

PUBLIC
BEFORE THE
SURFACE TRANSPORTATION BOARD

233520

INTERMOUNTAIN POWER AGENCY

Complainant,

v.

UNION PACIFIC RAILROAD COMPANY

Defendant.



Docket No. 42136

**OPENING EVIDENCE OF COMPLAINANT
INTERMOUNTAIN POWER AGENCY**

EXHIBITS

ENTERED
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DEC 17 2012
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Public Record

INTERMOUNTAIN POWER AGENCY

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Dated: December 17, 2012

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LIST OF EXHIBITS

EXHIBIT

TITLE

EXHIBIT III-A

- | | |
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|---|---|

EXHIBIT III-B

- | | |
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| 1 | IRR Track Diagrams |
| 2 | IRR Yard and Locomotive Shop Schematics |
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| 1 | Calculation of Coal Train Dwell Time at IGS |
| 2 | Dwell Time for Loaded Coal Trains Received in Interchange from URC at Provo |
| 3 | RTC Diagram of the IRR |
| 4 | IRR and UP Peak Period Transit Time Comparison |

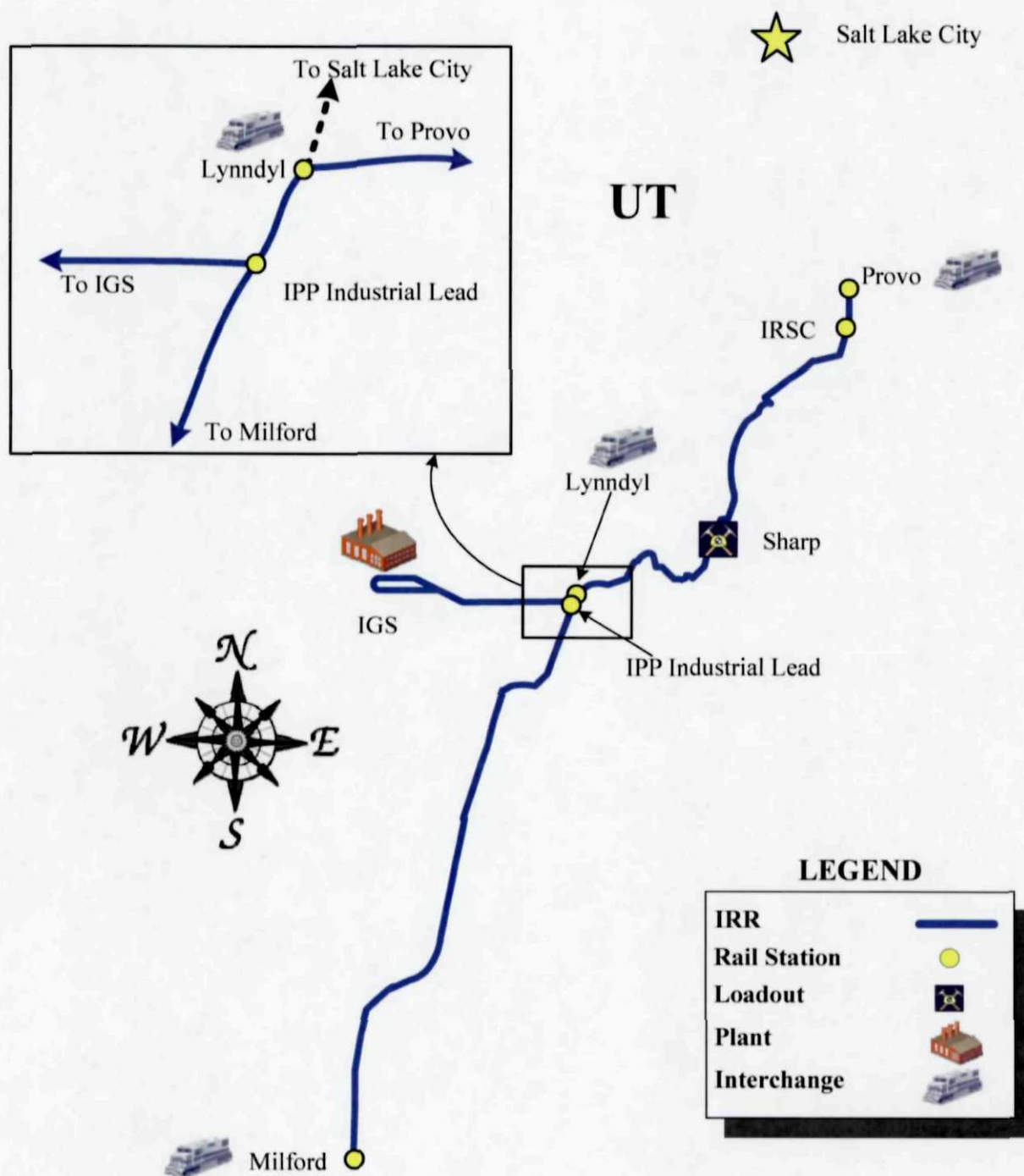
EXHIBIT III-H

- | | |
|-----------------|---|
| 1 | Discounted Cash Flow Analysis |
| 1 (Alternative) | Discounted Cash Flow Analysis |
| 2 | IPA and MMM Revenue to Variable Cost Ratios |
| 2 (Alternative) | IPA and MMM Revenue to Variable Cost Ratios |

III-A Stand-Alone
Traffic Group

Schematic Of The Intermountain Stand-Alone Railroad ("IRR")

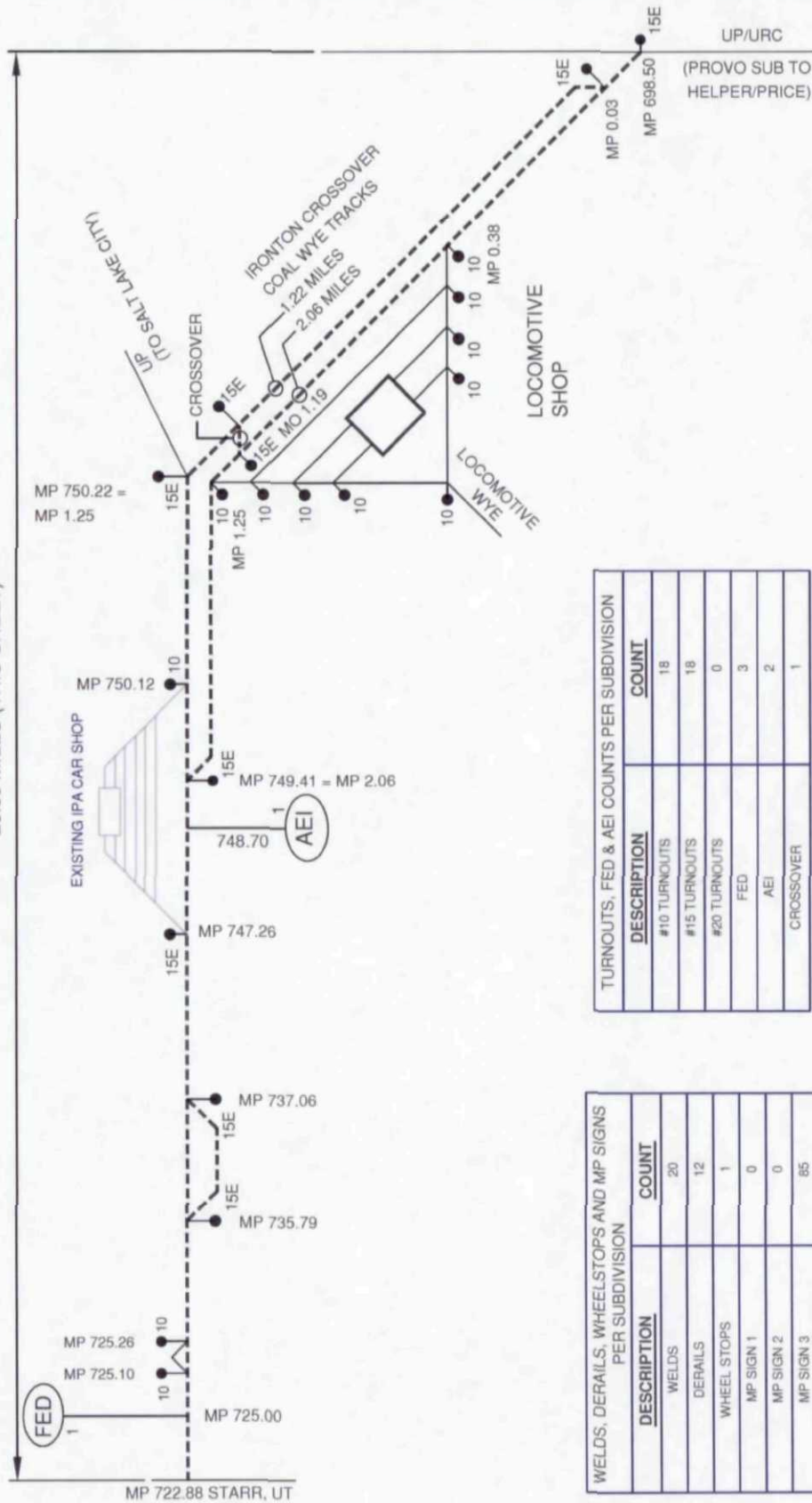
WY



IGS = Intermountain Generating Station
IRSC = Intermountain Railcar Service Center

III-B Stand-Alone Railroad System

85.77 IRR ROUTE MILES (CONTINUES ON SHEET 2 OF 4)
28.59 MILES (THIS SHEET)



WELDS, DERAILS, WHEELSTOPS AND MP SIGNS PER SUBDIVISION	
DESCRIPTION	COUNT
WELDS	20
DERAILS	12
WHEEL STOPS	1
MP SIGN 1	0
MP SIGN 2	0
MP SIGN 3	85

TURNOUTS, FED & AEI COUNTS PER SUBDIVISION	
DESCRIPTION	COUNT
#10 TURNOUTS	18
#15 TURNOUTS	18
#20 TURNOUTS	0
FED	3
AEI	2
CROSSOVER	1

EXHIBIT:
III-B-1

LEGEND:

- 136# STANDARD CWR
- - - 115# CWR CLASS 1 RELAY
- 20' TURNOUT TYPE
- * TURNOUT TYPES
 - 20 - #20 ELECTRIC
 - 15E - #15 ELECTRIC
 - 15 - #15 HAND-THROWN
 - 10S - #10 SPRING
 - 10 - #10 HAND-THROWN
 - 10E - #10 ELECTRIC
- (FED) 1 FAILED EQUIPMENT DETECTOR WITH NUMBER OF TRACKS COVERED
- (AEI) 1 HOT BEARING DETECTOR
- DE OR DEB - DRAGGING EQUIPMENT DETECTOR
- HW - HOT WHEEL DETECTOR
- (AEI) 1 AUTOMATIC EQUIPMENT IDENTIFICATION
- SCANNER WITH NUMBER OF TRACKS COVERED

SUBDIVISION: **SHARP**

DATE: **12/07/12**

MP: **722.88**

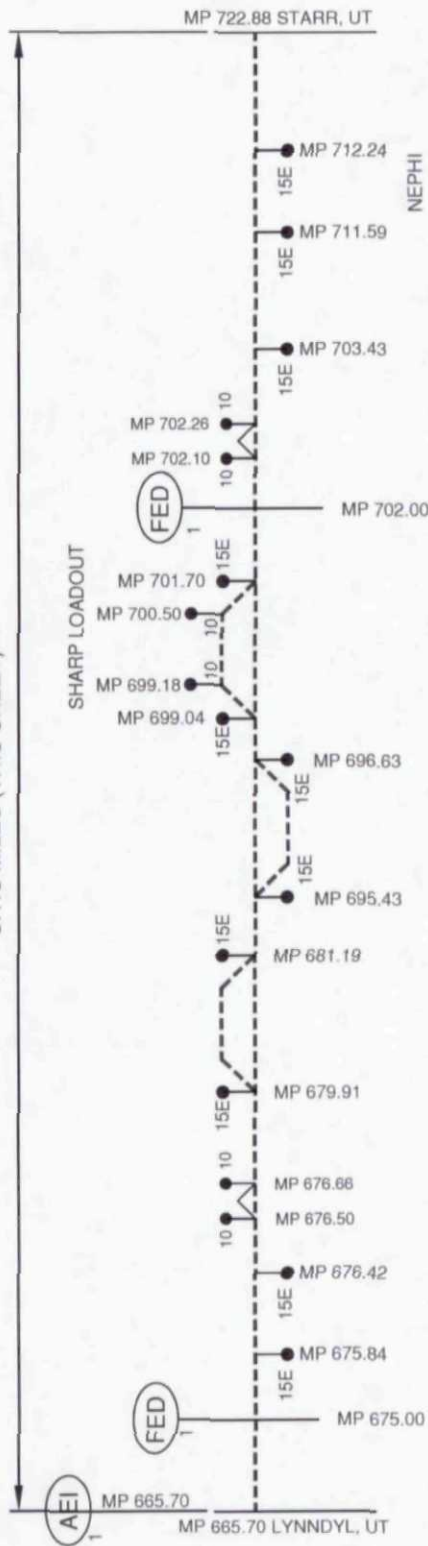
FROM: **STARR**

TO: **IRON TON**

NOT TO SCALE

MP: **750.22**

85.77 IRR ROUTE MILES (CONTINUES ON SHEET 1 OF 4)
57.18 MILES (THIS SHEET)



WELDS, DERAILS, WHEELSTOPS AND MP SIGNS PER SUBDIVISION	
DESCRIPTION	COUNT
WELDS	20
DERAILS	12
WHEELSTOPS	1
MP SIGN 1	0
MP SIGN 2	0
MP SIGN 3	85

TURNOUTS, FED & AEI COUNTS PER SUBDIVISION	
DESCRIPTION	COUNT
#10 TURNOUTS	18
#15 TURNOUTS	18
#20 TURNOUTS	0
FED	3
AEI	2
CROSSOVER	1

EXHIBIT:
III-B-1

LEGEND:

- 136# STANDARD CWR
- 115# CWR CLASS 1 RELAY
- 20 = TURNOUT TYPE*
- * TURNOUT TYPES
 - 20 - #20 ELECTRIC
 - 15E - #15 ELECTRIC
 - 15 - #15 HAND-THROWN
 - 10S - #10 SPRING
 - 10 - #10 HAND-THROWN
 - 10E - #10 ELECTRIC
- ⬮ FAILED EQUIPMENT DETECTOR WITH NUMBER OF TRACKS COVERED
- ⬮ HB = HOT BEARING DETECTOR
- ⬮ DE OR DED = DRAGGING EQUIPMENT DETECTOR
- ⬮ HW = HOT WHEEL DETECTOR
- ⬮ AEI = AUTOMATIC EQUIPMENT IDENTIFICATION
- ⬮ SCANNER WITH NUMBER OF TRACKS COVERED

SUBDIVISION: **SHARP**

FROM: **LYNN DYLL**

TO: **STARR**

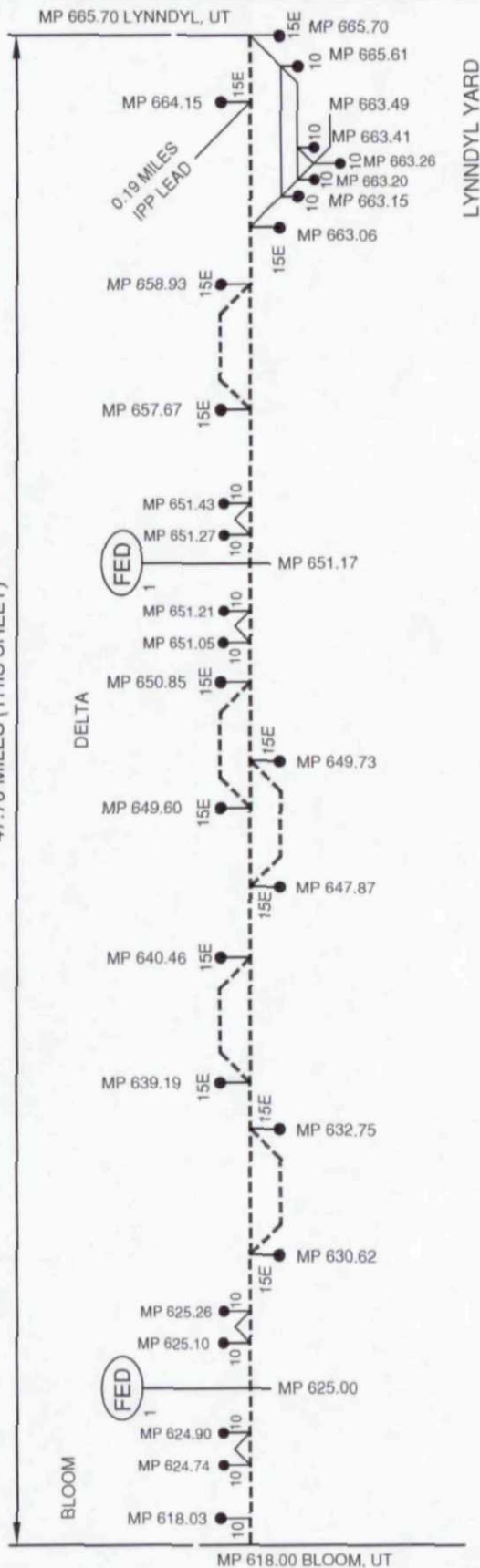
DATE: **12/07/12**

MP: **665.70**

MP: **722.88**

NOT TO SCALE

89.0 IRR ROUTE MILES (CONTINUES ON SHEET 4 OF 4)
47.70 MILES (THIS SHEET)



WELDS, DERAILS, WHEELSTOPS AND MP SIGNS PER SUBDIVISION	
DESCRIPTION	COUNT
WELDS	36
DERAILS	15
WHEEL STOPS	1
MP SIGN 1	0
MP SIGN 2	0
MP SIGN 3	89

TURNOUTS, FED & AEI COUNTS PER SUBDIVISION	
DESCRIPTION	COUNT
#10 TURNOUTS	24
#15 TURNOUTS	26
#20 TURNOUTS	0
FED	4
AEI	1

PAGE 3 OF 4

LEGEND:

--- 136# STANDARD CWR
--- 115# CWR CLASS 1 RELAY
--- 20# TURNOUT TYPE*

* TURNOUT TYPES
20 - #20 ELECTRIC
15E - #15 ELECTRIC
15 - #15 HAND-THROWN
10S - #10 SPRING
10 - #10 HAND-THROWN
10E - #10 ELECTRIC

1 (FED) FAILED EQUIPMENT DETECTOR WITH
NUMBER OF TRACKS COVERED
1 (AEI) HOT BEARING DETECTOR
DE OR DED= DRAGGING EQUIPMENT DETECTOR
HW= HOT WHEEL DETECTOR
1 (AEI) AUTOMATIC EQUIPMENT IDENTIFICATION
SCANNER WITH NUMBER OF TRACKS COVERED

EXHIBIT:
III-B-1

SUBDIVISION: **LYNN DYL**

FROM: **BLOOM**

MP: **618.00**

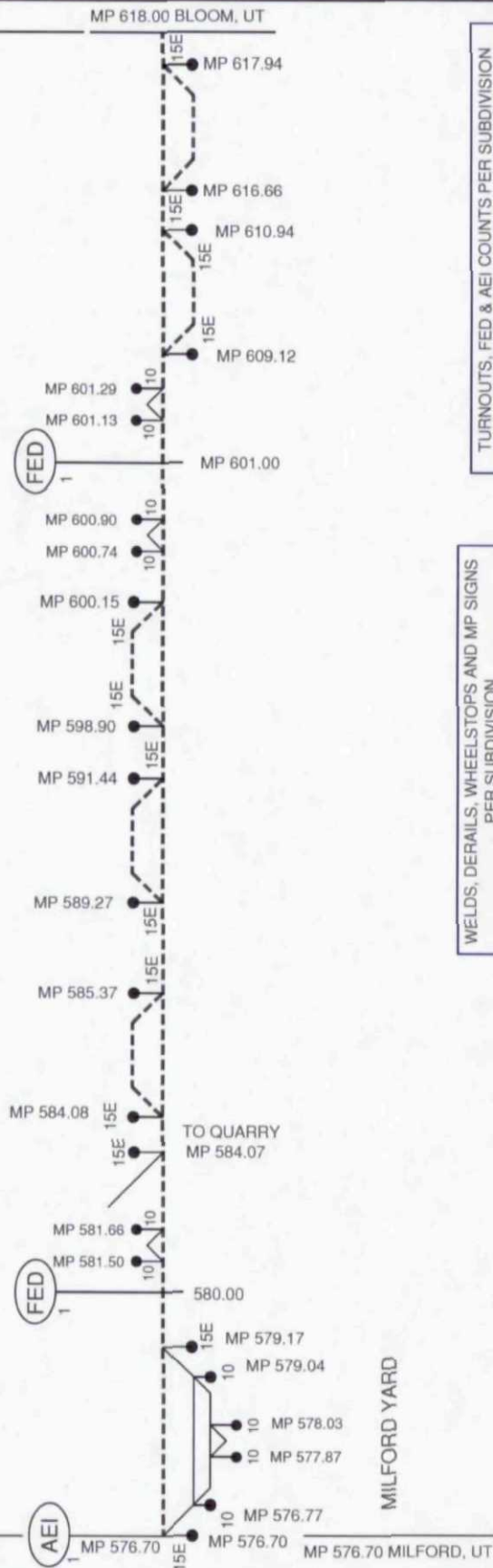
TO: **LYNN DYL**

NOT TO SCALE

MP: **665.70**

DATE: **12/07/12**

89.0 IRR ROUTE MILES (CONTINUES ON SHEET 3 OF 4)
41.30 MILES (THIS SHEET)



DESCRIPTION	COUNT
WELDS	36
DERAILS	15
WHEEL STOPS	1
MP SIGN 1	0
MP SIGN 2	0
MP SIGN 3	89

DESCRIPTION	COUNT
#10 TURNOUTS	24
#15 TURNOUTS	26
#20 TURNOUTS	0
FED	4
AEI	1

PAGE 4 OF 4

EXHIBIT:
III-B-1

LEGEND:

- 136# STANDARD CWR
- 115# CWR CLASS 1 RELAY
- 20 = TURNOUT TYPE*
- * TURNOUT TYPES
 - 20 - #20 ELECTRIC
 - 15E - #15 ELECTRIC
 - 15 - #15 HAND-THROWN
 - 10S - #10 SPRING
 - 10 - #10 HAND-THROWN
 - 10E - #10 ELECTRIC
- (FED) 1 FAILED EQUIPMENT DETECTOR WITH NUMBER OF TRACKS COVERED
- HB = HOT BEARING DETECTOR
- DE OR DED = DRAGGING EQUIPMENT DETECTOR
- HW = HOT WHEEL DETECTOR
- (AEI) 1 AUTOMATIC EQUIPMENT IDENTIFICATION SCANNER WITH NUMBER OF TRACKS COVERED

SUBDIVISION: **LYNN DYL**

DATE: **12/07/12**

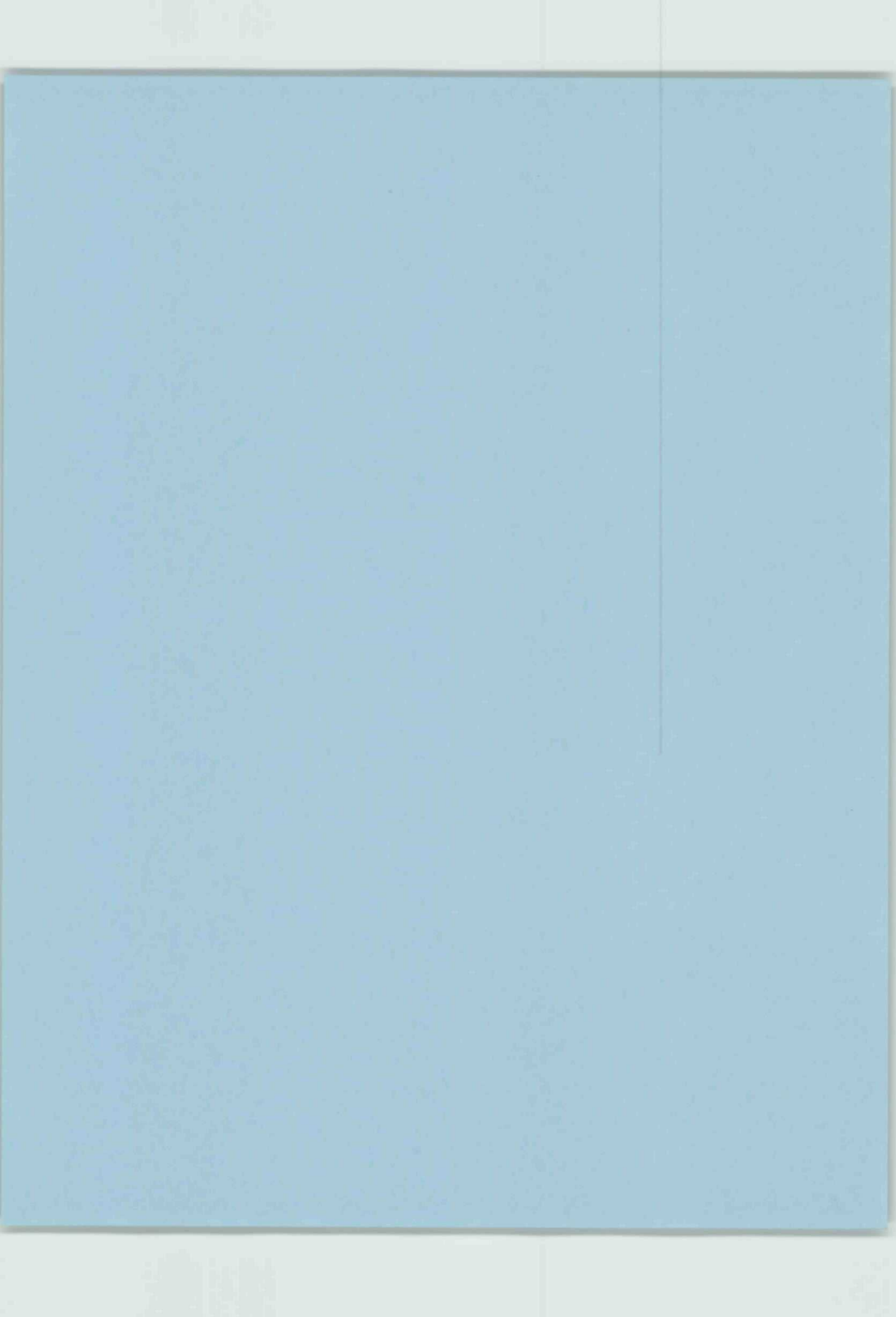
MP: **576.70**

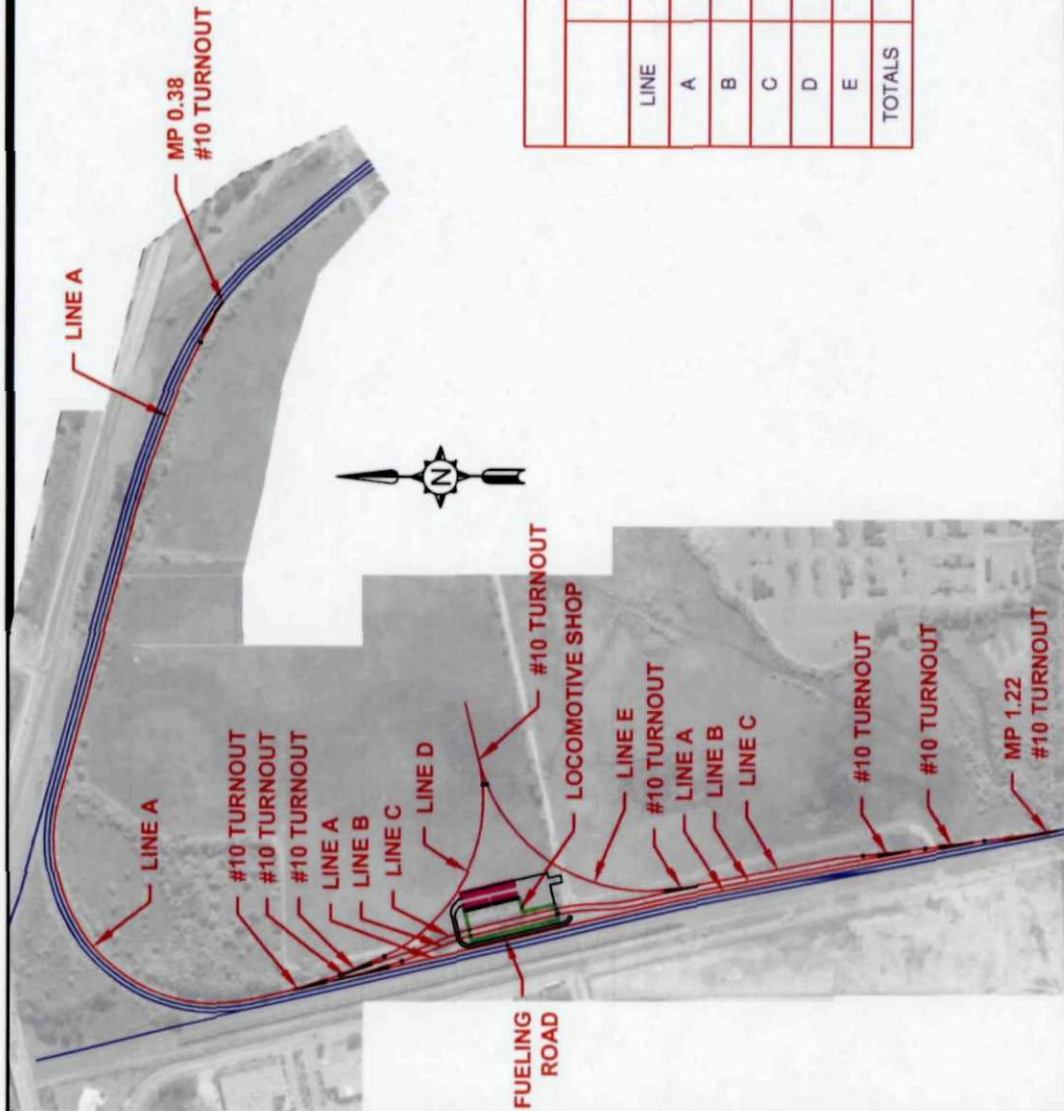
FROM: **MILFORD**

MP: **618.00**

TO: **BLOOM**

NOT TO SCALE





LINE	LOCOMOTIVE SHOP		LENGTH FROM TURNOUT TO TURNOUT	
	LENGTH AFTER 13' TRACK CLEARANCE AREA			
	L.F.	MILES	LF	MILES
A	5,255	0.995	5,572	1.046
B	1,805	0.342	2,066	0.391
C	1,812	0.343	2,073	0.393
D	706	0.134	920	0.174
E	825	0.156	1,112	0.211
TOTALS	10,403	1.970	11,743	2.215

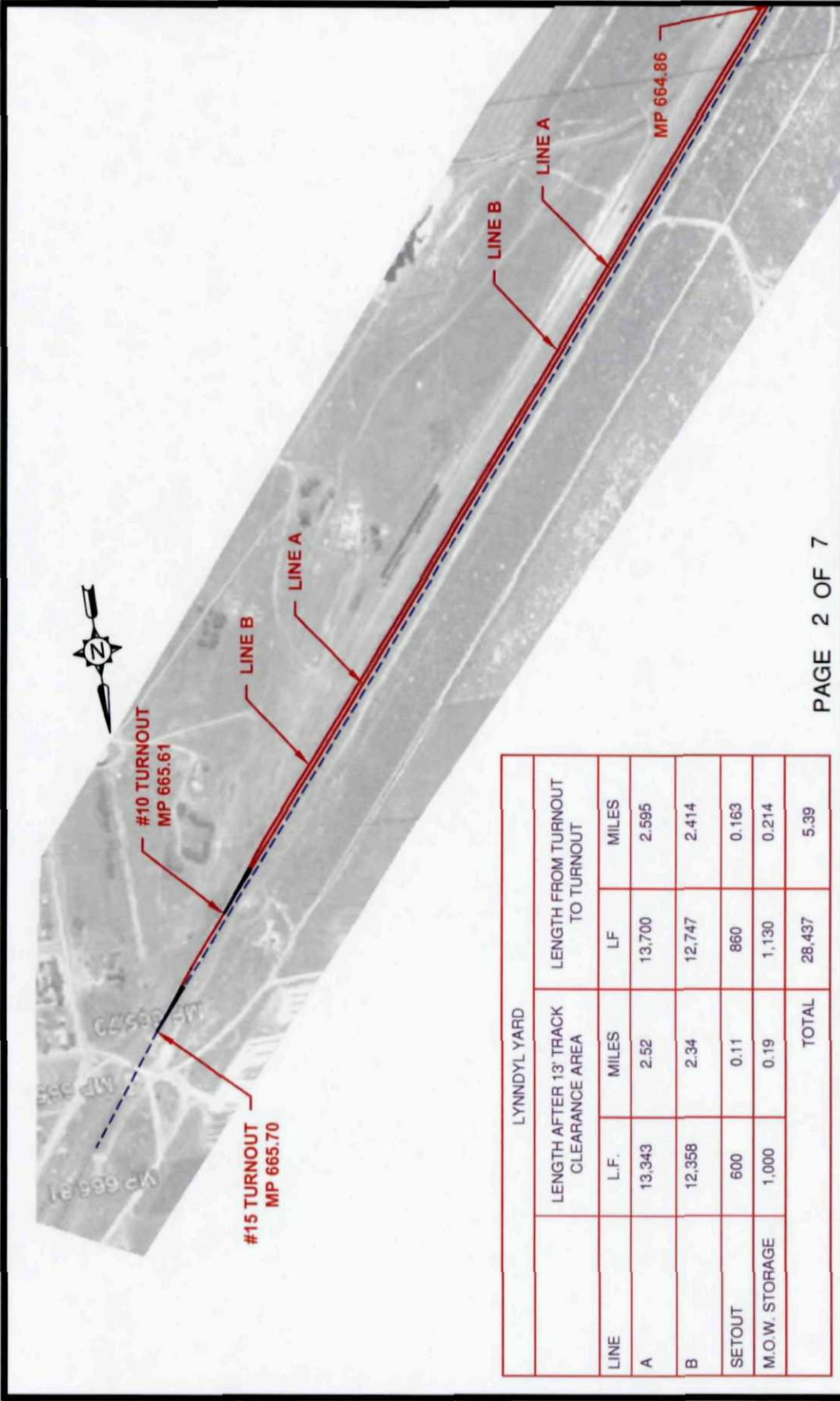
EXHIBIT:
III-B-2

LEGEND:

- 136# STANDARD CWR
- - - 115# CWR CLASS 1 RELAY
- 20# TURNOUT TYPE*
- * TURNOUT TYPES
- 20 - #20 ELECTRIC
- 15E - #15 ELECTRIC
- 15 - #15 HAND-THROWN
- 10S - #10 SPRING
- 10 - #10 HAND-THROWN
- 10E - #10 ELECTRIC
- (FED) 1 FAILED EQUIPMENT DETECTOR WITH NUMBER OF TRACKS COVERED
- HB = HOT BEARING DETECTOR
- DE OR DED = DRAGGING EQUIPMENT DETECTOR
- HW = HOT WHEEL DETECTOR
- (AEI) 1 AUTOMATIC EQUIPMENT IDENTIFICATION
- SCANNER WITH NUMBER OF TRACKS COVERED

SUBDIVISION: **SHARP**
LOCOMOTIVE SHOP

DATE: **12/05/12**
SCALE: **1" = 600'**



LYNNDYL YARD				
LINE	LENGTH AFTER 13' TRACK CLEARANCE AREA		LENGTH FROM TURNOUT TO TURNOUT	
	L.F.	MILES	LF	MILES
A	13,343	2.52	13,700	2.595
B	12,358	2.34	12,747	2.414
SETOUT	600	0.11	860	0.163
M.O.W. STORAGE	1,000	0.19	1,130	0.214
		TOTAL	28,437	5.39

PAGE 2 OF 7

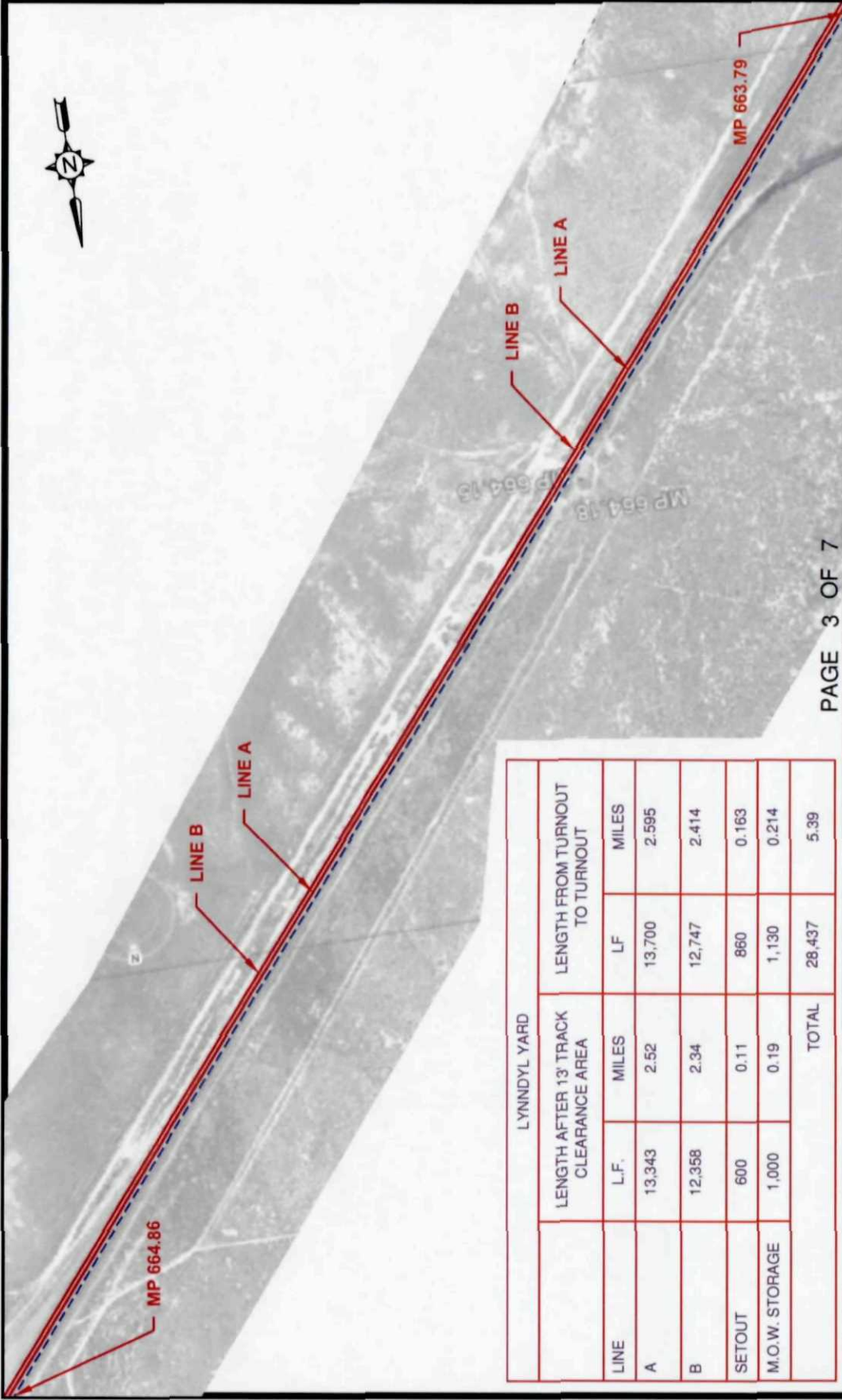
EXHIBIT:
III-B-2

LEGEND:

- 136# STANDARD CWR
--- 115# CWR CLASS 1 RELAY
20' TURNOUT TYPE*
- * TURNOUT TYPES
20 - #20 ELECTRIC
15E - #15 ELECTRIC
15- - #15 HAND-THROWN
10S - #10 SPRING
10- - #10 HAND-THROWN
10E - #10 ELECTRIC
- (FED) FAILED EQUIPMENT DETECTOR WITH NUMBER OF TRACKS COVERED
HB = HOT BEARING DETECTOR
DE OR DEB = DRAWING EQUIPMENT DETECTOR
HW = HOT WHEEL DETECTOR
(AEI) AUTOMATIC EQUIPMENT IDENTIFICATION SCANNER WITH NUMBER OF TRACKS COVERED

SUBDIVISION: **LYNNDYL**
LYNNDYL YARD
MP 665.70 TO 664.86

DATE: **12/05/12**
SCALE: 1" = 500'



LYNN DYL YARD				
LINE	LENGTH AFTER 13' TRACK CLEARANCE AREA		LENGTH FROM TURNOUT TO TURNOUT	
	L.F.	MILES	LF	MILES
A	13,343	2.52	13,700	2.595
B	12,358	2.34	12,747	2.414
SETOUT	600	0.11	860	0.163
M.O.W. STORAGE	1,000	0.19	1,130	0.214
TOTAL			28,437	5.39

EXHIBIT:
III-B-2

LEGEND:

- - 136# STANDARD CWR

- 115# CWR CLASS 1 RELAY
- 20

TURNOUT TYPE*

20

#20 ELECTRIC

15E

#15 ELECTRIC

15

#15 HAND-THROWN

10S

#10 SPRING

10

#10 HAND-THROWN

10E

#10 ELECTRIC
- FED

1

FAILED EQUIPMENT DETECTOR WITH NUMBER OF TRACKS COVERED

HB

HOT BEARING DETECTOR

DC

DC CURRENT DETECTOR

HW

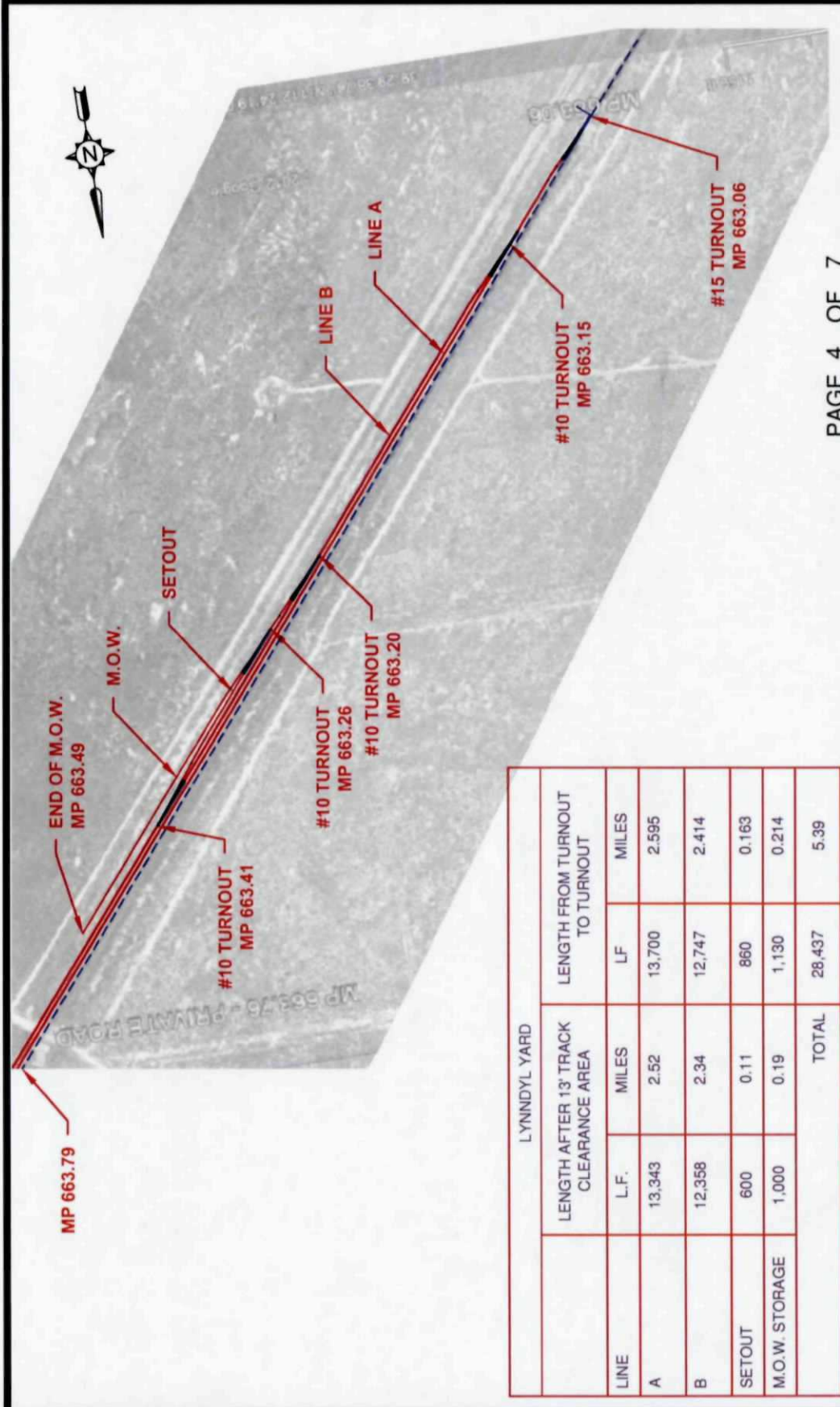
HOT WHEEL DETECTOR
- AEI

1

AUTOMATIC EQUIPMENT IDENTIFICATION SCANNER WITH NUMBER OF TRACKS COVERED

SUBDIVISION: **LYNN DYL**
LYNN DYL YARD
MP 664.86 TO 663.79

DATE: **12/05/12**
SCALE: 1" = 500'



LYNNDYL YARD				
LINE	LENGTH AFTER 13' TRACK CLEARANCE AREA		LENGTH FROM TURNOUT TO TURNOUT	
	L.F.	MILES	LF	MILES
A	13,343	2.52	13,700	2.595
B	12,358	2.34	12,747	2.414
SETOUT	600	0.11	860	0.163
M.O.W. STORAGE	1,000	0.19	1,130	0.214
TOTAL			28,437	5.39

EXHIBIT:
III-B-2

LEGEND:

- ---

- 136# STANDARD CWR

- 115# CWR CLASS 1 RELAY
- FED

1

FAILED EQUIPMENT DETECTOR WITH NUMBER OF TRACKS COVERED

HB

= HOT BEARING DETECTOR

DE OR DED

= DRAGGING EQUIPMENT DETECTOR

HW

= HOT WHEEL DETECTOR
- AEI

1

AUTOMATIC EQUIPMENT IDENTIFICATION SCANNER WITH NUMBER OF TRACKS COVERED
- * TURNOUT TYPES

20 - #20 ELECTRIC

15E - #15 ELECTRIC

15- #15 HAND-THROWN

10S - #10 SPRING

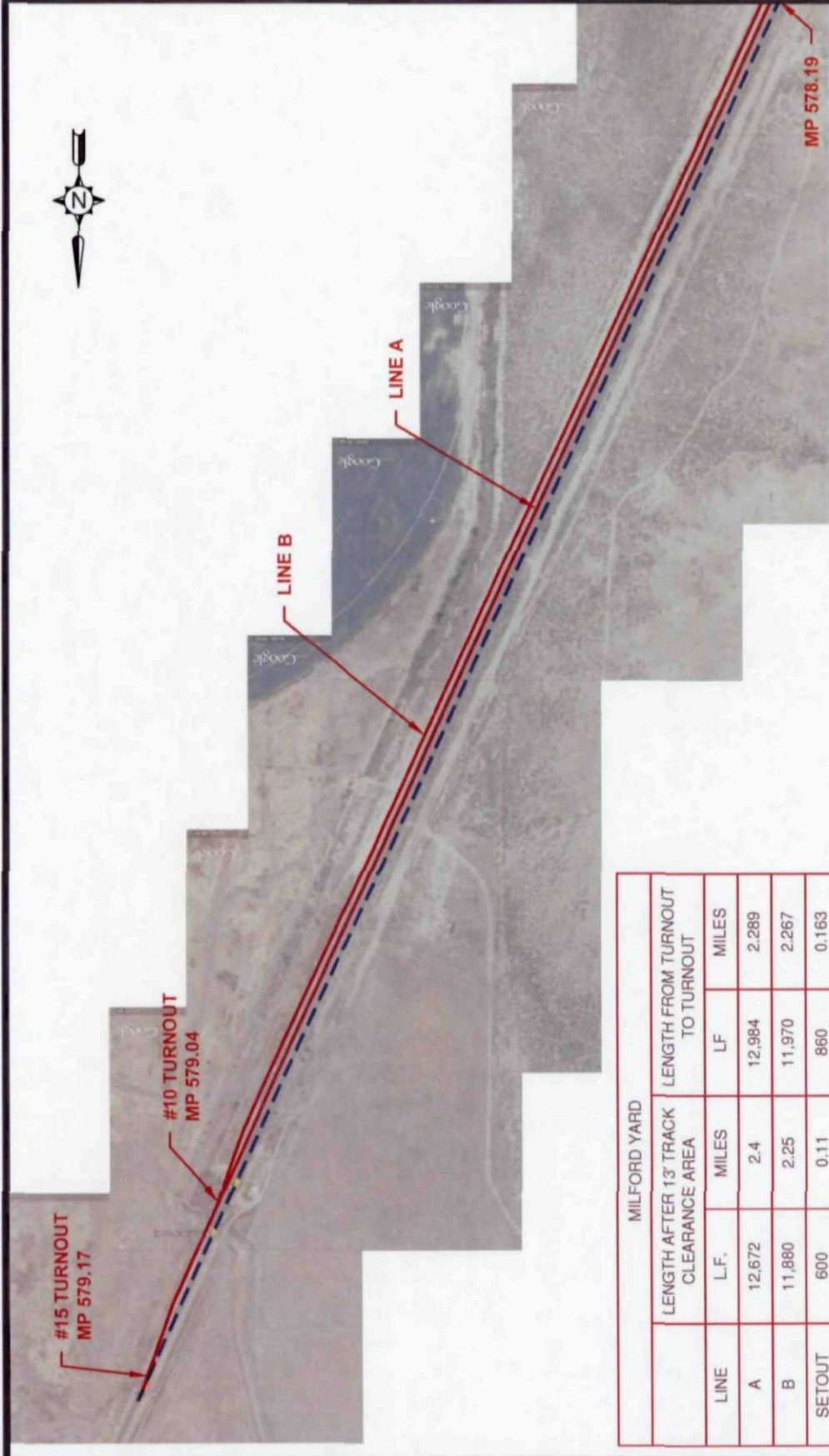
10- #10 HAND-THROWN

10E - #10 ELECTRIC
- ↑

20 = TURNOUT TYPE*

SUBDIVISION: **LYNNDYL**
LYNNDYL YARD
MP 663.79 TO 663.06

DATE: **12/05/12**
SCALE: 1" = 500'



MILFORD YARD				
LINE	LENGTH AFTER 13' TRACK CLEARANCE AREA		LENGTH FROM TURNOUT TO TURNOUT	
	L.F.	MILES	LF	MILES
A	12,672	2.4	12,984	2.289
B	11,880	2.25	11,970	2.267
SETOUT	600	0.11	860	0.163
TOTAL			25,814	4.719

EXHIBIT:
III-B-2

LEGEND:

- 136# STANDARD CWR

115# CWR CLASS 1 RELAY
- FED

1

FAILED EQUIPMENT DETECTOR WITH NUMBER OF TRACKS COVERED

HB

= HOT BEARING DETECTOR

DE OR OED

= DRAGGING EQUIPMENT DETECTOR

HW

= HOT WHEEL DETECTOR
- AEI

1

AUTOMATIC EQUIPMENT IDENTIFICATION

SCANNER WITH NUMBER OF TRACKS COVERED
- * TURNOUT TYPES

20- #20 ELECTRIC

15E- #15 ELECTRIC

15- #15 HAND-THROWN

10S- #10 SPRING

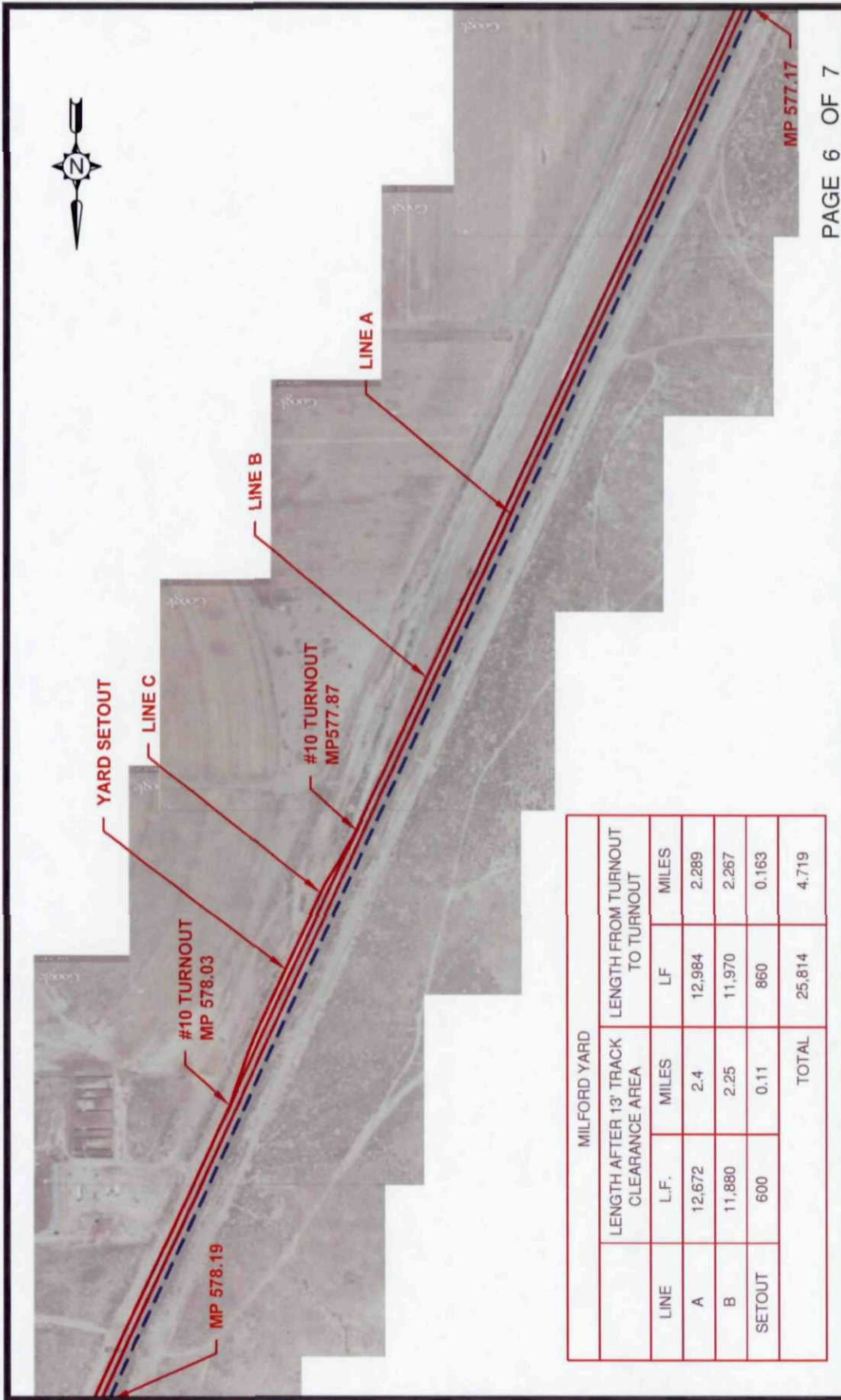
10- #10 HAND-THROWN

10E- #10 ELECTRIC
- ↑

20-# TURNOUT TYPE*

SUBDIVISION: **LYNDYL**
MILFORD YARD
MP 579.17 TO 578.19

DATE: **12/05/12**
SCALE: 1" = 500'



MILFORD YARD				
LINE	LENGTH AFTER 13' TRACK CLEARANCE AREA		LENGTH FROM TURNOUT TO TURNOUT	
	L.F.	MILES	LF	MILES
A	12,672	2.4	12,984	2.289
B	11,880	2.25	11,970	2.267
SETOUT	600	0.11	860	0.163
TOTAL			25,814	4.719

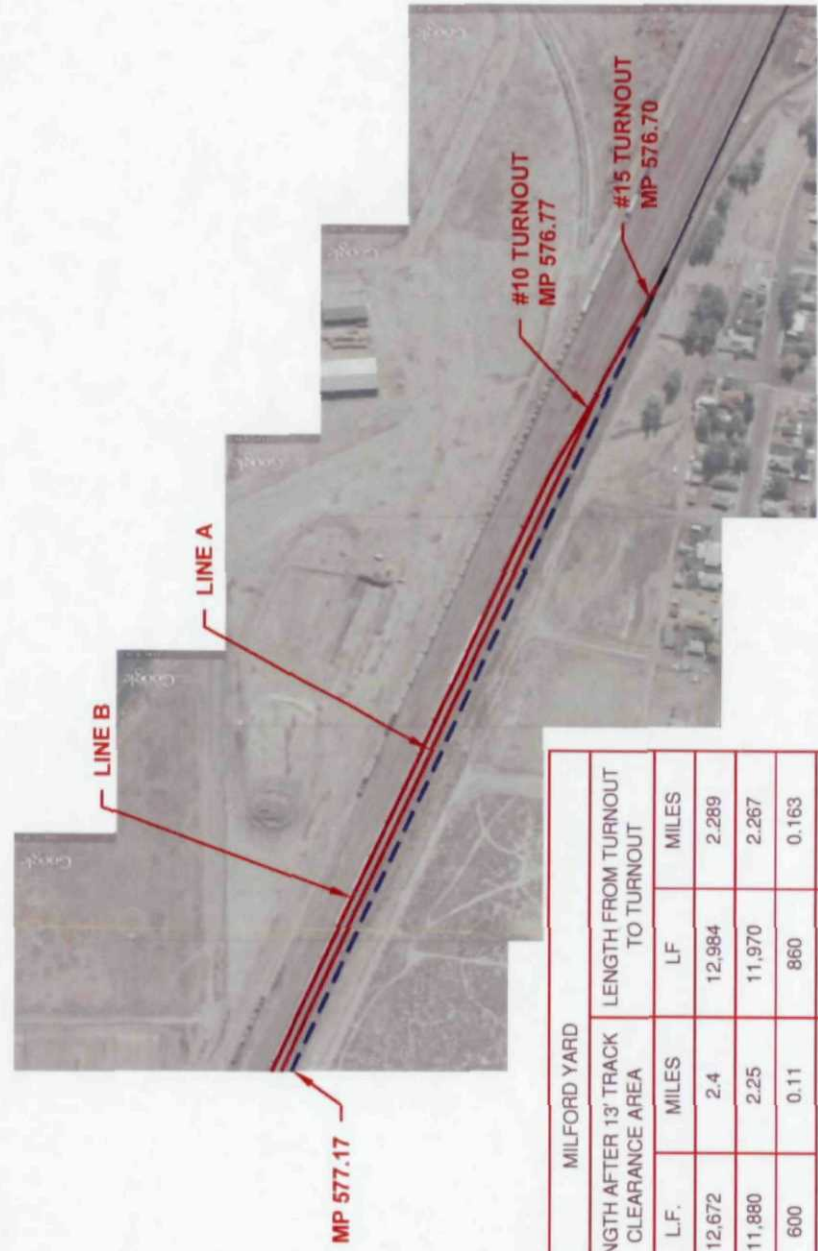
EXHIBIT:
III-B-2

LEGEND:

- - - - - 136# STANDARD CWR
- - - - - 115# CWR CLASS 1 RELAY
- * TURNOUT TYPES
 - 20 - #20 ELECTRIC
 - 15E - #15 ELECTRIC
 - 15S - #15 HAND-THROWN
 - 10S - #10 SPRING
 - 10E - #10 HAND-THROWN
 - 10E - #10 ELECTRIC
- (FED) 1 FAILED EQUIPMENT DETECTOR WITH NUMBER OF TRACKS COVERED
- HB = HOT BEARING DETECTOR
- DE OR DED = DRAGGING EQUIPMENT DETECTOR
- HW = HOT WHEEL DETECTOR
- (AEI) 1 AUTOMATIC EQUIPMENT IDENTIFICATION
- 1 SCANNER WITH NUMBER OF TRACKS COVERED

SUBDIVISION: **LYNDYL**
MILFORD YARD
MP 578.19 TO 577.17

DATE: **12/05/12**
SCALE: 1" = 500'



MILFORD YARD				
LINE	LENGTH AFTER 13' TRACK CLEARANCE AREA		LENGTH FROM TURNOUT TO TURNOUT	
	LF.	MILES	LF	MILES
A	12,672	2.4	12,984	2.289
B	11,880	2.25	11,970	2.267
SETOUT	600	0.11	860	0.163
TOTAL			25,814	4.719

EXHIBIT:
III-B-2

LEGEND:

- 136# STANDARD CWR
- - - 115# CWR CLASS 1 RELAY
- * TURNOUT TYPES
 - 20 - #20 ELECTRIC
 - 15E - #15 ELECTRIC
 - 15 - #15 HAND-THROWN
 - 10S - #10 SPRING
 - 10 - #10 HAND-THROWN
 - 10E - #10 ELECTRIC
- (FED) 1 FAILED EQUIPMENT DETECTOR WITH NUMBER OF TRACKS COVERED
 - HB = HOT BEARING DETECTOR
 - DE OR DECK DRAGGING EQUIPMENT DETECTOR
 - HW = HOT WHEEL DETECTOR
- (AEI) 1 AUTOMATIC EQUIPMENT IDENTIFICATION SCANNER WITH NUMBER OF TRACKS COVERED

SUBDIVISION: **LYNDYL**
MILFORD YARD
MP 577.17 TO 576.70

DATE: **12/05/12**
SCALE: 1" = 500'

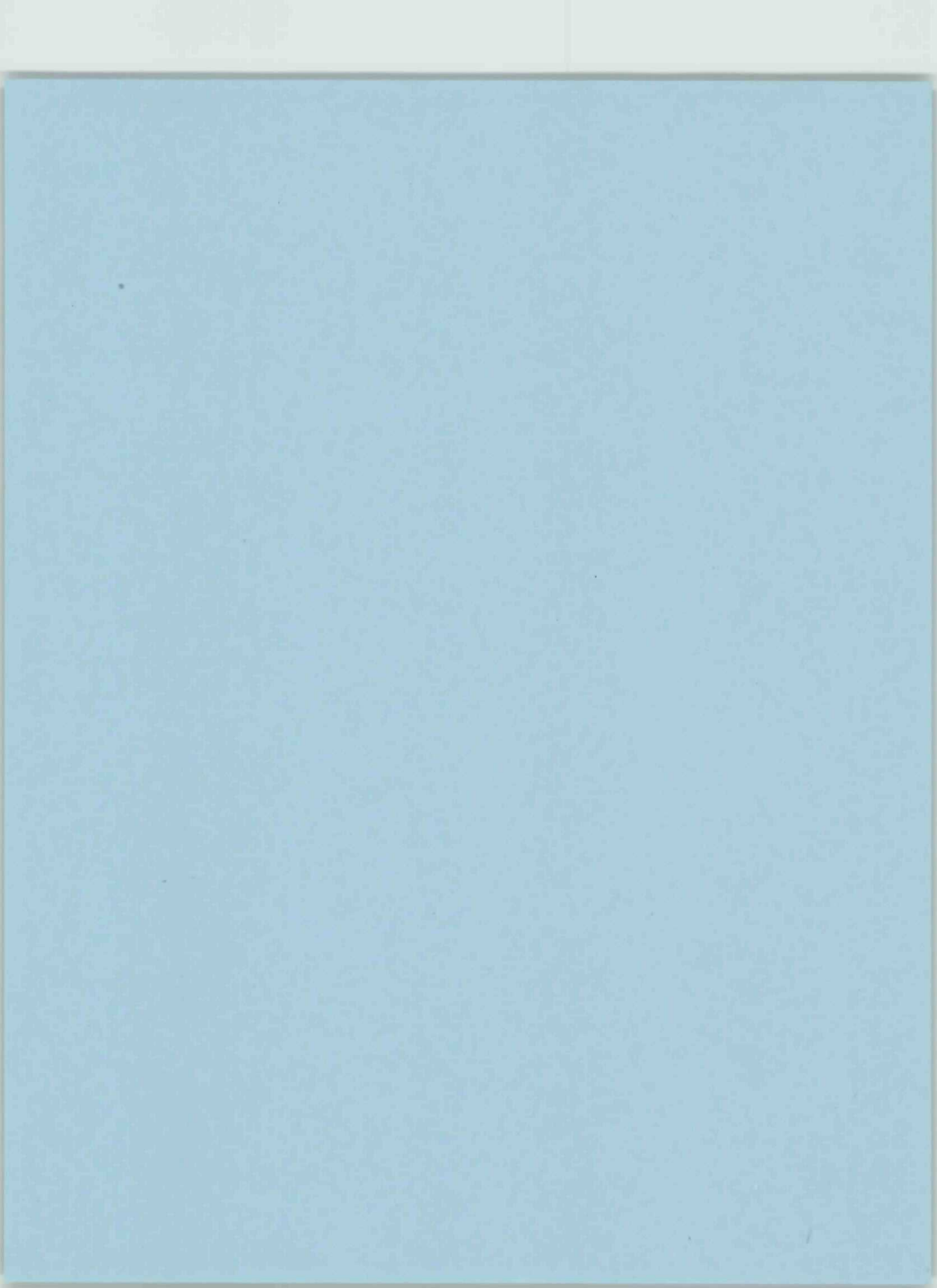
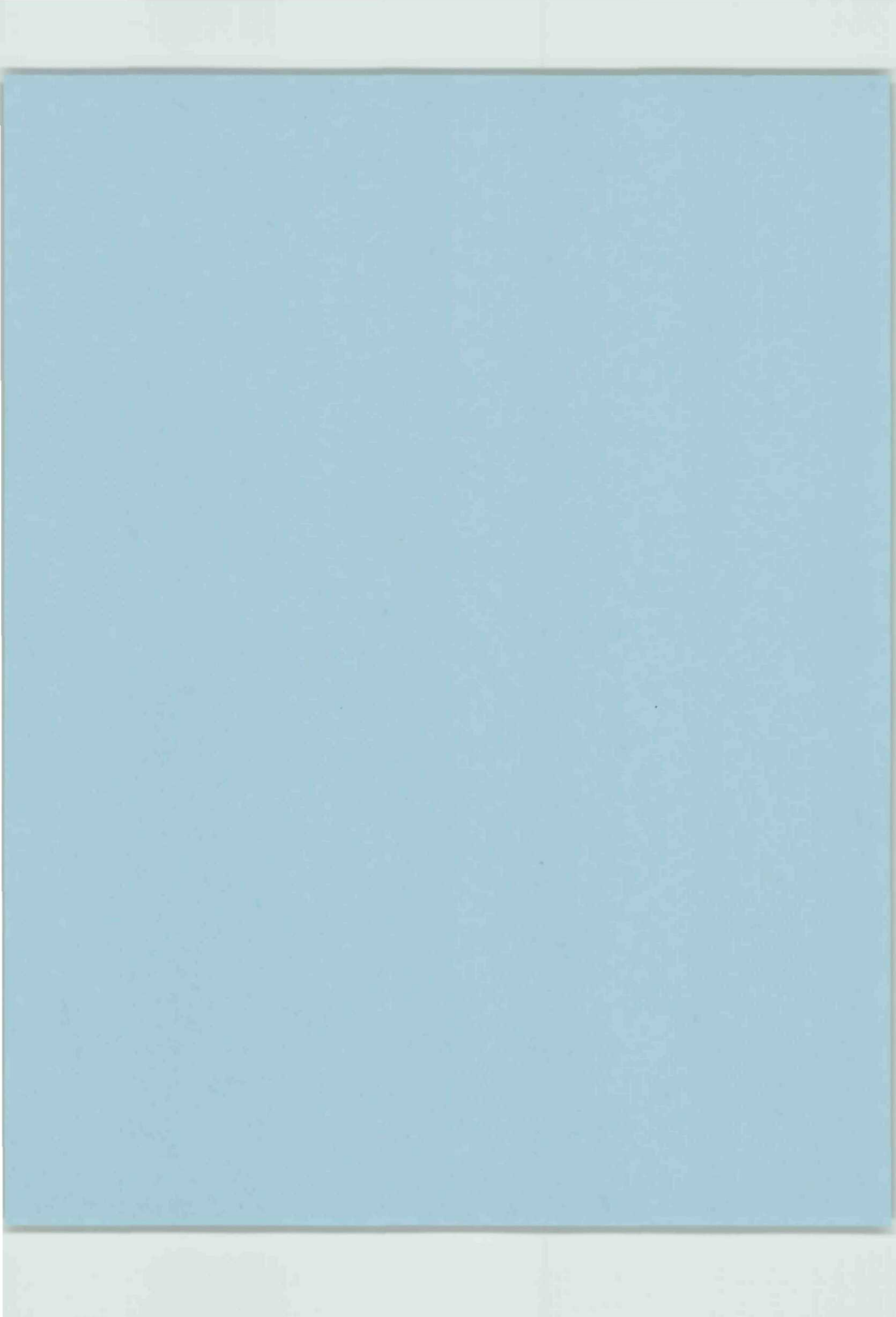


EXHIBIT III-B-3 IS CONFIDENTIAL
AND HAS BEEN REDACTED

EXHIBIT III-C-1 IS CONFIDENTIAL

AND HAS BEEN REDACTED



**DWELL TIME FOR LOADED COAL TRAINS
RECEIVED IN INTERCHANGE FROM URC AT PROVO**

This exhibit describes the individual movements required to remove Utah Railway ("URC") locomotives from and add IRR locomotives to westbound loaded coal trains interchanged between the two carriers at Provo. These movements assume that each loaded coal train received from the URC has both mid-train and rear helper locomotives, which may not always be the case (particularly as regards the rear helper).

Since the IRR trackage in this area is "dark" territory (no CTC), track warrants would be issued by the IRR dispatcher to govern the train and locomotive movements. However, the FRA regulations governing track warrants (49 C.F.R. § 218.105(d)) do not require a separate track warrant for each individual movement involving the same train in non-signaled territory. Rather, they require only that an employee undertake certain procedures before he "releases the limits of a main track authority" where "a hand-operated switch is used to clear the main track." The IRR switches that connect the Coal Wye tracks to the residual UP (and URC) and to the IRR's other mainline tracks, as well as the three switches on the Coal Wye tracks themselves, are power switches remotely controlled by the locomotive engineers. Thus, they do not meet the definition of a "Hand-operated Switch" under 49 C.F.R. § 218.93.

Under the IRR's operating rules (and as permitted by applicable FRA regulations), a total of only two track warrants are required for the URC/IRR locomotive removal/replacement process. One would be obtained by the inbound URC crew, and one would be obtained by the outbound IRR crew. The process would work as follows, with the time allotted for each movement for purposes of the simulation of the IRR's operations using the RTC Model shown:

1. The URC engineer radios the IRR dispatcher (URC would be given the IRR dispatcher's radio channel) prior to the loaded train's entry onto IRR tracks at Provo Subdivision Milepost 698.50 and requests a warrant to occupy the Coal Wye tracks and the portion of Wye #2¹ between MP 750.22 and MP 749.41 for a defined period (e.g., from 0800 hours to 0845 hours). Upon receiving the warrant, the URC engineer proceeds to move his loaded train through the point of connection between the UP/URC Provo Subdivision tracks and the IRR's Coal Wye tracks and onto Wye # 2, and stops the train when it has cleared the switch connecting Wye # 2 and Wye # 1 at MP 0.03. The train's dwell time on the IRR at Provo begins when the train has come to a stop on Wye # 2.

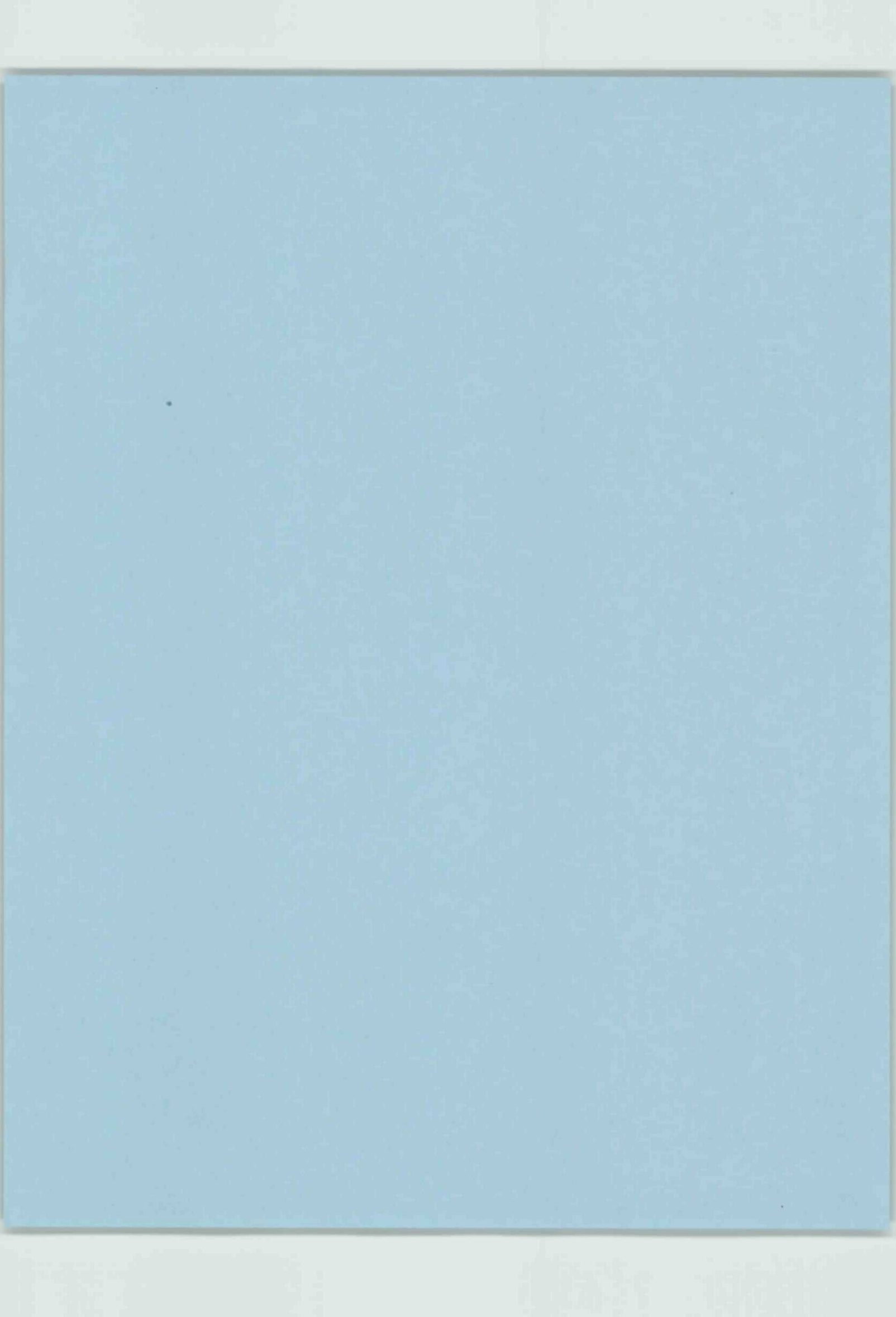
¹ The IRR's Coal Wye tracks (shown on the first page of Exhibit III-B-1) consist of two tracks, Wye #1 and Wye #2. Wye #1 is the northerly of the two tracks and Wye #2 is the southerly of the two tracks.

2. After the train stops, the URC crew of the mid-train helper units turns the angle cock on the car ahead and pulls the uncoupling pin. The head-end engineer then proceeds to pull the front portion of the train sufficiently past the crossover between Wye # 1 and Wye #2 at MP 1.19 to provide room for the mid-train helpers to use that crossover. This process takes no more than 10 minutes.
3. While the movement in #2 above is occurring, the URC rear helper crew uncouples the URC rear helper, if there is one, from the rest of the train and moves it back east onto the UP/URC tracks and then to the URC yard at Provo. No additional time needs to be allotted for this movement.
4. After the crossover at MP 1.19 is clear, the URC mid-train helper crew then takes the units west on Wye # 2 past the switch at MP 1.19, uses the crossover to move onto Wye # 1, and takes the units back east through the connection with the UP/URC tracks (and then to the URC yard at Provo). The portion of this movement that occurs on IRR tracks takes no more than 15 minutes.
5. After the mid-train helpers have cleared the crossover at MP 1.19, the lead URC crew then moves the first half of the train back west on Wye # 2 and couples the two halves of the train together. The lead locomotives are then moved (light) back west to clear the crossover at MP 1.19, and then back east through the crossover at MP 1.19, proceeding on Wye # 1 back to the UP/URC tracks and then to the URC yard. When the lead locomotives have cleared the Coal Wye tracks, the engineer radios the IRR dispatcher that URC has cleared the limits of the IRR track warrant. This process takes no more than 15 minutes.
6. Meanwhile, the three IRR locomotives and crew are ready to move from the IRR's nearby locomotive shop to join the train. When they hear the URC lead-locomotive engineer radio the IRR dispatcher that the URC locomotives have cleared the track warrant, the IRR crew then requests a track warrant from the dispatcher to occupy the Coal Wye tracks (including the portion the portion of Wye #2 between MP 749.41 and MP 750.22) for a defined period (e.g. 0845 hours to 0915 hours). The process of obtaining and recording the track warrant (by radio) should take no more than 5 minutes.
7. Upon receiving the warrant, the IRR crew then moves the three units east around the train, using the crossover at MP 1.19 to get to Wye # 1, and then reverses direction to use Wye # 2 to place one unit (the DP unit) onto the train. The crew checks the DP communication on this unit, uncouples the other two units, moves them through the switch at MP 0.03, and then back west on Wye # 1, through the crossover at MP 1.19 onto Wye # 2. The crew then moves the units east on Wye # 2 and couples to the front of the train,

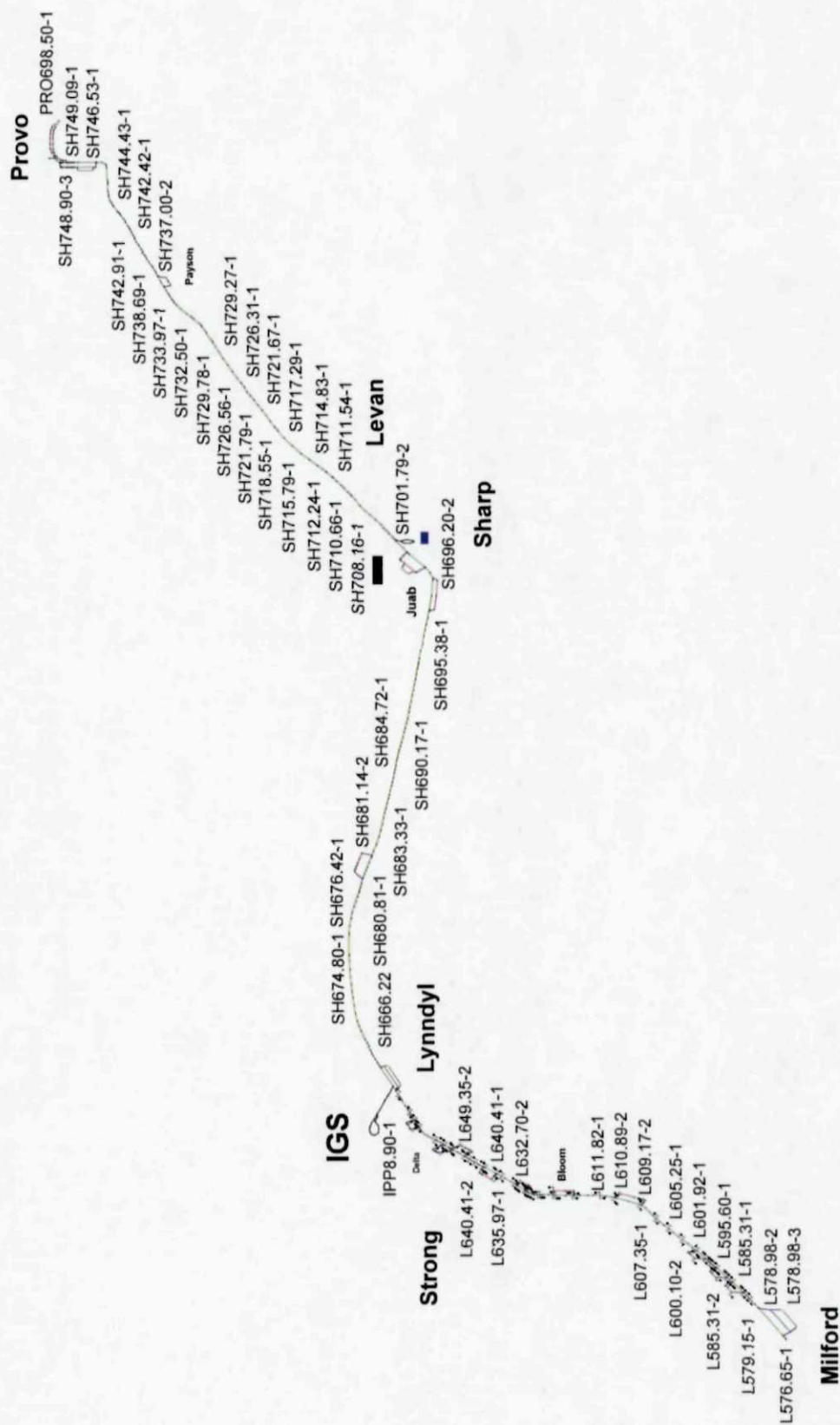
cuts in the air, releases the hand brakes, and sets up the DP communication. This process takes no more than 20 minutes.

8. The train is then ready to proceed west on the IRR's Sharp Subdivision toward Lynndyl under a new track warrant, which is obtained from the dispatcher while the carmen are performing a brake inspection (a process that takes no more than 10 minutes).

Based on these movements and time allotments, the total dwell time for loaded coal trains received in interchange from the URC at Provo is one hour and 15 minutes.



Intermountain Railroad



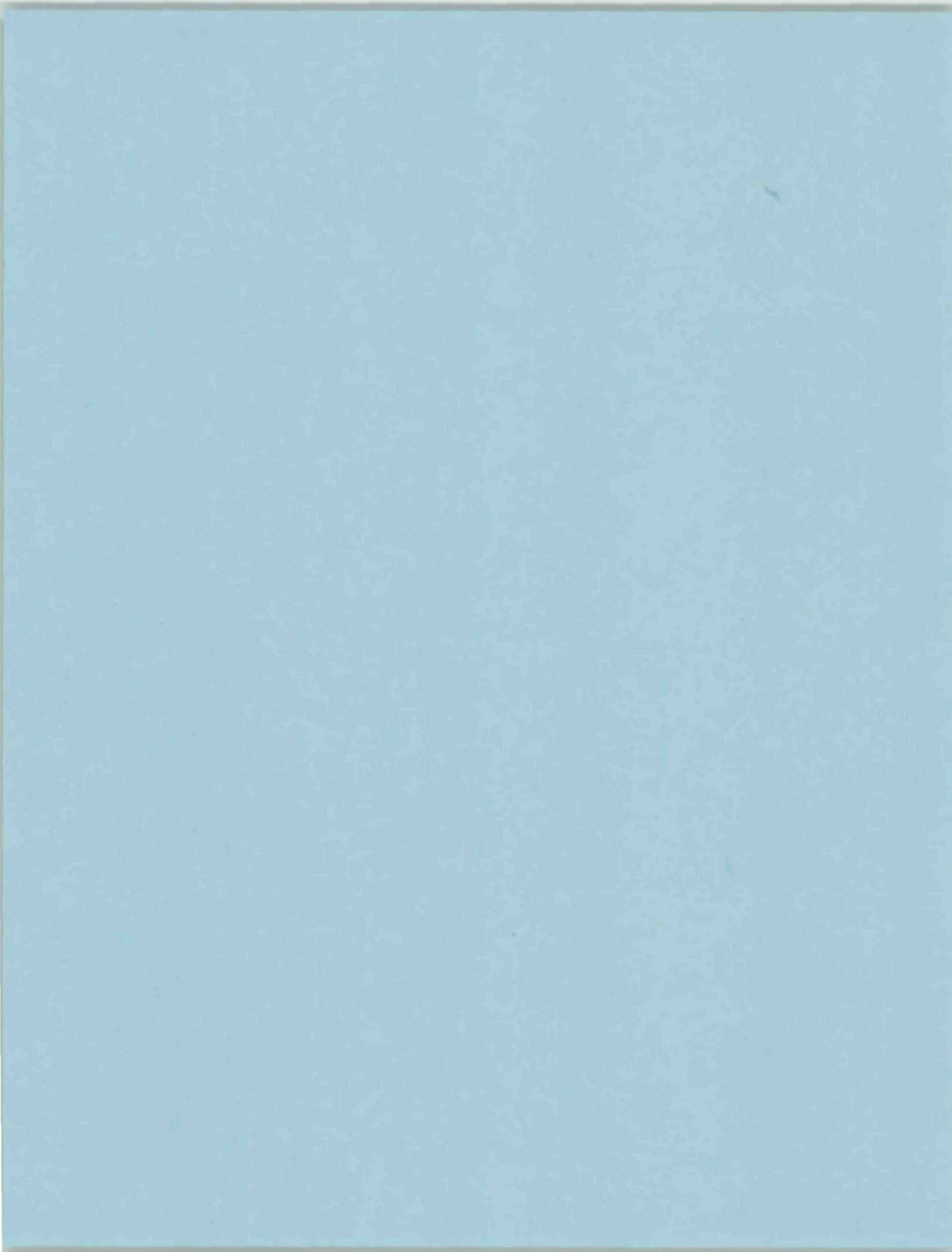


EXHIBIT III-C-4 IS CONFIDENTIAL
AND HAS BEEN REDACTED

**III-II Results of SAC
Analysis**

TABLE L: IRR STAND-ALONE COSTS AND REVENUES

Revenue Requirements to Cover Total Stand-Alone Costs

<u>Period</u> (1)	<u>Quarter</u> (2)	<u>Quarterly Capital Requirement Road Property</u> (3)	<u>Quarterly Operating Expense</u> (4)	<u>Annual Stand-Alone Requirement</u> (5)	<u>Annual Stand-Alone Revenues</u> (6)	<u>Overpayments Or Shortfalls In Revenues</u> (7)	<u>PV Difference</u> (8)	<u>Cumulative PV Difference</u> (9)
1	Nov 2 - Dec 31, 2012	\$7,217,384	\$7,458,201	\$14,675,585	\$18,031,813	\$3,356,228	\$3,449,361	\$3,449,361
2	1Q 2013	\$11,211,214	\$10,961,537					
3	2Q 2013	\$11,241,334	\$10,971,403					
4	3Q 2013	\$11,336,212	\$10,937,940					
5	4Q 2013	\$11,450,582	\$11,013,959	\$89,124,181	\$107,684,010	\$18,559,829	\$17,115,155	\$20,564,515
6	1Q 2014	\$11,567,596	\$11,266,201					
7	2Q 2014	\$11,622,190	\$11,343,937					
8	3Q 2014	\$11,756,790	\$11,354,147					
9	4Q 2014	\$11,888,160	\$11,476,772	\$92,275,793	\$116,226,498	\$23,950,704	\$19,821,441	\$40,388,957
10	1Q 2015	\$11,988,961	\$11,651,796					
11	2Q 2015	\$12,090,661	\$11,692,648					
12	3Q 2015	\$12,193,268	\$11,733,644					
13	4Q 2015	\$12,296,790	\$11,774,783	\$95,422,551	\$121,913,326	\$26,490,775	\$19,681,271	\$60,070,227
14	1Q 2016	\$12,388,468	\$12,015,566					
15	2Q 2016	\$12,480,856	\$12,125,752					
16	3Q 2016	\$12,573,961	\$12,236,948					
17	4Q 2016	\$12,667,788	\$12,349,161	\$98,838,504	\$126,717,651	\$27,879,147	\$18,591,472	\$78,661,699
18	1Q 2017	\$12,770,751	\$12,580,832					
19	2Q 2017	\$12,874,570	\$12,671,683					
20	3Q 2017	\$12,979,253	\$12,763,189					
21	4Q 2017	\$13,084,806	\$12,855,357	\$102,580,441	\$132,701,559	\$30,121,118	\$18,029,396	\$96,691,095
22	1Q 2018	\$13,196,844	\$13,024,888					
23	2Q 2018	\$13,309,854	\$13,119,749					
24	3Q 2018	\$13,423,846	\$13,215,301					
25	4Q 2018	\$13,538,828	\$13,311,548	\$106,140,857	\$137,181,798	\$31,040,940	\$16,677,109	\$113,368,205
26	1Q 2019	\$13,653,489	\$13,499,515					
27	2Q 2019	\$13,769,138	\$13,585,690					
28	3Q 2019	\$13,885,784	\$13,672,415					
29	4Q 2019	\$14,003,434	\$13,759,693	\$109,829,157	\$142,206,223	\$32,377,066	\$15,613,462	\$128,981,666
30	1Q 2020	\$14,114,224	\$14,129,214					
31	2Q 2020	\$14,225,912	\$14,188,605					
32	3Q 2020	\$14,338,508	\$14,248,246					
33	4Q 2020	\$14,452,017	\$14,308,138	\$114,004,863	\$150,851,705	\$36,846,842	\$15,919,159	\$144,930,826
34	1Q 2021	\$14,556,074	\$14,368,304					
35	2Q 2021	\$14,660,926	\$14,416,914					
36	3Q 2021	\$14,766,579	\$14,465,689					
37	4Q 2021	\$14,873,041	\$14,514,629	\$116,622,155	\$155,027,597	\$38,405,442	\$11,921,281	\$159,852,107
38	1Q 2022	\$14,983,186	\$14,597,231					
39	2Q 2022	\$15,091,181	\$14,653,429					
40	3Q 2022	\$15,206,043	\$14,709,844					
41	Oct 1 - Nov 1, 2022	\$5,328,268	\$5,136,165	\$99,708,351	\$132,633,015	\$32,924,664	\$11,481,814	\$171,333,921

TABLE L: IRR STAND-ALONE COSTS AND REVENUES

Revenue Requirements to Cover Total Stand-Alone Costs

<u>Period</u> (1)	<u>Quarter</u> (2)	<u>Quarterly Capital Requirement Road Property</u> (3)	<u>Quarterly Operating Expense</u> (4)	<u>Annual Stand-Alone Requirement</u> (5)	<u>Annual Stand-Alone Revenues</u> (6)	<u>Overpayments Or Shortfalls In Revenue</u> (7)	<u>PV Difference</u> (8)	<u>Cumulative PV Difference</u> (9)
1	Nov 2 - Dec 31, 2012	\$7,217,384	\$7,458,201	\$14,675,585	\$17,924,251	\$3,248,665	\$3,338,813	\$3,338,813
2	1Q 2013	\$11,211,214	\$10,961,537					
3	2Q 2013	\$11,241,334	\$10,971,403					
4	3Q 2013	\$11,336,212	\$10,937,940					
5	1Q 2014	\$11,450,582	\$11,013,959	\$89,124,181	\$107,233,584	\$18,109,403	\$16,699,790	\$20,038,603
6	1Q 2014	\$11,567,596	\$11,266,201					
7	2Q 2014	\$11,622,190	\$11,343,937					
8	3Q 2014	\$11,756,790	\$11,354,147					
9	4Q 2014	\$11,888,160	\$11,476,772	\$92,275,793	\$115,828,676	\$23,552,883	\$19,495,157	\$39,533,760
10	1Q 2015	\$11,988,961	\$11,651,796					
11	2Q 2015	\$12,090,661	\$11,692,618					
12	3Q 2015	\$12,193,268	\$11,733,644					
13	4Q 2015	\$12,296,790	\$11,771,783	\$95,422,551	\$121,567,590	\$26,145,039	\$19,424,407	\$58,958,167
14	1Q 2016	\$12,388,468	\$12,015,566					
15	2Q 2016	\$12,480,856	\$12,125,752					
16	3Q 2016	\$12,573,961	\$12,236,948					
17	4Q 2016	\$12,667,788	\$12,349,164	\$98,838,504	\$126,393,540	\$27,555,036	\$18,375,335	\$77,333,503
18	1Q 2017	\$12,770,751	\$12,580,832					
19	2Q 2017	\$12,871,570	\$12,671,683					
20	3Q 2017	\$12,979,253	\$12,763,189					
21	4Q 2017	\$13,084,806	\$12,855,357	\$102,580,441	\$132,389,535	\$29,809,094	\$17,842,630	\$95,176,133
22	1Q 2018	\$13,196,844	\$13,021,888					
23	2Q 2018	\$13,309,854	\$13,119,749					
24	3Q 2018	\$13,423,816	\$13,215,301					
25	4Q 2018	\$13,538,828	\$13,311,548	\$106,140,857	\$136,883,258	\$30,742,400	\$16,516,715	\$111,692,848
26	1Q 2019	\$13,653,489	\$13,199,515					
27	2Q 2019	\$13,769,138	\$13,585,690					
28	3Q 2019	\$13,885,784	\$13,672,415					
29	4Q 2019	\$14,003,434	\$13,759,693	\$109,829,157	\$141,922,155	\$32,092,998	\$15,476,473	\$127,169,322
30	1Q 2020	\$14,114,224	\$14,129,214					
31	2Q 2020	\$14,225,912	\$14,188,605					
32	3Q 2020	\$14,338,508	\$14,248,246					
33	4Q 2020	\$14,452,017	\$14,308,138	\$114,004,863	\$150,726,000	\$36,721,137	\$15,891,748	\$143,064,070
34	1Q 2021	\$14,556,074	\$14,368,304					
35	2Q 2021	\$14,660,926	\$14,416,911					
36	3Q 2021	\$14,766,579	\$14,465,689					
37	1Q 2021	\$14,873,041	\$14,511,629	\$116,622,155	\$154,866,128	\$38,243,973	\$14,858,547	\$157,922,617
38	1Q 2022	\$14,983,186	\$14,597,231					
39	2Q 2022	\$15,094,184	\$14,653,429					
40	3Q 2022	\$15,206,043	\$14,709,841					
41	Oct 1 - Nov 1, 2022	\$5,328,268	\$5,136,165	\$99,708,351	\$132,448,001	\$32,739,650	\$11,417,294	\$169,339,910

IPA and MMM Revenue to Variable Cost Ratios

	<u>Year</u> (1)	<u>MMM RVC Ratio</u> (2)
1	2012	218.0%
2.	2013	219.3%
3	2014	199.5%
4	2015	193.8%
5.	2016	189.3%
6	2017	186.3%
7.	2018	185.2%
8.	2019	183.5%
9.	2020	178.7%
10	2021	177.4%
11.	2022	177.0%

Source "MMM Model xlsx."

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IPA and MMM Revenue to Variable Cost Ratios

	<u>Year</u> (1)	<u>MMM R/V C Ratio</u> (2)
1	2012	219.3%
2	2013	221.1%
3	2014	200.7%
4.	2015	194.0%
5	2016	189.2%
6	2017	186.1%
7.	2018	185.0%
8	2019	183.5%
9.	2020	178.8%
10	2021	177.6%
11.	2022	177.3%

Source: "MMM Model (Alternative) .xlsn."