

BMP SCHEDULE:

WATER QUALITY MEASURES (BMP'S) ARE PROVIDED AT THE LOCATIONS SHOWN ON THE PLAN. BELOW IS A TABULATION OF EACH BMP AND A SUMMARY OF THE POLLUTANT REMOVAL PROVIDED BY THE PROPOSED BMP'S. REFER TO DETAILS AND TYPICAL SECTIONS ON SHEET C5.3 FOR ADDITIONAL INFORMATION.

WATER QUALITY SITE AREA = 1.16 ACRES

EXISTING CONDITIONS:

- MANAGED TURF = 0.622 ACRES
- IMPERVIOUS = 0.538 ACRES

PROPOSED CONDITIONS:

- MANAGED TURF = .340 ACRES
- IMPERVIOUS = 0.820 ACRES

SOIL HYDRAULIC GROUP = "D"

TOTAL LOAD REDUCTION REQUIRED (VRMM) = 0.77 LBS/YEAR

TOTAL LOAD REDUCTION PROVIDED (VRMM) = 0.83 LBS/YEAR

BMP NO. 1:

FILTRERRA BIORETENTION SYSTEM  
MODEL FT1006 (BY CONTECH ENGINEERED SOLUTIONS LLC)  
SIZE: 6-FOOT X 10-FOOT  
1 TREE GRATE (SEE LANDSCAPE PLAN FOR TYPE)  
GRATE TYPE - FT RADIAL (BLACK)  
THROAT ON 10-FOOT SIDE  
TOP ELEVATION = 790.8 (TO BE FIELD SET)  
INVERT = 787.3  
OUTLET PIPE = 6-INCH PVC (SDR-35), SLOPE AT 1.0% MINIMUM  
TOTAL DRAINAGE AREA = 0.788 ACRES  
AVERAGE "C" = 0.55  
WATER QUALITY DRAINAGE AREA = 0.207 ACRES (SEE NOTE 1 & 2)  
- 0.042 ACRES MANAGED TURF  
- 0.165 ACRES IMPERVIOUS  
POLLUTANT REMOVAL PROVIDED = 0.34 LBS/YEAR

BMP NO. 2:

JELLYFISH FILTER  
MODEL JF6 (BY CONTECH ENGINEERED SOLUTIONS LLC)  
SIZE: 6-FOOT DIAMETER MANHOLE  
FILTERS: TO BE SIZED BY MANUFACTURER BASED ON FLOW  
TOP OF ACCESS MANHOLES = 969.50 (PROVIDE GRADE RINGS AS REQUIRED)  
INVERT IN = 964.89 (10-INCH PVC)  
INVERT OUT = 964.39 (10-INCH PVC)  
TOTAL DRAINAGE AREA = 1.737 ACRES (INCLUDING ALL ROOF AREAS)  
AVERAGE "C" = 0.57  
WATER QUALITY DRAINAGE AREA = 0.736 ACRES (SEE NOTE 1 & 2)  
- 0.172 ACRES MANAGED TURF  
- 0.564 ACRES IMPERVIOUS  
POLLUTANT REMOVAL PROVIDED = 0.49 LBS/YEAR

NOTES:

- "WATER QUALITY DRAINAGE AREA" INCLUDE JUST THE AREA WITHIN THE WATER QUALITY PROJECT LIMITS.
- "WATER QUALITY DRAINAGE AREA" FOR BMP NO. 2 INCLUDED AREAS FROM UPSTREAM BMP.

GRADING & STORM DRAINAGE GENERAL NOTES:

- HORIZONTAL (NAD 83/93) AND VERTICAL (NAVD88) CONTROL WAS ESTABLISHED BY STATIC GPS SURVEY COMPLETED ON JULY 21, 2015 BY MATTERN & CRAIG, INC. (TIMOTHY W. CALDWELL, L.S.) USING ROANOKE CITY CONTROL NETWORK MONUMENT "PRESTON". BENCHMARK AND CONTROL POINTS SHOWN ON PLANS.
- TOPOGRAPHY SHOWN HEREON IS BASED ON A FIELD SURVEY PERFORMED BY MATTERN & CRAIG, P.C. - DATED JULY 21, 2015. CONTOUR INTERVAL SHOWN IS ONE (1) FOOT.
- THE PROJECT PROPERTY IS LOCATED IN FEMA DEFINED ZONE "UNSHADED X" (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AS SHOWN ON FLOOD INSURANCE RATE MAP PANEL 51161C010225, EFFECTIVE DATE SEPTEMBER 28, 2007. THIS DETERMINATION IS BASED ON SAID MAP AND HAS NOT BEEN VERIFIED BY ACTUAL FIELD ELEVATIONS. THE PROJECT PROPERTY DOES NOT LIE WITHIN THE LIMITS OF A SPECIAL FLOOD HAZARD AREA AS DESIGNATED BY FEMA.
- UNLESS DIRECTED OTHERWISE OR NOTED ON THE PLANS, THE BUILDING PAD SUBGRADE SHALL GRADED TO AN ELEVATION 8-INCHES BELOW THE PUBLISHED FINISHED FLOOR OR BASEMENT FLOOR ELEVATION. REFER TO ARCHITECTURAL AND STRUCTURAL FOUNDATION PLANS FOR ADDITIONAL INFORMATION REGARDING SLAB THICKNESS, STONE SUB-BASE, AND OTHER FOOTING EXCAVATIONS.
- WHERE SHOWN CLEAN-OUTS FOR ROOF DRAIN SYSTEM SHALL BE SET IN 6" DIAMETER CAST IRON VALVE BOX (ITEM #NPN-CH-18 BY CAPITOL FOUNDRY OF VA, INC., OR APPROVED EQUAL) WITH TOP SET FLUSH WITH FINISHED PAVED GRADE OR GRASS SURFACE ELEVATION.
- UPON COMPLETION OF THE STORM DRAINAGE SYSTEM, THE CONTRACTOR SHALL FURNISH TO THE OWNER WITH A FIELD SURVEYED FINAL CORRECT SET OF AS-BUILT PLANS OF THE NEWLY CONSTRUCTED STORM DRAIN AND/OR STORMWATER MANAGEMENT FACILITIES. AS-BUILT PLANS SHALL BE PROVIDED IN THE STATE PLANE VIRGINIA SOUTH COORDINATE SYSTEM, NAD 1983, FIPS 4502 FEET, US SURVEY FEET, DATUM NA 83, IN THE FORM OF 1 PAPER COPY AND 1 DIGITAL AUTOCAD FILE.
- UNLESS OTHERWISE NOTED, NEW AND EXISTING STORM DRAINAGE PIPES AND OPEN CHANNELS ON THE PROJECT SITE ARE PRIVATELY OWNED, OPERATED, AND MAINTAINED.
- CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE PROVISIONS OF THE "UNDERGROUND UTILITY DAMAGE PREVENTION ACT" AND SHALL CONTACT THE VIRGINIA UTILITY PROTECTION SERVICE (MISS UTILITY OF VIRGINIA) BY CALLING 811 OR 1-800-552-7001 AT LEAST 72 HOURS PRIOR TO PERFORMING EXCAVATIONS.
- THE WORK OF THE PROJECT INVOLVES LAND DISTURBANCES OF MORE THAN ONE (1) ACRE. THE CITY OF ROANOKE AND VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ) SHALL REQUIRE THE WORK TO BE PERMITTED IN ACCORDANCE WITH THE PROVISIONS OF THE "GENERAL PERMIT FOR DISCHARGES OF STORMWATER FROM CONSTRUCTION ACTIVITIES - AUTHORIZATION TO DISCHARGE UNDER THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMGP)" AND THE VIRGINIA STORMWATER MANAGEMENT ACT. THE OWNER/DEVELOPER HAS APPLIED FOR COVERAGE UNDER THE "VSMGP GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES (VARIO)." EVIDENCE OF COVERAGE UNDER THE "VSMGP GENERAL PERMIT" MUST BE PROVIDED PRIOR TO BEGINNING ANY LAND DISTURBANCE ON THE PROPERTY. A COPY OF THE "VSMGP GENERAL PERMIT" AND THE "STORMWATER POLLUTION PREVENTION PLAN (SWPPP)" MUST BE KEPT ON THE JOB SITE AT ALL TIMES AND THE "VSMGP GENERAL PERMIT COVERAGE LETTER" MUST BE POSTED AT THE PROJECT SITE.

GRADING / STORM DRAINAGE KEYNOTES:

- NEW STORM DRAIN SYSTEM. REFER TO STORM DRAINAGE PROFILES SHOWN ON SHEET C5.2 FOR STRUCTURE AND STORM DRAINAGE LINE INFORMATION AND STORM DRAINAGE DETAILS.
- STORM DRAIN ROOF LEADER (RD) AND COLLECTION LINE SHALL BE PVC SDR-35 (SIZE 6" SLOPING @ 1.0 % MINIMUM UNLESS OTHERWISE NOTED). SITE CONTRACTOR TO INSTALL ROOF LEADER COLLECTION LINES FROM STORM DRAIN MAIN / MANHOLE TO POINT SHOWN OR TO WITHIN 5-FEET OF BUILDING. BUILDING CONTRACTOR SHALL CONNECT DOWN SPOUT AND DEDICATED BUILDING STORM DRAIN LINES TO STORM DRAIN ROOF LEADER (RD). REFER TO ARCHITECTURAL PLAN FOR LOCATION OF DOWNSPOUTS AND REFER TO SHEET P1.1 FOR LOCATION OF BUILDING STORM DRAIN LINE.
- NEW SANITARY SEWER LINE AND WATER LINE SHOWN FOR INFORMATION AND COORDINATION PURPOSES ONLY. CONTRACTOR SHALL CONFIRM LOCATION & INVERT OF EXISTING AND NEW UTILITY LINES PRIOR TO INSTALLATION OF STORM DRAINAGE. REFER TO SHEET C4.1 FOR ADDITIONAL INFORMATION.
- BMP NO. 2 - SEE "BMP SCHEDULE" ON THIS SHEET. REFER TO SHEET C5.1 FOR ENLARGED PLAN AND DETAILS AND SECTIONS.
- NEW RETAINING WALL. REFER TO SHEET C6.2 FOR WALL ELEVATIONS, TYPICAL SECTION, AND DESIGN / CONSTRUCTION NOTES.
- GRASS-LINED SWALE. DRAIN TO SD-26.
- ADJUST FRAME AND COVER OF EXISTING STORM DRAIN MH D2 TO NEW FINISHED GRADE. REFER TO PROFILE ON SHEET C4.2 FOR TOP ELEVATION.
- BMP NO. 1 - SEE "BMP SCHEDULE ON THIS SHEET. REFER TO SHEET C5.3 FOR DETAIL.
- AREA DRAINS WITHIN PATIO AREA (AD-2 THRU AD-4) SHALL CONFORM TO 24" SQUARE AREA DRAIN (HDPE) WITH SLOTTED HEEL-PROOF DUCTILE IRON GRATE. ZURN INDUSTRIES MODEL Z887-24 CATCH BASIN OR EQUAL MEETS THIS PRODUCT SPECIFICATION.
- AREA DRAIN WITHIN GRASSED AREA (AD-1) SHALL CONFORM TO 12" DIAMETER DRAIN BASIN WITH 12" DIAMETER DROP-IN DUCTILE IRON GRATE. HYLOPLAST "INLINE DRAIN WITH STANDARD GRATE" OR EQUAL MEETS THIS PRODUCT SPECIFICATION.

LEGEND:

- STORM DRAIN LINE (SIZE DENOTED)
- ROOF DRAIN COLLECTOR (SIZE AND FLOW DIRECTION DENOTED)
- CLEAN OUT
- FOUNDATION DRAIN
- DOWN-SPOUT LOCATION
- STORM STRUCTURE TAG (SEE SHEET C5.2 FOR PROFILE AND STRUCTURE DATA)
- SPOT ELEVATION

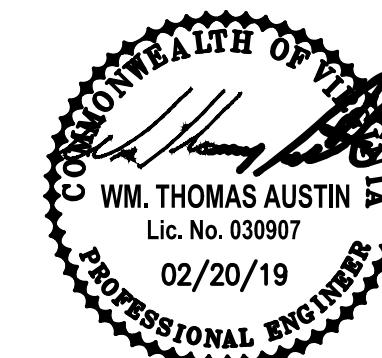
CITY PLAN NO.: CP19-0003

0 10' 20' 40'  
SCALE: 1" = 20'

**Mattern & Craig**  
ENGINEERS/SURVEYORS

701 FIRST STREET, S.W.  
ROANOKE, VIRGINIA 24016  
(540) 345-9342  
FAX (540) 345-7691

GENERAL NOTES



PROJECT TITLE

**ROANOKE FIRE-EMS  
STATION #7**

BID SET

**SFC**

SFC Inc. • 305 South Jefferson Street  
Roanoke, Virginia 24011.2003  
540.344.6664 • Fax 540.343.6925  
www.sfc.com

PROJECT DESIGNER	:	
PROJECT ARCHITECT	:	
PROJECT ENGINEER	:	WTA
DRAWN BY	:	ARB
CHECKED BY	:	WTA
APPROVED BY	:	WTA
NO.	REVISION DESCRIPTION	DATE
1	Addendum No. 4	3/22/19
2	Addendum No. 5	7/11/19

DRAWING TITLE  
**GRADING & STORM  
DRAINAGE PLAN**

COMM. NO. 17503.00	DATE FEBRUARY 20, 2019
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DRAWING  
**C5.1**  
SHEET  
OF