WASHINGTON GAS
TYSONS CORNER 24" TRANSMISSION MAIN INSTALLATION PHASE 5

C-1001-087

ACCT# 353216

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COMMONWEALTH OF VIRGINIA
JAMES L. WALKER
Lic. No. 046640
03/03/2016
PROFESSIONAL ENGINEER

WASHINGTON GAS GENERAL NOTES:

1. ALL PIPE AND PIPELINE COMPONENTS ARE TO BE IN ACCORDANCE WITH WGLC CORPORATE ENGINEERING PIPING SPECIFICATIONS FOR TRANSMISSION SERVICE CLASSIFICATION.
2. ALL PIPING IS TO BE DESIGNED, FABRICATED, INSTALLED AND TESTED IN ACCORDANCE WITH CURRENT REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS TITLE 49, DEPARTMENT OF TRANSPORTATION, PART 192 "TRANSPORTATION OF NATURAL GAS AND OTHER GAS BY PIPELINE: MINIMUM FEDERAL SAFETY STANDARDS" FOR A CLASS 4 LOCATION (DESIGN FACTOR, F=0.4).
3. MAXIMUM ALLOWABLE OPERATING PRESSURE = 325 PSIG FOR 24" MAIN.
4. NON-DESTRUCTIVE TESTING AND EVALUATION OF PIPELINE WELDS ARE TO BE BASED ON SECTION 6 OF API 1104 STANDARDS (19TH EDITION, SEPT. 1999).
5. BUTT WELDS ARE TO BE 100% RADIOGRAPHED. X-RAY NUMBERS AND LOCATIONS ARE TO BE RECORDED ON AS-BUILT CONSTRUCTION DRAWINGS. X-RAY REPORTS ARE TO BE FORWARDED TO CORPORATE ENGINEERING FOR INCLUSION INTO PROJECT BOOK FILES.
6. WRAPPED PIPING SHALL MEET PRITEC 10/40 SPECIFICATIONS AS MANUFACTURED BY LIBERTY COATING OR APPROVED EQUAL. UNLESS OTHERWISE SPECIFIED, UNDERGROUND WELD JOINTS AND FITTINGS ARE TO BE WRAPPED WITH SHRINK SLEEVE AND EQUIVALENT SHRINK TAPE OR APPROVED EQUAL.
7. BELOW GRADE PIPING SHALL BE INSTALLED WITH FOUR FEET MINIMUM COVER, UNLESS OTHERWISE SHOWN ON DRAWINGS.
8. THE CONTRACTOR SHALL VISUALLY INSPECT EACH LENGTH OF PIPE AND OTHER PIPELINE COMPONENTS AT SITE OF INSTALLATION TO ENSURE NO DETERMINABLE DAMAGE HAS OCCURRED THAT MAY IMPAIR ITS SERVICEABILITY.
9. UNLESS OTHERWISE NOTED A MINIMUM VERTICAL CLEARANCE OF 24" SHOULD BE MAINTAINED BETWEEN UNDERGROUND NATURAL GAS PIPE AT CROSSINGS WITH OTHER UTILITY LINES.
10. ALL IDENTIFYING MARKS, I.E. SPECIFICATIONS, SIZE, WALL THICKNESS, SEAM TYPE, GRADE, HEAT NUMBER AND VALVE NAMEPLATE DATA, LOCATED ON PIPE AND PIPELINE COMPONENTS ARE TO BE RECORDED ON AS-BUILT CONSTRUCTION DRAWINGS.
11. CONTRACTOR/CONSTRUCTION PERSONNEL SHALL ENSURE THAT EVERY REASONABLE PRECAUTION IS TAKEN TO PROTECT ITS EMPLOYEES AND THE GENERAL PUBLIC DURING THE TESTING. WHENEVER THE HOOP STRESS OF THE SEGMENT OF THE PIPELINE BEING TESTED WILL EXCEED 50% OF SMYS, THE CONTRACTOR SHALL TAKE ALL PRACTICABLE STEPS TO KEEP PERSONS NOT WORKING ON THE TESTING OPERATION OUTSIDE OF THE TESTING AREA. THESE PRECAUTIONS SHALL BE IMPOSED UNTIL THE PRESSURE IS REDUCED TO A PRESSURE EQUAL TO THE PIPELINE MAOP.
12. BURIED VALVES WITH GREASE FITTINGS MUST INCLUDE LINES TO EXTEND THE GREASE FITTINGS INTO THE VALVE BOX FOR READY ACCESS.
13. OVERALL DIMENSIONS INCLUDE $\frac{1}{16}$" ALLOWANCE PER GASKET, EXCEPT AS NOTED.
14. PIPING MUST BE PROTECTED FROM LIGHTNING & GROUNDING PER STANDARD DRAWINGS B-GSS-EL-2, 3, & 4.
15. CONTACT DAVE BROWN 703 750-4487 48 HOURS PRIOR TO CONSTRUCTION.
16. ALL CATHODIC PROTECTION TEST STATIONS SHALL BE INSTALLED PER WASHINGTON GAS DESIGN AND CONSTRUCTION STANDARDS SECTION 7140. CORROSION CONTROL MUST BE CONTACTED BEFORE BEGINNING WORK AND WILL BE DESIGNED BY IMP GROUP.
17. COATING RESISTANCE TEST AFTER INSTALLATION CONTACT DAVE BROWN 703-750-7744.
18. ALL CONSTRUCTION SHALL CONFORM TO FAIRFAX COUNTY, WASHINGTON GAS LIGHT COMPANY, AND VDOT STANDARDS AND SPECIFICATIONS.
19. ALL TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH VIRGINIA WORK AREA PROTECTION MANUAL (LATEST EDITION).
20. EROSION & SEDIMENT CONTROL DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH CURRENT EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK STANDARDS AND SPECIFICATIONS.
21. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ALIGNMENT OF EXISTING FACILITIES PERTINENT TO THE PERFORMANCE OF HIS WORK AND MAKE ANY ADJUSTMENTS REQUIRED BEFORE FABRICATING NEW WORK. LOCATIONS OF EXISTING FACILITIES, UTILITIES, DIMENSIONS OF PIPE, ALIGNMENTS, EASEMENTS, AND OFFSETS ON THE CONTRACT DRAWINGS ARE BASED ON FIELD MARKINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING (AS REASONABLY FEASIBLE) ALL LOCATIONS PRIOR TO EXCAVATION AND FABRICATION OF ANY NECESSARY OFFSETS.
22. CONTRACTOR WILL RESTORE THE PAVEMENT IN ACCORDANCE WITH VDOT REQUIREMENTS.
23. WHEN ACCESSING EXISTING WRAPPED STEEL PIPE FOR A PERMANENT REPAIR OR NEW INSTALL, A PIPE-TO-SOIL POTENTIAL READING MUST BE TAKEN AND RECORDED ON THE APPROPRIATE FIELD ORDER. PLEASE REFER TO O&M 4084-REPAIRING STEEL PIPELINES.

Sheet List Table

Sheet Number	Sheet Title
1	COVER SHEET
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3	OVERALL KEY MAP
4	PLAN AND PROFILE STA 95+71 TO 99+10
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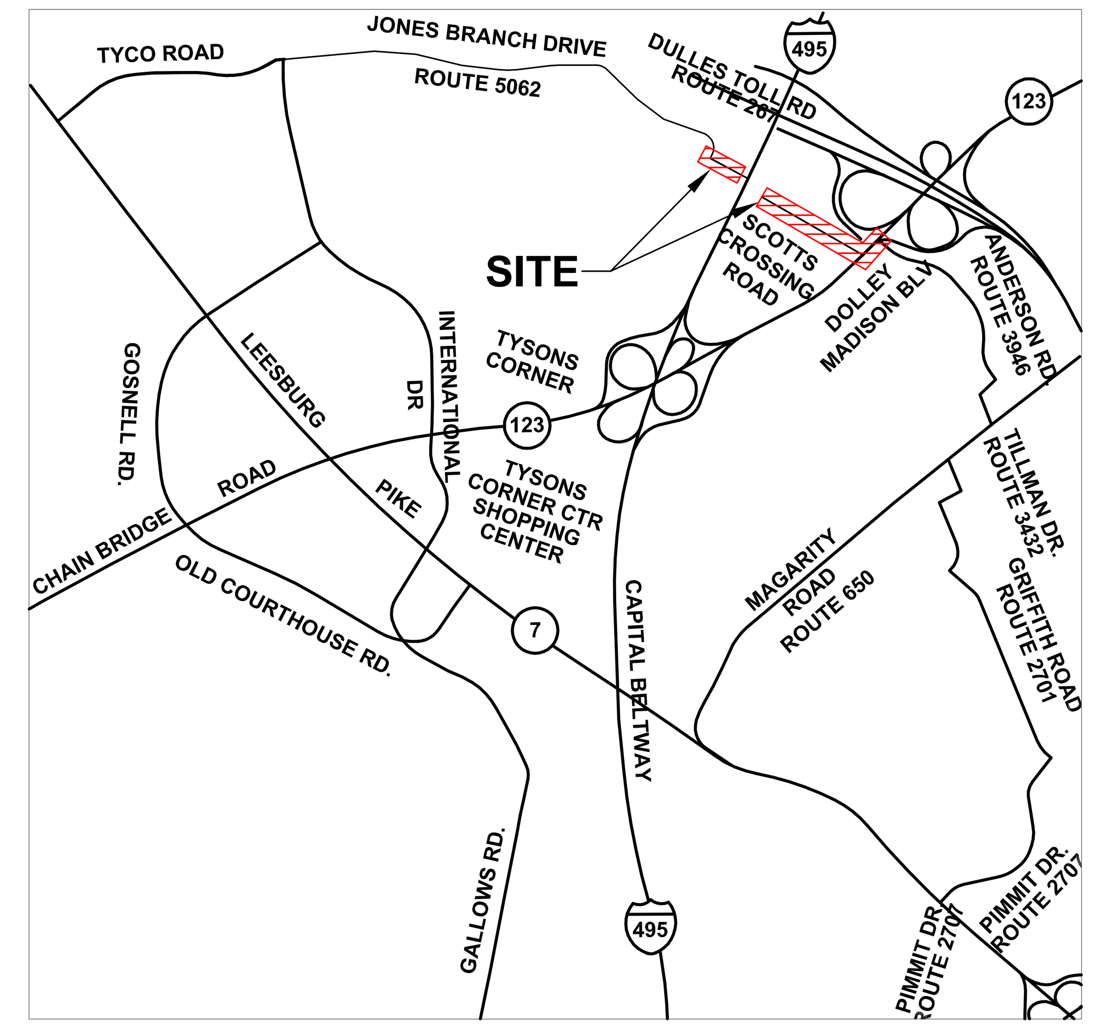
7	PLAN AND PROFILE STA 122+33 TO 128+31
8	PLAN AND PROFILE STA 128+31 TO 133+81
9	PLAN AND PROFILE - 133+81 TO 137+75
10	TYPICAL SECTIONS & DETAILS
11	TEMPORARY TRAFFIC CONTROL
12	TEMPORARY TRAFFIC CONTROL
13	TEMPORARY TRAFFIC CONTROL
14	TEMPORARY TRAFFIC CONTROL



VICINITY MAP
1"=2000'

STEEL PIPE & FITTING SCHEDULE (NEW) - TRANS. PRESSURE				
OUTSIDE DIAMETER	WALL THICKNESS (INCH)	MATERIAL TYPE & GRADE	YIELD STRENGTH (PSI)	WELDING PROCEDURE INDEX #
24" PIPE	0.375	API 5L X-65, ERW	65,000	33 & 36
24" FITTINGS	0.375	ASTM MSS SP-75 WPHY 65	65,000	33 & 36

STANDARD DRAWINGS	
B-GSS-EL-2	TYP. ELEC, GROUNDING, & LIGHTNING PROTECTION SYS DETAIL
B-GSS-EL-3	TYP. ELEC, GROUNDING, & LIGHTNING PROTECTION SYS DETAIL
B-GSS-EL-4	TYP. ELEC, GROUNDING, & LIGHTNING PROTECTION SYS DETAIL
E-GSS-P-2	1" BLOW OFF & 1/4" PRESS. GAUGE CONN. – HORIZ. PIPE
E-GSS-PS-5	TYPICAL PIPE SUPPORT CARRIER PIPE 2" THRU 24"
E-GSS-PS-5A	TYPICAL PIPE SUPPORT CARRIER PIPE 2" THRU 24"
D-8045-I-024	24" MANHOLE INSTALLATION
T-7160-I-200	1" TRANSMISSION CONNECTION
T-8240-I-045	TYPICAL ELECTRICAL WIRING DIAGRAM FOR E.P.R.
TD-7140-I-044A	INSULATOR TEST STATION DETAILS FOR TRANSMISSON
TD-7550-I-019	1" NO-BLO VALVE TEE
TD-8240-I-022	SERVICE LINE ABOVE GROUND RISER INSTALLATION
T-5298-I-625	6"-24" MAINLINE VALVE ASSEMBLY WITH YOKED BLOWOFF FOR TRANSMISSION A SERVICE DESIGN PRESSURE 600 PSIG (CLASS A)

REFERENCE NOTES:

THE WG DESIGN AND CONSTRUCTION STANDARDS ESTABLISH THE MINIMUM REQUIREMENTS FOR DESIGN AND CONSTRUCTION OF THE FACILITIES DESCRIBED ON THIS STANDARD DRAWING. THE FOLLOWING SECTIONS ARE APPLICABLE AND MUST BE ADHERED TO:

7010 DEVIATIONS, MODIFICATIONS, AND ENGINEERING INSTALLATIONS
7020 RECORDKEEPING
7460 EXOTHERMIC WELDING
7510 WELDING PROCEDURES AND WELDER QUALIFICATION
7515 INSPECTION AND TESTING OF WELDS
7580 FLANGE CONNECTIONS
7300 HANDLING OF MATERIALS
7140 CATHODIC PROTECTION DESIGN AND INSTALLATION
7703 PRESSURE TESTING DISTRIBUTION AND TRANSMISSION A PIPELINES

PIPE TESTING SCHEDULE					
DESCRIPTION	MAOP PRESSURE (PSIG)	MIN TEST PRESSURE (PSIG)	TARGET TEST PRESSURE (PSIG)	MAX TEST* PRESSURE (PSIG)	TEST MEDIUM
24" PIPE	325	500	740	1,125	WATER
24" FITTING	325	500	740	1,125	WATER

NOTE:
* DO NOT EXCEED THE MAXIMUM HYDROSTATIC SHELL TEST PRESSURE OF ANSI 300 (1125 PSIG).

DESCRIPTION	MAOP PRESSURE (% SMYS)	MIN TEST PRESSURE (% SMYS)	TARGET TEST PRESSURE (% SMYS)	MAX TEST* PRESSURE (% SMYS)	TEST DURATION (HOURS)
24" PIPE	16.0%	24.4%	36.4%	55.4%	8
24" FITTINGS (65,000)	16.0%	24.4%	36.4%	55.4%	8

MAOP TABLE	
STRIP #	MAOP
STRIP 1	325 PSIG

PROJECT SCOPE	
TOTAL PROJECT LENGTH	2,927 FT
LIMITS OF DISTURBANCE	23,416.00 FT²
INTERSECTION AT START OF PROJECT	JONES BRANCH DRIVE / JONES BRANCH CONNECTOR
INTERSECTION AT END OF PROJECT	DOLLEY MADISON BLVD / ANDERSON ROAD

CONTACT DAVE BROWN, SYSTEMS PROTECTION AT 703-750-7744 PRIOR TO CONSTRUCTION

FOR LOCATION OF UTILITIES CALL 1-800-552-7001 48 HOURS IN ADVANCE OF ANY WORK IN THIS VICINITY

IN EMERGENCY - CALL:

MAJOR UTILITIES:

VERIZON	800 275-2355
DOMINION VIRGINIA POWER	800 552-7001
FAIRFAX WATER AUTHORITY	703 698-5613
WASHINGTON GAS	800 752-7520 OR 703 750-1000

FOR CONSTRUCTION

T/I Gassed out Dry
Date: ____

As-built Drawing Pressure Test Data:
WC ID: ____
Span No. ____
Test Press (PSIG):
☐ 90 ☐ 100 ☐ 150 ☐ OTHER ____
Duration (Mins): ____
Medium : ☐ A ☐ N ☐ W
RIP : ☐ YES ☐ NO
Date : ____
Resp. Person : ____ print name
____ signature
Notes: ____

Observation data:
WC ID: ____
Point No. ____
Pipe Type: ☐ MN ☐ SVC ☐ H/L
Size: ____
Mat'l : ☐ PLA ☐ WRPD ☐ ____ ☐ STL ☐ CI
Pipe Cover : ____ (inches)
External Corrosion : ☐ YES ☐ NO ☐ N/A
Internal Corrosion : ☐ YES ☐ NO ☐ N/A
Corrosion Type: A B C D E F G H O X
Max Pit Depth : ____ (thousandths)
Coating Condition : ____

Abandonment Pipe Purge Data:
Purge out of Service : ☐ Yes ☐ No
Purge from : ____
Purge to : ____
Purge Medium : ☐ Air ☐ Nitrogen
Final Gas Reading : ____
Resp. Person : ____ print name
Notes : ____

Revisions	No.	Date	Reason
	1		

Safety Sector: N/A	ADC Map: 5525F2 5525G2
Quad Map: AD006NW AC006NW	Tax Map Page: 29-4 30-3
Scale: AS SHOWN	Cut No. ##

Drawn by:	Phone:	Date:
ND MW NB	703-449-7000	11/23/2015

Checked by:	Date:
J.WALKER	03/03/2016

WR / WO Number: C-1001-087

FAIRFAX COUNTY, VA

COVER SHEET
TYSONS CORNER STRIP 1
SYSTEM IMPROVEMENT
PHASE 5

P:\PROJECT\16972\1-4\ENG\PLANS\SHEETS - PHASE 6 JB DR CONNECTOR\B-16003-50.DWG
PLOTTED: 3/3/2016 10:42 AM

Job Status: FOR CONSTRUCTION

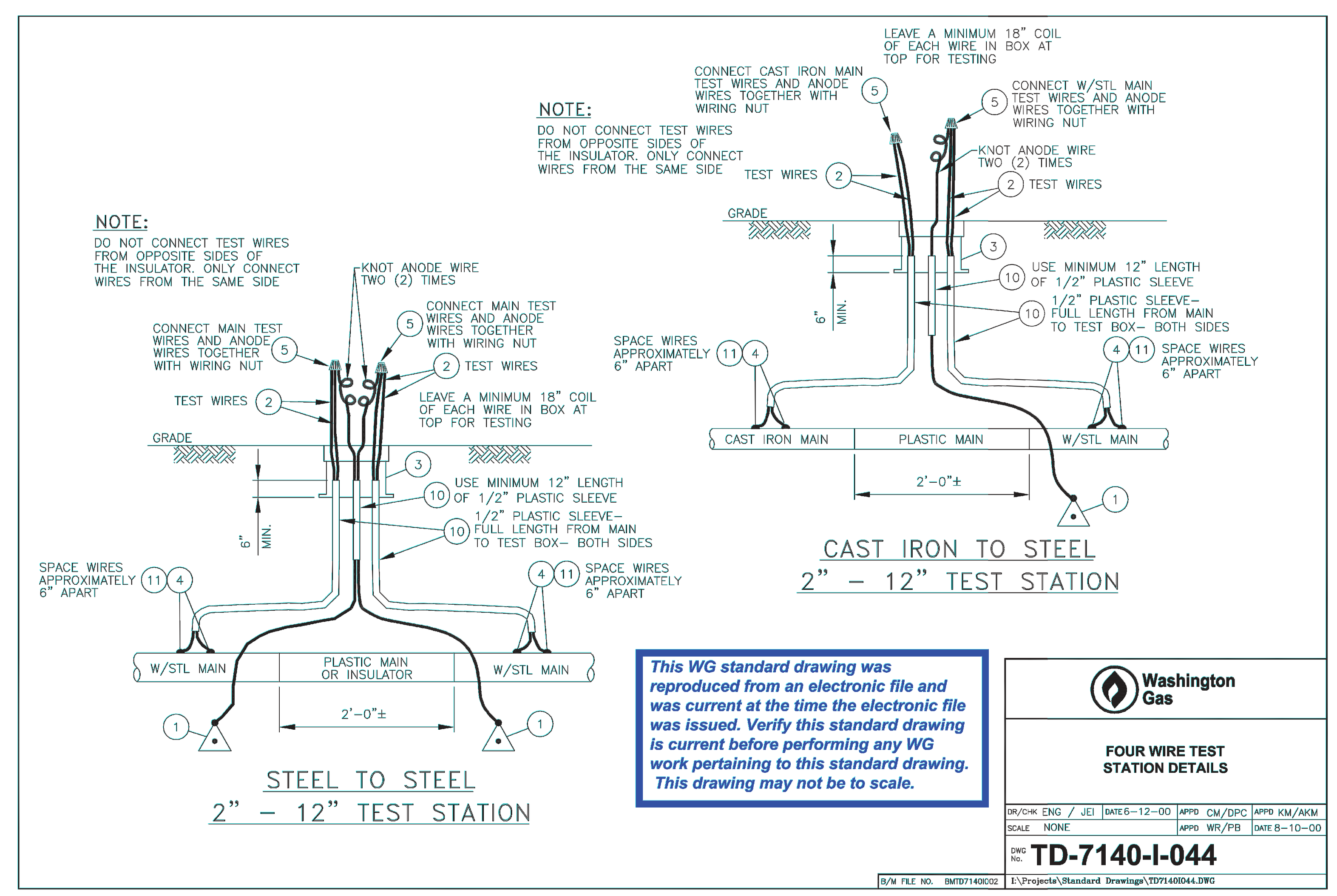
Drawing Number: B-16003-50

SITE/CIVIL ENGINEERING GENERAL NOTES

1. EMERGENCY - POLICE - FIRE - RESCUE = 911.
2. THIS SITE LIES ON FAIRFAX COUNTY, VA TAX MAPS 29-4, 30-3, AND 40-1, WITHIN THE PUBLIC RIGHT OF WAY.
3. THE BOUNDARY INFORMATION SHOWN HEREIN DOES NOT REPRESENT A BOUNDARY SURVEY OR A SUBDIVISION OF LAND. NO TITLE REPORT HAS BEEN PROVIDED FOR THIS PROJECT. THEREFORE, THE PLAN MAY NOT SHOW ALL ENCUMBRANCES ON THE PROPERTY.
4. THE TOPOGRAPHY DEPICTED IN THIS PLAN WAS TAKEN FROM VARIOUS SOURCES INCLUDING PLANS FOR THE I-495 HOT LANE PROJECT AND FIELDWORK PERFORMED BY PENNONI ASSOCIATES ON OR ABOUT MARCH 2012.
5. CONTOUR INTERVAL: 2 FEET.
6. THE UNIT OF MEASUREMENT USED IN THIS PLAN IS FEET.
7. THE HORIZONTAL DATUM USED IN THIS PLAN IS IN THE VIRGINIA COORDINATE SYSTEM NAD 83.
8. THE VERTICAL DATUM USED IN THIS PLAN IS NAVD88.
9. THE CONTRACTOR SHALL REVIEW FIELD CONDITIONS AND VERIFY THIS PLAN FOR CONSTRUCTIBILTY PRIOR TO AND DURING CONSTRUCTION. SHOULD ANY DISCREPANCIES BE DISCOVERED BETWEEN THIS PLAN AND ACTUAL FIELD CONDITIONS BE DISCOVERED, THE CONTRACTOR SHALL CONTACT PENNONI ASSOCIATES (703-449-7600) PRIOR TO INITIATING CONSTRUCTION. PENNONI ASSOCIATES SHALL NOT BE RESPONSIBLE FOR THE FAILURE OF THE CONTRACTOR TO ADHERE TO THIS REQUIREMENT.
10. CONSTRUCTION STAKEOUT SHALL BE UNDER THE DIRECT SUPERVISION OF A LAND SURVEYOR LICENSED IN THE COMMONWEALTH OF VIRGINIA.
11. IF PENNONI ASSOCIATES IS NOT PROVIDING STAKEOUT SERVICES FOR THIS PROJECT, IT SHALL BE THE WASHINGTON GAS LIGHT COMPANY'S RESPONSIBILITY TO ESTABLISH AND CONFIRM ALL HORIZONTAL AND VERTICAL CONTROLS TO BE USED FOR THE PROJECT. FURTHER, IT SHALL BE THE WASHINGTON GAS LIGHT COMPANY'S RESPONSIBILITY TO COMPUTE THE LAYOUT OF ALL PROPOSED SITE IMPROVEMENTS CONSISTENT AND IN ACCORDANCE WITH THE DESIGNS, IN ADVANCE OF COMMENCING THE WORK ASSOCIATED WITH THIS PLAN.
12. NO GEOTECHNICAL INVESTIGATION HAS BEEN PERFORMED FOR THIS WORK.
13. THIS SITE IS LOCATED WITHIN ZONE "X" OF THE FEMA FLOOD INSURANCE RATE MAP (FIRM) PANEL # 51059C0165E, DATED SEPTEMBER 17, 2010.
14. A PHASE I ARCHEOLOGICAL STUDY HAS NOT BEEN PREPARED FOR THIS SITE. NO GRAVE, OBJECT OR STRUCTURE MARKING A PLACE OF BURIAL OR HISTORIC MARKERS OR STRUCTURES ARE KNOWN TO EXIST ON THIS SITE.
15. A PHASE I ENVIRONMENTAL STUDY HAS NOT BEEN PERFORMED ON THIS SITE. NO ENDANGERED SPECIES OR ENVIRONMENTAL HAZARDS ARE KNOWN TO EXIST ON THIS SITE.
16. UNLESS OTHERWISE SPECIFIED ON THIS PLAN, ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS, REQUIREMENTS, AND SPECIFICATIONS OF THE WASHINGTON GAS LIGHT COMPANY, VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT), AND FAIRFAX COUNTY, VA.
17. THERE WILL BE NO PERMANENT IMPACTS TO THE DRAINAGE PATTERNS OF THIS SITE AS A RESULT OF THE CONSTRUCTION PROPOSED IN THESE PLANS. THEREFORE, NO STORM WATER MANAGEMENT/BMP IS REQUIRED.
18. THE CONTRACTOR SHALL CONTACT MISS UTILITY (811) PRIOR TO INITIATING WORK ON THE SITE, AND SHALL TAKE ALL STEPS TO AVOID CONFLICTS WITH EXISTING UTILITIES.
19. THE TEST PIT SYMBOL SHOWN HERE INDICATES WHERE PENNONI ASSOCIATES HAS ACQUIRED TEST PIT DATA. PENNONI ASSOCIATES DOES NOT GUARANTEE THAT ALL EXISTING UTILITIES HAVE BEEN LOCATED, UTILITIES MAY EXIST THAT ARE NOT DEPICTED. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY PENNONI ASSOCIATES OF ANY DISCREPANCIES BETWEEN ACTUAL FIELD CONDITIONS AND THIS PLAN PRIOR TO INITIATING ANY CONSTRUCTION. THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO PROTECT EXISTING UTILITIES AND TO ASSURE CONTINUANCE OF SERVICE. ANY DAMAGE TO EXISTING UTILITIES OCCURRING DURING CONSTRUCTION SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY.
20. THE TEST PIT SYMBOL SHOWN HERE INDICATES WHERE PENNONI ASSOCIATES HAS NOT ACQUIRED TEST PIT DATA. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXACT HORIZONTAL AND VERTICAL LOCATION OF THESE UTILITIES AND TO NOTIFY PENNONI ASSOCIATES OF ANY CONFLICTS WITH THE WORK PROPOSED IN THE PLANS PRIOR TO CONSTRUCTION.
21. PRIOR TO INITIATING WORK, THE CONTRACTOR SHALL PROTECT ALL ADJACENT PROPERTIES AND AREAS OUTSIDE OF THE APPROVED LIMITS OF DISTURBANCE FROM DAMAGES CAUSED BY THIS WORK.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY CLAIMS OF DAMAGE TO ADJACENT PROPERTIES AS A RESULT OF THIS CONSTRUCTION.
23. THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH) PRODUCED BY VIRGINIA DEPARTMENT OF CONSERVATION AND RECREATION (DCR). THE VESCH IS AVAILABLE ON-LINE AT:
http://www.dcr.virginia.gov/stormwater_management/e_and_s-ftp.shtml
24. EXCAVATION SUPPORT SYSTEMS SHALL CONFORM TO THE PROVISIONS OF OSHA CONSTRUCTION STANDARD 29 CFR PART 1926 SUBPART P.
25. ANY BLASTING OR EARTHWORK PERFORMED AS PART OF THIS CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH ALL JURISDICTIONAL AND PRIVATE UTILITY REQUIREMENTS, INCLUDING APPLICABLE FIRE MARSHAL REGULATIONS. ANY CLAIMS OF DAMAGE TO PRIVATE WELLS AND/OR STRUCTURES AS A RESULT OF BLASTING OR EARTHWORK DURING THIS CONSTRUCTION SHALL BE HANDLED BY THE CONTRACTOR IN AN EXPEDITIOUS MANNER.
26. THE 24" PRESSURIZED GAS TRANSMISSION LINE SHALL CONFORM TO ALL APPLICABLE INDUSTRY CODES, INCLUDING MATERIALS, DESIGN AND CONSTRUCTION REQUIREMENTS.
27. ALL TRAFFIC SIGNAL EQUIPMENT MUST BE LOCATED PRIOR TO THE START OF ANY WORK.
28. SIDEWALK TO BE CLOSED ON AN AS NEEDED BASIS. USE TYPE III BARRICADES FOR CLOSURE. SEE DETAIL ON SHEET 10.

SITE/CIVIL ABBREVIATIONS

A	AREA	MAX.	MAXIMUM
AC	ACRE	MIN.	MINIMUM
ABP	ANGLE OF BULK PLANE	MH	MANHOLE
BC	BACK OF CURB	MM	MEET AND MATCH
BM	BENCH MARK	MTD.	MOUNTED
BMP	BEST MANAGEMENT PRACTICES	MUTCD	MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES
BW	BOTTOM OF WALL	NIC	NOT IN CONTRACT
C/C FACTOR	RUNOFF COEFFICIENT	OHE	OVERHEAD ELECTRICAL
CD	CHECK DAM	OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
C&G	CURB AND GUTTER	OH, OVHD	OVERHEAD
CFS	CUBIC FEET PER SECOND	P/P	POWER POLE
CL	CENTERLINE	PERM.	PERMANENT
CLR.	CLEAR/CLEARANCE	PG.	PAGE
CMF	CONCRETE MONUMENT FOUND	PKNF	PK NAIL FOUND
CN	CONNECTION	PLA	PLASTIC PIPE
CO	CLEAN OUT	PROP	PROPOSED
CONC.	CONCRETE	PRC	POINT OF REVERSE CURVATURE
CULV.	CULVERT	PTD.	PAINTED
CVR.	COVER	PVC	POLYVINYL CHLORIDE
D.B.	DEED BOOK	R/W, R.O.W.	RIGHT OF WAY
DD	TEMPORARY DIVERSION DIKE	RCP	REINFORCED CONCRETE PIPE
DIA.	DIAMETER	REM.	REMOVE
D.I.P.	DUCTILE IRON PIPE	RR	REMOVE AND RELOCATE, RAILROAD
DT	DECIDUOUS TREE	RTE.	ROUTE
DV	DIVERSION DIKE	S/W	SIDEWALK
DWG	DRAWING	SAN. SEW.	SANITARY SEWER
EG	EDGE OF GRAVEL	SEC.	SECTION
ELEC.	ELECTRICAL	SF	SQUARE FEET/SILT FENCE
ELEV.	ELEVATION	SS	SILT SOXX
EP	EDGE OF PAVEMENT	SSF	SUPER SILT FENCE
E & S	EROSION & SEDIMENT CONTROL	STD.	STANDARD
ESMT.	EASEMENT	STM. DRN., STM. SEW.	STORM DRAIN, STORM SEWER
EX., EXIST.	EXISTING	SWM	STORMWATER MANAGEMENT
FC	FACE OF CURB	TBR	TO BE REMOVED
FDN	FOUNDATION	TC	TOP OF CURB
FFE	FINISHED FLOOR ELEVATION	TELE	TELECOMMUNICATIONS EQUIPMENT
FH	FIRE HYDRANT	TP	TELEPHONE POLE/TREE PROTECTION
FO	FIBER OPTIC	TRANS	TRANSFORMER, TRANSITION
FUT	FUTURE	TRMN	TRANSMISSION
FWA	FAIRFAX WATER AUTORITY	TW	TOP OF WALL
G	GAS	TYP.	TYPICAL
GALV.	GALVANIZED	U/C	UNDER CONSTRUCTION
GB	GUTTER BUDDY	UGE	UNDERGROUND ELECTRICAL
HC	HEADER CURB	UGT	UNDERGROUND TELECOMMUNICATIONS
HCR	HANDICAP RAMP	USGS	UNITED STATES GEOLOGICAL SURVEY
HP	HIGH POINT	UTIL	UTILITY
HWY.	HIGHWAY	VDOT	VIRGINIA DEPARTMENT OF TRANSPORTATION
INC	INCREMENTAL	VOL.	VOLUME
INV.	INVERT	W/L, W/M, WAT	WATER LINE, WATER MAIN
IPF	IRON PIPE FOUND	WMATA	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
IPS	IRON PIPE SET	WRPD	WRAPPED STEEL PIPE
JB	JUNCTION BOX	WSE	WATER SURFACE ELEVATION
LAT	LATERAL	WTP	WATER TREATMENT PLANT
LB/LBS	POUNDS	XING	CROSSING
LONG	LONGITUDE	YR	YEAR
LP	LIGHT POLE, LOW POINT	ZD	ZONING DESIGNATION



TYPICAL ELEVATION VIEW

LEGEND:

EXISTING GAS

PROPOSED GAS

PROPOSED GAS TO MAINTAIN A MINIMUM OF 2'-0" VERTICAL AND 5'-0" HORIZONTAL CLEARANCE FROM WATER AND SEWER FACILITIES UNLESS OTHERWISE SPECIFIED BY JURISDICTION.

FOR CONSTRUCTION

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COMMONWEALTH OF VIRGINIA
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03/03/2016
PROFESSIONAL ENGINEER

Washington Gas
Gas Transportation
6801 Industrial Road
Springfield, Virginia 22151
Telephone: 703-750-1000
Fax: 703-750-4527

T/I Gassed out Dry
Date: ______

As-built Drawing Pressure Test Data:
WC ID: ______
Span No. ______
Test Press (PSIG):
☐ 90 ☐ 100 ☐ 150 ☐ OTHER ____
Duration (Mins): ______
Medium : ☐ A ☐ N ☐ W
RIP : ☐ YES ☐ NO
Date : ______
Resp. Person : ______ print name
______ signature
Notes: ______

Observation data:
WC ID: ______
Point No. ______
Pipe Type: ☐ MN ☐ SVC ☐ H/L
Size: ______
Mat'l : ☐ PLA ☐ WRPD ☐ ____ ☐ STL ☐ CI
Pipe Cover : ______ (inches)
External Corrosion : ☐ YES ☐ NO ☐ N/A
Internal Corrosion : ☐ YES ☐ NO ☐ N/A
Corrosion Type: A B C D E F G H O X
Max Pit Depth : ______ (thousandths)
Coating Condition : ______

Abandonment Pipe Purge Data:
Purge out of Service : ☐ Yes ☐ No
Purge from : ______
Purge to : ______
Purge Medium : ☐ Air ☐ Nitrogen
Final Gas Reading : ______
Resp. Person : ______ print name
Notes : ______

Revisions		
No.	Date	Reason

Safety Sector: N/A	ADC Map: 5525F2 5525G2
Quad Map: AD006NW AC006NW	Tax Map Page: 29-4 30-3
Scale: AS SHOWN	Cut No. ###

Drawn by:	Phone:	Date:
ND MW NB	703-449-6700	11/23/2015

Checked by: J.WALKER | Date: 03/03/2016

WR / WO Number: WO# C-1001-087

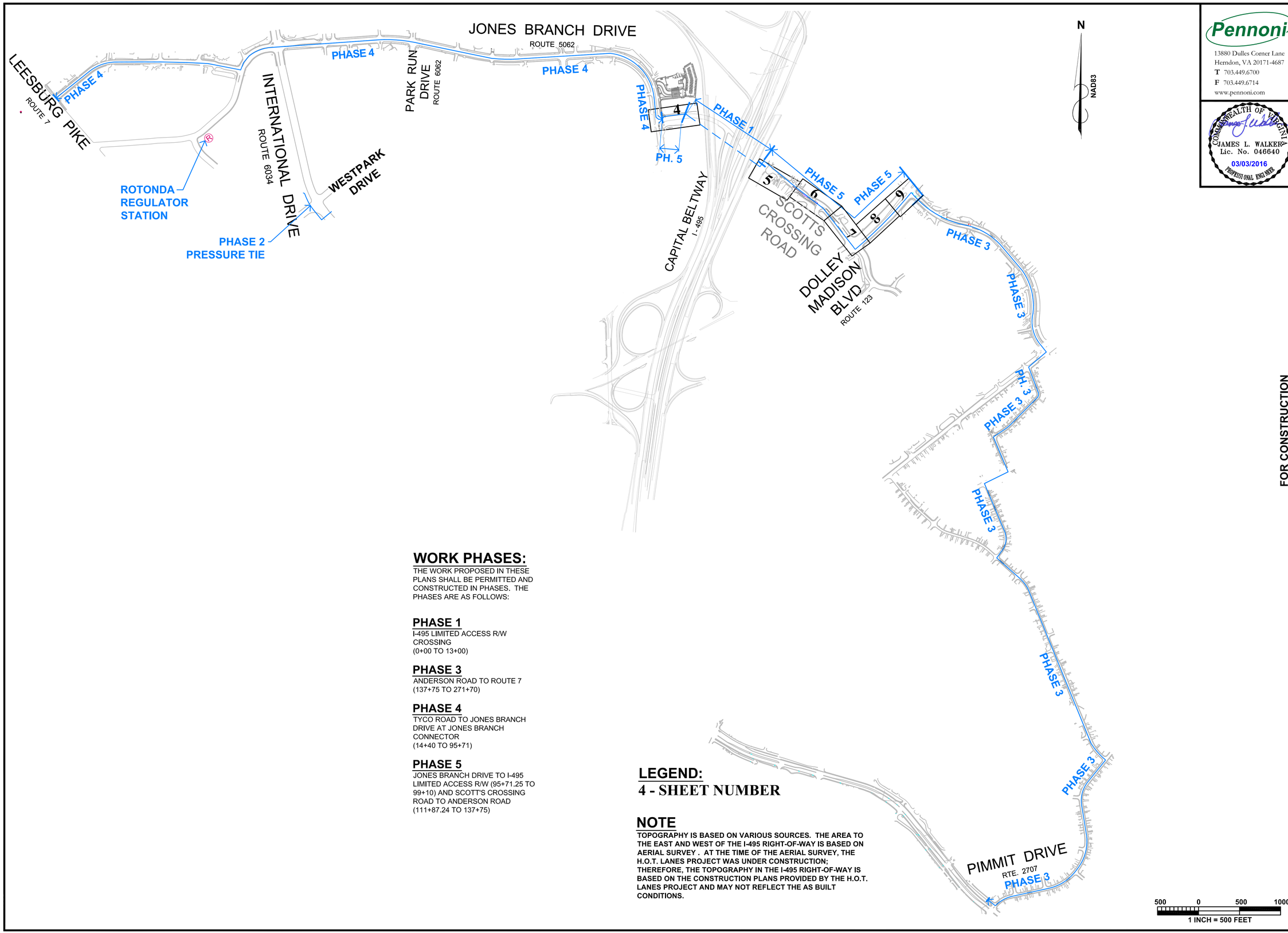
FAIRFAX COUNTY, VA

DETAILS AND ABBREVIATIONS
TYSONS CORNER STRIP 1 SYSTEM IMPROVEMENT PHASE 5

P:\PROJECT\16972\1-4\ENG\PLANS\SHEETS - PHASE 6 JB DR CONNECTOR\B-16003-51.DWG
PLOTTED: 3/3/2016 10:45 AM

Job Status: FOR CONSTRUCTION

Drawing Number: B-16003-51



WORK PHASES:

THE WORK PROPOSED IN THESE PLANS SHALL BE PERMITTED AND CONSTRUCTED IN PHASES. THE PHASES ARE AS FOLLOWS:

PHASE 1
I-495 LIMITED ACCESS R/W CROSSING
(0+00 TO 13+00)

PHASE 3
ANDERSON ROAD TO ROUTE 7
(137+75 TO 271+70)

PHASE 4
TYCO ROAD TO JONES BRANCH DRIVE AT JONES BRANCH CONNECTOR
(14+40 TO 95+71)

PHASE 5
JONES BRANCH DRIVE TO I-495 LIMITED ACCESS R/W (95+71.25 TO 99+10) AND SCOTT'S CROSSING ROAD TO ANDERSON ROAD
(111+87.24 TO 137+75)

LEGEND:

4 - SHEET NUMBER

NOTE

TOPOGRAPHY IS BASED ON VARIOUS SOURCES. THE AREA TO THE EAST AND WEST OF THE I-495 RIGHT-OF-WAY IS BASED ON AERIAL SURVEY . AT THE TIME OF THE AERIAL SURVEY, THE H.O.T. LANES PROJECT WAS UNDER CONSTRUCTION; THEREFORE, THE TOPOGRAPHY IN THE I-495 RIGHT-OF-WAY IS BASED ON THE CONSTRUCTION PLANS PROVIDED BY THE H.O.T. LANES PROJECT AND MAY NOT REFLECT THE AS BUILT CONDITIONS.

FOR CONSTRUCTION

Pennoni
13880 Dulles Corner Lane
Herndon, VA 20171-4687
T 703.449.6700
F 703.449.6714
www.pennoni.com

COMMONWEALTH OF VIRGINIA
JAMES L. WALKER
Lic. No. 046640
03/03/2016
PROFESSIONAL ENGINEER

Washington Gas
Gas Transportation
6801 Industrial Road
Springfield, Virginia 22151
Telephone: 703-750-1000
Fax: 703-750-4527

T/I Gassed out Dry
Date: _____

As-built Drawing Pressure Test Data:
WC ID: _____
Span No. _____
Test Press (PSIG):
☐ 90 ☐ 100 ☐ 150 ☐ OTHER ____
Duration (Mins): _____
Medium : ☐ A ☐ N ☐ W
RIP : ☐ YES ☐ NO
Date : _____
Resp. Person : _____ print name
signature
Notes: _____

Observation data:
WC ID: _____
Point No. _____
Pipe Type: ☐ MN ☐ SVC ☐ H/L
Size: _____
Mat'l : ☐ PLA ☐ WRPD ☐ ____
☐ STL ☐ CI
Pipe Cover : _____ (Inches)
External Corrosion : ☐ YES ☐ NO ☐ N/A
Internal Corrosion : ☐ YES ☐ NO ☐ N/A
Corrosion Type: A B C D E F G H O X
Max Pit Depth : _____(thousandths)
Coating Condition : _____

Abandonment Pipe Purge Data:
Purge out of Service : ☐ Yes ☐ No
Purge from : _____
Purge to : _____
Purge Medium ☐ Air ☐ Nitrogen
Final Gas Reading : _____
Resp. Person : _____ print name
Notes : _____

No.	Date	Revisions	Reason
1			

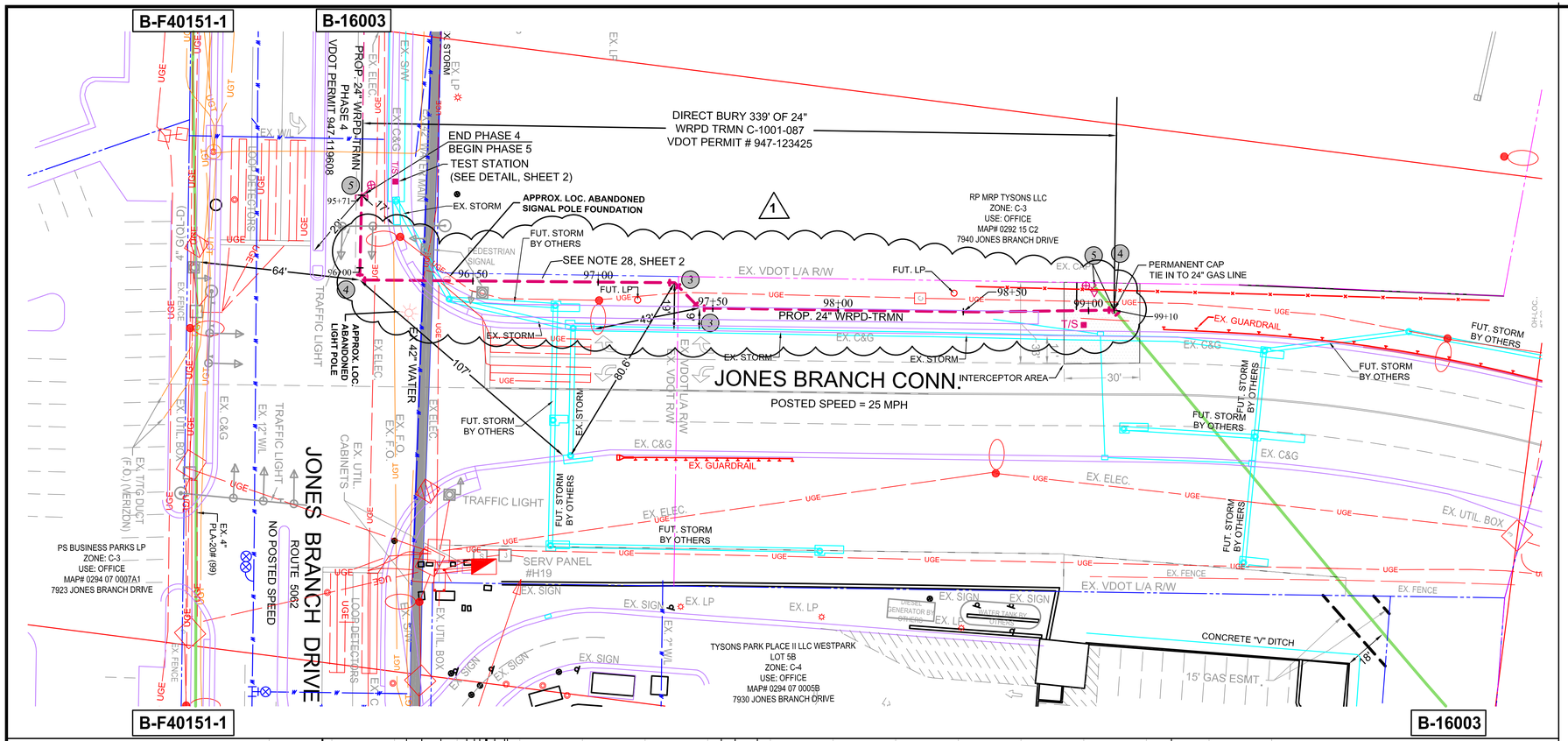
Safety Sector: N/A	ADC Map: 5525F2 5525G2
Quad Map: AD006NW AC006NW	Tax Map Page: 29-4 30-3
Scale: AS SHOWN	Cut No. ##
Drawn by: ND MW NB / Phone: 703-449-7000	Date: 11/23/2015
Checked by: J.WALKER	Date: 03/03/2016
WR / WO Number: C-1001-087	

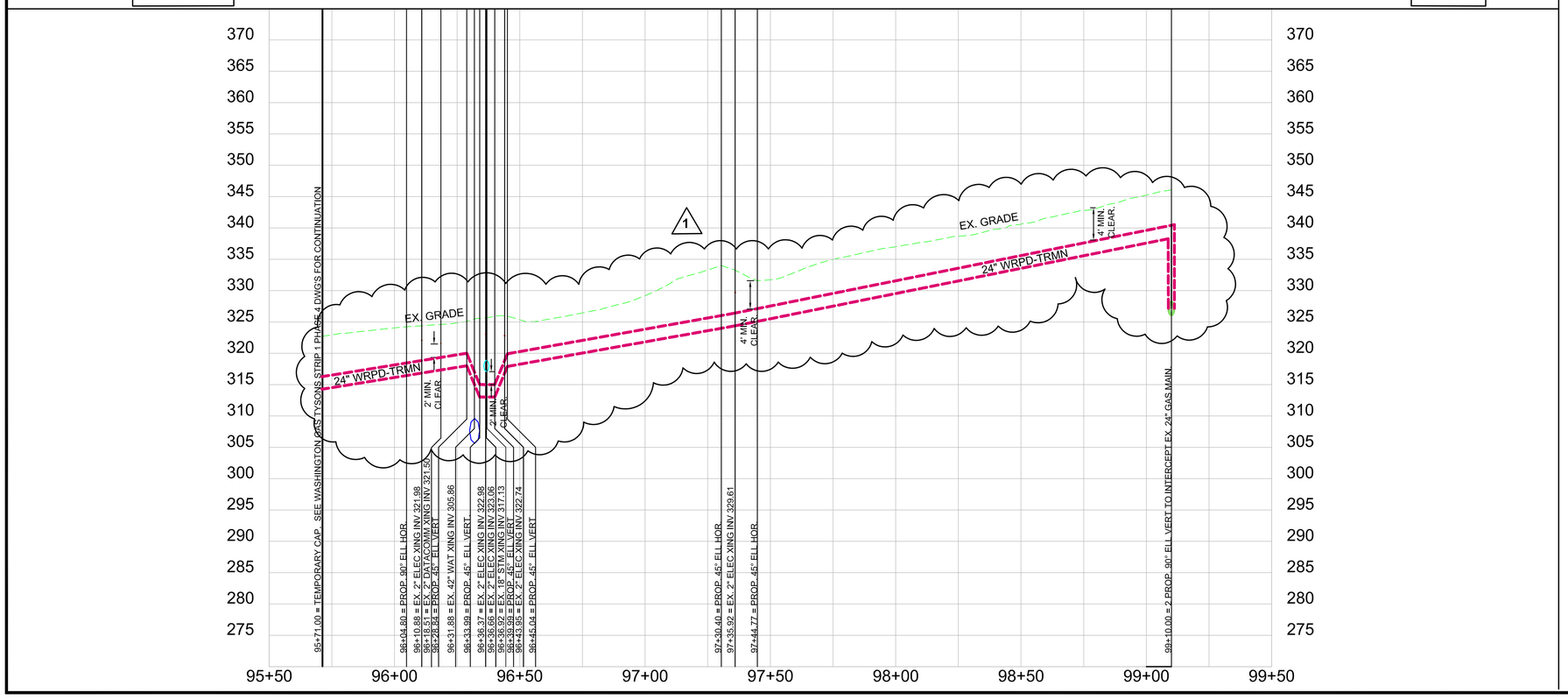
FAIRFAX COUNTY, VA

OVERALL KEY MAP
TYSONS CORNER STRIP 1 SYSTEM IMPROVEMENT PHASE 5

P:\PROJECT\1087\21-4-0\NOF\-ANSISHEETS - PHASE 4 JB OR CONNECTIONS-16003-52.DWG
PLOTTED: 3/3/2016 10:48 AM

Job Status: FOR CONSTRUCTION
Drawing Number: B-16003-52
Number: 3 OF 14





NOTE:
CATHODIC PROTECTION INSTALLED EVERY 500' AND AS DIRECTED BY WASHINGTON GAS.

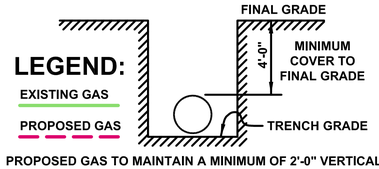
UTILITY KEYNOTES

1. PROP. 11.25° BEND
2. PROP. 22.5° BEND
3. PROP. 45° BEND
4. PROP. 90° BEND
5. TEMP. 24" CAP

TEMPORARY TRAFFIC CONTROL			
FROM STATION	TO STATION	METHOD	SHEET
95+71	97+00	TTC-28	12
96+50	99+10	TTC-35	13
97+95	99+10	TTC-38	14

*NO FLAGGERS

TYPICAL ELEVATION VIEW



LEGEND:
EXISTING GAS
PROPOSED GAS

PROPOSED GAS TO MAINTAIN A MINIMUM OF 2'-0" VERTICAL AND 5'-0" HORIZONTAL CLEARANCE FROM WATER AND SEWER FACILITIES UNLESS OTHERWISE SPECIFIED BY JURISDICTION.

25 0 25 50 100
1 INCH = 25 FEET

FOR CONSTRUCTION

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F 703.449.6714
www.pennoni.com

COMMONWEALTH OF VIRGINIA
JAMES L. WALKER
Lic. No. 046640
03/03/2016
PROFESSIONAL ENGINEER

LEGEND

- PROPERTY/R.O.W.
- CURB AND GUTTER
- EDGE OF PAVEMENT
- STORM SEWER
- SANITARY SEWER
- W WATERMAIN
- PROP. GAS LINE
- EX. GAS LINE
- UGE UNDERGROUND ELECTRIC
- UGT UNDERGROUND TELEPHONE
- FENCE/GUARDRAIL
- WMATA EASEMENT
- WATER METER
- WATER VALVE
- FIRE HYDRANT
- UTILITY POLE
- TRAFFIC SIGNAL POLE
- STREET LIGHT
- 1 STORM STRUCTURE LABEL
- 2 SANITARY STRUCTURE LABEL
- SIGN
- PROP. EX. TEST HOLE
- ELECTRICAL JUNCTION BOX
- CONDUIT RISER
- FEED / FEED ARROW
- 2 WIRE 2 ANODE TEST STATION
- T/S TEST STATION ACCESS BOX

Washington Gas
Gas Transportation
6801 Industrial Road
Springfield, Virginia 22151
Telephone: 703-750-1000
Fax: 703-750-4527

T/I Gassed out Dry
Date: _____

As-built Drawing Pressure Test Data:
WC ID: _____
Span No. _____
Test Press (PSIG): ☐ 90 ☐ 100 ☐ 150 ☐ OTHER ____
Duration (Mins): _____
Medium : ☐ A ☐ N ☐ W
RIP : ☐ YES ☐ NO
Date : _____
Resp. Person : _____ (print name)
Notes: _____ (signature)

Observation data:
WC ID: _____
Point No. _____
Pipe Type: ☐ MN ☐ SVC ☐ H/L
Size: _____
Mat'l : ☐ PLA ☐ WRPD ☐ ____ ☐STL ☐ CI
Pipe Cover : _____ (inches)
External Corrosion :☐YES ☐NO ☐N/A
Internal Corrosion : ☐YES ☐NO ☐N/A
Corrosion Type: A B C D E F G H O X
Max Pit Depth : _____(thousandths)
Coating Condition : _____

Abandonment Pipe Purge Data:
Purge out of Service : ☐Yes ☐No
Purge from : _____
Purge to : _____
Purge Medium ☐ Air ☐ Nitrogen
Final Gas Reading : _____
Resp. Person : _____ (print name)
Notes : _____

Revisions		
No.	Date	Reason
1	02/04/2016	Alignment adjustments

Safety Sector: N/A	ADC Map: 5525F2
Quad Map: AD006NW	Tax Map Page: 29-4 30-3
Scale: H:1"=25' V:1"=5'	Cut No. ##
Drawn by: NO MW NB	Phone: 703-840-6700 / Date: 11/23/2015
Checked by: J.WALKER	Date: 03/03/2016

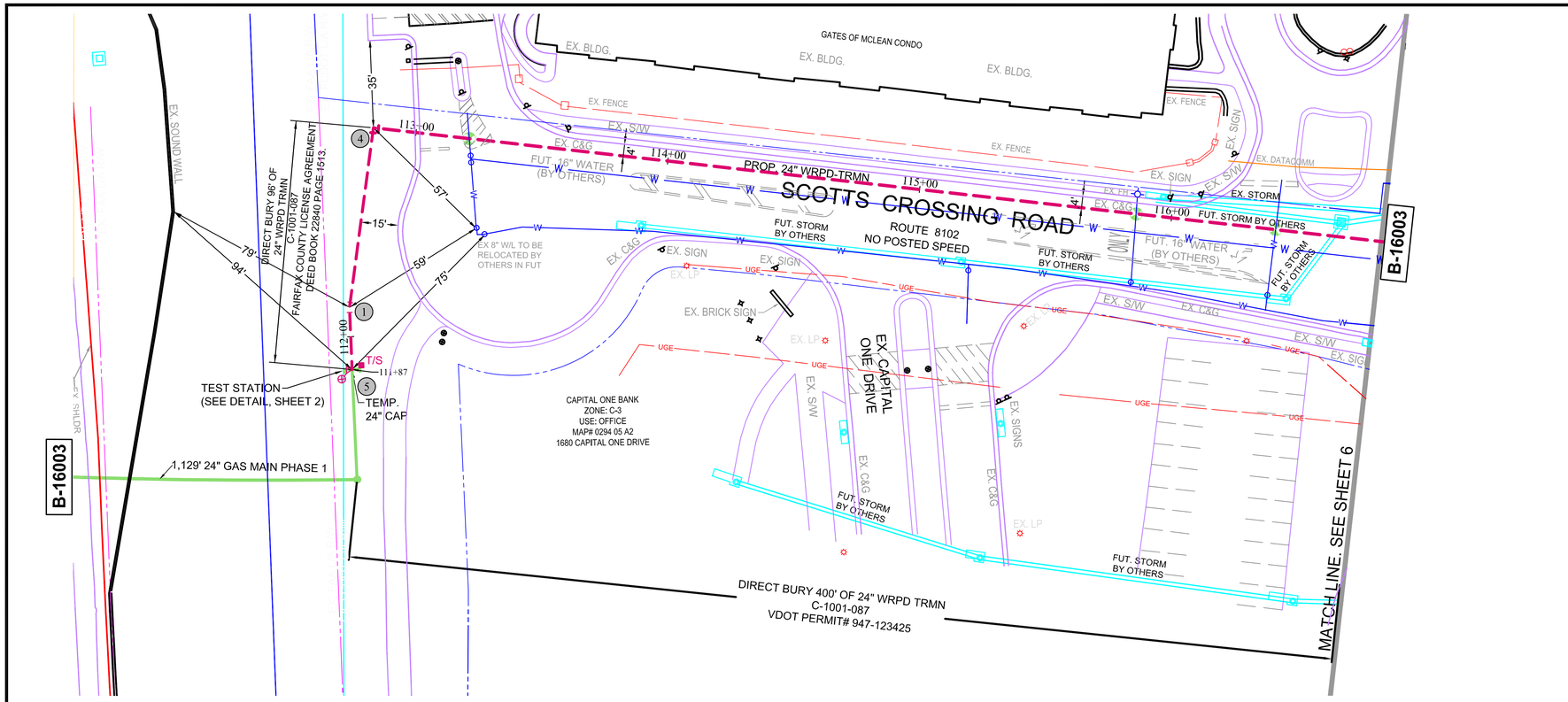
WR / WO Number: C-1001-087

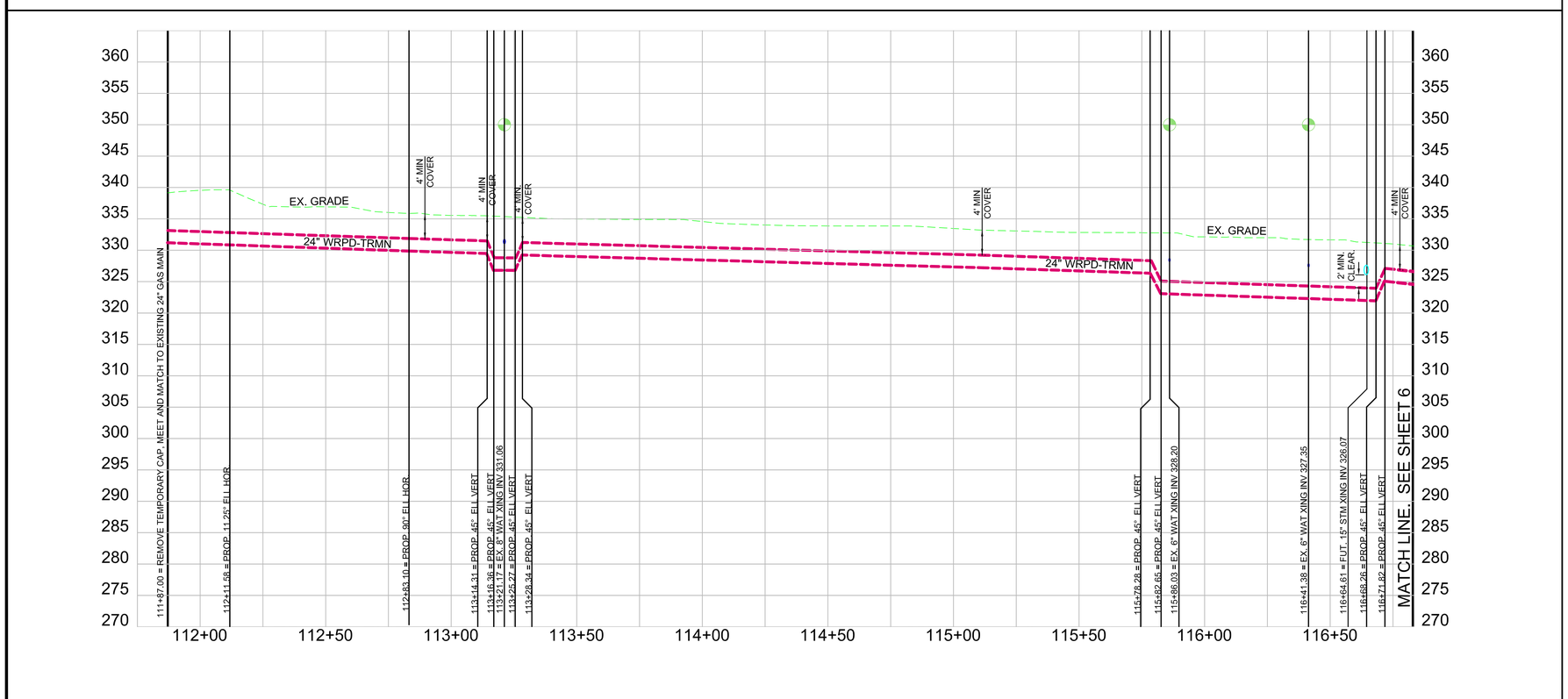
FAIRFAX COUNTY

PLAN AND PROFILE STA 95+71 TO 99+10 TYSONS CORNER STRIP 1 SYSTEM IMPROVEMENT PHASE 5

P:\PROJECTS\9721-4\INDP\JAMSHEETS - PHASE 5 JB CONNECTIONS-1000-71.DWG PLOTTED: 3/3/2016 11:15 AM

Job Status: FOR CONSTRUCTION
Drawing Number: B-16003-71
Sheet Number: 4 OF 14





CONTRACTOR NOTE

CONTRACTOR TO COORDINATE WITH THE GATES OF MCLEAN CONDOMINIUM REGARDING ENTRANCE CLOSURES.

CONTACT INFORMATION:
Suzanne Till
General Manager
Gates of McLean
1510 Spring Gate Drive
McLean, VA. 22102
703-506-0439

FOR CONSTRUCTION

NOTE:
CATHODIC PROTECTION INSTALLED EVERY 500' AND AS DIRECTED BY WASHINGTON GAS.

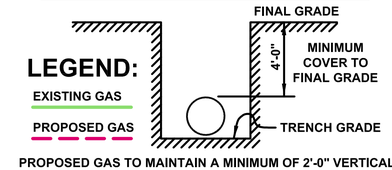
UTILITY KEYNOTES

1. PROP. 11.25° BEND
2. PROP. 22.5° BEND
3. PROP. 45° BEND
4. PROP. 90° BEND
5. TEMP. 24" CAP

TEMPORARY TRAFFIC CONTROL			
FROM STATION	TO STATION	METHOD	SHEET
113+00	117+00	TTC-23.0	13

*NO FLAGGERS

TYPICAL ELEVATION VIEW



PROPOSED GAS TO MAINTAIN A MINIMUM OF 2'-0" VERTICAL AND 5'-0" HORIZONTAL CLEARANCE FROM WATER AND SEWER FACILITIES UNLESS OTHERWISE SPECIFIED BY JURISDICTION.

25 0 25 50 100
1 INCH = 25 FEET

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www.pennoni.com

COMMONWEALTH OF VIRGINIA
JAMES L. WALKER
Lic. No. 046640
03/03/2016
PROFESSIONAL ENGINEER

LEGEND

- PROPERTY/R.O.W.
- CURB AND GUTTER
- EDGE OF PAVEMENT
- STORM SEWER
- SANITARY SEWER
- W WATERMAIN
- PROP. GAS LINE
- EX. GAS LINE
- UGE UNDERGROUND ELECTRIC
- UGT UNDERGROUND TELEPHONE
- FENCE/GUARDRAIL
- WMATA EASEMENT
- WATER METER
- WATER VALVE
- FIRE HYDRANT
- UTILITY POLE
- TRAFFIC SIGNAL POLE
- STREET LIGHT
- 1 STORM STRUCTURE LABEL
- 2 SANITARY STRUCTURE LABEL
- SIGN
- PROP. EX. TEST HOLE
- ELECTRICAL JUNCTION BOX
- CONDUIT RISER
- FEED FEED ARROW
- 2 WIRE 2 ANODE TEST STATION
- T/S TEST STATION ACCESS BOX

Washington Gas
Gas Transportation
6801 Industrial Road
Springfield, Virginia 22151
Telephone: 703-750-1000
Fax: 703-750-4527

T/I Gassed out Dry
Date:

As-built Drawing Pressure Test Data:
WC ID:
Span No.
Test Press (PSIG):
☐ 90 ☐ 100 ☐ 150 ☐ OTHER
Duration (Mins):
Medium : ☐ A ☐ N ☐ W
RIP : ☐ YES ☐ NO
Date :
Resp. Person : print name
signature
Notes:

Observation data:
WC ID:
Point No.
Pipe Type: ☐ MN ☐ SVC ☐ H/L
Size:
Mat'l : ☐ PLA ☐ WRPD ☐ ☐STL ☐ CI
Pipe Cover : (inches)
External Corrosion : ☐YES ☐NO ☐N/A
Internal Corrosion : ☐YES ☐NO ☐N/A
Corrosion Type: A B C D E F G H O X
Max Pit Depth : (thousandths)
Coating Condition :

Abandonment Pipe Purge Data:
Purge out of Service : ☐Yes ☐No
Purge from :
Purge to :
Purge Medium ☐ Air ☐ Nitrogen
Final Gas Reading :
Resp. Person : print name
Notes :

Revisions		
No.	Date	Reason
1		

Safety Sector: N/A	ADC Map: 5525G2
Quad Map: AC006NW	Tax Map Page: 29-4 30-3
Scale: H:1"=25' V:1"=5'	Cut No. ##
Drawn by: ND MW NB / Phone: 703-840-6700	Date: 11/23/2015
Checked by: J.WALKER	Date: 03/03/2016

WR / WO Number: C-1001-087

FAIRFAX COUNTY

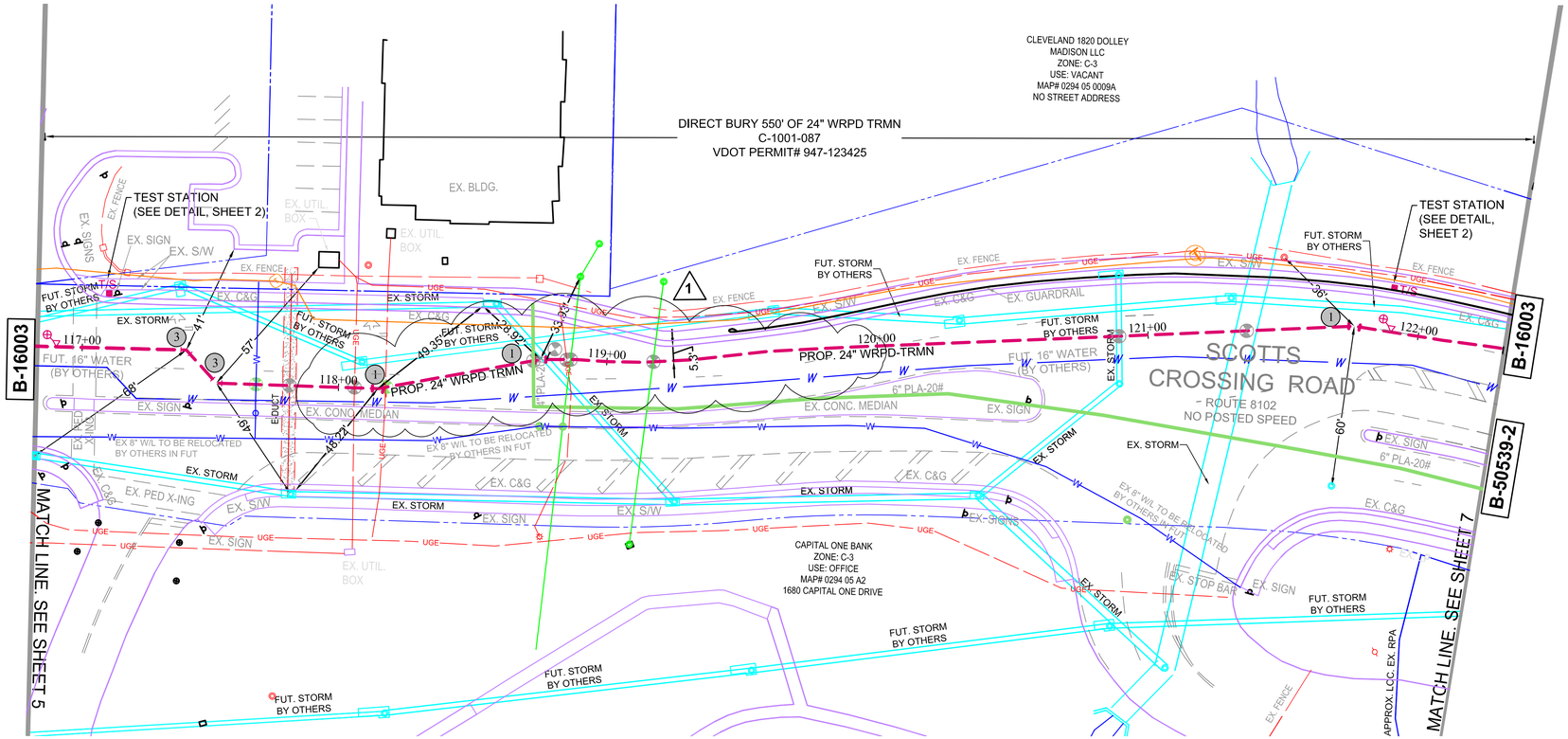
PLAN AND PROFILE
STA 111+87 TO 116+83
TYSONS CORNER STRIP 1
SYSTEM IMPROVEMENT
PHASE 5

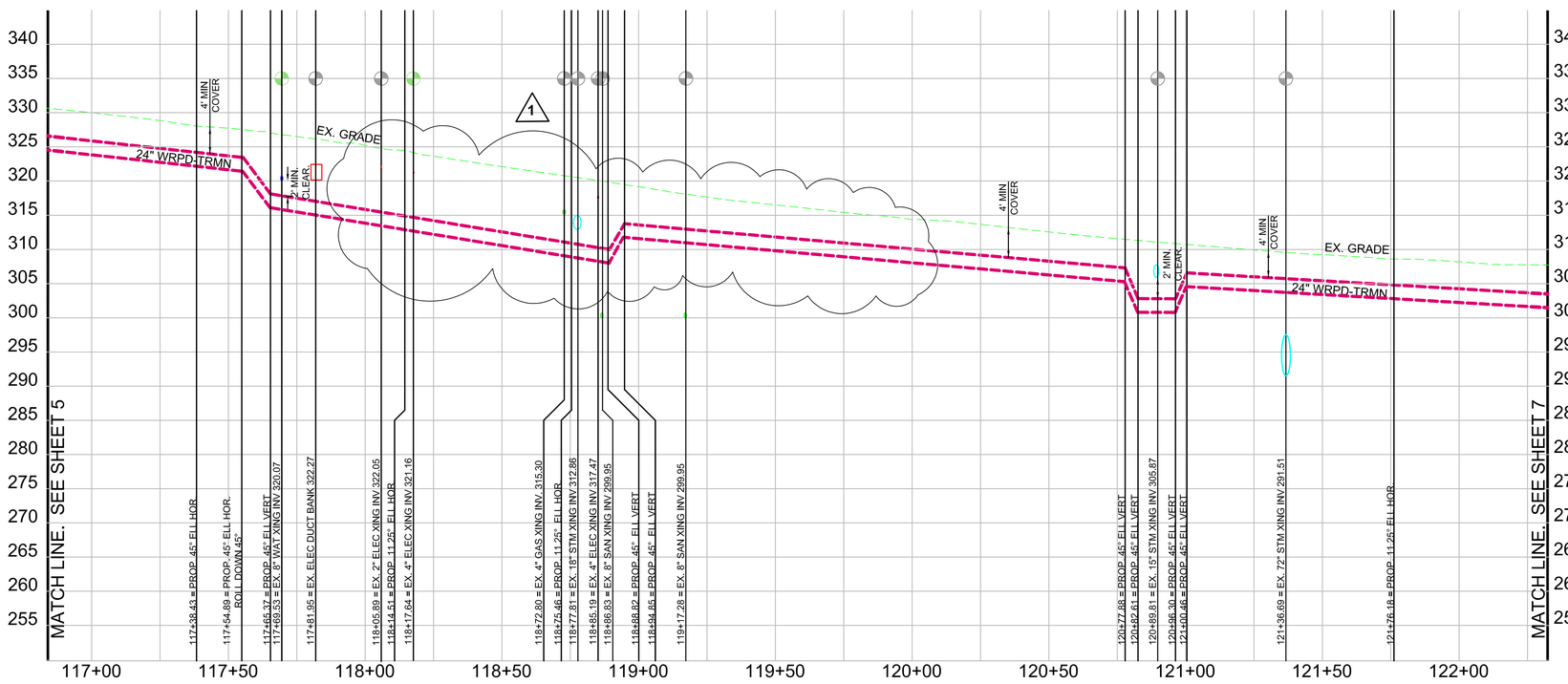
P:\PROJECTS\P27-1-4\SHEETS\PHASE 4 JR DIR CONNECTORS\1000-7223WG P.DWG PLOTTED: 3/3/2016 10:53 AM

Job Status: FOR CONSTRUCTION

Drawing Number: B-16003-72

Sheet Number: 5 OF 14





NOTE:
CATHODIC PROTECTION INSTALLED EVERY 500' AND AS DIRECTED BY WASHINGTON GAS.

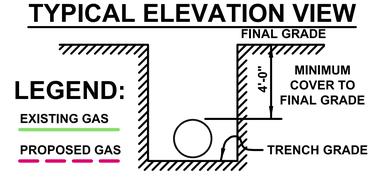
UTILITY KEYNOTES

1. PROP. 11.25° BEND
2. PROP. 22.5° BEND
3. PROP. 45° BEND
4. PROP. 90° BEND
5. TEMP. 24" CAP

TEMPORARY TRAFFIC CONTROL			
FROM STATION	TO STATION	METHOD	SHEET
117+00	117+50	TTC-16.0	12
117+50	122+25	TTC-18.0	14

*NO FLAGGERS

TYPICAL ELEVATION VIEW



LEGEND:

EXISTING GAS

PROPOSED GAS

PROPOSED GAS TO MAINTAIN A MINIMUM OF 2'-0" VERTICAL AND 5'-0" HORIZONTAL CLEARANCE FROM WATER AND SEWER FACILITIES UNLESS OTHERWISE SPECIFIED BY JURISDICTION.

25 0 25 50 100

1 INCH = 25 FEET

FOR CONSTRUCTION

Pennoni
13880 Dulles Corner Lane
Herndon, VA 20171-4687
T 703.449.6700
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Washington Gas
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Springfield, Virginia 22151
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Fax: 703-750-4527

COMMONWEALTH OF VIRGINIA
JAMES L. WALKER
Lic. No. 046640
03/03/2016
PROFESSIONAL ENGINEER

T/I Gassed out Dry
Date:

As-built Drawing Pressure Test Data:
WC ID:
Span No.
Test Press (PSIG):
☐ 90 ☐ 100 ☐ 150 ☐ OTHER
Duration (Mins):
Medium : ☐ A ☐ N ☐ W
RIP : ☐ YES ☐ NO
Date :
Resp. Person : print name
signature
Notes:

Observation data:
WC ID:
Point No.
Pipe Type: ☐ MN ☐ SVC ☐ H/L
Size:
Mat'l : ☐ PLA ☐ WRPD ☐ STL ☐ CI
Pipe Cover : (inches)
External Corrosion ☐YES ☐NO ☐N/A
Internal Corrosion : ☐YES ☐NO ☐N/A
Corrosion Type: A B C D E F G H O X
Max Pit Depth : (thousandths)
Coating Condition :

Abandonment Pipe Purge Data:
Purge out of Service : ☐Yes ☐No
Purge from :
Purge to :
Purge Medium ☐ Air ☐ Nitrogen
Final Gas Reading :
Resp. Person : print name
Notes :

LEGEND

- PROPERTY/R.O.W.
- CURB AND GUTTER
- EDGE OF PAVEMENT
- STORM SEWER
- SANITARY SEWER
- WATERMAIN
- PROP. GAS LINE
- EX. GAS LINE
- UGE UNDERGROUND ELECTRIC
- UGT UNDERGROUND TELEPHONE
- FENCE/GUARDRAIL
- WMATA EASEMENT
- WATER METER
- WATER VALVE
- FIRE HYDRANT
- UTILITY POLE
- TRAFFIC SIGNAL POLE
- STREET LIGHT
- STORM STRUCTURE LABEL
- SANITARY STRUCTURE LABEL
- SIGN
- PROP. EX. TEST HOLE
- ELECTRICAL JUNCTION BOX
- CONDUIT RISER
- FEED FEED ARROW
- 2 WIRE 2 ANODE TEST STATION
- T/S TEST STATION ACCESS BOX

Revisions		
No.	Date	Reason
1	02/04/2016	Alignment adjustments

Safety Sector: N/A	ADC Map: 5525G2
Quad Map: AC006NW	Tax Map Page: 29-4 30-3
Scale: H:1"=25' V:1"=5'	Cut No. ##
Drawn by: MW NB	Phone: 703-840-6700
Date: 11/23/2015	
Checked by: J.WALKER	Date: 03/03/2016

WR / WO Number: C-1001-087

FAIRFAX COUNTY

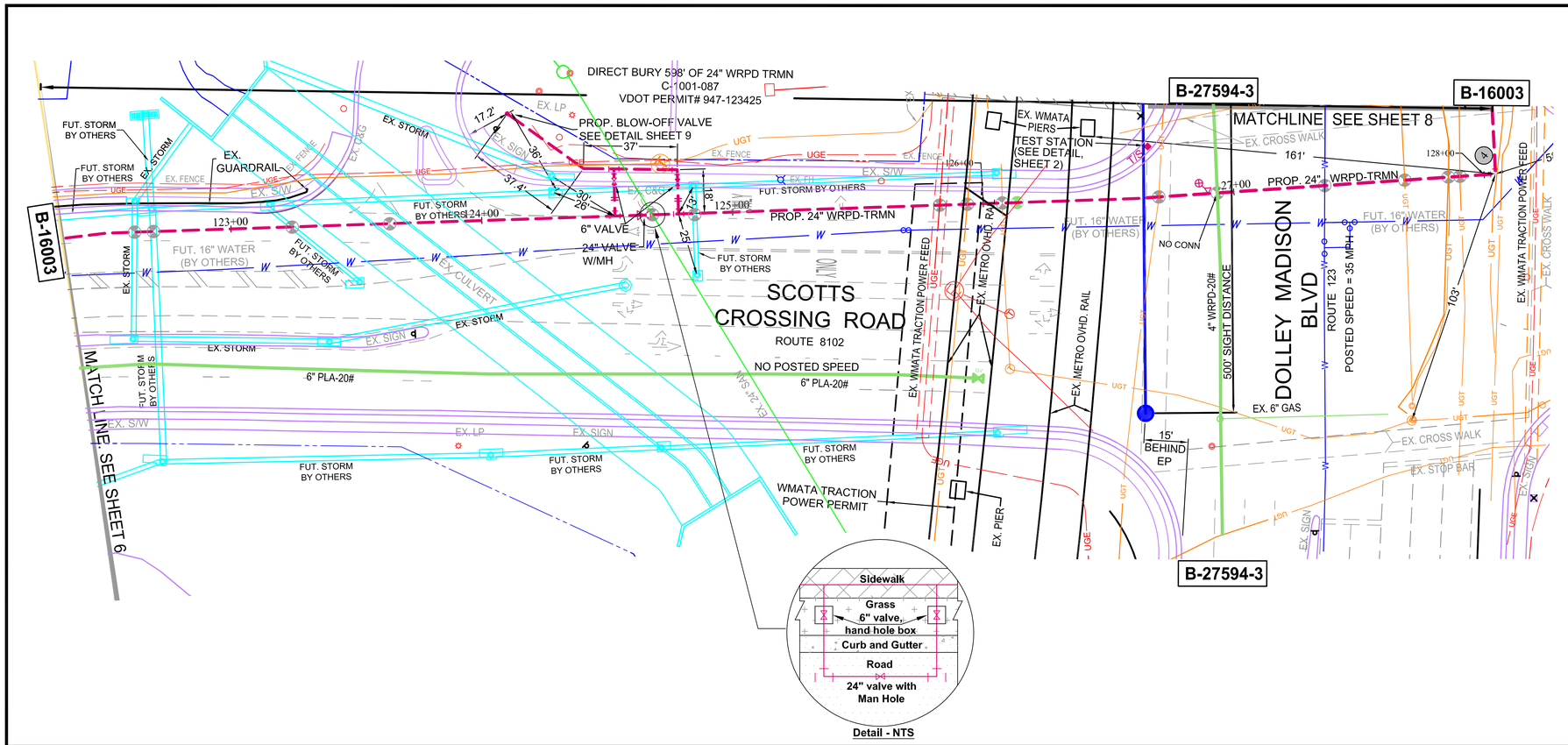
PLAN AND PROFILE
STA 116+83 TO 122+33
TYSONS CORNER STRIP 1
SYSTEM IMPROVEMENT
PHASE 5

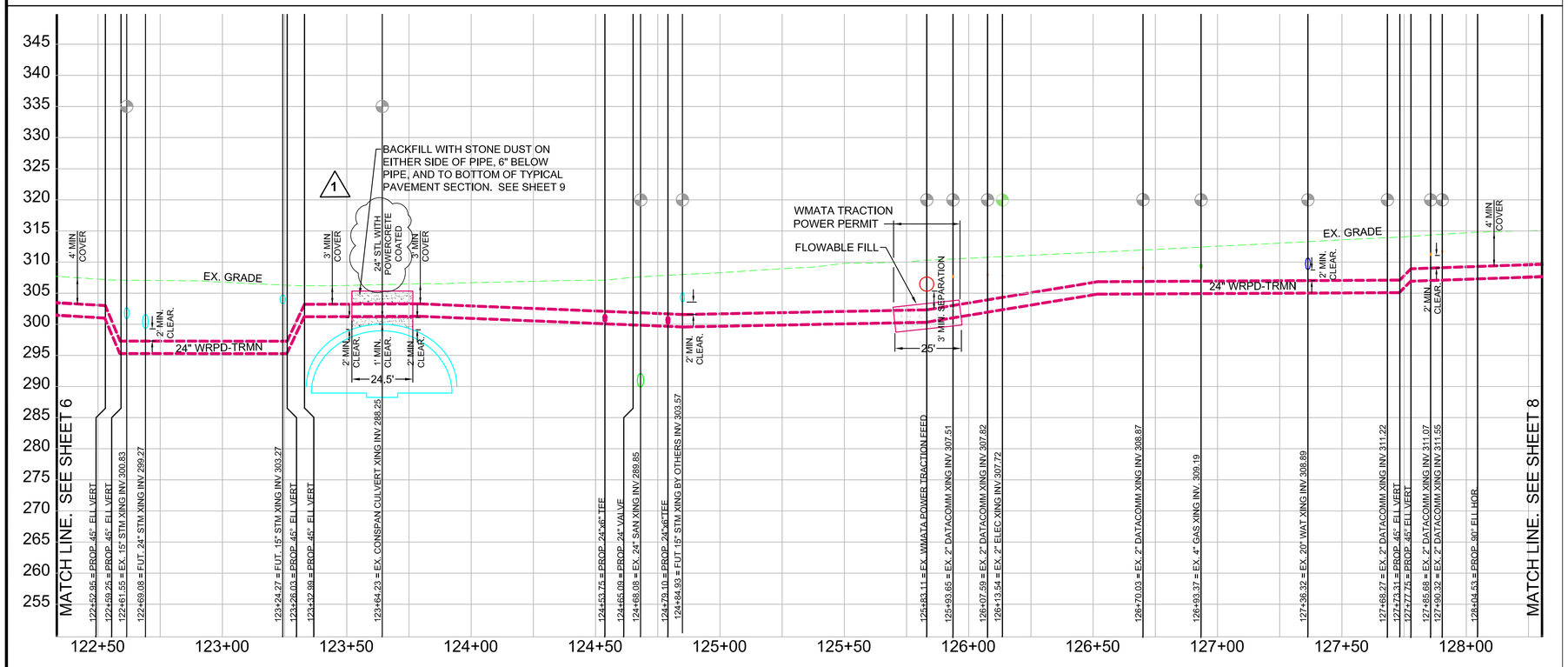
P:\PROJECTS\1972-1-4\DWG\LAND\SHEETS - PHASE 4 & 5\C-1001-087-TYSONS 1 PLOTTED: 3/3/2016 10:56 AM

Job Status: FOR CONSTRUCTION

Drawing Number: B-16003-73

Sheet Number: 6 OF 14





CONTRACTOR NOTE

1. IN THE AREA OF THE WMATA TRACTION POWER FEED THE CONTRACTOR IS REQUIRED TO HAND DIG THE TRENCH.
2. THE CONTRACTOR WILL FOLLOW THE WMATA ADJACENT CONSTRUCTION PROJECT MANUAL IN WORK AREAS THAT INVOLVE OR IMPACT WMATA INTEREST. WMATA INTERESTS ARE IDENTIFIED AS A WMATA POWER TRACTION FEED, WMATA EXISTING METRO RAIL OVERHEAD AND EXISTING AERIAL LICENSE AGREEMENT.
3. STRAY CURRENT TESTING WILL BE DONE AT TIME OF EXCAVATION BY WASHINGTON GAS TO DETERMINE A METHOD TO MITIGATE STRAY CURRENT. MITIGATION MEASURES WILL BE INSTALLED AND REGULARLY MONITORED BY WASHINGTON GAS AND ADJUSTED AS NEEDED.
4. IN ADDITION THE 24" GAS MAIN WILL BE ENCASED IN FLOWABLE FILL AS SHOWN.

FOR CONSTRUCTION

NOTE:
CATHODIC PROTECTION INSTALLED EVERY 500' AND AS DIRECTED BY WASHINGTON GAS.

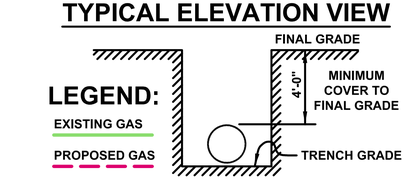
UTILITY KEYNOTES

1. PROP. 11.25° BEND
2. PROP. 22.5° BEND
3. PROP. 45° BEND
4. PROP. 90° BEND
5. TEMP. 24" CAP

TEMPORARY TRAFFIC CONTROL			
FROM STATION	TO STATION	METHOD	SHEET
122+25	122+69	TTC-42.0	12
122+69	126+50	TTC-16.0	12
126+50	128+31	SEE TRAFFIC MANAGEMENT PLAN	TMP PLAN

*NO FLAGGERS

TYPICAL ELEVATION VIEW



LEGEND:
EXISTING GAS
PROPOSED GAS

PROPOSED GAS TO MAINTAIN A MINIMUM OF 2'-0" VERTICAL AND 5'-0" HORIZONTAL CLEARANCE FROM WATER AND SEWER FACILITIES UNLESS OTHERWISE SPECIFIED BY JURISDICTION.

25 0 25 50 100
1 INCH = 25 FEET

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JAMES L. WALKER
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03/03/2016
PROFESSIONAL ENGINEER

LEGEND

- PROPERTY/R.O.W.
- CURB AND GUTTER
- EDGE OF PAVEMENT
- STORM SEWER
- SANITARY SEWER
- WATERMAIN
- PROP. GAS LINE
- EX. GAS LINE
- UGE UNDERGROUND ELECTRIC
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- FIRE HYDRANT
- UTILITY POLE
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- STREET LIGHT
- STORM STRUCTURE LABEL
- SANITARY STRUCTURE LABEL
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- PROP. / EX. TEST HOLE
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- 2 WIRE 2 ANODE TEST STATION
- T/S TEST STATION ACCESS BOX

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Gas Transportation
6801 Industrial Road
Springfield, Virginia 22151
Telephone: 703-750-1000
Fax: 703-750-4527

T/I Gassed out Dry
Date:

As-built Drawing Pressure Test Data:
WC ID:
Span No.
Test Press (PSIG):
☐ 90 ☐ 100 ☐ 150 ☐ OTHER
Duration (Mins):
Medium : ☐ A ☐ N ☐ W
RIP : ☐ YES ☐ NO
Date :
Resp. Person : print name
signature
Notes:

Observation data:
WC ID:
Point No.
Pipe Type: ☐ MN ☐ SVC ☐ H/L
Size:
Mat'l : ☐ PLA ☐ WRPD ☐ STL ☐ CI
Pipe Cover : (inches)
External Corrosion ☐YES ☐NO ☐N/A
Internal Corrosion : ☐YES ☐NO ☐N/A
Corrosion Type: A B C D E F G H O X
Max Pit Depth : (thousandths)
Coating Condition :

Abandonment Pipe Purge Data:
Purge out of Service : ☐Yes ☐No
Purge from :
Purge to :
Purge Medium ☐ Air ☐ Nitrogen
Final Gas Reading :
Resp. Person : print name
Notes :

Revisions		
No.	Date	Reason
1	02/04/2016	Alignment adjustments, and detail adjustments.

Safety Sector: N/A	ADC Map: 5525G2
Quad Map: AC006NW	Tax Map Page: 29-4 30-3
Scale: H:1"=25' V:1"=5'	Cut No. ##
Drawn by: MW NB	Phone: 703-840-6700 / Date: 11/23/2015
Checked by: J.WALKER	Date: 03/03/2016

WR / WO Number: C-1001-087

FAIRFAX COUNTY

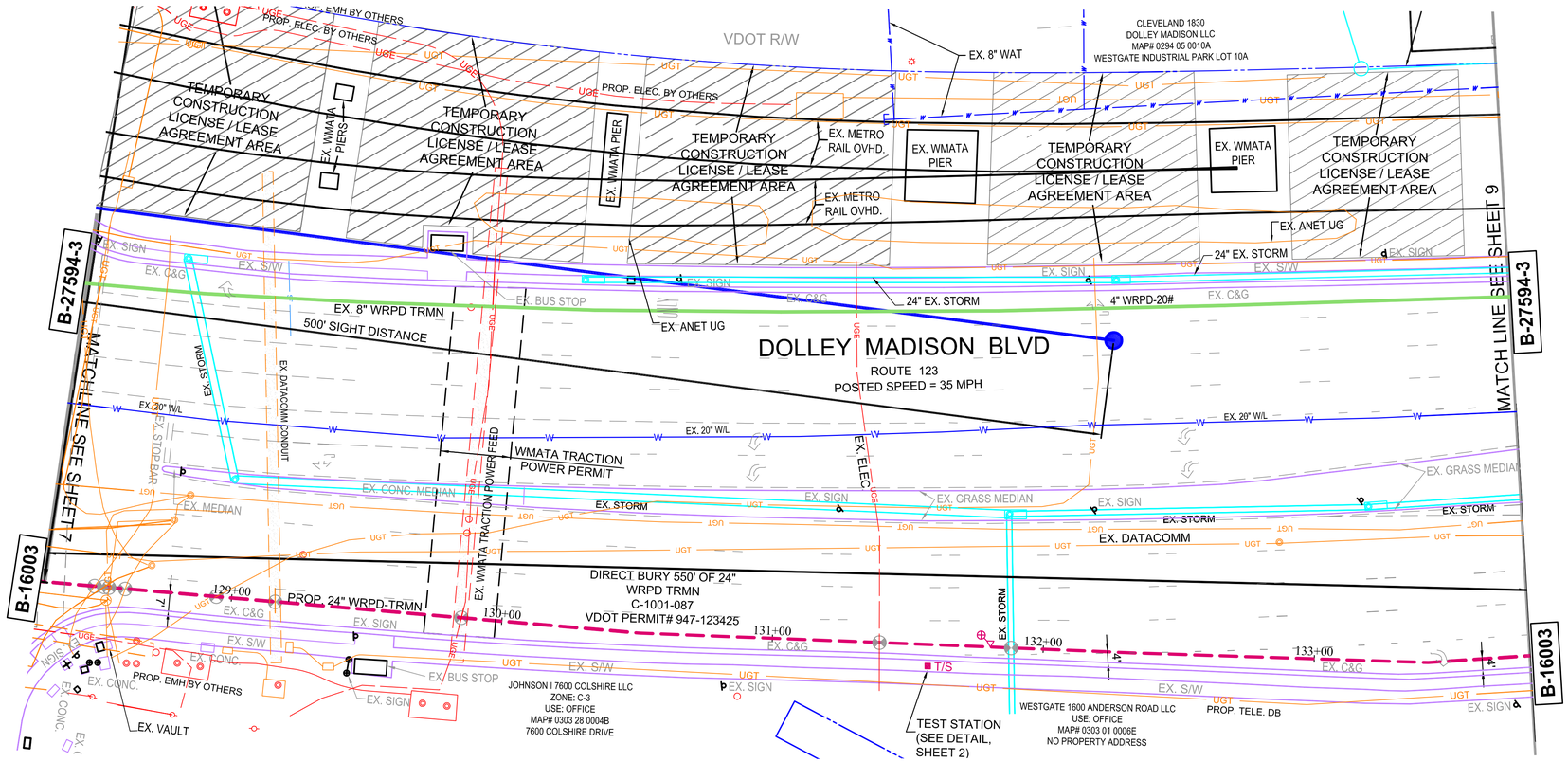
PLAN AND PROFILE STA 122+33 TO 128+31 TYSONS CORNER STRIP 1 SYSTEM IMPROVEMENT PHASE 5

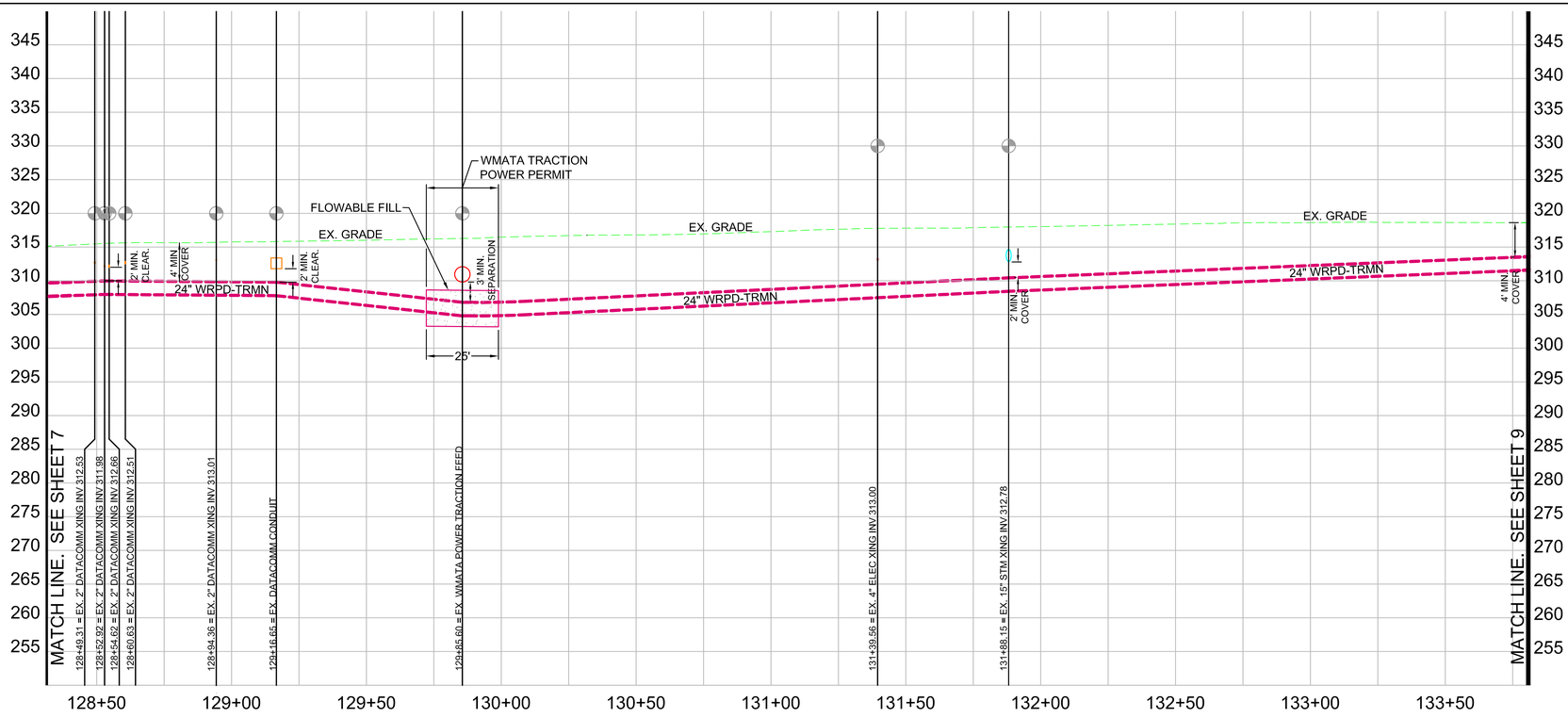
PATH: P:\PROJECT\19\74-4\ENGP\MISHEETS\ PHASE 5 JB CONNECTIONS-16003-74.DWG PLOTTED: 3/3/2016 10:04 AM

Job Status: FOR CONSTRUCTION

Drawing Number: B-16003-74

Sheet Number: 7 OF 14





CONTRACTOR NOTE

1. IN THE AREA OF THE WMATA TRACTION POWER FEED THE CONTRACTOR IS REQUIRED TO HAND DIG THE TRENCH.
2. THE CONTRACTOR WILL FOLLOW THE WMATA ADJACENT CONSTRUCTION PROJECT MANUAL IN WORK AREAS THAT INVOLVE OR IMPACT WMATA INTEREST. WMATA INTERESTS ARE IDENTIFIED AS A WMATA POWER TRACTION FEED, WMATA EXISTING METRO RAIL OVERHEAD AND EXISTING AERIAL LICENSE AGREEMENT.
3. STRAY CURRENT TESTING WILL BE DONE AT TIME OF EXCAVATION BY WASHINGTON GAS TO DETERMINE A METHOD TO MITIGATE STRAY CURRENT. MITIGATION MEASURES WILL BE INSTALLED AND REGULARLY MONITORED BY WASHINGTON GAS AND ADJUSTED AS NEEDED.
4. IN ADDITION THE 24" GAS MAIN WILL BE ENCASED IN FLOWABLE FILL.

FOR CONSTRUCTION

NOTE:
CATHODIC PROTECTION INSTALLED EVERY 500' AND AS DIRECTED BY WASHINGTON GAS.

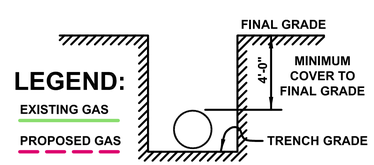
UTILITY KEYNOTES

1. PROP. 11.25° BEND
2. PROP. 22.5° BEND
3. PROP. 45° BEND
4. PROP. 90° BEND
5. TEMP. 24" CAP

TEMPORARY TRAFFIC CONTROL			
FROM STATION	TO STATION	METHOD	SHEET
128+31	133+81	TTC-18.0	14

*NO FLAGGERS

TYPICAL ELEVATION VIEW



PROPOSED GAS TO MAINTAIN A MINIMUM OF 2'-0" VERTICAL AND 5'-0" HORIZONTAL CLEARANCE FROM WATER AND SEWER FACILITIES UNLESS OTHERWISE SPECIFIED BY JURISDICTION.

25 0 25 50 100
1 INCH = 25 FEET

Pennoni
13880 Dulles Corner Lane
Herndon, VA 20171-4687
T 703.449.6700
F 703.449.6714
www.pennoni.com

COMMONWEALTH OF VIRGINIA
JAMES L. WALKER
Lic. No. 046640
03/03/2016
PROFESSIONAL ENGINEER

LEGEND

- PROPERTY/R.O.W.
- CURB AND GUTTER
- EDGE OF PAVEMENT
- STORM SEWER
- SANITARY SEWER
- WATERMAIN
- PROP. GAS LINE
- EX. GAS LINE
- UGE UNDERGROUND ELECTRIC
- UGT UNDERGROUND TELEPHONE
- FENCE/GUARDRAIL
- WMATA EASEMENT
- WATER METER
- WATER VALVE
- FIRE HYDRANT
- UTILITY POLE
- TRAFFIC SIGNAL POLE
- STREET LIGHT
- STORM STRUCTURE LABEL
- SANITARY STRUCTURE LABEL
- SIGN
- PROP. / EX. TEST HOLE
- ELECTRICAL JUNCTION BOX
- CONDUIT RISER
- FEED / FEED ARROW
- 2 WIRE 2 ANODE TEST STATION
- T/S TEST STATION ACCESS BOX

Washington Gas
Gas Transportation
6801 Industrial Road
Springfield, Virginia 22151
Telephone: 703-750-1000
Fax: 703-750-4527

T/I Gassed out Dry
Date:

As-built Drawing Pressure Test Data:
WC ID:
Span No.
Test Press (PSIG):
☐ 90 ☐ 100 ☐ 150 ☐ OTHER
Duration (Mins):
Medium : ☐ A ☐ N ☐ W
RIP : ☐ YES ☐ NO
Date :
Resp. Person : print name
signature
Notes:

Observation data:
WC ID:
Point No.
Pipe Type: ☐ MN ☐ SVC ☐ H/L
Size:
Mat'l : ☐ PLA ☐ WRPD ☐ STL ☐ CI
Pipe Cover : (inches)
External Corrosion ☐YES ☐NO ☐N/A
Internal Corrosion : ☐YES ☐NO ☐N/A
Corrosion Type: A B C D E F G H O X
Max Pit Depth : (thousandths)
Coating Condition :

Abandonment Pipe Purge Data:
Purge out of Service : ☐Yes ☐No
Purge from :
Purge to :
Purge Medium ☐ Air ☐ Nitrogen
Final Gas Reading :
Resp. Person : print name
Notes :

Revisions		
No.	Date	Reason
1		

Safety Sector: N/A	ADC Map: 5525G2
Quad Map: AC006NW	Tax Map Page: 29-4 30-3
Scale: H:1" = 25' V:1"=5'	Cut No. ##
Drawn by: JWH ND MW NB	Phone: 703-840-6700 / Date: 02/25/2016
Checked by: J.WALKER	Date: 03/03/2016

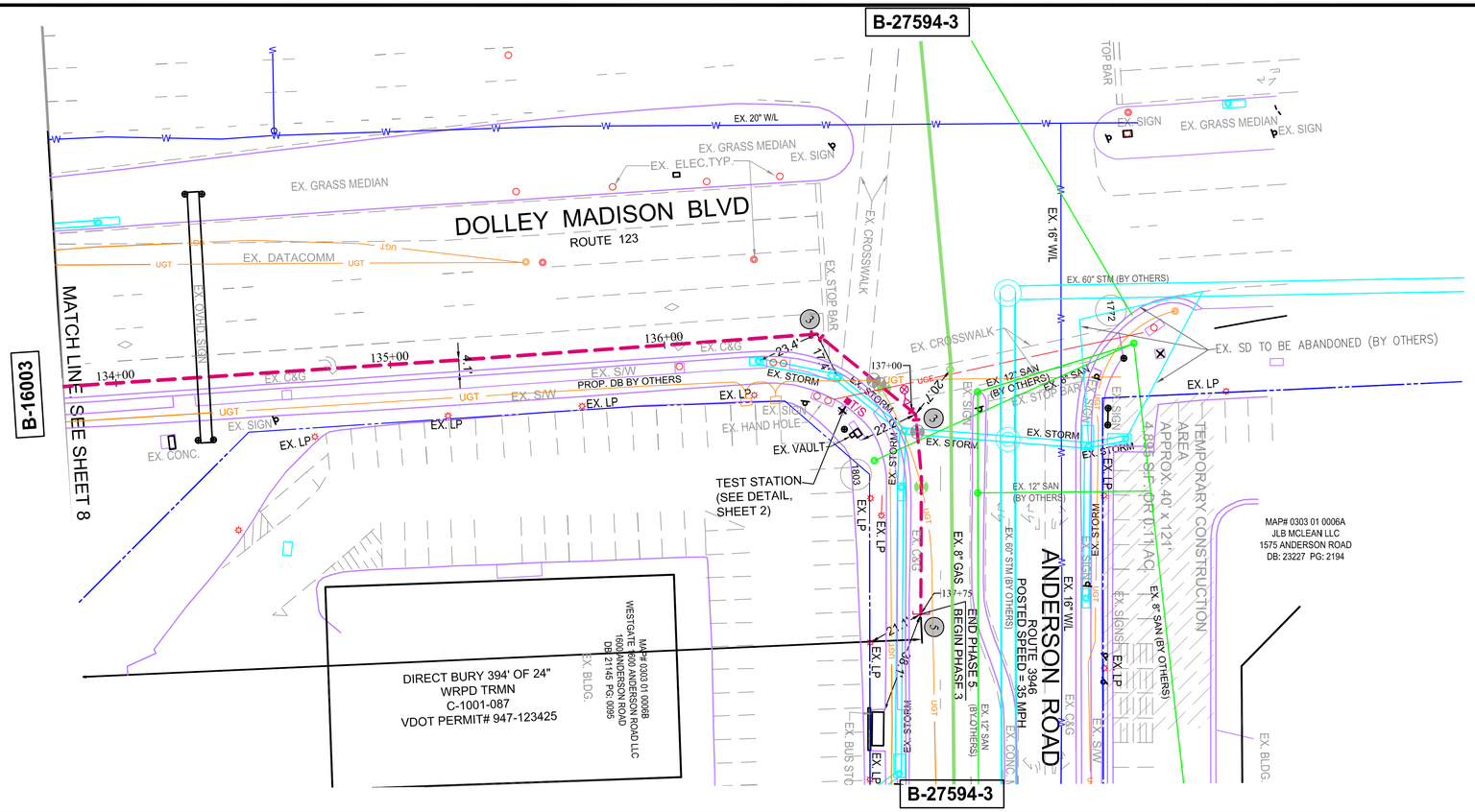
WR / WO Number: C-1001-087

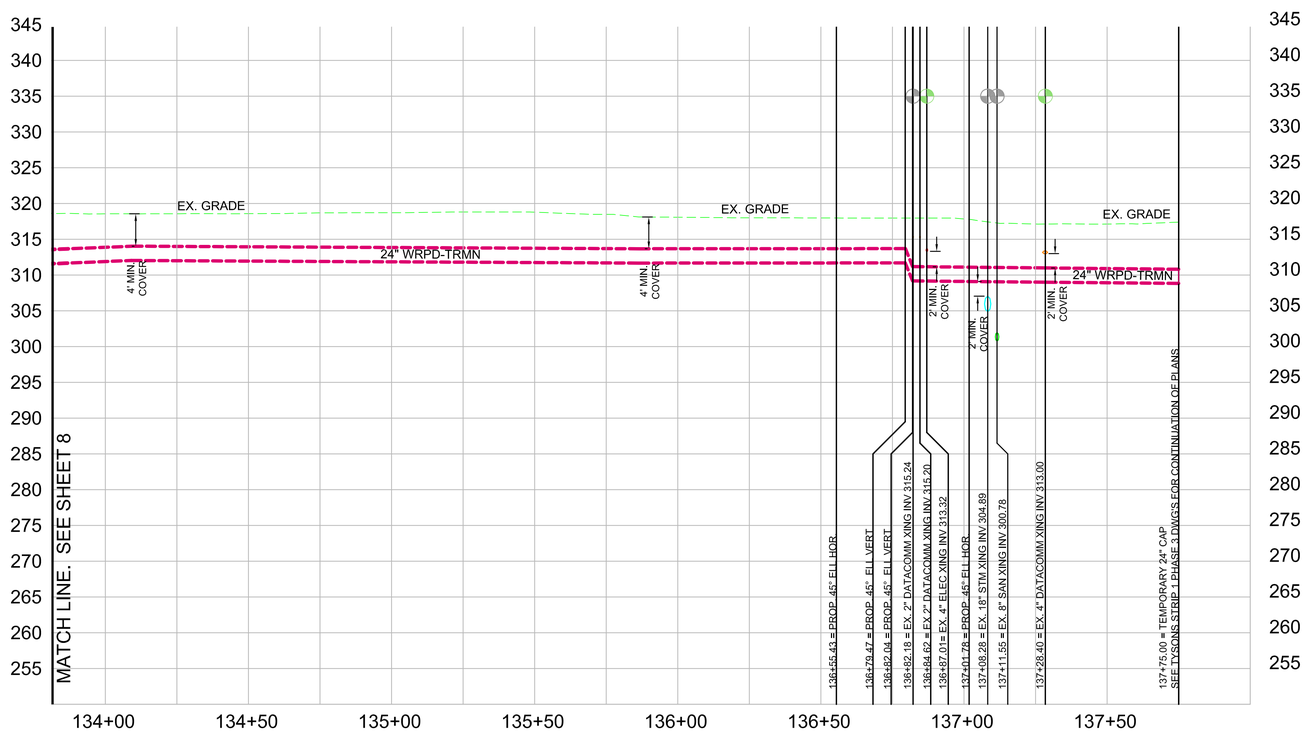
FAIRFAX COUNTY

PLAN AND PROFILE
STA 128+31 TO 133+81
TYSONS CORNER STRIP 1
SYSTEM IMPROVEMENT
PHASE 5

PATH: P:\PROJECT\19721-4E\DPLAN\SHEETS - PHASE 4 & 5\1 CONNECTOR\B-16003-75.DWG PLOTTED: 3/3/2016 11:51 AM

Job Status: FOR CONSTRUCTION
Drawing Number: B-16003-75
Sheet Number: 8 OF 14





NOTE:

1. CATHODIC PROTECTION INSTALLED EVERY 500' AND AS DIRECTED BY WASHINGTON GAS.
2. JLB PROPERTY TAX MAP # 0303 01 0006A RECENTLY RE-DEVELOPED. EXISTING UTILITIES LABELED AS "BY OTHERS" ARE BASED ON VIKA PLANS FOR JLB PARTNERS. AS-BUILT DRAWINGS NOT YET AVAILABLE.

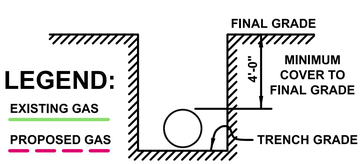
UTILITY KEYNOTES

1. PROP. 11.25° BEND
2. PROP. 22.5° BEND
3. PROP. 45° BEND
4. PROP. 90° BEND
5. TEMP. 24" CAP

TEMPORARY TRAFFIC CONTROL			
FROM STATION	TO STATION	METHOD	SHEET
133+81	136+45	TTC-16.0	12
136+45	137+37	TTC-28.0	12
137+37	137+75	TTC-16.0	12

*NO FLAGGERS

TYPICAL ELEVATION VIEW



PROPOSED GAS TO MAINTAIN A MINIMUM OF 2'-0" VERTICAL AND 5'-0" HORIZONTAL CLEARANCE FROM WATER AND SEWER FACILITIES UNLESS OTHERWISE SPECIFIED BY JURISDICTION.

25 0 25 50 100

1 INCH = 25 FEET

FOR CONSTRUCTION

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COMMONWEALTH OF VIRGINIA
JAMES L. WALKER
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03/03/2016
PROFESSIONAL ENGINEER

LEGEND

- PROPERTY/R.O.W.
- CURB AND GUTTER
- EDGE OF PAVEMENT
- STORM SEWER
- SANITARY SEWER
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- PROP. GAS LINE
- EX. GAS LINE
- UGE UNDERGROUND ELECTRIC
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- FENCE/GUARDRAIL
- WMATA EASEMENT
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- WATER VALVE
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- STREET LIGHT
- STORM STRUCTURE LABEL
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- FEED / FEED ARROW
- 2 WIRE 2 ANODE TEST STATION
- T/S TEST STATION ACCESS BOX

Washington Gas
Gas Transportation
6801 Industrial Road
Springfield, Virginia 22151
Telephone: 703-750-1000
Fax: 703-750-4527

T/I Gassed out Dry
Date:

As-built Drawing Pressure Test Data:
WC ID:
Span No.
Test Press (PSIG):
☐ 90 ☐ 100 ☐ 150 ☐ OTHER
Duration (Mins):
Medium : ☐ A ☐ N ☐ W
RIP : ☐ YES ☐ NO
Date :
Resp. Person : print name
signature
Notes:

Observation data:
WC ID:
Point No.
Pipe Type: ☐ MN ☐ SVC ☐ H/L
Size:
Mat'l : ☐ PLA ☐ WRPD ☐
☐ STL ☐ CI
Pipe Cover : (inches)
External Corrosion : ☐ YES ☐ NO ☐ N/A
Internal Corrosion : ☐ YES ☐ NO ☐ N/A
Corrosion Type: A B C D E F G H O X
Max Pit Depth : (thousandths)
Coating Condition :

Abandonment Pipe Purge Data:
Purge out of Service : ☐ Yes ☐ No
Purge from :
Purge to :
Purge Medium ☐ Air ☐ Nitrogen
Final Gas Reading :
Resp. Person : print name
Notes :

Revisions		
No.	Date	Reason
1		

Safety Sector: N/A	ADC Map: ##
Quad Map: 65161	Tax Map Page: 29-4 30-3
Scale: H: = 25' # = ##'	Cut No. ##
Drawn by: JWH ND MW NB	Phone: 703-840-6700 / Date: 11/23/2015
Checked by: ####	Date: 03/03/2016

WR / WO Number: C-1001-087

FAIRFAX COUNTY

PLAN AND PROFILE - STA 133+81 TO 137+75 TYSONS CORNER STRIP 1 SYSTEM IMPROVEMENT PHASE 5

PATH: P:\PROJECT\19721-4\ENGFX-LAYSHEETS - PHASE 4 & 5\1 CONNECTORS\1000-76.DWG PLOTTED: 3/3/2016 11:54 AM

Job Status: FOR CONSTRUCTION

Drawing Number: B-16003-76

Sheet Number: 9 OF 14

BILL OF MATERIAL

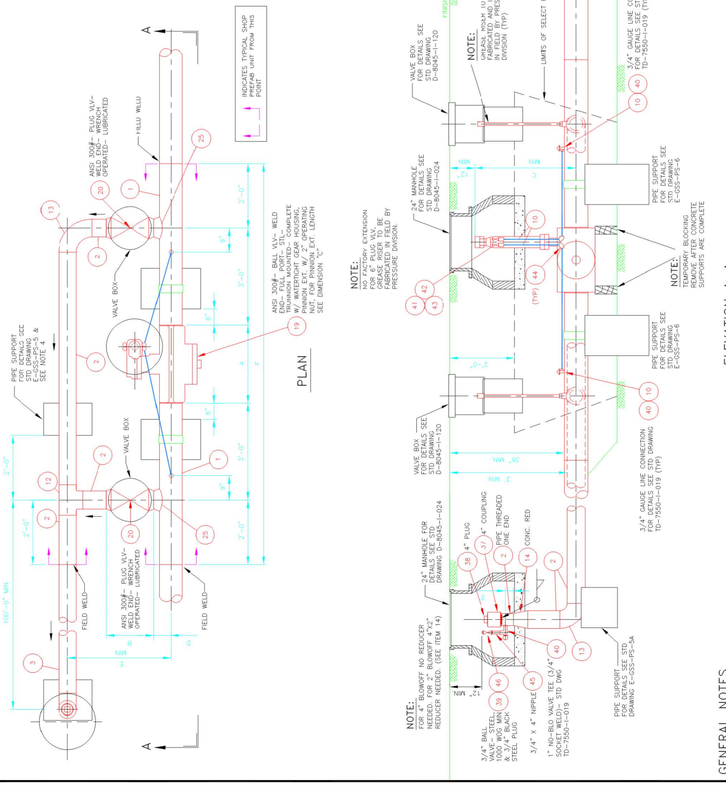
ITEM NO.	REQ. NO.	DESCRIPTION	6" MANUAL	8" MANUAL	12" MANUAL	16" MANUAL	20" MANUAL	24" MANUAL
1	10'	24" PIPE, API 5L-X60-ERW-REV END-BARE- 0.375" WALL						11734*
1	10'	20" PIPE, API 5L-X-42-ERW-REV END-BARE- 0.375" WALL					11731*	
1	10'	16" PIPE, API 5L-X-42-ERW-REV END-BARE- 0.375" WALL				NON STOCK		
1	10'	12" PIPE, API 5L-GR B-ERW/SMLS-REV END-BARE-			NON STOCK			
1	10'	8" PIPE, API 5L-GR B-SMLS-REV END-BARE- 0.322" WALL		NON STOCK				
1	10'	6" PIPE, API 5L-GR B-ERW/SMLS-REV END-BARE-	NON STOCK					
2	SHOP	24" PIPE, API 5L-GR B-SMLS-BEV END-BARE- 0.250" WALL				12944	12945	12945
2	SHOP	6" PIPE, ASTM A106-GR B-SMLS-BEV END-BARE- 0.250" WALL			11737			
3	SHOP	24" PIPE, ASTM A106-GR B-SMLS-BEV END-WRPD- 0.250" WALL				12947	12947	12948
3	SHOP	6" PIPE, ASTM A106-GR B-SMLS-BEV END-WRPD- 0.250" WALL			11737			
3	SHOP	4" PIPE, ASTM A106-GR B-SMLS-BEV END-WRPD- 0.237" WALL		12863				
3	SHOP	2" PIPE, API 5L-X42-ERW-REV END-BARE- 0.218" WALL	11756					
10	SHOP	3/4" PIPE, SCH. 80-SMLS-ASTM A-106-GR. B	11734	11734	11734	11734	11734	11734
		FITTINGS, CARBON STL, BUTT WELD- SMLS- ASTM A-234-GRADE WPB						
12	1	6" TEE, TO MATCH .250" WALL						10900
12	1	4" TEE, TO MATCH .237" WALL				10899		
13	1	24" 90° ELL TO MATCH .250" WALL		12840				
13	1	6" 90° ELL TO MATCH .250" WALL					10864	
13	2	4" 90° ELL TO MATCH .237" WALL			10863			
13	2	2" 90° ELL LR TO MATCH .218" WALL	12837					
14	1	4" X 2" CONC. RED. .237" X .218" WALL	NON STOCK					
14	1	6" X 4 CONC RED .250" X .237" WAL						10888
		VALVES, ANSI 300#, BALL TOS PORT, WELD END, STL, WITH ACTUATOR, LOCKING DEVICE, OPERATING NUT, OR PINNION EXT. LENGTH SEE DIMENSION "C"					SPECIAL ORDER	
19	1	24"						
19	1	20"						
19	1	16"						
19	1	12"						
19	1	8"						
19	1	6"						
19	1	VALVES, ANSI 300#, PLUG, LUBRICATED, WELD END, STL, WITH ACTUATOR, OPERATING NUT, OR PINNION EXT.						
20	1	6"						
20	1	4"						
20	1	2"						
		WELDOLETS, FSI, S10 WT						
25	1	24" X 2" X 4" ASTM A-694 GRADE F60						
25	1	20" X 2" X 4" ASTM A-694 GRADE F42						
25	1	16" X 2" X 4" ASTM A-694 GRADE F42						
25	1	12" X 2" X 4" ASTM A-105						
25	1	6" X 2" ASTM A-105						
37	1	4" COUPLING-REDUSED-END-SCREW-BLK-STL-RAW			11759	11759	11759	11759
38	1	3/4" PIPE THREADED NIPPLE-SCH 80-STL-GALV			11761	11761	11761	11761
39	1	3/4" BALL VALVE, STEEL- FNPT- 1,000 WOG			20393	20393	20393	20393
40	3	1" X 1" NO BLO ALV TEE- WLD END- STL CAP			10916	10916	10916	10916
41	2	3/4" PIPE PLUG- 3/4 FNPT X 1/4 MPT- STL- 4000 PSI RONDO		20365	20365	20365	20365	20365
42	2	1/4" NEEDLE VALVE- 10,000# - FEMALE- 3000 PSI		12636	12636	12636	12636	12636
43	2	1/4" PLUG- FST- BLACK- SQ HD- SOLID- ASME B16.14		11743	11743	11743	11743	11743
44	2	3/4" FLT FLL SOC WLD, FST, ASTM A105, CLASS 3000		10931	10931	10931	10931	10931
45	1	3/4" X 4" LONG NIPPLE- STEEL- BLK- TOE- 3/4" PIPE THREADED BOTH ENDS		11676	11676	11676	11676	11676
46	1	3/4" PLUG- STEEL- BLK- SOCKET- SQ. HD- SOLID- ASME B16.14		11244	11244	11244	11244	11244

* = STOCKED ON SPECIAL REQUEST ONLY

VARIABLE DIMENSIONS FOR PIPING ASSEMBLY & SUPPORT

LINE NO.	NOM. SIZE MAIN	NOM. SIZE OFF	A	B	C*	D	E*	F
1	6"	2"	18"	11 1/2"	27 5/16"	4 13/16"	21 11/16"	11"– 6"
2	8"	2"	20 1/2"	11 1/2"	28 5/16"	5 13/16"	22 11/16"	11"– 8 1/2"
3	12"	4"	28"	17"	30 3/8"	8 3/8"	35 7/8"	12"– 4"
4	16"	4"	33"	17"	33"	10"	37 1/2"	12"– 8"
5	20"	6"	43"	18"	34"	12 3/8"	40"	13"– 11"
6	24"	6"	55"	18"	36"	14 3/8"	48"	14"–7"

* MIN DIMENSIONS– FABRICATE AS SPECIFIED ON DWG OF MAIN INSTLN



DESCRIPTION	TYPICAL DESIGN PRESSURE	MIN. TEST PRESSURE	TYPICAL TARGET TEST PRESSURE	TEST MEDIUM	MIN. DURATION	MAX. ALLOWABLE TEST PRESSURE
ALL MAINLINE GAUGE AND SLOW-OFF PIPING	600 PSIG	900 PSIG	1000 PSIG	HYDROSTATIC WATER	4 HOUR	1,125 PSIG

6"- 24" MAINLINE VALVE ASSEMBLY WITH YOKED BLOW-OFF FOR TRANSMISSION & SERVICE DESIGN PRESSURE 600 PSIG (CLASS 4)

Washington Gas
CORPORATE ENGINEERING
6801 Industrial Road
Springfield, Virginia 22151
Telephone: 703-750-4465
Fax: 703-750-4447

Chk'd By	Date	Chk'd By	Date	Chk'd By	Date
CJ	8-1-03	JD/JD	6-24-13	HSK	12-7-01
VH	8-1-03	TK/KR/MGE	8-1-03	SC	12-7-01
SH	8-1-03	MJL	8-1-03	MWM	12-7-01
HSR	8-1-03	TRT/HSR	8-1-03	SC	12-7-01

Design Approval: CJR, KMM, CAM, JSR, OR

Rev. Number: 0, 1, 2, 3, 4
Rev. Date: 8-1-03, 8-1-03, 8-1-03, 12-7-01
Revision Comments: 4 CHANGED BLOW-OFF & DRAWING NUMBER

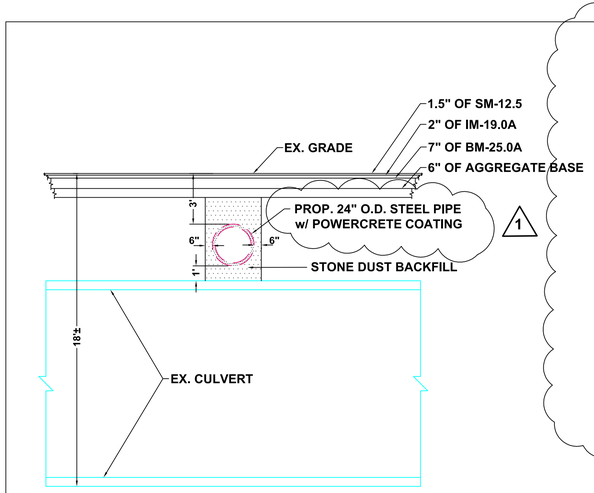
Path: V:\CE Staf\Shelley Dwangin\TSSMS\TSS-MS-001.DWG Plotted: 20-DEC-2001 10:01

Drawing Number: T-5298-1-625

Scale: NO SCALE
Revision Number: 4
B.W File Number:
Account Number:
Job Number:
Project Engineer: MMW
Drawn by/Date: JB / 10-16-01
Checked by/Date: ENG / 10-17-01
Quad Map:
Sal Map:

Rev.	Date	Description
4	12/09/2016	Final Review

CONSPAN CULVERT
NTS



CONTECH ENGINEERED SOLUTIONS

Contech Engineered Solutions LLC
9025 Centre Pointe Drive, Suite 400
West Chester, OH 45069
Phone: (513) 645-7000
Fax: (513) 645-7993
www.ContechES.com

February 1, 2016

RE: Scotts Crossing CON/SPAN, Tysons, VA
Utility Crossing

Given the following conditions and the detail provided by Pennoni, we confirm that the ConSpan culvert at Scotts Crossing Road is able to support a 24" diameter Powercrete coated steel pipe.

24" steel pipe weighs 94.6 lbs. per linear foot; 0.375" wall thickness. Minimum 12" fill from bottom of pipe to top of culvert. There will be no increase in total fill height from top culvert to roadway surface.

Respectfully,

Philip A. Creamer, P.E.
Director Precast Engineering

Pennoni
13880 Dulles Corner Lane
Herndon, VA 20171-4687
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F 703.449.6714
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03/03/2016
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Telephone: 703-750-1000
Fax: 703-750-4527

T/I Gassed out Dry
Date:

As-built Drawing Pressure Test Data:
WC ID:
Span No.
Test Press (PSIG):
☐ 90 ☐ 100 ☐ 150 ☐ OTHER
Duration (Mins):
Medium : ☐ A ☐ N ☐ W
RIP : ☐ YES ☐ NO
Date :
Resp. Person :
print name
signature
Notes:

Observation data:
WC ID:
Point No.
Pipe Type: ☐ MN ☐ SVC ☐ H/L
Size:
Mat'l : ☐ PLA ☐ WRPD ☐ ____ ☐STL ☐ CI
Pipe Cover : (Inches)
External Corrosion :☐YES ☐NO ☐N/A
Internal Corrosion :☐YES ☐NO ☐N/A
Corrosion Type: A B C D E F G H O X
Max Pit Depth : (thousandths)
Coating Condition :

Abandonment Pipe Purge Data:
Purge out of Service : ☐Yes ☐No
Purge from :
Purge to :
Purge Medium ☐ Air ☐ Nitrogen
Final Gas Reading :
Resp. Person :
print name
Notes :

FOR CONSTRUCTION

No.	Date	Reason
1	12/04/2016	Detail adjustment

Revisions

Safety Sector: N/A	ADC Map: 5525F2 5525G2
Quad Map: AD006NW AC006NW	Tax Map Page: 29-4 30-3
Scale: AS SHOWN	Cut No. ##
Drawn by: ND MW NB	Phone: 703-449-7000
Date: 11/23/2015	
Checked by: J.WALKER	Date: 03/03/2016

WR / WO Number:
WO# C-1001-087

FAIRFAX COUNTY, VA

TYPICAL SECTIONS & DETAILS
TYSONS CORNER STRIP 1 SYSTEM IMPROVEMENT PHASE 5

P:\PROJ\CET\10275-4-ENGR\PLANS\SHEETS - PHASE 5 JB DR CONNECTIONS-B-16003-102.DWG
PLOTTED: 3/3/2016 11:05 AM

Job Status:
FOR CONSTRUCTION

Drawing Number:
B-16003-102

Sheet Number: 10 OF 14

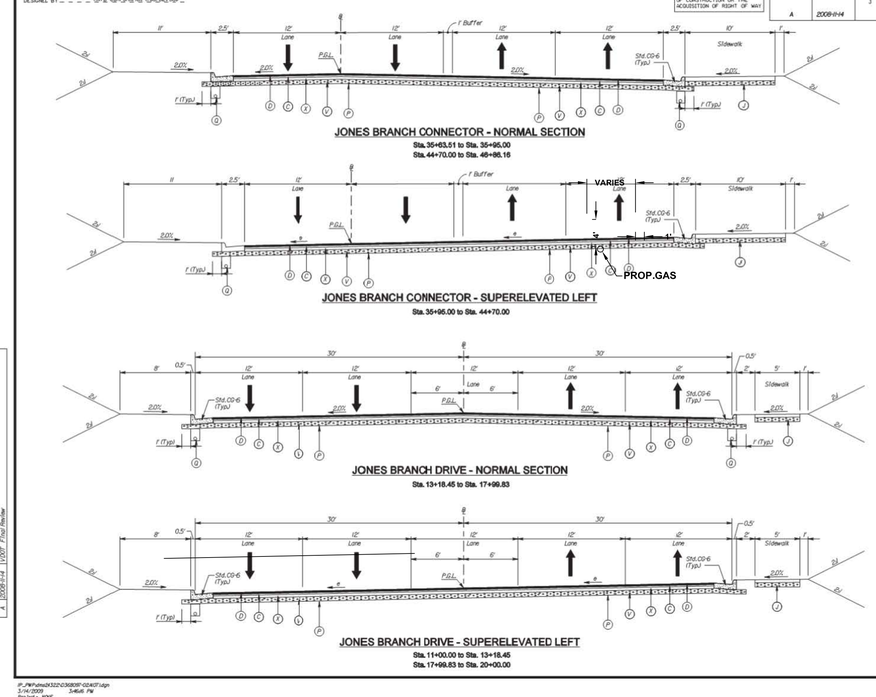
PROJECT MANAGER ___ LARRY GUIDICE (703) 657-2800 ___
SURVEYED BY ___ RICHARD_PAGNE_(703)-519-5300 ___
DESIGN SUPERVISED BY ___ CHARLES_A._DODGE_(703)_894-5112 ___
DESIGNED BY ___ SATE COMPUTER (703)_894-5112 ___

FOR INFORMATION ONLY!

THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY

LIMITED ACCESS HIGHWAY
By Resolution of Highway Commission dated October 4, 1956

REVISION	DATE	Fiscal Year	STATE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
A	2008-11-14	3	VA.		495	0495-029-754, P101 0495-029-136, R201 0495-029-754, C501	7-2(A7)



Legend

- (A) Asphalt Concrete Surface Course, Type SM-12.5E (W) - 2 Inch Depth
- (B) Asphalt Concrete Base Course, Type BM-25.0A - 14 Inch Depth
- (C) Asphalt Concrete Intermediate Course, Type IM-19.0A - 2 Inch Depth
- (D) Asphalt Concrete Surface Course, Type SM-9.5D - 1.5 Inch Depth
- (E) Asphalt Concrete Intermediate Course, Type IM-19.0D - 2 Inch Depth
- (F) Asphalt Concrete Base Course, Type BM-25.0A - 9 Inch Depth
- (G) Asphalt Concrete Base Course, Type BM-25.0A - 10 Inch Depth
- (H) Asphalt Concrete Base Course, Type BM-25.0A - 6 Inch Depth
- (I) Asphalt Concrete Base Course, Type BM-25.0A - 4 Inch Depth
- (J) Aggregate Base Material, Type I, Size No. 21 B - 8 Inch Depth
- (K) Aggregate Base Material, Type I, Size No. 21 B - 9 Inch Depth
- (L) Aggregate Base Material, Type I, Size No. 21 B - 10 Inch Depth
- (M) Aggregate Base Material, Type I, Size No. 21 B - 22 Inch Depth
- (N) Mill Existing Asphalt Surface - 2 Inch Depth
- (O) Cement Stabilized Aggregate Base Material, Type I, Size No. 21 A Stabilized With 4% Hydraulic Cement By Weight - 9 Inch Depth.

  When liquid asphalt is used as curing material for the cement stabilized course, it shall be liquid asphalt CRS-1, CRS-1h or CMS-2 applied at a rate of 0.2 gal/sq. Where necessary for maintenance of traffic, cover material consisting of No. 10 Aggregate or Grade B Sand shall be applied at a rate of 10 lbs/sq. All costs for such curing and materials shall be included in the bid price for the cement stabilized course.
- (P) Select Material, Type I, Minimum CBR 30 - 4 Inch Depth (As Required For Stabilization or as necessary)
- (Q) SF-U.D-4 Underdrain (See plans for underdrain locations)
- (R) Remove Exist Underdrain Pipe.
- (S) Asphalt Concrete Base Material, Type BM-25.0 - Variable Depth
- (T) Aggregate Base Material, Type I, Size No. 21 B - 13 Inch Depth
- (U) Cement Stabilized Aggregate Base Material, Type I, Size No. 21 A Stabilized With 4% Hydraulic Cement By Weight - 6 Inch Depth.

  When liquid asphalt is used as curing material for the cement stabilized course, it shall be liquid asphalt CRS-1, CRS-1h or CMS-2 applied at a rate of 0.2 gal/sq. Where necessary for maintenance of traffic, cover material consisting of No. 10 Aggregate or Grade B Sand shall be applied at a rate of 10 lbs/sq. All costs for such curing material shall be included in the bid price for the cement stabilized course.
- (V) Aggregate Base Material, Type I, Size No. 21 B - 6 Inch Depth
- (W) Asphalt Concrete Base Material, Type BM-25.0 - 11 Inch Depth
- (X) Asphalt Concrete Base Material, Type BM-25.0 - 7 Inch Depth

FLUOR-LANE!
I-495 HOT LANES
TYPICAL SECTIONS
JONES BRANCH DRIVE & JONES BRANCH CONNECTOR
SECTION 7

HNTB CORPORATION
ARCHITECTS ENGINEERS & PLANNERS
ARLINGTON, VIRGINIA

Scale: 1"=5'-0" | Date: March 6, 2009 | P.Lnk NO.: | PROJECT: | FILE NO.: | SHEET NO.: 7-2(A7)

THIS SHEET IS FOR INFORMATION ONLY!

Figure 6C-1, Component Parts of a Temporary Traffic Control Zone

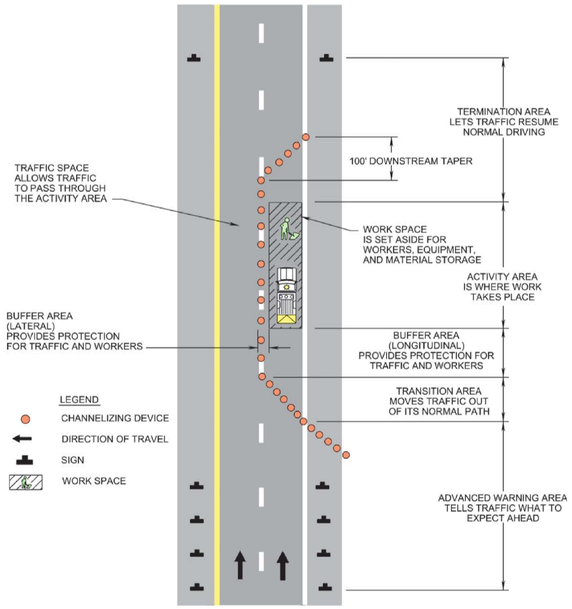


Table 6C-1, Spacing of Advance Warning Signs

Road Type	Spacing (Feet)
Urban street with 25 mph or less posted speed	100 – 200
Urban street with 30 to 40 mph posted speed	250 – 350
* All Other Roadways with 45 mph or less posted speed	350 – 500
All Other Roadways with greater than 45 mph posted speed	500 – 800
Limited Access highways	1300 – 1500

* Urban streets with greater than 40 mph posted speed limits fall into this category.

Table 6C-2, Length of the Longitudinal Buffer Space

Posted Speed Limit (mph)	Distance (Feet)
≤ 20	115 – 120
25	155 – 165
30	200 – 210
35	250 – 260
40	305 – 320
45	360 – 380
50	425 – 445
55	500 – 520
60	570 – 590
65	645 – 675
70	730 – 760
75	820 – 850

Table 6C-3, Taper Length Criteria for Temporary Traffic Control Zones

Type of Taper	Taper Length (L)
Merging	L= Minimum
Shifting	L Desired, ½ L Minimum
Shoulder	⅓ L Minimum
Two-Way Traffic	50 Feet Minimum, 100 Feet Maximum
Downstream	50 Feet Minimum, 100 Feet Maximum
L= Taper Length, W= Width of Offset, S= Posted Speed Limit	

Table 6C-4, Taper Length Chart

Taper Length (L)					
Posted Speed Limit (mph)	Width of Offset (Feet)				Remarks
	9	10	11	12	
≤ 25	95	105	115	125	L= S²W/60
30	135	150	165	180	"
35	185	205	225	245	"
40	240	267	294	320	"
45	405	450	495	540	L=SW
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	"
Limited Access highway merging taper length (L) shall be 1000 feet regardless of the posted speed and SW=L is desired for the shifting taper length with ½L being the minimum.					

Table 6H-2, Taper Length (L)

Posted Speed Limit (mph)	Width of Offset (Feet)				Remarks
	9	10	11	12	
≤ 25	95	105	115	125	L= S²W/60
30	135	150	165	180	"
35	185	205	225	245	"
40	240	270	295	320	"
45	405	450	495	540	L=SW
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	"
Limited Access Highway merging taper length (L) shall be 1000 feet regardless of the posted speed. SW=L is desired for the shifting taper length with ½L being the minimum.					

Table 6H-3, Buffer Space/ Flagger Distance from Work Area

Posted Speed Limit (mph)	Distance (Feet)
≤ 20	115 – 120
25	155 – 165
30	200 – 210
35	250 – 260
40	305 – 320
45	360 – 380
50	425 – 445
55	500 – 520
60	570 – 590
65	645 – 675
70	730 – 760

Typical Traffic Control
Crosswalk Closure and Pedestrian Detour Operation
(Figure TTC-36.1)
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.**
2. **Curb parking shall be prohibited for at least 50 feet in advance of the midblock crosswalk.**

Guidance:

3. *Audible information devices should be considered where midblock closings and changed crosswalk areas cause inadequate communication to be provided to pedestrians who have visual disabilities.*
4. *Pedestrian traffic signal displays controlling closed crosswalks should be covered or deactivated.*
5. *Temporary markings should be considered for operations exceeding three days in duration.*

Option:

6. 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.
7. For nighttime closures, Type A Flashing warning lights may be used on barricades supporting signs and closing sidewalks.
8. In order to maintain the systematic use of the fluorescent yellow-green background for pedestrian, bicycle, and school warning signs in a jurisdiction, the fluorescent yellow-green background for pedestrian, bicycle, and school warning signs may be used in TTC zones.

Standard:

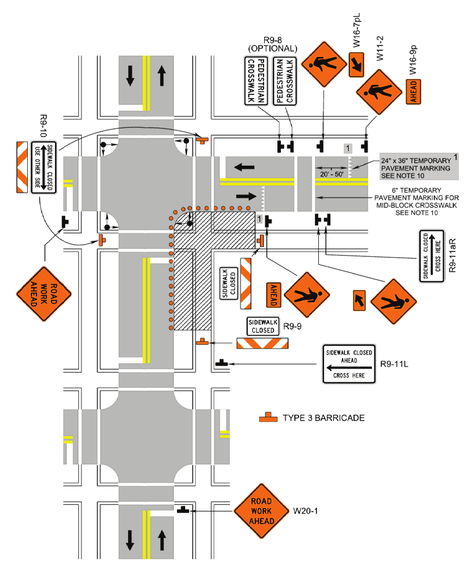
9. **All sidewalk closures shall be closed with Type 3 Barricades.**

Support:

10. Refer to Sections 3B-16 through 3B-18 of the 2009 MUTCD and the Virginia Supplement to the MUTCD[1] for crosswalk[1] lines, yield lines and other related TTC devices that may be used to control vehicular traffic at midblock crosswalks.

1: Revision 1 – 4/1/2015

Crosswalk Closure and Pedestrian Detour Operation
(Figure TTC-36.1)



1: Revision 1 – 4/1/2015

WORK ZONE NOTES:

1. ALL TRAFFIC CONTROL SHALL CONFORM TO THE MOST STRINGENT STANDARDS SET FORTH IN THE LATEST EDITIONS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), THE VDOT ROAD AND BRIDGE STANDARDS, AND THE VIRGINIA WORK AREA PROTECTION MANUAL.
2. SIGNS SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF WORK AND REMOVED IMMEDIATELY AFTER COMPLETION OF ACTIVITIES.
3. SIGN PLACEMENT SHALL BE ADJUSTED TO AVOID CONFLICT WITH EXISTING PERMANENT SIGNAGE.
4. UNLESS THE SIDEWALK IS FULLY OR PARTIALLY CLOSED, A MINIMUM OF 6 FEET WIDTH WITH NO RESTRICTION (FREE OF FIXTURES) SHALL BE MAINTAINED.
5. COMPLIANCE TO THE AMERICAN DISABILITIES ACT (ADA) IS REQUIRED.
6. PEDESTRIAN ACCESS AROUND THE WORK ZONE SHALL BE MAINTAINED AT ALL TIMES.

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COMMONWEALTH OF VIRGINIA
JAMES L. WALKER
Lic. No. 046640
03/03/2016
PROFESSIONAL ENGINEER

Washington Gas
Gas Transportation
6801 Industrial Road
Springfield, Virginia 22151
Telephone: 703-750-1000
Fax: 703-750-4527

T/I Gassed out Dry
Date:

As-built Drawing Pressure Test Data:
WC ID:
Span No.
Test Press (PSIG):
☐ 90 ☐ 100 ☐ 150 ☐ OTHER
Duration (Mins):
Medium : ☐ A ☐ N ☐ W
RIP : ☐ YES ☐ NO
Date :
Resp. Person : print name
signature
Notes:

Observation data:
WC ID:
Point No.
Pipe Type: ☐ MN ☐ SVC ☐ H/L
Size:
Mat'l : ☐ PLA ☐ WRPD ☐ STL ☐ CI
Pipe Cover : (inches)
External Corrosion : ☐YES ☐NO ☐N/A
Internal Corrosion : ☐YES ☐NO ☐N/A
Corrosion Type: A B C D E F G H O X
Max Pit Depth : (thousandths)
Coating Condition :

Abandonment Pipe Purge Data:
Purge out of Service : ☐Yes ☐No
Purge from :
Purge to :
Purge Medium : ☐ Air ☐ Nitrogen
Final Gas Reading :
Resp. Person : print name
Notes :

FOR CONSTRUCTION

No.	Date	Reason
1		

Revisions

Safety Sector: N/A	ADC Map: 5525F2 5525G2
Quad Map: AD006NW AC006NW	Tax Map Page: 29-4 30-3
Scale: AS SHOWN	Cut No. ##
Drawn by: ND MW NB	Phone: 703-449-7000 / Date: 11/23/2015
Checked by: J.WALKER	Date: 03/03/2016
WR / WO Number: WO# C-1001-087	

FAIRFAX COUNTY, VA

TEMPORARY TRAFFIC CONTROL
TYSONS CORNER STRIP 1
SYSTEM IMPROVEMENT
PHASE 5

PATH: P:\PROJECTS\B9701-4\ENGPLANS\SHEETS - PHASE 4 JB DR CONNECTORS-16003-103.DWG PLOTTED: 3/3/2016

Job Status: FOR CONSTRUCTION

Drawing Number: B-16003-103

Sheet Number: 11 OF 14

Typical Traffic Control

Outside Lane Closure Operation on a Four-Lane Roadway

(Figure TTC-16.0)

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	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 = ⅓ L Minimum				

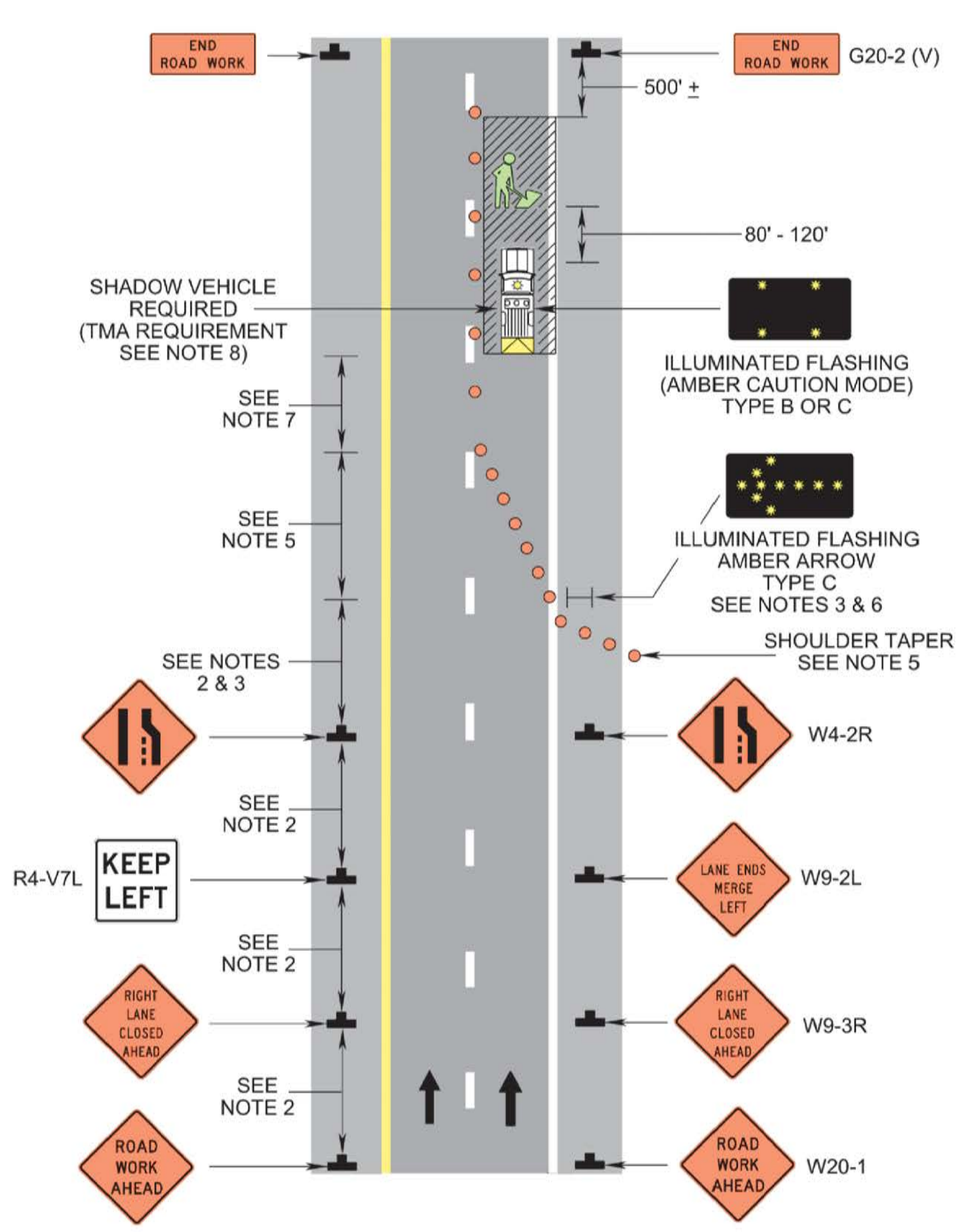
Channelizing Device Spacing		
Location	Speed Limit (mph)	
	0 - 35	36 +
Transition Spacing	20'	40'
Travelway Spacing	40'	80'
Construction Access*	80'	120'
* Spacing may be increased to this distance, but shall not exceed one access per ¼ mile.		

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-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, oscillating, or amber strobe 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, oscillating, or strobe lights. Vehicle hazard warning signals can be used to supplement high-intensity amber rotating, flashing, oscillating, or strobe lights.**
10. **When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed as needed.**

Outside Lane Closure Operation on a Four-Lane Roadway

(Figure TTC-16.0)



Typical Traffic Control

Interior Lane Closure Operation on a Multi-Lane Roadway

(Figure TTC-42.0)

NOTES

Guidance:

1. *Sign spacing distance should be 1300'-1500' for Limited Access highways, and on all other roadways 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.*
2. *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.*

Standard:

3. **On divided highways having a median wider than 8', right and left sign assemblies shall be required.**
4. **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 = ⅓ L Minimum				

Channelizing Device Spacing		
Location	Posted Speed (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.

5. **The buffer space length shall be as shown in Table 6H-3 on Page 6H-5 for the posted speed limit.**
6. **A shadow vehicle with either a Type B or C arrow board operating in the caution mode, or at least one high intensity rotating, oscillating, or amber strobe 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.**
7. **For long-term work zones existing conflicting pavement markings and markers shall be removed and temporary pavement markings and markers shall be installed per Figure TTC-60.**

Option:

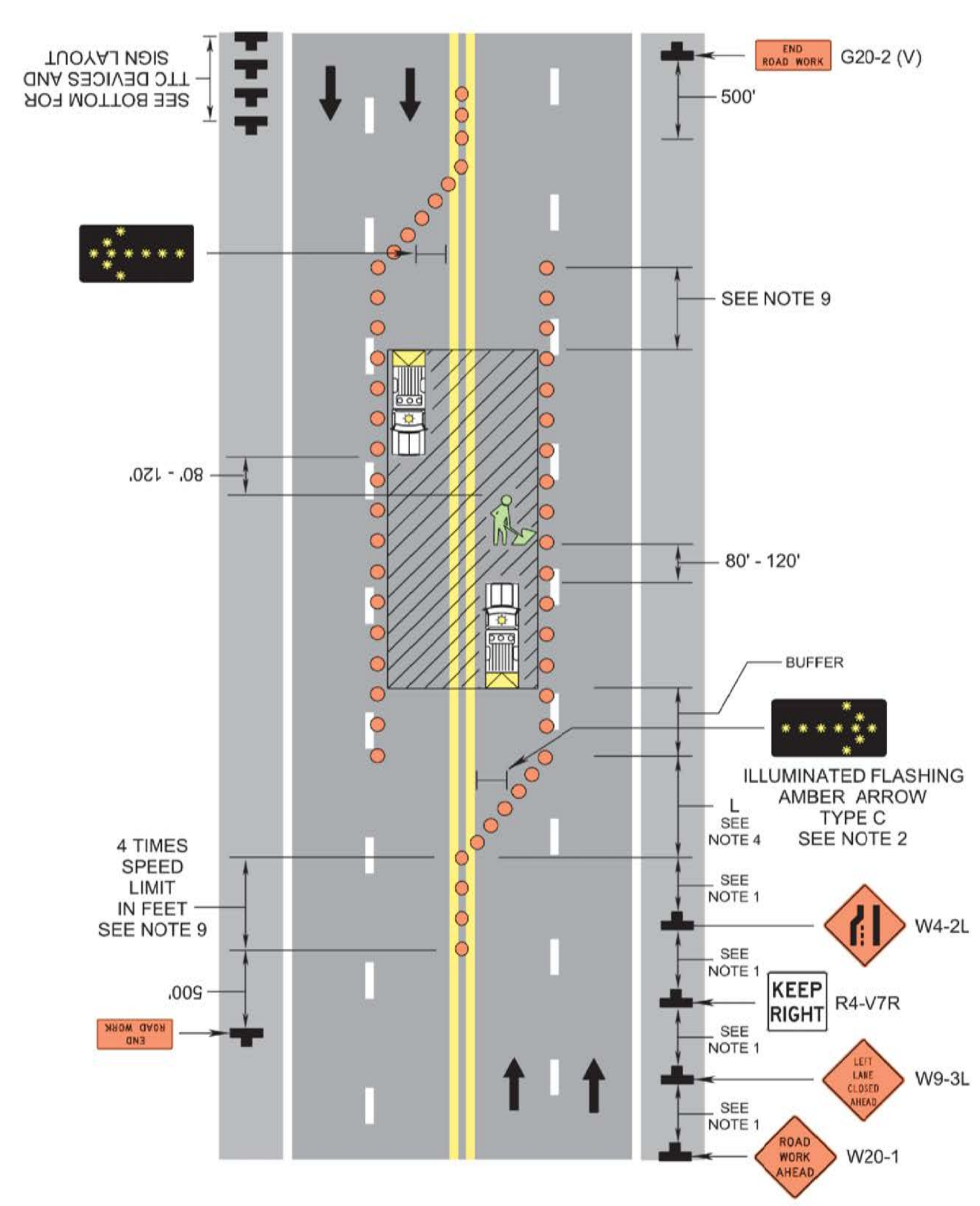
8. For short-term stationary work (less than 3 days duration), lanes may be delineated by channelizing devices or removable pavement markings instead of temporary pavement markings.

Guidance:

9. *When channelizing devices have the potential of leading vehicular traffic out of the intended traffic space, the channelizing devices should be extended a distance in feet of 4 times the posted speed limit in mph beyond the downstream end of the transition area as depicted.*

Interior Lane Closure Operation on a Multi-Lane Roadway

(Figure TTC-42.0)



Typical Traffic Control

Lane Closure Operation in an Intersection

(Figure TTC-28.0)

NOTES

Guidance:

1. *The control of traffic through the intersection in order of preference should be:*
   a. *Obtain the services of law enforcement personnel.*
   b. *Detour the effective routes to other roads and streets as approved and directed by the Regional Traffic Engineer.*
   c. *Place a state certified flagger on each leg of the intersection controlling a single lane of traffic.*

   Appropriate signing as shown should be used for law enforcement and flagging operations. For detour signs see Figure TTC-34.
2. *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:

3. **Channelizing device spacing shall be on 20' centers or less.**

Guidance:

4. *If room permits, a shadow vehicle with at least one rotating amber light or high intensity amber strobe light should be parked 80'-120' in advance of the first work crew.*

Standard:

5. **If the posted speed limit is 45 mph or greater, the shadow vehicle shall have a truck-mounted attenuator.**
6. **For emergency situations (any non-planned operation) of 30 minutes or less duration, two rotating amber lights or high intensity amber strobe lights mounted on the vehicle and visible for 360° shall be required in addition to the channelizing devices shown around the vehicle. Also, vehicle hazard warning signals or amber oscillating lights shall be used.**

Guidance:

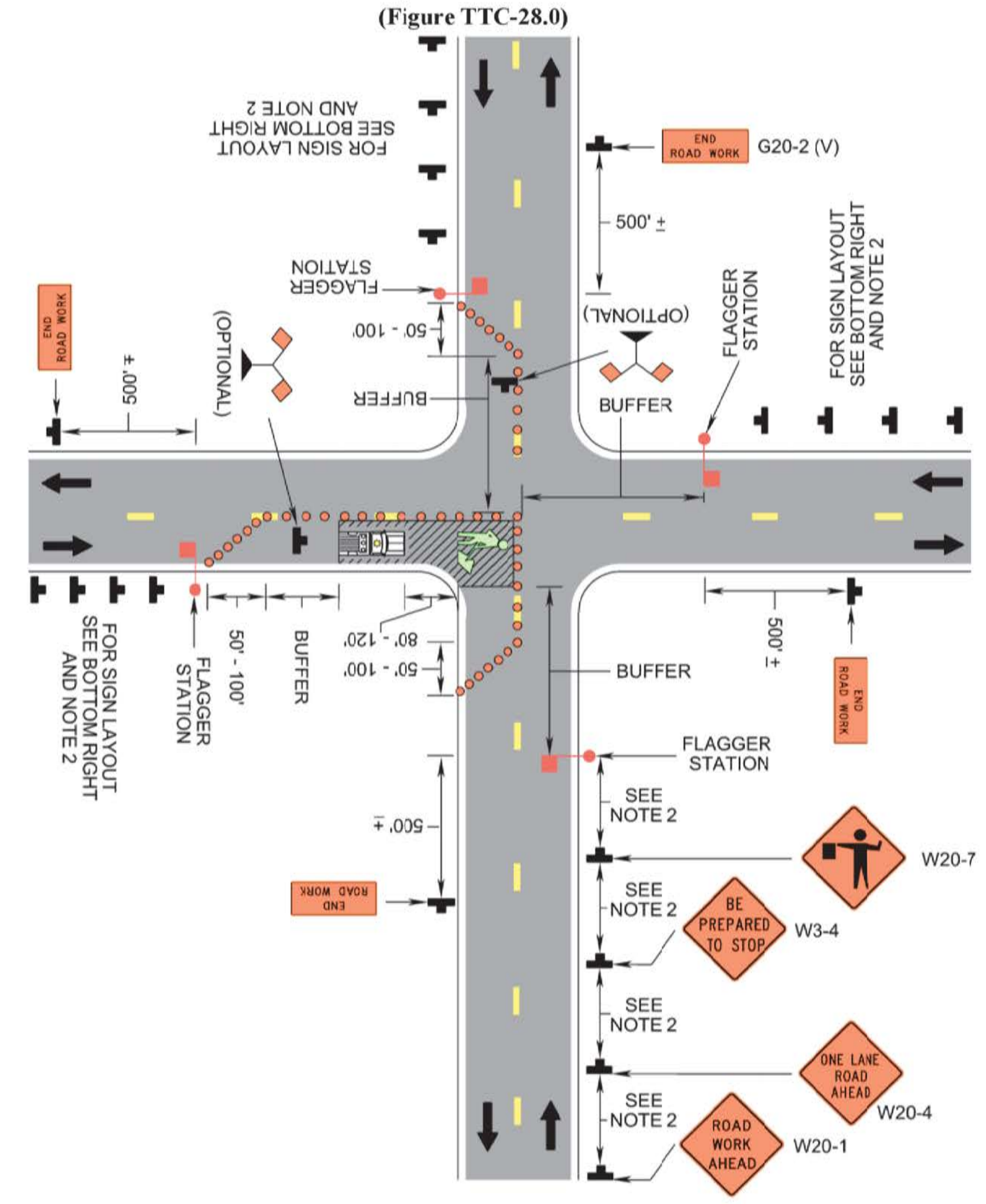
7. *If the work space extends across a crosswalk, the crosswalk should be closed using the information and devices shown in Figure TTC-36.*

Support:

8. 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.

Lane Closure Operation in an Intersection

(Figure TTC-28.0)



WORK ZONE NOTES:

1. ALL TRAFFIC CONTROL SHALL CONFORM TO THE MOST STRINGENT STANDARDS SET FORTH IN THE LATEST EDITIONS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), THE VDOT ROAD AND BRIDGE STANDARDS, AND THE VIRGINIA WORK AREA PROTECTION MANUAL.
2. SIGNS SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF WORK AND REMOVED IMMEDIATELY AFTER COMPLETION OF ACTIVITIES.
3. SIGN PLACEMENT SHALL BE ADJUSTED TO AVOID CONFLICT WITH EXISTING PERMANENT SIGNAGE.
4. UNLESS THE SIDEWALK IS FULLY OR PARTIALLY CLOSED, A MINIMUM OF 6 FEET WIDTH WITH NO RESTRICTION (FREE OF FIXTURES) SHALL BE MAINTAINED.
5. COMPLIANCE TO THE AMERICAN DISABILITIES ACT (ADA) IS REQUIRED.
6. PEDESTRIAN ACCESS AROUND THE WORK ZONE SHALL BE MAINTAINED AT ALL TIMES.

FOR CONSTRUCTION

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Springfield, Virginia 22151
Telephone: 703-750-1000
Fax: 703-750-4527

COMMONWEALTH OF VIRGINIA
JAMES L. WALKER
Lic. No. 046640
03/03/2016
PROFESSIONAL ENGINEER

T/I Gassed out Dry

Date: ____

As-built Drawing Pressure Test Data:
WC ID: ____
Span No. ____
Test Press (PSIG):
☐ 90 ☐ 100 ☐ 150 ☐ OTHER ____
Duration (Mins): ____
Medium : ☐ A ☐ N ☐ W
RIP : ☐ YES ☐ NO
Date : ____
Resp. Person : ____ print name
____ signature
Notes: ____

Observation data:
WC ID: ____
Point No. ____
Pipe Type: ☐ MN ☐ SVC ☐ H/L
Size: ____
Mat'l : ☐ PLA ☐ WRPD ☐ ____
☐STL ☐ CI
Pipe Cover : ____ (inches)
External Corrosion : ☐YES ☐NO ☐N/A
Internal Corrosion : ☐YES ☐NO ☐N/A
Corrosion Type: A B C D E F G H O X
Max Pit Depth : ____(thousandths)
Coating Condition : ____

Abandonment Pipe Purge Data:
Purge out of Service : ☐Yes ☐No
Purge from : ____
Purge to : ____
Purge Medium : ☐ Air ☐ Nitrogen
Final Gas Reading : ____
Resp. Person : ____ print name
Notes : ____

No.	Date	Reason	Revisions
1			

Safety Sector: N/A	ADC Map: 5525F2 5525G2
Quad Map: AD006NW AC006NW	Tax Map Page: 29-4 30-3
Scale: AS SHOWN	Cut No. ##

Drawn by:	Phone:	Date:
ND MW NB	703-449-7000	11/23/2015

Checked by:	Date:
J.WALKER	03/03/2016

WR / WO Number: **WO# C-1001-087**

FAIRFAX COUNTY, VA

TEMPORARY TRAFFIC CONTROL
TYSONS CORNER STRIP 1 SYSTEM IMPROVEMENT PHASE 5

PATH: P:\PROJECT\16972\1-4\ENG\PLANS\SHEETS - PHASE 6 JB DR CONNECTOR\B-16003-106.DWG PLOTTED: 3/3/2016

Job Status: **FOR CONSTRUCTION**

Drawing Number: **B-16003-106**

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 closings 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
Lane Closure Operation with Concrete Traffic Barrier
(Figure TTC-20.0)

NOTES

Guidance:

1. *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.*
2. *SHOULDER CLOSED (W21-5a) signs should be used on Limited-Access Highways where there is no opportunity for disabled vehicles to pull off the roadway (see Figure TTC-6).*
3. *If drivers cannot see a pull-off area beyond the closed shoulder, information regarding the length of the shoulder closure should be provided in feet or miles, as appropriate.*
4. *An emergency pull-off area should be provided per Section 6G.18 and Temporary Traffic Control Figure TTC-8.*

Standard:

5. **On divided highways having a median wider than 8', right and left sign assemblies shall be required.**
6. **Group 2 channelizing device spacing shall be at the following:**

Location	Posted Speed Limit (mph)	
	0 - 35	36 +
Transition Spacing	20'	40'
Travelway Spacing	40'	80'

7. **Length of pavement marking transition (L) is equal to Posted Speed (S) times the Width of Transition (W) (Example: 55 mph x 12'=660'), 1000' minimum for Limited Access highways.**
8. **Barrier transition slope ratio shall be as follows:**

Speed Limit (mph)	Slope Ratio	Speed Limit (mph)	Slope Ratio	Speed Limit (mph)	Slope Ratio
70	22:1	55	17:1	40	13:1
65	20:1	50	16:1	35	11:1
60	19:1	45	14:1	≤30	10:1

When the barrier transition slope is on a horizontal alignment, the total offset shall be prorated around the curve in lieu of a straight-line slope.

9. **End treatment of a barrier in order of preference:**
   a. **Where guardrail exists, attach to barrier with appropriate fixed object attachment.**
   b. **Where cut slope exists, bury barrier into cut slope and provide for drainage as needed.**
   c. **Extend end of barrier until it is beyond the established clear zone (see Figure 2 on Page A-4 of Appendix A for clear zone values).**
   d. **When barrier end is inside the established clear zone, attenuator service Type I or Type II shall be used. Refer to L&D special design drawings.**
10. **Barrier panels 8 inches in width and 12 inches in height shall be placed on top of the concrete barrier and spaced 80' on centers along the parallel or tangent sections and 40' on centers along the transition or taper sections. Reflectorized surface shall be fluorescent orange prismatic lens sheeting. The light at the beginning of the barrier run and at the breakpoint where the barrier becomes parallel to the roadway shall be a Type B flashing light. Barrier delineators shall be installed along the traffic side of the concrete barrier in-between and at the same spacing as the barrier panels approximately 24 inches up from the roadway surface.**

Guidance:

11. *Eradication of existing pavement markings should be as shown in Figure TTC-55.*

Option:

12. The barrier shown in this typical application is an example of one method that may be used to close a shoulder on a long-term project.

Typical Traffic Control
Lane Closure on a Two-Lane Roadway Using Flaggers
(Figure TTC-23.0)

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 at the following:**

Location	Posted Speed Limit (mph)	
	0 – 35	36 +
Transition Spacing	20'	40'
Travelway Spacing	40'	80'

7. **A shadow vehicle with at least one high intensity amber rotating, oscillating, or strobe 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 slowing 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 signs 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).*

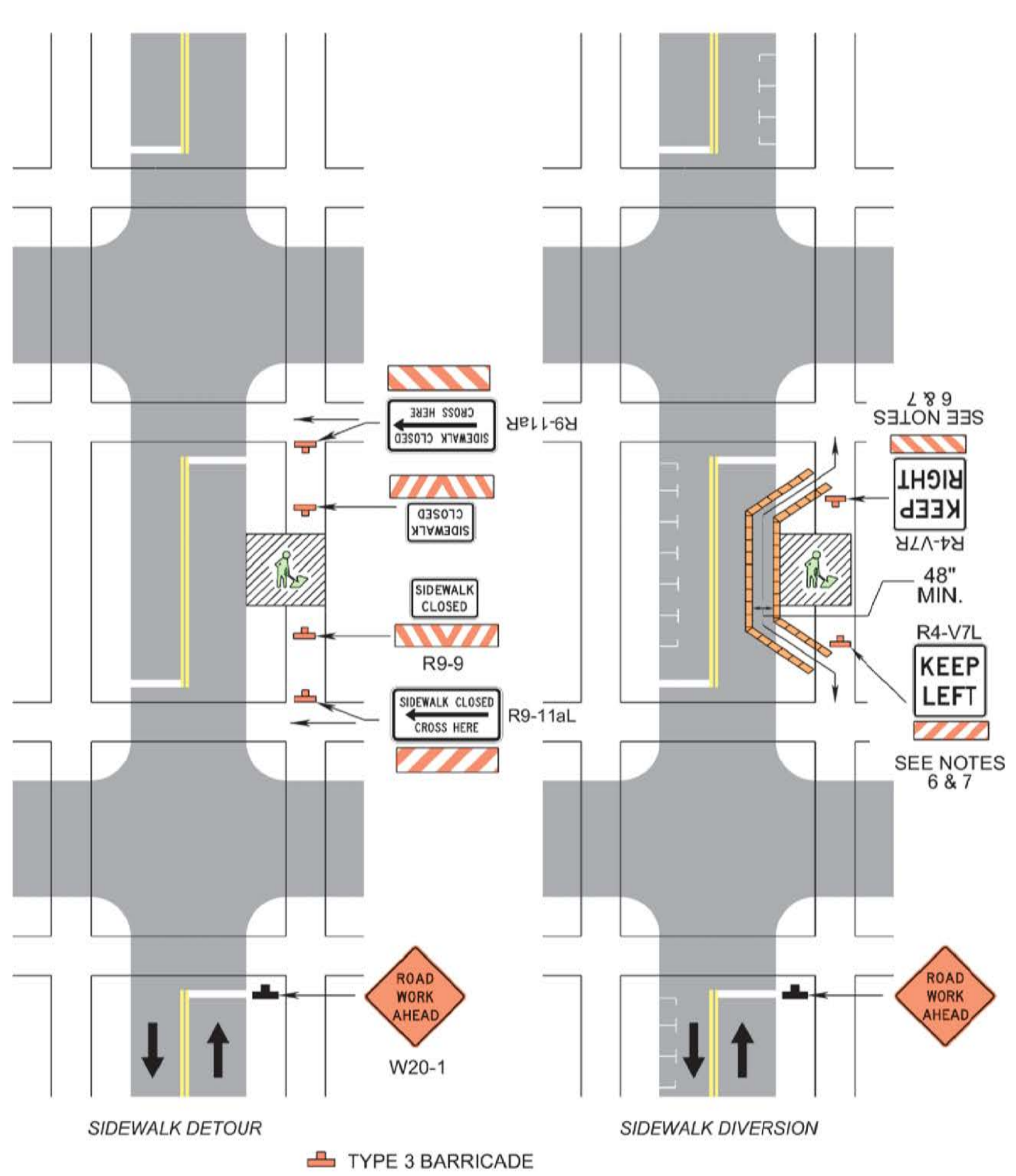
Standard:

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

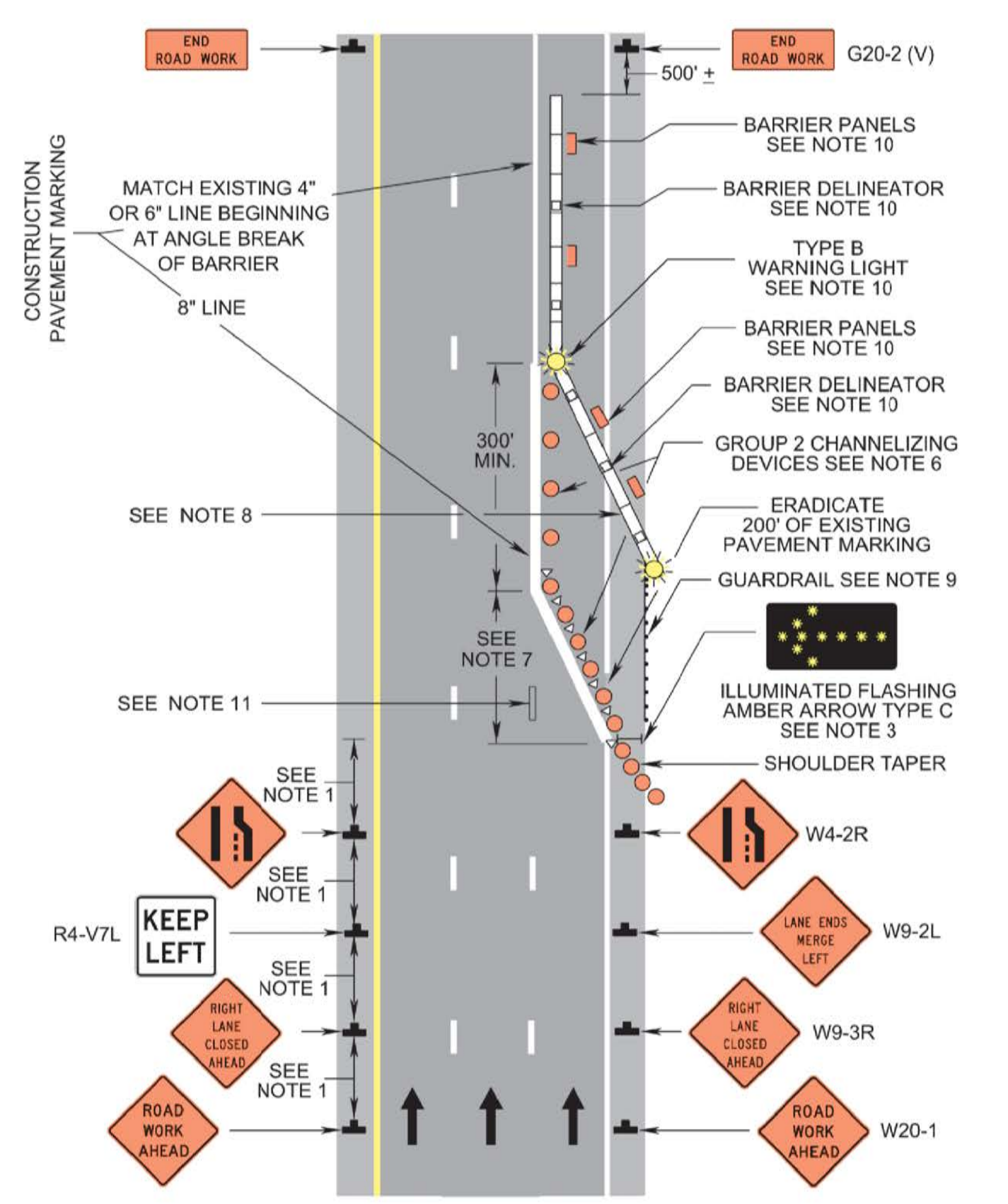
Option:

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 6E).

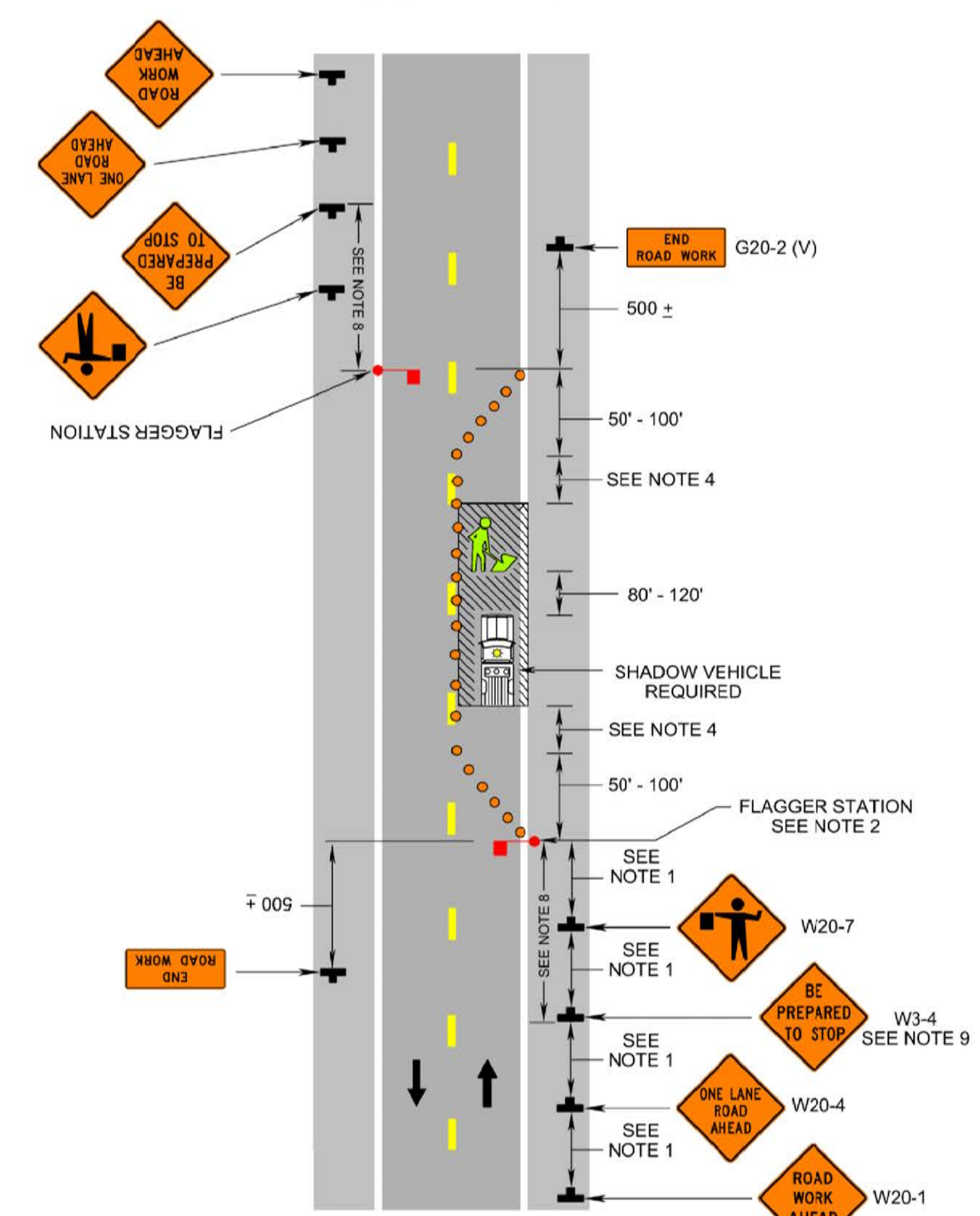
Sidewalk Closure and Bypass Sidewalk Operation
(Figure TTC-35.0)



Lane Closure Operation with Concrete Traffic Barrier
(Figure TTC-20.0)



Lane Closure on a Two-Lane Roadway Using Flaggers
(Figure TTC-23.0)



WORK ZONE NOTES:

1. ALL TRAFFIC CONTROL SHALL CONFORM TO THE MOST STRINGENT STANDARDS SET FORTH IN THE LATEST EDITIONS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), THE VDOT ROAD AND BRIDGE STANDARDS, AND THE VIRGINIA WORK AREA PROTECTION MANUAL.
2. SIGNS SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF WORK AND REMOVED IMMEDIATELY AFTER COMPLETION OF ACTIVITIES.
3. SIGN PLACEMENT SHALL BE ADJUSTED TO AVOID CONFLICT WITH EXISTING PERMANENT SIGNAGE.
4. UNLESS THE SIDEWALK IS FULLY OR PARTIALLY CLOSED, A MINIMUM OF 6 FEET WIDTH WITH NO RESTRICTION (FREE OF FIXTURES) SHALL BE MAINTAINED.
5. COMPLIANCE TO THE AMERICAN DISABILITIES ACT (ADA) IS REQUIRED.
6. PEDESTRIAN ACCESS AROUND THE WORK ZONE SHALL BE MAINTAINED AT ALL TIMES.

FOR CONSTRUCTION

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Washington Gas
Gas Transportation
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Springfield, Virginia 22151
Telephone: 703-750-1000
Fax: 703-750-4527

COMMONWEALTH OF VIRGINIA
JAMES L. WALKER
Lic. No. 046640
03/03/2016
PROFESSIONAL ENGINEER

T/I Gassed out Dry

Date: ____

As-built Drawing Pressure Test Data:
WC ID: ____
Span No. ____
Test Press (PSIG):
☐ 90 ☐ 100 ☐ 150 ☐ OTHER ____
Duration (Mins): ____
Medium : ☐ A ☐ N ☐ W
RIP : ☐ YES ☐ NO
Date : ____
Resp. Person : ____ print name
____ signature
Notes: ____

Observation data:
WC ID: ____
Point No. ____
Pipe Type: ☐ MN ☐ SVC ☐ H/L
Size: ____
Mat'l : ☐ PLA ☐ WRPD ☐ ____ ☐ STL ☐ CI
Pipe Cover : ____ (inches)
External Corrosion : ☐ YES ☐ NO ☐ N/A
Internal Corrosion : ☐ YES ☐ NO ☐ N/A
Corrosion Type: A B C D E F G H O X
Max Pit Depth : ____ (thousandths)
Coating Condition : ____

Abandonment Pipe Purge Data:
Purge out of Service : ☐ Yes ☐ No
Purge from : ____
Purge to : ____
Purge Medium : ☐ Air ☐ Nitrogen
Final Gas Reading : ____
Resp. Person : ____ print name
Notes : ____

Revisions						
No.	1					
Date						
Reason						

Safety Sector: N/A	ADC Map: 5525F2 5525G2
Quad Map: AD006NW AC006NW	Tax Map Page: 29-4 30-3
Scale: AS SHOWN	Cut No. ##

Drawn by: DN MW NB	Phone: 703-449-7000	Date: 11/23/2015

Checked by: J.WALKER	Date: 03/03/2016

WR / WO Number: **WO# C-1001-087**

FAIRFAX COUNTY, VA

TEMPORARY TRAFFIC CONTROL
TYSONS CORNER STRIP 1 SYSTEM IMPROVEMENT PHASE 5

PATH: P:\PROJECT\16972\1-4\ENG\PLANS\SHEETS - PHASE 6 JB DR CONNECTOR\B-16003-107.DWG PLOTTED: 3/3/2016

Job Status: **FOR CONSTRUCTION**

Drawing Number: **B-16003-107**

Sheet Number: **13 OF 14**

Typical Traffic Control
Multi-Lane Closure Operation
(Figure TTC-18.0)
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	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 = ⅓ 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.**
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, oscillating, or strobe 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, oscillating, or strobe lights. Vehicle hazard warning signals can be used to supplement high-intensity amber rotating, flashing, oscillating, or strobe lights.**
10. **When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed as needed.**

Typical Traffic Control
Partial Exit Ramp Closure Operation
(Figure TTC-38.0)
NOTES

Guidance:

1. *Sign spacing distance should be 1300'-1500' for Limited Access highways, and on all other roadways 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.*

Standard:

2. **To prevent accidental intrusion into the work area, channelizing device spacing shall not exceed 20' on centers.**
3. **Cone Taper Length (L) is equal to the Posted Speed Limit (S) times the Width of actual ramp closure (W). (Example: 55 mph x 6' = 330')**
4. **A shadow vehicle with either a Type B or C arrow board operating in the caution mode, or equipped with at least one high intensity rotating, oscillating, or amber strobe 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.**
5. **If an advisory speed limit sign is used, the Regional Traffic Engineer shall determine the advisory speed limit.**

Guidance:

6. *A minimum 200' buffer space should be provided, when possible.*

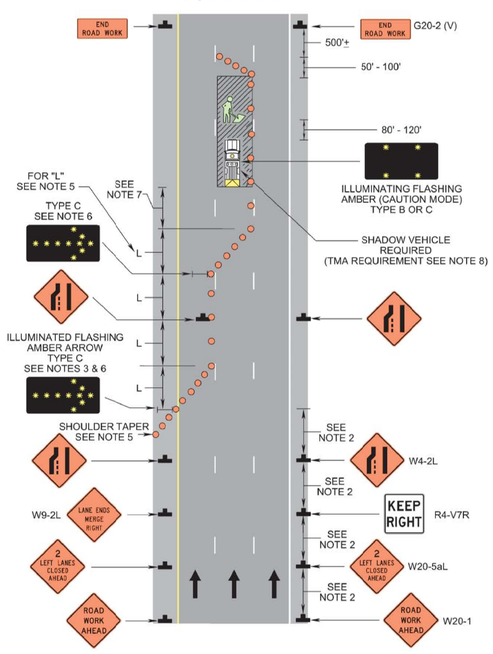
Standard:

7. **Truck off-tracking shall be considered when determining whether the 10 foot minimum lane width is adequate.**
8. **For long term stationary work (occupying a location for longer than three consecutive days) when the distance between the edgeline and the channelizing devices is less than 14 feet, a RAMP NARROWS (W5-4) sign shall be used, along with a LANE WIDTH (W5-VP1) plaque displaying the width from edgeline to the channelizing devices in feet and inches rounded down to the nearest foot or half foot increment.**
9. **Due to blanket permits for over width loads, whenever a travel direction is reduced to less than 14 feet in width from edgeline to the face of channelizing devices, a 96" by 48" black on white sign displaying the message RESTRICTED WIDTH ROUTE, XX FT.- YY INCHES (R5-V1) with WORK ZONE (G20-5aP or G20-5aP (V)) plaque shall be installed 1000 feet ± prior to the last exit from the approached side of the restricted work zone route.**

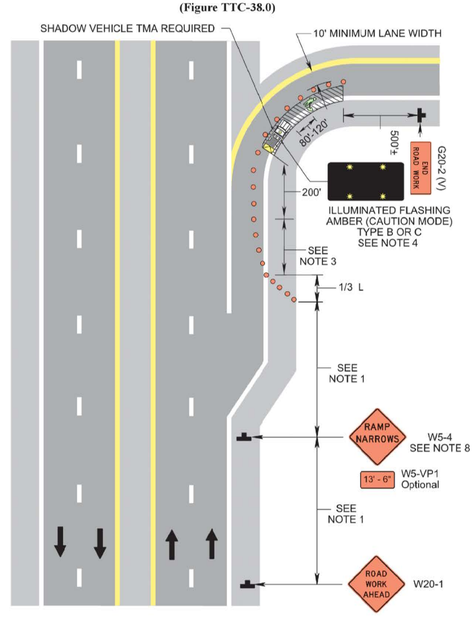
Guidance:

10. *A traffic engineering study should determine if there is a need for a wide load detour and additional TTC.*

Multi-Lane Closure Operation
(Figure TTC-18.0)



Partial Exit Ramp Closure Operation
(Figure TTC-38.0)



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03/03/2016
PROFESSIONAL ENGINEER

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Telephone: 703-750-1000
Fax: 703-750-4527

T/I Gassed out Dry
Date: _____

As-built Drawing Pressure Test Data:
WC ID: _____
Span No. _____
Test Press (PSIG): ☐ 90 ☐ 100 ☐ 150 ☐ OTHER ____
Duration (Mins): _____
Medium : ☐ A ☐ N ☐ W
RIP : ☐ YES ☐ NO
Date : _____
Resp. Person : _____ print name
_____ signature
Notes: _____

Observation data:
WC ID: _____
Point No. _____
Pipe Type: ☐ MN ☐ SVC ☐ H/L
Size: _____
Mat'l : ☐ PLA ☐ WRPD ☐ ____ ☐STL ☐ CI
Pipe Cover : _____ (inches)
External Corrosion ☐YES ☐NO ☐N/A
Internal Corrosion : ☐YES ☐NO ☐N/A
Corrosion Type: A B C D E F G H O X
Max Pit Depth : _____(thousandths)
Coating Condition : _____

Abandonment Pipe Purge Data:
Purge out of Service : ☐Yes ☐No
Purge from : _____
Purge to : _____
Purge Medium ☐ Air ☐ Nitrogen
Final Gas Reading : _____
Resp. Person : _____ print name
Notes : _____

FOR CONSTRUCTION

No.	Date	Revisions Reason
1		

Safety Sector: N/A	ADC Map: 5525F2 5525G2
Quad Map: 65161	Tax Map Page: 29-4 30-3
Scale: AS SHOWN	Cut No. ##
Drawn by: JWH ND MW KB	Phone: 703-449-7000 / Date: 11/23/2015
Checked by: J.WALKER	Date: 03/03/2016

WR / WO Number:
WO# C-1001-087

FAIRFAX COUNTY, VA

TEMPORARY TRAFFIC CONTROL
TYSONS CORNER STRIP 1
SYSTEM IMPROVEMENT
PHASE 5

PATH: P:\PROJECT\WP21-4\ENGR\SHEETS - PHASE 4 JB OR CONNECTOR\B-16003-108.DWG PLOTTED: 3/3/2016

Job Status:
FOR CONSTRUCTION

Drawing Number:
B-16003-108

Sheet Number: 14 OF 14