



WMSC Commissioner Brief: W-0136 – Improper Roadway Worker Protection – Van Dorn St. Station – July 8, 2021

Prepared for Washington Metrorail Safety Commission meeting on December 7, 2021

Safety event summary:

Metrorail's Rail Operations Control Center (ROCC) identified that a mobile work crew moved in the same direction as normal train traffic, rather than opposite the direction of traffic, while working in an area outside Van Dorn Street Station on July 8, 2021.

The Roadway Worker In-Charge (RWIC) had requested foul time protection to cross from one track to the other to exit the roadway via the access gate they had used to enter the roadway between Van Dorn Street and Franconia-Springfield stations to perform vegetation control. The movement from the access gate to the end of the work area was opposite the direction of normal traffic. The movement to return to the access gate was in the normal direction of traffic.

Metrorail training instructs personnel to walk against the normal direction of traffic for their safety. Metrorail's rules state that individuals on the roadway must "walk against the direction of traffic when possible."

This work crew had placed Advanced Mobile Flaggers (AMFs) at Franconia-Springfield Station, and had two Watchman/Lookouts on the roadway. One Watchman/Lookout was placed ahead of the crew, while the other was closer to the crew to communicate over the noise of their tools.

Due to the protections in place and the content of the rule, this event contradicted aspects of Metrorail's training but did not violate Metrorail's written procedures. The interviews and investigation conducted identified areas for safety improvement.

Probable Cause:

The probable cause of this event being reported was the complexity of and lack of clarity in Metrorail's roadway worker protection (RWP) procedures.

Corrective Actions:

Metrorail has begun a process to revise its roadway worker protection procedures.

WMSC staff observations:

Metrorail should consider including clearer direction in its revised RWP procedures regarding when, if ever, it is acceptable to walk with the direction of normal traffic. Any RWP revisions require extensive planning, communication and training for effective implementation. Metrorail should continue to assess whether interim changes are required while these long-term changes are developed and implemented.

Metrorail should also ensure that its consideration of its RWP program revision includes consideration of RWP rules such as rule 4.183 k, "walk against the direction of traffic when possible", that are not part of the primary RWP section (section 5) of the Metrorail Safety Rules and Procedures Handbook.

Staff recommendation: Adopt final report.



Washington Metro Area Transit Authority
Department of Safety and Environmental
Management (SAFE)

FINAL REPORT OF INVESTIGATION A&I E21284

Date of Event:	07/08/2021
Type of Event:	Improper Roadway Worker Protection (RWP)
Incident Time:	10:50 hours
Location:	Van Dorn Station, Track 1, Chain Marker (CM) 730+00
Time and How received by SAFE:	11:00 hours – SAFE On-Call Phone
WMSC Notification Time:	12:59 hours
Responding Safety Officers:	WMATA: No WMSC: No Other: No
Rail Vehicle:	N/A
Injuries:	None
Damage:	None
SMS I/A Incident Number:	N/A

Van Dorn Station – Improper Roadway Worker Protection (RWP)

July 8, 2021

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Abbreviations and Acronyms

AIMS	Advanced Information Management System
AMF	Advanced Mobile Flagger
ARS	Audio Recording System
CCTV	Closed-Circuit Television
CM	Chain Marker
ETO	Exclusive Track Occupancy
FT	Foul Time
IMO	Incident Management Officer
MOC	Maintenance Operations Control
MSRPH	Metrorail Safety Rules and Procedures Handbook
NOAA	National Oceanic and Atmospheric Administration
RBC	ROCC Button Controller
RJSB	Roadway Job Safety Briefing
ROCC	Rail Operations Control Center
RWIC	Roadway Worker In Charge
RWP	Roadway Worker Protection
SAFE	Department of Safety and Environmental Management
TRST	Office of Track and Structures
WMATA	Washington Metropolitan Area Transit Authority
WMSC	Washington Metrorail Safety Commission

Executive Summary

On Thursday, July 8, 2021, at approximately 10:50 hours, a Track and Structures (TRST) employee performing Roadway Worker In Charge (RWIC) duties was removed from service for a reported Roadway Worker Protection (RWP) violation by the Rail Operations Control Center (ROCC). ROCC personnel reported the RWIC and the mobile work crew walked in the same direction as train movement. The ROCC notified the SAFE Incident Management Officer (IMO) at approximately 11:00 hours. There were no reported injuries or damages as a result of this reported safety incident.

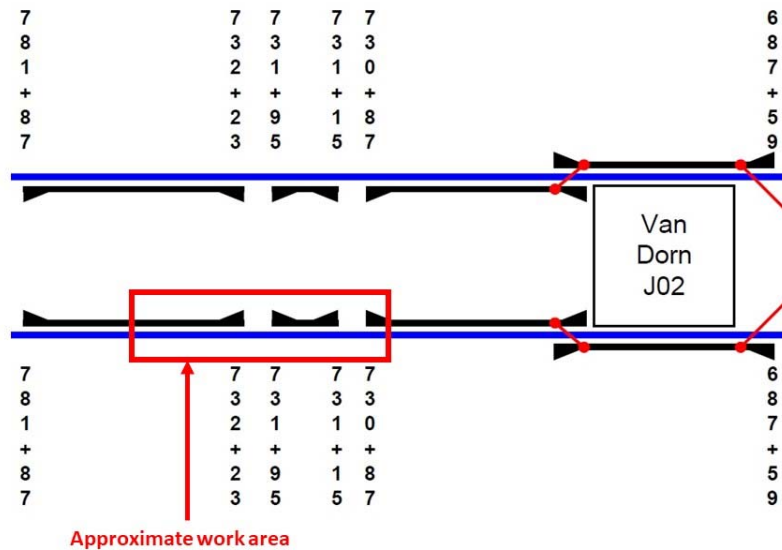
The Audio Recording System (ARS) playback [radio and landline] indicated that the RWIC requested Foul Time (FT) at Chain Marker (CM) J1 and J2 730+00 in order to exit the roadway via an access gate on Track 2 between Van Dorn and Franconia-Springfield Stations. The RWIC reported the mobile work crew was performing vegetation control between CM J1 730+00 to 750+00. After the work was completed, the RWIC requested FT to exit the roadway at CM J1 730+00. The ROCC inquired if the RWIC had performed their work between the chain markers as requested of J1 730+00 to J1 750+00. RWIC reported affirmative.

SAFE has determined there was no Roadway Worker Protection Violation that occurred. The ROCC recommended the RWIC to be removed from service for walking in the same direction as the train. However, there is no rule within the Metrorail Safety Rules and Procedures Handbook (MSRPH) that states it is mandatory to do so. MSRPH Section 4 – Safety Rules - 4.183.k states, *“Walk against the direction of traffic when possible.”* Although walking with the direction of traffic is not considered a “best practice,” SAFE recognizes there are situations which causes roadway workers to travel in the same direction as traffic. However, to travel with the direction of traffic, the RWIC must have adequate safety measures in place to protect all members on the roadway. In this instance, there were two Advanced Mobile Flaggers (AMFs) in place at Franconia-Springfield Station and two Watchman/Lookouts positioned on the roadway while the work crew were performing vegetation control duties to provide ample time to clear for the work crew.

Incident Site

Van Dorn Station, Track 1, CM 730+00

Field Sketch/Schematics



Purpose and Scope

The purpose of this incident investigation and candid self-evaluation is to collect and analyze available facts, determine the probable cause(s) of the incident, identify contributing factors, and make recommendations to prevent a recurrence.

Investigative Methods

The investigative methodologies included the following:

- Site Assessment via records review
- Formal Interviews – SAFE interviewed two individuals as part of this investigation. Interviews included persons present at, during, and after the reported incident. Representatives from the Washington Metrorail Safety Commission (WMSC) participated. SAFE interviewed the following individuals:
 - Roadway Worker in Charge (RWIC)
 - ROCC Button Controller (RBC)
- Documentation Review – Collection of relevant work history information and process documentation contained in WMATA systems of record. These records include:
 - Metrorail Safety Rules and Procedures Handbook (MSRPH)
 - National Oceanic and Atmospheric Administration (NOAA)
 - Roadway Job Safety Briefing (RJSB)
- System Data Recording Review – Collection of information contained in Metro Data Recording Systems. This data includes:
 - ARS (Audio Recording System) playback [Radio and Landline Communications]
 - Advanced Information Management System (AIMS) Playback
 - Closed-Circuit Television (CCTV)

Investigation

Based on findings, at approximately 10:50 hours, a Track and Structures (TRST) employee, performing Roadway Worker In Charge (RWIC) duties was removed from service for a reported Roadway Worker Protection (RWP) violation by the Rail Operations Control Center (ROCC). ROCC personnel reported the RWIC and the mobile work crew walked in the same direction as train movement. The ROCC notified the SAFE Incident Management Officer (IMO) at approximately 11:00 hours. There were no reported injuries or damages as a result of this reported safety incident.

The RWIC stated the mobile work crew was tasked with removing vegetation from the roadway between CM 730+00 to 750+00 on Track 1. The RWIC accessed the roadway via an access gate on Track 2 near CM 730+00. Before work commenced, The RWIC stated they positioned two Advanced Mobile Flaggers (AMFs) at Franconia-Springfield Station on both tracks to alert trains departing the station they were performing duties on the roadway. Further, the RWIC stated they positioned two Watchman/Lookouts (one 50 feet away from the work and the second closer to the work crew as the tools were noisy) on the roadway as they were performing their work duties. After the work was completed, the RWIC escorted the mobile work crew to CM 730+00 to request FT from ROCC in order to cross over to Track 2 and exit the roadway. After the FT request was made, ROCC instructed the RWIC to contact Maintenance Operations Control (MOC) via landline. The RWIC was subsequently removed from service. They were a total of seven employees in the work crew including the RWIC.

Chronological Event Timeline

ARS playback revealed the RWIC requested FT at J2 and J1 CM 730+00 to 750+00 to perform work. After the completion of work, the RWIC requested FT to exit the roadway at J1 730+00. After the RWIC exited the roadway, ROCC requested they give MOC a call via landline.

Time	Description
08:37 hours	TRST: RWIC requested Foul Time at CM J2 730+00 to enter the roadway. RWIC requested to cross over to Track 1 to perform vegetation control from CM J1 730+00 to J1 750+00. RWIC reported to ROCC they will be using Advanced Mobile Flagging to perform work once on Track 1.
08:52 hours	TRST: RWIC relinquished FT on Track 2 and began work on Track 1 under AMF protection.
10:50 hours	TRST: RWIC requested Foul Time at CM J1 and J2 730+00 to exit the roadway via an access gate on Track 2 between Van Dorn and Franconia-Springfield Stations. ROCC inquired if the RWIC had performed their work between the chain markers as requested of J1 730+00 to J1 750+00. RWIC reported the work was completed.
10:57 hours	ROCC: ROCC granted RWIC permission for FT at J1 and J2 730+00 in order to exit the roadway.
10:58 hours	TRST: RWIC reported personnel and equipment clear of the roadway and relinquished their FT at J1 and J2 730+00. ROCC instructed the RWIC to landline MOC.

Advanced Information Management System (AIMS) Playback

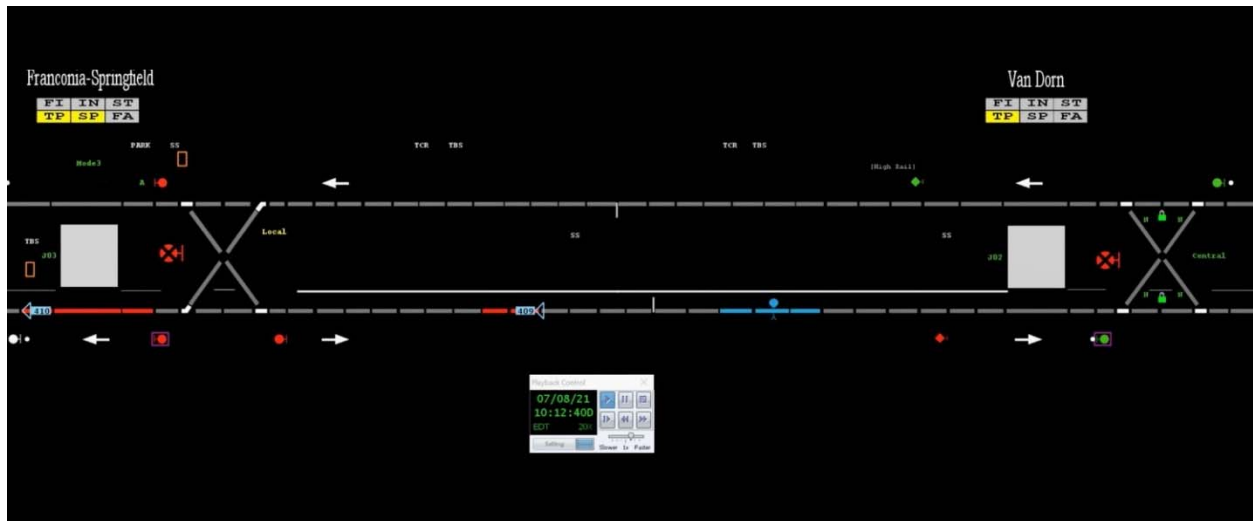


Photo #1 – Train ID 409 approaching the mobile work crew on Track 1 at approximately 10:12:40 hours.

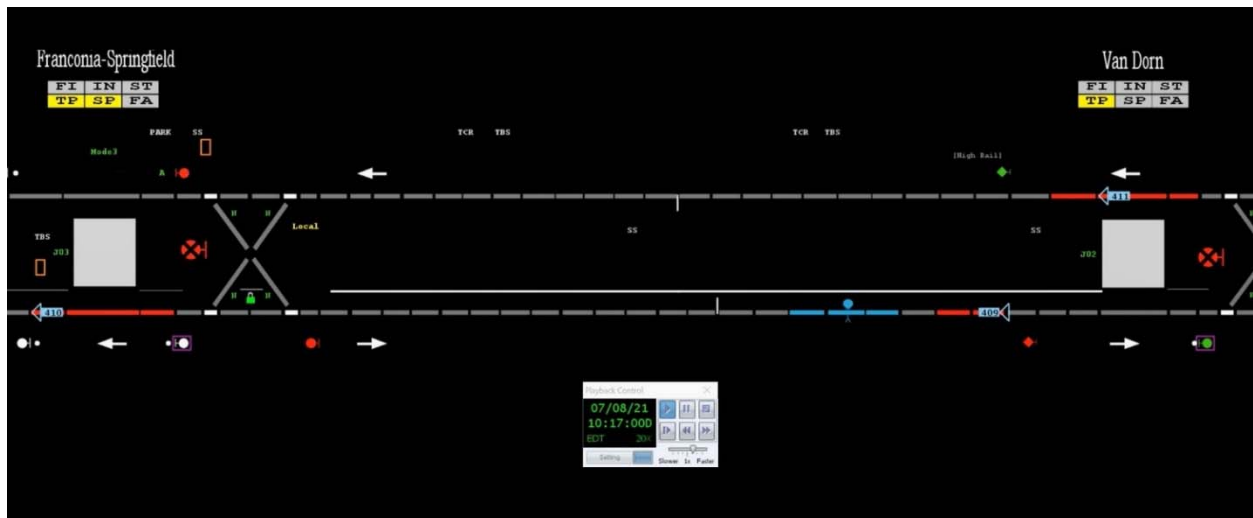


Photo #2 – Train ID 409 passed the mobile work crew on Track 1 at approximately 10:17 hours.

Closed-Circuit Television (CCTV)

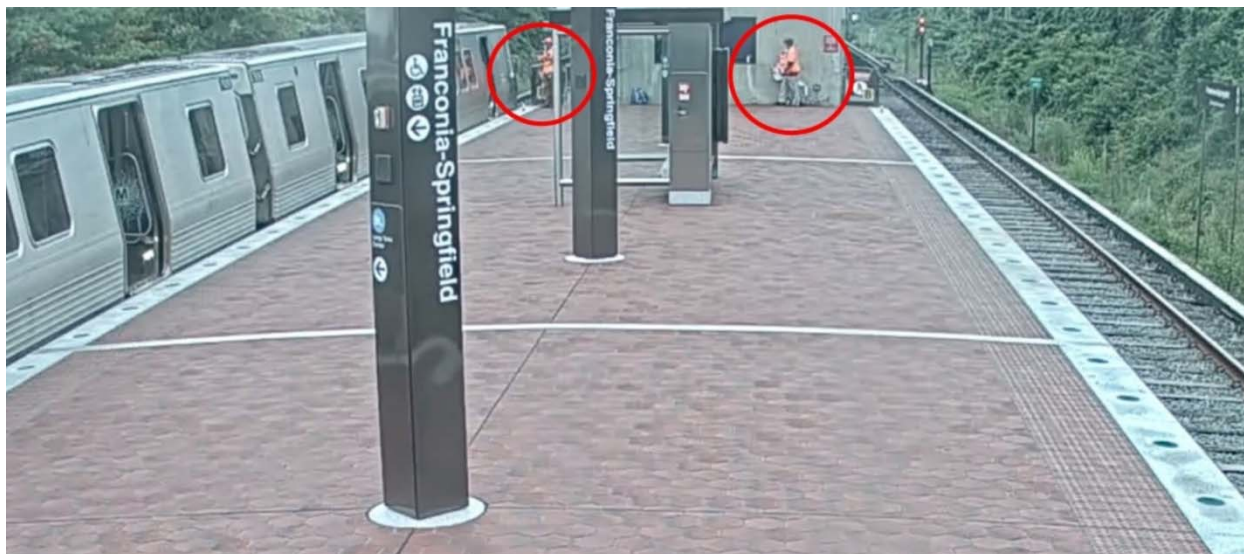


Photo #3 – Two AMFs stationed at the 8-Car Marker at Franconia-Springfield Station, Tracks 1 and 2 at approximately 08:43:17 hours.



Photo #4 – AMF briefing the Train Operator of Train ID 409 on Track 1, Franconia-Springfield Station at approximately 10:40:39 hours.

Interview Findings

Based on the investigation launched into the improper RWP violation at between Franconia-Springfield and Van Dorn Stations, SAFE conducted formal interviews with the RWIC and RBC via Microsoft Teams. Representatives from the WMSC participated. The interviews conducted identified the following key findings associated with this event:

The RWIC stated they stationed two AMFs at Franconia-Springfield Station on Track 1 and Track 2. In addition, the RWIC reported they stationed two Watchman/Lookouts on the roadway near the work detail for added safety. The RWIC stated they did not use the entire work area requested when conducting the vegetation control work assignment and walked back and forth through the work area to supervise the employees.

The RBC stated they cleared the personnel from roadway to determine if the RWIC committed a safety violation. The RBC stated the RWIC requested FT to exit the roadway at the same location they requested to enter the roadway. The RBC was not aware the MSRPH stated “walk against the direction of traffic when possible.”

Findings

- The RWIC was granted foul time from CM J1 730+00 to 750+00 to perform vegetation control duties.
- The RWIC positioned two AMFs at Franconia-Springfield Station and positioned two Watchman/Lookouts on the roadway near the work crew.
- MSRPH Section 4 – Safety Rules - 4.183.k states, “*Walk against the direction of traffic when possible.*”

Weather

At the time of the incident, NOAA recorded the temperature at 82° F, winds South to North at 10 mph, mostly cloudy with visibility of 10 miles. Humidity was at 72%. Weather was not a contributing factor to this incident. (Weather source: NOAA – Location: Alexandria, VA.)

SAFE Recommendations

SAFE does not have any recommendations as this occurrence did not result in a safety violation. WMATA’s Rail Safety Standards Committee is currently in the process of evaluating and updating the Roadway Worker Protection section of the MSRPH, including modifications to the Exclusive Track Occupancy (ETO) procedures, which will address occurrences such as this and provide clearer roadway instruction and rules for employee accessing the roadway.

Appendices

Appendix A – Interview Summaries

The below narratives are summaries of the interviews with SAFE and represent the statements made by the involved individuals. As such, times and details may present a conflict with the data contained in systems of record.

RWIC

This employee is a WMATA TRST Supervisor with a total of seven and a half years of experience: two years as a TRST Supervisor, five years as a Track Laborer. The RWIC's last RWP certification was in October 2020, as a Level 4. This employee has no history of sleep issues to report.

The RWIC reported their work assignment was vegetation control in between Van Dorn and Franconia-Springfield Stations. The RWIC stated there were a total of seven employees in the work crew including the RWIC. The RWIC stated they gave a safety briefing and positioned two contractor personnel at Franconia-Springfield Station to perform AMFs' duties on Tracks 1 and 2. The RWIC added he also appointed two personnel within the work crew to perform Watchman/Lookout duties while the remainder of the crew performed the work. After work was completed, the RWIC reported they gathered all tools and concluded their work at approximately CM 734+00. Upon completion, the RWIC requested FT to ROCC to cross over to Track 2 to exit the roadway. The ROCC then asked the RWIC if they completed all work up to CM 750+00. The RWIC stated he informed the ROCC yes and work was completed at this time. The ROCC granted the RWIC FT to exit the roadway and instructed them to call MOC via landline. On the landline call, the RWIC stated they were informed about the RWP violation. The RWIC stated they did not feel they have committed a safety violation as they have previously conducted work in this manner with no issues.

ROCC Button Controller (RBC)

This employee is a WMATA RBC with a total of 15 and a half years of service; six and half years of service as RBC, two years of service with Mobile Command, four years as a Car Maintenance Supervisor and three years as Car Cleaner. The RBC last certification was in October 2020. This employee has no history of sleep issues to report.

Based on the SAFE interview, the RBC reported the TRST RWIC requested FT at J2 and J1 CM 730+00 to 750+00 to perform a vegetation control work assignment. After the work was completed, the RBC stated the TRST RWIC requested FT again at CM J1 730+00 to exit the roadway. After reviewing the work area, the RBC reported they noticed the TRST RWIC traveled back to CM 730+00, which is in the same direction as normal train traffic. The RBC stated that walking with your back to train is a safety violation and they recommended the TRST RWIC clear the roadway to investigate further. During the interview, the RBC could not produce the safety violation which prevented employees from walking in the same direction as normal traffic flow. The RBC stated they recommend TRST Employee use ETO protection while performing vegetation control to better protect them on the roadway.

Appendix B – Roadway Job Safety Briefing (RJSB)

WMATA ROADWAY JOB SAFETY BRIEFING FORM

DATE: 07/08/21 TRACK TIME ON/OFF: 8:52 / 10:58
 RWIC NAME: [REDACTED] CALL#: [REDACTED] EMPLOYEE #: [REDACTED]
 RWIC's CELL PHONE NUMBER: [REDACTED] RADIO OPS CHANNEL: 03
 SAFETY RULE OF THE DAY: 4.20
 WORK ASSIGNMENT: Vegetation Control DIRECTION OF TRAFFIC: INBOUND ☒ OUTBOUND ☐
 RAIL LINE: A B C D E F G H I J K L N TRACK 1 2 3 WORK LIMITS CHAIN MARKER(s): 770 to 790 / 750 to 770
 PLACE OF SAFETY: Fence Side
 TYPE OF PROTECTION(s): IT ☐ ETO AUTHORITY ☐ ETO LOCAL SIGNAL ☐ AMF ☒ FT ☒
 REQUEST FROM ROCC: BLOCK CALLS ☐ CANCEL AUTOMATIC SIGNALS ☐ PROHIBIT EXITS ☐
 RED HOT SPOT(s) TYPE/LOCATION(s): ☐ RED HOT SPOT HAZARDS ☐ ETS/RADIO OUTAGE ☐

FOUL TIME PROTECTION CAN BE REQUESTED IN ALL WORK ZONE CONFIGURATIONS

POWER OUTAGE: LOCK OUT TAG OUT ☐ RED TAG ☐ SUPERVISORY ☐ NO POWER OUTAGE ☐
 RED TAG NUMBER: ☐ RED TAG HOLDER: ☐

WATCHMAN/LOOKOUT ASSIGNED: Yes ☒ No ☐ WATCHMAN/LOOKOUT NAMES(s): [REDACTED]

WATCHMAN/LOOKOUT EQUIPPED WITH AIR HORN AND WHISTLE ("W" Warning Disc required for fixed work zones): ☐

WATCHMAN/LOOKOUT MUST BE PROPERLY SPACED AND HAVE SUFFICIENT SIGHTING DISTANCE TO PROVIDE AMPLE WARNING

ADVANCE MOBILE FLAGGER ASSIGNED: Yes ☐ No ☐ ADVANCE MOBILE FLAGGER CALL #(s): ☐

ADVANCE MOBILE FLAGGER EQUIPPED WITH AMBER LANTERNS/E-FLARES, ORANGE FLAG, AIR HORN, WHISTLE AND RADIO: ☐

PIGGY BACK CREW LEADER CALL #(s): ☐ PIGGY BACK WORKZONE CM(s): ☐

PIGGY BACK WORK ASSIGNMENT: ☐

NUMBER OF RMM(s): ☐ RMM OPERATIONS IN WORK ZONE: ☐

ALL ROADWAY WORKERS MUST EXERCISE GOOD JUDGEMENT AND CONSIDER THE FOLLOWING POTENTIAL HAZARDS AND PROCEDURES BEFORE ENTERING THE ROADWAY:

WEATHER CONDITIONS	<input checked="" type="checkbox"/>	TRIPPING HAZARDS / UNEVEN WALKING SURFACES	<input checked="" type="checkbox"/>
TRACK GRADE AND VISIBILITY	<input checked="" type="checkbox"/>	POOR LIGHTING / TUNNEL AND VENT SHAFT(S)	<input type="checkbox"/>
HAZARDS ASSOCIATED WITH RAIL VEHICLE MOVEMENT	<input checked="" type="checkbox"/>	TRAIN / CURVE SPEED(S)	<input checked="" type="checkbox"/>
WORK SITE CONDITIONS AND ACTIVITIES	<input checked="" type="checkbox"/>	ETS BOX(S) LOCATIONS	<input checked="" type="checkbox"/>
EMERGENCY PROCEDURES	<input checked="" type="checkbox"/>	EQUIPMENT AND TOOL SAFETY	<input checked="" type="checkbox"/>
ADJACENT TRACK PROTECTION	<input checked="" type="checkbox"/>	ROTATION AND RELIEF PROCEDURES	<input checked="" type="checkbox"/>

Rv. 3 WMATA Roadway Job Safety Briefing Form, Date: November 2018

Document #1 – Page 1 of the RJSB given by the RWIC.

Incident Date: 07/08/2021 Time: 10:50 hours
 Final Report Rev. 1 – Improper RWP
 E21284

Rev. 1 Drafted By: SAFE 702 – 11/24/2021
 Rev. 1 Reviewed By: SAFE 70 – 11/26/2021
 Rev. 1 Approved By: SAFE 70 – 11/26/2021

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ROADWAY WORKERS HAVE THE RIGHT AND RESPONSIBILITY TO INITIATE A GOOD FAITH CHALLENGE WHEN NECESSARY

Perform Radio Check(s) ☒

I understand and agree with all aspects of the Roadway Job Safety Briefing I just received. I feel I am adequately protected from any train movement or roadway hazards. I understand I have a responsibility to conduct myself in a safe manner at all times.

[illegible]

RWIC COMMENTS:
Use PVE all the time, trains moving all directions all the time
740+00/780+00 Restricted view curve

DATE/TIME: 07/08/21

DATE/TIME:

RWP ISSUE(s) _____ ISSUED RESOLVED: Yes No