

# City of Richmond Department of Planning & Development Review

#### Location, Character, and Extent

LOCATION: 3101 Wharf St.

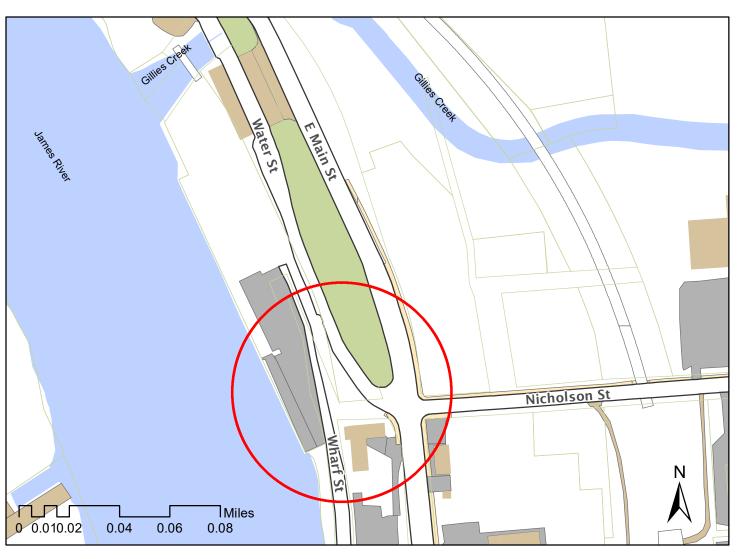
COUNCIL DISTRICT: 7

PROPOSAL: Final location, character, and extent review of a self-contained, pre-cast concrete restroom facility within the footprint of the existing

Intermediate Terminal Dock site.

4 5 7

For questions, please contact Josh Son at 646-3741 or joshua.son@richmondgov.com





#### **Application for URBAN DESIGN COMMITTEE Review**

Department of Planning and Development Review
Planning & Preservation Division
900 E. Broad Street, Room 510
Richmond, Virginia 23219
(804) 646-6335

http://www.richmondgov.com/CommitteeUrbanDesign

Application Type  Addition/Alteration to Existing Structure New Construction Streetscape Site Amenity	Encroachment Master Plan Sign Other	Review Type Conceptual Final
Project Name:		
Project Address:		
Applicant Information (on all applications other than encroachments, a City agency		
Name:	_ Email:	
City Agency:	Phone:	
Address:		
Main Contact (if different from Applicant):		
Company:	Phone:	
Email:		

#### **Submittal Deadlines**

All applications and support materials must be filed no later than 21 days prior to the scheduled meeting of the Urban Design Committee (UDC). Please see the schedule on page 3 as actual deadlines are adjusted due to City holidays. Late or incomplete submissions will be deferred to the next meeting.

#### **Filing**

Applications can be mailed or delivered to the attention of "Urban Design Committee" at the address listed at the top of this page. It is important that the applicant discuss the proposal with appropriate City agencies, Zoning Administration staff, and area civic associations and residents prior to filing the application with the UDC.

#### **UDC Background**

The UDC is a ten member committee created by City Council in 1968 whose purpose is to advise the City Planning Commission on the design of projects on City property or right-of-way. The UDC provides advice of an aesthetic nature in connection with the performance of the duties of the Commission under Sections 17.05, 17.06 and 17.07 of the City Charter. The UDC also advises the Department of Public Works in regards to private encroachments in the public right-of-way.



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#### **Submission Requirements**

- 10 copies of the application cover sheet and all support materials (see below), unless the application is for an encroachment, in which case only 6 copies are required. Plan sheets should be 11" x 17", folded to 8 1/2" x 11". If it is not possible to scale plans to these dimensions, please provide one set of larger, scaled plans.
- An electronic copy (PDF preferred) of all application materials, which can be burned to disc, emailed, or delivered by FTP.

All applications must include the attached cover sheet and the following support materials, as applicable to the project:

#### For Conceptual Review

- A detailed project narrative which includes the following: purpose of the project, project background, project budget and funding sources, description of construction program and estimated construction start date (description should also provide information on the surrounding area to provide context).
- A site plan for the project indicating site characteristics which include: building footprints, parking areas, pedestrian routes, recreation areas, open areas and areas of future expansion.
- A set of floor plans and elevations, as detailed as possible.
- A landscaping plan which shows the general location and character of plant materials and notes any existing tree to be removed.

#### For Final Review

- A detailed project narrative which includes the following: purpose of the project, project background, project budget and funding sources, description of construction program and estimated construction start date (description should also provide information on the surrounding area to provide context).
- A site plan for the project indicating site characteristics which include: building footprints, parking areas, pedestrian routes, recreation areas, open areas and areas of future expansion.
- A set of floor plans and elevations, as detailed as possible.
- A landscaping plan that includes a complete plant schedule, the precise location of all plant materials, and a landscape maintenance analysis. The plant schedule must show number, size and type of each planting proposed. If existing trees are to be removed, their size, type and location must be noted on the landscape plan.
- The location of all lighting units should be noted on a site plan, including wall-mounted, site and parking lot lighting. Other site details, such as benches, trash containers and special paving materials, should also be located. Include specification sheets for each item.
- Samples of all proposed exterior building materials, including but not limited to brick, mortar, shingles, siding, glass, paint and stain colors. When as actual sample cannot be provided, a product information sheet that shows the item or a photo of an existing item may be substituted.

#### **Review and Processing**

Once an application is received, it is reviewed by staff, who compiles a report that is sent to the UDC. A copy of the report and the meeting agenda will be sent to the applicant prior to the meeting. The applicant or a representative should be present at the UDC meeting or the application may be deferred to the next regularly scheduled meeting. It is also strongly suggested that a representative of the City Agency which will have final responsibility for the item be present at the meeting (if the applicant and the representative are not the same). Once the UDC recommends action on the application, it is automatically placed on the agenda for the next City Planning Commission (CPC) meeting. An exception to this is encroachment applications, recommendations for which are forwarded to the Department of Public Works. The applicant or a representative must be present at the CPC meeting or the application may be deferred to the next regularly scheduled meeting.

# CITY OF RICHMOND URBAN DESIGN COMMITTEE (UDC)

#### **MEETING SCHEDULE**

UDC Meetings	UDC Submission Deadlines	Anticipated Date of Planning Commission Following the UDC Meeting
December 7, 2017	November 9, 2017	December 18, 2017
January 4, 2018	December 7, 2017**	January 16, 2018 <sup>1</sup>
February 8, 2018	January 18, 2018	February 20, 2018 <sup>2</sup>
March 8, 2018	February 15, 2018	March 19, 2018
April 5, 2018	March 15, 2018	April 16, 2018
May 10, 2018	April 19, 2018	May 21, 2018
June 7, 2018	May 17, 2018	June 18, 2018
July 5, 2018	June 14, 2018	July 16, 2018
August 9, 2018	July 19, 2018	August 20, 2018 <sup>3</sup>
September 6, 2018	August 16, 2018	September 17, 2018
October 4, 2018	September 13, 2018	October 15, 2018
November 8, 2018	October 18, 2018	November 19, 2018
December 6, 2018	November 15, 2018*	December 17, 2018 <sup>4</sup>

<sup>&</sup>lt;sup>1</sup> Monday, January 15, 2018 is a City of Richmond Holiday.

The Richmond Urban Design Committee (UDC) is a ten member advisory committee created by City Council in 1968. Its purpose is to advise the City Planning Commission on the design of City projects. The UDC reviews projects for appropriateness in "location, character and extent" and for consistency with the City's Master Plan and forwards recommendations to the Planning Commission. The UDC also advises the Department of Public Works in regards to private encroachments in the public right-of-way.

Regular meetings are scheduled for the Thursday after the first Monday of each month at 10:00 a.m. in the 5<sup>th</sup> floor conference room of City Hall. Special meetings are scheduled as needed.

For additional information, please contact the Planning and Preservation Division staff at (804) 646-3741 or joshua.son@richmondgov.com.

<sup>&</sup>lt;sup>2</sup> Monday, February 19, 2018 is a City of Richmond Holiday.

<sup>&</sup>lt;sup>3</sup> This August CPC Meeting may be canceled. If so, Planning Commission hearing would be Tuesday, September 4, 2018.

<sup>&</sup>lt;sup>4</sup> This December CPC Meeting may be canceled. If so, Planning Commission hearing would be Monday, January 7, 2019.

<sup>\*\*</sup> Moved forward to account for Winter Holiday Schedule

#### <u>Intermediate Terminal Dock Phase 2 – Public Restroom Facility Installation</u>

#### Project Purpose:

- Intermediate Terminal is the primary opportunity for the City, along the James River, to develop commercial passenger, tourist and City resident interaction with the deep water portions of the river. The Riverfront Development Master Plan has highlighted the Intermediate Terminal Dock area as one that provides the citizens of the City of Richmond a place to enjoy the James River through boating, fishing and other activities. There are currently no public restroom facilities anywhere along this area of the riverfront. In addition, there are no public restroom facilities provided for anyone utilizing the Capital Trail in this area.
- As part of the proposed "Intermediate Terminal Dock Phase 2 Public Access" project, the city is
  proposing to install a pre-cast concrete restroom facility within the footprint of the existing
  Intermediate Terminal Dock site. This restroom facility will serve individuals coming to the dock
  for passenger cruise ship departures and for those utilizing the Capital Trail and the dock area
  for recreational purposes.

#### Project Background:

- The city proposes to install a self-contained, pre-cast concrete restroom facility within the footprint of the existing Intermediate Terminal Dock site.
- The proposed restroom will measure, approximately, 12 ft x 22 ft and consist of a Men's and Women's restroom facility
- Each facility will contain 2 stalls and 1 sink. Additionally the facility will provide a water fountain for public use.
- The restroom facilities are proposed to be open during the normal operating hours established by the City's Parks and Recreation department.

#### Project Budget:

• The current budget for this project is set at \$81,849. This funding was applied for and received via the "VPA aid to Local Ports" grant program.

#### **Estimated Construction Start Date:**

• The proposed start date for this Phase of the project is September, 2018. The project must be underway by December, 2018 in order to qualify for the use of the VPA to Local Port grant program.

# Site Plans

Issued for Permits

Date Issued February 2, 2018

Latest Issue June 22, 2018

# Intermediate Terminal Dock Phase 2 - Public Access

3101 Wharf Street Richmond, Virginia

# Owner

City of Richmond
Department of Public Works
900 East Broad Street, Suite 602
Richmond, Virginia 23219
804.646.6614

# **Applicant**

VHB 115 South 15th Street, Suite 200 Richmond, Virginia 23219 804.343.7100

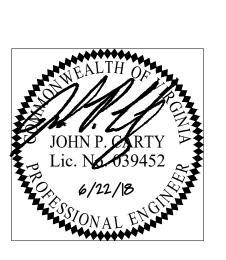
**Parcel:** E0000817001

Zoning: M-2, Heavy Industrial





Sheet Index				
No.	Drawing Title	Latest Issue		
C1.01	Legend and General Notes	June 22, 2018		
C2.01	Existing Conditions Plan	June 22, 2018		
C2.02	Demolition and Erosion and Sediment Control Plan Phase 1	June 22, 2018		
C3.01	Layout and Materials Plan	June 22, 2018		
C3.02	Utility Plan	June 22, 2018		
C4.01	Grading and Drainage Plan	June 22, 2018		
C5.01	Erosion and Sediment Control Plan Phase 2	June 22, 2018		
C5.02	Erosion Control Notes	June 22, 2018		
C5.03	City of Richmond Pollution Prevention Plan	June 22, 2018		
C5.04	Erosion Control Details	June 22, 2018		
C6.01-C6.05	Details	June 22, 2018		
C7.01	Calculations and Profiles	June 22, 2018		
C8.01	Drainage Area Maps	June 22, 2018		



		Leg	gend		
Exist.	Prop.		Exist.	Prop.	
		PROPERTY LINE			CONCRETE
		PROJECT LIMIT LINE	4.5	<u> </u>	HEAVY DUTY PAVEMENT
		RIGHT-OF-WAY/PROPERTY LINE			BUILDINGS
		EASEMENT			RIPRAP
		BUILDING SETBACK	1000 INOSCI		CONSTRUCTION EXIT
		PARKING SETBACK			
10+00	10+00	BASELINE	27.35 TC×	27.35 TC×	TOP OF CURB ELEVATION
		CONSTRUCTION LAYOUT	26.85 BC×	26.85 BC×	BOTTOM OF CURB ELEVATION
		ZONING LINE	132.75 ×	132.75 ×	SPOT ELEVATION
		TOWN LINE	45.0 TW × 38.5 BW	45.0 TW 38.5 BW	TOP & BOTTOM OF WALL ELEVATION
		-	_	<b>◆</b>	BORING LOCATION
<del></del>		LIMIT OF DISTURBANCE		<b>⊞</b>	TEST PIT LOCATION
<u>&amp;</u>		WETLAND LINE WITH FLAG	<b>○</b> MW	<b>→</b> MW	MONITORING WELL
<del></del>		FLOODPLAIN	UD	——UD——	UNDERDRAIN
BLSF		BORDERING LAND SUBJECT TO FLOODING	12"D	12″D—►	DRAIN
———ВZ——		WETLAND BUFFER ZONE	6"RD	6"RD <b>→</b>	ROOF DRAIN
NDZ		NO DISTURB ZONE	1 <u>2</u> "S	12 <b>"</b> S	SEWER
200′RA			FM	<u>FM</u>	FORCE MAIN
		200' RIVERFRONT AREA	OHW	OHW	OVERHEAD WIRE
		GRAVEL ROAD	6"W	6"W	WATER
<u>EOP</u>	<u>EOP</u>	EDGE OF PAVEMENT	4"FP	——4"FP——	FIRE PROTECTION
BB	BB	BITUMINOUS BERM		2"DW	DOMESTIC WATER
BC	BC	BITUMINOUS CURB	3"G	——-G——	GAS
CC	CC	CONCRETE CURB	——Е——	——Е——	ELECTRIC
	CG	CURB AND GUTTER	STM	——STM——	STEAM
CC	ECC	EXTRUDED CONCRETE CURB	T	T	TELEPHONE
CC	<u>MCC</u>	MONOLITHIC CONCRETE CURB	——-FA——	——FA——	FIRE ALARM
CC	PCC	PRECAST CONC. CURB			CABLE TV
<u>SGE</u>	SGE	SLOPED GRAN. EDGING			
VGC	VGC	VERT. GRAN. CURB			CATCH BASIN
		LIMIT OF CURB TYPE			DOUBLE CATCH BASIN
		SAWCUT	<b></b>	<b>==</b>	GUTTER INLET
	1			•	DRAIN MANHOLE
(1/1/1/1		BUILDING	=TD=		TRENCH DRAIN
](	<b>□</b> EN	BUILDING ENTRANCE	_co	r _co	PLUG OR CAP
]		LOADING DOCK		•••	CLEANOUT
•		BOLLARD	<b>&gt;</b>	•	FLARED END SECTION
D	D	DUMPSTER PAD			HEADWALL
-	<del></del>	SIGN	(\$)	•	SEWER MANHOLE
	<b>=</b>	DOUBLE SIGN	CS ⊚	 CS ●	
			● WV ●	<ul><li>W∨</li><li>●</li></ul>	CURB STOP & BOX
т т		STEEL GUARDRAIL	TSV	<b>●</b> TSV	WATER VALVE & BOX
		WOOD GUARDRAIL		<b>→</b>	TAPPING SLEEVE, VALVE & BOX
			 . HYD	₩ HYD	SIAMESE CONNECTION
		PATH	© WM	<b>.</b> ™M	FIRE HYDRANT
~ \ \	<b>~~~~</b>	TREE LINE	PIV	⊡ PIV	WATER METER
<u> </u>	<del>-x x -</del>	WIRE FENCE	<ul><li>•</li></ul>	•	POST INDICATOR VALVE
_0	•	FENCE		<u></u>	WATER WELL
	-	STOCKADE FENCE	GG O	GG O	GAS GATE
000000	$\infty$	STONE WALL	GM ∙	GM ⊡	GAS METER
		RETAINING WALL	E	<b>●</b> EMH	ELECTRIC MANHOLE
	<del></del>	STREAM / POND / WATER COURSE	EM	- EM ⊡	ELECTRIC METER
		DETENTION BASIN	<b>\$</b>	*	LIGHT POLE
0 0 0 0 0 0 0 0 0 0 0		HAY BALES		◆ •™H	
——×——	——×——	SILT FENCE	①	-	TELEPHONE MANHOLE
· <::::::> ·	· C::::::> ·	SILT SOCK / STRAW WATTLE	T	T	TRANSFORMER PAD
4	<del></del> 4 <del></del>	MINOR CONTOUR	-0-	•	UTILITY POLE
— — 20— —	20	MAJOR CONTOUR	0-	•-	GUY POLE
(10)	<u> </u>			Ϊ	GUY WIRE & ANCHOR
(10)	(10)	PARKING COUNT	HH ⊡	HH ⊡	HAND HOLE
DVI	©10)	COMPACT PARKING STALLS	PB ⊡	PB ⊡	PULL BOX
DYL	DYL	DOUBLE YELLOW LINE			. 011 20/
SL	SL	STOP LINE	<u>Mato</u>	<u>chline</u>	MATCHLINE
		CROSSWALK			
	$\triangle$	ACCESSIBLE CURB RAMP			
2	ያ	ACCESSIBLE DADKING			

**ACCESSIBLE PARKING** 

VAN-ACCESSIBLE PARKING

General	
ABAN	ABANDON
ACR	ACCESSIBLE CURB RAMP
ADJ	ADJUST
APPROX	APPROXIMATE
BIT	BITUMINOUS
BS	BOTTOM OF SLOPE
BWLL	BROKEN WHITE LANE LINE
CONC	CONCRETE
DYCL	DOUBLE YELLOW CENTER LINE
EL	ELEVATION
ELEV	ELEVATION
EX	EXISTING
FDN	FOUNDATION
FFE	FIRST FLOOR ELEVATION
GRAN	GRANITE
GTD	GRADE TO DRAIN
LA	LANDSCAPE AREA
LOD	LIMIT OF DISTURBANCE
MAX	MAXIMUM
MIN	MINIMUM
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
PERF	PERFORATED
PROP	PROPOSED
REM	REMOVE
RET	RETAIN
R&D	REMOVE AND DISPOSE
R&R	REMOVE AND RESET
SWEL	SOLID WHITE EDGE LINE
SWLL	SOLID WHITE LANE LINE
TS	TOP OF SLOPE
TYP	TYPICAL
Utility	
CB	CATCH BASIN
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
DCB	DOUBLE CATCH BASIN
DMH	DRAIN MANHOLE
CIP	CAST IRON PIPE
COND	CONDUIT
DIP	DUCTILE IRON PIPE
	FLARED END SECTION
FES FM	FORCE MAIN
	FRAME AND GOVER
	FRAME AND COVER
GI	GUTTER INLET
GT	GREASE TRAP
	HIGH DENSITY POLYETHYLENE PIPE
НН	HANDHOLE
	HEADWALL
HYD	HYDRANT
INV	INVERT ELEVATION
l=	INVERT ELEVATION
LP	LIGHT POLE
MES	METAL END SECTION
PIV	POST INDICATOR VALVE
	PAVED WATER WAY
PVC	POLYVINYLCHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE
R=	RIM ELEVATION
SMH	SEWER MANHOLE
TSV	TAPPING SLEEVE, VALVE AND BOX
UG	UNDERGROUND

UTILITY POLE

Notes

#### General

- CONTRACTOR SHALL CONTACT MISS UTILITY AT 811, 1-800-552-7100, OR
  HTTP://WWW.MISSUTILITYOFVIRGINIA.COM NO LESS THAN 72 HOURS PRIOR TO EXCAVATION AND SHALL NOT
  DISTURB THE SOIL UNTIL DIG TICKET HAS BEEN PROCESSED.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH OSHA STANDARDS, AND LOCAL REQUIREMENTS.
- ACCESSIBLE ROUTES, PARKING SPACES, RAMPS, SIDEWALKS AND WALKWAYS SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE FEDERAL AMERICANS WITH DISABILITIES ACT LATEST EDITION OF THE ADA STANDARDS FOR ACCESSIBLE DESIGN. CONTRACTOR MUST ALSO COMPLY WITH STATE AND LOCAL LAWS AND REGULATIONS (WHICHEVER ARE MORE STRINGENT).
- 4. AREAS DISTURBED DURING CONSTRUCTION AND NOT RESTORED WITH AN IMPERVIOUS SURFACE (PAVEMENT, GRAVEL, ETC.), BUT LEFT DORMANT FOR A PERIOD LONGER THAN 14 DAYS, SHALL APPLY SITE SPECIFIC TEMPORARY OR PERMANENT SEEDING MIXTURE. FOLLOW DETAIL PROVIDED BY VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK STANDARD & SPECIFICATIONS 3.31 AND 3.32.
- 5. WORK WITHIN THE LOCAL RIGHT-OF-WAY SHALL CONFORM TO CITY OF RICHMOND STANDARDS.
- 6. UPON AWARD OF CONTRACT, CONTRACTOR SHALL MAKE NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN NECESSARY PERMITS, AND POST BONDS ASSOCIATED WITH THE WORK INDICATED ON THE DRAWINGS, IN THE SPECIFICATIONS, AND IN THE CONTRACT DOCUMENTS. DO NOT CLOSE OR OBSTRUCT ROADWAYS, SIDEWALKS, AND FIRE HYDRANTS, WITHOUT APPROPRIATE PERMITS.
- 7. TRAFFIC SIGNAGE AND PAVEMENT MARKINGS SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, UNLESS OTHERWISE INDICATED.
- 8. DAMAGE RESULTING FROM CONSTRUCTION LOADS AND AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE AS SOON AS PRACTICABLE.
- 9. IN THE EVENT THAT SUSPECTED CONTAMINATED SOIL, GROUNDWATER, AND OTHER MEDIA ARE ENCOUNTERED DURING EXCAVATION AND CONSTRUCTION ACTIVITIES BASED ON VISUAL, OLFACTORY, OR OTHER EVIDENCE, THE CONTRACTOR SHALL STOP WORK IN THE VICINITY OF THE SUSPECT MATERIAL TO AVOID FURTHER SPREADING OF THE MATERIAL, AND SHALL NOTIFY THE OWNER IMMEDIATELY SO THAT THE APPROPRIATE TESTING AND SUBSECUENT ACTION CAN BE TAKEN.
- 10. CONTRACTOR SHALL PREVENT DUST, SEDIMENT, AND DEBRIS FROM EXITING THE SITE AND SHALL BE RESPONSIBLE FOR CLEANUP, REPAIRS AND CORRECTIVE ACTION IF SUCH OCCURS. CONTRACTOR SHALL DISPOSE OF DEBRIS IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS, ORDINANCES AND STATUS.
- 11. ALL EARTHWORK TO COMPLETE THE PROPOSED IMPROVEMENTS SHALL BE INCLUDED IN THE CONTRACT. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING SITE/EXCAVATION STABILITY, DRAINAGE AND PROTECTION FROM FROST IN ALL EXCAVATION WORK.
- 12. CONTRACTOR SHALL CONTROL STORMWATER RUNOFF DURING CONSTRUCTION TO PREVENT ADVERSE IMPACTS TO OFF SITE AREAS, AND SHALL BE RESPONSIBLE TO REPAIR RESULTING DAMAGES, IF ANY, AT NO COST TO OWNER.
- 13. THIS PROJECT IS LOCATED WITHIN THE RMA, A DESIGNATED CHESAPEAKE BAY PRESERVATION AREA, AND DISTURBS MORE THAN 2,500 SQUARE FEET OF LAND. IT IS, THEREFORE, SUBJECT TO THE RICHMOND STORMWATER MANAGEMENT PROGRAM (RSMP), GENERAL CONSTRUCTION PERMIT (GCP) PROGRAM AS ADMINISTERED BY THE CITY OF RICHMOND, UNDER THE JURISDICTION OF THE VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ) AND THE EPA. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL FILE A GCP NOTICE OF INTENT WITH THE CITY AND PREPARE A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IN ACCORDANCE WITH THE VSMP REGULATIONS.

#### Utilities

- 1. THE LOCATIONS, SIZES, AND TYPES OF EXISTING UTILITIES ARE SHOWN AS AN APPROXIMATE REPRESENTATION ONLY. THE OWNER OR IT'S REPRESENTATIVE(S) HAVE NOT INDEPENDENTLY VERIFIED THIS INFORMATION AS SHOWN ON THE PLANS. THE UTILITY INFORMATION SHOWN DOES NOT GUARANTEE THE ACTUAL EXISTENCE, SERVICEABILITY, OR OTHER DATA CONCERNING THE UTILITIES, NOR DOES IT GUARANTEE AGAINST THE POSSIBILITY THAT ADDITIONAL UTILITIES MAY BE PRESENT THAT ARE NOT SHOWN ON THE PLANS. PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY AND DETERMINE THE EXACT LOCATIONS, SIZES, AND ELEVATIONS OF THE POINTS OF CONNECTIONS TO EXISTING UTILITIES AND, SHALL CONFIRM THAT THERE ARE NO INTERFERENCES WITH EXISTING UTILITIES AND THE PROPOSED UTILITY ROUTES, INCLUDING ROUTES WITHIN THE PUBLIC RIGHT OF WAY.
- WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, OR EXISTING CONDITIONS DIFFER FROM THOSE SHOWN SUCH THAT THE WORK CANNOT BE COMPLETED AS INTENDED, THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED IN WRITING TO THE OWNER'S REPRESENTATIVE FOR THE RESOLUTION OF THE CONFLICT AND CONTRACTOR'S FAILURE TO NOTIFY PRIOR TO PERFORMING ADDITIONAL WORK RELEASES OWNER FROM OBLIGATIONS FOR ADDITIONAL PAYMENTS WHICH OTHERWISE MAY BE WARRANTED TO RESOLVE THE CONFLICT.
- 3. SET CATCH BASIN RIMS, AND INVERTS OF SEWERS, DRAINS, AND DITCHES IN ACCORDANCE WITH ELEVATIONS ON THE GRADING AND UTILITY PLANS.
- 4. RIM ELEVATIONS FOR DRAIN AND SEWER MANHOLES, WATER VALVE COVERS, GAS GATES, ELECTRIC AND TELEPHONE PULL BOXES, AND MANHOLES, AND OTHER SUCH ITEMS, ARE APPROXIMATE AND SHALL BE SET/RESET AS FOLLOWS:
- A. PAVEMENTS AND CONCRETE SURFACES: FLUSH
- B. ALL SURFACES ALONG ACCESSIBLE ROUTES: FLUSH
- C. LANDSCAPE, LOAM AND SEED, AND OTHER EARTH SURFACE AREAS: ONE INCH ABOVE SURROUNDING AREA AND TAPER EARTH TO THE RIM ELEVATION.
- 5. THE LOCATION, SIZE, DEPTH, AND SPECIFICATIONS FOR CONSTRUCTION OF PROPOSED PRIVATE UTILITY SERVICES SHALL BE INSTALLED ACCORDING TO THE REQUIREMENTS PROVIDED BY, AND APPROVED BY, THE RESPECTIVE UTILITY COMPANY (GAS, TELEPHONE, ELECTRIC, FIRE ALARM, ETC.). FINAL DESIGN LOADS AND LOCATIONS TO BE COORDINATED WITH OWNER AND ENGINEER.
- 6. CONTRACTOR SHALL MAKE ARRANGEMENTS FOR AND SHALL BE RESPONSIBLE FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE, FIRE ALARM, AND ANY OTHER PRIVATE UTILITIES, WHETHER WORK IS PERFORMED BY CONTRACTOR OR BY THE UTILITIES COMPANY.
- 7. UTILITY PIPE MATERIALS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED ON THE PLAN:
- A. WATER LINES FOR FIRE PROTECTION SHALL BE DUCTILE IRON PIPE (DIP). WATER LINES FOR DOMESTIC USE SHALL BE DUCTILE IRON PIPE (DIP), CLASS 52, OR TYPE "K" COPPER, IN ACCORDANCE WITH CITY OF RICHMOND
- B. SANITARY SEWER PIPES SHALL BE SDR-35 POLYVINYL CHLORIDE (PVC) SEWER PIPE.
- C. STORM DRAINAGE PIPES SHALL BE CLASS III RCP FOR SIZES 15" AND LARGER, AND SDR 35 PVC FOR SMALLER PIPES.
- D. PIPE INSTALLATION AND MATERIALS SHALL COMPLY WITH THE STATE PLUMBING CODE WHERE APPLICABLE. CONTRACTOR SHALL COORDINATE WITH LOCAL PLUMBING INSPECTOR PRIOR TO BEGINNING WORK.
- 8. CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR AND SHALL FURNISH EXCAVATION, INSTALLATION, AND BACKFILL OF ELECTRICAL FURNISHED SITEWORK RELATED ITEMS SUCH AS PULL BOXES, CONDUITS, DUCT BANKS, LIGHT POLE BASES, AND CONCRETE PADS. SITE CONTRACTOR SHALL FURNISH CONCRETE ENCASEMENT OF DUCT BANKS IF REQUIRED BY THE UTILITY COMPANY AND AS INDICATED ON THE DRAWINGS.
- 9. ALL CONCRETE DRAINAGE AND SANITARY STRUCTURE INTERIOR DIAMETERS (4' MIN.) SHALL BE DETERMINED BY THE MANUFACTURER BASED ON THE PIPE CONFIGURATIONS SHOWN ON THESE PLANS AND LOCAL MUNICIPAL STANDARDS. FOR MANHOLES THAT ARE 20 FEET IN DEPTH AND GREATER, THE MINIMUM DIAMETER SHALL BE 5 FEET.
- ALL DRAINAGE STRUCTURES 4 FEET AND GREATER IN DEPTH SHALL BE PROVIDED WITH MANHOLE STEPS WHICH COMPLY WITH VDOT STANDARD ST-1.
- 11. A UTILITY INSPECTOR SHALL BE ON SITE FOR ALL UTILITY INSTALLATIONS AND CONNECTIONS TO THE EXISTING SYSTEM.

# **Layout and Materials**

- DIMENSIONS ARE FROM THE FACE OF CURB, FACE OF BUILDING, FACE OF WALL, AND CENTER LINE OF PAVEMENT MARKINGS, UNLESS OTHERWISE NOTED.
- 2. CURB RADII ARE 5 FEET TO FACE OF CURB UNLESS OTHERWISE NOTED.
- 3. CURBING SHALL BE CITY OF RICHMOND STANDARD CONCRETE CURB, UNLESS OTHERWISE NOTED.
- 4. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL VERIFY EXISTING PAVEMENT ELEVATIONS AT INTERFACE WITH PROPOSED PAVEMENTS, AND EXISTING GROUND ELEVATIONS ADJACENT TO DRAINAGE OUTLETS TO ASSURE PROPER TRANSITIONS BETWEEN EXISTING AND PROPOSED FACILITIES.
- 5. ALL CONCRETE IF NOT SPECIFICALLY CALLED OUT SHALL BE A MINIMUM OF 3,000 PSI.
- 6. ALL AGGREGATE AND SUBGRADE WITHIN PAVED AREAS SHALL BE COMPACTED TO 95% COMPACTION PER STANDARD PROCTOR. LANDSCAPED AREAS SHALL BE 90% COMPACTED.
- SYMBOLS AND LEGENDS OF PROJECT FEATURES ARE GRAPHIC REPRESENTATIONS AND ARE NOT NECESSARILY SCALED TO THEIR ACTUAL DIMENSIONS OR LOCATIONS ON THE DRAWINGS. THE CONTRACTOR SHALL REFER TO THE DETAIL SHEET DIMENSIONS, MANUFACTURERS' LITERATURE, SHOP DRAWINGS AND FIELD MEASUREMENTS OF SUPPLIED PRODUCTS FOR LAYOUT OF THE PROJECT FEATURES.
- 8. PER ADA ACCESSIBILITY REQUIREMENTS, ALL ACCESSIBLE ROUTES SHALL NOT EXCEED 5% LONGITUDINAL SLOPE AND 2% CROSS SLOPE

## Geotechnical Notes - For the City of Richmond DPW

- ALL CONTROLLED FILL ZONES ARE TO BE MONITORED BY A FULL-TIME GEOTECHNICAL ENGINEERING SERVICES FIRM.
   ENGINEERED FILLS SHALL BE PROPERLY PLACED ACCORDING TO THE RECOMMENDATIONS OF THE GEOTECHNICAL
- 3. ALL SUMMARY REPORTS FROM THE GEOTECHNICAL ENGINEER REPRESENTING THE PROJECT MUST STATE HIS PROFESSINAL OPINION ON THE SATISFACTORILY COMPLETED PHASES OF CONSTRUCTION, SUCH AS; SLOPE CUTS,
- NO FILLS SHALL HAVE ZONES THAT EXCEED TWO (2) FEET IN ELEVATION WITHOUT CONDUCTING COMPACTION
  TEST AND OBTAINING RESULTS OF 95% OR GREATER.

SUBDRAINAGE SYSTEMS, PREPARATION OF SUBGRADES AND COMPACTION OF EARTH FILLS.

- 5. THE GEOTECHNICAL ENGINEER MUST SUBMIT A DETAILED ANALYSIS, ITEMIZING THE FIELD DENSITY TEST RESULTS. THIS REPORT SHALL BE ACCOMPANIED WITH A COPY OF THE SITE PLAN SHEET AND INDICATE THE TEST LOCATIONS AND ELEVATIONS. THE GEOTECHNICAL ENGINEER MUST PROVIDE ENOUGH DESIGNATED TESTING IN ALL FILL ZONES TO ADEQUATELY EXAMINE AND CERTIFY THE INTEGRITY OF THE FILL.
- 6. THE GEOTECHNICAL ENGINEER MUST SUBMIT A CERTIFIED BUILDING PAD REPORT FOR EACH FILL PAD LOCATION. THIS REPORT SHALL PROFILE THE FILL MATERIAL PLACEMENT AND PROVIDE THE COMPACTION TEST RESULTS. ALL REPORTS WILL BE ACCOMPANIED BY THE SITE PLAN, INDICATING THE TEST LOCATIONS AND ELEVATIONS.
- NO BUILDING PADS IN FILL ZONES WILL HAVE STRATUMS EXCEEDING TWO (2) FEET IN ELEVATION WITHOUT TEST VERFIYING DENISTY.
- 8. THESE GEOTECHNICAL NOTES SHALL IN NO WAY LESSEN THE REQUIREMENTS OF THE SUBMITTED SOILS REPORT.

#### Road Subgrade

- 1. INSPECTION AND APPROVAL OF THE SUBGRADE WILL BE REQUIRED PRIOR TO THE PLACEMENT OF THE APPROVED PAVEMENT MATERIAL.
- ANY CLAY DEPOSITS IN THE TOP TWO FEET OF THE SUBGRADE MUST BE REMOVED OR ADDRESSED AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER.
- 3. SUBGRADE APPROVAL SHALL BE ACCOMPANIED BY THE SUPPORTING DOCUMENTATION VERIFYING DENSITY TEST RESULTS OF 95% OR GREATER.
- 4. THE ENTIRE SUBGRADE WILL HAVE BEEN PROOFROLLED IN THE PRESENCE OF THE SITE INSPECTOR AND GEOTECHNICAL REPRESENTATIVE. PROOFROLLING SHALL BE A RUBBER TIRE VEHICLE SUCH AS A LOADED TEN (10) TON TRUCK OR APPROVED COMPACTION EQUIPMENT.
- 5. THE FINAL SUBGRADE SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER AND SITE INSPECTOR BEFORE PLACEMENT OF PAVEMENT SECTION MATERIALS.

#### Construction Notes: City of Richmond DPW (Division of Right-of-Way)

- ALL CUTS IN THE STREETS AND SIDEWALKS SHALL BE PERFORMED UNDER A PERMIT AND MONITORED BY THE PERMIT INSPECTOR.
- 2. WORK SHALL NOT COMMENCE UNTIL THE PERMIT INSPECTOR HAS BEEN NOTIFIED, A PRE-CONSTRUCTION CONFERENCE HELD AND MISS UTILITY CLEARS.
- 3. 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.
- 4. 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 OR ABIDING BY THE DPW ATTACHMENT STANDARD.
- 5. 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.
- 6. 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
- 7. PERMITTEE MUST 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 REPRESENTATIVES.
- 8. ALL DISTURBED SIDEWALK AND CURB SHALL BE REPAIRED AND REPLACED IN ACCORDANCE WITH CITY STANDARDS.
- 9. ALL UTILITY CUTS AND INSTALLATIONS ARE TO BE EXAMINED, INSPECTED, AND APPROVED BY THE APPROPRIATE UTILITY INSPECTOR/REPRESENTATIVE.
- 10. ALL ENCROACHMENTS MUST BE SATISFIED BY ORDINANCE

# Pavement Design

- 1. RESIDENTIAL THE REQUIRED DESIGN THICKNESS OF THE AGGREGATE BASE (6", 21A), BASE COURSE ASPHALT (3.5",BM-2) AND SURFACE COURSE ASPHALT (2",SM-2A) ARE SHOWN IN THE STREET STANDARDS ILLUSTRATIONS. PAVEMENT SECTION DESIGN THICKNESS IS BASED ON A CBR VALUE OF TEN AND MAY BE INCREASED OR DECREASED AS ALLOWED BY THE STANDARDS. IT SHALL NOT BE DECREASED BELOW THE CITY OF RICHMOND'S MINIMUM DESIGN STANDARD OF 6 INCHES OF 21A AGGREGATE BASE, 2 INCHES OF SM-2A BASE COURSE ASPHALT AND 1.5 INCHES OF SM-2A SURFACE/TOP COURSE ASPHALT.
- 2. ALTERNATE EQUIVALENT PAVEMENT SECTIONS MAY BE SUBSTITUTED FOR THOSE CALLED FOR IN THE STANDARDS. THE APPROVAL PROCEDURES CALL FOR A QUALIFIED PAVEMENT ENGINEER TO REFERENCE AND FOLLOW THE ESTABLISHED VIRGINIA DEPARTMENT OF TRANSPORTATION GUIDELINES IN THEIR PAMPHLET ENTITLED, "PAVEMENT DESIGN GUIDE FOR SUBDIVISION AND SECONDARY ROADS", YEAR 2000 EDITION, AS AMENDED. ALTERNATE PAVEMENT SECTIONS MUST BE PRE-APPROVED BY THE DPEARTMENT OF PULBIC WORKS, RIGHT OF WAY MANAGER. NOTE THE MINIMUM CITY OF RICHMOND RESIDENTIAL PAVEMENT SECTION DESCRIBED ABOVE.
- 3. NON-RESIDENTIAL STREET PAVEMENT SECTIONS MUST MEET THE MINIMUM DESIGN THICKNESS OF 8 INCHES OF 21A BASE AGGREGATE, 6 INCHES BM-2 BASE COURSE ASPHALT AND 2 INCHES OF SM-2A SURFACE COURSE ASPHALT. ANY REQUESTED REDUCTIONS IN THIS DESIGN MUST BE FULLY SUPPORTED BY A COMPREHENSIVE ENGINEERING ANALYSIS.
- 4. NO REDUCTIONS IN THE MINIMUM PAVEMENT SECTION DESIGN THICKNESS (8 INCHES 21A BASE AGGREGATE, 6 INCHES BM-2 BASE COURSE ASPHALT AND 2 INCHES OF SM-2A SURFACE COURSE ASPHALT) WILL BE CONSIDERED IN THE DOWNTOWN, ARTERIAL STREETS, MAJOR COLLECTORS AND/OR ANY OTHER MAJOR CONNECTION STREETS.
- 5. DESIGNATED DOWNTOWN AREAS, HEAVY COMMERCIAL ZONES, PARTICULARLY HIGH VOLUME BUS ROUTES, TURNING LANES, BUS BAYS AND MAJOR INDUSTRIAL ZONES WILL REQUIRE A HEAVY DUTY PAVEMENT SECTIONS. HEAVY DUTY IS DESCRIBED AS A MINIMUM OF 8 INCHES OF 21A AGGREGATE BASE, WITH 8 INCHES OF BM-2 BASE COURSE ASPHALT AND 2 INCHES OF SM-2A SURFACE COURSE ASPHALT. NO REDUCTIONS OF THIS PAVEMENT SECTION WILL BE ALLOWED IN SO DESIGNATED ZONES.
- 6. AS PER DIRECTION OF THE PERMITS ENGINEER, RIGHT OF WAY MANAGER OR THE DIRECTOR, THE PUBLIC WORKS PERMITTING REQUIREMENTS MAY DESIGNATE SPECIFIC ANTI-RUTTING TYPES OF ASPHALT MIX DESIGNS REQUIREMENTS (I.E. SM-2D/SM-2E) THAT WILL BETTER SUIT PROBLEM CONDITIONS AND/OR BETTER SERVE LOCATIONS WITH CERTAIN TYPES AND VOLUMES OF TRAFFIC.



Suite 200 Richmond, VA 23219 804.343.7100

# Intermediate Terminal Phase 2 - Public Access 3101 Wharf Street

3101 Wharf Street Richmond, Virginia

No.	Revision	Date	Appvd

Designed by

Checked by

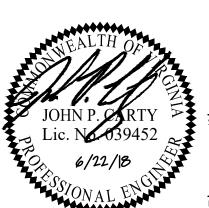
Issued for

Permitting

Date

June 22, 2018

Legend and
General Notes



C1.01



115 South 15th Street Suite 200 Richmond, VA 23219

804.343.7100

# **H&B NOTES**

- INVERTS FOR PIPES AND STRUCTURES SHOWN HEREON ARE BASED ON FIELD MEASUREMENTS, HOWEVER THEY SHOULD BE VERIFIED PRIOR TO CONSTRUCTION.
- PIPE SIZES, MATERIAL TYPE AND INVERT ELEVATIONS AS INDICATED ARE BASED UPON OBSERVATIONS MADE ABOVE GROUND. NO MEASUREMENTS HAVE BEEN PERFORMED BY
- EXISTING GROUND SURFACE LOCATION PERFORMED BY CONVENTIONAL INSTRUMENT SURVEY.
- HORIZONTAL (NAD'83) AND VERTICAL (NAVD'88) DATUM ESTABLISHED THROUGH REAL TIME KINEMATIC (RTK) GPS OBSERVATIONS ON SEPTEMBER 28, 2016. DIFFERENTIAL CORRECTIONS WERE DERIVED FROM NATIONAL GEODETIC (CORS) "LOY3". COORDINATE VALUES, IF SHOWN HEREON, ARE BASED ON VIRGINIA STATE GRID, SOUTH ZONE.
- UNDERGROUND UTILITIES WERE DESIGNATED BY ACCUMARK, INC. UTILITY INFORMATION ON THIS DRAWING WILL NEED TO BE FIELD VERIFIED PRIOR TO CONSTRUCTION. INDIVIDUALS ARE REQUIRED BY VIRGINIA LAW TO CONTACT MISS UTILITY OF VIRGINIA AT 1-800-552-7001 (OR 811) 2 BUSINESS DAYS (48 HOURS) PRIOR TO CONSTRUCTION OR EXCAVATION ACTIVITIES.
- THE PROPERTY SHOWN HEREON FALLS IN THE FOLLOWING FLOOD HAZARD ZONE: "AE (SHADED) SPECIAL FLOOD HAZARD AREA SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD PLAIN, AND FLOODWAY AREA ZONE AE (HATCHED & SHADED) AS SCALED GRAPHICALLY FROM FEMA FLOOD INSURANCE RATE MAP, MAP NUMBER 5101290043E, EFFECTIVE
- RECORDS AND EVIDENCE OF MONUMENTATION AND OCCUPATION FOUND IN THE FIELD. THIS SURVEY DOES NOT CONSTITUTE A BOUNDARY SURVEY AND WAS PREPARED WITHOUT THE BENEFIT OF A TITLE COMMITMENT, THEREFORE ALL EASEMENTS MAY NOT BE SHOWN ON THIS SURVEY.
- DIRECT AND RESPONSIBLE CHARGE OF LESLIE R. BYRNSIDE, LS. FROM AN ACTUAL GROUND SURVEY MADE UNDER HIS SUPERVISION. THE IMAGERY AND/OR ORIGINAL DATA WAS OBTAINED ON SEPTEMBER 28, 2016. THIS PLAT, MAP, OR DIGITAL GEOSPATIAL DATA INCLUDING METADATA MEETS MINIMUM

# VHB NOTES

- FEATURES SHOWN AS FADED ARE BASED ON DESIGN DOCUMENTS PROVIDED BY THE OWNER. THESE IMPROVEMENTS WERE INSTALLED AFTER THE GROUND SURVEY AND ARE NOT WARRANTED TO BE EXACT. REFER TO "EAST RIVERFRONT SHALL FIELD VERIFY THESE IMPROVEMENTS AND REPORT TO ENGINEER ANY CHANGES.
- 2. ENVIRONMENTAL BUFFERS SUCH AS THE FLOODWAY AND CHESAPEAKE BAY RESOURCE PROTECTION AREA (RPA)100 BUFFER SHOWN HERE ARE BASED ON CITY OF RICHMOND GIS.
- 3. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PRESERVE ALL EXISTING RIGHT-OF-WAY AND PROPERTY LIN MARKERS. ANY MARKERS DAMAGED OR LOST SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE BY A REGISTERED LICENSED SURVEYOR CERTIFIED TO WORK IN THE COMMONWEALTH OF VIRGINIA. ANY GRADE OR CONTROL STAKES DAMAGED OR LOST SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.



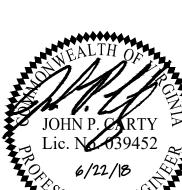
# **Intermediate Terminal** Phase 2 - Public Access

3101 Wharf Street Richmond, Virginia

Permitting

June 22, 2018

**Existing Conditions Plan** 



SAF

RELOCATE EX. BIKE STOP AHEAD SIGN

TO EXISTING CHAIN LINK FENCE

—100' RPA—

# **Demolition Notes** CONTRACTOR SHALL REMOVE AND DISPOSE OF MANMADE SURFACE FEATURES WITHIN THE LIMIT OF WORK AS SHOWN AND NOTED ON THESE PLANS. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED ON THE CITY OF RICHMOND UTILITY INFORMATION, ON-THE-GROUND SURVEY, OWNER OBSERVATIONS, AND FROM SUBUTILITY CONTRACTOR FIELD DESIGNATIONS. THEY ARE NOT WARRANTED TO BE EXACTLY LOCATED NOR IS IT WARRANTED THAT ALL UNDERGROUND UTILITIES OR OTHER STRUCTURES ARE SHOWN ON THIS PLAN. CONTRACTOR SHALL

- FIELD VERIFY EXISTING CONDITIONS; CONTACT A/E IF ACTUAL CONSTRUCTION VARIES FROM PLANS. EXISTING UTILITIES SHALL BE TERMINATED, UNLESS OTHERWISE NOTED, IN CONFORMANCE WITH LOCAL, STATE AND INDIVIDUAL UTILITY COMPANY STANDARD SPECIFICATIONS AND DETAILS. THE CONTRACTOR SHALL COORDINATE UTILITY SERVICE DISCONNECTS WITH THE UTILITY REPRESENTATIVES.
- 4. CONTRACTOR SHALL DISPOSE OF DEMOLITION DEBRIS IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES AND STATUTES.
- 4 THE DEMOLITION LIMITS DEPICTED IN THE PLANS IS INTENDED TO AID THE CONTRACTOR DURING THE BIDDING AND CONSTRUCTION PROCESS AND IS NOT INTENDED TO DEPICT EACH AND EVERY ELEMENT OF DEMOLITION. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING THE DETAILED SCOPE OF DEMOLITION BEFORE SUBMITTING ITS BID/PROPOSAL TO PERFORM THE WORK AND SHALL MAKE NO CLAIMS AND SEEK NO ADDITIONAL COMPENSATION FOR CHANGED CONDITIONS OR UNFORESEEN OR LATENT SITE CONDITIONS RELATED TO ANY CONDITIONS DISCOVERED DURING EXECUTION OF THE WORK.
- UNLESS OTHERWISE SPECIFICALLY PROVIDED ON THE PLANS OR IN THE SPECIFICATIONS, THE ENGINEER HAS NOT PREPARED DESIGNS FOR AND SHALL HAVE NO RESPONSIBILITY FOR THE PRESENCE, DISCOVERY, REMOVAL, ABATEMENT OR DISPOSAL OF HAZARDOUS MATERIALS, TOXIC WASTES OR POLLUTANTS AT THE PROJECT SITE. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR ANY CLAIMS OF LOSS, DAMAGE, EXPENSE, DELAY, INJURY OR DEATH ARISING FROM THE PRESENCE OF HAZARDOUS MATERIAL AND CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE ENGINEER FROM ANY CLAIMS MADE IN CONNECTION THEREWITH. MOREOVER, THE ENGINEER SHALL HAVE NO ADMINISTRATIVE OBLIGATIONS OF ANY TYPE WITH REGARD TO ANY CONTRACTOR AMENDMENT INVOLVING THE ISSUES OF PRESENCE, DISCOVERY, REMOVAL, ABATEMENT OR DISPOSAL OF ASBESTOS OR OTHER HAZARDOUS MATERIALS.

EX. FIRE HYDRANT TO REMAIN AND BE

RELOCATE EX. TRAIL X-ING SIGN

REMOVE EX. STOP SIGN -

RELOCATE EX. BIKE STOP SIGN

REMOVE EX. BOLLARD.

SALVAGE FOR REUSE -

PROTECTED.

- 6. ALL PUBLIC AND PRIVATE UTILITIES TO ADJACENT PROPERTIES, INCLUDING CABLE TV, FIBER OPTIC, GAS, ELECTRICAL, WATER, AND SEWER SERVICES, SHALL BE MAINTAINED AND PROTECTED AT ALL TIMES.
- 7. CONTRACTOR TO PROVIDE COMPLETE MAINTENANCE OF TRAFFIC PLAN IN ACCORDANCE WITH CITY OF RICHMOND STANDARDS. COORDINATE WITH DEPARTMENT OF PUBLIC WORKS.



Item	Unit	Quantity
SAFETY FENCE	L.F.	650
SILT FENCE	L.F.	700
DIVERSION DIKE	L.F.	250
CONSTRUCTION ENTRANCE	EACH	1
STORM DRAIN INLET PROTECTION	EACH	5
TEMPORARY SEEDING	ACRES	0.60
TREE PROTECTION	L.F.	200

\* CONTRACTOR TO DETERMINE ACTUAL QUANTITIES. QUANTITIES LISTED ARE FOR BOTH PHASE 1 AND PHASE 2 EROSION CONTROL.

Suite 200 Richmond, VA 23219 804.343.7100

115 South 15th Street

# **Demolition Legend**

DEMOLITION LIMITS. REMOVE AND DISPOSE OF EXISTING MANMADE SURFACE FEATURES, INCLUDING BUILDINGS, STRUCTURES, PAVEMENTS, SLABS, CURBING, WALLS, FENCES, UTILITY POLES, SIGNS, ETC, UNLESS OTHERWISE NOTED. REMOVE AND DISPOSE OF FOUNDATIONS AND UNSUITABLE MATERIAL PER DRAWINGS AND SPECIFICATIONS.

TREE, UTILITY POLES, AND OTHER STRUCTURES TO BE REMOVED

 $\times \times \times \times \times$  -

LIMITS OF WORK

UTILITY TO BE REMOVED UTILITY TO BE ABANDONED IN PLACE ACCORDING TO CITY OF RICHMOND

# **Erosion Control Legend**

LIMITS OF WORK NATURAL DRAINAGE DIVIDE 3.01 - TEMPORARY CHAIN LINK SAFETY FENCE, MIN. 6' HEIGHT 3.02 - CONSTRUCTION ENTRANCE SF 3.05 - SILT FENCE (DD) 3.09 - TEMPORARY DIVERSION DIKE

3.07 - STORM DRAIN INLET PROTECTION 3.31 - TEMPORARY SEEDING 3.32 - PERMENANT SEEDING

TP 3.38 - TREE PROTECTION FENCING

— ● ● ● SOIL DIVIDE

SOIL UNIT TYPE, PER USDA NATURAL

RESOURCES CONSERVATION SOIL MAP HYDROLOGIC SOIL GROUP

**Intermediate Terminal** 

Phase 2 - Public Access

Richmond, Virginia

June 22, 2018

**Demolition and Erosion** and Sediment Control Plan Phase 1

33965.20

WATER STREET **Soils Legend**  $\mathbf{X}\mathbf{X}$ TO MANHOLE. 3101 Wharf Street SAWCUT ASPHALT TRAIL FOR UTILITY STOCKPILE FOR REUSE SAF COBBLESTONE Permitting - STAGING AND LAYDOWN AREA -TIE CONSTRUCTION FENCE TO EXISTING RAILING. EXTEND FULL LENGTH OF CONCRETE DOCK EAGLE ONE DOCK LOCATIONS OF SUPPORT ACTIVITIES TO BE LIMITED TO THE CONTRACTOR STAGING AREA. THIS INCLUDES, BUT IS NOT LIMITED TO, EQUIPMENT AND VEHICLE WASHING; WHEEL AND OTHER WASH WATER; STORAGE FOR CHEMICALS; CONCRETE WASH OUT; VEHICLE FUELING AND MAINTENANCE; SANITARY WASTE; CONSTRUCTION WASTE STORAGE.

PROVIDE GATE AT

40

HSG D

PROPOSED PROPERTY REMOVE EX. "ADOPT RELOCATE EX. A STREET" SIGN

SMALL HARDWOODS

UTILITY POLE

REMOVE EX. "WHARF STREET" AND NO PARKING SIGNS (DD)

RELOCATE EX. BIKE STOP AHEAD SIGN

WHARF STREET

SURCHARGED REMOVE COBBLESTONE. STOCKPILE FOR REUSE

CONCETE SLAB

EX. LIGHT POLE

INTERMEDIATE TERMINAL DOCK

RELOCATE EX.

LIGHT POLE

REMOVE (4) EX.
COBBLESTONE
MEDIANS. SALVAGE

ASPHALT

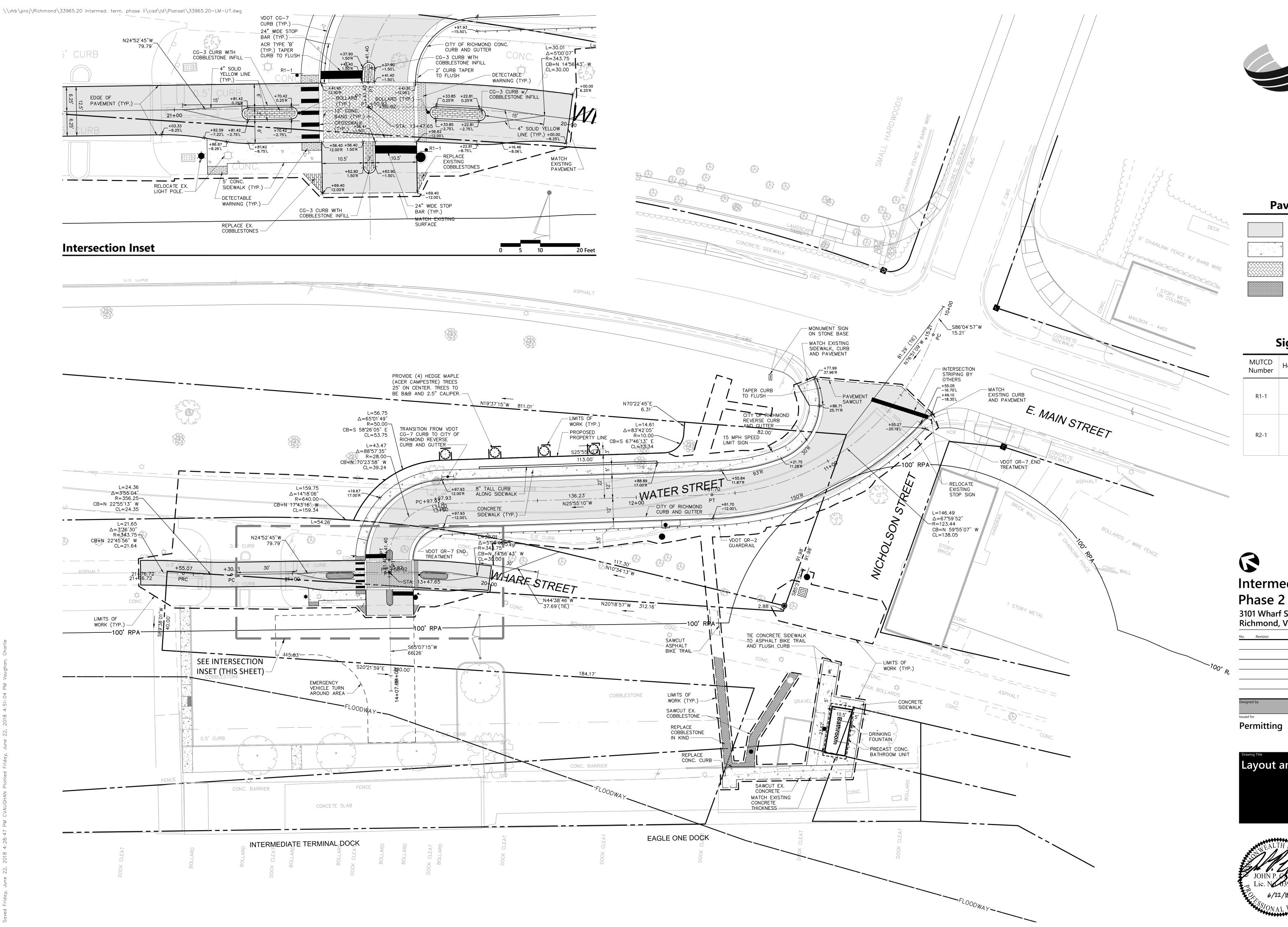
FYISTIN/

CURB FOR NEW= SIDEWALK CONNECTION. PROVIDE TYPE BARRICADE

TO REMAIN. REMOVE

PORT-A-POTTIES REMOVE COBBLESTONE. RAIN GAUGE

- CONSTRUCTION



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# **Pavement Legend**

ASPHALT PAVEMENT CONCRETE SIDEWALK VEHICULAR RATED BRICK CROSSING

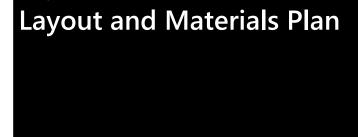
COBBLESTONE

# **Sign Summary**

MUTCD Number	Height	Width	Description
R1-1	30"	2'-6"	STOP
R2-1	30"	24"	SPEED LIMIT 15

**Intermediate Terminal** Phase 2 - Public Access

3101 Wharf Street Richmond, Virginia





June 22, 2018



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Intermediate Terminal
Phase 2 - Public Access

3101 Wharf Street Richmond, Virginia

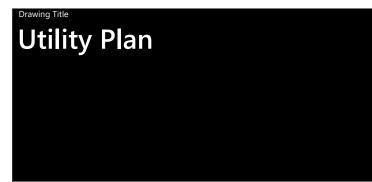
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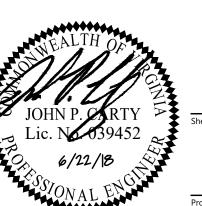
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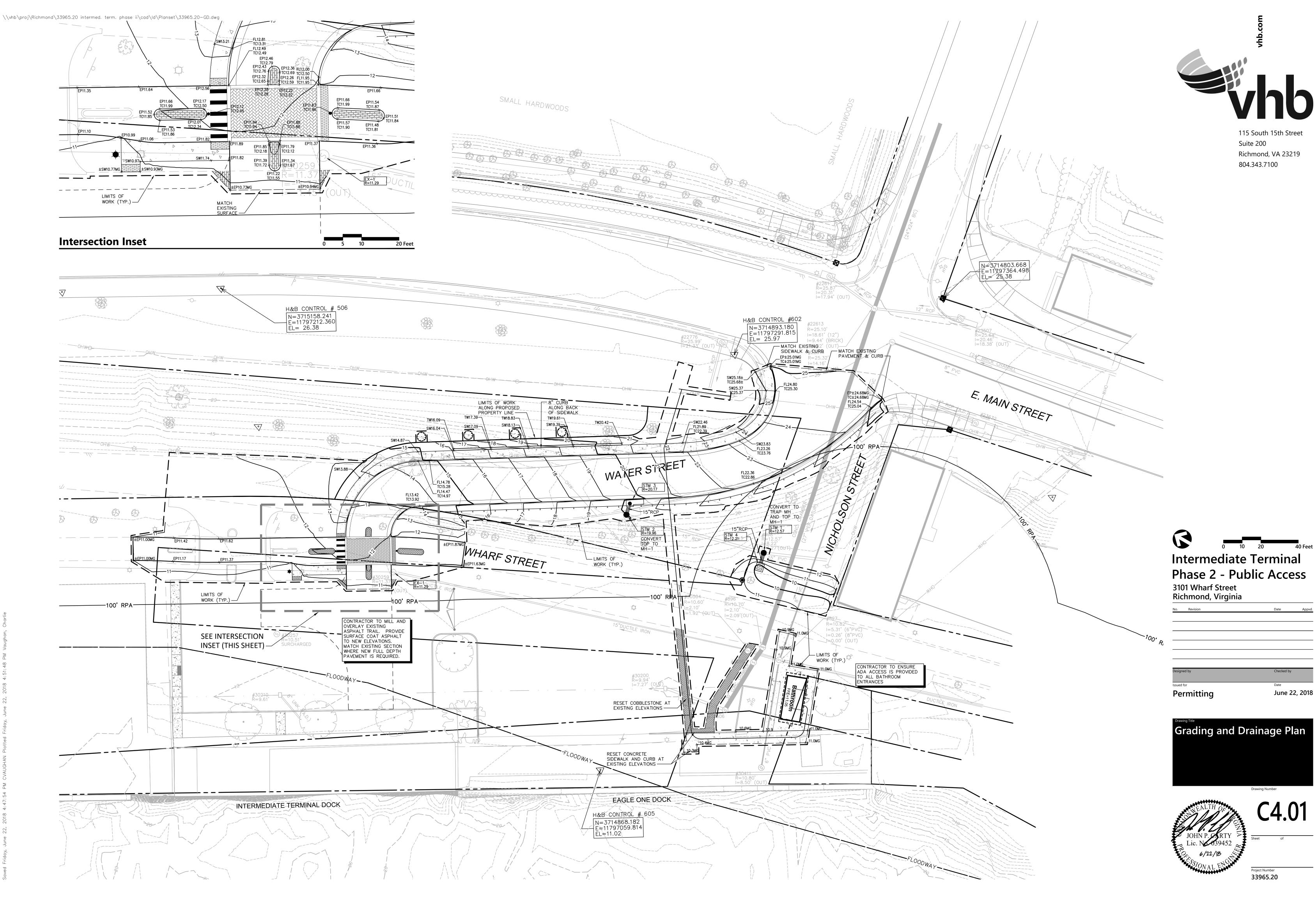
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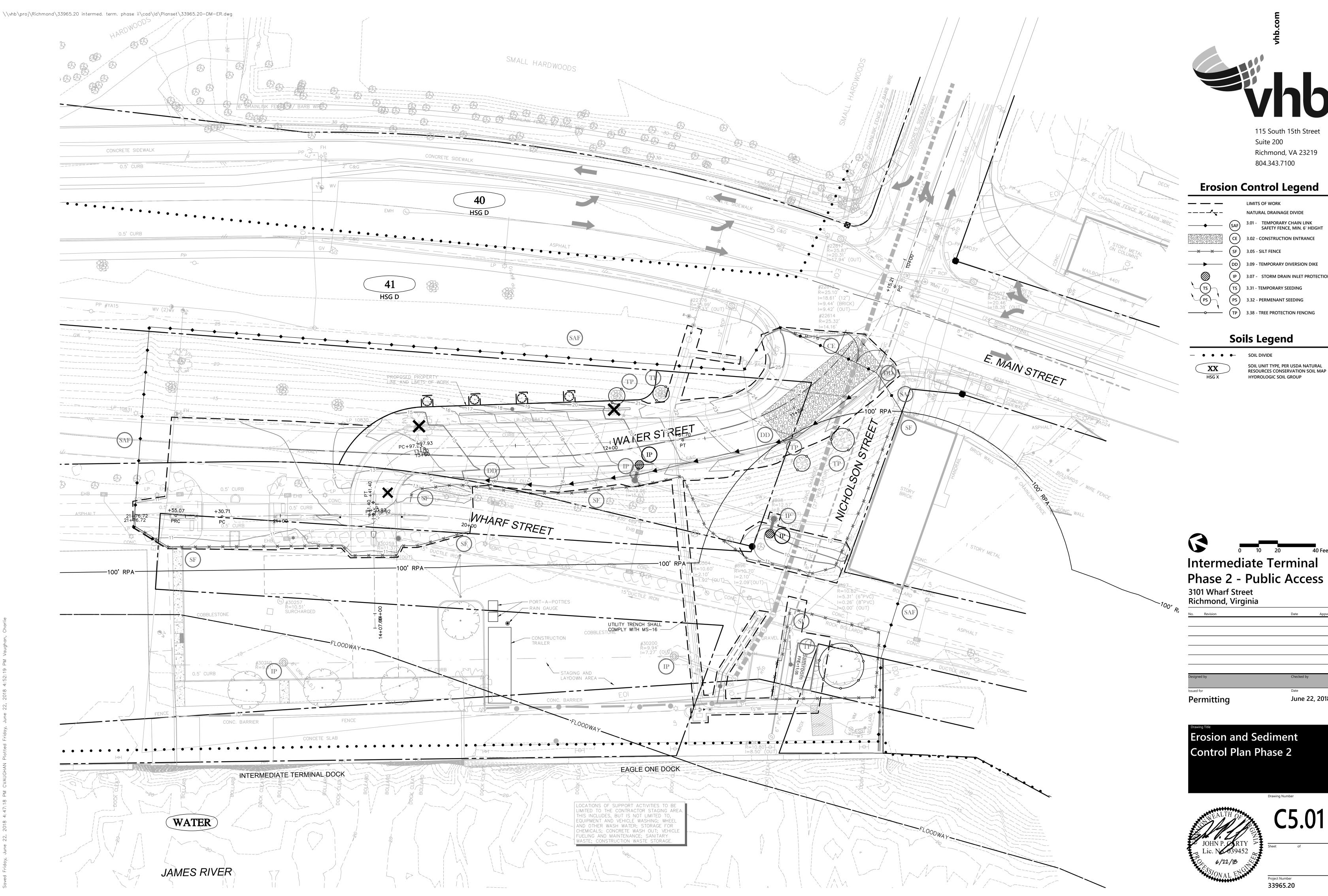
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# **Erosion Control Legend**

NATURAL DRAINAGE DIVIDE 3.01 - TEMPORARY CHAIN LINK SAFETY FENCE, MIN. 6' HEIGHT 3.02 - CONSTRUCTION ENTRANCE SF 3.05 - SILT FENCE (TS) 3.31 - TEMPORARY SEEDING PS 3.32 - PERMENANT SEEDING

# **Soils Legend**

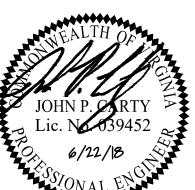


HYDROLOGIC SOIL GROUP

**Intermediate Terminal** 

June 22, 2018

**Erosion and Sediment Control Plan Phase 2** 



#### **Project Description and Schedule**

THE PROJECT PROPOSES TO CONSTRUCT A VEHICULAR ACCESS DRIVEWAY TO THE IMPROVED INTERMEDIATE TERMINAL DOCK IN RICHMOND, VIRGINIA. THE DRIVEWAY WILL BEGIN AT THE INTERSECTION OF EAST MAIN STREET AND NICHOLSON STREET IN THE EAST END OF THE CITY. THE REST OF THE SITE DISTURBANCE WILL BE APPROXIMATELY BOUND BY EAST MAIN STREET, NICHOLSON STREET, THE JAMES RIVER, AND THE ABANDONED WHARE STREET TUNNEL BUILDING, PROPOSED. IMPROVEMENTS INCLUDE A 24' DRIVEWAY, A CONCRETE SIDEWALK AND SHORT RETAINING WALL ALONG THE EAST SIDE OF THE ROAD, RELOCATION OF THE EXISTING VEHICULAR CROSSING OF THE VIRGINIA CAPITAL TRAIL, AND THE INSTALLATION OF A PREFABRICATED RESTROOM BUILDING AND ASSOCIATED UTILITY CONNECTIONS.

#### THE PROPOSED SITE DISTURBED AREA IS 0.60 ACRES.

CONSTRUCTION IS ANTICIPATED TO START IN AUGUST 2018, WITH SUBSTANTIAL COMPLETION OF ALL PROPOSED IMPROVEMENTS IN DECEMBER 2018, FOR A DURATION OF APPROXIMATELY 6 MONTHS.

## Objective of the Erosion and Sediment Control Plan

AS REQUIRED BY VIRGINIA ADMINISTRATIVE CODE SECTION 9VAC25-840, 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 THE EXISTING WATER STREET ROAD BED, WHICH WILL BE REMOVED WITH THIS PROJECT, AND LAWN HILLSIDE ON EITHER SIDE OF THE ROAD.

THE SITE IS APPROXIMATELY 53% IMPERVIOUS, WITH ALL IMPERVIOUS AREA COMING FROM THE ASPHALT ROAD SECTION. THE REMAINDER OF THE SITE CONSISTS OF A NARROW LANDSCAPE BUFFER SURROUNDING THE SITE, WHICH IS PRIMARILY LAWN. THE ADJACENT INTERMEDIATE TERMINAL DOCK HAS BEEN RECENTLY IMPROVED TO ADD LANDSCAPED AREAS

TOPOGRAPHY OF THE EXISTING ROAD IS FAIRLY STEEP, WITH A SLOPE OF 6%. THE HIGH ELEVATION OF 25 FEET IS AT THE MAIN AND NICHOLSON STREETS INTERSECTION, WITH THE ROAD SLOPING DOWN TO AN ELEVATION OF 11 FEET AT THE DOCK, ALL DRAINAGE SHEET FLOWS TO ADJACENT STORM SEWER STRUCTURES IN THE ROAD AND DOCK, ALL DRAINAGE OUTFALLS TO THE CITY OF RICHMOND'S COMBINED SEWER OUTFALL.

#### 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 AND EXCAVATED SOIL WILL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY AT A CERTIFIED LANDFILL OR RECYCLED. NO ON-SITE STOCKPILING IS ANTICIPATED AT

### Adjacent Site

THE SITE IS BOUND BY EAST MAIN STREET TO THE EAST, NICHOLSON STREET TO THE SOUTH, THE JAMES RIVER TO THE WEST, AND THE ABANDONED WHARF STREET TUNNEL BUILDING TO THE NORTH. THIS ABANDONED BUILDING IS PRIVATELY OWNED AND EXPECTED TO BE RENOVATED AND CONVERTED TO A RESTAURANT IN THE NEAR FUTURE.

THE EXISTING WATER STREET RIGHT OF WAY WILL BE REMOVED WITH THIS PROJECT.

THERE WILL BE NO OFF-SITE LAND DISTURBANCE FOR THIS PROJECT. THE CONTRACTOR IS TO ENSURE ALL WASTE FROM THE PROJECT IS PROPERLY DISPOSED OF AT AN APPROVED SITE WHICH HAS ALL NECESSARY PERMITS.

THE US DEPARTMENT OF AGRICULTURE'S NATURAL RESOURCES CONSERVATION SERVICE SOILS MAP SHOWS THE SITE'S SOIL TYPE TO BE 100% URBAN LAND (UNIT 41), WHICH IS HYDROLOGIC SOIL GROUP TYPE "D".

# Critical Areas

PORTIONS OF THE SITE ARE LOCATED WITHIN THE CHESAPEAKE BAY RESOURCE PROTECTION AREA (RPA), AND THE ENTIRE SITE IS LOCATED WITHIN THE RESOURCE MANAGEMENT AREA (RMA). THESE AREAS WILL BE PROTECTED WITH EROSION CONTROL MEASURES AS SHOWN ON THE PLANS. THE CONTRACTOR SHALL REGULARLY INSPECT THESE AREAS TO PROTECT THE NATURAL RESOURCES.

STEEP SLOPES EXIST ON SITE AND WILL BE DISTURBED WITH THE IMPROVEMENTS. CONTRACTOR SHALL PROTECT THESE AREAS FROM EROSION. PROVIDE SEEDING AND STABILIZE AS QUICKLY AS POSSIBLE.

ACCORDING TO THE U.S. FEDERAL EMERGENCY MANAGEMENT (FEMA) FLOOD INSURANCE RATE MAP FOR THE CITY OF RICHMOND, VIRGINIA, COMMUNITY PANEL 510129-0043-E, THE JAMES RIVER FLOODWAY IS ALONG THE WESTERN EDGE OF THE SITE. NO IMPROVEMENTS ARE PROPOSED WITHIN THE FLOODWAY. THE ENTIRE SITE IS ALSO SHOWN LOCATED WITHIN ZONE AE, WHICH IS SUBJECT TO FLOODING BY THE 1% ANNUAL CHANCE FLOOD (100-YEAR FLOOD), WITH A BASE FLOOD ELEVATION OF APPROXIMATELY 33 FEET

THERE ARE NO WETLANDS LOCATED WITHIN THE LIMITS OF THIS SITE.

# **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.

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

# 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 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 SPECIFICATION 3.05.

# **INLET PROTECTION - 3.07**

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

FENCE RESULTING FROM END RUNS AND UNDERCUTTING.

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.

- 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 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
- 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

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 STORM SEWER SYSTEM.

#### Stormwater Management Runoff

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 RELASE INTO THE EXISTING COMBINED

#### 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.

# Chesapeake Bay Narrative

#### Existing Conditions and Vegetation

THE PROPOSED SITE HAS BEEN PREVIOUSLY DEVELOPED AND IS 53% IMPERVIOUS. THE SITE CONSISTS OF THE EXISTING WATER STREET; A PORTION OF THE VIRGINIA CAPITAL TRAIL, AN ASPHALT BIKE AND PEDESTRIAN PATH; THE COBBLESTONE PAVED INTERMEDIATE TERMINAL DOCK WITH LANDSCAPED ISLANDS; AND A TURF HILLSIDE, OF APPROXIMATELY 3:1 SLOPES, ON EITHER SIDE OF THE ROAD.

VEGETATION ON SITE IS LIMITED TO THE TURF HILLSIDE, ARE A FEW TREES ALONG WATER STREET, MINIMAL SHRUB PLANTINGS ALONG THE BIKE TRAIL, AND TREES WITHIN THE LANDSCAPED ISLANDS OF THE INTERMEDIATE TERMINAL

THREE EXISTING TREES WILL NEED TO BE REMOVED WITH THIS PROJECT, AS SHOWN ON THE DEMOLITION PLAN. HOWEVER, EXISTING ASPHALT WITHIN WATER STREET IS ALSO BEING REMOVED AND REPLACED WITH LAWN, FOR AN OVERALL INCREASE IN PERVIOUS AREA.

#### Chesapeake Bay Measures

SINCE THIS SITE FALLS WITHIN THE 500' RESOURCE MANAGEMENT AREA (RMA) BUFFER FOR THE JAMES RIVER, WATER QUALITY AND STORMWATER MANAGEMENT MUST BE ADDRESSED. THIS DEVELOPMENT WILL MEET THE REQUIREMENTS OF DEVELOPING WITHIN A CHESAPEAKE BAY PRESERVATION AREA (CBPA) THROUGH THE OVERALL REDUCTION IN IMPERVIOUS AREA AND PURCHASE OF OFFSITE NUTRIENT CREDITS.

PER THE VIRGINIA RUNOFF REDUCTION METHOD, TREATMENT MUST BE PROVIDED FOR BOTH EXISTING AND PROPOSED IMPERVIOUS AREAS ON SITE. WHILE IMPERVIOUS AREAS ARE BEING REDUCED, AN ADDITIONAL CREDIT MUST BE PROVIDED FOR THE SIGNIFICANT AMOUNT OF EXISTING IMPERVIOUS AREA. DUE TO SITE CONSTRAINTS THAT ELIMINATE THE USE OF A BEST MANAGEMENT PRACTICE ON SITE, OFFSITE NUTRIENT CREDITS WILL BE PURCHASED TO MEET THE WATER QUALITY TREATMENT REQUIREMENT. THESE CREDITS WILL BE LOCATED WITHIN THE SAME OVERALL WATERSHED TO THE CHESAPEAKE BAY. REFER TO CREDIT AVAILABILITY LETTER PROVIDED ON THE CALCULATIONS PAGE OF THESE PLANS FOR MORE INFORMATION.

# **City of Richmond Erosion and Sediment Control Notes**

- 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.
- 4. 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
- 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
- 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

# **General Erosion and Sediment Control Notes**

- PER VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, THIRD EDITION: 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 IRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATIONS 9VAC25-840 EROSION AND/
- 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
- 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 APPROVING
- 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.

# Minimum Standards

AS REQUIRED BY VIRGINIA ADMINISTRATIVE CODE, SECTION 9VAC25-840-40: AN EROSION AND SEDIMENT CONTROL PROGRAM ADOPTED BY A DISTRICT OR LOCALITY MUST BE CONSISTENT WITH THE FOLLOWING CRITERIA, TECHNIQUES AND METHODS:

- 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 EARTH CONDITION 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.
- 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
- 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
- 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.
  - 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 VEHICUI AR 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 FROSION 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: 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
    - (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
    - (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. 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 TEN-YEAR STORM WILL NOT OVERTOP THE BANKS AND A TWO-YEAR STORM WILL NOT CAUSE EROSION TO THE CHANNEL, BED OR BANKS; OR
- 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.
- ALL HYDROLOGIC ANALYSES SHALL BE BASED ON THE EXISTING WATERSHED CHARACTERISTICS AND THE ULTIMATE DEVELOPMENT CONDITION OF THE SUBJECT PARCEL.
- 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.
- 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

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.
- 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) REGULATIONS.
- 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.



Richmond, VA 23219 804.343.7100

# **Sequence of Construction**

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

- 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 CONTRACTOR SHALL GIVE THE CITY INSPECTOR ((804)646-0770)) TWO WORKING DAYS
- 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.
- THE 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 PERFORMED BY THE CONTRACTOR. PRIOR TO STARTING ANY OTHER WORK ON THE SITE, THE CONTRACTOR SHALL INSTALL PERIMETER CONTROL

EROSION CONTROL MEASURES AS SHOWN ON THE PHASE I PLANS AND AS IDENTIFIED IN FEDERAL. STATE AND

- LOCAL APPROVAL DOCUMENTS PERTAINING TO THIS PROJECT. THE CONTRACTOR SHALL GIVE THE EROSION AND SEDIMENT CONTROL INSPECTOR 1 WEEK NOTIFICATION PRIOR TO COMMENCING WORK ONCE PERIMETER CONTROLS ARE IN PLACE, AND APPROVED BY THE INSPECTOR, BEGIN DEMOLITION, TO INCLUDE
- CLEARING AND GRUBBING. ANY TREES OUTSIDE THE LIMITS OF WORK ARE TO REMAIN. DURING CONSTRUCTION, SOIL STABILIZATION ON SITE SHALL CONFORM TO THE CITY OF RICHMOND STANDARD EROSION CONTROL NOTES AND THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH), LATEST
- 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
- SEWER STRUCTURES IF POSSIBLE. INLET PROTECTION TO BE PROVIDED FOR ALL STORM STRUCTURES AND INSPECTED AND MAINTAINED ON A WEEKLY BASIS. CONTRACTOR SHALL BE FULLY RESPONSIBLE TO CONTROL CONSTRUCTION SUCH THAT SEDIMENTATION SHALL NOT AFFECT REGULATORY PROTECTED AREAS, WHETHER SUCH SEDIMENTATION IS CAUSED BY WATER, WIND OR

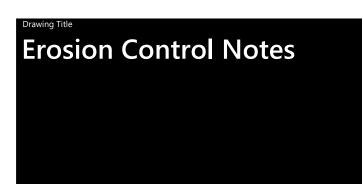
CONTRACTOR SHALL PROVIDE POSITIVE SURFACE DRAINAGE FROM GRADING OPERATIONS TO ADJACENT STORM

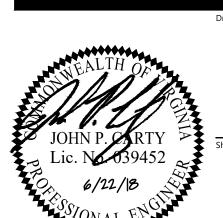
- COMMENCE ROUGH GRADING OPERATIONS. APPLY TEMPORARY SEEDING WITHIN 7 DAYS TO DENUDED AREAS IHAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR PERIODS LONGER THAN 14 DAYS. APPLY
- PERMANENT SEEDING TO AREAS THAT WILL REMAIN DORMANT FOR MORE THAN 1 YEAR. INSTALL PROPOSED STORM SEWER SYSTEM WITH INLET PROTECTION, AS REQUIRED.
- UNDERGROUND UTILITY INSTALLATION FOR WATER AND SANITARY SEWER CONNECTIONS MAY BEGIN. CONTRACTOR SHALL COORDINATE UTILITY CONNECTIONS WITH THE CITY OF RICHMOND DEPARTMENT OF
- FINE GRADE SWALES, SIDEWALKS, ROADWAYS, AND BIKE TRAIL IMPROVEMENTS. INSTALL SITE WALLS AND CURBING THROUGHOUT SITE.
- COMPACT SUBGRADE WITHIN HARDSCAPED AREAS. INSTALL SUBBASE AND HARDSCAPING PER PLANS.
- INSTALL LANDSCAPING AND PERMANENT GROUND STABILIZATION.
- UPON STABILIZATION OF THE ENTIRE SITE AND APPROVAL BY THE INSPECTOR, ALL EROSION AND SEDIMENT CONTROL MEASURES CAN BE REMOVED. CONTRACTOR SHALL CLEAN SEDIMENT AND DEBRIS FROM PAVEMENTS AND DRAINAGE SYSTEMS.

# Intermediate Terminal Phase 2 - Public Access 3101 Wharf Street

Richmond, Virginia

June 22, 2018





Permittina

The plan for implementing pollution prevention measures during construction activities developed on this sheet must be implemented and updated as necessary. Any PPP requirements not included on this sheet must be incorporated into the SWPPP required by 9VAC25-870-54 that must be developed before land disturbance commences. This PPP identifies potential sources of pollutants that may reasonable be expected to affect the quality stormwater discharges from the construction site (both on- and off-site activities) and describes control measures that will be used to minimize pollutants in stormwater discharges from the construction site.

# OTHER REFERENCED PLANS

SWPPP requirements may be fulfilled by incorporating, by reference, other plans. All plans incorporated by reference become enforceable under the VSMP Permit Regulations and General Permit VAR10 for Discharges of Stormwater from Construction Activities. If a plan incorporated by reference does not contain all of the required elements of the PPP, the operator must develop the missing elements and include them in the SWPPP.

Independent Plans Incorporated by Reference	Date Approved
Stormwater Management Plans (Regional or Master)	N/A
Spill Prevention, Control, and Countermeasure Plans	N/A
Off-Site Stockpile	N/A
Off-Site Borrow Area	N/A

#### POTENTIAL POLLUTANT SOURCES

The following sources of potential pollutants must be addressed in the Pollution Prevention Plan. Various controls and/or measures designed to prevent and/or minimize pollutants in stormwater discharges from the project site must be applied to the sources found on the site. Additional information concerning the following controls and/or measures may be found in the SWPPP. Deviations from the location criteria may be approved by the City of Richmond Site Inspector.

# LEAKS, SPILLS, AND OTHER RELEASES

- ✓ The operator(s) shall ensure procedures are in place to prevent and respond to all leaks, spills and other releases of pollutants.
- ✓ The operator(s) shall ensure all leaks, spills and other releases of pollutant are contained and cleaned immediately upon discovery. Any contaminated materials are to be disposed in accordance with federal, state, and/or local requirements.
- ✓ The operator(s) shall ensure spill containment kits containing appropriate materials (e.g., absorbent material and pads, brooms, gloves, sand, etc.) are available at appropriate locations, including, but not limited to: designated areas for vehicle and equipment maintenance; vehicle and equipment fueling; storage and disposal of construction materials, products, and waste; and storage and disposal of hazardous and toxic materials; and sanitary waste facilities.
- ✓ The locations of the spill containment kits are identified as described below:

	·		
Date	Shown on Plan Sheet #(s)	Location	
Approved Plan	C2.02	WITHIN CONTRACTOR STAGING AREA.	
		REVISIONS TO LOCATIONS	
Shown on Date Plan Sheet #(s)		Location	Operator(s) Initials

- ✓ The operator(s) shall notify the Department of Environmental Quality of leaks, spills, and other releases that discharge to or have the potential to discharge to surface waters immediately upon discovery of the discharge but in no case later than 24 after the discovery.
- ✓ The operator(s) shall notify the Department of Environmental Quality (DEQ) of leaks, spills, and other releases that discharge to or have the potential to discharge to surface waters immediately upon discovery of the discharge but in no case later than 24 after the discovery. Written notice of the discharge must be sent to DEQ and the f Richmond Department of Public Utilities within five (5) days of the discovery.

City of Richmond Department of Pu
Virginia Department of Environment
Quality
Piedmont Regional Office
4949-A Cox Road
Glen Allen, VA 23060
(804) 527-5020 (phone)
(804) 527-5106 (fax)

50 feet from those features.

City of Richmond Department of Public Utilities Water Resources 730 East Broad Street, 6th Floor Richmond, VA 23219 (804) 646-7586 (phone)

# **EQUIPMENT / VEHICLE WASHING**

- ✓ Washing must be conducted in a *dedicated area* that is located to maximize the distance from storm drain inlets, ditches, waterbodies or wetlands but no less than
- ✓ All wash water used in vehicle wheel washing must be directed to a sediment
- ✓ All vehicle washing activities other than wheel washing must have secondary
- ✓ Each facility must have appropriate signage to inform users where the *dedicated* area(s) are located.

Activity	Location of Dedicated Area(s)	Shown on Plan Sheet #(s)	Water Source Location	е	
Wheel Wash	STAGING AREA	C2.02	ON-SITE HYDRANT		
Other Wash Areas	STAGING AREA	C2.02	ON-SITE HYDRANT		
	REVISIO	NS TO LOCA	ATIONS		
Activity Location of Plan Water Source Operate Sheet #(s)					

### VEHICLE FUELING AND MAINTENANCE

- Conduct regular maintenance in a dedicated area that is located to maximize the distance from storm drain inlets, ditches, waterbodies or wetlands but no less than 50 feet from those features.
- ✓ If fueling is conducted at a *dedicated area*, the location must be located to maximize the distance from storm drain inlets, ditches, waterbodies or wetlands but no less than 50 feet from those features.
- ✓ The **dedicated areas** must be designed to eliminate the discharge of spilled and leaked fuels and chemicals from vehicle fueling and maintenance activities by providing secondary containment (spill berms, decks, spill containment pallets, providing cover where appropriate, and having spill kits readily available).
- ✓ Each facility must have appropriate signage to inform users where the *dedicated* area(s) are located.

Date	Shown on Plan Sheet #(s)	Location of <i>Dedicated Area(s)</i>	
Approved Plan	C2.02	WITHIN CONTRACTOR STAGING AREA.	
		REVISIONS TO LOCATIONS	
Date	Shown on Plan Sheet #(s)	Location of <i>Dedicated Area(s)</i>	Operator's Initials

- ✓ If mobile fueling will be used, the fueling must be done in an area that located to maximize the distance from storm drain inlets, ditches, waterbodies or wetlands but no less than 50 feet from those features.
- Spill kits must be readily available at all mobile fueling locations.
- On-site storage tanks must have a means of secondary containment (spill berms,
- decks, spill containment pallets, etc.) and must be covered where appropriate.
- ✓ All vehicles on site must be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage.

#### **DISCHARGE FROM STORAGE, HANDLING, AND DISPOSAL** OF CONSTRUCTION PRODUCTS, MATERIALS, AND WASTE

- ✓ Storage of construction products, materials, and waste is to be conducted in ✓ The **dedicated area** must be located to maximize the distance from storm drain
- inlets, ditches, waterbodies or wetlands but no less than 50 feet from those features Separations of less than 50 feet may be approved by the Environmental Inspector. √ The **dedicated areas** must be designed to minimize the discharge of pollutants from storage, handling, and disposal of construction products, materials and wastes including (i) building products such as asphalt sealants, copper flashing, roofing materials, adhesives, concrete admixtures; (ii) pesticides, herbicides, insecticides, fertilizers, and landscape materials; and (iii) construction and domestic wastes such as packaging materials, scrap construction materials, masonry products, timber, pipe and electrical cuttings, plastics, Styrofoam, concrete and other trash or building
- ✓ Each facility must have appropriate signage to inform users where the *dedicated*

<b>area(s)</b> a	re located.		
Date	Shown on Plan Sheet #(s)	Location(s) of <b>Dedicated Area(s)</b> for storage of products and materials	construction
Approved Plan	C2.02	WITHIN CONTRACTOR STAGING AREA.	
		REVISIONS TO LOCATIONS	
Date	Shown on Plan Sheet #(s)	Location(s) of <i>Dedicated Area(s)</i> for storage of construction products and materials	Operator(s) Initials

Date	Shown on Plan Sheet #(s)	Location(s) of <i>Dedicated Area(s)</i> for was construction products and material	
Approved Plan	C2.02	WITHIN CONTRACTOR STAGING AREA.	
		REVISIONS TO LOCATIONS	
Date	Shown on Plan Sheet #(s)	Location(s) of <i>Dedicated Area(s)</i> for waste from construction products and materials	Operator(s) Initials

- ✓ Follow all federal, state, and local requirements that apply to the use, handling and
- disposal of pesticides, herbicides, and fertilizers. ✓ Keep chemicals on-site in small quantities and in closed, well marked containers.
- ✓ Clean up solid waste, including building materials, garbage, and debris on a daily basis and deposit into covered dumpsters that are periodically emptied. ✓ Schedule waste collection to prevent exceeding the capacity of onsite containers.
- Additional containers may be necessary depending on the phase of construction (e.g., demolition, etc.)
- ✓ Dispose of all solid waste at an authorized disposal site. ✓ Ensure that containers have lids or are otherwise protected from exposure to

# **DISCHARGES FROM OTHER POTENTIAL POLLUTANT**

**SOURCES** 

✓ Discharges from other pollutant sources (e.g., water line flushing, storm sewer flushing, above ground storage tanks, etc.) not mentioned elsewhere must be

Other Potential Pollutant Sources	Location(s) of Potential Pollutant Sources

- ✓ Above ground oil storage tanks with a storage capacity exceeding 1,320 gallons and... have a reasonable expectation of a discharge into or upon Waters of the United States are required to have a Spill Prevention Control and Countermeasure (SPCC)
- ✓ The discharge of contaminated flush water and material removed during flushing operations must be collected and disposed of in accordance with appropriate federal, state, and local requirements.

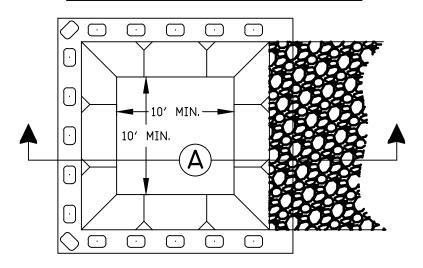
#### DISCHARGES FROM CONCRETE RELATED WASH ACTIVITIES

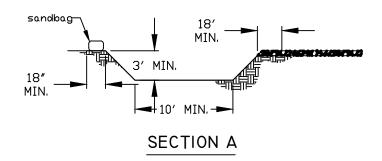
- ✓ Concrete trucks are not allowed to wash out or discharge surplus concrete or drum wash water on site except in a dedicated area(s) that is located to prevent discharge to storm drain inlets, ditches, waterbodies or wetlands but no less than 50 feet from those features.
- ✓ Each facility must have a stabilized access to prevent mud tracking into the street. ✓ Each facility must have appropriate signage to inform users where the dedicated.

Date	Shown on Plan Sheet #(s)	Location of <i>Dedicated Area(s)</i>	
Approved Plan	C2.02	WITHIN CONTRACTOR STAGING AREA.	
		REVISIONS TO LOCATIONS	
Date	Shown on Plan Sheet #(s)	Location of <i>Dedicated Area(s)</i>	Operator's Initials

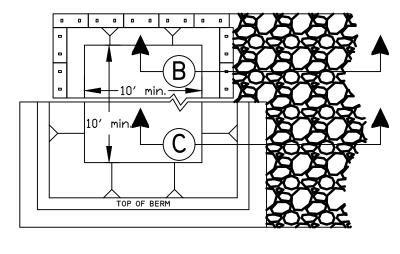
✓ Facilities must be cleaned, or new facilities constructed, once the washout area is two-thirds (2/3) full.

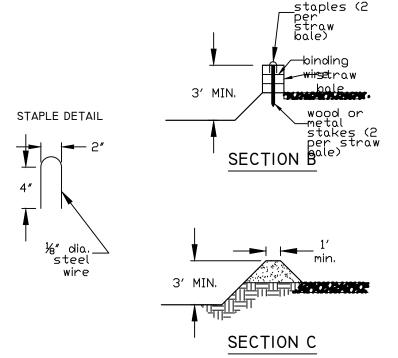
## BELOW GRADE CONCRETE WASHOUT AREA





# ABOVE GRADE CONCRETE WASHOUT AREA





# **CONCRETE WASHOUT AREA NOTES**

- ✓ The facility must be lined with 10 mil plastic lining that is free from holes, tears, or other defects that might compromise the material's impermeability.
- ✓ The lining must be anchored with staples (2' spacing) or sandbags.
- ✓ Side slopes must be 1:1 (horizontal:vertical) or flatter.
- Stone access must be provided between the street and the concrete washout area.
- ✓ A "Concrete Washout" sign must be installed within 30 feet of the washout facility. The sign must be no smaller than 2' tall by 4' wide.

#### DISCHARGES OF SOAPS, DETERGENTS, SOLVENTS, AND WASH WATER FROM CONSTRUCTION ACTIVITIES SUCH AS CLEANUP OF STUCCO, PAINT, FORM RELEASE OILS, AND

CURING COMPOUNDS

✓ Washing activities associated with construction activities other than vehicle and equipment washing, such as clean up of stucco, paint, form release oils, and curing compounds are to be conducted in a dedicated area.

detergents, solvents, and wash water.

✓ The **dedicated area** must be located to maximize the distance from storm drain inlets, ditches, waterbodies or wetlands but no less than 50 feet from those features. Separations of less than 50 feet may be approved by the Environmental Inspector. √ The *dedicated areas* must be designed to prevent the discharge of soaps,

Date	Shown on Plan Sheet #(s)	Location(s) of <i>Dedicated Area(s)</i>	
Approved Plan	C2.02	WITHIN CONTRACTOR STAGING AREA.	
		REVISIONS TO LOCATIONS	
Date	Shown on Plan Sheet #(s)	Location(s) of <i>Dedicated Area(s)</i>	Operator(s Initials

✓ The **dedicated area** must be covered (e.g., plastic sheeting, temporary roof, etc.) to prevent contact with stormwater.

- ✓ The contaminated wastewater from the *dedicated area* must be collected for
- disposal by a waste hauler or discharged to the sanitary sewer. ✓ In situations where these pollutants are or could be generated at locations other than at the designated area (e.g., concrete pours, building washing, etc.), cover (e.g., plastic sheeting, temporary roof, etc.) must be provided to prevent contact with stormwater and the contaminated wastewater from the activity must be collected for disposal by a waste hauler or discharged to the sanitary sewer.

#### DISCHARGES OF HAZARDOUS, TOXIC, **AND SANITARY WASTE**

✓ Storage and disposal of hazardous, toxic and sanitary wastes are to be conducted in

- ✓ The **dedicated areas** must be located to maximize the distance from storm drain inlets, ditches, waterbodies or wetlands but no less than 50 feet from those features. Separations of less than 50 feet may be approved by the Environmental Inspector.
- √ The dedicated areas must be designed to prevent the discharge of hazardous, toxic and sanitary waste by avoiding contact with precipitation

Date	Shown on Plan Sheet #(s)	Location(s) of <i>Dedicated Area(s)</i> for storage are hazardous and toxic wastes	nd disposal d
Approved Plan	C2.02	WITHIN CONTRACTOR STAGING AREA.	
		REVISIONS TO LOCATIONS	
Date	Shown on Plan Sheet #(s)	Location(s) of <b>Dedicated Area(s)</b> for storage and disposal of hazardous and toxic wastes	Operator(s Initials

Date	Shown on Plan Sheet #(s)	Location(s) of <b>Dedicated Area(s)</b> for portat	ole toilets
Approved Plan	C2.02	WITHIN CONTRACTOR STAGING AREA.	
		REVISIONS TO LOCATIONS	
Date	Shown on Plan Sheet #(s)	Location(s) of <b>Dedicated Area(s)</b> for portable toilets	Operator(s) Initials

 $\checkmark$  Consult with local waste management authorities or private firms about the requirements for disposing of hazardous materials and/or soils that may be

contaminated with hazardous materials. V Never remove the original product label from the container. Follow the manufacturer's recommended method of disposal.

#### ✓ Schedule periodic pumping of portable toilets and dispose of waste ✓ Dispose of all solid waste at an authorized disposal site.

**SWPPP MODIFICATIONS AND REVISIONS** The operator(s) shall ensure the SWPPP is modified and/or revised to reflect:

- ✓ Changes in qualified personnel; delegated authorities or other personnel required as a condition of the General Construction Permit;
- ✓ Changes in site conditions; ✓ Changes in the design, construction, operation, or maintenance of the construction site that affect the potential for discharges of pollutants that are not addressed in the normal implementation of the plan; and
- ✓ Ineffective control measures identified during inspections or investigations conducted by the operator's qualified personnel or local, state or federal officials.

Modifications/revisions to the SWPPP shall include additional or modified control measures to address the identified deficiencies.

the modifications/revisions must be implemented no later than seven (7) calendar days following approval. If the necessary modifications/revisions do not require approval by the Administrator,

the modifications/revisions must be implemented prior to the next anticipated storm

event or as soon as practicable.

If the necessary modifications/revisions require approval by the Administrator or DEQ,

**SWPPP UPDATES** 

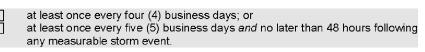
The operator(s) shall update the SWPPP to include:

- ✓ A record of dates when 1) major grading activities occur, 2) construction activities temporarily or permanently cease on a portion of the site, and 3) stabilization
- measures are initiated; ✓ Documentation of modifications and revisions to the SWPPP; ✓ Areas that have reached final stabilization where no further SWPPP or inspection
- requirements apply; ✓ All properties that are no longer under the legal control of the operator and the dates
- on which the operator no longer had legal control over each property; and ✓ The date, volume, and corrective/preventative actions implemented for any prohibited discharge.

The operator(s) shall update the SWPPP no later than seven (7) days following any of the situations identified above.

#### OPERATOR INSPECTIONS

The operator(s) identified below shall provide for inspections of the permitted landdisturbing activities by the qualified personnel identified below. The inspections will be conducted (select one the following options):



Where areas are in a stabilized condition or runoff is unlikely due to winter conditions, the inspection frequency may be reduced to once every 30 days while these conditions exist. Otherwise, the operator(s) shall resume the regular inspection frequency

Stormwater Pollution Prevention Plan (Erosion and Sediment Control Plan, Stormwater Management Plan, Pollution Prevention Plan, TMDL requirements, etc.). Records of the required inspections must be maintained and included in the SWPPP binder. The qualified personnel are encouraged to use the Operator Inspection form provided in the SWPPP binder to document the required inspections. If inspections are

conducted once every five (5) business days <u>and</u> no later than 48 hours following any measureable storm event, the location of the rain gauge used to determine the amount of rain must be included in the SWPPP and documented in the inspection report.

The operator(s) shall provide for inspections of the permitted land-disturbing activity to

ensure implementation and continued maintenance of all requirements of the

# **ACKNOWLEDGEMENTS**

I certify under penalty of law that I:

- a. have been designated by the Operator to conduct inspections of the
- permitted site; am knowledgeable in the principles and practices of erosion and sediment control and stormwater management;
- possess the skills to assess conditions at the permitted site for the Operator(s) that could impact stormwater quality and quantity:
- will assess the effectiveness of any erosion and sediment control measures or stormwater management facilities selected to control the stormwater discharges from the permitted site; and

will conduct inspections in accordance with the frequency noted above

in the OPERATOR INSPECTIONS section of this sheet. QUALIFIED PERSONNEL Name (print)

Additional information is located in Tab 6 of the SWPPP Binder

As the Operator(s), I/we understand that prior to initiating land disturbance, the potential qualified inspection personnel, contractors, etc.) required as a condition of the General Construction Permit (GCP) and the Stormwater Pollution Prevention Plan (SWPPP) must be identified. I also understand this information must be updated as necessary throughout all phases of construction until the GCP is terminated.

# Furthermore,

I/we certify under penalty of law that I/we have read and understand all requirements of the SWPPP (erosion and sediment control plan, stormwater management plan, pollution prevention plan, TMDL provisions, administrative requirements, etc.) and GCP and that the information herein is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment for knowing violations.

I/we understand that I/we are ultimately responsible for compliance with all conditions and requirements of the SWPPP and GCP and for ensuring all contractors and subcontractors on the permitted site are aware of the conditions and requirements of the SWPPP and GCP.

I/we shall comply with all conditions and requirements of the SWPPP and shall at all times properly operate and maintain all measures and control (and related appurtenances) which are installed or used to achieve compliance with the conditions of the GCP. Proper opration and maintenance also includes adequate funding and

I/we shall take all reasonable steps to minimize or prevent any discharge in violation of the SWPPP and/or GCP.

I/we understand that if it determined by the Department of Environmental Quality (DEQ) in consultation with the State Water Control Board at any time that stormwater discharges are causing, have reasonable potential to cause, or contribute to and excursion above any applicable water quality standard, the DEQ may, in consultation

- Modification of control measures to adequately address water quality concerns:
- Submission of valid and verifiable data and information that are representative of ambient conditions and indicate that the receiving water is
- attaining water quality standards; or Cessation of discharges of pollutants from construction activity and submit an
- individual permit application according to 9VAC25-870-410. OPERATOR(S) / DELEGATED AUTHORITY

with the Administrator, take appropriate enforcement action and require:

Name (print)	Signature	Date
Additional contact information can be found	in the SWPPP Binder	

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MOND UTILITIES

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**Intermediate Terminal** Phase 2 - Public Access 3101 Wharf Street Richmond, Virginia

115 South 15th Street

Richmond, VA 23219

Suite 200

804.343.7100

City of Richmond **Pollution Prevention Plan** 

Permitting

June 22, 2018

Source: Virginia Erosion and Sediment Control Handbook

PL 3.38.2

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

	SEED <sup>1</sup>	
LAND USE	SPECIES	APPLICATION RATES
Minimum Care Lawn	Tall Fescue <sup>1</sup> or	175 - 200 lbs
(Commercial or Residential)	Bermudagrass <sup>1</sup>	75 lbs
High-Maintenance Lawn	Tall Fescue <sup>1</sup> or	200-250 lbs
	Bermudagrass <sup>1</sup> (seed) <b>or</b>	40 lbs. (unhulled 30 lbs. (hulled
	Bermudagrass <sup>1</sup> (by other vegetative establishment method, see Std. & Spec. 3.34)	
General Slope (3:1 or less)	Tall Fescue <sup>1</sup> Red Top Grass or Creeping Red Fescue Seasonal Nurse Crop <sup>2</sup>	128 lbs 2 lbs <u>20 lbs</u> TOTAL: 150 lbs
Low-Maintenance Slope (Steeper than 3:1)	Tall Fescue <sup>1</sup> Bermudagrass <sup>1</sup> Red Top Grass or Creeping Red Fescue Seasonal Nurse Crop <sup>2</sup> Sericea Lespedeza <sup>3</sup>	93-108 lbs 0-15 lbs 2 lbs 20 lbs <u>20 lbs</u>

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 Annual Rye September, October - November 15<sup>th</sup> .....

November 16<sup>th</sup> - January . - 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
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• 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.)

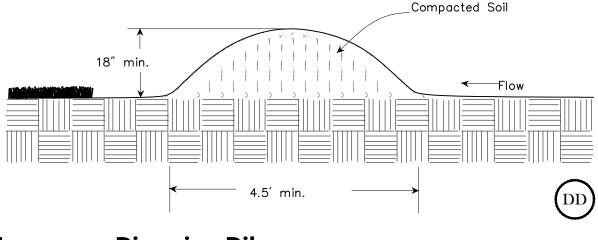
- A soil test is necessary to determine the actual amount of lime required to adjust the soil pH of site. - Incorporate the lime and fertilizer into the top 4 – 6 inches of the soil by disking or by other means. · When applying Slowly Available Nitrogen, use rates available in Erosion & Sediment Control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

FILL SLOPE SECTION

SOIL STABILIZATION MATS SHOULD BE INSTALLED VERTICALLY DOWNSLOPE FOR BEST RESULTS.

N.T.S.

N.T.S. Source: Virginia Erosion And Sediment Control Handbook



**Temporary Diversion Dike** Source: Virginia Erosion and Sediment Control Handbook

> TABLE 3.31-B (Revised June 2003) TEMPORARY SEEDING SPECIFICATIONS QUICK REFERENCE FOR ALL REGIONS

<u>SEED</u>					
APPLICATION DATES	SPECIES	APPLICATION RATES			
Sept. 1 - Feb. 15	50/50 Mix of Annual Ryegrass (Iolium multi- florum) & Cereal (Winter) Rye (Secale cereale)	50 -100 (lbs/acre)			
Feb. 16 - Apr. 30	Annual Ryegrass (Iolium multi-florum)	60 - 100 (lbs/acre)			
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. 2 - 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

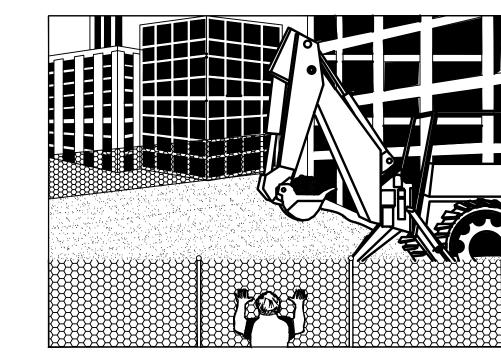
# **Temporary Seeding Specifications**

OF POSTS.

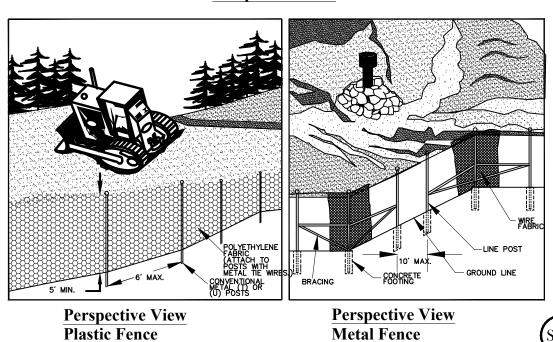
06/03

PL 3.32-E

Source: Virginia Erosion And Sediment Control Handbook PL 3.31-B







**Safety Fence** 

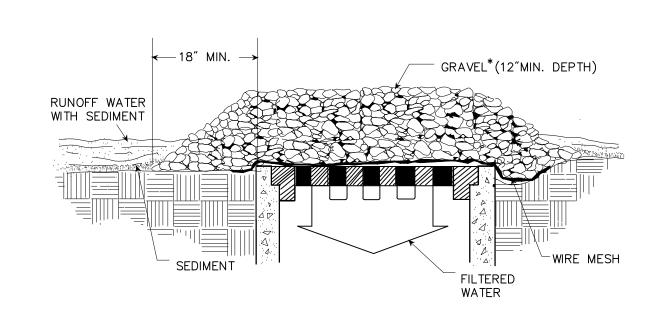
Source: Virginia Erosion And Sediment Control Handbook

**Metal Fence** 06/08

PL 3.01-1

115 South 15th Street

Suite 200 Richmond, VA 23219 804.343.7100



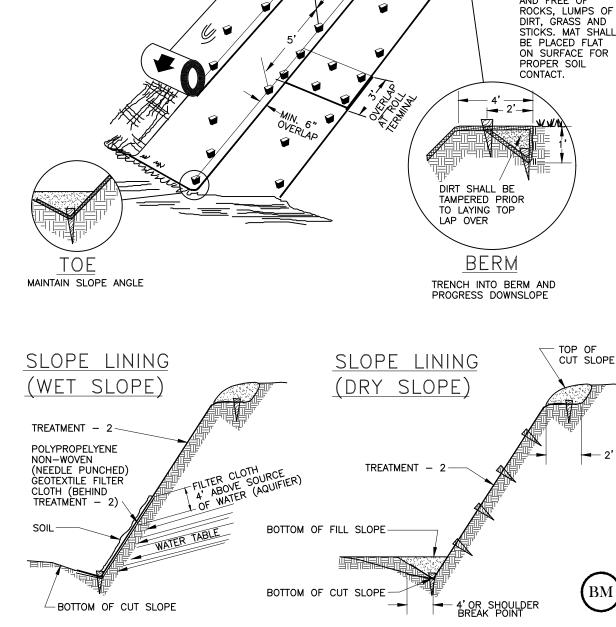
# **Specific Application**

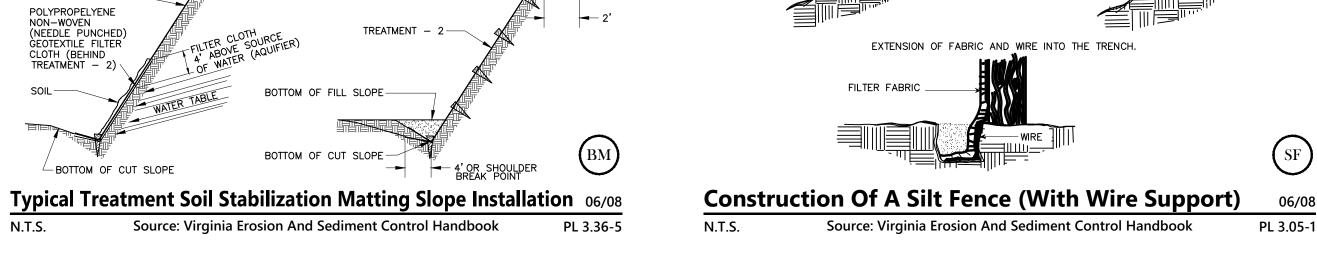
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY CONCENTRATED FLOWS ARE EXPECTED BUT NOT WHERE PONDING AROUND THE STRUCTURE MIGHT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

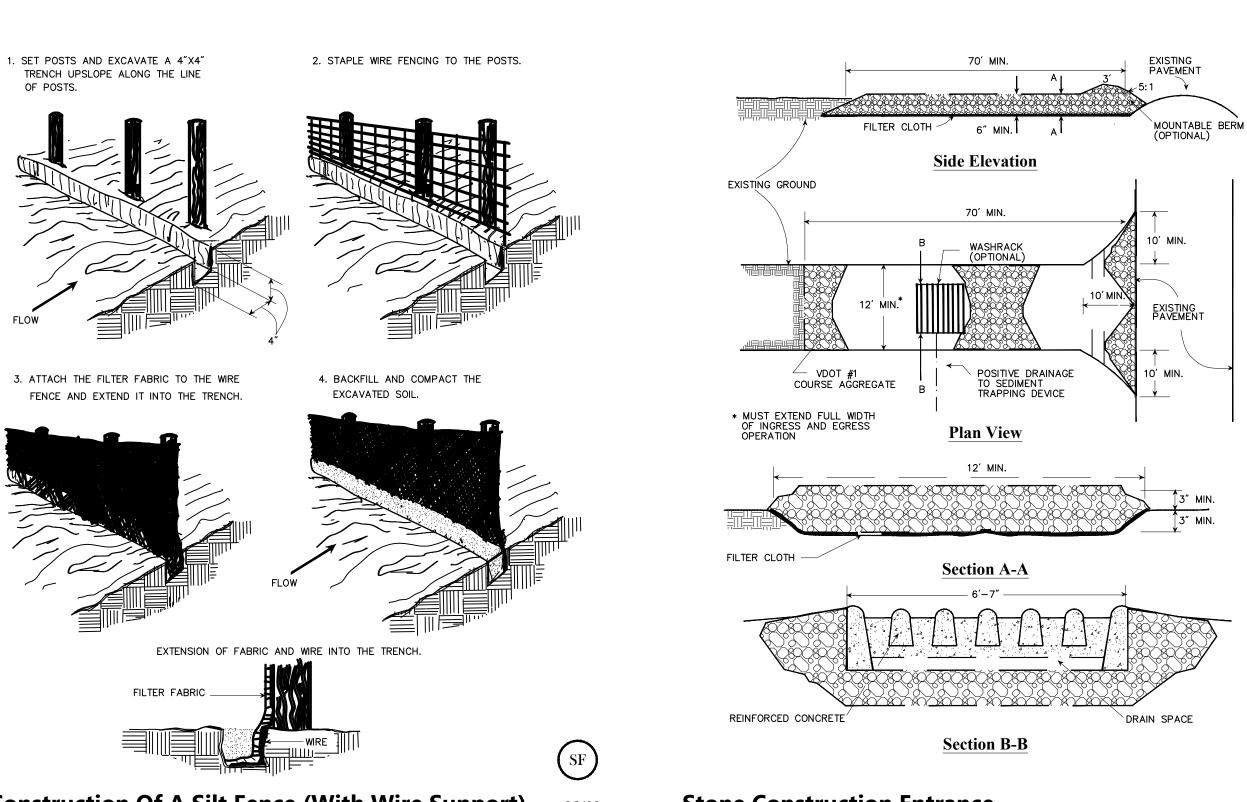
\* GRAVEL SHALL BE VDOT #3, #357 OR #5 COARSE AGGREGATE.

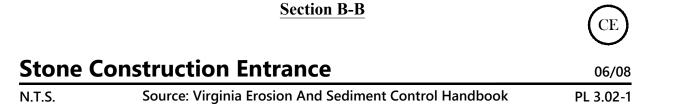
**Gravel And Wire Mesh Drop Inlet Sediment Filter** 

Source: Virginia Erosion And Sediment Control Handbook











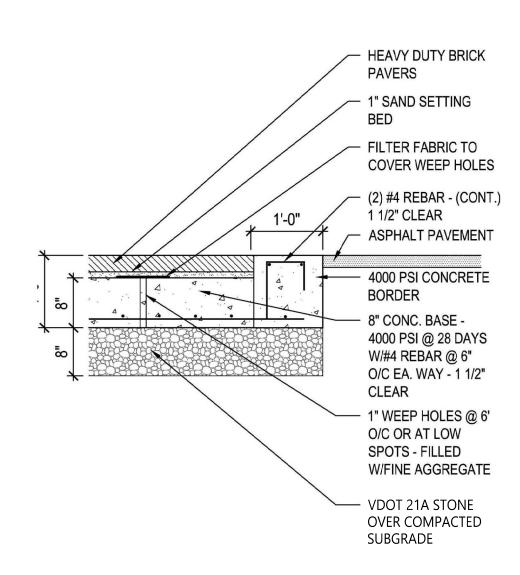
3101 Wharf Street Richmond, Virginia

June 22, 2018 Permitting

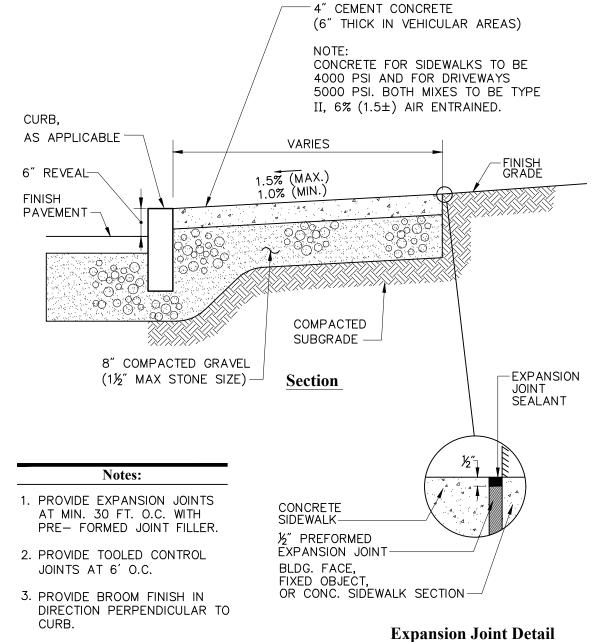
**Erosion Control Details** 

- 1. THE MAXIMUM ALLOWABLE SIDEWALK AND CURB RAMP CROSS SLOPES SHALL BE 1.5 (1% MIN.).
- 2. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE 5%.
- 3. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE AT CURB RAMPS SHALL BE 7.5%.
- 4. A MINIMUM OF 3 FEET CLEAR SHALL BE MAINTAINED AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (I.E., HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS, ETC.).
- 5. CURB TREATMENT VARIES, SEE PLANS FOR CURB TYPE. 6. RAMP, CURB AND ADJACENT PAVEMENTS SHALL BE GRADED TO PREVENT PONDING.
- 7. SEE TYPICAL SIDEWALK SECTION FOR RAMP CONSTRUCTION.
- 8. WHERE ACCESSIBLE ROUTES ARE LESS THAN 5' IN WIDTH (EXCLUDING CURBING) A 5' x 5' PASSING AREA SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 200 FEET.
- 9. ELIMINATE CURBING AT RAMP WHERE IT ABUTS ROADWAY, EXCEPT WHERE VERTICAL CURBING IS INDICATED ON THE DRAWINGS TO BE INSTALLED AND SET FLUSH.
- 10. DETECTABLE WARNINGS SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES.
- 11. DETECTABLE WARNINGS SHALL BE INSTALLED PERPENDICULAR TO THE ACCESSIBLE ROUTE.
- 12. CONTRACTOR TO SUBMIT R.F.I. FOR THIS TYPE OF ACCESSIBLE CURB RAMP FOR APEX ROADWAY CROSSINGS.

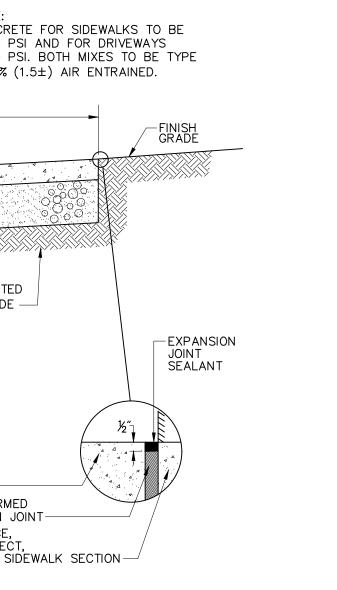
Accessible	1/16	
N.T.S.	Source: VHB	LD_50°







<b>Concrete Sidewalk</b>	04/11	
N.T.S.	Source: VHB	LD_420





804.343.7100

- SAND W/ DRY MORTAR MIX IN JOINTS COBBLESTONE SURFACE — JOINTS AND COBBLESTONE (PATTER TO MATCH EXISTING FIELD CONDITIONS) MIRAFI 140N (OR EQUAL) — MIN. 1" GRANITE STONE DUST W/ DRY MORTAR MIX FOR STONE BEDDING 4" VDOT #21A 4" VDOT #57 COMPACTED SUBGRADE

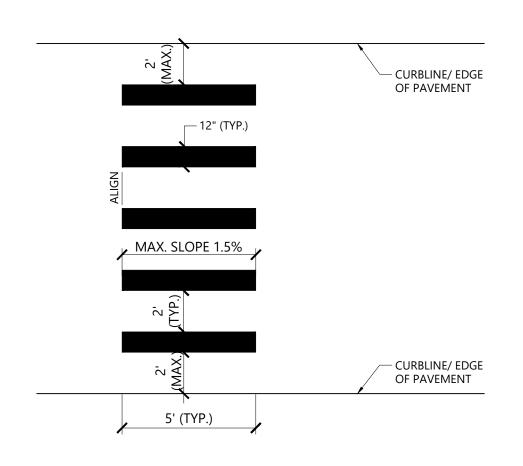
# **COBBLESTONE SECTION**

#### NOTES

1. SECTION LISTED IS THE MINIMUM REQUIREMENT. CONTRACTOR SHALL MATCH THE EXISTING PAVEMENT SECTION, IF MORE STRINGENT.

**Cobblestone Pavement Section** 

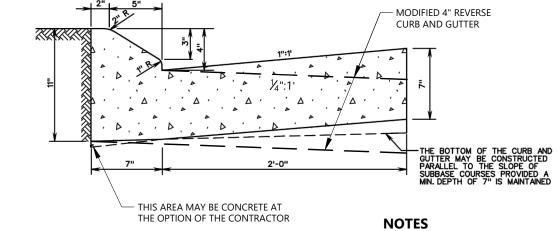
N.T.S. Source: VHB REV



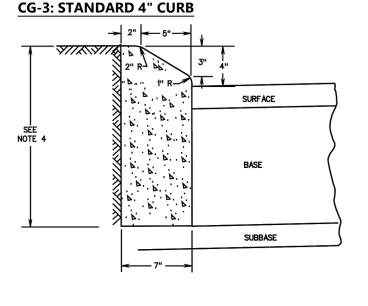
- 1. TWELVE INCH (12") LINES SHALL BE APPLIED IN ONE APPLICATION, NO COMBINATION OF LINES (TWO - 6 INCH LINES) WILL BE ACCEPTED.
- 2. LONGITUDINAL CROSSWALK LINES TO BE PARALLEL TO CURBLINE.
- 3. ALL LONGITUDINAL CROSSWALK LINES TO BE THE SAME LENGTH AND PROPERLY ALIGNED.
- 4. CROSS WALK SIDESLOPE SHALL NOT EXCEED 1.5%.

#### Crosswalk N.T.S. LD\_553 Source: VHB

# **CG-7: COMBINATION 4" CURB AND GUTTER**



CG-3: STANDARD 4" CURB SURFACE



N.T.S.

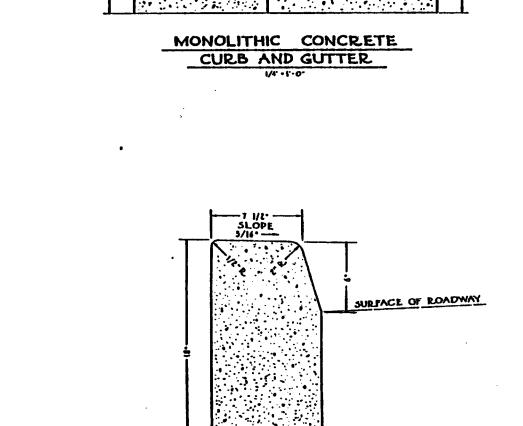
- 1. THESE ITEMS MAY BE PRECAST OR CAST IN 2. CONCRETE TO BE CLASS A3 IF CAST IN PLACE, 4,000 PSI IF PRECAST. 3. CURB HAVING A RADIUS OF 300 FEET OR LESS (ALONG FACE OF CURB) WILL BE PAID FOR AS RADIAL CURB. 4. THE DEPTH OF CG-3 CURB MAY BE REDUCED AS MUCH AS 3" (13" DEPTH) OR INCREASED AS MUCH AS 3" (19" DEPTH) IN ORDER THAT THE BOTTOM OF CURB WILL COINCIDE WITH
- THE TOP OF A COURSE OF THE PAVEMENT SUBSTRUCTURE. OTHERWISE THE DEPTH IS TO BE 16" AS SHOWN. NO ADJUSTMENT IN THE PRICE BID IS TO BE MADE FOR A DECREASE OR INCREASE IN DEPTH. CG-7 IS FOR USE WITH STABILIZED OPEN-GRADED DRAINAGE LAYER, THE BOTTOM OF THE CURB AND GUTTER SHALL BE CONSTRUCTED PARALLEL TO THE SLOPE OF SUBBASE COURSES AND TO THE DEPTH OF
- THE PAVEMENT ALLOWABLE CRITERIA FOR THE USE OF CG-3 AND CG-7 IS BASED ON ROADWAY CLASSIFICATION AND DESIGN SPEED AS SHOWN IN APPENDIX A OF THE VDOT ROAD DESIGN MANUAL IN THE SECTION ON URBAN GS STANDARDS. WHEN THIS STANDARD IS TO BE TIED INTO EXISTING BARRIER CURB, THE TRANSITION IS TO BE MADE WITHIN 10' OR THE CHANGE IN STANDARDS MADE AT REGULAR OPENINGS. WHEN COMBINATION MOUNTABLE CURB
- ARE TO HAVE THE MOUNTABLE CURB CONFIGURATION INCORPORATED. **VDOT Standard Mountable Curb and Gutter**

Source: VDOT

AND GUTTER IS USED, THE STANDARD ENTRANCE GUTTERS OR STANDARD

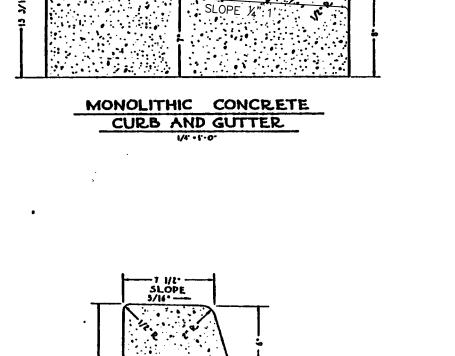
CONNECTION FOR STREET INTERSECTIONS

201.02 and 201.04



**City of Richmond Concrete Curb and Gutters** 

Source: City of Richmond - Department of Public Works



 ANY EXISTING CONCRETE CURB DAMAGED DURING CONSTRUCTION SHALL BE REPLACED IN ACCORDANCE CONCRETE CURB WITH CITY OF RICHMOND DETAIL.

06/03	Bitu
N-14000	NITC

REVERSE CURB

AND GUTTER

uminous Concrete Pavement Sections Source: VHB REV LD\_430

STANDARD DUTY FLEXIBLE PAVEMENT

SUBJECT TO CHANGE BASED ON FURTHER GEOTECHNICAL INVESTIGATIONS.

1. PAVEMENT SECTION IS BASED ON CITY OF RICHMOND MINIMUM AND IS

2. FOR PAVEMENT REPLACEMENT, SECTION LISTED IS THE MINIMUM REQUIREMENT. CONTRACTOR SHALL MATCH THE EXISTING PAVEMENT

SECTION, IF MORE STRINGENT.

2" SM-2A

6" BM-2

8" VDOT 21A

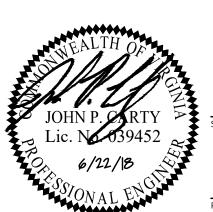
- COMPACTED SUBGRADE

# **Intermediate Terminal** Phase 2 - Public Access

3101 Wharf Street Richmond, Virginia

**Permitting** June 22, 2018

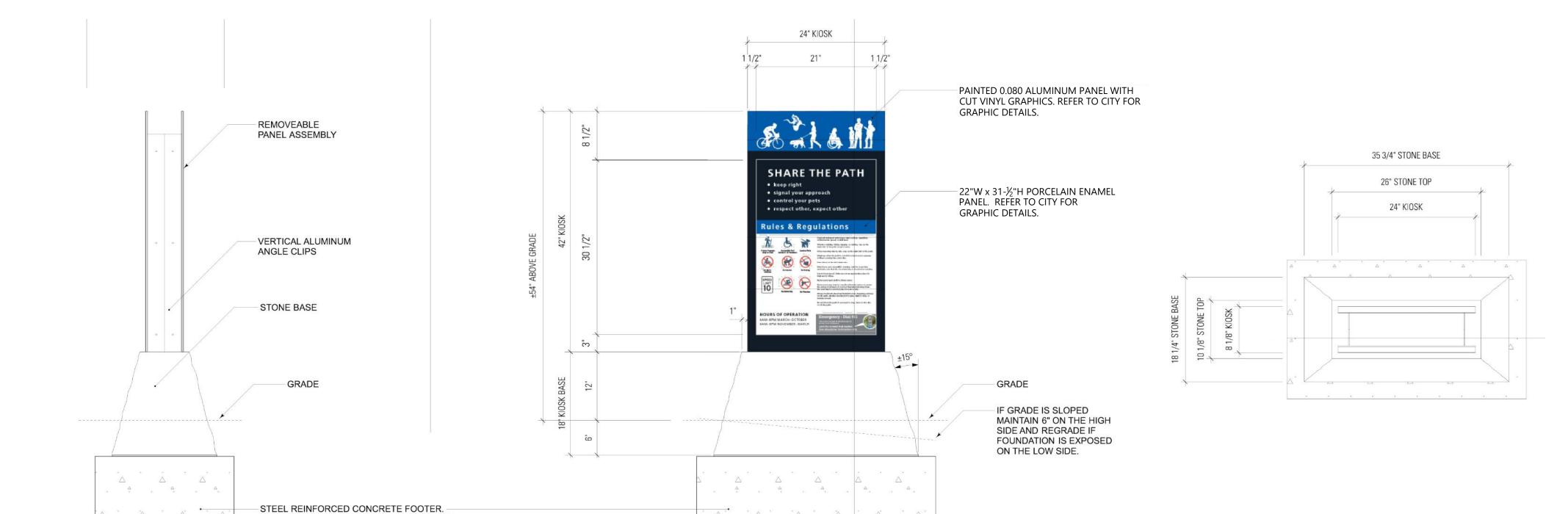




Suite 200

804.343.7100

Richmond, VA 23219



— TAPERED STONE BASE. REFER TO LANDSCAPE AND SIGNAGE PLANS #4 BARS AT 12" O.C. BOTH WAYS. TOP AND BOTTOM -FINISH GRADE.
SURFACE VARIES.
SEE PLANS MORTAR. REFER TO SIGNAGE PLANS -4000 PSI CEMENT CONCRETE (TYPE II) 6% (1.5%±) AIR ENTRAINED — - COMPACTED — COMPACTED

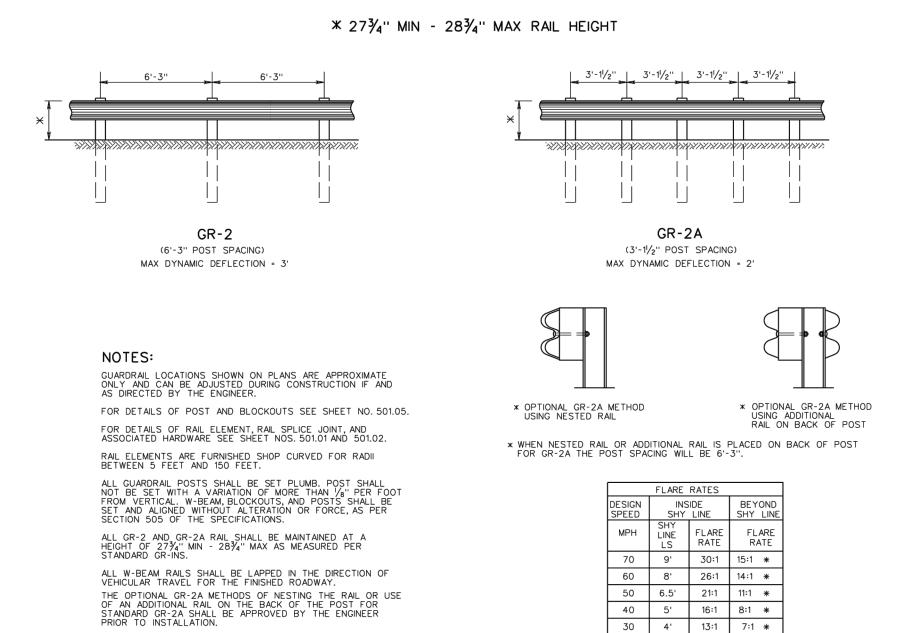
**Concrete Footer for Signage** 06/08 N.T.S. LD\_170 Source: VHB

**Monument Signage** 

GR-2, 2A

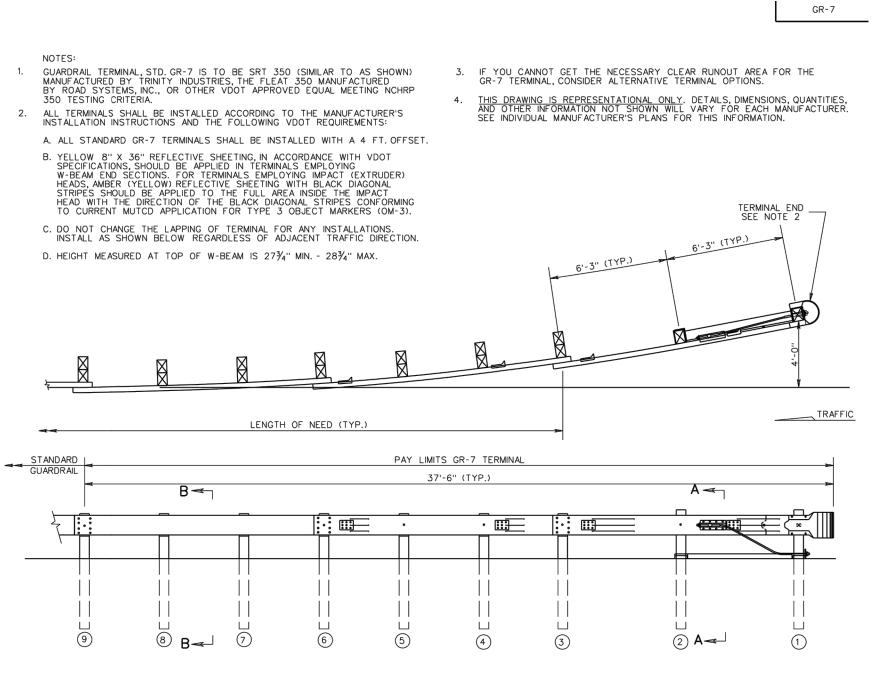
N.T.S.

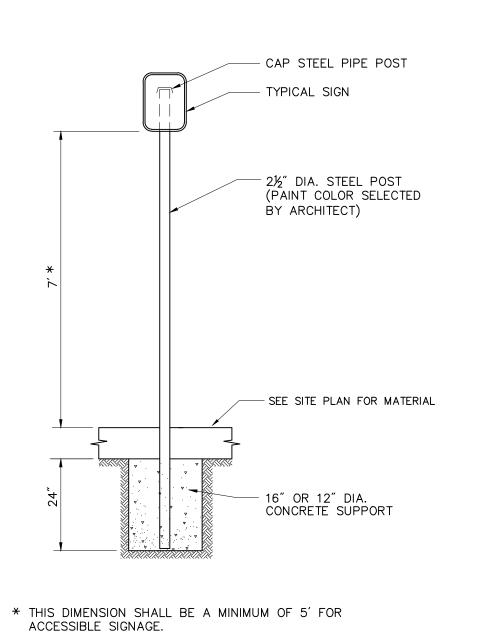
Source: City of Richmond



Source: VDOT

**GR-2 Standard Bocked Out W-Beam Guardrail** 





Sign Post - Type 'A	<b>4</b> '	01/12
N.T.S.	Source: VHB	LD_701

# **Intermediate Terminal** Phase 2 - Public Access 3101 Wharf Street

Richmond, Virginia

June 22, 2018 Permitting



N.T.S.

 
 60
 8'
 26:1
 14:1
 \*

 50
 6.5'
 21:1
 11:1
 \*

 40
 5'
 16:1
 8:1
 \*

 30
 4'
 13:1
 7:1
 \*
 \* SUGGESTED MAXIMUM FLARE RATE FOR SEMI-RIGID BARRIER SYSTEMS.

08/14

501.04

**GR-7 Breakaway Cable Terminal** 

Source: VDOT

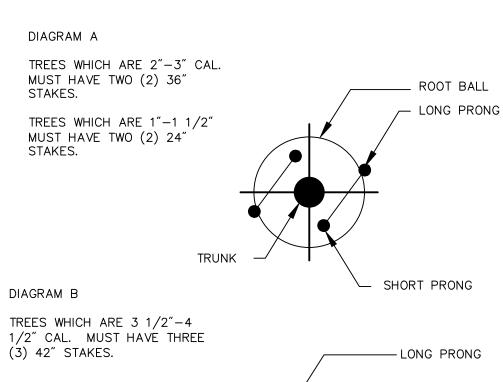
07/12 501.11

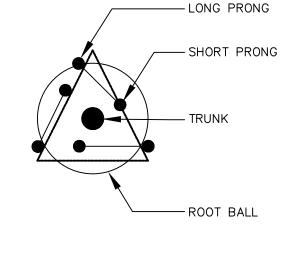
#### LANDSCAPE NOTES

- 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
- 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 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 AND APPROVED IN WRITING BY THE A/E OR 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
- 10. AREAS DESIGNATED "TOPSOIL & SEED" SHALL RECEIVE MINIMUM 6" OF TOPSOIL AND SPECIFIED SEED MIX. LAWNS OVER 2:1 SLOPE SHALL BE PROTECTED WITH EROSION CONTROL FABRIC.
- 11. ALL DISTURBED AREAS NOT OTHERWISE NOTED ON CONTRACT DOCUMENTS SHALL BE LOAM AND SEEDED OR MULCHED AS DIRECTED BY OWNER'S REPRESENTATIVE.

#### **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.





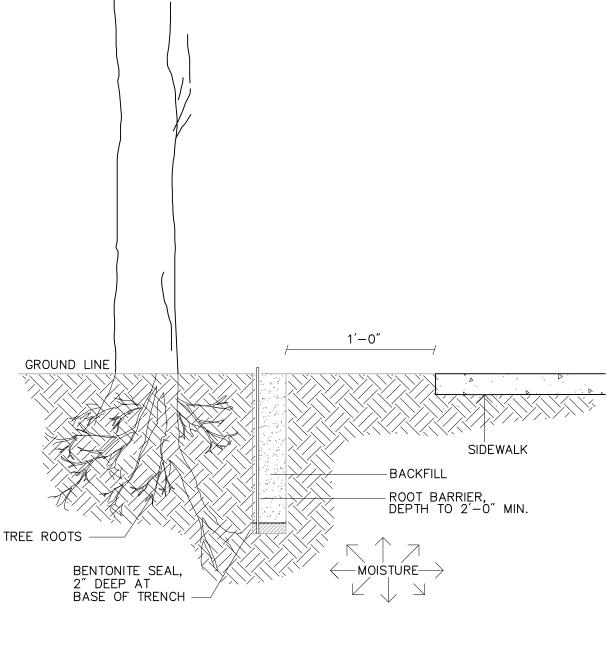
— ASPHALT FELT OR BOND BREAKER

M-8

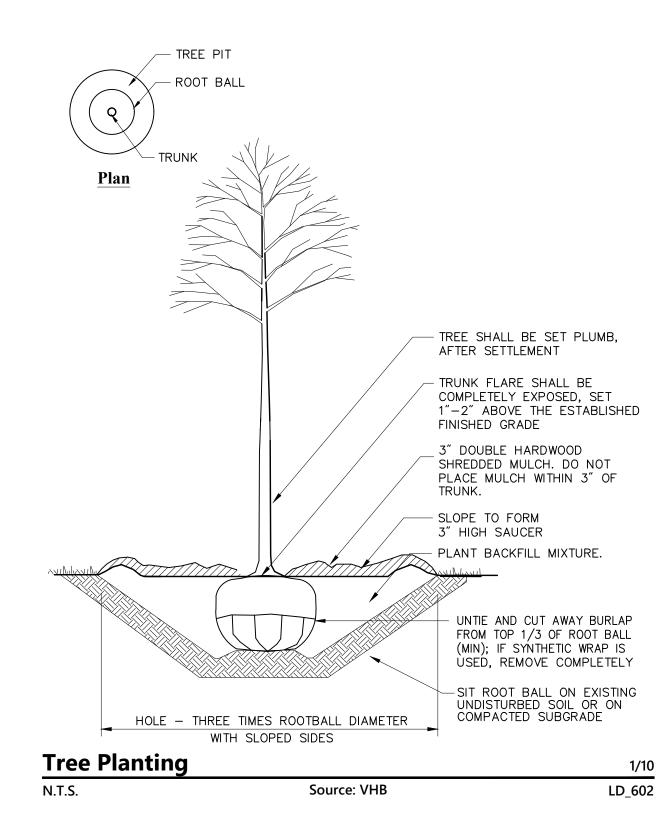
N.T.S.

#### **Below-Grade Tree Stabilizing System Detail** 11/12 Source: VHB

NEW PIPELINE

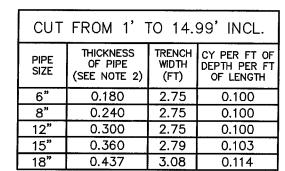


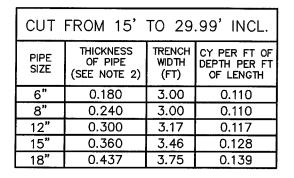


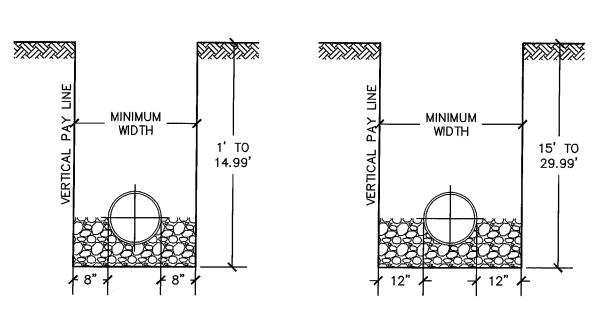




115 South 15th Street Suite 200 Richmond, VA 23219 804.343.7100



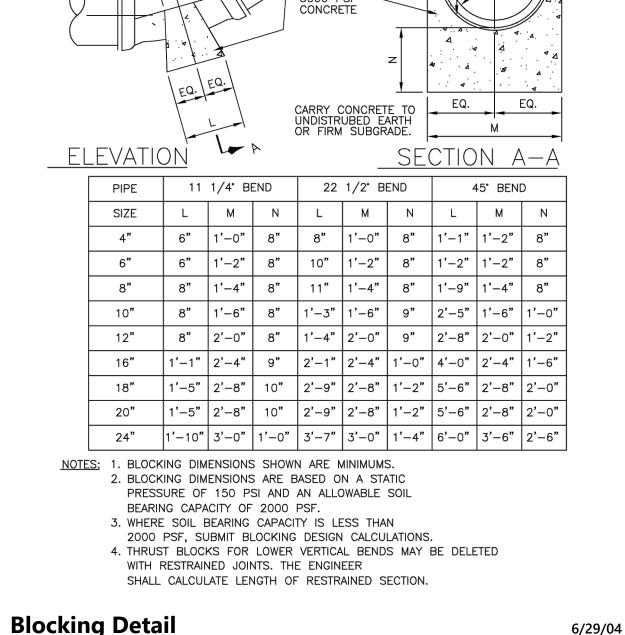




# NOTES:

- 1. ALLOWABLE EXCAVATIONS ARE IN CUBIC YARDS PER FT. OF DEPTH PER FT. OF LENGTH.
- 2. DIMENSIONS ALLOWED FOR SEWER EXCAVATIONS FOR SDR 35 PVC.
- 3. FOR DEPTHS GREATER THAN 30' CONTACT THE TECHNICAL SERVICES DIVISION OF DPU FOR ALLOWABLE EXCAVATIONS.

Pipelin	e Excavation	02/09
N.T.S.	Source: City of Richmond - Department of Public Utilities	P-1A



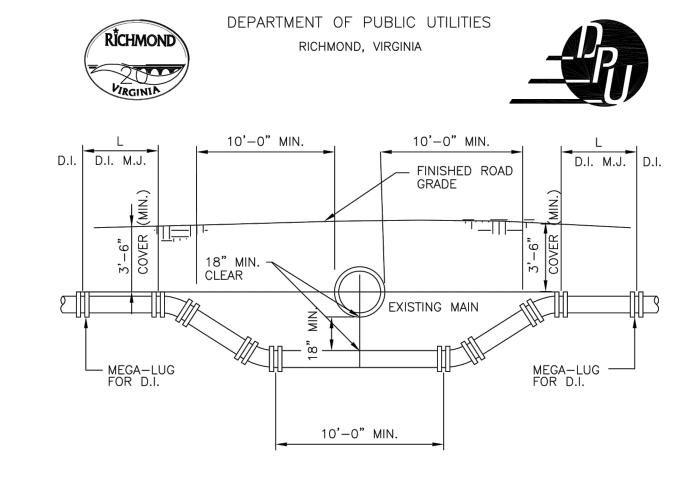
Source: City of Richmond DPU

N.T.S.

	ASPHALT FELT OR TOUR BOND BREAKER											
I	NEW PIPELINE CONCRETE  NEW PIPELINE  O  O  O  NEW PIPE  NEW PIPE  O  O  O  O  O  O  O  O  O  O  O  O  O											
	POUR AGA UNDISTURE EARTH											
	AGAINST / TURBED	/ <u>SE</u>	CTION	<u> </u>			-		A A PLAN	_		
			E	BUTTR	ESS F				. BEN	DS		
	BEND	DIM.	4"	6"	8"	10"	1ETER 12"	(D) 16"	18"	20"	24"	
	11 1/4°	A	6"	8"	8"	1'-1"	1'-4"	1'-9"	1'-9"	1'-9"	2'-0"	
		В	6"	7"	8"	9"	10"	1'-0"	1'-3"	1'-6"	1'-6"	
		С	6"	7"	7"	8"	9"	9"	10"	1'-0"	1'-0"	
	22 1/2°	Α	8"	10"	1'-4"	1'-7"	2'-0"	2'-6"	3'-3"	3'-3"	3'-9"	
		В	6"	7"	8"	10"	10"	1'-0"	1'-3"	1'-6"	1'-6"	
		С	7"	8"	9"	10"	1'-0"	1'-3"	1'-6"	1'-6"	1'-6"	
	45°	Α	1'-1"	1'-4"	2'-0"	2'-6"	3'-3"	4'-3"	6'-0"		7'-0"	
		В	6"	7"	8"	10"	11"	1'-3"	1'-3"	1'-6"	1'-8"	
		С	7"	8"	9"	10"	1'-0"	1'-3"	1'-4"	1'-9"	1'-9"	
	90°		1'-10"	2'-3"	3'-3"	3'-9"	5'-0"	6'-0"	8'-0"	8'-0"	9'-9"	
		В	7"	8"	9"	1'-0"	1'-0"	1'-4"	1'-8"	2'-0"	2'-0"	
NOTE		С	1'-0"	1'-6"	1'-6"	1'-6"	1'-6"	1'-9"	1'-9"	2'-0"	2'-0"	
<ol> <li>3.</li> <li>4.</li> </ol>	S: BLOCKING D BLOCKING D PRESSURE C BEARING CAI WHERE SOIL 2000 PSF, S THRUST BLO DELETED WIT	IMEN: PACIT BEA SUBM CKS	SIONS . 50 PSI Y OF .2 RING C IIT BLO FOR H ESTRAIN	ARE BAAND AAND AAND AAND PARACIT CKING ORIZON	ASED O IN ALLO ISF. Y IS LE DESIGN ITAL BE NTS. T	N A STOWABLE  ESS THE  I CALCE  ENDS ME  HE ENO	TATIC SOIL AN ULATION MAY BE GINEER					

				/ í	ASPHAL BOND E	T FELT BREAKE	OR - R	\	4-			
	NEW PIPELIA		<del>-</del>	; <del>/-</del>		0 PSI		\   -	·/2	_	NFW F	PIPELINE
	NEW PIPELIN	NE	$\bigvee$	/  /	CON	ICRETE			<b>├</b>		INL VV	II LLINL
	_	D/4			<u></u>	>	Q	2				
	<del>+</del>				<u>m</u>	(	#	AI		H		
	4	$-\Box$					7/				POUR A	
	Î				<u>"</u>		/	N. A.		\	UNDISTU EARTH	DKRFD
									L A			
	ACAINST /	SE	CTION	1 A-A	Ņ							
JNDIS	AGAINST 7 STURBED						-		A			
EARTH	1							1	<u>PLAN</u>			
			[	3UTTR	ESS	FOR H	HORIZ	ONTAL	BEN	DS		
							<u>IETER</u>					
	BEND	DIM.	4"	6"	8"	10"	12"	16"	18"	20"	24"	
	11 1/4°	LA_	6"	8" 7"	8"	1'-1" 9"	1'-4"	1'-9"	1'-9"	1'-9"	2'-0"	
		B	6" 6"	7"	8" 7"	8"	10" 9"	1'-0" 9"	1'-3" 10"	1'-6" 1'-0"	1'-6" 1'-0"	
	22 1/2°	A	8"	10"	1'-4"	1'-7"	2'-0"	2'-6"	3'-3"	3'-3"	3'-9"	
		В	6"	7"	8"	10"	10"	1'-0"	1'-3"	1'-6"	1'-6"	
		С	7"	8"	9"	10"	1'-0"	1'-3"	1'-6"	1'-6"	1'-6"	
	45°	A	1'-1"	1'-4"	2'-0"	2'-6"	3'-3"	4'-3"	6'-0"	6'-0"	7'-0"	
		В	6"	7"	8"	10"	11"	1'-3"	1'-3"	1'-6"	1'-8"	
	90°	C	7"	8"	9"	10"	1'-0"	1'-3"	1'-4"	1'-9"	1'-9"	
	90	A B	1'-10" 7"	2'-3" 8"	3'-3" 9"	3'-9" 1'-0"			8'-0" 1'-8"	8'-0" 2'-0"	9'-9" 2'-0"	
		C	1'-0"			1'-6"		1'-9"	1'-9"	2'-0"	2'-0"	
<u>NOTE</u>	<u> </u>		1	1. 0	1	1. 0	1	1. –	1. 0	1- 0		
	BLOCKING D											
2.	BLOCKING D											
	BEARING CA					- 117 IDEL						
3.	WHERE SOIL							NC				
4.	2000 PSF, THRUST BLO											
••	DELETED WIT											
	SHALL CALC	ULATE	E LENG	TH OF	RESTR	AINED	SECTIO	N.				
	_	_	_			_						
lut	tress fo	r H	oriz	onta	al Be	ends						6/28/0

Source: City of Richmond DPU



M-5

- 1. LOWERED SECTION TO BE OF DUCTILE IRON MECHANICAL JOINT PIPE WITH RESTRAINED JOINTS AT ANY INCLUDED JOINTS. THE ENGINEER SHALL CALCULATE LENGTH (L) OF RESTRAINED SECTION.
- 2. THRUST BLOCKS FOR VERTICAL BENDS MAY BE DELETED WITH
- 3. VERTICAL BENDS MAY BE ELIMINATED BY USING JOINT DEFLECTIONS. JOINT DEFLECTIONS SHALL NOT EXCEED 1/2 MANUFACTURERS RECOMMENDED DEFLECTION.

# **Waterline Adjustment for Existing Utility** Source: City of Richmod DPU



**Intermediate Terminal** 

3101 Wharf Street Richmond, Virginia

No. Revision

Permitting

06/04

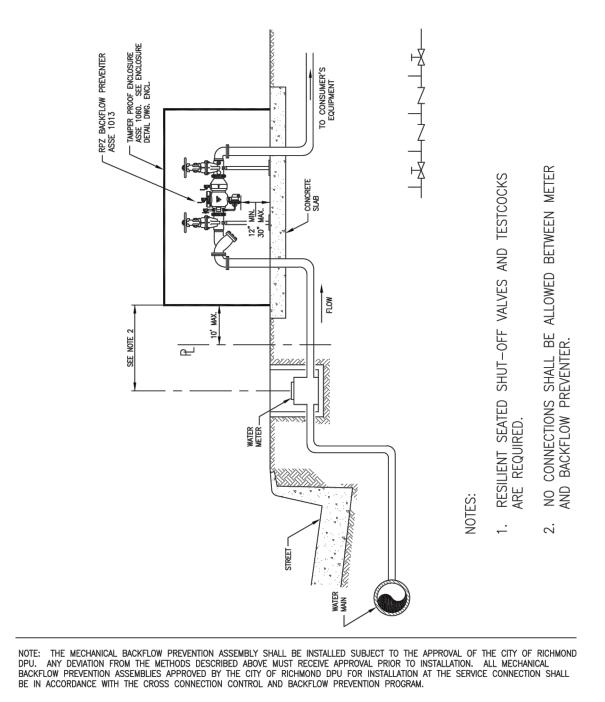
Phase 2 - Public Access

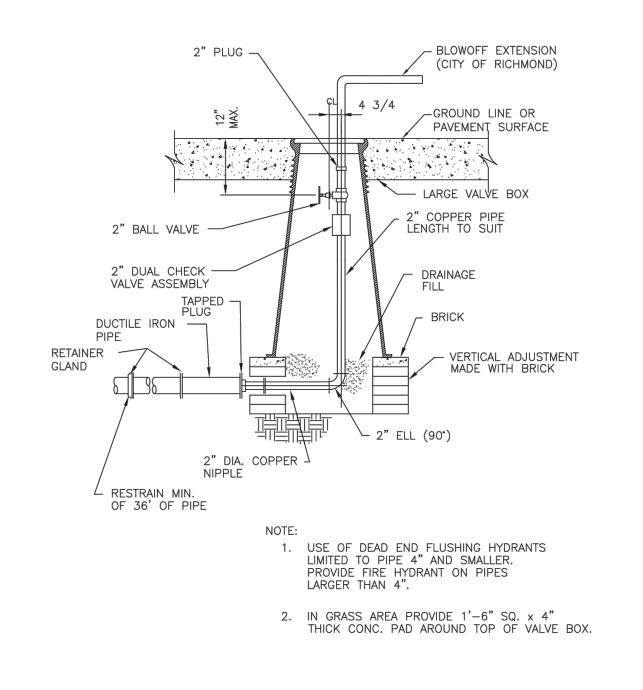
33965.20

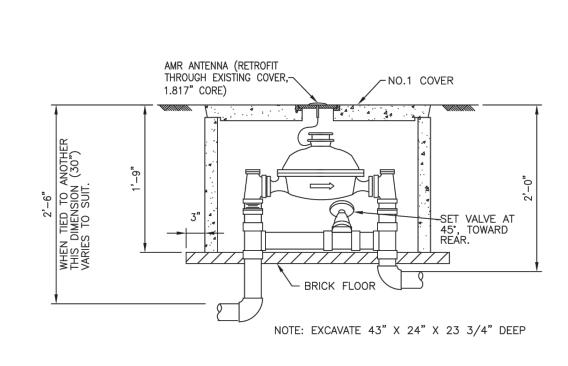
June 22, 2018

Richmond, VA 23219

804.343.7100







3'-6"

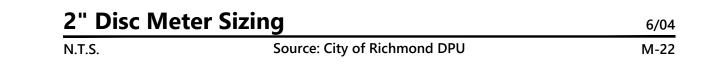
1'-5 1/4" FLG. TO FLG.

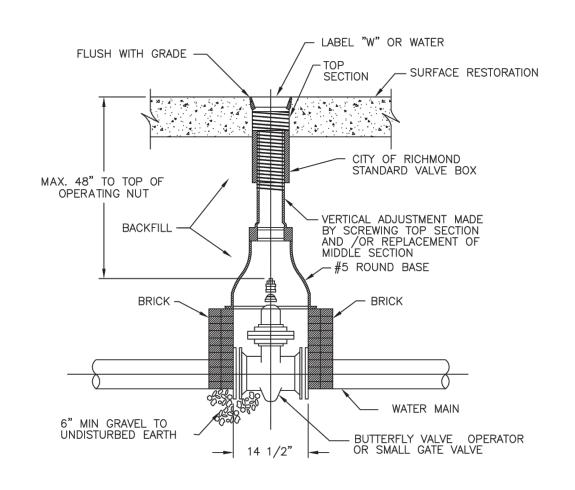
1'-4"

1'-4"

**Domestic Backflow Prevention Assembly** 4/06 Source: City of Richmond DPU N.T.S. RKFLWASSM

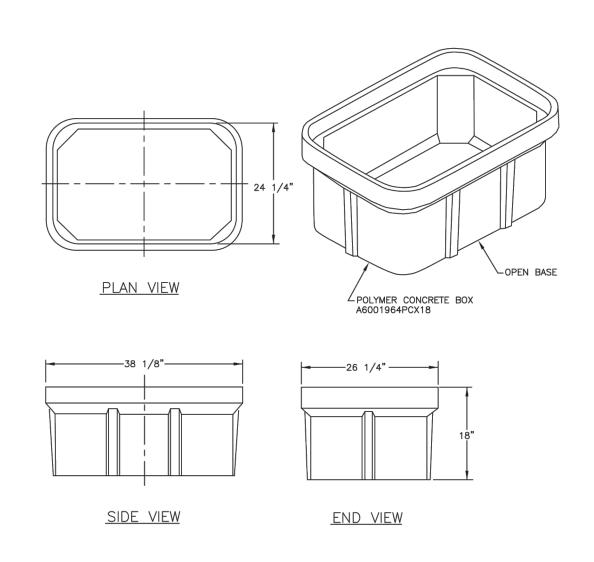
**Dead End Flushing Hydrant** 6/04 N.T.S. Source: City of Richmond DPU M-12



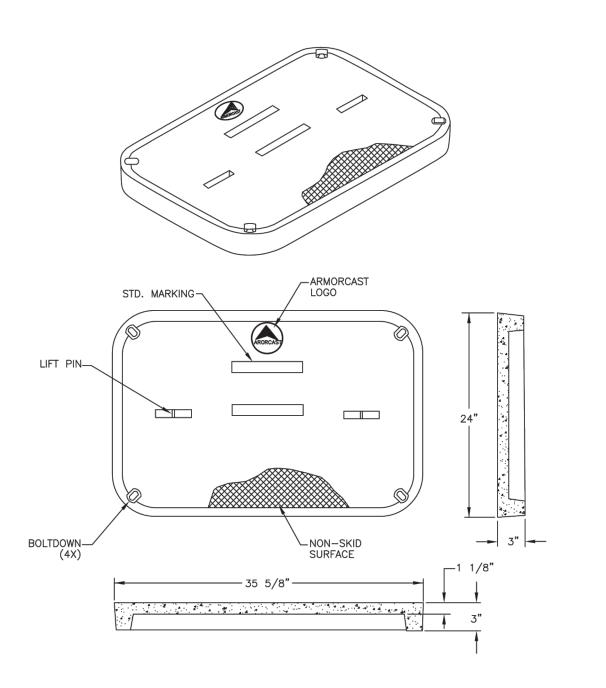


- 1. PROVIDE EXTENSION STEM IF TOP OF VALVE OPERATING NUT IS GREATER THAN 48" BELOW GROUND SURFACE
- 2. PROVIDE MIDDLE SECTION TO EXTEND FOR DEEP BOXES
- 3. ADJUST BOX TOP FOR STREET PAVEMENT OVERLAY, IF OVERLAY IS PERFORMED
- 4. IN GRASS AREAS PROVIDE 1'-6" SQ. x 4" THICK CONC. PAD AROUND TOP OF VALVE BOX

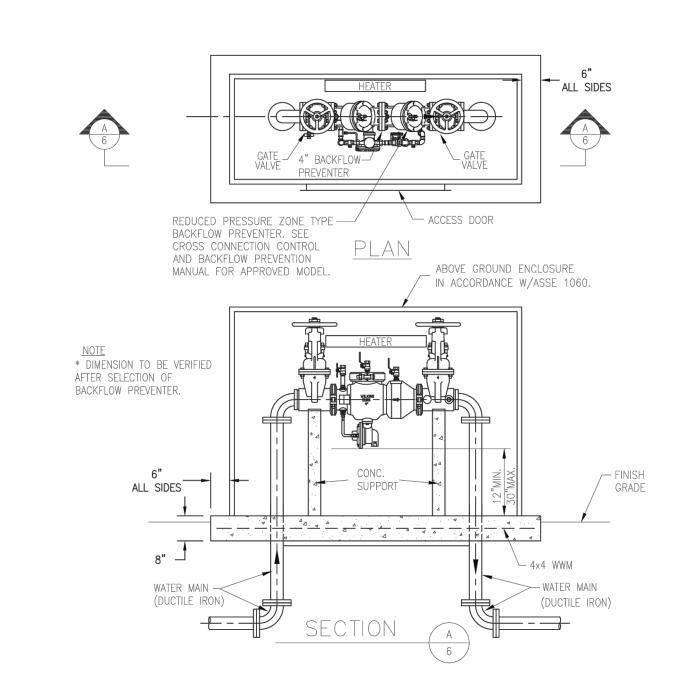




24" x 36'	" x 18" Polymer Concrete Water Meter Box	8/04
N.T.S.	Source: City of Richmond DPU	M-947



24" x 36" x 18" Polymer Concrete Water Meter Box Cover 8/04 Source: City of Richmond DPU M-947-B



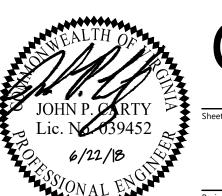
<b>Enclosure Detail</b>		4/06	
N.T.S.	Source: City of Richmond DPU	ENCL	

# **Intermediate Terminal** Phase 2 - Public Access

3101 Wharf Street Richmond, Virginia

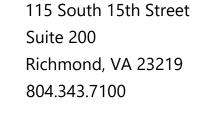
Permitting June 22, 2018

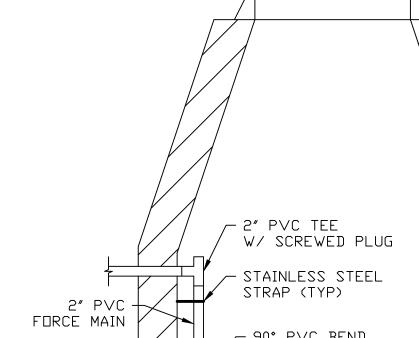


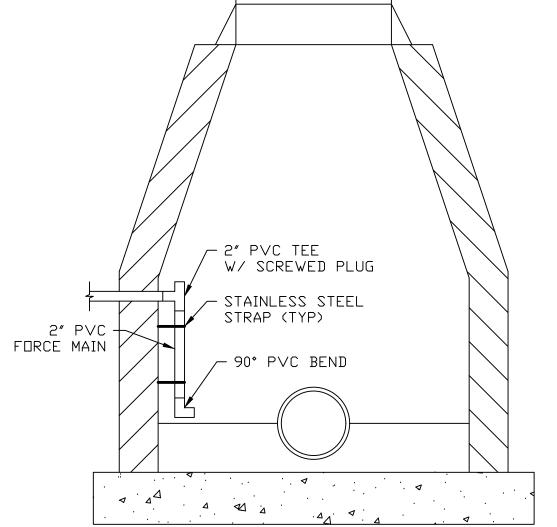


DETAIL A

ADD 0.469 CU, YD, PER ADDITIONAL FOOT OF DEPTH.









GRATE DETAIL

SECTION B-B COLLAR DETAIL

DUMP NO WASTE DRAINS TO WATERWAYS

DETAIL B

UUUUUU O WASTE - DRAMS TO WASTERWAYS

SECTION A-A

CONCRETE QUANTITIES FOR MIN. DEPTH

SEE DETAIL B

1/2"

1/2"

1/2"

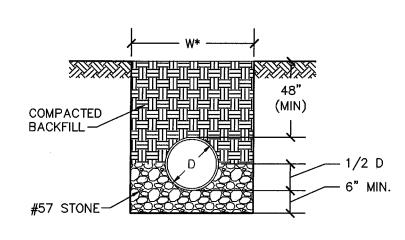
APPROXIMATE WEIGHT CAST IRON
18" CONCRETE PIPE - 1.620 CU. YD. CONCRETE
18" CONCRETE PIPE - 1.620 CU. YD. CONCRETE
18" CONCRETE PIPE - 1.620 CU. YD. CONCRETE
24" CONCRETE PIPE - 1.610 CU. YD. CONCRETE
35"

ADD 0.469 CU. YD. PER

STEPS ARE TO BE PROVIDED WHEN H IS 4'-0" OR GREATER. FOR DETAILS SEE STANDARD ST-1.

THIS ITEM MAY BE PRECAST OR CAST-IN-PLACE.





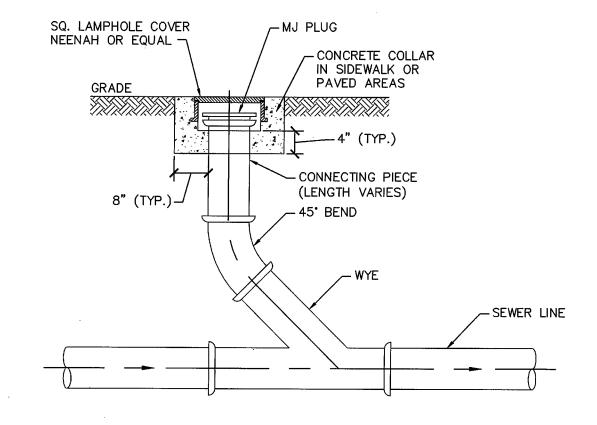
#### COMPACTED GRANULAR BEDDING CLASS B

# NOTES:

08/10 104.09

- 1. \* FOR "W" SEE DETAILS P-1A AND P-1B.
- 2. USE CLASS B COMPACTED GRANULAR BEDDING UNLESS OTHERWISE DIRECTED BY DPU TECHNICAL SERVICES DIVISION.
- 3. TRENCH, BACKFILL AND STREET RESTORATION SHALL BE IN ACCORDANCE WITH CITY OF RICHMOND DEPARTMENT OF PUBLIC WORKS AND/OR VDOT REQUIREMENTS.
- 4. DI PIPE IS REQUIRED IN AREAS WITH LESS THAN 48" OF COVER.

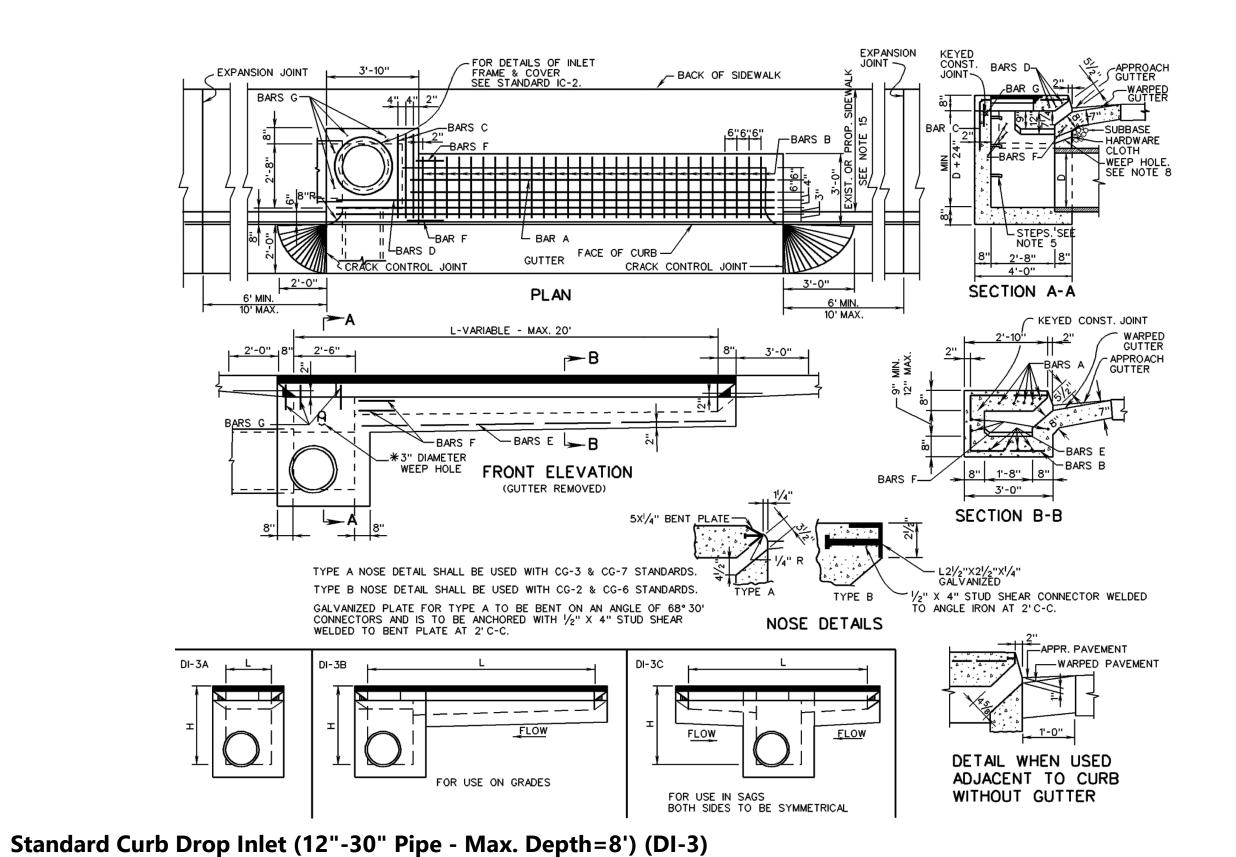
ewer Bedding		12/09
T.S.	Source: City of Richmond DPU	P-2

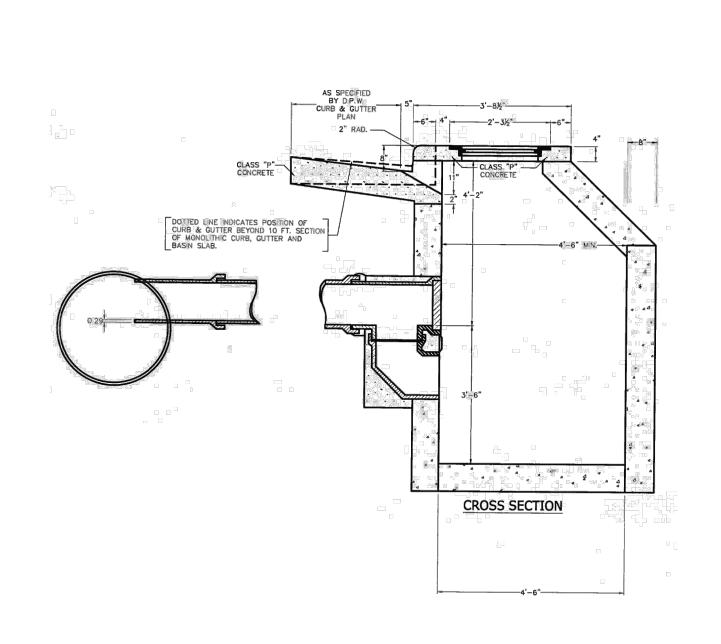


# NOTES:

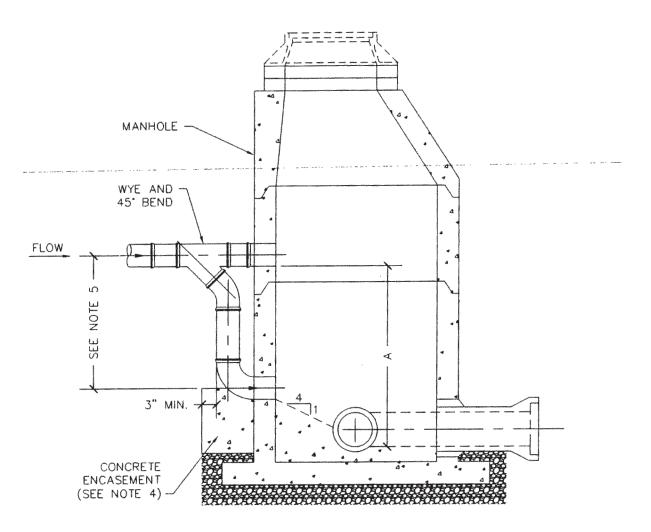
- 1. CLEANOUT COVER SHALL BE BRASS IN CONCRETE/PAVEMENT OR PLASTIC IN GRASS
- 2. CLEANOUT SHALL BE 6" OR LARGER UNLESS OTHERWISE APPROVED BY DPU DEPUTY

<b>Cleanout Detail</b>		12/09
N.T.S.	Source: City of Richmond DPU	P-7





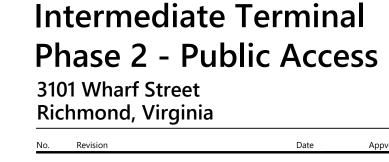
Trap Inlet		02/09
N.T.S.	Source: City of Richmond DPU	H-2



1. WHERE "A" IS GREATER THAN 2'-O" USE STANDARD EXTERIOR DROP MANHOLE.

- 2. WHERE "A" DISTANCE IS LESS THAN 2'-O" THE INCOMING SEWER SHALL BE LOWERED SO THAT THE TOP OF THE INCOMING SEWER IS NOT MORE THAN 6" ABOVE TOP OF THE OUTGOING SEWER, UNLESS APPROVED BY DPU TECHNICAL SERVICES DIVISION. ELIMINATE WYE AND 45 DEGREE BEND.
- 3. PIPE MATERIAL SHALL BE PVC OR DI AND SHALL MATCH THAT OF INCOMING
- FOR PVC PIPE, PROVIDE CONCRETE ENCASEMENT AS SHOWN. FOR DI PIPE, PROVIDE RESTRAINED JOINT.
- 5. PROVIDE STAINLESS STEEL STRAPS EVERY 3'-0" FOR DROPS GREATER THAN 6'-0".

<b>Exterior Dr</b>	op Manhole Connection	12/09
N.T.S.	Source: City of Richmond DPU	M-3



Designed by	Checked by

Permitting	June 22, 201
sued for	Date
esigned by	Checked by



10.19 ft

														PROJ	ECT:		Interm	ediate	Termin	ıal	
														PROJ	ECT N	O:	33965	.20			
														CREA	TED E	BY:	RCR				
														DATE			Febru	ary 1,	2018		
									10 YE	AR RE	TURN F	REQUE	VCY								
							HY	DRAL	JLIC G	RAD	E LINE	CALC	ULA	NOITA	S						
	OUTLET																			INLET	
	WATER																			WATER	
INLET	SURFACE											JUNCTI	ON LO	oss					FINAL	SURFACE	RIM
STATION	ELEV.	Do	Qo	Lo	Sfo	Hf	Vo	Но	Qi	Vi	QiVi	Vi^2/2g	Hi	ANGLE	ΗΛ	Ht	1.3Ht	0.5Ht	Н	ELEV.	ELEV.
2	9.82	15"	1.49	76.10	0.05	0.04	9.19	0.33	1.49	5.45	8.11	0.46	0.16	90	0.32	0.81	0.00	0.00	0.85	10.67	20.00
3	16.73	15"	1.49	6.50	0.05	0.00	5.45	0.12	0.00	0.00	0.00	0.00	0.00	90	0.00	0.12	0.00	0.00	0.12	16.85	19.53

				ST	ORM SE	WER DE	SIGN		Project:	Intermediat	e Terminal						
					10 YEAR	FREQUENC'	Y		Job#:	33965.2							
									Date:	February 1	2018						
									By:	RCR							
FROM	TO	DA			CA	TC	RAINFALL	RUN-OFF		INVERT	INVERT	LENGTH		DIAM.	CAPACITY	VELOCITY	FLOW TIME
POINT	POINT	(ACRES)	С	INCR.	ACCUM	(MINUTES)	(IN/HR)	(CFS)	LINE	UPPER	LOWER	(FEET)	SLOPE	(INCHES)	(CFS)	(F.P.S.)	(MINUTES)
3	2	0.23	0.90	0.21	0.21	5.00	7.07	1.49	3	15.86	15.73	6.50	2.00%	15	9.13	5.45	0.02
2	EX-1	0.00	0.90	0.00	0.21	5.02	7.07	1.49	2	15.63	8.82	76.10	8.95%	15	19.31	9.19	0.14

**Storm Sewer Calcs** 

Total Interception Length



**Chesapeake Bay Nutrient Offset Letter** 

Virginia Runoff Reduction Method Worksheet

DEQ Virginia Runoff Reduction Method Re-Development Compliance Spreadsheet - Version 3.0

BMP Design Specifications List: 2011 Stds & Specs **Site Summary** 

Total Rainfall (in):

**Site Land Cover Summary** 

	A soils	B Soils	C Soils	D Soils	Totals	% of Total
Forest/Open (acres)	0.00	0.00	0.00	0.00	0.00	0
Managed Turf (acres)	0.00	0.00	0.00	0.96	0.96	47
Impervious Cover (acres)	0.00	0.00	0.00	1.09	1.09	53
					2.05	100

0.00 0.00 0.00 Managed Turf (acres) Impervious Cover (acres)

**Site Tv and Land Cover Nutrient Loads** 

	Final Post-Development (Post-ReDevelopment & New Impervious)	Post- ReDevelopment	Post- Development (New Impervious)	Adjusted Pre- ReDevelopment
Rv	0.60	0.60	-	0.62
atment Volume (ft <sup>3</sup> )	4,478	4,478	-	4,630
.oad (lb/yr)	2.81	2.81	ı	2.91

0.20 0.20 Total TP Load Reduction Required (lb/yr)

Final Post-Development Load TN Load (lb/yr)

Virginia Runoff Reduction Method Worksheet

**Site Compliance Summary** 

Maximum % Reduction Required Belo

Total Runoff Volume Reduction (ft<sup>3</sup>) Total TP Load Reduction Achieved (lb/yr) Total TN Load Reduction Achieved (lb/yr)

.\_..\_.

OFFSITE NUTRIENT CREDITS WILL BE PURCHASED TO MEET THE REQUIRED PHOSPHOROUS REMOVAL. REFER TO OFFSITE NUTRIENT CREDIT AVAILABILITY LETTER FOR MORE INFORMATION.

**Virginia Runoff Reduction Method - Summary** 

# **Chesapeake Bay**

TOTAL GROSS SQUARE FOOTAGE AREA	89,069 GSF	2.04 AC	
TOTAL LAND AREA COVERED BY BUILDINGS	0	SF	
AMOUNT OF OPEN SPACE*	1.02 AC	49.88%	
AMOUNT OF IMPERVIOUS AREA ON SITE	1.03 AC	50.37%	
NUMBER OF PARKING SPACES	0 Spaces		
NUMBER OF RESIDENTIAL UNITS	NOT APPLICABLE		
* OPEN SPACE INTERPRETED AS ANY PERVIOUS	AREAS.		

# **Stormwater Management Summary**

THIS DEVELOPMENT, AS A LAND DISTURBING ACTIVITY OF GREATER THAN 2,500 SF WITHIN A CHESAPEAKE BAY PRESERVATION AREA, IS SUBJECT TO THE REQUIREMENTS OF THE RICHMOND STORMWATER MANAGEMENT PERMIT (RSMP). THIS WILL PROVIDE COMPLIANCE WITH THE VIRGINIA STORMWATER MANAGEMENT PROGRAM, AS REQUIRED BY THE DEPARTMENT OF ENVIRONMENTAL QUALITY.

NO STORMWATER MANAGEMENT FACILITIES WILL BE PROVIDED WITH THIS DEVELOPMENT. COMPLIANCE WITH WATER QUALITY AND WATER QUANTITY TREATMENT REQUIREMENTS FOR RUNOFF IS DESCRIBED BELOW.

THE SITE CURRENTLY CONSISTS OF AN ASPHALT ROADWAY; ASPHALT BIKE TRAIL WITH MINIMAL LANDSCAPING; THE COBBLESTONE TERMINAL DOCK; AND A TURF AREA WITH 3:1 SLOPES. TOPOGRAPHY IN THE DOCK AND TRAIL IS FLAT, WITH SLOPES OF 1%, WHILE THE ROAD TOPOGRAPHY IS STEEP UP THE HILL, WITH SLOPES OF APPROXIMATELY 6%.

ALL SLOPES DRAIN TO THE CENTER OF THE SITE, WHERE A SERIES OF DROP INLETS PICK UP THE RUNOFF. IT IS ASSUMED THAT ALL DRAINAGE INTO THESE INLETS IS PART OF THE CITY OF RICHMOND COMBINED SEWER SYSTEM, WHICH ULTIMATELY OUTFALLS TO THE WATER TREATMENT FACILITY.

Water Quality Compliance:

EVEN THOUGH THIS PROJECT DRAINS TO THE CITY OF RICHMOND COMBINED SEWER SYSTEM, WHICH IS TREATED AT THE WATER TREATMENT FACILITY, IT IS ALSO LOCATED WITHIN A CHESAPEAKE BAY PRESERVATION AREA. A SMALL PORTION OF IMPROVEMENTS ARE WITHIN THE RESOURCE PROTECTION AREA (RPA), WHILE THE MAJORITY OF THE SITE IS WITHIN THE RESOURCE MANAGEMENT AREA (RMA). AS SUCH, WATER QUALITY TREATMENT WILL BE REQUIRED.

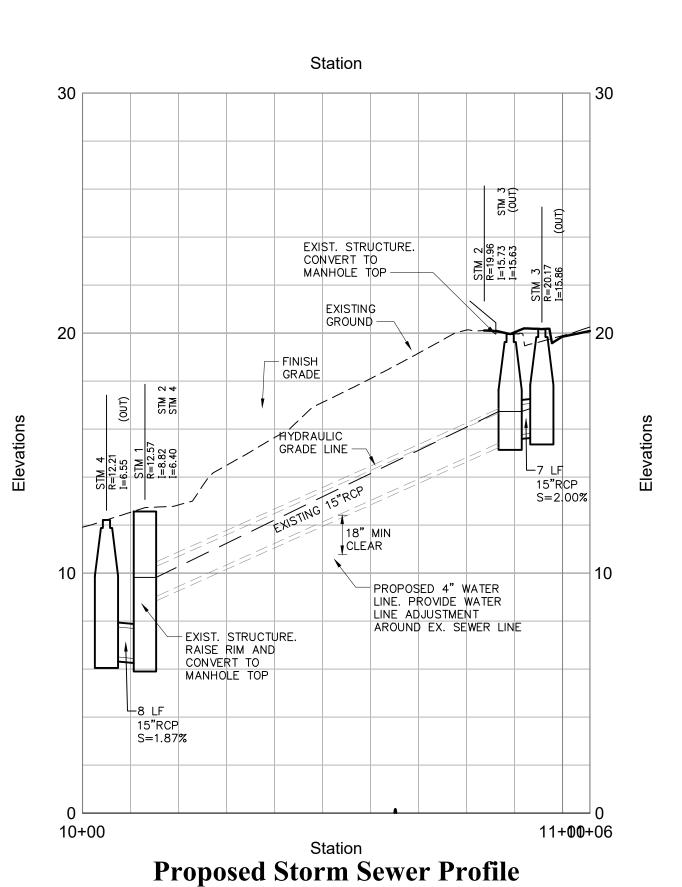
GIVEN THE SITE CONSTRAINTS, INCLUDING STEEP SLOPES, AND LIMITED AREA FOR DEVELOPMENT AROUND THE BIKE TRAIL AND TERMINAL DOCK, NO STORMWATER MANAGEMENT FACILITIES ARE FEASIBLE ON SITE. INSTEAD, OFFSITE NUTRIENT CREDITS WILL BE PURCHASED TO MEET THE WATER QUALITY TREATMENT REQUIREMENTS. REFER TO THE VIRGINIA RUNOFF REDUCTION METHOD SUMMARY AND LETTER OF CREDIT FOR MORE INFORMATION.

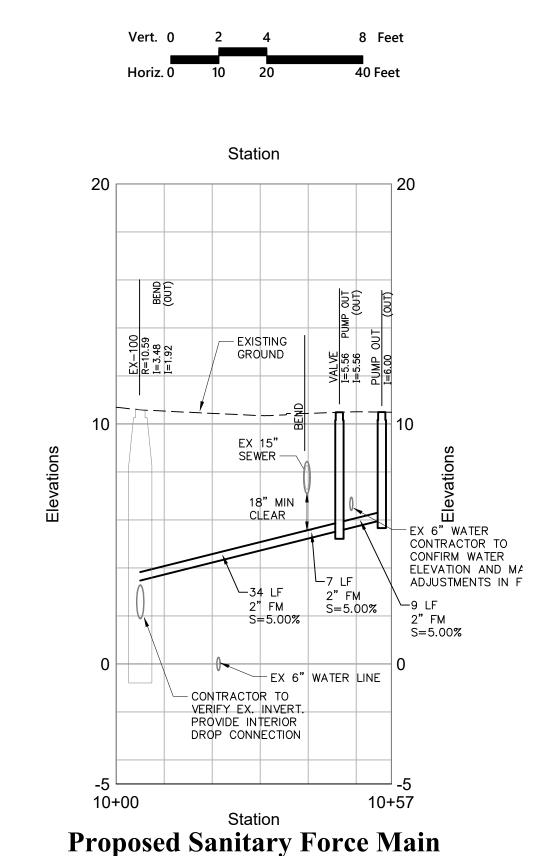
**Water Quantity Compliance:** 

THIS PROJECT OUTFALLS TO THE CITY OF RICHMOND COMBINED SEWER SYSTEM. IT IS REQUIRED THAT NO INCREASE IN FLOW MAY DRAIN TO THE CSO. ALSO, THE DEPARTMENT OF ENVIRONMENTAL QUALITY REQUIRES COMPLIANCE WITH MINIMUM STANDARD 19 (MS-19), WHICH STATES THAT THE POST-DEVELOPMENT PEAK RUNOFF RATE FOR THE 10-YEAR STORM EVENT NOT EXCEED THE PRE-DEVELOPMENT RATE.

COMPLIANCE WITH MS-19 REQUIREMENTS IS MET ON SITE THROUGH A SLIGHT DECREASE IN THE IMPERVIOUS AREA. A SUMMARY OF THE PRE- AND POST-DEVELOPMENT PEAK RUNOFF RATES FOR EACH OUTFALL IS PROVIDED BELOW:

PRE-DEVELOPMENT: Q = C \* i \* AC = 0.65i = 7.07 in/hr A = 2.10 acQ = 9.65 CFSPOST-DEVELOPMENT: Q = C \* i \* AC = 0.63i = 7.07 in/hr A = 2.10 acQ = 9.35 CFS





Final Post-Development | Post-ReDevelopment TF

(lb/acre/yr)

TP Load per acre

(lb/acre/yr)

TP Load per acre

(lb/acre/yr)

# **Intermediate Terminal** Phase 2 - Public Access 3101 Wharf Street

115 South 15th Street

Richmond, VA 23219

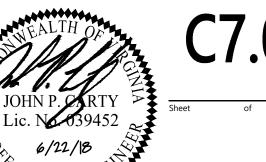
Suite 200

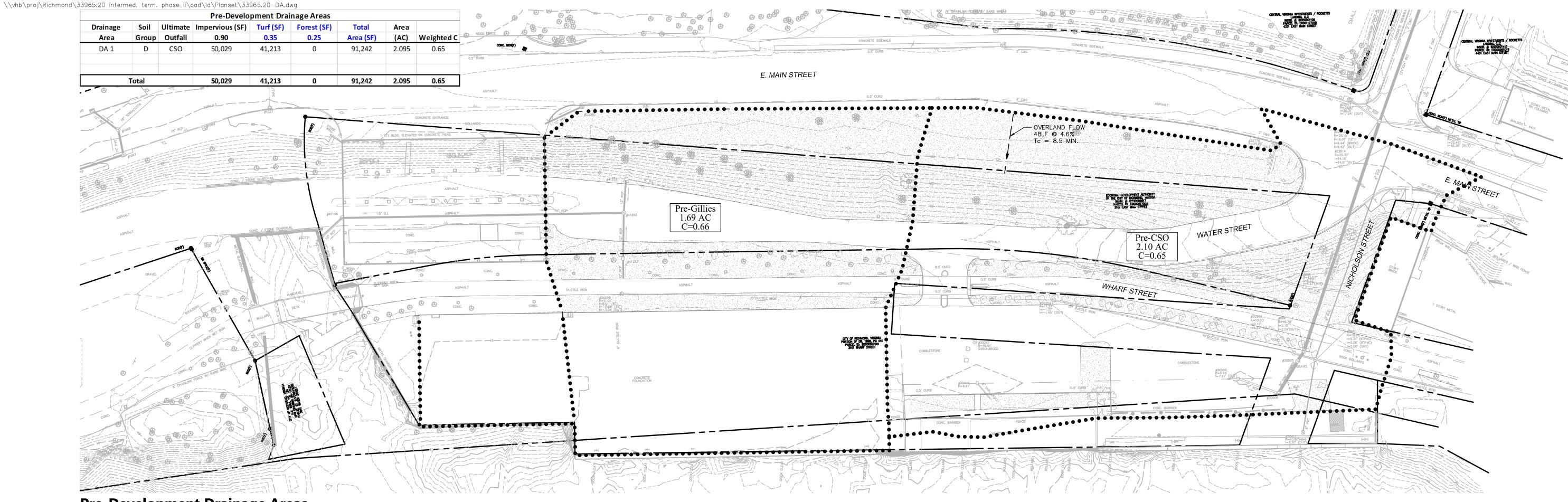
804.343.7100

Richmond, Virginia

June 22, 2018 Permitting

**Calculations and Profiles** 





115 South 15th Street Suite 200 Richmond, VA 23219 804.343.7100

# Legend

PERVIOUS AREA

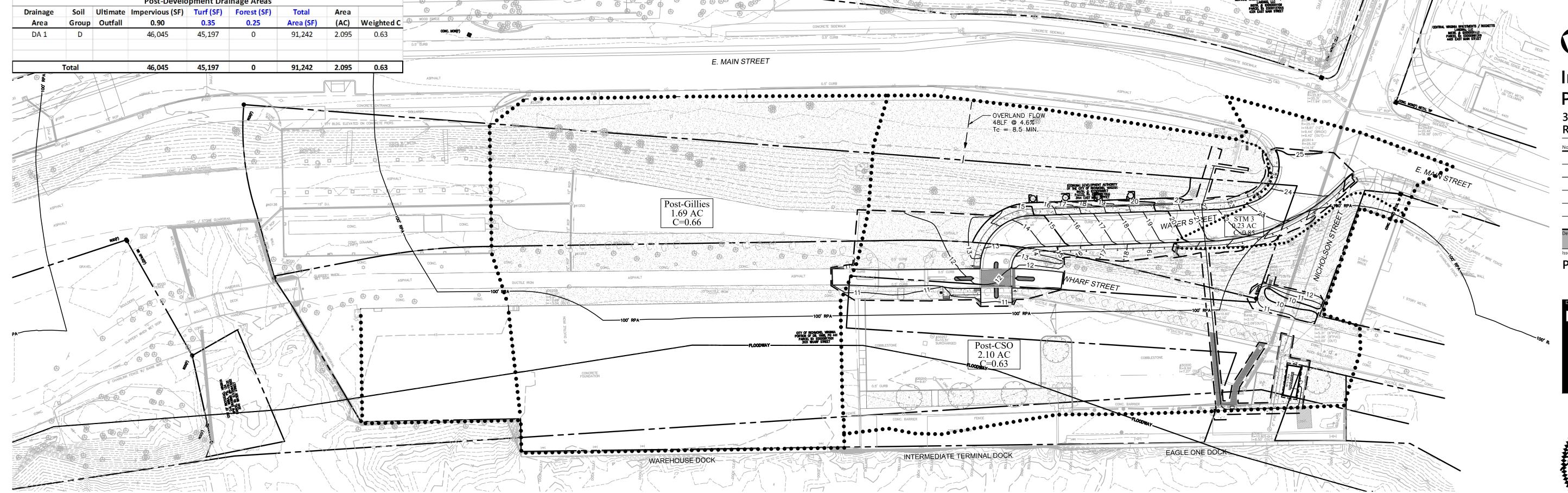
- • • • • • • • • • DRAINAGE DIVIDE TIME OF CONCENTRATION FLOW PATH

A=0.00C=0.00

DRAINAGE AREA ID TOTAL AREA, ACRES RUNOFF COEFFICIENT: C-FACTOR

**Pre-Development Drainage Areas** 

Scale: 1"=40'



**Intermediate Terminal** Phase 2 - Public Access

3101 Wharf Street Richmond, Virginia

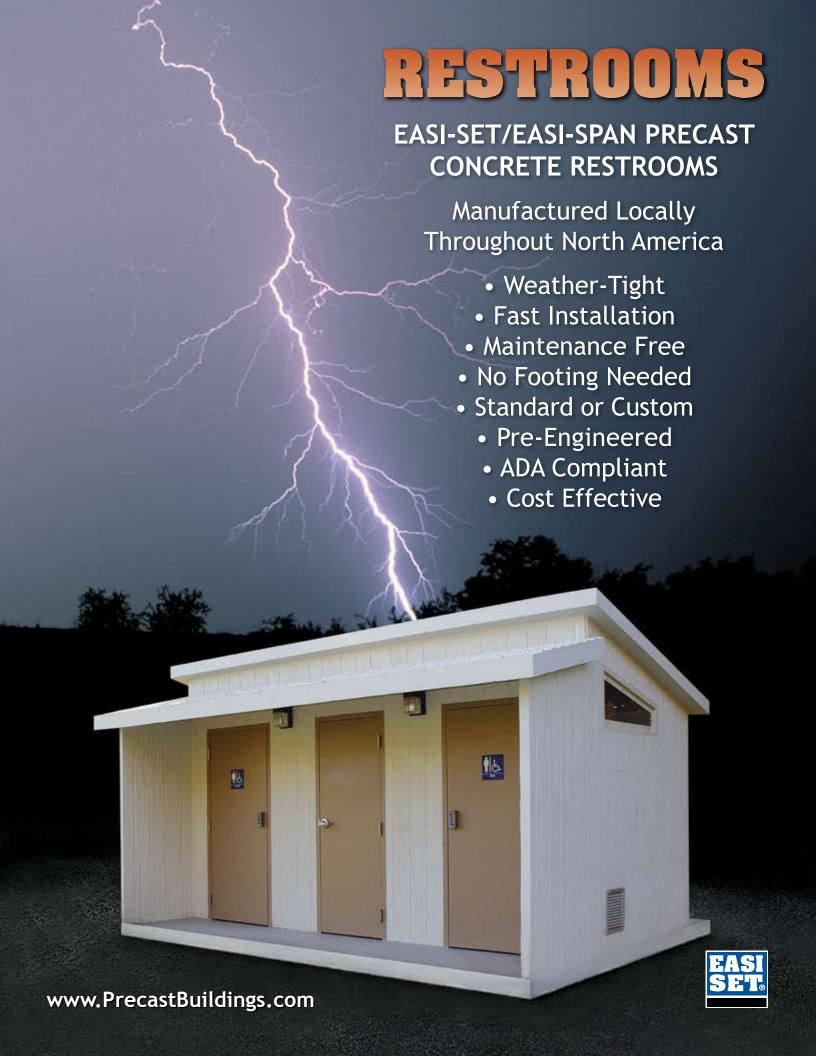
Permitting

June 22, 2018

**Drainage Area Maps** 

**Post-Development Drainage Areas** 

Scale: 1"=40'



# Fasi-Set Precast Restrooms

The industry leader in transportable concrete buildings provides greater weather-tightness and impact resistance through the patented post-tensioned roof & floor features. Manufactured locally throughout North America.

# Secure & Durable

- Meets current codes: IBC, ADA, Forest Service Specifications, and local building codes.
- All precast concrete: eight-foot roof heights, threeinch thick walls, and four-inch thick roof and floor.
- No foundation required.
- Lifetime roof: no coating required. Patented posttensioned technology (concrete under compression).
- Rugged: patented design withstands all weather, temperature, impact and seismic conditions.
- Vandal resistant: steel-reinforced precast concrete construction, tamper-proof hinges, dead-bolt locks and 18-gauge galvanized steel insulated doors.
- Maintenance free: won't rust, warp, corrode, rot, or burn and retains finish without maintenance.
- **Weather-tight:** roof and floor design provides superior water-tight construction.
- Transportable: welded precast panel construction



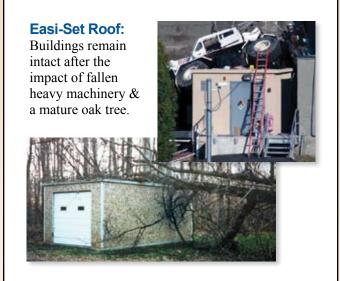
Sierra double restroom with split block finish

# **Green Friendly**

- Concrete is manufactured from local materials
- Restrooms are manufactured locally less hauling
- Waterless, solar, and electricity-free choices
- All-concrete restrooms are completely sustainable
- Most or all components are recyclable
- Steel reinforcement is recycled material



# **Post-Tensioned Design**



# **Restroom Models**

A variety of standard models are available: Blue Ridge single (wet or dry, Outback or gabled roof); Sierra double (wet or dry, Outback or gabled roof); and Skyline multiuser (Easi-Span or tapered roof) restrooms. Skyline restrooms can incorporate many applications into one building such as concessions, press boxes, dressing rooms, storage, or showers. Units can be connected side-by-side or stacked creating multi-story building complexes.

Visit precastbuildings.com to view floor plans and specs for all restroom models. Custom models can be built to your specifications to satisfy you unique needs.



Skyline restroom & concession with Easi-Span roof

# **Roof Styles**









# **Selected Features**

#### **Turn-Down Roof:**

Prefabricated turn-down protects the roof joint from direct exposure to driving rain and provides a drip edge which prevents moisture penetration, and ensures a watertight interior.



#### **Entrance Floor:**

- · Threshold and door sweeps can be eliminated and a flat entrance provided upon request.
- · Thresholds and door sweeps provided on standard restrooms



#### **Door and Frame:**

- · Heavy duty galvanized door and frame
- Easy clean out hospital stop available to prevent collection of bacteria
- Stainless and fiberglass options available



#### **Improved Radial Post-Tensioned Design:**

Provides superior water-tight construction.

#### **Restroom Testimonials**

"The design process was flexible & accurate. The purchasing process was simple & accommodating. The delivery was on time with no problems. And, the product has exceeded our expectations.

Staff & patrons have enjoyed having new restroom facilities in our ball field complex. They are functional & easy to maintain. They are durable & look great."

> Therron Dieckmann. Executive Director Ottawa Recreation Commission

"In regards to the two ... pre-cast bathroom units we purchased for our parks system, they are still providing excellent maintenance-free service."

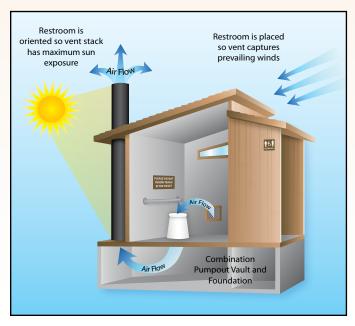
> Randolph Turner, Utilities Superintendent, Aurora, Indiana

# Wet & Dry Options



Stainless Steel Fixtures

All models can be outfitted with water/sewer hook-up (wet). The Blue Ridge and Sierra models can be configured with a pumpout vault (dry). Dry restrooms feature the FAN<sup>™</sup> natural ventilation system.



FAN™ Ventilation Technology (Fresh Air Naturally)

# Easy Site Preparation & Installation





Restroom installation with vault





Restroom installation with wet hook ups

#### Installed in Hours for a Lifetime of Protection

Easi-Set restrooms are designed to be placed on an engineered crushed stone base that provides adequate support and drainage. Site requirements are attached to all specifications. Pre-assembled buildings can also be set on a poured-in-place slab or a gravel base with openings in the floor for "stub out" pipes or electrical conduit. Field-installed building walls are attached to the slab using expansion anchors. Easi-Set restrooms are designed to be tough and rugged providing years of maintenance-free service.

# **Finishes**

Many finishes and colors are available. With all of the options possible, it is easy to match our buildings to surrounding structures on your building site

Colors and textures of natural materials may vary by region. Additional colors and finishes available.













Manufactured Locally by:

