

### Washington Metropolitan Area Transit Authority

# RFP NO: FQ15093/GG Technical Presentation

REHABILITATION OF RED LINE METRO RAIL SYSTEM FROM FRIENDSHIP HEIGHTS CROSSOVER TO GROSVENOR-STRATHMORE STATION

MAY 04, 2015

**Chen Zhou & Richard Smith** 



- Red Line Rehab Phase 2 Contracts
- Work Elements
- Work Elements and Location Map
- Design-Builder Furnished Equipment
- Access Points
- Roadway Access Submittal Process
- Contract Documents List
- Access Dates and Hours
- Delay and Cancellation Policy
- Adjacent Work by Others
- Critical Planning



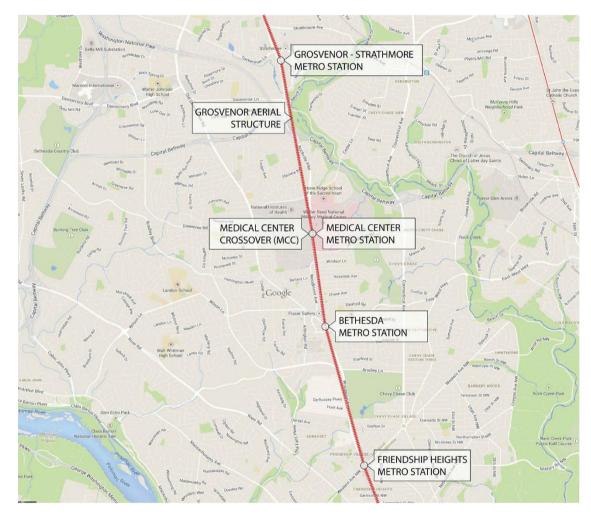
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#### Red Line Rehab Phase 2 Contracts







Red Line 2.1 Friendship Heights Crossover to Grosvenor
Track Rights Related Rehab (FQ15093) A305+32 to A568+78
Red Line 2.3 Friendship Heights Crossover to DuPont Circle Crossover
Track Rights Related Rehab

Red Line 2.2 Grosvenor to DuPont Crossover Non/MiniumnTrack Rights Related Rehab



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#### **Work Elements**

- <u>Part 1 2.1.1:</u> Tunnel Rehabilitation & Medical Center Station Ceiling Replacement
- Part 2 2.1.2: Medical Center Crossover Waterproofing
- Part 3 2.1.3: Grosvenor Aerial Structural Retrofit
- <u>Part 4 2.1.4:</u> Grosvenor-Strathmore Station Platform Slab and Tiles Rehabilitation
- <u>Part 5 2.1.5:</u> Grosvenor-Strathmore Platform Canopy and Mezzanine Roof Retrofit Design-Build
- Part 6 2.1.6: Bethesda Station New South Mezzanine Design-Build
  - a. Option 1A Design
  - b. Option 1B Construction, testing and commissioning

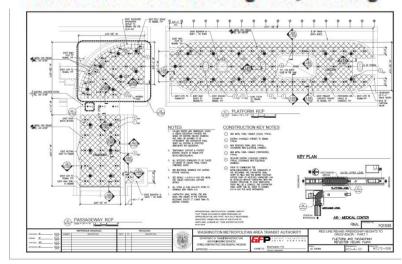


# 2.1.1 Tunnel Rehabilitation & Medical Center Station Ceiling Replacement

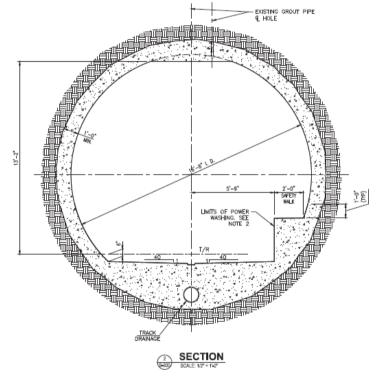
#### **A10 Ceiling**



Medical Center Passageway Ceiling



#### **Tunnel Power Washing**



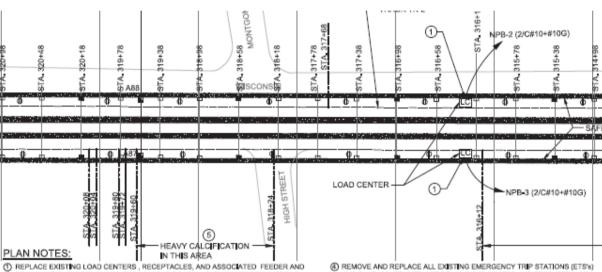




### 2.1.1 Tunnel Rehabilitation & Medical Center **Station Ceiling Replacement**

#### **Electrical Work**



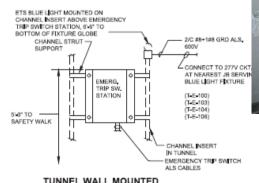


- BRANCH CIRCUIT WIRING, PROVIDE BONDING OF NEW LOAD CENTERS TO EXISTING TUNNEL GROUND CABLE, SEE GROUNDING DETAIL ON DWG, T-E-500.
- (2) SEE CROSSOVER ENLARGED PLAN, ON SHEET T-E-113 FOR WORK IN THIS
- (3) REPLACE EXISTING NORMAL AND EMERGENCY TUNNEL FIXTURES AND ASSOCIATED POWER SUPPLY WIRING, FOR MOUNTING HEIGHT OF NEW LIGHTING FIXTURES SEE CUT & COVER DOUBLE BOX TUNNEL DETAIL ON DWG T-E-500.
- AND BLUE LIGHTS, REPLACE RELAY PANELS IN TBS AND TPSS, REPLACE ASSOCIATED CONTROL WIRING BETWEEN ETS's AND RELAY PANELS (7/C ALS CABLE OR MATCH EXISTING MULTICONDUCTOR CABLE), REPLACE EXISTING 25-PAIR COMMUNICATION CABLE BETWEEN ETS'S AND FROM ETS's TO COMM ROOM IN EACH STATION.
- SEE DWGS, T.E. 503, 504 FOR RELAY PANEL DETAILS. SEE DWGS, T-E-600, -801, -602 FOR ETS CONTROL WIRING DETAILS. SEE DWG, T-E-500 FOR ETS HEIGHT.

#### TYPICAL CABLES WITH VERY HEAVY CALCIFICATION TUNNEL REHABILITATION LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MOUNTING	MANUFACTURER & MODEL	NOTES
L	INDUSTRIAL LINEAR LED 48" LONG, 50W, 120/277V, REMOTE DRIVER, RATED IP66, COLD TEMP. RATED, (-30°C TO 50°C)	WALL	OSRAM-SYLVANIA ILL-L-50-7-45-LB-UNV-GR OR APPROVED EQUAL	-
ETS BLUE L <b>I</b> IGHT	LED WARNING LIGHT	WALL	FEDERAL SIGNAL 191 XLM-277-B 36 WATTS	PROVIDE STEADY-BURN (NON-FLASHING) MODEL





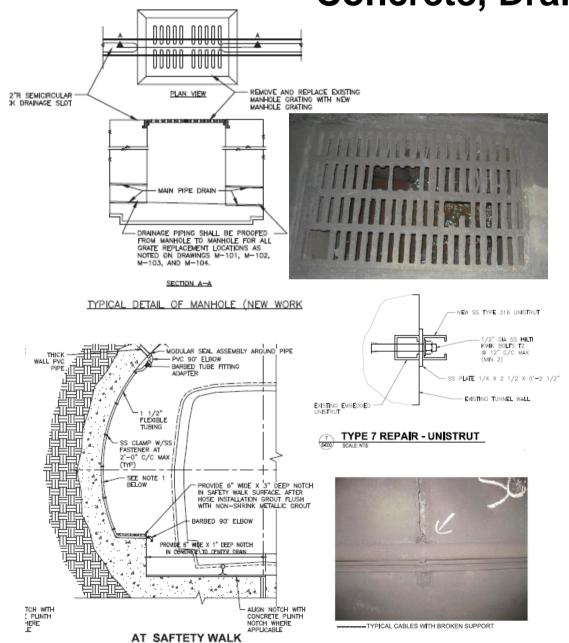
TUNNEL WALL MOUNTED **EMERGENCY TRIP STATION** 

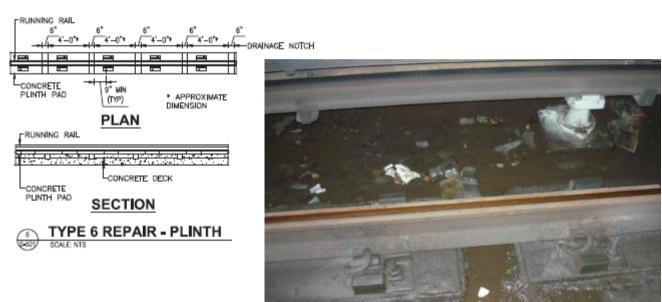


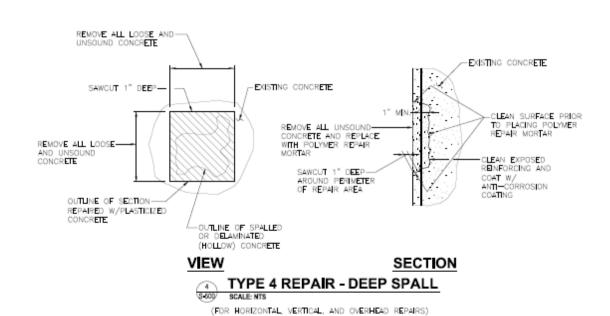


# 2.1.1 Tunnel Rehabilitation & Medical Center Station Ceiling Replacement

Concrete, Drainage & Plinth Pad Work



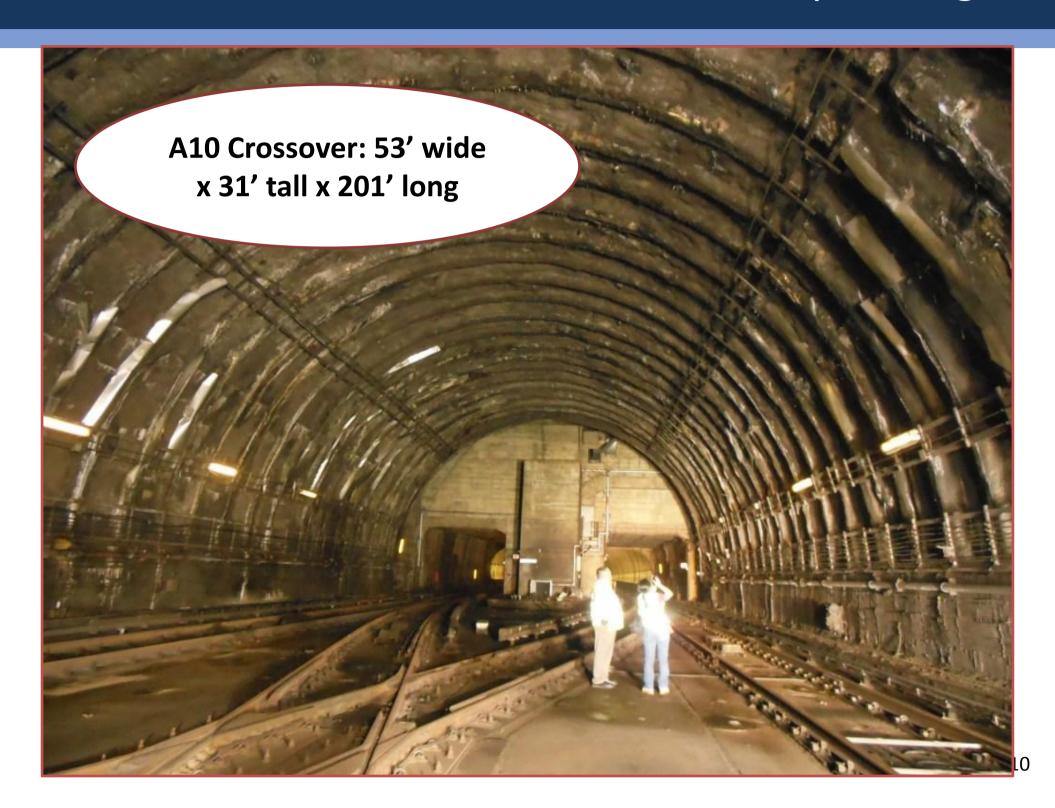






### 2.1.2 Medical Center Crossover Waterproofing





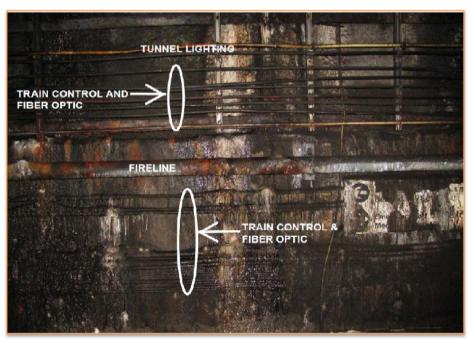


### 2.1.2 Medical Center Crossover Waterproofing



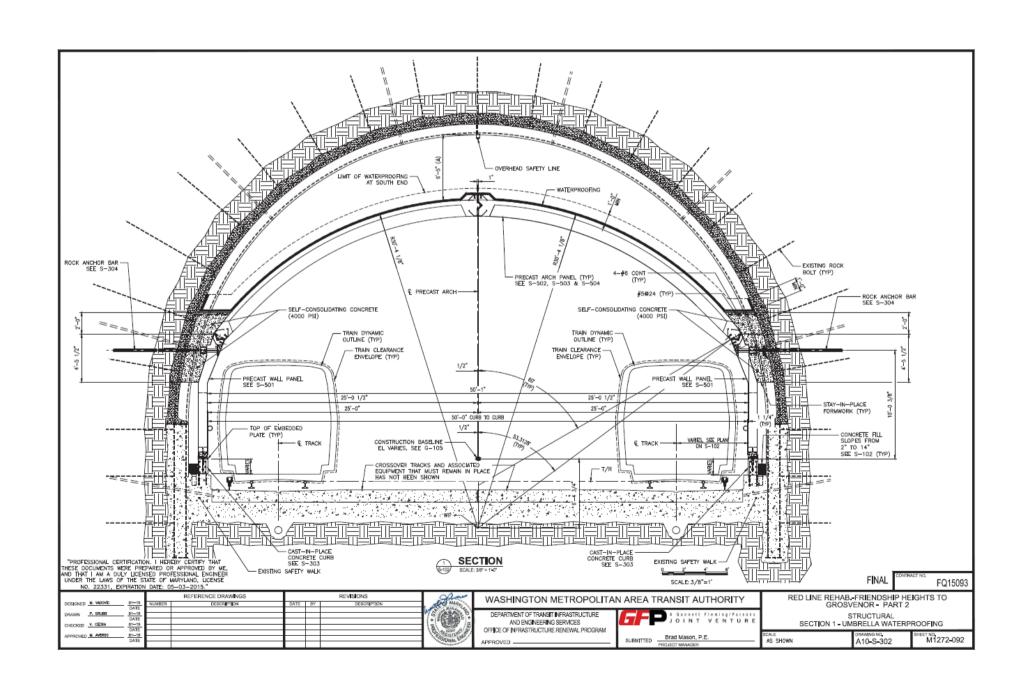








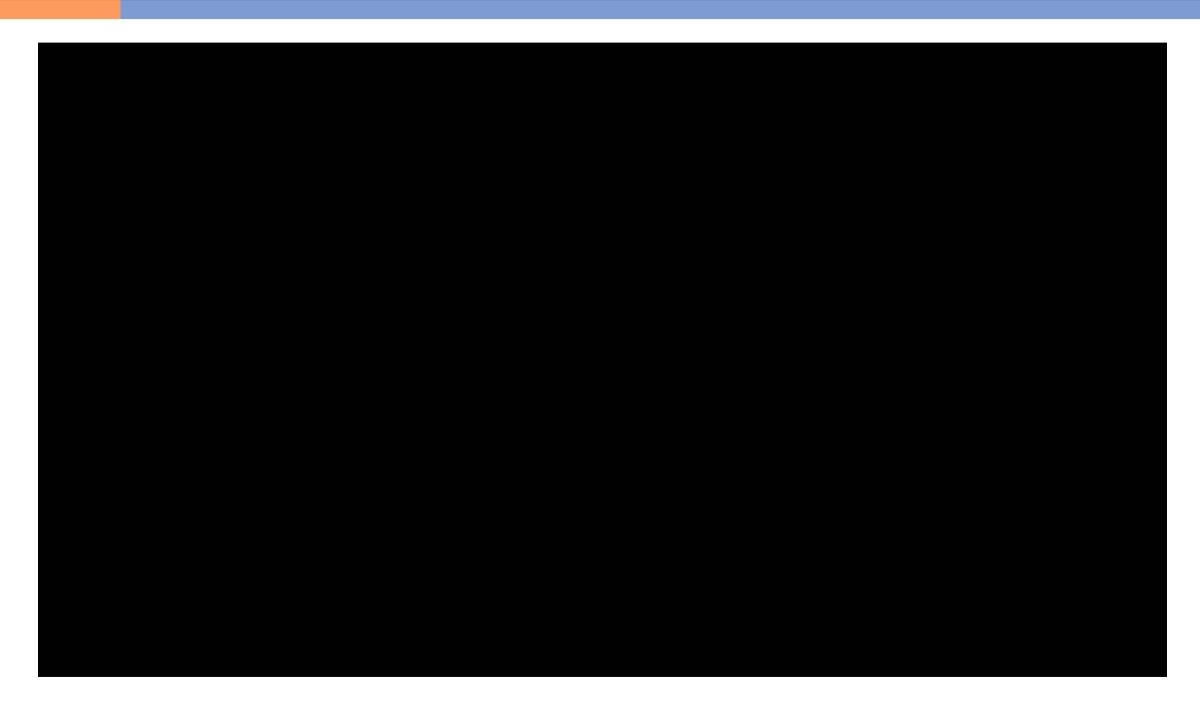
### 2.1.2 Medical Center Crossover Waterproofing





#### WMATA Board Presentation Video

(Actual method during installation may vary)

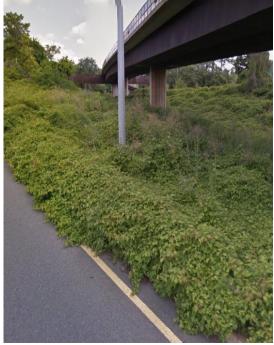














#### Access Road @ MD355 and Grosvenor Lane













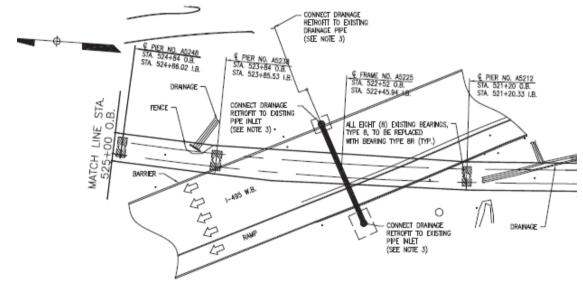
#### **MOT**

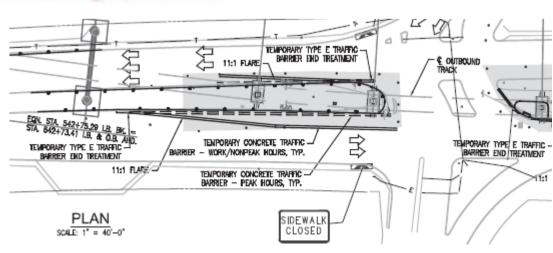


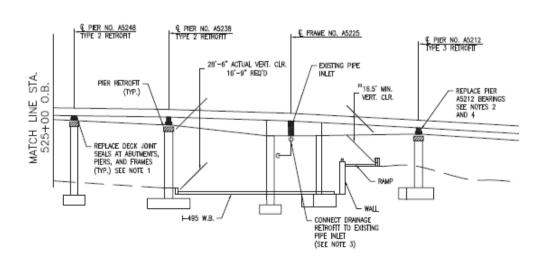




#### **Elevation**



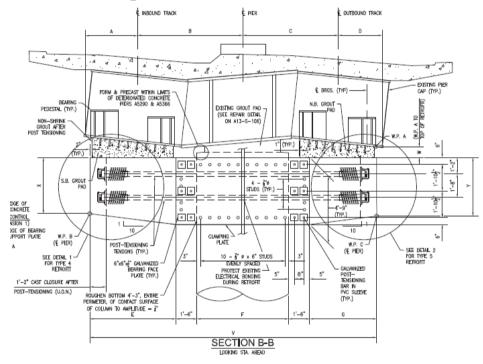




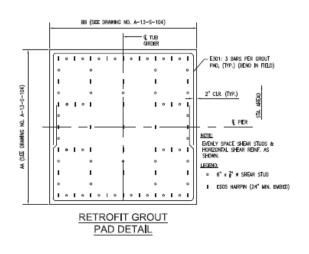
SCALE: 1



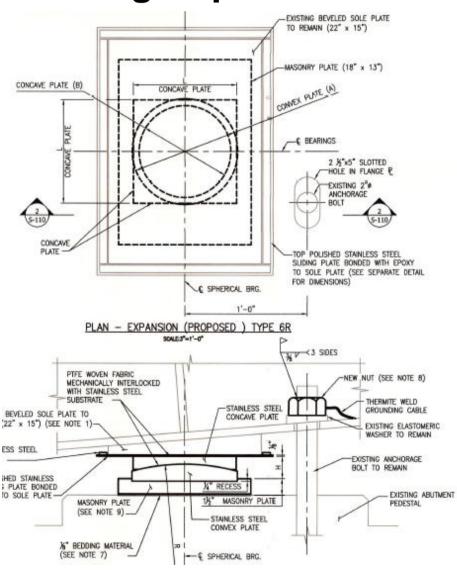
#### Pier Cap and Post Tensioning



#### **Grout Pad Retrofit**

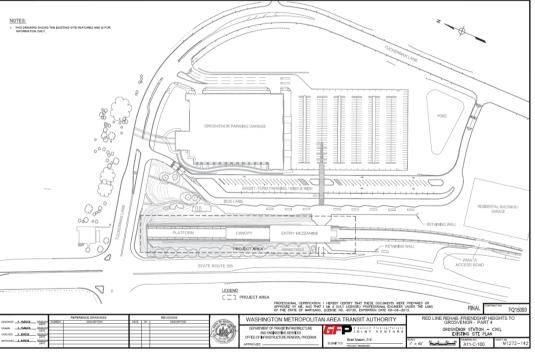


#### **Bearing Replacement**











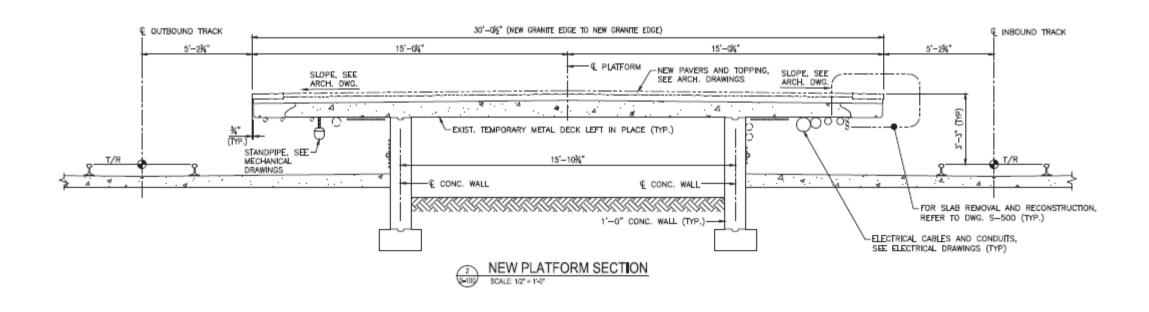








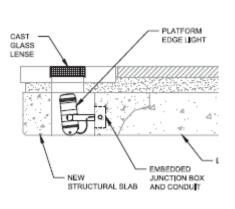


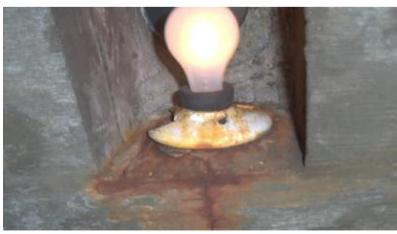


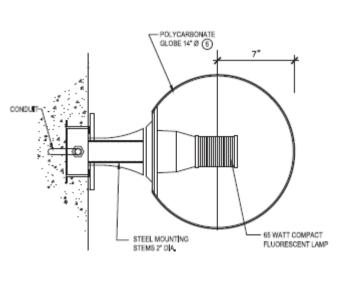












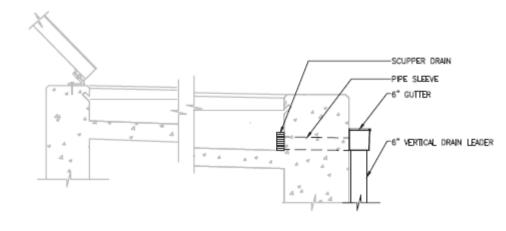




### 2.1.5 Grosvenor-Strathmore Platform Canopy and Mezzanine Roof Retrofit Design-Build

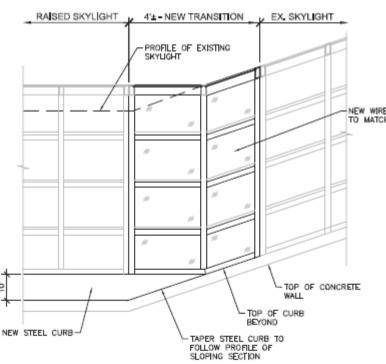


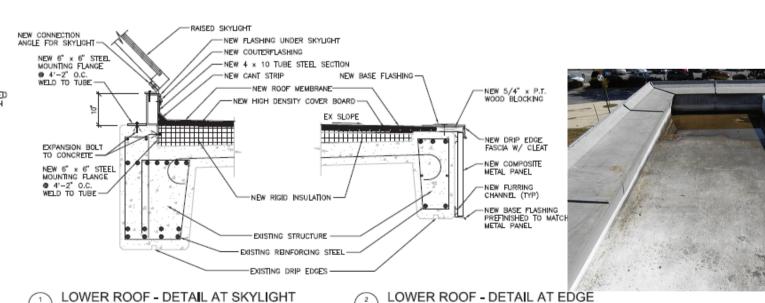




TYPICAL SECTION AT SCUPPER DRAIN

(M-350) SCALE: 1"=1"0"







# 2.1.6 Bethesda Station New South Mezzanine Design-Build

### Option 1A – Design

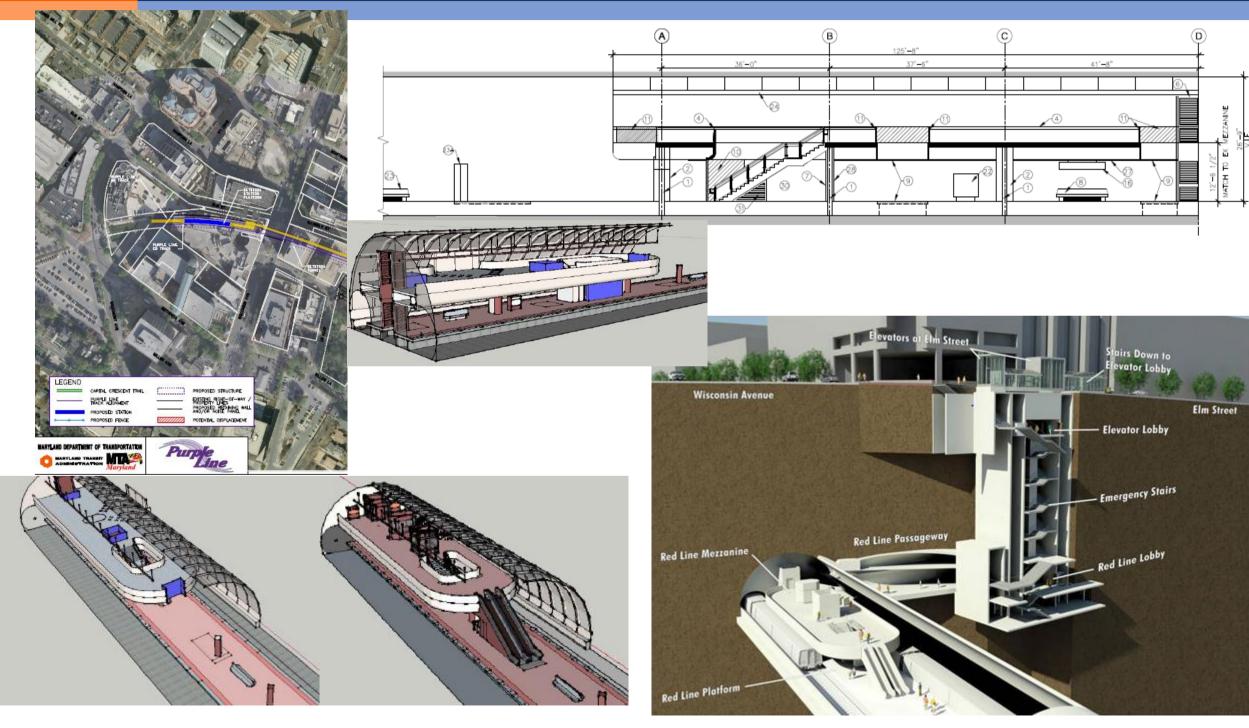
 Design a new south mezzanine at Bethesda Station to accommodate the future connection of the Purple Line based on Authority furnished conceptual design, specifications, WMATA Manual of Design Criteria and Program Requirements, and supplemental documents included or referenced within the Contract documents. See Section 01112, DESIGN AND PROGRAM REQUIREMENTS for a complete description of design requirements.

### Option 1B – Construction, testing and commissioning

 Construct, test and commission all elements of the new south mezzanine that will require Revenue Service Adjustment (RSA) track shutdowns during construction. See Table 01110-01 for description of these elements.

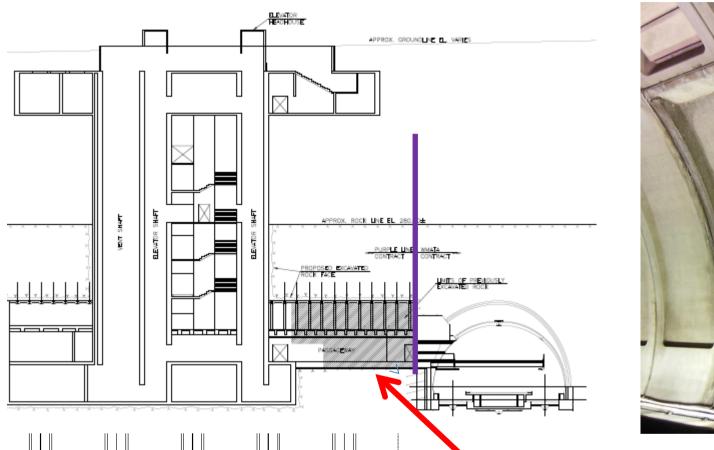


# 2.1.6 Bethesda Station New South Mezzanine Design-Build

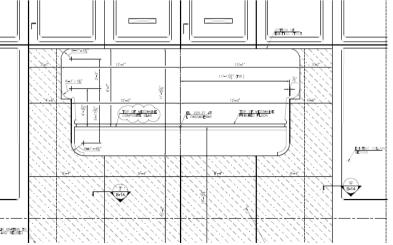




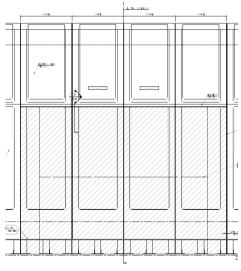
# 2.1.6 Bethesda Station New South Mezzanine Design-Build







Existing cavern behind station arch "knockout" panel

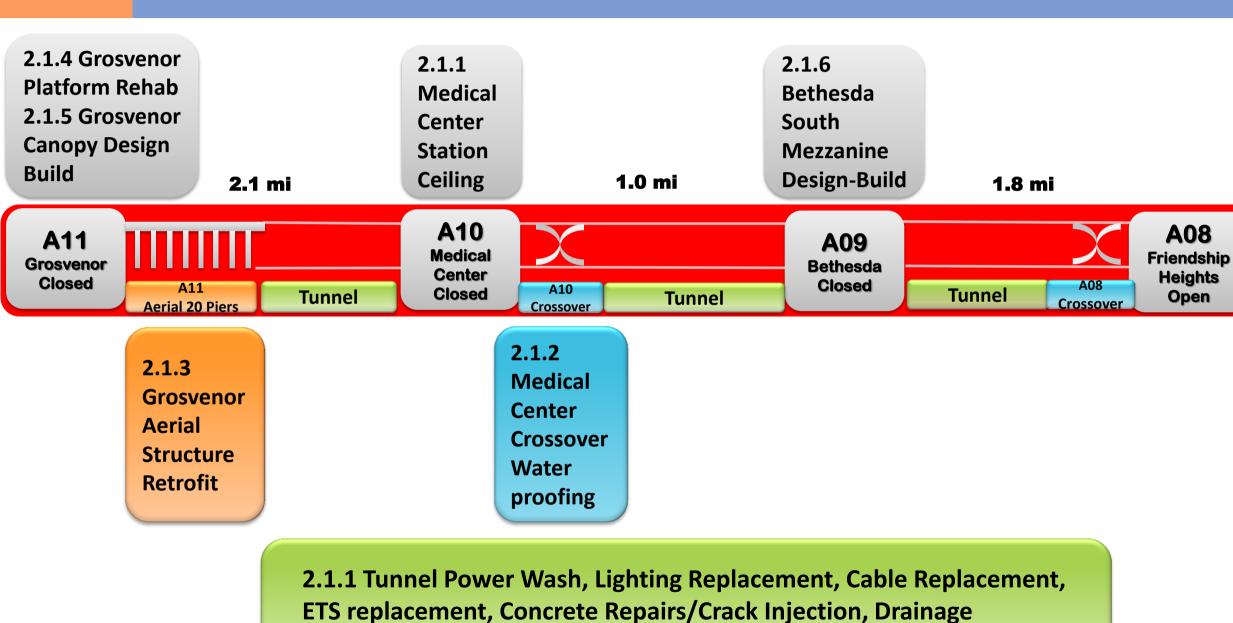




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### Work Elements and Locations Map



Remediation, Plinth Removal



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### Design-Builder Furnished Equipment

# Prime Mover and High Rail Vehicles





#### **Flat Cars**





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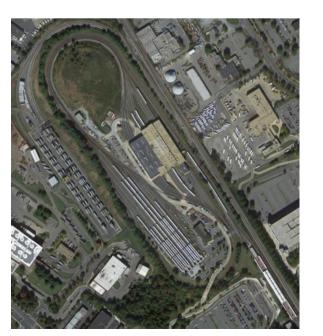


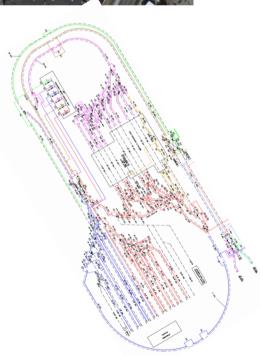
#### **Access Points**

### WMATA Rail Yards (Brentwood and Shady Grove)









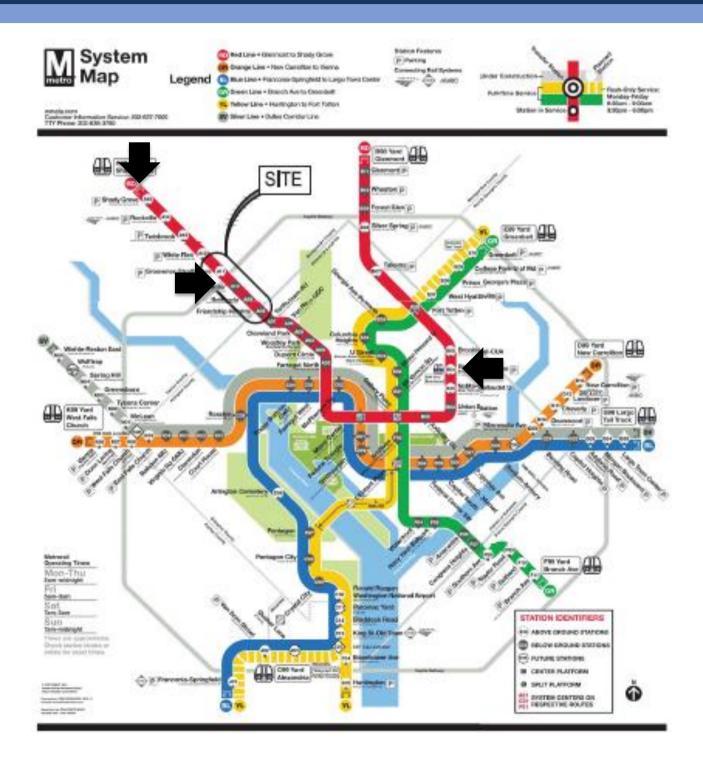
### Area Near Portal and Grosvenor Access Road







#### **Access Points**

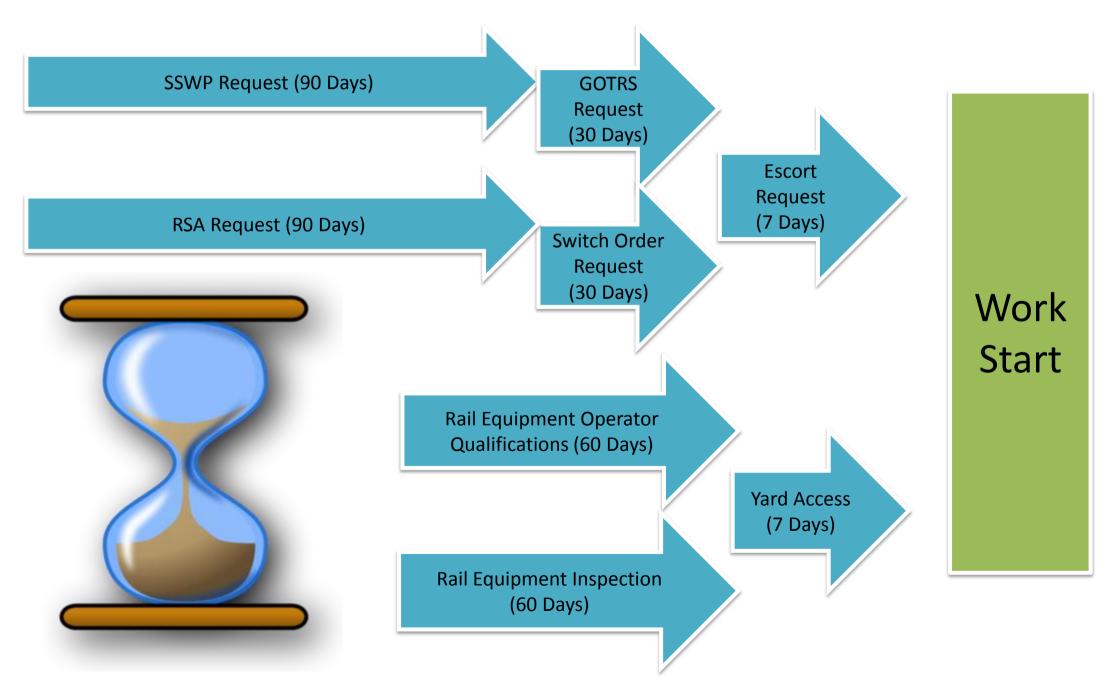




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### Roadway Access Submittal Process (Section 01141)





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### **Contract Documents List**

- Volume 1 Specifications: Divisions 0 and 1
- Volume 2 RFP Technical Specifications for construction part of the Work, RFP Technical Specifications for design-build part of the Work
- Volume 3 RFP Drawings for construction part of the Work and RFP Drawings for design-build part of the Work
- Volume 4 WMATA Standard Specifications
- Volume 5 WMATA Standard Drawings
- Volume 6 WMATA Manual of Design Criteria, WMATA Signage Criteria Manual and WMATA Design Directive Drawings (WMATA Signage Criteria Manual issued as an Amendment to the RFP)
- Volume 7 WMATA CAD Manual

Volume 8 - WMATA Safety and Security Plans and Documents

- WMATA System Safety Program Plan (SSPP)
- WMATA Construction Safety and Environmental Manual (CSEM)
- Metrorail Safety Rules and Procedures Handbook (MSRPH)
- OAP 200-33 Site Specific Work Plan (SSWP)
- Safety and Security Certification Program Plan (SSCPP)
- Roadway Worker Protection Manual (RWPM)

Volume 9 – WMATA Specification Preparation Style and Usage Guide

#### Volume 10 – Attachments

- ADA Key and New Station Checklist
- MSDS Review Request Form
- Sample Certifiable Items List (CIL)
- Design Review Form
- Sample Preventive Maintenance Instruction (PMI)
- Background Screening Form
- C 113, Daily Report and Period of Delay Form
- Office of Rail Transportation Maintenance Operations Control Administrative Procedure
- Maryland Department of the Environment Discharge Permit
- Revenue Service Adjustment Form
- General Orders and Track Rights System (GOTRS) Request Form
- Escort Request Form
- Switch Order Form
- Site Specific Work Plan (SSWP) Form
- 2013\_2014 Severe Weather Operations Plan



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# Access Dates and Hours (Section 01141)

Work Hour Category	Report to Site Time	Access to Site Time	Off Site Time	Hours of Work		
	Non-Revenue Hours of Work (Daily)					
Non-Revenue Weekday	Mon-Fri 00:30	Mon-Fri 01:30	Mon-Fri 03:30	2 hours		
	RSA Hours of \	Nork (Weekend Conti	nuous)			
Weekend Single Tracking Access	Sat 00:30	Sat 01:30	Mon 03:30	48 hours (considering miscellaneous disruptions)		
Total Shutdown Access	Sat 00:30	Sat 01:30	Mon 03:30	48 hours (considering miscellaneous disruptions)		
Outside of Roadway Access (Daily)						
Outside of Roadway Access	Mon-Fri 06:00	Mon-Fri 7:00	Mon-Fri 15:00	6 hours (considering miscellaneous disruptions)		



## **Access Dates and Hours**

### **Non-Revenue Weekday**

Areas of Work	Track 1	Track 2
Area 1: Friendship Heights northern end of the platform to Bethesda northern end of the platform		
Area 2: Bethesda northern end of the platform to Medical Center northern end of the platform	10	10
Area 3: Medical Center northern end of the platform to Medical Center Portal	10	10
Area 4: Medical Center Portal to Grosvenor northern end of the platform	20	20
Total number of non-revenue weekday access	120	
In accordance with Table 01141-01 each Non-Revenue Weekday event gives 2 Hours of Work	240 Hours of Work	

# Six (6) dates for **Weekend Single Tracking** Access are (3 for each track):

- 1. June 25, 2016
- 2. July 16, 2016
- 3. July 23, 2016
- 4. August 6, 2016
- 5. August 13, 2016
- 6. August 27, 2016

# Twelve (12) Dates for **Total Shutdown** Access are:

- 1. September 3, 2016
- 2. September 17, 2016
- 3. October 1, 2016
- 4. October 15, 2016
- 5. November 5, 2016
- 6. November 19, 2016
- 7. January 28, 2017
- 8. February 4, 2017
- 9. February 11, 2017
- 10. February 18, 2017
- 11. February 25, 2017
- 12. March 4, 2017



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## Delay and Cancellation Policy Section (00841)

#### TABLE 00841-01: BASIS OF PAYMENT FOR AUTHORITY CAUSED DELAY

AUTHORITY CAUSED DELAY				
	Non-Revenue – Weekday Access	Weekend Single Tracking Access	Total Shutdown Access	Outside of Roadway Access
Section 01141 Hours of Work	2 hrs	48 hrs	48 hrs	6 hrs
Delayed Hours	Equal to or more than 30 min	Equal to or more than 12 hours	Equal to or more than 12 hours	Equal to or more than 2 hours
Standby Cost: Compensation for Direct Labor	Actual time lost rounded to the nearest 30 minutes			tes
Make-up Access Provided by the Authority	1 Non-Revenue Weekday	1 Weekend Single Tracking	1 Total Shutdown or 1 Weekend Single Tracking	N/A
Extended Period of Performance	Yes, if justified by Time Impact Analysis	Yes, if justified by Time Impact Analysis	Yes, if justified by Time Impact Analysis	No
		T	T	
Delayed Hours	Less than 30 min	Less than 12 hours	Less than 12 hours	Less than 2 hours
Standby Cost: Compensation for Direct Labor	No	Actual time lost rounded to the nearest 30 minutes		
Make-up Access Provided by the Authority	No	1 Weekend Single Tracking, if accumulated Hours Delayed for multiple Weekend Single Tracking events are equal to or more than 48 hours  0, If accumulated	1 Total Shutdown or 1 Weekend Single Tracking if accumulated Hours Delayed for multiple Total Shutdowns are equal to or more than 48 hours	N/A
		Hours Delayed for multiple Weekend Single Tracking events are less than 48 hours	Hours Delayed for multiple Total Shutdowns are less than 48 hours	
Extended Period of Performance	No	Yes, if justified by Time Impact Analysis	Yes, if justified by Time Impact Analysis	No

#### TABLE 00841-02: BASIS OF PAYMENT FOR AUTHORITY CAUSED CANCELLATION

AUTHORITY CANCELLATION					
	Non-Revenue – Weekday Access	Weekend Single Tracking Access	Total Shutdown Access	Outside of Roadway Access	
Make-up Access Provided by the Authority	One Non- Revenue Weekday	One Weekend Single Tracking	One Total Shutdown	N/A	
Notice by Authority before the Start of "Hours of Work"	Less than 5 hrs	Less than 24 hrs	Less than 24 hrs	Less than 5 hrs	
Standby Cost: Compensation for Direct Labor	4 hrs	8 hrs	8 hrs	4 hrs	
Extended Period of Performance	Yes, if justified by Time Impact Analysis	Yes, if justified by Time Impact Analysis	Yes, if justified by Time Impact Analysis	No	
Notice by Authority before the Start of "Hours of Work"	Equal to 5 hrs or more	Equal to 24 hrs or more	Equal to 24 hrs or more	Equal to 5 hrs or more	
Standby Cost: Compensation for Direct No Labor		No	No	No	
Extended Period of Performance Yes, if justified by Time Impact Analysis		Yes, if justified by Time Impact Analysis	Yes, if justified by Time Impact Analysis	No	

#### TABLE 00841-03: DESIGN-BUILDER REQUEST TO CANCEL ACCESS

DESIGN-BUILDER REQUEST FOR CANCEL ACCESS					
	Non-Revenue – Weekday Access	Weekend Single Tracking Access	Total Shutdown Access	Outside of Roadway Access	
DB Notice given to Authority before Start of "Hours of Work"	Equal to or less than 5 Days	Equal to or less than 14 Days			
Scheduled access event will be lost to the Design-Builder					
DB Notice given to Authority before Start of "Hours of Work"	More than 5 Days	More than 14 Days			
Access event may be rescheduled by the Authority				N/A	



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## Adjacent Work by Others

WMATA contemplates to have the following construction work adjacent to the Work Site at the time of Design-Builder's Work. This is the best available information at the time of the RFP issuance. The work listed below, time and other details may change at a later time

Table 01110-02: Summary of Work by Others

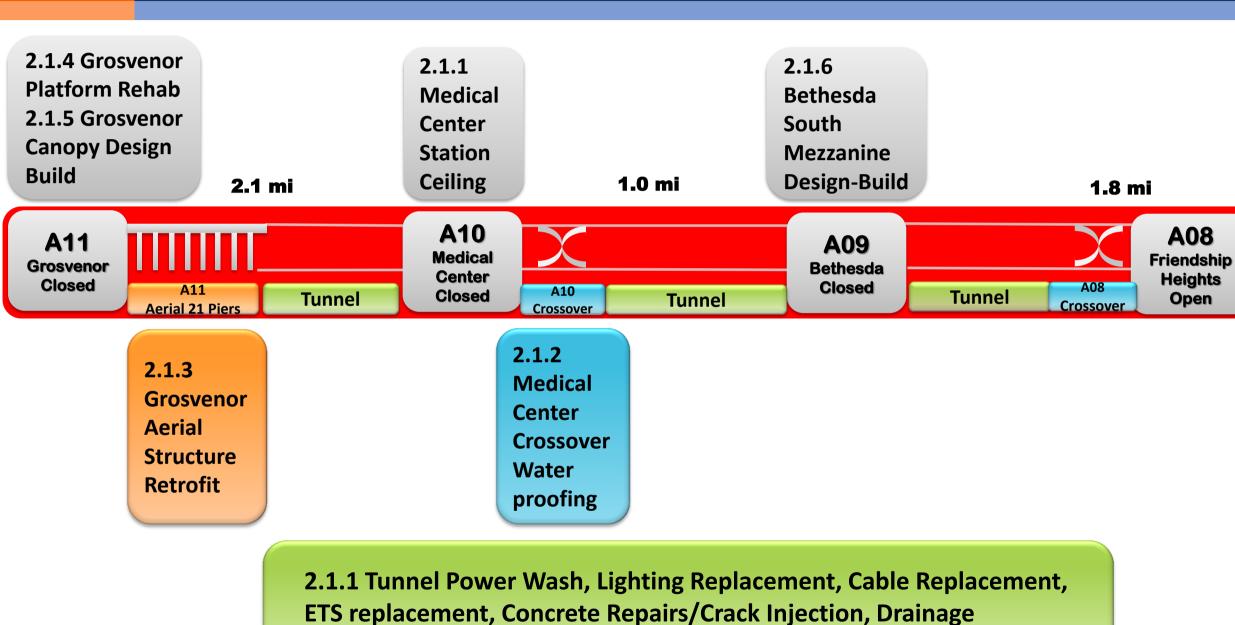
Description	Anticipated Start Date	Principal Area of Work
MD 355 Crossing (above Medical Center Station)	1 <sup>st</sup> Quarter 2016	Underpass of MD 355 above Medical Center Metro Rail Station; associated structures and passageway connecting to the Station Mezzanine; additional stairway and elevator at platform mezzanine levels
Replace Turnout in the Medical Center Tunnel	1 <sup>st</sup> Quarter 2016	Medical Center Tunnel
Replace Elevators	2 <sup>nd</sup> Quarter 2016	Elevators at Medical Center Station
Replace Escalators	Ongoing 3 <sup>rd</sup> Quarter 2017	Bethesda – Escalators at entrance to station Medical Center – Escalators at entrance to station
Track Bed Lighting	1 <sup>st</sup> Quarter 2017 3 <sup>rd</sup> Quarter 2017	Bethesda track way for replacement of lights Medical Center track way for replacement of lights.



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## Critical Planning



**Remediation, Plinth Removal** 



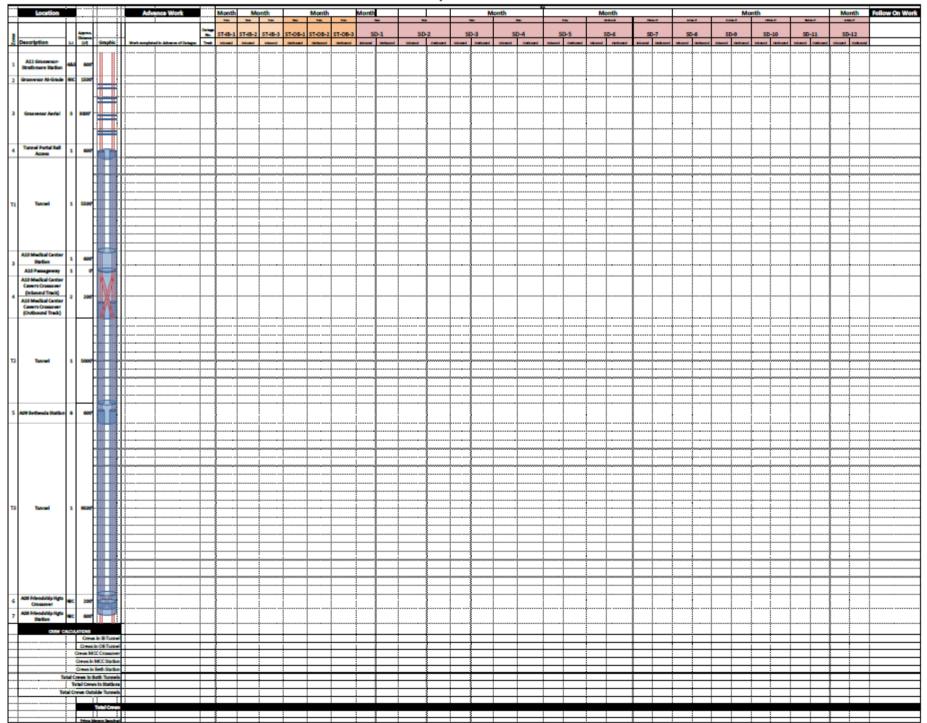
## Critical Planning

It is critical in your proposal to demonstrate a well orchestrated and realistic plan to complete the variety of work elements within the allotted access granted. Coordination of manpower and equipment per access event is essential. A thorough understanding of WMATA rules and procedures is a must.



## **Critical Planning**

#### Red Line Shutdown Conceptual Schedule





# QUESTIONS





### Site Visit

### > 2:00PM Today at Bethesda Metrorail Station, Station Manager Kiosk:

- Day one (1) Site Visit information: Site visit will start on Mon, May 4, 2015, 2.00 pm (14:00). Meeting point will be Bethesda Metrorail Station, Station Manager Kiosk, 7450 Wisconsin Avenue Bethesda, MD 20814.

  Attendees will be required to sign in. The Site Visit to Bethesda Metrorail is anticipated to finish around 3.00 pm (15:00). The south end of the platform will be visited which is the planned location of the new mezzanine.
- Day two (2) Site Visit information: Site visit on day two (2) will start on Tue, May 5, 2015 Rev 2 at 9.00 am. Meeting point will be Medical Center Metrorail Station, Station Manager Kiosk, 8810 Rockville Pike Bethesda, MD 20814. Attendees will be required to sign in. The visit at medical center will include the passageway area first then moving to the platform level to view the ceiling under the mezzanine. The Site Visit will continue the same day with visiting Grosvenor Strathmore Metrorail Station, 10300 Rockville Pike Bethesda, MD 20852. The visit will consist of walking the platform from end to end. After that a Metro Vehicle will be arranged to take attendees from Grosvenor-Strathmore Metrorail Station to "Area near portal" which is a staging area for precast equipment loading, to "Maintenance Roadway" which is an access point for Aerial Structure Retrofit Work, and to the Access road South of Grosvenor Station. Be alerted that the visits to the locations beyond the three (3) WMATA Metro Rail Stations may need to be completed in shifts dependent on the quantity of participants interested in visiting these sites.
- Due to security and safety concerns the number of attendees from one company will be limited to three (3) people.
- All attendees will be required to have with them OSHA approved safety vests, hard hats, safety glasses, and sturdy boots. Attendees that have a current WMATA Contractor ID shall display their ID and bring PPE and WMATA approved safety vest. Attendees not holding WMATA Contractor ID with PPE and vest should specifically identify themselves to the WMATA representative on site. Attendees will be required to provide their own fare to ride the Metrorail System.