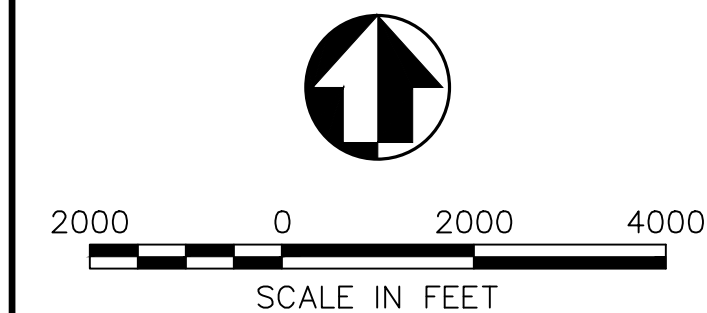
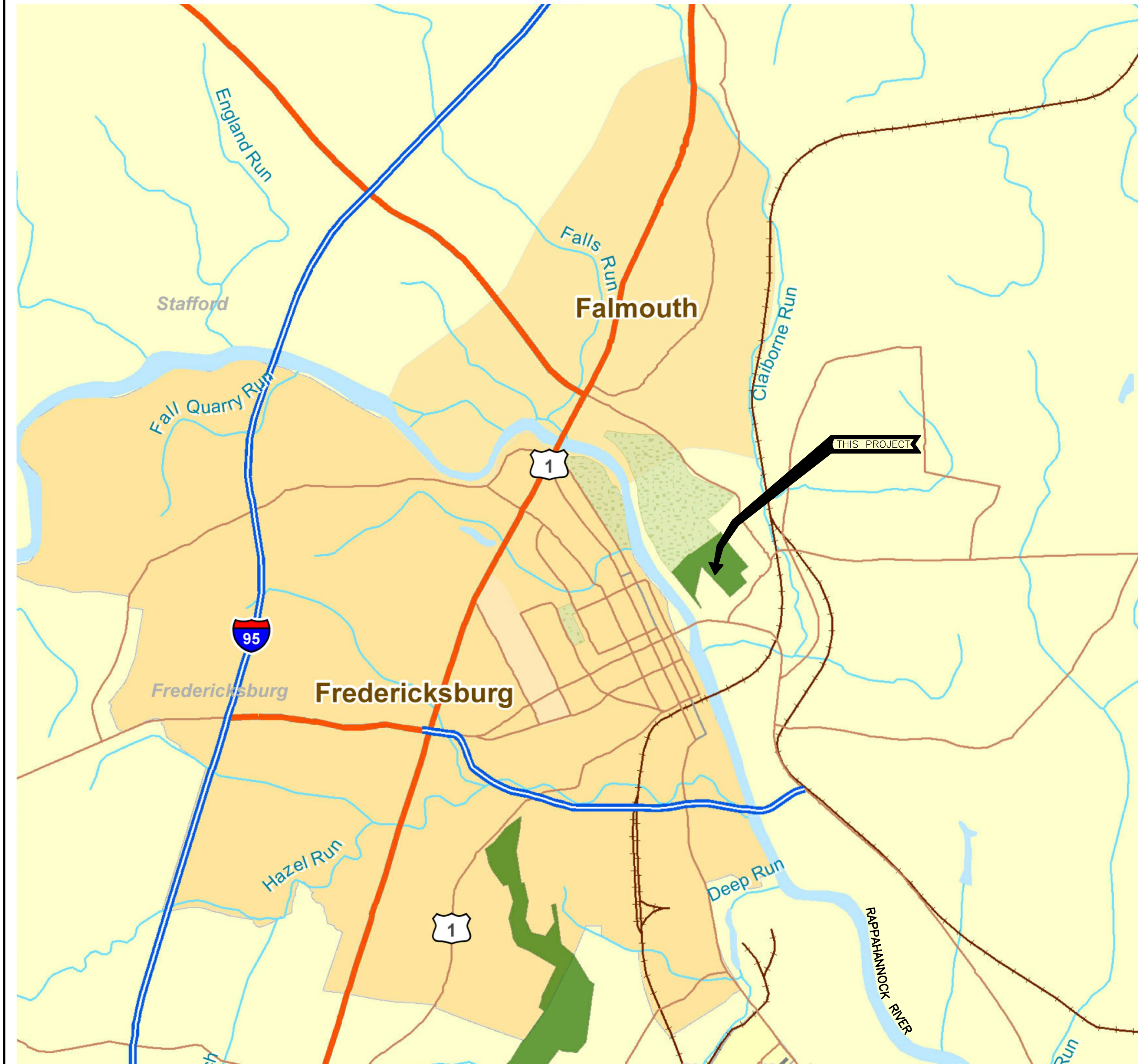


FEBRUARY 8, 2013
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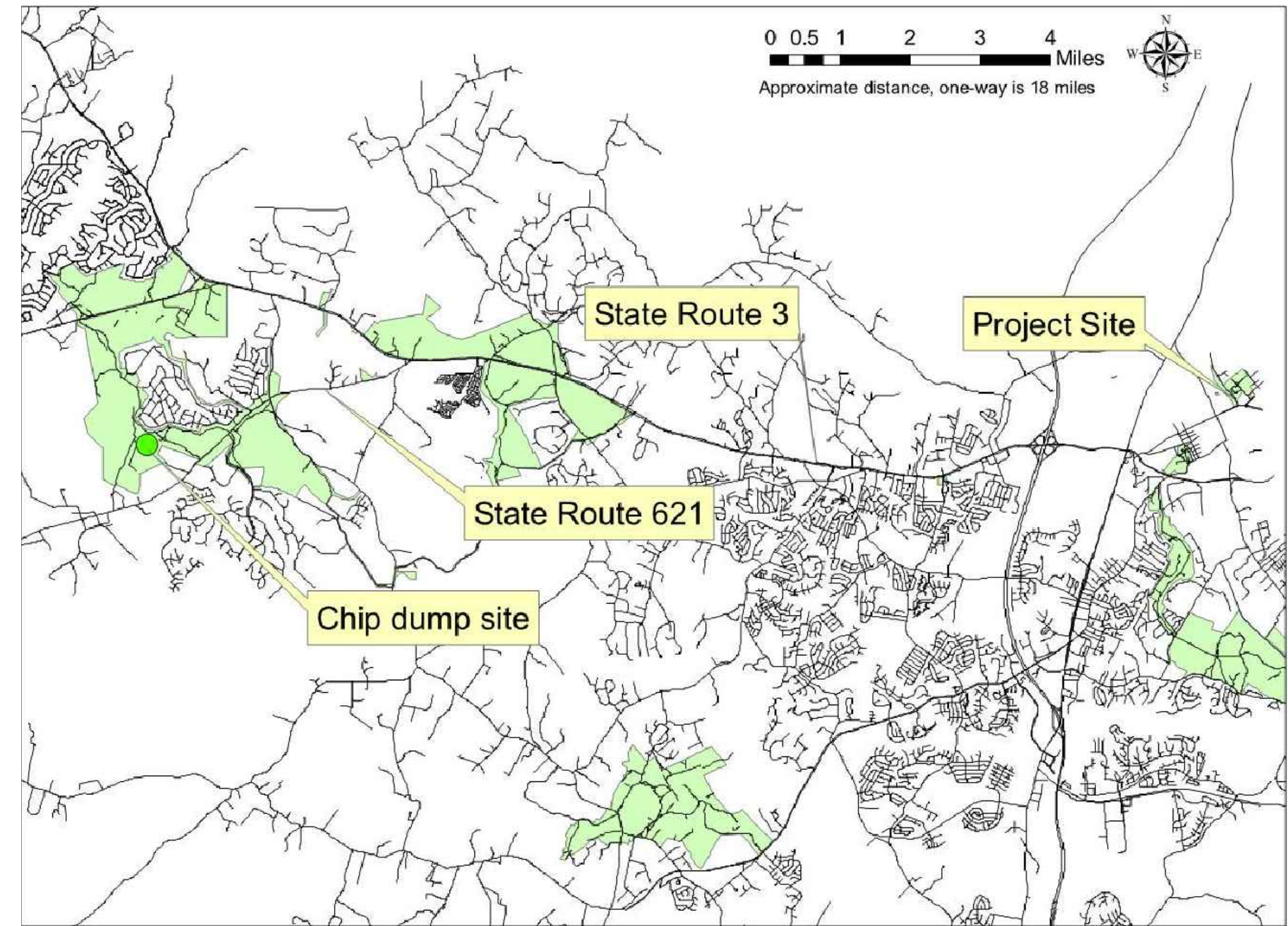


SHEET	SUB SHEET	TITLE OF SHEET
1		COVER SHEET
2	C1	LEGEND & GENERAL NOTES
3	C2	INDEX SHEET
4	C3	TREE REMOVAL PLAN (BID OPTION #3)
5	C4	TREE REMOVAL PLAN (BID OPTION #2)
6	C5	TREE REMOVAL PLAN (BID OPTION #4)
7-8	C6-C7	TREE REMOVAL PLAN (BASE BID)
9-10	C8-C9	CULVERT CALLOUTS (BID OPTION #1)
11	C10	EROSION & SEDIMENT CONTROL NOTES & DETAILS
12	C11	EROSION & SEDIMENT CONTROL DETAILS
13	C12	SITE DETAILS

INDEX TO DRAWINGS

Site Data:
APPROXIMATE SITE AREA: 10.8 ACRES
ADDRESS: 120 CHATHAM LANE, FREDRICKSBURG, VA 22404
NEAREST INTERSECTION: CHATHAM LANE AND CHATHAM HEIGHTS ROAD (SR 212)
DISTURBED AREA: 0.40 ACRES

Developer:
NATIONAL PARK SERVICE
FREDRICKSBURG & SPOTSYLVANIA NMP
MR. RUSS SMITH, SUPERINTENDENT
120 CHATHAM LANE
FREDRICKSBURG, VA 22404
TEL: 540.372.3032



DISPOSAL SITE LOCATION MAP
(APPROXIMATELY 18 MILES FROM SITE)
NPS CHEWNING FARM OFF OF HILL-EWELL DRIVE



FREDRICKSBURG & SPOTSYLVANIA NATIONAL MILITARY PARK

PMIS 163065
IDIQ NO. D4526101003

CONSTRUCTION DOCUMENTS

A/E FIRM - A/E CONTRACT NUMBER	Mark	Sheet	REVISION	Date	Initial
ARCH/PRIME: GWO INC. BALTIMORE, MD					
CIVIL: VHB, INC. WILLIAMSBURG, VA					

QUALITY DESIGN CERTIFICATION	
<input type="checkbox"/> Prepared in Accordance with Design Development (Title I)	Drawing No. _____
OR	Approved by Superintendent on _____ Date _____
<input type="checkbox"/> Variance from Design Development (Title I)	
OR	
<input type="checkbox"/> Construction Drawing Not Preceded by Design Development (Title I)	
Project Manager _____	Date _____



SITE PLANS	
UNITED STATES DEPARTMENT OF THE INTERIOR	
NATIONAL PARK SERVICE DENVER SERVICE CENTER	

TITLE OF DRAWING	
RESTORE EXISTING VISTA AT CHATHAM RIVER BOTTOM	
LOCATION WITHIN PARK CHATHAM MANOR	
NAME OF PARK FREDRICKSBURG & SPOTSYLVANIA	
REGION: NORTHEAST	COUNTY: SPOTSYLVANIA
STATE: VIRGINIA	

DRAWING NO. 326 119631	PKG. NO. SHEN 163065	SHEET 1 OF 13
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Legend		
Exist.	Prop.	
		PROJECT LIMIT LINE
		RIGHT-OF-WAY/ PROPERTY LINE
		CONSTRUCTION LAYOUT
		LIMITS OF WORK
		WETLAND LINE WITH FLAG
		RPA — APPROXIMATE RESOURCE PROTECTION AREA
		STREAM/POND/WATER COURSE
		SILT FENCE
		MINOR CONTOUR
		MAJOR CONTOUR
		RIPRAP
		DRAINAGE LINE
		FLARED END SECTION
		HEADWALL
		MATCHLINE

E&S Legend		
	SF	SILT FENCE (2 C10)
	CE	CONSTRUCTION ENTRANCE (5 C11)
	TP	TREE PROTECTION (1 C10)
	CIP	CULVERT INLET PROTECTION (4 C11)
	OP	OUTFALL PROTECTION (3 C11)
	EC3	EC-3 SOIL STABILIZATION BLANKET (2 C11)
	TS	TEMPORARY SEEDING (1 C11)
	PS	PERMANENT SEEDING (6 C11)
		LIMIT OF WORK


Abbreviations		
General		
APPROX		APPROXIMATE
CONC		CONCRETE
ELEV		ELEVATION
EXIST		EXISTING
GTD		GRADE TO DRAIN
LOD		LIMIT OF DISTURBANCE
MAX		MAXIMUM
MIN		MINIMUM
NIC		NOT IN CONTRACT
NTS		NOT TO SCALE
PROP		PROPOSED
REM		REMOVE
RET		RETAIN
R&D		REMOVE AND DISPOSE
TS		TOP OF SLOPE
TYP		TYPICAL

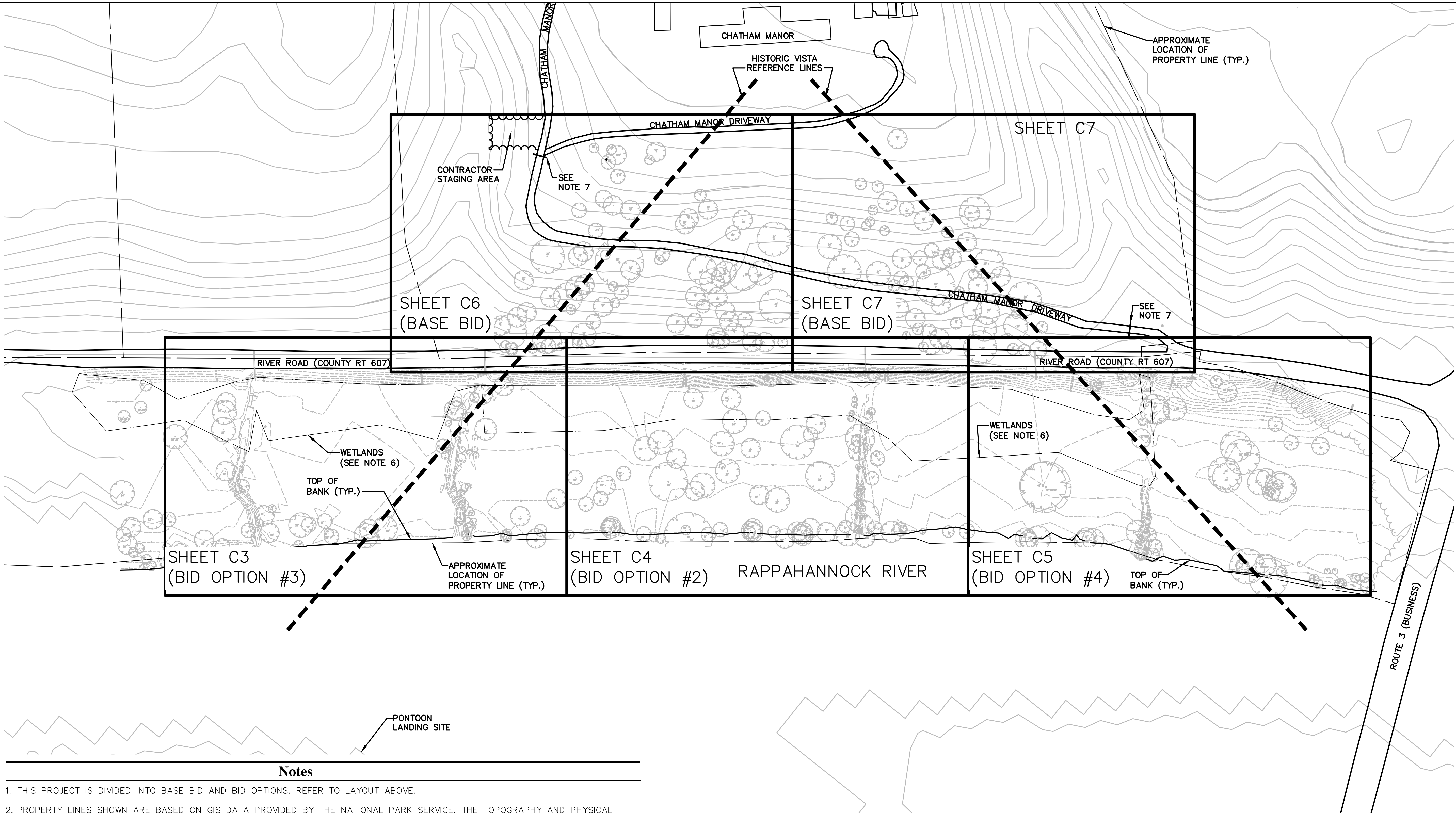
Utility		
HW		HEADWALL
INV		INVERT ELEVATION
RCP		REINFORCED CONCRETE PIPE

Notes:		
<u>General</u>		
1.	THE “MISS UTILITY LAW” REQUIRES FOR THE CONTRACTOR TO CALL 811 AT LEAST 3 WORKING DAYS IN ADVANCE OF THE PLANNED WORK TO ALLOW TIME FOR MARKING, THAT THE MARKS BE RESPECTED AND PROTECTED, AND THAT EXCAVATION BE COMPLETED CAREFULLY.	ADDITIONAL WORK RELEASES THE GOVERNMENT FROM OBLIGATIONS FOR ADDITIONAL PAYMENTS WHICH OTHERWISE MAY BE WARRANTED TO RESOLVE THE CONFLICT.
2.	CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH OSHA STANDARDS AND LOCAL REQUIREMENTS.	3. SET CULVERT INVERTS AND DITCHES IN ACCORDANCE WITH ELEVATIONS ON THE SITE PLANS.
3.	AREAS DISTURBED DURING CONSTRUCTION SHALL FOLLOW DETAIL PROVIDED BY VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK FOR SITE SPECIFIC SEEDING MIXTURES IN ACCORDANCE WITH STANDARD & SPECIFICATION 3.32.	4. UTILITY PIPE MATERIALS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED ON THE PLAN: A. STORM DRAINAGE PIPES SHALL BE RCP.
4.	WORK WITHIN THE LOCAL RIGHTS-OF-WAY SHALL CONFORM TO LOCAL MUNICIPAL STANDARDS. WORK WITHIN STATE RIGHTS-OF-WAY SHALL CONFORM TO THE LATEST EDITION OF THE STATE HIGHWAY DEPARTMENTS STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.	<u>Layout and Materials</u> 1. ANY EXISTING PROPERTY LINE MONUMENTATION DISTURBED BY CONTRACTOR DURING CONSTRUCTION SHALL BE SET OR RESET BY A PROFESSIONAL LICENSED SURVEYOR AT NO ADDITIONAL COST TO THE NPS. 2. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL VERIFY EXISTING ELEVATIONS AT INTERFACE WITH CULVERTS AND EXISTING GROUND ELEVATIONS ADJACENT TO DRAINAGE OUTLETS TO ASSURE PROPER TRANSITIONS BETWEEN EXISTING AND PROPOSED FACILITIES.
5.	UPON AWARD OF CONTRACT, CONTRACTOR SHALL MAKE NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN NECESSARY PERMITS, PAY FEES, 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.	3. 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.
6.	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.	<u>Demolition</u> 1. CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING MANMADE FEATURES WITHIN THE LIMIT OF WORK AS NOTED ON THE PLANS. 2. CONTRACTOR SHALL DISPOSE OF DEMOLITION DEBRIS IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES AND STATUTES.
7.	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 CONTRACTING OFFICER (CO) IMMEDIATELY SO THAT THE APPROPRIATE TESTING AND SUBSEQUENT ACTION CAN BE TAKEN.	<u>Erosion Control</u> 1. PRIOR TO STARTING WORK ON THE SITE, THE CONTRACTOR SHALL NOTIFY APPROPRIATE AGENCIES AND SHALL INSTALL EROSION CONTROL MEASURES AS SHOWN ON THE PLANS AND AS IDENTIFIED IN FEDERAL, STATE AND LOCAL APPROVAL DOCUMENTS PERTAINING TO THIS PROJECT. 2. CONTRACTOR SHALL INSPECT AND MAINTAIN EROSION CONTROL MEASURES, AND REMOVE SEDIMENT THEREFROM ON A WEEKLY BASIS AND WITHIN TWELVE HOURS AFTER EACH STORM EVENT AND DISPOSE OF SEDIMENTS IN AN UPLAND AREA SUCH THAT THEY DO NOT ENCUMBER OTHER DRAINAGE STRUCTURES AND PROTECTED AREAS. 3. 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 DIRECT DEPOSIT. 4. CONTRACTOR SHALL PERFORM CONSTRUCTION SEQUENCING SUCH THAT EARTH MATERIALS ARE EXPOSED FOR A MINIMUM OF TIME BEFORE THEY ARE COVERED, SEEDED OR OTHERWISE STABILIZED TO PREVENT EROSION. 5. UPON COMPLETION OF CONSTRUCTION AND ESTABLISHMENT OF PERMANENT GROUND COVER, CONTRACTOR SHALL REMOVE AND DISPOSE OF EROSION CONTROL MEASURES AND CLEAN SEDIMENT AND DEBRIS FROM ENTIRE DRAINAGE SYSTEM.
8.	CONTRACTOR SHALL PREVENT DUST, SEDIMENT, AND DEBRIS FROM EXITING THE SITE AND SHALL BE RESPONSIBLE FOR CLEANUP, REPAIRS AND CORRECTIVE ACTION IF SUCH OCCURS.	
9.	DAMAGE RESULTING FROM CONSTRUCTION LOADS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE GOVERNMENT.	
10.	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 THE GOVERNMENT.	
11.	IF THIS PROJECT DISTURBS MORE THAN ONE ACRE OF LAND AND THEN IT WOULD FALL WITHIN THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP), GENERAL CONSTRUCTION PERMIT (GCP) PROGRAM AS ADMINISTERED BY THE VIRGINIA DEPARTMENT OF CONSERVATION AND RECREATION (DCR) UNDER THE JURISDICTION OF THE EPA. IF NEEDED, THE CONTRACTOR SHALL FILE A GCP NOTICE OF INTENT WITH THE DCR AND PREPARE A STORMWATER POLLUTION PREVENTION PLAN IN ACCORDANCE WITH THE VSMP REGULATIONS.	

Utilities

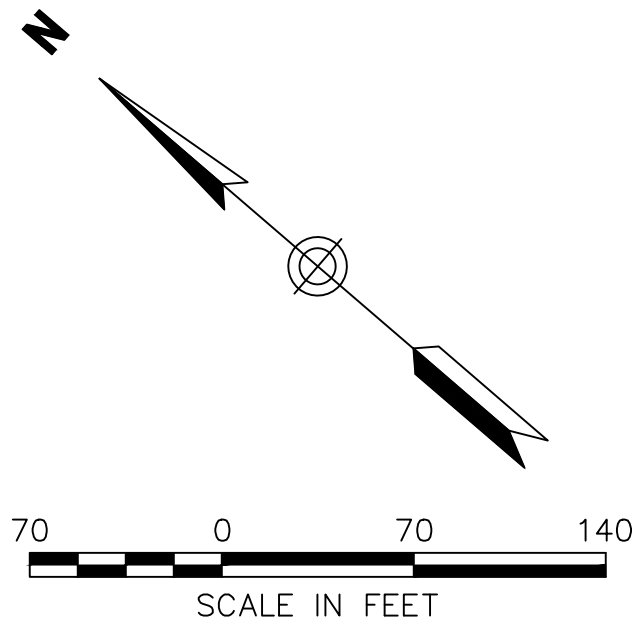
- THE LOCATIONS, SIZES, AND TYPES OF EXISTING UTILITIES ARE SHOWN AS AN APPROXIMATE REPRESENTATION ONLY. THE NATIONAL PARK SERVICE (NPS) HAS NOT INDEPENDENTLY VERIFIED THIS INFORMATION AS SHOWN ON THE PLANS. THE UTILITY INFORMATION SHOWN DOES NOT GUARANTEE THE ACTUAL EXISTENCE, SERVICEABILITY, OR OTHER 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,
- 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 CO FOR THE RESOLUTION OF THE CONFLICT AND CONTRACTOR’S FAILURE TO NOTIFY PRIOR TO PERFORMING

CONSTRUCTION DOCUMENTS				
A/E FIRM	DESIGNED:	SUB SHEET NO	TITLE OF SHEET	DRAWING NO.
PRIME:	TJH	C1	LEGEND & GENERAL NOTES	<u>326</u>
GWWO INC. BALTIMORE, MD	 VND			119631
SUB:	TECH. REVIEW:			PMIS/PKG NO.
VHB, INC. WILLIAMSBURG,VA	VND			FRSP 163065
	DATE:		RESTORE HISTORIC VISTA AT CHATHAM RIVER BOTTOM	SHEET
	2-8-2013			<u>2</u> OF <u>13</u>



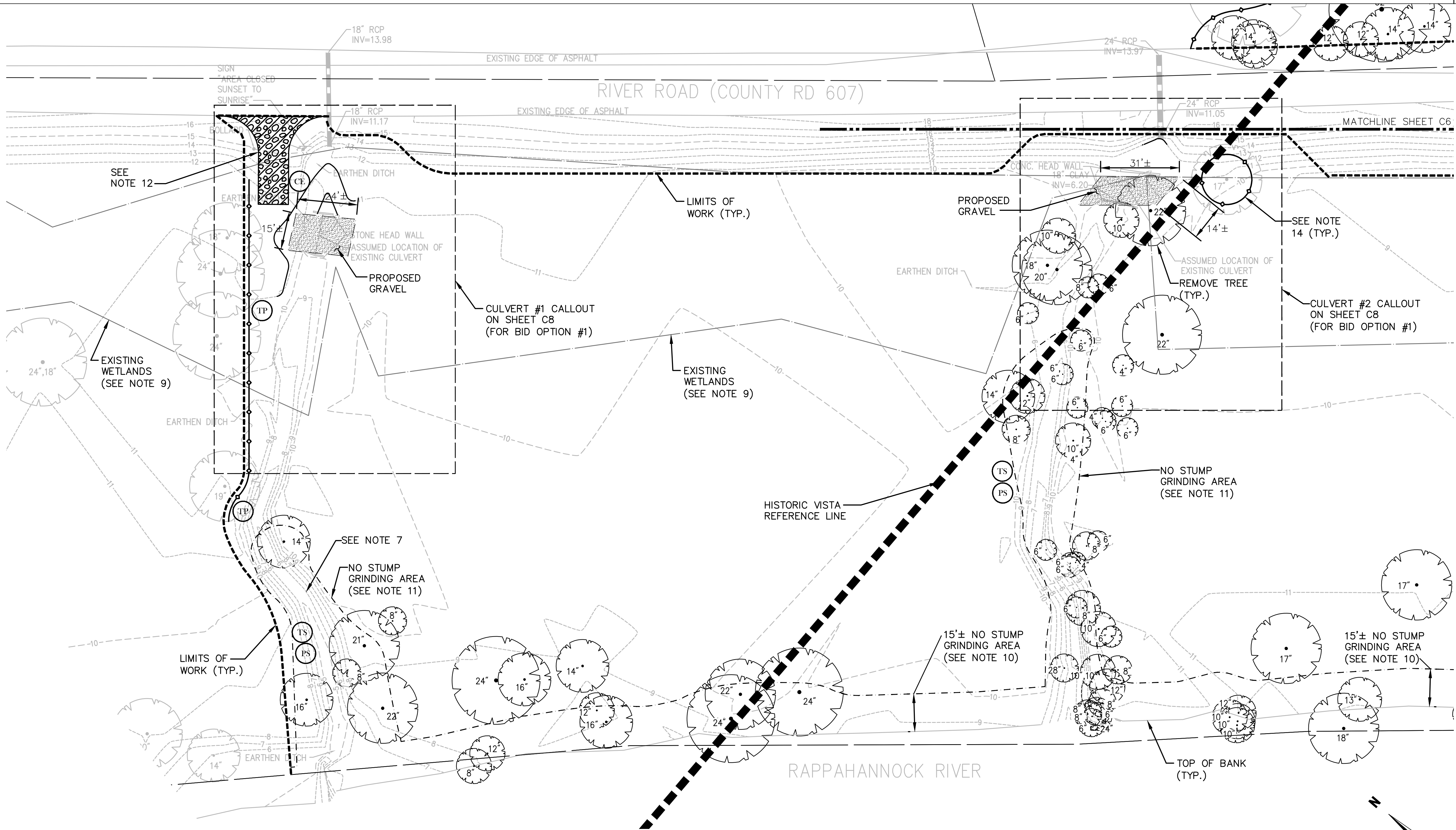
Notes

1. THIS PROJECT IS DIVIDED INTO BASE BID AND BID OPTIONS. REFER TO LAYOUT ABOVE.
2. PROPERTY LINES SHOWN ARE BASED ON GIS DATA PROVIDED BY THE NATIONAL PARK SERVICE. THE TOPOGRAPHY AND PHYSICAL FEATURES ARE BASED ON AN ACTUAL FIELD SURVEY PERFORMED ON THE GROUND BY VHB INC. DURING NOVEMBER 2012.
3. UNDERGROUND UTILITY LOCATIONS ARE BASED UPON VISUAL SURFACE EVIDENCE GATHERED DURING THE FIELD SURVEY AND FROM VERBAL INFORMATION PROVIDED IN THE FIELD BY NPS STAFF. NO UNDERGROUND UTILITY LOCATING OR MAPPING WAS PERFORMED. THEREFORE, ALL UNDERGROUND UTILITY LOCATIONS SHOULD BE HORIZONTALLY AND VERTICALLY FIELD VERIFIED PRIOR TO CONSTRUCTION.
4. NO TITLE REPORT WAS FURNISHED. PARCEL LINES ARE BASED ON GIS PROVIDED BY THE NATIONAL PARK SERVICE.
5. FIRM PANEL 204 & 212 (EFFECTIVE DATE FEBRUARY 4, 2005)
MAP NO. 5101540204E & 5101540212E
PORTION OF THE SITE SOUTH OF RIVER ROAD IS DESIGNATED ZONE AE (AREA SUBJECT TO FLOODING BY THE 1% ANNUAL CHANCE FLOOD) AND PORTION OF SITE NORTH OF RIVER ROAD IS DESIGNATED ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN).
6. VERTICAL DATUM IS BASED ON NAVD88.
7. WETLANDS ARE DEPICTED FROM GIS DATA PROVIDED BY THE NPS (DATED 10/17/12).
8. THE CONTRACTOR SHALL PROVIDE BARRICADES, CONES, SIGNAGE, AND OTHER MEANS NECESSARY TO PREVENT VEHICLE AND PEDESTRIAN ACCESS TO WORK AREAS AND AS DIRECTED BY THE CONTRACTING OFFICER.



CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: GWWO INC. BALTIMORE, MD SUB: VHB, INC. WILLIAMSBURG, VA	DESIGNED: TJH	SUB SHEET NO C2	TITLE OF SHEET INDEX SHEET RESTORE HISTORIC VISTA AT CHATHAM RIVER BOTTOM	DRAWING NO. 326 119631
	DATE: 2-8-2013			PMIS/PKG NO. FRSP 163065
	TECH. REVIEW: VND			SHEET 3 OF 13

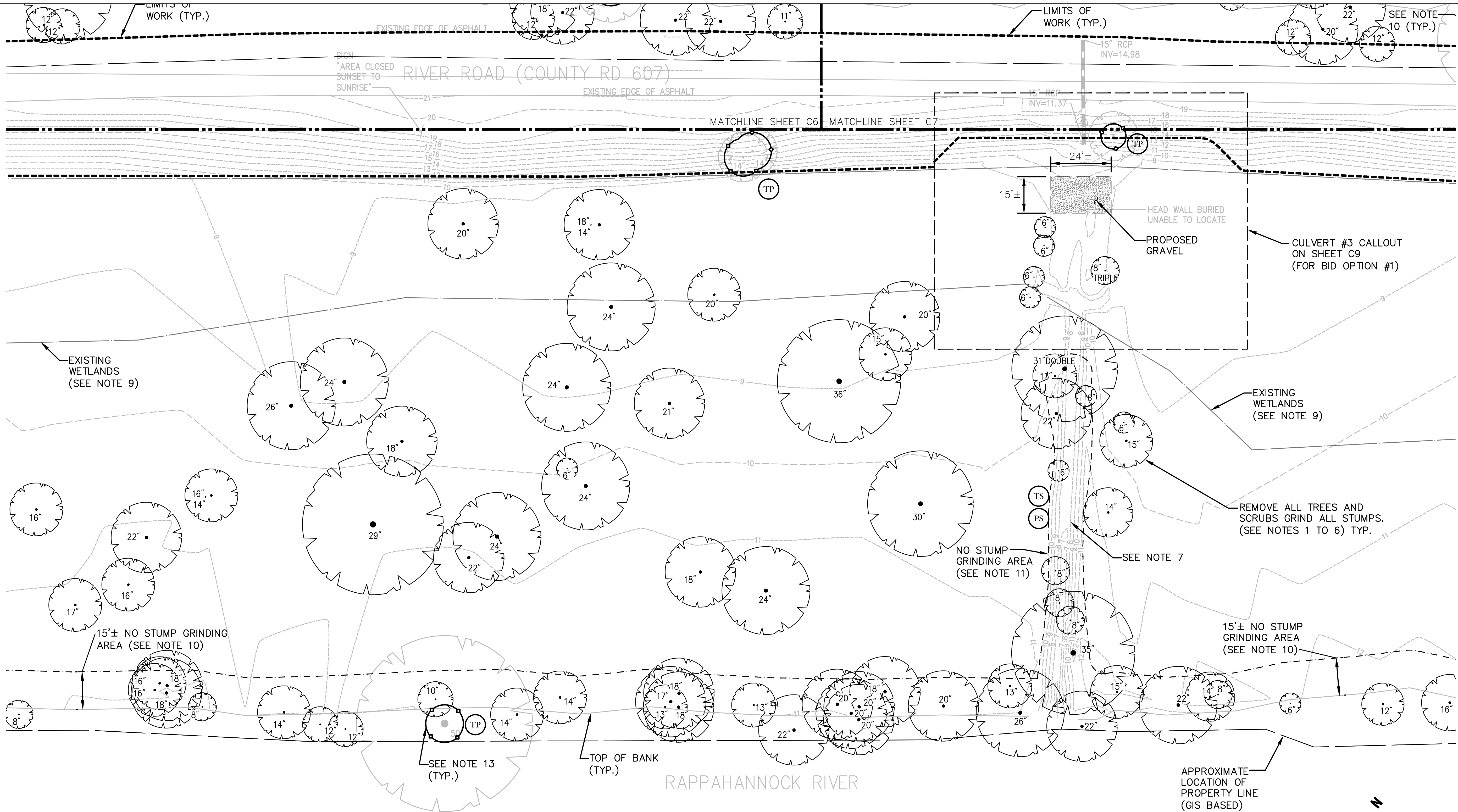


Notes

- CONTRACTOR SHALL REMOVE ALL TREES WITHIN THE LIMITS OF WORK DEPICTED ON THE PLAN EXCEPT FOR TREES INDICATED TO REMAIN.
- ALL SHRUBS ARE TO BE REMOVED WITHIN THE LIMITS OF WORK AND THE AREA CLEARED OF ALL EXISTING TREE DEBRIS ON THE GROUND.
- STUMPS ARE TO BE REMOVED TO 2" MIN. BELOW GRADE BY STUMP GRINDING EXCEPT AS NOTED IN NOTES 10 & 11. EXCAVATION OF STUMPS IS NOT ALLOWED.
- AREAS DISTURBED BY TREE REMOVAL AND STUMP GRINDING SHALL BE RESTORED WITH SEEDING PER SPECIFICATIONS.
- CONTRACTOR SHALL PROVIDE MAINTENANCE OF TRAFFIC PLANS AND PERMITS FROM VDOT AND ALL OTHER AGENCIES HAVING JURISDICTION FOR WORK WITHIN OR ALONG THE RIGHT OF WAY AND AS REQUIRED FOR HAULING.
- CONTRACTOR SHALL SUBMIT TO THE CONTRACTING OFFICER (CO) A WRITTEN TREE REMOVAL PLAN FOR REVIEW AND APPROVAL PRIOR TO COMMENCING WORK ON SITE.
- CONTRACTOR SHALL CLEAN SWALES BY REMOVING FALLEN TREES, BRANCHES AND DEBRIS FROM THE CULVERT TO THE RIVER AND PROVIDE MINOR GRADING AS REQUIRED TO ENSURE UNOBSTRUCTED, POSITIVE FLOW.
- CONTRACTOR SHALL RESTORE ALL PAVEMENT DAMAGED BY CONTRACTOR OPERATIONS TO THE CONDITION OF THE PAVEMENT WHICH EXISTED PRIOR TO COMMENCEMENT OF WORK. THIS INCLUDES, BUT IS NOT LIMITED TO, RIVER ROAD, CHATHAM LANE AND PARKING AREAS. THE PAVEMENT RESTORATION MAY INCLUDE PAVEMENT REMOVAL AND REPLACEMENT AND/OR ASPHALT OVERLAY AS REQUIRED TO RESTORE PAVEMENT. THE CHATHAM MANOR DRIVEWAY SHALL BE RESTORED WITH GRADED AND COMPACTED VDOT 21B STONE TO REMOVE RUTTING AND POTHOLES, ETC. CAUSED BY CONTRACTOR EQUIPMENT.
- WETLANDS ARE DEPICTED FROM GIS DATA PROVIDED BY THE NPS (DATED 10/17/12).
- TREES REMOVED ALONG THE TOP OF BANK TO APPROXIMATELY 15' INLAND SHALL BE CUT FLUSH WITH THE GROUND AND THE STUMPS ARE TO REMAIN. NO STUMP GRINDING IS ALLOWED IN THIS AREA. NO TREES ARE TO BE CUT DOWN THAT ARE DOWN SLOPE (RIVERWARD) FROM THE TOP OF BANK.
- TREES REMOVED ALONG THE DRAINAGE SWALES SHALL BE CUT FLUSH WITH THE GROUND AND THE STUMPS ARE TO REMAIN. NO STUMP GRINDING IS ALLOWED IN THIS AREA.
- CONSTRUCTION ENTRANCE (CE) STONE IS TO BE LEFT IN PLACE. UPON COMPLETION OF WORK, THE CE IS TO BE RESTORED BY COVERING CE STONE WITH 2" OF TOP SOIL, FINE GRADE ENTRANCE AND SEED.
- THE CONTRACTOR SHALL REMOVE FALLEN TREES, TREE BRANCHES, EXISTING STORM DEBRIS AND THE LIKE FROM ALL AREAS WITHIN THE LIMITS OF WORK.
- FOR THE TREES THAT ARE TO REMAIN, LIMB TREE UP TO 30' AND REMOVE VINES UP TO 7' FROM THE GROUND.

CONSTRUCTION DOCUMENTS

A/E FIRM	DESIGNED:	SUB SHEET NO	TITLE OF SHEET	DRAWING NO.
PRIME: GWWO INC. BALTIMORE, MD	TJH	C3	TREE REMOVAL PLAN (BID OPTION #3)	326
SUB: VHB, INC. WILLIAMSBURG, VA	VND			119631
	VND			PMIS/PKG NO. FRSP 163065
	DATE: 2-8-2013		RESTORE HISTORIC VISTA AT CHATHAM RIVER BOTTOM	SHEET 4 OF 13

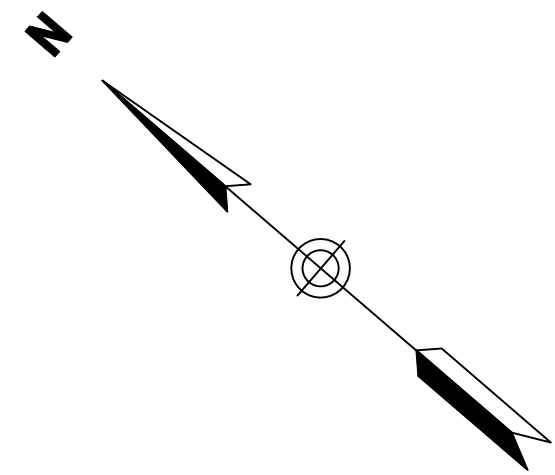


Notes

- CONTRACTOR SHALL REMOVE ALL TREES WITHIN THE LIMITS OF WORK DEPICTED ON THE PLAN EXCEPT FOR TREES INDICATED TO REMAIN.
- ALL SHRUBS ARE TO BE REMOVED WITHIN THE LIMITS OF WORK AND THE AREA CLEARED OF ALL EXISTING TREE DEBRIS ON THE GROUND.
- STUMPS ARE TO BE REMOVED TO 2" MIN. BELOW GRADE BY STUMP GRINDING EXCEPT AS NOTED IN NOTES 10 & 11. EXCAVATION OF STUMPS IS NOT ALLOWED.
- AREAS DISTURBED BY TREE REMOVAL AND STUMP GRINDING SHALL BE RESTORED WITH SEEDING PER SPECIFICATIONS.
- CONTRACTOR SHALL PROVIDE MAINTENANCE OF TRAFFIC PLANS AND PERMITS FROM VDOT AND ALL OTHER AGENCIES HAVING JURISDICTION FOR WORK WITHIN OR ALONG THE RIGHT OF WAY AND AS REQUIRED FOR HAULING.
- CONTRACTOR SHALL SUBMIT TO THE CONTRACTING OFFICER (CO) A WRITTEN TREE REMOVAL PLAN FOR REVIEW AND APPROVAL PRIOR TO COMMENCING WORK ON SITE.
- CONTRACTOR SHALL CLEAN SWALES BY REMOVING FALLEN TREES, BRANCHES AND DEBRIS FROM THE CULVERT TO THE RIVER AND PROVIDE MINOR GRADING AS REQUIRED TO ENSURE UNOBSTRUCTED, POSITIVE FLOW.
- CONTRACTOR SHALL RESTORE ALL PAVEMENT DAMAGED BY CONTRACTOR OPERATIONS TO THE CONDITION OF THE PAVEMENT WHICH EXISTED PRIOR TO COMMENCEMENT OF WORK. THIS INCLUDES, BUT IS NOT LIMITED TO, RIVER ROAD, CHATHAM LANE AND PARKING AREAS. THE PAVEMENT RESTORATION MAY INCLUDE PAVEMENT REMOVAL AND REPLACEMENT AND/OR ASPHALT OVERLAY AS REQUIRED TO RESTORE PAVEMENT. THE CHATHAM MANOR DRIVEWAY SHALL BE RESTORED WITH GRADED AND COMPACTED VDOT 21B STONE TO REMOVE RUTTING AND POTHOLES, ETC. CAUSED BY CONTRACTOR EQUIPMENT.
- WETLANDS ARE DEPICTED FROM GIS DATA PROVIDED BY THE NPS (DATED 10/17/12).
- TREES REMOVED ALONG THE SHORELINE FROM THE TOP OF BANK TO 15' INLAND SHALL BE CUT FLUSH WITH THE GROUND AND THE STUMPS ARE TO REMAIN. NO STUMP GRINDING IS ALLOWED IN THIS AREA. NO TREES ARE TO BE CUT DOWN THAT ARE DOWN SLOPE (RIVERWARD) FROM THE TOP OF BANK.
- TREES REMOVED ALONG THE DRAINAGE SWALES SHALL BE CUT FLUSH WITH THE GROUND AND THE STUMPS ARE TO REMAIN. NO STUMP GRINDING IS ALLOWED IN THIS AREA.
- THE CONTRACTOR SHALL REMOVE FALLEN TREES, TREE BRANCHES, EXISTING STORM DEBRIS AND THE LIKE FROM ALL AREAS WITHIN THE LIMITS OF WORK.
- FOR TREES THAT ARE TO REMAIN, LIMB TREE UP TO 30' AND REMOVE VINES UP TO 7' FROM THE GROUND.

CONSTRUCTION DOCUMENTS

A/E FIRM	DESIGNED:	SUB SHEET NO	TITLE OF SHEET	DRAWING NO.
PRIME: GWVO INC. BALTIMORE, MD	TJH	C4	TREE REMOVAL PLAN (BID OPTION #2)	326 119631
SUB: VHB, INC. WILLIAMSBURG, VA	WVD			PMIS/PKG NO. FRSP 163065
	WVD			SHEET 5 OF 13
DATE: 2-8-2013			RESTORE HISTORIC VISTA AT CHATHAM RIVER BOTTOM	





A/E FIRM		DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
PRIME:		TJH	C5	TREE REMOVAL PLAN (BID OPTION #4)	<u>326</u>
GWWO INC. BALTIMORE, MD		GA&D			<u>119631</u>
SUB:		VND		PMIS/PKG NO. FRSP 163065	
VHB, INC. WILLIAMSBURG, VA		TECH. REVIEW: VND		SHEET	
DATE:		2-8-2013	RESTORE HISTORIC VISTA AT CHATHAM RIVER BOTTOM		<u>6</u> OF <u>13</u>

- Notes:
1.

CONTRACTOR SHALL REMOVE ALL TREES WITHIN THE AREA DEPICTED ON THE PLAN AND TREES INDIVIDUALLY INDICATED OUTSIDE THE TREE REMOVAL AREA.
2.

ALL SHRUBS ARE TO BE REMOVED WITHIN THE TREE REMOVAL AREA AND THE AREA CLEARED OF ALL DEBRIS.
3.

ALL STUMPS ARE TO BE REMOVED TO 2" MIN. BELOW GRADE BY STUMP GRINDING. EXCAVATION OF STUMPS IS NOT ALLOWED. DISTURBED AREAS SHALL BE RESTORED WITH SEEDING PER SPECIFICATIONS.
5.

CONTRACTOR SHALL PROVIDE MAINTENANCE OF TRAFFIC PLANS AND PERMITS FROM VDOT AND ALL OTHER AGENCIES HAVING JURISDICTION FOR WORK WITHIN OR ALONG THE RIGHT OF WAY AND AS REQUIRED FOR HAULING.
6.

CONTRACT SHALL SUBMIT TO THE CONTRACTING OFFICER (CO) A WRITTEN TREE REMOVAL PLAN FOR REVIEW AND APPROVAL PRIOR TO COMMENCING WORK ON SITE.
7.

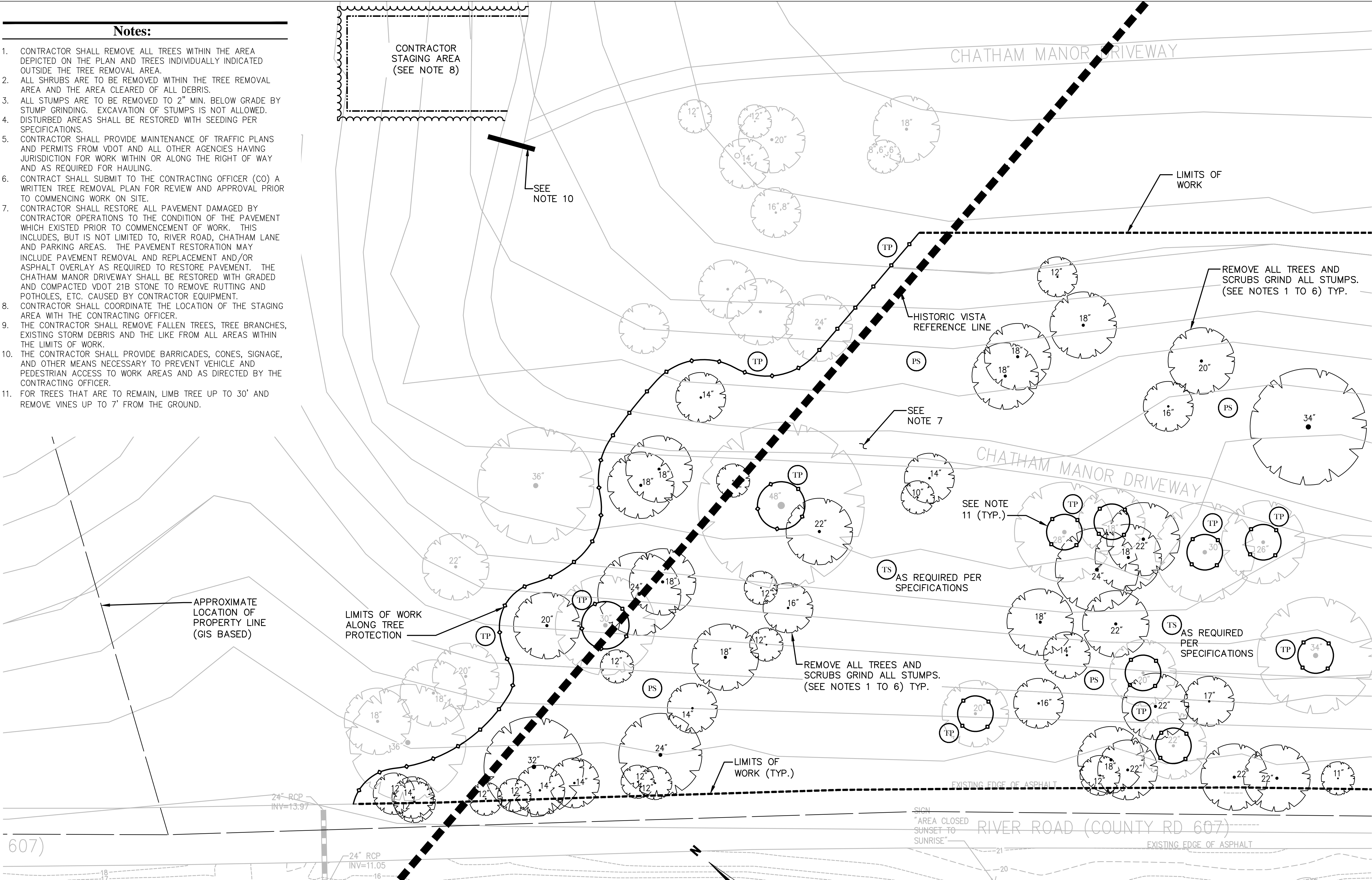
CONTRACTOR SHALL RESTORE ALL PAVEMENT DAMAGED BY CONTRACTOR OPERATIONS TO THE CONDITION OF THE PAVEMENT WHICH EXISTED PRIOR TO COMMENCEMENT OF WORK. THIS INCLUDES, BUT IS NOT LIMITED TO, RIVER ROAD, CHATHAM LANE AND PARKING AREAS. THE PAVEMENT RESTORATION MAY INCLUDE PAVEMENT REMOVAL AND REPLACEMENT AND/OR ASPHALT OVERLAY AS REQUIRED TO RESTORE PAVEMENT. THE CHATHAM MANOR DRIVEWAY SHALL BE RESTORED WITH GRADED AND COMPACTED VDOT 21B STONE TO REMOVE RUTTING AND POTHOLES, ETC. CAUSED BY CONTRACTOR EQUIPMENT.
8.

CONTRACTOR SHALL COORDINATE THE LOCATION OF THE STAGING AREA WITH THE CONTRACTING OFFICER.
9.

THE CONTRACTOR SHALL REMOVE FALLEN TREES, TREE BRANCHES, EXISTING STORM DEBRIS AND THE LIKE FROM ALL AREAS WITHIN THE LIMITS OF WORK.
10.

THE CONTRACTOR SHALL PROVIDE BARRICADES, CONES, SIGNAGE, AND OTHER MEANS NECESSARY TO PREVENT VEHICLE AND PEDESTRIAN ACCESS TO WORK AREAS AND AS DIRECTED BY THE CONTRACTING OFFICER.
11.

FOR TREES THAT ARE TO REMAIN, LIMB TREE UP TO 30' AND REMOVE VINES UP TO 7' FROM THE GROUND.



CONSTRUCTION DOCUMENTS				
A/E FIRM	DESIGNED:	SUB SHEET NO		TITLE OF SHEET
PRIME:	TJH	C6		TREE REMOVAL PLAN (BASE BID)
GWVO INC. BALTIMORE, MD	VND			
SUB:	VND			RESTORE HISTORIC VISTA AT CHATHAM RIVER BOTTOM
VHB, INC. WILLIAMSBURG, VA	DATE:	2-8-2013		DRAWING NO. 326 119631
				PMIS/PKG NO. FRSP 163065
				SHEET 7 OF 13

Notes:

1. CONTRACTOR SHALL REMOVE ALL TREES WITHIN THE AREA DEPICTED ON THE PLAN AND TREES INDIVIDUALLY INDICATED OUTSIDE THE TREE REMOVAL AREA.
2. ALL SHRUBS ARE TO BE REMOVED WITHIN THE TREE REMOVAL AREA AND THE AREA CLEARED OF ALL DEBRIS.
3. ALL STUMPS ARE TO BE REMOVED TO 2" MIN. BELOW GRADE BY STUMP GRINDING. EXCAVATION OF STUMPS IS NOT ALLOWED.
4. DISTURBED AREAS SHALL BE RESTORED WITH SEEDING PER SPECIFICATIONS.
5. CONTRACTOR SHALL PROVIDE MAINTENANCE OF TRAFFIC PLANS AND PERMITS FROM VDOT AND ALL OTHER AGENCIES HAVING JURISDICTION FOR WORK WITHIN OR ALONG THE RIGHT OF WAY AND AS REQUIRED FOR HAULING.
6. CONTRACT SHALL SUBMIT TO THE CONTRACTING OFFICER (CO) A WRITTEN TREE REMOVAL PLAN FOR REVIEW AND APPROVAL PRIOR TO COMMENCING WORK ON SITE.
7. CONTRACTOR SHALL RESTORE ALL PAVEMENT DAMAGED BY CONTRACTOR OPERATIONS TO THE CONDITION OF THE PAVEMENT WHICH EXISTED PRIOR TO COMMENCEMENT OF WORK. THIS INCLUDES, BUT IS NOT LIMITED TO, RIVER ROAD, CHATHAM LANE AND PARKING AREAS. THE PAVEMENT RESTORATION MAY INCLUDE PAVEMENT REMOVAL AND REPLACEMENT AND/OR ASPHALT OVERLAY AS REQUIRED TO RESTORE PAVEMENT. THE CHATHAM MANOR DRIVEWAY SHALL BE RESTORED WITH GRADED AND COMPACTED VDOT 21B STONE TO REMOVE RUTTING AND POTHOLES, ETC. CAUSED BY CONTRACTOR EQUIPMENT.
8. CONSTRUCTION ENTRANCE (CE) LOCATION TO BE COORDINATED AND APPROVED BY THE CONTRACTING OFFICER. CE STONE IS TO BE REMOVED UPON COMPLETION OF WORK.
9. THE CONTRACTOR SHALL PROVIDE BARRICADES, CONES, SIGNAGE, AND OTHER MEANS NECESSARY TO PREVENT VEHICLE AND PEDESTRIAN ACCESS TO WORK AREAS AND AS DIRECTED BY THE CONTRACTING OFFICER.
10. FOR TREES THAT ARE TO REMAIN, LIMB TREE UP TO 30' AND REMOVE VINES UP TO 7' FROM THE GROUND.

APPROXIMATE
LOCATION OF
PROPERTY LINE
(GIS BASED)

HISTORIC VISTA
REFERENCE LINE

SEE
NOTE 8

REMOVE ALL TREES AND
SCRUBS GRIND ALL STUMPS.
(SEE NOTES 1 TO 6) TYP.

SEE
NOTE 9

YDI
RIM=25.88

LIMITS OF
WORK (TYP.)

15" RCP
INV=14.98

15" RCP
INV=11.37

SEE NOTE
10 (TYP.)

15" RCP
INV=16.62

RIVER ROAD
(COUNTY RD 607)

EXISTING EDGE OF ASPHALT

APPROXIMATE LOCATION
PROPERTY LINE (GIS BASED)

EXISTING EDGE OF ASPHALT

CONSTRUCTION DOCUMENTS

A/E FIRM
PRIME:
GWVO INC.
BALTIMORE, MD
SUB:
VHB, INC.
WILLIAMSBURG, VA

DESIGNED:
TJH
VND
TECH. REVIEW:
VND
DATE:
2-8-2013

SUB SHEET NO

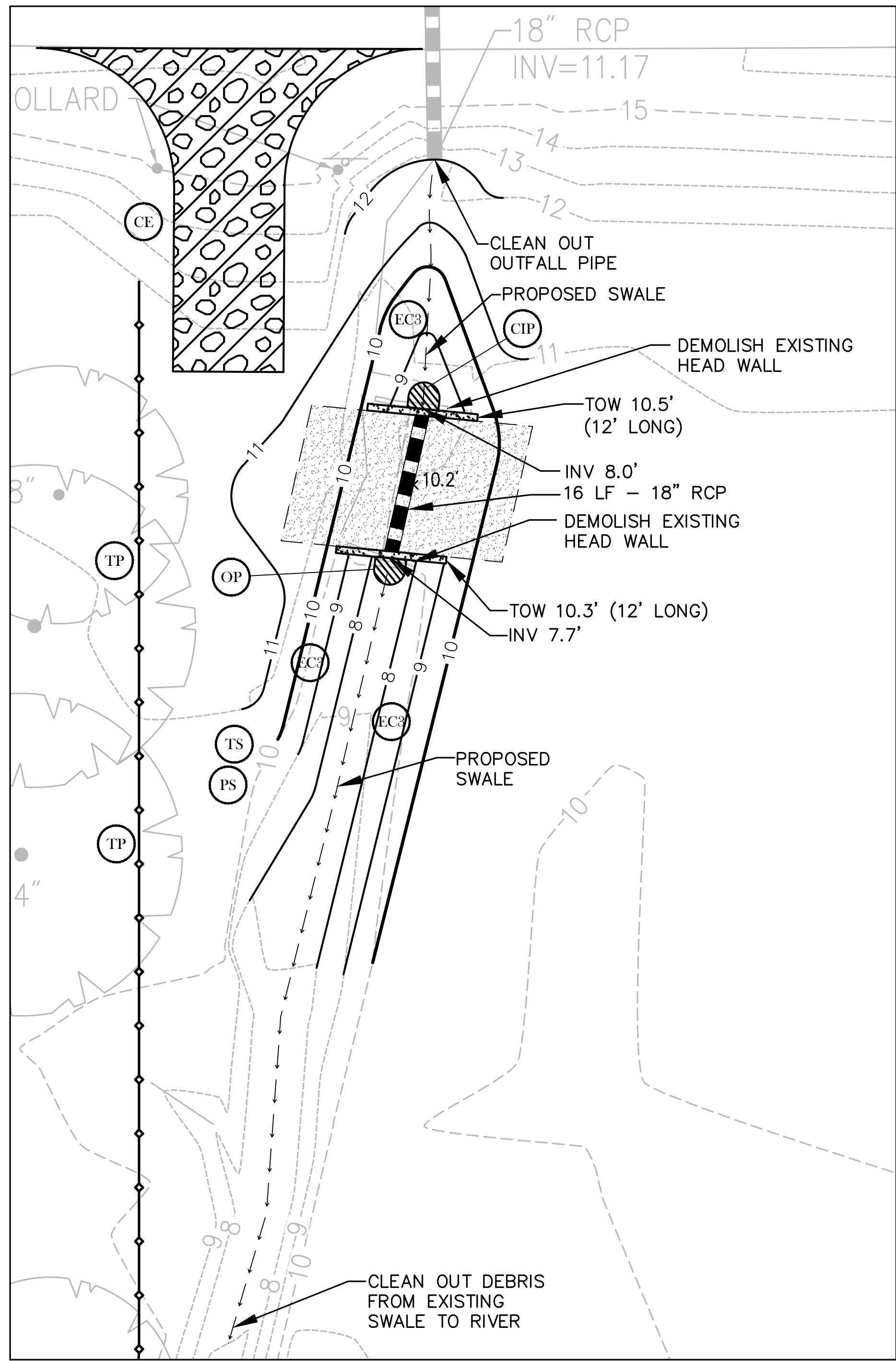
C7

TITLE OF SHEET
TREE REMOVAL PLAN
(BASE BID)

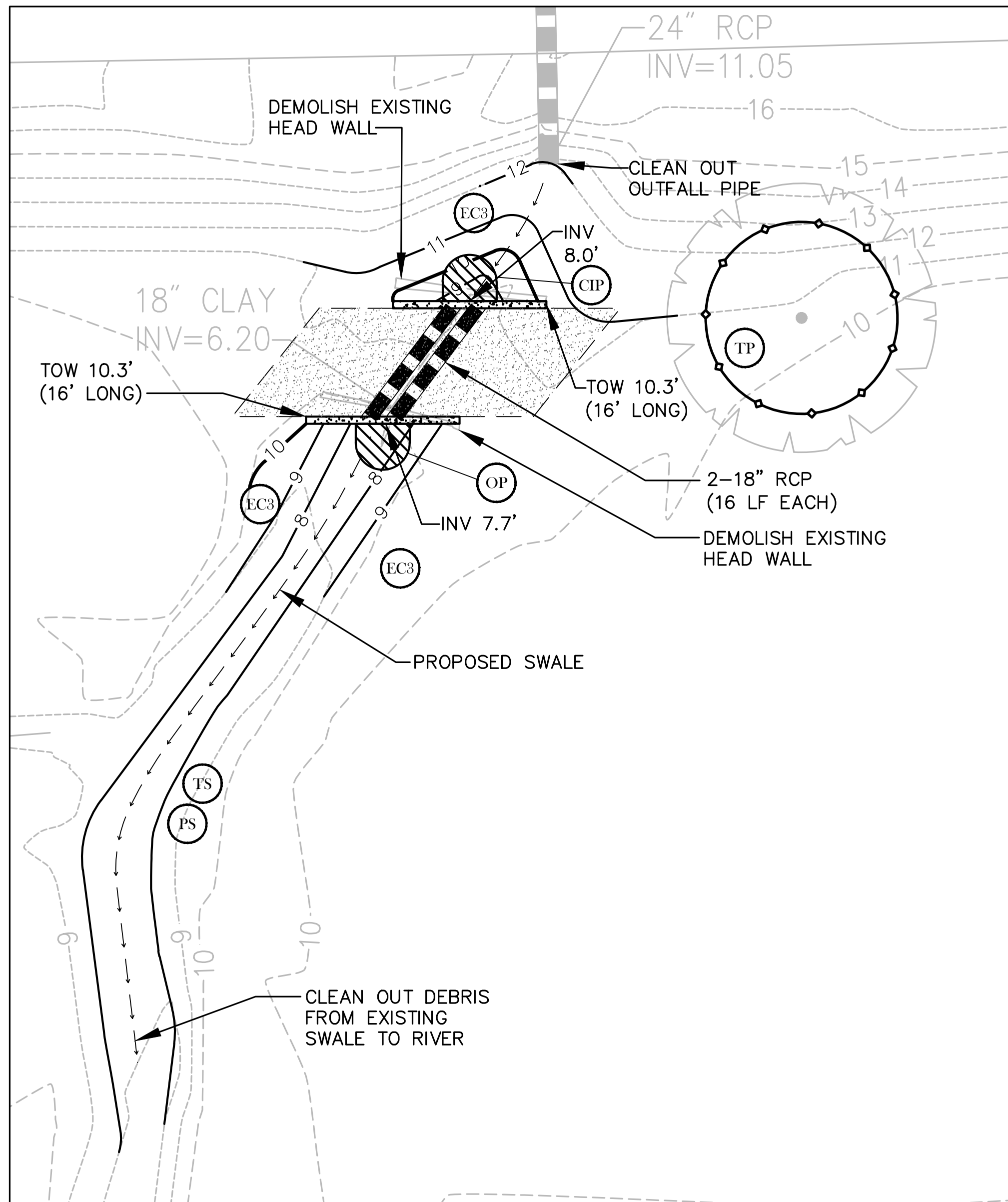
RESTORE HISTORIC VISTA AT
CHATHAM RIVER BOTTOM

DRAWING NO.
326
119631
PMIS/PKG NO.
FRSP 163065
SHEET
8 OF 13

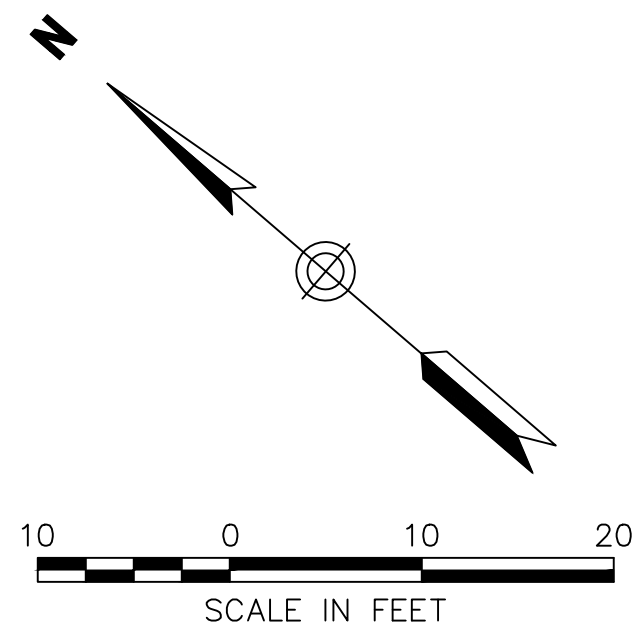
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SCALE IN FEET



CULVERT #1 CALLOUT

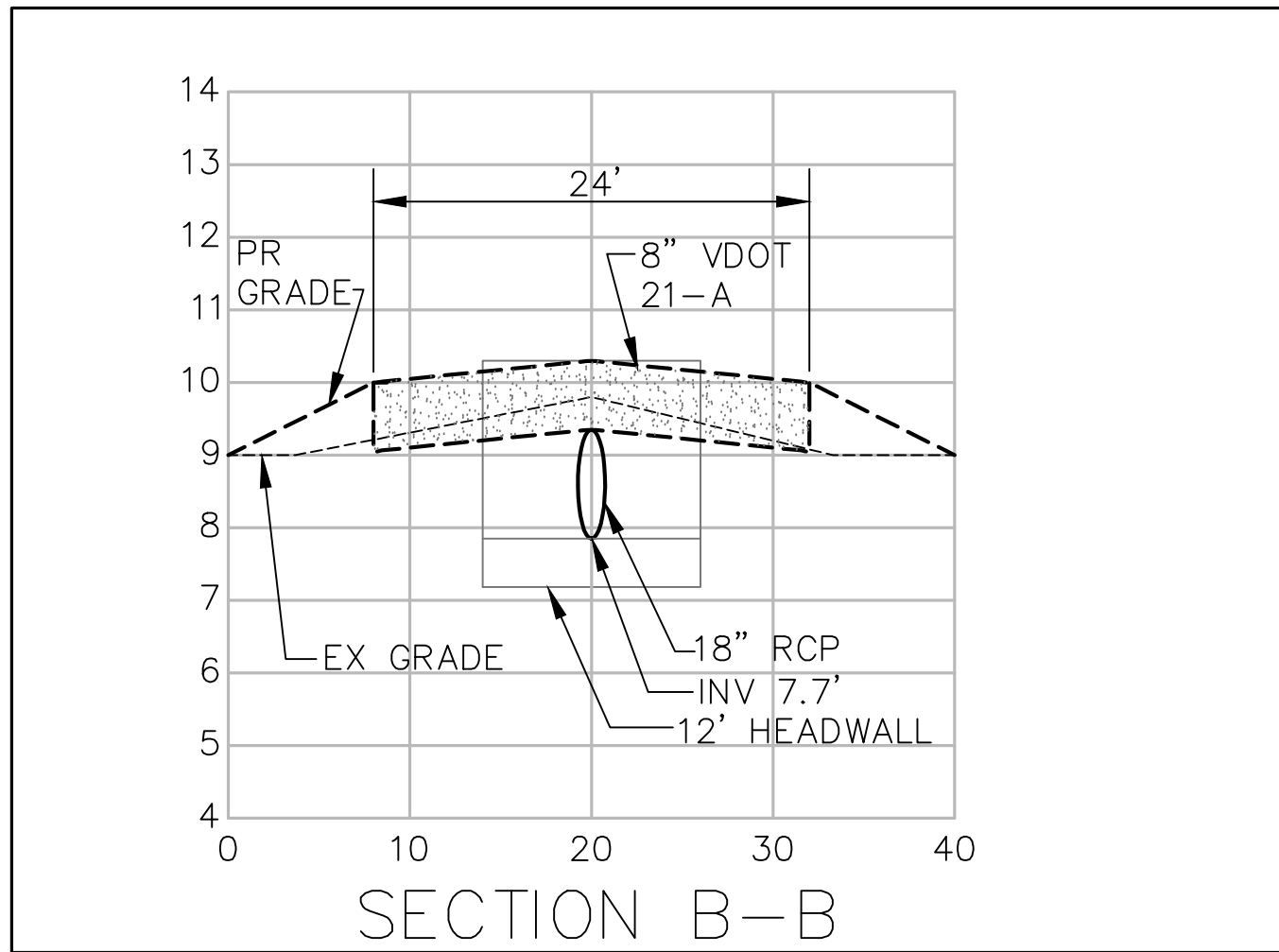
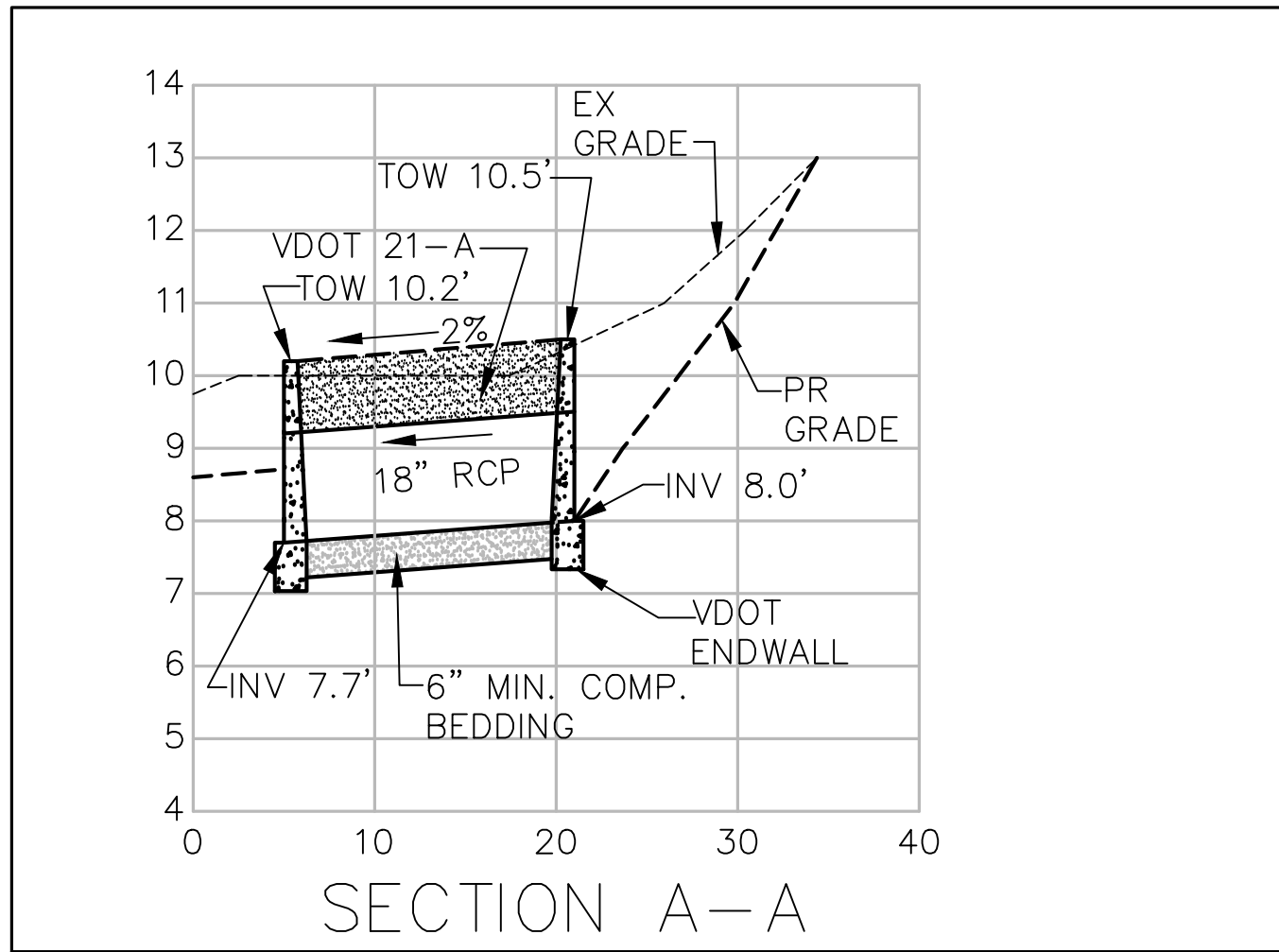
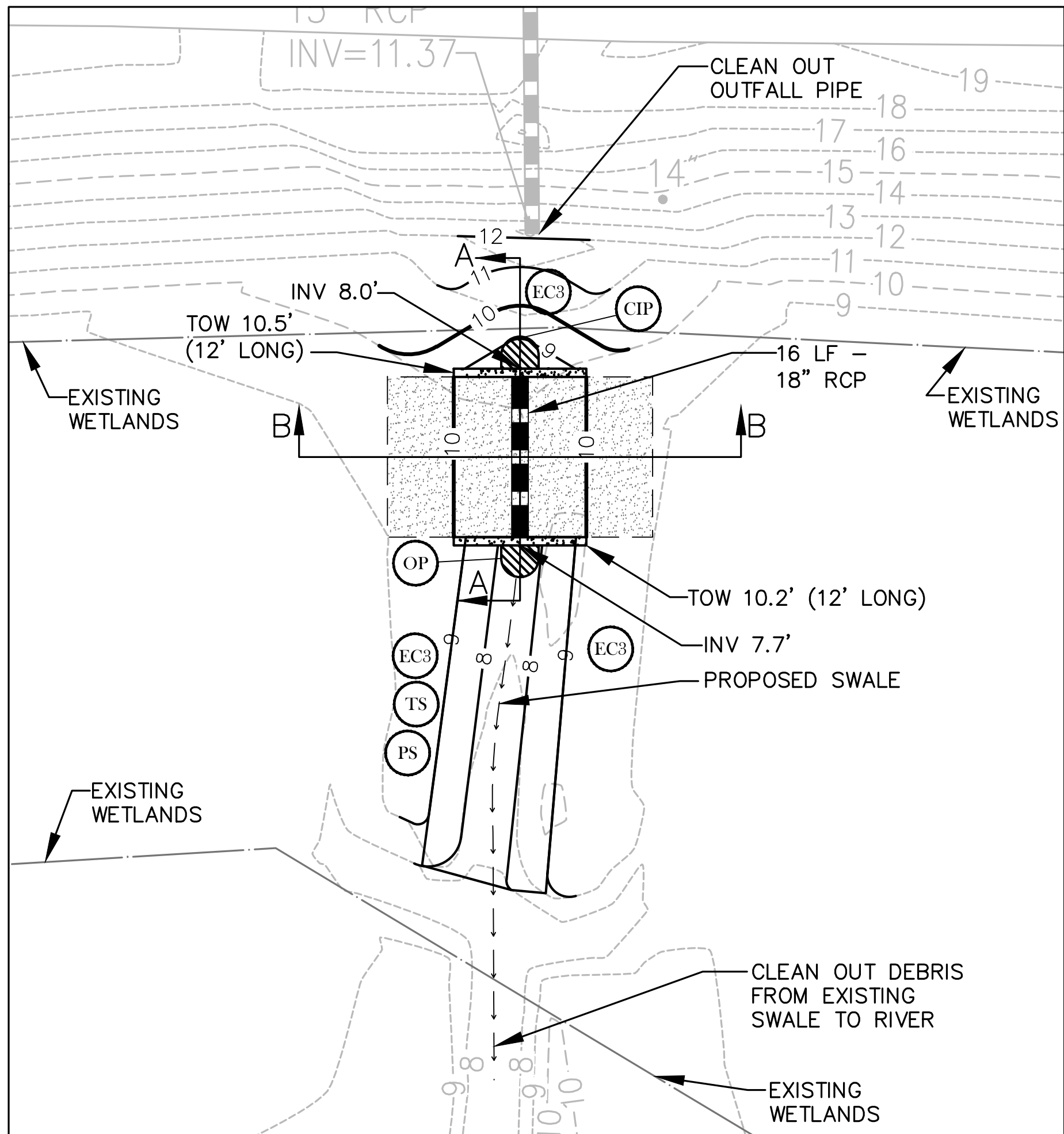


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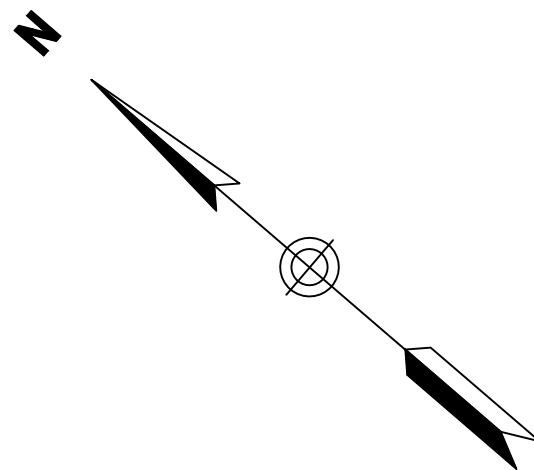
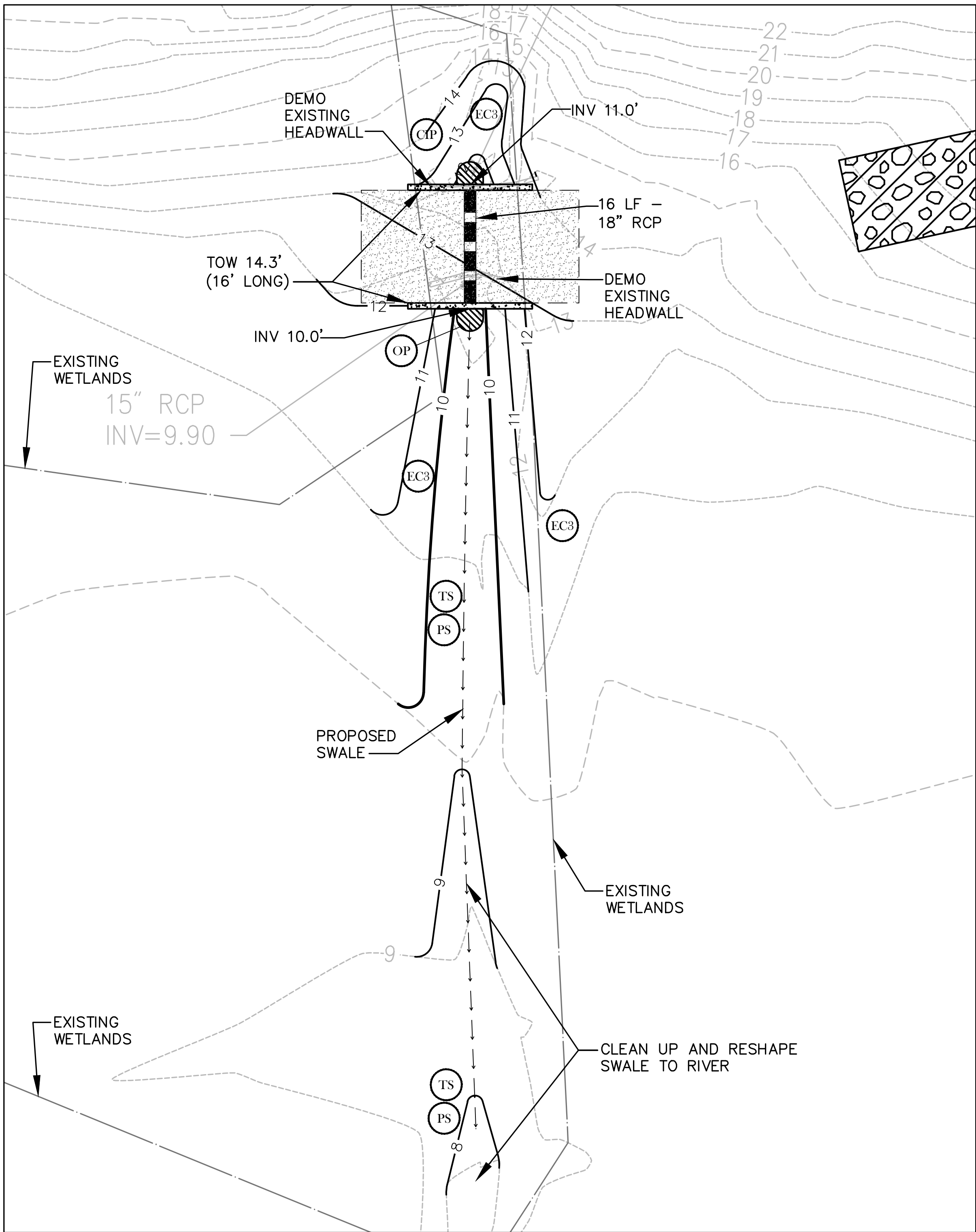


CONSTRUCTION DOCUMENTS

A/E FIRM	DESIGNED:	SUB SHEET NO	TITLE OF SHEET	DRAWING NO.
PRIME: GWWO INC. BALTIMORE, MD	TJH	C8	CULVERT CALLOUTS (BID OPTION #1)	326
SUB: VHB, INC. WILLIAMSBURG, VA	VND			119631
	VND			PMIS/PKG NO. FRSP 163065
	DATE: 2-8-2013		RESTORE HISTORIC VISTA AT CHATHAM RIVER BOTTOM	SHEET 9 OF 13



NOTE: CULVERT SECTIONS ARE TYPICAL FOR ALL CULVERT CONSTRUCTION.



CONSTRUCTION DOCUMENTS

A/E FIRM	DESIGNED:	SUB SHEET NO	TITLE OF SHEET	DRAWING NO.
PRIME: GWWO INC. BALTIMORE, MD	TJH	C9	CULVERT CALLOUTS (BID OPTION #1)	326
SUB: VHB, INC. WILLIAMSBURG, VA	VND			119631
	VND			PMIS/PKG NO. FRSP 163065
	DATE: 2-8-2013		RESTORE HISTORIC VISTA AT CHATHAM RIVER BOTTOM	SHEET 10 OF 13

Erosion & Sediment Control Narrative:

GENERAL EROSION AND SEDIMENT CONTROL NOTES

- ES-1: UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS PER 4VAC50-30 ET AL.
- ES-2: THE CONTRACTING OFFICER MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRECONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO THE FINAL INSPECTION.
- ES-3: ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO COMMENCEMENT OF LAND DISTURBING ACTIVITIES.
- ES-4: A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
- ES-5: PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO, OFF-SITE BORROW OR WASTE AREAS), THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE CONTRACTING OFFICER FOR REVIEW AND APPROVAL BY THE PLAN APPROVING AUTHORITY.
- ES-6: THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE CONTRACTING OFFICER.
- 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: 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.

CRITICAL EROSION AREAS
SPECIAL CARE SHOULD BE TAKEN TO PROTECT EXISTING TREES AND VEGETATION THAT ARE TO BE SAVED.

EROSION AND SEDIMENT CONTROL MEASURES
UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VESCH HANDBOOK. THE MINIMUM STANDARDS OF THE VESCH SHALL BE ADHERED TO UNLESS OTHERWISE WAIVED OR APPROVED BY THE CONTRACTING OFFICER.

- STRUCTURAL PRACTICES
1. CONSTRUCTION ENTRANCE
 2. SILT FENCE
 3. TREE PROTECTION
 4. OUTFALL PROTECTION

VEGETATIVE PRACTICES

1. TOPSOILING (STOCKPILE)

TOPSOIL WILL BE STRIPPED FROM AREAS TO BE GRADED AND STOCKPILED FOR LATER USE. STOCKPILE LOCATIONS SHALL BE LOCATED ON-SITE IN OPEN SPACE AREAS AND ARE TO BE STABILIZED WITH TEMPORARY VEGETATION.
2. TEMPORARY SEEDING

ALL DENUDED AREAS WHICH WILL BE LEFT DORMANT FOR EXTENDED PERIODS OF TIME SHALL BE SEEDDED PER THE TABLE ON SHEET C11.

MANAGEMENT STRATEGIES

1. CONSTRUCTION SHOULD BE SEQUENCED SO THAT GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE.
2. AREAS, WHICH ARE NOT TO BE DISTURBED, SHALL BE CLEARLY MARKED BY FLAGS, AND SIGNS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION CONTROL PRACTICES.
4. LAND DISTURBANCE SHALL ONLY OCCUR WITHIN THE PROJECT BOUNDARY.
5. EMBANKMENT AND EXCAVATED SLOPES SHALL BE GRADED TO A MAXIMUM OF 2:1.
6. THE CONTRACTOR IS RESPONSIBLE FOR KEEPING THE PUBLIC ROADS FREE OF MUD AND DUST DURING CONSTRUCTION. CONTRACTOR SHALL MAINTAIN ACCESS TO EXISTING FACILITIES.
7. THE CONTRACTOR SHALL BE A CERTIFIED VIRGINIA LAND DISTURBER.

PERMANENT STABILIZATION
ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH PERMANENT SEEDING IMMEDIATELY FOLLOWING FINISH GRADING. SEEDING SHALL BE DONE PER TABLE ON SHEET C11. EROSION CONTROL BLANKETS WILL BE INSTALLED OVER FILL SLOPES WHICH HAVE BEEN BROUGHT TO FINAL GRADE AND HAVE BEEN SEEDDED TO PROTECT THE SLOPES FROM RILL AND GULLY EROSION AND TO ALLOW SEED TO GERMINATE PROPERLY. HYDRO SEEDING & FIBER MULCH MAY BE USED ON RELATIVELY FLAT AREAS. IN ALL SEEDING OPERATIONS, SEED, FERTILIZER AND LIME SHALL BE APPLIED PRIOR TO MULCHING.

MAINTENANCE

1. ALL MEASURES ARE TO BE INSPECTED DAILY BY THE CONTRACTOR AND REPAIRED BY THE END OF THE DAY.
2. SEDIMENT SHALL BE REMOVED FROM EROSION CONTROL MEASURES AS REQUIRED BY THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH).
3. ALL SEEDDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED AND RESEEDDED AS NEEDED.

SPECIAL CARE NOTES

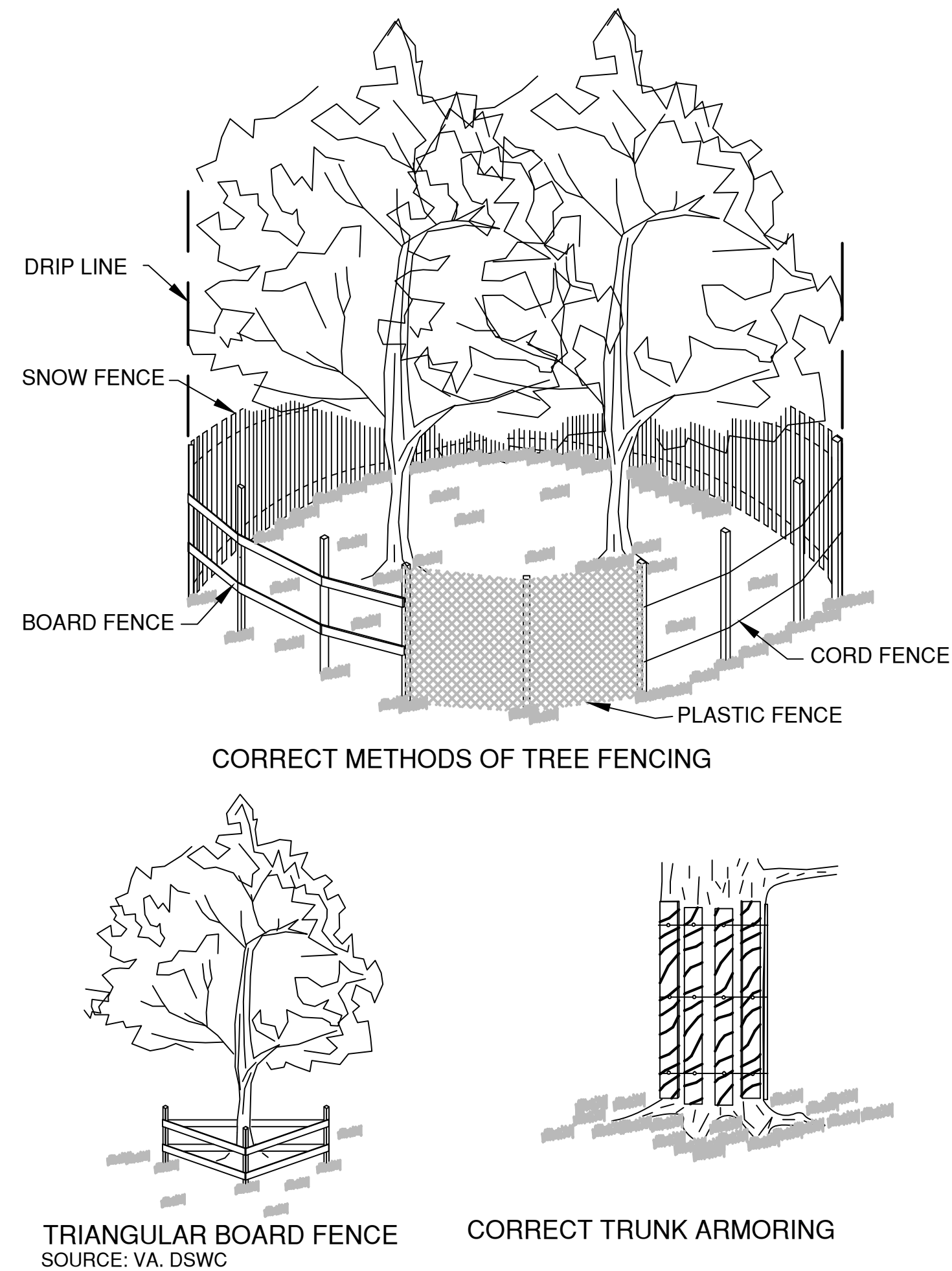
1. IT IS THE INTENT OF THIS PLAN TO PRECLUDE SEDIMENT FROM LEAVING THE DELINEATED CONSTRUCTION LIMITS. THE CONTRACTOR SHALL TAKE SPECIAL CARE TO PREVENT CONSTRUCTION DEBRIS AND MUD FROM BEING TRACKED ONTO SURROUNDING PUBLIC AND PRIVATE ROADS.

FUELING PRACTICES

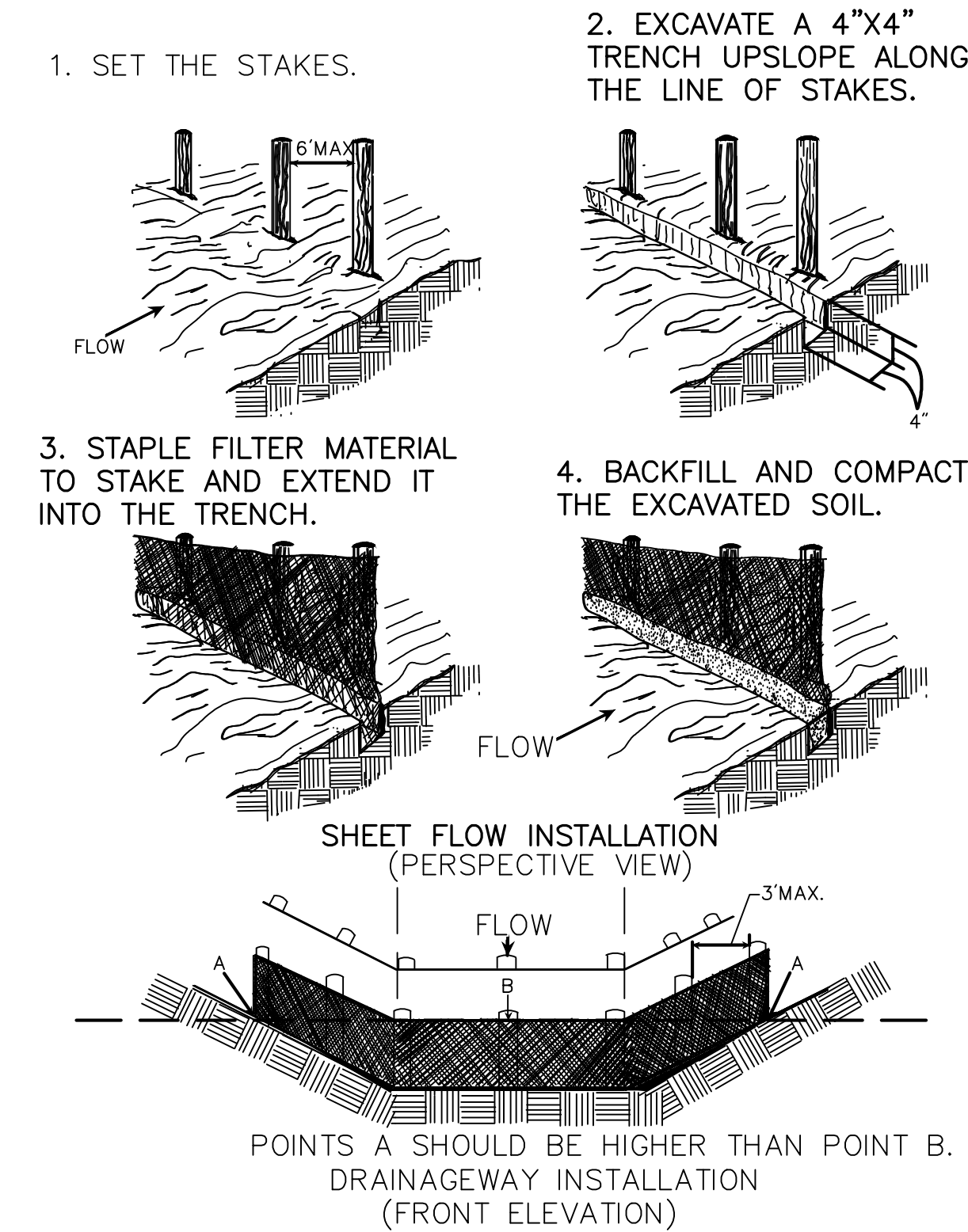
- MINIMIZE THE EFFECTS OF FUEL SPILLS THROUGH THE FOLLOWING:
1. STORAGE OF OILS AND HAZARDOUS MATERIALS WITH SECONDARY CONTAINMENT.
 2. LOCATE CONSTRUCTION STAGING AREAS AWAY FROM SURFACE WATER FEATURES.
 3. LOCATE REFUELING AREAS AWAY FROM SURFACE WATER FEATURES.
 4. DESIGNATE AREAS WHERE REFUELING OR CONSTRUCTION VEHICLE AND EQUIPMENT MAINTENANCE WOULD BE PERFORMED AND HAVE CONTAINMENT DEVICES, SUCH AS TEMPORARY EARTH BERMS, AROUND THESE AREAS.
 5. HAVE ABSORBENT PADS AVAILABLE TO CLEAN UP SPILLS.

Sequence of Construction

1. NOTIFY THE NATIONAL PARK SERVICE A MINIMUM OF 48-HOURS IN ADVANCE OF COMMENCEMENT OF CONSTRUCTION OPERATIONS.
2. CONDUCT PRE-CONSTRUCTION MEETING ON-SITE BETWEEN CONTRACTOR AND CONTRACTING OFFICER (CO).
3. GRADE ONLY WHAT IS REQUIRED FOR THE INSTALLATION OF THE TWO CONSTRUCTION ENTRANCES (CE). INSTALL THE CE PER DETAIL.
4. FLAG THE LIMITS OF CONSTRUCTION AS INDICATED ON THE PLAN.
5. INSTALL OUTFALL PROTECTION AT THE CULVERTS.
6. COMPLETE INSTALLATION OF ALL E&SC MEASURES AS INDICATED ON THE SITE PLANS.
7. CLEARING AND GRADING ACTIVITIES MAY PROCEED ONLY UPON INSPECTION AND APPROVAL OF THE CO.
8. CLEAR AND GRADE THE AREA NECESSARY FOR THE INSTALLATION OF THE GRASS CHANNELS AS INDICATED ON THE SITE PLANS.
9. INSTALL CULVERTS AND GRASS CHANNELS AS SHOWN ON THE SITE PLANS.
10. ALL DISTURBED SLOPES 3:1 OR STEEPER SHALL BE STABILIZED WITH EC-3/TYPE II AS NOTED ON THE PLANS.



1 TREE PROTECTION
C10 N.T.S SOURCE: VA E&S CONTROL HANDBOOK PL 3.38-2



2 CONSTRUCTION OF A SILT FENCE
C10 N.T.S SOURCE: VA E&S CONTROL HANDBOOK PL 3.05-2

CONSTRUCTION DOCUMENTS

A/E FIRM	DESIGNED:	SUB SHEET NO	TITLE OF SHEET	DRAWING NO.
PRIME: GWWO INC. BALTIMORE, MD	TJH	C10	EROSION & SEDIMENT CONTROL NOTES & DETAILS	326
SUB: VHB, INC. WILLIAMSBURG,VA	VND			119631
	VND			PMIS/PKG NO. FRSP 163065
	DATE: 2-8-2013		RESTORE HISTORIC VISTA AT CHATHAM RIVER BOTTOM	SHEET 11 OF 13

Planting Dates	Species	Rate (lbs./acre)
Sept. 1 – Feb. 15	50/50 Mix of Annual Ryegrass (Lolium muti-florum) & Cereal (Winter) Rye (Secale cereale)	50 – 100
Feb. 16 – Apr. 30	Annual Ryegrass (Lolium muti-florum)	60 – 100
May 1 – Aug. 31	German Millet (Setaria italica)	50

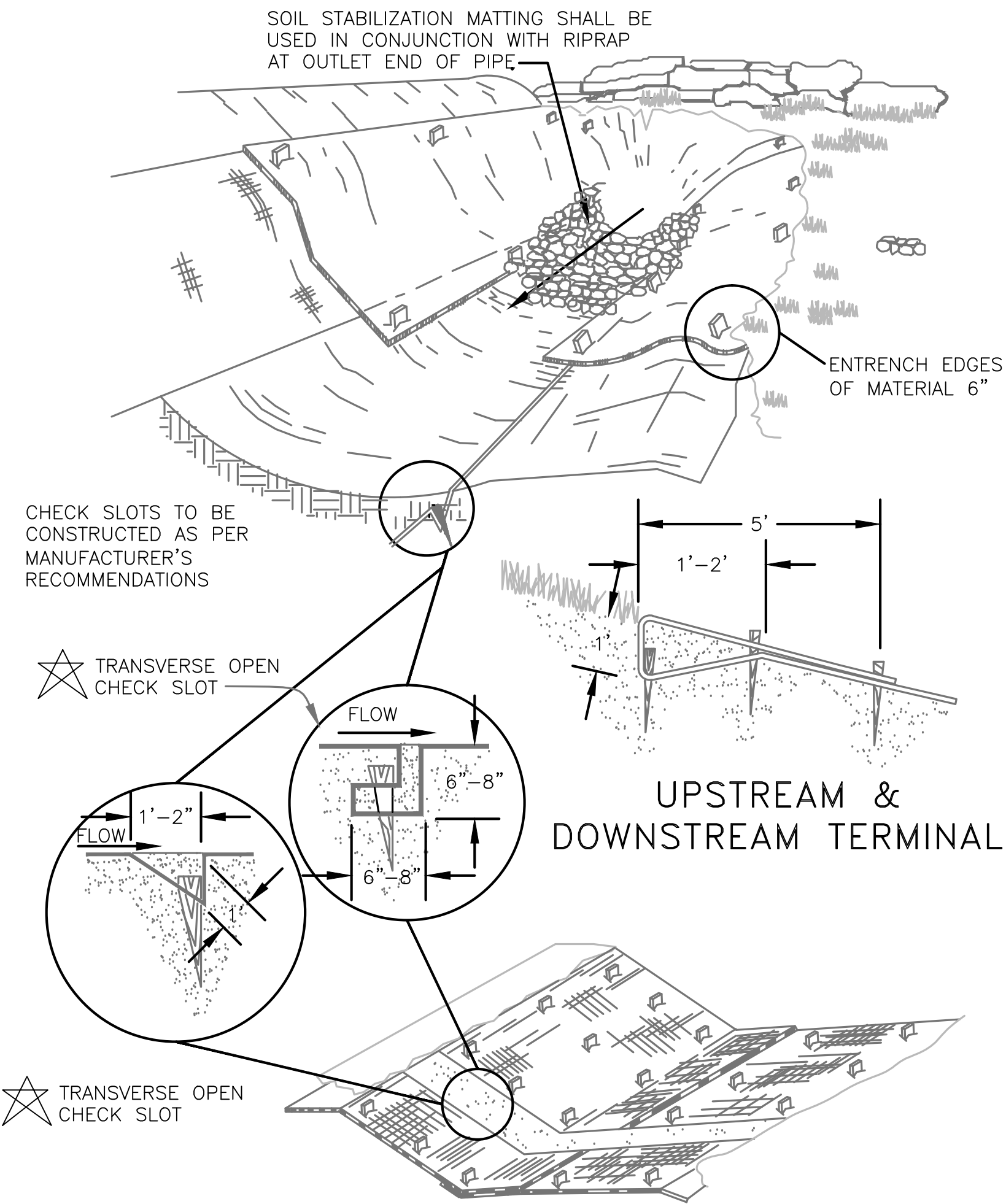
Note: CONTRACTOR SHALL COORDINATE ALL TEMPORARY SEEDING WITH THE CONTRACTING OFFICER.

1

C11

TEMPORARY SEEDING SPECIFICATIONS

N.T.S. SOURCE: VA E&S CONTROL HANDBOOK PL 3.31-B



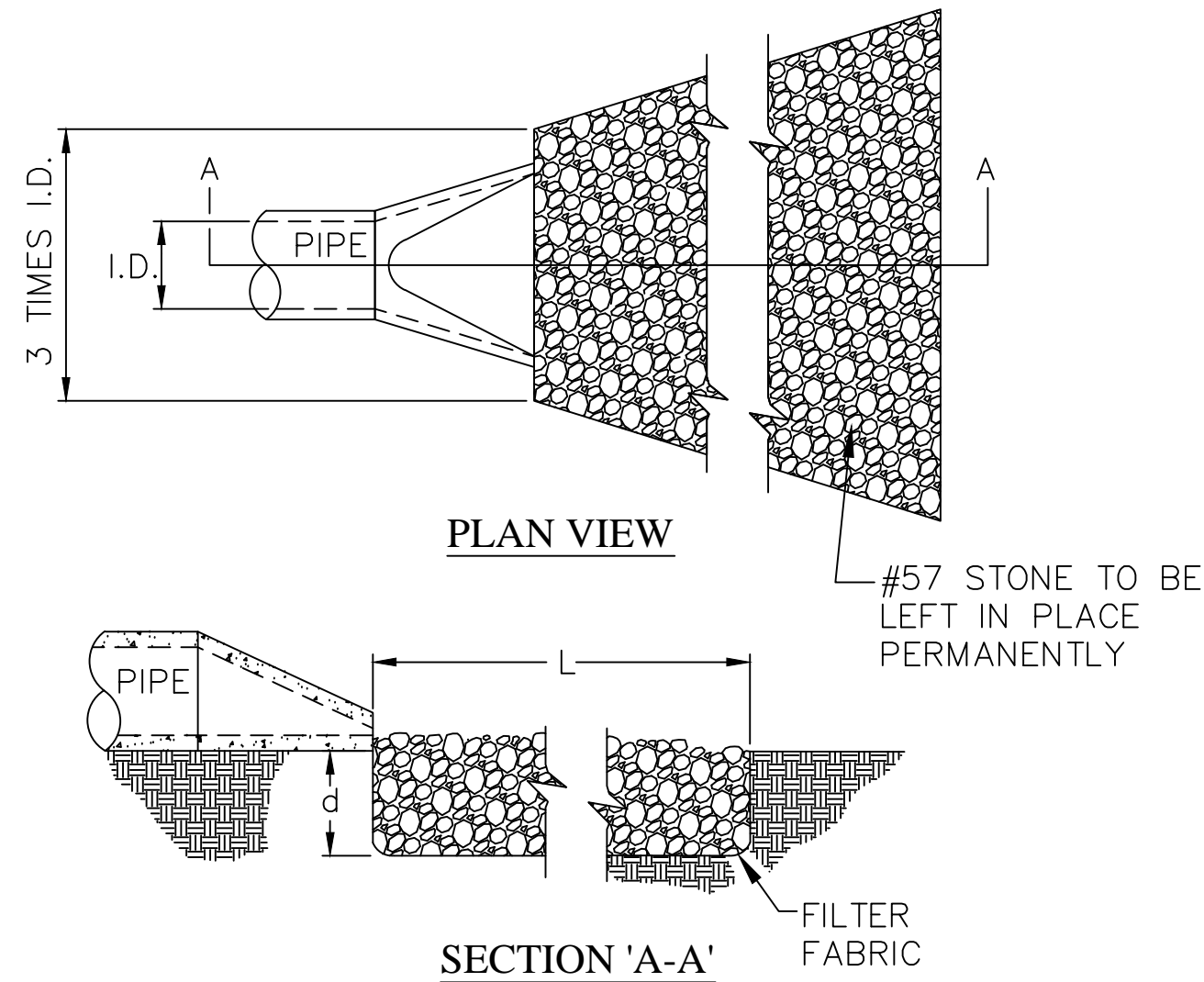
- NOTES:
- STAKES, STAPLES, AND PINS FOR EC-3 MATTING SHALL BE PER VA E&S CONTROL HANDBOOK DETAIL 3.36-3 OR PER MANUFACTURER'S RECOMMENDATIONS.
 - STAPLE PATTERN SHALL BE PER VA E&S CONTROL HANDBOOK DETAIL 3.36-6 OR PER MANUFACTURER'S RECOMMENDATIONS.

2

C11

SOIL STABILIZATION BLANKET (EC-3)

N.T.S. SOURCE: VA E&S CONTROL HANDBOOK PL 3.36-4



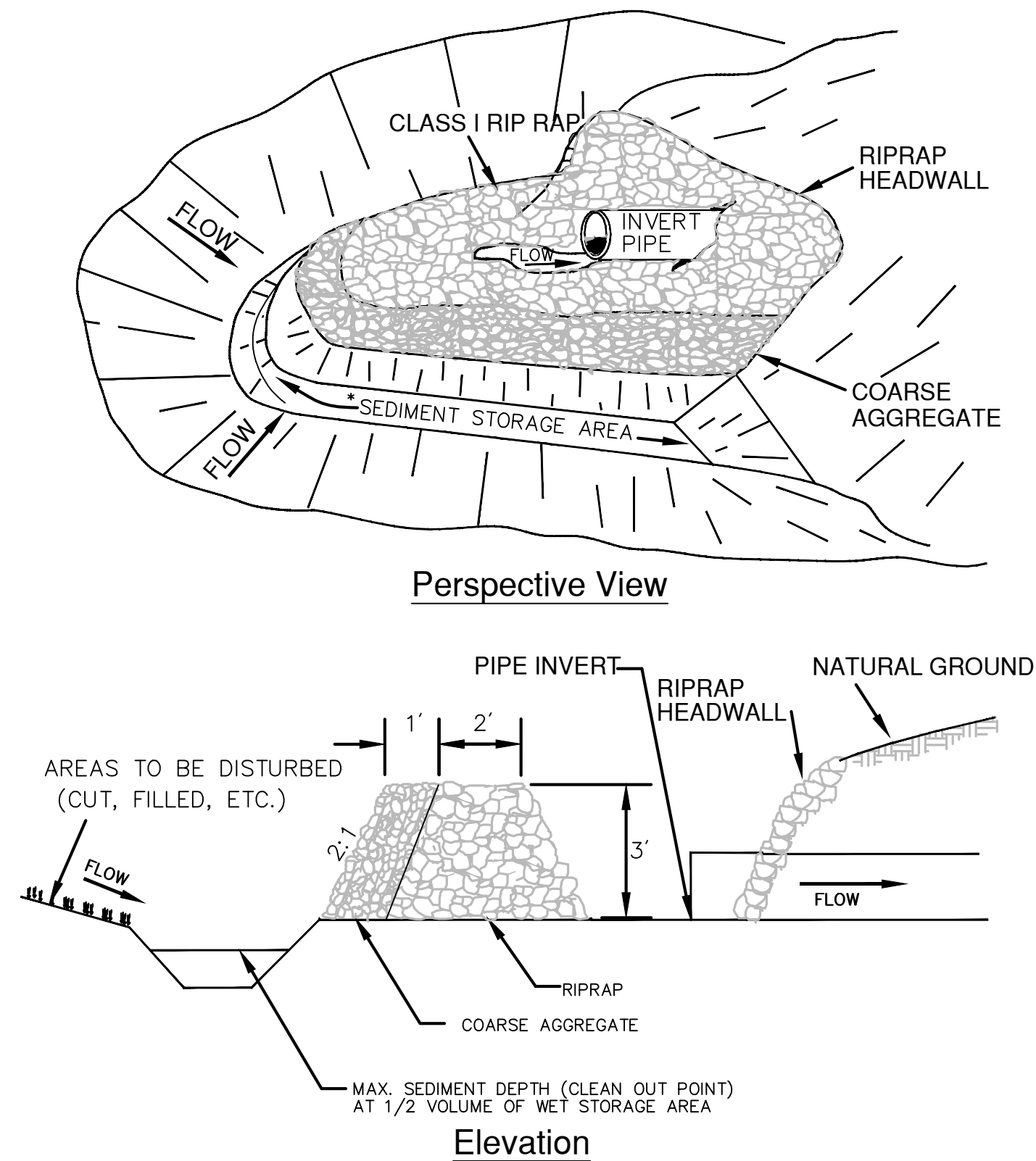
- NOTES:
- L = THE LENGTH OF THE RIPRAP APRON.
 - d = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6" (INCHES).
 - A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND SOIL FOUNDATION.

3

C11

OUTFALL PROTECTION

N.T.S. SOURCE: VA E&S CONTROL HANDBOOK PL 3.18-1

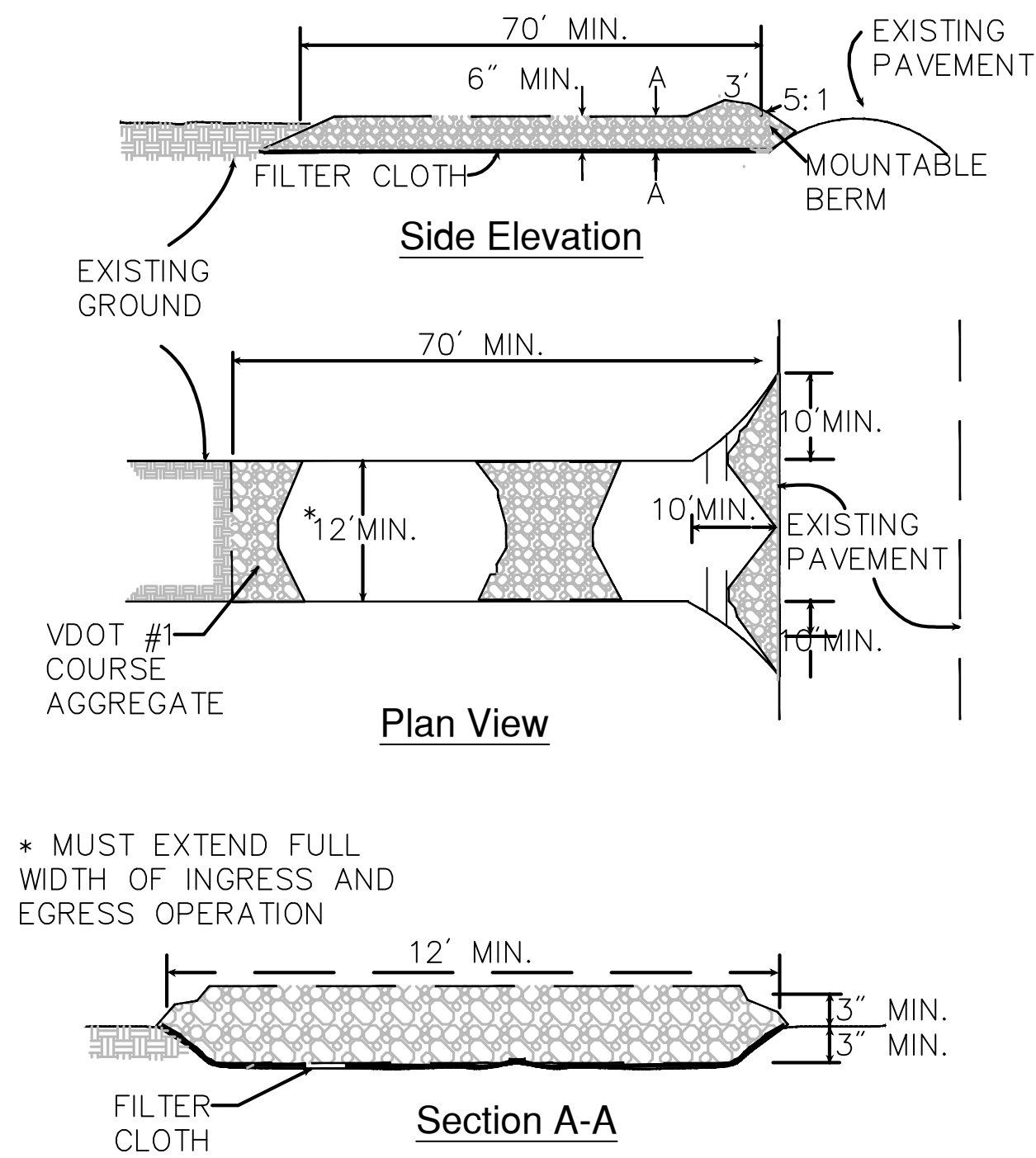


4

C11

CULVERT INLET PROTECTION

N.T.S. SOURCE: VA E&S CONTROL HANDBOOK PL 3.08-2



5

C11

STONE CONSTRUCTION ENTRANCE

N.T.S.

	Total Lbs. Per Acre
MINIMUM CARE LAWN	
-COMMERCIAL OR RESIDENTIAL	
-KENTUCKY 31 OR TURF-TYPE TALL FESCUE	175-200 lbs.
-IMPROVED PERENNIAL RYEGRASS	95-100% 0-5%
-KENTUCKY BLUEGRASS	0-5%
HIGH-MAINTENANCE LAWN	
-KENTUCKY 31 OR TURF-TYPE TALL FESCUE	200-500 lbs.
	100%
GENERAL SLOPE (3:1 OR LESS)	
-KENTUCKY 31 FESCUE	128 lbs.
-RED TOP GRASS	2 lbs.
-SEASONAL NURSE CROP*	20 lbs.
	150 lbs.
LOW MAINTENANCE SLOPE (STEEPER THAN 3:1)	
-KENTUCKY 31 FESCUE	108 lbs.
-RED TOP GRASS	2 lbs.
-SEASONAL NURSE CROP*	20 lbs.
-CROWN VETCH**	20 lbs.
	150 lbs.

* USE SEASONAL NURSE CROP IN ACCORDANCE WITH SEEDING DATES AS STATED BELOW:

FEBRUARY 16TH THROUGH APRIL	ANNUAL RYE
MAY 1ST THROUGH AUGUST 15TH	FOXTAIL MILLET
AUGUST 16TH THROUGH OCTOBER	ANNUAL RYE
NOVEMBER THROUGH FEBRUARY 15TH	WINTER RYE

** SUBSTITUTE SERICEA LESPEDEZA FOR COWNVETCH EAST OF FARMVILLE, VA. (MAY THROUGH SEPTEMBER USE HULLED SERICEA, ALL OTHER PERIODS, USE UNHULLED SERICEA). IF FLATPEA IS USED IN LIEU OF CROWN VETCH, INCREASE RATE TO 30LBS./ACRE. ALL LEGUME SEED MUST BE PROPERLY INOCULATED. WEEPING LOVEGRASS MAY BE ADDED TO ANY SLOPE OR LOW-MAINTENANCE MIX DURING WARMER SEEDING PERIODS; ADD 10-20 LBS./ACRE IN MIXES.

NOTE: CONTRACTOR SHALL COORDINATE ALL PERMANENT SEEDING WITH OWNER'S REPRESENTATIVE.

6

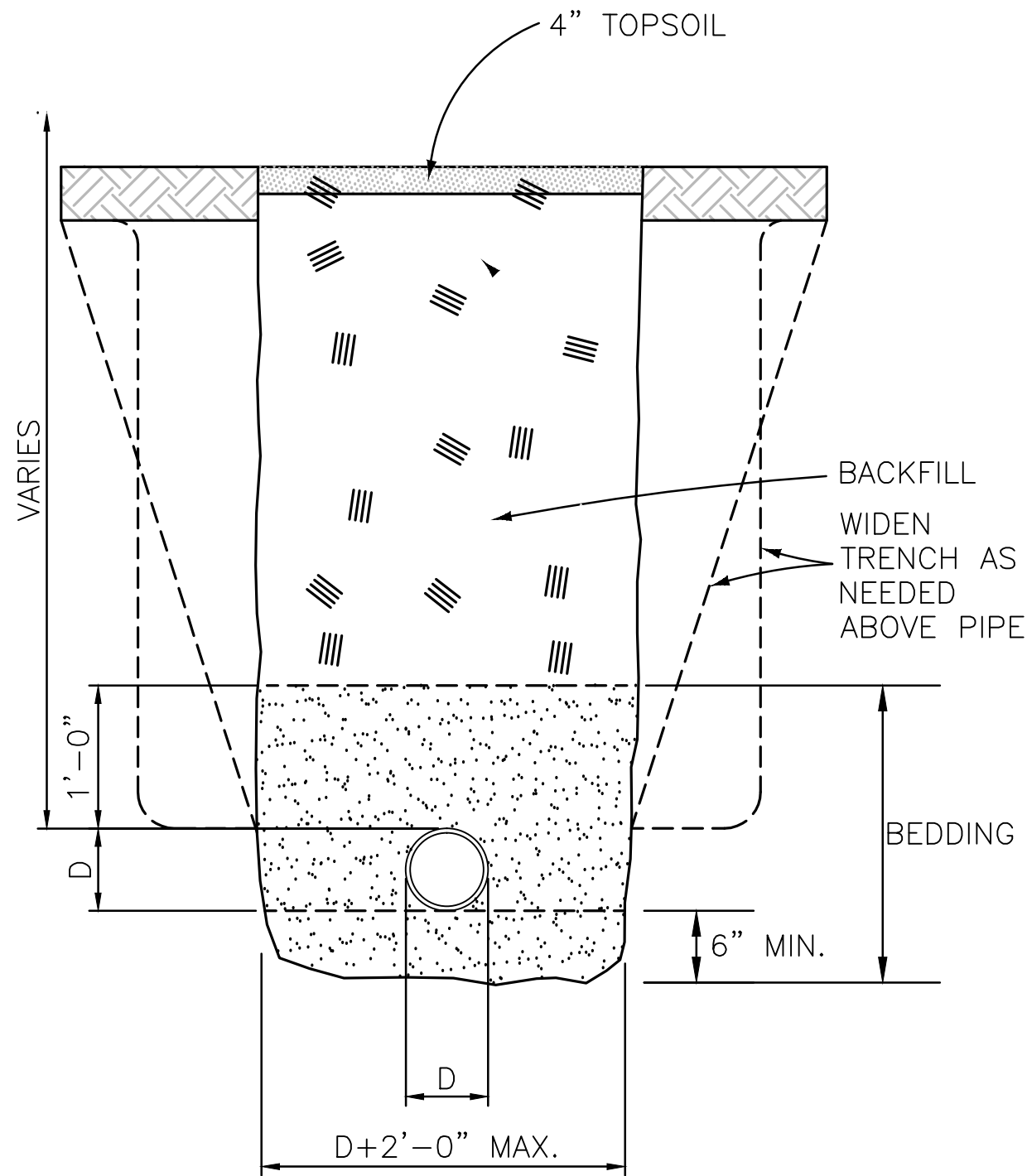
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PERMANENT SEEDING SPECIFICATIONS

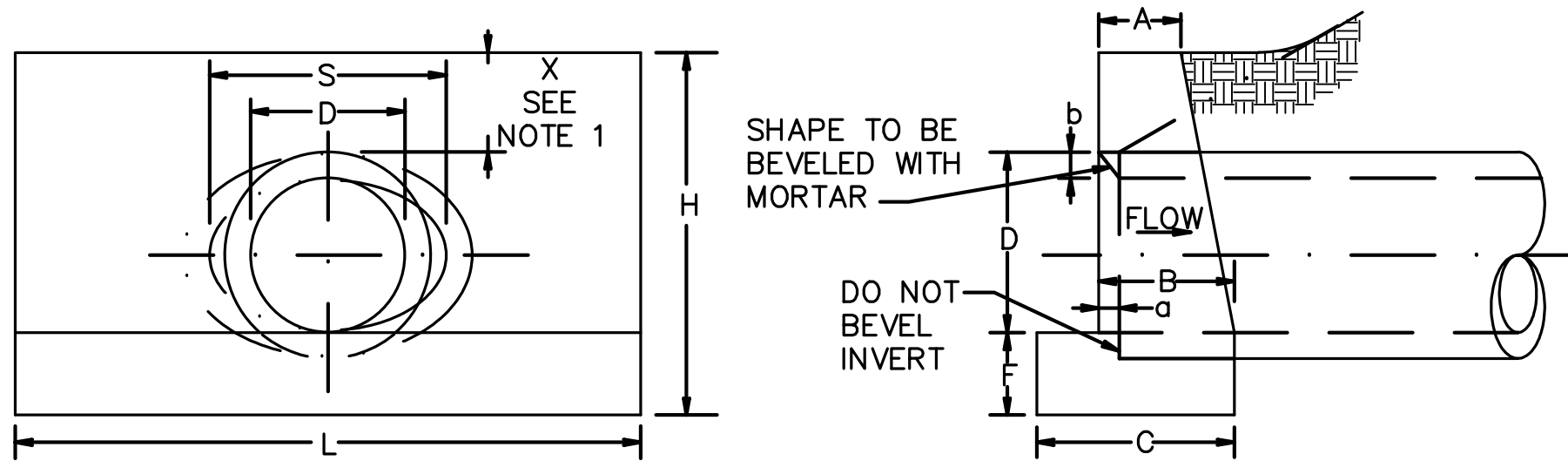
N.T.S. SOURCE: VA E&S CONTROL HANDBOOK PL 3.32-D

CONSTRUCTION DOCUMENTS

A/E FIRM	DESIGNED:	SUB SHEET NO	TITLE OF SHEET	DRAWING NO.
PRIME: GWWO INC. BALTIMORE, MD	TJH	C11	EROSION & SEDIMENT CONTROL DETAILS	326
SUB: VHB, INC. WILLIAMSBURG, VA	VND			119631
	VND			PMIS/PKG NO. FRSP 163065
	DATE: 2-8-2013		RESTORE HISTORIC VISTA AT CHATHAM RIVER BOTTOM	SHEET 12 OF 13



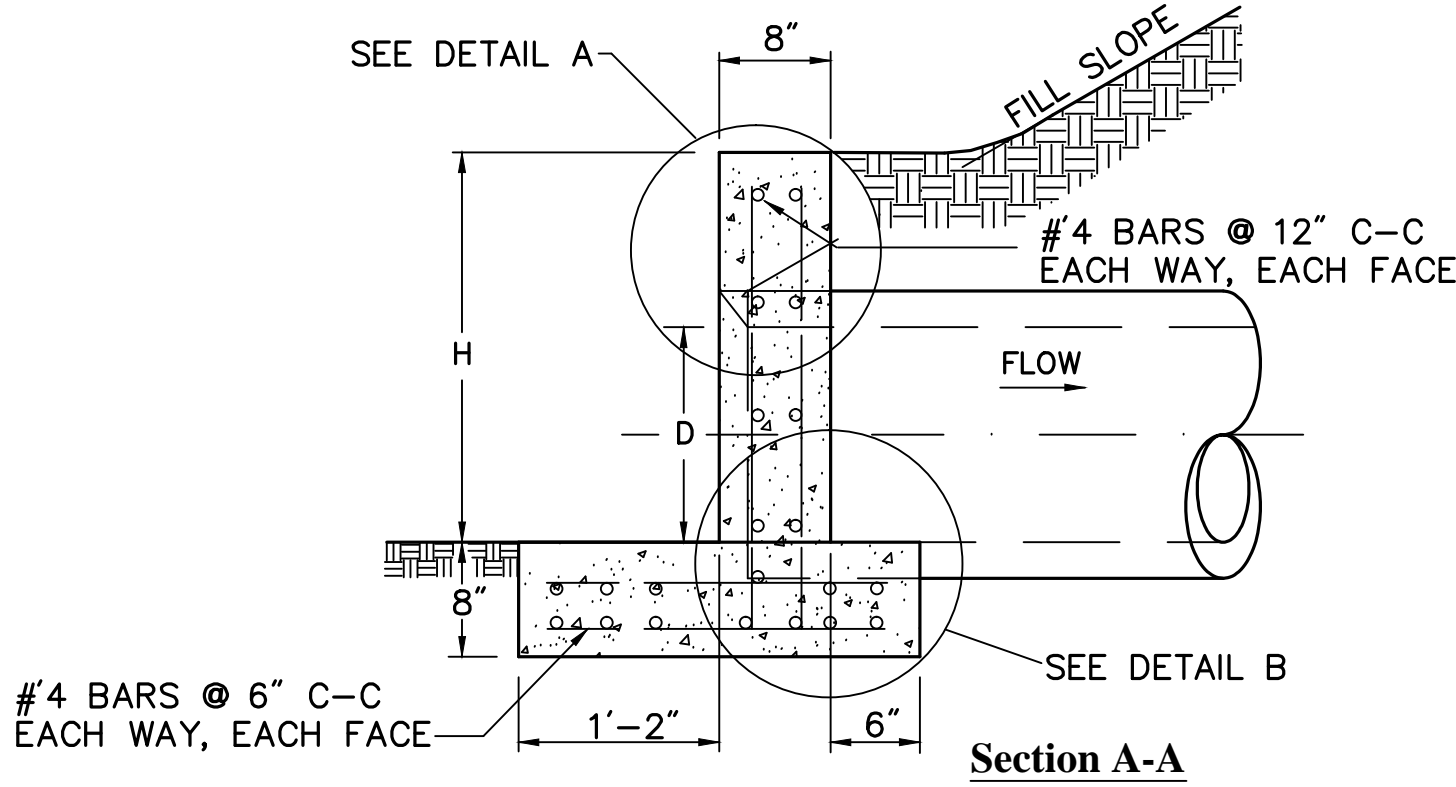
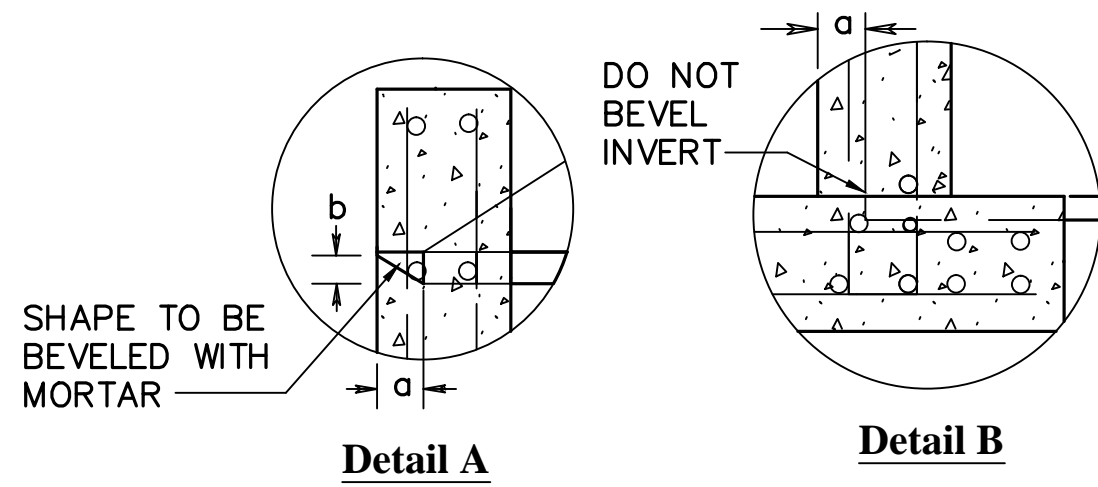
1 UTILITY TRENCH
C12 N.T.S.



ENDWALL FOR CIRCULAR PIPE			
DIAMETER OF PIPE CULVERT			
	15"	18"	21" OR 24"
A	0'-8"	0'-9"	0'-11"
B	1'-1"	1'-3"	1'-6"
C	1'-7"	1'-9"	2'-2"
D	1'-3"	1'-6"	2'-0"
F	0'-8"	0'-8"	0'-9"
H	2'-11"	3'-2"	3'-9"
L	5'-0"	6'-0"	8'-0"
a	0'-1 3/4"	0'-2"	0'-2 1/2"
b	0'-1 1/4"	0'-1 1/2"	0'-2"
CUBIC YARDS OF CONCRETE			
CONC. PIPE	0.492	0.697	1.319
C.M. PIPE	0.521	0.739	1.398

- "H" MAY BE REDUCED UNTIL "X" REACHES A MINIMUM OF 4" WHERE ENDWALL WOULD PROTRUDE ABOVE SHOULDER LINE. IN NO CASE SHALL TOP OF ENDWALL PROJECT ABOVE FILL SLOPE, DITCH SLOPE, OR SHOULDER.
- THIS ITEM MAY BE PRECAST OR CAST IN PLACE.
- ALL CAST IN PLACE CONCRETE TO BE CLASS A3. FOR PRECAST SEE SHEET 101.02.
- THIS STANDARD TO BE USED WITH STRAIGHT CROSSINGS AND ALL SKEWS (0° TO 45°).
- HEADWALL TO BE BEVELED IN ALL AREAS EXCEPT WHERE A CONFLICT WITH INVERT OR WINGWALLS OCCUR.

2 STANDARD ENDWALL FOR PIPE CULVERTS
C12 N.T.S.



NOTES:

- BEVEL EDGE IS REQUIRED ON THE HEADWALL AT THE INLET END OF THE CULVERT (WHERE THE FLOW ENTERS THE CULVERT).
- HEADWALL AT THE OUTLET END OF THE CULVERT MAY BE EITHER SQUARE EDGE OR BEVEL EDGE.
- ON SHALLOW FILLS, WHERE ENDWALLS ARE 1' OR LESS BELOW SHOULDER LINE, THE TOP OF THE ENDWALL SHALL BE CONSTRUCTED PARALLEL TO THE GRADE OF THE ROAD.
- 3/4" CHAMFER MAY BE PROVIDED ON ALL EDGES AT MANUFACTURER'S OPTION.

SOURCE: VDOT

101_01(REV.) & 101_02(REV.)

CONSTRUCTION DOCUMENTS

A/E FIRM	DESIGNED:	SUB SHEET NO	TITLE OF SHEET	DRAWING NO.
PRIME: GWWO INC. BALTIMORE, MD	TJH	C12	SITE DETAILS	326
SUB: VHB, INC. WILLIAMSBURG, VA	VND			119631
	VND			PMIS/PKG NO. FRSP 163065
	DATE: 2-8-2013		RESTORE HISTORIC VISTA AT CHATHAM RIVER BOTTOM	SHEET 13 OF 13