Typical Traffic Control Shoulder Operation with Minor Encroachmen (Figure TTC-5.1) NOTES

For required sign assemblies for multi-lane roadways see Note 1, TTC-4.²

2. Sign spacing should be 1300'-1300' 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. When work takes up part of a lone on a high volume readway: vehicular traffic volumes, vehicle mix.

speed and capacity should be analyzed to determine whether the affected fane should be closed. Unless the lone encreachment analysis permits a remaining lane width of 10 feet, the lane should be closed. If the closure operation is on a Limited Access highway, the minimum lone width is 11 feet.

4. The ROAD WORK AHEAD (W20-1) sign on an intersecting roadway may be omitted where drivers emerging from that roadway will encounter another advance warning sign prior to this activity area.

5. A shadow vehicle with either an arrow board operating in the caution mode, or at least one highintensity amber rotating, flashing, or oscillating light shall be parked 80' - 120' in advance of the first work crew.

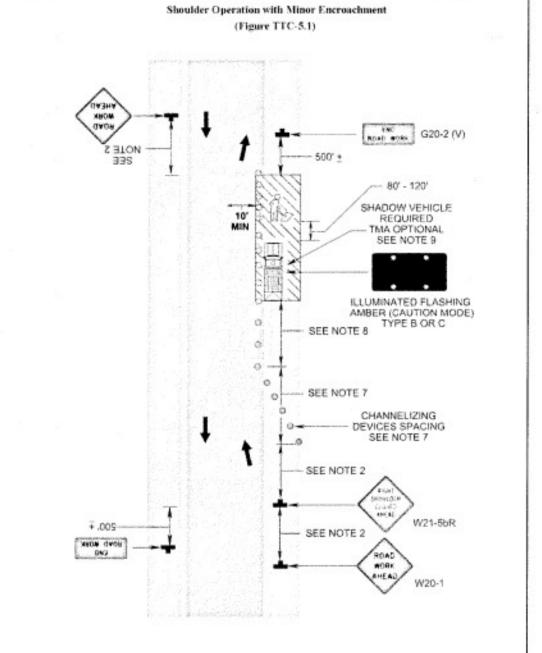
6. Vehicle huzard warning signals shall not be used instead of the vehicle's high-intensity amber rotating, flashing, or' oscillating lights. Vehicle hazard warning signals can be used to supplement

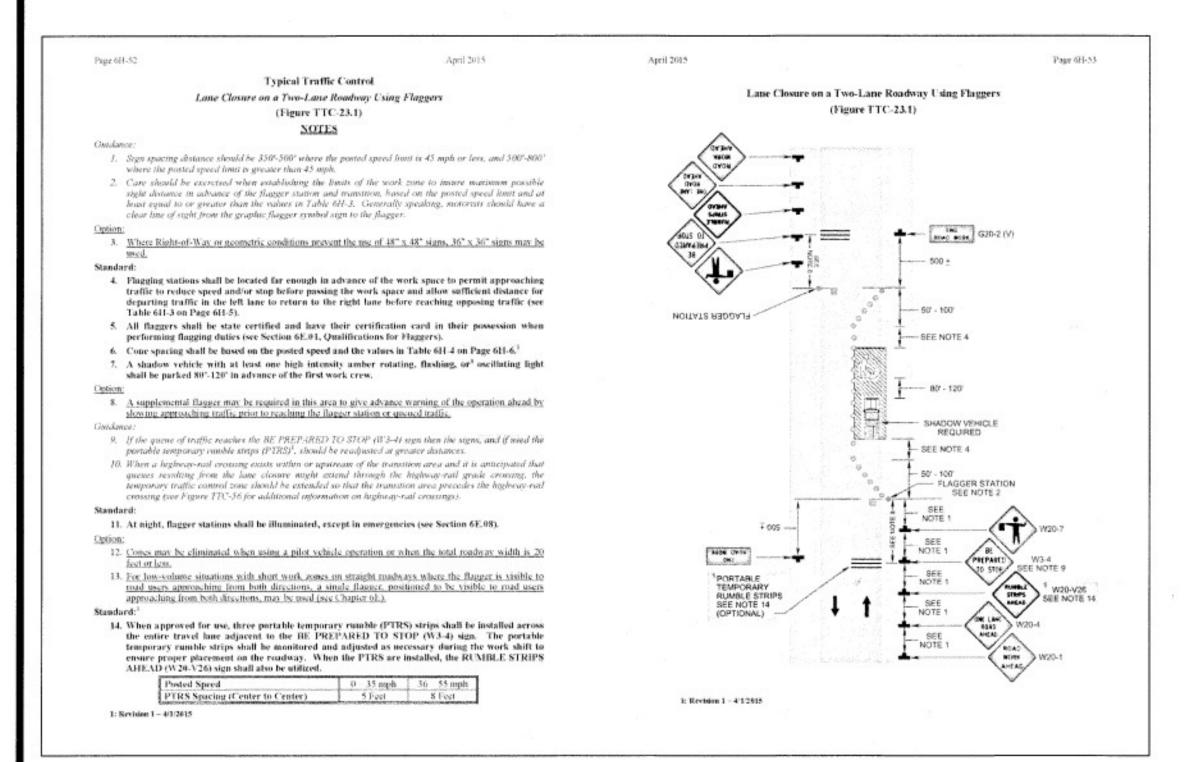
high-intensity amber rotating, flashing, or oscillating lights. be at the following:

Taper Length (L)					Channelizing Device Spacing			
Speed Limit (mph)	Lane Width (Feet)				Landin	Speed Limit (mpl		
	9	10	11	12	Location	0 - 35	36 +	
25	96	105	115	125	Transition Spacing	207	40	
30	135	150	165	180	Travelway Spacing	40"	80	
35	185	205	225	245	Construction Access*	80	1201	
40	240	270	295	320	*Spacing may be increased to this distance but shall not exceed one access per ½ mile On roadways with paved shoulders having			
45	405	450	495	540				
50	450	500	550	600				
55	495	550	605	660	width of 8 feet or more, channelizing device shall be used to close the shoulder			
60	540	600	660	720	advance of the merging taper to dir- vehicular traffic to remain within the trave			
85	585	650	715	780				
70	630	700	770	840	way.			
65 70 Maramum tape	585 630 r length	650 700	715 770 nited Ar	780 840				
mark anneal february	Section (September 1987)	THE OWNER OF THE OWNER.	Inimum	-				

8. The buffer space length shall be as shown in Table 6H-3 on Page 6H-5 for the posted speed limit. 9. A truck-mounted attenuator (TMA) shall be used on Limited Access highways and multi-lane roadways with posted speed limit equal to or greater than 45 mph.

10. When a side road intersects the highway within the temporary traffic control zone, additional traffic control devices shall be placed as needed. 1: Revision 1 - 4/1/2015





TYPICAL APPLICATIONS OF TEMPORARY TRAFFIC CONTROL AS GIVEN IN THE VIRGINIA WORK AREA PROTECTION MANUAL

MAINTENANCE OF TRAFFIC NOTES

- DURING CONSTRUCTION, CONTRACTOR SHALL LIMIT DISRUPTION TO RESIDENTIAL ACCESS DRIVEWAYS, COORDINATE CONSTRUCTION ACTIVITIES THAT MAY AFFECT DRIVEWAYS WITH THE PROPERTY OWNER, AND PROVIDE OWNER WITH ACCESS BY END OF WORK DAY OR SOONER AS POSSIBLE.
- ALL STANDARDS AND GUIDELINES OF THE VIRGINIA WORK AREA PROTECTION MANUAL (VWAPM) SHALL APPLY TO ANY TRAFFIC CONTROL MEASURES INCLUDING, BUT NOT LIMITED TO, ALL DEVICES, METHODS, AND DIMENSIONS.
- CONTRACTOR SHALL PROVIDE WARNING SIGNS, AND APPROVED PORTABLE SIGN STANDS AND INSURE AN UNRESTRICTED VIEW OF ADVANCE WARNING SIGN MESSAGES FOR SAFETY OF TRAFFIC AND IN ACCORDANCE WITH THE VWAPM.
- ALL WORK WITHIN THE RIGHT-OF-WAY SHALL BE APPROPRIATELY SIGNED REGARDLESS OF WHETHER A LANE OR SHOULDER CLOSURE IS
- NEEDED. DURING LANE CLOSURES, CONTRACTOR SHALL USE AT LEAST 2 FLAGMEN AT ALL TIMES AND IN ACCORDANCE WITH THE VWAPM.
- CONES MAY BE USED IN AREAS WHERE PERSONNEL WILL BE PRESENT TO INSURE THEIR PROPER ALIGNMENT; GROUP II DRUMS SHALL BE REQUIRED WHEN THE WORK ZONE IS UNMANNED. ALL CONES SHALL BE A MINIMUM OF 36" IN HEIGHT AND PLACED IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND THE VWAPM.
- ALL TRAFFIC CONTROL EQUIPMENT AND OBJECTS SHALL MEET NCHRP 350 CRASH TESTING CRITERIA.
- THESE NOTES ARE PROVIDED AS GUIDELINES ONLY. THE CONTRACTOR SHALL PREPARE A SPECIFIC TRAFFIC CONTROL PLAN THAT MATCHES HIS PLANNED OPERATIONS AND PROJECT SEQUENCING.

COMMUNICATION NOTES

- THE CONTRACTOR SHALL ADVISE THE LOCAL VIRGINIA DEPARTMENT OF TRANSPORTATION OFFICE OF PLANNED LANE CLOSURES A MINIMUM OF 72 HOURS IN ADVANCE OF PLANNED LANE CLOSURE.
- THE CONTRACTOR SHOULD IMMEDIATELY NOTIFY 911 FOR ANY EMERGENCY. IF AN EMERGENCY IS TRAFFIC RELATED, THE LOCAL VIRGINIA DEPARTMENT OF TRANSPORTATION OFFICE, OR HIS DESIGNEE SHOULD BE NOTIFIED IMMEDIATELY AFTER CALLING 911.

GENERAL UTILITY NOTES

- ALL CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM TO THE LATEST EDITION OF THE WESTERN VIRGINIA REGIONAL DESIGN AND CONSTRUCTION STANDARDS AVAILABLE AT WWW.WESTERNVAWATER.ORG OR BY CONTACTING THE AUTHORITY AT 540-853-5700. THE PROJECT SHALL ALSO COMPLY WITH THE GOVERNING JURISDICTION'S STANDARDS AND OTHER AGENCY STANDARDS (E.G., VDOT, DEQ, DCR, VDH, ETC.) WHERE
- ALL CONNECTIONS TO EXISTING WATERLINES SHALL BE PERFORMED BY THE AUTHORITY. THE CONTRACTOR SHALL PROVIDE FULL STAINLESS STEEL TAPPING SLEEVE(S) AND VALVE(S). THE CONTRACTOR SHALL EXCAVATE TO THE EXISTING WATERLINE, SHORE THE TRENCH PER OSHA REQUIREMENTS, CLEAN THE EXISTING WATERLINE, AND INSTALL THE TAPPING SLEEVE AND VALVE PRIOR TO THE AUTHORITY PERFORMING THE TAP. THE CONTRACTOR SHALL NOTIFY THE AUTHORITY'S UTILITY LINE SERVICES DIVISION AT 540-853-2792 AT LEAST SEVENTY-TWO (72) HOURS PRIOR TO REQUIRING THE CONNECTION.
- PRIOR TO CONSTRUCTION IN THE RIGHT-OF-WAY, ALL APPLICABLE PERMIT(S) FROM THE GOVERNING JURISDICTION AND/OR AGENCY MUST BE OBTAINED AND A COPY KEPT ON THE PROJECT SITE.
- FOR PROJECTS REQUIRING TRAFFIC CONTROL NOTIFY THE BEDFORD VDOT RESIDENCY, AT 540-586-7910 AT LEAST TWO WEEKS IN ADVANCE OF REQUIRING TRAFFIC CONTROL. TRAFFIC CONTROL REQUIREMENTS SHALL BE DETERMINED ONCE THE VDOT LAND USE PERMIT HAS BEEN ISSUED. TRAFFIC CONTROL SHALL BE PROVIDED IN ACCORDANCE WITH THE MOST RECENT MUTCD MANUAL AND THE VDOT WORK AREA PROTECTION MANUAL UNLESS OTHERWISE SPECIFIED.
- THE CONTRACTOR SHALL NOTIFY THE AUTHORITY'S ENGINEERING COORDINATOR, MARK SINK, AT
- 540-537-3460 AT LEAST THREE (3) DAYS PRIOR TO CONSTRUCTION. A PRE-CONSTRUCTION CONFERENCE SHALL BE SCHEDULED AT LEAST ONE (1) DAY PRIOR TO ANY
- THE CONTRACTOR SHALL HAVE A VALID MISS UTILITY TICKET PRIOR TO EXCAVATION, CONTACT MISS UTILITY AT 1-800-552-7001.
- ALL EXISTING UTILITIES MAY NOT BE SHOWN OR MAY NOT BE SHOWN IN THEIR EXACT LOCATION. CONTRACTOR SHALL LOCATE ALL UTILITIES AND DETERMINE ALL INVERTS PRIOR TO CONSTRUCTION TO ALLOW FOR ADJUSTMENTS DUE TO CONFLICTS WITH OTHER UTILITIES. THE CONTRACTOR SHALL COMPLY WITH THE VIRGINIA STATE WATER WORKS REGULATIONS, SECTION 12VAC5-590-1150, AND THE VIRGINIA STATE SEWAGE
- COLLECTION AND TREATMENT REGULATIONS WHERE LINES CROSS. AN APPROVED SET OF PLANS AND PERMITS MUST BE AVAILABLE AT THE CONSTRUCTION SITE AT ALL TIMES.
- CONSTRUCTION DEBRIS SHALL BE CONTAINERIZED IN ACCORDANCE WITH THE VIRGINIA LITTER CONTROL ACT. PRIOR TO COMMENCING WORK, THE CONTRACTOR'S CERTIFIED RESPONSIBLE LAND DISTURBER SHALL OBTAIN AN EROSION AND SEDIMENT CONTROL PERMIT FOR THE PROJECT FROM THE LOCAL GOVERNING JURISDICTION AND DEQ (IF REQUIRED). ALL EROSION AND SEDIMENT CONTROL MEASURES MUST BE IN ACCORDANCE WITH THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND SHALL BE INSTALLED PRIOR TO CONSTRUCTION.
- 12. THE CONTRACTOR SHALL PROVIDE ADEQUATE MEANS OF CLEANING ALL VEHICLES AND EQUIPMENT PRIOR TO ENTERING PUBLIC STREETS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE STREETS ARE KEPT IN A CLEAN, MUD AND DUST FREE CONDITION AT ALL TIMES.
- 13. FIELD CHANGES SHALL BE APPROVED BY THE AUTHORITY'S ENGINEERING DIVISION PRIOR TO SUCH CONSTRUCTION.
- THE CONTRACTOR SHALL MAKE PROVISIONS TO PROVIDE ACCESS TO ALL PROPERTIES DURING CONSTRUCTION AND SHALL MAINTAIN SAFE ACCESSIBILITY TO FIRE HYDRANTS AT ALL TIMES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND UNCOVERING ALL MANHOLES AFTER PAVING.
- MANHOLE RIMS SHALL BE INSTALLED TO GRADE AND FLUSH WITH THE FINAL PAVEMENT. UNREPAIRED ROADWAYS OPENED TO TRAFFIC SHALL HAVE, AT A MINIMUM, COMPACTED AGGREGATE MATERIAL
- VDOT 21A OR 21B FLUSH WITH THE ADJACENT ROADWAY SURFACE AND SHALL BE INSPECTED AND REPAIRED ON A DAILY BASIS. SOME AREAS WILL REQUIRE A TEMPORARY PATCH UNTIL FINAL PAVING CAN BE
- THE CONTRACTOR SHALL NOT EXCAVATE MORE TRENCH LENGTH THAN CAN BE RESTORED WITHIN THE SAME WORK DAY. ALL TRENCHES SHALL BE BACKFILLED OR PLATED AT THE END OF EACH WORK DAY OR WHEN THE CONTRACTOR IS NOT ON SITE.
- 18. THE CONTRACTOR SHALL SUPPLY THE AUTHORITY WITH CORRECT AS-BUILT PLANS BEFORE SUBSTANTIAL COMPLETION WILL BE GRANTED.
- ROAD OPENCUT NOT PERMITTED. ALL ROAD CROSSINGS SHALL BE BY DIRECTIONAL DRILLING METHODS.
- ALL MANHOLE COVERS, VALVE BOX, ETC., SHALL BE INSTALLED TWO INCHES BELOW THE EXISTING GROUND LINE AND SHALL CONFORM TO EXISTING CONTOURS.

WATERLINE NOTES

- INSTALL WATERLINE AND APPURTENANCES IN ACCORDANCE WITH THE DETAILS SHOWN ON THESE DRAWINGS AND ALL OTHER AUTHORITY REGULATIONS.
- A TYPICAL MINIMUM COVER OF THREE (4) FEET IS REQUIRED OVER PROPOSED WATERLINES UNLESS
- OTHERWISE INDICATED ON PLANS. WATER MAINS SHALL BE A MINIMUM CLASS 350 DUCTILE IRON PER AWWA C151, UNLESS OTHERWISE
- INDICATED ON PLANS. ALL WATERLINES SHALL BE INSTALLED ACCORDING TO THE PROFILES INCLUDED WITH THESE PLANS AND WITHOUT ANY ADDITIONAL HIGH POINTS OTHER THE THOSE INDICATED ON PROFILES. SHOULD THE CONTRACTOR CONSTRUCT WATERLINE WITH HIGH POINTS NOT SHOWN ON PROFILES, THE CONTRACTOR SHALL INSTALL ADDITIONAL AIR RELEASE VALVES AT SUCH HIGH POINTS AND IN-LINE BLOW-OFFS AT ADJACENT
- LOW POINTS WITH NO ADDITIONAL COST TO THE AUTHORITY. ALL SERVICE LATERALS CROSSING ROADWAYS SHOULD BE BORED ACROSS TO A POINT PAST OPPOSITE EDGE
- OF PAVEMENT WITH MINIMAL ADDITIONAL DAMAGE TO ROAD SURFACE. (NONE PROPOSED) THE TOPS OF ALL VALVE BOXES, VALVE VAULTS, AND ACCESS MANHOLES SHALL BE INSTALLED TO GRADE
- AND FLUSH WITH PAVED SURFACES. ALL WATERLINES SHALL BE PROPERLY RESTRAINED WITH THRUST BLOCKS OR JOINT RESTRAINTS AS SHOWN ON AUTHORITY'S DETAILS.
- WHERE WATERLINE MUST CROSS UNDER STORM DRAINS, PIPES SHALL HAVE A MINIMUM OF 18" OF
- SEPARATION, OR THE STORM PIPE SHALL BE SUPPORTED IN ACCORDANCE WITH THE AUTHORITY'S STANDARDS.
- ALL WATERLINES AND SERVICE LATERALS SHALL BE PRESSURE TESTED, AFTER BACKFILLING, TO A HYDROSTATIC PRESSURE OF NOT LESS THAN 100psi ABOVE THE DESIGN WATER PRESSURE FOR THE SYSTEM OR 200psi, WHICHEVER IS GREATER. TESTING PROCEDURE AND ALLOWABLE LEAKAGE SHALL BE ACCORDING TO AUTHORITY STANDARDS.

SITE AND ZONING TABULATIONS

CURRENT ZONING: LOTS SURROUNDING THE WATERLINE EXTENSION ARE ZONED EITHER: A1-AGRICULTURAL, R1-RESIDENTIAL SUBURBAN SUBDIVISION, RPD-RESIDENTIAL PLAN UNIT

PROPOSED USE: WATERLINE EXTENSION TO CONNECT TO EXISTING WATERLINE THAT IS GOING FROM PRIVATE TO PUBLIC.

SITE ACREAGE: LOT SIZE VARIES.

PROPOSED NUMBER OF LOTS: NO CHANGE IN NUMBER OF LOTS.

GENERAL NOTES

 OWNER/DEVELOPER: WESTERN VIRGINIA WATER AUTHORITY ATTN: (JEFF ROGERS)

601 SOUTH JEFFERSON STREET, SUITE 300 ROANOKE, VA 24011

NO PORTION OF THIS PROJECT IS LOCATED WITHIN THE LIMITS OF A 100 YEAR FLOOD BOUNDARY AS DESIGNATED BY FEMA. THIS OPINION IS BASED ON AN INSPECTION OF THE FLOOD INSURANCE RATE MAP #51067C0120D, DATED JANUARY 6, 2010.

THE PROPERTY LINES AND RIGHT OF WAY SHOWN ARE THE RESULT OF REPRODUCING RECORDED SUBDIVISION PLATS FOR THE LOTS INVOLVED AND JUSTIFYING THESE WITH PROPERTY CORNERS AS LOCATED BY FIELD SURVEY PERFORMED BY LUMSDEN

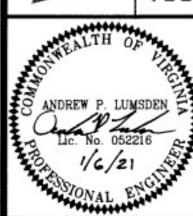
(540) 855-4679

- ASSOCIATES, P.C. IN 2019. TOPOGRAPHIC DATA IS BASED ON A FIELD SURVEY PERFORMED BY LUMSDEN ASSOCIATES, P.C. IN 2019.
- A TITLE REPORT WAS NOT FURNISHED FOR THESE PROPERTIES.
- THE PROPERTIES SHOWN ON THESE PLANS ARE ACCESSED BY PUBLIC ROADS.
- AN APPROVED SET OF PLANS SHALL BE KEPT ON SITE AT ALL TIMES.

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January 6, 2021

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