ADDENDUM NO. 1

Arlington County Invitation to Bid No. 23-DES-ITBPW-309 N. Glebe Rd. ITS Project is amended as follows:

Following updates are made to Sheet C-0002, "Signal Notes" section of Construction Drawings for N. Glebe Rd. ITS Improvements Project

Delete A.6. and replace with following notes:

6. FOUNDATIONS FOR SIGNAL POLES AND PEDESTAL POLES SHALL BE FINISHED FLUSH WITH FINAL GRADE. WHEN SIGNAL POLE OR PEDESTAL POLE IS INSTALLED IN THE SIDEWALK, THE ENTIRE SIDEWALK PANEL SHALL BE REPLACED AROUND THE FOUNDATION.

7. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING POLE FOUNDATION DESIGNS FOR ANY MAST ARM POLES. THE CONTRACTOR SHALL SUBMIT REQUIRED STRUCTURAL DRAWINGS AND CALCULATIONS FOR REVIEW PRIOR TO STARTING WORK FOR THE FOUNDATIONS.

Delete B.1. and replace with following notes:

1. NEW CONTROLLER CABINETS SHALL BE ATC PER LATEST TRAFFIC SIGNAL STANDARDS & SPECIFICATIONS.

Delete B.2. and replace with following notes:

2. CONTROLLER SHALL BE INTELIGHT X-N AND SHALL BE INSTALLED AND SET AS FOLLOWS:
   2.1 TO REST IN PHASE 2 & 6 GREEN INTERVAL

   2.2 TO START/RESTART IN PHASE 2 & 6 YELLOW CHANGE INTERVAL

Add the following note to C:

3. ALL SIGNAL HEADS SHALL BE INSTALLED WITH RETROREFLECTIVE BACKPLATES PER VDOT STANDARDS AND SPECIFICATIONS.
4. ALL SIGNAL HEADS SHALL BE YELLOW IN COLOR.

Delete D.1. and replace with following notes:

1. ALL NEW PEDESTRIAN PUSH BUTTON STATIONS SHALL CONFORM TO ARLINGTON COUNTY'S SPECIFICATIONS FOR ACCESSIBLE SIGNAL DESIGN AND SHALL USE POLARA VIBRO-TACTILE/AUDIO PUSH BUTTON ASSEMBLIES UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL PROVIDE EXTENDER BRACKETS IF NEEDED TO MAKE PUSHBUTTONS ADA ACCESSIBLE. THE PUSHBUTTON ASSEMBLY SHALL CONTAIN A MOUNTING BRACKET TO ALLOW THE R10-3E SIGN TO BE MOUNTED DIRECTLY TO THE PUSHBUTTON.

Delete D.3. and replace with following notes:

3. NEW OVERHEAD VIDEO DETECTION SHALL BE ECONOLITE VISION WITH EXTENDED WARRANTY AND SHALL BE INSTALLED IN ACCORDANCE WITH LATEST TRAFFIC SIGNAL STANDARDS & SPECIFICATIONS.

Add the following to D:

5. EVP TO BE MOUNTED ON VEHICLE HEAD MOUNTING BRACKET OR AS APPROVED BY THE ENGINEER IN THE FIELD. EVP SHALL INCLUDE CONFIRMATION LIGHTS.

Add the following:

I. INSPECTIONS

1. THE CONTRACTOR SHALL CONTACT THE COUNTY CONSTRUCTION MANAGER FOR INSPECTIONS THROUGHOUT CONSTRUCTION AS REQUIRED BY THE CONSTRUCTION MANAGER.

2. THE COUNTY SHALL VERIFY POLE LOCATIONS PRIOR TO EXCAVATION. THE CONTRACTOR SHALL NOTIFY MR. CHRISTOPHER MALTBY, 703-228-6513 TO SCHEDULE INSPECTION PRIOR TO EXCAVATION, AND AGAIN PRIOR TO POURING CONCRETE. STAKEOUT IS THE RESPONSIBILITY OF THE CONTRACTOR UNLESS DIRECTED OTHERWISE.

3. THE CONTRACTOR SHALL CONTACT THE COUNTY CONSTRUCTION MANAGER WITHIN 7 BUSINESS DAYS OF SIGNAL ACTIVATION. ALL POWER AND COMMUNICATIONS SHALL BE IN OPERATION AT THE TIME OF ACTIVATION UNLESS APPROVED BY THE COUNTY CONSTRUCTION MANAGER.

ARLINGTON
VIRGINIA

DEPARTMENT OF
ENVIRONMENTAL SERVICES

Signal Systems and ITS
Traffic Engineering and Operations Bureau
2100 Clarendon Boulevard, Suite 900, Arlington, VA 22201
Phone: 703.228.3629 Fax: 703.228.3606 www.arlingtonva.us

Table of Contents:

Construction Drawings For:
N. Glebe Road Intelligent Transportation Systems (ITS) Improvements Project

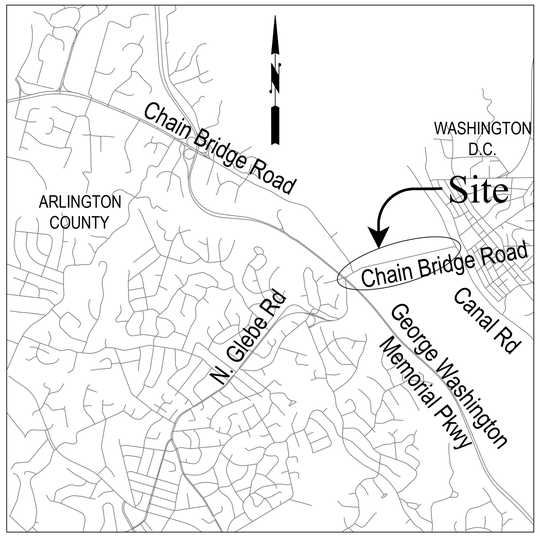
Intersection of: N. Glebe Road and Chain Bridge Road

THIS PROJECT CONSISTS OF TRAFFIC SIGNAL MODIFICATIONS AND INTELLIGENT TRANSPORTATION SYSTEMS (ITS) IMPROVEMENTS AT THE INTERSECTION OF NORTH GLEBE ROAD AND CHAIN BRIDGE ROAD. THE SIGNAL IMPROVEMENTS INCLUDE REMOVING ALL EXISTING EQUIPMENT AND REPLACING WITH NEW EQUIPMENT AND ACCESSIBLE PEDESTRIAN SIGNAL DEVICES. THE ITS IMPROVEMENTS INVOLVES THE INSTALLATION OF LANE CONTROL SIGNALS.

Location Map

Scale: N.T.S.

Vicinity



FUNCTIONAL CLASSIFICATION AND TRAFFIC DATA		
CHAIN BRIDGE ROAD - PRINCIPAL ARTERIAL - SPEED LIMIT 25/30 MPH N GLEBE ROAD - PRINCIPAL ARTERIAL - SPEED LIMIT 25 MPH		
	CHAIN BRIDGE ROAD (RTE 123)	N GLEBE ROAD (RTE 120)
AADT (2017)	12000	12000
AADT (DESIGN YR)	N/A	N/A
V DESIGN (mph)	25/30	25

I CERTIFY THAT THIS PROJECT WAS BUILT IN SUBSTANTIAL CONFORMANCE WITH THIS PLAN, UNLESS DULY NOTED IN THE ABOVE REVISION BLOCK.

_____ _____
PROJECT MANAGER **DATE**

_____ _____
CONSTRUCTION MANAGER **DATE**

CALL 48 HOURS BEFORE YOU DIG

IT'S THE LAW! DIAL 811

811 Know what's Call below. before you dig.

ARLINGTON
VIRGINIA

DEPARTMENT OF
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Kimley»Horn
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Fax: 703-674-1350

Seal

COMMONWEALTH OF VIRGINIA
GEOFF D. GIFFIN
Lic. No. 039584
09/18/2019
PROFESSIONAL ENGINEER

FINAL DESIGN PLANS

Approvals Date

Approvals	Date
DESIGN TEAM SUPERVISOR	10/4/19
TRAFFIC SIGNALS MANAGER	10/04/19
CHIEF, TE&O BUREAU	10/04/2019
DIRECTOR OF TRANSPORTATION	10/4/19

Revisions Date

Designed: KF
Drawn: JW
Checked: GG
Miss Utility Transmittal #:

Filename: 0000 COVER SHEET.dwg
Path: K:\NVA_TPTO\110010100 - Glebe Road ITS Design\CAD\PlanSheets
Plotted: September 18, 2019
Plotted by: Kelley.Frank

ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

COVER SHEET
N. GLEBE ROAD ITS IMPROVEMENTS

FINAL DESIGN PLANS

SCALE: HOR. N/A VERT. N/A | SHEET: 0000

Symbols

Existing		Proposed
1001	Storm Str. #	ST1
	Catch Basin	
	Sanitary Manhole	
2001	Sanitary Str. #	SA1
	Fire Hydrant	
	Watermain Reducer	
	Water – Valve	
	Blowoff Valve	
	Water – Cross	
	Water – Tee	
	Water – Typical Bend	
	Water Meter	
	Water Cap	
	Water – Manhole Cover	
	Siamese Connection	
	CableTV Pedestal	
	Electrical Box	
	Telephone Pedestal	
	Cobrahead Light	
	Carlyle Light	
	Ground Light	
	Light Pole	
	Utility Pole	
	Guy Wire	
	Utility Cover	
	Gas Valve	
	Gas Line Marker	
	Test Hole	
	Bollard	
	Mailbox	
	Parking Meter	
	Sign	
	Traffic Mast Arm Pole	
	Traffic Pedestrian Pole	
	Traffic Control Box	
	Traffic Electrical Box	
	Traffic Junction Box	
S	Traffic Service Meter	S
	Coniferous Tree	
	Deciduous Tree	
	Bush/Hedge/Shrub	
	Construction Notes	1
	Benchmark	
	Monument (GPS)	
	Monument	
	Iron Rod Found	
	Iron Pipe Found	
	Rebar Rod Found	
	P.K. Nail Found	
	Traverse	
NORTH	North Arrow	
C–2R	Curb Transition	

	Existing	Proposed
Easement		
Asphalt		
Building		
Cable TV	CATV CATV CATV	
Center Line		
Concrete		
Contours	250	250
Curb		
Electric (Underground)	UGE UGE UGE	
Fence		
Fiber Optic	fo fo fo	
Guardrail		
2" Gas	2" G 2" G 2" G	
3" Gas	3" G 3" G 3" G	
6" Gas	6" G 6" G 6" G	
8" Gas	8" G 8" G 8" G	
Gas	GAS GAS GAS	
Limits Of Clearing		
Overhead Wires		
Property Line		
8" Sanitary	8" S	
12" Sanitary	12" S	
Sanitary Sewer		
Sanitary House Con.	SHC	
Sidewalk		
Storm (size noted)		
Telephone (Underground)	UGT UGT UGT	
Wall		
6" Water	6" W	
8" Water	8" W	
12" Water	12" W	
Water	W W	
Water House Con.	WHC WHC WHC	
Lane Marking		
Tree Line		
PVC (Street Lights)		

Asphalt – Mill & Overlay	
Asphalt – Overlay	
Asphalt – Full Depth	
Concrete	
Demolish Existing Sidewalk	
Demolish Existing Driveway Aprons	
Demolish Existing Curb & Gutter	
Sand	
Soil	
Gravel	
Herringbone	
Basket Weave	
Brick	

STORM SEWER AS-BUILT TABLE

#22324
TOP = 50.55
18" RCP INV. OUT (22326) = 48.26

#22326
TOP = 52.83
18" RCP INV. IN (22324) = 47.57

#22327
TOP = 53.76
18" RCP INV. IN (22324) = 44.35
18" RCP INV. OUT = 44.03

#22328
TOP = 50.67
STRUCTURE IS FULL OF DEBRIS/DIRT

#22330
TOP GRATE = 77.78
STRUCTURE IS FULL OF DEBRIS/DIRT

Survey Control Table:

10	7024430.19	11876200.24	55.02	TRV 10 DH
11	7024386.44	11876203.69	56.20	FLY 11 DH
12	7024438.90	11876298.40	51.34	FLY 12 SN
13	7024466.23	11876334.87	50.29	FLY 13 SN
14	7024379.04	11876091.99	63.66	FLY 14 PK
15	7024411.12	11876101.06	61.74	FLY 15 PK
16	7024332.04	11876014.60	70.98	FLY 16 PK
17	7024265.96	11875924.93	80.12	FLY 17 PK
18	7024498.45	11876076.82	66.07	FLY 18 PK
19	7024242.29	11875861.10	87.64	FLY 19 PK
20	7024197.37	11875887.37	86.82	FLY 20 PK
100	7024592.26	11876611.91	62.23	TRAV 100 PK
101	7024541.53	11876387.24	54.32	TRAV 101 PK

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Filename: 0001 LEGEND AND SURVEY DATA.dwg
Path: K:\NVA_TPTO\110010100 - Glebe Road ITS Design\CAD\PlanSheets
Plotted: September 18, 2019
Plotted by: Kelley.Frank

ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

LEGEND AND SURVEY DATA
N. GLEBE ROAD ITS IMPROVEMENTS

CONSTRUCTION DOCUMENTS

SCALE: HOR. N/A VERT. N/A

SHEET: 0001

General Signal Notes

1. ALL WORK FOR TRAFFIC SIGNALS, TRAFFIC SIGNS, AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), THE LATEST EDITION OF THE ARLINGTON COUNTY TRAFFIC SIGNAL & STREETLIGHT SPECIFICATIONS, 2016 VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) ROAD AND BRIDGE SPECIFICATIONS, 2016 VDOT ROAD AND BRIDGE STANDARDS, 2011 VIRGINIA SUPPLEMENT TO THE MUTCD, 2011 VIRGINIA WORK AREA PRODUCTION MANUAL, AND SPECIAL PROVISIONS IN EFFECT AT THE TIME OF ADVERTISEMENT.

2. FIVE WORKING DAYS PRIOR TO COMMENCING SIGNAL INSTALLATION/MODIFICATION WORK AT ANY LOCATION IN ARLINGTON COUNTY, VIRGINIA, SIGNAL CONTRACTORS MUST NOTIFY THE COUNTY ENGINEER IN WRITING WITH THE NAME, DAYTIME PHONE NUMBER, AND EMERGENCY PHONE NUMBERS OF THE CONTRACTOR.THIS NOTIFICATION IS TO INCLUDE LOCATION, ROUTE NUMBERS, TYPE, AND DETAILS OF CONSTRUCTION AND SCHEDULE OF WORK.

3. THE TRAFFIC SIGNAL CONSTRUCTION SHALL NOT BEGIN WITHOUT PRIOR NOTIFICATION AND APPROVAL FROM ARLINGTON COUNTY.

4. THE COUNTY ENGINEER, PRIOR TO CONSTRUCTION, SHALL VERIFY POLE(S) AND CONTROLLER CABINET LOCATIONS.

5. ALL CATALOG CUTS, POLE CALCULATIONS, FOUNDATION DESIGNS, SHOP DRAWINGS, ETC., SHALL BE SUBMITTED TO, AND APPROVED BY, ARLINGTON COUNTY PRIOR TO CONSTRUCTION.

6. OPERATION OF THE SIGNALIZED INTERSECTION IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL THE TRAFFIC SIGNAL IS ACCEPTED BY ARLINGTON COUNTY.

7. ANY NOTES NOT MENTIONED IN THE NOTES SECTION OF THIS SIGNAL PLAN WILL REVERT TO THE ARLINGTON COUNTY STANDARDS.

8. CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING TRAFFIC SIGNAL COMMUNICATION THROUGHOUT THE PROJECT. DUE TO THE CRITICAL LOCATION OF THIS INTERSECTION, THE CONTRACTOR SHALL VERIFY WORKING COMMUNICATIONS TO NEW TRAFFIC SIGNAL CABINET PRIOR TO DEACTIVATION OF THE EXISTING CABINET.

9. ALL NEW CONTROLLER CABINETS MUST BE FURNISHED WITH A BACKUP POWER BATTERY

10. THE CONTRACTOR SHALL CONTACT "MISS UTILITY" AT 811 FOR MARKING THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES (i.e. WATER, SEWER, GAS, TELEPHONE, ELECTRIC, AND CABLE TV) AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION OR CONSTRUCTION. THE CONTRACTOR IS REQUIRED TO IDENTIFY AND PROTECT ALL OTHER UTILITY LINES FOUND IN THE WORK SITE AREA BELONGING TO OTHER OWNERS THAT ARE NOT MEMBERS OF "MISS UTILITY." PRIVATE UTILITY LATERALS ARE NOT LOCATED. CONTRACTOR SHALL VERIFY THE LOCATION OF UTILITY LATERALS AND IS RESPONSIBLE FOR ANY DAMAGE TO PRIVATE UTILITY LATERALS. IF THE CONTRACTOR PERCEIVES THAT A CONFLICT BETWEEN THE UTILITIES AND THE TRAFFIC SIGNAL WILL OCCUR, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IMMEDIATELY SO THAT THE CONFLICT MAY BE RESOLVED.

11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING WITH MATCHING MATERIALS ANY PAVEMENT, PAVEMENT MARKINGS, CURB AND GUTTER, SIDEWALK, ETC. THAT ARE DAMAGED DURING CONSTRUCTION .

12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK ZONE SIGNING, DELINEATION, PAVEMENT MARKINGS AND ANY OTHER TRAFFIC CONTROL DEVICES NECESSARY TO PERFORM THE WORK IN ACCORDANCE WITH THE VIRGINIA WORK AREA PROTECTION MANUAL. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL IMMEDIATELY REMOVE ALL TEMPORARY DEVICES.

13. THE CONTRACTOR SHALL SUBMIT "AS-BUILT" DRAWINGS TO ARLINGTON COUNTY UPON JOB COMPLETION AND FINAL INSPECTION .

14. EXISTING CONTROLLER AND CABINETS SPECIFIED TO BE REMOVED SHALL BE RETURNED TO ARLINGTON COUNTY.

15. CCTV LOCATIONS AND QUANTITIES ARE FOR PLANNING PURPOSES ONLY. THE FINAL LOCATIONS SHALL BE FIELD LOCATED.

16. CONTRACTOR SHALLL COORDINATE WITH UTILITY COMPANIES ON ADJUSTMENT OF OVERHEAD CABLES TO INSTALL MAST ARM SIGNAL POLES.

Signal Notes

A. POLES AND FOUNDATIONS

1. MAST ARM LENGTH IS TO BE AS SHOWN ON PLAN AND ALL MAST ARMS ARE TO BE FIELD DRILLED ONLY.
2. MAST ARM POLES SHALL BE DESIGNED TO THE PROPER HEIGHT TO ACCOMMODATE A STREET LIGHT LUMINAIRE AND INSTALLED IN ACCORDANCE WITH ARLINGTON COUNTY TRAFFIC SIGNAL & STREETLIGHT SPECIFICATIONS.
3. MAST ARM POLE FOUNDATIONS SHALL BE INSTALLED IN ACCORDANCE WITH ARLINGTON COUNTY STANDARDS AND SPECIFICATIONS. ALL POLES SHALL HAVE A 6-BOLT PATTERN.
4. THE COUNTY SHALL VERIFY POLE LOCATIONS PRIOR TO EXCAVATION. THE CONTRACTOR SHALL NOTIFY MR. SAROSH SALEEM, 703-228-3402 TO SCHEDULE INSPECTION. STAKEOUT IS THE RESPONSIBILITY OF THE CONTRACTOR UNLESS DIRECTED OTHERWISE.
5. AT THE COUNTY'S REQUEST, THE CONTRACTOR SHALL DIG TEST PITS TO VERIFY THAT SIGNAL POLE FOUNDATIONS WILL NOT CONFLICT WITH UNDERGROUND UTILITIES AND THAT FOUNDATIONS WILL FIT WITHIN EXISTING RIGHT-OF-WAY
6. SIGNAL POLES AND MAST ARMS SHALL BE NON-ORNAMENTAL. COBRA LIGHTING SHALL BE LED TYPE - RFL-145W64LED4K-T-R2M-UNIV-DMG-PH8-RCD7-[USA-003]-BK.

B. CONTROLLER AND FOUNDATION

1. NEW CONTROLLER CABINETS SHALL BE TS2, P TYPE WITH BATTERY BACKUP PER ARLINGTON COUNTY REQUIREMENTS. ADD GENERATOR AND POLICE PANEL WITH RJ-45 SWITCH PER THE ARLINGTON COUNTY STANDARDS.
2. CONTROLLER SHALL BE INTELIGHT X-3 WITH LATEST FIRMWARE AND SHALL BE INSTALLED AND SET AS FOLLOWS:
   2.1 TO REST IN PHASE 2 & 6 GREEN INTERVAL
   2.2 TO START/RESTART IN PHASE 2 & 6 YELLOW CHANGE INTERVAL
3. THE CONTROLLER CABINET AND FOUNDATION SHALL BE INSTALLED IN ACCORDANCE WITH ARLINGTON COUNTY TRAFFIC SIGNAL & STREETLIGHT SPECIFICATIONS 66-01. 66-02, AND 70-01.
4. THE COUNTY WILL PROVIDE SIGNAL TIMINGS TO THE CONTRACTOR FOR THE CONTROLLER WHEN THE INTERSECTION IS TOTALLY PREPARED FOR OPERATION. THE CONTRACTOR SHALL NOTIFY THE COUNTY IN WRITING 10 DAYS IN ADVANCE OF REQUIRING FINAL TIMINGS.

C. TRAFFIC SIGNAL HEADS

1. ALL NEW VEHICULAR SIGNAL SECTIONS SHALL BE 12 INCHES IN DIAMETER CAST ALUMINUM WITH LED DISPLAYS.
2. PEDESTRIAN SIGNAL HEAD SECTIONS SHALL BE CAST ALUMINUM WITH LED DISPLAYS (COUNTDOWN).

D. DETECTORS

1. ALL NEW PEDESTRIAN PUSH BUTTON STATIONS SHALL CONFORM TO ARLINGTON COUNTY'S SPECIFICATIONS FOR ACCESSIBLE SIGNAL DESIGN AND SHALL USE POLARA NAVIGATOR VIBRO-TACTILE/AUDIO PUSH BUTTON ASSEMBLIES UNLESS OTHERWISE SPECIFIED.
2. NEW PASSIVE PEDESTRIAN DETECTION SHALL CONFORM TO SPECIFICATIONS INCLUDED IN CONTRACT DOCUMENT FOR THIS PROJECT.
3. NEW OVERHEAD VIDEO DETECTION SHALL BE FLIR CAMERAS AND SHALL BE INSTALLED IN ACCORDANCE WITH COUNTY REQUIREMENTS.
4. EMERGENCY VEHICLE PRE-EMPTION (EVP) EQUIPMENT (GTT MODEL M711 OR M721), OR APPROVED SUBSTITUTE, SHALL BE INSTALLED COMPLETE WITH DISCRIMINATOR CARDS, WIRING, ETC. IN ACCORDANCE WITH ARLINGTON COUNTY STANDARDS.

E. CONDUIT, CONDUCTORS, AND ELECTRICAL

1. ALL JUNCTION BOXES SHALL HAVE THE WORDS "ARLINGTON COUNTY TRANSPORTATION" CAST IN THE LID. ALL JUNCTION BOXES SHALL BE INSTALLED PER STANDARDS 61-01, 61-02, 61-03, AND 61-04.
2. METER PEDESTAL SHALL MATCH COUNTY STANDARDS. UNDERGROUND SERVICE SHALL BE OBTAINED FROM THE NEAREST UTILITY POLE OR SERVICE POINT. CONTRACTOR IS RESPONSIBLE FOR OBTAINING APPROVAL AND COORDINATING WITH POWER SERVICE COMPANY FOR CONNECTION.
3. CONDUIT SYSTEM SHALL BE ADDED TO CONNECT EXISTING COMMUNICATION CABLE PLANT TO THE NEW CONTROLLER CABINET LOCATION AS DIRECTED BY THE COUNTY ENGINEER.
4. ALL CONDUIT ENTERING INTO JUNCTION BOXES SHALL NOT EXTEND OVER 3" MAXIMUM NOR 2" MINIMUM INSIDE THE JUNCTION BOXES, AND SHALL BE FITTED WITH BELL ENDS OR BUSHING.
5. ALL JUNCTION BOXES SHALL HAVE A GROUND ROD INSTALLED. ALL JUNCTION BOXES SHALL BE PROPERLY CONNECTED TO THE INTERSECTION GROUNDING SYSTEM. METAL LIDS SHALL BE BONDED TO THE GROUNDING SYSTEM.
6. CONTRACTOR IS TO VERIFY DEPTHS OF UTILITIES AT PROPOSED CONDUIT CROSSINGS PRIOR TO EXCAVATING CONDUIT TRENCHES OR BORING.
7. ALL CONDUITS BENEATH ROADWAYS SHALL BE DIRECTIONAL DRILLED UNLESS DIRECTED OTHERWISE BY THE COUNTY CONSTRUCTION MANAGER. WHERE DIRECTED ON THE PLANS OR BY THE CONSTRUCTION MANAGER, THE CONTRACTOR SHALL INSTALL SPARE CONDUITS WITH PULL TAPE AND TRACER WIRE FOR ROAD CROSSINGS.
8. ALL EXISTING CONDUIT AND CABLES ARE BASED ON RECORD DRAWINGS OR WERE ESTIMATED. CONTRACTOR SHALL VERIFY CONDUIT FILL CAPACITY IN EXISTING CONDUITS PRIOR TO BEGINNING CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY ARLINGTON COUNTY IF CONDUIT CAPACITY IS NOT AVAILABLE IN EXISTING CONDUIT FOR NEW CABLES.
9. NEW CCTV CAMERAS SHALL BE INSTALLED IN ACCORDANCE WITH ARLINGTON COUNTY REQUIREMENTS. CONTRACTOR SHALL CONFIRM MOUNTING LOCATION OF CCTV CAMERA WITH COUNTY PRIOR TO INSTALLATION.
10. ALL PROPOSED CONDUIT SHALL HAVE #8 AWG (EGC) FOR GROUNDING SYSTEM.
11. REMOVE ALL EXISTING UNUSED RISER, JUNCTION BOXES, AND CABLES.

F. SIGNS

1. ALL MAST ARM SIGNS SHALL BE MOUNTED IN ACCORDANCE WITH ARLINGTON COUNTY STANDARDS. SIGNS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNLESS DIRECTED OTHERWISE.
2. STREET NAME SIGNS SHALL HAVE A WHITE LEGEND ON GREEN BACKGROUND. CONTRACTOR SHALL SUBMIT SIGN DETAILS TO COUNTY TO REVIEW. THE DIMENSIONS PROVIDED ON PLANS ARE ESTIMATED.

G. DEMOLITION/SALVAGE

1. ALL EXISTING SIGNAL EQUIPMENT IS TO BE REMOVED & RETURNED TO ARLINGTON COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES LOCATED AT 4300 29TH ST S., ARLINGTON, VA 22206.
2. ALL EXISTING SIGNAL POLE FOUNDATIONS SHALL BE DEMOLISHED IN ACCORDANCE WITH ARLINGTON COUNTY SPECIFICATIONS.

H. COMMUNICATIONS

1. EXISTING COUNTY FIBER JUNCTION BOXES AND CONDUITS CONTAIN LIVE FIBER OPTIC CABLES. THE CONTRACTOR SHALL NOT CUT OR DAMAGE THE COUNTY'S EXISTING FIBER CABLES.
2. ALL FIBER OPTIC CABLE INSTALLATION, REMOVAL, SPLICING, AND TESTING SHALL BE PERFORMED BY THE COUNTY AT THE CONTRACTOR'S EXPENSE. CONTRACTOR MAY CONTRACT DIRECTLY WITH THE COUNTY'S FIBER CONTRACTORS. UPON REQUEST 703-228-7726, THE COUNTY WILL PROVIDE THE CONTACT INFORMATION FOR CURRENT COUNTY FIBER CONTRACTORS.
3. CONTACT ARLINGTON COUNTY DTS FOR FIBER OPTIC CABLE REMOVAL OR INSTALLATION AT LEAST 10 BUSINESS DAYS IN ADVANCE.
4. CONTRACTOR SHALL FURNISH FIBER PATCH PANEL FOR INSTALLATION BY THE COUNTY. FIBER PIGTAIL SHALL BE APPROPRIATE LENGTH TO ALLOW FOR 50 FEET OF SLACK IN EACH INTERMEDIATE JUNCTION BOX. CONTRACTOR SHALL SUBMIT A SHOP DRAWING OF THE PATCH PANEL (INDICATING THE TAIL LENGTH) FOR COUNTY REVIEW PRIOR TO ORDERING.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF PROPOSED JUNCTION BOXES AND CONDUITS INCLUDING ALL APPURTENANCES SUCH AS GROUND RODS, TRACER WIRE, PULL TAPE, ETC.
6. ALL NEW CONDUITS SHALL HAVE PULL TAPE INSTALLED BETWEEN JUNCTION BOXES AND TRACER WIRE INSTALLED WITHIN OR BESIDE AT LEAST ONE OF THE CONDUITS. TRACER WIRE SHALL BE CONNECTED TO THE GROUND RODS INSTALLED IN THE ADJACENT JUNCTION BOXES.
7. DO NOT SPLICE TRACER WIRE.

ARLINGTON
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Seal

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09/18/2019
PROFESSIONAL ENGINEER

FINAL DESIGN PLANS

Approvals Date

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DESIGN TEAM SUPERVISOR	10/4/19
TRAFFIC SIGNALS MANAGER	10/04/19
CHIEF, T&O BUREAU	10/04/2019
DIRECTOR OF TRANSPORTATION	10/4/19

Revisions Date

Revisions	Date

Designed: KF
Drawn: JW
Checked: GG
Miss Utility Transmittal #:

Filename: 0002 GENERAL NOTES AND DETAILS.dwg
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ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

GENERAL NOTES AND DETAILS
N. GLEBE ROAD ITS IMPROVEMENTS

CONSTRUCTION DOCUMENTS

SCALE: HOR. N/A VERT. N/A | SHEET: 0002

GENERAL NOTES

MAPPING

1. EXISTING CONDITIONS MAPPING PROVIDED BY ARLINGTON COUNTY. BASIS FOR MAPPING IS FIELD SURVEY AND AS-BUILT INFORMATION.

GENERAL REQUIREMENTS

1. THE CONTRACTOR SHALL OBTAIN ALL APPLICABLE PERMITS AND LICENSES AND KEEP COPIES OF THE SAME ON SITE DURING CONSTRUCTION, EXCEPT AS PROVIDED BY ARLINGTON COUNTY.
2. THE CONTRACTOR SHALL MAINTAIN A CLEAN WORK SITE, FREE FROM TRASH AND DEBRIS.
3. THE CONTRACTOR SHALL KEEP AND MAINTAIN A SET OF APPROVED PROJECT PLANS AND SPECIFICATIONS ON SITE AT ALL TIMES.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING WITH MATCHING MATERIALS ANY PAVEMENT, PAVEMENT MARKINGS, ETC. THAT MUST BE CUT OR REMOVED, OR THAT ARE DAMAGED DURING CONSTRUCTION.

COORDINATION

1. CONSTRUCTION WILL TAKE PLACE ADJACENT TO ONGOING TRAFFIC OPERATIONS. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH ARLINGTON COUNTY (AC).
2. THE CONTRACTOR SHALL SUBMIT A SCHEDULE FOR CONSTRUCTION TO AC IN ACCORDANCE WITH ARLINGTON COUNTY D.E.S. REQUIREMENTS.
3. PER THE CONTRACT DOCUMENTS, PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL ARRANGE A MEETING WITH AC TO DISCUSS COORDINATION OF CONSTRUCTION ACTIVITIES AND RELATED PROJECTS. THE CONTRACTOR SHALL PARTICIPATE IN A CONTRACTOR LED BIWEEKLY PROGRESS MEETINGS WITH THE COUNTY AND SHALL SUBMIT SCHEDULE UPDATES AT THESE MEETINGS.
4. THE CONTRACTOR WILL ALSO BE REQUIRED TO CLOSELY COORDINATE WITH ADJACENT ONGOING AND PLANNED PROJECTS BEING CONSTRUCTED BY OTHERS, INCLUDING BUT NOT LIMITED TO THE COUNTY FIBER OPTIC INSTALLATION.

CLEARING AND GRUBBING/DEMOLITION

1. THE CONTRACTOR SHALL PERFORM DEMOLITION ACTIVITIES AS NOTED AND SHOWN ON THESE PLANS AND AS DIRECTED BY ARLINGTON COUNTY (AC).
2. INSTALL ALL EROSION AND SEDIMENT CONTROL DEVICES AND TREE PROTECTION PRIOR TO BEGINNING DEMOLITION WORK.
3. DEMOLITION DETAILS AND NOTES ARE INTENDED TO DEPICT GENERAL DEMOLITION AND UTILITY WORK AND ARE NOT INTENDED TO IDENTIFY EACH ELEMENT OF DEMOLITION OR RELOCATION. CONTRACTOR SHALL COORDINATE WITH AC AND APPROPRIATE UTILITY COMPANIES PRIOR TO WORK.
4. THE CONTRACTOR SHALL REMOVE OR ABANDON, AS SPECIFIED, EXISTING UTILITIES SUCH AS STORM DRAINAGE, SANITARY SEWER, WATER, GAS, ELECTRIC, AND TELEPHONE OR AS DIRECTED BY AC. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING EACH UTILITY COMPANY AND AC TO COORDINATE ABANDONMENT OR REMOVAL OF ALL UTILITIES AND FOR DETERMINING HORIZONTAL AND VERTICAL LOCATIONS OF UTILITIES PRIOR TO COMMENCING WORK.
5. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES TO REMAIN IN PLACE.
6. ALL MATERIALS REMOVED UNDER CLEARING WORK, NOT TO BE RELOCATED OR TO BE TURNED OVER TO THE OWNER, SHALL BE LEGALLY DISPOSED OF BY THE CONTRACTOR.
7. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS TO AVOID UNNECESSARY DAMAGE TO EXISTING ROAD SURFACES.
8. ALL EXISTING ITEMS TO REMAIN WHICH ARE DAMAGED DURING CONSTRUCTION SHALL BE RESTORED TO ITS ORIGINAL CONDITION AT THE EXPENSE OF THE CONTRACTOR.

UTILITIES

1. THIS PLAN DOES NOT GUARANTEE THE EXISTENCE, NONEXISTENCE, SIZE, TYPE, LOCATION, ALIGNMENT, OR DEPTH OF ANY UNDERGROUND UTILITIES OR OTHER FACILITIES. WHERE SURFACE FEATURES (MANHOLES, CATCH BASINS, VALVES, ETC.) ARE UNAVAILABLE OR INCONCLUSIVE, INFORMATION SHOWN MAY BE FROM UTILITY OWNER'S RECORDS AND/OR ELECTRONIC LINE TRACING, THE RELIABILITY OF WHICH IS UNCERTAIN. THE CONTRACTOR SHALL PERFORM TEST EXCAVATIONS OR OTHER REINVESTIGATIONS AS NECESSARY TO VERIFY LOCATION AND CLEARANCES.
2. UNLESS OTHERWISE NOTED, UTILITIES LIDS, INCLUDING WATER VALVE LIDS, ARE TO BE ADJUSTED BY THE CONTRACTOR TO MATCH FINAL GRADE AND SLOPE.
3. STATE LAW MANDATES THE NOTIFICATION OF UTILITY OWNERS 48 HOURS IN ADVANCE OF EXCAVATION. FOR LOCATION OF UTILITIES CALL:

UTILITY OWNERS	TELEPHONE
DOMINION VIRGINIA POWER (DVP)	888-667-3000
VERIZON COMMUNICATIONS	888-826-2355
COMCAST	888-683-1000
JONES FIBER	540-891-5545
WASHINGTON GAS	703-750-1000

4. CONTRACTOR SHALL CONFORM TO THE "OVERHEAD HIGH VOLTAGE ACT" (EFFECTIVE JULY 1, 2003) AND SHALL CONTACT THE NECESSARY AUTHORITIES PRIOR TO START OF CONSTRUCTION.
5. ARLINGTON COUNTY'S UTILITY DEPARTMENT INSPECTOR SHALL BE NOTIFIED WHEN ANY IMPROVEMENT PERTINENT TO HIS INSPECTION DUTIES ARE BEING INSTALLED. SPECIFIC REQUIREMENTS ARE:
   A. SITE INSPECTOR OR AREA SUPERVISOR IS TO BE NOTIFIED AT LEAST 3 DAYS PRIOR TO START OF CONSTRUCTION.
   B. A MINIMUM OF 24 HOURS NOTICE IS REQUIRED WHEN REQUESTING COMPACTION TESTS.
6. STABLE SUBGRADE SHALL COMPRISE SOLID, WELL DRAINED, UNDISTURBED EARTH CAPABLE OF SUPPORTING STREET LOADING WITHOUT RESULTING IN ANY DAMAGING SETTLEMENT AS DETERMINED BY THE ENGINEER.
7. WHERE UNSUITABLE SUBGRADE, AS DETERMINED BY THE ENGINEER, IS ENCOUNTERED, IT SHALL BE MADE STABLE BY DRAINING, COMPACTING, AND/OR REPLACING AS REQUIRED, TO THE SATIFACTION OF THE ENGINEER.
8. ALL CONCRETE SHALL BE VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) CLASS "A4" FOR PRECAST STRUCTURES AND VDOT CLASS "A3" FOR ALL OTHERS USES, UNLESS OTHERWISE SPECIFIED.
9. ALL ASPHALT PAVEMENT COURSES SHALL BE IN CONFORMANCE WITH VDOT SPECIFICATIONS.
10. EXISTING FIRE HYDRANTS MUST REMAIN ACTIVE UNTIL NEW HYDRANTS ARE AVAILABLE FOR PUBLIC USE. CONTRACTOR TO COORDINATE WITH PROPERTY OWNERS AND FIRE DEPARTMENT WHEN SERVICES TO PROPERTIES ARE INTERRUPTED.

WATER-SEWER CONSTRUCTION REQUIREMENTS

1. ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH ARLINGTON COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES CONSTRUCTION STANDARDS & SPECIFICATIONS AND SHALL BE APPROVED BY THE DEPARTMENT OF ENVIRONMENTAL SERVICES. UPON PHYSICAL INSPECTION, THE COUNTY RESERVES THE RIGHT TO REJECT THE USE OF ANY MATERIAL FOUND TO BE DEFECTIVE OR NOT CONFORMING TO THE STANDARDS AND SPECIFICATIONS.
2. BEFORE START OF CONSTRUCTION, THE CONTRACTOR SHALL FURNISH THE FOLLOWING INFORMATION AND/OR EVIDENCE OF COMPLIANCE WITH ALL APPLICABLE REGULATIONS AND LAWS, TO THE ARLINGTON COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES:
   - THE NAME AND ADDRESS OF THE CONTRACTOR HIRED TO WORK ON THE PROJECT. THE CONTRACTOR SHALL BE REGISTERED IN THE COMMONWEALTH OF VIRGINIA. SATISFACTORY EVIDENCE SHALL BE FURNISHED OF THE CONTRACTOR'S PRIOR EXPERIENCE AS PRIME CONTRACTOR IN THE CONSTRUCTION OF WATER MAINS AND/OR SANITARY SEWER INSTALLATIONS. FURTHER, THE CONTRACTOR SHALL FURNISH A LETTER WITH A LIST OF MATERIALS AND SUPPLIERS FOR PROPOSED PROJECT.
   - A RIGHT-OF-WAY PERMIT IS REQUIRED TO WORK IN ARLINGTON COUNTY STREETS. IN INSTANCES OF EXCAVATIONS IN STATE RIGHT OF WAY, THE DATE AND NUMBER OF ALL PERMITS REQUIRED BY THE VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) SHALL BE FURNISHED.
   - IF ANY EASEMENTS ARE NEEDED, TWO (2) COPIES OF THE DESCRIPTION OF SUCH EASEMENT, AS ACTUALLY RECORDED, SHALL BE FURNISHED, INCLUDING THE PLACE, DATE AND REFERENCE OF SUCH RECORDATION PRIOR TO PLAN APPROVAL.
   - WRITTEN NOTICE OF TENTATIVE STARTING DATE OF CONSTRUCTION, WHICH SHALL BE A MINIMUM OF ONE (1) WEEK FOLLOWING THE DATE OF NOTICE. IN ADDITION, THE CONTRACTOR SHALL FURNISH THE NAMES AND TELEPHONE NUMBERS OF TWO (2) RESPONSIBLE PERSONS WHO CAN BE CONTACTED IN CASE OF EMERGENCY.
   - EXISTING WATER SERVICES MAY BE ALLOWED FOR CONSTRUCTION PURPOSES ONLY WITH PRIOR APPROVAL OF ARLINGTON COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES. IN THESE CASES, INSTALLATION OF A WATER METER FOR "WATER ONLY" USE SHALL BE REQUESTED BY CALLING THE UTILITY SERVICES OFFICES AT (703) 228-6570. THE METER WILL NOT BE PROVIDED WITHOUT EVIDENCE THAT THE CONTRACTOR HAS INSTALLED AN ASSE-1013 APPROVED, REDUCED-PRESSURE, BACKFLOW PREVENTION (HIGH HAZARD) DEVICE PER THE ARLINGTON COUNTY PLUMBING CODE.
   - CONSTRUCTION SHALL NOT BEGIN UNTIL THE ABOVE ITEMS HAVE BEEN COMPLETED AND THE ARLINGTON COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES HAS APPROVED THE STARTING DATE AND ARRANGEMENTS HAVE BEEN MADE FOR THE REQUIRED INSPECTION SERVICE.
3. ALL CONSTRUCTION SHALL BE ACCOMPLISHED FROM APPROVED PLANS, SPECIFICATIONS AND CUT SHEETS SUBMITTED BY A REGISTERED ENGINEER AND APPROVED BY THE COUNTY. TO AVOID CONSTRUCTION DELAYS ALL NECESSARY TEST HOLE INFORMATION SHALL BE OBTAINED PRIOR TO PLAN APPROVAL. WATER MAIN VALVES, METERS AND APPURTENANCES SHALL ONLY BE OPERATED BY ARLINGTON COUNTY WATER PERSONNEL.
4. NO EXISTING WATER MAINS, FIRE HYDRANTS, OR SANITARY SEWERS MAY BE TAKEN OUT OF SERVICE OR MADE INACCESSIBLE BY THE CONTRACTOR WITHOUT THE PRIOR APPROVAL FROM THE DEPARTMENT OF ENVIRONMENTAL SERVICES.
5. SANITARY SEWER LATERALS ARE PRIVATELY OWNED AND MAINTAINED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL EXISTING LATERALS WITHIN THE LIMITS OF CONSTRUCTION. APPROPRIATE PERMITS AND INSPECTIONS FOR WORK ON ANY LATERALS SHALL BE OBTAINED FROM THE INSPECTION SERVICES DIVISION. ANY LATERALS ABANDONED WITH THE PROJECT SHALL BE CAPPED AT THE SEWER MAIN.
6. IN CASES WHERE A PROPOSED SANITARY SEWER IS TO BE CONNECTED TO AN EXISTING SANITARY MANHOLE, THE EXISTING MANHOLE SHALL BE RECONSTRUCTED OR REPLACED BY THE CONTRACTOR AS DIRECTED BY THE COUNTY TO MEET THE CURRENT STANDARDS. ALL NEW CONNECTIONS TO THE EXISTING MANHOLES SHALL BE CORE DRILLED WITH BOOT JUST ABOVE THE EXISTING BENCH AND THE FLOW CHANNELS RESHAPED AS NEEDED.
7. UPON COMPLETION OF CONSTRUCTION, ALL FINAL TESTS, AS REQUIRED, SHALL BE PERFORMED IN THE PRESENCE OF THE COUNTY'S REPRESENTATIVE. WATER AND SEWER SERVICE CONNECTIONS SHALL NOT BE MADE UNTIL THE WATER AND/OR SEWER MAINS AND APPURTENANCES HAVE BEEN APPROVED AND ACCEPTED BY ARLINGTON COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES. THE CONTRACTOR IS RESPONSIBLE FOR DECHLORINATING ALL CHLORINATED WATER, REGARDLESS OF THE CONCENTRATION. ALL SUPER CHLORINATED WATER REQUIRES A DECHLORINATION PLAN THAT SHALL BE SUBMITTED TO AND APPROVED BY ARLINGTON COUNTY. THIS PLAN SHALL DESCRIBE HOW AND WHERE THE WATER IS TO BE DISCHARGED.
8. THE CONTRACTOR SHALL MAINTAIN BACKFILL FOR UTILITY EXCAVATIONS UNTIL ARLINGTON COUNTY HAS FINALLY ACCEPTED THE PROPOSED WATER AND/OR SEWER MAIN. ALSO, ALL SURFACES OVER THE UTILITY EXCAVATIONS SHALL EITHER BE RESTORED TO THE ORIGINAL CONDITION OR FINISHED AS PER THE PROPOSED DESIGN BEFORE THE ACCEPTANCE OF THE PROJECT. PAVEMENT PATCHING FOR UTILITY CUTS IN THE PUBLIC STREETS SHALL BE PERFORMED IN ACCORDANCE WITH ARLINGTON COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES CONSTRUCTION STANDARDS AND SPECIFICATIONS OR AS PER VDOT ROAD AND BRIDGE STANDARDS AND SPECIFICATIONS DEPENDING UPON THE STREET OWNERSHIP. PRIOR TO FINAL PAVING, THE CONTRACTOR SHALL ADJUST ALL EXISTING VALVE BOXES AND SANITARY SEWER MANHOLE FRAME AND COVERS AS PER COUNTY STANDARDS, REMOVE ALL ABANDONED SANITARY MANHOLES AND VALVE BOXES OVER THE ABANDONED WATER MAINS, ABANDON ALL PIPES IN ACCORDANCE WITH COUNTY STANDARDS AND COMPLETE ALL NECESSARY WATER MAIN CUT AND CAPS."
9. UPON COMPLETION, APPROVAL, AND ACCEPTANCE OF WATER AND/OR SEWER MAINS AND APPURTENANCES, THE CONTRACTOR SHALL SUBMIT A TELEVISION INSPECTION AND REPORT ON A DVD IN A COUNTY APPROVED FORMAT. PRIOR TO ANY BOND REDUCTION/RELEASE OR APPROVAL/ACCEPTANCE OF WATER AND/OR SEWER MAINS AND APPURTENANCES, THE CONTRACTOR'S REGISTERED ENGINEER SHALL SUBMIT TO ARLINGTON COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES, A SET OF MYLAR TRACINGS AND CD WITH PDF FILE FORMAT THAT SHOWS THE AS-BUILT CONDITIONS PER THE COUNTY STANDARDS AND A SIGNED STATEMENT CONFIRMING THAT THE WORK, AS INDICATED, IS ACCEPTABLE TO THE ENGINEER.
10. PRIOR TO THE FINAL ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL REQUEST TO THE UTILITY SERVICES IN WRITING FOR THE DISCONTINUATION OF ALL EXISTING WATER SERVICES (WHERE APPLICABLE) AT WHICH TIME THE COUNTY WILL REMOVE THE WATER METER AND ISSUE A FINAL BILL. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL EXISTING METER BOXES RELATED TO THE SERVICES BEING DISCONTINUED AND DISCONNECTING EXISTING WATER SERVICES AT THE MAIN BY EXCAVATING, TURNING OFF THE CORPORATION STOP AND DISCONNECTING THE SERVICE FROM THE CORPORATION STOP.

DRAINAGE

1. THE LOCATIONS OF ALL DRAINAGE STRUCTURES SHOWN ON THESE PLANS ARE APPROXIMATE ONLY, WITH THE EXCEPTION OF STRUCTURES SHOWING SPECIFIC STATIONS. THE HEIGHT ("H") DIMENSIONS SHOWN ON THE PLANS FOR DROP INLETS AND JUNCTION BOXES AND THE LINEAR FOOT (LF) DIMENSIONS SHOWN FOR MANHOLES ARE APPROXIMATE.
2. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY DRAINAGE STRUCTURES AND CONVEYANCE MEASURES TO PREVENT DAMAGE TO PRIVATE PROPERTY AND PUBLIC STREETS, OR AS DIRECTED BY AC.
3. IF PRECAST DRAINAGE STRUCTURES ARE USED, SHOP DRAWINGS MUST BE SUBMITTED.
4. ALL PROPOSED STORM DRAINAGE STRUCTURES SHALL UTILIZE INLET SHAPING WITH PAVED INVERTS, UNLESS OTHERWISE NOTED ON THE PLANS, FOR EACH STRUCTURE.
5. ALL PIPE CULVERTS (WATER, SEWER, AND STORM SEWER), LOCATED WITHIN RIGHT-OF-WAY EXCAVATION AREAS THAT ARE SUBJECT TO TRAFFIC LOADS SHALL BE BACKFILLED WITH A SELECT OR GRANULAR MATERIAL AND PLACED IN SIX (6) INCH LAYERS AND COMPACTED TO 95 PERCENT THEORETICAL AASHTO DENSITY IN ACCORDANCE WITH SECTION 302.03 OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS (CURRENT EDITION).
6. RIPRAP MUST BE PROVIDED AT ALL ENDWALLS AND FLARED END SECTIONS AS REQUIRED BY AC INSPECTOR.
7. THE CONTRACTOR SHALL MAINTAIN ALL DRAINAGE, STORMWATER MANAGEMENT, AND BEST MANAGEMENT PRACTICES FACILITIES AND SYSTEMS TO ENSURE THAT THEY FUNCTION PROPERLY DURING CONSTRUCTION.
8. A WATERTIGHT CONNECTION SHALL BE MADE AT ALL PIPES ENTERING DRAINAGE STRUCTURES. IN ADDITION, WATERTIGHT CONNECTIONS SHALL BE MADE BETWEEN EACH SECTIONS OF PIPE.
9. LENGTHS OF PIPE SHOWN ON THE DRAWINGS ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.
10. TOP OF STRUCTURES SHALL BE SET TO MATCH CURB AND GUTTER, SIDEWALK AND/OR DITCH CONSTRUCTION.

CONSTRUCTION

1. SUBMITTALS ON MATERIALS FOR THIS PROJECT SHALL BE PROVIDED TO AC FOR APPROVAL PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION.
2. EXISTING VEGETATION SURROUNDING THE CONSTRUCTION AREA SHALL REMAIN IN A NATURAL STATE. TREES NEAR THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH TREE PROTECTION DETAILS, PLANS, AND NOTES AS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN.
3. THE CONTRACTOR SHALL STRIP TOPSOIL AND ANY ORGANIC LADEN SOIL AND STORE FOR USE IN BACKFILLING AND LANDSCAPING FOR SITE RESTORATION. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ANY EXCESS SOIL AFTER RESTORATION OF THE SITE.
4. WHEN MATERIALS WHICH ARE UNSUITABLE FOR FOUNDATIONS, SUBGRADES, OR ROADWAY PURPOSES OCCUR WITHIN THE LIMITS OF CONSTRUCTION, THE CONTRACTOR SHALL BE REQUIRED TO EXCAVATE SUCH MATERIAL BELOW THE GRADE SHOWN ON THE PLANS. THE AREAS SO EXCAVATED SHALL BE BACKFILLED WITH APPROVED SUITABLE SELECT FILL MATERIAL.
5. ANY NECESSARY FILL UNDER PAVED AREAS SHALL BE PLACED IN 6-INCH LIFTS. ALL FILL SHALL BE COMPACTED 95% MDD STANDARD PROCTOR. SUBGRADE SHALL BE PROOF-ROLLED PER THE DIRECTION OF AC. AREAS THAT RUT SHALL BE UNDERCUT AND REPLACED WITH CONTROLLED FILL.
6. ALL UNPAVED SURFACES SHALL BE GRADED TO PROVIDE POSITIVE DRAINAGE AWAY FROM PAVED AREAS AND TOWARD DRAINAGE STRUCTURES.
7. FOLLOWING FINAL COMPLETION, ALL DISTURBED GRASS AREAS SHALL BE PREPARED AND SODDED.
8. DISTURBED GRASS AREAS WITHIN THE PROJECT LIMITS THAT WILL REMAIN INACTIVE FOR A PERIOD OF 7 CALENDAR DAYS OR LONGER SHALL BE TEMPORARILY STABILIZED WITH SEED AND STRAW, MULCH, OR OTHER ACCEPTABLE GROUNDCOVER.
9. THE CONTRACTOR IS REQUIRED TO NOTIFY AC THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION AND SPECIFICALLY REQUEST INSPECTION BEFORE BEGINNING ANY OF THE FOLLOWING ACTIVITIES:
   A. INSTALLATION OF SILTATION AND EROSION CONTROL MEASURES
   B. CLEARING AND GRUBBING
   C. EARTHWORK
   D. BACKFILL OF ANY STORM DRAINAGE PIPE, CULVERTS, INLET, AND OTHER UTILITIES
   E. INSTALLATION OF ANY UNDERGROUND UTILITY, INCLUDING STORM PIPES, CULVERT, INLETS, DUCT BANKS, MANHOLE, ETC.
   F. PLACING SUBBASE, BASE OR PAVING SURFACE
   G. INSTALLATION OF ANY FORMS
   H. PLACING OF ANY CONCRETE
   I. BACKFILL OF ANY FOUNDATIONS OR WALLS
   J. INSTALLATION OF LANDSCAPING
   K. INSTALLATION MARKINGS OF LIGHTING
   L. STRIPING AND APPLICATION OF PAVEMENT MARKINGS
   M. ALTERATIONS TO BUS STOPS STRUCTURES AND SIGNAGE
10. CONTRACTOR TO MAINTAIN ALL PUBLIC AND PRIVATE ACCESS AT ALL TIMES.
11. CONTRACTOR TO MATCH ALL EXISTING STEPS, SIDEWALKS, RAMPS, ETC. IN ORDER TO MAINTAIN SAFE PEDESTRIAN AND ADA ACCESS.

ARLINGTON
VIRGINIA

DEPARTMENT OF
ENVIRONMENTAL SERVICES

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Seal

COMMONWEALTH OF VIRGINIA
GEOFF D. GIFFIN
Lic. No. 039584
09/18/2019
PROFESSIONAL ENGINEER
FINAL DESIGN PLANS

Approvals	Date
DESIGN TEAM SUPERVISOR	10/4/19
TRAFFIC SIGNALS MANAGER	10/04/19
CHIEF, T&O BUREAU	10/04/2019
DIRECTOR OF TRANSPORTATION	10/4/19

Revisions	Date

Designed: KF
Drawn: JW
Checked: GG
Miss Utility Transmittal #:

Filename: 0003 GENERAL NOTES AND DETAILS.dwg
Path: K:\NVA_TPTO\110010100 - Glebe Road ITS Design\CAD\PlanSheets
Plotted: September 18, 2019
Plotted by: Kelley.Frank

ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

GENERAL NOTES AND DETAILS
N. GLEBE ROAD ITS IMPROVEMENTS

CONSTRUCTION DOCUMENTS

SCALE: HOR. N/A VERT. N/A | SHEET: 0003

EROSION AND SEDIMENT CONTROL

1. TEMPORARY SILT FENCE SHALL BE CONSTRUCTED FOR SHEET RUN OFF AS SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER. INFORMATION.

2. WHEN WIRE SUPPORT IS USED, STANDARD STRENGTH FILTER CLOTH MAY BE USED. POSTS FOR THIS TYPE OF INSTALLATION SHALL BE PLACED A MAXIMUM OF 10 FEET APART. THE WIRE MESH FENCE MUST BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY DUTY WIRE STAPLES AT LEAST ONE INCH LONG, TIE WIRES OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF TWO INCHES AND SHALL NOT EXTEND MORE THAN 34 INCHES ABOVE THE ORIGINAL GROUND SURFACE.

3. WHEN WIRE SUPPORT IS NOT USED, EXTRA STRENGTH FILTER CLOTH SHALL BE USED. POSTS FOR THIS TYPE OF FABRIC SHALL BE PLACED A MAXIMUM OF 6 FEET APART. THE FILTER FABRIC SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING ONE INCH LONG (MINIMUM) HEAVY DUTY WIRE STAPLES OR TIE WIRES AND EIGHT INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH.

4. WIRE FENCE REINFORCEMENT FOR SILT FENCES USING STANDARD STRENGTH FILTER CLOTH SHALL BE A MINIMUM OF 14 GAUGE AND SHALL HAVE A MAXIMUM MESH SPACING OF 6 INCHES. POSTS SHALL BE EITHER STEEL POSTS OR WOODEN STAKES AND HAVE A MINIMUM LENGTH OF 5 FEET.

5. SYNTHETIC FILTER FABRIC SHALL BE A PERVIOUS SHEET OF PROPYLENE, NYLON, POLYESTER OR ETHYLENE YARN AND SHALL BE CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE REQUIREMENTS NOTED IN TABLE 3.05-B OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, THIRD EDITION. THE SYNTHETIC FILTER FABRIC SHALL CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF SIX MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0°F TO 120°F.

6. SILT FENCES SHALL BE INSPECTED AND CLEANED ON A WEEKLY BASIS AND ON A DAILY BASIS IMMEDIATELY FOLLOWING EACH RAIN STORM. ALL NECESSARY REPAIRS SHOULD BE MADE IMMEDIATELY.

14. UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, THIRD EDITION (1992) AND VIRGINIA REGULATIONS 4VAC50-30 EROSION AND SEDIMENT CONTROL REGULATIONS.

15. THE TEMPORARY EROSION AND SILTATION (E&S) CONTROL ITEMS SHOWN ON THE E&S CONTROL PLAN ARE INTENDED TO PROVIDE A GENERAL PLAN FOR CONTROLLING EROSION AND SILTATION WITHIN THE PROJECT LIMITS. THE E&S CONTROL PLAN IS BASED ON FIELD CONDITIONS AT THE TIME OF PLAN DEVELOPMENT AND AN ASSUMED SEQUENCE OF CONSTRUCTION. THE CONTRACTOR, IN CONJUNCTION WITH THE AC PROJECT MANAGER AND/OR RLD, SHALL ADJUST THE LOCATION, QUANTITY AND TYPE OF EROSION AND SILTATION CONTROL ITEMS REQUIRED BASED ON THE ACTUAL FIELD CONDITIONS ENCOUNTERED AT THE TIME OF CONSTRUCTION AND THE SELECTED SEQUENCE OF CONSTRUCTION.

16. THE AREAS BEYOND THE PROJECT'S CONSTRUCTION AREA ARE TO BE PROTECTED FROM SILTATION. PERIMETER CONTROLS SUCH AS FILTER BARRIER, SILT FENCE, ETC. SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION OPERATIONS.

17. SILT REMOVAL AND SEDIMENT CLEAN-OUT FROM EROSION AND SILTATION CONTROL ITEMS SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING:
    A. TEMPORARY SEDIMENT BASINS AND SEDIMENT TRAPS – WHEN THE "WET" STORAGE VOLUME (PERMANENT POOL) HAS BEEN REDUCED BY 50%.
    B. DEWATERING BASINS – WHEN THE EXCAVATED VOLUME HAS BEEN REDUCED BY 50%.
    C. ALL OTHER EROSION AND SILTATION CONTROL ITEMS – WHEN THE CAPACITY, HEIGHT, OR DEPTH HAS BEEN REDUCED BY 50%.

18. EXCEPT WHERE NOTED HEREON, TO THE BEST OF THE DESIGNER'S KNOWLEDGE, THE PROPOSED DEVELOPMENT OF THE SUBJECT PROPERTY CONFORMS TO ALL CURRENT APPLICABLE LAND DEVELOPMENT ORDINANCES, REGULATIONS, AND ADOPTED STANDARDS.

19. LAND CONSERVATION NOTES – MEASURES TO CONTROL EROSION AND SILTATION SHALL BE PROVIDED PURSUANT TO AND IN COMPLIANCE WITH CURRENT STATE AND LOCAL REGULATIONS. HOWEVER, THE APPROVAL OF THESE PLANS SHALL IN NO WAY RELIEVE THE CONTRACTOR OR HIS AGENT OF ANY LEGAL RESPONSIBILITIES WHICH MAY BE REQUIRED BY THE CODE OF VIRGINIA OR ANY ORDINANCE ENACTED BY AC.

20. ADDITIONAL SILTATION AND EROSION CONTROL MEASURES SHALL BE INSTALLED AS DIRECTED BY ARLINGTON COUNTY INSPECTOR DURING FIELD REVIEW; COSTS ASSOCIATED WITH ADDITIONAL MEASURES SHALL BE ASSUMED BY THE CONTRACTOR.

21. EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CONSTRUCTION.

22. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.

23. ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.

24. DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.

25. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES WEEKLY AND AFTER EACH RUNOFF-PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.

26. EROSION CONTROL MEASURES ARE TO BE REMOVED BY CONTRACTOR AFTER PERMANENT VEGETATION HAS BEEN ESTABLISHED.

27. UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS:
    A. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.
    B. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF THE TRENCH.
    C. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED (EXAMPLE WOULD BE A SILT BAG) OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE (EXAMPLE WOULD BE A SEDIMENT TRAP) OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.
    D. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.
    E. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH STANDARDS 3.31 AND 3.32.
    F. ALL TRENCHING SHALL BE IN ACCORDANCE WITH APPLICABLE SAFETY STANDARDS.

MINIMUM STANDARDS REVIEW

MS-1 TEMPORARY AND PERMANENT STABILIZATION HAS BEEN ADDRESSED. INFORMATION.

MS-2 THERE ARE NO STOCKPILES PROPOSED WITH THIS PLAN.

MS-3 MAINTENANCE OF PERMANENT STABILIZATION HAS BEEN ADDRESSED, SEE PERMANENT STABILIZATION.

MS-4 SEDIMENT TRAPPING FACILITIES ARE TO BE INSTALLED AS THE FIRST STEP IN LAND DISTURBING ACTIVATES. MAINTENANCE OF FACILITIES ARE DETAILED UNDER THE EROSION AND SEDIMENT CONTROL NOTES.

MS-5 THERE ARE NO EARTHEN STRUCTURE PROPOSED WITH THIS PROJECT.

MS-6 THERE ARE NO SEDIMENT BASINS PROPOSED WITH THIS PROJECT.

MS-7 THERE ARE NO CUT AND FILL SLOPES PROPOSED WITH THIS PROJECT.

MS-8 THERE ARE NO PAVED FLUMES, CHANNELS, OR SLOPE DRAINS PROPOSED WITH THIS PROJECT.

MS-9 THERE ARE NO WATER SEEPS ANTICIPATED WITH THIS PROJECT.

MS-10 INLET PROTECTION IS PROVIDED ON INLETS DOWN GRADIENT FROM DISTURBED AREAS.

MS-11 ADEQUATE OUTLET PROTECTION EXIST AT ALL EXISTING OUTLETS. THERE ARE NO NEW OUTLETS PROPOSED.

MS-12 THERE ARE NO IN-STREAM CONSTRUCTION MEASURES PROPOSED WITH THIS PROJECT.

MS-13 THERE ARE NO STREAM CROSSINGS PROPOSED WITH THIS PROJECT.

MS-14 THERE ARE NO WATERCOURSES BEING CROSSED WITH THIS PROJECT.

MS-15 THERE ARE NO IMPACTS TO IN-STREAM IMPROVEMENTS PROPOSED WITH THIS PROJECT.

MS-16 UTILITY TRENCHING HAS BEEN ADDRESSED IN THE EROSION AND SEDIMENT CONTROL NOTES.

MS-17 PREVENTING SOIL FROM BEING TRACKED ON THE STREETS IS ADDRESSED IN THE EROSION AND SEDIMENT CONTROL NOTES.

MS-18 THE REMOVAL OF TEMPORARY PRACTICES HAS BEEN ADDRESSED IN THE EROSION AND SEDIMENT CONTROL NOTES.

MS-19 THIS PROJECT REDUCES THE IMPERVIOUS AREA AND DECREASE THE RUNOFF FROM THE SITE AREA. DOWNSTREAM OUTFALL POINTS ARE ADEQUATELY PROTECTED AND ARE NOT ACTIVELY ERODING. OUTFALL POINTS HAVE BEEN ANALYZED AND FOUND TO BE ADEQUATE IN ACCORDANCE WITH THE STATE OUTFALL REQUIREMENTS.

MS4 NOTES

1. ONLY THE FOLLOWING NON-STORMWATER DISCHARGES ARE AUTHORIZED BY ARLINGTON COUNTY'S MS4 PERMIT, UNLESS THE STATE WATER CONTROL BOARD, THE VIRGINIA SOIL AND WATER CONSERVATION BOARD (BOARD), OR ARLINGTON COUNTY DETERMINES THE DISCHARGE TO BE A SIGNIFICANT SOURCE OF POLLUTANTS TO SURFACE WATERS: WATER LINE FLUSHING; LANDSCAPE IRRIGATION; DIVERTED STREAM FLOWS; RISING GROUND WATERS; UNCONTAMINATED GROUND WATER INFILTRATION (AS DEFINED AT 40 CFR 35.2005(20)); UNCONTAMINATED PUMPED GROUND WATER; DISCHARGES FROM POTABLE WATER SOURCES; AIR CONDITIONING CONDENSATION; IRRIGATION WATER; SPRINGS; WATER FROM CRAWL SPACE PUMPS; FOOTING DRAINS; LAWN WATERING; INDIVIDUAL RESIDENTIAL CAR WASHING; FLOWS FROM RIPARIAN HABITATS AND WETLANDS; DECHLORINATED SWIMMING POOL DISCHARGES; DISCHARGES OR FLOWS FROM FIRE FIGHTING; AND, OTHER ACTIVITIES GENERATING DISCHARGES IDENTIFIED BY THE DEPARTMENT OF ENVIRONMENTAL QUALITY AS NOT REQUIRING VPDES AUTHORIZATION.

2. APPROPRIATE CONTROLS MUST BE IMPLEMENTED TO PREVENT ANY NON-STORMWATER DISCHARGES NOT INCLUDED ON THE ABOVE LIST (EG., CONCRETE WASH WATER, PAINT WASH WATER, VEHICLE WASH WATER, DETERGENT WASH WATER, ETC.) FROM BEING DISCHARGED INTO ARLINGTON COUNTY'S MS4 SYSTEM, WHICH INCLUDES THE CURB AND GUTTER SYSTEM, AS WELL AS CATCH BASINS AND OTHER STORM DRAIN INLETS, OR STREAM NETWORK.

3. PER CHAPTER 26 OF THE ARLINGTON COUNTY CODE, IT SHALL BE UNLAWFUL FOR ANY PERSON TO DISCHARGE DIRECTLY OR INDIRECTLY INTO THE STORM SEWER SYSTEM OR STATE WATER, ANY SUBSTANCE LIKELY, IN THE OPINION OF THE COUNTY MANAGER, TO HAVE AN ADVERSE EFFECT ON THE STORM SEWER SYSTEM OR STATE WATERS.

GENERAL LAND CONSERVATION NOTES

1. NO DISTURBED AREA WILL REMAIN DENUDED FOR MORE THAN 7 CALENDAR DAYS UNLESS OTHERWISE AUTHORIZED BY THE DIRECTOR OR HIS AGENT.

2. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN GRADING. FIRST AREAS TO BE CLEARED ARE TO BE THOSE REQUIRED FOR THE PERIMETER CONTROLS.

3. ALL STORM AND SANITARY SEWER LINES NOT IN STREETS ARE TO BE MULCHED AND SEEDED WITHIN 5 DAYS AFTER BACKFILL. NO MORE THAN 500 FEET ARE TO BE OPEN AT ANY ONE TIME.

4. ELECTRIC POWER, TELEPHONE AND GAS SUPPLY TRENCHES ARE TO BE COMPACTED, SEEDED AND MULCHED WITHIN 5 DAYS OF BACKFILL.

5. ALL TEMPORARY EARTH BERMS, DIVERSIONS AND SEDIMENT CONTROL DAMS ARE TO BE MULCHED AND SEEDED FOR TEMPORARY VEGETATIVE COVER IMMEDIATELY AFTER GRADING. STRAW OR HAY MULCH IS REQUIRED. THE SAME APPLIES TO ALL SOIL STOCKPILES.

6. DURING CONSTRUCTION, ALL STORM SEWER INLETS WILL BE PROTECTED BY INLET PROTECTION DEVICES, MAINTAINED AND MODIFIED AS REQUIRED BY CONSTRUCTION PROGRESS.

7. ANY DISTURBED AREA NOT COVERED BY NOTE # 1 ABOVE AND NOT PAVED, SODDED OR BUILT UPON BY NOVEMBER 1ST, OR DISTURBED AFTER THAT DATE, SHALL BE MULCHED WITH HAY OR STRAW AT THE RATE OF 2 TONS PER ACRE AND OVER-SEEDED NO LATER THAN MAY 15TH.

8. AT THE COMPLETION OF THE CONSTRUCTION PROJECT AND PRIOR TO BOND RELEASE, ALL TEMPORARY SEDIMENT CONTROLS SHALL BE REMOVED AND ALL DENUDED AREAS SHALL BE STABILIZED. ARLINGTON COUNTY INSPECTOR TO APPROVE REMOVAL OF ALL TEMPORARY SILTATION MEASURES.

EROSION CONTROL NARRATIVE

PROJECT DESCRIPTION:
THIS PROJECT RECONSTRUCTS THREE EXISTING INTERSECTIONS ALONG S CARLIN SPRINGS ROAD FROM 6TH ROAD TO 3RD ST S. ALL CONSTRUCTION WORK WILL BE FOR THE DURATION OF 80 TOTAL CALENDAR (60 WORK DAYS). WORK DAYS NOT TO INCLUDE ARLINGTON COUNTY PUBLIC HOLIDAYS.

EXISTING CONDITIONS:
S CARLIN SPRINGS ROAD IS A MULTI-LANE, CURB AND GUTTER ROAD WITH SIDEWALKS ON BOTH SIDES. OVERHEAD UTILITIES ARE LOCATED ALONG MOST OF THE ROAD. THE RIGHT OF WAY INCLUDES STREET TREES, STREET LIGHTING, STORM DRAINAGE STRUCTURES AND PIPES, SANITARY SEWER MAINS, WATER MAINS, NATURAL GAS, ELECTRIC LINES, COMMUNICATIONS LINES AND MASS TRANSIT STOP LOCATIONS. MINIMAL CHANGES TO THE EXISTING TOPOGRAPHY ARE PROPOSED WITH LIMITED AREAS OUTSIDE OF THE RIGHT-OF-WAY BEING IMPACTED. MOST OF THE EXISTING VEGETATION WITHIN THE PROJECT LIMITS SHALL BE REPLACED. THERE ARE MINOR NEW CUT AND FILL SLOPES PROPOSED.

ADJACENT AREAS:
S CARLIN SPRINGS ROAD IS BOUND ON BOTH SIDES WITH A MIXTURE OF RESIDENTIAL DEVELOPMENTS, MEDICAL FACILITIES, AND A SCHOOL. THE CONTRACTOR SHALL PROVIDE TO THE ARLINGTON COUNTY INSPECTOR PHOTOGRAPHS OF IMMEDIATE ADJACENT AREAS TO DOCUMENT ADJACENT OFFSITE CONDITIONS PRIOR TO INSTALLING PERIMETER EROSION CONTROLS.

OFF-SITE AREAS:
THERE ARE NO OFF-SITE AREAS OR STOCKPILES ASSOCIATED WITH THIS PROJECT. OFFSITE AREAS DAMAGED BY THE CONTRACTOR OR ITS LACK OF EROSION CONTROLS SHALL BE REPAIRED BY THE CONTRACTOR, AT ITS EXPENSE, IN A TIMELY MANOR.

SOILS:
THE SOILS IN THE PROJECT AREA HAVE BEEN MAPPED AS URBAN LAND – UDORTHENTS COMPLEX WHICH ARE SOILS THAT HAVE BEEN PREVIOUSLY DISTURBED AND NOT CHARACTERIZED. THE SOILS ALONG THIS PROJECT AREA HAVE BEEN ANALYZED BY GEOCONCEPTS ENGINEERING, INC. AND A GEOTECHNICAL REPORT HAS BEEN PROVIDED IN THE CONTRACT DOCUMENTS. THE SOILS HAVE BEEN LISTED AS A SANDY FAT CLAY (USCS – CH) AND CLAYED SAND W/ GRAVEL (USCS – SC). ADDITIONAL INFORMATION IS AVAILABLE IN THE PROJECT GEOTECHNICAL REPORT.

CRITICAL AREAS:
THERE ARE NO CRITICAL AREAS ASSOCIATED WITH THIS PROJECT. DISTURBANCE SHALL BE LIMITED TO SMALL AREAS AND THE CONTRACTOR SHALL PROTECT THOSE AREAS AS TO NOT CAUSE OR ALLOW FOR EROSION OF SOILS OUT OF THE PROJECT AREA.

EROSION AND SEDIMENT CONTROL MEASURES:
THE FOLLOWING EROSION CONTROLS SHALL BE USED DURING THIS PROJECT:
1. STD. 3.05 SILT FENCE – SILT FENCE AND SUPER SILT FENCE SHALL BE USED IN ACCORDANCE WITH THIS STANDARD AND AS SPECIFIED BY ARLINGTON COUNTY. SEE DETAIL THIS SHEET. SILT FENCE OR SUPER SILT FENCE SHALL BE USED DOWN GRADIENT FROM DISTURBED AREAS AS SHOWN ON THE PLANS AND AS NEEDED TO PREVENT THE TRANSPORTATION OF SEDIMENT BEYOND THE PROJECT LIMITS. IT SHALL BE INSTALLED PRIOR TO STARTING LAND DISTURBANCE AND SHALL BE REMOVED AFTER THE DISTURBED AREA HAS HAD TEMPORARY OR PERMANENT STABILIZATION ESTABLISHED. COORDINATE REMOVAL WITH THE ARLINGTON COUNTY INSPECTOR.
2. STD. 3.07 STORM DRAIN INLET PROTECTION – STORM DRAINAGE INLETS SHALL BE PROTECTED IN ACCORDANCE WITH THIS STANDARD. INLETS DOWN GRADIENT FROM LAND DISTURBING ACTIVITIES SHALL HAVE INLET PROTECTION INSTALLED PRIOR TO STARTING LAND DISTURBANCE. CARE SHALL BE TAKEN AS TO NOT INTERFERE WITH TRAFFIC ON COLUMBIA PIKE WHEN SELECTING THE TYPE OF INLET PROTECTION TO BE USED. THE CONTRACTOR IS TO REMOVE SILT BUILDUP PROMPTLY SO THAT SILT IS NOT TRACKED ALONG THE ROAD. REMOVAL OF THE INLET PROTECTION SHALL OCCUR ONCE DISTURBED AREA UP GRADIENT OF THE INLET HAVE BEEN STABILIZED AND IN COORDINATION WITH THE ARLINGTON COUNTY INSPECTOR.
3. STD. 3.26 DEWATERING STRUCTURE – ALL DISCHARGES FROM DEWATERING OPERATIONS SHALL BE IN ACCORDANCE WITH THIS STANDARD. DEWATERING CONTROLS SHALL BE USED AT ALL DEWATERING DISCHARGES. THE CONTRACTOR IS TO NOTIFY THE ARLINGTON COUNTY INSPECTOR PRIOR TO DISCHARGING DEWATERING EFFLUENT OF THE LOCATION AND TYPE OF FILTER OR CONTROL THAT IS TO BE USED AND FOR HOW LONG IT WILL BE USED.
4. STD. 3.31 TEMPORARY SEEDING – TEMPORARY SEEDING SHALL BE APPLIED IN ACCORDANCE WITH THIS STANDARD. TEMPORARY STABILIZATION IS REQUIRED WHEN AN AREA IS NOT TO BE WORKED WITHIN A 7 DAY PERIOD. THE CONTRACTOR SHALL STABILIZE DISTURBED AREAS AS SOON AS POSSIBLE IN ORDER TO ESTABLISH A SURFACE PROTECTION TO EROSION. TEMPORARY SEEDING SHALL BE CARED FOR AS NECESSARY IN ORDER TO GENERATE A DENSE, HEALTHY STAND OF VEGETATION THAT WILL RESIST EROSION.
5. THE CONTRACTOR SHALL USE APPROPRIATE METHODS TO ESTABLISH PERMANENT STABILIZATION THAT ARE SIMILAR TO THE CONDITION THAT WAS PRESENT PRIOR TO STARTING LAND DISTURBANCE ACTIVITIES.
6. STD. 3.33 SODDING – ALL SODDING SHALL BE IN ACCORDANCE WITH THIS STANDARD. SODDED AREAS SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL THE SOD HAS BEEN ESTABLISHED AND HAD TWO MOWING CYCLES. THE CONTRACTOR SHALL COORDINATE THE RELEASE OF MAINTENANCE OF SODDED AREAS WITH THE ARLINGTON COUNTY INSPECTOR AND THE LAND OWNER.
7. STD. 3.38 TREE PRESERVATION AND PROTECTION – TREE PROTECTION FENCING SHALL BE IN ACCORDANCE WITH THIS STANDARD AND ARLINGTON COUNTY'S TREE PROTECTION FENCE, PLAN, SEE THIS SHEET FOR DETAIL. TREE PROTECTION SHALL BE USED ALONG THE LIMITS OF DISTURBANCE WHERE AN OFFSITE TREE OR LANDSCAPED AREA MAY HAVE A CRITICAL ROOT ZONE THAT EXTENDS INTO THE LIMITS OF THIS PROJECT. THE ARLINGTON COUNTY URBAN FORESTER MAY REQUIRE ADDITIONAL TREE PRESERVATION AND PROTECTION BE INSTALLED PRIOR TO STARTING LAND DISTURBING ACTIVITIES. TREE PRESERVATION AND PROTECTION SHALL ONLY BE REMOVED WITH THE APPROVAL OF THE ARLINGTON COUNTY URBAN FORESTER.

PERMANENT STABILIZATION:
ALL DISTURBED AREAS BY THIS PROJECT SHALL BE STABILIZED WITH PERMANENT GROUND COVER UTILIZING STD. 3.33. SODDING IS THE REQUIRED GROUND COVER FOR AREAS THAT ARE CURRENTLY GRASS. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF ALL DISTURBED ARES UNTIL FINAL ACCEPTANCE BY ARLINGTON COUNTY AND/OR LAND OWNER. THIS SHALL INCLUDE CUTTING THE GRASS TO MAINTAIN THE SAME APPEARANCE AS THE ADJOINING PROPERTY.

STORMWATER RUNOFF CONSIDERATIONS:
THIS PROJECT REDUCES THE OVERALL IMPERVIOUSNESS OF THE SITE AREA AND DOES NOT INCREASE SURFACE RUNOFF PATTERNS OR VOLUMES. NO FLOODING OR CHANNEL DEGRADATION IS ANTICIPATED DOWNSTREAM OF THE PROJECT DUE TO THE PROPOSED REDUCTION IN RUNOFF.

CALCULATIONS:
DETAILED CALCULATIONS SHOWING PRE AND POST DEVELOPMENT DRAINAGE AREAS, INLET COMPUTATIONS, PIPE CAPACITIES AND FLOWS ARE INCLUDED IN THIS SET OF PLANS.

ARLINGTON
VIRGINIA

DEPARTMENT OF
ENVIRONMENTAL SERVICES

Signal Systems and ITS
Traffic Engineering and Operations Bureau
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Kimley»Horn
Kimley-Horn
and Associates, Inc.

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Reston, Virginia 20191
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Fax: 703-674-1350

Seal

COMMONWEALTH OF VIRGINIA
GEOFF D. GIFFIN
Lic. No. 039584
09/18/2019
PROFESSIONAL ENGINEER

FINAL DESIGN PLANS

Approvals	Date
DESIGN TEAM SUPERVISOR	10/4/19
TRAFFIC SIGNALS MANAGER	10/4/19
CHIEF, TE&O BUREAU	10/04/2019
DIRECTOR OF TRANSPORTATION	10/4/19

Revisions	Date

Designed: KF
Drawn: JW
Checked: GG
Miss Utility Transmittal #:

Filename: 0004 GENERAL NOTES AND DETAILS.dwg
Path: K:\NVA_TPTO\110010100 - Glebe Road ITS Design\CAD\PlanSheets
Plotted: September 18, 2019
Plotted by: Kelley.Frank

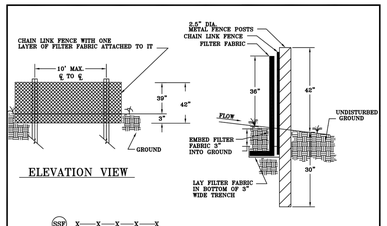
ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

GENERAL NOTES AND DETAILS
N. GLEBE ROAD ITS IMPROVEMENTS

CONSTRUCTION DOCUMENTS

SCALE: HOR. N/A VERT. N/A
SHEET: 0004

GENERAL DETAILS



SUPER SILT FENCE
NO SCALE

FENCING

Chain link fence shall be 30" above grade with 8" embedded for a total fabric width of 42". The post shall be 42" above grade with 30" placed below grade (without concrete) for a total length of 72".

NOTES

1. Chain link fence shall be fastened securely to fence posts with wire ties.
2. Filter fabric shall be fastened securely to chain link fence with ties spaced horizontally 24" at the top and midsection.
3. Physical properties of the filter fabric shall conform to the latest edition of THE VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK.
4. When two sectiogs of filter fabric adjoin each other, they shall be overlapped by 6".
5. Maintenance shall be performed as needed and material shall be removed when sediment build-up reaches 50% of the height of the super silt fence.

	SUPER SILT FENCE NO SCALE	PLATE NO.	STD. NO.

_____
date

Qianqian Li, P.E.
ESC Program Administrator
Department of Environmental Services
2100 Clarendon Boulevard, Suite 813
Arlington, Virginia 22201

Re: Erosion and Sediment Control Permit Application for:

_____
street address

_____
lot, block, section subdivision

_____
permit number

Dear Mrs. Li:

I hereby certify that I accept the responsibilities of Responsible Land Disturber for the above referenced project. I understand that these responsibilities include:

1. Reviewing the erosion and sedimentation (E&S) plan for the project.
2. Walking the site prior to construction to identify critical areas.
3. Conducting a pre-construction briefing with earth moving and site contractors to present the E&S plan and highlight the presence of critical areas, the limits of clearing and the required E&S controls and tree protection measures to be installed. Call 703-228-0760 to schedule pre-construction meeting.
4. Regularly inspecting the site during construction to ensure that all E&S controls are functioning and are adequate to address erosion and sedimentation. Inspect the site 48 hours after a runoff-generating storm, and provide a copy of the inspection findings to the county.
5. Reporting to the owner the presence inadequate or non functioning E&S controls when they are observed.
6. Ensuring that temporary soil stabilization is applied within 7 days to areas denuded that will remain undisturbed for longer than 14 days. Permanent stabilization shall be applied to areas that are to be left dormant for more than one year.
7. Calling (703) 228-0760 at least 80 hours before demolishing any structure.

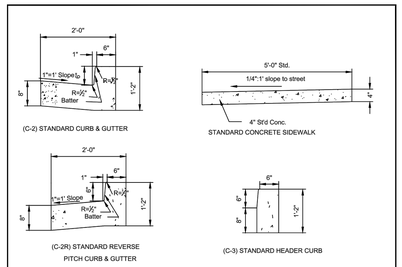
I may be reached at _____ with questions about this plan or my execution of the duties of
telephone number
Responsible Land Disturber.

Sincerely,

_____
signed

_____
name printed

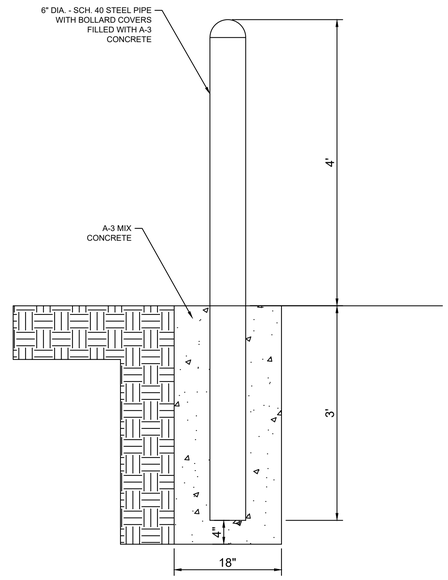
_____
professional registration (type and number)



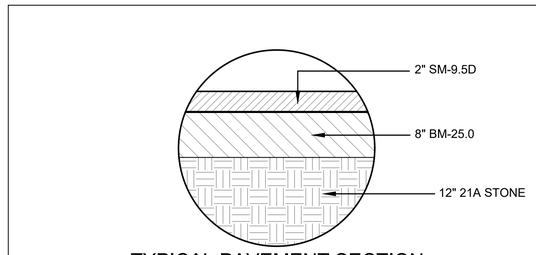
NOTES:

1. SECTION C-3 IS TO BE USED ONLY WITH RIGID TYPE PAVEMENT UNLESS OTHERWISE DIRECTED IN WRITING OR WHEN SHOWN ON APPROVED PLANS.
2. EXPANSION JOINTS IN HEADER CURB AND STANDARD CURB AND GUTTERSHALL BE 40' APART OR AT EXPANSION JOINTS IN CONCRETE PAVEMENT.
3. EXPANSION JOINTS MAY BE OMITTED IF 1/8" JOINTS ARE PLACED EVERY 10' OF LESS
4. EXPANSION JOINTS IN THE SIDEWALK SHALL BE 40' APART. IF ADJACENT TO CONCRETE CURB, EXPANSION JOINTS SHALL MATCH JOINT OF CURB. AN EXPANSION JOINT SHALL BE PLACED BETWEEN CURB AND SIDEWALK.
5. SEE DRAWING R-2.2 FOR DETAIL OF SIDEWALK STRESS COLUMN TO BE PLACED UNDER SIDEWALK WHEN PLACED ADJACENT TO BACK OF CURB.
6. SEE ARLINGTON COUNTY SPECIFICATION SECTIONS 02611 AND 03100 FOR MATERIAL SPECS.
7. PROVIDE 6" MINIMUM AGGREGATE BASE HAVING CBR-30 UNDER CURB AND GUTTER.
8. PROVIDE 3" MINIMUM AGGREGATE BASE HAVING CBR-30 UNDER SIDEWALK

CONCRETE CURB & GUTTER AND SIDEWALK	Rev. Sidewalk Dim. 07/11/2013	
		REVISION & DATE
ARLINGTON VIRGINIA — ARLINGTON COUNTY, VIRGINIA, DEPARTMENT OF ENVIRONMENTAL SERVICES		DRAWING NO. R-2.0



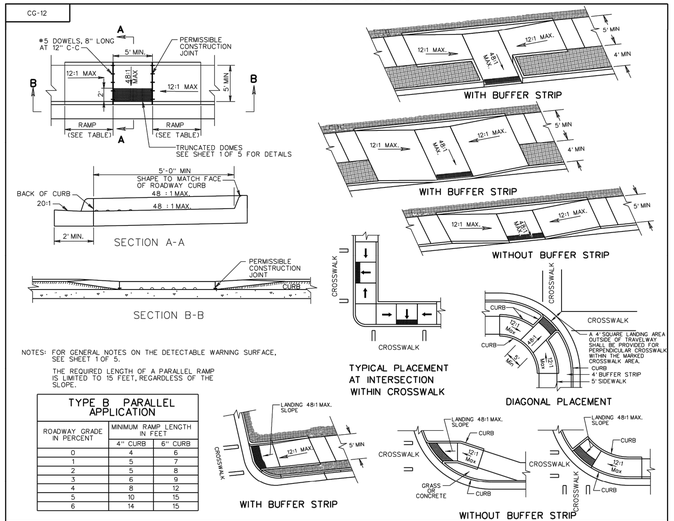
BOLLARD DETAIL



TYPICAL PAVEMENT SECTION

2016 ROAD & BRIDGE STANDARDS

CG-12



TYPE B PARALLEL APPLICATION		
ROADWAY GRADE IN PERCENT	MINIMUM RAMP LENGTH IN FEET	
	4" CURB	6" CURB
0	4	6
1	5	7
2	5	8
3	6	9
4	8	12
5	10	13
6	14	15

VDOT ROAD AND BRIDGE STANDARDS	CG-12 DETECTABLE WARNING SURFACE TYPE B (PARALLEL) APPLICATION VIRGINIA DEPARTMENT OF TRANSPORTATION	SPECIFICATION REFERENCE
SHEET 3 OF 5	REVISION DATE 07/16	105 502
203.07		

2016 ROAD & BRIDGE STANDARDS

ARLINGTON VIRGINIA

DEPARTMENT OF ENVIRONMENTAL SERVICES

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Seal

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PROFESSIONAL ENGINEER
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DIRECTOR OF TRANSPORTATION	10/4/19

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Filename: 0005 GENERAL NOTES AND DETAILS.dwg
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GENERAL NOTES AND DETAILS
N. GLEBE ROAD ITS IMPROVEMENTS

CONSTRUCTION DOCUMENTS

SCALE: HOR. N/A VERT. N/A | SHEET: 0005

SIGN DETAIL
1:50

SIGN NUMBER	SIGN 21
WIDTH x HGHT.	2'-6" x 4'-0"
BORDER WIDTH	0.75"
CORNER RADIUS	2.25"
MOUNTING	Overhead
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White

SYMBOL	ROT	X	Y	WID	HT
M1_1	0	3.8	16.5	22.5	18
AR_Type D	0	12	3	6	9

Panel Style: guide_con_destination.ssi
Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)

T	O																			LENGTH	SERIES/SIZE
10.6	15.1																			8.8	D 2000 6

SIGN DETAIL
1:50

SIGN NUMBER	S-4
WIDTH x HGHT.	6'-0" x 1'-0"
BORDER WIDTH	0.5"
CORNER RADIUS	1.5"
MOUNTING	Overhead
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White

SYMBOL	ROT	X	Y	WID	HT

Panel Style: ARLINGTON OVERHEAD.ssi
Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)

C	h	a	i	n		B	r	i	d	g	e		R	d						LENGTH	SERIES/SIZE
6.8	12.1	16.5	21.1	23.2	26.8	30.5	35.5	38.5	40.4	45	49.5	53.1	56.8	61.6						58.3	D 2000 6/4.5

SIGN DETAIL
1:50

SIGN NUMBER	SIGN 22
WIDTH x HGHT.	10'-6" x 3'-0"
BORDER WIDTH	0.63"
CORNER RADIUS	1.13"
MOUNTING	Overhead
BACKGROUND	TYPE: Reflective
	COLOR: White
LEGEND/BORDER	TYPE: Reflective
	COLOR: Black/Black

SYMBOL	ROT	X	Y	WID	HT

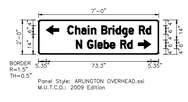
Panel Style: chain bridge.ssi
Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)

B	E	G	I	N		R	E	V	E	R	S	E		L	A	N	E					LENGTH	SERIES/SIZE
5.7	12.5	18.7	25.9	29.1	34.5	42.5	49.3	54.9	62.2	68.5	74.8	81.6	86.5	94.5	100	108	115.3					114.6	D 2000 8
O	N		C	h	a	i	n		B	r	i	d	g	e								85.5	D 2000 8/6
20.2	27.7	33.1	41.1	48.2	54	60.1	63	67.7	75.7	82.3	86.3	88.9	95	101									

SIGN DETAIL
1:50



SIGN NUMBER	S-5
WIDTH x HGHT.	7'-0" x 2'-0"
BORDER WIDTH	0.5"
CORNER RADIUS	1.5"
MOUNTING	Overhead
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White

SYMBOL	ROT	X	Y	WID	HT
AR_Type D	90	5.3	14	6	9
AR_Type D	270	69.7	4	6	9

Panel Style: ARLINGTON OVERHEAD.ssi
Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)

C	h	a	i	n		B	r	i	d	g	e		R	d						LENGTH	SERIES/SIZE
20.3	25.6	30	34.6	36.7	40.3	44	49	52	53.9	58.5	63	66.6	70.3	75.1						58.3	D 2000 6/4.5
N		G	I	e	b	e		R	d											39.4	D 2000 6/4.5
26.3	30.4	34.1	39.4	41.3	45.7	50	53.6	57.3	62.1												

ARLINGTON
VIRGINIA

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Revisions Date

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Miss Utility Transmittal #:

Filename: 0007 SIGN DETAILS.dwg
Path: K:\NVA_TPTO\110010100 - Glebe Road ITS Design\CAD\PlanSheets
Plotted: September 18, 2019
Plotted by: Kelley.Frank

ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

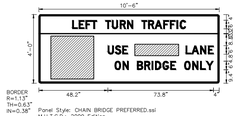
N. GLEBE ROAD ITS IMPROVEMENTS
SIGN DETAILS

CONSTRUCTION DOCUMENTS

SCALE: HOR. N/A VERT. N/A

SHEET: 0006

SIGN DETAIL
1:50



SIGN NUMBER	S-6
WIDTH x HGHT.	10'-6" x 4'-0"
BORDER WIDTH	0.63"
CORNER RADIUS	1.13"
MOUNTING	Overhead
BACKGROUND	TYPE: Reflective
	COLOR: White / White
LEGEND/BORDER	TYPE: Reflective
	COLOR: Black/Black

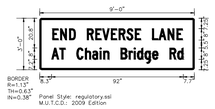
SYMBOL	ROT	X	Y	WID	HT

Panel Style: CHAIN BRIDGE PREFERRED.ssi
Dimensions are in inches.tenths

▨ = Panel cutout for LED sign (see this sheet)
Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)																				LENGTH	SERIES/SIZE
L	E	F	T		T	U	R	N		T	R	A	F	F	I	C					D 2000
23.4	28	32.7	36.8	40.5	46.5	51.2	56.7	61.8	65.9	71.9	76.5	81	87	91.7	96.3	98.6				79.3	6
U	S	E		C	E	N	T	E	R		L	A	N	E							D 2000
48.2	53.3	58.4	62.1	68.1	73.5	78.3	83.2	87.9	92.6	96.7	102.7	106.8	112.8	118.3						73.8	6
O	N		B	R	I	D	G	E		O	N	L	Y								D 2000
53	58.6	62.7	68.7	73.8	78.9	81.3	86.5	91.9	95.7	101.7	107.2	112.8	116.8							69	6

SIGN DETAIL
1:50



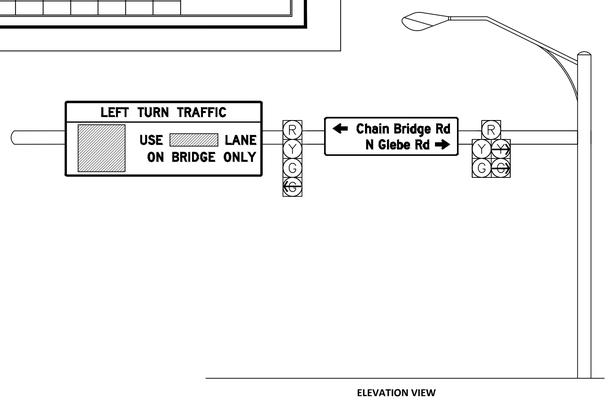
SIGN NUMBER	S-9
WIDTH x HGHT.	9'-0" x 3'-0"
BORDER WIDTH	0.63"
CORNER RADIUS	1.13"
MOUNTING	Overhead
BACKGROUND	TYPE: Reflective
	COLOR: White
LEGEND/BORDER	TYPE: Reflective
	COLOR: Black/Black

SYMBOL	ROT	X	Y	WID	HT

Panel Style: regulatory.ssi
Dimensions are in inches.tenths

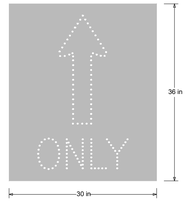
Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)																				LENGTH	SERIES/SIZE
E	N	D		R	E	V	E	R	S	E		L	A	N	E						C 2000
8.9	14.4	20.6	25.1	33.1	38.9	43.7	49.8	55.3	60.7	66.5	70.6	78.6	83.2	89.4	95.7					90.8	8
A	T																				C 2000
8.3	13.9																			9.7	8
C	h	a	i	n		B	r	i	d	g	e		R	d							C 2000
25.8	31.7	36.8	42	44.5	48.6	56.6	62.3	65.8	68.1	73.4	78.7	82.8	90.8	96.2						74.5	8/6



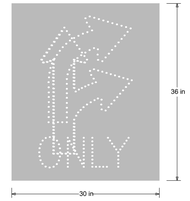
ELEVATION VIEW
CHAIN BRIDGE ROAD SOUTHBOUND

LED SIGN CONFIGURATIONS

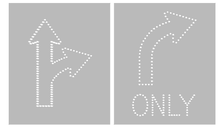


S1
36"H X 30"W X 2.5"D
INPUT VOLTAGE: 100-240 VAC (100-240 VAC)
PHOTODIMMING: (3) REDUNDANT FAIL-SAFE PHOTOCELLS FOR AUTO PHOTODIMMING
POWER SUPPLIES: (2) REDUNDANT POWER SUPPLIES PER MESSAGE
MESSAGES ARE INDEPENDENTLY CONTROLLED

MESSAGE	LED/COLOR	HEIGHT	AMPS
UP ARROW ONLY	WHITE NARROW ANGLE LED	22", 6"	0.103–0.043



Message 1 Message 2



S2
36"H X 30"W X 2.5"D
INPUT VOLTAGE: 100-240 VAC (100-240 VAC)
PHOTODIMMING: (3) REDUNDANT FAIL-SAFE PHOTOCELLS FOR AUTO PHOTODIMMING
POWER SUPPLIES: (2) REDUNDANT POWER SUPPLIES PER MESSAGE
MESSAGES ARE INDEPENDENTLY CONTROLLED

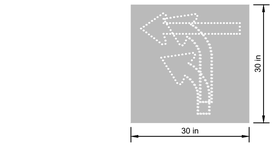
MESSAGE	LED/COLOR	HEIGHT	AMPS
UP ARROW W/ VEERING RIGHT ARROW	WHITE LED	25"	0.084–0.035
VEERING RIGHT ARROW, ONLY	WHITE LED	21.5", 6"	0.106–0.044

Message 1

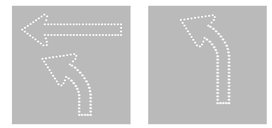
Message 2

S-6
6"H X 22"W X 2.5"D
INPUT VOLTAGE: 100-240 VAC (100-240 VAC)
PHOTODIMMING: (3) REDUNDANT FAIL-SAFE PHOTOCELLS FOR AUTO PHOTODIMMING
POWER SUPPLIES: (2) REDUNDANT POWER SUPPLIES PER MESSAGE
ILLUMINATION: DIRECT VIEW LEDS. MESSAGE BLANKS OUT WHEN OFF
MESSAGES ARE INDEPENDENTLY CONTROLLED

MESSAGE	LED/COLOR	HEIGHT	AMPS
CENTER	WHITE NARROW ANGLE LED	3.5"	0.067–0.028
RIGHT	WHITE NARROW ANGLE LED	3.5"	0.049–0.021



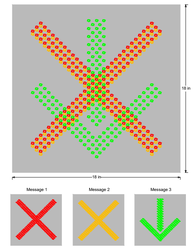
Message 1 Message 2



S-6
30"H X 30"W X 2.5"D
INPUT VOLTAGE: 100-240 VAC (100-240 VAC)
PHOTODIMMING: (3) REDUNDANT FAIL-SAFE PHOTOCELLS FOR AUTO PHOTODIMMING
POWER SUPPLIES: (2) REDUNDANT POWER SUPPLIES PER MESSAGE
ILLUMINATION: DIRECT VIEW LEDS. MESSAGE BLANKS OUT WHEN OFF
MESSAGES ARE INDEPENDENTLY CONTROLLED

MESSAGE	LED/COLOR	HEIGHT	AMPS
LEFT ARROW VEERING LEFT ARROW	WHITE NARROW ANGLE LED	15", 32.5"	0.097–0.041
VEERING LEFT ARROW	WHITE NARROW ANGLE LED	20"	0.056–0.024

LANE-USE CONTROL SIGNALS



L1,L2,L3,L4,L5,L6
18"H X 18"W X 5"D
INPUT VOLTAGE: 100-240 VAC (100-240 VAC)
PHOTODIMMING: (3) REDUNDANT FAIL-SAFE PHOTOCELLS FOR AUTO PHOTODIMMING
POWER SUPPLIES: (2) REDUNDANT POWER SUPPLIES PER MESSAGE
MESSAGES ARE INDEPENDENTLY CONTROLLED

MESSAGE	LED/COLOR	HEIGHT	AMPS
X	RED NARROW ANGLE LED	14"	0.078–0.033
X	AMBER NARROW ANGLE LED	14"	0.078–0.033
DOWN ARROW	GREEN NARROW ANGLE LED	14"	0.114–0.048

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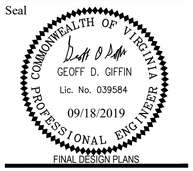
Kimley-Horn and Associates, Inc.

11400 Commerce Park Drive, Suite 400
Reston Virginia 20191
Phone: 703-674-1300
Fax: 703-674-1350

Seal



FINAL DESIGN PLANS

Approvals Date

Approvals Date
DESIGN TEAM SUPERVISOR 10/4/19
TRAFFIC SIGNALS MANAGER 10/04/19
CHIEF, T&O BUREAU 10/04/2019
DIRECTOR OF TRANSPORTATION 10/4/19

Revisions Date

Designed: KF
Drawn: JW
Checked: GG
Miss Utility Transmittal #:

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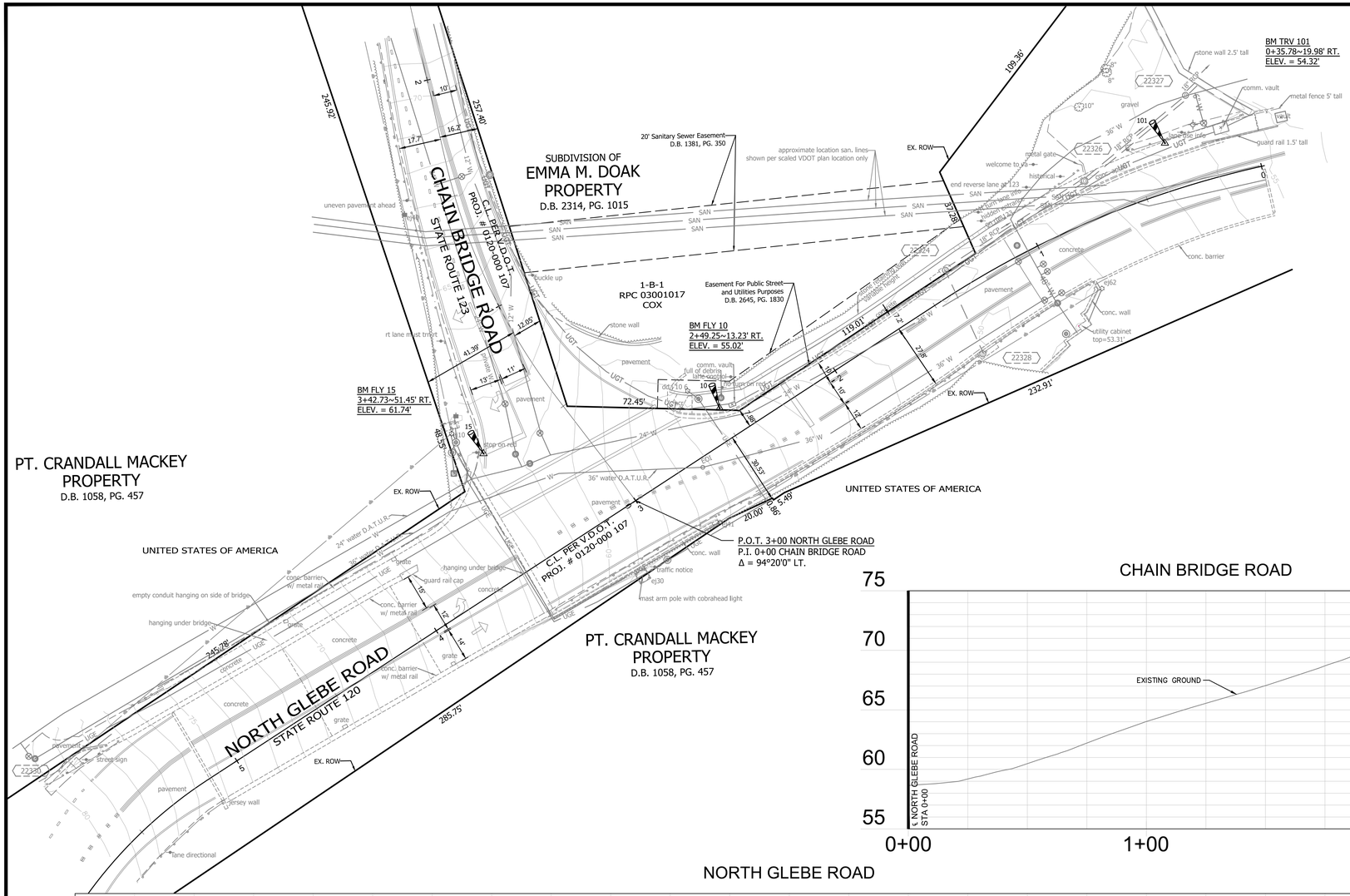
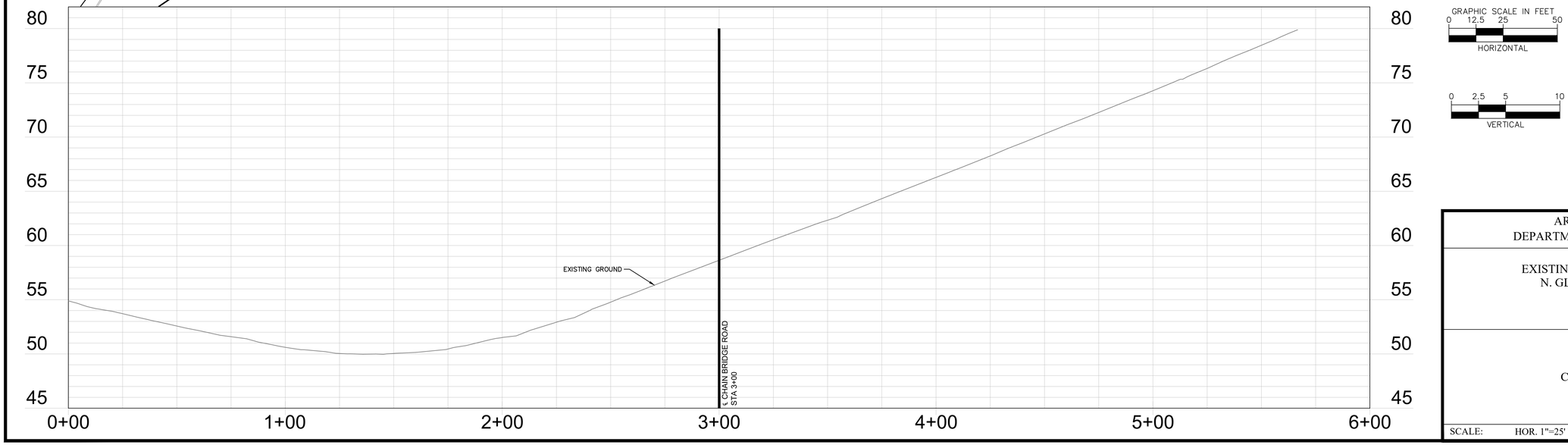
ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

N. GLEBE ROAD ITS IMPROVEMENTS
SIGN DETAILS

CONSTRUCTION DOCUMENTS

SCALE: HOR. N/A VERT. N/A
SHEET: 0007





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Seal

COMMONWEALTH OF VIRGINIA
GEOFF D. GIFFIN
Lic. No. 039584
09/18/2019
PROFESSIONAL ENGINEER
FINAL DESIGN PLANS

Approvals	Date
DESIGN TEAM SUPERVISOR	10/4/19
TRAFFIC SIGNALS MANAGER	10/04/19
CHIEF, T&O BUREAU	10/04/2019
DIRECTOR OF TRANSPORTATION	10/4/19

Revisions	Date

Designed: KF
Drawn: KF
Checked: GG
Miss Utility Transmittal #:

Filename: 0100 EXISTING CONDITIONS PLAN AND
Path: K:\NVA_TPTO\110010100 - Glebe Road ITS Design\CAD\PlanSheets
Plotted: September 18, 2019
Plotted by: Kelley.Frank

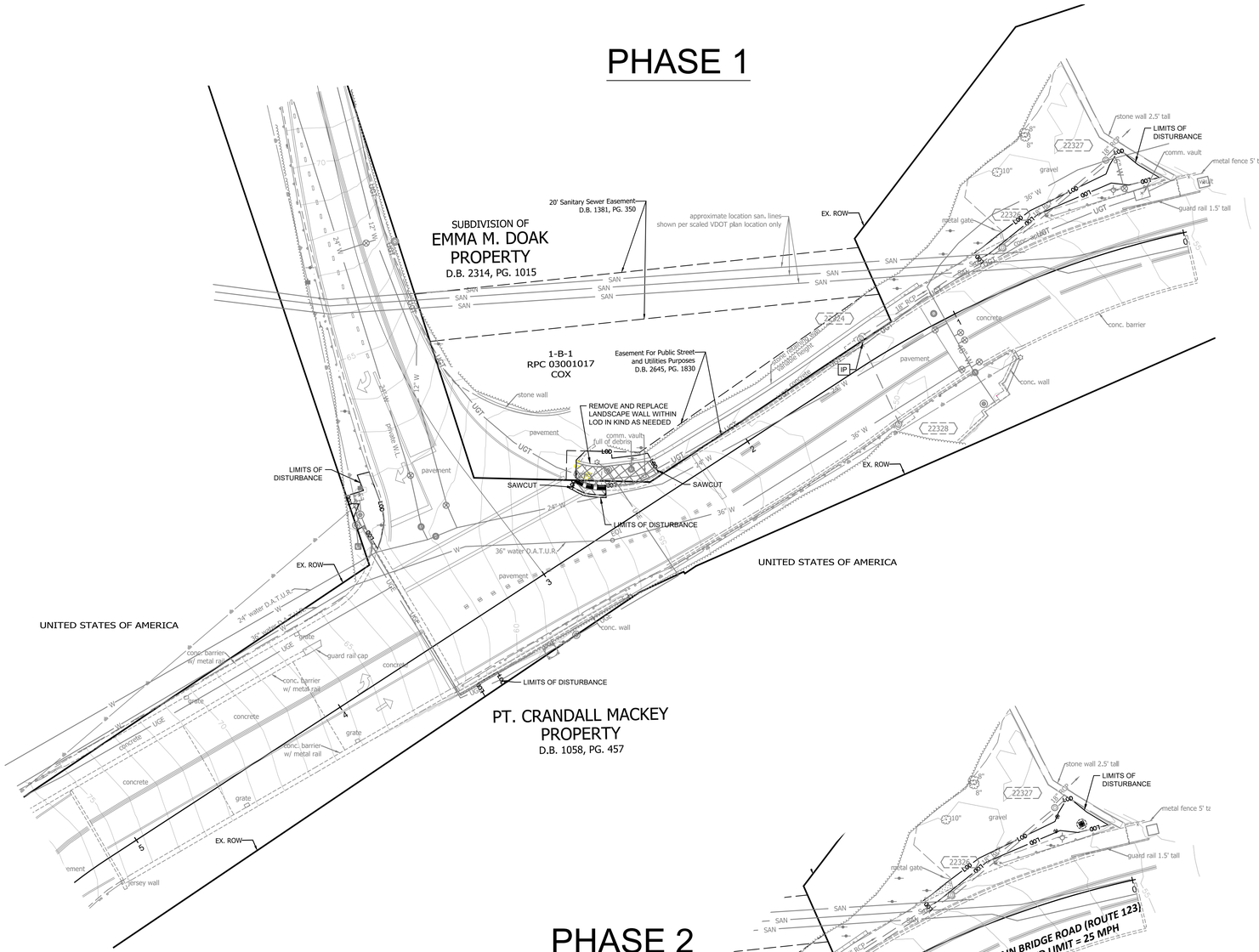
ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

EXISTING CONDITIONS PLAN AND PROFILE
N. GLEBE ROAD ITS IMPROVEMENTS

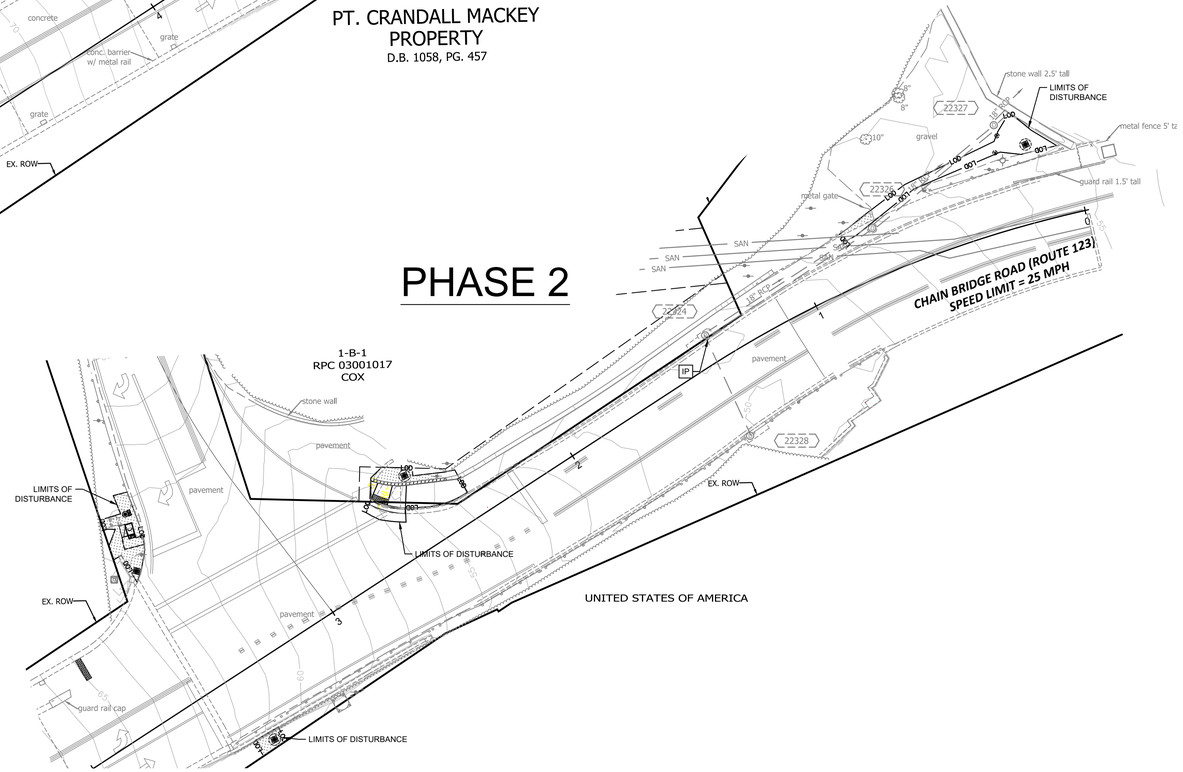
CONSTRUCTION DOCUMENTS

SCALE: HOR. 1"=25' VERT. 1"=5' | SHEET: 0100

PHASE 1



PHASE 2



GRAPHIC SCALE IN FEET
0 12.5 25 50

LEGEND

- SODDING
- REMOVE FULL DEPTH BITUMINOUS SURFACE
- REMOVE FULL DEPTH CONCRETE SURFACE
- REMOVE CONCRETE CURB AND GUTTER
- REMOVE FENCE OR WALL
- IP — STORM SEWER STRUCTURE INLET PROTECTION TYPE B
- SF SF — EROSION CONTROL FENCE (SILT FENCE)
- LOD — LIMITS OF DISTURBANCE

NOTES:

1. EROSION AND SEDIMENT PROTECTION MEASURES SHOULD BE INSTALLED ONLY WHEN NEEDED FOR THE CONSTRUCTION ZONE. IF A PROTECTION MEASURE IS NOT IMPACTED BY THE CONSTRUCTION THEN IT SHOULD BE REMOVED.
2. SEE TRAFFIC SIGNALS PLAN FOR DEMOLITION OF TRAFFIC SIGNALS
3. SEE SIGNING AND MARKING PLAN FOR LOCATIONS OF SIGNS TO BE REMOVED OR RELOCATED. COORDINATE RELOCATIONS WITH MOT AND ACTUAL CONSTRUCTION.
4. CONTRACTOR SHALL PROTECT AND RETAIN ALL EXISTING MANHOLE LIDS, VALVES, AND JUNCTION BOXES.
5. NO TREES ARE PROPOSED TO BE ADDED OR REMOVED AS PART OF THIS PLAN. TREE PROTECTION TABLE NOT INCLUDED.

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GEOFF D. GIFFIN
Lic. No. 039584
09/18/2019
PROFESSIONAL ENGINEER
FINAL DESIGN PLANS

Approvals	Date
DESIGN TEAM SUPERVISOR	10/4/19
TRAFFIC SIGNALS MANAGER	10/04/19
CHIEF, T&O BUREAU	10/04/2019
DIRECTOR OF TRANSPORTATION	10/4/19

Revisions	Date

Designed: KF
Drawn: KF
Checked: GG
Miss Utility Transmittal #:

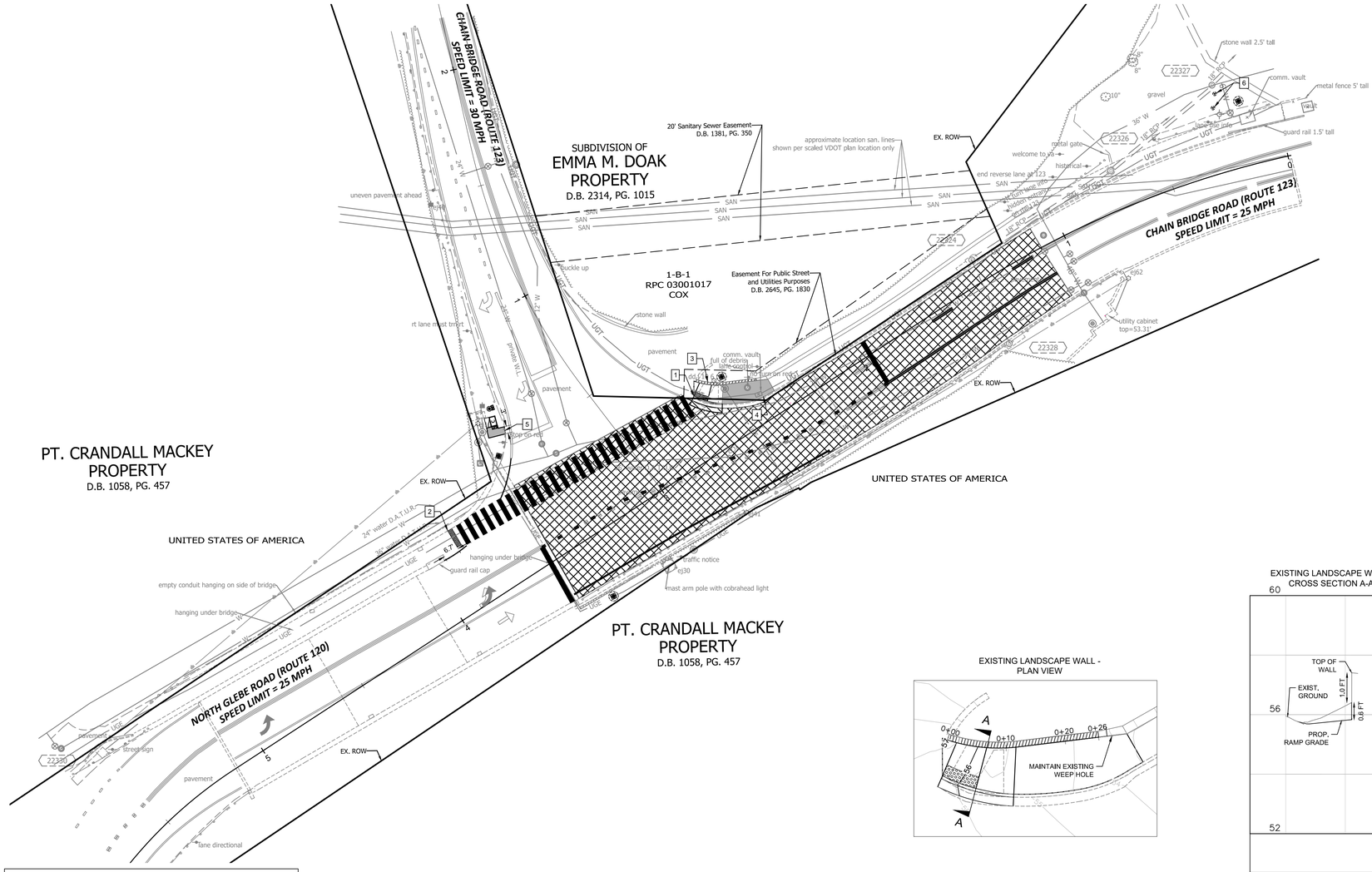
Filename: 0200 PHASE 1 EROSION CONTROLS ANI
Path: K:\NVA_TPTO\110010100 - Glebe Road ITS Design\CAD\PlanSheets
Plotted: September 18, 2019
Plotted by: Kelley.Frank

ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

PHASE 1 & 2 EROSION CONTROLS AND DEMOLITION PLAN
N. GLEBE ROAD ITS IMPROVEMENTS

CONSTRUCTION DOCUMENTS

SCALE: HOR. 1"=25' VERT. N/A | SHEET: 0200



GRAPHIC SCALE IN FEET
0 12.5 25 50

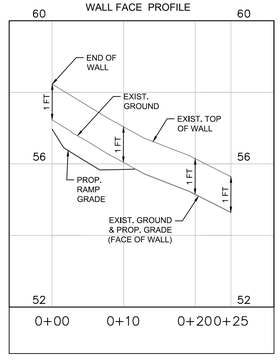
LEGEND

1	TYPE B (MODIFIED) PEDESTRIAN CURB RAMP
2	8'x2' DETECTABLE WARNING SURFACE (BOLT-DOWN STYLE)
3	REMOVE AND REPLACE LANDSCAPE WALL AS NEEDED. DO NOT DISTURB RETAINING WALL (HEIGHT GREATER THAN 2'). SEE WALL DETAILS ON THIS SHEET.
4	REBUILD EXISTING SIDEWALK IN PLACE
5	INSTALL CONCRETE SIDEWALK FOR CONTROLLER TECHNICIAN ACCESS
6	CONCRETE BOLLARD, 6' ON CENTER (SEE SHEET 0005). BOLLARD LOCATIONS SHALL NOT INTERFERE WITH THE OPERATION OF EXISTING FIRE HYDRANT.
	STONE LANDSCAPE WALL (AS NEEDED)
	FULL DEPTH ASPHALT PAVEMENT
	ARL. CO. STD. CONCRETE SIDEWALK
	MILL AND OVERLAY, 1.5"

GRAPHIC SCALE IN FEET
0 5 10 20

EXISTING LANDSCAPE WALL - CROSS SECTION A-A

EXISTING LANDSCAPE WALL - WALL FACE PROFILE



EXISTING LANDSCAPE WALL - PLAN VIEW

GRAPHIC SCALE IN FEET
0 5 10 20

STORMWATER MANAGEMENT NARRATIVE

DISTURBED AREA = 1,130 S.F. (LESS THAN 2,500 S.F.)

PROJECT DESCRIPTION: THIS TRAFFIC SIGNAL MODIFICATION AND ITS IMPROVEMENT PROJECT INCLUDES SIGNAL MODIFICATIONS, INSTALLATION OF LANE CONTROL SIGNALS AND VARIABLE MESSAGE SIGN, SIGNAL EQUIPMENT UPGRADES, CURB CUT RAMP, AND PAVEMENT MARKINGS. THE PROJECT INCLUDES AN ESTIMATED TOTAL OF 1,058 S.F. OF REGULATED LAND DISTURBING ACTIVITIES.

EXEMPTION QUALIFIED: IN ACCORDANCE WITH THE CHESAPEAKE BAY PRESERVATION ACT, THE PROJECT LAND DISTURBANCE OF 1,130 S.F. IS LESS THAN THE 2,500 S.F. THRESHOLD. THEREFORE, THE PROJECT IS EXEMPT FROM THE FOLLOWING VIRGINIA STORM WATER MANAGEMENT REGULATIONS:

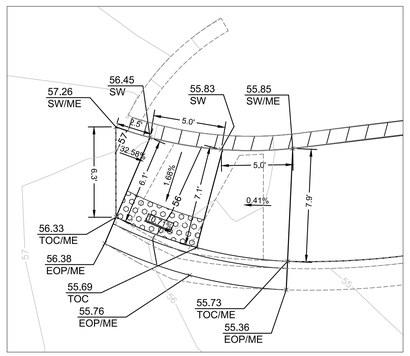
- VIRGINIA POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT (VPDES)
- WATER QUALITY/QUANITITY REQUIREMENTS
- STORMWATER POLLUTION PREVENTION PLAN

PER THE CHESAPEAKE BAY PRESERVATION ACT

TABLE OF DISTURBED AREA

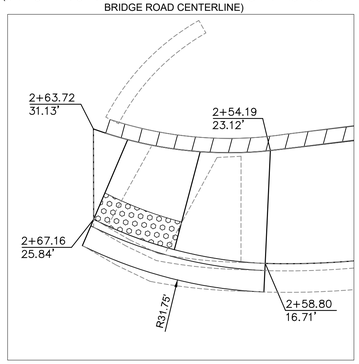
DISTURBED AREA	IMPERVIOUS TO PERVIOUS	PERVIOUS TO IMPERVIOUS	CHANGE IN PERVIOUS AREA
1,130 FT^2	75 FT^2	72 FT^2	+3 FT^2

RAMP DETAIL - NE CORNER



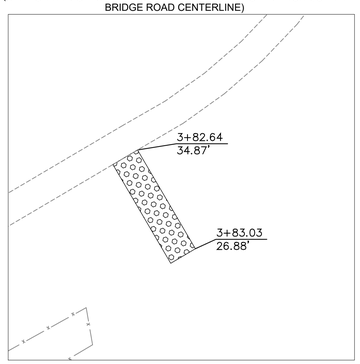
GRAPHIC SCALE IN FEET
0 2.5 5 10

RAMP GEOMETRY - NE CORNER
(STATION AND OFFSET MEASURED FROM NORTH GLEBE ROAD/CHAIN BRIDGE ROAD CENTERLINE)



GRAPHIC SCALE IN FEET
0 2.5 5 10

DETECTABLE WARNING SURFACE LOCATION - NW CORNER
(STATION AND OFFSET MEASURED FROM NORTH GLEBE ROAD/CHAIN BRIDGE ROAD CENTERLINE)



GRAPHIC SCALE IN FEET
0 2.5 5 10

GRADING LEGEND

ME = MATCH EXISTING

TOC = TOP OF CURB

EOP = EDGE OF PAVEMENT

SW = SIDEWALK

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CHIEF, T&O BUREAU	10/04/2019
DIRECTOR OF TRANSPORTATION	10/4/19

Revisions	Date

Designed: KF
Drawn: KF
Checked: GG
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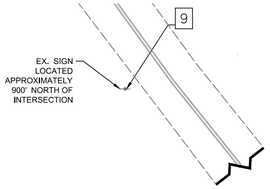
Filename: 0300 PROPOSED PLAN, PROFILE, GEOMI
Path: K:\NVA_TPTO\110010100 - Glebe Road ITS Design\CAD\PlanSheets
Plotted: September 18, 2019
Plotted by: Kelley.Frank

ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

PROPOSED PLAN & PROFILE, GEOMETRY AND RAMP DETAIL
N. GLEBE ROAD ITS IMPROVEMENTS

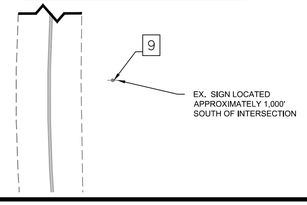
CONSTRUCTION DOCUMENTS

SCALE: HOR. 1"=25' VERT. N/A
SHEET: 0300



DETAIL A: EX. W3-3 (NORTH)

DETAIL B: EX. W3-3 (SOUTH)



GRAPHIC SCALE IN FEET
0 12.5 25 50

EXISTING SIGNS TO REMAIN

1 — HISTORICAL SIGN

2 — WELCOME TO VIRGINIA

3 — ONLY

4 — SOUTH 120 ROUTE 309 3 ROUTE 1 10

5 — ARLINGTON MCLEAN

6 — HIDDEN ENTRANCE ON RTE 123

7 — HIDDEN ENTRANCE

8 — STATE LAW BUCKLE UP

9

10 — UNEVEN PAVEMENT AHEAD

11 — RIGHT LANE MUST TURN RIGHT

12 — STOP HERE ON RED

13 — WASHINGTON ALEXANDRIA

EXISTING SIGNS TO BE RELOCATED

14 — TURNING VEHICLES TO

SEE SHEET 0500

EXISTING SIGNS TO BE REMOVED

15 — NOTICE
LEFT TURN TRAFFIC USE CENTER LANE 6:15 AM TO 10 AM MON THRU FRI EXCEPT HOLIDAY
ALL OTHER TIMES USE RIGHT LANE ON CHAIN BRIDGE

16 — END REVERSIBLE LANE AT CHAIN BRIDGE RD

17 — 6:15 - 10 AM MON–FRI / ALL TIMES

18 — RIGHT LANE MUST TURN RIGHT EXCEPT 6:15–10 AM MON–FRI

19 — END
6:15 - 10 AM MON–FRI / ALL TIMES

20 — NO TURN ON RED

PROPOSED SIGNS

21 — TO INTERSTATE 495

30"x48"

SPEED LIMIT 30

R2-1
24"x30"

INSTALL NEW SIGN POST (STP-1, 2 ½ INCH 12 GA, TYPE A FOUNDATION) AND MOUNT PROPOSED SIGNS (TO REPLACE THE EXISTING SIGNS)

NOTE: SEE SHEET 0006 FOR DETAILED SIGN LAYOUT.

22 — BEGIN REVERSE LANE ON Chain Bridge

36" x 126"

INSTALL NEW SIGN POST (STP-1, 2 INCH 14 GA, TYPE D FOUNDATION) AND MOUNT PROPOSED SIGN

NOTE: SEE SHEET 0006 FOR DETAILED SIGN LAYOUT

EXISTING SIGN TO BE REMOVED

HIGH VISIBILITY CROSSWALK
2.0' 2.0' 10'

LEGEND

EXISTING		PROPOSED
	BUS STOP	
	FIRE HYDRANT	
	PARKING METER	
	SIGN	
A	STRIPING	A

STANDARD PAVEMENT MARKING LEGEND:

A	TYPE B CLASS 1.....WHITE 4" WIDTH	PARKING LANES, EDGE LINES, LANE LINES
B	TYPE B CLASS 1.....WHITE 4" WIDTH, 10' LONG, 30' SPACING	DASHED LANE LINES
C	TYPE B CLASS 1.....WHITE 4" WIDTH, 2' LONG, 10' SPACING	LANE TRANSITIONS, TURN LANE SKIPS
D	TYPE B CLASS 1.....WHITE 18" WIDTH	STOP BARS
E	TYPE B CLASS 1.....WHITE 24" WIDTH	CONTINENTAL CROSS WALKS
F	TYPE B CLASS 1.....WHITE 6" WIDTH	TURN LANES,TRANSVERSE CROSSWALKS, BIKE LANES
G	TYPE B CLASS 1.....YELLOW 4" WIDTH, 10' LONG, 30' SPACING	DIVIDED TRAFFIC, TWO WAY TURN LANES
H	TYPE B CLASS 1.....YELLOW 4" WIDTH	EDGE LINES
I	TYPE B CLASS 1.....YELLOW 4" WIDTH, DOUBLE LINE, 4" SPACING	CENTERLINES
J	TYPE B CLASS 1.....WHITE 6" WIDTH, 10' SPACING @45 DEGREE	HATCH LINES, SAFETY ZONES
K	TYPE B CLASS 1.....WHITE SINGLE ARROW	TURN LANES
L	TYPE B CLASS 1.....WHITE COMBINATION ARROW	TURN LANES
M	TYPE B CLASS 1.....WHITE 8' LETTERS	PAVEMENT LETTERS (STOP, YIELD, BUS, ONLY etc.)
N	TYPE B CLASS 1.....WHITE 6" WIDTH, 2' LONG, 10' SPACING	LANE TRANSITIONS, TURN LANE SKIPS
O	TYPE B CLASS 1.....WHITE 12" WIDTH, 20' SPACING @45 DEGREE	GORE MARKINGS
P	TYPE B CLASS 1.....YELLOW 12" WIDTH, 20' SPACING @45 DEGREE	GORE MARKINGS
Q	TYPE B CLASS 1.....WHITE 6" WIDTH, 2' LONG, 4' SPACING	LANE TRANSITIONS
R	TYPE B CLASS 1.....YELLOW 4" WIDTH, DOUBLE LINE, 2' LONG, 4' SPACING	CENTERLINES

SIGN AND PAVEMENT MARKING NOTES:

1. STREET WIDTH MEASUREMENTS ARE FROM FACE OF CURB TO FACE OF CURB. LANES ARE MEASURED FROM CENTER OF MARKING TO CENTER OF MARKING .
2. CONTACT DENNIS HOWELL OR HIS DESIGNEE AT 703-228-6598 OR (571) 437-1077 TO APPROVE MARKING LAYOUT 48 HRS. PRIOR TO INSTALLATION OF MARKINGS.
3. PAVEMENT MARKINGS TO BE IN ACCORDANCE WITH THE FOLLOWING AND ANY REVISIONS HERE TO:
   A.) THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
   B.) ARLINGTON COUNTY MARKING STANDARDS.
4. ALL MARKINGS SHALL BE THERMOPLASTIC PER ARLINGTON COUNTY MARKING STANDARDS.
5. STOP BARS SHALL BE A MINIMUM OF 4' IN ADVANCE OF A MARKED CROSSWALK. IF THERE IS NO MARKED CROSSWALK, STOP BAR SHALL BE NO MORE THAN 30' FROM THE NEAREST EDGE OF THE INTERSECTED TRAVELED WAY.
6. CROSSWALKS SHALL BE 10' WIDE UNLESS OTHERWISE NOTED.
7. LEFT TURN ARROWS SHALL BE LOCATED 25' BACK FROM STOP BAR. FOR ADDITIONAL ARROWS FOLLOW COUNTY MARKING STANDARDS.
8. ON-STREET PARKING LANE IS 7' WIDE (UNLESS OTHERWISE NOTED) AND MARKED WITH 4" WIDE WHITE LINES. BEGINNING AND END OF PARKING SHALL BE MARKED WITH AN END LINE PERPENDICULAR TO CURB EXCEPT AT NUBS OR WHERE OTHERWISE INDICATED.
9. SHARROWS SHALL BE PLACED IN CENTER OF LANE, 250' APART UNLESS OTHERWISE SPECIFIED.
10. BIKE LANE SYMBOLS TO BE PLACED 330' APART UNLESS OTHERWISE SPECIFIED.

ARLINGTON VIRGINIA

DEPARTMENT OF ENVIRONMENTAL SERVICES

Signal Systems and ITS
Traffic Engineering and Operations Bureau
2100 Clarendon Boulevard, Suite 900
Arlington, VA 22201
Phone: 703.228.3629
Fax: 703.228.3606

Kimley»Horn
Kimley-Horn and Associates, Inc.

11400 Commerce Park Drive, Suite 400
Reston, Virginia 20191
Phone: 703-674-1300
Fax: 703-674-1350

Seal
COMMONWEALTH OF VIRGINIA
GEOFF D. GIFFIN
Lic. No. 039584
09/18/2019
PROFESSIONAL ENGINEER
FINAL DESIGN PLANS

Approvals	Date
DESIGN TEAM SUPERVISOR	10/4/19
TRAFFIC SIGNALS MANAGER	10/04/19
CHIEF, TE&O BUREAU	10/04/2019
DIRECTOR OF TRANSPORTATION	10/4/19

Revisions — Date

Designed: KF
Drawn: KF
Checked: GG
Miss Utility Transmittal #:

Filename: 0400 PAVEMENT MARKING AND SIGNIN
Path: K:\NVA_TPTO\110010100 - Glebe Road ITS Design\CAD\PlanSheets
Plotted: September 18, 2019
Plotted by: Kelley.Frank

ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

PAVEMENT MARKING AND SIGNING PLAN
N. GLEBE ROAD ITS IMPROVEMENTS

CONSTRUCTION DOCUMENTS

SCALE: HOR. 1"=25' VERT. N/A | SHEET: 0400

CONDUIT & CABLE

1-4" CONDUIT PVC
4-14/7C FOR SIGNAL HEADS 11, 21, 22, 61, 62
1-14/7C FOR PED HEAD P22
1-14/3C FOR PED PUSH BUTTON P22
2-14/5C FOR SIGNS S-1, S-2
2-LEAD IN CABLES FOR THERMAL VEHICLE DETECTION
1-PEDESTRIAN VIDEO DETECTION CABLE (1)
1-12/2C FOR LUMINAIRE
1-CAT-5E CABLE FOR CCTV CAMERA
1-#6 AWG (EGC)

1-2" CONDUIT PVC
2-PREEMPTION CABLES
1-#6 AWG (EGC)

1-3" CONDUIT (BORED) HDPE
1-4" CONDUIT (BORED) HDPE
4-14/7C FOR SIGNAL HEADS 11, 21, 22, 61, 62
1-14/7C FOR PED HEAD P22
1-14/3C FOR PED PUSH BUTTON P22
2-14/5C FOR SIGNS S-1, S-2
6-14/5C FOR LANE USE CONTROL SIGNAL HEADS
2-LEAD IN CABLES FOR THERMAL VEHICLE DETECTION
1-PEDESTRIAN VIDEO DETECTION CABLE (2)
1-12/2C FOR LUMINAIRE
1-CAT-5E CABLES FOR CCTV CAMERAS
2-#6 AWG (EGC)

1-2" CONDUIT (BORED) HDPE
2-PREEMPTION CABLES
1-#6 AWG (EGC)

1-4" CONDUIT (BORED) HDPE
2-14/7C FOR SIGNAL HEADS 41, 42
2-14/5C FOR SIGN S-6
1-LEAD IN CABLE FOR THERMAL VEHICLE DETECTION
1-12/2C FOR LUMINAIRE (3)
1-#6 AWG (EGC)

1-2" CONDUIT (BORED) HDPE
1-PREEMPTION CABLE
1-#6 AWG (EGC)

1-3" CONDUIT PVC
2-14/7C FOR SIGNAL HEADS 41, 42
2-14/5C FOR SIGN S-6
1-LEAD IN CABLE FOR THERMAL VEHICLE DETECTION
1-12/2C FOR LUMINAIRE (4)
1-#6 AWG (EGC)

1-2" CONDUIT PVC
1-PREEMPTION CABLE
1-#6 AWG (EGC)

1-2" CONDUIT PVC
1-14/7C FOR PED HEAD P21
1-LMR-100 CABLE FOR ANTENNA
1-CAT-5E CABLE FOR CCTV CAMERA (5)
1-#6 AWG (EGC)

3-3" CONDUIT PVC
6-14/7C FOR SIGNAL HEADS 11, 21, 22, 41, 42, 61, 62
2-14/7C FOR PED HEADS P21, P22
1-14/3C FOR PED PUSH BUTTON P22
4-14/5C FOR SIGNS S-1, S-2, AND S-6
6-14/5C FOR LANE USE CONTROL SIGNAL HEADS
1-LMR-100 CABLE FOR ANTENNA
3-LEAD IN CABLES FOR THERMAL VEHICLE DETECTION
1-PEDESTRIAN VIDEO DETECTION CABLE (6)
2-12/2C FOR LUMINAIRES
2-CAT-5E CABLES FOR CCTV CAMERA
3-#6 AWG (EGC)

1-2" CONDUIT PVC
3-PREEMPTION CABLES
1-#6 AWG (EGC)

1-3" CONDUIT PVC
SPARE

1-2" CONDUIT METAL
3-#6 AWG FOR ELECTRICAL SERVICE (A)

1-2" CONDUIT METAL
1-#6 AWG FOR SYSTEM GROUNDING (B)

1-2" CONDUIT PVC
SPARE (FUTURE DMS ELECTRICAL CONDUIT)
1-#6 AWG (EGC) (D)

1-2" CONDUIT PVC
SPARE (FUTURE DMS ELECTRICAL CONDUIT)
1-#6 AWG (EGC) (E)

1-2" CONDUIT (BORED) HDPE
SPARE (FUTURE DMS ELECTRICAL CONDUIT)
1-#6 AWG (EGC) (F)

2-2" CONDUIT PVC
6-14/5C FOR LANE USE CONTROL SIGNAL HEADS
2-#6 AWG (EGC) (G)

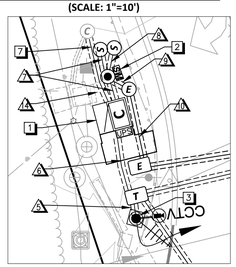
1-4" CONDUIT (BORED) HDPE
6-14/5C FOR LANE USE CONTROL SIGNAL HEADS
1-#6 AWG (EGC) (H)

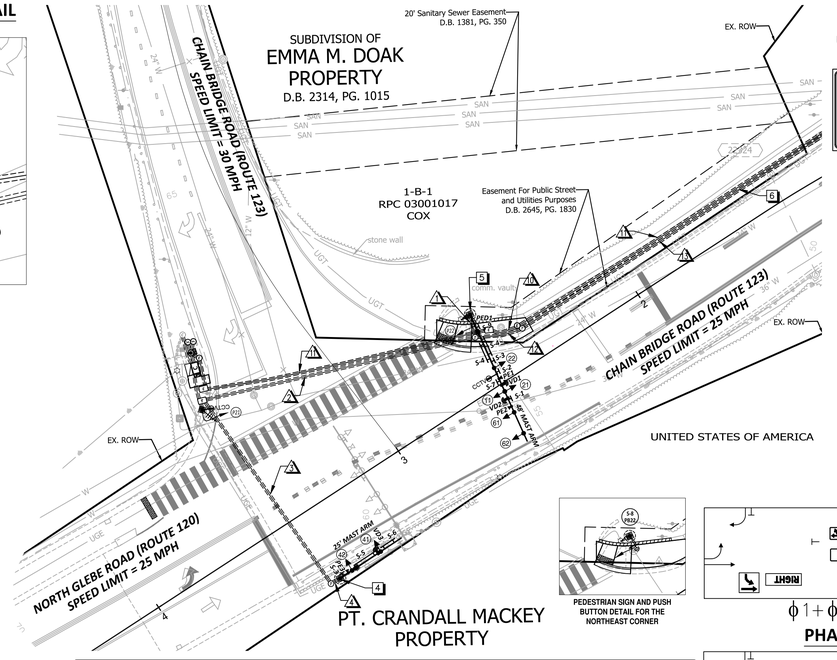
1-2" CONDUIT PVC
1-12 FIBER CABLE (EXISTING, RELOCATED) (I)

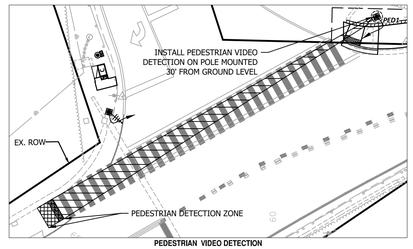
EGC - ELECTRICAL GROUNDING CONDUCTOR
HDPE - HIGH DENSITY POLYETHYLENE CONDUIT

NORTHWEST CORNER DETAIL

(SCALE: 1"=10')



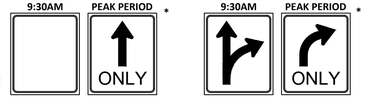




PEDESTRIAN VIDEO DETECTION DETAIL

PEDESTRIAN SIGN AND PUSH BUTTON DETAIL FOR THE NORTHEAST CORNER

PROPOSED LED SIGNS



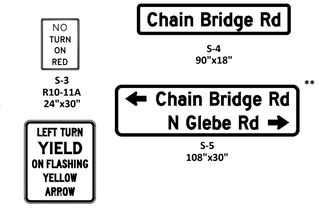
S-1
R3-5a
30"x36"

S-2
R3-6 | R3-5
30"x36"

EXISTING SIGN TO BE RELOCATED

S-9
SEE SIGN 14 ON SHEET 0400

PROPOSED SIGNS



S-3
R10-11A
24"x30"

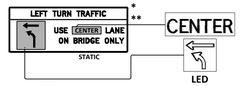
S-4
90"x18"

S-5
108"x30"

S-7
R10-V1
36"x42"

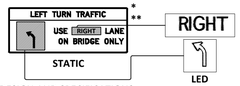
PROPOSED COMBINATION STATIC AND LED SIGN

AM PEAK (6:00 AM TO 9:30 AM)



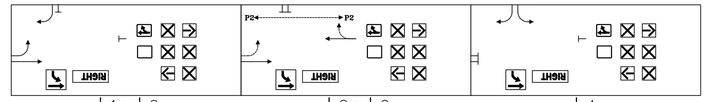
S-6
72"x30"

NON-AM PEAK

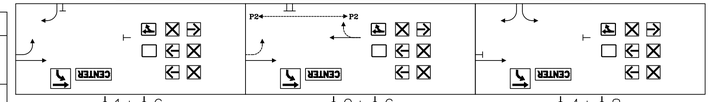


*NOTE: SEE SHEET 0007 FOR LED SIGN DESIGN AND SPECIFICATIONS
**NOTE: SEE SHEETS 0006-0007 FOR DETAILED SIGN LAYOUT

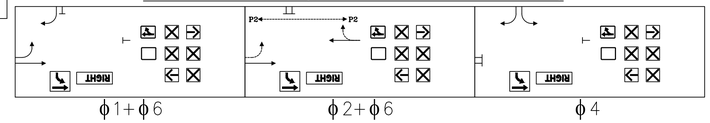
PHASING DIAGRAM (TRANSITION TO AM PEAK)



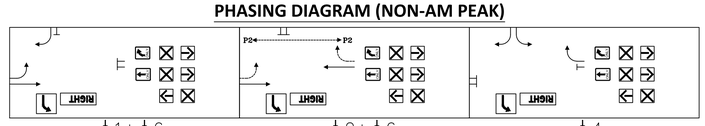
PHASING DIAGRAM (AM PEAK ONLY) (6:00 AM TO 9:30 AM)



PHASING DIAGRAM (TRANSITION TO NON-AM PEAK)



PHASING DIAGRAM (NON-AM PEAK)



POLE SIGNAL MOUNTING

No.	STANDARD TYPE	SIG. M.A.	LUM. M.A.	LUM. LED (4)	POLE SIGNAL MOUNTING: VEHICLE & PED. HEADS	PED. PUSH BUTTONS	SIGNS	VIDEO DETECTOR PREEMPTION & CCTV	STREET NAME SIGN
A	STREETLIGHT POLE, 25'				P21				
B	MAST ARM POLE	48'	6'	145W	11,21,22,61,62,P22	S-8	S-1,S-2,S-3,S-7	VD1,PE1,VD2,PE2,CCTV PED1	S-4, S-4
C	MAST ARM POLE	25'	6'	145W	41,42		S-3,S-6	VD3,PE3	S-5

COLOR SEQUENCE CHART (AM PEAK ONLY) (6:00 AM TO 9:30 AM)

PHASE		1	2	4	6	8	1+6	2+6	4+8	FLASH
SIGNAL	STATES	R/W	R/W	R/W	R/W	R/W	R/W	R/W	R/W	
11	R/Y/G	G	Y				G	Y		R
21	R/Y/G		G					G		Y
22	R/Y/G		G					G		Y
41	R/Y/G			G					G	R
42	R/Y/G	G		G			G		G	R
61, 62	R/Y/G				G	G	G	G	G	Y
P21, P22	W / DW	DW	W*	DW	DW	DW	DW	W*	DW	DARK
S-1	DARK/THRU	DARK	DARK	DARK	DARK	DARK	DARK	DARK	DARK	DARK
S-2	THRU-RT/RT	THRU-RT	THRU-RT	THRU-RT	THRU-RT	THRU-RT	THRU-RT	THRU-RT	THRU-RT	THRU-RT
S-6 (LANE)	CENTER/RT	CENTER	CENTER	CENTER	CENTER	CENTER	CENTER	CENTER	CENTER	RT
S-6 (ARROW)	SINGLE/DUAL	DUAL	DUAL	DUAL	DUAL	DUAL	DUAL	DUAL	DUAL	SINGLE
L1	X(R)/ARROW	X(R)	X(R)	X(R)	X(R)	X(R)	X(R)	X(R)	X(R)	X(R)
L2	X(R)/ARROW	ARROW	ARROW	ARROW	ARROW	ARROW	ARROW	ARROW	ARROW	X(R)
L3	X(R)/ARROW	ARROW	ARROW	ARROW	ARROW	ARROW	ARROW	ARROW	ARROW	ARROW
L4	X(R)/ARROW	X(R)	X(R)	X(R)	X(R)	X(R)	X(R)	X(R)	X(R)	X(R)
L5	X(R)/ARROW	X(R)	X(R)	X(R)	X(R)	X(R)	X(R)	X(R)	X(R)	X(R)
L6	X(R)/ARROW	ARROW	ARROW	ARROW	ARROW	ARROW	ARROW	ARROW	ARROW	ARROW

NOTE: BLANK SPACES IN THIS CHART REPRESENT A "RED" SIGNAL INDICATION.
Y = FLASHING YELLOW ARROW SIGNAL IS DISPLAYED
*"WALK" INDICATION IS DISPLAYED WHEN PEDESTRIAN CALL IS SERVICED; "WALK" INDICATION IS DISPLAYED UNTIL IT IS TIMED OUT. OTHERWISE "DON'T WALK" INDICATION IS DISPLAYED.

COLOR SEQUENCE CHART (NON-AM PEAK)

PHASE		1	2	4	6	1+6	2+6	FLASH
SIGNAL	STATES	R/W	R/W	R/W	R/W	R/W	R/W	
11	R/Y/G	G	Y			G	Y	R
21	R/Y/G		G				G	Y
22	R/Y/G		G				G	Y
41	R/Y/G			G				R
42	R/Y/G	G		G		G		R
61, 62	R/Y/G				G	G	G	Y
P21, P22	W / DW	DW	W*	DW	DW	DW	W*	DARK
S-1	DARK/THRU	THRU	THRU	THRU	THRU	THRU	THRU	DARK
S-2	THRU-RT/RT	RT	RT	RT	RT	RT	RT	THRU-RT
S-6 (LANE)	CENTER/RT	RT	RT	RT	RT	RT	RT	RT
S-6 (ARROW)	SINGLE/DUAL	SINGLE	SINGLE	SINGLE	SINGLE	SINGLE	SINGLE	SINGLE
L1	X(R)/ARROW	X(R)	X(R)	X(R)	X(R)	X(R)	X(R)	X(R)
L2	X(R)/ARROW	X(R)	X(R)	X(R)	X(R)	X(R)	X(R)	X(R)
L3	X(R)/ARROW	ARROW	ARROW	ARROW	ARROW	ARROW	ARROW	ARROW
L4	X(R)/ARROW	X(R)	X(R)	X(R)	X(R)	X(R)	X(R)	X(R)
L5	X(R)/ARROW	ARROW	ARROW	ARROW	ARROW	ARROW	ARROW	X(R)
L6	X(R)/ARROW	ARROW	ARROW	ARROW	ARROW	ARROW	ARROW	ARROW

NOTE: BLANK SPACES IN THIS CHART REPRESENT A "RED" SIGNAL INDICATION.
Y = FLASHING YELLOW ARROW SIGNAL IS DISPLAYED
*"WALK" INDICATION IS DISPLAYED WHEN PEDESTRIAN CALL IS SERVICED; "WALK" INDICATION IS DISPLAYED UNTIL IT IS TIMED OUT. OTHERWISE "DON'T WALK" INDICATION IS DISPLAYED.

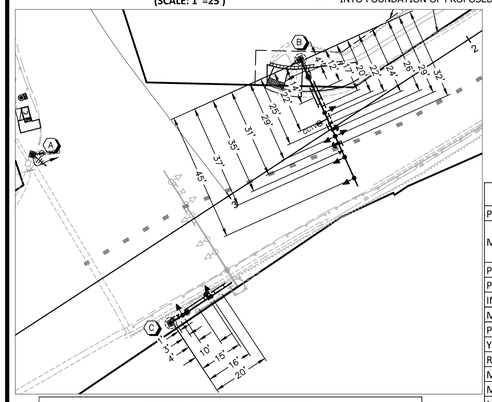
CONSTRUCTION NOTES

EXISTING CONTROLLER AND CABINET TO BE REPLACED WITH NEW CONTROLLER AND CABINET ON A NEW FOUNDATION. ALL OTHER EXISTING EQUIPMENT TO BE REMOVED INCLUDING UNUSED WIRING, CONDUIT, AND JUNCTION BOXES, UNLESS OTHERWISE SPECIFIED. EXISTING CONTROLLER AND CABINET SHALL BE RETURNED TO ARLINGTON COUNTY.

1. INSTALL SIGNAL CONTROLLER CABINET WITH UPS AND CONCRETE STOOP. CABINET SHALL BE ORIENTED TO PROVIDE TECHNICIAN VIEW OF SIGNAL DISPLAYS.
2. INSTALL UNDERGROUND ELECTRICAL SERVICE WITH PEDESTAL METERPAN. PROPOSED CONDUIT SHOWN TO THE APPROXIMATE LOCATION OF POWER SOURCE.
3. INSTALL 25' ALUMINUM OCTAFLUTE POLE WITH PEDESTRIAN SIGNAL (MOUNTING HEIGHT = 8'), CCTV (MOUNTING HEIGHT = 20'), AND 900 MHZ YAGI ANTENNA (MOUNT TO TOP OF POLE).
4. INSTALL NON-ORNAMENTAL MAST ARM SIGNAL POLE WITH LUMINAIRE.
5. INSTALL NON-ORNAMENTAL MAST ARM SIGNAL POLE WITH LUMINAIRE, PEDESTRIAN SIGNAL HEAD, AND POLARA PEDESTRIAN EQUIPMENT ATTACHED TO 12" POLARA PUSH BUTTON FRAME EXTENDER PER COUNTY ST'D 68-01. INSTALL PEDESTRIAN VIDEO DETECTION, SEE DETAIL FOR INSTALL LOCATION.
6. SEE ITS DESIGN PLAN ON SHEET 0600 FOR LANE USE CONTROL SIGNAL AND ITS EQUIPMENT DETAILS.
7. CONTRACTOR SHALL INTERCEPT EXISTING CONDUIT WITH 12 FIBER PATCH PANEL CABLE AND REROUTE AND INSTALL INTO FOUNDATION OF PROPOSED TRAFFIC SIGNAL CABINET.

POLE LOCATION DETAIL

(SCALE: 1"=25')

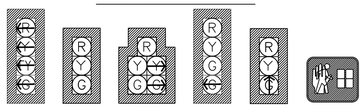


POLE LOCATION SCHEDULE

POLE ID	STATION	OFFSET	POLE HEIGHT/MAST ARM MOUNTING HEIGHT	MAST ARM LENGTH	POLE TYPE	FOUNDATION TYPE
A	3+49.55	49.57' RT	25'/ -	-	14080-02**	14060-03**
B	2+52.96	26.29' RT	28'/18'	48'	-	66-06 (#3)*
C	3+41.32	26.12' LT	30'/20'	25'	-	66-06 (#1)*

* CONTRACTOR SHALL REVIEW IF THE PROPOSED LOADING IS GREATER THAN THE ARLINGTON COUNTY STANDARD DESIGN. IF THE LOADING IS GREATER, THEN THE CONTRACTOR SHALL PROVIDE A CUSTOM DESIGN AND PROVIDE ARLINGTON COUNTY WITH STRUCTURAL CALCULATIONS FOR APPROVAL PRIOR TO ORDERING EQUIPMENT.
** PER ARLINGTON COUNTY STREETLIGHT STANDARDS

PROPOSED SIGNALS



INITIAL TIMING CHART

PHASE	1	2	3	4	5	6	7	8	9	10
MOVEMENT	EB N GLEBE RD LEFT	WB CHAIN BRIDGE ROAD		SB CHAIN BRIDGE ROAD		EB N GLEBE RD THRU			NON-AM PEAK CONTROL PHASE	AM PEAK CONTROL PHASE
PHASE ON	X	X		X		X		X	X	X
PHASE OFF			X		X		X			
INTERVAL	PHASE TIMINGS									
MIN GR	5.0	5.0	-	5.0	-	5.0	-	-	-	-
PASSAGE	0.0	0.0	-	0.0	-	0.0	-	-	-	-
YELLOW	4.0	4.0	-	4.0	-	4.0	-	-	-	-
RED	2.0	5.0	-	3.0	-	5.0	-	-	-	-
MAX 1	15.0	15.0	-	15.0	-	15.0	-	-	-	-
MAX 2	0.0	0.0	-	0.0	-	0.0	-	-	-	-
MIN GAP	0.0	0.0	-	0.0	-	0.0	-	-	-	-
TIME BEFORE REDUCTION	0.0	0.0	-	0.0	-	0.0	-	-	-	-
TIME TO REDUCE	0.0	0.0	-	0.0	-	0.0	-	-	-	-
PED WALK	0.0	4.0	-	0.0	-	0.0	-	-	-	-
PED FLASH DONT WALK	0.0	34.0	-	0.0	-	0.0	-	-	-	-
MODE	-	MIN RECALL	-	-	-	MIN RECALL	-	-	-	-

GRAPHIC SCALE IN FEET
0 12.5 25 50

PROPOSED ACCESSIBLE PEDESTRIAN PUSHBUTTONS

PUSHBUTTON	WALK MESSAGE
PB22	*CHAIN BRIDGE ROAD, WALK SIGN IS ON TO CROSS CHAIN BRIDGE ROAD.*

* PEDESTRIAN PUSHBUTTON SIGN SHALL BE MOUNTED ABOVE PEDESTRIAN PUSHBUTTON.

*** ACCESSIBLE PUSHBUTTON SYSTEM SHALL BE POLARA SYSTEM CONFORMING TO ARLINGTON COUNTY SPECIFICATION AND SHALL INCLUDE A POLARA CENTRAL CONTROL UNIT.**

LEGEND

	EXISTING	PROPOSED
Control Cabinet		C
Signal Junction Box (61-02)	T	T
Signal Junction Box (61-04, TYPE-3)	T	T
Electrical Junction Box	E	E
Comm. Junction Box	C	C
Service Junction Box	S	S
Mast Arm Pole & Foundation		
Pedestrian Pedestal Pole & Foundation		
Carlyle Lighting Pole & Foundation		
Service Meter		
Battery Backup (UPS)	UPS	UPS
Vehicle Signal Head (LED)		
Pedestrian Push Button	PB#	PB#
FLIR Video Detection	VD#	VD#
Emergency Vehicle Preemption	PE#	PE#
CCTV Vehicle Camera	CCTV	CCTV
Overhead Light (LED)	SL#	SL#
Conduit Run		
Pedestrian Video Detection		PED#
900 MHz Yagi Antenna		

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GEOFF D. GIFFIN
Lic. No. 039584
09/18/2019
PROFESSIONAL ENGINEER
FINAL DESIGN PLANS

Approvals Date

Approvals	Date
DESIGN TEAM SUPERVISOR	10/4/19
TRAFFIC SIGNALS MANAGER	10/04/19
CHIEF, T&O BUREAU	10/04/2019
DIRECTOR OF TRANSPORTATION	10/4/19

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Plotted: September 18, 2019
Plotted by: Kelley.Frank

ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

TRAFFIC SIGNAL DESIGN PLAN
N. GLEBE ROAD ITS IMPROVEMENTS

CONSTRUCTION DOCUMENTS

SCALE: HOR. 1"=25' VERT. N/A | SHEET: 0500

CONDUIT & CABLE

SEE TRAFFIC SIGNAL DESIGN PLAN ON SHEET 0500 FOR CONDUIT RUNS 1-8

3 | **1-2" CONDUIT PVC**
SPARE (FUTURE DMS ELECTRICAL CONDUIT)
1-#6 AWG (EGC)

10 | **1-2" CONDUIT PVC**
SPARE (FUTURE DMS ELECTRICAL CONDUIT)
1-#6 AWG (EGC)

11 | **1-2" CONDUIT (BORED) HDPE**
SPARE (FUTURE DMS ELECTRICAL CONDUIT)
1-#6 AWG (EGC)

12 | **2-2" CONDUIT PVC**
6-14/5C FOR SIGNAL HEADS L1, L2, L3, L4, L5, L6
2-#6 AWG (EGC)

13 | **1-4" CONDUIT (BORED) HDPE**
6-14/5C FOR SIGNAL HEADS L1, L2, L3, L4, L5, L6
1-#6 AWG (EGC)

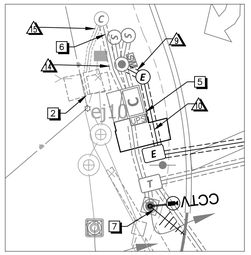
14 | **1-2" CONDUIT PVC**
1-12" FIBER CABLE (EXISTING, RELOCATED)

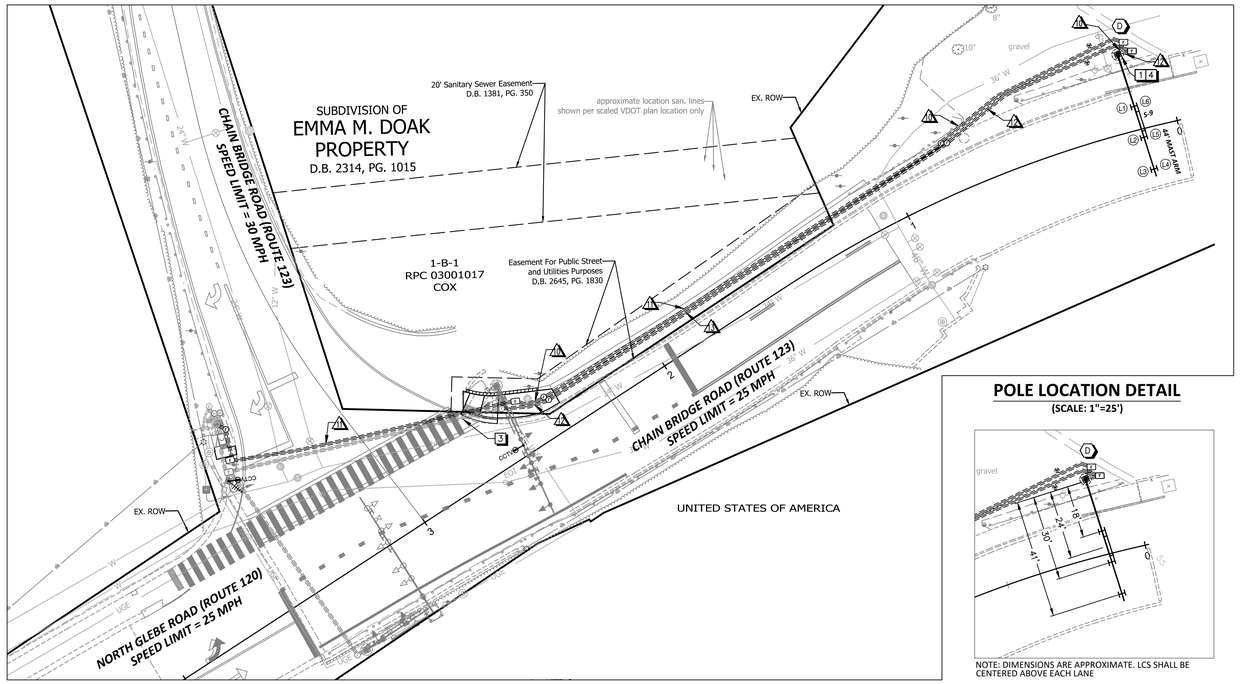
15 | 1-2" CONDUIT (EXISTING)
1-12" FIBER CABLE (TO BE RELOCATED)

EGC - ELECTRICAL GROUNDING CONDUCTOR
HDPE - HIGH DENSITY POLYETHYLENE CONDUIT

NORTHWEST CORNER DETAIL

(SCALE: 1"=10')





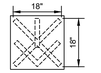
POLE LOCATION DETAIL

(SCALE: 1"=25')

NOTE: DIMENSIONS ARE APPROXIMATE. LCS SHALL BE CENTERED ABOVE EACH LANE

GRAPHIC SCALE IN FEET
0 12.5 25 50

PROPOSED LANE-USE CONTROL SIGNALS (LCS)



*

HEADS
L1,L2,L3,L4,L5,L6

PROPOSED SIGN

END REVERSE LANE
AT Chain Bridge Rd **

S-9
R3-9g
108"x36"

***NOTE: SEE SHEET 0007 FOR LCS DETAILS**
****NOTE: SEE SHEET 0007 FOR DETAILED SIGN LAYOUT**

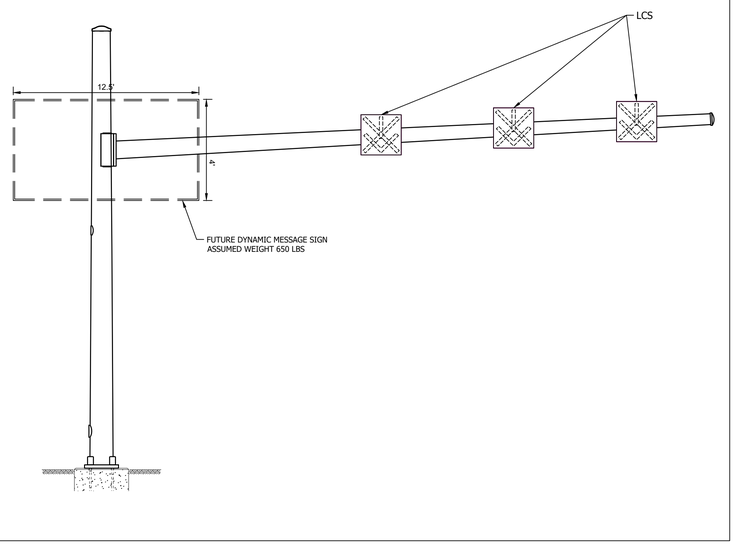
POLE LOCATION SCHEDULE

POLE ID	STATION	OFFSET	UMC DESIGN NUMBER	MAST ARM LENGTH	POLE TYPE	FOUNDATION TYPE
D	0+14.37	27.32' RT	-	44'	-	66-06*

* CONTRACTOR SHALL REVIEW IF THE PROPOSED LOADING IS GREATER THAN THE ARLINGTON COUNTY STANDARD DESIGN. IF THE LOADING IS GREATER, THEN THE CONTRACTOR SHALL PROVIDE A CUSTOM DESIGN AND PROVIDE ARLINGTON COUNTY WITH STRUCTURAL CALCULATIONS FOR APPROVAL PRIOR TO ORDERING EQUIPMENT.

DETAIL A: LCS POLE DETAIL

NOT TO SCALE



CONSTRUCTION NOTES

1. INSTALL NON-ORNAMENTAL SIGNAL MAST-ARM POLE. SEE DETAIL A THIS SHEET.
2. CONTRACTOR SHALL REMOVE ALL COMMUNICATION EQUIPMENT TO INCLUDE: 12 FIBER PATCH PANEL AND FIBER CABLE, EHTERNET SWITCH AND JUMPER CABLES FROM EXISTING TRAFFIC SIGNAL CABINET AND RELOCATE TO PROPOSED CONTROLLER CABINET.
3. SEE TRAFFIC SIGNAL DESIGN PLAN ON SHEET 0500 FOR ITS CABLE AND CONDUIT WITHIN TRAFFIC SIGNAL SYSTEM.
4. LCS POLE SHALL BE DESIGNED TO ACCOMMODATE FUTURE DYNAMIC MESSAGE SIGN MOUNTED ON POLE PER DETAIL: A. ASSUMED SIGN SIZE: 12.5' X 4', ASSUMED SIGN WEIGHT: 650 LBS.
5. CONTRACTOR SHALL INSTALL 12 FIBER PATCH PANEL, ETHERNET SWITCH AND JUMPER CABLES IN PROPOSED TRAFFIC SIGNAL CABINET.
6. CONTRACTOR SHALL INTERCEPT EXISTING CONDUIT WITH 12 FIBER PATCH PANEL CABLE AND REROUTE AND INSTALL WITHIN PROPOSED TRAFFIC SIGNAL CABINET.
7. INSTALL 900 MHZ YAGI ANTENNA ON TOP OF POLE.

GENERAL NOTES

1. CONTRACTOR SHALL SUBMIT SPLICE ENCLOSURES FOR ENGINEER APPROVAL.
2. CONTRACTOR SHALL NOTIFY ENGINEER PRIOR TO CUTTING OR DISCONNECTING ANY FIBER CABLE. CONTRACTOR SHALL NOT PROCEED WITH FIBER CUTTING UNLESS ENGINEER IS ON-SITE.
3. CONTRACTOR SHALL RE-SPLICE ALL FIBERS TO THE SAME FIBERS AND BUFFER TUBE AS THE EXISTING CONDITION.
4. CONTRACTOR SHALL PERFORM BI-DIRECTIONAL OTDR TESTING ON THE 12 FIBER CABLE ENTERING THE PROPOSED TRAFFIC SIGNAL CABINET FROM THE TERMINATION POINTS. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER TO GAIN ACCESS TO THE NEAREST FIBER TERMINATION POINTS FOR THE ITS 144 FIBER OPTIC CABLE TO PERFORM TESTING.
5. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH BI-DIRECTIONAL OTDR TEST RESULTS IN PDF FORMAT FOR APPROVAL. NO WORK SHALL BE ACCEPTED IF THE FOLLOWING REQUIREMENTS ARE NOT MET:
   - EACH FUSION SPLICE LOSS DOES NOT EXCEED 0.05 DB, BI-DIRECTIONALLY AVERAGED
   - CABLE ATTENUATION MAY NOT EXCEED 0.30 DB/KM AT 1550 NM AND 0.40 DB/KM AT 1310 NM.

   IF ANY OF THE ABOVE CONDITIONS ARE NOT MET, THEN TAKE APPROVED CORRECTIVE ACTION, INCLUDING REMAKING SPLICES OR REPLACING COMPLETE SEGMENTS OF FIBER OPTIC CABLE, AS REQUIRED. CORRECTIVE ACTION WILL BE AT NO ADDITIONAL COST TO THE COUNTY.
6. THE CONTRACTOR SHALL NOT CUT OR DAMAGE EXISTING FIBER OPTIC CABLES OR FIBER OPTIC SPLICE ENCLOSURES. WHEN HANDLING THE EXISTING FIBER OPTIC CABLES, THE CONTRACTOR SHALL PROTECT THE CABLES FROM EXCEEDING THE MINIMUM BEND RADIUS OF 14 INCHES.
7. THE CONTRACTOR IS RESPONSIBLE FOR ALL REPAIR AND COSTS ASSOCIATED WITH DAMAGED FIBER OPTIC CABLES OR SPLICE ENCLOSURES DUE TO CONSTRUCTION ACTIVITIES.
8. ALL CABLING AND SPLICE ENCLOSURES IN JUNCTION BOXES SHALL BE NEATLY ARRANGED.
9. IF EXISTING FACTORY-TERMINATED PATCH PANEL IS DAMAGED DURING CONSTRUCTION, THE CONTRACTOR SHALL REPLACE AT NO COST TO THE COUNTY.

LEGEND

	EXISTING	PROPOSED
Control Cabinet	C	C
Signal Junction Box (61-02)	T	T
Signal Junction Box (61-04, TYPE-3)	T	T
Electrical Junction Box	E	E
Comm. Junction Box	C	C
Service Junction Box	S	S
Mast Arm Pole & Foundation		
Pedestrian Pedestal Pole & Foundation		
Carlyle Lighting Pole & Foundation		
Service Meter		
Battery Backup (UPS)	UPS	UPS
Vehicle Signal Head (LED)		
Pedestrian Push Button	PB#	PB#
FLIR Video Detection	VD#	VD#
Emergency Vehicle Preemption	PE#	PE#
CCTV Vehicle Camera	CCTV	CCTV
Overhead Light (LED)	SL#	SL#
Conduit Run		
Pedestrian Video Detection		PED#
900 MHz Yagi Antenna		

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CHIEF, T&O BUREAU	10/04/2019
DIRECTOR OF TRANSPORTATION	10/4/19

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Plotted by: Kelley.Frank

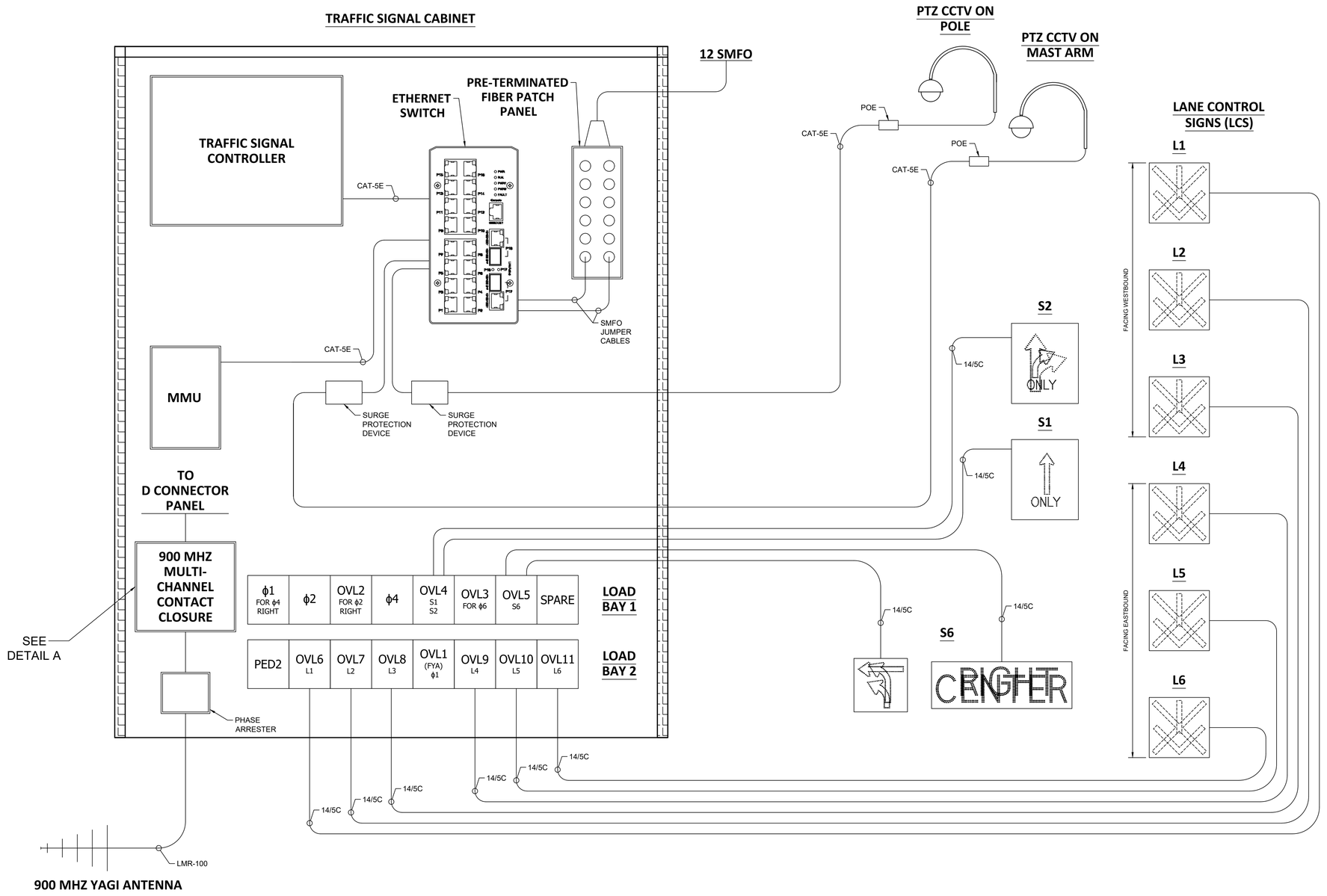
ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

ITS DESIGN PLAN
N. GLEBE ROAD ITS IMPROVEMENTS

CONSTRUCTION DOCUMENTS

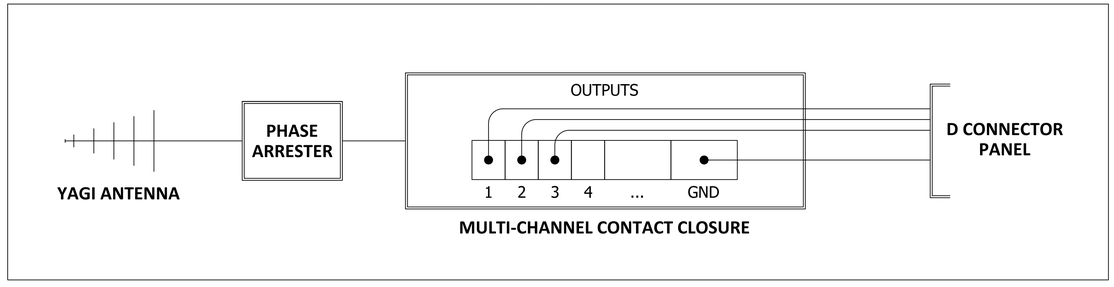
SCALE: HOR. 1"=25' VERT. N/A | SHEET: 0600

COMMUNICATION BLOCK DIAGRAM



DETAIL A: 900 MHZ MULTI CHANNEL CONTACT CLOSURE

NOT TO SCALE



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ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

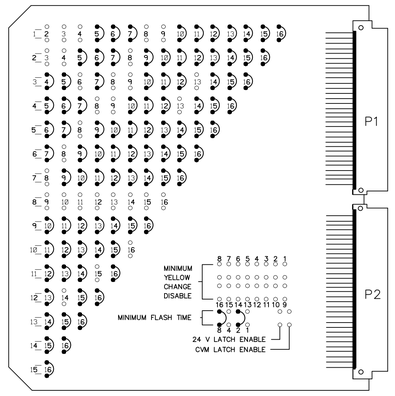
COMMUNICATION AND ELECTRICAL BLOCK DIAGRAM
N. GLEBE ROAD ITS IMPROVEMENTS

CONSTRUCTION DOCUMENTS

SCALE: HOR. N/A VERT. N/A | SHEET: 0601

EDI MODEL MMU2-16LEip MALFUNCTION MANAGEMENT UNIT PROGRAMMING DETAIL

(program card and tables as shown)



MMU PROGRAMMING CARD

UNIT OPTIONS	
OPTION	SETTING
RECURRENT PULSE	ON
WALK DISABLE	OFF
LOG CVM FAULTS	ON
EXTERN WATCHDOG	OFF
24V-2=12VDC	OFF
PGM CARD MEMORY	ON
LEDguard	ON
FORCE TYPE 16	OFF
TYPE12-SDLC	OFF
VM 3x/Day Latch	ON

FIELD CHECK ENABLE DUAL IND ENABLE RED FAIL ENABLE	
CHANNEL NUMBER	ENABLE/ DISABLE
1	DISABLE
2	ENABLE
3	ENABLE
4	ENABLE
5	ENABLE
6	ENABLE
7	ENABLE
8	DISABLE
9	DISABLE
10	ENABLE
11	ENABLE
12	ENABLE
13	ENABLE
14	ENABLE
15	ENABLE
16	ENABLE

FLASHING YELLOW ARROW	
CONFIG MODE	B
ENABLE CHANNEL PAIR, FYA	
CH 1-13	ON
CH 3-14	OFF
CH 5-15	OFF
CH 7-16	OFF
RED/YEL INPUT ENABLE	
CH 1	ON
CH 3	OFF
CH 5	OFF
CH 7	OFF
FLASH RATE FAULT	ON
FYA TRAP DETECT	ON

MMU PROGRAMMING NOTE

ENSURE YELLOW CHANGE PLUS RED CLEARANCE MONITORING IS ENABLED FOR ALL CHANNELS.

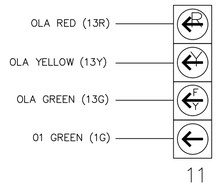
LOADSWITCH ASSIGNMENT REFERENCE

LOAD SWITCH NUMBER	FUNCTION
1	∅ 1
2	∅ 2
3	OVL 2
4	∅ 4
5	OVL 4
6	OVL 3
7	OVL 5
8	OVL 20*
9	∅ 2 PED
10	OVL 6
11	OVL 7
12	OVL 8
13	OVL 1
14	OVL 9
15	OVL 10
16	OVL 11

* See Note 10

FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



NOTES

1. To prevent "flash-conflict" problems, wire all unused load switches to flash red. Verify that signal heads flash in accordance with the signal plans.
2. To prevent red failures on unused monitor channels, tie unused load switch red output 8 to load switch AC+ by inserting a jumper plug in the unused load switch socket from pin 1 (LS AC+) to pin 3 (RED out). Make sure all flash transfer relays are in place.
3. Program controller to start up in phase 2, 6, and 9 Green.
4. Set power-up flash time to 10 seconds and implement on the Malfunction Management Unit. Set controller power-up flash time to 0 seconds.
5. Enable simultaneous gap-out feature for all phases.
6. Program detectors in accordance with the manufacturer's instructions to accomplish the detection schemes shown on the signal design plans.
7. Program detector call delay and extension timing on the controller, unless otherwise specified.
8. Set all detector card unit channels to "presence" mode.
9. Program phases 4 and 8 for dual entry.
10. Phase 8 operates as a control phase for overlap operation. To limit the phase 8 output, assign load switch 8 to (dummy) overlap 20.
11. The cabinet and controller are a part of the Arlington County Signal System.

EQUIPMENT INFORMATION

CONTROLLER.....INTELIGHT
CABINET TS-2
SOFTWARE .....MAXTIME
CABINET MOUNT.....BASE
LOADBAY POSITIONS.....16
LOAD SWITCHES USED.....1,2,3,4,5,6,7,9,10,11,12,13,14,15,16
PHASES USED.....1,2,2 PED,4,6,8,9,10
OVL 1.....1,2
OVL 2.....4
OVL 3.....6,8
OVL 4.....9
OVL 5.....10
OVL 6.....NONE
OVL 7.....10
OVL 8.....9,10
OVL 9.....NONE
OVL 10.....9
OVL 11.....9,10

* See Maxtime Overlap Programming Detail

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH	1		2	3	4		5	6	7	8	9	10	11	12	13	14	15	16
PHASE	1		2	OVL2	4		OVL4	OVL3	OVL5	OVL20	2 PED	OVL6	OVL7	OVL8	OVL1	OVL9	OVL10	OVL11
SIGNAL HEAD NO.	** 11	42	21,22	22	41	42	S-1, S-2	61,62	S-6	NU	P21, P22	L1	L2	L3	** 11	L4	L5	L6
RED	*		2R	*	4R	4R		6R										
YELLOW			2Y		4Y	4Y	*	6Y	*									
GREEN			2G		4G	4G												
RED ARROW															13R			
YELLOW ARROW		1Y		3Y											13Y			
FLASHING YELLOW ARROW																		
GREEN ARROW	1G	1G		3G	4G			6G							13G			
											9R							
											9G							
ONLY							5G											
							5R											
ONLY							5G											
RIGHT									7R									
CENTER									7G									
RED												10R	11R	12R		14R	15R	16R
YELLOW												10Y	11Y	12Y		14Y	15Y	16Y
GREEN												10G	11G	12G		14G	15G	16G

NU = Not Used

* Denotes install load resistor. See Load Resistor Installation Detail on sheet 3.

** See pictorial of head wiring detail this sheet.

MAXTIME OVERLAP PROGRAMMING

OVERLAP #	TYPE	INCLUDED PHASES	MODIFIER PHASES	NEGATIVE PHASES	DESCRIPTION
1	FYA - 4 SECTION	2	1		HEAD 11: FLASHING YELLOW ARROW
2	NORMAL	4		8	HEAD 22 - RIGHT TURN OVERLAP
3	NORMAL	6,8			HEADS 61 AND 62 - TIME OF DAY CONTROLLED THROUGH MOVEMENT
4	NORMAL	9			S-1 AND S-2: WESTBOUND REGULATORY BLANK OUT SIGNS
5	NORMAL	10			S-6: VARIABLE STATIC SIGN
6	NORMAL				L1 - LANE CONTROL BLANK OUT SIGN
7	NORMAL	10			L2 - LANE CONTROL BLANK OUT SIGN
8	CUSTOM 1	9,10			L3 - LANE CONTROL BLANK OUT SIGN
9	NORMAL				L4 - LANE CONTROL BLANK OUT SIGN
10	NORMAL	9			L5 - LANE CONTROL BLANK OUT SIGN
11	CUSTOM 1	9,10			L6 - LANE CONTROL BLANK OUT SIGN

CUSTOM OVERLAP RULES

RULE	CUSTOM OVERLAP	INCLUDED STATE	MODIFIER STATE	NEGATIVE STATE	CUSTOM OUTPUT	FLASH
1	CUSTOM 1	ANY	ANY	OFF	GREEN	NOT SET

SEQUENCE CONFIGURATION

(normal operation)

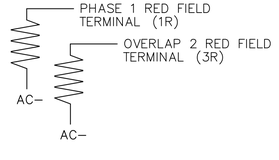
SEQUENCE 1	
RING	SEQUENCE DATA
1	1,2,A,4,B
2	6,A,B
3	9,C

(am peak only 6:00am to 9:30am)

SEQUENCE 2	
RING	SEQUENCE DATA
1	1,2,A,4,B
2	6,A,8,B
3	10,C

LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown)



ACCEPTABLE VALUES

VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)

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TRAFFIC SIGNALS MANAGER	10/04/19
CHIEF, T&O BUREAU	10/04/2019
DIRECTOR OF TRANSPORTATION	10/4/19

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ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

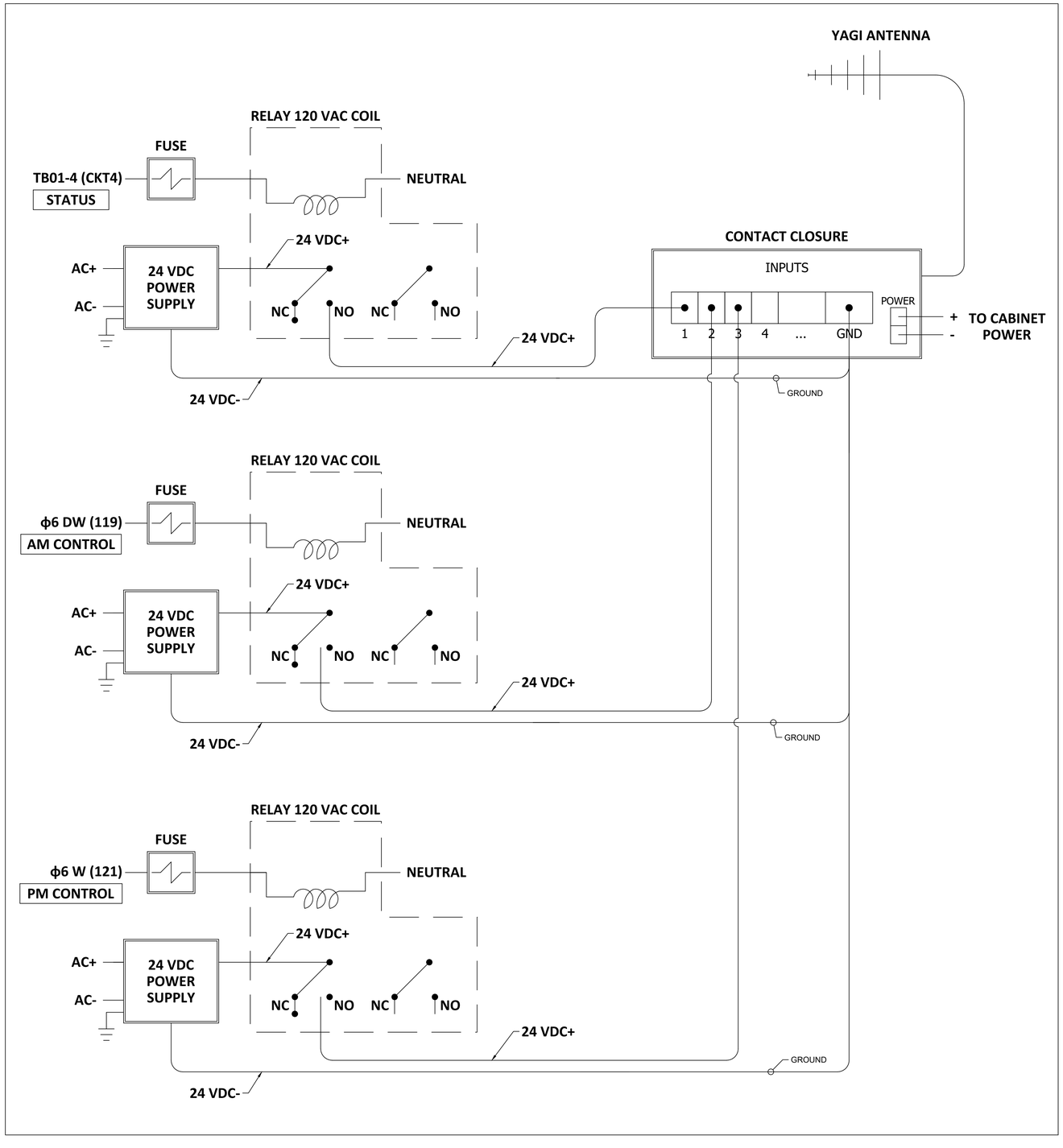
CONTROLLER PROGRAMMING DETAILS
N. GLEBE ROAD ITS IMPROVEMENTS

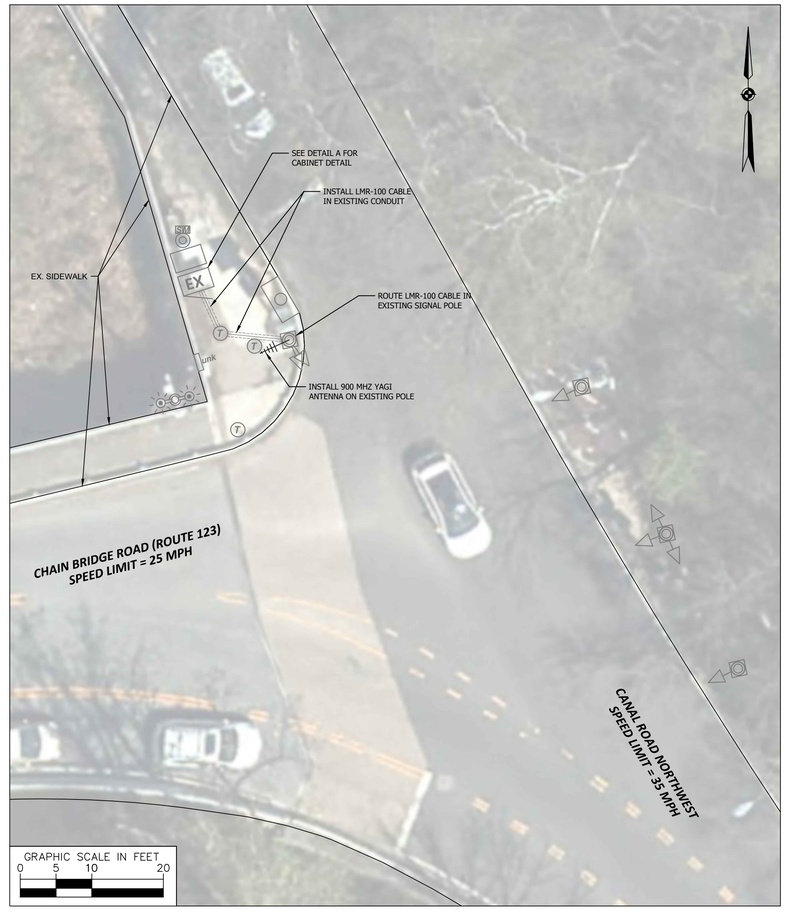
CONSTRUCTION DOCUMENTS

SCALE: HOR. N/A VERT. N/A

SHEET: 0602

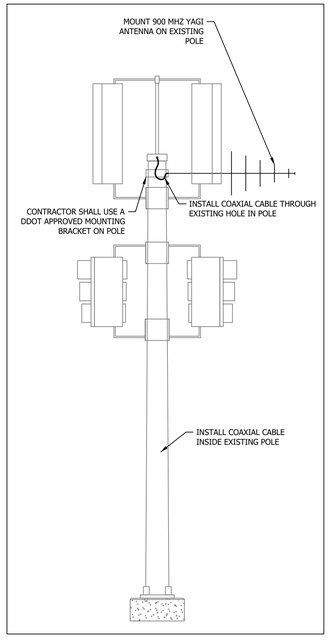
DETAIL A: DDOT CABINET





DETAIL B: 900 MHZ COMMUNICATION DETAIL

NOT TO SCALE



CONSTRUCTION NOTES

1. ALL WORK ON DDOT INFRASTRUCTURE MUST BE PERFORMED BY M.C. DEAN OR AN APPROVED DDOT CONTRACTOR.
2. DDOT STAFF OR AN APPROVED DDOT REPRESENTATIVE MUST BE ON-SITE PRIOR TO ANY CONSTRUCTION ACTIVITIES TAKING PLACE.
3. CONTRACTOR STAFF IS NOT PERMITTED TO PERFORM SIGNAL CONTROLLER PROGRAMMING ON DDOT EQUIPMENT. THE CONTRACTOR SHALL CONTACT HARVEY ALEXANDER (202-671-1495) TO COORDINATE ANY SIGNAL CONTROLLER PROGRAMMING.

ARLINGTON
VIRGINIA

DEPARTMENT OF ENVIRONMENTAL SERVICES

Signal Systems and ITS
Traffic Engineering and Operations Bureau
2100 Clarendon Boulevard, Suite 900
Arlington, VA 22201
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Kimley»Horn
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Seal

COMMONWEALTH OF VIRGINIA
GEOFF D. GIFFIN
Lic. No. 039584
09/18/2019
PROFESSIONAL ENGINEER
FINAL DESIGN PLANS

Approvals	Date
DESIGN TEAM SUPERVISOR	10/4/19
TRAFFIC SIGNALS MANAGER	10/04/19
CHIEF, T&O BUREAU	10/04/2019
DIRECTOR OF TRANSPORTATION	10/4/19

Revisions	Date

Designed: NM
Drawn: JW
Checked: GG
Miss Utility Transmittal #:

Filename: 0701 ITS DESIGN PLAN - DC SIDE.dwg
Path: K:\NVA_TPTO\110010100 - Glebe Road ITS Design\CAD\PlanSheets
Plotted: September 18, 2019
Plotted by: Kelley.Frank

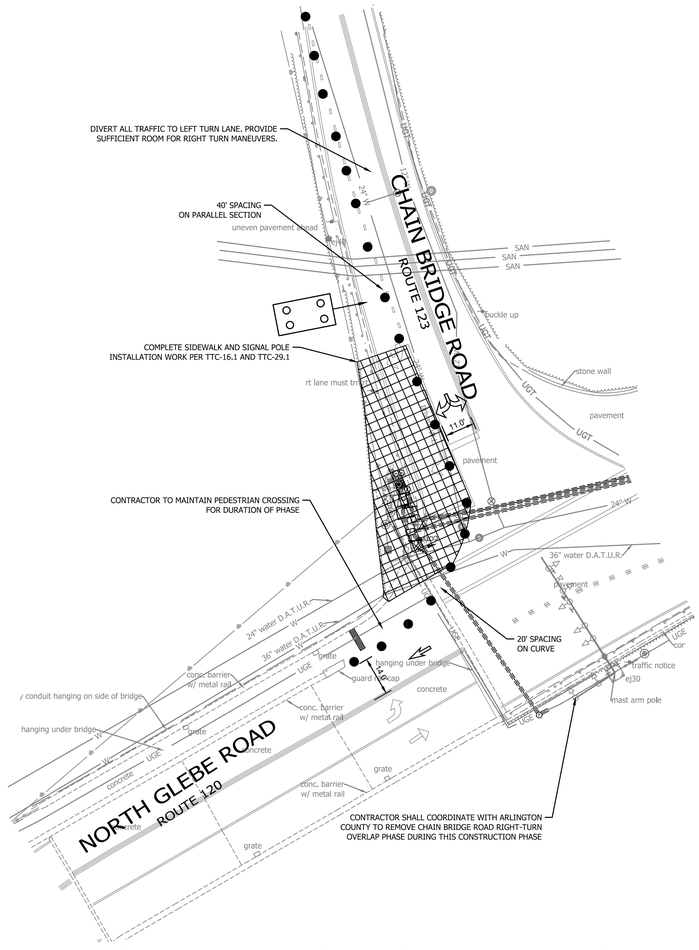
ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

ITS DESIGN PLAN - DC SIDE
N. GLEBE ROAD ITS IMPROVEMENTS

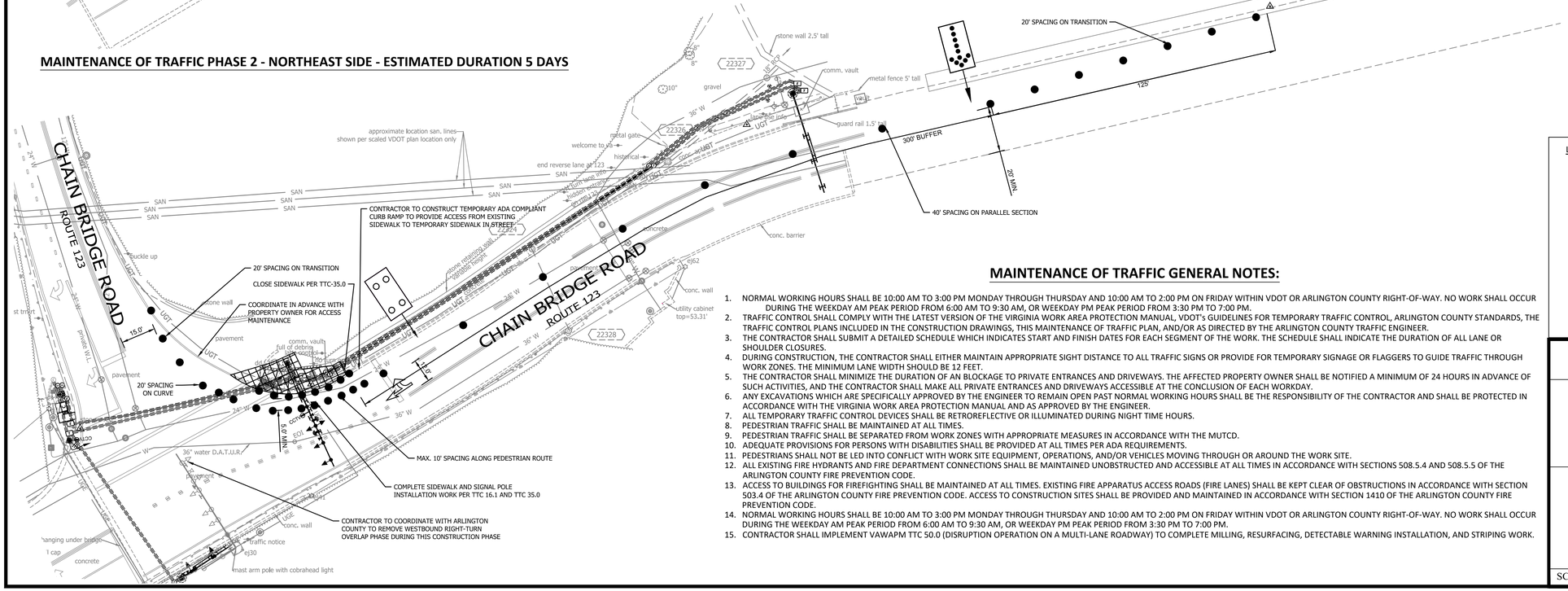
CONSTRUCTION DOCUMENTS

SCALE: HOR. 1"=10' VERT. N/A | SHEET: 0603

MAINTENANCE OF TRAFFIC PHASE 1 - NORTHWEST SIDE - ESTIMATED DURATION 15 DAYS



MAINTENANCE OF TRAFFIC PHASE 2 - NORTHEAST SIDE - ESTIMATED DURATION 5 DAYS



MAINTENANCE OF TRAFFIC GENERAL NOTES:

1. NORMAL WORKING HOURS SHALL BE 10:00 AM TO 3:00 PM MONDAY THROUGH THURSDAY AND 10:00 AM TO 2:00 PM ON FRIDAY WITHIN VDOT OR ARLINGTON COUNTY RIGHT-OF-WAY. NO WORK SHALL OCCUR DURING THE WEEKDAY AM PEAK PERIOD FROM 6:00 AM TO 9:30 AM, OR WEEKDAY PM PEAK PERIOD FROM 3:30 PM TO 7:00 PM.
2. TRAFFIC CONTROL SHALL COMPLY WITH THE LATEST VERSION OF THE VIRGINIA WORK AREA PROTECTION MANUAL, VDOT'S GUIDELINES FOR TEMPORARY TRAFFIC CONTROL, ARLINGTON COUNTY STANDARDS, THE TRAFFIC CONTROL PLANS INCLUDED IN THE CONSTRUCTION DRAWINGS, THIS MAINTENANCE OF TRAFFIC PLAN, AND/OR AS DIRECTED BY THE ARLINGTON COUNTY TRAFFIC ENGINEER.
3. THE CONTRACTOR SHALL SUBMIT A DETAILED SCHEDULE WHICH INDICATES START AND FINISH DATES FOR EACH SEGMENT OF THE WORK. THE SCHEDULE SHALL INDICATE THE DURATION OF ALL LANE OR SHOULDER CLOSURES.
4. DURING CONSTRUCTION, THE CONTRACTOR SHALL EITHER MAINTAIN APPROPRIATE SIGHT DISTANCE TO ALL TRAFFIC SIGNS OR PROVIDE FOR TEMPORARY SIGNAGE OR FLAGGERS TO GUIDE TRAFFIC THROUGH WORK ZONES. THE MINIMUM LANE WIDTH SHOULD BE 12 FEET.
5. THE CONTRACTOR SHALL MINIMIZE THE DURATION OF AN BLOCKAGE TO PRIVATE ENTRANCES AND DRIVEWAYS. THE AFFECTED PROPERTY OWNER SHALL BE NOTIFIED A MINIMUM OF 24 HOURS IN ADVANCE OF SUCH ACTIVITIES, AND THE CONTRACTOR SHALL MAKE ALL PRIVATE ENTRANCES AND DRIVEWAYS ACCESSIBLE AT THE CONCLUSION OF EACH WORKDAY.
6. ANY EXCAVATIONS WHICH ARE SPECIFICALLY APPROVED BY THE ENGINEER TO REMAIN OPEN PAST NORMAL WORKING HOURS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE PROTECTED IN ACCORDANCE WITH THE VIRGINIA WORK AREA PROTECTION MANUAL AND AS APPROVED BY THE ENGINEER.
7. ALL TEMPORARY TRAFFIC CONTROL DEVICES SHALL BE RETROREFLECTIVE OR ILLUMINATED DURING NIGHT TIME HOURS.
8. PEDESTRIAN TRAFFIC SHALL BE MAINTAINED AT ALL TIMES.
9. PEDESTRIAN TRAFFIC SHALL BE SEPARATED FROM WORK ZONES WITH APPROPRIATE MEASURES IN ACCORDANCE WITH THE MUTCD.
10. ADEQUATE PROVISIONS FOR PERSONS WITH DISABILITIES SHALL BE PROVIDED AT ALL TIMES PER ADA REQUIREMENTS.
11. PEDESTRIANS SHALL NOT BE LED INTO CONFLICT WITH WORK SITE EQUIPMENT, OPERATIONS, AND/OR VEHICLES MOVING THROUGH OR AROUND THE WORK SITE.
12. ALL EXISTING FIRE HYDRANTS AND FIRE DEPARTMENT CONNECTIONS SHALL BE MAINTAINED UNOBSTRUCTED AND ACCESSIBLE AT ALL TIMES IN ACCORDANCE WITH SECTIONS 508.5.4 AND 508.5.5 OF THE ARLINGTON COUNTY FIRE PREVENTION CODE.
13. ACCESS TO BUILDINGS FOR FIREFIGHTING SHALL BE MAINTAINED AT ALL TIMES. EXISTING FIRE APPARATUS ACCESS ROADS (FIRE LANES) SHALL BE KEPT CLEAR OF OBSTRUCTIONS IN ACCORDANCE WITH SECTION 503.4 OF THE ARLINGTON COUNTY FIRE PREVENTION CODE. ACCESS TO CONSTRUCTION SITES SHALL BE PROVIDED AND MAINTAINED IN ACCORDANCE WITH SECTION 1410 OF THE ARLINGTON COUNTY FIRE PREVENTION CODE.
14. NORMAL WORKING HOURS SHALL BE 10:00 AM TO 3:00 PM MONDAY THROUGH THURSDAY AND 10:00 AM TO 2:00 PM ON FRIDAY WITHIN VDOT OR ARLINGTON COUNTY RIGHT-OF-WAY. NO WORK SHALL OCCUR DURING THE WEEKDAY AM PEAK PERIOD FROM 6:00 AM TO 9:30 AM, OR WEEKDAY PM PEAK PERIOD FROM 3:30 PM TO 7:00 PM.
15. CONTRACTOR SHALL IMPLEMENT VAWAPM TTC 50.0 (DISRUPTION OPERATION ON A MULTI-LANE ROADWAY) TO COMPLETE MILLING, RESURFACING, DETECTABLE WARNING INSTALLATION, AND STRIPING WORK.

GRAPHIC SCALE IN FEET
0 12.5 25 50

LEGEND

- ARROW PANEL
- ARROW PANEL ON TRAILER
- APPROXIMATE LIMITS OF WORK AREA
- LANE USE
- CHANNELIZING DEVICE**

Typical Traffic Control
Outside Lane Closure Operation on a Four-Lane Roadway
(Figure TTC-16.1)
NOTES

Standard:

1. **On divided highways having a median wider than 8', right and left sign assemblies shall be required.**

Guidance:

2. *Sign spacing should be 1300'-1500' for Limited Access highways. For all other roadways, the sign spacing should be 500'-800' where the posted speed limit is greater than 45 mph, and 350'-500' where the posted speed limit is 45 mph or less.*
3. *Care should be exercised when establishing the limits of the work zone to insure maximum possible sight distance in advance of the transition, based on the posted speed limit and at least equal to or greater than the values in Table 6H-3. For Limited Access highways a minimum of 1000' is desired.*
4. *All vehicles, equipment, workers, and their activities should be restricted to one side of the pavement.*

Standard:

5. **Taper Length (L) and Channelizing Device Spacing shall be:**

Taper Length (L)				
Speed Limit (mph)	Lane Width (Feet)			
	9	10	11	12
25	95	105	115	125
30	135	150	165	180
35	185	205	225	245
40	240	270	296	320
45	405	450	495	540
50	450	500	550	600
55	495	550	605	660 *
60	540	600	660	720
65	585	650	715	780
70	630	700	770	840
Minimum taper lengths for Limited Access highways shall be 1000 feet.				
Shoulder Taper = ½ L Minimum				

Channelizing Device Spacing	
Location	Speed Limit (mph)
	0 - 35 / 36 +
Transition Spacing	20' / 40'
Travelway Spacing	40' / 80'
Construction Access*	80' / 120'

* Spacing may be increased to this distance, but shall not exceed one access per ¼ mile.

On roadways with paved shoulders having a width of 8 feet or more, channelizing devices shall be used to close the shoulder in advance of the merging taper to direct vehicular traffic to remain within the traveled way.

6. **An arrow board shall be used when a lane is closed. When more than one lane is closed, a separate arrow board shall be used for each closed lane (see Figure TTC-1B).**
7. **The buffer space length shall be shown in Table 6H-1 on Page 6H-5 for the posted speed limit.**
8. **A shadow vehicle with either a Type B or C arrow board operating in the caution mode, or at least one high intensity amber rotating, flashing, or oscillating light shall be parked 80'-120' in advance of the first work crew. When the posted speed limit is 45 mph or greater, a truck-mounted attenuator shall be used.**
9. **Vehicle hazard warning signals shall not be used instead of the vehicle's high-intensity amber rotating, flashing, or oscillating lights but can be used to supplement the amber rotating, flashing, or oscillating lights.**
10. **When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed as needed.**

1: Revision 1 – 4/1/2015

Typical Traffic Control
Turn Lane Closure Operation
(Figure TTC-29.1)
NOTES

Guidance:

1. *Sign spacing distance should be 350'-500' where the posted speed limit is 45 mph or less, 500'-800' where the posted speed limit is greater than 45 mph.*

Standard:

2. **On divided highways having a median wider than 8', right and left sign assemblies shall be required.**
3. **To prevent accidental intrusion into the work area, channelizing device spacing shall not exceed 20' on centers.**

Option:

4. This layout may be used for either right or left turn lane closures.
5. For a high volume of turning movements, additional traffic control devices, such as signs (graphic NO LEFT TURN (R3-2) or LEFT LANE MUST TURN LEFT (R3-7L)), channelizing devices and vehicles may be used

Standard:

6. **Taper Length (L) shall be:**

Speed Limit (mph)	Lane Width (Feet)			
	9	10	11	12
≤30	95	105	115	125
35	135	150	165	180
40	185	205	225	245
45	240	270	296	320
50	405	450	495	540
55	450	500	550	600
60	495	550	605	660
65	540	600	660	720
Shoulder Taper = ½ L Minimum				

7. **Buffer Space Length shall be:**

Posted Speed Limit (mph)	Distance (Feet)*
≤25	115–155
30	155–185
35	205–215
40	250–280
45	305–350
50	425–445
55	500–530
60	570–600
65	645–675
70	730–780

Guidance:

8. *If the work space extends across a crosswalk, the crosswalk should be closed using the information and devices shown in Figure TTC-36.*

Support:

9. Turns can be prohibited as required by vehicular traffic conditions. Unless the streets are wide, it might be physically impossible to make certain turns, especially for large vehicles.

1: Revision 1 – 4/1/2015

Typical Traffic Control
Sidewalk Closure and Bypass Sidewalk Operation
(Figure TTC-35.0)
NOTES

Standard:

1. **When crosswalks or other pedestrian facilities are closed or relocated, temporary facilities shall be detectable and shall include accessibility features consistent with the features present in the existing pedestrian facility.**

Guidance:

2. *Where high speeds are anticipated, a temporary traffic barrier and, if necessary, a crash cushion should be used to separate the temporary sidewalks from vehicular traffic.*
3. *Audible information devices should be considered where midblock clinings and changed crosswalk areas cause inadequate communication to be provided to pedestrians who have visual disabilities.*
4. *Temporary markings should be considered for operations exceeding three days in duration.*

Option:

5. Only the TTC devices related to pedestrians are shown. Other devices, such as lane closure signing or ROAD NARROWS (W5-1) signs, may be used to control vehicular traffic.
6. For nighttime closures, Type A Flashing warning lights may be used on barricades that support signs and close sidewalks.
7. Signs, such as KEEP RIGHT (R4-V7R) and KEEP LEFT (R4-V7L), may be placed along a temporary sidewalk to guide or direct pedestrians.

Standard:

8. **All sidewalk closures shall be closed with Type 3 Barricades.**

Typical Traffic Control
Disruption Operation on a Multi-Lane Roadway
(Figure TTC-50.0)
NOTES

Support:

1. Conditions represented are a planned closure not exceeding 20 minutes during the daytime.

Guidance:

2. *On Limited Access highways, the sign spacing distance and flagger distance should be 1300'- 1500'. For all other roadways, the distance between the advance warning signs and between the flagger should be 500'-800' where the posted speed limit is 45 mph or less.*
3. *Care should be exercised when establishing the limits of the work zone to insure maximum possible sight distance in advance of the transition, based on the posted speed limit and at least equal to or greater than the values in Table 6H-3. For Limited Access highways a minimum of 1000' is desired.*
4. *The buffer space length should be as shown in Table 6H-3 on Page 6H-5 for the posted speed limit.*

Standard:

5. **On divided highways having a median wider than 8', right and left sign assemblies shall be required.**
6. **Flagging stations shall be located far enough in advance of the operation to permit approaching traffic to reduce speed and/or stop before passing into the operation.**
7. **All flaggers shall be state certified and have their certification card in their possession when performing flagging duties and shall follow the procedures noted in Sections 6E.04 and 6E.05.**
8. **A minimum of four (4) drum channelizing devices shall be placed on the shoulder in advance of the PCMS in a taper for delineation (see Figure 6H-4).**

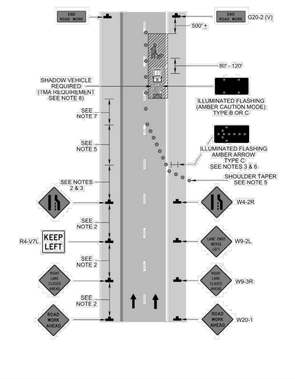
Guidance:

9. *A Portable Changeable Message Sign (PCMS) should be used on Limited Access highways and placed a minimum of one mile in advance of the warning signs warning of the operation ahead (UTILITY WORK AHEAD) and advising of the action required (BE PREPARED TO STOP).*
10. *Disruptions to traffic should be coordinated with all entities involved in advance and performed during off-peak hours to minimize the impact on the motoring public. On Limited Access highways, State Police should assist with the stoppage of traffic.*

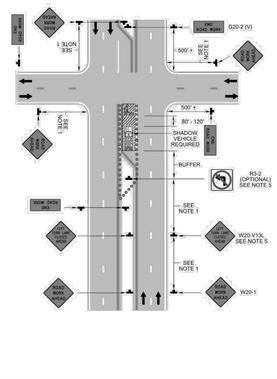
Option:

11. A uniformed law enforcement officer may be used for this application in place of the flagger.
12. The ROAD WORK AHEAD (W20-1) sign may be replaced with other appropriate signs such as UTILITY WORK AHEAD (W21-7).

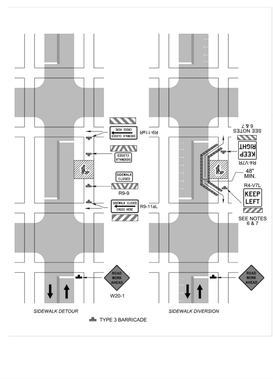
Outside Lane Closure Operation on a Four-Lane Roadway
(Figure TTC-16.1)



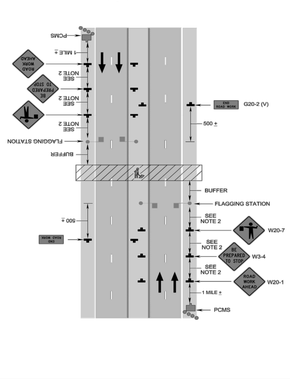
Turn Lane Closure Operation
(Figure TTC-29.1)



Sidewalk Closure and Bypass Sidewalk Operation
(Figure TTC-35.0)



Disruption Operation on a Multi-Lane Roadway
(Figure TTC-50.0)



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Fax: 703-674-1350

Seal
COMMONWEALTH OF VIRGINIA
MICHAEL R. ALBRIGHT
Lic. No. 46643
09/18/2019
PROFESSIONAL ENGINEER
FINAL DESIGN PLANS

Seal
ADVANCED WORK ZONE TRAFFIC CONTROL CERTIFICATE # 031618768

Revisions Date

Approvals Date
DESIGN TEAM SUPERVISOR 10/4/19
TRAFFIC SIGNALS MANAGER 10/04/19
CHIEF, TE&O BUREAU 10/04/2019
DIRECTOR OF TRANSPORTATION 10/4/19

Designed: TC
Drawn: TC
Checked: MA
Miss Utility Transmittal #:

Filename: 0701 MAINTENANCE OF TRAFFIC PLAN
Path: K:\NVA_TPTO\110010100 - Glebe Road ITS Design\CAD\PlanSheets
Plotted: September 18, 2019
Plotted by: Kelley.Frank

ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

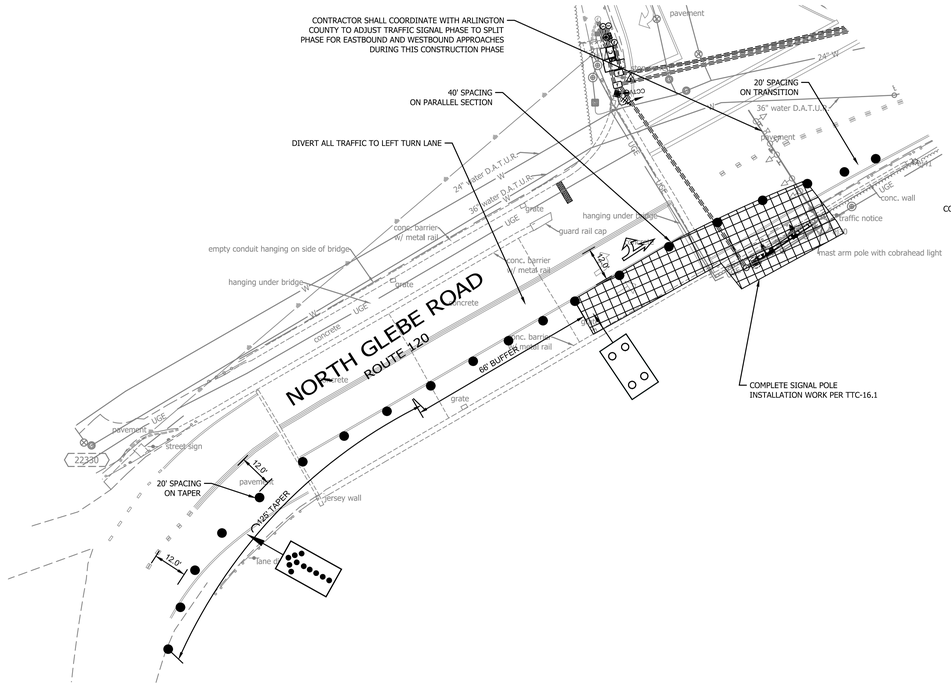
MAINTENANCE OF TRAFFIC PLAN
N. GLEBE ROAD ITS IMPROVEMENTS

FINAL DESIGN PLANS

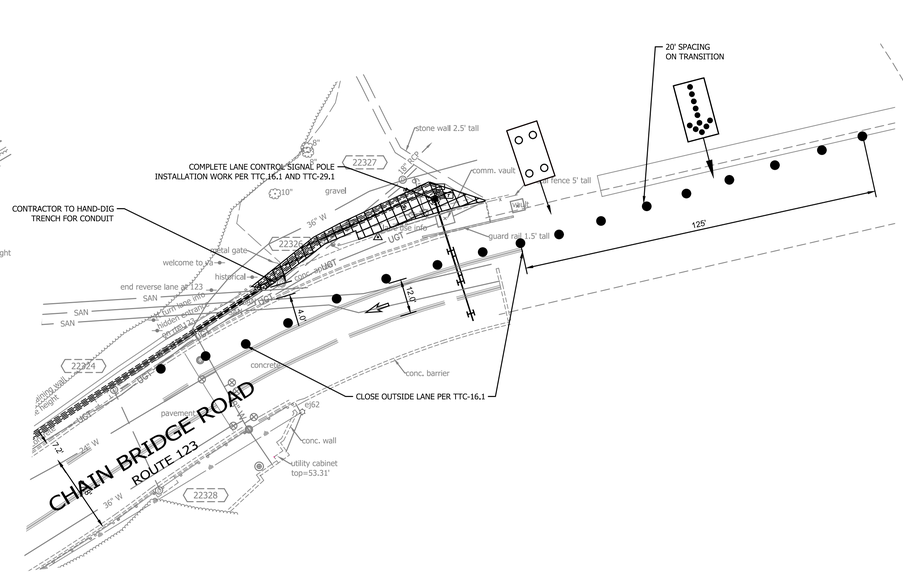
NOT FOR CONSTRUCTION

SCALE: HOR. 1" = 25' VERT. N/A | SHEET: 0700

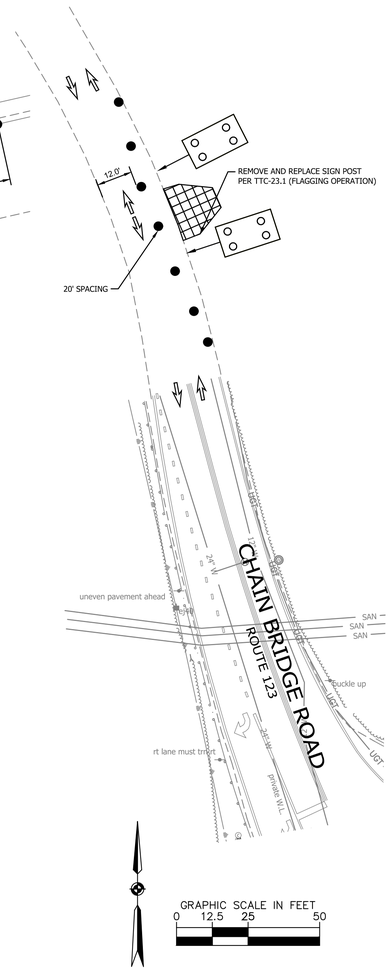
MAINTENANCE OF TRAFFIC PHASE 3 - SOUTHWEST SIDE - ESTIMATED DURATION 10 DAYS



MAINTENANCE OF TRAFFIC PHASE 4 - EAST SIDE - ESTIMATED DURATION 5 DAYS



MAINTENANCE OF TRAFFIC PHASE 5 - NORTH SIDE - ESTIMATED DURATION 5 DAYS



MAINTENANCE OF TRAFFIC GENERAL NOTES:

1. NORMAL WORKING HOURS SHALL BE 10:00 AM TO 3:00 PM MONDAY THROUGH THURSDAY AND 10:00 AM TO 2:00 PM ON FRIDAY WITHIN VDOT OR ARLINGTON COUNTY RIGHT-OF-WAY. NO WORK SHALL OCCUR DURING THE WEEKDAY AM PEAK PERIOD FROM 6:00 AM TO 9:30 AM, OR WEEKDAY PM PEAK PERIOD FROM 3:30 PM TO 7:00 PM.
2. TRAFFIC CONTROL SHALL COMPLY WITH THE LATEST VERSION OF THE VIRGINIA WORK AREA PROTECTION MANUAL, VDOT's GUIDELINES FOR TEMPORARY TRAFFIC CONTROL, ARLINGTON COUNTY STANDARDS, THE TRAFFIC CONTROL PLANS INCLUDED IN THE CONSTRUCTION DRAWINGS, THIS MAINTENANCE OF TRAFFIC PLAN, AND/OR AS DIRECTED BY THE ARLINGTON COUNTY TRAFFIC ENGINEER.
3. THE CONTRACTOR SHALL SUBMIT A DETAILED SCHEDULE WHICH INDICATES START AND FINISH DATES FOR EACH SEGMENT OF THE WORK. THE SCHEDULE SHALL INDICATE THE DURATION OF ALL LANE OR SHOULDER CLOSURES.
4. DURING CONSTRUCTION, THE CONTRACTOR SHALL EITHER MAINTAIN APPROPRIATE SIGHT DISTANCE TO ALL TRAFFIC SIGNS OR PROVIDE FOR TEMPORARY SIGNAGE OR FLAGGERS TO GUIDE TRAFFIC THROUGH WORK ZONES. THE MINIMUM LANE WIDTH SHOULD BE 12 FEET.
5. THE CONTRACTOR SHALL MINIMIZE THE DURATION OF AN BLOCKAGE TO PRIVATE ENTRANCES AND DRIVEWAYS. THE AFFECTED PROPERTY OWNER SHALL BE NOTIFIED A MINIMUM OF 24 HOURS IN ADVANCE OF SUCH ACTIVITIES, AND THE CONTRACTOR SHALL MAKE ALL PRIVATE ENTRANCES AND DRIVEWAYS ACCESSIBLE AT THE CONCLUSION OF EACH WORKDAY.
6. ANY EXCAVATIONS WHICH ARE SPECIFICALLY APPROVED BY THE ENGINEER TO REMAIN OPEN PAST NORMAL WORKING HOURS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE PROTECTED IN ACCORDANCE WITH THE VIRGINIA WORK AREA PROTECTION MANUAL AND AS APPROVED BY THE ENGINEER.
7. ALL TEMPORARY TRAFFIC CONTROL DEVICES SHALL BE RETROREFLECTIVE OR ILLUMINATED DURING NIGHT TIME HOURS.
8. PEDESTRIAN TRAFFIC SHALL BE MAINTAINED AT ALL TIMES.
9. PEDESTRIAN TRAFFIC SHALL BE SEPARATED FROM WORK ZONES WITH APPROPRIATE MEASURES IN ACCORDANCE WITH THE MUTCD.
10. ADEQUATE PROVISIONS FOR PERSONS WITH DISABILITIES SHALL BE PROVIDED AT ALL TIMES PER ADA REQUIREMENTS.
11. PEDESTRIANS SHALL NOT BE LED INTO CONFLICT WITH WORK SITE EQUIPMENT, OPERATIONS, AND/OR VEHICLES MOVING THROUGH OR AROUND THE WORK SITE.
12. ALL EXISTING FIRE HYDRANTS AND FIRE DEPARTMENT CONNECTIONS SHALL BE MAINTAINED UNOBSTRUCTED AND ACCESSIBLE AT ALL TIMES IN ACCORDANCE WITH SECTIONS 508.5.4 AND 508.5.5 OF THE ARLINGTON COUNTY FIRE PREVENTION CODE.
13. ACCESS TO BUILDINGS FOR FIREFIGHTING SHALL BE MAINTAINED AT ALL TIMES. EXISTING FIRE APPARATUS ACCESS ROADS (FIRE LANES) SHALL BE KEPT CLEAR OF OBSTRUCTIONS IN ACCORDANCE WITH SECTION 503.4 OF THE ARLINGTON COUNTY FIRE PREVENTION CODE. ACCESS TO CONSTRUCTION SITES SHALL BE PROVIDED AND MAINTAINED IN ACCORDANCE WITH SECTION 1410 OF THE ARLINGTON COUNTY FIRE PREVENTION CODE.
14. NORMAL WORKING HOURS SHALL BE 10:00 AM TO 3:00 PM MONDAY THROUGH THURSDAY AND 10:00 AM TO 2:00 PM ON FRIDAY WITHIN VDOT OR ARLINGTON COUNTY RIGHT-OF-WAY. NO WORK SHALL OCCUR DURING THE WEEKDAY AM PEAK PERIOD FROM 6:00 AM TO 9:30 AM, OR WEEKDAY PM PEAK PERIOD FROM 3:30 PM TO 7:00 PM.
15. CONTRACTOR SHALL IMPLEMENT VAWAPM TTC 50.0 (DISRUPTION OPERATION ON A MULTI-LANE ROADWAY) TO COMPLETE MILLING, RESURFACING, DETECTABLE WARNING INSTALLATION, AND STRIPING WORK.

Typical Traffic Control
Outside Lane Closure Operation on a Four-Lane Roadway
(Figure TTC-16.1)
NOTES

Standard:

1. On divided highways having a median wider than 8', right and left sign assemblies shall be required.

Guidance:

2. *Sign spacing should be 1500'-1500' for Limited Access highways. For all other roadways, the sign spacing should be 500'-800' where the posted speed limit is greater than 45 mph, and 350'-500' where the posted speed limit is 45 mph or less.*
3. *Care should be exercised when establishing the limits of the work zone to insure maximum possible sight distance in advance of the transition, based on the posted speed limit and at least equal to or greater than the values in Table 6H-3. For Limited Access highways a minimum of 1000' is desired.*
4. *All vehicles, equipment, workers, and their activities should be restricted to one side of the pavement.*

Standard:

5. Taper Length (L) and Channelizing Device Spacing shall be:

Taper Length (L)				
Speed Limit (mph)	**Lane Width (Feet)**			
	9	**10**	**11**	**12**
25	95	105	115	125
30	135	150	165	180
35	185	205	225	245
40	240	270	295	320
45	405	450	495	540
50	450	500	550	600
55	495	550	605	660
60	540	600	660	720
65	585	650	715	780
70	630	700	770	840
Minimum taper lengths for Limited Access highways shall be 1000 feet.				
Shoulder Taper = ½ L Minimum				

Channelizing Device Spacing	
Location	**Speed Limit (mph)**
	0 - 35 / **36 +**
Transition Spacing	20' / 40'
Traveleay Spacing	40' / 80'
Construction Access*	80' / 120'

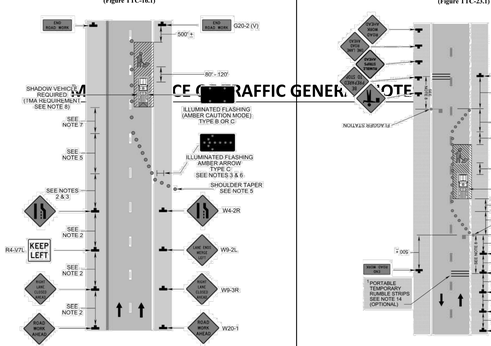
* Spacing may be increased to this distance, but shall not exceed one access per ½ mile.

On roadways with paved shoulders having a width of 8 feet or more, channelizing devices shall be used to close the shoulder in advance of the merging taper to direct vehicular traffic to remain within the traveled way.

6. An arrow board shall be used when a lane is closed. When more than one lane is closed, a separate arrow board shall be used for each closed lane (see Figure TTC-18).
7. The buffer space length shall be shown in Table 6H-3 on Page 6H-5 for the posted speed limit.
8. A shadow vehicle with either a Type B or C arrow board operating in the caution mode, or at least one high intensity amber rotating, flashing, or oscillating light shall be parked 80'-120' in advance of the first work crew. When the posted speed limit is 45 mph or greater, a truck-mounted attenuator shall be used.
9. Vehicle hazard warning signals shall not be used instead of the vehicle's high-intensity amber rotating, flashing, or oscillating lights but can be used to supplement the amber rotating, flashing, or oscillating lights.
10. When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed as needed.

1: Revision 1 – 4/1/2015

Outside Lane Closure Operation on a Four-Lane Roadway
(Figure TTC-16.1)



Typical Traffic Control
Lane Closure on a Two-Lane Roadway Using Flaggers
(Figure TTC-23.1)
NOTES

Guidance:

1. *Sign spacing distance should be 350'-500' where the posted speed limit is 45 mph or less, and 500'-800' where the posted speed limit is greater than 45 mph.*
2. *Care should be exercised when establishing the limits of the work zone to insure maximum possible sight distance in advance of the flagger station and transition, based on the posted speed limit and at least equal to or greater than the values in Table 6H-3. Generally speaking, motorists should have a clear line of sight from the graphic flagger symbol sign to the flagger.*

Option:

3. Where Right-of-Way or geometric conditions prevent the use of 48" x 48" signs, 36" x 36" signs may be used.

Standard:

4. Flagging stations shall be located far enough in advance of the work space to permit approaching traffic to reduce speed and/or stop before passing the work space and allow sufficient distance for departing traffic in the left lane to return to the right lane before reaching opposing traffic (see Table 6H-3 on Page 6H-5).
5. All flaggers shall be state certified and have their certification card in their possession when performing flagging duties (see Section 6E.01, Qualifications for Flaggers).
6. Cone spacing shall be based on the posted speed and the values in Table 6H-4 on Page 6H-6.
7. A shadow vehicle with at least one high intensity amber rotating, flashing, or oscillating light shall be parked 80'-120' in advance of the first work crew.

Option:

8. A supplemental flagger may be required in this area to give advance warning of the operation ahead by stirring approaching traffic prior to reaching the flagger station or queued traffic.

Guidance:

9. *If the queue of traffic reaches the BE PREPARED TO STOP (W3-4) sign then the sign(s) and if used the portable temporary rumble strips (PTRS), should be readjusted at greater distances.*
10. *When a highway-rail crossing exists within or upstream of the transition area and it is anticipated that queues resulting from the lane closure might extend through the highway-rail grade crossing, the temporary traffic control zone should be extended so that the transition area precedes the highway-rail crossing (see Figure TTC-56 for additional information on highway-rail crossings).*

Standard:

11. At night, flagger stations shall be illuminated, except in emergencies (see Section 6E.08).

Option:

12. Cones may be eliminated when using a pilot vehicle operation or when the total roadway width is 20 feet or less.
13. For low-volume situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger, positioned to be visible to road users approaching from both directions, may be used (see Chapter 6L).

Standard:

14. When approved for use, three portable temporary rumble (PTRS) strips shall be installed across the entire travel lane adjacent to the BE PREPARED TO STOP (W3-4) sign. The portable temporary rumble strips shall be monitored and adjusted as necessary during the work shift to ensure proper placement on the roadway. When the PTRS are installed, the RUMBLE STRIPS AHEAD (W20-V26) sign shall also be utilized.

Posted Speed	0 – 35 mph	36 – 55 mph
PTRS Spacing (Center to Center)	5 Feet	8 Feet

1: Revision 1 – 4/1/2015

Lane Closure on a Two-Lane Roadway Using Flaggers
(Figure TTC-23.1)

Typical Traffic Control
Turn Lane Closure Operation
(Figure TTC-29.1)
NOTES

Guidance:

1. *Sign spacing distance should be 350'-500' where the posted speed limit is 45 mph or less, 500'-800' where the posted speed limit is greater than 45 mph.*

Standard:

2. On divided highways having a median wider than 8', right and left sign assemblies shall be required.
3. To prevent accidental intrusion into the work area, channelizing device spacing shall not exceed 20' on centers.

Options:

4. This layout may be used for either right or left turn lane closures.
5. For a high volume of turning movements, additional traffic control devices, such as signs (graphic NO LEFT TURN (R3-2) or LEFT LANE MUST TURN LEFT (R3-7L)), channelizing devices and vehicles may be used

Standard:

6. Taper Length (L) shall be:

Speed Limit (mph)	Lane Width (Feet)			
	9	10	11	12
25	95	105	115	125
30	135	150	165	180
35	185	205	225	245
40	240	270	295	320
45	405	450	495	540
50	450	500	550	600
55	495	550	605	660
60	540	600	660	720
Shoulder Taper = ½ L Minimum				

7. Buffer Space Length shall be:

Posted Speed Limit (mph)	Distance (Feet)
25	100 – 155
30	150 – 205
35	200 – 255
40	250 – 305
45	300 – 360
50	350 – 410
55	500 – 560
60	570 – 630
65	640 – 670
70	730 – 780

Guidance:

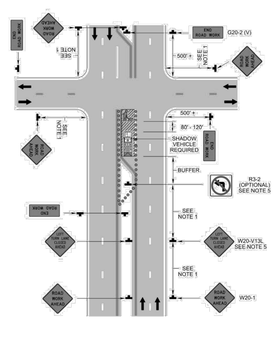
8. *If the work space extends across a crossroad, the crossroad should be closed using the information and devices shown in Figure TTC-36.*

Support:

9. Turns can be prohibited as required by vehicular traffic conditions. Unless the streets are wide, it might be physically impossible to make certain turns, especially for large vehicles.

1: Revision 1 – 4/1/2015

Turn Lane Closure Operation
(Figure TTC-29.1)



Typical Traffic Control
Disruption Operation on a Multi-Lane Roadway
(Figure TTC-50.0)
NOTES

Support:

1. Conditions represented are a planned closure not exceeding 20 minutes during the daytime.

Guidance:

2. *On Limited Access highways, the sign spacing distance and flagger distance should be 1500'- 1500'. For all other roadways, the distance between the advance warning signs and between the flagger should be 500'-800' where the posted speed limit is 45 mph or less.*
3. *Care should be exercised when establishing the limits of the work zone to insure maximum possible sight distance in advance of the transition, based on the posted speed limit and at least equal to or greater than the values in Table 6H-3. For Limited Access highways a minimum of 1000' is desired.*
4. *The buffer space length should be as shown in Table 6H-3 on Page 6H-5 for the posted speed limit.*

Standard:

5. On divided highways having a median wider than 8', right and left sign assemblies shall be required.
6. Flagging stations shall be located far enough in advance of the operation to permit approaching traffic to reduce speed and/or stop before passing into the operation.
7. All flaggers shall be state certified and have their certification card in their possession when performing flagging duties and shall follow the procedures noted in Sections 6E.04 and 6E.05.
8. A minimum of four (4) drum channelizing devices shall be placed on the shoulder in advance of the PCMS in a taper for dislineation (see Figure 6F-4).

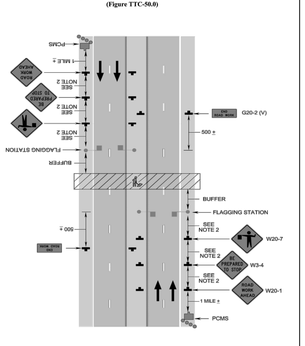
Guidance:

9. *A Portable Changeable Message Sign (PCMS) should be used on Limited Access highways and placed a minimum of one mile in advance of the warning signs warning of the operation ahead (UTILITY WORK AHEAD) and advising of the action required (BE PREPARED TO STOP).*
10. *Disruptions to traffic should be coordinated with all entities involved in advance and performed during off-peak hours to minimize the impact on the motoring public. On Limited Access highways, State Police should assist with the stoppage of traffic.*

Options:

11. A uniformed law enforcement officer may be used for this application in place of the flagger.
12. The ROAD WORK AHEAD (W20-1) sign may be replaced with other appropriate signs such as UTILITY WORK AHEAD (W21-7).

Disruption Operation on a Multi-Lane Roadway
(Figure TTC-50.0)



Seal

COMMONWEALTH OF VIRGINIA
MICHAEL R. ALBRIGHT
Lic. No. 46643
09/18/2019
PROFESSIONAL ENGINEER
FINAL DESIGN PLANS

Seal

ADVANCED WORK ZONE TRAFFIC CONTROL CERTIFICATE # 031618768

Revisions Date

Approvals	Date
DESIGN TEAM SUPERVISOR	10/4/19
TRAFFIC SIGNALS MANAGER	10/04/19
CHIEF, TEAM BUREAU	10/04/2019
DIRECTOR of TRANSPORTATION	10/4/19

Designed: TC
Drawn: TC
Checked: MA
Miss Utility Transmittal #:

Filename: 0701 MAINTENANCE OF TRAFFIC PLAN
Path: K:\NVA_TPTO\110010100 - Glebe Road ITS Design\CAD\PlanSheets
Plotted: September 18, 2019
Plotted by: Kelley.Frank

LEGEND

- ARROW PANEL
- ARROW PANEL ON TRAILER
- APPROXIMATE LIMITS OF WORK AREA
- LANE USE
- CHANNELIZING DEVICE**

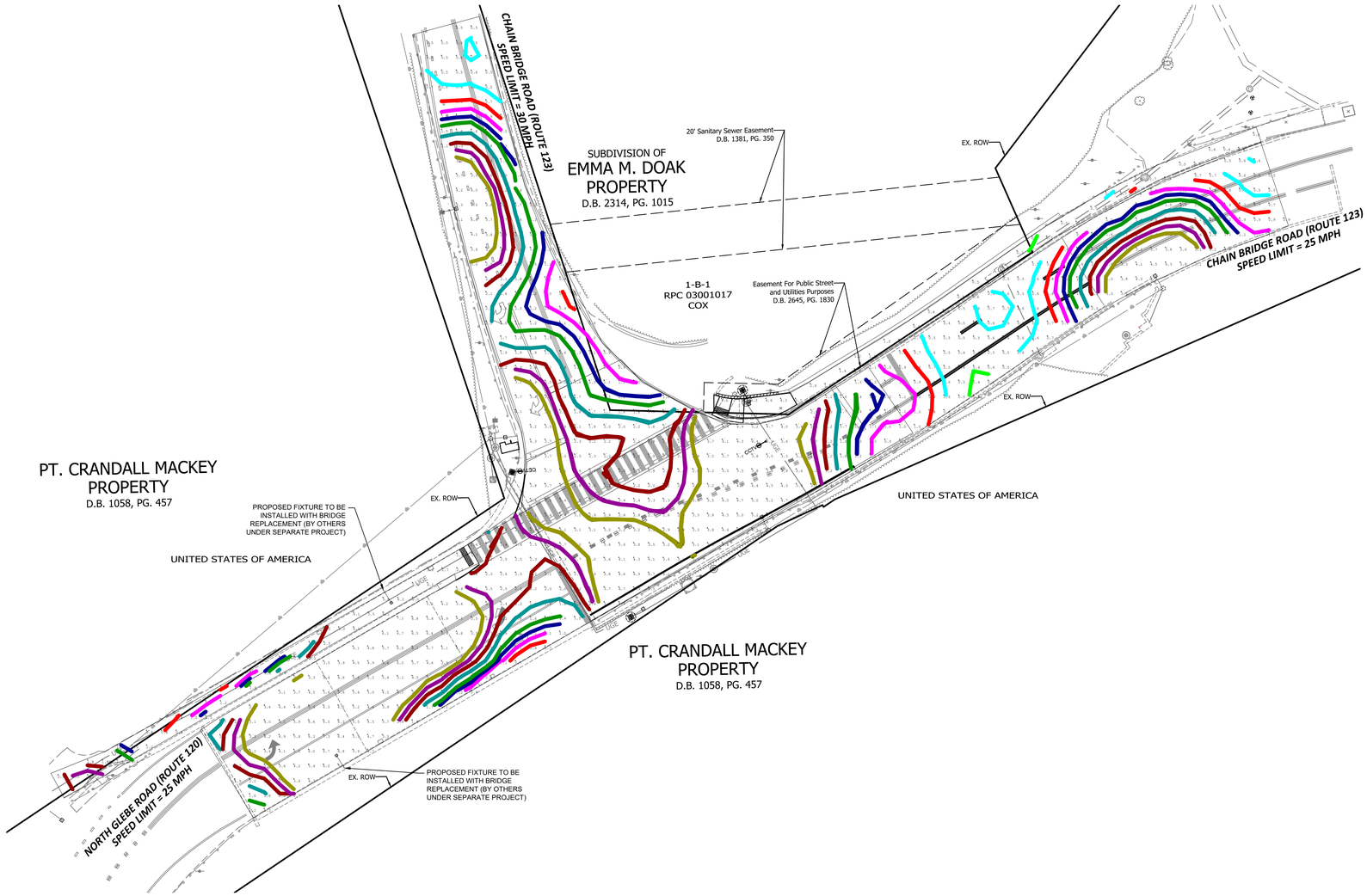
ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

MAINTENANCE OF TRAFFIC PLAN
N. GLEBE ROAD ITS IMPROVEMENTS

FINAL DESIGN PLANS

NOT FOR CONSTRUCTION

SCALE: HOR. 1" = 25' VERT. N/A | SHEET: 0701



GRAPHIC SCALE IN FEET
0 12.5 25 50

PHOTOMETRIC LEGEND

VALUE (FC)	COLOR	VALUE (FC)	COLOR
0.2		1.2	
0.3		1.4	
0.4		1.8	
0.6		2.2	
0.8		2.6	
1.0		3.0	

North Glebe Road and Chain Bridge Road Photometrics (Illuminance in footcandles)

Facility	Target		Calculation			Requirements Met?
	Avg	Min	Avg	Min	Avg/Min	
Intersection - Overall	1.2	0.4				
North Glebe Road and Chain Bridge Road			2.5	0.4	6.1	Yes
Intersection - Immediate Area	1.2	0.4				
North Glebe Road and Chain Bridge Road			2.8	0.9	3.1	Yes
Major Street Crosswalk	1.4	0.3				
Chain Bridge Road - Pedestrian Crossing			2.5	1.6	1.6	Yes
Sidewalk	0.8	0.2				
North Glebe Road - North Side			2.4	0.7	3.4	Yes
Chain Bridge Road - North Side			1.6	0.3	5.2	Yes

NOTE: "Overall" intersection calculation area extends to turn lane limits along the approaches. "Immediate Area" intersection calculation area extends between the stop bars.

NOTE: Photometric calculation includes two proposed GE LED Evolve fixtures located along the bridge over North Glebe Road. Fixtures are to be installed as part of the future VDOT bridge replacement project. The fixtures as shown will satisfy Arlington County roadway lighting standards at this intersection.

ARLINGTON
VIRGINIA

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Seal

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GEOFF D. GIFFIN
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PROFESSIONAL ENGINEER

FINAL DESIGN PLANS

Approvals Date

Approvals	Date
DESIGN TEAM SUPERVISOR	10/4/19
TRAFFIC SIGNALS MANAGER	10/04/19
CHIEF, TE&O BUREAU	10/04/2019
DIRECTOR OF TRANSPORTATION	10/4/19

Revisions Date

Designed: KF
Drawn: KF
Checked: GG
Miss Utility Transmittal #:

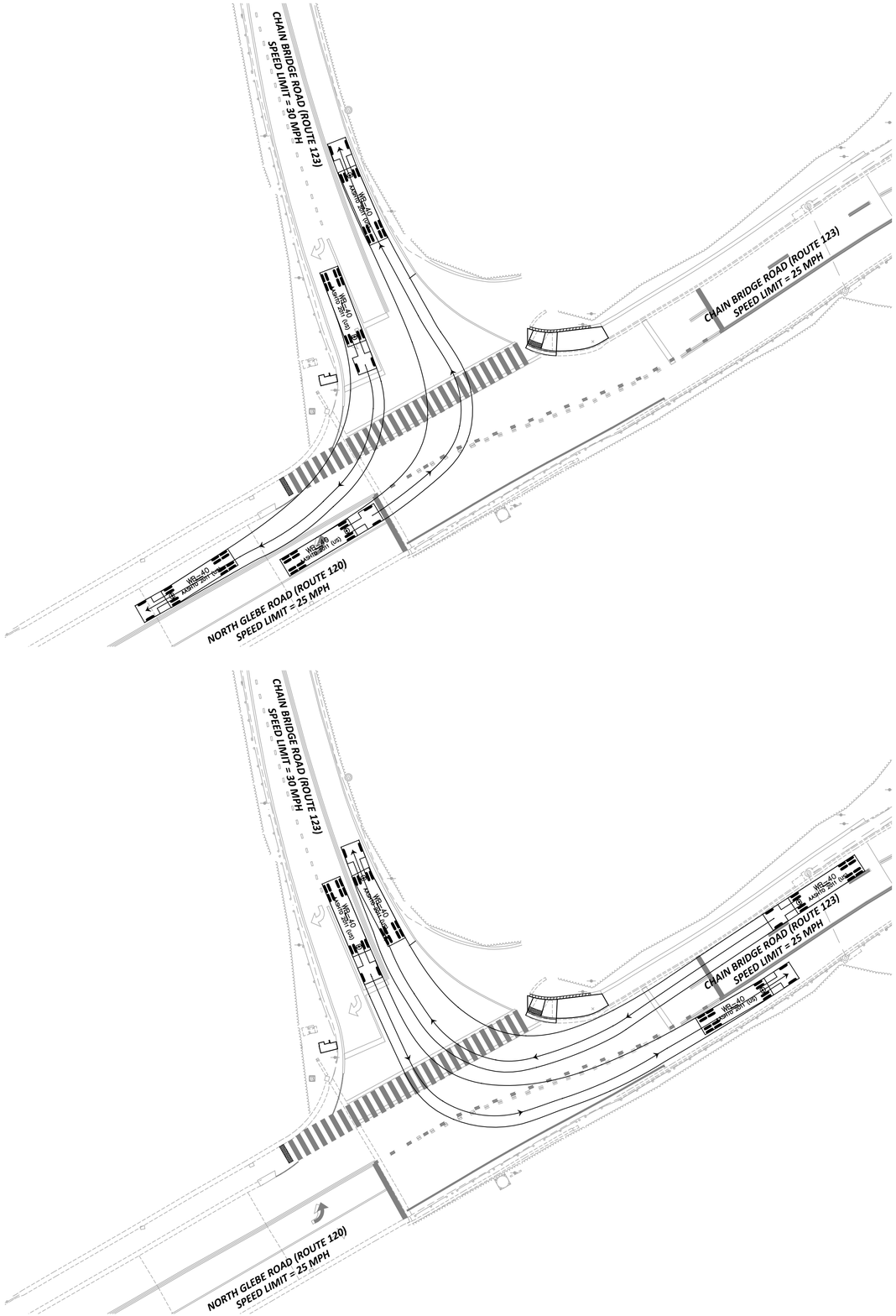
Filename: EXHIBIT A STREETLIGHT PHOTOMETR
Path: K:\NVA_TPTO\110010100 - Glebe Road ITS Design\CAD\PlanSheets
Plotted: September 18, 2019
Plotted by: Kelley.Frank

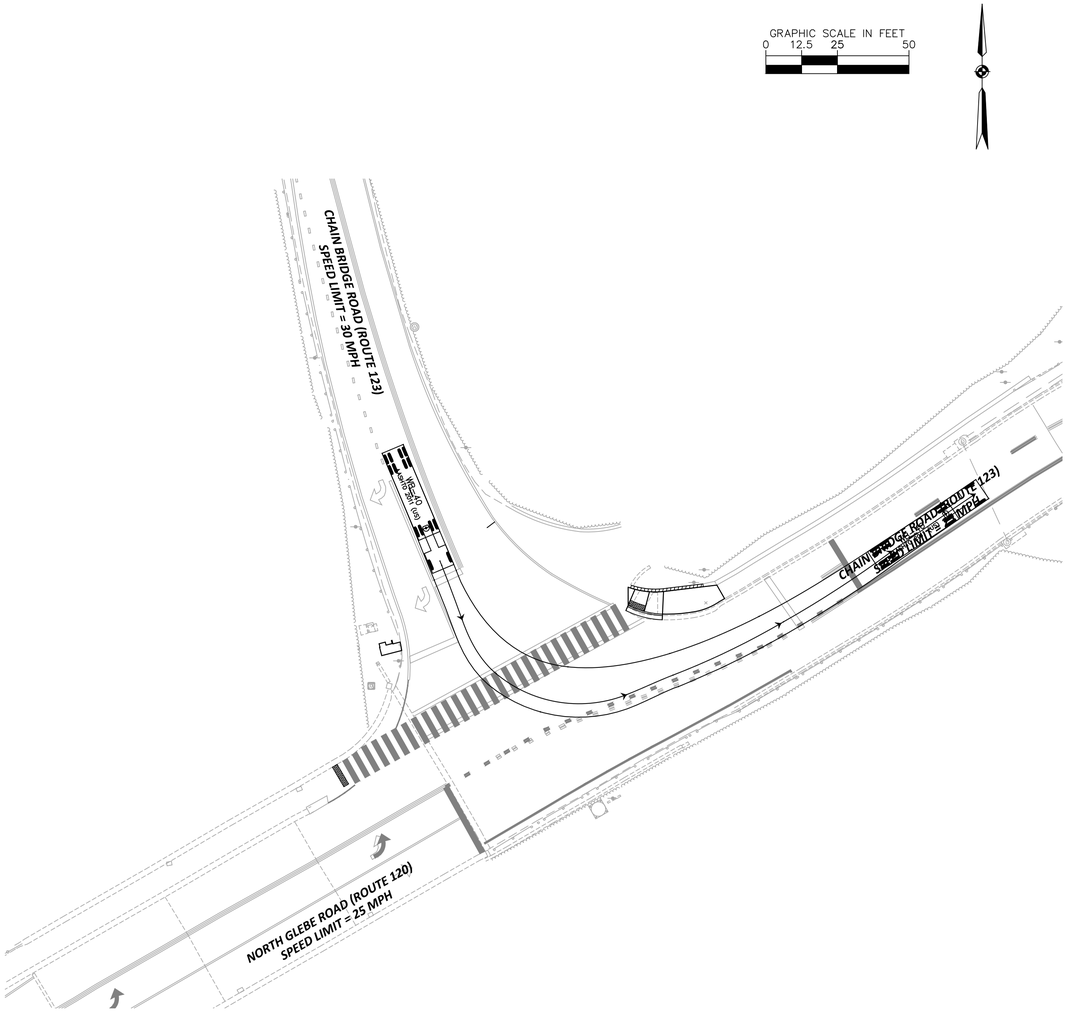
ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

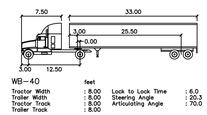
STREETLIGHT PHOTOMETRICS
N. GLEBE ROAD ITS IMPROVEMENTS

CONSTRUCTION DOCUMENTS

SCALE: HOR. 1"=25' VERT. N/A | SHEET: EXHIBIT A







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Seal

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09/18/2019
PROFESSIONAL ENGINEER

FINAL DESIGN PLANS

Approvals	Date
DESIGN TEAM SUPERVISOR	10/4/19
TRAFFIC SIGNALS MANAGER	10/04/19
CHIEF, T&O BUREAU	10/04/2019
DIRECTOR OF TRANSPORTATION	10/4/19

Revisions	Date

Designed: JW
Drawn: JW
Checked: GG
Miss Utility Transmittal #:

Filename: EXHIBIT B AUTOTURN EXHIBIT.dwg

Path: K:\NVA_TPTO\110010100 - Glebe Road ITS Design\CAD\PlanSheets

Plotted: September 18, 2019

Plotted by: Kelley.Frank

ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

AUTOTURN - N GLEBE ROAD AND CHAIN BRIDGE ROAD
N. GLEBE ROAD ITS IMPROVEMENTS

CONSTRUCTION DOCUMENTS

SCALE: HOR. 1"=25' VERT. N/A

SHEET: EXHIBIT B