

SHEET NO.	SANITARY SEWER SUMMARY								
	SANITARY SEWER MANHOLE	DI SANITARY SEWER PIPE	ADJUST EXIST. FRAME & COVER	MANHOLE FRAME & COVER F&C-1	MANHOLE FRAME & COVER WF&C-1	REMOVE EXIST. A/C PIPE	CONNECT TO EXIST. A/C PIPE	CONC. ENCASE.	RECONSTRUCT EXISTING SANITARY MANHOLE
	8	8"	6	8	8	15	15	9	8
	LF	LF	EA	EA	EA	LF	EA	LF	LF
10(3)			1						1.3
10(3C)	10.8	62	1	1	1	40	1	12.5	
10(4)									
10(5)									
10(5C)									
10(6)									
10(7)	14.7	141		2					
TOTAL	26	203	2	3	1	40	1	13	2

SHEET NO.	MISC. UTILITY SUMMARY
	4" CONDUIT
	16
	LF
10(3)	107
10(3C)	
10(4)	
10(5)	
10(5C)	
10(6)	
10(7)	
TOTAL	107

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	FHWA REGION	STATE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
	3	VA.		720	0720-080-299,C501	10(1)

Colonial Ave Highway Plans
Hazel Dr to Route 719/Electric Rd.
Penn Trust Blvd
Givard Dr

As-Built 3/18/2011

SHEET NO.	WATER MAIN SUMMARY																			
	WATER SERVICE LINE		DI WATER MAIN				GATE VALVE & MANHOLE				6" GATE VALVE & BOX	FIRE HYDRANT	ADJUST EXIST. VALVE BOX	ADJUST EXIST. WATER MANHOLE FRAME & COVER	5/8" WATER METER BOX & YOKE	ADJUST EXIST. WATER METER BOX	1" AIR RELEASE VALVE AND MANHOLE	PRESSURE REDUCING VALVE VAULT	WATER SERVICE VAULT	FIRE SERVICE VAULT
	4									2										
	1 "	4"	6"	8"	12"	4"	6"	8"	12"	2	3	2	2	5	5	11	12	13	14	
	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	
10(3)	161		6		745				4	1	1			3	3		1			
10(3C)				40	354	1		1	1											
10(4)	122	76	7	78	716	1		1	4		1	1			2	1				
10(5)	129		8	264	684				2	2	1			2	1					
10(5C)	37													1						
10(6)	26		33		466		1									1		1	1	
10(7)	47		16		176				1	1	1		1							
TOTAL	522	76	70	382	3141	2	1	4	12	3	4	1	1	6	6	2	1	1	1	

GENERAL NOTES

1. LOCATION, DEPTHS AND SIZES OF EXISTING UTILITIES SHOWN ON THE UTILITY ADJUSTMENT PLANS ARE NOT GUARANTEED. THE CONTRACTOR SHALL FIELD VERIFY WITH TEST HOLES THE LOCATION, ELEVATION, TYPE, ROUNDNESS AND SIZE OF ALL EXISTING UNDERGROUND UTILITIES AND POINTS OF CONNECTION PRIOR TO EXCAVATION, ORDERING OF MATERIALS AND INSTALLATION FOR THIS PROJECT.

THE CONTRACTOR SHALL NOTE THAT THE UTILITY PLAN SHEETS ARE FOR WATER AND SEWER RELOCATION/ADJUSTMENT/BETTERMENT WORK ONLY. THE CONTRACTOR SHALL REFER TO THE ROADWAY PLANS FOR ROADWAY AND DRAINAGE DESIGN.

2. THE CONTRACTOR SHALL COORDINATE THE VALVE OPERATIONS, CHANGEOVER OR TAPPING OF WATER AND SANITARY SEWER FACILITIES WITH THE WESTERN VIRGINIA WATER AUTHORITY (WVWA) 48 HRS. PRIOR TO VALVE OPERATIONS, CHANGEOVER OR TAPPING. WVWA EMPLOYEES WILL OPERATE ALL EXISTING VALVES IN CONNECTION WITH CHANGEOVER OF FACILITIES. TAPPING OF THE WATER MAINS SHALL BE PERFORMED BY THE WVWA, BUT COORDINATED AND ARRANGED FOR BY THE CONTRACTOR. CONTRACTOR SHALL CONTACT WVWA 72 HRS. PRIOR TO REQUIRING THE CONNECTION. THE WVWA WILL FURNISH THE TAPPING EQUIPMENT. THE CONTRACTOR SHALL FURNISH ALL MATERIALS NEEDED FOR ANY TAPPINGS OF THE EXISTING WATER MAIN. THE CONTRACTOR SHALL NOTIFY: CHUCK CLARK, WESTERN VIRGINIA WATER AUTHORITY, PHONE: (540) 537-3243.

3. THE CONTRACTOR SHALL NOT PERFORM ANY GRADING OPERATIONS OVER EXISTING WATER AND SEWER FACILITIES WITHIN THE PROJECT WHICH WOULD IN ANY WAY JEOPARDIZE SERVICES UNTIL THE PROPOSED WATER AND SEWER FACILITIES ARE INSTALLED AND PLACED INTO OPERATION AND EXISTING WATER AND SEWER FACILITIES ARE ABANDONED. ANY DEVIATION MUST BE APPROVED BY THE ENGINEER.

4. EXISTING MAINS, HYDRANTS AND WATER SERVICES SHALL REMAIN IN SERVICE UNTIL NEW MAINS AND HYDRANTS ARE PLACED IN SERVICE AND APPROVED BY THE ENGINEER. PROPOSED FIRE HYDRANTS SHALL REMAIN COVERED BY MEANS OF SECURELY ATTACHED BURLAP BAGS UNTIL TESTED AND PLACED IN SERVICE.

5. THE CONTRACTOR SHALL NOT INSTALL WATER MAIN JOINTS BENEATH PROPOSED OR EXISTING UTILITIES OR PROPOSED VDOT STORM DRAINAGE WHEN CROSSING UNDER THESE STRUCTURES. A MINIMUM OF 12 FEET BEYOND THE OUTSIDE OF THE FOREIGN PIPE OR UTILITY SHALL BE REQUIRED WHEN PLACING JOINTS, UNLESS OTHERWISE SHOWN ON THE PLANS.

6. INSTALL VALVES WITH OPERATOR STEMS IN THE VERTICAL PLANE THROUGH THE PIPE AXIS AND PERPENDICULAR TO THE PIPE AXIS. LOCATE VALVES AS SHOWN ON DRAWINGS.

VALVE STEM EXTENSIONS SHALL BE INSTALLED WHEN THE DISTANCE FROM THE OPERATING NUT TO TOP OF VALVE BOX FRAME IS GREATER THAN 36". CONTRACTOR SHALL PROVIDE VALVE OPERATOR EXTENSIONS, AS REQUIRED, TO BRING OPERATOR TO WITHIN A MINIMUM OF 12" OF PROPOSED GRADE AND 3 FEET MAXIMUM OF PROPOSED GRADE FOR NEW VALVES. THE EXTENSION SHALL REPLACE OR BE SECURELY ATTACHED TO THE NORMAL 2" SQUARE OPERATING NUT SHALL BE AT LEAST AS STRONG AS THE VALVE STEM, AND SHALL BE COATED IN ACCORDANCE WITH AWWA C550.

7. WATER MAIN PIPE SHALL BE LAID WITH BELL ENDS FACING THE DIRECTION OF LAYING. WHERE GRADE IS 10 PERCENT OR GREATER, PIPE SHALL BE LAID UPHILL WITH BELL ENDS UPGRADE.
8. CONTRACTOR TO FIELD VERIFY LOCATIONS AND DEPTH OF ALL OPERATIONAL SANITARY SERVICE LATERALS PRIOR TO CONSTRUCTION OR ADJUSTMENT OF THE UTILITY SYSTEMS. CONTRACTOR TO SCHEDULE SANITARY SEWER LATERAL CONNECTIONS WITH THE PROPERTY OWNER, USER, WVWA.

9. FOR EXISTING SERVICE TO BE REPLACED OR ABANDONED, THE CONTRACTOR SHALL ABANDON WATER SERVICE BY SHUTTING OFF THE CORPORATION STOP AT THE WATER MAIN AND REMOVE THE SERVICE LINE FROM THE WATER MAIN. CONTRACTOR SHALL NOT DISTURB WATER MAIN DURING THE TRANSFER OR ABANDONMENT OF SERVICES.

10. ALL EXISTING VALVE BOXES, AIR RELEASES, SANITARY SEWER MANHOLES AND CLEANOUTS SHALL BE RELOCATED AND/OR ADJUSTED TO FINISH GRADE AS REQUIRED, REGARDLESS IF THEY ARE SHOWN ON THE PLANS.

11. THE CONTRACTOR, WITH HIS ASSOCIATED MATERIALS SUPPLIERS, SHALL PROVIDE CERTIFICATION ACCEPTABLE TO THE ENGINEER, THAT ALL MATERIALS SUPPLIED ON THE PROJECT MEET OR EXCEED THE SPECIFICATIONS.

12. ALL RESTRAINT SYSTEMS INSTALLED UNDER THIS CONTRACT SHALL BE PLACED BEFORE BACKFILLING OF THE TRENCH AND INSPECTED BY THE ENGINEER. TEMPORARY BUTTRESSING FOR TESTING SHALL BE PROVIDED BY THE CONTRACTOR. A JOINT RESTRAINT SYSTEM SHALL BE USED IN LIEU OF REACTION BLOCKING. THE JOINT RESTRAINTS SHALL BE A STANDARD PRODUCT OF A MANUFACTURER. THE JOINT RESTRAINTS SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS SHOWN ON SHEET 10(8).

13. PRESSURE AND LEAKAGE TESTING (WATER MAINS AND ACCESSORIES) SHALL BE IN ACCORDANCE WITH AWWA C600. TESTING HYDROSTATIC PRESSURE SHALL NOT BE LESS THAN 100 PSI ABOVE THE DESIGN WATER PRESSURE FOR THE SYSTEM OR 150 PSI, WHICH EVER IS GREATER. LEAKAGE TESTING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF VDOT "ROAD AND BRIDGE SPECIFICATIONS".

14. FLUSHING OF WATER MAINS SHALL BE IN ACCORDANCE WITH THE VDOT ROAD AND BRIDGE SPECIFICATIONS.

15. DISINFECTION OF WATER MAINS SHALL BE IN ACCORDANCE WITH AWWA C651 - LATEST REVISION, AND THE VDOT ROAD AND BRIDGE SPECIFICATIONS.

16. THE AUTHORITY DOES NOT GUARANTEE A 100 PERCENT SHUTDOWN OF THE WATER DISTRIBUTION SYSTEM. THE CONTRACTOR SHALL ANTICIPATE CUT AND PLUG OPERATIONS UNDER PARTIAL PRESSURE.

17. THE CONTRACTOR SHALL COMPLY WITH "MISS UTILITY" REQUIREMENTS PRIOR TO PERFORMING ANY EXCAVATION.

18. ACCESS TO ALL PUBLIC AND PRIVATE FIRE HYDRANTS IN SERVICE WITHIN THE PROJECT LIMITS SHALL BE MAINTAINED AT ALL TIMES. A MINIMUM CLEAR SPACE OF A 10 FOOT RADIUS AROUND THE HYDRANTS SHALL BE KEPT CLEAR OF ALL SOIL, STONE, MATERIALS, EQUIPMENT AND OTHER OBSTRUCTIONS. THE CONTRACTOR SHALL INFORM THE WVWA 48 HOURS PRIOR TO ANY WORK ON EXISTING FIRE HYDRANTS WITHIN THE PROJECT LIMITS. THE CONTRACTOR SHALL SCHEDULE HYDRANT INSTALLATION SO THAT NO TWO HYDRANTS IN LINE WILL BE OUT OF SERVICE AT THE SAME TIME. THE CONTRACTOR SHALL ALSO SEQUENCE EACH HYDRANT INSTALLATION FOR MINIMAL AMOUNT OF INTERRUPTED SERVICE. ALL POSSIBLE TRENCHING AND ASSEMBLY REQUIRED FOR THE NEW HYDRANT SHALL BE DONE PRIOR TO TAKING THE OLD HYDRANT OFF LINE. PRIOR TO REMOVING EXISTING HYDRANT, VERIFY RESTRAINT OF EXISTING FIRE HYDRANT, VALVE, WATER MAIN, AND PROVIDE RESTRAINT FROM THE EXISTING TEE TO THE EXISTING VALVE. RESTRAIN FROM THE EXISTING VALVE TO THE NEW HYDRANT DURING INSTALLATION. THE CONTRACTOR SHALL COORDINATE WITH THE WVWA FOR TESTING AND PAINTING OF NEW HYDRANTS.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SEWAGE OVERFLOWS OR SPILLAGE DURING SANITARY SEWER SYSTEM SHUTDOWN OR CONNECTIONS. ONCE GRAVITY SANITARY SEWER FACILITIES HAVE BEEN SHUTDOWN OR PUMP STATIONS PUMPED DOWN, THE CONTRACTOR SHALL PROVIDE STANDBY SEWAGE PUMPING AND HAULING OR BY-PASS PUMPING TECHNIQUES FOR THE DISPOSAL OF ALL OVERFLOWS WHICH MAY OCCUR IN THE SHUTDOWN OF THE SANITARY SEWER SYSTEM FACILITIES. THE APPROPRIATE TECHNIQUE SHALL HAVE THE CAPACITY TO HANDLE PEAK FLOWS FROM THE SEWER FACILITIES. A BACKUP PUMP SHALL BE KEPT ON SITE AND AVAILABLE FOR USE IF THE PRIMARY PUMP FAILS. THE METHOD FOR MAINTAINING SEWAGE CONVEYANCE SHALL BE APPROVED BY THE WVWA AND THE ENGINEER PRIOR TO SYSTEM SHUTDOWN. STAND BY SEWAGE PUMPING AND HAULING OR BY-PASS PUMPING SHALL BE CONSIDERED INCIDENTAL TO INSTALLATION OF SANITARY SEWER FACILITIES.

20. CONTRACTOR SHALL FURNISH EIGHT (8) COPIES OF ALL SHOP DRAWINGS TO THE ENGINEER PRIOR TO CONSTRUCTION AND/OR INSTALLATION OF WVWA FACILITIES AND RELATED ITEMS. ANY ITEMS INSTALLED PRIOR TO APPROVAL OF SHOP DRAWINGS ARE DONE AT THE CONTRACTOR'S RISK AND MAY BE SUBJECT TO REMOVAL AND CORRECT INSTALLATION AT THE CONTRACTOR'S EXPENSE.

21. THE NUMBER AND TYPE OF FITTINGS REQUIRED FOR THE COMPLETION OF WATER RELOCATION/ADJUSTMENT WORK ARE NOT GUARANTEED AND, THEREFORE, SHALL BE DETERMINED BY ACTUAL CONDITIONS ENCOUNTERED IN THE FIELD DURING CONSTRUCTION. FITTINGS 12" IN SIZE AND LESS SHALL NOT BE MEASURED FOR SEPARATE PAYMENT. THE COST THEREOF SHALL BE INCLUDED IN THE BID PRICE FOR THE ITEM TO WHICH IT PERTAINS.

22. CONTRACTOR SHALL SALVAGE EXISTING FIRE HYDRANTS AND GATE VALVES. MATERIALS TO BE ABANDONED SHOULD BE LEFT IN A SECURE AREA, WITHIN THE PROJECT LIMITS, FOR THE WVWA TO PICK UP.


23. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE INSTALLATION OF NEW GUARDRAILS WITH EXISTING AND PROPOSED CROSSINGS OF UNDERGROUND UTILITIES WITH THE LIMITS OF THE ROADWAY PROJECT.

24. CONTRACTOR SHALL MAINTAIN TWO (2) CLEAN RED-LINED SETS OF UTILITY PLANS TO SERVE AS A SET OF RECORD DRAWINGS FOR THE PROJECT. THE DRAWINGS SHOULD CLEARLY DEPICT CONSTRUCTION CHANGES THAT DIFFER FROM THE UTILITY PLANS, INCLUDING BOTH THE PLAN AND PROFILE VIEWS IN THE PLANS. THE RECORD DRAWINGS SHALL BE DELIVERED TO THE WESTERN VIRGINIA WATER AUTHORITY UPON COMPLETION OF THE UTILITY PORTION OF THE PROJECT.

25. THE COST FOR ALL TEMPORARY CONNECTIONS TO THE EXISTING MAIN SHALL BE INCLUDED IN THE UNIT COST FOR THE WATER MAIN. NO SEPARATE PAYMENT SHALL BE MADE FOR THESE ITEMS (INCLUDING LABOR, EQUIPMENT AND MATERIALS FOR TEMPORARY WATER MAIN, VALVES, FITTINGS, AND OTHER WATER APPURTENANCES NECESSARY TO MAKE THE TEMPORARY CONNECTION).

25. CONTINUOUS WATER AND SEWER SERVICE SHALL BE MAINTAINED BY THE CONTRACTOR FOR ALL WVWA CUSTOMERS THROUGHOUT CONSTRUCTION. BRIEF OUTAGES WILL BE ALLOWED FOR TRANSFER OF SERVICE FROM OLD TO NEW LINES FOLLOWING A MINIMUM 24 HOUR ADVANCE NOTICE TO THE CUSTOMER.

Signed and sealed by:
Bradley C. Craig
Virginia License No. 23789
On this date of:
JUNE 10, 2008
A copy of the original signed and sealed sheet is available. The seal applies to sheets 10(1) through 10(13)

 **Mattern & Craig, Inc.**
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