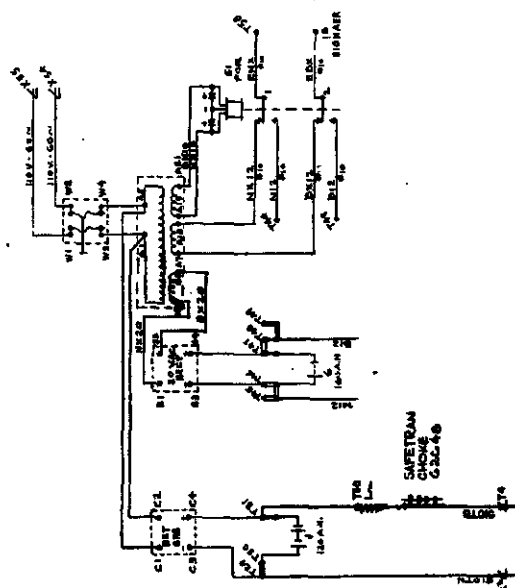
REF PLAN - 6122-0488

[illegible]

xerox

1	10-3-65	REFERENCE	LOCATION PLAN	COMAL & E. 8TH, HONOLULU, HI
2	11-10-65	1. 100' x 100' LOT 2. 100' x 100' LOT	CUT SECTION	
3	12-10-65	3. 100' x 100' LOT	3.6 MI. SOUTH OF HAWAII, OHIO	
4	1-10-66	4. 100' x 100' LOT	4. 100' x 100' LOT	
5	2-10-66	5. 100' x 100' LOT	5. 100' x 100' LOT	
6	3-10-66	6. 100' x 100' LOT	6. 100' x 100' LOT	
7	4-10-66	7. 100' x 100' LOT	7. 100' x 100' LOT	
8	5-10-66	8. 100' x 100' LOT	8. 100' x 100' LOT	
9	6-10-66	9. 100' x 100' LOT	9. 100' x 100' LOT	
10	7-10-66	10. 100' x 100' LOT	10. 100' x 100' LOT	
11	8-10-66	11. 100' x 100' LOT	11. 100' x 100' LOT	
12	9-10-66	12. 100' x 100' LOT	12. 100' x 100' LOT	
13	10-10-66	13. 100' x 100' LOT	13. 100' x 100' LOT	
14	11-10-66	14. 100' x 100' LOT	14. 100' x 100' LOT	
15	12-10-66	15. 100' x 100' LOT	15. 100' x 100' LOT	
16	1-11-67	16. 100' x 100' LOT	16. 100' x 100' LOT	
17	2-11-67	17. 100' x 100' LOT	17. 100' x 100' LOT	
18	3-11-67	18. 100' x 100' LOT	18. 100' x 100' LOT	
19	4-11-67	19. 100' x 100' LOT	19. 100' x 100' LOT	
20	5-11-67	20. 100' x 100' LOT	20. 100' x 100' LOT	
21	6-11-67	21. 100' x 100' LOT	21. 100' x 100' LOT	
22	7-11-67	22. 100' x 100' LOT	22. 100' x 100' LOT	
23	8-11-67	23. 100' x 100' LOT	23. 100' x 100' LOT	
24	9-11-67	24. 100' x 100' LOT	24. 100' x 100' LOT	
25	10-11-67	25. 100' x 100' LOT	25. 100' x 100' LOT	
26	11-11-67	26. 100' x 100' LOT	26. 100' x 100' LOT	
27	12-11-67	27. 100' x 100' LOT	27. 100' x 100' LOT	
28	1-12-68	28. 100' x 100' LOT	28. 100' x 100' LOT	
29	2-12-68	29. 100' x 100' LOT	29. 100' x 100' LOT	
30	3-12-68	30. 100' x 100' LOT	30. 100' x 100' LOT	
31	4-12-68	31. 100' x 100' LOT	31. 100' x 100' LOT	
32	5-12-68	32. 100' x 100' LOT	32. 100' x 100' LOT	
33	6-12-68	33. 100' x 100' LOT	33. 100' x 100' LOT	
34	7-12-68	34. 100' x 100' LOT	34. 100' x 100' LOT	
35	8-12-68	35. 100' x 100' LOT	35. 100' x 100' LOT	
36	9-12-68	36. 100' x 100' LOT	36. 100' x 100' LOT	
37	10-12-68	37. 100' x 100' LOT	37. 100' x 100' LOT	
38	11-12-68	38. 100' x 100' LOT	38. 100' x 100' LOT	
39	12-12-68	39. 100' x 100' LOT	39. 100' x 100' LOT	
40	1-1-69	40. 100' x 100' LOT	40. 100' x 100' LOT	
41	2-1-69	41. 100' x 100' LOT	41. 100' x 100' LOT	
42	3-1-69	42. 100' x 100' LOT	42. 100' x 100' LOT	
43	4-1-69	43. 100' x 100' LOT	43. 100' x 100' LOT	
44	5-1-69	44. 100' x 100' LOT	44. 100' x 100' LOT	
45	6-1-69	45. 100' x 100' LOT	45. 100' x 100' LOT	
46	7-1-69	46. 100' x 100' LOT	46. 100' x 100' LOT	
47	8-1-69	47. 100' x 100' LOT	47. 100' x 100' LOT	
48	9-1-69	48. 100' x 100' LOT	48. 100' x 100' LOT	
49	10-1-69	49. 100' x 100' LOT	49. 100' x 100' LOT	
50	11-1-69	50. 100' x 100' LOT	50. 100' x 100' LOT	
51	12-1-69	51. 100' x 100' LOT	51. 100' x 100' LOT	
52	1-2-70	52. 100' x 100' LOT	52. 100' x 100' LOT	
53	2-2-70	53. 100' x 100' LOT	53. 100' x 100' LOT	
54	3-2-70	54. 100' x 100' LOT	54. 100' x 100' LOT	
55	4-2-70	55. 100' x 100' LOT	55. 100' x 100' LOT	

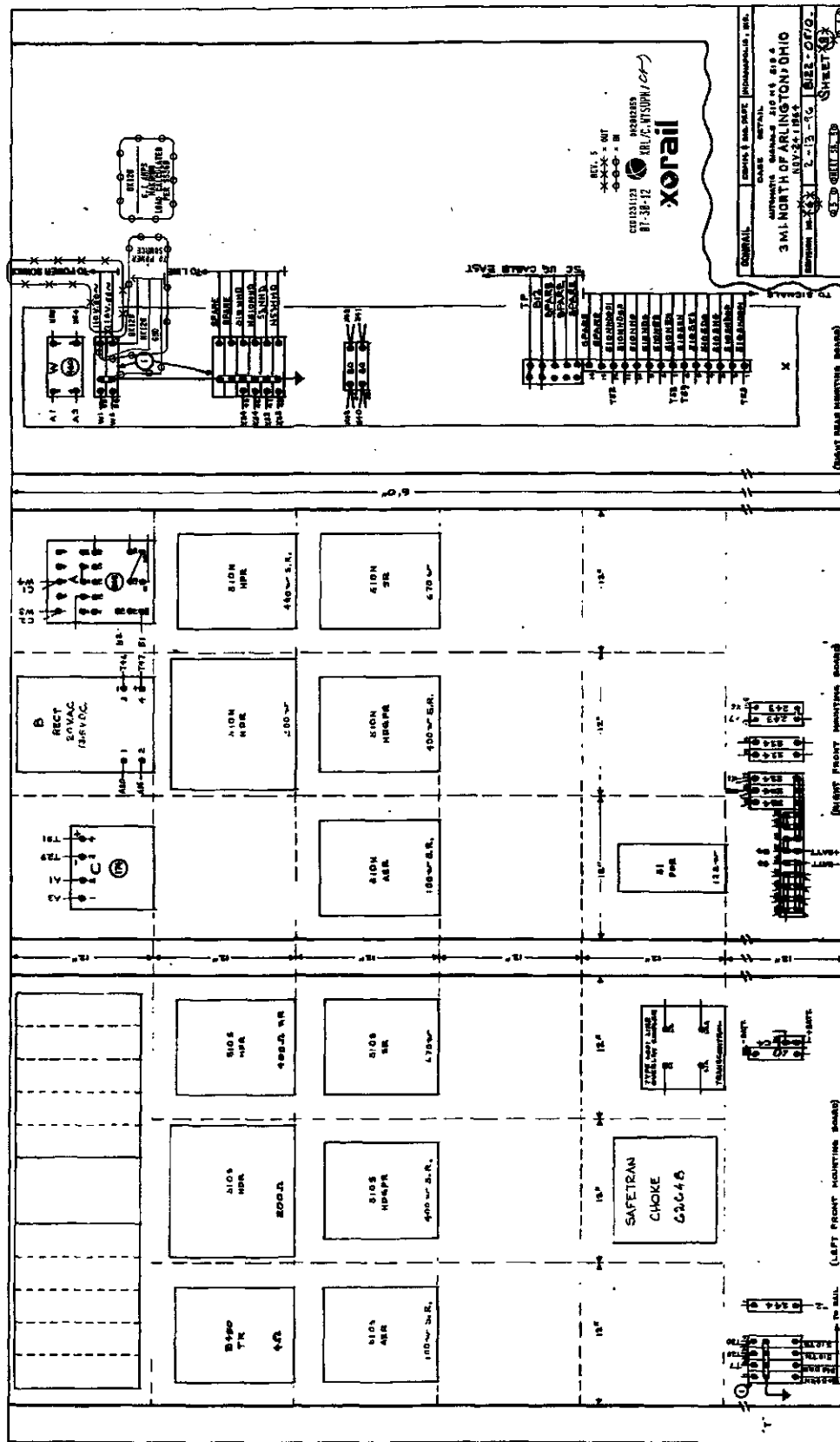
510 MHD
510 MHD
COMM ARM PINS 700



REV. 5
* * * * * INT
* * * * * IN
CS01251125
07-38-12
0N2512659
XRLVC. WY5UPH12097

xorail

CONTROL 5000 515 DET. INDIANAPOLIS, IND.
 LIGHTING & POWER DISTRIBUTION
 AUTOMATIC, SIGNALS FROM F-105
 2 MI. NORTH OF BELLINGTON, OHIO
 10/13/68 11:14
 2-13-68 5122-0510
 14* 14* SHEET 14*
 14* 14* 14*



3.1 NORTH OF ARLINGTON, OHIO
 NOV 24 1964
 SHEET 010
 3.1 NORTH OF ARLINGTON, OHIO
 NOV 24 1964
 SHEET 010

3.1 NORTH OF ARLINGTON, OHIO
 NOV 24 1964
 SHEET 010
 3.1 NORTH OF ARLINGTON, OHIO
 NOV 24 1964
 SHEET 010

3.1 NORTH OF ARLINGTON, OHIO
 NOV 24 1964
 SHEET 010
 3.1 NORTH OF ARLINGTON, OHIO
 NOV 24 1964
 SHEET 010

NEW WORK
 2231123 0121259
 38-12 XRL/C, WTSUPH/407
xorail

[illegible]

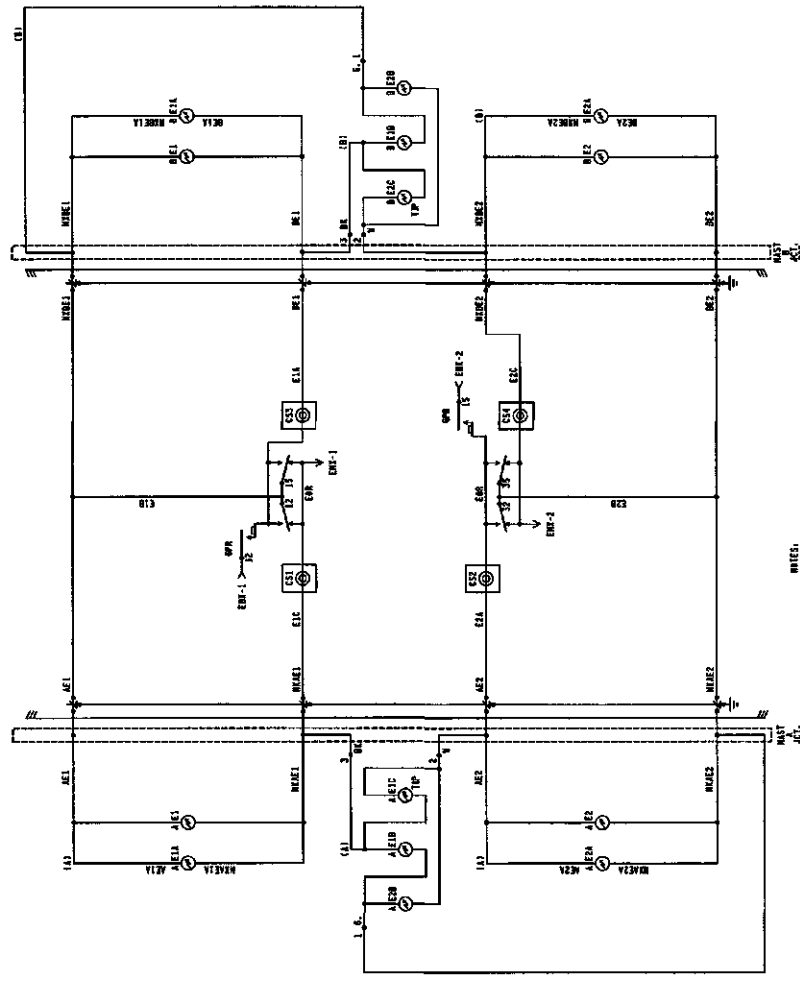
REVISIONS	DRAWING NO.		SHEET NO.		DATE	
	1122-PC-18	1	1122-PC-18	1	11-27-85	
						
RAIL TANK CARRIAGE ENGINEERING CORPORATION						
MOCKUP FOR 513732F						
INJECTION REPAIR PROGRAM						
ALBUQUERQUE, NM 87107-45						
	DESIGNED	CHECKED	DESIGNED	CHECKED	DATE	
	11/27/85	11/27/85	11/27/85	11/27/85	11-27-85	
	BY	BY	BY	BY	BY	
	1122-PC-18	1122-PC-18	1122-PC-18	1122-PC-18	1122-PC-18	
	1122-PC-18	1122-PC-18	1122-PC-18	1122-PC-18	1122-PC-18	

NEW WORK
C/O 1231123 082912859
87-30-12 XRL/C. NYSUPH/1259
xorail



NEW WORK
 08021255
 XRL/C. WYSPH/057
xorail

[illegible]



NOTES:
 1. TERMINAL IN ACT. BY
 2. WHEN 1 ON WIRE LAMP ON 1
 3. WHEN 2 ON WIRE LAMP ON 2
 4. WHEN 3 ON WIRE LAMP ON 3
 5. WHEN 4 ON WIRE LAMP ON 4

RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS		CROSSING WARNING DEVICE CIRCUITRY ALDERTON, NH M.P. 01-51.05	
DRAWING NO. 513732F		DATE 01-08-12	
DESIGNED BY: JH/CSH		CHECKED BY: JH/CSH	
NEXT FILE 513732F		NEXT SH 000105	
SHEET NO. 5		SHEET 004	

NEW WORK
 01-08-12
 01-08-12
 01-08-12
 01-08-12

xorail

NOTE TO INSPECTOR: AT IN SERVICE OF EVENT ANALYZER OR UPDATE OF ITS INTERNAL EXECUTIVE PROGRAM OR ITS USER PROGRAM, THE USER MUST BE INSERTED IN THE BLANK FIELDS OF EACH PROGRAM.

EVENT ANALYZER EXECUTIVE PROGRAM	VERSION 1.0	CHANGES ON	FIELD RECORD
CHART USER PROGRAM (IF NEEDED)	VERSION 1.0	CHANGES ON	CHART RECORD
SECTION SETTINGS			
DATE & TIME (REARLE ANALYST) DATE TIME x 1 (YES)	00-00-00 20 00:00		
SITE NAME	WASH ST 100-17-00-1		
DOT NUMBER	1234567		

BATTERY INPUTS	DC 01	DC 02	DC 03	DC 04
CHANNEL	1	2	3	4
BATTERY CHANNEL NAMES	1-2 BATT BATTERY	3-4 GATE BATTERY	5-6 GATE BATTERY	7-8 GATE BATTERY
BATTERY CHANNEL I.D.	1-2	3-4	5-6	7-8
CHANNEL PERIOD	1000 ms	1000 ms	1000 ms	1000 ms
RESOLUTION	1000 ms	1000 ms	1000 ms	1000 ms

BATTERY INPUTS	DC 01	DC 02	DC 03	DC 04	DC 05
CHANNEL	1	2	3	4	5
BATTERY CHANNEL NAMES	1-2 BATT BATTERY	3-4 GATE BATTERY	5-6 GATE BATTERY	7-8 GATE BATTERY	9-10 GATE BATTERY
BATTERY CHANNEL I.D.	1-2	3-4	5-6	7-8	9-10
CHANNEL PERIOD	1000 ms	1000 ms	1000 ms	1000 ms	1000 ms
RESOLUTION	1000 ms	1000 ms	1000 ms	1000 ms	1000 ms

BATTERY INPUTS	DC 01	DC 02	DC 03	DC 04	DC 05
CHANNEL	1	2	3	4	5
BATTERY CHANNEL NAMES	1-2 BATT BATTERY	3-4 GATE BATTERY	5-6 GATE BATTERY	7-8 GATE BATTERY	9-10 GATE BATTERY
BATTERY CHANNEL I.D.	1-2	3-4	5-6	7-8	9-10
CHANNEL PERIOD	1000 ms	1000 ms	1000 ms	1000 ms	1000 ms
RESOLUTION	1000 ms	1000 ms	1000 ms	1000 ms	1000 ms

BATTERY INPUTS	DC 01	DC 02	DC 03	DC 04	DC 05
CHANNEL	1	2	3	4	5
BATTERY CHANNEL NAMES	1-2 BATT BATTERY	3-4 GATE BATTERY	5-6 GATE BATTERY	7-8 GATE BATTERY	9-10 GATE BATTERY
BATTERY CHANNEL I.D.	1-2	3-4	5-6	7-8	9-10
CHANNEL PERIOD	1000 ms	1000 ms	1000 ms	1000 ms	1000 ms
RESOLUTION	1000 ms	1000 ms	1000 ms	1000 ms	1000 ms

EVENT ANALYZER EXECUTIVE PROGRAM	VERSION 1.0
CHART USER PROGRAM (IF NEEDED)	VERSION 1.0
DATE & TIME (REARLE ANALYST) DATE TIME x 1 (YES)	00-00-00 20 00:00
SITE NAME	WASH ST 100-17-00-1
DOT NUMBER	1234567

WHOLE INITIAL 4 BATT CURRENT SENSOR SERIAL NUMBER	1	2	3	4
RESOLUTION CANS BATT - CANS 2.0 AMP	1	2	3	4
INITIALLY ALLOCATED INITIAL INPUT	1	2	3	4
DIGITAL 4 BATT CURRENT SENSOR	1	2	3	4
NAME	1	2	3	4
LIT BATT CANS ON EACH CANS	1	2	3	4
APPROPRIATE BATT VOLT BATT VOLTAGE	1	2	3	4

NAME	1	2	3	4
RELAY OUTPUT #1	1	2	3	4
RELAY OUTPUT #2	1	2	3	4
RELAY OUTPUT #3	1	2	3	4
RELAY OUTPUT #4	1	2	3	4
RELAY OUTPUT #5	1	2	3	4
RELAY OUTPUT #6	1	2	3	4
RELAY OUTPUT #7	1	2	3	4
RELAY OUTPUT #8	1	2	3	4
RELAY OUTPUT #9	1	2	3	4
RELAY OUTPUT #10	1	2	3	4

NAME	1	2	3	4
RELAY OUTPUT #1	1	2	3	4
RELAY OUTPUT #2	1	2	3	4
RELAY OUTPUT #3	1	2	3	4
RELAY OUTPUT #4	1	2	3	4
RELAY OUTPUT #5	1	2	3	4
RELAY OUTPUT #6	1	2	3	4
RELAY OUTPUT #7	1	2	3	4
RELAY OUTPUT #8	1	2	3	4
RELAY OUTPUT #9	1	2	3	4
RELAY OUTPUT #10	1	2	3	4



NEW WORK
CORPORATION
87-38-12
RAILC.WISCONSIN

REVISIONS

REVISION	1	2	3	4	5	6	7	8	9	10
DATE	01-11-11	01-12-11	01-13-11	01-14-11	01-15-11	01-16-11	01-17-11	01-18-11	01-19-11	01-20-11

RAIL TRAVEL AND SIGNALS
COMMUNICATIONS AND SIGNALS
HOUSTON RD 513732F

REVISIONS

REVISION	1	2	3	4	5	6	7	8	9	10
DATE	01-11-11	01-12-11	01-13-11	01-14-11	01-15-11	01-16-11	01-17-11	01-18-11	01-19-11	01-20-11

REVISIONS

REVISION	1	2	3	4	5	6	7	8	9	10
DATE	01-11-11	01-12-11	01-13-11	01-14-11	01-15-11	01-16-11	01-17-11	01-18-11	01-19-11	01-20-11

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

TO: Rob Marvin, Director of Transportation, PUCO
Leah Thomas-Dalton, Deputy Chief, PUCO

FROM: Susan Kirkland, Manager, Safety Section, ORDC

BY: Tod Darfus, Project Manager, ORDC

SUBJECT: Wood County, CSX
Township Road 56, 228 808 A, PID 93329 *GILTON RD*

DATE: August 27, 2012

The Public Utilities Commission of Ohio (PUCO) established a diagnostic survey at the subject location on March 22, 2012. The Ohio Rail Development Commission (ORDC) attended the review. The Diagnostic Team recommended the improvement of warning devices to flashing lights and roadway gates. A copy of the diagnostic review form is attached.

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

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

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

Thank you for your assistance with these matters.

Attachment: Diagnostic Review
Plan & Estimate

c: George Martin, PUCO
T.Darfus (file)



Diagnostic Review Team Survey

Date: 3/22/2012

Location Data			
Street or Road Name: Girton Road			
Route/Road Number (i.e. Twp., Co., SR or US): TR 56		US DOT No.: 228808A	
County: Wood (WOO)	Township: Montgomery Twp	City: (In or Near)	
Railroad Name: CSX	Railroad Division: App-Chia	Branch/Line Name: Dan Sub	
Nearest RR Timetable Station: Bradner		RR Milepost: CD 96.79	

On-Site Review Team

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

1. Tod Darfus - ORDC - 614.374.9298 - tod.darfus@dot.state.oh.us

2. Ken Gilsdorf

3. Terry Ludban

4. George Martin PUCO 614-752-9107

5. Paul Walters Trustee Montgomery Twp

6. Terry Ludban CSX 724-652-3882

7. Ken Gilsdorf CSX 419-350-7997

8. Keith Wilson PUCO

9.

Existing Traffic Control Devices

Type of Warning Devices	Installed?		Quantity/Comments
Advance Warning Signs (condition?)	☒ Yes	☐ No	2 good
'Stop' Signs	☐ Yes	☒ No	
'Stop Ahead' Signs	☐ Yes	☒ No	
Pavement Markings (condition?)	☐ Yes	☒ No	
Crossbucks	☒ Yes	☐ No	2
Number of Tracks Signs	☒ Yes	☐ No	2 good
Inventory Tags	☒ Yes	☐ No	1 NE Quad
Interconnected Highway Traffic Signal	☐ Yes	☒ No	
Mast-Mounted Flashing Lights	☐ Yes	☒ No	
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	277	Date Run: 3/7/2012

Railroad Data

Railroad Characteristics	Initial Information (from database)	Revised
Total trains per day	32	22-24
< 1 per day		
Day thru trains	15	9
Night thru trains	15	
Daytime switching movements	2	2
Nighttime switching movements	0	
Total number of tracks		
Number of main tracks	2	2
Number of other tracks	0	
Maximum train speed	50	50
Typical train speed		45
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: Montgomery Twp

Roadway Characteristics	Initial Information (from database)	Revised
Average daily traffic	185 (2011)	185
Highway paved	☒ Yes ☐ No	☒ Yes ☐ No
Roadway Surface: ☒ Blacktop ☐ Gravel ☐ Concrete ☐ Other _____		
Roadway width: <u>20</u> ft.		
Number of highway lanes	2	2
Urban or Rural	Rural	Rural
Vehicle Speed: <u>55</u> MPH		
School Bus Operation: ☐ No ☒ Yes <u>37</u> Amount		No
Hazardous Materials Trucks: ☐ No ☐ Yes <u>3</u> 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: ☐ Functional (Curb height = 4" or more) ☐ Non-functional (Curb height = Less than 4") ☒ None	Quadrant _____ Curb and Gutter: ☐ Functional (Curb height = 4" or more) ☐ Non-functional (Curb height = Less than 4") ☒ 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 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 ☐ Industrial ☐ Residential	☐ Institutional ☐ Commercial Location of nearby schools: Lakota High 7-8 mile
Utility Information	
Is commercial power available? ☐ No ☒ Yes Utility Provider (Company Name) <u>Hancock Wood Co op</u> Phone Number _____ Nearest Available Power Source <u>@ Crossing</u> What other utilities are present? <u>Fiber on track side both sides</u> (add locations to sketch)	
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):

No

Crossing Consolidation or Closure:

No

Real Estate or ROW:

Twp = 60

CSX = 100

Culverts / Drainage / Ballast Conditions:

No

Roadway and/or Sidewalks:

No

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

Lighted Terr - No Overlap

Environmental:

No

Other:

Diagnostic Team Recommendations

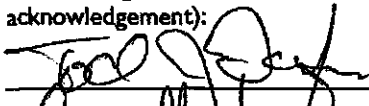
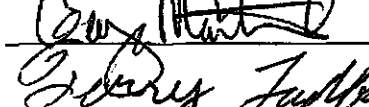
	Quadrants Needed
☒ Install/upgrade active devices	
☐ Automatic Flashing Lights (AFLS)	
☐ AFLS / Cants	
☒ AFLS / Gates	
☐ AFLS / Gates / Cants	
☒ Bells / number	2
☐ Upgrade circuitry / type	
☐ Sidelights	
☐ Guardrail Needed	
☐ Install/Replace curb	
☐ Bungalow placement & offset from rail & highway	SW Quad - 25/30 platform needed
☐ Other (define)	

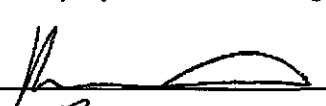
Comments:

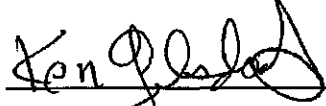
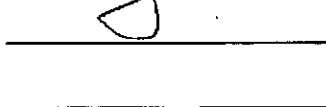
Set Foundations @ 10' of EOFR

☐ 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

Sidewalk

Parkway

Roadway

Roadway

Parkway

Sidewalk

Show North
Direction

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

Measurements 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.

Field Sketch

Include utilities as marked by OUPS and LHA; include ROW boundaries as indicated by railroad and LHA.

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

Sketch by: _____

**CSX TRANSPORTATION, INC.
FORCE ACCOUNT ESTIMATE**

Page 1

ACCT. CODE : 709 - OH0894

ESTIMATE SUBJECT TO REVISION AFTER: 1/28/2013		DOT NO.: 228808A
CITY: (near) Bradner	COUNTY: Wood	STATE: OH
DESCRIPTION: TR 56 (Girton Rd.) - Installation of FLS&G and bells.		
DIVISION: Chicago	SUB-DIV: Pemberville	MILE POST: CD - 96.79
AGENCY PROJECT NUMBER: PID 93329		

PRELIMINARY ENGINEERING:

200 Additive	31.34%	\$	-
230 Expenses		\$	-
212 Contracted & Administrative Engineering Services		\$	2,000
Subtotal		\$	2,000

CONSTRUCTION ENGINEERING/INSPECTION:

200 Additive	31.34%	\$	-
230 Expenses		\$	-
212 Contracted & Administrative Engineering Services		\$	2,000
Subtotal		\$	2,000

FLAGGING SERVICE: (Contract Labor)

070 Labor (Conductor-Flagman)		\$	-
050 Labor (Foreman/Inspector)		\$	-
070 Additive	73.76% (Transportation Department)	\$	-
050 Additive	97.95% (Engineering Department)	\$	-
230 Per Diem (Engineering Department)		\$	-
230 Expenses		\$	-
Subtotal		\$	-

<u>SIGNAL & COMMUNICATIONS WORK:</u>	(Details Attached)	\$	190,143
---	--------------------	----	---------

<u>TRACK WORK:</u>	(Details Attached)	\$	-
---------------------------	--------------------	----	---

ACCOUNTING & BILLING:

040 Labor		\$	2,500
040 Additive	63.03%	\$	1,576
Subtotal		\$	4,076

PROJECT SUBTOTAL

900 <u>CONTINGENCIES:</u>		\$	-
----------------------------------	--	----	---

GRAND TOTAL	*****	\$	198,219
--------------------	-------	----	----------------

DIVISION OF COST:

Agency	100.00%	\$	198,219
Railroad		\$	-
TOTAL	*****	\$	198,219

NOTE: Estimate is based on FULL CROSSING CLOSURE during work by Railroad Forces.

This estimate has been prepared based on site conditions, anticipated work duration periods, material prices, labor rates, manpower and resource availability, and other factors known as of the date prepared. The actual cost for CSXT work may differ based upon the agency's requirements, their contractor's work procedures, and/or other conditions that become apparent once construction commences or during the progress of the work

Office of Assistant Chief Engineer Public Projects--Jacksonville, Florida

Estimated prepared by:	BSE	Approved by:	ajd	CSXT Public Project Group
DATE:	8/1/2012	REVISD:	DATE:	8/6/2012

Form Revised 05-05-2010-LLS

Project Summary Sheet

Estimate No. 120616
CSX Transportation

Girton Rd. - Install Automatic Flashing Light Signals and Gates.
(near) Bradner, OH

DOT: 228808A

OP: OH0894

CSX Project: OH2012061

Summary

Material	\$ 78,657
Sales Tax	\$ 0
Labor:	
Construction Labor (94 man-days).....	\$ 25,585
Shop Labor (7 man-days).....	\$ 1,470
Subsistence (94 man-days).....	\$ 12,220
Railroad Engineering, Preliminary	\$ 4,519
Railroad Engineering, Construction	\$ 3,838
Additives to Construction Labor	\$ 22,559
Additives to Shop Labor	\$ 927
Additives to Track Labor	\$ 0
Additives to Engineering	\$ 2,619
Equipment Expenses (20 work days).....	\$ 13,000
Waste Management (20 work days).....	\$ 480
Contract Engineering	\$ 11,403
Freight	\$ 5,366
Poleline Removal	\$ 0
AC Power Service	\$ 2,500
Salvage	\$ 0
Vac Truck	\$ 5,000
TOTAL ESTIMATE COST	\$ 190,143

Date: 07/24/2012

Estimated By: Patrick Lahey

NOTE: This estimate should be considered void one year from date of estimate.

Shop Material List for CSX Project: OH2012061 (Effective: 07/24/2012)
Installation of FLS&G w/HXP-3R2 in a new 6'X6 House.
Bradner, OH - CD 96.79

Catalog Num	Cond	Unit Price	Qty	Cost	Description
020-0003386	1	6781.00	1	6781.00	HOUSE 6X6L ALUM INCLUDES 5 SHELFs, FARADAY CLOSET, 240V
020-0017120	1	11.52	6	69.12	BLOCK TERMINAL 12 POST SINGLE STRIP AAR 14.1.6 WITH 1 AAR
020-0017125	1	3.54	12	42.48	BLOCK TERMINAL 2 POST AAR 14.1.8 WITH 1 AAR 14.1.11
020-0017211	1	627.20	1	627.20	TRANSFORMER 010520-50X LIGHT 750VA MOD SLT 50 SAFETRAN PRI
020-0021965	1	8.96	1	8.96	EXTRACTOR DWG 59688-4 TERMINAL GRS CAT P3-308 REF
020-0022651	1	55.89	5	279.45	PLUGBOARD KIT TYPE B1 OR ST1 RELAY ASSEMBLY WITH 12 EACH
020-0022701	1	68.01	29	1972.29	ARRESTER LPC 15012-1 0-30V DC OR 0-24V AC RATED AT 15 AMP
020-0025595	1	20.72	1	20.72	WRENCH DWG 55393-3 GR1 "E" TERMINAL POST NUT GRS CAT
020-0053360	1	406.56	3	1219.68	CHARGER BATTERY ELC 12/20 S 20 AMP 10-19.9 VDC ROTARY SW
020-0053510	1	254.11	1	254.11	KIT 240V AC EMERGENCY GENERATOR CABLE AND
020-0660077	1	597.41	1	597.41	ARRESTER GE 9L10KAC213 FOR 240 VOLT SINGLE PHASE 3 WIRE
020-0750090	1	0.09	3	0.27	NUT INSULATED USE ON AAR BINDING POST TERMINAL FOR
020-0770060	1	13.84	12	166.08	ARRESTER US&S N451552-0201 TRACK SERIES RED LABEL USGA
020-0770105	1	22.40	4	89.60	ARRESTER HARMON 202217-000 AGE-1 TRACK AIR GAP EQUALIZER
020-1940055	1	14.22	1	14.22	CONTAINER CIRCUIT PRINT 24" SCHEDULE 20 4" PVC PIPE WITH
020-2501400	1	987.92	1	987.92	CONTROLLER DTMF RADIO KEY DOWN MODE 6 SET TIMER TO 60
020-2532515	1	32.48	2	64.96	MODULE RESISTOR ISLAND OUTPUT RESISTIVE LOAD ASSEMBLY 560
020-2552649	1	13853.29	1	13853.29	PREDICTOR 250829-4D00 HXP-3R2 4KHZ RSI HARMON DUAL TRACK
020-3430110	1	321.84	1	321.84	RELAY SAFETRAN 400004 500 OHMS CONTACTS 4FB-2F-1B CSX
020-3430115	1	421.20	1	421.20	RELAY SAFETRAN 400005 500 OHMS CONTACTS 4FB HEAVY DUTY
020-3430135	1	513.30	1	513.30	RELAY SAFETRAN 400213 460 OHMS CONTACTS 2FB CSX
020-3430170	1	413.95	1	413.95	RELAY SAFETRAN 400800-CSX 100/100 OHMS CONTACTS 6FB
020-3430185	1	431.55	1	431.55	RELAY SAFETRAN 400700-X 60 OHMS CONTACTS 4FB CSX
020-4200100	1	7.45	2	14.90	CONNECTOR BUS 1" CENTERS 1/2" X 36" 18 GAGE PUNCHED 1/4" X
020-4200340	1	1.74	12	20.88	LINK TEST ASSEMBLY 1" CENTERS COMPLETE WITH INSULATED

Shop Material List for CSX Project: OH2012061 (Effective: 07/24/2012)
Installation of FLS&G w/HXP-3R2 in a new 6'X6 House.
Bradner, OH - CD 96.79

Catalog Num	Cond	Unit Price	Qty	Cost	Description
020-4200350	1	2.06	9	18.54	LINK TEST ASSEMBLY 2-3/8" CENTERS COMPLETE WITH
020-8000067	1	14.87	2	29.74	LOCK AMERICAN H10SIGRA CSX SIGNAL PADLOCK WITH BLACK
020-8100044	1	3906.57	1	3906.57	RECORDER EVENT HAWK INCLUDES ETHERNET MODEM AND CURRENT
022-8005160	1	594.61	1	594.61	KIT CDMA AND VHF RADIO MATERIAL FOR USE WITH CSX
Total Cost: \$				33,735.84	

Field Material List for CSX Project: OH2012061 (Effective: 07/24/2012)
Installation of FLS&G w/HXP-3R2 in a new 6'X6 House.
Bradner, OH - CD 96.79

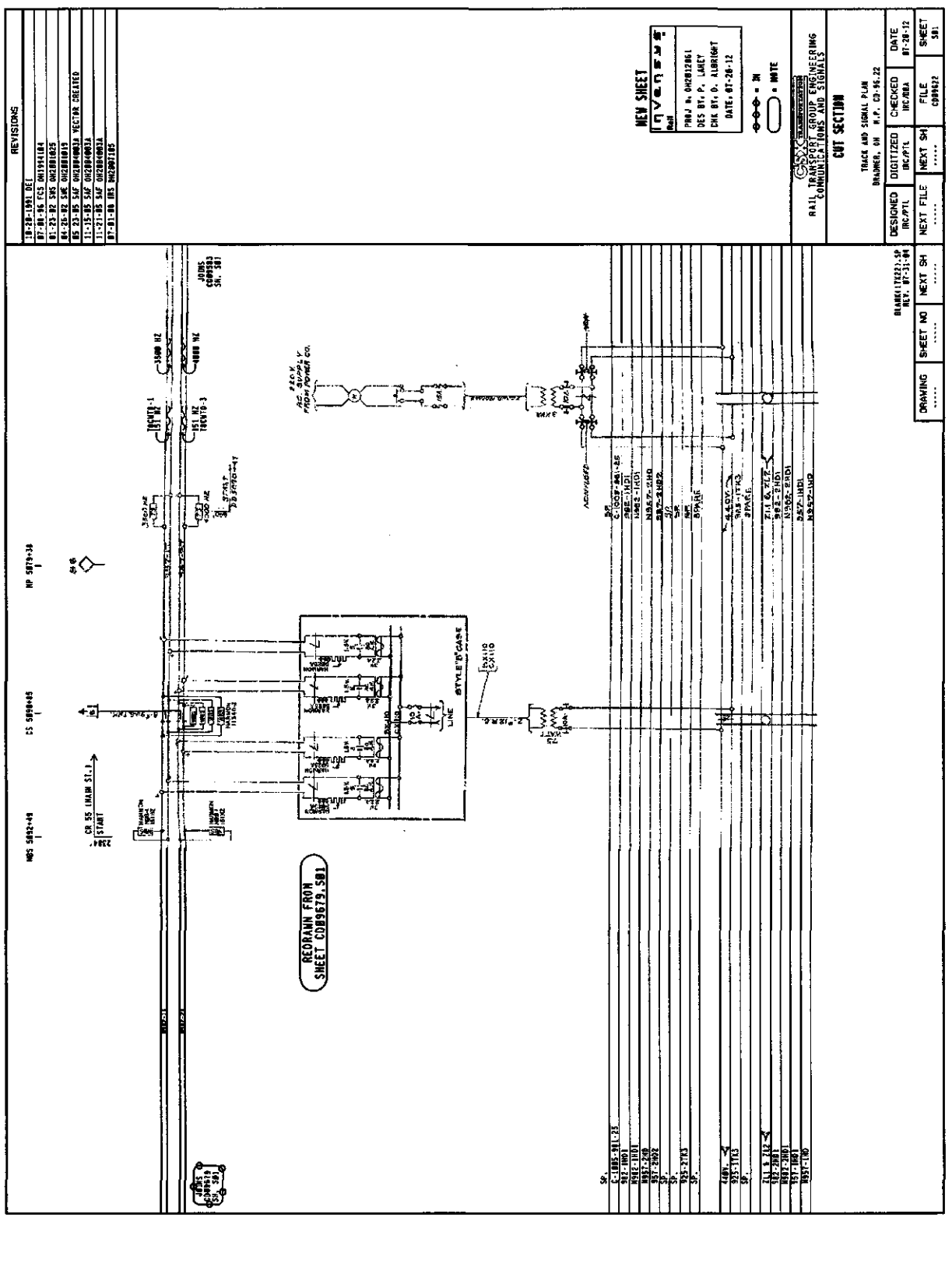
Catalog Num	Cond	Unit Price	Qty	Cost	Description
020-0010449	1	15.78	2	31.56	BOX, 9 INCH DIA. "FLOWER POT" ENCLOSURE WITH HD
020-0013908	1	7.31	300	2193.00	CABLE UG COMPOSITE 19 CONDUCTOR INCLUDES 13
020-0014700	1	12316.50	1	12316.50	PLATFORM SIGNAL 12' X 12' FOR 4' X 4' OR 6' X 6' HOUSE/CASE
020-0025145	1	343.27	4	1373.08	SHUNT ENCLOSURE INTERRAIL P/N IRS-SE8A WAYSIDE MOUNT
020-0052475	1	11.20	4	44.80	ARM EXTENSION 10-1/2" ALUM WITH 3/8" DIAMETER MOUNTING
020-0053066	1	4.59	16	73.44	BOND WEB OF RAIL TRACK CONNECTOR 3/16" DIA X 1" TAB
020-0053220	1	2.64	150	396.00	CABLE POWER UG 3 COND NO 6 AWG - SHOW LENGTH ON EACH
020-0054075	1	1006.88	2	2013.76	GATE GARD NORMAL MOVEMENT COMPLETE WITH SHEAR PIN AND
020-0055421	1	18.61	6	111.66	BRACKET SIGN 4" OR 5" MAST W/1/2" U-BOLT FOR ALL SIGNS
020-0056181	1	46.37	2	92.74	SIGN MULTIPLE TRACK "2 TRACKS" COMPLETE WITH 2 EACH
020-0056421	1	18.61	4	74.44	BRACKET SIGN 4" OR 5" MAST FOR ALL SIGNS REQUIRING 5/8"
020-0056674	1	5870.84	2	11741.68	SIGNAL 0220-L GCWD GATE ASSY DWG SS222 INCLS 18 FBRGL ARM
020-0057275	1	1.23	625	768.75	WIRE UG TRACK TWISTED PAIR NO. 6 AWG SOLID CONDUCTOR
020-1040322	1	150.52	29	4365.08	BATTERY SAFT SPL165, 165 AH POCKET PLATE NICKEL CADMIUM
020-1040540	1	31.36	2	62.72	TRAY BATTERY FIBER CO 82687-1-P 12" WIDTH 24" LONG
020-1040550	1	45.92	2	91.84	TRAY BATTERY FIBER CO 82687-3-P 12" WIDTH 38"
020-1150750	1	0.95	200	190.00	BOND STRAND 3/16" DIA 7 STRANDS OF 19 STR EACH 6 WITH
020-1153550	1	4.31	8	34.48	CLIP TRACK WIRE RETAINER UNIVERSAL RAIL BASE WRAP
020-1360014	1	854.41	1	854.41	PACKAGE FOREMANS CARE FOR ALUMINUM TYPICAL BOM FOR USE
020-1360016	1	22.49	1	22.49	PACKAGE SAFETY & SECURMENT WITH 1 EA CAUTION TAG 1 EA
020-1360103	1	1381.37	1	1381.37	LAYOUT METER SERVICE WITH 25' POLE CSX DWG SS351 SH 2 ITEMS
020-2531280	1	265.93	4	1063.72	SHUNT HARMON 250250-267 NBS-1-10 267HZ 10 FT LEADS
020-3263656	1	1.77	8	14.16	SLEEVE BONDSTRAND 3/16" TO 3/16" 100 PER BOX, NICOPRESS
020-3263680	1	0.35	40	14.00	STAPLE COPPERWELD ROLLED POINT 1-3/4" LONG, 3/8"
020-3901895	1	92.68	2	185.36	TIP FLEX HWY CROSSING GATE 24 IN LONG RED & WHITE STRIPES

Field Material List for CSX Project: OH2012061 (Effective: 07/24/2012)
Installation of FLS&G w/HXP-3R2 in a new 6'X6 House.
Bradner, OH - CD 96.79

Catalog Num	Cond	Unit Price	Qty	Cost	Description
020-3920200	1	181.17	2	362.34	BELL GCWD ELECTRONIC 4" OR 5" MAST 8 TO 13 VOLTS DC GSI PN
020-3930010	1	3.70	2	7.40	KIT GATE ARM WARNING STICKER KIT INCLUDES 1-EA 5"X3"
020-4200340	1	1.74	33	57.42	LINK TEST ASSEMBLY 1" CENTERS COMPLETE WITH INSULATED
020-4200900	1	0.30	6	1.80	CONNECTOR SHEATHING AMP 329860 FOR NO. 14 WIRE
020-4201042	1	0.15	49	7.35	NUT HEX BINDING (RSA NUT) AAR 14.1.11-6 14-24 NS-2 THD CONE
020-4201043	1	0.12	294	35.28	NUT HEX CLAMP (FLAT NUT) AAR 14.1.11-7 14-24 NS-2 THD FLAT
020-4201044	1	0.11	245	26.95	WASHER AAR 14.1.11 ROUND COPPER NICKEL PLATED FOR AAR
020-7300031	1	200.48	2	400.96	BRACKET BELL FITS WESTERN CULLEN HAYES JUNCTION BOX
020-9999991	1	100.00	1	100.00	BLOCKING AND BRACING FOR PROJECTS BURCO DIST
250-0001827	1	14.69	1	14.69	BREAKER CIRCUIT SQ D QO235
250-1680406	1	0.52	80	41.60	CONDUIT LIQUID TIGHT 3/4" FLEXIBLE GREY PVC CARLON P/N
250-1680408	1	1.16	80	92.80	CONDUIT LIQUID TIGHT 3/4" NON-METALLIC ORANGE PVC
360-0006100	1	35.07	1	35.07	STOOL STEP WOOD 14"X 20" SIGNAL MAINTAINERS CSXT
360-0800145	1	5.00	1	5.00	BROOM WAREHOUSE CORN HVY DUTY ID300
Total Cost: \$				40,699.7	

Consumables List for CSX Project: OH2012061 (Effective: 07/24/2012)
Installation of FLS&G w/HXP-3R2 in a new 6'X6 House.
Bradner, OH - CD 96.79

Catalog Num	Cond	Unit Price	Qty	Cost Description
N/A		50.00	1	50.00 FILL MATERIAL, 1 CUBIC YARD
N/A		800.00	1	800.00 WALKWAY ROCK, 10 CUBIC YARDS
020-0017605	1	0.33	350	115.50 WIRE CASE 10 AWG FLEX CSX SPEC SS796 OKONITE
020-0017607	1	0.78	500	390.00 WIRE CASE TW PR NO 10 AWG FLEX CSX SPEC SS796 TWIST 2
020-0017625	1	0.46	150	69.00 WIRE CASE TW PR NO 14 AWG FLEX CSX SPEC SS796 TWIST 2
020-0017630	1	0.15	200	30.00 WIRE CASE NO 16 AWG FLEX CSX SPEC SS796 FURN 1000 FT SPOOL
020-0017635	1	0.80	130	104.00 WIRE SIGNAL DEL 018 NO 6 COPPER STRANDED SINGLE
020-0028610	1	0.23	100	23.00 TERMINAL RING AMP 35628 YELLOW PLASTI-BOND HVY DUTY
020-1710055	1	1.99	200	398.00 CONDUIT SDR 13.5 4" ORANGE POLYETHYLENE TRENCHLESS
020-2060072	1	457.00	2	914.00 FOUNDATION HELICAL SCREW-IN ASSEMBLY 7' X 10", USED FOR
020-2060074	1	366.00	2	732.00 EXTENSION 10" X 3' USE WITH XING GATE AND SIGNAL MAST
020-3261970	1	9.41	2	18.82 DECAL ASSY 2" BLACK PRESSURE SENSITIVE VINYL PRE-MASKED
020-4200880	1	0.53	2	1.06 CONNECTOR TERMINAL 2-3/8" CENTERS AAR 14.1.15-4 NICKEL
020-4200892	1	0.44	27	11.88 CONNECTOR TERMINAL 1" CENTERS AAR 14.1.15-3 NICKEL PLATED
020-4251190	1	0.14	120	16.80 TERMINAL RING AMP 35627 BLACK PLASTI-BOND WIRE SIZE 10-12
020-4251290	1	0.53	30	15.90 TERMINAL WIRE AMP 322051 BLUE WIRE SIZE NO 6 AWG 1/4" STUD
020-4251295	1	0.53	6	3.18 TERMINAL WIRE AMP 322007 BLUE WIRE SIZE NO 6 AWG 3/8" STUD
020-9999992	1	50.00	1	50.00 HOUSE, SIGNAL HANDLING CHARGE, BURCO DISTRIBUTION
022-5290559	1	325.00	1	325.00 CONVERTER WILMORE INPUT 10V DC TO 16V DC OUTPUT 13.6V DC
280-8020180	1	56.79	2	113.58 WELD FIELD COMPLETE 136RE RAILTECH BOUTET P/N
450-0019212	1	0.40	100	40.00 SCREW 10 X 1" SHT METAL PAN HD TYPE A COARSE THREAD
Total Cost: \$				4,221.72



REVISIONS	
12-28-1991	NE
01-04-1992	CS
01-23-92	CS
04-26-92	CS
05-23-92	CS
11-15-92	CS
11-27-92	CS
07-01-93	CS

MP 5879+34
CS 5890445
MS 5892+48

CR 55 (MAIN ST.)
START

JOINS
COMPASS
SN. 581

AC SUPPLY
FROM POWER CO.

LINE STYLE CASE

REDRAWN FROM
SHEET CD9679.581

NEW SHEET

PROJ. N. 00012861
DES. BY P. J. LUCY
CHK. BY D. ALBRIGHT
DATE: 07-28-12

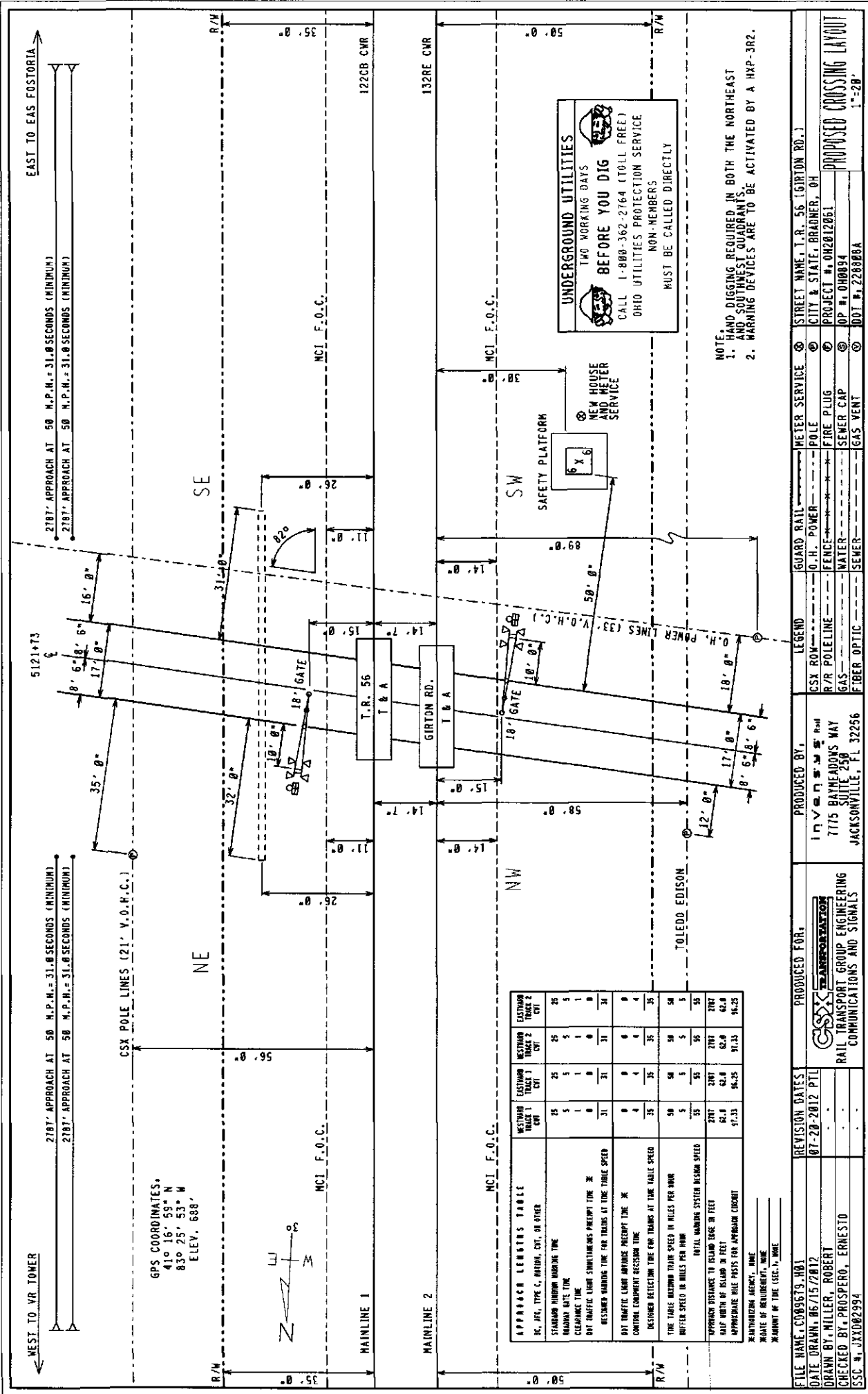
RAIL TRANSPORTATION ENGINEERING
COMMUNICATIONS AND SIGNALS

TRACK AND SIGNAL PLAN
BIRMINGHAM, AL. R.P. CD-96.22

DESIGNED	DIGITIZED	CHECKED	DATE
INC/PTL	INC/PTL	INC/PTL	07-28-12

DRAWING	SHEET NO.	NEXT SH.
CD9679.581	1	2

FILE	FILE	SHEET
CD9679.581	CD9679.581	1



APPROACH LENGTHS TABLE

IC, JFC, TYPE C, RAIL, CWT, OR OTHER	ESTIMATED TIME (MIN)	ESTIMATED TIME (SEC)	ESTIMATED TIME (MIN)	ESTIMATED TIME (SEC)
STANDARD HINDEN WARNING TIME	25	25	25	25
RAILWAY GATE TIME	5	5	5	5
CLEARANCE TIME	1	1	1	1
DOT TRAFFIC LIGHT SIMULTANEOUS PRESENT TIME *	1	1	1	1
RESUMED WARNING TIME FOR TRAINS AT TIME TABLE SPEED	31	31	31	31
DOT TRAFFIC LIGHT ADVANCE PRECEPT TIME *	0	0	0	0
CONTROL EQUIPMENT DECESSION TIME	4	4	4	4
DESIGNED DETECTION TIME FOR TRAINS AT TIME TABLE SPEED	25	25	25	25
TIME TABLE WARNING TRAIN SPEED IN MILES PER HOUR	50	50	50	50
BUFFER SPEED IN MILES PER HOUR	5	5	5	5
INITIAL WARNING SYSTEM DESIGN SPEED	55	55	55	55
APPROXIMATE DISTANCE TO ISLAND ENDS IN FEET	2787	2787	2787	2787
HALF NORTH OF ISLAND IN FEET	62.0	62.0	62.0	62.0
APPROXIMATE MILE POSTS FOR APPROACH CLOSURE	51.33	56.25	51.33	56.25

FILE NAME: C089573.H01
DATE DRAWN: 06/15/2012
DRAWN BY: MILLER, ROBERT
CHECKED BY: PROSPERO, ERNESTO
SSC #: JX002994

REVISION DATES:
 07-20-2012 PTL

PRODUCED FOR:
 CSX TRANSPORTATION
 RAIL TRANSPORT GROUP ENGINEERING
 COMMUNICATIONS AND SIGNALS

PRODUCED BY:
 12775 BAYMEADOWS WAY
 SUITE 250
 JACKSONVILLE, FL 32256

LEGEND:
 CSX ROW --- O.H. POWER ---
 R/R POLELINE --- FENCE ---
 GAS --- WATER ---
 FIBER OPTIC --- SEWER ---

METER SERVICE:
 METER SERVICE --- POLE ---
 FIRE PLUG ---
 SEWER CAP ---
 GAS VENT ---

STREET NAME: T.R. 56 (GIRTON RD.)
CITY & STATE: BRADNER, OH
PROJECT #: 04202061
OP #: 000894
DOT #: 228806A

PROPOSED CROSSING LAYOUT
 1"=20'

INDEX

CONTENTS

SH. NO.		REVISION NO.								
		1	2	3	4	5	6	7	8	9
101	INDEX AND REVISIONS									
102	TRACK AND SIGNAL PLAN									
103	POWER DISTRIBUTION									
104	CROSSING DETECTION CIRCUITRY									
105	DETECTION DEVICE PROGRAM									
106	CROSSING WARNING DEVICE GATE CIRCUITRY									
107	CROSSING WARNING DEVICE LIGHT CIRCUITRY									
108	RECORDER AND DTIME CONTROLLER CIRCUITS									
109	RECORDER PROGRAM									

☒ = DESIGN COMPLETED
☒ = REVISION COMPLETED

REVISIONS			
REV. NO.	PROJECT NO.	DESIGN DATE	IN SERVICE DATE
1	002812861	07-28-12	

TO BE COMPLETED
ON A.I.S.

NEW WORK

PROJ #, 002812861
DES BY, P. LAHEY
CHK BY, D. ALBRIGHT
DATE, 07-28-12

NOTE

21RPH03CPML.101
REV. 09-30-10

DESIGN DATE	REV. NO.
07-28-12	1

RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

T.R. 56 (GIRTON RD.) 228000A

INDEX AND REVISIONS
BRANNER, MN R.P. CD-36.79

DESIGNED	DIGITIZED	CHECKED	DATE
JRC/PTL	JRC/PTL	JRC/PTL	07-28-12
DRAWING	SHEET NO	FILE	SHEET
.....		CD99579	101

79000

HXP-3R2 APPLICATION DESIGN CARD									
OPTION 99 (CABINET #)	CABINET #	TRACK 1	TRACK 2	TRACK 3	TRACK 4	TRACK 5	TRACK 6	TRACK 7	TRACK 8
PASSWORD	2107	2107	2107	2107	2107	2107	2107	2107	2107
APPROACH LENGTH ADJUSTMENT	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
WARNING TIME ADJUSTMENT	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
LUMPED IMPEDANCE ADJUSTMENT (LIA)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
TRANSMITTER CHECK ADJUSTMENT (TIC)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
MOTION DETECT RESTART (MD-RST)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
MOTION DETECT RESTART (MD-RST)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
OPTION 1 TRACK ENABLE (TK-ENA)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
OPTION 2 TRACK FREQUENCY (TK-FQ)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
OPTION 3 CONSTANT WARNING/MOTION (CW-MO)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
OPTION 4 UNIDIRECTIONAL (UNI-BI)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
OPTION 5 NARROW BAND COMPENSATION (NBS-C)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
OPTION 6 ONE WARNING TIME (COW-T)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
OPTION 7 LOSS OF SHUNT TIME (LOS)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
OPTION 8 LOS K/JADENTS NEAR ISLAND (LJ-LOS)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
OPTION 9 BALLAST COMPENSATION (BC)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
OPTION 10 PHASE COMPENSATION ADJUSTMENT (P-COMP)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
AX OPTIONS									
ITEM 1 TRACK ASSIGNMENT (TK-ASM)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
ITEM 2 OFFSET DISTANCE TRACK 1 (OF-TL1)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
ITEM 3 OFFSET DISTANCE TRACK 2 (OF-TL2)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
ITEM 4 WARNING TIME (WT)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
ITEM 5 MOTION DETECT RESTART (MD-RST)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
ITEM 6 CONSTANT WARNING/MOTION (CW-MO)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
ITEM 7 CLEAR JOINTS (CJ-LOS)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
ITEM 8 POST JOINT DETECTION (PJ-BET)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
ITEM 9 POST JOINT RX (PJ-RX)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
ITEM 10 POSITIVE START	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
OPTION 17 MDR DRIVE OR AX RELAY DRIVE SELECTION (MDR-AX)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
OPTION 17 SUB-MENU	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
ITEM 1 MDR-AX OFFSET DISTANCE TRK. 1 (OF-TL1) & TRK. 2 (OF-TL2)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
ITEM 2 MDR-AX CLEAR JOINT LOS TIME (CJ-LOS)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
ITEM 3 MDR-AX POST JOINT DETECTION TIME (PJ-BET)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
ITEM 4 POST JOINT RX (PJ-RX)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
OPTION 18 MOTION DETECTOR TIMER (MD-TMR)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
OPTION 19 MINIMUM WARNING TIME WITH ADVANCED PREEMPTION (MIN-WT)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
OPTION 20 FALSE SHUNT TIMER ADJUSTMENT (FS-TMR)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
ITEM 1 FALSE SHUNT RX (FS-RX)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
OPTION 21 POSITIVE START RX & TIMER ADJUSTMENT (POS-ST)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
ITEM 1 POSITIVE START RX (POS-RX)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
ITEM 2 POSITIVE START TIMER (POS-TN)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
OPTION 22 APPROACH RELEASE RX (AR-RX)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
ITEM 1 APPROACH RELEASE RX (AR-RX)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
ITEM 2 APPROACH RELEASE TIMER (AR-TN)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
OPTION 47 AUTO RX ADJUSTMENT (ATO-RX)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
OPTION 48 PREDICTIVE FILTER ENABLE/DISABLE (PF-ENA)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
OPTION 49 RESET LOCAL PARAMETERS TO DEFAULT SETTINGS (RESET)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
OPTION 50 RECORDER PRINTER CONTROL (PRNTR)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
OPTION 51 CLOCK ADJUSTMENT (CLOCK)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
OPTION 70 LOCAL SERIAL I/O PORT ADJUSTMENT (LSP)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
ITEM 1 BAUD RATE	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
ITEM 2 ORBITS (DATA BITS)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
ITEM 3 PA (PARITY)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
OPTION 99 CABINET NUMBER DISPLAY (CAB)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
OPTION 91 HXP-3 OPERATING PROGRAM VERSION NUMBER (VERS)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.
OPTION 99 RESET PASSWORD TIMER (TIMER)	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.	31 SEC.

NOTE:

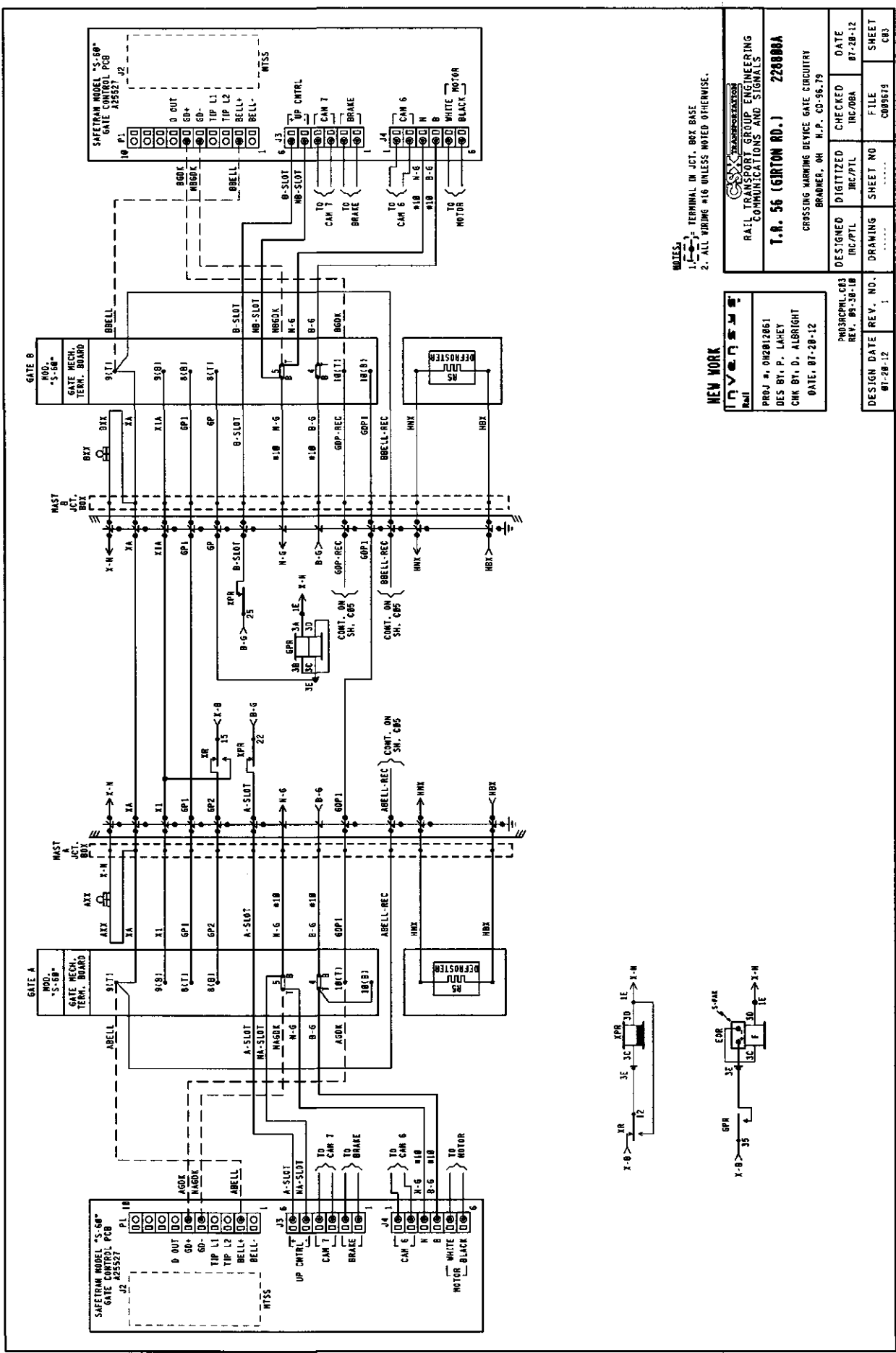
- * = ENTRY TO BE DONE ON AS-IN-SERVICE.
- ☆ = NORMALLY SET AT "0" SEE MANUAL 100052-001 AND Pg. 1-46 & 3-41.
- ◇ = THE WORD STRAP IS DISPLAYED WHEN FREQUENCY SELECT DIP SWITCHES USED TO SELECT A STANDARD FREQUENCY.
- ⊗ = ADJUSTMENT NECESSARY ONLY WHEN AX RELAY DRIVE MODULE USED.
- ** = ADJUSTMENT NECESSARY IF INSULATED POINTS ARE LOCATED NEAR ISLAND CIRCUIT.
- *** = ADJUSTMENT NECESSARY ONLY IF VERY POOR BALLAST CONDITIONS NEED TO BE COMPENSATED.
- = OPTION 17 SUB-MENU USED ONLY WHEN AX RELAY DRIVE MODULE IS USED. IF OTHER THAN ZERO ASSIGNS A MOR AS AN AX DRIVE.
- △ = WHEN AXD MODULES ARE NOT INSTALLED, THEIR ASSOCIATED OPTIONS AND ADJUSTMENTS ARE NOT DISPLAYED.
- ** = PROGRAM UNUSED AX OPTION(S) SAME AS OPTION 17. IF AX OPTION 17 OR 15 IS USED IN THE FUTURE THEN REPROGRAM AS APPLICABLE.
- ⊙ = FREQUENCY DEPENDANT, RANGE BETWEEN 50-250 TO BE SUPPLIED ON AS-IN-SERVICE.
- ⊕ = OPTIONS 50-99 ARE NON-VITAL AND NOT REQUIRED FOR INITIAL SETUP. SEE MANUAL 100052-001 A49. FOR OPTIONS 49 TO 99 SEE PAGES AS LISTED IN DEFAULT COLUMN.
- ⊗ = SET CORRECT LOCAL TIME AND DATE. TIME OF DAY SHOULD BE SYNCHRONIZED WITH TIME SHOWN BY EXTERNAL EVENT RECORDER.

NEW WORK

PROJ # 0102012061
DES BY: P. LAHEY
CHK BY: D. ALDRIGHT
DATE: 07-20-12

RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS		T.R. 56 (GIRTON RD.) 220808A	
DESIGNED INC/PTL		CHECKED INC/PTL	
DATE 07-20-12		SHEET NO 000659	
DRAWING		FILE	
SHEET NO		C00659	

DETECTION DEVICE PROGRAM BROOKER, NM M.P. CO-96.79	
DESIGNED INC/PTL	CHECKED INC/PTL
DATE 07-20-12	SHEET 000659



NOTES:
1. TERMINAL IN JCT. BOX BASE
2. ALL WIRING #16 UNLESS NOTED OTHERWISE.

NEW YORK

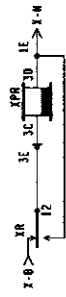
PROJ. #, 012012061
DES BY, P. LAHEY
CHK BY, D. ALBRIGHT
DATE, 07-28-12

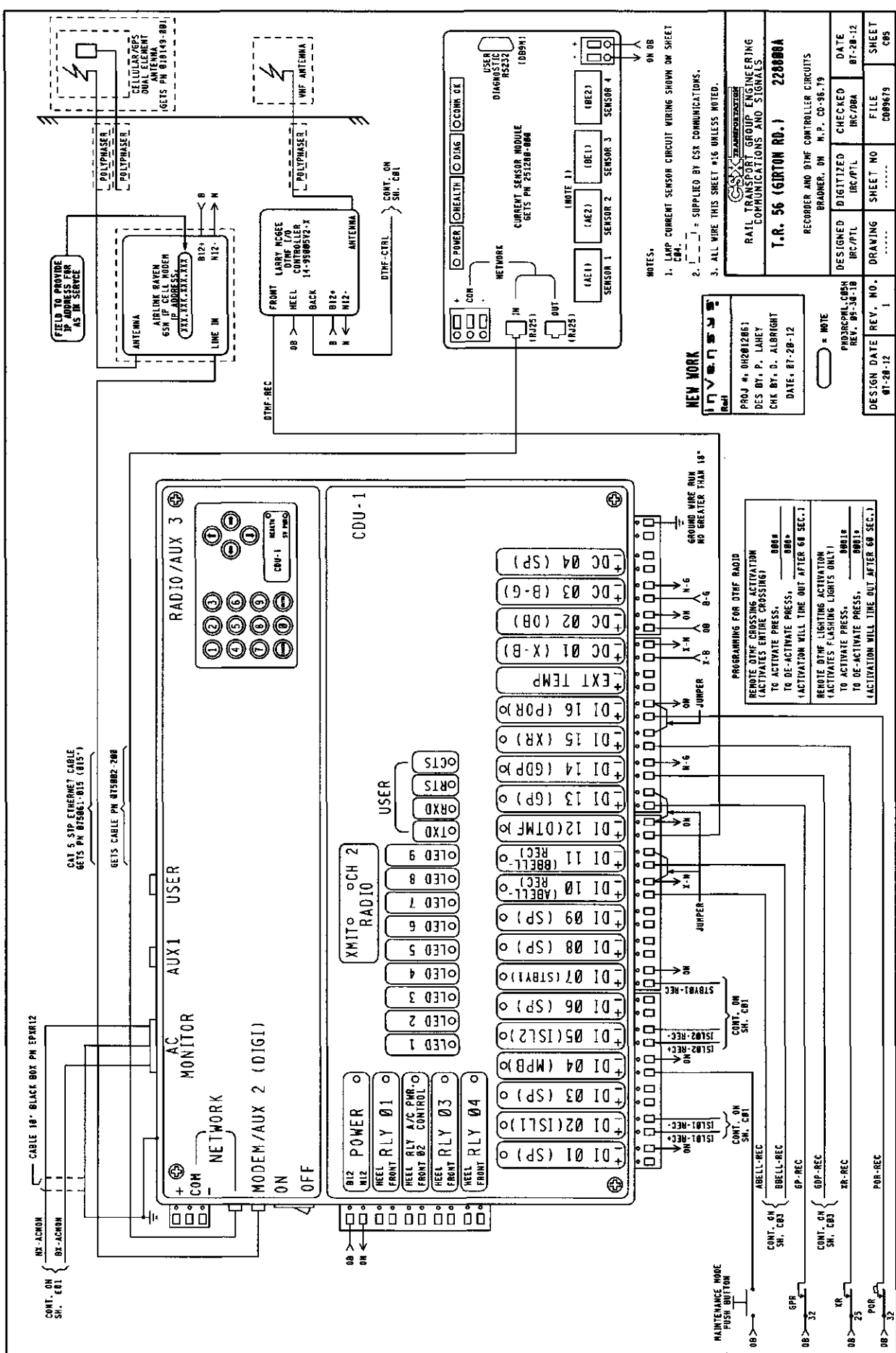
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

T.R. 56 (GORTON RD.) 220808A

CROSSING WARNING DEVICE GATE CIRCUITRY
BRADNER, OH N.P. CO-56-79

DESIGNED	DIGITIZED	CHECKED	DATE
IRC/PTL	IRC/PTL	IRC/DBA	07-28-12
DRAWING	SHEET NO	FILE	SHEET
07-28-12	1	009579	083





NOTE TO INSPECTOR: AT IN SERVICE OF EVENT ANALYZER OR UPDATE OF ITS INTERNAL EXECUTIVE PROGRAM OR ITS CSAT USER PROGRAM, THE VERSION NUMBER AND COMPILATION DATES OF EACH PROGRAM MUST BE INSERTED IN THE BLANK FIELDS.

EVENT ANALYZER EXECUTIVE PROGRAM	VERSION 3.1	COMPILED ON 08-11-2003	FIELD RECORD
CSAT USER PROGRAM (IF LOADED)	VERSION 1.0	COMPILED ON 12-01-03 (HW-00-TT)	
SYSTEM SETTINGS			
DATE & TIME (ENABLE DAYLIGHT SAVING TIME = Y (YES))	MM-DD-YY 23:01:59		
MILE POST	X12-789-01		
SITE NAME	RAIL ST (SR-17, US-11)		
DOT NUMBER	12345678		

BATTERY INPUTS	DC 01	DC 02	DC 03	DC 04
CHANNEL	1	2	3	4
BATTERY CHANNEL NAMES	X-B BULB BATTERY	0-B ELECTRONIC BATTERY	B-B GATE BATTERY	SPARE
BATTERY CHANNEL I.D.	X-B	0-B	B-B	SP
SAMPLE PERIOD	500 ms	500 ms	500 ms	10,000 ms
RESOLUTION	00.2 V	01.0 V	01.0 V	02.0 V

DIGITAL INPUTS	01 01	01 02	01 03	01 04	01 05
CHANNEL	1	2	3	4	5
NAME	ISLAND TRACK 1	ISLAND TRACK 2	MAINTENANCE PB	ISLAND TRACK 2	ISL
ID	SP	ISL	MPB	ISL	ISL
ON NAME	ISL 1 ON	ISL 1 ON	MAINTENANCE PB HI	ISL 2 ON	ISL 2 ON
ON DEBOUNCE TIME	1000 ms	1000 ms	100 ms	100 ms	100 ms
OFF DEBOUNCE TIME	1000 ms	1000 ms	100 ms	100 ms	100 ms
TOGGLE PERIOD	500 ms	500 ms	500 ms	500 ms	500 ms

DIGITAL INPUTS	01 06	01 07	01 08	01 09	01 10
CHANNEL	6	7	8	9	10
NAME	STANDBY 1	STANDBY 1	ABELL REC	ABELL REC	ABELL REC
ID	SP	SP	SP	SP	SP
ON NAME	STANDBY UNIT	STANDBY UNIT	BELL RINGING	BELL RINGING	BELL RINGING
ON DEBOUNCE TIME	1000 ms	1000 ms	1000 ms	1000 ms	1000 ms
OFF DEBOUNCE TIME	1000 ms	1000 ms	1000 ms	1000 ms	1000 ms
TOGGLE PERIOD	500 ms	500 ms	500 ms	500 ms	500 ms

DIGITAL INPUTS	01 11	01 12	01 13	01 14	01 15	01 16
CHANNEL	11	12	13	14	15	16
NAME	BELL REC	DTMF TEST	GATE VERTICAL	GATE HORIZONTAL	AC POWER OFF	AC POWER OFF
ID	BELL REC	DTMF	GPR	GPR	POW	POW
ON NAME	BELL RINGING	DTMF TEST ON	GATE VERTICAL	GATE HORIZONTAL	AC POWER ON	AC POWER ON
ON DEBOUNCE TIME	1000 ms	1000 ms	1000 ms	1000 ms	1000 ms	1000 ms
OFF DEBOUNCE TIME	1000 ms	1000 ms	1000 ms	1000 ms	1000 ms	1000 ms
TOGGLE PERIOD	500 ms	500 ms	500 ms	500 ms	500 ms	500 ms

EVENT ANALYZER ETHERNET PORT SETUP	
ETHERNET DIAGNOSTIC PORT (TOP)	IP ADDRESS 192.168.13.2
ETHERNET REMOTE PORT (BOTTOM)	192.168.13.1

MODULE-DIGITAL 4 QUAD CURRENT SENSOR SERIAL NUMBER: 1 (00-23 ARMS)	01 17	01 18	01 19	01 20
AUTOMATICALLY ALLOCATED DIGITAL INPUT	1	2	3	4
DIGITAL 4 QUAD CURRENT SENSOR	E1C	E2A	E1A	E2C
ID	E1C	E2A	E1A	E2C
LIT BULB COUNT ON EACH CIRCUIT	4	4	4	4
CURRENT READING IN AMPS AT APPROXIMATE 10.8 VOLTS BULB VOLTAGE	2.6	2.6	2.6	2.6

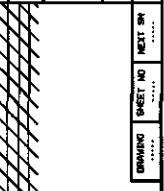
CHANNEL	1	2	3	4
NAME	RELAY OUTPUT 01	RELAY OUTPUT 02	RELAY OUTPUT 03	RELAY OUTPUT 04
ID	RLY01	RLY02	RLY03	RLY04
ON NAME	ON	ON	ON	ON
OFF NAME	OFF	OFF	OFF	OFF
PULSE DURATION	1000 ms	1000 ms	1000 ms	1000 ms

PORT	USER	AUX 1	MODEM/AUX 2
BAUD RATE	38400	38400	38400
PARITY	N	N	N
DATA BITS	8	8	8
STOP BITS	1	1	1
FLOW CONTROL	NONE	NONE	NONE

NEW WORK

RAIL	0123456789
PROJ #	042812061
DES BY	P. LAHEY
CHK BY	D. ALDRIGHT
DATE	07-28-12

RAIL TRANSPORTATION	RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS		
T.R. 56 (GIRTON RD.)	220800A		
RECORDED PROGRAM	BRADNER, ON N.P. CD-56.79		
DESIGNED	DIGITIZED	CHECKED	DATE
IRC/PTL	IRC/PTL	IRC/PTL	07-28-12
DRAWING	SHEET NO	FILE	SHEET
07-28-12	1	C080619	C06



REDRAWN TO NEW
SHEET C08967A.S01

VS FILE, CD09737.S01 RASTER FILE, SAG0020053.CIT

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

TO: Rob Marvin, Director of Transportation, PUCO
Leah Thomas-Dalton, Deputy Chief, PUCO

FROM: Susan Kirkland, Manager, Safety Section, ORDC

BY: Tod Darfus, Project Manager, ORDC

SUBJECT: Wood County, CSX
Devil's Hole Road, 228 835 W, PID 93334

DATE: August 27, 2012

The Public Utilities Commission of Ohio (PUCO) established a diagnostic survey at the subject location on March 22, 2012. The Ohio Rail Development Commission (ORDC) attended the review. The Diagnostic Team recommended the improvement of warning devices to flashing lights and roadway gates. A copy of the diagnostic review form is attached.

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

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

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

Thank you for your assistance with these matters.

Attachment: Diagnostic Review
Plan & Estimate

c: George Martin, PUCO
T.Darfus (file)



Diagnostic Review Team Survey

Date: 3/22/2012

Location Data

Street or Road Name: Devil's Hole Road			
Route/Road Number (i.e. Twp., Co., SR or US) TR 61		US DOT No.: 228835W	
County: Wood (WOO)	Township: Troy Twp	City: (In or Near)	
Railroad Name: CSX	Railroad Division: Appalachian	Branch/Line Name: Pemberville Sub	
Nearest RR Timetable Station: Pemberville		RR Milepost: 107.87	

On-Site Review Team

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

1. Tod Darfus - ORDC - 614.374.9298 - tod.darfus@dot.state.oh.us
2. Ken Gilsdorf
3. Terry Ludban
4. TOM BALLARD TROY TWP MAINTENAC 419 833 5111 CEL 419 843 9751
5. Todd Gottschalk " " " " cell 419 260 4137
6. GEORGE MARTIN PUCO 614-752-9107
7. Keith Wilson PUCO
- 8.
- 9.

Existing Traffic Control Devices

Type of Warning Devices	Installed?		Quantity/Comments
Advance Warning Signs (condition?)	☒ Yes	☐ No	
'Stop' Signs	☐ Yes	☒ No	
'Stop Ahead' Signs	☐ Yes	☒ No	
Pavement Markings (condition?)	☐ Yes	☒ No	
Crossbucks	☒ Yes	☐ No	2
Number of Tracks Signs	☒ Yes	☐ No	on - 1 x buck
Inventory Tags	☒ Yes	☐ No	
Interconnected Highway Traffic Signal	☐ Yes	☒ No	
Mast-Mounted Flashing Lights	☐ Yes	☒ No	
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	© crossing
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	227	Date Run: 3/7/2012

Railroad Data

Railroad Characteristics	Initial Information (from database)	Revised
Total trains per day	32	24
< 1 per day		
Day thru trains	15	9
Night thru trains	15	
Daytime switching movements	2	2
Nighttime switching movements	0	
Total number of tracks		
Number of main tracks	2	2
Number of other tracks	0	
Maximum train speed	50	50
Typical train speed		45
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: Troy Twp

Roadway Characteristics	Initial Information (from database)	Revised
Average daily traffic	300 (2011)	300
Highway paved	☒ Yes ☐ No	☒ Yes ☐ No
Roadway Surface: ☒ Blacktop ☐ Gravel ☐ Concrete ☐ Other _____		
Roadway width: 20 ft.		
Number of highway lanes	2	2
Urban or Rural	Rural	Rural
Vehicle Speed: 55 MPH		
School Bus Operation: ☒ No ☒ Yes 6 Amount		
Hazardous Materials Trucks: ☐ No ☒ Yes 3 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: ☐ Functional (Curb height = 4" or more) ☐ Non-functional (Curb height = Less than 4") ☒ None	Quadrant _____ Curb and Gutter: ☐ Functional (Curb height = 4" or more) ☐ Non-functional (Curb height = Less than 4") ☒ 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 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 ☐ Industrial ☐ Residential	☐ Institutional ☐ Commercial Location of nearby schools: Pemberville or Lucky (3 miles)
Utility Information	
Is commercial power available? ☐ No ☒ Yes Utility Provider (Company Name) <u>TE</u> Phone Number _____ Nearest Available Power Source <u>@ Crossing</u> What other utilities are present? <u>Fiber Optic par to RR</u> (add locations to sketch) 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):

None

Crossing Consolidation or Closure:

None

Real Estate or ROW:

Twp - 50 R/R -

Ferry to get?

Culverts / Drainage / Ballast Conditions:

No

Roadway and/or Sidewalks:

No

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

No Overlap

Environmental:

No

Other:

Diagnostic Team Recommendations

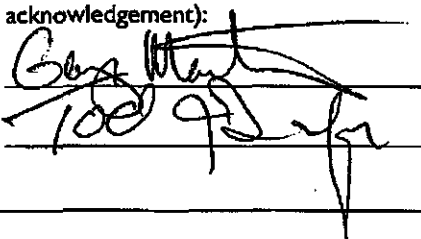
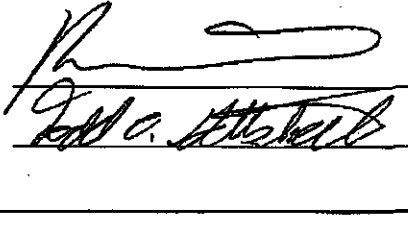
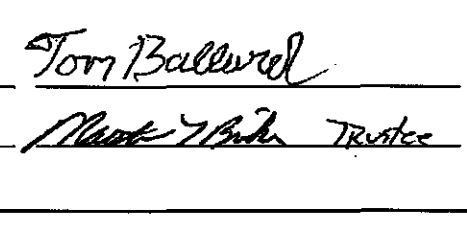
	Quadrants Needed
☒ Install/upgrade active devices	
☐ Automatic Flashing Lights (AFLS)	
☐ AFLS / Cants	
☒ AFLS / Gates	
☐ AFLS / Gates / Cants	
☒ Bells / number	2
☐ Upgrade circuitry / type	
☐ Sidelights	
☐ Guardrail Needed	
☐ Install/Replace curb	
☐ Bungalow placement & offset from rail & highway	NW Quad 25/50 on platform
☐ Other (define)	

Comments:

Need Platform For House
Set foundation's 10' or greater from edge of road

☐ 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):




 100 92 2 for Ed C. Attisbel Mark 7 Bish Trustee

Field Dimensions

Sidewalk

Parkway

Roadway

Roadway

Parkway

Sidewalk

Show North
Direction

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

Measurements 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.



41.4425422-83.4609445

© 2012 Google

Google earth

Google earth



CSX TRANSPORTATION, INC.
FORCE ACCOUNT ESTIMATE

Page 1

ACCT. CODE : 709 - OH0895

ESTIMATE SUBJECT TO REVISION AFTER:	1/28/2013	DOT NO.: 228835W
CITY: (near) Pemberville	COUNTY: Wood	STATE: OH
DESCRIPTION: Devil's hole Rd. - Install FLS&G with bells.		
DIVISION:	SUB-DIV: ____	MILE POST: CD - 107.87
AGENCY PROJECT NUMBER: PID 93334		

PRELIMINARY ENGINEERING:

200 Additive	31.34%	\$	-
230 Expenses		\$	-
212 Contracted & Administrative Engineering Services		\$	2,000
Subtotal		\$	2,000

CONSTRUCTION ENGINEERING/INSPECTION:

200 Additive	31.34%	\$	-
230 Expenses		\$	-
212 Contracted & Administrative Engineering Services		\$	2,000
Subtotal		\$	2,000

FLAGGING SERVICE: (Contract Labor)

070 Labor (Conductor-Flagman)		\$	-
050 Labor (Foreman/Inspector)		\$	-
070 Additive	73.76% (Transportation Department)	\$	-
050 Additive	97.95% (Engineering Department)	\$	-
230 Per Diem	(Engineering Department)	\$	-
230 Expenses		\$	-
Subtotal		\$	-

<u>SIGNAL & COMMUNICATIONS WORK:</u>	(Details Attached)	\$	205,119
---	--------------------	----	---------

<u>TRACK WORK:</u>	(Details Attached)	\$	-
---------------------------	--------------------	----	---

ACCOUNTING & BILLING:

040 Labor		\$	2,700
040 Additive	63.03%	\$	1,702
Subtotal		\$	4,402

PROJECT SUBTOTAL

900 CONTINGENCIES:		\$	213,521
		\$	-

GRAND TOTAL	*****	\$	213,521
-------------	-------	----	---------

DIVISION OF COST:

Agency	100.00%	\$	213,521
Railroad		\$	-
TOTAL	*****	\$	213,521

NOTE: Estimate is based on FULL CROSSING CLOSURE during work by Railroad Forces.

This estimate has been prepared based on site conditions, anticipated work duration periods, material prices, labor rates, manpower and resource availability, and other factors known as of the date prepared. The actual cost for CSXT work may differ based upon the agency's requirements, their contractor's work procedures, and/or other conditions that become apparent once construction commences or during the progress of the work

Office of Assistant Chief Engineer Public Projects--Jacksonville, Florida

Estimated prepared by:	BSE	Approved by:	ajd	CSXT Public Project Group
DATE:	8/1/2012	REVISD:	DATE:	8/6/2012

Form Revised 05-05-2010-LLS

Project Summary Sheet

Estimate No. 120585
CSX Transportation

Devils Hole Rd. (T.R.61) - Install Automatic Flashing Light Signals and Gates.
(near) Pemberville, OH

DOT: 228835W

OP: OH0895

CSX Project: OH2012062

Summary

Material	\$ 88,293
Sales Tax	\$ 0
Labor:	
Construction Labor (100 man-days).....	\$ 27,207
Shop Labor (7 man-days).....	\$ 1,470
Subsistence (100 man-days).....	\$ 13,000
Railroad Engineering, Preliminary	\$ 4,700
Railroad Engineering, Construction	\$ 4,081
Additives to Construction Labor	\$ 23,988
Additives to Shop Labor	\$ 927
Additives to Track Labor	\$ 0
Additives to Engineering	\$ 2,752
Equipment Expenses (21 work days).....	\$ 13,650
Waste Management (21 work days).....	\$ 504
Contract Engineering	\$ 10,549
Freight	\$ 6,498
Poleline Removal	\$ 0
AC Power Service	\$ 2,500
Salvage	\$ 0
Vaccum track	\$ 5,000
TOTAL ESTIMATE COST	\$ 205,118

Date: 07/19/2012

Estimated By: Douglas Baumgartner

NOTE: This estimate should be considered void one year from date of estimate.

Shop Material List for CSX Project: OH2012062 (Effective: 07/19/2012)
Install new FLS & G
Pemberville, OH - CD 107.37

Catalog Num	Cond	Unit Price	Qty	Cost	Description
020-0003386	1	6781.00	1	6781.00	HOUSE 6X6L ALUM INCLUDES 5 SHELF, FARADAY CLOSET, 240V
020-0017120	1	11.52	6	69.12	BLOCK TERMINAL 12 POST SINGLE STRIP AAR 14.1.6 WITH 1 AAR
020-0017125	1	3.54	12	42.48	BLOCK TERMINAL 2 POST AAR 14.1.8 WITH 1 AAR 14.1.11
020-0017211	1	627.20	1	627.20	TRANSFORMER LIGHT 750VA 010520-50X MODEL SLT-50
020-0021965	1	8.96	1	8.96	EXTRACTOR DWG 59688-4 TERMINAL GRS CAT P3-308 REF
020-0022651	1	55.89	5	279.45	PLUGBOARD KIT TYPE B1 OR ST1 RELAY ASSEMBLY WITH 12 EACH
020-0022701	1	68.00	29	1972.00	ARRESTER LPC 15012-1 0-30V DC OR 0-24V AC RATED AT 15 AMP
020-0025595	1	20.72	1	20.72	WRENCH DWG 55393-3 GR1 "E" TERMINAL POST NUT GRS CAT
020-0053360	1	406.56	3	1219.68	CHARGER BATTERY ELC 12/20 S 20 AMP 10-19.9 VDC ROTARY SW
020-0053510	1	233.11	1	233.11	KIT 240V AC EMERGENCY GENERATOR CABLE AND
020-0660077	1	597.41	1	597.41	ARRESTER GE 9L10KAC213 FOR 240 VOLT SINGLE PHASE 3 WIRE
020-0750090	1	0.09	3	0.27	NUT INSULATED USE ON AAR BINDING POST TERMINAL FOR
020-0770060	1	13.44	12	161.28	ARRESTER US&S N451552-0201 TRACK SERIES RED LABEL USGA
020-0770105	1	22.40	4	89.60	ARRESTER HARMON 202217-000 AGE-1 TRACK AIR GAP EQUALIZER
020-1940055	1	14.22	1	14.22	CONTAINER CIRCUIT PRINT 24" SCHEDULE 20 4" PVC PIPE WITH
020-2501400	1	987.92	1	987.92	CONTROLLER DTMF RADIO KEY DOWN MODE 6 SET TIMER TO 60
020-2532515	1	32.48	2	64.96	MODULE RESISTOR ISLAND OUTPUT RESISTIVE LOAD ASSEMBLY 560
020-2552580	1	13842.91	1	13842.91	DETECTOR HARMON 251017-440 PMD-3R2 W/8 KHZ RSI DOUBLE
020-3430110	1	321.84	1	321.84	RELAY SAFETRAN 400004 500 OHMS CONTACTS 4FB-2F-1B CSX
020-3430115	1	421.20	1	421.20	RELAY SAFETRAN 400005 500 OHMS CONTACTS 4FB HEAVY DUTY
020-3430135	1	362.64	1	362.64	RELAY SAFETRAN 400213 460 OHMS CONTACTS 2FB CSX
020-3430170	1	318.53	1	318.53	RELAY SAFETRAN 400800-CSX 100/100 OHMS CONTACTS 6FB
020-3430185	1	313.63	1	313.63	RELAY SAFETRAN 400700-X 60 OHMS CONTACTS 4FB CSX
020-4200100	1	6.04	2	12.08	CONNECTOR BUS 1" CENTERS 1/2" X 36" 18 GAGE PUNCHED 1/4" X
020-4200340	1	1.65	12	19.80	LINK TEST ASSEMBLY 1" CENTERS COMPLETE WITH INSULATED

Shop Material List for CSX Project: OH2012062 (Effective: 07/19/2012)
Install new FLS & G
Pemberville, OH - CD 107.37

<u>Catalog Num</u>	<u>Cond</u>	<u>Unit Price</u>	<u>Qty</u>	<u>Cost Description</u>
020-4200350	1	2.04	9	18.36 LINK TEST ASSEMBLY 2-3/8" CENTERS COMPLETE WITH
020-4201045	1	0.09	300	27.00 NUT HEX CLAMP (FLAT NUT) AAR 14.1.11-7 14-24 NS-2 THD FLAT
020-8000067	1	14.61	2	29.22 LOCK AMERICAN H10SIGRA CSX SIGNAL PADLOCK WITH BLACK
020-8100044	1	3906.57	1	3906.57 RECORDER EVENT HAWK INCLUDES ETHERNET MODEM AND CURRENT
022-8005160	1	601.42	1	601.42 KIT CDMA AND VHF RADIO MATERIAL FOR USE WITH CSX
Total Cost: \$				33,364.58

Field Material List for CSX Project: OH2012062 (Effective: 07/19/2012)
Install new FLS & G
Pemberville, OH - CD 107.37

Catalog Num	Cond	Unit Price	Qty	Cost	Description
020-0010449	1	31.57	2	63.14	BOX, 9 INCH DIA. "FLOWER POT" ENCLOSURE WITH HD
020-0013908	1	6.98	300	2094.00	CABLE UG COMPOSITE 19 CONDUCTOR INCLUDES 13
020-0014700	1	12316.50	1	12316.50	PLATFORM SIGNAL 12' X 12' FOR 4' X 4' OR 6' X 6' HOUSE/CASE
020-0017605	1	0.31	300	93.00	WIRE CASE 10 AWG FLEX CSX SPEC SS796 OKONITE P/N
020-0025145	1	320.49	4	1281.96	SHUNT ENCLOSURE INTERRAIL P/N IRS-SE8A WAYSIDE MOUNT
020-0052475	1	11.20	4	44.80	ARM EXTENSION 10-1/2" ALUM WITH 3/8" DIAMETER MOUNTING
020-0053066	1	3.94	16	63.04	BOND WEB OF RAIL TRACK CONNECTOR 3/16" DIA X 1" TAB
020-0053220	1	2.52	150	378.00	CABLE POWER UG 3 COND NO 6 AWG, SHOW LENGTH ON EACH
020-0054075	1	1006.88	2	2013.76	GATE GARD NORMAL MOVEMENT COMPLETE WITH SHEAR PIN AND
020-0055421	1	18.61	6	111.66	BRACKET SIGN 4" OR 5" MAST W/1/2" U-BOLT FOR ALL SIGNS
020-0056181	1	33.49	2	66.98	SIGN MULTIPLE TRACK "2 TRACKS" COMPLETE WITH 2 EACH
020-0056421	1	18.61	4	74.44	BRACKET SIGN 4" OR 5" MAST FOR ALL SIGNS REQUIRING 5/8"
020-0056678	1	6050.70	2	12101.40	SIGNAL 0221-L GCWD GATE ASSY DWG SS222 INCLS ADJ 19 TO 28
020-0057275	1	1.17	650	760.50	WIRE UG TRACK TWISTED PAIR NO. 6 AWG SOLID CONDUCTOR
020-1040322	1	162.40	29	4709.60	BATTERY SAFT SPL165, 165 AH POCKET PLATE NICKEL CADMIUM
020-1040540	1	31.36	2	62.72	TRAY BATTERY FIBER CO 82687-1-P 12" WIDTH 24" LONG
020-1040550	1	45.92	2	91.84	TRAY BATTERY FIBER CO 82687-3-P 12" WIDTH 38"
020-1150750	1	0.83	200	166.00	BOND STRAND 3/16" DIA 7 STRANDS OF 19 STR EACH 6 WITH
020-1153550	1	4.31	8	34.48	CLIP TRACK WIRE RETAINER UNIVERSAL RAIL BASE WRAP
020-1360014	1	1000.44	1	1000.44	PACKAGE FOREMANS CARE FOR ALUMINUM TYPICAL BOM FOR USE
020-1360016	1	21.18	1	21.18	PACKAGE SAFETY & SECURMENT WITH 1 EA CAUTION TAG 1 EA
020-1360103	1	1381.37	1	1381.37	LAYOUT METER SERVICE WITH 25' POLE CSX DWG SS351 SH 2 ITEMS
020-2531280	1	265.93	4	1063.72	SHUNT HARMON 250250-267 NBS-1-10 267HZ 10 FT LEADS
020-2532590	1	360.64	1	360.64	COUPLING TIU-2 TRK ISOLATION UNIT HPN 250213-1A MODEL 2
020-3263656	1	1.77	8	14.16	SLEEVE BONDSTRAND 3/16" TO 3/16" 100 PER BOX, NICOPRESS

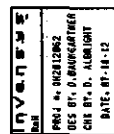
Field Material List for CSX Project: OH2012062 (Effective: 07/19/2012)
Install new FLS & G
Pemberville, OH - CD 107.37

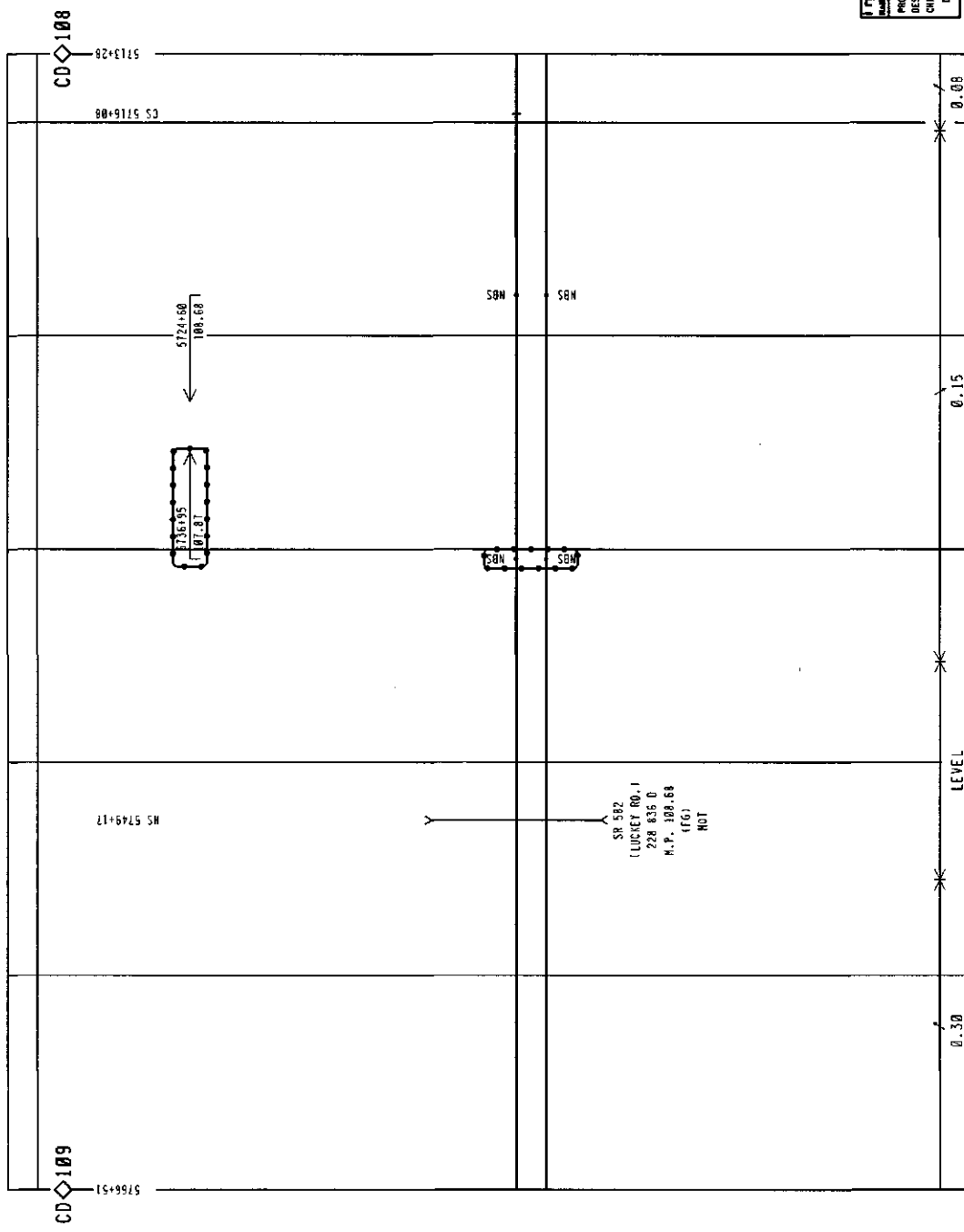
Catalog Num	Cond	Unit Price	Qty	Cost Description
020-3263680	1	0.35	40	14.00 STAPLE COPPERWELD ROLLED POINT 1-3/4" LONG, 3/8"
020-3901895	1	92.68	2	185.36 TIP FLEX HWY CROSSING GATE 24 IN LONG RED & WHITE STRIPES
020-3920200	1	181.17	2	362.34 BELL GCWD ELECTRONIC 4" OR 5" MAST 8 TO 13 VOLTS DC GSI PN
020-3930010	1	3.70	2	7.40 KIT GATE ARM WARNING STICKER KIT INCLUDES 1-EA 5"X3"
020-4200340	1	1.65	33	54.45 LINK TEST ASSEMBLY 1" CENTERS COMPLETE WITH INSULATED
020-4200900	1	0.29	6	1.74 CONNECTOR SHEATHING AMP 329860 FOR NO. 14 WIRE
020-4201042	1	0.12	49	5.88 NUT HEX BINDING (RSA NUT) AAR 14.1.11-6 14-24 NS-2 THD CONE
020-4201043	1	0.11	294	32.34 NUT HEX CLAMP (FLAT NUT) AAR 14.1.11-7 14-24 NS-2 THD FLAT
020-4201044	1	0.11	245	26.95 WASHER AAR 14.1.11 ROUND COPPER NICKEL PLATED FOR AAR
020-7300031	1	200.48	2	400.96 BRACKET BELL FITS WESTERN CULLEN HAYES JUNCTION BOX
020-9999991	1	100.00	1	100.00 BLOCKING AND BRACING FOR PROJECTS BURCO DIST
250-0001827	1	13.76	1	13.76 BREAKER CIRCUIT SQ D QO235
250-1680406	1	0.49	80	39.20 CONDUIT LIQUID TIGHT 3/4" FLEXIBLE GREY PVC CARLON P/N
250-1680408	1	1.00	80	80.00 CONDUIT LIQUID TIGHT 3/4" NON-METALLIC ORANGE PVC
360-0006100	1	35.07	1	35.07 STOOL STEP WOOD 14"X 20" SIGNAL MAINTAINERS CSXT
360-0800145	1	4.72	1	4.72 BROOM WAREHOUSE CORN HVY DUTY 1-1/8" DIA HANDLE
Total Cost: \$				41,733.5

Consumables List for CSX Project: OH2012062 (Effective: 07/19/2012)

**Install new FLS & G
Pemberville, OH - CD 107.37**

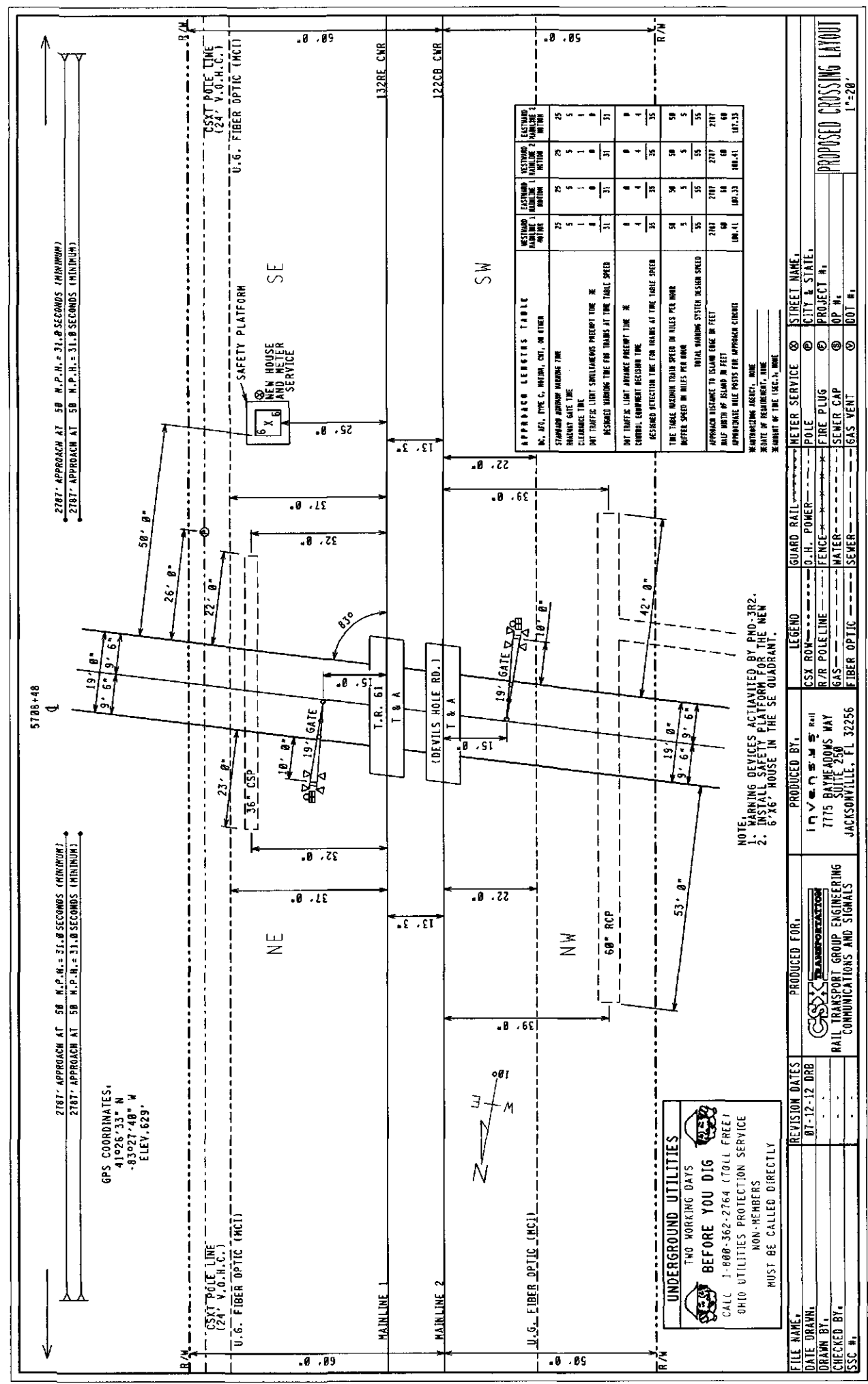
Catalog Num	Cond	Unit Price	Qty	Cost Description
N/A		50.00	160	8000.00 FILL MATERIAL, 1 CUBIC YARD
N/A		800.00	1	800.00 WALKWAY ROCK, 10 CUBIC YARDS
020-0017605	1	0.29	350	101.50 WIRE CASE 10 AWG FLEX CSX SPEC SS796 OKONITE
020-0017607	1	0.68	500	340.00 WIRE CASE TW PR NO 10 AWG FLEX CSX SPEC SS796 TWIST 2
020-0017625	1	0.43	150	64.50 WIRE CASE TW PR NO 14 AWG FLEX CSX SPEC SS796 TWIST 2
020-0017630	1	0.13	200	26.00 WIRE CASE NO 16 AWG FLEX CSX SPEC SS796 FURN 1000 FT SPOOL
020-0017635	1	0.80	130	104.00 WIRE SIGNAL DEL 018 NO 6 COPPER STRANDED SINGLE
020-0028610	1	0.22	100	22.00 TERMINAL RING AMP 35628 YELLOW PLASTI-BOND HVY DUTY
020-1710055	1	1.99	250	497.50 CONDUIT SDR 13.5 4" ORANGE POLYETHYLENE TRENCHLESS
020-2060072	1	750.00	2	1500.00 FOUNDATION HELICAL SCREW-IN ASSEMBLY 7' X 10" COMPLETE
020-2060074	1	630.00	2	1260.00 EXTENSION 10" X 3' USE WITH XING GATE AND SIGNAL MAST
020-3261960	1	18.82	2	37.64 DECAL (DO NOT ORDER, CALL SIGNAL SHOP) ASSY 5" BLACK
020-3261970	1	9.41	2	18.82 DECAL ASSY 2" BLACK PRESSURE SENSITIVE VINYL PRE-MASKED
020-4200880	1	0.53	2	1.06 CONNECTOR TERMINAL 2-3/8" CENTERS AAR 14.1.15-4 NICKEL
020-4200892	1	0.44	27	11.88 CONNECTOR TERMINAL 1" CENTERS AAR 14.1.15-3 NICKEL PLATED
020-4251190	1	0.13	120	15.60 TERMINAL RING AMP 35627 BLACK PLASTI-BOND WIRE SIZE 10-12
020-4251290	1	0.49	30	14.70 TERMINAL WIRE AMP 322051 BLUE WIRE SIZE NO 6 AWG 1/4" STUD
020-4251295	1	0.49	6	2.94 TERMINAL WIRE AMP 322007 BLUE WIRE SIZE NO 6 AWG 3/8" STUD
020-9999992	1	50.00	1	50.00 HOUSE, SIGNAL HANDLING CHARGE, BURCO DISTRIBUTION
022-5290559	1	325.00	1	325.00 CONVERTER WILMORE INPUT 10V DC TO 16V DC OUTPUT 13.6V DC
450-0019212	1	0.02	100	2.00 SCREW 10 X 1" SHT METAL PAN HD TYPE A COARSE THREAD
Total Cost: \$				13,195.14

[illegible]



INVERTS
 PROJ. # 00012062
 DES. BY: R. BURGHEIMER
 CHK. BY: R. ALBRIGHT
 DATE: 07-18-12

04-10-07 SWE 02-01-08 IRS 02-07-08		HORIZONTAL SCALE 1 INCH = 500 FEET		M.P. CD 108 TO CD 108 TRUCKS BUCKEYE ST. TO TURNPIKE		DESIGNED 07/20/12		CHECKED 07/20/12		DATE 07-18-12		NET FILE 07/19/12		FILE 03/10/04		SHEET 101	
--	--	---------------------------------------	--	--	--	----------------------	--	---------------------	--	------------------	--	----------------------	--	------------------	--	--------------	--



INDEX

CONTENTS

SH. NO.		REVISION NO.								
		1	2	3	4	5	6	7	8	9
101	INDEX AND REVISIONS									
SW1	TRACE AND SIGNAL PLAN									
ED1	POWER DISTRIBUTION									
CD1	CROSSING DETECTION CIRCUITRY									
CD2	DETECTION DEVICE PROGRAM									
CD3	CROSSING WARNING DEVICE GATE CIRCUITRY									
CD4	CROSSING WARNING DEVICE LIGHT CIRCUITRY									
CD5	RECORDER AND DTMF CONTROLLER CIRCUITS									
CD6	RECORDER PROGRAM									

☒ = DESIGN COMPLETED
☒ = REVISION COMPLETED

REVISIONS			
REV. NO.	PROJECT NO.	DESIGN DATE	IN SERVICE DATE
1	0M2812862	87-10-12	

TO BE COMPLETED ON A.I.S.

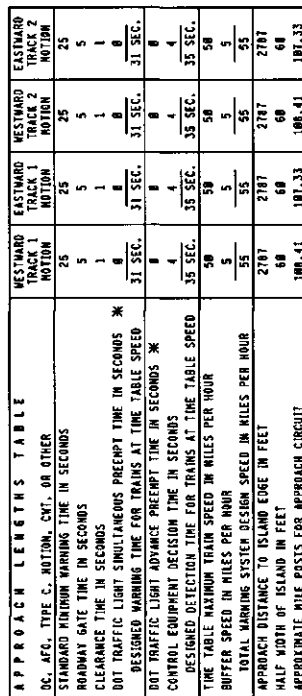
NEW WORK

PROJ # 0M2812862
 DES BY: D. RAUMGARTNER
 CHK BY: D. ALBRIGHT
 DATE: 87-10-12

RAIL TRANSIT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
INDEX AND REVISIONS PENNSYLVANIA, OH N.P. CD-107.87			
T.R. 61 (DEVILS HOLE RD.) 228835W			
DESIGNED	DIGITIZED	CHECKED	DATE
JRC/DRB	JRC/DRB	JRC/DRB	87-10-12
DRAWING	SHEET NO.	FILE	SHEET
.....		CD10787	101

☐ = NOTE
 21TRPH032PML.101
 REV. 87-08-10

DESIGN DATE	REV. NO.
87-10-12	1



81240

IRM LOCAL PARAMETERS PHD-3R2 DESIGN CARD

OPERATING PROGRAM PRG	VERSION AND COMPILE DATE	FIELD RECORD	DEFAULTS & PRE STYLE	
			35.0 MM/DD/YY	MA
SYSTEM MONITOR PROGRAM EPR	VERSION AND COMPILE DATE		28.2 MM/DD/YY	MA
			DEFAULT TRACK 1	TRACK 2
#1 RZ	ADJUSTMENT		NA	NA
#2 PH (PHASE)	INTENDED ABOVE 32 (NOT ADJUSTABLE)		NA	NA
#3 CN / RD	CN OR RD NOT ADJUSTABLE FROM RD TOWARD CN (SEE TCR 430-B1 FOR CONSTRAINTS)		ND	ND
#4 UNIB1 (IF CN IS CHOSEN IN #3)	UNT OR B1		NA	NA
#5 LIA (IF CN IS CHOSEN IN #3)	-5 TO +5		NA	NA
#6 WT (IF CN IS CHOSEN IN #3)	23 TO 99		NA	NA
#7 TC	WHEN IN CONFORMANCE WITH PHD-3R2 MANUAL, ADJUST TC FOR A TRANSMITTER CHECK MONITOR VALUE LESS THAN 470		NA	NA
#8 B (BALLAST COMPENSATION)	50 TO 250 (FIELD ADJUSTMENT - ADJUST ONLY WHEN IN CONFORMANCE WITH DATA ACCUMULATED AT THIS SITE AND IN COMPLIANCE WITH SUPERVISOR INSTRUCTIONS & PHD-3R2 MANUAL)		NA	NA
#9 PC (PHASE COMPENSATION)	0 TO +10 (FIELD ADJUSTMENT - ADJUST ONLY WHEN IN CONFORMANCE WITH SUPERVISOR INSTRUCTIONS & PHD-3R2 MANUAL)	PC-B	NA	NA
#10 FREQ	REFERENCE, NOT ADJUSTABLE FROM MENU	NA	NA	NA
#11 FS-T (FALSE SHUNT TIMER)	ENTRANCE TO SUDEN FALSE SHUNT SUB-MENU	NA	NA	NA
#12 FR (FALSE SHUNT % OF RX APPROACH)	0 TO 80 NOT ADJUSTABLE FROM ZERO UNTIL AFTER STRICT DESIGN REVIEW FOR SITE APPLICATION CONFLICTS, FR-B MEANS DISABLED (SEE TCR 430-B1 FOR CONSTRAINTS)	FR-B	FR-B	FR-B
#13 ET (FAULT TIMER)	0 TO 99 MINUTES (FACTORY DEFAULT IS 10)	FT=10	MA	MA
#14 AR-T (APPROACH RELEASE TIMER)	ENTRANCE TO SUB-MENU FOR RESIDUAL FALSE SHUNT STARTED DURING TRAIN PASSAGE	NA	MA	MA
#15 AR (FALSE SHUNT % OF RX APPROACH)	0 TO 80 NOT ADJUSTABLE FROM ZERO UNTIL AFTER STRICT DESIGN REVIEW FOR SITE APPLICATION CONFLICTS AR-B MEANS DISABLED (SEE TCR 430-B1 FOR CONSTRAINTS)	AR-B	AR-B	AR-B
#16 AT (FAULT TIMER)	0 TO 99 MINUTES (FACTORY DEFAULT IS 10)	AT=10	AT=10	AT=10
#17 RS (HIGHEST STABLE R VALUE)	REFERENCE, NOT ADJUSTABLE FROM MENU	NA	MA	MA
#18 LP (LOWEST STABLE PHASE)	REFERENCE, NOT ADJUSTABLE FROM MENU	NA	MA	MA
#19 SD (SELF DIAGNOSTICS)	REFERENCE, NOT ADJUSTABLE FROM MENU, BUT MENU CAN REVIEW, THEN CLEAR DIAGNOSTIC CODES	NA	MA	MA
#20 REC (TRAIN RECORD DISPLAY)	REFERENCE, SEQUENTIAL DISPLAY OF PREVIOUS WARNING TIME RECORDS (NO ADJUSTMENT)	NA	MA	MA
#21 PRN (PRINTER/LAPTOP READY)	STARTS DOWNLOAD OF INTERNAL TRAIN EVENT LOG WHEN SERIAL PORT CABLE CONNECTED	NA	MA	MA
#22 LSP (LOCAL SERIAL PORT)	ENTRANCE TO SUB-MENU FOR SETTING SPEED OF SERIAL PORT DOWNLOADS	NA	MA	MA
#23 @ (BAUD RATE)	BAUD RATE OF 38,400 IS 384 AND DEFAULT	@=384	@=384	@=384
#24 DB (DATA BITS)	7 OR 8	DB=8	DB=8	DB=8
#25 PA (PARITY)	9, E, OR N IS DEFAULT	PA=N	PA=N	PA=N
#26 AR (AUTO RX)	UP OR DN ON IS FACTORY DEFAULT (FIELD ADJUSTMENT - ADJUST TO "UP" ONLY WHEN BC HAS BEEN PREVIOUSLY STABILIZED THROUGH ADJUSTMENT, AND ONLY WHEN IN CONFORMANCE WITH SUPERVISOR INSTRUCTIONS AND PHD-3R2 MANUAL)	AR=DN	AR=DN	AR=DN
#27 RX (OPTIMIZER VALUE)	REFERENCE, DISPLAY ONLY	NA	MA	MA
#28 VERB (PROGRAM VERSION)	REFERENCE, SEQUENTIAL DISPLAY OF EPRON AND SOFTWARE VERSIONS	NA	MA	MA

NEW WORK

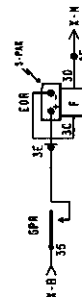
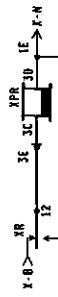
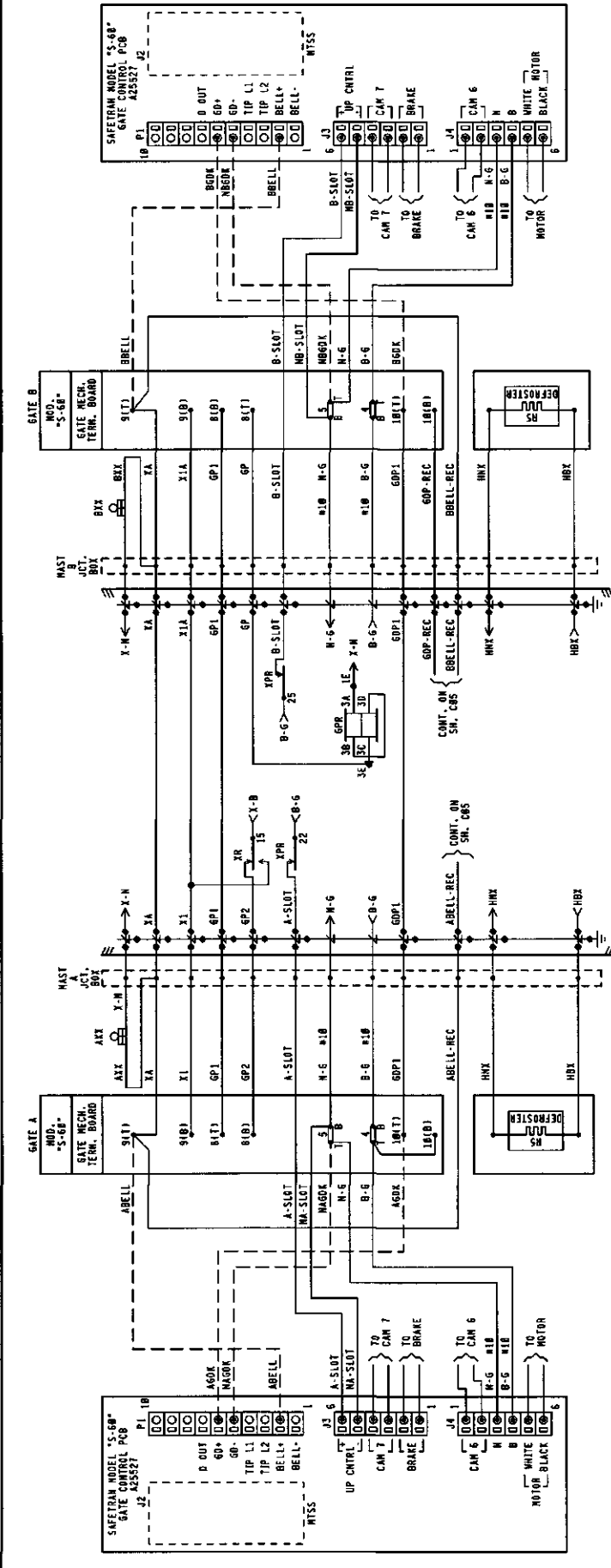
PROJ # 082012062
 DES BY, D. BAUMGARTNER
 CHK BY, D. ALBRIGHT
 DATE, 07-10-12

RAIL TRANSPORT GROUP - ENGINEERING
 COMMUNICATIONS AND SIGNALS
 T.R. 61 (DEVILS HOLE RD.) 220835V

DETECTION DEVICE PROGRAM
 PENNSYLVANIA, OH M.P. CD-187.87

DESIGNED TIC/DRB	DIGITIZED TIC/DRB	CHECKED	DATE
01-18-12	01-18-12	01-18-12	01-18-12
SHEET NO	FILE	COUNT	SHEET
01-18-12	01-18-12	01-18-12	01-18-12

DESIGN DATE	REV. NO.	1
01-18-12	01-18-12	01-18-12



NEW YORK

PROJ. NO. 902012862
DES. BY: D. BAUMGARTNER
CHK. BY: O. ALBRIGHT
DATE: 07-18-12

RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

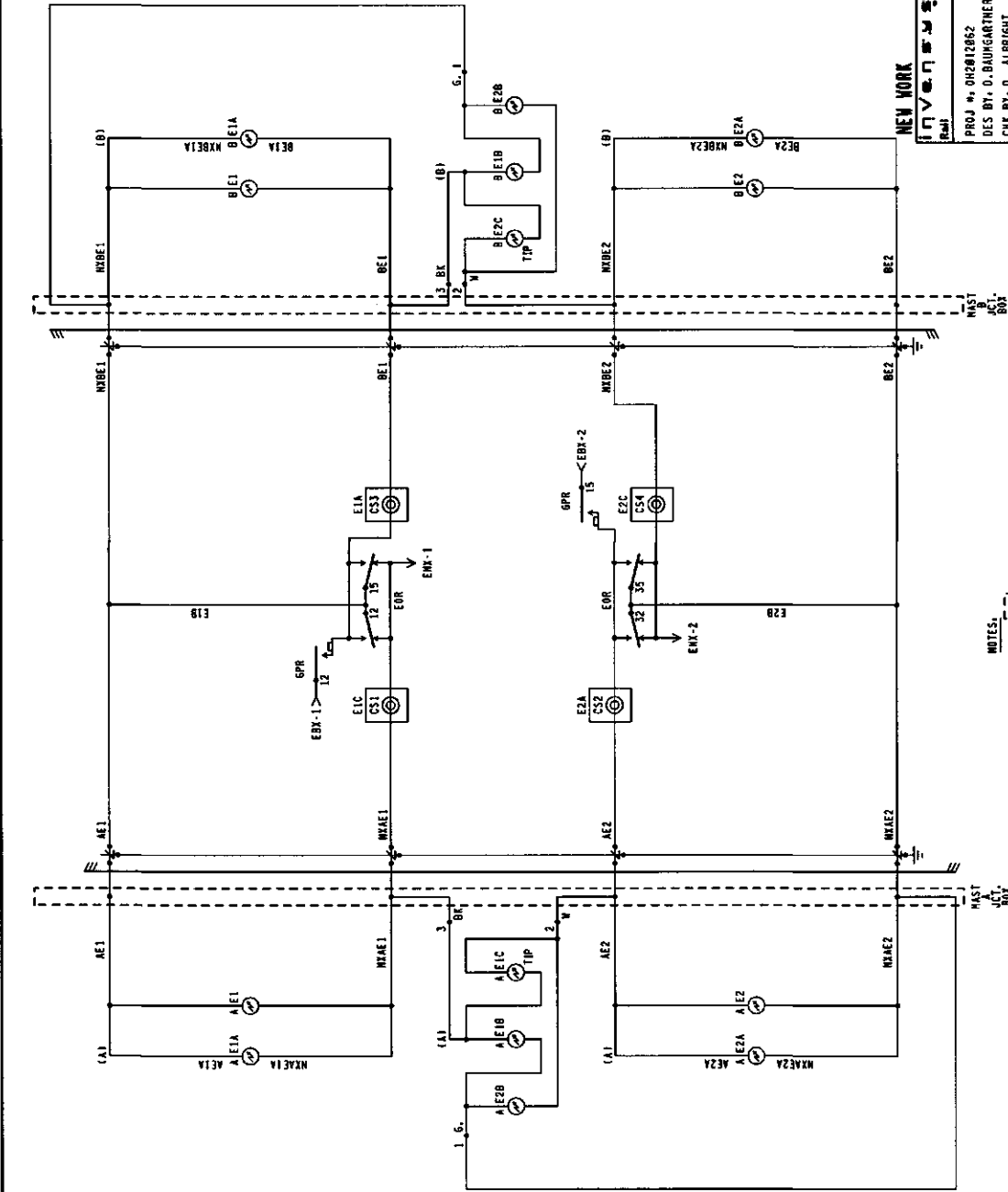
T.R. 61 (DEVILS HOLE RD.) 228035V

CROSSING WARNING DECKE GATE CIRCUITRY
PENNSYLVANIA, OH. R.P. 60-107.87

DESIGNED	DIGITIZED	CHECKED	DATE
JRC/ARB	JRC/ARB	JRC/ARB	07-18-12

DESIGN DATE	REV. NO.
07-18-12	1

DRAWING	SHEET NO	FILE	SHEET
000000	000000	000000	000

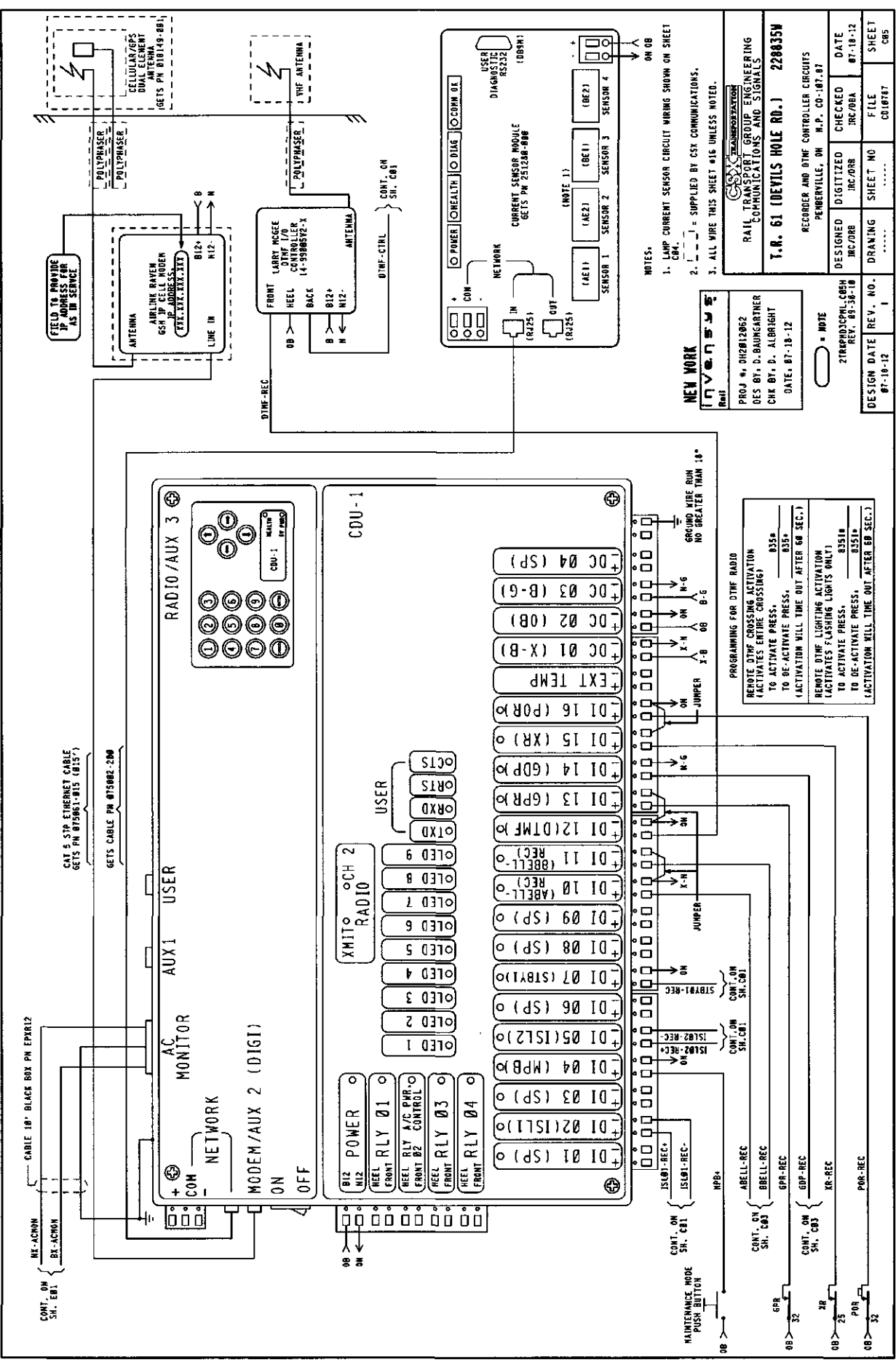


NOTES:
 1. TERMINAL IN JCT. BOX
 2. SINGLE STATIONING, SEE SS-302
 FOR REQUIRED ARRESTER RATING.

NEW WORK
 PROJ. # 0428012852
 DES. BY: D. BAUGARTNER
 CHK. BY: D. ALBRIGHT
 DATE: 07-10-12

RAIL TRANSIT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
T.R. 61 (DEVILS HOLE RD.) 228035W			
CROSSING WARNING DEVICE LIGHT CIRCUITRY PEMBERVILLE, OH H.P. CD-187.87			
DESIGNED	DIGITIZED	CHECKED	DATE
INC/DRB	INC/DRB	INC/DRB	07-10-12
DRAWING	SHEET NO.	FILE	SHEET
.....		CD187	084

21RPH030PML.C94
 REV. 09-30-10
 DESIGN DATE REV. NO.
 07-10-12 1



NEW WORK

PROJ # 0102012062
DES BY: D. BAUMGARTNER
CHK BY: D. ALDRIGHT
DATE: 07-18-12

PROGRAMMING FOR DTHF RADIO

REMOTE DTHF CROSSING ACTIVATION
(ACTIVATES ENTIRE CROSSING)
TO DE-ACTIVATE PRESS, B35+
(ACTIVATION WILL TIME OUT AFTER 60 SEC.)
REMOTE DTHF LIGHTING ACTIVATION
(ACTIVATES FLASHING LIGHTS ONLY)
TO DE-ACTIVATE PRESS, B351+
(ACTIVATION WILL TIME OUT AFTER 60 SEC.)

- NOTES:
1. LAMP CURRENT SENSOR CIRCUIT WIRING SHOWN ON SHEET ON 08.
 2. --- = SUPPLIED BY CST COMMUNICATIONS.
 3. ALL WIRE THIS SHEET #16 UNLESS NOTED.

DESIGNED	DIGITIZED	CHECKED	DATE
REC/DBB	REC/DBB	REC/DBA	07-18-12
DRAWING	SHEET NO	FILE	C010707
07-10-12	1		

RECORDING AND DTHF CONTROLLER CIRCUITS
PENNEVILLE, OH M.P. CO-107-07

278PH030PM-C08H
REF: 85-38-10

NOTE

RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

T.R. 61 (DEVILS HOLE RD.) 228835V

EVENT ANALYZER EXECUTIVE PROGRAM	VERSION 2.11, COMPILED ON NOV. 11, 1983	FIELD RECORD
CST USER PROGRAM (IF LOADED)	VERSION 1.0, COMPILED ON 12-01-83 (MM-DD-YY)	COMPILED ON (FIELD TO ENTER)
SYSTEM SETTINGS	MM-DD-YY 23 01:55	MM-DD-YY 23 01:55
DATE & TIME (ENABLE DAYLIGHT SAVING TIME = Y (YES))	MM-DD-YY 23 01:55	MM-DD-YY 23 01:55
MILE POST	XYZ-789.01	CD-107.07
SITE NAME	MAIN ST (SR-17 US-11)	T.R. 61
DOT NUMBER	123456A	220835N

NOTE TO INSPECTOR: AT IN SERVICE OF EVENT ANALYZER OR UPDATE OF ITS INTERNAL EXECUTIVE PROGRAM OR ITS CSXT USER PROGRAM, THE VERSION NUMBER AND COMPILE DATES OF EACH PROGRAM MUST BE INSERTED IN THE BLANK FIELDS.

EVENT ANALYZER ETHERNET PORT SETUP	IP ADDRESS
ETHERNET DIAGNOSTIC PORT (TOP)	192.168.13.2
ETHERNET REMOTE PORT (BOTTOM)	192.168.13.1

BATTERY INPUTS	DC 01	DC 02	DC 03	DC 04
BATTERY CHANNEL NAMES	T-B BULB BATTERY	CB ELECTRONIC BATTERY	B-B GATE BATTERY	SPACE
BATTERY CHANNEL I.D.	T-B	CB	B-B	SP
SAMPLE PERIOD	500 ms	500 ms	500 ms	10,000 ms
RESOLUTION	00.2 V	00.2 V	01.8 V	02.8 V

DIGITAL INPUTS	DI 01	DI 02	DI 03	DI 04	DI 05
CHANNEL	1	2	3	4	5
NAME	ISLAND TRACK 1	ISLAND TRACK 2	MAINTENANCE PB	MAINTENANCE PB	ISLAND TRACK 2
ID	SP	ISL	SP	SP	ISL
ON NAME	ISL 1 UP	ISL 1 UP	MAINTENANCE PB UP	MAINTENANCE PB UP	ISL 2 UP
OFF NAME	ISL 1 DN	ISL 1 DN	MAINTENANCE PB DN	MAINTENANCE PB DN	ISL 2 DN
ON DEBOUNCE TIME	1000 ms	1000 ms	1000 ms	1000 ms	1000 ms
OFF DEBOUNCE TIME	1000 ms	1000 ms	1000 ms	1000 ms	1000 ms
TOGGLE PERIOD	500 ms	500 ms	500 ms	500 ms	500 ms

DIGITAL INPUTS	DI 06	DI 07	DI 08	DI 09	DI 10
CHANNEL	6	7	8	9	10
NAME	STANDBY 1	STANDBY 1	ABELL REC	ABELL REC	ABELL REC
ID	SP	SP	SP	SP	SP
ON NAME	STANDBY UNIT	STANDBY UNIT	BELL RINGING	BELL RINGING	BELL RINGING
OFF NAME	STANDBY UNIT	STANDBY UNIT	BELL NOT RINGING	BELL NOT RINGING	BELL NOT RINGING
ON DEBOUNCE TIME	1000 ms	1000 ms	1000 ms	1000 ms	1000 ms
OFF DEBOUNCE TIME	1000 ms	1000 ms	1000 ms	1000 ms	1000 ms
TOGGLE PERIOD	500 ms	500 ms	500 ms	500 ms	500 ms

DIGITAL INPUTS	DI 11	DI 12	DI 13	DI 14	DI 15	DI 16
CHANNEL	11	12	13	14	15	16
NAME	BELL REC	DTMF TEST	GATE VERTICAL	GATE HORIZONTAL	AC POWER OFF	AC POWER OFF
ID	BELL-REC	DTMF	GR	GOP	POB	POB
ON NAME	BELL RINGING	DTMF TEST ON	GATE VERTICAL	GATE HORIZONTAL	AC POWER ON	AC POWER ON
OFF NAME	BELL NOT RINGING	DTMF TEST OFF	GATE NOT VERTICAL	GATE NOT HORIZONTAL	AC POWER OFF	AC POWER OFF
ON DEBOUNCE TIME	1000 ms	1000 ms	1000 ms	1000 ms	1000 ms	1000 ms
OFF DEBOUNCE TIME	1000 ms	1000 ms	1000 ms	1000 ms	1000 ms	1000 ms
TOGGLE PERIOD	500 ms	500 ms	500 ms	500 ms	500 ms	500 ms

MODULE-DIGITAL 4 QUAD CURRENT SENSOR SERIAL NUMBERS	1	2	3	4
RESOLUTION (AMPS RMS) = 100.23 AMPS				
AUTOMATICALLY ALLOCATED DIGITAL INPUT	DI 17	DI 18	DI 19	DI 20
DIGITAL 4 QUAD CURRENT SENSOR	EIC	E2A	E1A	E2C
NAME	EIC	E2A	E1A	E2C
ID	EIC	E2A	E1A	E2C
LIT BULB COUNT ON EACH CIRCUIT	4	4	4	4
CURRENT READING IN AMPS AT APPROXIMATE 10.4 VOLTS BULB VOLTAGE	2.6	2.6	2.6	2.6

CHANNEL	1	2	3	4
NAME	RELAY OUTPUT B1	RELAY OUTPUT B2	RELAY OUTPUT B3	RELAY OUTPUT B4
I.D.	RLB1	RLB2	RLB3	RLB4
ON NAME	ON	ON	ON	ON
OFF NAME	OFF	OFF	OFF	OFF
PULSE DURATION	1000 ms	1000 ms	1000 ms	1000 ms

PORT	USER	MODE/AUX 1	MODE/AUX 2
BUILD RATE	37600	9600	9600
PARITY	N	N	N
DATA BITS	8	8	8
STOP BITS	1	1	1
FLOW CONTROL	NONE	NONE	NONE

NEW YORK

NEW YORK

NEW YORK

NEW YORK

NEW YORK

NEW YORK

NEW YORK

NEW YORK

NEW YORK

NEW YORK

NEW YORK

RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS

T.R. 61 (DEVILS HOLE RD.) 220835N

REORDER PROGRAM

PENNSYLVANIA, OH N.P. CD-187.07

DESIGNED BY: D. BAUMGARTNER

DATE: 07-18-12

DESIGN DATE: 07-18-12

REV. NO. 1

SHEET NO. 1

FILE NO. C010787

SHEET 006

