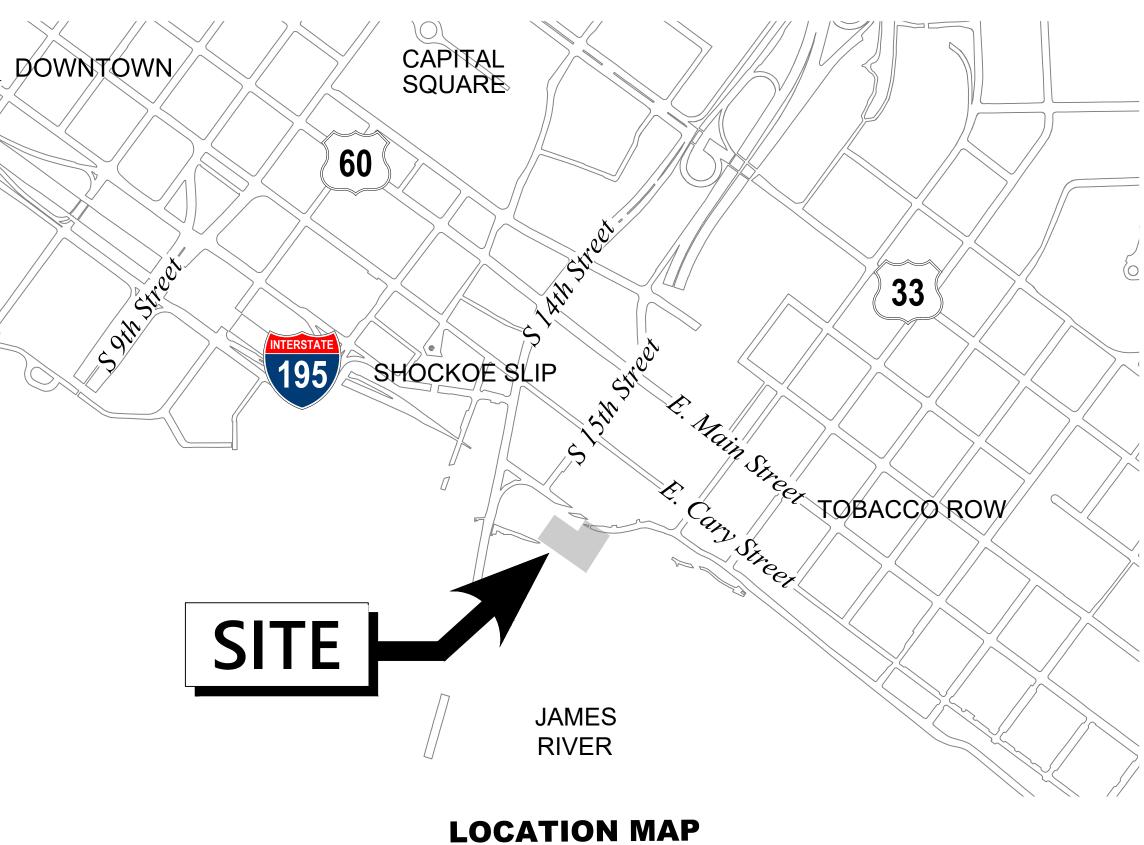
CITY OF RICHMOND, VIRGINIA

DEPARTMENT OF PUBLIC WORKS TRANSPORTATION ENGINEERING DIVISION



Canal Walk Improvements Phase 2

CITY PROJECT NO. **UPC 113492**



NTS

July 2022

OWNER: CITY OF RICHMOND DEPT. OF PUBLIC WORKS CITY HALL, RM 707, RICHMOND, VA

50% Plans

NOT FOR

CONSTRUCTION

APPROVI	ED FOR CONSTRUCTION
DATE	SURVEYS SUPERINTINDENT
DATE	PROJECT MANAGER
DATE	MAINTENANCE ENGINEER
DATE	CITY TRANSPORTATION ENGINEER
DATE	CAPITAL PROJECTS ADMINISTRATOR
DATE	CITY ENGINEER
DATE	DIRECTOR OF PUBLIC WORKS

REVISIONS

ILL	11010110	
NO.	DATE	COMMENTS



DRAWING NO: 0-28_

NOTES:

- 1. SEE SHEET 1A FOR INDEX OF SHEETS.
- 2. DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE CITY OF RICHMOND.
- 3. FOR THIS PRELIMINARY PLAN SUBMISSION THE PROJECT BASE MAPPING WAS OBTAINED FROM A PRELIMINARY/DRAFT SURVEY WHICH WAS NOT COMPLETE VERSIFIED PRIOR TO THE DEVELOPMENT OF THESE PLANS. AS WELL AS, UTILITIES LOCATED BY ACCUMARK

INDEX OF SHEETS

Sheet Title	. Sheet No.
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EXISTING CONDITIONS	1B
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^{*} NOT INCLUDED IN THIS SUBMISSION

JULY 2022

THESE PLANS ARE
UNFINISHED AND
UNAPPROVED AND
ARE NOT TO BE USED
FOR CONSTRUCTION

NOTES
1. Lot dimensions in parentheses are from deed.
2. Property owners correct as of, 20
3. Ordinance Number
4. Adopted
5. Accepted

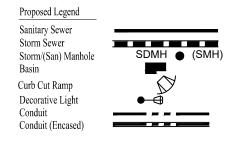
REVISIONS

Existing Legend

Storm Sewer
Sanitary Sewer
Gas Line
Electric Line
Overhead Utility
Telephone/Telegraph
Water Line
Property Line
Storm Basin

Storm or Sanitary Manhole

Water Meter
Existing Curb Cut Ramp
Gas Meter / Valve
Fence
Power/Light Pole
Guy Anchor
Tree



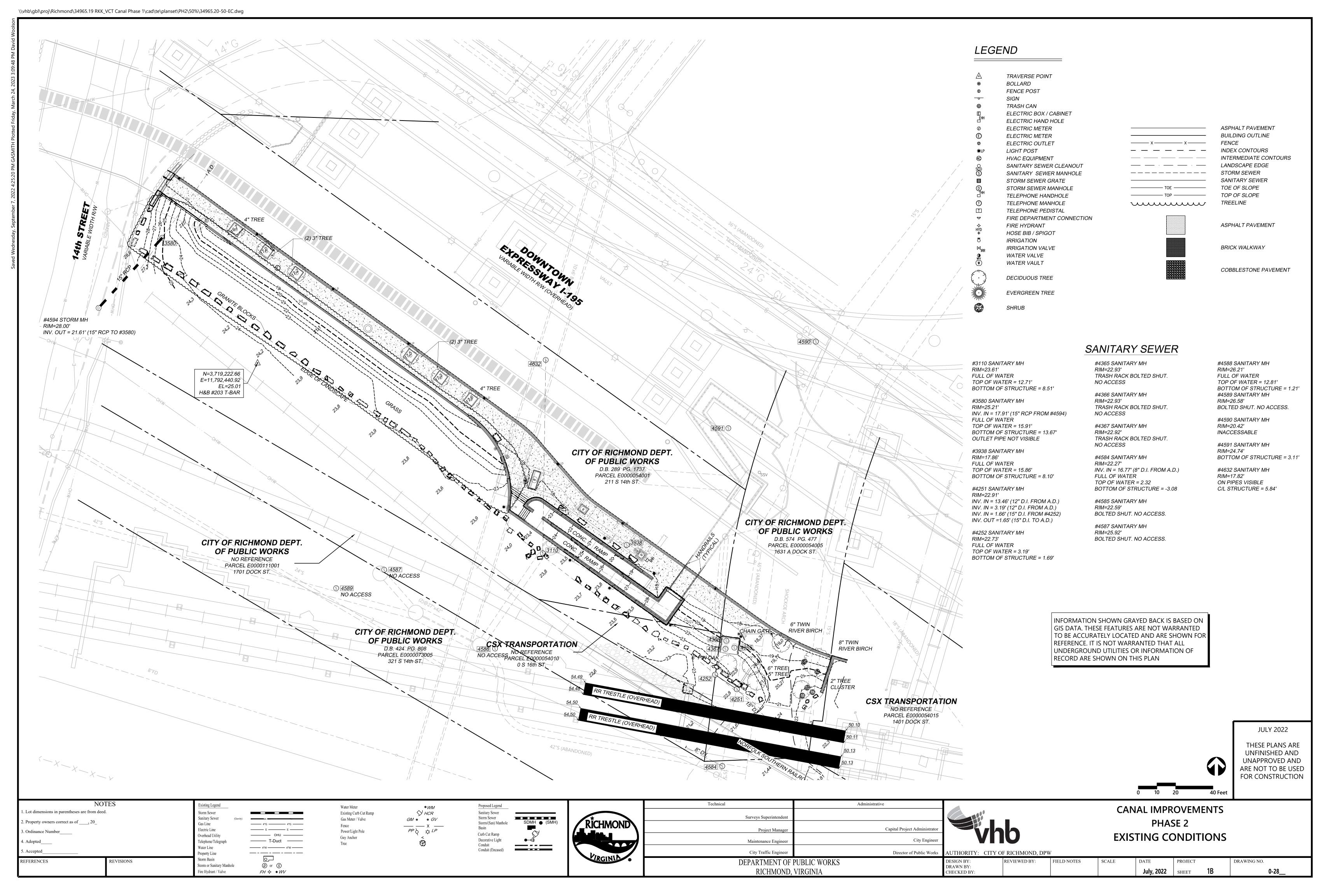


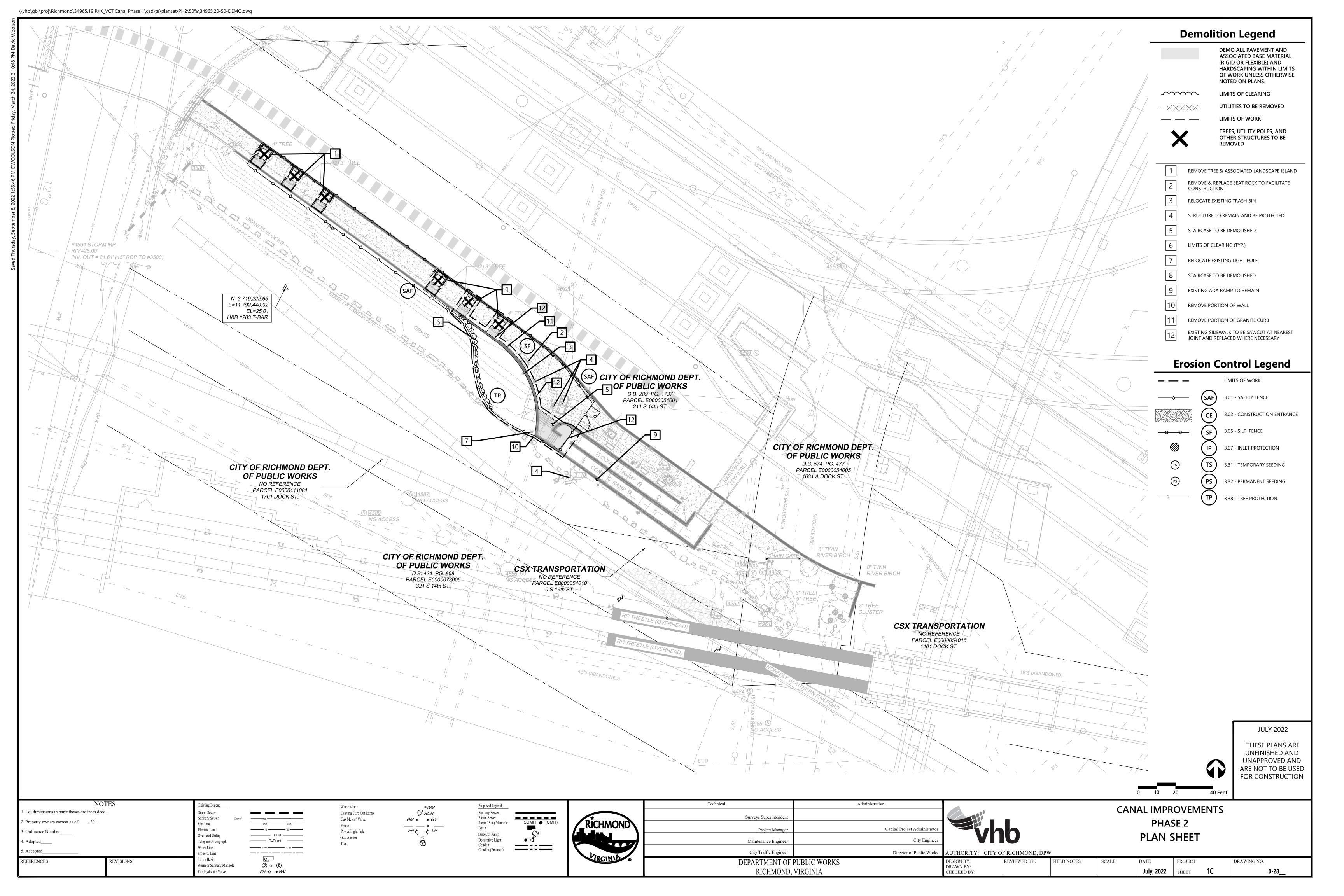
	Technical	Administrative	ſ
	Surveys Superintendent		
ND\	Project Manager	Capital Project Administrator	
	Maintenance Engineer	City Engineer	
	City Traffic Engineer	Director of Public Works	1
•	DEPARTMENT OF 1	PUBLIC WORKS	
	RICHMOND,	VIRGINIA	



CANAL IMPROVEMENTS
PHASE 2
SHEET INDEX

CITY O	F RICHMOND, DPW	<i>I</i>					
	REVIEWED BY:	FIELD NOTES	SCALE	DATE	PROJECT		DRAWING NO.
				July, 2022	SHEET	1A	





Notes

Construction Notes

ATTENTION: UTILITY "WORK IN THE STREETS" PERMITS FROM: DEPARTMENT OF PUBLIC WORKS-DIVISION OF RIGHT OF WAY MANAGEMENT - OFFICE OF THE PERMITS ENGINEER

- ALL CUTS IN THE STREETS AND SIDEWALKS SHALL BE PERFORMED UNDER A PERMIT AND MONITORED BY THE PERMIT INSPECTOR. CONTRACTOR SHALL VERIFY SIZE, LOCATION AND DEPTH OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY UTILITY DAMAGED DURING WORK.
- WORK SHALL NOT COMMENCE UNTIL THE PERMIT INSPECTOR HAS BEEN NOTIFIED, A PRE-CONSTRUCTION CONFERENCE HELD AND MISS UTILITY CLEARS.
- CUTS SHALL BE AS CLEAN AND STRAIGHT AS POSSIBLE, WITH NO OUTLINE DIMENSIONS LESS THAN 3 FEET WITHOUT SPECIAL APPROVAL OF THE DEPARTMENT'S INSPECTOR.
- THE DETAILS OF TRENCHING CUTS FOR UTILITY STRIPS MUST BE SHOWN IN A TYPICAL SECTION ON THE DRAWINGS OR PROVIDED IN A SUBMITTAL WITH CONSTRUCTION NOTES SPECIFYING WIDTHS, DEPTHS, METHODS, MATERIALS COMPACTION REQUIREMENTS AND PAVEMENT RESTORATION OF ABIDING BY THE DPW ATTACHMENT STANDARD
- ALL ASPHALT PAVEMENT RESTORATION THICKNESS SHALL BE 1 1/2 TIMES THE EXISTING SECTION OR A MINIMUM OF 8 INCHES WHICHEVER IS GREATER. SEE THE DPW TRENCH RESTORATION ILLUSTRATION FOR THE TYPICAL CONFORMANCE STANDARDS.
- THE FINAL RESTORATION ON OPEN TRENCH CUTS REQUIRES THE DISTURBED ASPHALT PAVEMENT ZONE TO BE A SQUARE POINTED OFF AND STRAIGHT LINE. THE AREA OF PAVEMENT RESTORATION IS TO BE FULLY ENVELOPED BY THE FINAL SURFACE COURSE REPAIRS. THE ADJOINING SURFACE/TOP COURSE LAYER IS TO BE OVER-MILLED A MINIMUM DEPTH OF 1.25 INCHES OR MORE, A MINIMUM DISTANCE OF ONE FOOT BEYOND EACH SIDE OF THE TRENCH WALL. THIS STEP OUT IS TO OCCUR ALONG THE ENTIRE TRENCH LINE RUN AND/OR SQUARED POINTED AREA. CUTS INVOLVING CONTINUOUS NETWORK RUNS, WHICH EXCEED 350 FEET IN LENGTH OR TYPICALLY OVER ONE FULL CITY BLOCK, WILL BE CONSIDERED MULTIPLE BLOCK CUTS. ON MULTIPLE BLOCK CUT ZONES, THE OVER MILLING OF THE TRENCH LINE AND ADJOINING SURFACE COURSE LAYER MUST BE DONE WITH TYPICAL HIGH PRODUCTION ROADWAY COLD PLANNING EQUIPMENT. IN MULTIPLE BLOCK RESTORATION CASES, WHERE THE HIGH PRODUCTION COLD PLANNER IS REQUIRED, FINAL PAVING SHALL BE DONE BY A HIGH PRODUCTION HIGHWAY PAVER.
- CONTRACTOR SHALL PROVIDE AND COORDINATE THE NECESSARY GEOTECHNICAL SERVICES FROM A QUALIFIED FIRM TO INSURE COMPACTION APPROVAL. APPROVAL OF IN-PLACE MATERIAL MUST BE FOLLOWED UP WITH A WRITTEN SUMMARY REPORT. COMPACTION REQUIREMENTS WILL BE REVIEWED FOR APPROVAL BY THE PERMITS ENGINEER OR HIS RESPRESENTATIVE.
- 8. ALL DISTURBED SIDEWALK AND CURB SHALL BE REPAIRED AND REPLACED IN ACCORDANCE WITH CITY STANDARDS.
- 9. ALL UTILITY CUTS ARE TO BE EXAMINED AND APPROVED BY THE APPROPRIATE UTILITY INSPECTOR/REPRESENTATIVE.
- 10. CONTRACTOR SHALL COORDINATE WITH THE CITY OF RICHMOND DPW 48 HOURS IN ADVANCE OF CLOSING TRAVELWAYS TO GENERAL VEHICULAR TRAFFIC. ALL TRAFFIC CLOSURES SHALL BE IN COMPLIANCE WITH THE 2011 VIRGINIA WORK AREA PROTECTION MANUAL (REVISION 2, DATED SEPTEMBER 1,
- ENSURE STRUCTURE TOPS IN STREET AND SIDEWALK ARE ADJUSTED TO FINAL FINISHED GRADE.

Electric

- . CONDUIT IS TO BE 2" (INCH) SCHEDULE 40 PVC.
- 2. ALL STREET AND ALLEY CROSSINGS ARE TO BE CONCRETE ENCASED, WITH A
- MINIMUM OF 4" OF ENCASEMENT ON TOP, AND 2" ON THE SIDES, AND BOTTOM. 3. SINGLE RUNS OF 2" SCHEDULE 40 PVC FROM POLE BASE TO POLE BASE UNLESS OTHERWISE NOTED.
- 4. NO RUNS OVER 300' (FT) WITHOUT A SECONDARY ENCLOSURE.
- 5. CONDUIT MINIMUM DEPTH OF 36".
- 6. NO ONE SHALL ENTER DPU MANHOLE / SECONDARY ENCLOSURE WITHOUT A DPU INSPECTOR PRESENT.

Landscaping

. LANDSCAPING TO BE SHOWN ON FUTURE SUBMISSIONS.

Pavement Markings

. NO PAVEMENT MARKINGS ARE ANTICIPATED FOR THIS PROJECT.

Grading

- . THE COST OF REMOVAL OF ALL EXISTING CONCRETE ITEMS LOCATED IN THE AREA TO BE GRADED, INCLUDING, BUT NOT LIMITED TO THE FOLLOWING, SHALL BE INCLUDED IN THE PRICE BID FOR REGULAR EXCAVATION: SIDEWALK, WALLS, MEDIANS, LIGHT POLE BASES AND CURB RAMPS.
- . THE BORROW MATERIAL FOR THIS PROJECT SHALL BE A MINIMUM CBR 10 OR AS APPROVED BY THE MATERIALS ENGINEER.

Construction Notes

- PRIOR TO CONSTRUCTION OR EXCAVATION, THE CONTRACTOR SHALL ASSUME THE RESPONSIBILITY OF LOCATING ANY UNDERGROUND UTILITIES (PUBLIC OR PRIVATE) THAT MAY EXIST OR CROSS THROUGH THE AREA OF CONSTRUCTION. BEFORE YOU DIG, CALL "MISS UTILITY" OF VIRGINIA AT 1-800-552-7001. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING, AT THEIR EXPENSE, ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION.
- 2. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE CITY DEPARTMENT PRIOR TO MAKING ANY UTILITY ADJUSTMENTS OR PERFORMING OTHER WORK WITHIN THE RIGHT-OF-WAY.
- LOCATIONS OF EXISTING UTILITIES ACROSS OR ALONG THE LINE OF THE PROPOSED WORK ARE SHOWN ONLY IN AN APPROXIMATE LOCATION ON THE PLANS. CONTRACTOR SHALL LOCATE ALL UNDERGROUND LINES AND STRUCTURES AS NECESSARY. CONTRACTOR SHALL CALL "MISS UTILITY" @ 1-800-522-7001 PRIOR TO CONSTRUCTION AND IS RESPONSIBLE FOR ANY DAMAGE TO UNDERGROUND LINES OR STRUCTURES. CITY DPU TO BE NOTIFIED OF ANY INCONSISTENCIES BY CONTRACTOR.
- GATE VALVES SHALL BE U.S. PIPE, METROSEAL 250, OPEN RIGHT (CLOCKWISE), WITH MECHANICAL JOINT END FITTINGS, NON-RISING SYSTEM.
- FIRE HYDRANTS SHALL BE U.S. PIPE, METROPOLITAN 250, OPEN RIGHT (CLOCKWISE) WITH 4 1/2" VALVE OPENING.
- 6. ALL FIRE HYDRANTS AND VALVES BOXES DESIGNATED TO BE REMOVED SHALL BE SALVAGED AND DELIVERED TO THE DEPARTMENT OF UTILITIES AT 400 JEFFERSON DAVIS HIGHWAY.
- CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS.
- MINIMUM DEPTH OF COVER FOR GAS AND WATER MAINS IS 42 INCHES.
- THE CONTRACTOR SHALL REQUEST VALVE OPERATION BY THE OWNER'S FORCE NO LESS THAN 48 HOURS IN ADVANCE. THE CONTRACTOR SHALL NOT OPERATE ANY EXISTING VALVES UNLESS DIRECTED BY OWNER.
- 10. THE CITY DOES NOT GUARANTEE A 100% PERCENT SHUTDOWN OF ITS EXISTING WATER MAINS. THE CONTRACTOR SHALL PROVIDE ALL PLUGS AND DEWATERING EQUIPMENT NECESSARY TO PERFORM THE WORK.
- 11. MECHANICAL JOINT LONG SOLID SLEEVES SHALL BE USED FOR ALL CONNECTIONS TO EXISTING WATER MAINS.
- 12. COUPLINGS FOR CONNECTIONS TO EXISTING SANITARY SEWER LATERALS SHALL BE FERNCO OR
- 13. BASED ON CITY RECORDS, EXISTING SANITARY SEWER LATERALS ARE ASSUMED TO BE 6 INCH WITHIN THE RIGHT-OF-WAY AND 4 INCH ON PRIVATE PROPERTY.
- 14. THE CONTRACTOR SHALL PROVIDE ACCESS THROUGH THE SITE AS DIRECTED BY THE TRANSPORTATION ENGINEERING DIVISION AT ALL TIMES DURING CONSTRUCTION AND SHALL ENSURE THE SAFETY OF PEDESTRIANS FROM TRAFFIC AND CONSTRUCTION HAZARDS

Drainage

NO DRAINAGE WORK IS ANTICIPATED AT THIS TIME; HOWEVER, IN THE EVENT OF A UTILITY DISRUPTION THE FOLLOWING SHALL APPLY:

- 1. THE HORIZONTAL LOCATION OF ALL DRAINAGE STRUCTURES SHOWN ON THESE PLANS IS APPROXIMATE ONLY, WITH THE EXCEPTION OF STRUCTURES SHOWING SPECIFIC STATIONS, SPECIAL DESIGN BRIDGES AND STORM SEWER SYSTEMS
- 2. ALL EXISTING DRAINAGE FACILITIES LABELED "TO BE ABANDONED" SHALL BE LEFT IN PLACE BACKFILLED AND PLUGGED IN ACCORDANCE WITH THE VDOT ROAD AND BRIDGE STANDARD PP-1 BASIS OF PAYMENT WILL BE C.Y. OF FLOWABLE BACKFILL
- EXISTING DRAINAGE FACILITIES BEING UTILIZED AS A PART OF THE DRAINAGE SYSTEM, AND DESIGNATED ON THE PLANS "TO BE CLEANED OUT" SHALL BE CLEANED AS DIRECTED BY THE ENGINEER. THE COST INCIDENTAL TO THIS SHALL BE INCLUDED IN THE CONTRACT PRICE FOR OTHER ITEMS.
- 4. PROPOSED DROP INLETS WITH A HEIGHT (H) LESS THAN THE STANDARD MINIMUM SHOWN IN THE VDOT ROAD AND BRIDGE STANDARDS SHALL BE CONSIDERED AND PAID FOR AS STANDARD DROP INLETS FOR THE TYPE SPECIFIED. PIPES WITH LESS THAN STANDARD MINIMUM FINISHED HEIGHT OF COVER SHALL BE NOTED AS SUCH IN THE DRAINAGE DESCRIPTION FOR THE PIPE. SPECIFIC PIPE BEDDING AND COVER REQUIREMENTS ARE PROVIDED IN THE APPLICABLE PB-1 AND PC-1 STANDARD DRAWINGS OF THE VDOT ROAD AND BRIDGE STANDARDS.
- 5. WHERE THE PLANS SPECIFY THE INSTALLATION OF STANDARD CURB DROP INLETS ADJACENT TO THE CITY OF RICHMOND STANDARD CURB AND GUTTER, THE STANDARD DROP INLETS (AS SHOWN IN THE VDOT ROAD AND BRIDGE STANDARDS) SHALL BE MODIFIED. THESE DROP INLETS SHALL BE
- CONSIDERED AND PAID FOR AS STANDARD DROP INLETS FOR THE TYPE SPECIFIED 6. WHEN CG-6 OR CG-7 IS SPECIFIED ON A RADIUS (SUCH AS AT A STREET INTER-SECTION), THE ENGINEER MAY APPROVE A DECREASE IN THE CROSS SLOPE OF THE GUTTER TO FACILITATE PROPER DRAINAGE.

Fire Hydrant and Public Water Use Notes

- 1. DPU MAINTENANCE PERSONNEL LARRY GRANT, (804) 646-8316, WILL PERFORM FIRE HYDRANT RELOCATIONS AND MUST BE INCLUDED IN THE PRE-CONSTRUCTION MEETING FOR SCHEDULING AND COORDINATION OF THE FIRE HYDRANT RELOCATIONS.
- WATER FOR USE BY THE CONTRACTOR FROM A PUBLIC WATER MAIN OR HYDRANT WITHIN THE CITY OF RICHMOND SHALL REQUIRE A CITY ISSUED PORTABLE WATER METER WITH BACKFLOW DEVICE. THE CONTRACTOR SHALL CONTACT THE UTILITY CROSS CONNECTION SPECIALIST LOCATED AT 400 JEFFERSON DAVIS HIGHWAY (RM. 143), TUESDAY THROUGH FRIDAY (9 A.M. TO 11 A.M.) TO MAKE AN APPLICATION. THE CONTRACTOR MAY CALL (804) 646-8502 FOR ANY QUESTIONS RELATED TO THIS PROGRAM.

Typical Clearances / Separation Notes

- 1. IF TYPICALLY REQUIRED CLEARANCES AND/OR SEPARATION WITH EXISTING DPU INFRASTRUCTURE CANNOT BE ACCOMPLISHED PLEASE CONTRACT THE APPROPRIATE DPU SEECTION TO REACH AN ACCEPTABLE RESOLUTION:
- 1.1. WATER: 804.646.8316 / 804.646.8346 / 804.646.8327
- 1.2. SEWER: 804.646.8247 / 804.646.8463
- 1.3. GAS: 804.646.8342
- 1.4. STREETLIGHTS: 804.646.8568 / 804.646.8565

Asphalt Sawcutting Notes

ATTENTION: CONTRACTOR TO SAWCUT ALONG PROPOSED CURB AND GUTTER LINE TO AVOID DAMAGE TO NEW ASPHALT ROADWAY. IF DAMAGE OCCURS, CONTRACTOR IS RESPONSIBLE TO RESTORE ASPHALT PAVEMENT PER CITY OF RICHMOND STANDARDS OR AS DIRECTED BY THE CITY PAVEMENT MANAGER. THIS MAY OR MAY NOT REQUIRE A CHANGE ORDER, SOLELY AT THE DISCRETION OF THE CITY ENGINEER. PRIOR TO PAVING WORK, SITE VISIT REQUIRED BY CITY.

Pavement

- 1. IF ANY SETTLEMENT OCCURS IN CONCRETE PAVEMENT ADJACENT TO BRIDGES PRIOR TO ACCEPTANCE OF THE PROJECT BY THE DEPARTMENT, THE CONTRACTOR SHALL RESTORE THE PAVEMENT TO THE ORIGINAL GRADE EITHER BY THE MUD JACK METHOD OR BY REPLACING THE PAVEMENT. IN THE EVENT THE PAVEMENT CRACKS OR BECOMES DAMAGED, IT SHALL BE REPLACED, IF DIRECTED BY THE ENGINEER.
- THE PAVEMENT MATERIALS ON THIS PROJECT WILL BE PAID FOR ON A TONNAGE BASIS. THE WEIGHT WILL VARY IN ACCORDANCE WITH THE SPECIFIC GRAVITY OF THE AGGREGATES AND THE ASPHALTIC CONTENT OF THE MIX ACTUALLY USED TO SECURE THE DESIGN DEPTH. THE WEIGHT OF THE ASPHALT CONCRETE IS BASED ON 95% OF THE THEORETICAL MAXIMUM DENSITY.

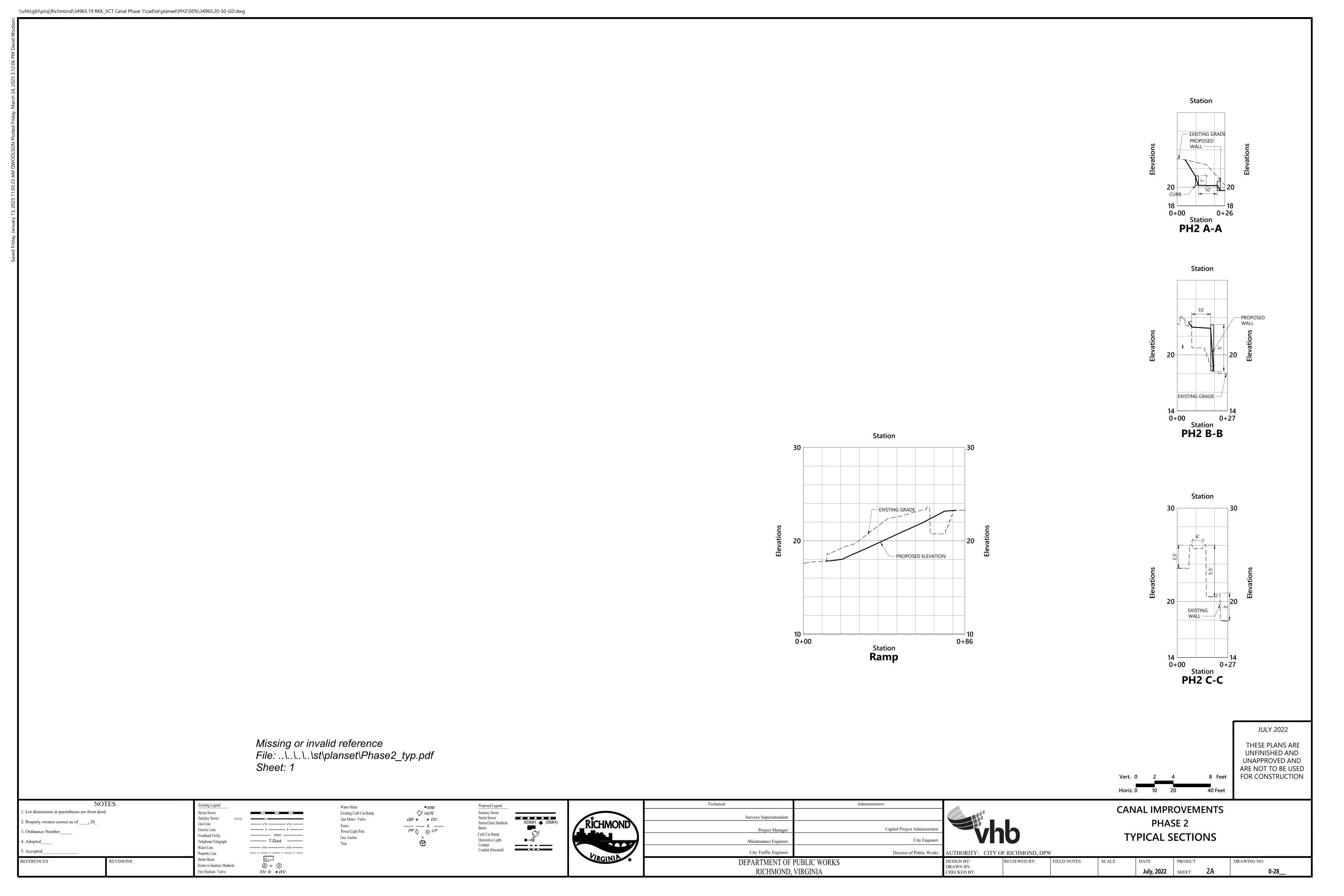
Incidentals

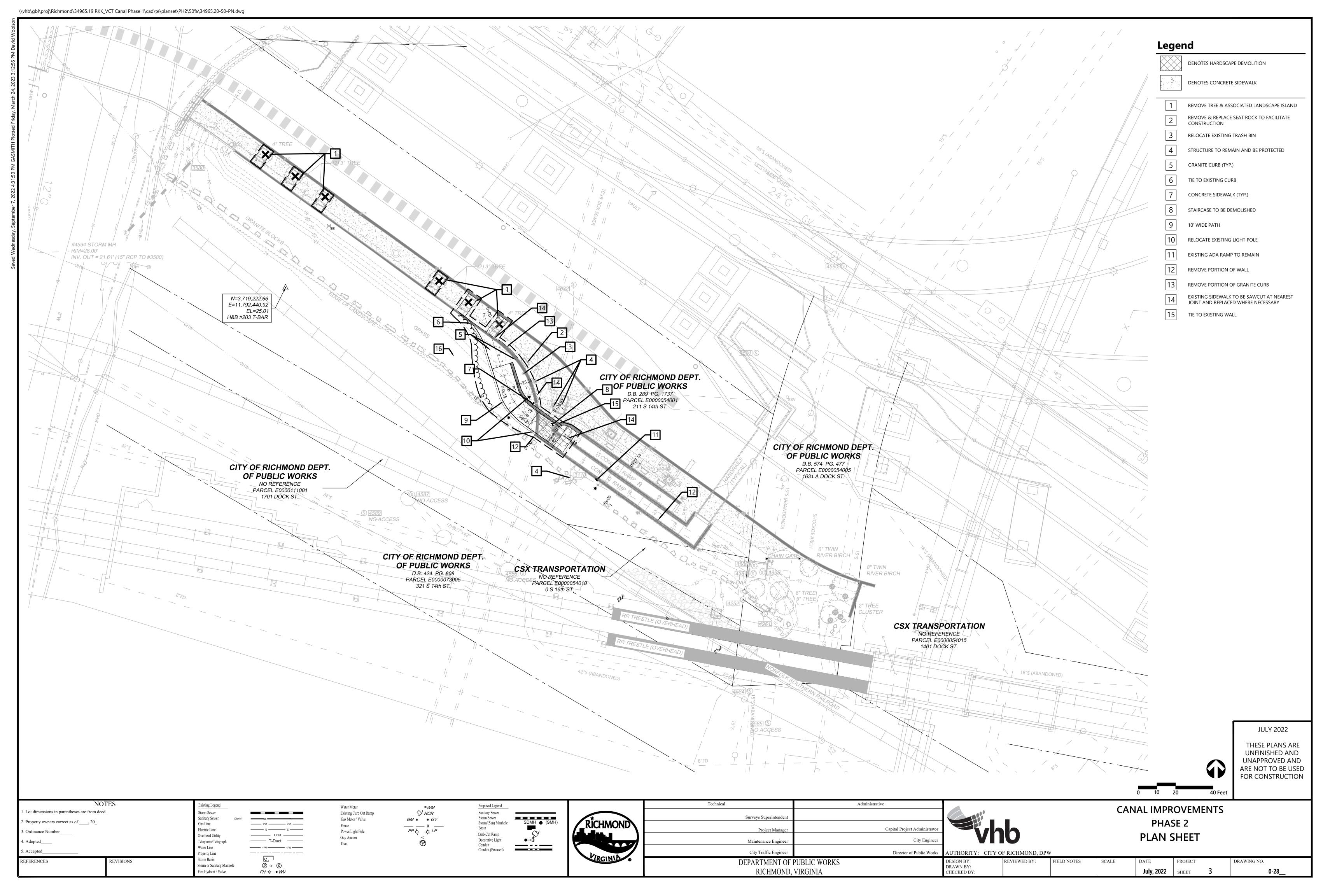
- CERTAIN TREES SHALL BE PRESERVED AS NOTED ON PLANS OR AS DIRECTED BY THE ENGINEER.
- WHERE STANDARD SLOPE ROUNDOFFS WOULD DAMAGE TREES, BUSHES OR OTHER DE-SIRABLE VEGETATION, THEY SHALL BE OMITTED WHEN SO ORDERED BY THE ENGINEER.
- CLEARING AND GRUBBING SHALL BE CONFINED TO THOSE AREAS NEEDED FOR CONSTRUCTION. NO TREES OR SHRUBS IN UNGRADED AREAS SHALL BE CUT WITHOUT THE PERMISSION OF THE ENGINEER.
- 4. WHEN NO CENTERLINE ALIGNMENT IS SHOWN FOR A PROPOSED ENTRANCE, THE ENTRANCE SHALL BE CONSTRUCTED IN THE SAME LOCATION AS THE EXISTING ENTRANCE.
- 5. ALL PAVEMENT MARKINGS AND TRAFFIC FLOW ARROWS SHOWN ON THE ROADWAY CONSTRUCTION PLANS ARE SCHEMATIC ONLY. THE ACTUAL LOCATION AND APPLICATION OF PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH SECTION 704 OF THE APPLICABLE VDOT ROAD AND BRIDGE SPECIFICATIONS, MUTCD, SEQUENCE OF CONSTRUCTION/ TRAFFIC CONTROL PLANS, PAVEMENT MARKING PLAN SHEETS 22(1) THRU 22(19) AND AS DIRECTED BY THE ENGINEER.
- THE OFFICIAL ELECTRONIC PDF VERSION OF THE PLANS WILL OVERRIDE THE PAPER COPIES OR PRINTS OF SPECIFIC LAYERS.
- PORTIONS OF THIS PLAN ASSEMBLY HAVE BEEN CADD GENERATED. TO ASSIST IN THE PREPARATION OF THE BID AND CONSTRUCTION OF THE PROJECT, AUTOCAD FORMAT (.DWG) FILES WILL BE MADE AVAILABLE TO THE PRIME CONTRACTOR DURING BIDS AND AFTER AWARD OF THE CONTRACT.
- ALL ELECTRONIC PLAN ASSEMBLIES WILL INCLUDE THE CONSTRUCTION PLANS IN TWO FORMATS: PDF FILES AND AUTOCAD FORMAT (.DWG) FILES. ONLY THE PDF FILES WILL BE CONSIDERED AS PART OF THE OFFICIAL PLAN ASSEMBLY.
- THE AUTOCAD FORMAT (.DWG) FILES ARE FURNISHED ONLY AS INFORMATION FOR THE CONTRACTOR. THESE PLANS ARE DEVELOPED IN LAYERS (LEVELS) TO AID IN READABILITY. (SEE THE VDOT CADD MANUAL FOR CADD LEVEL STRUCTURE). HOWEVER, THE CONSTRUCTION ITEMS MAY OR MAY NOT BE IN THE PROPER LAYERING SCHEME AS DESCRIBED IN THE VDOT CADD MANUAL. THE AUTOCAD FILES WILL ONLY MATCH THE SCANNED FILES IF ALL REQUIRED LEVELS ARE TURNED ON. A AUTOCAD SOFTWARE LICENSE IS REQUIRED TO BE ABLE TO READ THESE FILES.

JULY 2022

THESE PLANS ARE **UNFINISHED AND** UNAPPROVED AND ARE NOT TO BE USED FOR CONSTRUCTION

NOTES 1. Lot dimensions in parentheses are from deed.	Existing Legend Storm Sewer	Water Meter ■ WM Existing Curb Cut Ramp → HCR			Technical	Administrative	- 41		CANAL IMPRO	OVEMENTS	
2. Property owners correct as of, 20 3. Ordinance Number	Sanitary Sewer (Gravity) ————————————————————————————————————	Gas Meter / Valve Fence Power/Light Pole Guy Anchor	Storm Sewer Storm/(San) Manhole Basin Curb Cut Ramp	RÎCHMOND	Surveys Superintendent Project Manager	Capital Project Administrator	Whb		PHAS GENERAL		
4. Adopted 5. Accepted	Telephone/Telegraph T-Duct Water Line 4"w — 4"w — 4"w — Property Line	Tree 📆	Decorative Light Conduit Conduit (Encased)	Vinewith 1	Maintenance Engineer City Traffic Engineer	City Engineer Director of Public Works	AUTHORITY: CITY OF RICHMO	OND, DPW	GENTERONE	110125	
REFERENCES REVISIONS	Storm Basin Storm or Sanitary Manhole Fire Hydrant / Valve Storm or S Fire Hydrant / Valve Storm Or S Fire Hydrant / Valve			VIRGINIA .	DEPARTMENT OF RICHMOND,		DESIGN BY: REVIEWED DRAWN BY: CHECKED BY:	BY: FIELD NOTES		PROJECT SHEET 2	DRAWING NO. 0-28





Tree Protection

- 1. EXISTING TREES TO REMAIN SHALL BE PROTECTED WITH TEMPORARY CONSTRUCTION FENCE. ERECT FENCE AT EDGE OF THE TREE DRIPLINE PRIOR TO START OF CONSTRUCTION.
- 2. CONTRACTOR SHALL NOT OPERATE VEHICLES WITHIN THE TREE PROTECTION AREA. CONTRACTOR SHALL NOT STORE VEHICLES OR MATERIALS, OR DISPOSE OF ANY WASTE MATERIALS, WITHIN THE TREE PROTECTION AREA.
- 3. DAMAGE TO EXISTING TREES CAUSED BY THE CONTRACTOR SHALL BE REPAIRED BY A CERTIFIED ARBORIST AT THE CONTRACTOR'S EXPENSE.
- 4. TREES SHALL BE PRESERVED TO MEET ANY PART OF THE LANDSCAPING REQUIREMENTS AND WILL BE PROTECTED DURING CLEARING, GRADING, AND CONSTRUCTION. TREE PROTECTION FENCING SHALL BE PLACED AT THE DRIP LINES OF THE TREES WITH DETAILS TO INCLUDE SIGNAGE STATING THAT "THERE IS TO BE NO STORAGE OF MATERIALS, VEHICLES, OR EQUIPMENT BEYOND THE FENCING". TREE PROTECTION FENCING SHALL BE INSTALLED AND INSPECTED PRIOR TO INITIAL LAND DISTURBANCE.

Plant Maintenance Notes

- 1. CONTRACTOR SHALL PROVIDE COMPLETE MAINTENANCE OF THE LAWNS AND PLANTINGS. NO IRRIGATION IS PROPOSED FOR THIS SITE. THE CONTRACTOR SHALL SUPPLY SUPPLEMENTAL WATERING FOR NEW LAWNS AND PLANTINGS DURING THE ONE YEAR PLANT GUARANTEE PERIOD.
- 2. CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR, AND EQUIPMENT FOR THE COMPLETE LANDSCAPE MAINTENANCE WORK. WATER SHALL BE PROVIDED BY THE CONTRACTOR.
- 3. WATERING SHALL BE REQUIRED DURING THE GROWING SEASON, WHEN NATURAL RAINFALL IS BELOW ONE INCH PER WEEK.

4. WATER SHALL BE APPLIED IN SUFFICIENT QUANTITY TO THOROUGHLY

SATURATE THE SOIL IN THE ROOT ZONE OF EACH PLANT.5. CONTRACTOR SHALL REPLACE DEAD OR DYING PLANTS AT THE END OF THE ONE YEAR GUARANTEE PERIOD. CONTRACTOR SHALL TURN OVER

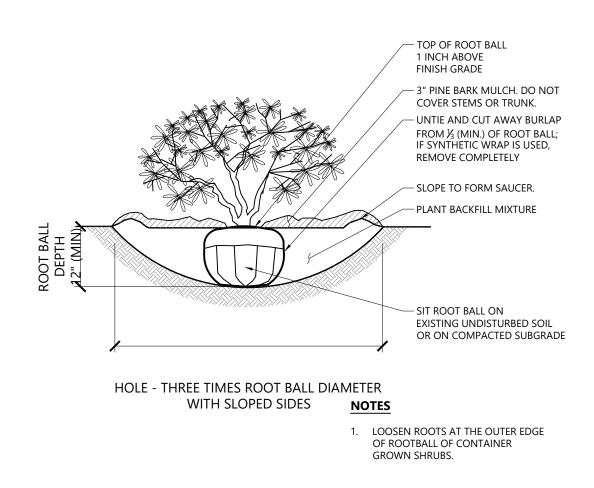
MAINTENANCE TO THE FACILITY MAINTENANCE STAFF AT THAT TIME.

Planting Notes

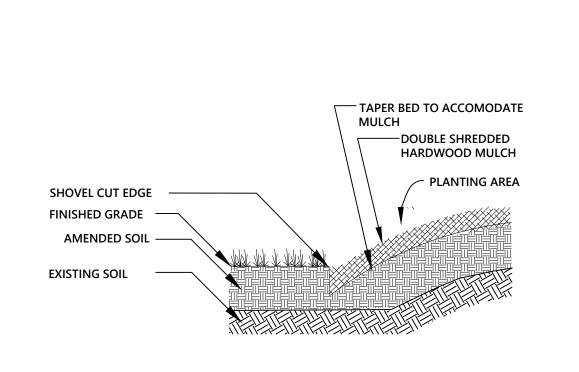
- 1. ALL PROPOSED PLANTING LOCATIONS SHALL BE STAKED AS SHOWN ON THE PLANS FOR FIELD REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
- 2. CONTRACTOR SHALL VERIFY LOCATIONS OF ALL BELOW GRADE AND ABOVE GROUND UTILITIES AND NOTIFY OWNERS REPRESENTATIVE OF CONFLICTS.
- 3. NO PLANT MATERIALS SHALL BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA. CONTRACTOR SHALL NOTIFY OWNER'S REPRESENTATIVE OF ANY CONFLICT.
- 4. A 3-INCH DEEP MULCH PER SPECIFICATION SHALL BE INSTALLED UNDER ALL TREES AND SHRUBS, AND IN ALL PLANTING BEDS, UNLESS OTHERWISE INDICATED ON THE PLANS, OR AS DIRECTED BY OWNER'S REPRESENTATIVE.
- 5. ALL TREES SHALL BE BALLED AND BURLAPPED, UNLESS OTHERWISE NOTED IN THE DRAWINGS OR SPECIFICATION, OR APPROVED BY THE OWNER'S REPRESENTATIVE.
- 6. FINAL QUANTITY FOR EACH PLANT TYPE SHALL BE AS GRAPHICALLY SHOWN ON THE PLAN. THIS NUMBER SHALL TAKE PRECEDENCE IN CASE OF ANY DISCREPANCY BETWEEN QUANTITIES SHOWN ON THE PLANT LIST AND ON THE PLAN. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES BETWEEN THE NUMBER OF PLANTS SHOWN ON THE PLANT LIST AND PLANT LABELS PRIOR TO BIDDING.
- 7. ANY PROPOSED PLANT SUBSTITUTIONS MUST BE REVIEWED BY LANDSCAPE ARCHITECT AND APPROVED IN WRITING BY THE OWNER'S REPRESENTATIVE.
- 8. ALL PLANT MATERIALS INSTALLED SHALL MEET THE SPECIFICATIONS OF THE "AMERICAN STANDARDS FOR NURSERY STOCK" BY THE AMERICAN ASSOCIATION OF NURSERYMEN AND CONTRACT DOCUMENTS.
- 9. ALL PLANT MATERIALS SHALL BE GUARANTEED FOR ONE YEAR FOLLOWING DATE OF FINAL ACCEPTANCE.
- 10. THIS PLAN IS INTENDED FOR PLANTING PURPOSES. REFER TO SITE / CIVIL DRAWINGS FOR ALL OTHER SITE CONSTRUCTION INFORMATION.

Plant List

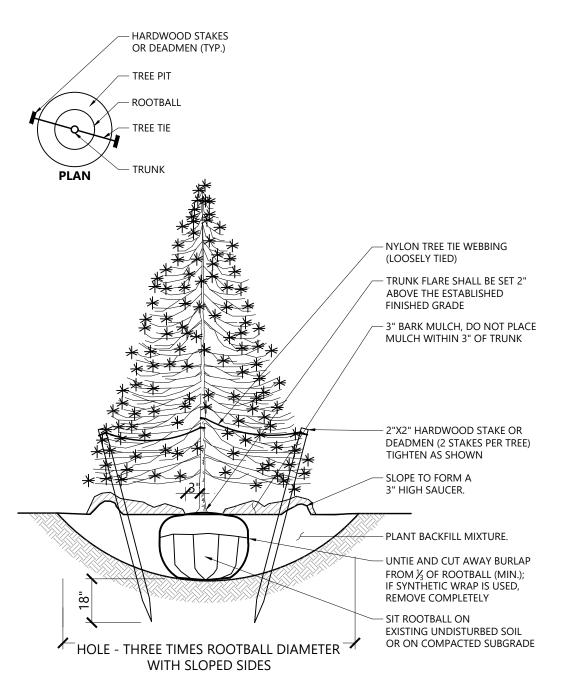
Key	Qty.	Botanical Name	Common Name	Size
	٠,٠	Dotarrical ivallie	Common Name	5120
	3	HYDRANGEA QUERCIFOLIA	OAKLEAF HYDRANGEA	6-8'
	1	OSTRYA VIRGINIANA	AMERICAN HOPHORNBEAM	2.5" CALIPER
	7	VIBURNUM X PRAGENSE	PRAGUE VIBURNUM	24-36" HT.
	7	CLETHRA ALNIFOLIA 'SUGARTINA'	DWARF SUMMERSWEET	18" HT/SPRD MIN.
	12	PANICUM VIRGATUM 'SHENANDOAH'	SHENANDOAH SWITCHGRASS	18" HT/SPRD MIN.
	25	RUDBECKIA HIRTA	BLACK EYED SUSAN	12" O.C., 18" HT/SPRD MIN.



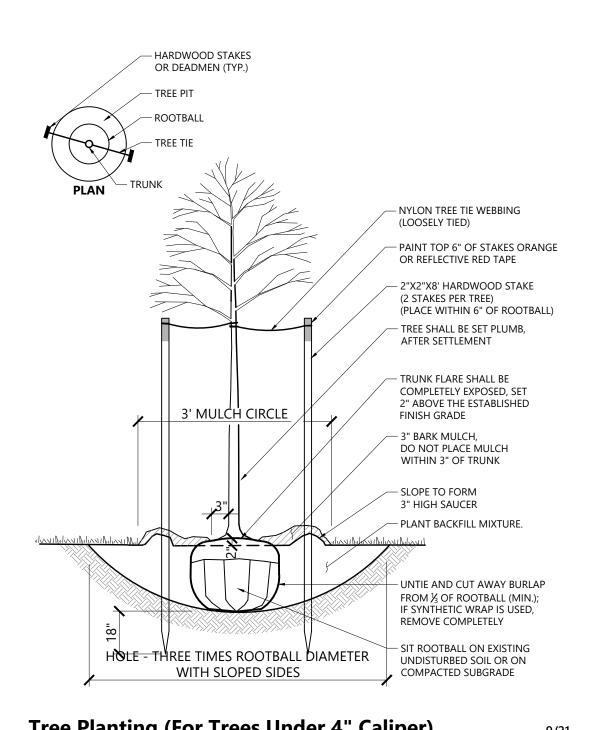
Shrub Planting			1/16	
N.T.S.	Source: VHB	REV	LD_600	



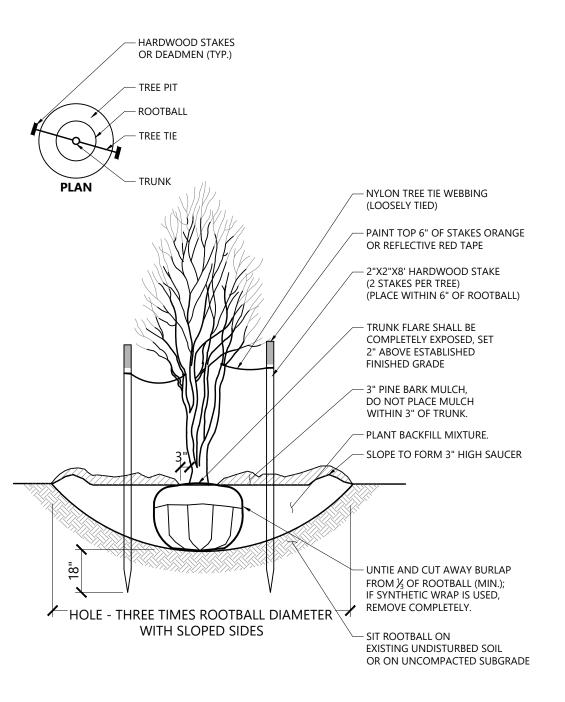
Shovel Cut Edg	ging Detail	7/15
N.T.S.	Source: VHB	



Evergreen Tree F	Planting		9/21
N.T.S.	Source: VHB	REV	LD_604



or frees officer 4	Caliper		9/21
Source: VHB		REV	LD_602
		Source: VHB	· · · · · · · · · · · · · · · · · · ·

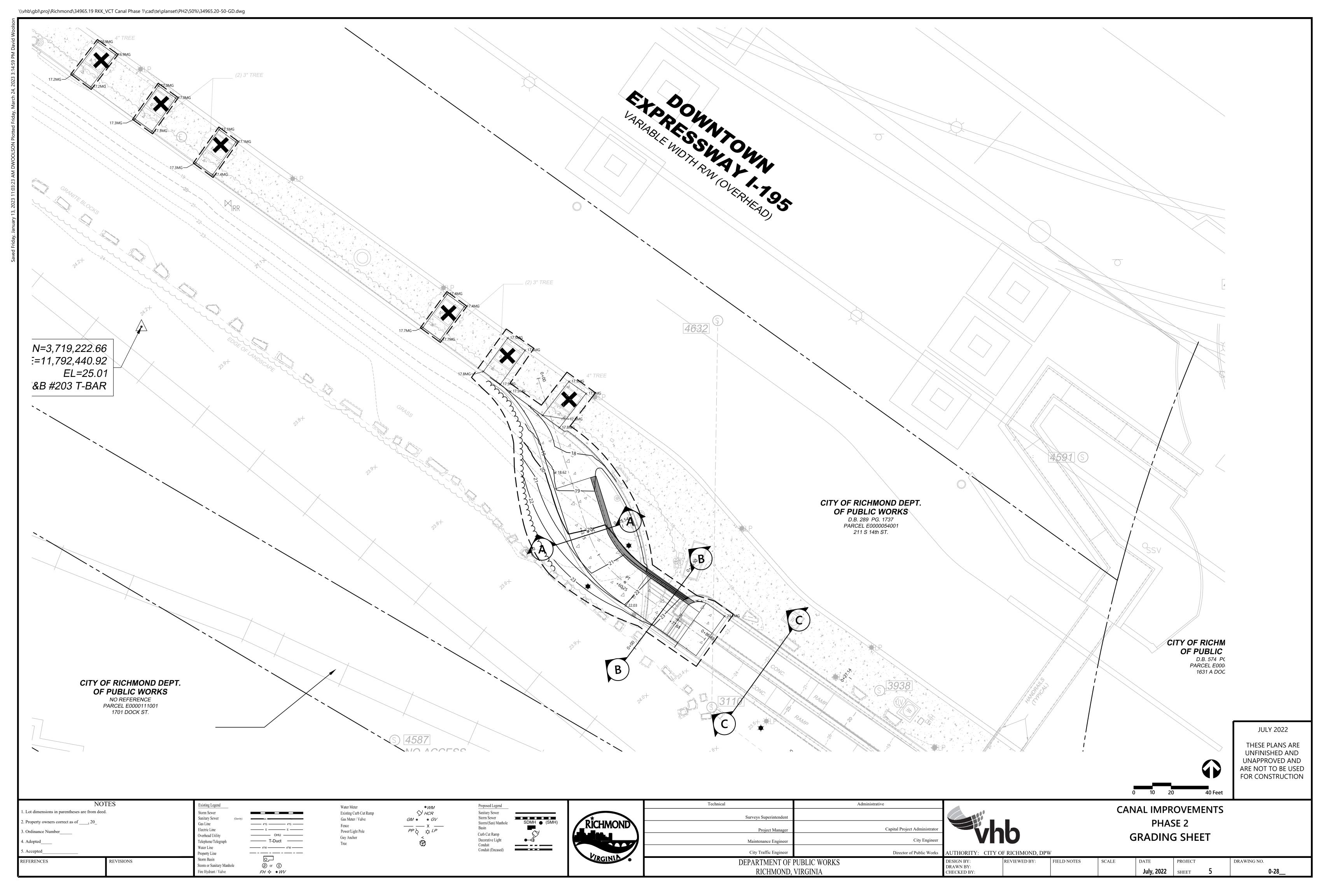


Multistem Tree	e Planting		9/21
N.T.S.	Source: VHB	REV	LD_606

JULY 2022

THESE PLANS ARE
UNFINISHED AND
UNAPPROVED AND
ARE NOT TO BE USED
FOR CONSTRUCTION

NOTES	Existing Legend	Water Meter ⊗ WM	Proposed Legend		Technical	Administrative				/FN/FNITC	
1. Lot dimensions in parentheses are from deed.	Storm Sewer	Existing Curb Cut Ramp \bigcirc HCR	Sanitary Sewer		Surraya Sunaristandant		-11		CANAL IMPROV	EIVIEIN I 2	
2. Property owners correct as of, 20	Sanitary Sewer (Gravity) ————————————————————————————————————	Gas Meter / Valve GM ● GV	Storm Sewer Storm/(San) Manhole SDMH ● (SMH)	RÎCHMOND	Surveys Superintendent				PHASE 2		
3. Ordinance Number	Electric Line	Fence — X — Power/Light Pole PP \(\sqrt{\frac{1}{2}} \sqrt{\frac{1}{2	Dasiii	INICHIAIOIAD	Project Manager	Capital Project Administrator	J. John				
4 Adopted	Overhead Utility — OHU — Telephone/Telegraph — T-Duct —	Guy Anchor	Curb Cut Ramp Decorative Light		Maintenance Engineer	City Engineer	I VIIU	PLANTIN	G SCHEDULE, NO	DTES, AND	DETAILS
	Water Line —— 4"w ——— 4"w ———	Tree	Conduit (Encased)		, and the second		1				
5. Accepted	Property Line		Collum (Elicaseu)	Vinewijk	City Traffic Engineer	Director of Public Works	AUTHORITY: CITY OF RICHN	MOND, DPW			
REFERENCES REVISIONS	Storm Basin Storm or Sanitary Manhole O or S			RGINIA	DEPARTMENT OF 1	PUBLIC WORKS	DESIGN BY: REVIEW	ED BY: FIELD NOTES SO	ALE DATE PRO.	JECT	DRAWING NO.
	Fire Hydrant / Valve $FH + \diamondsuit WV$				RICHMOND,		DRAWN BY: CHECKED BY:		July, 2022 SHE	ет 4В	0-28



Minimum Standards

AN EROSION AND SEDIMENT CONTROL PROGRAM ADOPTED BY A DISTRICT OR LOCALITY MUST BE CONSISTENT WITH THE FOLLOWING CRITERIA. TECHNIQUES AND METHODS:

- 1. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 14 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR
- 1. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS BORROW AREAS AND SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.
- 2. 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, IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.
- 3. 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.
- 4. STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.
- 5. SEDIMENT TRAPS AND SEDIMENT BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN.
- a. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT TRAP SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA AND THE TRAP SHALL ONLY CONTROL DRAINAGE AREAS LESS THAN THREE ACRES.
- b. SURFACE RUNOFF FROM DISTURBED AREAS THAT IS COMPRISED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES SHALL BE CONTROLLED BY A SEDIMENT BASIN. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT BASIN SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA. THE OUTFALL SYSTEM SHALL, AT A MINIMUM, MAINTAIN THE STRUCTURAL INTEGRITY OF THE BASIN DURING A TWENTY-FIVE YEAR STORM OF 24-HOUR DURATION. RUNOFF COEFFICIENTS USED IN RUNOFF CALCULATIONS SHALL CORRESPOND TO A BARE EARTHCONDITION OR THOSE CONDITIONS EXPECTED TO EXIST WHILE THE SEDIMENT BASIN IS UTILIZED.
- 7. CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED.
- 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.
- TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.

 9. WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.
- 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.
- 11. BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS OR PIPES 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.
- 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
- 13. WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX-MONTH PERIOD, A TEMPORARY VEHICULAR STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL SHALL BE
- 14. ALL APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET.
- 15. THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS
- 16. UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN
- ADDITION TO OTHER APPLICABLE CRITERIA:

 a. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.
- b. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.
- c. 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.
- d. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.
- e. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THIS CHAPTER.
- f. APPLICABLE SAFETY REQUIREMENTS SHALL BE COMPLIED WITH.
- 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. THIS PROVISION SHALL APPLY TO INDIVIDUAL DEVELOPMENT LOTS AS WELL AS TO LARGER LAND-DISTURBING ACTIVITIES.
- 18. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL PROGRAM AUTHORITY. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.
- 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 AND CRITERIA. STREAM RESTORATION AND RELOCATION PROJECTS THAT INCORPORATE NATURAL CHANNEL DESIGN CONCEPTS THAT ARE NOT MAN-MADE CHANNELS AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FORNATURAL OR MAN-MADE CHANNELS:
- a. CONCENTRATED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED DIRECTLY INTO AN ADEQUATE NATURAL 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 A 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 A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP ITS BANKS AND BY THE USE OF A TWO-YEAR STORM TO DEMONSTRATE THAT STORMWATER 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 THAT STORMWATER WILL BE CONTAINED WITHIN THE PIPE OR SYSTEM.
- 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 TEN-YEAR STORM WILL NOT OVERTOP THE BANKS AND A TWO-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 TEN-YEAR STORM IS CONTAINED WITHIN THE APPURTENANCES: 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 TEN-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A MAN-MADE CHANNEL; OR
- (4) PROVIDE A COMBINATION OF CHANNEL IMPROVEMENT, STORMWATER 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 CONDITION OF THE SUBJECT PARCEL.
- 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
- g. OUTFALL FROM A DETENTION FACILITY SHALL BE DISCHARGED TO A RECEIVING CHANNEL, AND ENERGY DISSIPATERS 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.

 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 THE STORMWATER RUNOFF CRITERIA, INDIVIDUAL LOTS OR PARCELS IN A RESIDENTIAL, COMMERCIAL OR INDUSTRIAL DEVELOPMENT SHALL NOT BE CONSIDERED TO BE SEPARATE 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.

I. 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 THE PEAK FLOW RATE FROM THE SITE ASSUMING IT WAS IN A 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 OR MAN-MADE CHANNELS AS DEFINED IN ANY REGULATIONS PROMULGATED PURSUANT TO § 62.1-44.15:54 OR 62.1-44.15:65 OF THE ACT.

- m. FOR PLANS APPROVED ON AND AFTER JULY 1, 2014, THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF § 62.1-44.15:52 A OF THE ACT AND THIS SUBSEQUENT SECTION SHALL BE SATISFIED BY THE COMPLIANCE OF THE WATER QUANTITY REQUIREMENTS IN THE STORMWATER MANAGEMENT ACT (§ 62.1-44.15:24 ET SEQ. OF THE CODE OF VIRGINIA) AND ATTENDANT REGULATIONS, UNLESS SUCH LAND-DISTURBING ACTIVITIES ARE IN ACCORDANCE WITH 9VAC25-870-48 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP)
- n. COMPLIANCE WITH THE WATER QUANTITY MINIMUM STANDARDS SET OUT IN 9VAC25-870-66 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) REGULATIONS SHALL BE DEEMED TO SATISFY THE REQUIREMENTS OF SUBDIVISION 19 OF THIS SUBSECTION.

Erosion Control Construction Narrative

Project Description and Schedule
THE PROJECT PROPOSES TO PROVIDE A SHARED USE PATH THAT PROVIDES BIKE AND ADA ACCESS TO THE CANAL FROM VIRGINIA STREET. UTILITY RELOCATION AND LANDSCAPING WILL ALSO BE INCLUDED IN THIS PROJECT.

THE SITE IS LOCATED IN RICHMOND, VIRGINIA, AND IS BOUND BY NORTH BY THE SOUTH SIDE OF THE CANAL WALK,

VIRGINIA STREET TO THE EAST, AND E. BYRD STREET TO THE SOUTH.

OTHER IMPROVEMENTS INCLUDE UTILITY CONNECTIONS AND RELOCATIONS AND SIGNIFICANT LANDSCAPE

CONSTRUCTION IS ANTICIPATED TO BEGIN IN SPRING 2023 AND LAST FOR 9 MONTHS.

Objective of the Erosion and Sediment Control Plan

IMPROVEMENTS. THE PROPOSED SITE DISTURBED AREA IS 0.29 ACRES.

THE OBJECTIVE OF THIS EROSION AND SEDIMENT CONTROL PLAN IS TO ESTABLISH SPECIFIC GUIDELINES FOR CONTROLLING SOIL EROSION AND SEDIMENTATION DURING AND AFTER THE CLEARING, GRUBBING, AND EARTHWORK ASSOCIATED WITH PREPARATION OF THE SITE FOR BUILDING CONSTRUCTION. MOREOVER, THIS PLAN SPECIFIES THE CONTROL MEASURES THAT WILL BE EMPLOYED TO PROVIDE A PRACTICAL AND WORKABLE MEANS OF MINIMIZING DETRIMENTAL IMPACTS TO SOILS AND WATER RESOURCES AS A RESULT OF THE CONSTRUCTION ACTIVITIES. ALL MEASURES ARE DESIGNED IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, THIRD EDITION, 1992.

Existing Conditions / General Description

THE SITE ON WHICH THE PROPOSED DEVELOPMENT WILL OCCUR IS CLASSIFIED AS URBAN LAND AND HAS BEEN PREVIOUSLY DEVELOPED. THE MAJORITY OF THE SITE CONSISTS OF LANDSCAPED AREA. THE FEW EXISTING TREES ON THE SITE WILL BE REMOVED.

TOPOGRAPHY OF THE SITE RANGES FROM A HIGH ELEVATION OF 28' ON THE SOUTH SIDE OF THE SITE. TO A LOW ELEVATION OF 17' ALONG THE CANAL WALK. SLOPES ARE RANGING FROM 4%-8%. HOWEVER, THERE IS A STEEP HILL THAT SLOPES 2.5:1 TOWARDS THE SEAT WALL THE RUNS ALONG CANAL WALK. WATER DRAINS FROM THE SOUTH SIDE OF THE PROPERTY TO THE NORTH SIDE OF THE PROPERTY.

ALL STORMWATER RUNOFF ON SITE EVENTUALLY DRAINS TO EITHER THE CITY OF RICHMOND'S COMBINED SEWER SYSTEM, OR THE CITY CANAL.

Clearing and Grubbing

THIS SITE REQUIRES CLEARING AND GRUBBING, THE LIMITS OF WHICH ARE SHOWN ON THE EROSION CONTROL AND DEMOLITION PLANS. THIS LIMIT WAS ESTABLISHED OUTSIDE THE AREAS TO BE GRADED AND OUTSIDE OF ANY AREAS DESIGNATED AS TREE PROTECTION AREAS. ANY DEMOLISHED MATERIALS WILL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY AT A CERTIFIED LANDFILL OR RECYCLED. EXCAVATED SOIL WILL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY AT A CERTIFIED LANDFILL. NO ON-SITE STOCKPILING IS ANTICIPATED AT THIS TIME.

Adjacent Site

THE SITE IS BOUND TO THE SOUTH BY PUBLIC RIGHT OF WAY FOR BROAD STREET. IT IS BOUND TO THE WEST BY PUBLIC RIGHT OF WAY FOR TERMINAL PLACE. TO THE NORTHWEST IS PRIVATE PROPERTY FOR THE CHILDREN'S MUSEUM OF RICHMOND. THE REST OF THE SITE, TO THE NORTH AND EAST, IS THE REST OF THE SCIENCE MUSEUM OF VIRGINIA PROPERTY, ULTIMATELY BOUND TO THE EAST BY DMV DRIVE, AND OTHER PROPERTIES, ALSO OWNED BY THE COMMONWEALTH OF VIRGINIA, TO THE NORTH.

Off-Site Areas

Off-Site Areas

OFF-SITE LAND DISTURBANCE WILL BE REQUIRED WITHIN THE CITY OF RICHMOND PUBLIC RIGHT OF WAY. OTHER OFF-SITE LAND DISTURBANCE WILL BE LIMITED TO THE LOCATION WHERE TOPSOIL AND OTHER WASTE MATERIALS ARE LEGALLY DISPOSED OF AT A LEGAL LANDFILL OR AS DESCRIBED WITHIN PROJECT SUSTAINABILITY SPECIFICATIONS.

CONTRACTOR TO ENSURE ALL WASTE FROM THE PROJECT IS PROPERLY DISPOSED OF AT AN APPROVED SITE WHICH HAS ALL THE NECESSARY PERMITS. NO OFF-SITE AREAS CAN BE USED WITHOUT PRIOR APPROVAL OF THE DEQ PLAN REVIEWER OR DEQ INSPECTOR, TO ENSURE THESE ARE PROPERLY PERMITTED. REVIEW AND APPROVAL OF OFF-SITE AREAS BY DEQ MAY REQUIRE ADDITIONAL PERMITS AND MAY IMPACT CONSTRUCTION TIMELINES.

Soils

THE US DEPARTMENT OF AGRICULTURE'S NATURAL RESOURCES CONSERVATION SERVICE SOILS MAP SHOWS THE SITE'S SOIL TYPE TO BE AS FOLLOWS:

41: URBAN LAND, 0-2% SLOPES, 100% SITE COVERAGE

Critical Areas

THERE IS A STEEP SLOPE TOWARDS THE NORTH SIDE OF THE SITE DRAINING TOWARDS THE CANAL AT 2.5:1.

ACCORDING TO THE U.S. FEDERAL EMERGENCY MANAGEMENT (FEMA) FLOOD INSURANCE RATE MAP, THERE ARE FEMA FLOODPLAINS ON THE PROPOSED SITE. FEMA LISTS THE SITE AS AN AREA WITH REDUCED FLOOD RISK DUE TO LEVEE, ZONE X, PANEL 5101290041E, EFFECTIVE DATE 07/16/2014. THE CITY OF RICHMOND FLOOD PLAIN MAP LISTS THE SITE AS WITHIN A 500-YEAR FLOODPLAIN.

THERE ARE NO WETLANDS LOCATED WITHIN THE LIMITS OF THIS SITE. THE CANAL ITSELF IS CONSIDERED A WETLAND, PER THE U.S FISH & WILDLIFE SERVICE'S NATIONAL WETLANDS INVENTORY. HOWEVER, IT IS OUTSIDE THE LIMITS OF THIS PROJECT AND WILL NOT BE DISTURBED.

Permanent Stabilization

ALL NON-IMPERVIOUS AREAS REMAINING SHALL BE PERMANENTLY SEEDED PER VESCH STANDARDS AND SPECIFICATIONS OR THE LANDSCAPE PLAN SPECIFICATION.

Erosion and Sediment Control Measures

ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH), THIRD EDITION, 1992.

SAFETY FENCE - STANDARD 3.01
THE SAFETY OF THE PUBLIC MUST ALWAYS BE CONSIDERED AT BOTH THE PLANNING AND IMPLEMENTATION PHASES OF A LAND-DISTURBING ACTIVITY. IF THERE IS ANY QUESTION CONCERNING THE RISK OF A PARTICULAR EROSION CONTROL MEASURE TO THE GENERAL PUBLIC AN APPROPRIATE SAFETY FENCE SHOULD BE INSTALLED TO PREVENT UNDESIRED ACCESS. PROPERLY DESIGNED AND INSTALLED SAFETY FENCES PREVENT THE TRESPASSING OF PEOPLE INTO POTENTIALLY DANGEROUS AREAS. THE INSTALLATION OF THESE FENCES WILL PROTECT PEOPLE FROM HAZARDS AND THE OWNER FROM POSSIBLE LITIGATION.

CONSTRUCTION ENTRANCE - STANDARD 3.02

POINTS OF VEHICULAR INGRESS AND EGRESS SHALL HAVE A STABILIZED STONE PAD WITH A FILTER FABRIC UNDERLINER TO REDUCE THE AMOUNT OF MUD TRANSPORTED ONTO PAVED PUBLIC ROADS BY MOTOR VEHICLES OR RUNOFF FROM THE CONSTRUCTION SITE.

SILT FENCE - STANDARD 3.05 SILT FENCE IS INSTALLED TO INTERCEPT AND DETAIN SMALL AMOUNTS OF SEDIMENT FROM DISTURBED AREAS DURING CONSTRUCTION OPERATIONS IN ORDER TO PREVENT SEDIMENT FROM LEAVING THE SITE. SILT FENCES SHALL BE

CONSTRUCTION OPERATIONS IN ORDER TO PREVENT SEDIMENT FROM LEAVING THE SITE. SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY. CLOSE ATTENTION SHOULD BE PAID TO THE REPAIR OF DAMAGED SILT FENCE RESULTING FROM END RUNS AND UNDERCUTTING. SHOULD THE FABRIC ON A SILT FENCE DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIBE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED, AND SEEDED. ALL SILT FENCE SHALL BE INSTALLED IN ACCORDANCE WITH VESCH STANDARDS AND

INLET PROTECTION - STANDARD 3.07

SAFETY FENCE

INLET PROTECTION IS INSTALLED AT STORM SEWER INLETS PRIOR TO CLEARING OF THE UPSTREAM AREAS TO PREVENT SEDIMENT FROM ENTERING THE SEWER SYSTEM AND LEAVING THE SITE. INLET PROTECTION SHALL REMAIN IN PLACE UNTIL THE PROJECT SITE IS FULLY STABILIZED. ALL INLET PROTECTION SHALL BE INSTALLED IN ACCORDANCE WITH VESCH STANDARD AND SPECIFICATION 3.07.

VEGETATIVE PRACTICES ALL DISTURBED AREAS SHALL BE SODDED OR SEEDED WITH FAST-GERMINATING, TEMPORARY VEGETATION IMMEDIATELY

FOLLOWING GRADING OR WHERE EXPOSED SOIL SURFACES WILL NOT BE BROUGHT TO FINAL GRADE FOR A PERIOD OF TIME EXCEEDING 14 DAYS. REFER TO THE VESCH FOR APPROPRIATE SEED MIXTURE DEPENDENT ON LOCATION AND TIME OF YEAR.

Maintenance of Erosion and Sediment Control Facilities

ALL MAINTENANCE OF TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL FACILITIES SHALL BE CARRIED

OUT IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS (9VAC25-840-40). DURING THE PERIOD THAT THE PROJECT SITE IS UNDER CONSTRUCTION, THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTENANCE OF THE EROSION AND SEDIMENT CONTROL FACILITIES. THE CONTRACTOR WILL INSPECT EROSION AND SEDIMENT CONTROL FACILITIES ON A REGULAR BASIS, ESPECIALLY AFTER PERIODS OF HEAVY RAINFALL. ANY DAMAGE DISCOVERED WILL BE REPAIRED PROMPTLY BY THE CONTRACTOR. FURTHERMORE, A READILY AVAILABLE SUPPLY OF EROSION AND SEDIMENT CONTROL MATERIALS WILL BE MAINTAINED BY THE CONTRACTOR AT ALL TIMES.

FENCES SHALL BE CHECKED REGULARLY FOR WEATHER-RELATED OR OTHER DAMAGE. ANY NECESSARY REPAIRS MUST BE MADE IMMEDIATELY. CARE SHOULD BE TAKEN TO SECURE ALL ACCESS POINTS (GATES) AT THE END OF EACH WORKING DAY. LOCKING DEVICES MUST BE REPAIRED OR REPLACES AS NECESSARY.

• CONSTRUCTION ENTRANCE

THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS OF WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR THE WASHING AND REWORKING OF EXISTING STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY STRUCTURES USED TO TRAP SEDIMENT.

SILT FENCE
 SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER. CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED SILT FENCE RESULTING FROM END RUNS AND UNDERCUTTING.

INLET PROTECTION
 THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NECESSARY. SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE HALF THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.

Pumping of Stormwater

Stormwater Management Runoff

SHOULD IT BE NECESSARY TO PUMP STORMWATER DURING CONSTRUCTION BECAUSE THE GRADING WILL NOT ALLOW FOR GRAVITY FLOW, THEN THE PUMPED STORMWATER MUST BE FILTERED THROUGH A SILT SACK, OR SIMILAR SEDIMENT TRAPPING DEVICE, BEFORE OUTLETING INTO THE ADJACENT STORM SEWER SYSTEM.

DURING CLEARING, GRUBBING, AND THROUGHOUT CONSTRUCTION, STORMWATER RUNOFF WILL SHEET FLOW TO EXISTING OR PROPOSED STORMWATER INLETS, WITH INLET PROTECTION, AND OTHER PERIMETER CONTROLS SUCH AS SILT FENCE. THROUGH THESE MEASURES, THE RUNOFF WILL BE FILTERED PRIOR TO RELEASE INTO THE EXISTING STORM SEWER SYSTEM.

Tree Protection

TREE PROTECTION IS USED TO PROTECT DESIRABLE TREES FROM MECHANICAL AND OTHER INJURY DURING LAND DISTURBING AND CONSTRUCTION ACTIVITY. IN SPITE OF PRECAUTIONS, SOME DAMAGE TO PROTECTED TREES MAY OCCUR. IN SUCH CASES, THE FOLLOWING MAINTENANCE GUIDELINES SHOULD BE FOLLOWED:

SOIL AERATION - THE GROUND SHALL BE AERATED IF THE SOIL BECOMES COMPACTED OVER THE ROOT ZONE.
 REPAIR OF DAMAGE.
 FERTILIZATION - BROADLEAF TREES THAT HAVE BEEN STRESSED OR DAMAGED SHALL RECEIVE A HEAVY APPLICATION OF FERTILIZER TO AID THEIR RECOVERY.

SOIL BECOMES COMPACTED OVER THE ROOT ZONE OF ANY TREE, THE GROUND SHALL BE AERATED BY PUNCHING HOLES WITH AN IRON BAR. BROADLEAF TREES THAT HAVE BEEN STRESSED OR DAMAGED SHALL RECEIVE A HEAVY APPLICATION OF FERTILIZER TO AID THEIR RECOVERY.

ALL TREE PROTECTION SHALL BE INSTALLED IN ACCORDANCE WITH VESCH STANDARD AND SPECIFICATION 3.38. IF THE

ALL TREE PROTECTION AREAS SHALL HAVE 4 FOOT HIGH FENCING WITH MINUMUM 4 INCH SIGNAGE, IN ENGLISH AND SPANISH, RESTRICTING ACCESS TO FENCED AREAS. CONTRACTOR IS RESPONSIBLE FOR RESTRICTING ACCESS TO FENCED

Final Site Cleanup

NO EROSION AND SEDIMENT CONTROL MEASURES CAN BE REMOVED WITHOUT APPROVAL OF THE ENVIRONMENTAL INSPECTOR FOR THE PROJECT. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES WILL BE REMOVED ONLY WHEN ALL PREVIOUSLY DENUDED AREAS PROTECTED BY DEVICES HAVE BECOME STABILIZED. THE STONE AND/OR ROCK USED AT CONSTRUCTION ENTRANCES AND ANY OTHER LOCATION ON THE SITE WILL BE REMOVED AND DISPOSED OF IN THE APPROPRIATE MANNER. THE SILT FENCES USED ALONG THE LIMITS OF WORK WILL BE REMOVED IF VEGETATIVE COVER AND SLOPE STABILITY HAVE BEEN ATTAINED.

City of Richmond Erosion and Sediment Control Notes

- 1. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE 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.
- 2. EXCESS EXCAVATION DISPOSED OF OFF THE SITE SHALL BE DISPOSED OF IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.
- 3. EROSION AND SEDIMENT CONTROLS SHALL BE INSTALLED IN ACCORDANCE WITH VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND SHALL BE PLACED PRIOR TO OR AS THE FIRST STEP OF THE LAND DISTURBING ACTIVITY.
- EROSION AND SEDIMENT CONTROLS SHALL BE MAINTAINED SO THAT THE SEDIMENT CARRYING RUNOFF FROM THE SITE WILL NOT ENTER STORM DRAINAGE FACILITIES.
- 5. EROSION AND SEDIMENT CONTROLS SHALL BE MAINTAINED UNTIL THE DISTURBED AREA IS STABILIZED.
- 6. PROPERTIES ADJOINING THE SITE SHALL BE KEPT CLEAN OF MUD OR SILT CARRIED FROM THE SITE BY VEHICULAR TRAFFIC OR RUNOFF.
- 7. THE DISPOSAL OF WASTE MATERIALS REMOVED FROM EROSION AND SEDIMENT CONTROL FACILITIES AND THE DISPOSAL OF THESE FACILITIES SHALL BE IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDROOK
- 8. STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.
- 9. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT 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.

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 EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATIONS 9VAC25-840 EROSION AND SEDIMENT CONTROL 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
- ES-4: A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL
- ES-5: PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INLCUDING, BUT NOT LIMITED TO, OFF-SITE BORROW OR WASTE AREAS), THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE PLAN APPROVAL OF A LITERARY OF THE PLAN APPROVAL OF
- 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.
- ES-9: THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF-PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.
- ES-10: THE CONTRACTOR IS RESPONSIBLE FOR THE DAILY REMOVAL OF SEDIMENT THAT HAS BEEN TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE.
- ES-11: SEEDING OPERATIONS SHALL BE INITIATED WITHIN 7 DAYS AFTER REACHING FINAL GRADE OR UPON SUSPENSION OF GRADING OPERATIONS FOR ANTICIPATED DURATION OF GREATER THAN 14 DAYS OR UPON COMPLETION OF GRADING OPERATIONS FOR A SPECIFIC AREA.
- ES-12: THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING SURFACE AND AIR MOVEMENT OF DUST FROM EXPOSED SOILS WHICH MAY PRESENT HEALTH HAZARDS, TRAFFIC SAFETY PROBLEMS, OR HARM ANIMAL OR PLANT LIFE
- ES-13: THIS PROJECT IS NOT SUBJECT TO THE VIRGINIA STORMWATER MANAGEMENT PROGRAM PERMIT (VSMPP).

 DISTURBANCE IS LOCATED ENTIRELY WITHIN THE CITY OF RICHMOND COMBINED SEWER OVERFLOW (CSO). SEE http://www.deq.virginia.gov/Programs/Water/StormwaterManagement/VSMPPermits.aspx FOR MORE INFORMATION.

Sequence of Construction

THE FOLLOWING OUTLINES THE GENERAL CONSTRUCTION SEQUENCE THAT WILL BE EMPLOYED DURING THE SITE CONSTRUCTION STAGE:

- 1. A PRE-CONSTRUCTION MEETING MUST TAKE PLACE PRIOR TO ANY LAND DISTURBING ACTIVITIES. THE OWNER'S REPRESENTATIVE, ENGINEER, EROSION CONTROL INSPECTOR, AND CONTRACTOR MUST BE PRESENT AT THIS MEETING. THE SITE WORK CONTRACTOR SHALL GIVE THE DEQ INSPECTOR TWO WORKING DAYS NOTIFICATION.
- 2. A CERTIFIED RESPONSIBLE LAND DISTURBER (RLD) IS REQUIRED DURING ALL STAGES OF CONSTRUCTION, FROM THE INITIAL LAND DISTURBANCE THROUGH FINAL SITE STABILIZATION. THE NAME OF THE PROJECT RLD MUST BE PROVIDED BEFORE ANY LAND DISTURBANCE MAY BEGIN.
- 3. THE SITE CONTRACTOR WILL BE RESPONSIBLE FOR SCHEDULING AND CONDUCTING ALL NECESSARY INSPECTIONS WITH THE APPROPRIATE LOCAL AND STATE OFFICIALS. COORDINATION WITH THE APPROPRIATE ENTITIES WILL BE EXECUTED BY THE CONTRACTOR.
- 4. PRIOR TO STARTING ANY OTHER WORK ON THE SITE, THE CONTRACTOR SHALL NOTIFY APPROPRIATE AGENCIES AND SHALL INSTALL EROSION CONTROL MEASURES AS SHOWN ON THE PLANS AND AS IDENTIFIED IN FEDERAL, STATE, AND LOCAL APPROVAL DOCUMENTS PERTAINING TO THIS PROJECT. THE SITE WORK CONTRACTOR SHALL GIVE THE EROSION AND SEDIMENT CONTROL INSPECTOR 1 WEEK NOTIFICATION PRIOR TO COMMENCING WORK.
- PERIMETER CONTROLS SUCH AS SILT FENCING, SAFETY FENCING, CONSTRUCTION ENTRANCES, LAY DOWN AREAS, AND INLET PROTECTION AS SHOWN ON THE EROSION CONTROL PLAN. LAND DISTURBANCE WITHIN THE LIMITS OF DISTURBANCE MAY NOT OCCUR UNTIL THE INITIAL ESC MEASURES INSTALLATION HAS BEEN APPROVED BY THE ENVIRONMENTAL INSPECTOR.

DURING PHASE I EROSION AND SEDIMENT CONTROL WORK, THE CONTRACTOR SHALL INSTALL

- 6. CONTRACTOR SHALL INSPECT AND MAINTAIN EROSION CONTROL MEASURES, AND REMOVE SEDIMENT THEREFROM ON A WEEKLY BASIS AND WITHIN 12 HOURS AFTER EACH STORM EVENT AND DISPOSE OF THE SEDIMENTS IN AN UPLAND AREA SUCH THAT THEY DO NOT ENCUMBER OTHER DRAINAGE STRUCTURES AND PROTECTED AREAS. CONTRACTOR IS FULLY RESPONSIBLE TO CONTROL CONSTRUCTION SUCH THAT SEDIMENTATION SHALL NOT AFFECT REGULATORY PROTECTED AREAS, WHETHER SUCH SEDIMENTATION IS CAUSED BY WATER, WIND, OR DIRECT
- 7. ANY TREES OUTSIDE THE LIMIT OF DISTURBANCE ARE TO REMAIN.

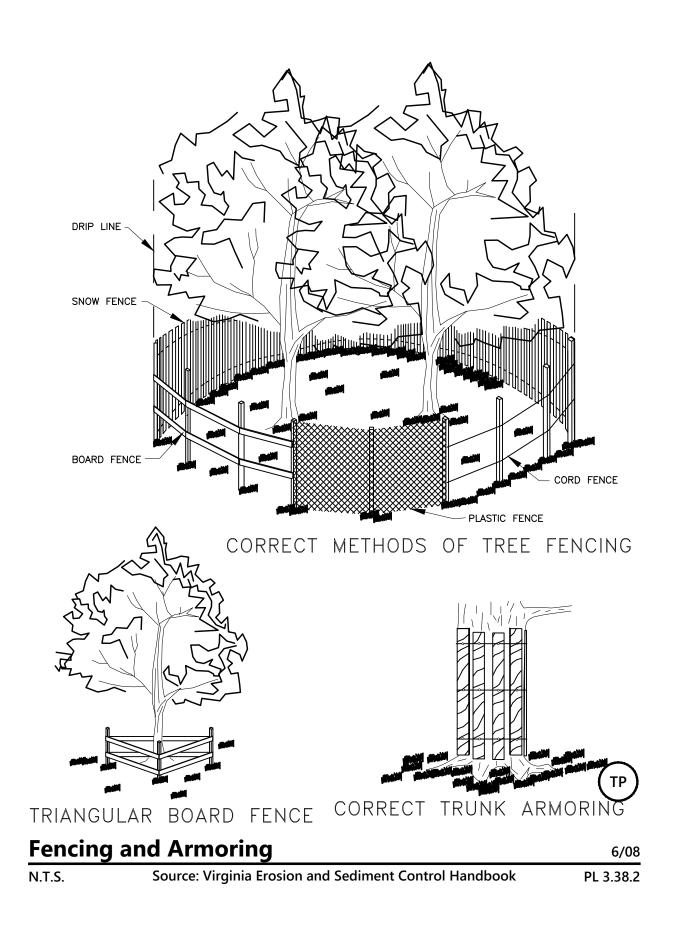
MEASURES ARE INSTALLED AND APPROVED BY THE INSPECTOR.

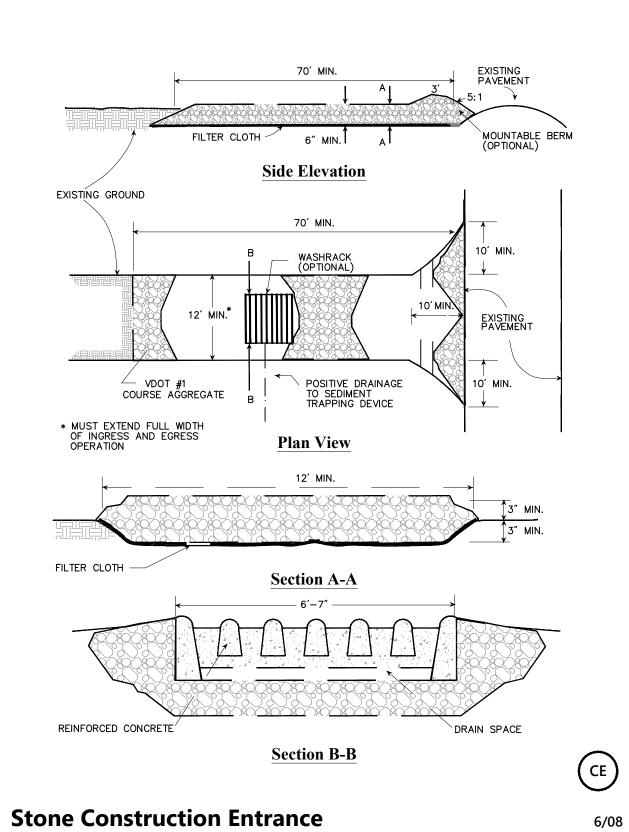
- 8. DEMOLITION OF THE SITE HARDSCAPE AND UTILTIES MAY BEGIN AFTER PHASE 1 EROSION CONTROL
- 9. UPON COMPLETION OF SITE DEMOLITION, ROUGH GRADING OPERATIONS MAY COMMENCE. DEWATERING DEVICES TO BE INSTALLED AS NECESSARY TO REMOVE TRAPPED WATER FROM THE EXCAVATED AREA. REFER TO THE PUMPING OF STORMWATER NOTE ON WITH THE EROSION CONTROL DETAILS.
- 10. CONTRACTOR SHALL PROVIDE SURFACE DRAINAGE FROM GRADING OPERATIONS TO ADJACENT STORM SEWER STRUCTURES IF POSSIBLE. INLET PROTECTION SHALL BE PROVIDED FOR ALL DOWNSTREAM STRUCTURES AND INSPECTED AND MAINTAINED ON A WEEKLY BASIS.
- 11. INSTALL SITE WALLS AND BEGIN FINE GRADING OF THE SITE.
- 12. INSTALL SITE HARDSCAPE AND SITE LIGHTING.
- 13. STABILIZE ALL AREAS AS REQUIRED IN PLANS AND SPECIFICATIONS.
- 14. APPLY TEMPORARY SEEDING WITHIN 7 DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR PERIODS LONGER THAN 14 DAYS. APPLY PERMANENT SEEDING TO AREAS THAT WILL REMAIN DORMANT FOR MORE THAN 1 YEAR.
- 15. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL REMAIN IN OPERATION AND MAINTAINED UNTIL CONSTRUCTION OPERATIONS ARE COMPLETE. TEMPORARY ESC MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER THEY ARE NO LONGER NEEDED. UPON COMPLETION OF CONSTRUCTION AND ESTABLISHMENT OF PERMANENT GROUND COVER, CONTRACTOR SHALL REMOVE AND DISPOSE OF EROSION CONTROL MEASURES AND CLEAN SEDIMENT AND DEBRIS FROM SITE PAVEMENTS AND SEWER SYSTEMS.

JULY 2022

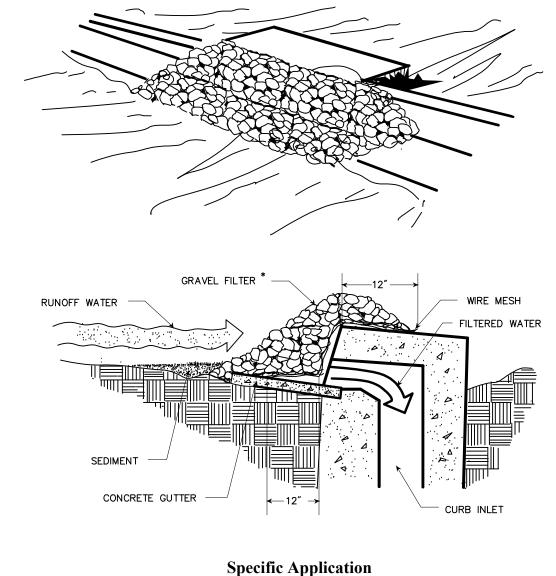
THESE PLANS ARE
UNFINISHED AND
UNAPPROVED AND
ARE NOT TO BE USED
FOR CONSTRUCTION

NOTES Technical Administrative Proposed Legend Water Meter CANAL IMPROVEMENTS Lot dimensions in parentheses are from deed. Sanitary Sewer torm Sewer \bigcirc HCR Existing Curb Cut Ramp Surveys Superintende anitary Sewer Storm Sewer Gas Meter / Valve GM ⊕ ⊕ GV Property owners correct as of ______, 20 Storm/(San) Manhole Basin Capital Project Administra Electric Line Power/Light Pole Ordinance Number Curb Cut Ramp **EROSION CONTROL** Overhead Utility Guy Anchor Decorative Light City Engineer . Adopted__ Telephone/Telegrap _____ T-Duct _____ Maintenance Engineer Conduit _____ **NOTES & DETAILS** _____ 4"\0/ _____ 4"\0/ ____ Water Line Conduit (Encased) Accepted City Traffic Engine Director of Public Works AUTHORITY: CITY OF RICHMOND, DPW _--_operty Line torm Basin EFERENCES EVISIONS DEPARTMENT OF PUBLIC WORKS ESIGN BY REVIEWED BY: DRAWING NO **(D)** or **(S)** orm or Sanitary Manhole DRAWN BY: RICHMOND. VIRGINIA July, 2022 | SHEET FH - → WV HECKED BY





Source: Virginia Erosion and Sediment Control Handbook



THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE PONDING IN FRONT OF THE STRUCTURE IS NOT LIKELY TO CAUSE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED

Source: Virginia Erosion and Sediment Control Handbook

TABLE 3.31-B (Revised June 2003) Plate 3.07-6

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

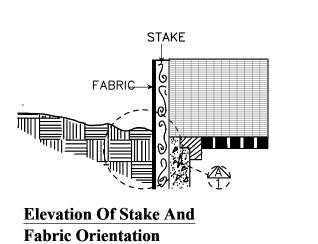
Gravel Curb Inlet Sediment Filter

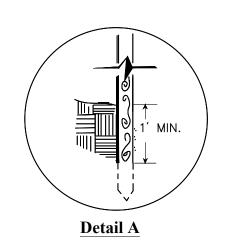
N.T.S.

Plate 3.02-1

2 X 4" WOOD FRAME DROP INLET WITH GRATE

Perspective Views



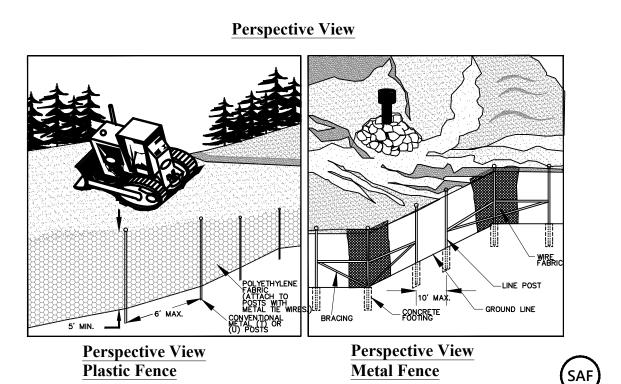


Specific Application

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPE NO GREATER THAN 5%) WHERE THE INLET SHEET OR OVERLAND FLOWS (NOT EXCEEDING 1 C.F.S.) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.

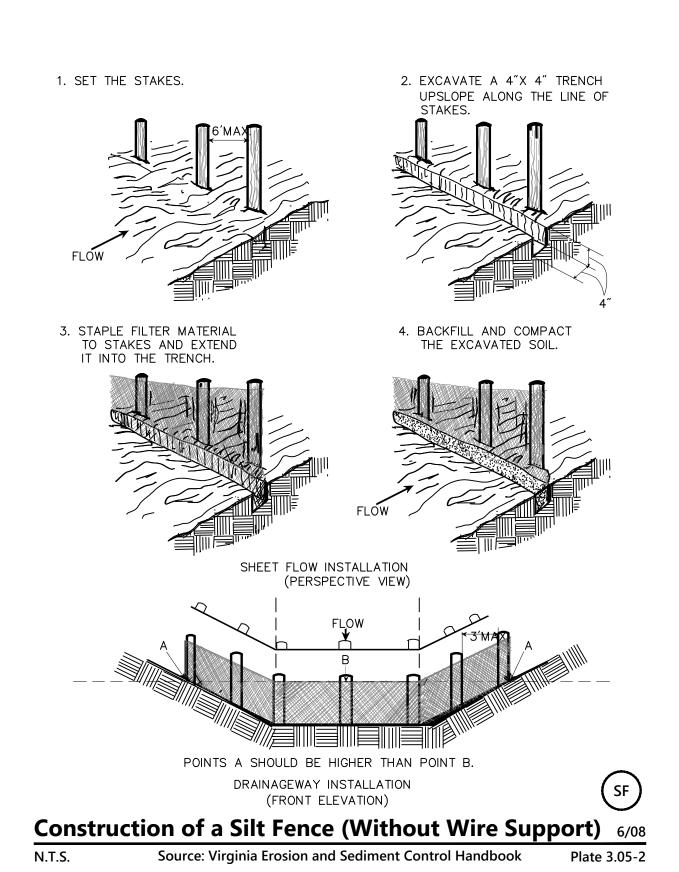
Silt Fence Drop Inlet Protection Source: Virginia Erosion and Sediment Control Handbook

Plate 3.07-1



Source: Virginia Erosion and Sediment Control Handbook

Storm or Sanitary Manhole



TEMPORARY SEEDING SPECIFICATIONS QUICK REFERENCE FOR ALL REGIONS SEED APPLICATION DATES SPECIES APPLICATION RATES 50/50 Mix of Annual Ryegrass (Iolium multi-florum) & Cereal (Winter) Rye (Secale cereale) 50 -100 (lbs/acre) Annual Ryegrass (lolium multi-florum) 60 - 100 (lbs/acre) Feb. 16 - Apr. 30 May 1 - Aug. 31 German Millet 50 (lbs/acre) FERTILIZER & LIME Apply 10-10-10 fertilizer at a rate of 450 lbs. / acre (or 10 lbs. / 1,000 sq. ft.) Apply Pulverized Agricultural Limestone at a rate of 2 tons/acre (or 90 lbs. / 1,000 sq. ft.) 1 - A soil test is necessary to determine the actual amount of lime required to adjust the soil pH of site. - Incorporate the lime and fertilizer into the top 4-6 inches of the soil by disking or by other means.

When applying Slowly Available Nitrogen, use rates available in Erosion & Sediment Control Technical Bulletin

4, 2003 Nutrient Management for Development Sites at http://www.dcr.state.va.us/sw/e&s.htm#pubs

ď	The state of the s	SEEDING RATE -		NORTH*		SOUTH ⁸		I _p		
SPECIES	Acro	1000 ft ²	3/1. 30 4/30	5/1 to 8/15	8/15 to 11/1	2/15 60 4/30	5/1, 40 9/1	9/1 to 11/15	PLANT CHARACTERISTICS	
OATS Avena saliva)	3 but (up to 100 lbs.); not less than 50 lbs.)	2.0%	X	<u>(18)</u>	6%	X	38	-	Use spring varieties (e.g., Noble):	
NE' Secula ionalia)	2 bu. (up to 110 (bs., not less than 50 (bs.)	25 May 0	X		×	X	76	X	Use for late fall seedings, winter cover. Tolerates cold and low meisture.	
GERMAN/MILLET (Seams stalics)	50 lbs.	approx. 1 lb.	A	X		# 0	X	*	Warm-scascos central. Dies of first frost May be added to strenge mixes.	
ANNUAL RYEGRASS*	60 lbs.	19/16s/	X	-	X	х		X	May be added in mixes. Will mow out of most stands	
WEEPING LOVEGRASS (Eragnosts corvala)	15 lbs.,	514 ozs.	148	×	8#87	.#G	x	3*	Warm-season perential. May builth Tolerates hot, dry slopes and soid, infertile soils. May be added to mixes.	
KOREAN LESPEDEZA [®] Lespodeza stipulacoa)	25 lbs:	approx. 1% lbs	X	X.		¥X.	X	9	Warm season annual fegume Tolerates acid seeks May be added to mixes	

TABLE 3.32-E (Revised June 2003) PERMANENT SEEDING SPECIFICATIONS FOR COASTAL PLAIN AREA

LAND USE	SPECIES	APPLICATION RATES
LAND GGE		
Minimum Care Lawn	Tall Fescue ¹	175 - 200 lb
(Commercial or Residential)	or	l
(Bermudagrass ¹	75 lk
High-Maintenance Lawn	Tall Fescue ¹	200-250 lt
	or	
	Bermudagrass ¹ (seed)	40 lbs. (unhulle
	or	30 lbs. (hulle
	Bermudagrass ¹ (by other vegetative	
	establishment method, see Std. & Spec. 3.34)	
	Tall Fescue ¹	128 lt
General Slope (3:1 or less)	Red Top Grass or Creeping Red Fescue	2 lt
General Slope (3.1 or less)	Seasonal Nurse Crop ²	<u>20 lk</u>
	·	TOTAL: 150 lb
	Tall Fescue ¹	93-108 lb
	Bermudagrass ¹	0-15 lb
Low-Maintenance Slope	Red Top Grass or Creeping Red Fescue	2 lk
(Steeper than 3:1)	Seasonal Nurse Crop ²	20 lb
	Sericea Lespedeza ³	20 lk
		TOTAL: 150 lb
1 - When selecting varieties of	turfgrass, use the Virginia Crop Improvement Assoc	istion (\/CIA) recommended

variety list is available at the local County Extension office or through VCIA at 804-746-4884 or at http://sudan.cses.vt.edu/html/Turf/turf/publications/publications2.html 2 - Use seasonal nurse crop in accordance with seeding dates as stated below: February, March - April Foxtail Millet

September, October - November 15th Annual Rye

November 16th - January .. Winter Rye 3 - May through October, use hulled seed. All other seeding periods, use unhulled seed. If Weeping Lovegrass is used, include in any slope or low maintenance mixture during warmer seeding periods, increase to 30 -40 lbs/acre.

FERTILIZER & LIME

Apply 10-20-10 fertilizer at a rate of 500 lbs. / acre (or 12 lbs. / 1,000 sq. ft.)
 Apply Pulverized Agricultural Limestone at a rate of 2 tons/acre (or 90 lbs. / 1,000 sq. ft.)

- A soil test is necessary to determine the actual amount of lime required to adjust the soil pH of site. - Incorporate the lime and fertilizer into the top 4 – 6 inches of the soil by disking or by other means. - When applying Slowly Available Nitrogen, use rates available in <u>Erosion & Sediment Control Technical Bulletin #</u>
4, 2003 Nutrient Management for Development Sites at http://www.dcr.state.va.us/sw/e&s.htm#pubs

PS

Permanent Seeding Specifications 06/03 3.32 Source: Virginia Erosion and Sediment Control Handbook

THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR CONSTRUCTION

JULY 2022

0-28_

N	OTE
. Lot dimensions in parentheses are from de	eed.
. Property owners correct as of, 20_	
. Ordinance Number	
Adopted	

	NOTES	Existing Legend	
1. Lot dimensions in parentheses	are from deed.	Storm Sewer	
2. Property owners correct as of _		Sanitary Sewer (Gravity) Gas Line	——————————————————————————————————————
3. Ordinance Number		Electric Line Overhead Utility	E OHI
4. Adopted		Telephone/Telegraph	—— T-Duc
5. Accepted		Water Line Property Line	4"W —
REFERENCES	REVISIONS	Storm Basin	

Safety Fence

----- 4"W -----_----

(D) or **(S)**

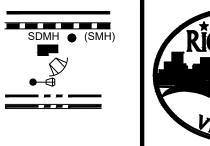
FH - ♦ WV

Plate 3.01-1

Water Meter Existing Curb Cut Ramp Gas Meter / Valve Power/Light Pole Guy Anchor

 \bigcirc HCR

Proposed Legend Sanitary Sewer Storm Sewer Storm/(San) Manhole Curb Cut Ramp Conduit (Encased)



	Technical	Administrative
*	Surveys Superintendent	
RÎCHMOND	Project Manager	Capital Project Adminis
	Maintenance Engineer	City Eng
	City Traffic Engineer	Director of Public V
VIRGINIA .	DEPARTMENT OF 1	PUBLIC WORKS

RICHMOND, VIRGINIA

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neer	VIIU

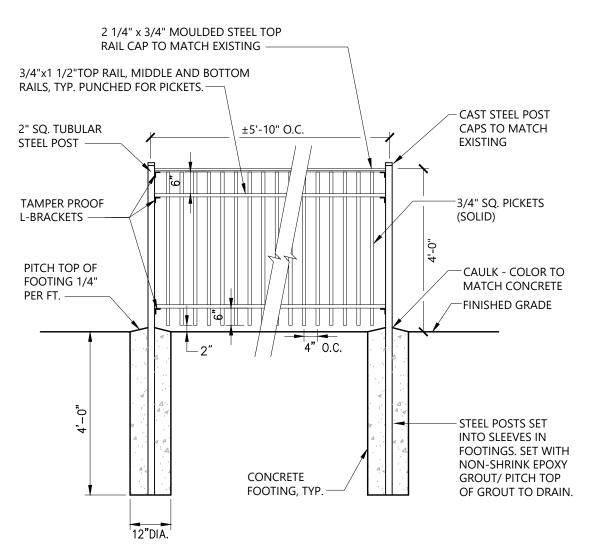
CHECKED BY:

CANAL IMPROVEMENTS PHASE 2 **EROSION CONTROL**

NOTES & DETAILS AUTHORITY: CITY OF RICHMOND, DPW DRAWING NO. DRAWN BY: July, 2022 SHEET

- 1. FOR ADDITIONAL INFORMATION ON RAMPS SEE SECTION 405 RAMPS OF THE DEPARTMENT OF JUSTICE 2010 STANDARDS.
- 2. EDGE PROTECTION TO BE PROVIDED BY EXTENDING THE RAMP SURFACE 12 INCHES BEYOND THE INSIDE FACE OF THE HANDRAIL OR PROVIDING A BOTTOM RAIL WITH THE BOTTOM OF THE RAIL TO BE NO HIGHER THAN 4 INCHES ABOVE THE RAMP SURFACE.
- 3. REFER TO SIDEWALK DETAIL FOR SIDEWALK CONSTRUCTION.

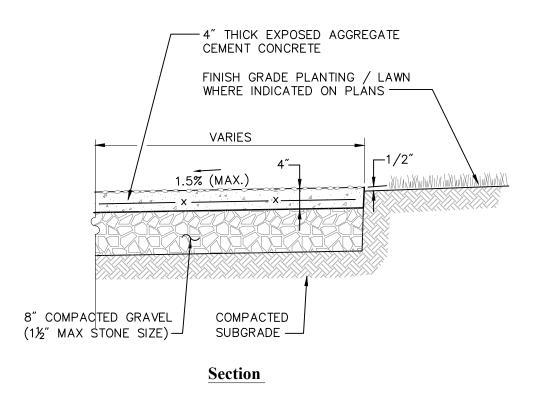
ADA Ramp 1/16 N.T.S. LD_764A Source: VHB



CONTRACTOR SHALL SUBMIT SHOP DRAWINGS, BASED ON FIELD MEASUREMENTS, FOR APPROVAL PRIOR TO

2. ALL STEEL SHALL BE HOT DIPPED GALVANIZED WITH FACTORY APPLIED EPOXY ENAMEL FINISH TO MATCH EXISTING FENCE.

4' Ht. Ornamental Metal Fence 11/15 N.T.S.

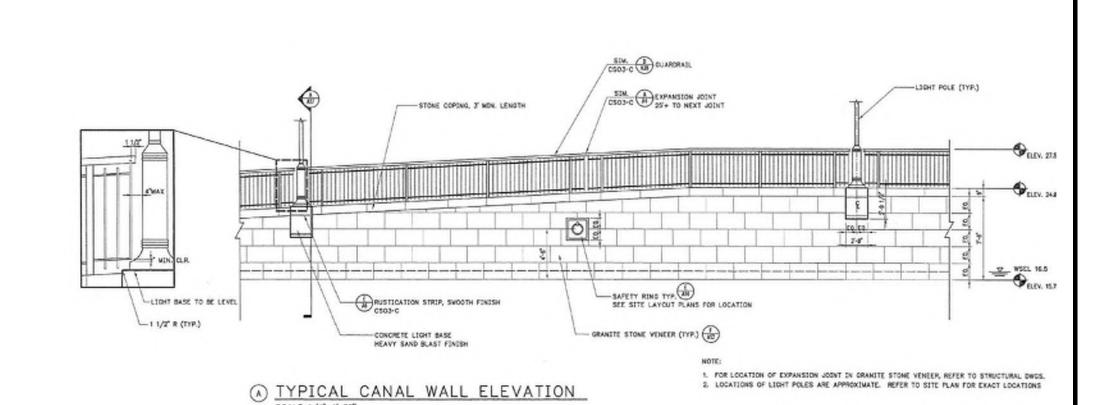


Notes: 1. PROVIDE SEALED EXPANSION JOINTS WITH PREFORMED JOINT FILLER AT 30 FEET OR CLOSER O.C. WHERE NOT OTHERWISE INDICATED ON THE PLANS.

- 2. PROVIDE SAWCUT CONTROL JOINTS 6 FEET O.C. WHERE NOT OTHERWISE INDICATED ON THE PLANS.
- 3. SEE BRICK PAVER BAND DETAIL FOR CONDITION AT PAVER BANDS.

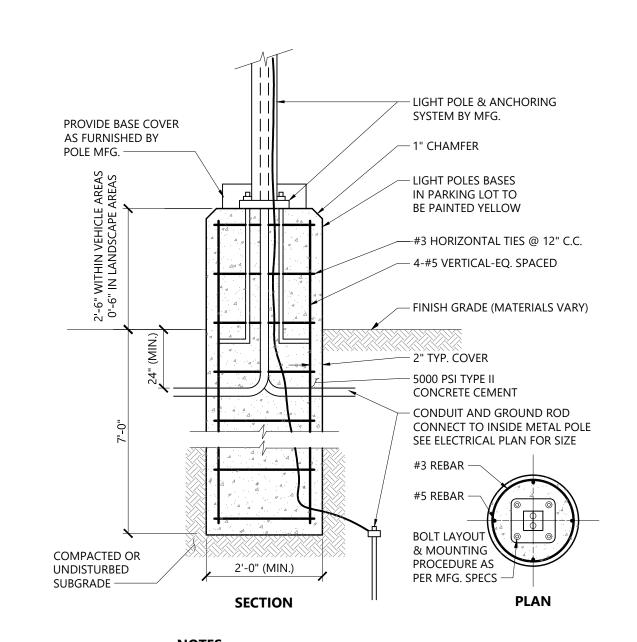
Exposed Aggregate Concrete Paving

N.T.S. Source: VHR 5/14



Canal Wall

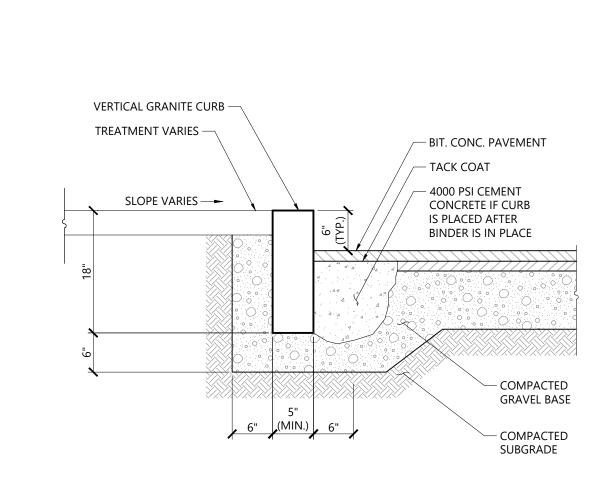
Source: Wallace Roberts & Todd N.T.S.



LIGHT POLE FOUNDATION DESIGN IS SUBJECT TO CHANGE BASED ON FINAL POLE AND FIXTURE SELECTION AND GEOTECHNICAL SITE INVESTIGATION.

Light Pole Foundation Detail (Up to 40' Pole)

N.T.S. Source: VHB 1/16 LD_310



Vertical Granite Curb - Type VB (VGC-VB)

— 1 ¼" (MIN.) TO 2" (MAX.) O.D. GALV. STL. POST & RAILS ON BOTH SIDES OF STAIRS W.W. MESH (6 X 6 X W1.4 X W1.4) FLAT SHEETS - CENTER DEPTH — 4" CEMENT CONCRETE -EXPANSION JOINT -- ½" R NOSING (MAX.) - EXPANSION JOINT 8" COMPACTED GRAVEL (1½" MAX STONE SIZE) _ 4" CEMENT CONCRETE — COMPACTED SUBGRADE — CONCRETE HILTI ANCHORS (TYP.) — SIDEWALL **EXPANSION** JOINT SEALANT -**NOTES** CONCRETE PROVIDE BROOM FINISH IN SIDEWALK -DIRECTION PERPENDICULAR TO SIDEWALK, PARALLEL TO STAIR. ½" PREFORMED 2. CEMENT CONCRETE SHALL BE 5,000 **EXPANSION JOINT -**PSI-TYPE ||. 3. WIDTH OF STEPS SHALL BE AS INDICATED ON THE PLANS.

EXPANSION JOINT DETAIL

Concrete Steps and Sidewalk 1/16 N.T.S. LD_766 Source: VHB

JULY 2022 THESE PLANS ARE **UNFINISHED AND** UNAPPROVED AND ARE NOT TO BE USED

FOR CONSTRUCTION

NO	ΓES
1. Lot dimensions in parentheses are from deed	
2. Property owners correct as of, 20	
3. Ordinance Number	
4. Adopted	
5. Accepted	
REFERENCES	REVISIONS

Existing Legend Storm Sewer Sanitary Sewer Gas Line Electric Line Overhead Utility Water Line Property Line

(D) or **(S)**

FH - ♦ WV

Storm Basin

Storm or Sanitary Manhole

Water Meter Existing Curb Cut Ramp Gas Meter / Valve Power/Light Pole Guy Anchor

 \bigcirc HCR GM ⊕ ⊕ GV

Proposed Legend Sanitary Sewer Storm Sewer Storm/(San) Manhole Curb Cut Ramp Decorative Light Conduit Conduit (Encased)



	Administrative	Technical
		Surveys Superintendent
	Capital Project Administrator	Project Manager
`	City Engineer	Maintenance Engineer
AUTHORITY	Director of Public Works	City Traffic Engineer
DESIGN BY: DRAWN BY: CHECKED BY:		DEPARTMENT OF E RICHMOND,



3/19

LD_402B

CANAL IMPROVEMENTS PHASE 2 SITE DETAILS

AUTHORITY: CITY OF RICHMOND, DPW DRAWING NO. July, 2022 SHEET