UTILITY ADJUSTMENT QUANTITIES & NOTES

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

EVISED	FHWA	STATE -	FEDERAL AID	4.	STATE	augen in
1	REGION	SIAIL	PROJECT	ROUTE	PROJECT	SHEET NO.
			,		0221-128-101,PE-101 RW-201	
	3	VA.		221	C-501	7(1)
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### WATER NOTES - CITY OF ROANOKE

- THE CONTRACTOR SHALL INSTALL REACTION BLOCKING
  IN ACCORDANCE WITH STANDARD RB-1.
- WATER MAIN PIPE SHALL BE DUCTILE IRON CONFORMING
  TO AWWA C151. ALL PIPE SHALL BE BITUMINOUS
  COATED AND CEMENT LINED IN ACCORDANCE WITH AWWA
  C104.
- 3. THICKNESS CLASS FOR WATER MAIN PIPE 12 INCHES
  OR SMALLER IN DIAMETER SHALL BE CLASS 52. ALL
  PIPE THICKNESS DESIGN SHALL BE IN ACCORDANCE
  WITH AWWA C104.
- PIPE JOINTS SHALL BE IN 18 FOOT LENGTHS AND
  SHALL BE SINGLE RUBBER GASKET TYPE. SINGLE
  RUBBER GASKET TYPE JOINTS SHALL BE INDUSTRY
  STANDARD AND SHALL BE MADE IN ACCORDANCE WITH
  AWWA C111. JOINTS SHALL BE PUSH ON TYPE.
- WATER MAIN FITTINGS SHALL BE MECHANICAL JOINT CAST IRON, CLASS 250, DIMENSIONS MEETING THE REQUIREMENTS OF AWWA C110. JOINTS SHALL MEET THE REQUIREMENTS OF AWWA C111. ALL FITTINGS SHALL BE COATED AND CEMENT LINED IN ACCORDANCE WITH AWWA C104.
- GATE VALVES SHALL BE IRON BODY, BRONZE MOUNTED,
  DOUBLE DISC, PARALLEL SEAT, O-RING SEALED, INSIDE
  SCREW, NON-RISING STEM, FITTING WITH A 2 INCH
  SQUARE OPERATING NUT FOR VALVE VAULT SERVICE, ALL
  IN ACCORDANCE WITH AWWA C500. CONNECTIONS SHALL
  BE SUITABLE FOR 200 PSI WATER WORKING PRESSURE
  AND SHALL BE TESTED AT TWICE THE RATED WORKING
  PRESSURE. THE OPERATING NUT SHALL BE MARKED WITH
  AN ARROW AND THE WORD "OPEN" AND SHALL OPEN BY
  TURNING TO THE RIGHT (CLOCKWISE). THE VALVES
  SHALL BE MUELLER # A-2380-22 IMPROVED GATE VALVES,
  DARLING #55 OR APPROVED EQUAL.
- 7. FIRE HYDRANTS SHALL BE DRY TOP, DRY BARREL,
  COMPRESSION TYPE WITH A 6 INCH BASE AND WITH
  DOUBLE O-RING SEALS, AND SHALL CONFORM TO AWWA
  C502. FIRE HYDRANTS SHALL BE MUELLER A24113,
  DARLING B50B. KENNEDY K10B OR APPROVED EQUAL.
- 8. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL VALVE VAULTS & WATER METER VAULTS. THE CONTRACTOR SHALL ALSO PROVIDE AND INSTALL ALL REQUIRED WATER LINES TO AND FROM THE WATER METER. THE CITY OF ROANOKE SHALL PROVIDE THE WATER METER ASSEMBLY, WHICH INCLUDES THE WATER METER AND ALL ASSOCIATED BYPASS VALVES AND PIPE. THE CONTRACTOR SHALL INSTALL THE WATER METER ASSEMBLY.
- 9. STRUCTURES TO BE ABANDONED SHALL BE CUT OFF OR REMOVED TO A MINIMUM DEPTH OF TWENTY FOUR (24)
  INCHES BELOW FINISHED GRADE AND BACKFILLED
  COMPLETELY. ALL EXISTING WATER METER ASSEMBLIES,
  VALVES, & VALVE BOXES NOT REUSED SHALL BE RETURNED
  TO THE CITY OF ROANOKE.
- ALL WATER SERVICE LINES LARGER THAN 11/2" SHALL BE TYPE 'K' RIGID COPPER PIPE.
- VALVE VAULTS & FRAMES & COVERS SHALL BE CONSTRUCTED ACCORDING TO DETAILS ON SHEET 7(9), OR VDOT STANDARD JB-1 OR MH-1.

#### SANITARY SEWER NOTES - CITY OF ROANOKE

- 1. POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS SHALL BE SDR 35 AND SHALL CONFORM WITH ASTM D 3034.
- 2. PVC PIPE AND FITTINGS SHALL BE BELL AND SPIGOT

  TYPE JOINTS. THE BELL AND SPIGOT JOINT SHALL BE

  SEALED WITH ELASTOMERIC GASKETS CONFORMING TO ASTM

  D 3212 AND IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS

  OF THE PIPE MANUFACTURER.
- 3. RECONSTRUCTED MANHOLE INVERTS SHALL BE SHAPED IN ACCORDANCE WITH STANDARD IS-1.
- 4. PIPE CONNECTIONS WITH MANHOLES SHALL BE MADE WITH A FLEXIBLE BOOT CONFORMING WITH ASTM C-443.
- 5. PIPE TO BE ABANDONED SHALL BE PLUGGED, CAPPED OR SEALED WITH CONCRETE.
- 6. STRUCTURES TO BE ABANDONED SHALL BE CUT OFF OR REMOVED TO A MINIMUM DEPTH OF TWENTY FOUR (24) INCHES BELOW FINISHED GRADE AND BACKFILLED COMPLETELY. EXISTING FRAMES & COVERS NOT REUSED SHALL BE RETURNED TO THE CITY OF ROANOKE.
- 7. ALL UNITS USED IN MANHOLE CONSTRUCTION SHALL BE SECURELY CONNECTED BY INTERLOCKING BETWEEN UNITS, CONCRETE COLLARS OR OTHER APPROVED METHODS.
- 8. MANHOLE FRAMES & COVERS SHALL BE DEWEY BROS., INC. MH-RCR-3000EC IN PAVED AREAS & MH-RCR-3000W IN UNPAVED AREAS OR APPROVED EQUAL.
- DUCTILE IRON PIPE SHALL CONFORM WITH AWWA C151/ANSI
  21.51 AND FITTINGS SHALL CONFORM WITH AWWA C110/ANSI
  21.10. THE PIPE AND FITTINGS SHALL BE BITUMINOUS COATED
  AND CEMENT LINED IN ACCORDANCE WITH AWWA C104/ANSI
  21.40. THE PIPE THICKNESS SHALL CONFORM WITH AWWA
  C150/ANSI 21.50 AND SHALL BE CLASS 50, AS A MINIMUM.
- 10. RECONSTRUCTED MANHOLES AND NEW MANHOLES SHALL HAVE INVERTS SHAPED IN ACCORDANCE WITH STANDARD IS-1.
- 11. ALL SANITARY SEWER SERVICE LATERALS WHICH CROSS BENEATH PROPOSED STORM SEWER PER DETAIL SHEET 7(9) SHALL BE DUCTILE IRON.
- 12. CLEANOUTS SHALL BE INSTALLED ON ALL ADJUSTED SANITARY SEWER SERVICE LATERALS PER STANDARD SCO-1.

### GENERAL UTILITY NOTES

- 1. VAULTS, MANHOLE BASES, RISERS, TAPERS, AND GRADE RINGS SHALL BE PRECAST REINFORCED CONCRETE MANUFACTURED IN ACCORDANCE TO VIRGINIA DEPARTMENT OF TRANSPORTAION, ROAD AND BRIDGE SPECIFICATIONS, SECTION 503.
- 2. A MAXIMUM OF 2 CONSTRUCTION GRADE RINGS OR MAXIMUM OF 1' OF GRADE RINGS AND FRAME AND COVER ADJUSTMENT ARE ALLOWABLE.
- 3. FINAL ADJUSTMENT OF FRAME AND COVER SHALL BE IN ACCORDANCE TO FRAME AND COVER ADJUSTMENT DETAIL A USING NON SHRINK CONCRETE WITH MAXIMUM OF 4 BRICKS OR CONCRETE BLOCKS FOR GRADE CONTROL. FRAME AND COVERS ARE TO BE SET AT FINISH GRADE OR 1/4" ABOVE FINISH GRADE IN PAVEMENT AND YARD AREAS AND MINIMUM 6" ABOVE FINISH GRADE IN OTHER AREAS. MANHOLE FRAMES AND COVERS ARE NOT TO BE SET IN DRAINAGE SWALE, VALLEY GUTTER, ETC.
- 4. JOINTS AND OPENINGS IN MANHOLE UNITS SHALL BE MADE WATERTIGHT BY USING BUTYL SEALANTS, "O" RING GASKETS OR MASTIC. THE CONCRETE SURFACE SHALL BE CLEANED PRIOR TO USE OF SEALANT.
- 5. ALL LIFT HOLES, OPENINGS AROUND PIPE, ETC. SHALL BE FILLED INSIDE AND OUTSIDE TO THICKNESS OF STRUCTURE.
- 6. ALL WATER & SANITARY SEWER ADJUSTMENTS ARE TO THE BENEFIT OF THE CITY OF ROANOKE.

# CONTRACT QUANTITIES

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SHEET NUMBER	1	JUST STING	<i>~</i>	IE.	જ				SEWER	d	שר	EXISTING		ER 170N	
	& COVER	ωτ	ETE EMENT UB-	1 E		SANI	SANITARY SEWER PIPE		SANITARY	8" SANITARY DROP CONNECTION SMH—1	ER CLEANOUT	UCT	ENT	SANITARY SEMER TERAL CONNECTION	SHEET NUMBER
	FRAME	SEWER CLEANOUT	CONCRETE	SANITARY SMH-1	MANHOLE COVER F&	8"	10"	12"	10" DI PIPE	8° SAU CONNE	6" SEWER (SCO-1)	RECON	PAVEMENT REPAIR	6" SAI LATER	
	EA	EA	L.F.	L.F.	EA	L.F.	L.F.	L.F.	L.F.	L.F.	EA	L.F.	L.F.	L.F.	
7(2)	6		43	61.3	7	334	323		242	7	38			1170	7(2)
7(3)	3	1		56.8	9	330	214	113	,	4.6	33	0.6		1170	7(3)
7(4)				22.5	2		350						225	,	7(4)
TOTAL	9	1	43	140.6	18	664	887	113	242	11.6	71	0.6	225	2340	TOTAL

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,	ADJU	ST EX	ISTING	DI W	ATER	TAPP	ING SL	EEVE,		lu.		RELO EXIST	CATE TING	lui		برا		(6)2	
W			TE.	M	4//		E&V		FH	- VALVE BOV-1	94.	11 Y	MANHOLE	SERVICE	NOE	SERVICE	NOF	PIERS SHEET ?	
SHEET NUMBER	VAL VE BOX	WETER BOX	VAL VE MANHOLE	4"	6"	6 x 6 °	24"x6"	12"x6"	FIRE HYDRANT	2" BLOW-OFF AND VAULT, B	REMOVE EXISTING FIRE HYDRANT	METER ASSEMBLY & BOX	METER & MANI	34" WATER SI LINE, WA-1	1" WATER SERVICE LINE, MM-1	11/2" WATER S LINE, WM-1	2" WATER SERVICE LINE, MA-1	CONCRETE PIETS SEE DETAIL SH	SHEET NUMBER
	EA	EA	EA	L.F.	L.F.	EA	EA	EA	EA	EA	EA	EA	EA	L.F.	L.F.	L.F.	L.F.	EA	
7(2)	2	2	12	30	345	2	1		2	1	2	3		72				6	7(2)
7(3)		1	9		37			1	1		1	13	1	306					7(3)
7(4)					7	1	,					1		7					7(4)
TOTAL	2	3	21	30	389	3	1	1	3	1	3	17	1	385	10	10	10	6	TOTAL

### SEQUENCE OF CONSTRUCTION

THE FOLLOWING IS PROVIDED AS A SUGGESTED SEQUENCE OF CONSTRUCTION FOR THE UTILITY RELOCATION/ADJUSTMENT PHASE OF THE PROJECT. THE CONTRACTOR SHALL SUBMIT A PLAN OF OPERATIONS TO THE ENGINEER FOR APPROVAL.

- STAGE 1: WHILE MAINTAINING TRAFFIC ON ALL STREETS CONSTRUCT THE FOLLOWING:
  - A: ALL OF THE PROPOSED SANITARY SEWER LINE AND MANHOLES FROM THE INTERSECTION OF LUCK AVENUE AND 2ND STREET TO THE END OF PROJECT, STATION 35 + 05.
  - B: WHILE LAYING 10" SANITARY SEWER NOTED ABOVE ALSO LAY THE 281 L.F. OF NEW 6" WATER LINE BETWEEN STATION 20+96 TO 23+75.
- STAGE 2: SOME OF THE FOLLOWING MAY BE CONSTRUCTED CONCURRENTLY WITH THE ABOVE BUT SHOULD NOT TAKE PRECEDENCE OVER THE ABOVE.
  WHILE MAINTAINING TRAFFIC ON RTE. 221 CONSTRUCT THE FOLLOWING:
  - A: ADJUST ALL SANITARY SEWER LATERALS AND MAKE CONNECTIONS TO THE NEW SANITARY SEWER LINES.
  - B: CONSTRUCT ALL RELOCATIONS OF WATER VALVES, METERS,
    OFFSETS, EASEMENTS, AND SERVICE CONNECTIONS.
    THIS SHOULD ENTAIL CONSTRUCTION OF ALL FIRE
    HYDRANTS AND THE REMOVAL OF ABANDONED FIRE HYDRANTS.
    (PLEASE NOTE THAT ANY SERVICE INTERRUPTION OF WATER
    OR SANITARY LINES SHALL BE COORDINATED WITH THE CITY
    OF ROANOKE.)
- STAGE 3: CONSTRUCT STORM SEWER FROM 2ND STREET TO END OF PROJECT,
  STATION 35 + 05 FRANKLIN ROAD.

## CITY OF ROANOKE QUANTITIES

SANITA	4R)	' Si	EWE	R .	SUM	MARY	
SHEET NUMBER	RY MANHOLE	MANHOLE FRAME & COVER F&C-1	SANI	TARY S PIPE	SHEET NUMBER	N. Comments	
	SANITARY SMH-1	MANHO	8"	10"	12"		
	L.F.	EA	L.F.	L.F.	L.F.	·	
7(2)	33.2	3	195			7(2)	
7(3)	36.7	6	50	62	123	7(3)	,
7(4)		• • • • • • • • • • • • • • • • • • • •	•			7(4)	
TOTAL	69.9	9	245	62	123	TOTAL	

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. Franklin Rd - Elon Sk

	*	LEGEND	
4"W	PROPOSED WATER LINE  EXISTING WATER LINE  UNDERGROUND TELEPHONE  PROPOSED STORM SEWER  EXISTING SANITARY SEWER  EXISTING SANITARY LATERAL  EXISTING FORCE MAIN  EXISTING STORM SEWER  EXISTING GAS LINE  VALVE  EXISTING WATER METER  PROPOSED WATER METER  EX. FIRE HYDRANT	O EX. MANHOLE POWER POLE TELEPHONE OR TELE PROPOSED RIGHT— PROPERTY LINE CENTER LINE LIMITS OF CONSTRU EXISTING GUARD RA PROPOSED GUARD PROPOSED FIRE HA PROPOSED FIRE HA PROPOSED SANITARY SE	OF-WAY LINE  WATER STRUCTURE (NUMERICAL)  UCTION  AIL  RAIL  VDRANT  SANITARY SEWER STRUCTURE  SANITARY SEWER STRUCTURE  SANITARY SEWER STRUCTURE