

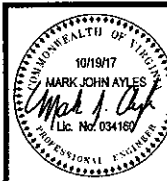
DATE:	OCT. 19, 2017
REVISIONS	Δ DEC 20, 2017
	Δ FEB 7, 2018
	Δ
	Δ
	Δ

HUGHES ASSOCIATES
ARCHITECTS & ENGINEERS
656 ELM AVENUE SW | ROANOKE, VIRGINIA 24016
540.342.4002
www.hughesae.com

NEW WATERLINE FOR
ROANOKE COLUMN STAGE LLC
434 CHURCH AVENUE SW ROANOKE, VIRGINIA

DRAWN BY: *WJW*
CHECKED BY: *mja*

VVWA
DETAILS &
SITE DETAILS



COMMISSION No.
17061
SHEET
SP-3

1. TAPPING SLEEVE SHALL BE POWERSEAL MODEL 3490 TYPE 304 STAINLESS STEEL WITH CARBON STEEL FLANGE. ROMAC'S MODEL SST III FORD MODEL FTSS WITH CARBON STEEL FLANGE OR APPROVED EQUIVALENT. SLEEVE SHALL BE RATED AT 100 PSI OVER WORKING PRESSURE AND MUST HAVE A TEST PLUG.

2. TAPPING VALVE SHALL BE AVK RESILIENT SEATED GATE VALVE SERIES 25 MJFL, MUELLER T-2360 RESILIENT WEDGE TAPPING VALVE WITH MJFL, OR APC SERIES 2500 RESILIENT WEDGE TAPPING VALVE WITH MJFL. VALVE SHALL BE RATED AT 250 PSI.

3. TAPPING SLEEVE AND VALVE SHALL BE FULL PORT TO ACCEPT FULL SIZE SHELL CUTTER.

4. STEEL FLANGE SHALL MEET ASTM A207.

5. SIZE-ON-SIZE TAPPING NOT ALLOWED UNLESS APPROVED BY PARTICIPATING UTILITY.

CONTRACTOR TO EXPOSE & CLEAN PIPE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS

WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL

TAPPING SLEEVE AND VALVE

01/01/14 W-21

PLAN BENDS

PLAN AND ELEVATION PLUGS

SECTION-X-X INTO UNDISTURBED MAT. ON SOIL (TYP.)

SECTION OF VERTICAL BEND

NOTES

- FOR VERT. BEND DOWN IN EXCESS OF 11 1/4" BEND, ANCHORAGE SHALL BE DESIGNED BY ENGINEER.
- FOR VERT. BEND UPWARD, BLOCKING TO BE SIMILAR TO THAT FOR HORIZ. BEND.
- GLANDS & BOLTS SHALL BE PROTECTED FROM CONC. WITH PLASTIC SHEETING WHEN POURING THRUST BLOCKS.
- ALL THRUST BLOCK & SUPPORT CONCRETE SHALL BE 3000 PSI READY MIX CONCRETE.
- THRUST BLOCKS WITH "B" DIMENSION GREATER THAN 30" SHALL HAVE THE RESTRAINED PIPE INSTALLED WITH A MINIMUM OF 4" OF COVER.
- REFER TO MINIMUM THRUST RESTRAINT OF PIPE JOINTS DESIGN LENGTHS" DETAIL FOR WHEN THRUST BLOCKS ARE REQUIRED TO BE USED.
- WHEN THRUST BLOCK IS REQUIRED BUT NOT FEASIBLE TO CONSTRUCT, THRUST COLLAR SHALL BE USED. SEE "THRUST COLLAR" DETAIL.

PRESSURE = 200psid
BEARING = 2000psf
FACTOR OF SAFETY = 1.5

PIPE SIZE	90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND		TEE		PLUG	
	A	B	A	B	A	B	A	B	A	B	C	D
4"	8"	12"	8"	8"	6"	6"	6"	6"	11"	8"	10"	6"
6"	18"	12"	8"	10"	8"	8"	8"	8"	11"	10"	12"	18"
8"	18"	13"	10"	10"	8"	8"	8"	8"	11"	12"	12"	24"
10"	20"	16"	12"	14"	8"	12"	8"	12"	14"	16"	16"	30"
12"	20"	16"	12"	14"	8"	12"	8"	12"	14"	16"	16"	30"
16"	28"	20"	16"	11"	11"	13"	11"	13"	18"	20"	20"	36"
24"	82"	42"	62"	30"	44"	22"	22"	16"	82"	42"	82"	42"
30"	185"	42"	100"	42"	52"	42"	40"	30"	185"	42"	185"	42"

WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL

THRUST BLOCK REQUIREMENTS

02/01/15 W-18

6" X 6" W1.4 X W1.4 WHF

TOP OF SLAB

COMPACTED SUBGRADE TO 95%

NOTES

- 4" THICK, 4000 PSI AIR-ENTRAINED REINFORCED CONCRETE WITH 6" X 6" W1.4 X W1.4 WELDED WIRE FABRIC.
- 4" AGGREGATE BASE - VDOT NO. 57 STONE OR EQUAL.

4" CONCRETE SIDEWALK SECTION

NOTES

- SUBGRADE SHALL BE COMPACTED TO 95% OF THE THEORETICAL MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT. AGGREGATE BASE MATERIAL SHALL BE COMPACTED TO 100% OF THE THEORETICAL MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT.
- CONCRETE FINISH: CONCRETE SHALL FIRST BE SMOOTH TROWELLED, THEN FINISHED WITH A "LIGHT BROOM FINISH".
- WHEN THE SLAB ADJUTS A BUILDING, A 1/2" EXPANSION JOINT FILLED WITH PREFORMED JOINT FILLER EXTENDING FROM THE BOTTOM OF THE SLAB TO APPROXIMATELY 1/4" BELOW THE TOP SURFACE SHALL BE USED.
- TOOLED CONTROL JOINTS SHALL EXTEND INTO THE CONCRETE FOR AT LEAST 1" AND BE APPROXIMATELY 1/8" IN WIDTH.

NEW CURB AND GUTTER TO MATCH PROFILE OF EXISTING

12"

BENCH

2" SM12.50

5" 21-A

CONCRETE SHALL BE 4" THICK

CURB & GUTTER WITH ASPHALT RESTORATION

NTS

PS PERMANENT SEEDING MIXTURE

TYPE A

15 OCTOBER TO 1 FEBRUARY
K-31 FESCUE @ 5 LB / 1000 SF
DORZY WINTER RYE @ 1/2 LB / 1000 SF

1 FEBRUARY TO 1 JUNE
K-31 FESCUE @ 5 LB / 1000 SF
ANNUAL RYE @ 1/2 LB / 1000 SF

1 JUNE TO 1 SEPTEMBER
K-31 FESCUE @ 5 LB / 1000 SF
GERMAN MILLET @ 1/2 LB / 1000 SF

1 SEPTEMBER TO 15 OCTOBER
K-31 FESCUE @ 5 LB / 1000 SF
ANNUAL RYE @ 1/2 LB / 1000 SF

TYPE B (SLOPES 3:1 OR STEPPER)

KENTUCKY 31 FESCUE: 108 LBS./ACRE
RED TOP GRASS: 2 LBS./ACRE
SEASONAL NURSE CROP: 20 LBS./ACRE
CROWN VETCH: 20 LBS./ACRE
TOTAL: 150 LBS./ACRE

SEASONAL NURSE CROP SEEDING DATES:
MARCH, APRIL - 15 MAY ANNUAL RYE
16 MAY - 15 AUGUST FOXTAIL MILLET
16 AUGUST - OCTOBER ANNUAL RYE
NOVEMBER - FEBRUARY WINTER RYE

LIME: 2 TONS/ACRE (90 LBS./1000 SF) PULVERIZED AGRICULTURAL LIMESTONE

FERTILIZER: 10-20-10 OR EQUIVALENT NUTRIENTS
RATE: 1000 LBS./ACRE (23 LBS./1000 SF.)

MULCH: STRAW OR FIBER MULCH SHALL BE USED OVER ALL SEEDED AREAS AND SHALL BE APPLIED IN ACCORDANCE WITH SECTION 1.75 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.

MULCHING RATE: STRAW OR HAY: 1.5-2 TONS/ACRE (70-90 LBS./1000 SF.)
FIBER MULCH: 1500 LBS./ACRE (35 LBS./1000 SF.)

SOIL CONDITIONING: INCORPORATION OF LIME AND FERTILIZER, SELECTION OF CERTIFIED SEED, MULCHING, MAINTENANCE OF NEW SEEDLINGS, AND RESEEDING SHALL BE IN ACCORDANCE WITH SPECIFICATIONS CONTAINED WITHIN THE VIRGINIA SOIL EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION. ADDITIONAL SEEDING TO BE PERFORMED AS REQUIRED BY THE INSPECTOR.

SEED APPLICATION: APPLY SEED UNIFORMLY WITH A CYCLONE SEEDER, DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER ON A FIRM, FINABLE, SEEDBED. MAXIMUM SEEDING DEPTH SHALL BE 1/4 INCH.

TS TEMPORARY SEEDING MIXTURE

1 SEPTEMBER TO 15 FEBRUARY
50/50 MIX OF ANNUAL RYEGRASS
CEREAL WINTER RYE
@ 50-100 LBS./ACRE

16 FEBRUARY TO 30 APRIL
ANNUAL RYEGRASS @ 60-100 LBS./ACRE

1 MAY TO 31 AUGUST
GERMAN MILLET @ 50 LBS./ACRE

FERTILIZER: 10-20-10 OR EQUIVALENT NUTRIENTS
RATE: 600 LBS./ACRE (14 LBS./1000 SF.)

MULCH: STRAW MULCH SHALL BE USED OVER ALL SEEDED AREAS AND SHALL BE APPLIED IN ACCORDANCE WITH SECTION 1.75 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.

MULCHING RATE: STRAW OR HAY: 1.5-2 TONS/ACRE (70-90 LBS./1000 SF.)

TOP VIEW

5" 4,500 GPM (MIN.) BRASS FDC WITH 5" NPT THREADED CONNECTIONS. VERIFY CONNECTION REQUIREMENTS WITH THE LOCAL FIRE DEPARTMENT.

4" GALVANIZED RISER PIPE

PRIME AND TWO COATS RED EXTERIOR PAINT - FORMULATED FOR GALVANIZED MATERIAL

2' X 2' SQUARE CONC. PAD 8" THICK VDOT 43 A/E CONC.

FINISHED GRADE

MIN. 3/4" (HOT DIP) GALV. RODS WITH BITUMINOUS COATING ON ALL BOLTS AND NUTS (TYP.)

TO SYSTEM

4" TO SYSTEM

CONCRETE THRUST BLOCK

UNDISTURBED SOIL

5" STORZ COUPLING W/ 3/4" ELBOWS KNOX BOX LOCKING CAP

ARRANGE THE FDC TO FACE THE STREET

1.0" VDOT # 57 GRAVEL WRAPPED IN FILTER FABRIC

AUTOMATIC HORIZONTAL BRASS BALL DRIP VALVE IN GRAVEL

CONCRETE THRUST BLOCK

UNDISTURBED SOIL

NOTES

- VERIFY THREAD CONNECTION REQUIREMENTS WITH THE CITY OR ROANOKE FIRE DEPARTMENT OFFICIALS.
- THREE INCH LETTERS "FDC" SHALL BE PAINTED VERTICALLY IN WHITE ON THE RISER PIPE.
- ALL EXPOSED PIPING AND FITTINGS SHALL BE GALVANIZED, EXCEPT FOR THE FDC WHICH SHALL BE BRASS AND PRIME AND PAINTED WITH TWO COATS OF EXTERIOR ENAMEL PAINT FORMULATED FOR GALVANIZED SURFACES.
- ALL PIPE FOR THE FDC SHALL BE 4" DUCTILE CAST PIPE WITH MECHANICAL JOINTS, CONFORMING TO ASTM A153 SPECIFICATIONS AND A MINIMUM THICKNESS CLASS OF 350.
- ALL DUCTILE CAST IRON STANDARD MECHANICAL JOINT WATER PIPE SHALL CONFORM TO ANSI SPECIFICATION A21.51.
- ALL JOINTS SHALL HAVE THRUST BLOCKS AND RESTRAINED JOINTS.
- IF THE FIRE SPRINKLER DESIGN INDICATES DEMAND OF 1000 GPM OR GREATER, THE UNDERGROUND FIRE DEPARTMENT CONNECTION LINE SHALL BE INCREASED TO 6" DIAMETER WITH A 6" FIRE DEPARTMENT HOSE CONNECTION.

FIRE DEPARTMENT CONNECTION (FDC)

NOT TO SCALE

1" SQUARE

SHUT

6" DIAMETER

BODY

SUPERVISORY SWITCH

STANDPIPE (PAINTED RED)

CONDUIT

STANDPIPE GROUND LINE MARK

GROUND LINE OR FINISHED GRADE

STANDPIPE (PAINTED BLACK)

36"

12" DIAMETER

TO RISER ROOM

NOTES

- THE PIV REQUIRES TAMPER PROOF SUPERVISORY SWITCHES. PIV TO BE WIRED TO THE ALARM SYSTEM.

POST INDICATOR VALVE (PIV)

NOT TO SCALE