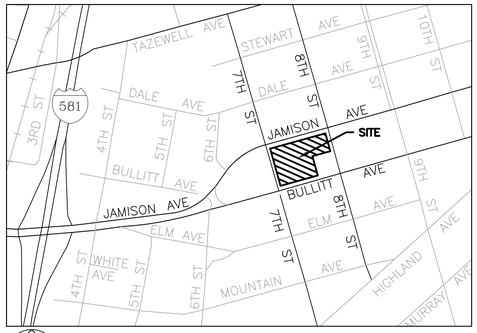
ROANOKE GATEWAY PHASE 2

704 BULLITT AVENUE SE
CITY OF ROANOKE, VIRGINIA



VICINITY MAP
NTS

LEGEND

348	EX. INTRMDT. CONTOUR
345	EX. INDEX CONTOUR
+ 35.55	EX. SPOT ELEVATION
8" WL	EX. WATER LINE
8" SAN	EX. SANITARY SEWER
IR STM	EX. STORM PIPE
	EX. EDGE OF PAVEMENT
	EX. BUILDING
	EX. CONCRETE
	EX. PAVEMENT
	EX. GRAVEL
	PAVEMENT REPLACEMENT
	EX. POWER POLE
SS	EX. SANITARY SEWER MANHOLE
STM	EX. STORM SEWER MANHOLE
CO	CLEANOUT
	EX. LIGHT POLE
	WATER LINE REDUCER
T	EX. TELEPHONE
G	EX. GAS LINE
OHU	EX. OVERHEAD CABLE
X	EX. FENCE
	EX. TREE LINE
	ADJOINING PROPERTY LINE
	EXISTING ROAD MONUMENTS

	PROP. INTRMDT. CONTOUR
1320	PROP. INDEX CONTOUR
35.55 / 35.05	PROP. SPOT ELEVATION
8" WL	PROP. WATER LINE
8" SAN	PROP. SANITARY SEWER
	PROP. STORM PIPE
	PROP. EDGE OF PAVEMENT
	PROP. BUILDING
	PROP. CONCRETE
	PROP. ASPHALT PAVEMENT (STANDARD/HEAVY DUTY)
	PROP. GRAVEL
	PROP. PAVERS
	PROP. POWER POLE
	PROP. MANHOLE
	SIGN
WM	WATER METER
	PROP. GATE VALVE
	BLOW-OFF VALVE
	BENCHMARK
G	PROP. GAS LINE
OHU	PROP. OVERHEAD CABLE
P	PROP. UNDERGRND POWER LINE
X	PROP. FENCE
	PROP. TREE LINE
	SITE PROPERTY LINE
	INLET PROTECTION

ABBREVIATIONS

AHFH	ARROW HEAD TOP OF FIRE HYDRANT	EVCS	END VERT. CURVE STA.	RR	RAILROAD
APPROX	APPROXIMATE	EW	ENDWALL	RYS	REAR YARD SETBACK
ASPH	ASPHALT	EXIST	EXISTING	SAN	SANITARY
BC	BACK OF CURB	FDN	FOUNDATION	SBL	SOUTH BOUND LANE
BIT	BITUMINOUS	FF	FINISHED FLOOR	SD	STORM DRAIN
BLDG	BUILDING	FG	FINISH GRADE	SECT	SECTION
BLK	BLOCK	GBE	GRADE BREAK ELEVATION	SE	SLOPE EASEMENT
BM	BENCHMARK	GBS	GRADE BREAK STATION	SS	SANITARY SEWER
BS	BOTTOM OF BOTTOM STEP	HOA	HOMEOWNERS ASSOCIATION	SSD	STOPPING SIGHT DISTANCE
BVCE	BEGIN VERT. CURVE ELEV.	HPT	HIGH POINT	SSE	SANITARY SEWER EASEMENT
BVCS	BEGIN VERT. CURVE STA.	HSD	HEADLIGHT SIGHT DISTANCE	STA	STATION
BW	BOTTOM OF WALL	INTX	INTERSECTION	STD	STANDARD
CB	CINDER BLOCK	INV	INVERT	STO	STORAGE
C&G	CURB & GUTTER	IP	IRON PIN	SYS	SIDE YARD SETBACK
CMP	CORRUGATED METAL PIPE	LT	LEFT	TBM	TEMPORARY BENCHMARK
CONC	CONCRETE	LVC	LENGTH OF VERTICAL CURVE	TBR	TO BE REMOVED
COR	CORNER	MH	MANHOLE	TC	TOP OF CURB
DBL	DOUBLE	MIN	MINIMUM	TEL	TELEPHONE
DEFL	DEFLECTION	MBL	MINIMUM BUILDING LINE	TRANS	TRANSFORMER
DI	DROP INLET	MON	MONUMENT	TS	TOP OF TOP STEP
DIA	DIAMETER	NBL	NORTH BOUND LANE	TW	TOP OF WALL
DE	DRAINAGE EASEMENT	PROP	PROPOSED	TYP	TYPICAL
ELEC	ELECTRIC	PUE	PUBLIC UTILITY EASEMENT	VDOT	VIRGINIA DEPARTMENT OF TRANSPORTATION
ELEV	ELEVATION	PVMT	PAVEMENT	VERT	VERTICAL
ENTR	ENTRANCE	R	RADIUS	WBL	WEST BOUND LANE
EP	EDGE OF PAVEMENT	RT	RIGHT	YD	YARD
EVCE	END VERT. CURVE ELEV.	R.O.W.	RIGHT OF WAY		
		REQD	REQUIRED		

ENGINEERS NOTES

WESTWOOD PROFESSIONAL SERVICES, INC. ASSUMES NO RESPONSIBILITY FOR ADEQUACY OF PLANS OR FOR INFORMATION ON PLANS UNTIL SUCH PLANS HAVE BEEN APPROVED BY THE REQUIRED PUBLIC AGENCIES.

ANY WORK COMMENCED ON A PROJECT PRIOR TO PLAN APPROVAL IS AT SOLE RISK OF THE DEVELOPER.

WESTWOOD PROFESSIONAL SERVICES, INC. WILL NOT BE RESPONSIBLE FOR THE CONTRACTORS FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THE PLANS OR WILL NOT BE RESPONSIBLE FOR ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTORS, OR THEIR AGENTS OR EMPLOYEES, OR OF ANY OTHER PERSONS PERFORMING PORTIONS OF THE WORK.

SOURCE OF TOPOGRAPHIC MAPPING IS FIELD SURVEY PERFORMED BY WESTWOOD PROFESSIONAL SERVICES, INC., DATED DECEMBER 2025

SHEET INDEX

C1	COVER	C8.1	UTILITY PROFILES
C2	NOTES	C8.2	SWM DETAILS
C3	EXISTING CONDITIONS & DEMOLITION PLAN	C9.1	SITE DETAILS 1
C4	LAYOUT PLAN	C9.2	SITE DETAILS 2
C5	UTILITY PLAN	C10.1	WVWA DETAILS 1
C6	GRADING PLAN	C10.2	WVWA DETAILS 2
C7.1	E.S.C. PLAN PHASE 1	C11	MAINTENANCE OF TRAFFIC
C7.2	E.S.C. PLAN PHASE 2	C12	LANDSCAPE PLAN
C7.3	E.S.C. NOTES		
C7.4	E.S.C. DETAILS		

WESTERN VIRGINIA WATER AUTHORITY NOTES:

GENERAL NOTES:
A PRE-CONSTRUCTION MEETING SHALL BE SCHEDULED WITH THE WESTERN VIRGINIA WATER AUTHORITY TO BE HELD AT LEAST ONE (1) DAY PRIOR TO ANY CONSTRUCTION OF THE APPROVED WATER AND SANITARY SEWER FACILITIES.

ALL WATER AND SANITARY SEWER CONSTRUCTION SHALL BE COMPLETED IN ACCORDANCE WITH WESTERN VIRGINIA REGIONAL DESIGN AND CONSTRUCTION STANDARDS, LATEST EDITION.

UTILITY CONTRACTOR SHALL COMPLETE ALL PRESSURE TESTING AND DISINFECTION IN ACCORDANCE WITH WVWA AND VIRGINIA DEPARTMENT OF HEALTH REQUIREMENTS. TESTING AND DISINFECTION SHALL BE COORDINATED WITH WVWA INSPECTOR.

A MINIMUM COVER OF THREE (3) FEET IS REQUIRED OVER PROPOSED LINES.

ALL SANITARY SEWER AND WATER CONNECTIONS TO EXISTING LINES SHALL BE COORDINATED WITH AND PERFORMED BY THE WESTERN VIRGINIA WATER AUTHORITY.

CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND UNCOVERING VALVE VAULTS, MANHOLES, ETC. AFTER PAVING AND ADJUSTING TO FINAL GRADE IF NECESSARY.

ALL EXISTING UTILITIES MAY NOT BE SHOWN OR MAY NOT BE SHOWN IN THE EXACT LOCATION. THE CONTRACTOR SHALL COMPLY WITH THE STATE WATER WORKS REGULATIONS, SECTION 12.05.03, WHERE LINES CROSS.

ALL TRENCHES IN EXISTING OR FUTURE HIGHWAY RIGHT-OF-WAYS SHALL BE COMPACTED ACCORDING TO CITY OF ROANOKE STANDARDS.

LINES SHALL BE STAKED PRIOR TO CONSTRUCTION.

CONTRACTOR SHALL REFER TO THE WESTERN VIRGINIA WATER AUTHORITY STANDARD WATER AND SEWER REGULATIONS FOR CONSTRUCTION DETAILS AND INSTALLATION METHODS AS REQUIRED TO COMPLETE THE PROPOSED UTILITY FACILITIES AS INDICATED BY THESE DRAWINGS.

FIELD CORRECTIONS SHALL BE APPROVED BY THE WVWA ENGINEERING DIVISION PRIOR TO SUCH CONSTRUCTION.

THE CONTRACTOR SHALL PROVIDE THE WESTERN VIRGINIA WATER AUTHORITY WITH CORRECT AS-BUILT PLANS PRIOR TO SUBSTANTIAL COMPLETION OF ANY NEW PUBLIC EXTENSIONS.

WATER NOTES
WATER MAINS SHALL BE MINIMUM CLASS 350 DUCTILE IRON IN ACCORDANCE TO AWWA C151 OR DR-14 PVC IN ACCORDANCE WITH AWWA C-900.

WATER LATERALS FROM THE METER TO THE BUILDING SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE.

THE CONSTRUCTION OF THE PROPOSED PUBLIC WATER MAIN AND ALL COMMERCIAL SERVICES SHALL BE IN COMPLIANCE WITH THE CURRENT WESTERN VIRGINIA WATER AUTHORITY REGULATIONS. REFER TO THESE REGULATIONS FOR COMPLETE DETAILS AND INSTALLATION METHODS.

SEWER NOTES:
THE LATERALS AND REQUIRED FITTINGS LOCATED WITHIN A PUBLIC RIGHT-OF-WAY OR PUBLIC EASEMENT SHALL BE OF THE SAME TYPE OF MATERIAL AS THE MAINLINE SEWER PIPE.

THE CONSTRUCTION OF THE PROPOSED PUBLIC SEWER MAIN AND ALL RESIDENTIAL SERVICES SHALL BE IN COMPLIANCE WITH THE CURRENT WESTERN VIRGINIA WATER AUTHORITY REGULATIONS. REFER TO THESE REGULATIONS FOR COMPLETE DETAILS AND INSTALLATION METHODS.

ALL SANITARY SEWER PIPING SHALL BE PVC (POLYVINYL CHLORIDE) MANUFACTURED IN ACCORDANCE WITH ASTM DESIGNATION 3034-77 (SDR 26) UNLESS OTHERWISE NOTED ON THE PLANS/PROFILES.

ALL MANHOLE FRAMES AND COVERS SHALL BE WATERTIGHT AND ALL COVERS SHALL BE BOLT-DOWN MANHOLE COVERS (SEE DETAIL S-05 AND S-06) WHERE APPLICABLE.

COMPREHENSIVE SITE PLAN #: CP26-00XX

CITY OF ROANOKE APPROVAL BLOCK

SITE & ZONING SUMMARY:

OWNER: GATEWAY PROJECT LLC

OWNER ADDRESS: PO BOX 11525
ROANOKE, VA 24022

SITE ADDRESS: 704 BULLITT AVE SE
ROANOKE, VA 24013

SITE PARCEL INFORMATION:

EXISTING PARCELS TO BE COMBINED INTO PROPOSED PARCEL B:
T.M.#: 4013101, ±0.12 AC.
T.M.#: 4013102, ±0.12 AC.
T.M.#: 4013103, ±0.09 AC.
T.M.#: 4013104, ±0.09 AC.
T.M.#: 4013105, ±0.09 AC.
T.M.#: 4013106, ±0.09 AC.
T.M.#: 4013107, ±0.12 AC.
T.M.#: 4013108, ±0.12 AC.
T.M.#: 4013109, ±0.12 AC.
T.M.#: 4013110, ±0.12 AC.
T.M.#: 4013111, ±0.12 AC.
PROPOSED PARCEL B COMBINED ACREAGE: ±1.1938 AC.

EXISTING PARCELS TO BE COMBINED INTO PROPOSED PARCEL C:
T.M.#: 4013112, ±0.09 AC.
T.M.#: 4013113, ±0.09 AC.
T.M.#: 4013114, ±0.09 AC.
T.M.#: 4013115, ±0.09 AC.
T.M.#: 4013116, ±0.09 AC.
T.M.#: 4013117, ±0.09 AC.
T.M.#: 4013118, ±0.09 AC.
T.M.#: 4013119, ±0.09 AC.
T.M.#: 4013120, ±0.09 AC.
PROPOSED PARCEL C COMBINED ACREAGE: ±0.8058 AC.

TOTAL COMBINED ACREAGE: ±1.9996 AC.

EXISTING ZONING: RMF(c): RESIDENTIAL CONDITIONAL (ORD#43151-021825)

ORD#43151-021825 PROFFERED CONDITIONS:
1. THE PROPERTY WILL BE DEVELOPED IN SUBSTANTIAL CONFORMITY WITH THE DEVELOPMENT PLAN PREPARED BY BALZER AND ASSOCIATES, INC., DATED JANUARY 17, 2025, A COPY OF WHICH IS ATTACHED TO THIS APPLICATION AS EXHIBIT A, SUBJECT TO ANY CHANGES THAT MAY BE REQUIRED BY THE CITY DURING COMPREHENSIVE DEVELOPMENT PLAN REVIEW.
2. ARCHITECTURAL REQUIREMENTS FOR THE PROPOSED BUILDING DESIGN SHALL BE IN SUBSTANTIAL CONFORMANCE WITH THE PERSPECTIVE RENDERING DRAWING TITLED "GATEWAY PROJECT-EXHIBIT C" PREPARED BY GRIMM AND PARKER AND DATED JANUARY 17, 2025. THE ARCHITECTURAL STYLE, COMPONENTS INCLUDING FORM, WALLS, OFFSETS, WINDOWS, ENTRIES, AND DOORS SHALL BE A SIMILAR STYLE FOR ALL THREE (3) PROPOSED MULTIFAMILY RESIDENTIAL BUILDINGS.

DISTURBED AREA: ±2.25 AC.

ZONING REQUIREMENTS (RMF):

MINIMUM LOT AREA PER DWELLING:	1,000 SF
MINIMUM LOT AREA:	15,000 SF
MINIMUM FRONTAGE:	50'
SETBACKS:	
FRONT:	10' MINIMUM
SIDE:	15' MINIMUM
REAR:	5' MINIMUM
MAXIMUM BUILDING HEIGHT:	45'
MAXIMUM IMPERVIOUS SURFACE:	70%
PARCEL B PROVIDED:	70%
PARCEL C PROVIDED:	70%
MINIMUM TREE CANOPY COVERAGE:	10%
PARCEL B PROVIDED:	11%
PARCEL C PROVIDED:	16%
MINIMUM PARKING REQ. APPLIES:	NO
FRONT YARD REQ. FOR INFILL:	NO

PARKING SUMMARY:

STANDARD SPACES:	45
UNIVERSAL DESIGN/ADA (UD):	6
UNIVERSAL DESIGN/ADA FUTURE (FUT. UD):	4
UNIVERSAL DESIGN/ADA EV (UD/EVSC):	1
ELECTRIC VEHICLE INSTALLED (EVSC):	6
ELECTRIC VEHICLE FUTURE (EVC):	6
TOTAL:	68

CITY OF ROANOKE & UTILITY CONTACTS:

CITY OF ROANOKE DEVELOPMENT REVIEW COORDINATOR – ADRIAN GILBERT (540) 853-5796

ROANOKE GAS COMPANY – WAYLON SPENCER (540) 793-5104

VERIZON – WILLARD DIETZ (540) 265-7510

AMERICAN ELECTRIC POWER – KEITH FREEMAN (540) 427-3643

WESTERN VIRGINIA WATER AUTHORITY – AARON SHEARER (540) 283-2941

ROANOKE CITY TRAFFIC ENGINEER – IAN COFFEY (540) 853-2686

DIG WITH C.A.R.E. KEEP VIRGINIA SAFE Call Miss Utility @ 811

Westwood
Westwood Professional Services, Inc.
1208 CORPORATE CIRCLE
ROANOKE, VA 24018
T: 540.772.9580
F: 540.426.3435
westwoodps.com

NO.	REVISIONS	DATE

ROANOKE GATEWAY PHASE 2
COVER
704 BULLITT AVENUE SE
CITY OF ROANOKE, VA

DATE: 6/30/2026
SCALE: N/A
DRAFTER: LDS
DESIGNER: LDS
CHECKED: CPB
PROJECT NO.
R0070930.01

COMMONWEALTH OF VIRGINIA
CHRISTOPHER P. BURNS
Lic. No. 47338
6-30-2026
PROFESSIONAL ENGINEER

C1

CP26-00XX

Last Saved by: SStrobl
Last Saved: 6/30/2026 11:14 AM
Plotted: Jun 30, 2026 - 11:14 AM
Drawing: N:\0070930.01\06 CAD\DWG\Site Design\Design\R0070930.01 BASE 2026-06-30

FIRE NOTES

FIRE DEPARTMENT CONNECTIONS SHALL BE IDENTIFIED BY AN APPROVED SIGN MOUNTED ON THE STREET FRONT, ON THE SIDE OF THE BUILDING, OR DIRECTLY ADJACENT TO A FREESTANDING FIRE DEPARTMENT CONNECTION. FIRE DEPARTMENT CONNECTION SIGNAGE SHALL BE CONSTRUCTED IN ACCORDANCE WITH APPENDIX A (CALL THIS OFFICE IF YOU NEED THE APPENDIX A DESIGN) AND SHALL: BE RED IN COLOR AND BE AT LEAST 18 INCHES BY 24 INCHES IN SIZE. HAVE "FDC" IN WHITE RETROFLECTIVE LETTERS NO LESS THAN SIX INCHES IN HEIGHT. SIGNAGE MUST INDICATE THE BUILDING OR PORTION THEREOF SERVED BY THE FIRE DEPARTMENT CONNECTION WHEN THE FIRE DEPARTMENT CONNECTION IS REMOTELY LOCATED, THE BUILDING IS SERVED BY MULTIPLE FIRE DEPARTMENT CONNECTIONS, OR WHEN REQUIRED BY THE FIRE MARSHAL. THIS INFORMATION SHALL BE PROVIDED IN WHITE RETROREFLECTIVE LETTERS NO LESS THAN TWO INCHES IN HEIGHT. ADDITIONAL SIGNAGE MAY BE REQUIRED WHEN THE FIRE DEPARTMENT CONNECTION IS NOT VISIBLE TO APPROACHING FIRE APPARATUS ON THE ADDRESS SIDE OF THE BUILDING OR WHEN OTHERWISE REQUIRED BY THE FIRE MARSHAL. THIS SIGNAGE WILL BE CONSTRUCTED SIMILARLY TO THE SIGNAGE DESCRIBED ABOVE AND IN APPENDIX A, WITH THE ADDITION OF AN ARROW INDICATING THE LOCATION OF THE FIRE DEPARTMENT CONNECTION IN RELATION TO THE ADDRESS SIDE OF THE BUILDING.

FIRE DEPARTMENT KEY BOXES SHALL BE REQUIRED WHENEVER: (PLEASE SEE WWW.KNOXBOX.COM)
- A PROPOSED BUILDING WILL NOT HAVE A FIRE ALARM SYSTEM OR FIRE SPRINKLER SYSTEM;
- A PROPOSED BUILDING WILL NOT HAVE AN ELEVATOR;

KEY BOXES: SIZE, LOCATION, AND INSTALLATION

THE PROVISIONS OF THIS SECTION ARE A MINIMUM REQUIREMENT THAT MAY BE SUPERSEDED DURING THE COMPREHENSIVE PLANNING PROCESS. IN SOME CASES, THE FIRE MARSHAL OR HIS/HER DESIGNEE MAY ACCEPT PERFORMANCE–BASED ALTERNATIVES OR REQUIRE A GREATER LEVEL OF BUILDING ACCESS FOR LIFESAVING OR FIREFIGHTING PURPOSES.

- THE SIZE OF THE REQUIRED KEY BOX IS DEPENDENT ON BUILDING SIZE AND/OR CONFIGURATION:
  LESS THAN SEVEN STORIES, LESS THAN 50,000 SQ FT: KNOX 3200 SERIES
  LESS THAN SEVEN STORIES, GREATER THAN 50,000 SQ FT: KNOX 4400 SERIES
  HIGH–RISE BUILDING: KNOX 4400 SERIES
- ALL KEY BOXES SHALL BE OF THE HINGED TYPE; "LIFT–OFF" LIDS ARE NOT PERMITTED.
- KEY BOXES SHALL BE LOCATED AT THE MAIN ENTRANCE TO THE BUILDING OR OTHER LOCATION APPROVED BY THE FIRE MARSHAL OR HIS/HER DESIGNEE. KEY BOXES ARE PREFERRED TO BE AT A HEIGHT OF SIX (6) FEET ABOVE FINISHED GRADE, BUT MUST BE NO LOWER THAN FIVE (5) FEET OR NO HIGHER THAN SIX (6) FEET ABOVE FINISHED GRADE. ALL MEASUREMENTS SHALL BE TO THE CENTERLINE OF THE BOX.

KEY BOXES: CONTENTS

EACH KEY SET MUST INCLUDE:
- KEYS TO PROVIDE ACCESS TO ALL PORTIONS OF THE BUILDING
- ONE (1) ELECTRICAL PANEL KEY
- IF THE BUILDING IS EQUIPPED WITH A FIRE ALARM SYSTEM: ONE (1) FIRE ALARM KEY
- IF THE BUILDING IS EQUIPPED WITH AN ELEVATOR: ONE (1) ELEVATOR KEY

THE FOLLOWING NUMBER OF KEY SETS SHALL BE REQUIRED BASED ON THE BUILDING SIZE AND/OR CONFIGURATION:
- SINGLE STORY, LESS THAN 50,000 SQ FT: ONE SET
- SINGLE STORY, GREATER THAN 50,000 SQ FT: THREE SETS
- TWO TO SIX STORIES, LESS THAN 50,000 SQ FT: TWO SETS
- TWO TO SIX STORIES, GREATER THAN 50,000 SQ FT: THREE SETS
- HIGH–RISE BUILDING/GREATER THAN SEVEN STORIES: FIVE SETS

THE FIRE MARSHAL OR HIS/HER DESIGNEE MAY REQUIRE A DIFFERENT NUMBER OF KEY SETS DEPENDENT ON THE BUILDING SIZE, CONFIGURATION, OR TO PROVIDE A GREATER LEVEL OF BUILDING ACCESS FOR LIFESAVING OR FIREFIGHTING PURPOSES.

ELEVATOR KNOX BOXES: LOCATION AND INSTALLATION

THE PROVISIONS OF THIS SECTION ARE A MINIMUM REQUIREMENT THAT MAY BE SUPERSEDED DURING THE COMPREHENSIVE PLANNING PROCESS. IN SOME CASES, THE FIRE MARSHAL OR HIS/HER DESIGNEE MAY ACCEPT PERFORMANCE–BASED ALTERNATIVES OR REQUIRE A GREATER LEVEL OF BUILDING ACCESS FOR LIFESAVING OR FIREFIGHTING PURPOSES. BUILDINGS EQUIPPED WITH ELEVATORS ARE REQUIRED TO BE EQUIPPED WITH A KNOX 1404 SERIES ELEVATOR BOX. THE ELEVATOR BOX SHALL BE LOCATED IN THE PRIMARY ELEVATOR LOBBY OR OTHER LOCATION APPROVED BY THE FIRE MARSHAL OR HIS/HER DESIGNEE.

ELEVATOR BOXES: CONTENTS
- AN ELEVATOR BOX SET SHALL BE DEFINED AS THE FOLLOWING:
- ONE (1) ELEVATOR DOOR DROP KEY
- ONE (1) KEY SET AS DESCRIBED IN KEY BOXES: CONTENTS, ABOVE

THE FOLLOWING NUMBER OF ELEVATOR BOX SETS SHALL BE REQUIRED BASED ON THE BUILDING SIZE AND/OR CONFIGURATION:
- LOW–RISE BUILDING/SIX STORIES OR LESS: ONE SET
- HIGH–RISE BUILDING/SEVEN STORIES OR GREATER: TWO SETS

GENERAL NOTES

PROVIDE NEW MATERIALS AND WORKMANSHIP IN CONFORMANCE WITH ALL APPLICABLE CODES, STATE AND FEDERAL LAWS, LOCAL ORDINANCES, INDUSTRY STANDARDS, AND OTHER CRITERIA WHICH WOULD NORMALLY APPLY TO WORK OF THIS NATURE. NOTIFY THE ENGINEER IMMEDIATELY UPON DISCOVERING A CONFLICT IN CODES, ORDINANCES, STANDARDS, OR OTHER CRITERIA. APPLICABLE CODES AND STANDARDS INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO, THE FOLLOWING:
- a. BOCA – BASIC CODES
- b. CITY OF ROANOKE
- c. VDOT – VIRGINIA DEPARTMENT OF TRANSPORTATION, ROAD AND BRIDGE STANDARDS AND SPECIFICATIONS
- d. VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS AND HANDBOOK
- e. OSHA – OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
- f. ASTM – AMERICAN SOCIETY FOR TESTING AND MATERIALS
- g. WVWA – WESTERN VIRGINIA WATER AUTHORITY

MAINTAIN A SET OF APPROVED PLANS ON SITE AT ALL TIMES DURING CONSTRUCTION.

OBTAIN EACH REQUIRED PERMIT PRIOR TO COMMENCING THAT PART OF THE WORK. PAY REQUIRED FEES.

NOTIFY THE ENGINEER IMMEDIATELY UPON DISCOVERY OF CONDITIONS WHICH DIFFER FROM THOSE SHOWN ON THE PLANS.

COMPLY WITH LOCAL ORDINANCES FOR BURNING OF WASTE. TRANSPORT WASTE MATERIALS AND UNSUITABLE MATERIALS FROM OWNER'S PROPERTY.

A PRECONSTRUCTION MEETING MUST TAKE PLACE PRIOR TO COMMENCING WORK. AS A MINIMUM, THE CONTRACTOR, OWNER'S AGENT, AND CITY'S AGENT MUST ATTEND.

VERIFY THE LOCATION AND ELEVATION OF EACH EXISTING UNDERGROUND UTILITY IN AREAS OF CONSTRUCTION PRIOR TO COMMENCEMENT OF WORK. CONTACT ENGINEER IMMEDIATELY IF THERE APPEARS TO BE A CONFLICT, UPON DISCOVERY OF A UTILITY WHICH IS NOT SHOWN, AND UPON DISCOVERY OF A LOCATION OR ELEVATION WHICH DIFFERS FROM THAT SHOWN. TO LOCATE UTILITIES, CALL "MISS UTILITY", 1–800–552–7001. UTILITY LOCATIONS SHOWN ARE THE RESULT OF A COMBINATION OF FIELD LOCATION AND EXISTING INFORMATION. LOCATIONS ARE APPROXIMATE.

REPAIR ALL DAMAGE TO ANY UTILITY, PUBLIC OR PRIVATE, CAUSED AS A RESULT OF CONSTRUCTION ACTIVITIES, AT NO ADDITIONAL COST TO OWNER.

NOTIFY OWNERS OF UTILITIES IN AREAS OF CONSTRUCTION PRIOR TO COMMENCEMENT OF EXCAVATION.

ANY SITE DEVELOPMENT OUTSIDE THE SCOPE OF THIS PLAN WILL REQUIRE ADDITIONAL PLAN REVIEW AND APPROVAL

ANY SIGNAGE PROPOSED FOR THIS DEVELOPMENT SHALL COMPLY WITH THE APPLICABLE REGULATIONS OF THE CITY OF ROANOKE ZONING ORDINANCE, SPECIFICALLY SEC. 36.2–660. A SEPARATE SIGN PERMIT AND APPROVAL WILL BE REQUIRED.

ANY NEW ALIGNMENTS, CHANGES IN GRADES, ALTERNATIVE PIPE SIZES OR MANHOLES WILL REQUIRE A NEW SET OF PLANS STAMPED BY THE CONSULTING ENGINEER. COUNTY ENGINEER WILL REVIEW PLANS WITHIN THREE DAYS OF SUBMITTAL. PLAN SHEETS CAN BE 8.5 X 11 IF THE INFORMATION IS LEGIBLE.

NO CONSTRUCTION/FIELD CHANGES WITHOUT APPROVAL OF THE CONSULTING ENGINEER AND THE CITY OF ROANOKE.

CONSTRUCTION SITE PLAN GENERAL NOTES
CONSTRUCTION METHODS

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS, VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE STANDARDS, AND LOCAL JURISDICTIONAL STANDARDS AND SPECIFICATIONS, WHERE APPLICABLE. ANY WORK WITHIN R.O.W. SHALL ADHERE TO THE CITY OF ROANOKE RIGHT OF WAY EXCAVATION AND RESTORATION STANDARDS.
2. THE LOCATION OF EXISTING UTILITIES AS SHOWN IS APPROXIMATE. THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION WORK AND NOTIFY ENGINEER IMMEDIATELY IF LOCATIONS DIFFER FROM PLANS.
3. THE CONTRACTOR SHALL NOTIFY 'MISS UTILITY' AT 1-800-552-7001 OR 811 PRIOR TO ANY CONSTRUCTION WORK IN THIS AREA.

HANDICAPPED ACCESSIBILITY / ADA COMPLIANCE

1. THE MAXIMUM ALLOWABLE CROSS SLOPE ACROSS ACCESSIBLE PARKING SPACES AND ACCESSIBLE AISLES IS 2%. NO SLOPE IN ANY DIRECTION SHALL EXCEED 2% WITHIN ADA PARKING SPACES OR AISLES.
2. THE MAXIMUM ALLOWABLE LONGITUDINAL SLOPE ALONG ACCESSIBLE AISLES IS 5%.
3. THE CONTRACTOR SHALL VERIFY SLOPES AND GRADES FOR ALL ACCESSIBLE PARKING SPACES AND ACCESS AISLES AFTER STAKING IS COMPLETE AND BOTH BEFORE AND AFTER INSTALLATION.
4. ANY SLOPE DISCREPANCIES DETECTED BY THE SURVEYOR AND/OR CONTRACTOR SHALL BE REPORTED TO THE ENGINEER PRIOR TO INSTALLATION.
5. UNLESS SPECIFICALLY NOTED ON THE SITE PLAN, DETECTABLE WARNINGS STRIPS ARE REQUIRED AT ALL CURB RAMPS AND FLUSH CURB TRANSITIONS TO PARKING LOTS.
6. HAND RAILS ARE REQUIRED FOR ANY ACCESSIBLE SITE PEDESTRIAN RAMPS WITH LONGITUDINAL SLOPES THAT EXCEED 5% AND / OR 6-INCHES IN RISE.
7. SITE HAND RAILS SHALL BE PER VDOT / ADA / ANSI STANDARDS AND SPECIFICATIONS, UNLESS NOTED OTHERWISE. HANDRAILS REQUIRED TO MEET 2021 VIRGINIA CONSTRUCTION CODE SECTION 1015. COORDINATE WITH ARCHITECTURAL PLANS PRIOR TO CONSTRUCTION.
8. SITE HAND RAILS SHALL BE INSTALLED ON BOTH SIDES OF THE SITE SIDEWALKS WHERE HAND RAILS ARE REQUIRED. COORDINATE WITH ARCHITECTURAL PLANS PRIOR TO CONSTRUCTION.
9. PER VDOT STANDARDS, THE MAXIMUM PERMISSIBLE CURB RAMP SLOPE IS 12:1.
10. WHEEL STOPS FOR ACCESSIBLE PARKING SPACES SHALL BE INSTALLED 3' OFF THE FACE OF CURB.
11. GUTTER PAN INSTALLED IN ACCESSIBLE PARKING SPACES SHALL NOT EXCEED 2% SLOPE.
12. NO VERTICAL TRANSITIONS IN ADA ACCESSIBLE ROUTES SHALL EXCEED 1/4".

CURB AND GUTTER

1. THE CONTRACTOR SHALL USE A MINIMUM OF THREE (3) RUNNING CONSTRUCTION STAKES TO AVOID HARD BREAK LINES IN THE CURB - UNLESS SPECIFICALLY CALLED FOR ON THE PLANS.
2. THE MINIMUM LONGITUDINAL SLOPE FOR GUTTER PAN IS 0.5%, UNLESS OTHERWISE NOTED ON PLANS.
3. ALL CURB AND GUTTER SHOWN ON THE PLANS SHALL BE VDOT CG-6, CG-2, OR CG-7, UNLESS SPECIFICALLY NOTED OTHERWISE. ALL PUBLIC CURB AND GUTTER SHALL BE CITY OF ROANOKE STANDARD GUTTER SECTIONS, SEE DETAILS WITHIN THE PLAN SET.

UNDERGROUND UTILITIES

1. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING LINE AND GRADE FOR ALL DRY UTILITIES PRIOR TO THE START OF CONSTRUCTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING DRY UTILITY LINES AND GRADES AGAINST ALL PROPOSED UTILITIES SHOWN ON THE PLANS. POTENTIAL CONFLICTS SHALL BE REPORTED TO THE ENGINEER AS SOON AS POSSIBLE.
3. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING TELEPHONE, CABLE, FIBER OPTIC, AND ELECTRICAL SERVICES TO THE PROJECT. CONTACT UTILITY PROVIDERS AS SOON AS POSSIBLE TO BEGIN COORDINATION.
4. THE CONTRACTOR SHALL REVIEW SITE AND BUILDING DRAWINGS TO VERIFY COORDINATION OF UTILITY INVERTS. ANY DISCREPANCIES SHALL BE REPORTED TO THE ARCHITECT AND ENGINEER PRIOR TO INSTALLATION.

SIDEWALKS AND SITE STAIRS

1. ALL SITE STAIRS SHALL BE FURNISHED WITH VDOT HR-1 ON BOTH SIDES OF THE STAIRS AND COORDINATED WITH THE ARCHITECTURAL PLANS.
2. ALL SITE STAIRS SHALL BE CONSTRUCTED IN ACCORDANCE WITH VDOT / ADA / ANSI STANDARDS AND SPECIFICATIONS, UNLESS SPECIFICALLY NOTED OTHERWISE AND COORDINATED WITH THE ARCHITECTURAL PLANS. HANDRAILS REQUIRED TO MEET 2021 VIRGINIA CONSTRUCTION CODE SECTION 1015.
3. SIDEWALKS SHALL BE INSTALLED WITH A MAXIMUM 2% CROSS-SLOPE
4. SIDEWALKS SHALL BE BROOM FINISHED, UNLESS NOTED OTHERWISE ON THE PLANS.
5. SIDEWALKS SHALL BE 5-FEET IN WIDTH, UNLESS NOTED OTHERWISE ON THE PLANS.

ROOF DRAINS AND DOWN SPOUTS

1. ALL DOWN SPOUTS SHALL BE FURNISHED WITH A DOWNSPOUT/ROOFDRAIN TRANSITION BOOT. STUBBING OF DOWNSPOUT INTO ROOF DRAIN LATERAL WITHOUT A SUITABLE BOOT TRANSITION IS NOT PERMITTED.
2. ALL ROOF DRAIN LATERALS SHALL BE INSTALLED IN ACCORDANCE WITH THE PREVAILING LOCAL JURISDICTIONAL PLUMBING CODE OR THE INTERNATIONAL PLUMBING CODE, WHICHEVER IS MORE STRINGENT.
3. MINIMUM ALLOWABLE SLOPE FOR 4-INCH ROOF DRAIN LATERAL IS 2.08%.
4. MINIMUM ALLOWABLE SLOPE FOR 6-INCH ROOF DRAIN LATERAL IS 1.04%.

ROOF DRAIN LATERALS SHALL BE PER THE ARCHITECTURAL PLANS.

TELEPHONE, FIBER OPTIC, CABLE, AND GAS LINE SERVICES

1. CONTRACTOR SHALL HAVE 'MISS UTILITY' MARK EXISTING UTILITY LINES PRIOR TO START OF CONSTRUCTION AND AS NECESSARY THROUGHOUT CONSTRUCTION.
2. CONTRACTOR SHALL REVIEW PLANS TO VERIFY EXISTING LOCATIONS MARKED IN THE FIELD MATCH THOSE SHOWN ON THE PLANS.
3. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY POTENTIAL DISCREPANCIES PRIOR TO THE START OF CONSTRUCTION.
4. CONTRACTOR SHALL POT-HOLE EXISTING UTILITIES AT CRITICAL CROSSING LOCATIONS PRIOR TO THE START OF CONSTRUCTION AND PROVIDE ENGINEER WITH LINE AND GRADE INFORMATION.

BUILDING DOORS AND GRADES

1. A MINIMUM 5'X5' PAD SHALL BE INSTALLED AT ALL BUILDING DOOR LOCATIONS (MAXIMUM 2% SLOPE IN ANY DIRECTION). COMPLY WITH ADA DOOR CLEARANCE REQUIREMENTS FOR PAD POSITIONING OUTSIDE OF THE DOOR. THIS SHALL BE COORDINATED DIRECTLY WITH THE ARCHITECTURAL PLANS PRIOR TO INSTALLATION.
2. FINISHED GRADE SHALL BE 6-INCHES BELOW FINISHED FLOOR ELEVATION ALONG ALL BUILDING WALLS, IN AREAS WHERE PERVIOUS SURFACES ARE PROVIDED, UNLESS OTHERWISE NOTED. FINISHED GRADE FOR AREAS TO BE MULCHED SHALL BE AT TOP OF MULCH. FINSHED GRADE FOR AREAS TO RECEIVE SOD SHALL BE TO TOP OF SOD.
3. ALL PERVIOUS SURFACES SHALL BE INSTALLED WITH A MINIMUM OF 2% SLOPE AWAY FROM THE BUILDING (FOR A MINIMUM OF 10-FEET), TO PROVIDE FOR POSITIVE DRAINAGE.
4. CONTRACTOR SHALL COORDINATE LOCATION OF WEEP HOLES ALONG ALL BUILDING AND RETAINING WALLS AND VERIFY REQUIRED SEPARATION BETWEEN WEEP HOLES AND FINISHED GRADES.
5. CONTRACTOR SHALL REVIEW GRADING ALONG BUILDINGS WITH STOREFRONTS TO VERIFY REQUIRED SEPARATION AS PROVIDED.

GENERAL UTILITY NOTES

1. SUPPLY AND INSTALL ALL MATERIALS AND METHODS FOR WATERLINES, SANITARY SEWERS AND STORM DRAINAGE IN ACCORDANCE WITH THE SPECIFICATIONS AND REQUIREMENTS OF THE CITY OF ROANOKE, THE WESTERN VIRGINIA WATER AUTHORITY, AND/OR THE VIRGINIA DEPARTMENT OF TRANSPORTATION "ROAD AND BRIDGE STANDARDS AND SPECIFICATIONS", LATEST EDITION.

2. OBTAIN ALL REQUIRED PERMITS AND NOTIFY APPROPRIATE OFFICIALS 48 HOURS PRIOR TO COMMENCEMENT OF WORK. OBTAIN INFORMATION FROM WESTERN VIRGINIA WATER AUTHORITY AND/OR CITY OF ROANOKE CONCERNING PERMITS AND CONNECTIONS TO EXISTING LINES.

3. ALL WORK SHALL BE SUBJECT TO INSPECTION BY WESTERN VIRGINIA WATER AUTHORITY AND/OR CITY OF ROANOKE. NOTIFY APPROPRIATE OFFICIALS PRIOR TO COMMENCEMENT OF WORK.

4. SITE SHALL BE TO SUBGRADE PRIOR TO INSTALLATION OF UTILITIES. ALL UTILITIES SHALL BE IN PLACE PRIOR TO PLACEMENT OF PAVEMENT BASE MATERIAL.

5. USE SELECT MATERIAL FREE FROM FROST, LARGE CLODS, STONES, AND DEBRIS FOR BACKFILL FROM THE BOTTOM OF THE TRENCH TO TWELVE (12) INCHES ABOVE THE PIPE.

6. MINIMIZE ANY DISTURBANCE TO EXISTING WATER SERVICE, SEWER LINES OR ANY OTHER UTILITY DURING CONSTRUCTION AND PROVIDE QUALITY WORKMANSHIP.

7. MAKE ALL PIPE JOINTS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND/OR WESTERN VIRGINIA WATER AUTHORITY SPECIFICATIONS. MAKE JOINTS BETWEEN DIFFERENT PIPE MATERIALS WITH STANDARD FITTINGS MANUFACTURED FOR THE PURPOSE.

8. MAINTAIN ALL WATER LINES AT TEN (10) FEET HORIZONTAL SEPARATION FROM SEWER LINES AND MANHOLES; MEASURE THE DISTANCE EDGE–TO–EDGE. WHEN LOCAL CONDITIONS PREVENT THE DESIRED HORIZONTAL SEPARATION, THE WATERLINE MAY BE LAID CLOSER TO THE SEWER OR MANHOLE PROVIDED THAT THE BOTTOM OF THE WATERLINE SHALL BE AT LEAST EIGHTEEN (18) INCHES ABOVE THE TOP OF THE SEWER. WHERE THIS VERTICAL SEPARATION CANNOT BE OBTAINED, CONSTRUCT THE SEWER OF AWWA APPROVED WATER PIPE AND PRESSURE TREAT IN PLACE PRIOR TO BACKFILLING. THE SEWER MANHOLE SHALL BE OF WATERTIGHT CONSTRUCTION TESTED IN PLACE.

9. SEWER AND WATER TAPS SHALL BE LOCATED BY THE CONTRACTOR, PERFORMED BY THE CONTRACTOR/DEVELOPER AND INSPECTED BY THE WESTERN VIRGINIA WATER AUTHORITY.

10. LOCATE AND UNCOVER VALVE VAULTS AND MANHOLES AFTER PAVING AND ADJUST TO FINAL GRADE, IF NECESSARY.

11. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS WHERE UTILITIES ENTER THE BUILDING.

12. PRIOR TO COMMENCING WITH ANY UNDERGROUND PIPE CONSTRUCTION OR GRADING (EXCAVATION), THE GENERAL CONTRACTOR SHALL CALL MISS UTILITY OF VIRGINIA (TOLL FREE 1–800–552–7001) AT LEAST 48 HOURS PRIOR TO COMMENCING. THE G.C. IS RESPONSIBLE FOR ANY DAMAGE CAUSED TO ANY UTILITY, PUBLIC OR PRIVATE, AS A RESULT OF NOT CONTACTING MISS UTILITY AND SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE OWNER/DEVELOPER.

13. EXISTING UTILITY LOCATIONS SHOWN ARE A RESULT OF FIELD SURVEYS, AND AVAILABLE RECORDS AND PREVIOUSLY APPROVED PLANS. LOCATIONS ARE APPROXIMATE. GENERAL CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES SHOWN ON THE PLANS IN AREAS OF CONSTRUCTION PRIOR TO STARTING WORK. CONTACT THE ENGINEER IMMEDIATELY IF: 1) ANY LOCATION OR ELEVATION IS DIFFERENT FROM THAT SHOWN ON THE PLANS. 2) IF THERE APPEARS TO BE ANY CONFLICT. UPON DISCOVERY OF ANY UTILITY NOT SHOWN ON THE PLANS. G.C. SHALL CALL "MISS UTILITY" OF VIRGINIA AND/OR CITY OF ROANOKE AND/OR WESTERN VIRGINIA WATER AUTHORITY.

14. PROVIDE A CONTINUOUS AND UNIFORM BEDDING IN THE TRENCH FOR ALL PIPE. REMOVE STONES AND ROCKS FOUND IN THE TRENCH FOR A DEPTH OF AT LEAST SIX (6) INCHES BELOW THE BOTTOM OF THE PIPE AND TAMP SELECT FILL BEDDING PROVIDED. AFTER THE PIPE HAS BEEN PLACED IN THE TRENCH, BACKFILL THE TRENCH WITH SELECT MATERIAL, THOROUGHLY COMPACT TO 90% (95% UNDER PAVEMENT OR CONCRETE SLAB) OF THE STANDARD PROCTOR (ASTM D–698) USING CARE NOT TO DAMAGE THE PIPE. USE VDOT STANDARD PB–1 TRENCH FOR STORM SEWER AND UB–1 FOR SANITARY SEWER AND WATER.

15. PLACE BACKFILL FOR ALL WATER AND SEWER UTILITIES IN ACCORDANCE WITH WESTERN VIRGINIA WATER AUTHORITY SPECIFICATIONS, AND THE FOLLOWING CRITERIA: 1) BACKFILL NO TRENCH UNTIL INSPECTED BY WESTERN VIRGINIA WATER AUTHORITY. MATERIALS USED FOR BACKFILL FROM THE BOTTOM OF THE TRENCH TO TOP OF THE PIPE SHALL BE CRUSHER RUN, OR APPROVED EQUAL MATERIAL. THOROUGHLY AND CAREFULLY COMPACT THE BACKFILL MATERIAL. 2) COMPACT BACKFILL BY MECHANICAL TAMPING THROUGHOUT THE DEPTH OF THE TRENCH TO ENSURE A SUITABLE SUBBASE ACCEPTABLE TO THE ROAD ENGINEER. IF THE MATERIAL TAKEN FROM THE DITCH IS NOT SUITABLE FOR BACKFILLING, REMOVE IT AND USE AN ACCEPTABLE MATERIAL FOR BACKFILLING THE TRENCH.

16. IN AREAS OF WATER LINE CONSTRUCTION, GRADES SHALL BE WITHIN SIX (6) INCHES OF FINAL GRADE PRIOR TO BEGINNING CONSTRUCTION.

17. MINIMUM COVER OVER ALL WATER AND SANITARY SEWER LINES SHALL BE THREE (3) FEET.

18. THE CONTRACTOR SHALL INSTALL ALL WATER SERVICE CONNECTIONS AND METER BOXES.

19. CONNECT PIPE TO MANHOLES THROUGH PRE CAST OPENINGS AND JOIN WITH EITHER A FLEXIBLE BOOT ADAPTER OR A PIPE SEAL GASKET.

STANDARD CITY OF ROANOKE CONSTRUCTION PROCEDURE REQUIREMENTS

NOTICE TO ALL LANDOWNERS, DEVELOPERS, AND CONTRACTORS:
FAILURE TO COMPLY WITH THE CONSTRUCTION PROCEDURE REQUIREMENTS LISTED BELOW MAY RESULT IN THE COSTLY REMOVAL OF STRUCTURES, TIME DELAYS, OR THE ISSUANCE OF A STOP WORK ORDER.

RIGHT–OF–WAY EXCAVATION PERMIT: PRIOR TO THE COMMENCEMENT OF ANY DIGGING, ALTERATION, OR CONSTRUCTION WITHIN THE PUBLIC RIGHT–OF–WAY (STREETS, ALLEYS, PUBLIC EASEMENTS), A RIGHT–OF–WAY EXCAVATION PERMIT SHALL BE APPLIED FOR AND OBTAINED BY THE CONTRACTOR FROM THE CITY OF ROANOKE.

LAND DISTURBANCE PERMIT: AN APPROVED EROSION AND SEDIMENT CONTROL PLAN FOR ANY BORROW/FILL SITES ASSOCIATED WITH THE PROJECT MUST BE SUBMITTED PRIOR TO THE ISSUANCE OF A LAND DISTURBANCE PERMIT

PLANS AND PERMITS: A COPY OF THE PLANS AS APPROVED BY THE CITY OF ROANOKE (SIGNED BY THE PROPER CITY OFFICIALS) AND ALL PERMITS ISSUED BY THE CITY SHALL BE MADE AVAILABLE AT THE CONSTRUCTION SITE AT ALL TIMES OF ONGOING CONSTRUCTION.

LOCATION OF UTILITIES: THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.

CONSTRUCTION ENTRANCE: THE CONTRACTOR SHALL INSTALL AN ADEQUATE CONSTRUCTION ENTRANCE FOR ALL CONSTRUCTION RELATED EGRESS FROM THE SITE. SIZE AND COMPOSITION OF THE CONSTRUCTION ENTRANCE SHALL BE AS SHOWN ON THE PLANS.

STREETS TO REMAIN CLEAN: IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THAT THE PUBLIC STREET ADJACENT TO THE CONSTRUCTION ENTRANCE REMAINS FREE OF MUD, DIRT, DUST, AND/OR ANY TYPE OF CONSTRUCTION MATERIALS OR LITTER AT ALL TIMES.

BARRICADES/DITCHES: THE CONTRACTOR SHALL MAINTAIN THE INTEGRITY OF ALL EXCAVATED DITCHES AND SHALL FURNISH AND ENSURE THAT ALL BARRICADES PROPER AND NECESSARY FOR THE SAFETY OF THE PUBLIC ARE IN PLACE.

SEWER AND PAVEMENT REPLACEMENT: CONSTRUCTION OF SANITARY SEWERS AND THE REPLACEMENT OF PAVEMENT SHALL BE IN ACCORDANCE WITH APPROVED STANDARDS AND SPECIFICATIONS OF THE CITY OF ROANOKE AND THE WESTERN VIRGINIA WATER AUTHORITY.

APPROVED PLANS/CONSTRUCTION CHANGES: ANY CHANGE OR VARIATION FROM CONSTRUCTION DESIGN AS SHOWN ON THE OFFICIALLY APPROVED PLANS SHALL BE APPROVED BY THE EROSION AND SEDIMENT CONTROL AGENT PRIOR TO SAID CHANGES OR VARIATION IN CONSTRUCTION BEING MADE.

FINAL ACCEPTANCE/CITY: THE OWNER OR DEVELOPER SHALL FURNISH THE CITY OF ROANOKE'S PLANNING BUILDING AND DEVELOPMENT DEPARTMENT WITH A FIELD SURVEYED FINAL CORRECT SET OF AS–BUILT PLANS OF THE NEWLY CONSTRUCTED STORM DRAIN AND/OR STORMWATER MANAGEMENT FACILITIES PRIOR TO FINAL ACCEPTANCE AND ISSUANCE OF A CERTIFICATE OF OCCUPANCY BY THE CITY. 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.

SITE CONSTRUCTION NOTES

ALL MATERIALS AND CONSTRUCTION WITHIN THE PUBLIC RIGHT–OF–WAY SHALL BE IN ACCORDANCE WITH CURRENT CITY OF ROANOKE STANDARDS AND SPECIFICATIONS.

A RIGHT–OF–WAY EXCAVATION PERMIT MUST BE OBTAINED FROM THE CITY OF ROANOKE PRIOR TO BEGINNING ANY CONSTRUCTION WITHIN THE EXISTING CITY MAINTAINED RIGHT–OF–WAY (INCLUDING ACCESS).

THE CONTRACTOR SHALL VERIFY THE ELEVATIONS OF ALL POINTS OF CONNECTION OR PROPOSED WORK TO EXISTING CURBS, SANITARY LINES, WATER LINES, ETC., PRIOR TO CONSTRUCTION. CONTACT THE CONSULTING ENGINEER IF ANY DISCREPANCIES ARE FOUND.

UPON THE DISCOVERY OF SOILS THAT ARE UNSUITABLE FOR FOUNDATIONS, SUBGRADES, OR OTHER ROADWAY CONSTRUCTION PURPOSES, THE CONTRACTOR SHALL IMMEDIATELY CONTACT A GEOTECHNICAL ENGINEER AND/OR THE CITY OF ROANOKE. THESE AREAS SHALL BE EXCAVATED BELOW PLAN GRADE AS DIRECTED BY THE GEOTECHNICAL ENGINEER, BACKFILLED WITH SUITABLE MATERIAL AND COMPACTED IN ACCORDANCE WITH CURRENT VDOT SPECIFICATIONS.

ALL STORM SEWER DESIGN AND CONSTRUCTION TO BE IN ACCORDANCE WITH CITY OF ROANOKE AND VDOT STANDARDS AND SPECIFICATIONS.

ALL ENTRANCES ARE TO BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH CURRENT CITY OF ROANOKE STANDARDS.

CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES SHOWN ON PLANS IN AREAS OF CONSTRUCTION PRIOR TO STARTING WORK. CONTACT ENGINEER IMMEDIATELY IF LOCATION OR ELEVATION IS DIFFERENT FROM THAT SHOWN ON PLAN. IF THERE APPEARS TO BE A CONFLICT, AND/OR UPON DISCOVERY OF ANY UTILITY SHOWN ON THIS PLAN, CALL MISS UTILITY OF CENTRAL VIRGINIA AT 1–800–552–7001. THE DEVELOPER SHALL BE RESPONSIBLE FOR THE RELOCATION OF ANY UTILITY WITHIN EXISTING AND/OR PROPOSED RIGHT–OF–WAY REQUIRED BY THE DEVELOPMENT.

CASING SLEEVES OR CONDUIT MAY BE PROVIDED AS REQUIRED FOR THE LIGHT POLES.

THE INSTALLATION OF SANITARY SEWER, STORM SEWER, WATERLINES, AND GAS MAINS (INCLUDING SERVICE LATERALS AND/OR SLEEVES) AND OTHER UNDERGROUND UTILITIES SHALL BE COMPLETED PRIOR TO PLACEMENT OF AGGREGATE BASE COURSE.

A PRIME COAT SEAL BETWEEN THE AGGREGATE BASE AND BITUMINOUS CONCRETE WILL BE REQUIRED AT A RATE OF 0.30 GALLONS PER SQUARE YARD (REC–250 PRIME COAT) PER VDOT STANDARDS AND SPECIFICATIONS.

THE SCHEDULING OF AGGREGATE BASE INSTALLATION AND SUBSEQUENT PAVING ACTIVITIES SHALL ACCOMMODATE FORECAST WEATHER CONDITIONS PER SECTION 315 OF THE VDOT ROAD AND BRIDGE SPECIFICATIONS (LATEST EDITION).

ALL VEGETATION AND ORGANIC MATERIAL IS TO BE REMOVED FROM THE RIGHT–OF–WAY LIMITS PRIOR TO CONDITIONING OF THE SUBGRADE.

G.C. SHALL SUBMIT A TRAFFIC CONTROL PLAN TO THE CITY OF ROANOKE PRIOR TO ANY CONSTRUCTION WITHIN THE RIGHT–OF–WAY.

GRADING NOTES

G.C. SHALL REEFER TO GEOTECHNICAL REPORT PROVIDED BY ECS MID–ATLANTIC, LLC DATED APRIL 2026 FOR THE SITE AND FOLLOW ALL RECOMMENDATIONS. IF THERE ARE ANY DISCREPANCIES BETWEEN THE REPORT AND THESE NOTES, THE REPORT SHALL GOVERN.

REFER TO BUILDING PLANS FOR SUBGRADE AND UTILITY TRENCHES WITHIN 5' OF THE BUILDING ENVELOPE.

REMOVE TREES, SHRUBS, GRASS, AND OTHER VEGETATION, IMPROVEMENTS OR OBSTRUCTIONS AS REQUIRED TO PERMIT INSTALLATION OF NEW CONSTRUCTION. REMOVE TREES AND OTHER VEGETATION, INCLUDING STUMPS AND ROOTS, COMPLETELY IN AREAS REQUIRED FOR SUBSEQUENT SEEDING. CUT OFF TREES AND STUMPS IN AREAS TO RECEIVE FILL MORE THAN THREE FEET IN DEPTH TO WITHIN EIGHT INCHES OF THE ORIGINAL GROUND SURFACE.

BARRICADE OPEN EXCAVATIONS OCCURRING AS PART OF THIS WORK AND OPERATE WARNING LIGHTS AS RECOMMENDED BY AUTHORITIES HAVING JURISDICTION.

EXCAVATION FOR STRUCTURES:
- a. CONFORM TO ELEVATIONS AND DIMENSIONS SHOWN WITHIN A TOLERANCE OF 0.1'
- b. PROVIDE TRUE AND STRAIGHT FOOTING EXCAVATIONS WITH UNIFORM AND LEVEL BOTTOMS OF THE WIDTH INDICATED TO ENSURE PROPER PLACEMENT AND COVER OF ALL REINFORCEMENT.
- c. REMOVE ALL LOOSE MATERIALS FROM THE EXCAVATION PRIOR TO PLACEMENT OF CONCRETE.
- d. FOOTINGS WHICH SUPPORT CONCRETE MASONRY UNITS MAY BE STEPPED PROVIDED THE VERTICAL STEP DOES NOT EXCEED ONE HALF OF THE HORIZONTAL DISTANCE BETWEEN STEPS AND HORIZONTAL DISTANCE BETWEEN STEPS IS NOT LESS THAN TWO FEET.
- e. IF ROCK IS ENCOUNTERED IN A FOOTING EXCAVATION, UNDERCUT IT A MINIMUM EXCAVATION WITH CONTROLLED FILL.

CUT SURFACE UNDER PAVEMENTS TO COMPLY WITH CROSS SECTIONS, ELEVATIONS, AND GRADES AS INDICATED.

EXCAVATE TRENCHES TO UNIFORM WIDTH CONFORMING TO VDOT STANDARD PB–1 FOR STORM DRAINAGE PIPING.

PREVENT SURFACE WATER AND SUBSURFACE OR GROUND WATER FROM FLOWING INTO EXCAVATIONS AND FROM FLOODING PROJECT SITE AND SURROUNDING AREA. DO NOT ALLOW WATER TO ACCUMULATE IN EXCAVATIONS. REMOVE WATER TO PREVENT SOFTENING OF FOUNDATION BOTTOMS, UNDERCUTTING FOOTINGS, AND SOIL CHANGES DETRIMENTAL TO STABILITY OF SUBGRADES AND FOUNDATIONS. CONVEY WATER WHEN ATMOSPHERIC TEMPERATURE IS LESS THEN 35°F (1°C).

PROTECT EXCAVATED BOTTOMS OF ALL FOOTINGS AND TRENCHES AGAINST FREEZING WHEN ATMOSPHERIC TEMPERATURE IS LESS THEN 35°F (1°).

BACKFILLING:
- a. COMPACT THE BACKFILL AROUND THE OUTSIDE OF EACH BUILDING TO A MINIMUM OF 85% OF MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D 698 STANDARD PROCTOR. DO NOT ALLOW HEAVY COMPACTION EQUIPMENT SUCH AS ROLLERS, ETC., CLOSER TO ANY FOOTING THAN THE HORIZONTAL DISTANCE SUBTENDED BY A 45° ANGLE WITH THE TOP EDGE OF THE FOOTINGS AND THE SURFACE OF THE GROUND.
- b. BACKFILL BEHIND WALLS AFTER PERMANENT CONSTRUCTION WHICH BRACES THE WALL IS IN PLACE OR TEMPORARY BRACING OF THE WALL IS PROPERLY INSTALLED, AND AFTER ACCEPTANCE OF CONSTRUCTION BELOW FINISH GRADE INCLUDING DAMP–PROOFING, REMOVAL OF CONCRETE FORMWORK, AND REMOVAL OF TRASH AND DEBRIS.

FINISH LAWN AREAS TO WITHIN ONE INCH ABOVE OR BELOW REQUIRED SUBGRADE ELEVATIONS. SHAPE SURFACE UNDER WALKS AND PAVEMENTS TO LINE, GRADE, AND CROSS SECTION, WITH NOT MORE THAN 1/2" ABOVE OR BELOW REQUIRED SUBGRADE ELEVATION.

GRADE SURFACE UNDER BUILDING SLABS SMOOTH AND EVEN, FREE OF VOIDS. PROVIDE FINAL GRADES WITHIN 1/2" OF THOSE INDICATED WHEN TESTED WITH A 10' STRAIGHT EDGE.

PROTECT GRADED AREAS FROM TRAFFIC AND EROSION. REPAIR AREAS WHICH HAVE SETTLED, ERODED, OR BECOME DAMAGED DUE TO CONSTRUCTION ACTIVITIES AT NO ADDITIONAL COST TO OWNER.

PLACE ALL FILL AND BACKFILL AS CONTROLLED FILL AS FOLLOWS:
- a. ESTABLISH SUITABLE SUBGRADE CONDITIONS PRIOR TO PLACING FILL BY PROOFROLLING, UNDERCUTTING AND COMPACTING AS NECESSARY.
- b. PLACE FILL MATERIALS IN LAYERS NOT MORE THAN 8" IN LOOSE DEPTH FOR HEAVY COMPACTION EQUIPMENT, AND NOT MORE THAN 4" FOR HAND TAMPERS.
- c. PRIOR TO COMPACTION, PROVIDE MOISTURE CONTENT TO WITHIN 3% OF OPTIMUM BY MOISTENING OR AERATING EACH LAYER. DO NOT PLACE FILL MATERIAL ON SURFACES WHICH ARE MUDDY, FROZEN OR CONTAIN FROST OR ICE.
- d. COMPACT SOIL TO NOT LESS THAN 95% OF MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D 698 (STANDARD PROCTOR).

SPREAD TOPSOIL TO A DEPTH OF 4" OVER ALL DISTURBED AREAS NOT RECEIVING WALKS, PAVEMENT, WALLS OR BUILDING, INCLUDING TRENCHES. IMMEDIATELY FOLLOWING PLACEMENT OF TOPSOIL, DISK THE ENTIRE TOPSOILED AREA AND RAKE FREE OF STONES AND DEBRIS OVER 1/2" IN ANY DIMENSION. PROVIDE A FINISHED SURFACE FREE OF DEPRESSIONS OR HIGH SPOTS. SEED IMMEDIATELY.

OWNER (CONTRACTOR) SHALL EMPLOY QUALIFIED SOILS TESTING LABORATORY TO INSPECT EARTHWORK OPERATIONS. NOTIFY LABORATORY PRIOR TO PERFORMING EARTHWORK OPERATIONS.

Westwood
Westwood Professional Services, Inc.
1208 CORPORATE CIRCLE
ROANOKE, VA 24018
T: 540.772.9580
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westwoodps.com

NO.	REVISIONS	DATE

ROANOKE GATEWAY PHASE 2

NOTES

704 BULLITT AVENUE SE
CITY OF ROANOKE, VA

DATE: 6/30/2026
SCALE: N/A
DRAFTER: LDS
DESIGNER: LDS
CHECKED: CPB
PROJECT NO. R0070930.01

COMMONWEALTH OF VIRGINIA
CHRISTOPHER P. BURNS
Lic. No. 47338
6-30-2026
PROFESSIONAL ENGINEER

C2

CP26–00XX

Last Saved by: SStritzl
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DEMOLITION NOTES:

DEMOLITION SHALL INCLUDE, UNLESS OTHERWISE NOTED ON THE DRAWINGS, REMOVAL OF EXISTING OBJECTS OR IMPROVEMENTS, WHETHER INDICATED ON THE DRAWINGS OR NOT, THAT WOULD IN THE OPINION OF THE OWNER, PREVENT OR INTERFERE WITH THE PROCESS OR COMPLETION OF THE PROPOSED WORK.

PERMITS, FEES AND LICENSES SHALL BE SECURED AND PAID FOR BY THE CONTRACTOR, INCLUDING DISPOSAL CHARGES AS REQUIRED.

WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE GOVERNING AUTHORITIES IN DEMOLITION OF EXISTING PAVEMENT, CURBS AND GUTTERS, DRAINAGE STRUCTURES AND UTILITIES AS MAY BE REQUIRED.

ALL EXISTING UTILITIES TO ANY BUILDINGS SHOWN TO BE RAZED SHALL BE DISCONNECTED AND PLUGGED OR CAPPED AS REQUIRED BY THE CITY OF ROANOKE.

CONTRACTOR SHALL SAW-CUT ALL JOINTS WHERE EXISTING CURBING, PAVEMENT AND SIDEWALK IS TO BE DEMOLISHED AND NEW CONSTRUCTION JOINS THE EXISTING.

CONTRACTOR SHALL COMPLETELY FILL BELOW GRADE AREAS AND VOIDS FROM DEMOLITION USING APPROVED SELECT FILL MATERIAL.

ALL EXISTING CURBING, CONCRETE, SIDEWALK, ENTRANCES, ASPHALT, BRICK, AND ANY STRUCTURES THAT ARE DEMOLISHED SHALL BE REMOVED FROM THE SITE AND DISPOSED OF BY THE CONTRACTOR, ALL DEBRIS, ETC. SHALL NOT BE USED AS FILL MATERIAL ON THE SITE.

CONTRACTOR SHALL PROVIDE THE FOLLOWING PROTECTIONS AT THE JOB SITE:

MAKE ARRANGEMENTS, BEFORE INITIATING DEMOLITION, FOR RELOCATING, DISCONNECTING, REROUTING, ABANDONING, OR SIMILAR ACTION AS MAY BE REQUIRED RELATIVE TO THE UTILITIES AND OTHER UNDERGROUND PIPING, TO PERMIT WORK TO PROCEED WITHOUT ANY DELAY. ARRANGEMENTS SHALL BE MADE IN ACCORDANCE WITH REGULATIONS OF AUTHORITIES OF UTILITIES MENTIONED. SUCH AS OVERHEAD AND UNDERGROUND POWER AND TELEPHONE LINES AND EQUIPMENT, GAS PIPING, STORM SEWERS, SANITARY SEWERS, OR WATER PIPING. CONTRACTOR SHALL NOT USE WATER WHEN IT MAY CREATE HAZARDOUS OR OBJECTIONABLE CONDITIONS, SUCH AS ICE, FLOODING AND/OR POLLUTION.

ENSURE SAFE PASSAGE OF PERSONS AROUND ALL AREAS OF DEMOLITION.

CONDUCT OPERATIONS TO PREVENT DAMAGE TO ADJUST BUILDINGS, STRUCTURES, OTHER FACILITIES, OR INJURY TO PERSONS.

PROMPTLY REPAIR DAMAGES CAUSED TO ADJACENT FACILITIES BY DEMOLITION OPERATIONS AT NO COST TO THE OWNER.

MAINTAIN EXISTING UTILITIES INDICATED TO REMAIN, KEEP IN SERVICE, AND PROTECT AGAINST DAMAGE DURING DEMOLITION OPERATIONS. PREVENT INTERRUPTION OF EXISTING UTILITIES SERVING OCCUPIED OR USED FACILITIES, EXCEPT WHEN AUTHORIZED IN WRITING BY AUTHORITIES HAVING JURISDICTION. PROVIDE TEMPORARY SERVICED DURING INTERRUPTIONS TO EXISTING UTILITIES AS ACCEPTABLE TO GOVERNING AUTHORITIES.

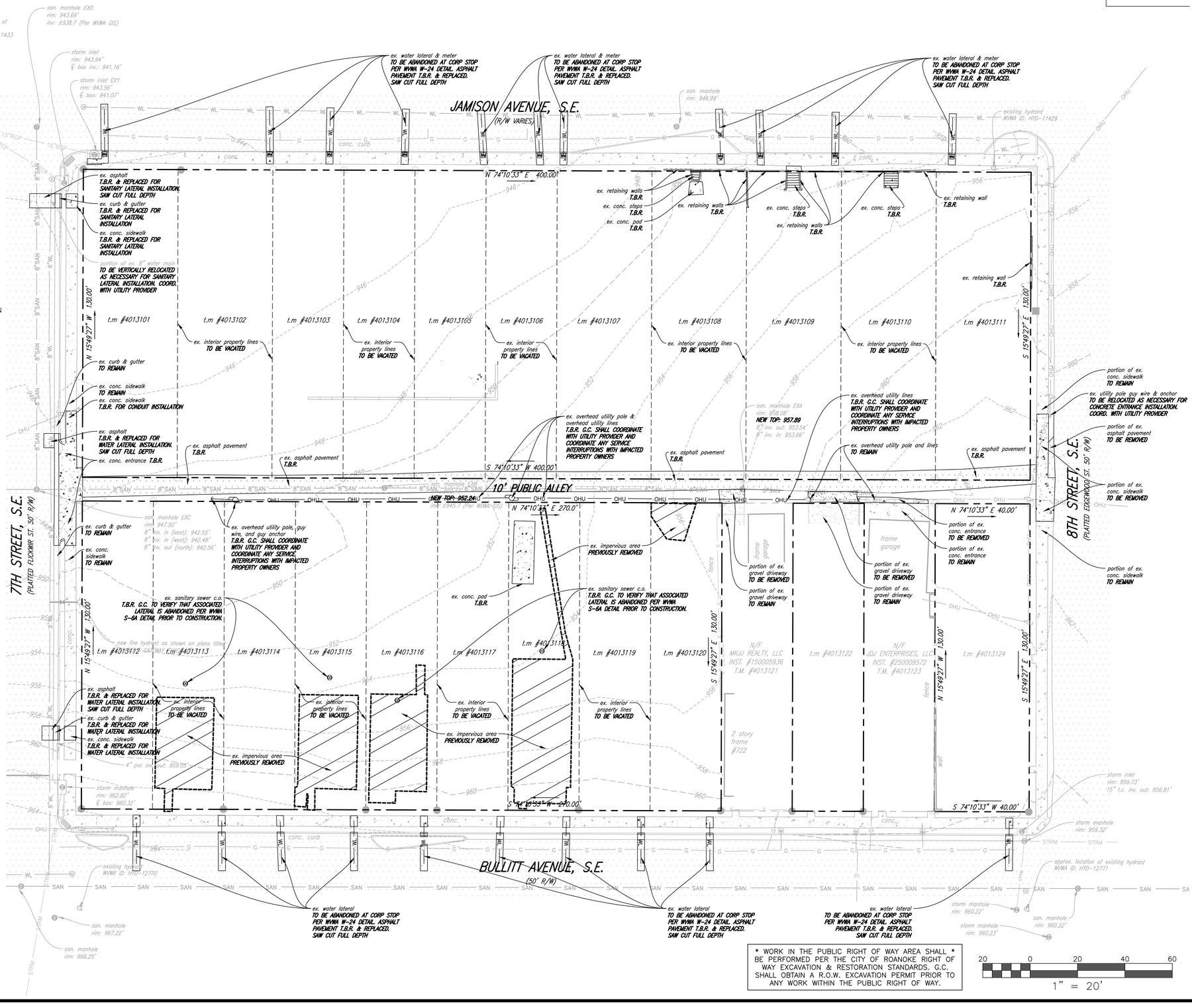
USE WATER SPRINKLING AND OTHER SUITABLE METHODS TO LIMIT DUST AND DIRT RISING AND SCATTERING IN AIR TO LOWEST PRACTICAL LEVEL.

COMPLY WITH GOVERNING REGULATIONS PERTAINING TO ENVIRONMENTAL PROTECTION.

COORDINATE ALL INTERRUPTIONS TO ACCESS AND UTILITY SERVICES WITH AFFECTED PROPERTY OWNER(S) PRIOR TO THE INTERRUPTION.

KEY:

- PREVIOUSLY EXISTING IMPERVIOUS AREA
- PORTION OF PUBLIC UTILITY EASEMENT TO BE VACATED
- EXISTING ASPHALT PAVEMENT
- EXISTING ASPHALT PAVEMENT TO BE REMOVED
- EXISTING CONCRETE
- EXISTING CONCRETE TO BE REMOVED



* WORK IN THE PUBLIC RIGHT OF WAY AREA SHALL * BE PERFORMED PER THE CITY OF ROANOKE RIGHT OF WAY EXCAVATION & RESTORATION STANDARDS. G.C. SHALL OBTAIN A R.O.W. EXCAVATION PERMIT PRIOR TO ANY WORK WITHIN THE PUBLIC RIGHT OF WAY.

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1" = 20'

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NO.	REVISIONS	DATE

ROANOKE GATEWAY PHASE 2
EXISTING CONDITIONS & DEMOLITION PLAN

704 BULLITT AVENUE SE
CITY OF ROANOKE, VA

DATE: 6/30/2026
SCALE: 1" = 20'
DRAFTER: LDS
DESIGNER: LDS
CHECKED: CPB
PROJECT NO.
R0070930.01

COMMONWEALTH OF VIRGINIA
CHRISTOPHER P. BURNS
Lic. No. 47338
6-30-2026
PROFESSIONAL ENGINEER

C3

CP26-00XX

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GENERAL SITE NOTES:

1. G.C. TO CONFIRM THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION OF PROPOSED IMPROVEMENTS.

2. NO CONSTRUCTION/FIELD CHANGES WITHOUT THE APPROVAL OF THE OWNER/DEVELOPER, CONSULTING ENGINEER, W.V.W.A., AND CITY OF ROANOKE.

3. GENERAL CONTRACTOR TO FIELD VERIFY PAVEMENT TIE IN LOCATIONS/ELEVATIONS AND ENSURE THAT POSITIVE DRAINAGE AWAY FROM THE PROPOSED BUILDINGS IS MAINTAINED THROUGHOUT THE SITE.

4. ANY PAVEMENT TO REMAIN THAT IS DISTURBED OR DESTROYED DURING THE CONSTRUCTION PROCESS SHALL BE REPAIRED/REPLACED AS NECESSARY TO PRE-CONSTRUCTION CONDITIONS AT NO COST TO THE OWNER.

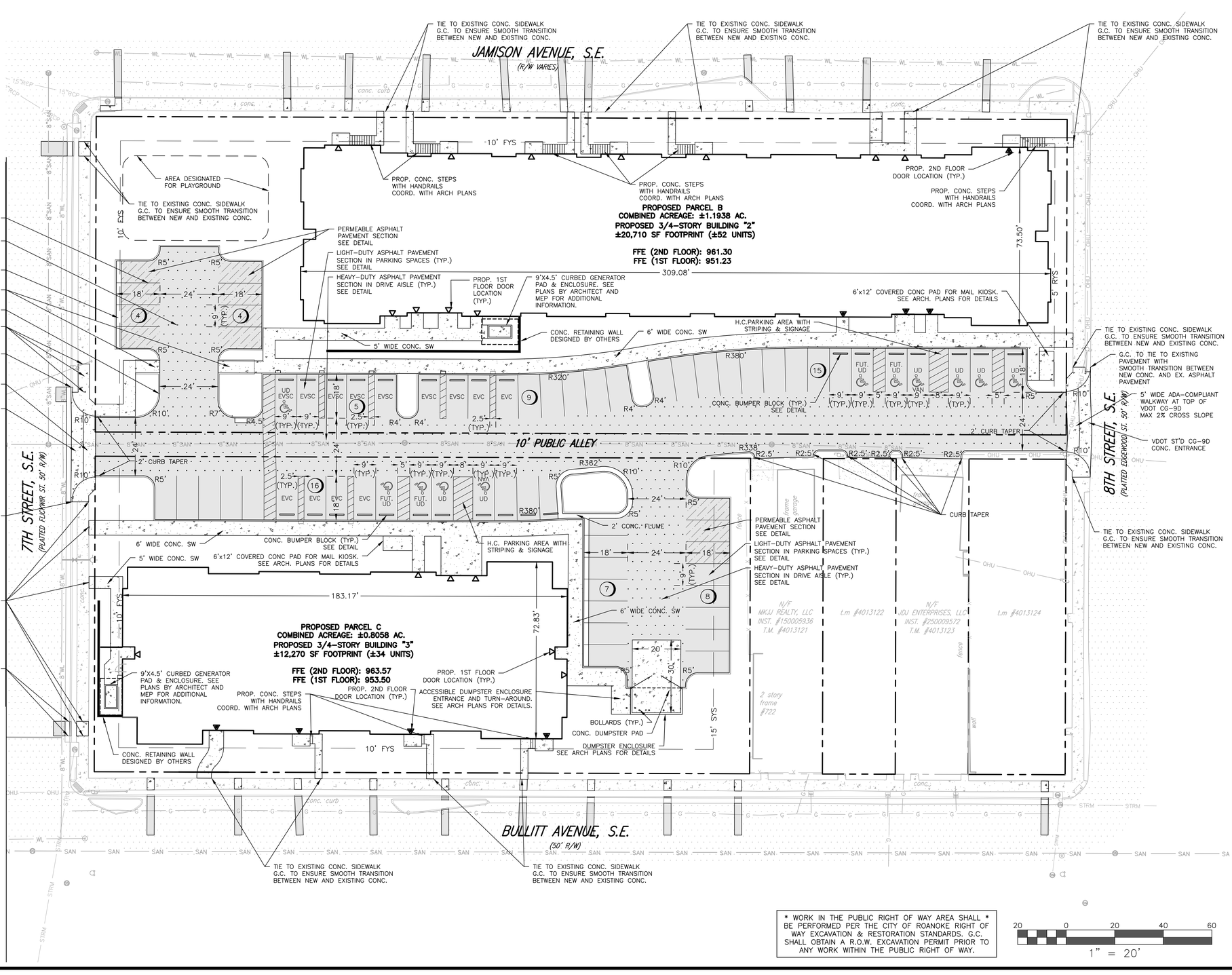
5. ALL BUILDING DIMENSIONS AND UTILITY CONNECTIONS SHALL BE COORDINATED WITH THE ARCHITECTURAL PLANS.

6. G.C. TO PROVIDE ALL REQUIRED CONDUIT FOR EXTERIOR LIGHTING, ELECTRICAL, TELEPHONE, AND COMMUNICATIONS.

7. ALL UTILITIES TO BE INSTALLED UNDERGROUND PER SECTION 36.2-610. WATER & SEWER CONNECTIONS SHALL CONFORM TO WVWA UTILITY STANDARDS AND INTERNATIONAL BUILDING CODE.

8. G.C. SHALL COORDINATE CONCRETE FINISHING AROUND THE PROPOSED DOOR LOCATIONS WITH THE ARCHITECTURAL PLANS.

9. THE SITE CONTRACTOR MUST COORDINATE THE TIMING AND INSTALLATION OF ALL UTILITIES AND MAKE ALL NECESSARY SCHEDULE ARRANGEMENTS WITH AEP, ROANOKE GAS, AND OTHER PROVIDERS FOR TEMPORARY OR PERMANENT UTILITIES PER THE PROJECT SCHEDULE.



KEY:

- EXISTING GRAVEL
- EXISTING ASPHALT PAVEMENT
- PROPOSED LIGHT-DUTY ASPHALT PAVEMENT
- PROPOSED HEAVY-DUTY ASPHALT PAVEMENT
- PROPOSED PERMEABLE ASPHALT PAVEMENT
- EXISTING CONCRETE
- PROPOSED CONCRETE

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1" = 20'

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ROANOKE GATEWAY PHASE 2

LAYOUT PLAN

704 BULLITT AVENUE SE
CITY OF ROANOKE, VA

DATE: 6/30/2026
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FIRE FLOW SUMMARY:

EXISTING FLOW DATA PER TEST PERFORMED BY
THE WVWA ON 12/18/2025

HYD-11429
STATIC: 74 PSI
FLOW: 167.8 GPM @ 2 PSI RESIDUAL
CALCULATED FLOW: 144 GPM @20 PSI RESIDUAL

HYD-11433
STATIC: 79 PSI
FLOW: 1210 GPM @ 65 PSI RESIDUAL
CALCULATED FLOW: 2631 GPM @20 PSI RESIDUAL

HYD-12770
STATIC: 69 PSI
FLOW: 1125.6 GPM @ 54 PSI RESIDUAL
CALCULATED FLOW: 2133 GPM @20 PSI RESIDUAL

HYD-12771
STATIC: 72 PSI
FLOW: 992.7 GPM @ 48 PSI RESIDUAL
CALCULATED FLOW: 1507 GPM @20 PSI RESIDUAL

CONDUIT NOTES:

1. FOR BOTH BUILDINGS "2" AND "3", G.C. SHALL PROVIDE (2) 4" PVC SCHEDULE 40 CONDUITS BETWEEN THE EXISTING UTILITY SERVICE AND PROPOSED SERVICE IN BUILDING. G.C. TO COORDINATE DIRECTLY WITH VERIZON/T.E.C./ETC.

2. FOR BOTH BUILDINGS "2" AND "3", G.C. SHALL PROVIDE (3) 4" PVC SCHEDULE 40 CONDUITS BETWEEN THE EXISTING UTILITY SERVICE AND PROPOSED TRANSFORMER & BUILDING. G.C. TO COORDINATE DIRECTLY WITH AEP.

3. FOR BOTH BUILDINGS "2" AND "3", G.C. SHALL PROVIDE PVC SCHEDULE 40 CONDUIT AS REQUIRED FROM BUILDING TO PROVIDE POWER TO PROPOSED ELECTRICAL CHARGING STATIONS PER MANUFACTURER.

TIE TO EXISTING 8" SANITARY SEWER PER WVWA S-6 DETAIL WITH NEW 48" SAMPLING MH AT THE PROPERTY LINE. SAWCUT AND ASPHALT PAVEMENT REPLACEMENT FOR UTILITY INSTALLATION G.C TO CONFIRM EXACT LOCATION AND ELEVATION PRIOR TO CONSTRUCTION. ENSURE SMOOTH TRANSITION BETWEEN NEW AND EXISTING ASPHALT PAVEMENT.

CURB AND GUTTER AND SIDEWALK REPLACEMENT FOR SANITARY SEWER INSTALLATION. G.C. TO ENSURE SMOOTH TRANSITION BETWEEN NEW AND EXISTING

UTILITY PROVIDER TO PROVIDE OVERHEAD SERVICE CONNECTION TO SPECIFIED EXISTING UTILITY POLE LOCATION. TRANSITION FROM OVERHEAD TO UNDERGROUND POWER AT THIS POLE. G.C. TO COORDINATE DIRECTLY WITH AEP.

PROP. TRANSFORMER PAD WITH 6' TALL SCREEN FENCING. COORD. ROUTING WITH MEP & AEP

TIE TO EXISTING 8" WATER MAIN WITH 8"x6" TAPPING SLEEVE & 6" GATE VALVE PER WVWA W-21 DETAIL. G.C. SHALL CONFIRM EXACT SIZE, MATERIAL, LOCATION, AND ELEVATION OF EX. WATERLINE PRIOR TO ANY CONSTRUCTION. COORD. WITH WVWA FOR TAP.

20' WIDE PUBLIC WATER EASEMENT

SAWCUT AND PAVEMENT REPLACEMENT PER CITY OF ROANOKE ROW EXCAVATION AND RESTORATION STANDARDS FOR WATERLINE INSTALLATION, G.C. TO ENSURE SMOOTH TRANSITION BETWEEN NEW AND EXISTING PAVEMENT

WATER METER AND FIRE SERVICE VAULT PER WVWA W-7 DETAIL WITH 6" FIRE LINE, 2" DOMESTIC LINE AND 2" METER PIV TO BE PROVIDED ON 6" FIRE LINE BEHIND PROPERTY LINE. VAULT LID SHALL BE FLUSH WITH FINISHED GRADE

PROP. TRANSFORMER PAD WITH 6' TALL SCREEN FENCING. COORD. ROUTING WITH MEP & AEP

TIE CANOPY DRAINS TO 8" ROOF DRAIN TRUNKLINE WITH 106 LF OF 6" SCH. 40 PVC AT MIN 1.04% SLOPE WITH CLEANOUTS AT BENDS.

12" NYLOPLAST CATCH BASIN INLET TOP=953.10 INV.=951.10

WATER METER AND FIRE SERVICE VAULT PER WVWA W-7 DETAIL WITH 6" FIRE LINE, 2" DOMESTIC LINE AND 2" METER PIV TO BE PROVIDED ON 6" FIRE LINE BEHIND PROPERTY LINE. VAULT LID SHALL BE FLUSH WITH FINISHED GRADE

CURB AND GUTTER AND SIDEWALK REPLACEMENT FOR WATERLINE INSTALLATION. G.C. TO ENSURE SMOOTH TRANSITION BETWEEN NEW AND EXISTING CONCRETE

TIE TO EXISTING 8" WATER MAIN WITH 8"x6" TAPPING SLEEVE & 6" GATE VALVE PER WVWA W-21 DETAIL. G.C. SHALL CONFIRM EXACT SIZE, MATERIAL, LOCATION, AND ELEVATION OF EX. WATERLINE PRIOR TO ANY CONSTRUCTION. COORD. WITH WVWA FOR TAP.

SAWCUT AND PAVEMENT REPLACEMENT PER CITY OF ROANOKE ROW EXCAVATION AND RESTORATION STANDARDS FOR WATERLINE INSTALLATION, G.C. TO ENSURE SMOOTH TRANSITION BETWEEN NEW AND EXISTING PAVEMENT

14' WIDE PUBLIC WATER EASEMENT
6" PRIVATE FIRE LINE
2" PRIVATE DOMESTIC W.L.

JAMISON AVENUE, S.E.
(R/W VARIES)

BULLITT AVENUE, S.E.
(50' R/W)

7TH STREET, S.E.
(PLATTED FLOWMIR ST. 50' R/W)

8TH STREET, S.E.
(PLATTED EDGEWOOD ST. 50' R/W)

10' PUBLIC ALLEY

PROPOSED 3/4-STORY BUILDING "2"
±20,710 SF FOOTPRINT (±52 UNITS)
FFE (2ND FLOOR): 961.30
FFE (1ST FLOOR): 951.23

PROPOSED 3/4-STORY BUILDING "3"
±12,270 SF FOOTPRINT (±34 UNITS)
FFE (2ND FLOOR): 963.57
FFE (1ST FLOOR): 953.50

UNDERGROUND SWM FACILITY

6" STORM CLEANOUT TOP=944.75 INV.=941.30
6" STORM CLEANOUT TOP=946.85 INV.=942.20
6" STORM CLEANOUT TOP=947.50 INV.=943.10
6" STORM CLEANOUT TOP=949.40 INV.=946.00
6" STORM CLEANOUT TOP=956.20 INV.=948.00
TIE CANOPY DRAINS TO STR. EX1 WITH 370 LF OF 6" SCH. 40 PVC AT MIN 1.04% SLOPE WITH CLEANOUTS AT BENDS.
EV CHARGING STATION LOCATION (TYP.) G.C. TO PROVIDE ALL REQUIRED CONDUIT AND MATERIALS FROM BUILDING. COORD. WITH MEP PLANS. COORD. CHARGING BOLLARD WITH OWNER/DEVELOPER & MEP.
REMOTE FDC WITH KNOX LOCKING CAPS. COORD. WITH MEP PLANS
12" NYLOPLAST CATCH BASIN INLET TOP=949.00 INV.=944.55
TIE ROOF DRAINS TO STR. 5 WITH 107 LF OF 8" SCH. 40 PVC AT MIN 1.04% SLOPE WITH CLEANOUTS AT BENDS. TOP=949.15 INV.=945.35
BALL DRIP AND CHECK VALVE TO PREVENT FREEZING
8" STORM CLEANOUT TOP=949.75 INV.=944.00
COORD. EXACT UTILITY TIE IN LOCATIONS WITH ARCH & MEP PLANS (TYP.)
(3) 4" PVC CONDUIT G.C. TO PROVIDE ALL CONDUIT FOR UNDERGROUND ELECTRICAL ROUTING INTO BUILDING. COORD. EXACT ELECTRICAL TIE IN LOCATION WITH ARCH & MEP PLANS
TIE CANOPY DRAINS TO STR. 3 WITH 167 LF OF 6" SCH. 40 PVC AT MIN 2.08% SLOPE WITH CLEANOUTS AT BENDS.
12" NYLOPLAST CATCH BASIN INLET TOP=959.95 INV.=957.00
6" STORM CLEANOUT TOP=959.10
12" NYLOPLAST CATCH BASIN INLET TOP=949.00 INV.=945.40 INV.=952.00
12" NYLOPLAST CATCH BASIN INLET TOP=949.00 INV.=945.20
6" CHECK VALVE
6" PRIVATE FIRE LINE
2" PRIVATE DOMESTIC W.L.
PROP. 5' WIDE PUBLIC SANITARY SEWER EASEMENT
PROP. PRIVATE FIRE HYDRANT ASSEMBLY
NEW TOP: 957.89
NEW TOP: 952.24
PROP. 5' WIDE PUBLIC SANITARY SEWER ,EASEMENT
PROP. 5' WIDE PUBLIC SANITARY SEWER EASEMENT
PROP. 5' WIDE PUBLIC SANITARY SEWER EASEMENT
SCH. 40 PVC C.O. WITH TRAFFIC BEARING LID SEE DETAIL SHEET C9.2 TOP=954.30 INV.=951.30
20 LF OF PERFORATED 6" SCH. 40 PVC WRAPPED IN FILTER FABRIC AT MIN 0.50% SLOPE. SEE DETAIL SHEET C9.2
SCH. 40 PVC C.O. WITH TRAFFIC BEARING LID SEE DETAIL SHEET C9.2 TOP=954.20 INV.=952.20
TIE 6" PERFORATED UNDERDRAIN TO STR. 1 WITH 47 LF OF 6" SCH. 40 PVC AT MIN 2.08% SLOPE WITH CLEANOUTS AT BENDS.
6" STORM CLEANOUT TOP=951.40 INV.=949.55
TIE ROOF DRAINS TO STR. 5 WITH 59 LF OF 8" SCH. 40 PVC AT MIN 1.04% SLOPE WITH CLEANOUTS AT BENDS. TOP=951.90 INV.=949.00
new fire hydrant as shown on plans titled "ROANOKE GATEWAY PHASE 1"
FUTURE EV CHARGING STATION LOCATION (TYP.) G.C. TO PROVIDE ALL REQUIRED CONDUIT AND MATERIALS FROM BUILDING. COORD. WITH MEP PLANS.
COORD. EXACT UTILITY TIE IN LOCATIONS WITH ARCH & MEP PLANS (TYP.)
(3) 4" PVC CONDUIT G.C. TO PROVIDE ALL CONDUIT FOR UNDERGROUND ELECTRICAL ROUTING INTO BUILDING. COORD. EXACT ELECTRICAL TIE IN LOCATION WITH ARCH & MEP PLANS
6" STORM CLEANOUT TOP=953.40 INV.=949.40
12" NYLOPLAST CATCH BASIN INLET TOP=952.20 INV.=948.50
TIE CANOPY DRAINS TO STR. 1 WITH 64 LF OF 6" SCH. 40 PVC AT MIN 2.08% SLOPE WITH CLEANOUTS AT BENDS.
8" STORM CLEANOUT TOP=953.50 INV.=949.50
6" STORM CLEANOUT TOP=961.00 INV.=952.50
FDC WITH REQUIRED BUILDING MOUNTED SIGNAGE, FDC REQUIRED TO HAVE A KNOX BOX LOCKING CAP INSTALLED WITH 5" STORZ COUPLINGS AND A 30° ELBOW. COORD. WITH ARCH AND MEP PLANS G.C. SHALL PROVIDE KNOX BOX IN APPROVED LOCATION.
TIE 12" NYLOPLAST CATCH BASIN INLET TO STR. 1 WITH 99 LF OF 8" SCH. 40 PVC AT MIN 2.08% SLOPE WITH CLEANOUTS AT BENDS. TOP=952.80 INV.=950.00
6" STORM CLEANOUT TOP=963.05 INV.=960.00
6" STORM CLEANOUT TOP=962.80 INV.=958.50

N/F MKJU REALTY, LLC INST. #150005936 T.M. #4013121
t.m #4013122
N/F JDJ ENTERPRISES, LLC INST. #250009572 T.M. #4013123
t.m #4013124

existing hydrant WVWA ID: 10D-11429
existing hydrant WVWA ID: HYD-11433
existing hydrant WVWA ID: HYD-12770
approx. location of existing hydrant WVWA ID: HYD-12771
san. manhole EX0 rim: 943.69' inv: ±938.7 (Per WVWA GIS)
storm inlet rim: 943.94' E box inv.: 941.16'
storm inlet EX1 rim: 943.56' E box: 941.07'
storm manhole rim: 943.54'
san. manhole rim: 946.99'
san. manhole EX4 rim: 953.54' 8" inv. out: 953.44' 8" inv. in: 953.66'
san. manhole rim: 947.50' 8" inv. in (east): 942.25' 8" inv. in (west): 942.48' 8" inv. out (south): 941.56'
storm manhole rim: 962.82' E box: 960.32'
4" pvc inv. out: 959.05'
storm inlet rim: 959.73' 15" t.c. inv. out: 956.81'
storm manhole rim: 959.32'
storm manhole rim: 960.22'
san. manhole rim: 960.22'
storm manhole rim: 960.23'
san. manhole rim: 967.22'
san. manhole rim: 966.25'

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ROANOKE GATEWAY PHASE 2

UTILITY PLAN

704 BULLITT AVENUE SE
CITY OF ROANOKE, VA

DATE: 6/30/2026
SCALE: 1" = 20'
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DESIGNER: LDS
CHECKED: CPB
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COMMONWEALTH OF VIRGINIA
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Lic. No. 47338
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SITE GRADING NOTES:

1. NO CONSTRUCTION/FIELD CHANGES WITHOUT THE APPROVAL OF THE OWNER/DEVELOPER, CONSULTING ENGINEER, AND THE CITY OF ROANOKE.

2. ANY NEW ALIGNMENTS, CHANGES IN GRADES, OR ESC MEASURES WILL REQUIRE A NEW SET OF PLANS STAMPED BY THE CONSULTING ENGINEER.

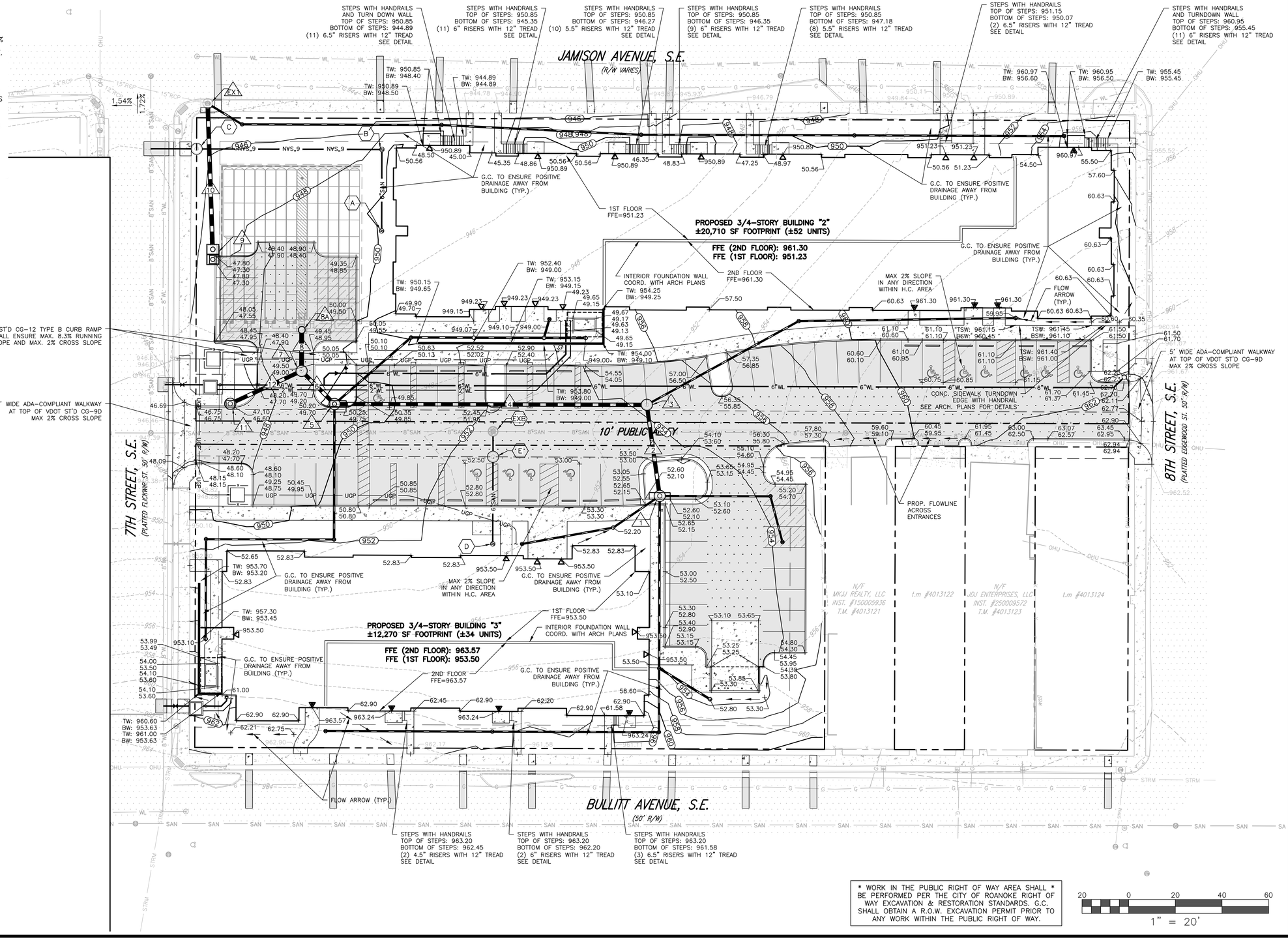
3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF ANY DISCREPANCIES WITH EXISTING UTILITIES ARE LOCATED DURING THE GRADING PROCESS FOR THE SITE PRIOR TO PROCEEDING WITH ANY FURTHER WORK.

4. ALL STANDARD PARKING LOT STRIPING SHALL BE PAINTED WITH 4" WIDE WHITE TRAFFIC PAINT (2 COATS MINIMUM).

5. ALL COMPACTION SHALL MEET OR EXCEED 95% STANDARD PROCTOR OR AS OUTLINED IN THE APPLICABLE GEOTECHNICAL REPORT IF AVAILABLE.

6. PROPOSED CONCRETE SIDEWALKS SHALL HAVE A MAX. 2% CROSS SLOPE TOWARDS THE PUBLIC ROADWAYS.

7. G.C. SHALL BE RESPONSIBLE FOR CONFIRMING THE PAVEMENT TIE IN LOCATIONS AND ELEVATIONS PRIOR TO ANY CONSTRUCTION TO CONFIRM EXISTING CONDITIONS. G.C. SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY QUESTIONS/CONCERNS OR DISCREPANCIES FOUND ON-SITE.



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ROANOKE GATEWAY PHASE 2

GRADING PLAN

704 BULLITT AVENUE SE
CITY OF ROANOKE, VA

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E.S.C. CONSTRUCTION SEQUENCE I:

1. THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) SHALL BE PROVIDED ON-SITE AND ALL REGULATIONS, INSPECTIONS, AND PROCEDURES FOLLOWED FOR THE ENTIRE DURATION OF THE PROJECT. SEE SWPPP DOCUMENT FOR SITE SPECIFIC REQUIREMENTS AND INSPECTIONS.

2. THE CONSTRUCTION ENTRANCE SHALL BE INSTALLED AS THE FIRST STEP OF CONSTRUCTION. THE CONSTRUCTION ENTRANCE SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT. G.C. SHALL PAY SPECIAL ATTENTION TO ENSURE SEDIMENT LADEN RUNOFF IS NOT DIRECTED TOWARDS THE ADJACENT PUBLIC RIGHTS-OF-WAY.

   *NOTE: G.C. SHALL ENSURE NO MUD 'TRACKING' FROM THE SITE INTO THE PUBLIC RIGHT-OF-WAY.

3. SILT FENCE, INLET PROTECTION, AND ROCK FILTER OUTLETS TO BE INSTALLED AS SHOWN PRIOR TO ANY LAND DISTURBANCE WITH SELECTIVE DEMOLITION AS NECESSARY TO ALLOW EROSION AND SEDIMENT CONTROL MEASURES TO BE INSTALLED. THE SILT FENCE, INLET PROTECTION, AND ROCK FILTER OUTLETS SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT AND SHALL BE CHECKED AFTER EACH MEASURABLE RAIN EVENT AS REQUIRED BY THE EROSION AND SEDIMENT CONTROL HANDBOOK.

   *NOTE: THE R.L.D. ASSIGNED TO THE PROJECT SHALL ENSURE ALL REGULATIONS ARE FOLLOWED AND DOCUMENTED THROUGHOUT THE ENTIRE PROJECT TO PREVENT THE EXCESSIVE BUILD-UP OF SEDIMENT. ALL BUILT SEDIMENT SHALL BE REMOVED AND PROPERLY DISPOSED OF.

4. SEDIMENT TRAP, DIVERSIONS, AND STORMWATER CONVEYANCE CHANNEL SHALL BE CONSTRUCTED AS SHOWN. THE DIVERSIONS SHALL BE INSTALLED WITH POSITIVE DRAINAGE TO DIRECT SEDIMENT LADEN RUNOFF TO THE SEDIMENT TRAP. STORMWATER CONVEYANCE CHANNEL TO BE STABILIZED IMMEDIATELY FOLLOWING INSTALLATION.

5. FULL DEMOLITION OPERATIONS SHALL OCCUR AT THIS TIME FOR THE EXISTING IMPROVEMENTS THAT ARE TO BE REMOVED.

6. MAJOR GRADING OPERATIONS SHALL COMMENCE ONCE THE CONSTRUCTION ENTRANCE, SILT FENCE, ROCK FILTER OUTLET, INLET PROTECTION, SEDIMENT TRAP, DIVERSIONS, AND STORMWATER CONVEYANCE CHANNEL ARE INSTALLED.

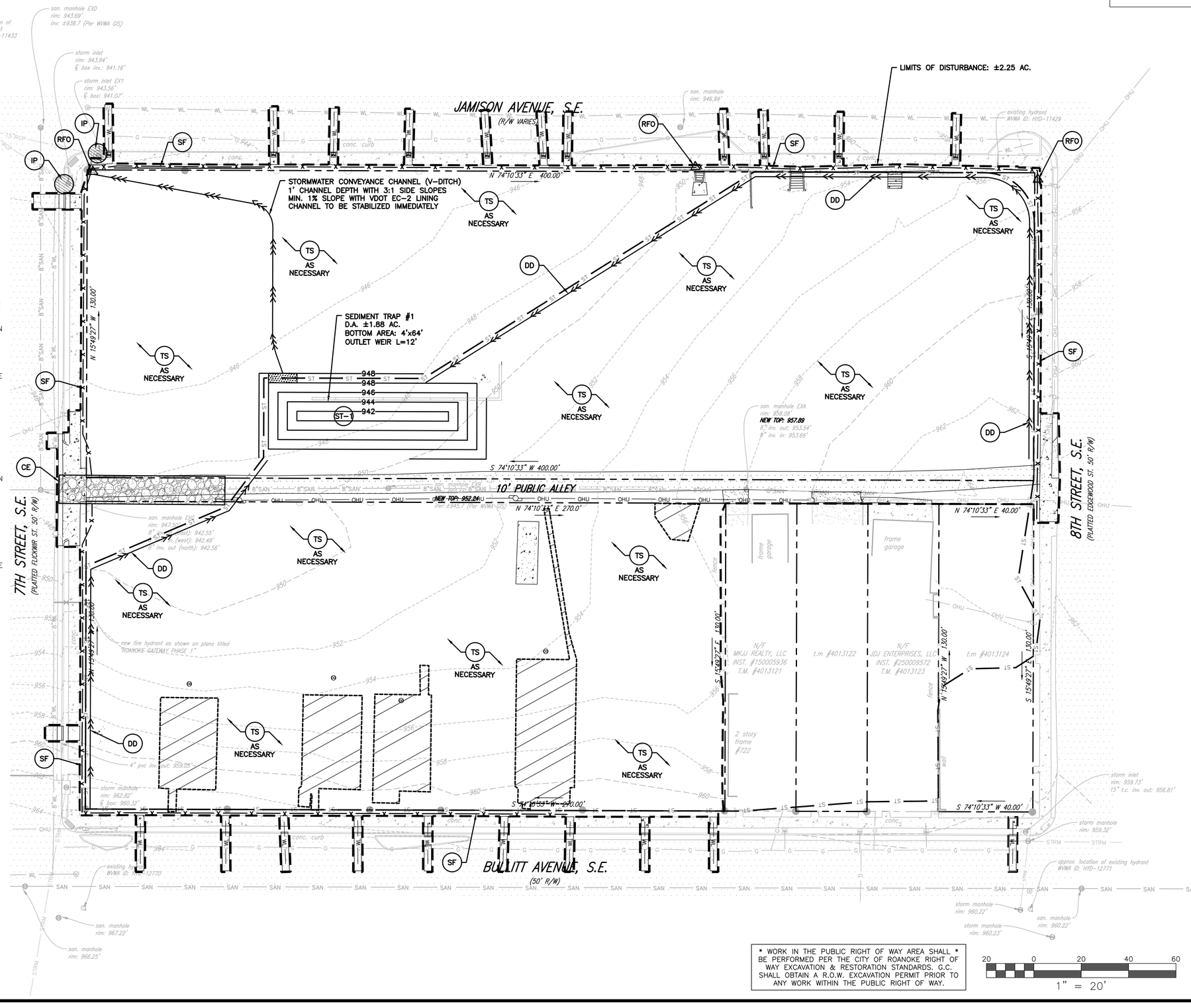
7. SEE SHEET C7.2 FOR PHASE 2 OF THE E.S.C. PLAN.

8. G.C. SHALL ENSURE THAT THE LIMITS OF DISTURBANCE ARE STRICTLY ADHERED TO DURING THE PROJECT.

9. NO DEVIATIONS TO THE PLANS SHALL TAKE PLACE UNLESS PRIOR APPROVAL FROM THE OWNER, PROJECT ENGINEER, AND THE APPROPRIATE REVIEW AGENCIES.

ESC LEGEND

C-PCM-04	SILT FENCE	SF
C-ECM-04	TEMPORARY DIVERSION DIKE	DD
C-ECM-09	STORMWATER CONVEYANCE CHANNEL	SCC
C-SCM-03	TEMPORARY STONE CONSTRUCTION ENTRANCE	CE
C-SCM-04	INLET PROTECTION	IP
C-SCM-08	ROCK FILTER OUTLET	RFO
C-SCM-11	TEMPORARY SEDIMENT TRAP	ST
C-SCM-13	CONCRETE WASHOUT PIT	CW
C-SSM-05	SOIL STABILIZATION BLANKETS AND MATTING	B/M
C-SSM-09	TEMPORARY SEEDING	TS
C-SSM-10	PERMANENT SEEDING	PS
C-SSM-11	MULCHING	MU



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ROANOKE GATEWAY PHASE 2
E.S.C. PLAN PHASE 1

704 BULLITT AVENUE SE
CITY OF ROANOKE, VA

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E.S.C. CONSTRUCTION SEQUENCE II:

1. THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) SHALL BE PROVIDED ON-SITE AND ALL REGULATIONS, INSPECTIONS, AND PROCEDURES FOLLOWED FOR THE ENTIRE DURATION OF THE PROJECT. SEE SWPPP DOCUMENT FOR SITE SPECIFIC REQUIREMENTS AND INSPECTIONS.

2. THE CONSTRUCTION ENTRANCE, SILT FENCE, INLET PROTECTION, AND ROCK FILTER OUTLETS SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT AND SHALL BE CHECKED AFTER EACH MEASURABLE RAIN EVENT AS REQUIRED BY THE EROSION AND SEDIMENT CONTROL HANDBOOK.

3. BUILDING CONSTRUCTION MAY BEGIN ONCE THE BUILDING PAD REACHES SUBGRADE AND ALL PERMITS HAVE BEEN OBTAINED. THE CONCRETE WASHOUT SHALL BE UTILIZED IN ACCORDANCE WITH D.E.Q. REGULATIONS.

4. PROPOSED STORM SEWER AND THE UNDERGROUND STORM WATER MANAGEMENT FACILITY SHALL BE INSTALLED AT THIS TIME. ALL PROPOSED INLETS SHALL BE PROTECTED FROM SEDIMENT WITH INLET PROTECTION AS SOON AS INSTALLATION OF EACH STRUCTURE IS COMPLETE. DIVERSIONS TO BE INSTALLED UPSTREAM OF SWM FACILITY TO DIRECT RUNOFF AROUND FACILITY DURING INSTALLATION. G.C. SHALL ENSURE SEDIMENT LADEN RUNOFF IS NOT CONVEYED THROUGH THE STORM SEWER SYSTEM. G.C. SHALL ENSURE THAT THE UNDERGROUND FACILITY IS PROTECTED FROM SEDIMENT AT ALL TIMES

5. ALL OTHER UTILITIES FOR THE SITE SHALL BE INSTALLED AT THIS TIME AND AREAS TEMPORARILY OR PERMANENTLY SEEDED AFTER COMPLETION OF INSTALLATION.

6. AFTER PROPOSED DRAINAGE DIVIDES ARE ESTABLISHED AND STORMWATER IS DIRECTED TO THE NEW INLETS, THE SEDIMENT TRAP, TEMPORARY DIVERSION DIKES, AND STORMWATER CONVEYANCE CHANNEL CAN BE REMOVED. CITY OF ROANOKE INSPECTION AND APPROVAL IS REQUIRED PRIOR TO THE REMOVAL OF THE SEDIMENT TRAP AND DIVERSION DIKES.

7. PAVEMENT, CURBING, AND LANDSCAPING, ETC. SHALL BE INSTALLED AT THIS TIME. THE CONCRETE WASHOUT SHALL BE UTILIZED IN ACCORDANCE WITH D.E.Q. REGULATIONS. RIGHT-OF-WAY DIVERSION TO BE REMOVED PRIOR TO PAVING OPERATIONS.

8. PERMANENT SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS AT FINAL GRADE. BLANKET MATTING SHALL BE APPLIED TO ANY SLOPES 3:1 OR GREATER.

9. AFTER FINAL SITE STABILIZATION AND CITY OF ROANOKE APPROVAL, CONSTRUCTION ENTRANCE, SILT FENCE, ROCK FILTER OUTLETS, AND INLET PROTECTION MAY BE REMOVED.

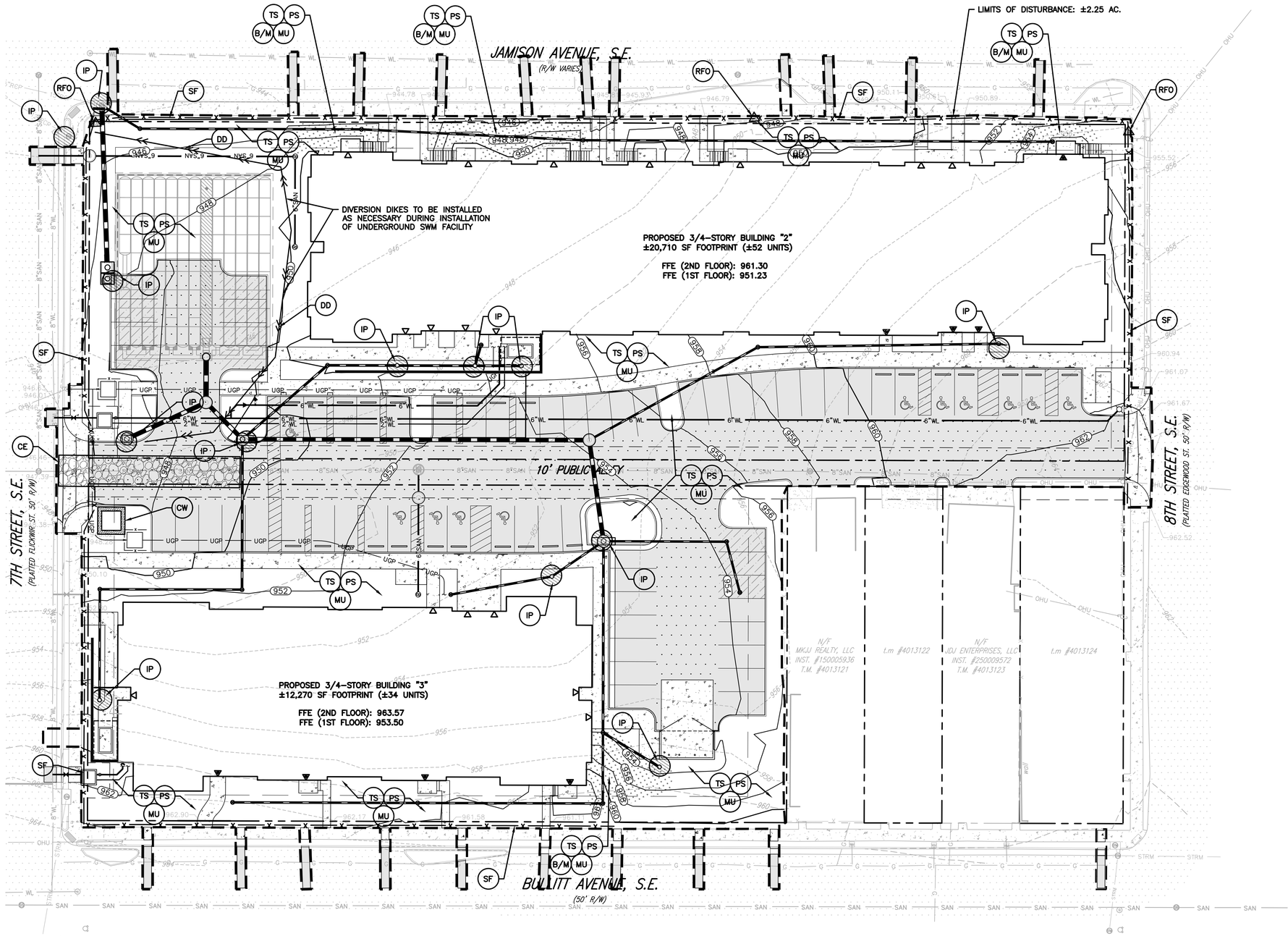
   *NOTE: CITY OF ROANOKE INSPECTION AND APPROVAL IS REQUIRED PRIOR TO THE REMOVAL OF EROSION AND SEDIMENT CONTROL MEASURES.

10. G.C. SHALL ENSURE THAT THE LIMITS OF DISTURBANCE ARE STRICTLY ADHERED TO DURING THE PROJECT.

11. NO DEVIATIONS TO THE PLANS SHALL TAKE PLACE UNLESS PRIOR APPROVAL FROM THE OWNER, PROJECT ENGINEER, AND THE APPROPRIATE REVIEW AGENCIES.

ESC LEGEND

C-PCM-04	SILT FENCE	SF
C-ECM-04	TEMPORARY DIVERSION DIKE	DD
C-ECM-09	STORMWATER CONVEYANCE CHANNEL	SCC
C-SCM-03	TEMPORARY STONE CONSTRUCTION ENTRANCE	CE
C-SCM-04	INLET PROTECTION	IP
C-SCM-08	ROCK FILTER OUTLET	RFO
C-SCM-11	TEMPORARY SEDIMENT TRAP	ST
C-SCM-13	CONCRETE WASHOUT PIT	CW
C-SSM-05	SOIL STABILIZATION BLANKETS AND MATTING	B/M
C-SSM-09	TEMPORARY SEEDING	TS
C-SSM-10	PERMANENT SEEDING	PS
C-SSM-11	MULCHING	MU



* WORK IN THE PUBLIC RIGHT OF WAY AREA SHALL * BE PERFORMED PER THE CITY OF ROANOKE RIGHT OF WAY EXCAVATION & RESTORATION STANDARDS. G.C. SHALL OBTAIN A R.O.W. EXCAVATION PERMIT PRIOR TO ANY WORK WITHIN THE PUBLIC RIGHT OF WAY.

20 0 20 40 60
1" = 20'

Westwood
Westwood Professional Services, Inc.
1208 CORPORATE CIRCLE
ROANOKE, VA 24018
T: 540.772.9580
F: 540.426.3435
westwoodps.com

NO.	REVISIONS	DATE

ROANOKE GATEWAY PHASE 2

E.S.C. PLAN PHASE 2

704 BULLITT AVENUE SE
CITY OF ROANOKE, VA

DATE: 6/30/2026
SCALE: 1" = 20'
DRAFTER: LDS
DESIGNER: LDS
CHECKED: CPB
PROJECT NO.
R0070930.01

COMMONWEALTH OF VIRGINIA
CHRISTOPHER P. BURNS
Lic. No. 47338
6-30-2026
PROFESSIONAL ENGINEER

C7.2

CP26-00XX

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GENERAL EROSION AND SEDIMENT CONTROL NOTES

ES-1: UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA STORMWATER MANAGEMENT HANDBOOK, AND 9VAC25-875 VIRGINIA EROSION AND STORMWATER REGULATIONS.

ES-2: THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRE- CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO THE FINAL INSPECTION.

ES-3: ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CLEARING.

ES-4: A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.

ES-5: PRIOR TO ISSUANCE OF A LAND DISTURBANCE PERMIT BY THE CITY OF ROANOKE, THE OWNER SHALL PROVIDE DOCUMENTATION OF AN EXISTING LAND DISTURBING PERMIT(S) THAT WOULD BE ASSOCIATED OR REQUIRED FOR ANY OFF-SITE BORROW OR WASTE AREAS; WHETHER LOCATED WITHIN THE CITY LIMITS OR NOT.

ES-6: THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE PLAN APPROVING AUTHORITY.

ES-7: ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.

ES-8: DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE. FOR RECEIVING WATERWAYS MEETING IMPAIRMENT REQUIREMENTS IN THE 2024 CONSTRUCTION GENERAL PERMIT (CGP), DEWATERING DISCHARGES SHALL BE CONTROLLED AND DOCUMENTED USING THE TURBIDITY BENCHMARK OPTIONS DESCRIBED IN THE 2024 CGP.

ES-9: THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUN-OFF PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.

ES-10: ALL ASPHALT AREAS WILL BE STABILIZED WITH BASE STONE WITHIN 30 DAYS OF FINAL GRADING.

ES-11: PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE, BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN 14 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.

ES-12: THE LOCAL APPROVING AUTHORITY AND OTHER INTERESTED AGENCIES SHALL MAKE A CONTINUING REVIEW AND EVALUATION OF THE METHODS USED FOR THE OVERALL EFFECTIVENESS OF THE EROSION CONTROL PROGRAM. AN APPROVED EROSION AND SEDIMENT CONTROL PLAN MAY BE AMENDED BY THE APPROVING AUTHORITY OF ON SITE INSPECTION INDICATED THAT THE APPROVED CONTROL MEASURES ARE NOT EFFECTIVE IN CONTROLLING EROSION AND SEDIMENTATION OR IF BECAUSE OF CHANGED CIRCUMSTANCES, THE APPROVED PLAN CANNOT BE CARRIED OUT.

ES-13: IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LEAVE THE SITE ADQUATELY PROTECTED AGAINST EROSION, SEDIMENTATION, OR ANY DAMAGE TO ANY ADJACENT PROPERTY AT THE END OF EACH DAY'S WORK.

ES-14: ALL CONSTRUCTION TRAFFIC SHALL ENTER AND EXIT THE SITE VIA THE CONSTRUCTION ENTRANCES.

ES-15: FOR THE EROSION CONTROL KEY SYMBOLS SHOWN ON THE PLANS, REFER TO THE VIRGINIA UNIFORM CODING SYSTEM FOR EROSION AND SEDIMENT CONTROL PRACTICES CONTAINED IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION. THESE SYMBOLS AND KEYS ARE TO BE UTILIZED ON ALL EROSION CONTROL PLANS SUBMITTED TO ROANOKE COUNTY.

BAL-1: ALL ASPHALT AREAS WILL BE STABILIZED WITH BASE STONE WITHIN 30 DAYS OF FINAL GRADING.

BAL-2: PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE, BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.

BAL-3: THE LOCAL APPROVING AUTHORITY AND OTHER INTERESTED AGENCIES SHALL MAKE A CONTINUING REVIEW AND EVALUATION OF THE METHODS USED FOR THE OVERALL EFFECTIVENESS OF THE EROSION CONTROL PROGRAM. AN APPROVED EROSION AND SEDIMENT CONTROL PLAN MAY BE AMMENDED BY THE APPROVING AUTHORITY OF ON SITE INSPECTION INDICATED THAT THE APPROVED CONTROL MEASURES ARE NOT EFFECTIVE IN CONTROLLING EROSION AND SEDIMENTATION OR IF BECAUSE OF CHANGED CIRCUMSTANCES, THE APPROVED PLAN CANNOT BE CARRIED OUT.

BAL-4: ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARDS, SPECIFICATIONS AND DETAILS OF THE LATEST EDITION OF THE VIRGINIA STORMWATER MANAGEMENT HANDBOOK (THE HANDBOOK) BY THE VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY. EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE MAINTAINED SO THAT SEDIMENT CARRYING RUNOFF FROM THE SITE WILL NOT ENTER STORM DRAINAGE FACILITIES OR ADJOINING PROPERTIES AND RIGHTS-OF-WAY.

BAL-5: ALL CONSTRUCTION TRAFFIC SHALL ENTER AND EXIT THE SITE VIA THE CONSTRUCTION ENTRANCES.

TYPE A

15 OCTOBER TO 1 FEBRUARY
K-31 FESCUE @ 5 LB / 1000 SF
BORZY 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 STEEPER)

15 MARCH TO 1 MAY
CROWN VETCH @ 1/2 LB / 1000 SF
PERENNIAL RYEGRASS @ 1/2 LB / 1000 SF
RED TOP @ 1/8 LB / 1000 SF

15 AUGUST TO 1 OCTOBER
CROWN VETCH @ 1/2 LB / 1000 SF
PERENNIAL RYEGRASS @ 1/2 LB / 1000 SF
RED TOP @ 1/8 LB / 1000 SF

140 LB / 1000 SF PULVERIZED AGRICULTURAL LIMESTONE

FERTILIZER: 5-20-10 @ 25 LB / 1000 SF
38-0-0 @ 7 LB / 1000 SF

MULCH: IF REQUIRED, 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.

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, FRIABLE, SEEDBED. MAXIMUM SEEDING DEPTH SHALL BE 1/4 INCH.

(PS) **PERMANENT SEEDING MIXTURE**

DEFINITION - THE ESTABLISHMENT OF A TEMPORARY VEGETATIVE COVER ON DISTURBED AREAS BY SEEDING SITH APPROPRIATE RAPIDLY GROWING ANNUAL PLANTS.

LIMING REQUIREMENTS FOR TEMPORARY SITES

pH TEST	RECOMMENDED APPLICATION OF AGRICULTURAL LIMESTONE
BELOW 4.2	3 TONS PER ACRE
4.2 TO 5.2	2 TONS PER ACRE
5.2 TO 6	1 TON PER ACRE

ACCEPTABLE TEMPORARY SEEDING PLANT MATERIAL
" QUICK REFERENCE FOR ALL REGIONS"

PLANTING DATES	SPECIES	RATE (LBS/ACRE)
SEPT. 1 - FEB. 15	50/50 MIX OF ANNUAL RYEGRASS & WINTER RYE	50 - 100
FEB. 16 - APR. 30	ANNUAL RYEGRASS	60 - 100
MAY 1 - AUG. 31	GERMAN MILLET	50

(TS) **TEMPORARY SEEDING**

EROSION AND SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION: THE PURPOSE OF THIS PROJECT IS FOR THE CONSTRUCTION OF TWO PROPOSED MULTIFAMILY RESIDENTIAL APARTMENT BUILDINGS AND ASSOCIATED PARKING AND UTILITY IMPROVEMENTS. THE SITE IS LOCATED ALONG BULLITT AVENUE SE IN THE CITY OF ROANOKE, VIRGINIA. THE PROPERTY IS CURRENTLY OWNED BY GATEWAY PROJECT, LLC. THE APPROXIMATE DISTURBED AREA FOR THIS PROJECT IS **±2.25 ACRES**.

EXISTING SITE CONDITIONS: THE SITE IS CURRENTLY CONSISTS OF MANAGED TURF WITH A GRAVEL DRIVE AND MISCELLANEOUS CONCRETE PADS, STEPS, AND RETAINING WALLS.

ADJACENT PROPERTY: THE LIMITS OF CONSTRUCTION ARE BOUNDED ON THE EAST BY THE PUBLIC RIGHT-OF-WAY OF 8TH STREET SE AND SINGLE FAMILY RESIDENTIAL PROPERTY ZONED RM-2, TO THE WEST BY THE PUBLIC RIGHT-OF-WAY OF 7TH STREET SE, TO THE NORTH BY THE PUBLIC RIGHT-OF-WAY OF JAMISON AVENUE SE, AND TO THE SOUTH BY THE PUBLIC RIGHT-OF-WAY OF BULLITT AVENUE SE AND SINGLE FAMILY RESIDENTIAL PROPERTY ZONED RM-2.

OFF-SITE AREAS: G.C. SHALL NOTIFY THE CITY OF ROANOKE OF THE LOCATION OF ANY OFF-SITE FILL OR BORROW AREAS PRIOR TO ANY MATERIAL BEING TRANSPORTED TO OR FROM THE SITE. ANY OFF-SITE MATERIAL SHALL COME FROM A PERMITTED SITE.

SOILS: A SUBSURFACE INVESTIGATION HAS NOT BEEN PROVIDED. SOIL INFORMATION IS AVAILABLE ON THE RESIDUAL SOILS THAT IS SUGGESTED IN THE "SOIL SURVEY OF ROANOKE COUNTY AND THE CITIES OF ROANOKE AND SALEM, VIRGINIA" AS PREPARED BY THE UNITED STATES DEPARTMENT OF AGRICULTURE. THIS SURVEY IDENTIFIES THE ORIGINAL SOIL MATERIALS DESCRIBED BELOW:
- SOIL GROUP 6C - CHISWELL-LITZ-URBAN LAND COMPLEX (2 TO 15 PERCENT SLOPES) CLASSIFIED AS HSG-D SOILS.

CRITICAL EROSION AREAS: CRITICAL AREAS ARE ANTICIPATED FOR ALL STEEP SLOPES ON SITE AND AREAS ADJACENT TO PUBLIC ROADS. SPECIAL ATTENTION SHALL BE PAID TO THESE LOCATIONS TO ENSURE SEDIMENT LADEN RUNOFF IS NOT TRANSPORTED INTO THE ADJACENT RIGHTS-OF-WAY OR ADJACENT PROPERTIES.

EROSION AND SEDIMENT CONTROL MEASURES:
UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE "VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, THIRD EDITION" (VESCH). THE MINIMUM STANDARDS OF THE VESCH SHALL BE ADHERED TO UNLESS OTHERWISE DIRECTED BY THE LOCAL PROGRAM ADMINISTRATOR.

EROSION CONTROL MEASURES (C-ECM):

TEMPORARY DIVERSION DIKE, DD (C-ECM-04): A TEMPORARY RIDGE OF COMPACTED SOIL CONSTRUCTED TO CONVEY CLEAN STORMWATER RUNOFF THROUGH OR AROUND A DISTURBED LAND AREA. IN MOST CASES, TEMPORARY DIVERSION DIKES COLLECTING SEDIMENT-LADEN WATER WORK AS CONVEYANCE IN CONJUNCTION WITH OTHER EROSION AND SEDIMENT CONTROL DEVICES.

STORMWATER CONVEYANCE CHANNEL, SCC (C-ECM-09): A WATERWAY SHAPED, SIZED, AND LINED WITH APPROPRIATE VEGETATION OR STRUCTURAL MATERIAL SUCH THAT THE CHANNEL SAFELY CONVEYS STORMWATER RUNOFF WITHIN OR AWAY FROM A DEVELOPING AREA.

SEDIMENT CONTROL MEASURES (C-SCM):

TEMPORARY STONE CONSTRUCTION ENTRANCE, CE (C-SCM-03): A PAD WITH A FABRIC FILTER LINER UNDERNEATH THE STONE LOCATED AT POINTS OF VEHICULAR INGRESS AND EGRESS ON A CONSTRUCTION SITE. THERE ARE SEVERAL TYPES OF TRACK-OUT CONTROLS THAT MINIMIZE THE AMOUNT OF SEDIMENT, SUCH AS DIRT OR MUD, LEAVING OR BEING TRACKED OUT FROM THE CONSTRUCTION SITE ATTACHED TO VEHICLES.

INLET PROTECTION, IP (C-SCM-04): A SEDIMENT FILTER OR AN EXCAVATED IMPOUNDING AREA AROUND A STORM DRAIN DROP INLET OR CURB INLET.

ROCK FILTER OUTLET, RFO (C-SCM-08): A BERM CONSTRUCTED OF RIPRAP AND STONE AGGREGATE WHERE UNANTICIPATED CONCENTRATED FLOW TO A PERIMETER CONTROL (E.G., SILT FENCE OR STRAW BALE BARRIER) HAS CAUSED THE PERIMETER CONTROL TO FAIL.

TEMPORARY SEDIMENT TRAP, ST (C-SCM-11): A TEMPORARY PONDING AREA FORMED BY CONSTRUCTING AN EARTHEN EMBANKMENT WITH A STONE OUTLET TO DETAIN SEDIMENT-LADEN RUNOFF FROM SMALL DISTURBED AREAS LONG ENOUGH TO ALLOW THE MAJORITY OF THE SEDIMENT TO SETTLE OUT.

CONCRETE WASHOUT PIT, CW (C-SCM-13): A TEMPORARY EXCAVATED OR ABOVE-GROUND LINED CONSTRUCTED PIT OR A PREFABRICATED OR FABRICATED CONTAINER IN WHICH CONCRETE TRUCK MIXERS AND EQUIPMENT CAN BE WASHED AFTER THEIR LOADS HAVE BEEN DISCHARGED TO PREVENT HIGHLY ALKALINE RUNOFF FROM ENTERING STORM DRAINAGE SYSTEMS OR LEACHING INTO SOIL.

SURFACE STABILIZATION MEASURES (C-SSM):

TEMPORARY SEEDING, TS (C-SSM-09): THE ESTABLISHMENT OF A TEMPORARY VEGETATIVE COVER ON DISTURBED AREAS BY SEEDING WITH APPROPRIATE RAPIDLY GROWING ANNUAL PLANTS.

PERMANENT SEEDING, PS (C-SSM-10): THE ESTABLISHMENT OF PERENNIAL VEGETATIVE COVER ON DISTURBED AREAS BY PLANTING SEED.

MULCHING, MU (C-SSM-11): THE APPLICATION OF A PROTECTIVE BLANKET OF STRAW OR OTHER PLANT RESIDUES/MATERIALS TO THE SOIL SURFACE DURING THE ESTABLISHMENT OF TEMPORARY AND PERMANENT SEEDING.

SOIL STABILIZATION BLANKETS AND MATTING, B/M (C-SSM-05): A PROTECTIVE BLANKET ON A PREPARED PLANTING AREA OF A STEEP SLOPE, CHANNEL, OR SHORELINE.

PERIMETER CONTROL MEASURES (C-PCM):

SILT FENCE, SF (C-PCM-04): A TEMPORARY SEDIMENT BARRIER CONSISTING OF A SYNTHETIC FILTER FABRIC ENTRENCHED AND STRETCHED ACROSS AND ATTACHED TO SUPPORTING POSTS. USE WIRE REINFORCEMENT FOR REINFORCED SILT FENCE USING STANDARD-STRENGTH FILTER FABRIC WITH A MINIMUM OF 14 GAUGE AND A MAXIMUM MESH SPACING OF 6 INCHES.

MANAGEMENT STRATEGIES:
A) CONSTRUCTION WILL BE SEQUENCED SO THAT GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE.
B) SEDIMENT TRAPPING MEASURES WILL BE INSTALLED AS A FIRST STEP IN GRADING.
C) THE LOCAL PROGRAM ADMINISTRATOR RESERVES THE RIGHT TO ADD TO, DELETE OR OTHERWISE CHANGE THE EROSION CONTROL MEASURES AS DEEMED NECESSARY DUE TO ACTUAL FIELD CONDITIONS BY WRITTEN NOTIFICATION TO THE CONTRACTOR.
D) ALL FILL AND CUT SLOPES SHALL BE SEEDED WITHIN SEVEN (7) DAYS OF ACHIEVING FINAL GRADE.
E) ONLY AFTER INSPECTION AND APPROVAL FROM THE LOCAL PROGRAM ADMINISTRATOR MAY ITEMS BE REMOVED FOLLOWING THE STABILIZATION OF THE CONTRIBUTING AREAS.

INSPECTIONS:
THE GENERAL CONTRACTOR SHALL INSPECT DISTURBED AREAS OF THE SITE THAT HAVE NOT BEEN FINALLY STABILIZED, AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION, STRUCTURAL CONTROL MEASURES, AND THE AREA OF CONSTRUCTION VEHICLE ACCESS AT LEAST EVERY FIVE (5) CALENDAR DAYS, AND WITHIN 24 HOURS OF THE END OF A STORM EVENT PRODUCING 1/2" OR GREATER OF PRECIPITATION. WHERE AREAS HAVE BEEN FINALLY OR TEMPORARILY STABILIZED OR RUNOFF IS UNLIKELY DUE TO WINTER CONDITIONS (SITE IS COVERED WITH SNOW, ICE, OR FROZEN GROUND EXISTS) SUCH INSPECTIONS SHALL BE CONDUCTED AT LEAST ONCE EVERY MONTH.
A) INSPECT DISTURBED AREAS AND AREAS OF MATERIALS STORAGE THAT ARE EXPOSED TO PRECIPITATION FOR EVIDENCE OF, OR THE POTENTIAL FOR SEDIMENT ENTERING THE STORM DRAIN SYSTEM. INSPECT E&S CONTROLS IN ACCORDANCE WITH REQUIREMENTS STATED HEREIN, AND INSPECT POINTS OF STORM DRAIN DISCHARGE FOR EXCESSIVE SEDIMENTATION. CORRECT SITE CONTROLS AS REQUIRED TO REDUCE SEDIMENTATION OF STORM DRAINS, CULVERTS, AND RECEIVING CHANNELS.
B) IF CONTROLS OR SEDIMENT PREVENTION AREAS ARE FOUND TO BE IN NEED OF REPAIR OR MODIFICATION, THE GENERAL CONTRACTOR SHALL PROVIDE ADDITIONAL MEASURES OR MODIFICATIONS TO EXISTING MEASURES AS REQUIRED. ANY ADDITIONAL MEASURES OR MODIFICATIONS TO EXISTING MEASURES SHALL BE RECORDED AS FIELD REVISIONS TO THESE PLANS. IN THE EVENT THAT ADDITIONAL CONTROLS ARE FOUND TO BE REQUIRED, THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING THESE CONTROLS BEFORE THE NEXT ANTICIPATED STORM EVENT. IF IMPLEMENTATION BEFORE THE NEXT STORM EVENT IS IMPRACTICAL, THEY SHALL BE IMPLEMENTED AS SOON AS PRACTICAL.
C) A REPORT SUMMARIZING THE SCOPE OF INSPECTIONS, NAME OF INSPECTOR, INSPECTOR'S QUALIFICATIONS, DATES OF INSPECTIONS, MAJOR OBSERVATIONS PERTAINING TO THE IMPLEMENTATION OF THESE EROSION CONTROL PLANS, AND ACTIONS TAKEN SHALL BE MADE AND RETAINED AS A PART OF THESE PLANS. MAJOR OBSERVATIONS OF THESE REPORTS SHALL INCLUDE: THE LOCATIONS OF EXCESSIVE SEDIMENTATION FROM THE SITE; LOCATIONS OF CONTROLS IN NEED OF REPAIR; LOCATIONS OF FAILED OR INADEQUATE CONTROLS; AND LOCATIONS WHERE ADDITIONAL CONTROLS ARE NEEDED.

STORMWATER MANAGEMENT:
STORMWATER QUANTITY REQUIREMENTS FOR THIS DEVELOPMENT WILL BE MET BY DETAINING A PORTION OF THE RUNOFF FROM THE SITE IN A PROPOSED UNDERGROUND DETENTION FACILITY. THE ENERGY BALANCE EQUATION IS BEING UTILIZED FOR THIS DEVELOPMENT TO PROVIDE CONFORMANCE WITH LOCAL AND STATE REGULATIONS RELATED TO CHANNEL PROTECTION REQUIREMENTS. THE 1-YEAR STORM HAS BEEN ANALYZED AND DETAINED UTILIZING THE UNDERGROUND STORMWATER MANAGEMENT FACILITY TO ENSURE THE DEVELOPMENT CONFORMS TO CURRENT STANDARDS. FLOOD PROTECTION REQUIREMENTS WILL BE MET BY PROVIDING A REDUCTION IN THE POST-DEVELOPMENT 10-YEAR PEAK FLOW RATE WHEN COMPARED TO THE PRE-DEVELOPMENT 10-YEAR PEAK FLOW RATE.

STORMWATER QUALITY REQUIREMENTS WILL BE MET THROUGH THE INSTALLATION OF THE ON-SITE STORMTECH SYSTEM (**0.61 LBS/YR**) AND THE PURCHASE OF OFF-SITE NUTRIENT CREDITS (**0.35 LBS/YR**).

MINIMUM STANDARDS

No.	CRITERIA, TECHNIQUE OR METHOD	PRACTICES PROVIDED
1	PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN (7) DAYS AFTER FINAL GRADE HAS BEEN REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN (7) DAYS TO DENUDED AREAS THAT MAY BE AT FINAL GRADE BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN FOURTEEN (14) DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE (1) YEAR.	TS PS MU B/M FOR ALL DENUDED AREAS
2	DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.	TS PS FOR PROVIDED STOCKPILES
3	A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT, IN THE OPINION OF THE LOCAL PROGRAM ADMINISTRATOR OR DESIGNATED AGENT, IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.	TS PS MU B/M FOR ALL DENUDED AREAS
4	SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.	SF IP DD RFO ST FOR ALL DRAINAGE DIVIDES
5	STABILIZATION METHODS SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.	TS PS MU FOR ALL EARTHEN STRUCTURES
6	SEDIMENT TRAPS AND BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN.	ST
7	CUT AND FILL SLOPES SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE (1) YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZATION MEASURES UNTIL THE PROBLEM IS CORRECTED.	TS PS MU B/M FOR ALL ERODING SLOPES
8	CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.	*NO CONCENTRATED RUNOFF SHALL BE CONVEYED DOWN THE STEEP SLOPES ON-SITE*
9	WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.	*SHOULD SEEPS OCCUR IN ANY EXISTING OR NEW CUT OR FILL SLOPE, THE CONTRACTOR SHALL FIRST INSURE THAT THERE ARE NOT AREAS OF PONDED WATER AT THE TOPS OF THE SLOPES, AND THEN SHALL CONTACT BOTH THE DESIGN ENGINEER AND THE PROJECT GEOTECHNICAL ENGINEER FOR ON-SITE EVALUATION OF THE AREAS OF SEEPAGE.*
10	ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.	IP
11	BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.	NOT APPLICABLE
12	WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.	NOT APPLICABLE
13	WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX (6) MONTH PERIOD, A TEMPORARY STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL.	NOT APPLICABLE
14	ALL APPLICABLE FEDERAL, STATE AND LOCAL CHAPTERS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET. THE BEDS AND BANKS OF ANY WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.	NOT APPLICABLE
15	THE BEDS AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.	NOT APPLICABLE
16	UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA: 1)NO MORE THAN 500 LINEAR FEET OF ANY TRENCH MAY BE OPENED AT ONE TIME. 2)EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES. 3)EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY. 4)MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION. 5)RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE CHAPTERS. 6)APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH.	UTILIZE FOR SANITARY, STORM SEWER, & WATERLINE INSTALLATION
17	WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.	CE
18	ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL PROGRAM ADMINISTRATOR. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.	TS PS MU B/M
19	PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION AND DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY AND PEAK FLOW RATE OF STORMWATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24-HOUR DURATION IN ACCORDANCE WITH THE FOLLOWING STANDARDS & CRITERIA (see below)	SEE SWM CALCULATIONS

A: CONCENTRATED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED DIRECTLY INTO AN ADEQUATE OR MAN-MADE RECEIVING CHANNEL, PIPE OR STORM SEWER SYSTEM. FOR THOSE SITES WHERE RUNOFF IS DISCHARGED INTO A PIPE OR PIPE SYSTEM, DOWNSTREAM STABILITY ANALYSES AT THE OUTFALL OF THE PIPE OR PIPE SYSTEM SHALL BE PERFORMED.

B: ADEQUACY OF ALL CHANNELS AND PIPES SHALL BE VERIFIED IN THE FOLLOWING MANNER:
1. THE APPLICANT SHALL DEMONSTRATE THAT THE TOTAL DRAINAGE AREA TO THE POINT OF ANALYSIS WITHIN THE CHANNEL IS ONE HUNDRED TIMES GREATER THAN THE CONTRIBUTING DRAINAGE AREA OF THE PROJECT IN QUESTION OR
2. (a) NATURAL CHANNELS SHALL BE ANALYZED BY THE USE OF THE TWO-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP CHANNEL BANKS NOR CAUSE EROSION OF CHANNEL BED OR BANKS; AND
(b) ALL PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS SHALL BE ANALYZED BY THE USE OF THE 10-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP ITS BANKS AND BY THE USE OF A 2-YEAR STORM TO DEMONSTRATE THAT STORWMATER WILL NOT CAUSE EROSION OF CHANNEL BED OR BANKS; AND
(c) PIPES AND STORM SEWER SYSTEMS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THE STORMWATER WILL BE CONTAINED WITHIN THE PIPE SYSTEM

C: IF EXISTING NATURAL RECEIVING CHANNELS OR PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS OR PIPES ARE NOT ADEQUATE, THE APPLICANT SHALL:
1. IMPROVE THE CHANNEL TO A CONDITION WHERE A 10-YEAR STORM WILL NOT OVERTOP THE BANKS AND A 2-YEAR STORM WILL NOT CAUSE EROSION TO THE CHANNEL BED OR BANKS; OR
2. IMPROVE THE PIPE OR PIPE SYSTEM TO A CONDITION WHERE THE 10-YEAR STORM IS CONTAINED WITHIN THE APPURTANCES; OR
3. DEVELOP A SITE DESIGN THAT WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TWO-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A NATURAL CHANNEL OR WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A 10-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A MAN-MADE CHANNEL; OR
4. PROVIDE A COMBINATION OF CHANNEL IMPROVEMENT, STORMATER DETENTION OR OTHER MEASURES WHICH IS SATISFACTORY TO THE PLAN APPROVING AUTHORITY TO PREVENT DOWNSTREAM EROSION.

D. THE APPLICANT SHALL PROVIDE EVIDENCE OF PERMISSION TO MAKE THE IMPROVEMENTS

E. ALL HYDROLOGIC ANALYSES SHALL BE BASED ON THE EXISTING WATERSHED CHARACTERISTICS AND THE ULTIMATE DEVELOPMENT OF THE SUBJECT PROJECT.

F. IF THE APPLICANT CHOOSES AN OPTION THAT INCLUDES STORMWATER DETENTION HE SHALL OBTAIN APPROVAL FROM THE LOCALITY OF A PLAN FOR MAINTENANCE OF THE DETENTION FACILITIES. THE PLAN SHALL SET FORTH THE MAINTENANCE REQUIREMENTS OF THE FACILITY AND THE PERSON RESPONSIBLE FOR PERFORMING THE MAINTENANCE.

G. OUTFALL FROM A DETENTION FACILITY SHALL BE DISCHARGED TO A RECEIVING CHANNEL, AND ENERGY DISSIPATORS SHALL BE PLACED AT THE OUTFALL OF ALL DETENTION FACILITIES AS NECESSARY TO PROVIDE A STABILIZED TRANSITION FROM THE FACILITY TO THE RECEIVING CHANNEL.

H. ALL ON-SITE CHANNELS MUST BE VERIFIED TO BE ADEQUATE.

I. INCREASED VOLUMES OF SHEET FLOWS THAT MAY CAUSE EROSION OR SEDIMENTATION ON ADJACENT PROPERTY SHALL BE DIVERTED TO A STABLE OUTLET, ADEQUATE CHANNEL, PIPE OR PIPE SYSTEM, OR TO A DETENTION FACILITY.

J. IN APPLYING THESE STORMWATER RUNOFF CRITERIA, INDIVIDUAL LOTS OR PARCELS IN A RESIDENTIAL, COMMERCIAL OR INDUSTRIAL DEVELOPMENT SHALL NOT BE CONSIDERED TO BE SEPERATE DEVELOPMENT PROJECTS. INSTEAD, THE DEVELOPMENT, AS A WHOLE, SHALL BE CONSIDERED TO BE A SINGLE DEVELOPMENT PROJECT. HYDROLOGIC PARAMETERS THAT REFLECT THE ULTIMATE DEVELOPMENT CONDITION SHALL BE USED IN ALL ENGINEERING CALCULATIONS.

K. ALL MEASURES USED TO PROTECT PROPERTIES AND WATERWAYS SHALL BE EMPLOYED IN A MANNER WHICH MINIMIZES IMPACTS ON THE PHYSICAL, CHEMICAL, AND BIOLOGICAL INTEGRITY OF RIVERS, STREAMS AND OTHER WATERS OF THE STATE.

L. ANY PLAN APPROVED PRIOR TO JULY 1, 2014 THAT PROVIDES FOR STORMWATER MANAGEMENT THAT ADDRESSES ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS SHALL SATISFY THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS IF THE PRACTICES ARE DESIGNED TO;
i. DETAIN THE WATER QUALITY VOLUME AND TO RELEASE IT OVER 48 HOURS;
ii. DETAIN AND RELEASE OVER A 24-HOUR PERIOD THE EXPECTED RAINFALL RESULTING FROM THE ONE YEAR, 24-HOUR STORM; AND
iii. REDUCE THE ALLOWABLE PEAK FLOW RATE RESULTING FROM THE 1.5, 2, AND 10-YEAR, 24-HOUR STORMS TO A LEVEL THAT IS LESS THAN OR EQUAL TO TH EPEAK FLOW RATE FROM THE SITE ASSUMING IT WAS IN GOOD FORESTED CONDITION, ACHIEVED THROUGH MULTIPLICATION OF THE FORESTED PEAK FLOW RATE BY A REDUCTION FACTOR THAT IS EQUAL TO THE RUNOFF VOLUME FROM THE SITE WHEN IT WAS IN A GOOD FORESTED CONDITION DIVIDED BY THE RUNOFF VOLUME FROM THE SITE IN ITS PROPOSED CONDITION, AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL FOR NATURAL OR MAN-MADE CHANNELS AS DEFINED IN ANY REGULATIONS PROMULGATED PURSUANT TO 10.1-562 OR 10.1-570 OF THE ACT.

M. FOR PLANS APPROVED ON OR AFTER JULY 1, 2014, THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF 10.1-561 A OF THE ACT AND THIS SUBSECTION SHALL BE SATISFIED BY COMPLIANCE WITH WATER QUANTITY REQUIREMENTS IN THE STORMWATER MANAGEMENT ACT (10.1-603.2 ET SEQ. OF THE CODE OF VIRGINIA) AND ATTENDANT REGULATIONS, UNLESS SUCH LAND-DISTURBING ACTIVITIES ARE IN ACCORDANCE WITH 4VAC50-60-48 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) PERMIT REGULATIONS.

N. COMPLIANCE WITH THE WATER QUANTITY MINIMUM STANDARDS SET OUT IN 4VAC50-60-66 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) PERMIT REGULATIONS SHALL BE DEEMED TO SATISFY THE REQUIREMENTS OF MINIMUM STANDARD 19.

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NO.	REVISIONS	DATE

ROANOKE GATEWAY PHASE 2

E.S.C. NOTES

704 BULLITT AVENUE SE
CITY OF ROANOKE, VA

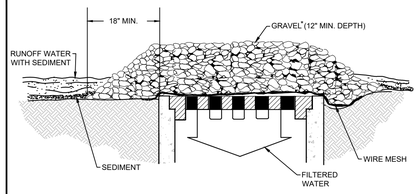
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DRAFTER: LDS
DESIGNER: LDS
CHECKED: CPB
PROJECT NO. R0070930.01

COMMONWEALTH OF VIRGINIA
CHRISTOPHER P. BURNS
Lic. No. 47338
6-30-2026
PROFESSIONAL ENGINEER

C7.3

CP26-00XX

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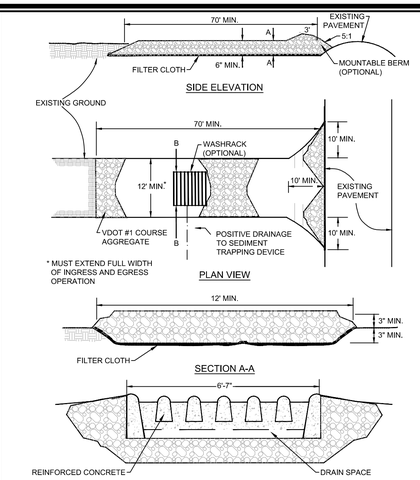
SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY CONCENTRATED FLOWS ARE EXPECTED BUT NOT WHERE PONDING AROUND THE STRUCTURE MIGHT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

* GRAVEL SHALL BE VDOT #3, #357 OR #5 COARSE AGGREGATE.

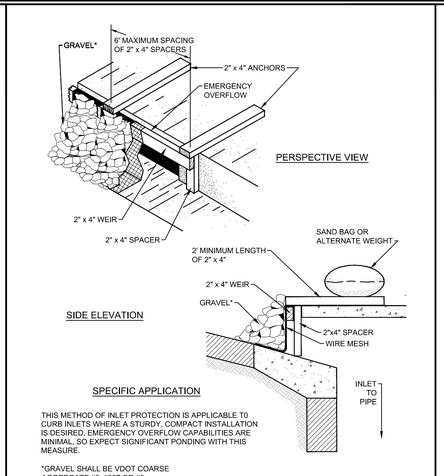
GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER

v1.1 SOURCE: VA. DSWC C-SCM-04-2



STONE CONSTRUCTION ENTRANCE

v1.1 SOURCE: VA. DSWC, MD ESC STDS C-SCM-03-1



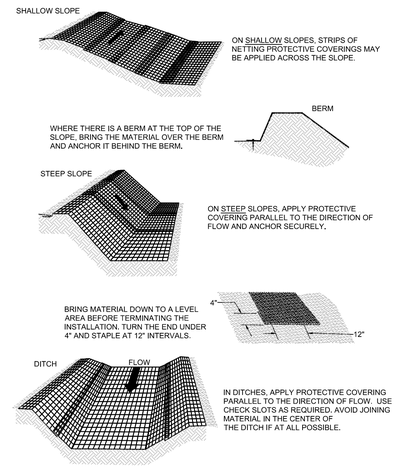
SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE T0 CURB INLETS WHERE A STURDY, COMPACT INSTALLATION IS DESIRED, EMERGENCY OVERFLOW CAPABILITIES ARE MINIMAL, SO EXPECT SIGNIFICANT PONDING WITH THIS MEASURE.

*GRAVEL SHALL BE VDOT COARSE AGGREGATE #3, #357 OR #5

CURB INLET PROTECTION WITH 2-INCH X 4-INCH WOODEN WEIR

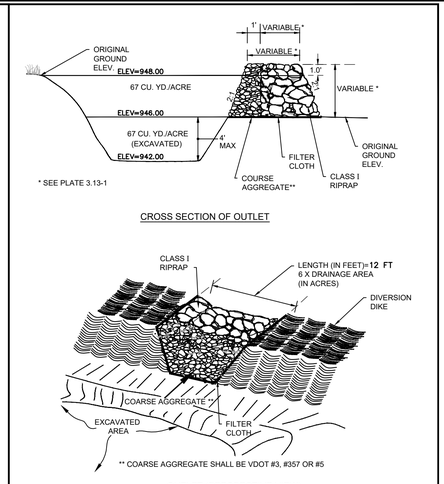
v1.1 SOURCE: USDA NRCS C-SCM-04-6



TYPICAL ORIENTATION OF TREATMENT - 1 (SOIL STABILIZATION BLANKET)

SOURCE: ADAPTED FROM LUDLOW PRODUCTS BROCHURE

v1.1 C-SSM-05-1



TEMPORARY SEDIMENT TRAP

v1.1 SOURCE: VA. DSWC C-SCM-11-2

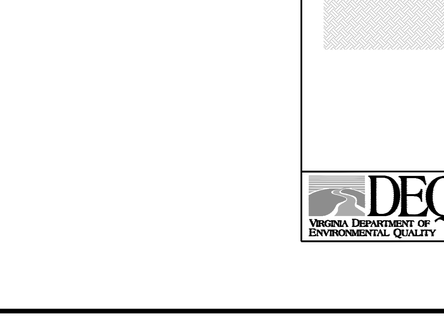
TYPICAL WATERWAY SECTIONS

v1.1 C-ECM-09-1

CONSTRUCTION OF SILT FENCE WITHOUT WIRE SUPPORT

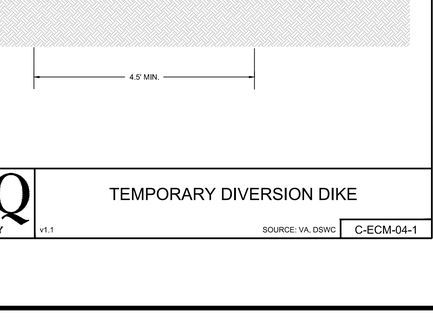
SOURCE: ADAPTED FROM STRAW & FAB. BARRIERS, SHERWOOD & WYANT

v1.1 C-PCM-04-2B



ROCK FILTER OUTLET DETAIL

v1.1 SOURCE: PA DEP C-SCM-08-1

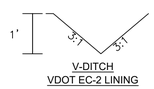


TYPICAL TREATMENT - 1 (SOIL STABILIZATION BLANKET) INSTALLATION CRITERIA

v1.1 SOURCE: VDOT ROAD & BRIDGE STDS. C-SSM-05-2

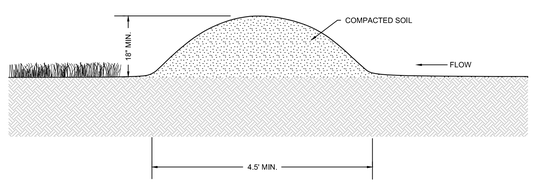
SEDIMENT TRAP SUMMARY TABLE

DRAINAGE AREA ID	ST-1
TOTAL DRAINAGE AREA SIZE	1.88 AC
BOTTOM/TOP LENGTH	64LF/88LF
BOTTOM/TOP WIDTH	4LF/28LF
DEPTH	6'
BERM HEIGHT	1'
WEIR LENGTH	12 LF
WEIR HEIGHT	1'
STORAGE REQUIRED (CY)	126 WET - 126 DRY
STORAGE PROVIDED (CY)	131 WET - 149 DRY



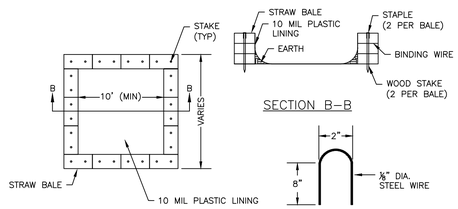
SCC DETAIL

N.T.S.



TEMPORARY DIVERSION DIKE

v1.1 SOURCE: VA. DSWC C-ECM-04-1



CONCRETE WASHOUT PIT DETAIL

NTS

GENERAL NOTES:

1. ACTUAL SIZE TO BE DETERMINED IN FIELD. A MINIMUM OF 10' WIDE BY 10' LONG AND SIZED TO CONTAIN ALL LIQUID AND SOLID WASTE. A MINIMUM OF 12" FREEBOARD SHALL BE INCLUDED.

2. THE CONCRETE WASHOUT SHALL NOT BE PLACED WITHIN 50' OF STORM DRAINS.

3. EXCESS AND SLUMP TEST SOLIDS SHALL BE PLACED ON PLASTIC LINER UNTIL HARDENED.CONTRACTOR MAY CONSIDER INSTALLING WIRE OR REBAR HOOD FOR LATER PICKUP REMOVAL.

4. INSPECTORS SHALL USE THE WASHOUT FACILITY OR PLASTIC FOR CLEANING OF THEIR TOOLS.

MAINTENANCE NOTES:

1. CHECK ALL CONCRETE WASHOUT FACILITIES DAILY TO DETERMINE IF THEY HAVE BEEN FILLED TO 75% CAPACITY. THE FACILITY SHALL BE CLEANED OUT OR CHANGED WHEN 75% FULL.

2. INSPECT LINERS DAILY TO ENSURE THAT LINERS ARE INTACT AND SIDEWALLS HAVE NOT BEEN DAMAGED BY CONSTRUCTION ACTIVITIES. LINERS SHALL BE REPLACED IF THERE ARE HOLES OR TEARS OBSERVED.

3. CONCRETE WASTE SHALL BE WASHED INTO THE DESIGNATED AREA AND ALLOWED TO HARDEN. THE HARDENED CONCRETE SHALL BE BROKEN UP AND DISPOSED OF OFFSITE PER APPLICABLE VA, DEQ RULES AND REGULATIONS. LIQUIDS SHALL NOT BE DISCHARGED DIRECTLY INTO WATERWAYS, STORM DRAINS, SWALES, OR DIRECTLY ONTO THE GROUND.

4. REMOVE LIQUIDS OR COVER STRUCTURE BEFORE PREDICTED STORMS TO PREVENT OVERFLOWS.

5. INSTALL A NEW PLASTIC LINER AFTER EVERY CLEANING.

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NO.	REVISIONS	DATE

ROANOKE GATEWAY PHASE 2

E.S.C. DETAILS

704 BULLITT AVENUE SE
CITY OF ROANOKE, VA

DATE: 6/30/2026
SCALE: N/A
DRAFTER: LDS
DESIGNER: LDS
CHECKED: CPB
PROJECT NO.
R0070930.01

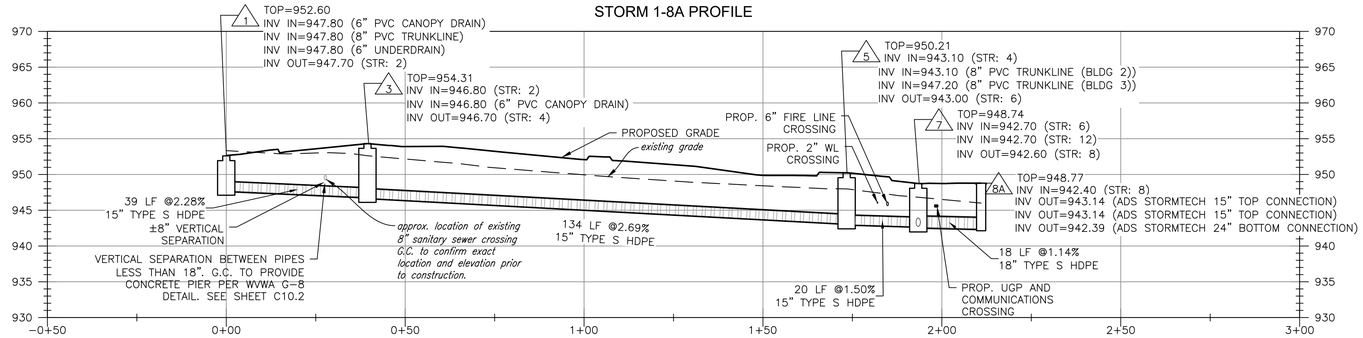
COMMONWEALTH OF VIRGINIA
CHRISTOPHER P. BURNS
Lic. No. 47338
6-30-2026
PROFESSIONAL ENGINEER

C7.4

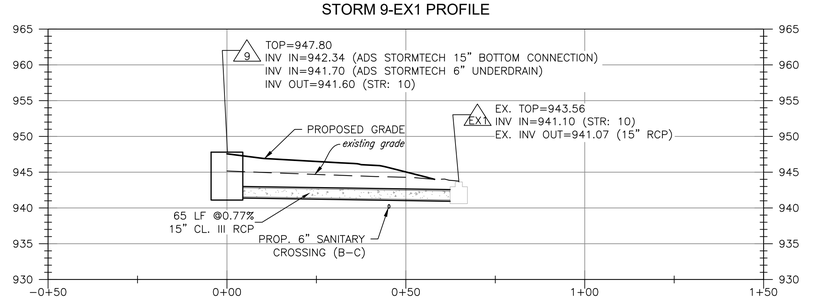
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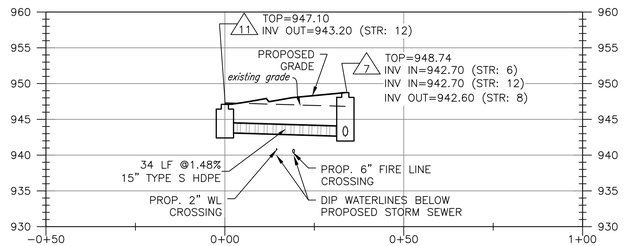
STORM 1-8A PROFILE



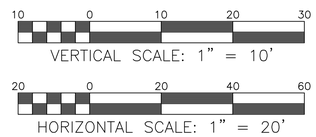
STORM 9-EX1 PROFILE



STORM 11-7 PROFILE



NOTES:
1. VDOT STD IS−1 INLET SHAPING SHALL BE PROVIDED IN ALL PROPOSED STRUCTURES.
2. NON−SHRINK GROUT SHALL BE USED FOR ALL STORM SEWER PIPE CONNECTIONS.
3. EXCAVATE TRANCHES TO UNIFORM WIDTH CONFORMING TO VDOT STANDARD PB−1 DETAIL FOR STORM DRAINAGE PIPING.



SANITARY SEWER SCHEDULE:

BLDG.2 A — 11 LF OF PRIVATE 6" SDR−26 PVC AT 1.04% MIN. COORD. BUILDING TIE IN LOCATION AND ELEVATION WITH MEP PLANS.

A — PRIVATE S.S. CO
TOP= 950.13
INV. IN= 943.50 (BLDG.2−A)
INV. OUT= 943.50 (A−B)

A B — 35 LF OF PRIVATE 6" SDR−26 PVC AT 5.73%

B — PRIVATE S.S. CO
TOP= 949.00
INV. IN= 941.50 (A−B)
INV. OUT= 941.50 (B−C)

B C — 79 LF OF PRIVATE 6" SDR−26 PVC AT 2.08%

C — PUBLIC 48" SAMPLING MH
TOP= 944.45
INV. IN= 939.85 (B−C)
INV. OUT= 939.75 (C−EX)

C EX — 20 LF OF PUBLIC 6" SDR−26 PVC AT 1.27%
TIE TO EX. 8" PUBLIC S.S. MAIN PER WVWA S−6 DETAIL
APPROX. INV. @ TIE IN= ±939.50
G.C. SHALL CONFIRM EXACT LOCATION, ELEVATION, PIPE SIZE & MATERIAL PRIOR TO CONSTRUCTION.

BLDG.3 D — 5 LF OF PRIVATE 6" SDR−26 PVC AT 1.04% MIN. COORD. BUILDING TIE IN LOCATION AND ELEVATION WITH MEP PLANS.

D — PRIVATE S.S. CO
TOP= 953.35
INV. IN= 948.00 (BLDG.3−D)
INV. OUT= 948.00 (D−E)

D E — 37 LF OF PRIVATE 6" SDR−26 PVC AT 2.41%

E — PUBLIC 48" SAMPLING MH
TOP= 952.54
INV. IN= 947.10 (D−E)
INV. OUT= 947.00 (E−EXB)

E EXB — 11 LF OF PRIVATE 6" SDR−26 PVC AT 4.59%

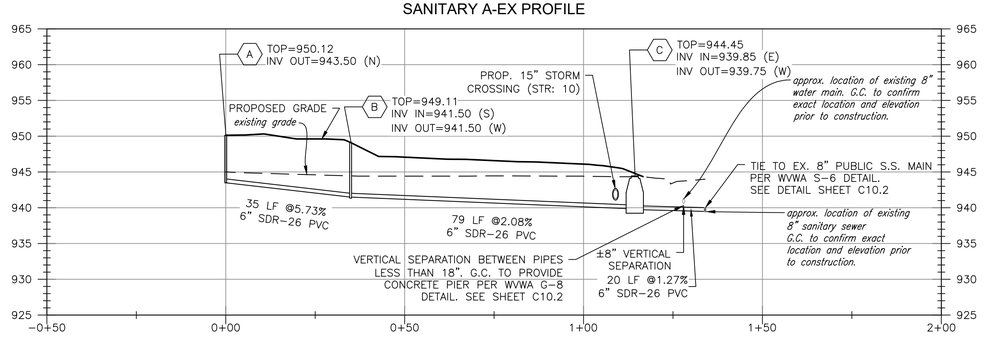
EXB — EX. PUBLIC 48" S.S. MH
EX. TOP= 950.44
NEW TOP= 952.24
NEW INV. IN= 946.50 (E−EXB)
APPROX EX. INV.= ±945.70
G.C. SHALL CONFIRM EXACT LOCATION, ELEVATION, PIPE SIZE & MATERIAL PRIOR TO CONSTRUCTION.

NOTES:
1. G.C. SHALL CONFIRM & COORDINATE ALL BUILDING TIE−IN LOCATIONS AND ELEVATIONS WITH M.E.P. AND ARCHITECTURAL DRAWINGS PRIOR TO ANY CONSTRUCTION.
2. G.C. TO CONFIRM ALL TIE−IN LOCATIONS AND ELEVATIONS TO EXISTING LINES PRIOR TO CONSTRUCTION AND NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
3. G.C. SHALL CORE DRILL EXISTING MANHOLE AND PROVIDE FLEXIBLE BOOT CONNECTION FOR PROPOSED TIE IN.
4. G.C. SHALL ENSURE MIN. 1.04% SLOPE FOR 6" SANITARY LATERAL AND MIN. 2.08% SLOPE FOR 4" SANITARY LATERAL
5. ALL CLEANOUT TOPS WITHIN PAVEMENT OR HARDSCAPE SHALL HAVE TRAFFIC BEARING LIDS.
6. ALL SANITARY STRUCTURES AND PIPES UPSTREAM OF PUBLIC S.S. SAMPLING MANHOLES "C" & "E" TO BE PRIVATE.

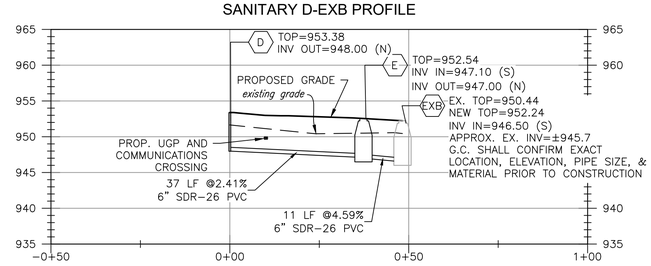
STORM SCHEDULE

STR#	TYPE	NOSE	TOP ELEV.	HEIGHT	LENGTH	DIAMETER	MATERIAL	SLOPE	INV. IN	INV. OUT	COMMENTS
1	DI-3C	TYPE B	952.60	4.90	8.00						IS-1, ST-1
2					39.47	15"	HDPE (TYPE S)	2.28%	947.70	946.80	
3	48" MH-2		954.34	7.64							IS-1, ST-1
4					133.92	15"	HDPE (TYPE S)	2.69%	946.70	943.10	
5	DI-3B	TYPE B	950.21	7.21	6.00						IS-1, ST-1
6					20.01	15"	HDPE (TYPE S)	1.50%	943.00	942.70	
7	48" MH-2		948.79	6.19							IS-1, ST-1
8					17.57	18"	HDPE (TYPE S)	1.14%	942.60	942.40	
8A	30" NYLOPLAST DRAIN BASIN		948.70	6.30							
9	SEE DETAIL SHEET 8.2	TYPE B	947.80	6.20	2.50						SEE DETAIL SHEET 8.2
10					64.79	15"	CL. III RCP	0.77%	941.60	941.10	
11	DI-3A	TYPE B	947.10	3.90	2.50						IS-1
12					33.67	15"	HDPE (TYPE S)	1.48%	943.20	942.70	

SANITARY A-EX PROFILE



SANITARY D-EXB PROFILE



Westwood
Westwood Professional Services, Inc.
1208 CORPORATE CIRCLE
ROANOKE, VA 24018
T: 540.772.9580
F: 540.426.3435
westwoodps.com

NO.	REVISIONS	DATE

ROANOKE GATEWAY PHASE 2

UTILITY PROFILES

704 BULLITT AVENUE SE
CITY OF ROANOKE, VA

DATE: 6/30/2026
SCALE: AS SHOWN
DRAFTER: LDS
DESIGNER: LDS
CHECKED: CPB
PROJECT NO.
R0070930.01

COMMONWEALTH OF VIRGINIA
CHRISTOPHER P. BURNS
Lic. No. 47338
6-30-2026
PROFESSIONAL ENGINEER

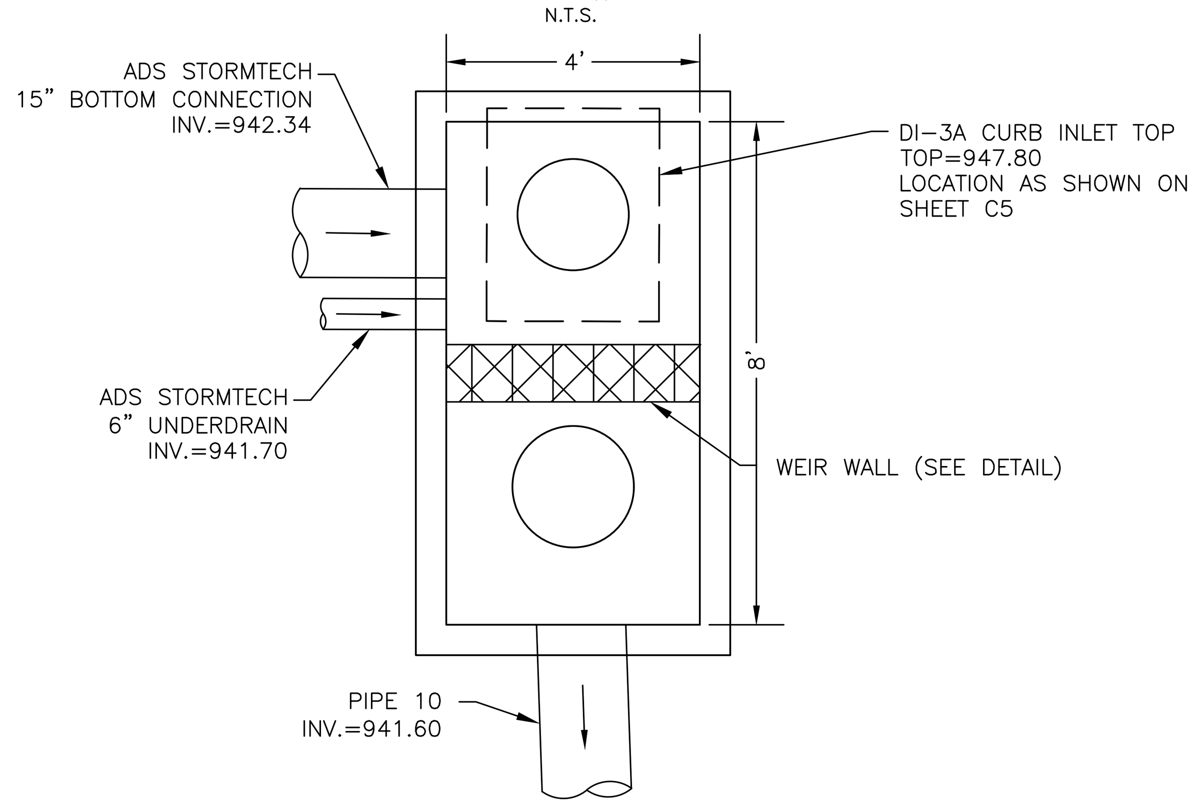
C8.1

CP26−00XX

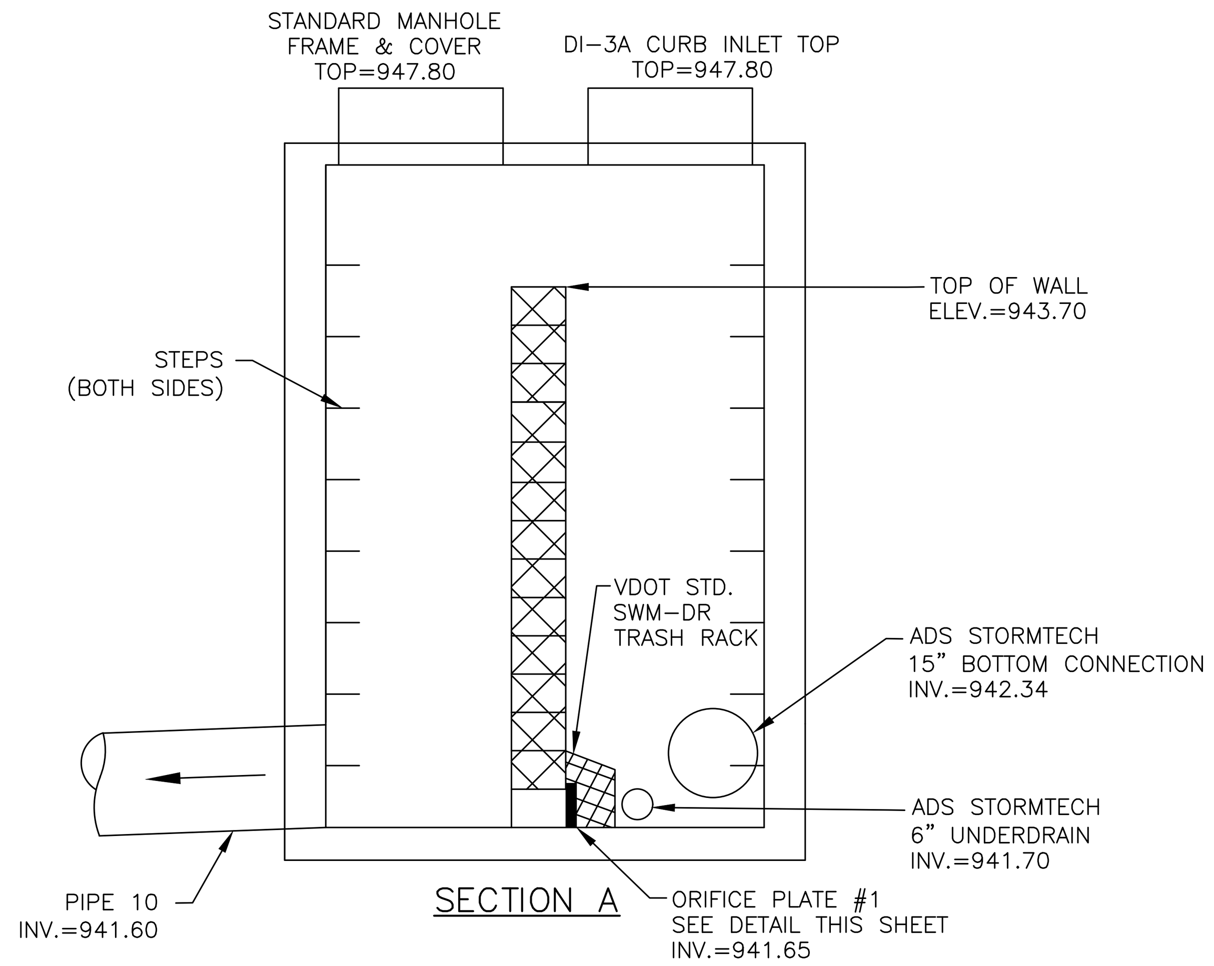
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Drawing: N:\0070930.01\06 CAD\DWG\Site Design\R0070930.01 BASE 2026-06-30

STRUCTURE #9 DETAILS

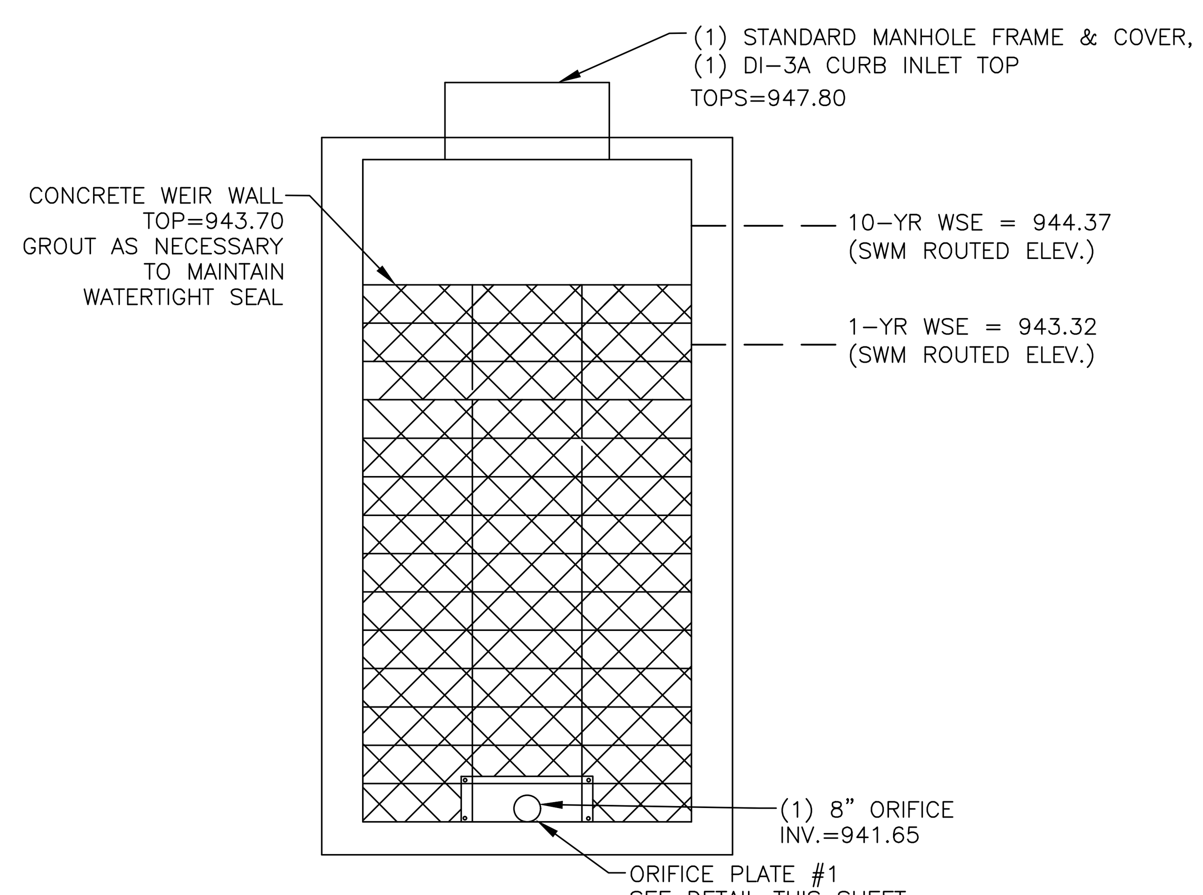
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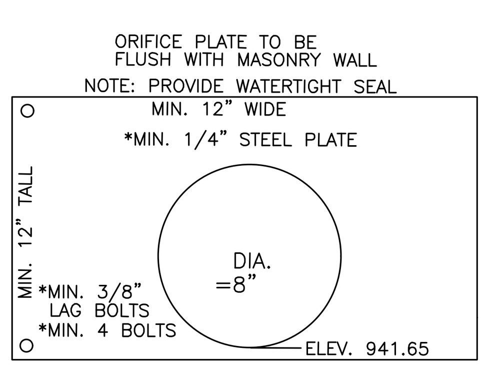
STRUCTURE #9 PLAN VIEW



SECTION A



SECTION B



ORIFICE PLATE DETAIL

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PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER	JIM CLARK 240-463-0124 JAMES.CLARK@ADSPIPE.COM
ADS SALES REP	DAVID CAMDEN 434-238-4751 DAVID.CAMDEN@ADSPIPE.COM
PROJECT NO.	S526029

ADS Advanced Drainage Systems, Inc.

ADS SiteAssist™ FOR STORMTECH INSTALLATION INSTRUCTIONS VISIT OUR APP

ROANOKE GATEWAY PHASE 2

ROANOKE, VA, USA

SC-800 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH SC-800.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
6. CHAMBERS SHALL BE DESIGNED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
7. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 700 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
8. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
   - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
   - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
   - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.
10. MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH NOTE #6.32 FOR MANIFOLD SIZING GUIDANCE. DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
11. ADS DOES NOT DESIGN OR PROVIDE MEMBRANE LINER SYSTEMS. TO MINIMIZE THE LEAKAGE POTENTIAL OF LINER SYSTEMS, THE MEMBRANE LINER SYSTEM SHOULD BE DESIGNED BY A KNOWLEDGEABLE GEOTEXTILE PROFESSIONAL AND INSTALLED BY A QUALIFIED CONTRACTOR.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-800 SYSTEM

1. STORMTECH SC-800 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH SC-800 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "SC/DC STORMTECH CHAMBER INSTALLATION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 3" (75 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE; AASHTO M43 #3, 357, 4, 467, 5, 56, OR 57.
8. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
9. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

1. STORMTECH SC-800 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "SC/DC STORMTECH CHAMBER INSTALLATION GUIDE".
2. THE USE OF CONSTRUCTION EQUIPMENT OVER SC-800 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "SC/DC STORMTECH CHAMBER INSTALLATION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "SC/DC STORMTECH CHAMBER INSTALLATION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT ADS WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

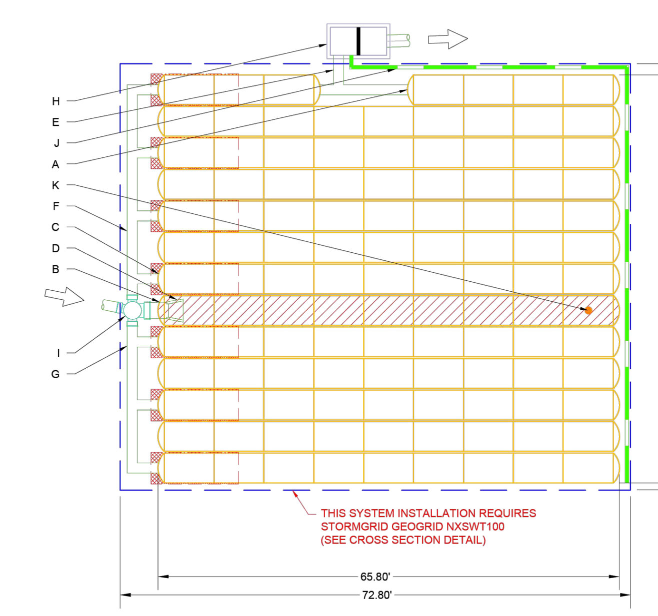
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PROPOSED LAYOUT	
115	STORMTECH SC-800 CHAMBERS
28	STORMTECH SC-800 END CAPS
6	STONE ABOVE (in)
12	STONE BELOW (in)
40	% STONE VOID
10,195	INSTALLED SYSTEM VOLUME ABOVE INVERT 941.70 (CF) (PERIMETER STONE INCLUDED)
2.3	ISOLATOR ROW TREATMENT RATE (CFS)
4,430	SYSTEM AREA (ft²)
267	SYSTEM PERIMETER (ft)

PROPOSED ELEVATIONS	
952.95	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED)
946.70	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC)
946.20	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC)
946.20	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT)
946.20	MINIMUM ALLOWABLE GRADE (TOP OF RIGID PAVEMENT)
945.45	TOP OF STONE
944.95	TOP OF SC-800 CHAMBER
943.14	15" TOP MANIFOLD/CONNECTION INVERT
942.39	24" ISOLATOR ROW PLUS CONNECTION INVERT
942.34	15" BOTTOM MANIFOLD/CONNECTION INVERT
942.20	BOTTOM OF SC-800 CHAMBER
941.70	UNDERDRAIN INVERT
941.20	BOTTOM OF STONE

*INVERT ABOVE BASE OF CHAMBER

PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT*	MAX FLOW
PRE-CORED END CAP	A	15" BOTTOM PARTIAL CUT END CAP, PART#: SC800EPE15BPC / TYP OF ALL 15" BOTTOM CONNECTIONS	0.00	
PREFABRICATED EZ END CAP	B	24" BOTTOM PREFABRICATED EZ END CAP, PART#: SC800ECEZ / TYP OF ALL 24" BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS		
PRE-CORED END CAP	C	15" TOP PRE-CORED END CAP, PART#: SC800EPE15TPC / TYP OF ALL 15" TOP CONNECTIONS		
FLAMP	D	INSTALL FLAMP ON 24" ACCESS PIPE / PART#: SC80024RAMP		
MANIFOLD	E	15" x 15" BOTTOM MANIFOLD, ADS N-12	1.70"	
MANIFOLD	F	15" x 15" TOP MANIFOLD, ADS N-12	11.30"	
MANIFOLD	G	15" x 15" TOP MANIFOLD, ADS N-12	11.30"	
CONCRETE STRUCTURE	H	OCS (DESIGN BY ENGINEER / PROVIDED BY OTHERS)		2.7 CFS OUT
NYLOPLAST (INLET W/ ISO PLUS ROW)	I	30" DIAMETER (24.00" SUMP MIN)		17.9 CFS IN
UNDERDRAIN	J	6" ADS N-12 DUAL WALL PERFORATED HDPE UNDERDRAIN		
INSPECTION PORT	K	4" SEE DETAIL		



ISOLATOR ROW PLUS (SEE DETAIL)

PLACE MINIMUM 12.50' OF ADSPLUS625 WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS

BED LIMITS

NOTES

- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE MODULE COVER REQUIREMENTS ARE MET.

ROANOKE GATEWAY PHASE 2
ROANOKE, VA, USA
DATE: 05/12/2026 | DRAWN: DL
PROJECT #: S526029 | CHECKED: XXX

DATE	DWN	CHK

StormTech® Chamber System
ADS WWW.ADSPIPE.COM

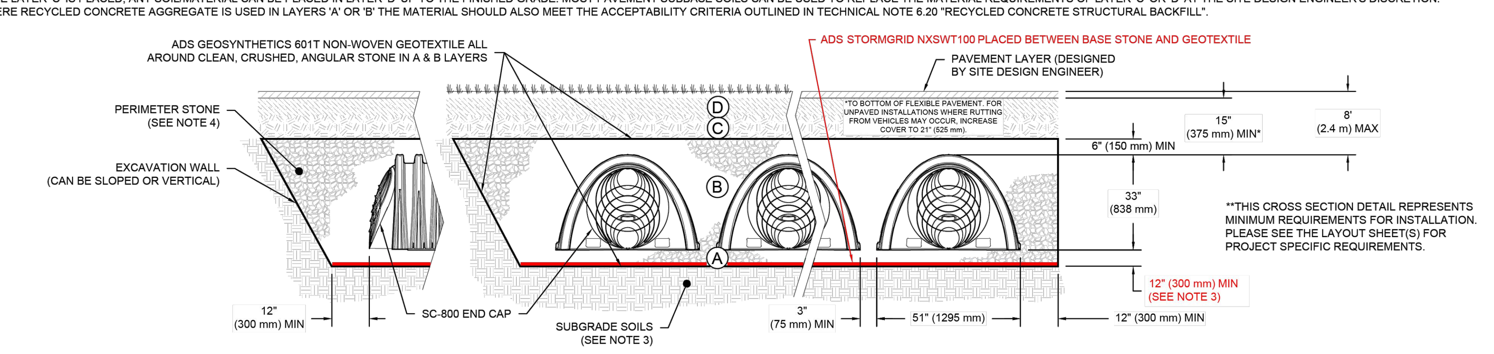
THIS DRAWING HAS BEEN PREPARED BASED ON INFORMATION PROVIDED TO ADS/STORMTECH UNDER THE DIRECTION OF THE PROJECT'S ENGINEER OF RECORD ('EOR') OR OTHER PROJECT REPRESENTATIVE. THIS DRAWING IS NOT INTENDED FOR USE IN BIDDING OR CONSTRUCTION WITHOUT THE EOR'S PRIOR APPROVAL. EOR SHALL REVIEW THIS DRAWING PRIOR TO BIDDING AND/OR CONSTRUCTION. IT IS THE ULTIMATE RESPONSIBILITY OF THE EOR TO ENSURE THAT THE PRODUCT(S) DEPICTED AND ALL ASSOCIATED DETAILS MEET ALL APPLICABLE LAWS, REGULATIONS, AND PROJECT REQUIREMENTS.

SHEET 2 OF 6

ACCEPTABLE FILL MATERIALS: STORMTECH SC-800 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 15" (375 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
5. WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".

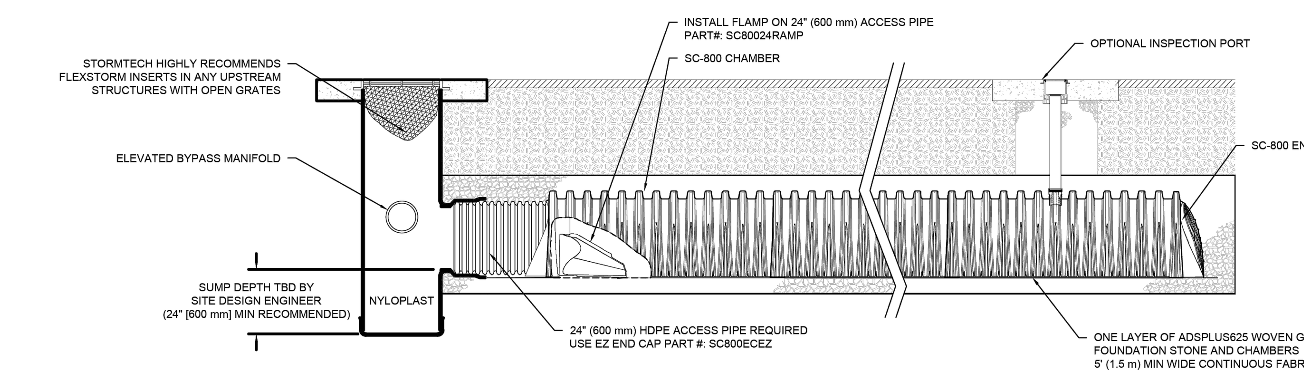


ROANOKE GATEWAY PHASE 2 SPECIFIC CROSS SECTION

NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-800 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS. REFERENCE STORMTECH DESIGN MANUAL FOR BEARING CAPACITY GUIDANCE.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2" (50 mm).
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 700 LBS/FT/%. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

SHEET 3 OF 6



SC-800 ISOLATOR ROW PLUS DETAIL

NTS

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

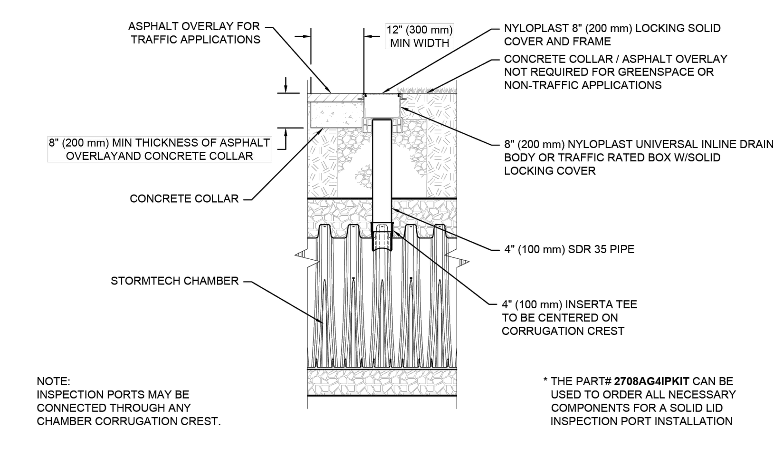
STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

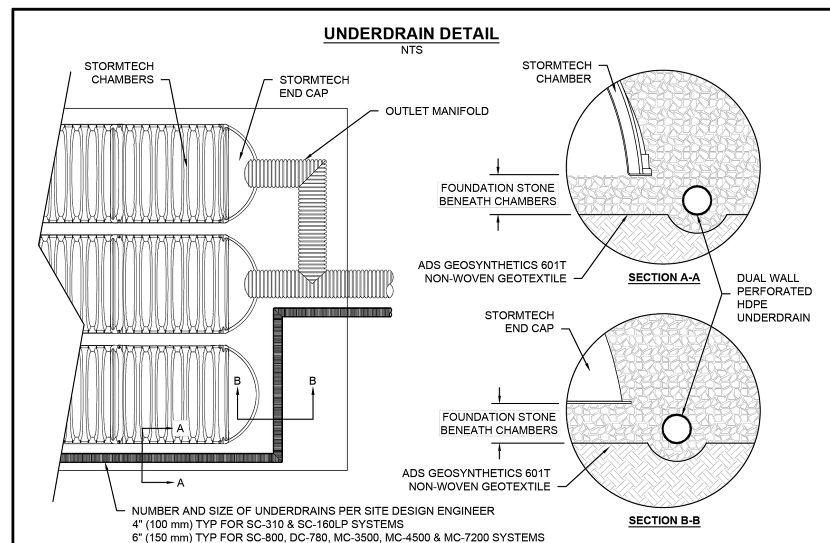
1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

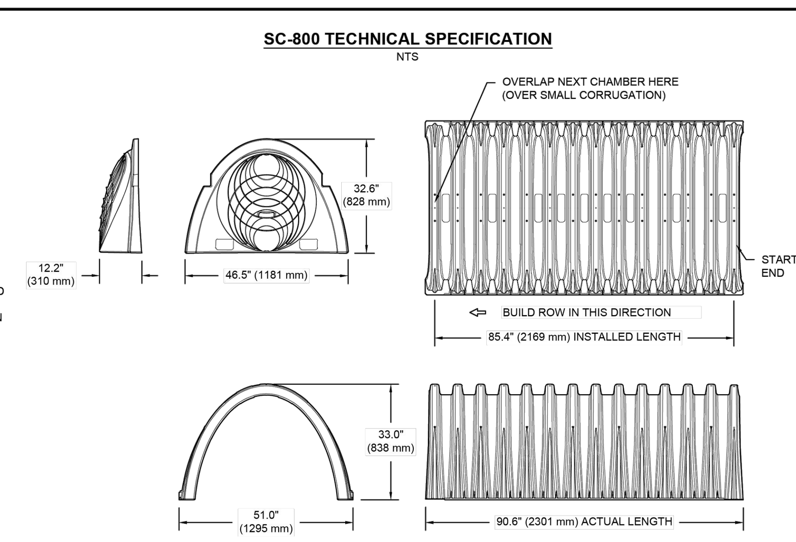


4" (100 mm) PVC INSPECTION PORT DETAIL (SC SERIES CHAMBER)

NTS

SHEET 4 OF 6





NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	51.0" X 33.0" X 85.4"	(1295 mm X 838 mm X 2169 mm)
CHAMBER STORAGE	50.6 CUBIC FEET	(1.43 m³)
MINIMUM INSTALLED STORAGE*	78.4 CUBIC FEET	(2.22 m³)
WEIGHT	81.8 lbs.	(37.1 kg)

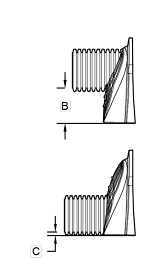
NOMINAL END CAP SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	46.5" X 32.6" X 10.5"	(1181 mm X 828 mm X 267 mm)
END CAP STORAGE	3.4 CUBIC FEET	(0.09 m³)
MINIMUM INSTALLED STORAGE**	14.7 CUBIC FEET	(0.42 m³)
WEIGHT	15.7 lbs.	(7.1 kg)

* ASSUMES 6" (150 mm) STONE ABOVE, BELOW, AND BETWEEN CHAMBERS, 3" (75 mm) BETWEEN CHAMBERS
**ASSUMES 6" (150 mm) STONE ABOVE AND BELOW END CAPS, 3" (150 mm) BETWEEN ROWS, 12" (300 mm) BEYOND END CAPS

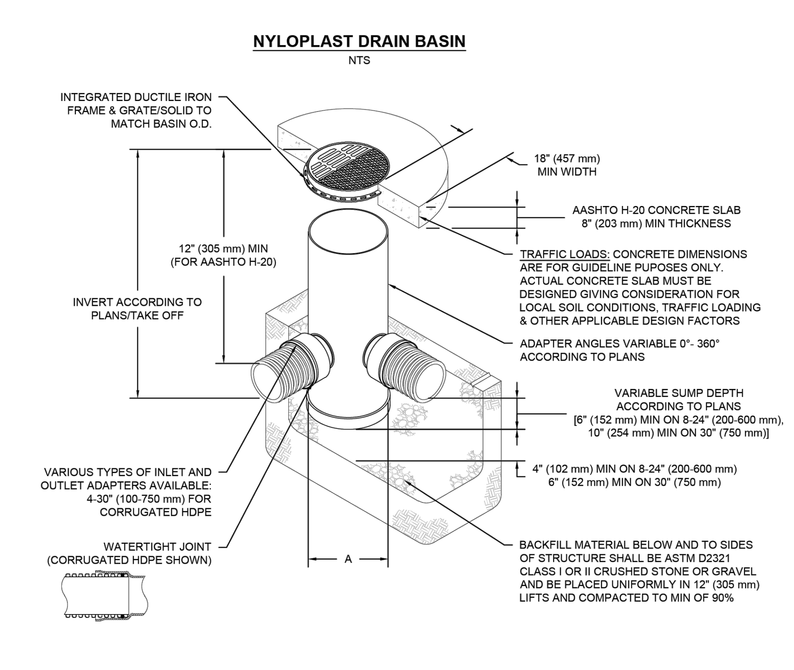
PRE-CORED HOLES AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "BPC"
PRE-CORED HOLES AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "TPC"

PART #	STUB	B	C
SC800EPE06TPC	6" (150 mm)	21.4" (544 mm)	---
SC800EPE06BPC		---	0.9" (23 mm)
SC800EPE08TPC	8" (200 mm)	19.2" (488 mm)	---
SC800EPE08BPC		---	1.0" (25 mm)
SC800EPE10TPC	10" (250 mm)	17.0" (432 mm)	---
SC800EPE10BPC		---	1.2" (30 mm)
SC800EPE12TPC	12" (300 mm)	14.4" (366 mm)	---
SC800EPE12BPC		---	1.6" (41 mm)
SC800EPE15TPC	15" (375 mm)	11.3" (287 mm)	---
SC800EPE15BPC		---	1.7" (43 mm)
SC800EPE18TPC	18" (450 mm)	8.0" (203 mm)	---
SC800EPE18BPC		---	2.0" (51 mm)
SC800EPE24BPC	24" (600 mm)	---	2.3" (58 mm)
SC800EPE	NONE	SOLID END CAP	



NOTE: ALL DIMENSIONS ARE NOMINAL

SHEET 5 OF 6



NOTES

1. 8-30" (200-750 mm) GRATES/SOLID COVERS SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
2. 12-30" (300-750 mm) FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
3. DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS
4. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS & HANCOR DUAL WALL) & SDR 35 PVC
5. FOR COMPLETE DESIGN AND PRODUCT INFORMATION: **WWW.NYLOPLAST-US.COM**
6. TO ORDER CALL: **800-821-6710**

A	PART #	GRATE/SOLID COVER OPTIONS		
8" (200 mm)	2808AG	PEDESTRIAN LIGHT DUTY	STANDARD LIGHT DUTY	SOLID LIGHT DUTY
10" (250 mm)	2810AG	PEDESTRIAN LIGHT DUTY	STANDARD LIGHT DUTY	SOLID LIGHT DUTY
12" (300 mm)	2812AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
15" (375 mm)	2815AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
18" (450 mm)	2818AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
24" (600 mm)	2824AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
30" (750 mm)	2830AG	PEDESTRIAN AASHTO H-20	STANDARD AASHTO H-20	SOLID AASHTO H-20

Nyloplast®

SHEET 6 OF 6

Westwood
Westwood Professional Services, Inc.
1208 CORPORATE CIRCLE
ROANOKE, VA 24018
T: 540.772.9580
F: 540.426.3435
westwoodps.com

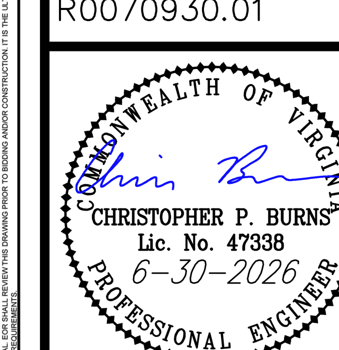
NO.	REVISIONS	DATE

ROANOKE GATEWAY PHASE 2

SWM DETAILS

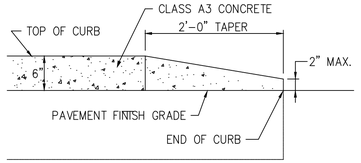
704 BULLITT AVENUE SE
CITY OF ROANOKE, VA

DATE: 6/30/2026
SCALE: N/A
DRAFTER: LDS
DESIGNER: LDS
CHECKED: CPB
PROJECT NO. R0070930.01



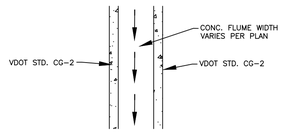
C8.2

CP26-00XX



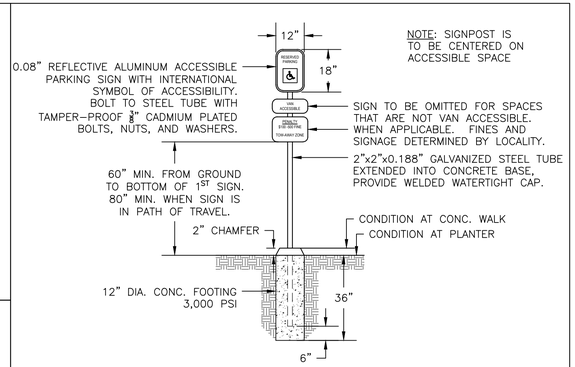
CURB TAPER DETAIL

NO SCALE



CONCRETE FLUME DETAIL

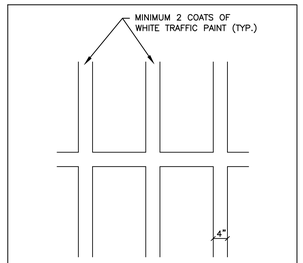
NO SCALE



NOTE: SIGNPOST IS TO BE CENTERED ON ACCESSIBLE SPACE

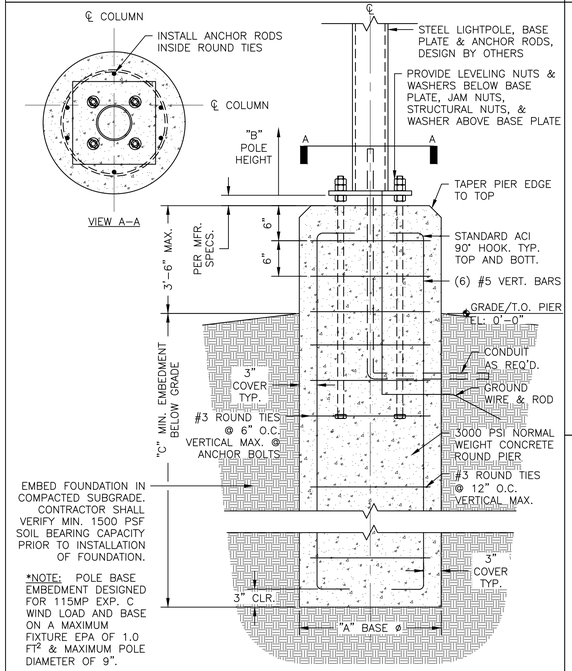
ACCESSIBLE SIGNPOST DETAIL

N.T.S.



PAVEMENT STRIPING DETAIL

N.T.S.



*NOTE: POLE BASE EMBEDMENT DESIGNED FOR 115MP EXP. C WIND LOAD AND BASE ON A MAXIMUM FIXTURE EPA OF 1.0 FT² & MAXIMUM POLE DIAMETER OF 9".

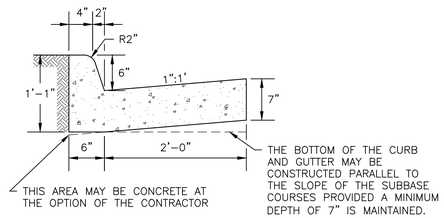
LIGHT POLE BASE EMBEDMENT "C" SCHEDULE*

"A" BASE DIA.	"B" LIGHT POLE HEIGHT								
	14'-0"	16'-0"	18'-0"	20'-0"	22'-0"	24'-0"	26'-0"	28'-0"	30'-0"
18"	4'-6"	4'-9"	5'-3"	5'-6"	5'-9"	6'-0"	6'-3"	6'-6"	6'-9"
24"	4'-0"	4'-6"	4'-9"	5'-0"	5'-0"	5'-3"	5'-6"	5'-9"	6'-0"
30"	3'-9"	4'-0"	4'-3"	4'-6"	4'-9"	5'-0"	5'-3"	5'-3"	5'-6"

EXPOSED POLE BASE DETAIL

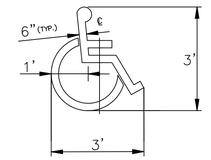
N.T.S.

NOTES:
1. CONCRETE IS TO BE CLASS A3 CAST IN PLACE.
2. FOR USE WITH STABILIZED OPEN-GRADED DRAINAGE LAYER, THE BOTTOM OF THE CURB & GUTTER SHALL BE CONSTRUCTED PARALLEL TO THE SLOPE OF SUBBASE COURSES AND TO THE DEPTH OF THE PAVEMENT.



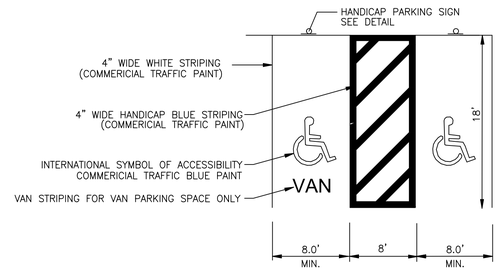
CG-6 (WET) DETAIL

N.T.S.



ACCESSIBLE PARKING SYMBOL

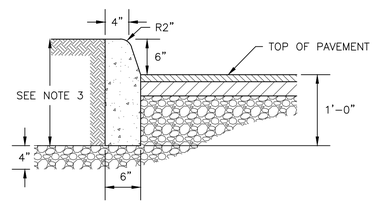
LOCATE AT EDGE OF PARKING SPACE NEXT TO DRIVE AISLE UNLESS ACCOMPANIED BY "VAN" LETTERING



H.C. STALL STRIPING DETAIL

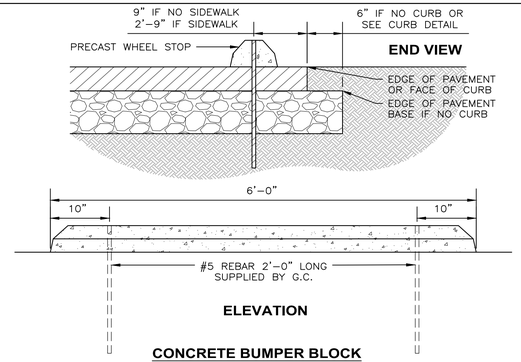
N.T.S.

NOTES:
1. CONCRETE IS TO BE CLASS A3 CAST IN PLACE.
2. THE DEPTH OF CURB MAY BE REDUCED AS MUCH AS 3" (15" DEPTH) OR INCREASED AS MUCH AS 3" (21" DEPTH) IN ORDER THAT THE BOTTOM OF THE CURB WILL COINCIDE WITH THE TOP OF A COURSE OF THE PAVEMENT SUBSTRUCTURE. OTHERWISE, THE DEPTH IS TO BE 18" AS SHOWN. NO ADJUSTMENT IN THE PRICE BID IS TO BE MADE FOR A DECREASE OR AN INCREASE IN DEPTH.



CG-2 DETAIL

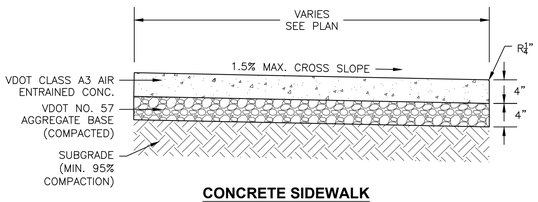
N.T.S.



CONCRETE BUMPER BLOCK

N.T.S.

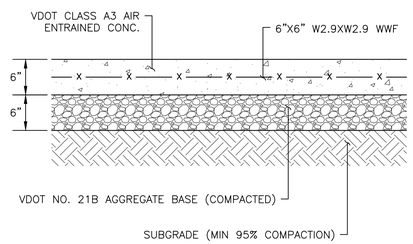
NOTES:
1. G.C. SHALL BE RESPONSIBLE FOR OBTAINING ADEQUATE COMPACTION OF SUBGRADE PRIOR TO CONCRETE CONSTRUCTION.
2. ½" PREFORMED EXPANSION JOINT FILLER WHERE ADJACENT TO BUILDING.
3. SCORING EVERY 6', EXPANSION JOINTS EVERY 25' O.C.
4. FINISH – TROWELED EDGES, BROOM FINISH.
5. MAXIMUM LONGITUDINAL SLOPE IS 4.5% WHEN WITHIN A PUBLIC RIGHT-OF-WAY AND PARALLEL TO THE ROAD, LONGITUDINAL SLOPE IS TO FOLLOW ROAD GRADES. REFER TO RAMP DETAIL WHEN IN RAMP CONDITION.



CONCRETE SIDEWALK

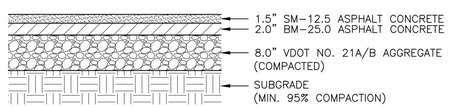
N.T.S.

NOTES:
1. G.C. SHALL BE RESPONSIBLE FOR OBTAINING ADEQUATE COMPACTION OF SUBGRADE PRIOR TO PAVEMENT CONSTRUCTION.
2. WWF SHALL BE PLACED IN TOP HALF OF SLAB DEPTH.
3. CRACK CONTROL JOINT SPACING 18' O.C. (¼TH SLAB DEPTH).
4. ½" PREFORMED EXPANSION JOINT FILLER WHERE ADJACENT TO BUILDING.
5. STONE TO BE PLACED IN LIFTS OF NO MORE THAN 4".



CONCRETE PAVEMENT SECTION

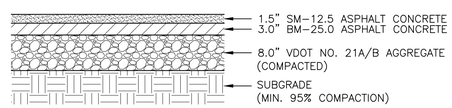
N.T.S.



NOTES:
1. G.C. TO ENSURE SOIL SUBGRADE IS COMPACTED TO 95% STANDARD PROCTOR DRY DENSITY PRIOR TO STONE/ASPHALT PLACEMENT.
2. STONE BASE MUST BE PLACED IN LIFTS OF NO MORE THAN 4" EACH.
3. A TACK COAT SHALL BE APPLIED BETWEEN ASPHALT PAVEMENT LAYERS.
4. PAVEMENT SECTION IS BASED ON THE CALIFORNIA BEARING RATIO (CBR) & RESILIENCY FACTOR (RF) PROVIDED IN THE GEOTECH REPORT AND MUST BE FIELD VERIFIED BY A GEOTECHNICAL ENGINEER PRIOR TO STONE/ASPHALT PLACEMENT.

LIGHT DUTY ASPHALT PAVEMENT SECTION

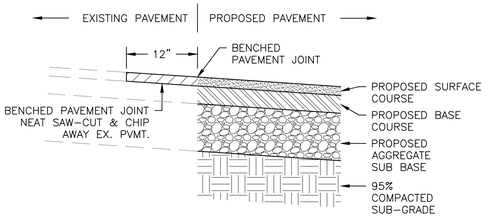
N.T.S.



NOTES:
1. G.C. TO ENSURE SOIL SUBGRADE IS COMPACTED TO 95% STANDARD PROCTOR DRY DENSITY PRIOR TO STONE/ASPHALT PLACEMENT.
2. STONE BASE MUST BE PLACED IN LIFTS OF NO MORE THAN 4" EACH.
3. A TACK COAT SHALL BE APPLIED BETWEEN ASPHALT PAVEMENT LAYERS.
4. PAVEMENT SECTION IS BASED ON THE CALIFORNIA BEARING RATIO (CBR) & RESILIENCY FACTOR (RF) PROVIDED IN THE GEOTECH REPORT AND MUST BE FIELD VERIFIED BY A GEOTECHNICAL ENGINEER PRIOR TO STONE/ASPHALT PLACEMENT.

HEAVY DUTY ASPHALT PAVEMENT SECTION

N.T.S.



NOTES:
1. G.C. TO ENSURE SOIL SUBGRADE IS COMPACTED TO 95% STANDARD PROCTOR DRY DENSITY PRIOR TO STONE/ASPHALT PLACEMENT.
2. STONE BASE MUST BE PLACED IN LIFTS OF NO MORE THAN 4" EACH.
3. A TACK COAT SHALL BE APPLIED BETWEEN ASPHALT PAVEMENT LAYERS.

PAVEMENT JOINT DETAIL

N.T.S.

Westwood
Westwood Professional Services, Inc.
1208 CORPORATE CIRCLE
ROANOKE, VA 24018
T: 540.772.9580
F: 540.426.3435
westwoodps.com

NO.	REVISIONS	DATE

ROANOKE GATEWAY PHASE 2

SITE DETAILS 1

704 BULLITT AVENUE SE
CITY OF ROANOKE, VA

DATE: 6/30/2026
SCALE: N/A
DRAFTER: LDS
DESIGNER: LDS
CHECKED: CPB

PROJECT NO.
R0070930.01

COMMONWEALTH OF VIRGINIA
CHRISTOPHER P. BURNS
Lic. No. 47338
6-30-2026
PROFESSIONAL ENGINEER

C9.1

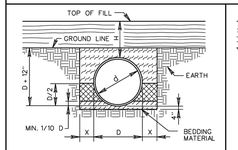
CP26-00XX

Last Saved by SStirtzl
Last Saved: 6/30/2026 11:44 AM
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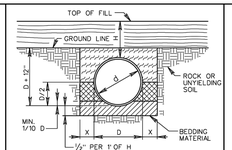
2016 ROAD & BRIDGE STANDARDS

PB-1

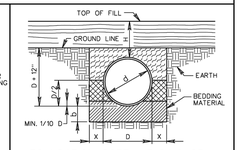
NO PROJECTION OF PIPE ABOVE GROUND LINE



NORMAL EARTH FOUNDATION

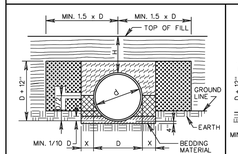


ROCK FOUNDATION

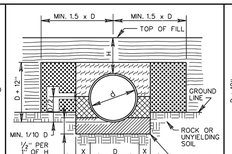


FOUNDATION SOFT, YIELDING, OR OTHERWISE UNSUITABLE MATERIAL

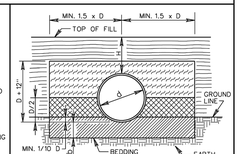
PIPE PROJECTION ABOVE GROUND LINE



NORMAL EARTH FOUNDATION



ROCK FOUNDATION



FOUNDATION SOFT, YIELDING, OR OTHERWISE UNSUITABLE MATERIAL

BEDDING MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.

CLASS I BACKFILL MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.

FOR PLASTIC PIPE CLASS I BACKFILL MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.

FOR ALL OTHER PIPE REGULAR BACKFILL MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.

EMBANKMENT

REGULAR BACKFILL MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.

NOTES:

FOR GENERAL NOTES ON PIPE BEDDING, SEE INSTALLATION OF PIPE CULVERTS AND STORM SEWERS GENERAL NOTES ON SHEET 107.00.

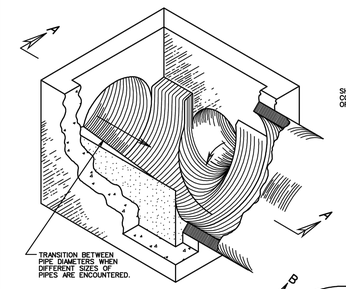
CRUSHED GLASS CONFORMING TO THE SIZE REQUIREMENTS FOR CRUSHER RUN AGGREGATE SIZE 25 AND 26 MAY BE USED IN PLACE OF CLASS I BACKFILL.

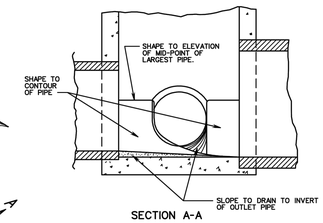
VDOT ROAD AND BRIDGE STANDARDS		INSTALL. OF PIPE CULVERTS AND STORM SEWERS CIRC. PIPE BEDDING AND BACKFILL - METHOD "A" VIRGINIA DEPARTMENT OF TRANSPORTATION	SPECIFICATION REFERENCE
SHEET 1 OF 4	REVISION DATE		302
107.01	07/12		303

2016 ROAD & BRIDGE STANDARDS

2016 ROAD & BRIDGE STANDARDS

IS-1





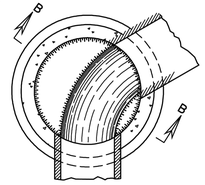
SECTION A-A

METHOD OF TREATMENT IN DROP INLETS

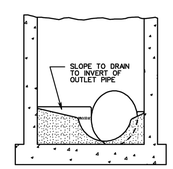
NOTES:
SHAPING OF MANHOLE AND INLET INVERTS IN ACCORDANCE WITH THIS DRAWING IS TO APPLY TO THOSE STRUCTURES SPECIFIED ON PLANS OR WHERE INVERT OF PIPE IS ABOVE INVERT OF STRUCTURE.

MANHOLE OR DROP INLET IS TO BE FORMED AND CONSTRUCTED IN ACCORDANCE WITH APPLICABLE STANDARD OR SPECIAL DRAWING. THE CONCRETE SHAPING AS DETAILED HEREON IS TO CONSIST OF A PORTLAND CEMENT CONCRETE MIX CONFORMING TO CLASS A3 OR CLASS S1 EXCEPT THAT 25% OF COARSE AGGREGATE MAY BE UP TO 4" IN DIAMETER AND CONSIST OF STONE, BROKEN BRICK, BROKEN CONCRETE OR BROKEN CONCRETE BLOCK. THE SURFACE SHALL BE LEFT SMOOTH BY MEANS OF HAND TROWELLING. NONE OF THE COARSE AGGREGATE SHALL REMAIN EXPOSED.

DETAILS OF INVERT SHAPING AS SHOWN HEREON ARE FOR EXAMPLE PURPOSES ONLY. EACH MANHOLE OR DROP INLET IS TO BE SHAPED INDIVIDUALLY TO BEST FIT THE PARTICULAR INLET AND OUTLET CONFIGURATION AND FLOW LINES.



PLAN

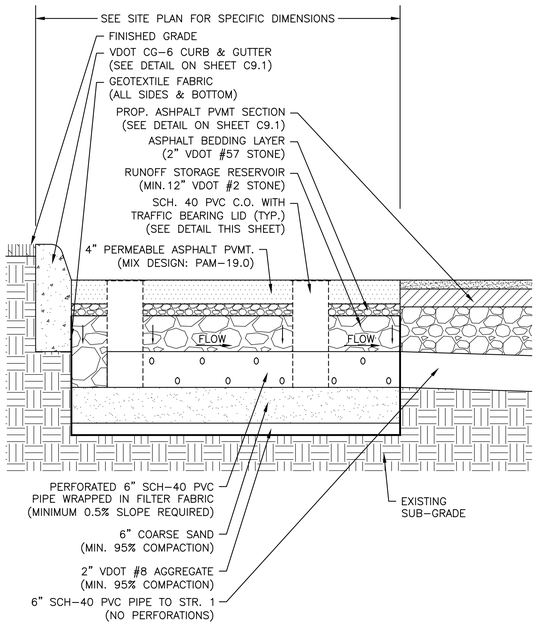


SECTION B-B

METHOD OF TREATMENT IN MANHOLES

VDOT ROAD AND BRIDGE STANDARDS		STANDARD METHOD OF SHAPING MANHOLE & INLET INVERTS VIRGINIA DEPARTMENT OF TRANSPORTATION	SPECIFICATION REFERENCE
SHEET 1 OF 1	REVISION DATE		302
106.08			

2016 ROAD & BRIDGE STANDARDS

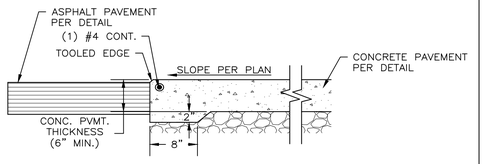


PERMEABLE PAVEMENT SECTION

NOT TO SCALE

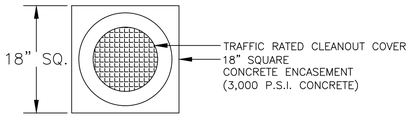
NOTE:
1. ALL PIPE INSTALLATION AND COMPACTION SHALL FOLLOW THE NATIONAL READY MIXED CONCRETE ASSOCIATION (NRMCA) SPECIFICATIONS FOR INSTALLATION.

2. ALL OTHER PIPE BEDDING ON-SITE SHALL BE COMPACTED TO MEET CITY OF ROANOKE EXCAVATION STANDARDS, LATEST EDITION.

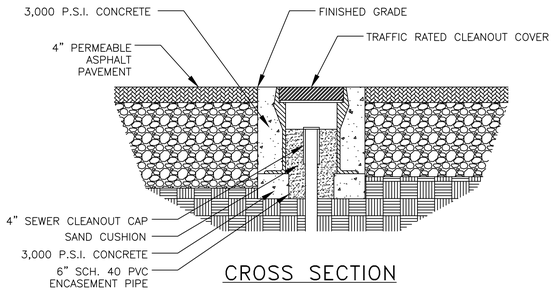


DUMPSTER APRON

N.T.S.



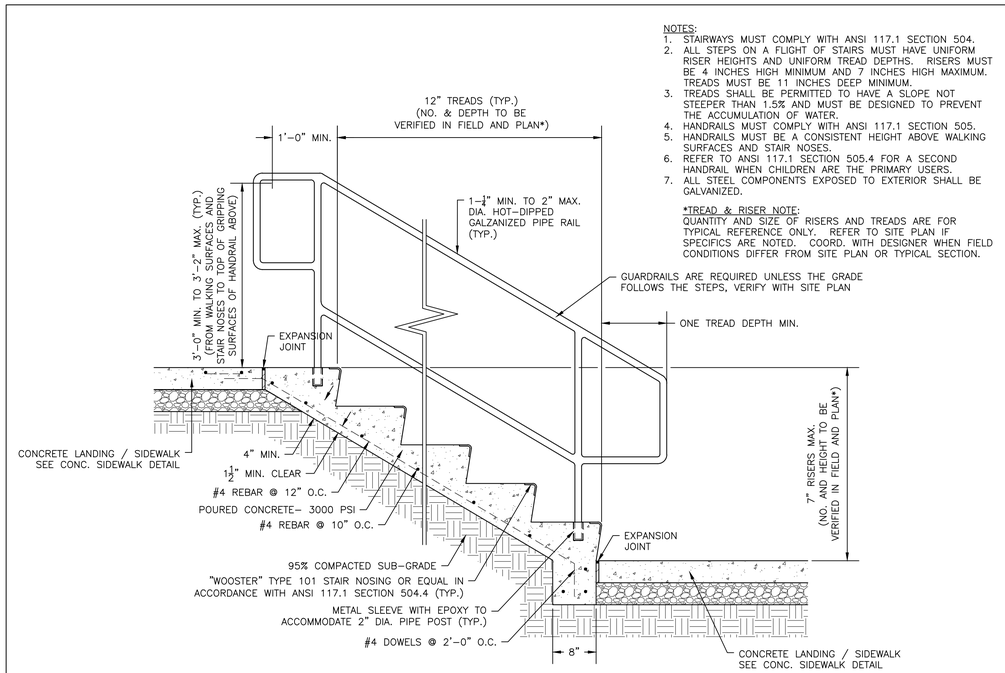
TOP VIEW



CROSS SECTION

TRAFFIC RATED CLEANOUT

NO SCALE



TYPICAL SECTION AT CONCRETE STEPS

N.T.S.

Westwood
Westwood Professional Services, Inc.
1208 CORPORATE CIRCLE
ROANOKE, VA 24018
T: 540.772.9580
F: 540.426.3435
westwoodps.com

NO.	REVISIONS	DATE

ROANOKE GATEWAY PHASE 2

SITE DETAILS 2

704 BULLITT AVENUE SE
CITY OF ROANOKE, VA

DATE: 6/30/2026
SCALE: N/A
DRAFTER: LDS
DESIGNER: LDS
CHECKED: CPB
PROJECT NO.
R0070930.01

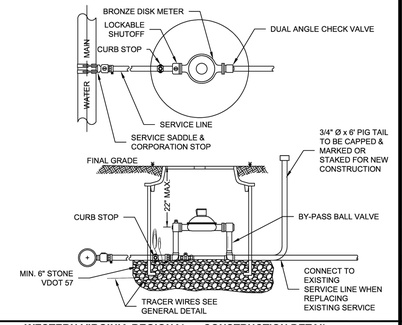
COMMONWEALTH OF VIRGINIA
CHRISTOPHER P. BURNS
Lic. No. 47338
6-30-2026
PROFESSIONAL ENGINEER

C9.2

CP26-00XX

Last Saved by: SStinzi
Last Saved: 6/30/2026 11:44 AM
Plotted: 6/30/2026 11:47 AM
Drawing: N:\0070930.01\16 CAD\2WGS\Site Design\R0070930.01 BASE 2026-06-30

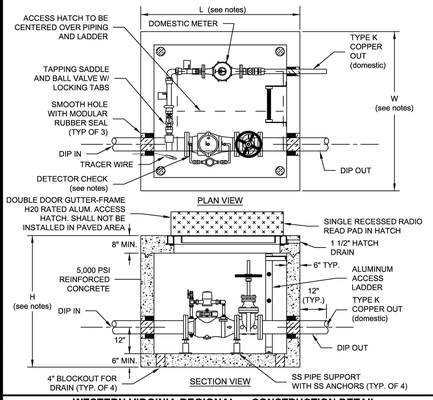
1. ALL METERS ARE TO BE PROVIDED AND INSTALLED BY PARTICIPATING UTILITY AT OWNER/DEVELOPER'S EXPENSE. METER BOX, SERVICE, AND SETTER TO BE FURNISHED AND INSTALLED BY OWNER/DEVELOPER IN ACCORDANCE WITH THE MINIMUM REQUIREMENTS SHOWN BELOW.
2. SADDLES SHALL BE USED WITH ALL PLASTIC & DUCTILE IRON PIPE. SERVICE SADDLES SHALL BE USED IN ACCORDANCE WITH WATER DISTRIBUTION PIPING SPECIFICATION AND SHALL BE SPECIFICALLY SIZED FOR THE TYPE OF PIPE.
3. METER BOXES SHALL BE PLASTIC BOX, CORRUGATED HDPE BOX, OR APPROVED EQUAL. MINIMUM METER BOX & LID DIAMETERS SHALL BE 20" AND 30".
4. COPPER METER SETTER TO BE WITH ANGLE DUAL CHECK VALVE AND BYPASS HAVING LOCKABLE SHUTOFF VALVE.
5. SERVICES REQUIRING METERS LARGER THAN 2-INCH. SEE STANDARD DETAIL W-7.
6. ALL METERS SHALL INCLUDE A 2" SETTER AND SHALL INCLUDE BUSHING FOR SMALLER METER IF NECESSARY.
7. CENTER METER IN METER BOX.
8. DO NOT OVERFILL WITH #57 STONE.
9. PROVIDE 2" RECESSED HOLE IN LID/COVER TO ACCOMMODATE METER RADIO READ PAD.



WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL

COMMERCIAL WATER SERVICE
NON TRAFFIC BEARING LOCATION
(LINE PRESSURE UNDER 120 PSI)
METER SIZES 5/8" - 2"
09/2024 — **W-4**

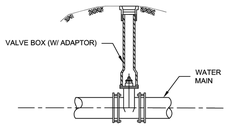
1. FOR 6" FIRE LINE, EXTERIOR VAULT DIMENSIONS SHALL BE (L x W x H) 6' X 6' X 5' WITH DOMESTIC TAP MADE INSIDE VAULT AS SHOWN BELOW.
2. FOR 8" FIRE LINE EXTERIOR VAULT DIMENSIONS SHALL BE (L X W X H) 6' X 6' X 6' WITH DOMESTIC TAP MADE OUTSIDE VAULT. BALL VALVE WITH LOCKING TABS SHALL BE PROVIDED INSIDE VAULT TO ALLOW FOR ISOLATION OF DOMESTIC METER. FOR LINES GREATER THAN 8", VAULTS TO BE APPROVED ON A CASE BY CASE BASIS.
3. SINGLE DETECTOR CHECK VALVE SHALL INCLUDE FLANGED END CONNECTIONS, BYPASS ASSEMBLY, AND ONE OS&Y GATE VALVE.
4. BYPASS ASSEMBLY SHALL INCLUDE 2 BALL VALVES TO ISOLATE METER.
5. DOMESTIC SHALL BE TYPE K COPPER WITH GRIP JOINT FITTINGS, BALL VALVE AT TAPPING SADDLE (WITH LOCKING TABS) AND CHECK VALVE ON OUTLET.
6. DOMESTIC METER AND BYPASS METER TO BE SUPPLIED BY OWNER AND INSTALLED BY VENDOR.
7. PLAIN END WITH ADAPTER FLANGE OR FLANGED BY PLAIN END PIPING REQUIRED FOR INLET AND OUTLET PIPING.
8. VAULT TO BE INSTALLED ON MIN. 6" COMPACTED VDOT #57 STONE WITH FILTER FABRIC PLACED BETWEEN STONE BEDDING AND SUBGRADE.
9. THIS CONFIGURATION IS NOT ALLOWED IN THE CITY OF SALEM.
10. ALL METERS 2" AND SMALLER SHALL INCLUDE A 2" SETTER, WITH ADAPTERS FOR SMALLER METERS PROVIDED AS REQUIRED.



WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL

TYPICAL COMMERCIAL METER VAULT / FIRE SERVICE VAULT
(SUBMIT ACTUAL DESIGN TO PARTICIPATING UTILITY FOR APPROVAL)
(LINE PRESSURE UNDER 120 PSI)
09/2024 — **W-7**

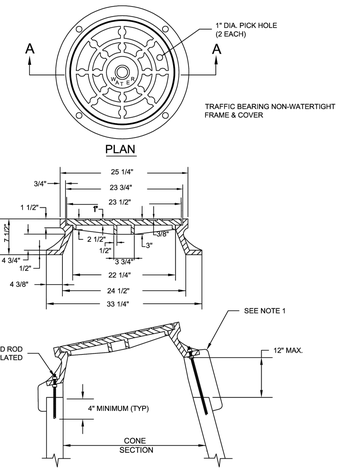
1. CAST IRON "SCREW TYPE" VALVE BOXES ARE REQUIRED FOR ALL PIPE LESS THAN 12" AND DEPTHS LESS THAN 5' TO TOP OF PIPE.
2. CAST IRON LID TO BE MARKED "WATER".



WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL

SCREW TYPE
VALVE BOX
09/2024 — **W-9A**

1. CONCRETE ADJUSTMENT RINGS SHALL MEET H20 LOADING. MAXIMUM 12" ADJUSTMENT.
2. USE MODERATELY STIFF NON SHRINK GROUT.
3. MIX IS TO BE FORCED INTO ALL GROOVES AND UNDER FLANGE OF FRAME AND LEFT AT OR ABOVE TOP OF FLANGE.
4. DO NOT BACKFILL AROUND FRAME AND COVER, FOR 48 HOURS AFTER CONCRETE IS PLACED. THE USE OF HIGH EARLY STRENGTH CEMENT WOULD REDUCE TIME TO (24 HRS.)
5. RESTRICT TRAFFIC LOAD FOR A MINIMUM OF 24 HOURS.
6. METAL GRADE RINGS BETWEEN FRAME AND LID ARE NOT ALLOWED.

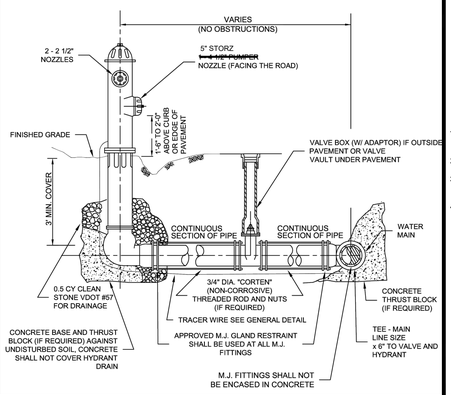


WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL

VAULT FRAME
AND COVER
09/2024 — **W-16**

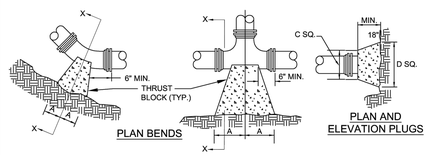
*NOTE: G.C. SHALL SUBMIT SHOP DRAWINGS FOR WATER VAULT(S) TO ENGINEER AND THE WWA FOR APPROVAL PRIOR TO ORDERING.

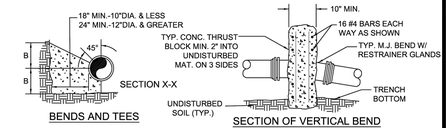
1. PUBLIC HYDRANTS SHALL BE PAINTED SILVER WITH AN OIL-BASED PAINT. PRIVATE HYDRANTS SHALL ALSO BE PAINTED SILVER WITH AN OIL-BASED PAINT UNLESS OTHERWISE SPECIFIED BY THE JURISDICTIONAL FIRE MARSHALL.
2. FIRE HYDRANT SHALL BE INSTALLED 2' MIN. AND 4' MAX. FROM BACK OF CURB OR 6' MIN. AND 12' MAX. FROM EDGE OF PAVEMENT WHEN CURB IS NOT PRESENT. FIRE HYDRANT TO BE INSTALLED WITHIN RIGHT-OF-WAY OR EASEMENT LINE. OTHER LOCATIONS ARE ALLOWABLE WITH APPROVAL OF PARTICIPATING UTILITY.
3. AREA AROUND HYDRANT AT A RADIUS OF 4' TO BE LEVEL AND UNOBSTRUCTED.
4. WATERPROOF BAGS OR OUT OF SERVICE RINGS SHALL BE PLACED OVER ALL NEWLY INSTALLED FIRE HYDRANTS.
5. HYDRANT ASSEMBLIES SHALL RESTRAINED WITH APPROVED M.J. GLAND RESTRAINTS. HIGH PRESSURE (OVER 150 PSI) ALSO REQUIRES CONCRETE THRUST BLOCKS & RODS AS SHOWN BELOW.
6. IF DURING CONSTRUCTION THE SEASONAL WATER LEVEL IS NOTED TO BE ABOVE THE DRAIN OUTLETS OF THE PROPOSED HYDRANT, THE PARTICIPATING UTILITY WILL BE NOTIFIED IMMEDIATELY SO THAT THE HYDRANT CAN BE RELOCATED TO A SUITABLE LOCATION, OMITTED, OR THE DRAIN HOLE PLUGGED.
7. SEE TRACER WIRE DETAIL FOR TRACER WIRE INSTALLATION DETAILS REGARDING FIRE HYDRANTS.
8. WHERE HYDRANT LATERAL(S) IS APPROVED BY THE PARTICIPATING UTILITY TO BE LONGER IN LENGTH, MAKING THE CONTINUOUS SECTION OF PIPE ON EACH SIDE OF THE GATE VALVE UNFEASIBLE, RESTRAINED PIPE JOINTS SHALL BE INSTALLED BETWEEN THE TEE AND GATE VALVE.
9. INSTALL GATE VALVE AT MAIN TEE HOWEVER KEEP VALVE OUT OF PAVEMENT IF POSSIBLE.



WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL

FIRE HYDRANT
ASSEMBLY
09/2024 — **W-17**





NOTES

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

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

PIPE SIZE	90° BEND		45° BEND		22 ½° BEND		11 ¼° 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"	9"	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"	26"	20"	16"	18"	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
09/2024 — **W-18**

PIPE SIZE	PIPE MAT'L	90° BEND	45° BEND	22 ½° BEND	11 ¼° BEND	VALVE/ PLUG (NOTE 5)	TEE BRANCH (NOTE 6)	REDUCER (NOTE 7)	45° VERT.	22 ½° VERT.	11 ¼° VERT.
6"	D.I.	33'	14'	7'	3'	50'	34'	26'	14'	7'	3'
8"	D.I.	43'	18'	9'	5'	65'	49'	28'	18'	9'	5'
10"	D.I.	51'	21'	11'	5'	78'	62'	26'	21'	11'	5'
12"	D.I.	60'	25'	12'	6'	91'	75'	27'	25'	12'	6'
16"	D.I.	76'	32'	15'	8'	117'	100'	50'	32'	15'	8'
18"	D.I.	83'	35'	17'	9'	129'	112'	27'	35'	17'	9'
20"	D.I.	90'	38'	18'	9'	141'	124'	26'	38'	18'	9'
24"	D.I.	105'	44'	21'	11'	164'	147'	49'	44'	21'	11'

PIPE SIZE	PIPE MAT'L	90° BEND	45° BEND	22 ½° BEND	11 ¼° BEND	VALVE/ PLUG (NOTE 5)	TEE BRANCH (NOTE 6)	REDUCER (NOTE 7)	45° VERT.	22 ½° VERT.	11 ¼° VERT.
6"	PVC	43'	18'	9'	5'	78'	53'	40'	18'	9'	5'
8"	PVC	56'	23'	12'	6'	102'	77'	43'	23'	12'	6'
10"	PVC	66'	28'	14'	7'	122'	96'	41'	28'	14'	7'
12"	PVC	78'	32'	16'	8'	143'	118'	42'	32'	16'	8'
16"	PVC	99'	41'	20'	10'	184'	158'	42'	41'	20'	10'
18"	PVC	108'	45'	22'	11'	202'	176'	42'	45'	22'	11'
20"	PVC	118'	49'	24'	12'	222'	195'	41'	49'	24'	12'
24"	PVC	136'	57'	27'	14'	258'	231'	76'	57'	27'	14'

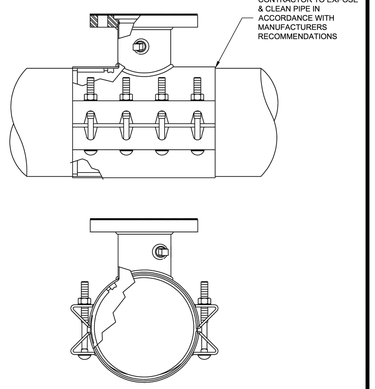
1. BASED ON TEST PRESSURE OF 200 PSI. IF HIGHER PRESSURE IS USED/REQUIRED, THE LENGTHS ABOVE SHALL BE ADJUSTED.
2. BASED ON GRANULAR BEDDING AND SAFETY FACTOR OF 1.5.
3. REFER TO EBAA RESTRAINT LENGTH CALCULATOR, www.ncp.ebaa.com/calculator.php
4. ALL JOINTS SHALL BE RESTRAINED ON BOTH SIDES OF THE FITTING AND DOCUMENTED BY THE INSPECTOR FOR THE LENGTH SHOWN UNLESS OTHER WISE INDICATED.
5. RESTRAINED LENGTH SHOWN REFERS TO ANY DESIGNED OR POTENTIAL LINE STOP, INCLUDING ALL GATE VALVES.
6. RESTRAINED LENGTH SHOWN REFERS TO THE BRANCH LINE ONLY. THE CONTINUOUS PIPE LENGTH OF THE MAIN SHALL BE A MINIMUM OF 10' ON EACH SIDE OF THE TEE.
7. RESTRAINED LENGTH SHOWN FOR REDUCERS IS BASED ON REDUCING PIPE DIAMETER TO ONE SIZE SMALLER THAT PIPE LISTED (ANY OTHER DIAMETER REDUCTION WILL REQUIRE ADDITIONAL CALCULATIONS BEFORE INSTALLATION). RESTRAINED LENGTH SHOWN IS UPSTREAM ON THE LARGE SIDE OF THE REDUCER.
8. 12" AND SMALLER DIAMETER: IF UNDER 150 PSI WORKING PRESSURE, RESTRAINED JOINT(S) ARE TO BE USED. IF EQUAL TO OR OVER 150 PSI WORKING PRESSURE, BOTH THRUST BLOCK(S) AND RESTRAINED JOINT(S) SHALL BE USED.

   LARGER THAN 12" DIAMETER: IF UNDER 100 PSI WORKING PRESSURE, RESTRAINED JOINT(S) ARE TO BE USED. IF EQUAL TO OR OVER 100 PSI WORKING PRESSURE, BOTH THRUST BLOCK(S) AND RESTRAINED JOINT(S) SHALL BE USED (UNLESS OTHERWISE APPROVED BY THE PARTICIPATING UTILITY).
9. FOR RESTRAINED JOINT PIPING REQUIREMENTS AT FITTING R.J. PVC AND R.J. DIP MAY BE USED INTERCHANGEABLY WITH APPROVAL FROM PARTICIPATING UTILITY. CONTRACTOR MUST PLAN ACCORDINGLY FOR THE DIFFERENCE IN PVC AND DIP BELL AND SPIGOT DIMENSIONS.

WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL

MINIMUM THRUST RESTRAINT
OF PIPE JOINTS
DESIGN LENGTHS
09/2024 — **W-19**

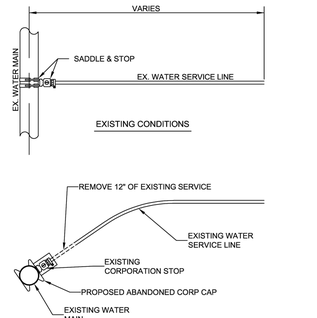
1. TAPPING SLEEVE SHALL BE RATED AT 100 PSI OVER WORKING PRESSURE AND MUST HAVE A TEST PLUG.
2. TAPPING VALVE SHALL BE RESILIENT SEATED GATE VALVE. VALVE SHALL BE RATED AT 250 PSI.
3. TAPPING SLEEVE AND VALVE SHALL BE FULL PORT TO ACCEPT FULL SIZE SHELL CUTTER.
4. SIZE-ON-SIZE TAPPING NOT ALLOWED UNLESS APPROVED BY PARTICIPATING UTILITY.
5. IF PRESSURE IS GREATER THAN 150 PSI, USE DUCTILE IRON TAPING SLEEVE WITH FULL FACE GASKET.



WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL

TAPPING SLEEVE
AND VALVE
09/2024 — **W-21**

1. EXCAVATE THE WATER SERVICE LINE ALL THE WAY TO THE MAIN WATER LINE AT CORPORATION STOP. TURN OFF THE CORPORATION STOP AND REMOVE A MINIMUM OF 12" OF THE WATER SERVICE LINE.
2. INSTALL AN ABANDONED CORP CAP (SEE APPROVED PRODUCT LIST) ON THE MAIN TO ENCAPSULATE THE CORPORATION STOP. BACK FILL.
3. UNDER EXTREME CIRCUMSTANCES AND WITH APPROVAL OF THE PARTICIPATING UTILITY THE SERVICE LINE MAY BE ABANDONED BY TURNING SERVICE OFF AT METER SETTER AND BURYING THE METER SETTER.
4. CUT / REMOVE TRACER WIRE THAT FOLLOWS SERVICE LINE.



WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL

WATER SERVICE ABANDONMENT DETAIL
09/2024 — **W-24**

Westwood
Westwood Professional Services, Inc.
1208 CORPORATE CIRCLE
ROANOKE, VA 24018
T: 540.772.9580
F: 540.426.3435
westwoodps.com

NO.	REVISIONS	DATE

ROANOKE GATEWAY PHASE 2
WVWA DETAILS 1
704 BULLITT AVENUE SE
CITY OF ROANOKE, VA

DATE: 6/30/2026
SCALE: N/A
DRAFTER: LDS
DESIGNER: LDS
CHECKED: CPB

PROJECT NO.
R0070930.01

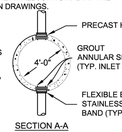
COMMONWEALTH OF VIRGINIA
CHRISTOPHER P. BURNS
Lic. No. 47338
6-30-2026
PROFESSIONAL ENGINEER

C10.1

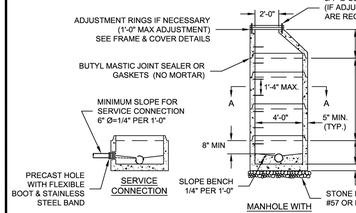
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Drawing: N:\0070930.01\06 CAD\DWG\Site Design\Design\R0070930.01 BASE 2026-06-30

1. WHEN USED AS SAMPLING MANHOLE FLOW SHALL PASS STRAIGHT THROUGH, i.e., 180°.
2. STEPS SHALL BE VERTICALLY ALIGNED. FIRST STEP SHALL BE WITHIN 24" OF COVER, BOTTOM STEP SHALL BE WITHIN 24" OF BOTTOM OF MANHOLE.
3. FRAME AND COVER SHALL BE PROPERLY ALIGNED WITH THE 2 FOOT OPENING OF THE MANHOLE STRUCTURE AND BOLTED IN PLACE.
4. FLAT TOP MANHOLES MAY ONLY BE SUBSTITUTED WITH THE PERMISSION OF THE PARTICIPATING UTILITY. FLAT TOP MANHOLES ARE PREFERRED IN AND AROUND STREAM OR STEEP SLOPES DUE TO ACCESSIBILITY ISSUES.
5. FLEXIBLE JOINT MANHOLE CONNECTION SHALL BE USED AT ALL PIPE TO MANHOLE CONNECTIONS.
6. GROUT ANNULAR SPACE BETWEEN PIPE AND PRECAST MANHOLE ON INSIDE OF MANHOLE. DO NOT GROUT BOOTS.
7. WHEN REPLACING AN EXISTING MANHOLE OR INSTALLING A NEW PRECAST MANHOLE ON AN EXISTING SEWER, A MINIMUM OF SIX FEET (6') OF EXISTING PIPE SHALL BE REMOVED AND REPLACED WITH NEW MATERIAL ON INLET AND OUTLET OF MANHOLE.
8. MANHOLES WHERE THE INVERT IS LOWER THAN THE NORMAL GROUNDWATER ELEVATION (I.E., ALONG CREEKS, RIVERS, LOW-LYING AREAS, ETC.) SHALL HAVE A FULL EXTERIOR COATING AND JOINT WRAP APPLIED IN ADDITION TO JOINT SEALANT. SEE NOTES 9 & 10.
9. EXTERIOR VERTICAL WALL SURFACES SHALL BE FACTORY COATED, WHERE INDICATED IN THE DESIGN DRAWINGS.
10. MANHOLES SHALL UTILIZE AN EXTERNAL FRAME AND JOINT SEAL AT ALL JOINTS AND AT THE FRAME/CHIMNEY INTERFACE, WHERE INDICATED IN THE DESIGN DRAWINGS.
11. FOR PIPE LARGER THAN 15 INCHES IN DIAMETER, THE MINIMUM INSIDE DIAMETER OF THE MANHOLE SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS BASED ON PIPE SIZE AND ANGLE BETWEEN INLET AND OUTLET PIPING.
12. A BEND WITHIN 36" OF MANHOLE MAY BE USED ON STEEP LINES TO ENTER OR EXIT A MANHOLE WITH PARTICIPATING UTILITY APPROVAL.
13. MANHOLE BASES THAT ARE REQUIRED TO BE GREATER THAN 4' DIAMETER MAY TRANSITION TO 4' AFTER 6' VERTICAL DEPTH.
14. INSIDE DROP MANHOLE REQUIRED WHEN DISTANCE FROM INCOMING PIPE INVERT TO MANHOLE BOTTOM EXCEEDS 24".



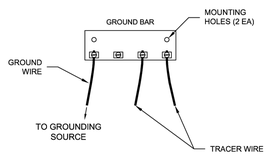
SECTION A-A



MANHOLE WITH PRECAST INVERT

WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL	
4' STANDARD MANHOLE FOR PIPE 15" OR SMALLER (FOR DEPTHS UP TO 15 FEET) 09/2024	S-1

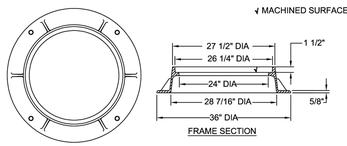
1. TRACER WIRE SHALL BE INSTALLED ON ALL NEW WATER AND SEWER PIPE INSTALLATION. THIS INCLUDES, BUT IS NOT LIMITED TO, DUCTILE IRON PIPE, PVC PIPE, AND POLYETHYLENE PIPE, INCLUDING SERVICE LINES. TRACER WIRE IS NOT REQUIRED FOR GRAVITY SEWER MAINS BETWEEN MANHOLES. TRACER WIRE WILL BE REQUIRED FOR SEWER LATERALS BETWEEN THE MAIN AND THE CLEANOUT AT THE PROPERTY LINE.
2. TRACER WIRE SHALL BE 14 GAUGE SOLID COPPER ELECTRICAL WIRE WITH A MINIMUM OF 45 MIL POLYETHYLENE COATING. THHN WIRE IS NOT ACCEPTABLE.
3. TRACER WIRE SHALL BE INSTALLED ALONG THE TOP OF THE PIPE AT 3:00 OR 9:00 O'CLOCK POSITION.
4. TRACER WIRE SHALL BE BROUGHT TO THE SURFACE AT LOCATIONS SUCH AS VALVES, WATER VAULTS, AIR VALVES, AND TRACER WIRE ACCESS BOXES IF NECESSARY.
5. TRACER WIRE SHALL BE INSTALLED WITH WATER AND SEWER PIPE INSTALLED BY ALL METHODS INCLUDING OPEN TRENCHING, DIRECTIONAL BORING, JACK AND BORE, OR PIPE BURSTING.
6. SPLICING OF TRACER WIRE SHALL BE MINIMIZED. THE CONTRACTOR WILL BE RESPONSIBLE FOR ENSURING CONTINUITY AT ALL SPLICE LOCATIONS. IT IS THE INTENT OF THIS SPECIFICATION THAT THE SPLICE BE WATERPROOF, CORROSION-PROOF, AND UNABLE TO COME APART.
7. TRACER WIRE USED FOR DIRECTIONAL BORING, PIPE BURSTING, AND JACK AND BORING SHALL BE ATTACHED DIRECTLY TO THE PIPE. THREE STRANDS OF TRACER WIRE SHALL BE USED IN THIS APPLICATION. TRACER WIRE USED FOR BORING SHALL BE STRONGER THAN TYPICAL TRACER WIRE. SEE APPROVED PRODUCT LIST FOR SPECIFICATIONS. TRACER ACCESS BOXES SHALL BE INSTALLED AT EACH END OF ALL BORING/PIPE BURSTING OPERATIONS.
8. RECORD DRAWING SHALL SHOW TRACER WIRE ACCESS POINT LOCATIONS AND SPLICE LOCATIONS.
9. TRACER WIRE SHALL BE ON STANCARDS POINT EVERY 500'. THIS MAY REQUIRE TRACER WIRE ACCESS BOXES IF OTHER ACCESS POINTS ARE NOT AVAILABLE. TRACER ACCESS BOXES SHALL BE USED IN LAWNS/SIDEWALKS/STREETS. IN FIELDS, USE AN ABOVE GROUND STATION THAT IS A HIGHLY VISIBLE POST.
10. LOCATION TRACER WIRE WILL BE TESTED BY THE PARTICIPATING UTILITY AS PART OF THE FINAL ACCEPTANCE. CONTRACTOR WILL BE RESPONSIBLE FOR ENSURING THAT THE TRACER WIRE CAN BE LOCATED.
11. A GROUND ROD WILL BE REQUIRE AT ALL TRACER WIRE ACCESS POINTS. THIS MAY INCLUDE VALVE BOXES OR TRACER WIRE ACCESS BOXES OR POSTS. THE GROUND ROD SHALL BE COPPER COATED STEEL WITH A MINIMUM DIAMETER OF5/8" AND SHALL BE BURIED A MINIMUM OF FOUR (4) FEET INTO THE GROUND. THE GROUND WIRE CONNECTED TO THE GROUND ROD SHALL BE #6 AWG COPPER WIRE AND SHALL BE OF ADEQUATE LENGTH TO EXTEND A MINIMUM OF FIVE (5) FEET BEYOND THE TOP OF THE ACCESS POINT.
12. TRACER WIRE SHALL BE GREEN FOR SEWER AND BLUE FOR WATER.



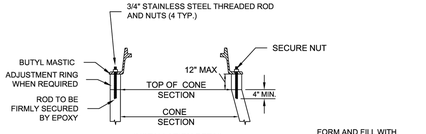
WHEN USING CONCRETE VAULT

WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL	
TRACER WIRE 09/2024	G-4

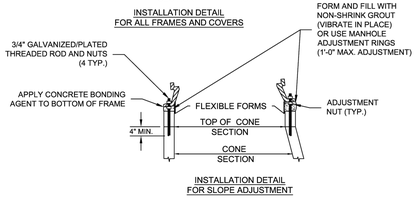
1. CONCRETE ADJUSTMENT RINGS SHALL MEET H-20 LOAD RATING AND UTILIZE BUTYL MASTIC JOINT SEALANT BETWEEN EACH RING AND FRAME AN COVER TO FORM A WATERTIGHT JOINT.
2. FRAME HEIGHT SHALL BE 4" FOR MANHOLES WITHIN OR ADJACENT TO STREAMS AND 7" IN ALL OTHER LOCATIONS.
3. 12" MAXIMUM ADJUSTMENT USING CONCRETE GRADE RING.
4. METAL GRADE RINGS BETWEEN FRAME AND LID ARE NOT ALLOWED.



FRAME SECTION



INSTALLATION DETAIL FOR ALL FRAMES AND COVERS

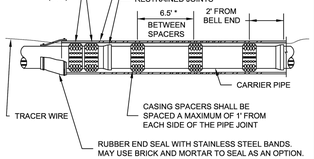


INSTALLATION DETAIL FOR SLOPE ADJUSTMENT

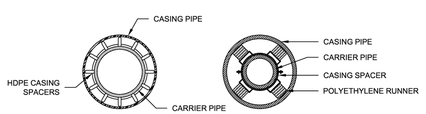
WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL	
MANHOLE FRAME 09/2024	S-4

1. SPACERS SHALL BE HDPE. STAINLESS STEEL SPACERS MAY BE USED IF IN COMPLIANCE WITH THE FOLLOWING CRITERIA:
   - INTERIOR SURFACES OF THE CIRCULAR STAINLESS STEEL BAND SHALL BE LINED WITH EPDM OR NEOPRENE MATERIAL.
   - ABRASION RESISTANT RUNNERS/SKIDS SHALL BE POLYMER MATERIAL WITH EACH END BEVELED TO FACILITATE EASE OF INSTALLATION INTO CASING PIPE.
2. SPACERS SHALL BE SPACED 6 1/2" ON CARRIER PIPE.
3. CARRIER PIPE SHALL BE DUCTILE OR HDPE IN ACCORDANCE WITH REGIONAL STANDARDS.
4. IF HDPE CARRIER PIPE IS USED AND PRECISE GRADES ARE NOT REQUIRED THROUGH CASING, SPACERS MAY BE OMITTED.
5. CASING PIPE TO BE STEEL IN ACCORDANCE WITH VDOT STANDARD DETAIL EP-1 OR HDPE AS SPECIFIED IN THE STANDARDS IF APPROVED BY THE PARTICIPATING UTILITY.
6. CONCRETE CASING PIPE WILL NOT BE ALLOWED.
7. DIAMETER OF CASING PIPE SHALL BE AS SHOWN IN THE TABLE BELOW UNLESS OTHERWISE SPECIFIED BY THE PARTICIPATING UTILITY. WHERE SPACERS ARE NOT REQUIRED, CASING PIPE SHALL BE MINIMUM DIAMETER TO ADEQUATELY INSTALL AND PASS CARRIER PIPE THROUGH AND TO MINIMIZE VOID SPACE BETWEEN CARRIER AND CASING PIPES.
8. ATTACH TRACER WIRE TO CARRIER PIPE.

CASING PIPE SIZE CHART	
CARRIER PIPE (NOMINAL DIAMETER)	CASING PIPE (DIAMETER)
6"	12"
8"	16"
10"	24"
12"	24"
14"	24"
16"	30"
18"	30"
24"	42"
30"	42"

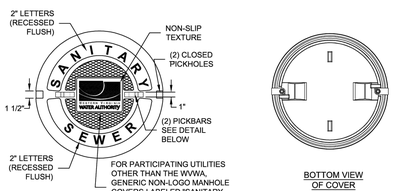


* ADDITIONAL SPACING ALLOWED AS RECOMMENDED BY PIPE MANUFACTURER.

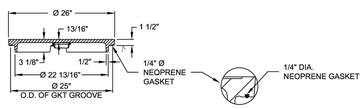


WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL	
PIPE SUPPORT IN CASING PIPE 09/2024	G-6

1. MANHOLE COVERS FOR THE CITY OF SALEM WILL NOT INCLUDE THE WVWA LOGO. COVERS SHALL HAVE "SANITARY SEWER" ONLY.

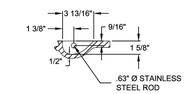


BOTTOM VIEW OF COVER



SECTION VIEW

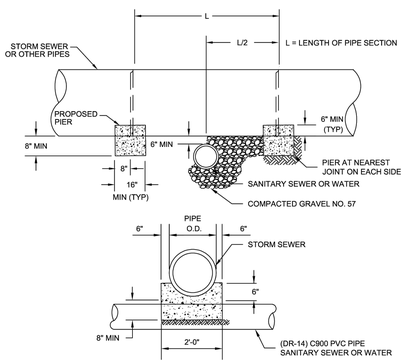
MACHINED SURFACE



PICKBAR DETAIL

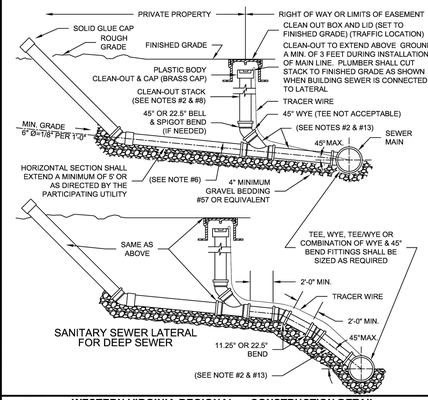
WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL	
STANDARD MANHOLE COVERS 09/2024	S-5

1. PIER REQUIRED WHEN STORM DRAIN OR OTHER PIPES CROSSES OVER THE OTHER UTILITY WITH A VERTICAL CLEARANCE OF LESS THAN 18".
2. PIER TO BE BUILT ON UNDISTURBED EARTH.
3. CONCRETE TO BE READY MIX, CLASS A3.



WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL	
CONCRETE PIER 09/2024	G-8

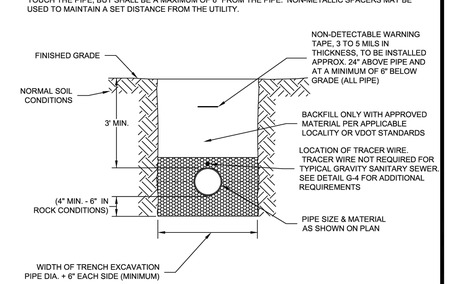
1. TRAFFIC BEARING BOX AND LID REQUIRED IN TRAFFIC AREAS.
2. SEWER LATERAL FITTINGS SHALL BE OF SAME SDR RATING AS THE SEWER MAIN.
3. ALL PIPES SHALL BE OF SAME SIZE.
4. NO BENDS ARE ALLOWED IN THE LATERAL FROM THE MAIN TO THE CLEANOUT STACK WYE. (EXCEPT FOR DEEP SEWER, AS SHOWN BELOW).
5. ALL MAIN LINE TAPS ON ACTIVE MAINS SHALL BE PERFORMED BY PARTICIPATING UTILITY.
6. PIPING ON PRIVATE SIDE OF CLEANOUT TO BE INSTALLED PER GOVERNING JURISDICTION REQUIREMENTS.
7. MINIMUM LATERAL SIZE: 6" MINIMUM FOR ALL SERVICES.
8. SEWER CLEANOUTS SHALL BE SAME SIZE AS SEWER LATERAL.
9. MINIMUM COVER FOR ALL SEWER LATERALS SHALL BE THREE (3') FEET.
10. PROPERTY OWNER RESPONSIBLE FOR INSTALLING CLEANOUT ON PROPERTY LINE (IN ACCORDANCE WITH THIS DETAIL) WHEN MAINTENANCE OCCURS.
11. LOWEST SERVED FINISHED FLOOR ELEVATION SHALL BE A MINIMUM OF THREE FEET (3') ABOVE THE TOP OF THE MAIN AT THE POINT WHERE THE SERVICE LATERAL CONNECTS TO THE MAIN.
12. WHEN CONNECTING TO EXISTING LATERAL USE FLEXIBLE COUPLING.
13. CONNECTIONS TO THE MAIN MAY BE MADE WITH A 6" BRANCH TEE OR WYE.
14. ATTEMPT TO AVOID DRIVEWAYS AND SIDEWALKS FOR CLEANOUT LOCATIONS.



SANITARY SEWER LATERAL FOR DEEP SEWER

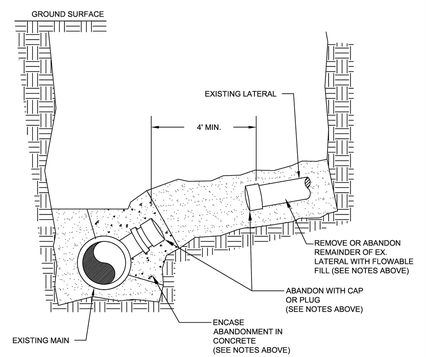
WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL	
SANITARY SEWER LATERAL 09/2024	S-6

1. BEDDING AND HAUNCHING MATERIAL; USE #57'S OR #68'S.
2. INITIAL BACKFILL MATERIAL; USE ANY CRUSHED STONE, TYPICALLY 21A'S (CRUSHER RUN)
3. FINAL BACKFILL MATERIAL IN PAVEMENT; USE ANY CRUSHED STONE, TYPICALLY 21A'S (CRUSHER RUN)
4. PVC WATER PIPE, AS A MINIMUM, SHALL BE BEDDED AND HAUNCHED UP TO THE SPRING LINE FOR INSTALLATION IN PAVED OR OUTSIDE OF PAVED AREAS.
5. PVC SEWER PIPE, AS A MINIMUM, SHALL BE BEDDED, HAUNCHED, AND INITIAL BACKFILL TO 6" ABOVE PIPE FOR INSTALLATION IN PAVED OR OUTSIDE OF PAVED AREAS.
6. DIP SEWER PIPE, SHALL BE BEDDED AND HAUNCHED UP TO THE SPRING LINE FOR INSTALLATION IN PAVED OR OUTSIDE OF PAVED AREAS.
7. DIP WATER PIPE DOES NOT REQUIRE ANY BEDDING OR SPECIAL BACKFILL EXCEPT IN PAVED AREAS WHERE IT SHALL BE BEDDED AND BACKFILLED WITH ANY TYPE OF CRUSHED STONE.
8. IN ALL CASES, PROVIDE AT LEAST 6" OF CLEARANCE FROM LEDGE ROCK, BOULDERS, LARGE STONES AND BACKFILL SHALL BE FREE OF LARGE STONES PERISHABLE MATERIAL, FROZEN CLODS, STICKY MASSES OF CLAY, AND OTHER UNSUITABLE MATTER
9. ALL EXCAVATIONS SHALL COMPLY WITH OSHA PART 1926 - SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION, SUBPART P - EXCAVATIONS, AND THE OSHA TECHNICAL MANUAL, SECTION V CONSTRUCTION OPERATIONS, CHAPTER 2, EXCAVATIONS: HAZARD RECOGNITION IN TRENCHING AND SHORING.
10. THE TRACER WIRE SHALL BE PLACED ALONG THE UPPER QUADRANT OF THE PIPE. THE WIRE SHALL NOT TOUCH THE PIPE, BUT SHALL BE A MAXIMUM OF 6" FROM THE PIPE. NON-METALLIC SPACERS MAY BE USED TO MAINTAIN A SET DISTANCE FROM THE UTILITY.



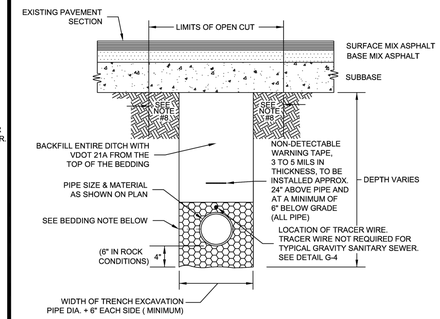
WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL	
BEDDING AND BACKFILL OUTSIDE OF PAVED AREAS 09/2024	G-11

NOTES:
1. FOR VCP, CONCRETE, OR CI LATERALS, ABANDONED BY CUTTING THE PIPE NEAR THE WYE OR TEE AND INSTALLING A EXTERNAL GRIPPER PLUG WITH CONCRETE ENCASEMENT INCLUDING THE WYE OR TEE AS DIRECTED BY THE AUTHORITY.
2. IF CONNECTION TO MAIN IS NOT WITH A WYE OR TEE (E.G., BREAK IN), AN APPROPRIATELY SIZED SADDLE WITH SHIELD AND SST BANDS MUST BE INSTALLED OVER OPENING. PLUG SADDLE WITH AN APPROVED PLUG IN COORDINATION WITH THE AUTHORITY.
3. ANY REMAINING EXISTING LATERAL IN THE PUBLIC ROW SHALL BE EITHER REMOVED AND CAPPED OR ABANDONED BY FILLING WITH A FLOWABLE FILL. FLOWABLE FILL SHALL BE CONCRETE, SLURRY OR APPROVED EQUAL.
4. IF LATERAL IS PVC AND APPEARS TO BE IN GOOD CONDITION, LATERAL MUST BE INSPECTED BY THE AUTHORITY USING CCTV TO CONFIRM LATERAL CONDITION, INCLUDING CONNECTION TO MAIN. IS SUITABLE FOR ABANDONMENT WITHOUT REQUIRING ADDITIONAL WORK. IF ACCEPTABLE, THE LATERAL CAN BE TERMINATED WITH A GLUED PVC CAP WITH MINIMUM SEPARATION AND ENCASEMENT AS SHOWN IN DETAIL.
5. IF LATERAL CONNECTION TO MAIN IS DEEP (GREATER THAN OR EQUAL TO 12'), LATERAL MUST BE INSPECTED BY THE AUTHORITY USING CCTV TO CONFIRM LATERAL CONDITION, INCLUDING CONNECTION TO MAIN, IS SUITABLE FOR ABANDONMENT WITHOUT REQUIRING ADDITIONAL WORK. IF ACCEPTABLE, THE LATERAL CAN BE TERMINATED WITH APPROPRIATELY SIZED EXTERNAL GRIPPER PLUG, ENCASED IN CONCRETE AT A POINT AGREEABLE TO THE AUTHORITY.



WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL	
SANITARY LATERAL ABANDONMENT AT EXISTING MAIN 09/2024	S-6A

1. BEDDING AND HAUNCHING MATERIAL; USE #57'S OR #68'S.
2. INITIAL BACKFILL MATERIAL; USE ANY CRUSHED STONE, TYPICALLY 21A'S (CRUSHER RUN)
3. FINAL BACKFILL MATERIAL IN PAVEMENT; USE ANY CRUSHED STONE, TYPICALLY 21A'S (CRUSHER RUN)
4. PVC WATER PIPE, AS A MINIMUM, SHALL BE BEDDED AND HAUNCHED UP TO THE SPRING LINE FOR INSTALLATION IN PAVED OR OUTSIDE OF PAVED AREAS.
5. PVC SEWER PIPE, AS A MINIMUM, SHALL BE BEDDED, HAUNCHED, AND INITIAL BACKFILL TO 6" ABOVE PIPE FOR INSTALLATION IN PAVED OR OUTSIDE OF PAVED AREAS.
6. DIP SEWER PIPE, SHALL BE BEDDED AND HAUNCHED UP TO THE SPRING LINE FOR INSTALLATION IN PAVED OR OUTSIDE OF PAVED AREAS.
7. DIP WATER PIPE DOES NOT REQUIRE ANY BEDDING OR SPECIAL BACKFILL EXCEPT IN PAVED AREAS WHERE IT SHALL BE BEDDED AND BACKFILLED WITH ANY TYPE OF CRUSHED STONE.
8. IN ALL CASES, PROVIDE AT LEAST 6" OF CLEARANCE FROM LEDGE ROCK, BOULDERS, LARGE STONES AND BACKFILL SHALL BE FREE OF LARGE STONES PERISHABLE MATERIAL, FROZEN CLODS, STICKY MASSES OF CLAY, AND OTHER UNSUITABLE MATTER
9. IN VDOT ROW, THE CONTRACTOR SHALL REPLACE THE PAVEMENT AS REQUIRED AND SPECIFIED BY VDOT. IN ROANOKE CITY, CONTRACTOR SHALL REPLACE PAVEMENT AS REQUIRED BY CITY OF ROANOKE RIGHT OF WAY EXCAVATION AND RESTORATION STANDARDS, LATEST EDITION.
10. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE AS SPECIFIED BY VDOT OR APPLICABLE LOCALITY.
11. BENCH CUT ON EACH SIDE OF PAVEMENT SHALL BE IN ACCORDANCE WITH VDOT OR APPLICABLE LOCALITY'S SPECIFICATIONS.
12. ALL EXCAVATIONS SHALL COMPLY WITH OSHA PART 1926 - SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION, SUBPART P - EXCAVATIONS, AND THE OSHA TECHNICAL MANUAL, SECTION V CONSTRUCTION OPERATIONS, CHAPTER 2, EXCAVATIONS: HAZARD RECOGNITION IN TRENCHING AND SHORING.
13. THE TRACER WIRE SHALL BE PLACED ALONG THE UPPER QUADRANT OF THE PIPE. THE WIRE SHALL NOT TOUCH THE PIPE, BUT SHALL BE A MAXIMUM OF 6" FROM THE PIPE. NON-METALLIC SPACERS MAY BE USED TO MAINTAIN A SET DISTANCE FROM THE UTILITY.



WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL	
BEDDING AND BACKFILL UNDER PAVEMENT AND IN RIGHT-OF-WAY 09/2024	G-12

Westwood
Westwood Professional Services, Inc.
1208 CORPORATE CIRCLE
ROANOKE, VA 24018
T: 540.772.9580
F: 540.426.3435
westwoodps.com

NO.	REVISIONS	DATE

ROANOKE GATEWAY PHASE 2

WVWA DETAILS 2

704 BULLITT AVENUE SE
CITY OF ROANOKE, VA

DATE: 6/30/2026
SCALE: N/A
DRAFTER: LDS
DESIGNER: LDS
CHECKED: CPB

PROJECT NO.
R0070930.01

COMMONWEALTH OF VIRGINIA
CHRISTOPHER P. BURNS
Lic. No. 47338
6-30-2026
PROFESSIONAL ENGINEER

C10.2

CP26-00XX

Last Saved By: CSilvaz
Last Saved: 6/30/2026 11:44 AM
Plot Date/Time: 6/30/2026 11:52 PM
Drawing: N:\0070930.01\06 CAD\DWG\Site Design\R0070930.01 BASE 2026-06-30

Notes for Shoulder Work with Minor Encroachment (Less than 40 mph) (Figure TTC-5.0) *(MUTCD TA-6)*

Guidance:

1. [Paragraph Deleted]

1a. If the closure operation is on a Limited Access highway, the minimum lane width is 11 feet. The minimum lane width is 10 feet for all other roads.

2. [Paragraph Deleted]

Option:

3-11. [Paragraphs Deleted]

11a. 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.

Standard:

12-14. [Paragraphs Deleted]

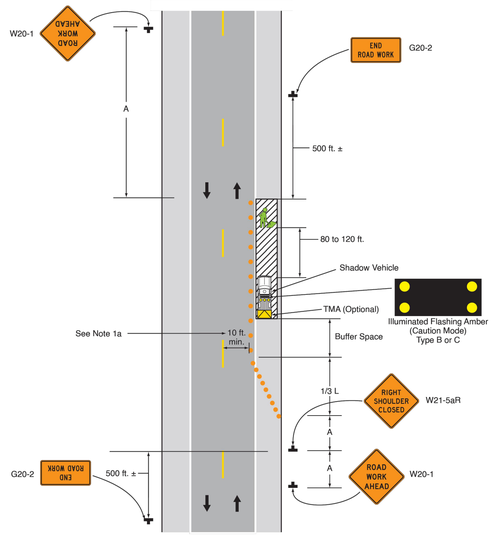
15. See Table 6P-V5 for taper lengths and Table 6P-V8 for channelizing device spacing.

16. On roadways with paved shoulders having a width of 8 feet or more, channelizing devices shall be used to close the shoulder in advance of the merging taper to direct vehicular traffic to remain within the traveled way.

17. The buffer space length shall be as shown in Table 6P-V4 for the speed limit.

18. When a side road intersects the highway within the temporary traffic control zone, additional traffic control devices shall be placed as needed.

Shoulder Work with Minor Encroachment (40 mph or Less)
Figure TTC-5.0 *(MUTCD TA-6)*



Note: See Table 6P-2 for the meanings of the symbols used in this figure.
See Table 6P-V3 for sign spacing requirements ("A").
See Tables 6P-V5 through 6P-V7 for taper length requirements.
See Table 6P-V8 for channelizing device spacing requirements.

Notes for Stationary Lane Closure on a Divided Highway (Figure TTC-16.0) *(MUTCD TA-33B)*

Standard:

1. [Paragraph Deleted]

1a. On divided highways having a median wider than 8 feet, right and left sign assemblies shall be required.

2. [Paragraph Deleted]

Guidance:

3. [Paragraph Deleted]

3a. When closing a lane, a PCMS should be used in advance of the first warning sign if all of the left side signs cannot be installed.

3b. Care should be exercised when establishing the limits of the work zone to ensure maximum possible sight distance in advance of the transition, based on the posted speed limit and at least equal to or greater than the values in Table 6P-V4. For Limited Access highways a minimum of 1,000 feet is desired.

3c. All vehicles, equipment, workers, and their activities should be restricted to one side of the pavement.

Option:

4. [Paragraph Deleted]

5. [Paragraph Deleted]

Support:

6. [Paragraph Deleted]

Standard:

6a. See Table 6P-V5 for taper lengths.

6b. See Table 6P-V8 for channelizing device spacing.

7. An arrow board shall be used when a freeway lane is closed. When more than one freeway lane is closed, a separate arrow board shall be used for each closed lane (see Figure TTC-18).

8. The buffer space length shall be as shown in Table 6P-V4 for the posted speed limit.

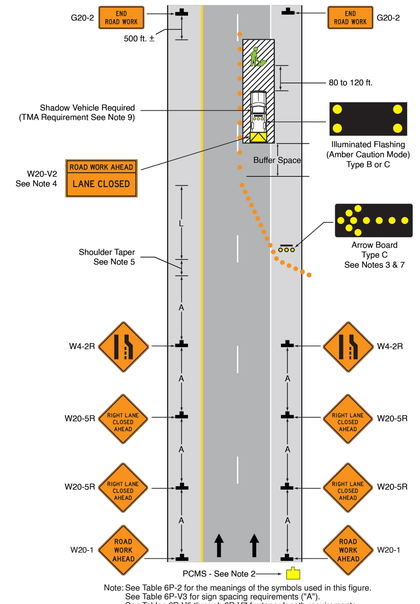
9. A shadow vehicle with either a Type B or C arrow board operating in the caution mode shall be parked 80 to 120 feet in advance of the first work crew. When the posted speed limit is 45 mph or greater, a TMA shall be used.

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

11. When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed as needed.

Stationary Lane Closure on a Divided Highway
Figure TTC-16.0 *(MUTCD TA-33B)*

Known Error (VDOT) *Known Error (FHWA)*



Note: See Table 6P-2 for the meanings of the symbols used in this figure.
See Table 6P-V3 for sign spacing requirements ("A").
See Tables 6P-V5 through 6P-V7 for taper length requirements.
See Table 6P-V8 for channelizing device spacing requirements.

GENERAL NOTES:

1: PROJECT CATEGORY (MINIMUM TMP REQUIREMENTS):
- A: THIS WILL BE A CATEGORY 1 PROJECT (MINIMAL LEVEL OF CONSTRUCTION)
  - i. THIS WILL BE PERMITTED WORK.
  - ii. THIS PROJECT WILL INVOLVE TRAFFIC CONTROL DEVICES TO ENSURE SAFE TRAVEL AROUND THE WORK ZONES.

2: SIGNS AND OTHER TRAFFIC CONTROL MEASURES ARE SHOWN GRAPHICALLY FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT SHOWN IN ACTUAL LOCATIONS. G.C. SHALL BE RESPONSIBLE FOR ENSURING THAT ALL SIGNAGE IS PLACED THE CORRECT DISTANCE BEFORE OR AFTER THE WORK ZONE AS SHOWN IN THE WORK AREA PROTECTION MANUAL (LATEST ADDITION) AND AS DICTATED BY THE SPECIFIC SITE. ALL SIGN LOCATIONS SHALL BE COORDINATED WITH THE CITY OF ROANOKE.

3: THIS MAINTENANCE OF TRAFFIC PLAN IS INTENDED TO PROVIDE A BASIC OVERVIEW OF THE TYPES OF TRAFFIC CONTROL MEASURES NECESSARY FOR THE WORK ZONES ON THIS PROJECT. THIS PLAN IS NOT INTENDED TO SHOW EVERY FEATURE OF THE TRAFFIC CONTROL PLAN. THE G.C. SHALL PROVIDE THE CITY OF ROANOKE WITH A COMPLETE MAINTENANCE OF TRAFFIC PLAN PRIOR TO COMMENCEMENT OF WORK WITHIN THE EXISTING RIGHT-OF-WAY AND THE G.C. SHALL ULTIMATELY BE RESPONSIBLE FOR ENSURING SAFE TRAVEL AROUND ALL WORK AREAS.

TRAFFIC CONTROL NARRATIVE:

G.C. SHALL COORDINATE ALL TRAFFIC CONTROL AND CONSTRUCTION WITHIN THE PUBLIC RIGHT OF WAY WITH THE CITY OF ROANOKE. A DETAILED MAINTENANCE OF TRAFFIC PLAN SHALL BE SUBMITTED BY THE CONTRACTOR.

WORK HOUR RESTRICTIONS FOR LANE CLOSURES AND FLAGGING OPERATIONS ARE TYPICALLY LIMITED TO 8AM-4PM MONDAY THROUGH FRIDAY FOR STREETS ADJACENT TO THE PROJECT. THE CITY TRAFFIC ENGINEER MUST APPROVE ANY DEVIATION FROM THE ABOVE TIME OF DAY OR DAY OF WEEK OPERATIONS.

NO DETOURS ARE PERMITTED

TRAFFIC CONTROL NOTES:

1: WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE MOST CURRENT EDITION OF THE VIRGINIA WORK AREA PROTECTION MANUAL.

2: G.C. SHALL CONTACT THE CITY OF ROANOKE REPRESENTATIVE IN WRITING WITH A WORK SCHEDULE 2 WEEKS BEFORE STARTING WORK. THE CITY REPRESENTATIVE WILL DETERMINE IF POLICE PATROL IS NECESSARY FOR TRAFFIC CONTROL.

3: THE CONTRACTOR SHALL COORDINATE THE SEQUENCE OF CONSTRUCTION WITH THE CITY OF ROANOKE.

4: SIGN SPACING MAY BE ADJUSTED TO FIT FIELD CONDITIONS WITH CITY OF ROANOKE APPROVAL.

5: ALL PAVEMENT MARKINGS CONFLICTING WITH TRAFFIC PATTERNS SHALL BE ERADICATED AND RE-STRIPED AS NECESSARY.

6: WHEN WORK IS NOT BEING PERFORMED, THE CLEAR ZONE OF THE ROADWAY SHALL BE FREE OF STORED MATERIALS AND PARKED EQUIPMENT.

7: ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH THE MUTCD (LATEST EDITION), THE VIRGINIA WORK AREA PROTECTION MANUAL (LATEST EDITION), AND AS DIRECTED BY THE CITY OF ROANOKE AND SHALL COMPLY WITH ALL REGULATIONS PROVIDED IN THE CITY OF ROANOKE RIGHT OF WAY EXCAVATION & RESTORATION STANDARDS.

8: THE POSTED SPEED LIMIT ON THE APPLICABLE SECTIONS OF JAMISON AVENUE AND BULLITT AVENUE IS 25 MPH. THE POSTED SPEED LIMIT ON ALL OTHER ADJACENT STREETS IS 25 MPH. ALL TAPER LENGTHS, BUFFER LENGTHS, AND CHANNELIZING SHALL BE BASED ON THESE SPEEDS.

9: A CITY OF ROANOKE RIGHT OF WAY EXCAVATION PERMIT WILL BE REQUIRED PRIOR TO ANY CONSTRUCTION WITHIN THE CITY OF ROANOKE RIGHT OF WAY.

10: SAFE ACCESS TO ALL EXISTING PUBLIC ROADWAYS SHALL BE MAINTAINED AT ALL TIMES.

11: CHANNELIZING DEVICES SUCH AS CONES OR BARRELS SHALL BE UTILIZED WHERE REQUIRED AND FOLLOW THE WORK AREA PROTECTION MANUAL.

12: G.C. SHALL MAINTAIN ALL EXISTING ROADWAY SIGNAGE DURING ALL PHASES OF THIS PROJECT.

LOCAL EMERGENCY RESPONSE AGENCY CONTACT LIST (911)

CITY OF ROANOKE EMERGENCY SERVICES – (540) 853-2327

CITY CHIEF OF POLICE OFFICE – (540) 853-2212

CITY FIRE MARSHAL – (540) 853-2795

CITY TRAFFIC ENGINEER (IAN COFFEY) – (540) 853-2686

VIRGINIA STATE POLICE (DIV. 6 – SALEM) – (540) 375-9500

Westwood
Westwood Professional Services, Inc.
1208 CORPORATE CIRCLE
ROANOKE, VA 24018
T: 540.772.9580
F: 540.426.3435
westwoodps.com

NO.	REVISIONS	DATE

ROANOKE GATEWAY PHASE 2
MAINTENANCE OF TRAFFIC

704 BULLITT AVENUE SE
CITY OF ROANOKE, VA

DATE: 6/30/2026
SCALE: N/A
DRAFTER: LDS
DESIGNER: LDS
CHECKED: CPB
PROJECT NO. R0070930.01

COMMONWEALTH OF VIRGINIA
CHRISTOPHER P. BURNS
Lic. No. 47338
6-30-2026
PROFESSIONAL ENGINEER

C11

CP26-00XX

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SITE LANDSCAPE SUMMARY:

REQUIRED LANDSCAPE CANOPY COVERAGE FOR SITE:
– (10%–RMF ZONING) –
PARCEL B: SITE AREA: ±52,000 SF
CANOPY REQUIRED: 5,200 SF
CANOPY PROVIDED: 6,008 SF
PARCEL C: SITE AREA: ±35,100 SF
CANOPY REQUIRED: 3,510 SF
CANOPY PROVIDED: 5,486 SF

STREET TREES: (PER SECTION 31.1–400)
MINIMUM NUMBER OF STREET TREES REQUIRED SHALL BE CALCULATED BY DIVIDING THE BLOCK LENGTH, MINUS 20' OF SIGHT DISTANCE REQUIRED AT EACH CORNER OF THE BLOCK, BY 40. ANY FRACTIONAL REMAINDER MAY BE ROUNDED DOWN TO A WHOLE NUMBER.

JAMISON AVENUE SE:

REQUIRED: 1 TREE FROM APPROVED STREET TREE LIST PER 40'
9 LARGE DECIDUOUS TREES REQUIRED OR
12 SMALL DECIDUOUS TREES REQUIRED (PER 30')
(380 LF OF APPLICABLE PUBLIC ROAD FRONTAGE ON JAMISON AVENUE SE)

PROVIDED: 9 LARGE DECIDUOUS TREES

7TH STREET SE:

REQUIRED: 1 TREE FROM APPROVED STREET TREE LIST PER 40'
6 LARGE DECIDUOUS TREES REQUIRED OR
8 SMALL DECIDUOUS TREES REQUIRED (PER 30')
(240 LF OF APPLICABLE PUBLIC ROAD FRONTAGE ON SEVENTH STREET SE)

PROVIDED: 6 LARGE DECIDUOUS TREES

8TH STREET SE:

REQUIRED: 1 TREE FROM APPROVED STREET TREE LIST PER 40'
3 LARGE DECIDUOUS TREES REQUIRED OR
4 SMALL DECIDUOUS TREES REQUIRED (PER 30')
(110 LF OF APPLICABLE PUBLIC ROAD FRONTAGE ON SEVENTH STREET SE)

PROVIDED: 3 LARGE DECIDUOUS TREES

BULLITT AVENUE SE:

REQUIRED: 1 TREE FROM APPROVED STREET TREE LIST PER 40'
6 LARGE DECIDUOUS TREES REQUIRED OR
8 SMALL DECIDUOUS TREES REQUIRED (PER 30')
(250 LF OF APPLICABLE PUBLIC ROAD FRONTAGE ON BULLITT AVENUE SE)

PROVIDED: 6 LARGE DECIDUOUS TREES

PARKING AREA LANDSCAPING: (PER SECTION 36.2–649)

OVERALL PARKING AREA TREE CANOPY
REQUIRED: 20 YR. TREE CANOPY = 20% OF THE TOTAL SQUARE FOOTAGE OF THE PARKING AREA.

(±25,000 S.F. – PARKING AREA)

TOTAL PARKING AREA CANOPY REQUIRED: ±5,000 S.F.
TOTAL PARKING AREA CANOPY PROVIDED: ±5,172 S.F.

SHRUB PLANTINGS ALONG PARKING AREAS ADJACENT TO PUBLIC ROW (PER SECTION 36.2–648 TABLE 647–1)

*NOTE: MINIMUM SHRUB HEIGHT 18" AT PLANTING

JAMISON AVENUE SE:
REQUIRED: 1 SHRUB PER 3' OF PARKING LOT FRONTAGE (60 LF)
(20 SHRUBS REQUIRED)

PROVIDED: 22 SHRUBS

7TH STREET SE:
REQUIRED: 1 SHRUB PER 3' OF PARKING LOT FRONTAGE (54 LF)
(18 SHRUBS REQUIRED)

PROVIDED: 21 SHRUBS

8TH STREET SE:
REQUIRED: 1 SHRUB PER 3' OF PARKING LOT FRONTAGE (18 LF)
(6 SHRUBS REQUIRED)

PROVIDED: 6 SHRUBS

BULLITT AVENUE SE:
REQUIRED: 1 SHRUB PER 3' OF PARKING LOT FRONTAGE (60 LF)
(20 SHRUBS REQUIRED)

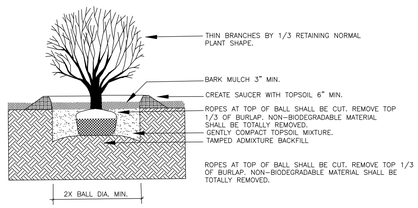
PROVIDED: 25 SHRUBS

*NOTE: ALL AREAS NOT TO RECEIVE HARDSCAPE SHALL HAVE A MINIMUM SOIL DEPTH OF 2', AND SHALL INCLUDE SURFACE LANDSCAPING, MULCH, GRASS, OR OTHER VEGETATIVE GROUND COVER.

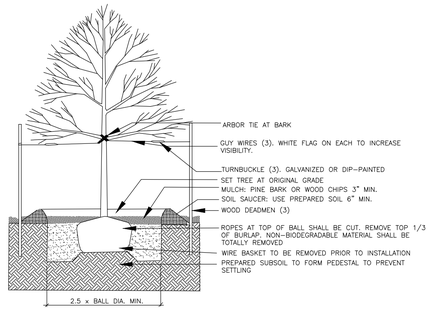
G.C. SHALL ENSURE NO PLANTINGS OR OTHER OBSTRUCTIONS WITHIN 4' OF ANY FIRE HYDRANT.

SHADING KEY
MULCH

20 0 20 40 60
1" = 20'



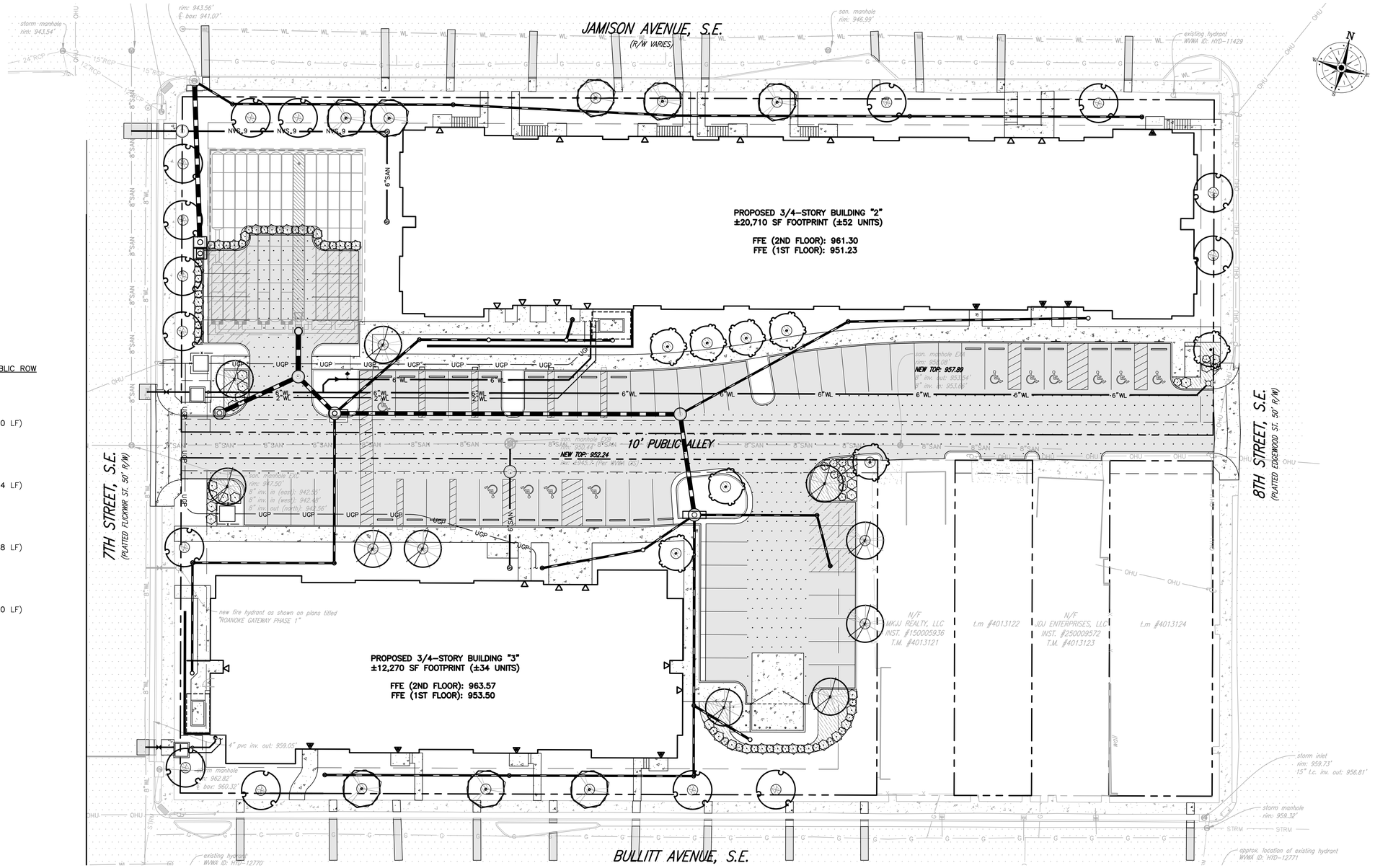
SHRUB PLANTING DETAIL
NO SCALE



DEC. TREE PLANTING DETAIL
NO SCALE

PLANT SCHEDULE

SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	ROOTS	CALIPER	HEIGHT	20-YR CANOPY	CANOPY	PARCEL B CANOPY	PARCEL C CANOPY	TOTAL CANOPY
TREES											
	AR	8	Acer rubrum / Red Maple	5 gal	2.00" CAL. MIN.		314 SF/TREE	314	5 TREES 1,570 SF	3 TREES 942 SF	2,512
	QP	15	Quercus phellos / Willow Oak	B & B	2.00" CAL. MIN.		254 SF/TREE	254	10 TREES 2,540 SF	5 TREES 1,270 SF	3,810
	TA	10	Tilia americana / American Linden	5 gal	2.00" CAL. MIN.		314 SF/TREE	314	2 TREES 628 SF	8 TREES 2,512 SF	3,140
	UP	8	Ulmus parvifolia / Lacebark Elm	5 gal	2.00" CAL. MIN.		254 SF/TREE	254	5 TREES 1,270 SF	3 TREES 762 SF	2,032
SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	CONT	HEIGHT	SPREAD					
SHRUBS									6,008 SF	5,486 SF	11,494 SF
	IS	46	Ilex glabra 'Shamrock' / Shamrock Inkberry Holly	3 gal	18" MIN.						
	NP	40	Nandina domestica 'Firepower' / Firepower Heavenly Bamboo	3 gal	18" MIN.						



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westwoodps.com

NO.	REVISIONS	DATE

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LANDSCAPE PLAN
704 BULLITT AVENUE SE
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