
Woodlands
Memphis, Shelby County, TN
General ARAP – Wetland

Prepared for:

PFMT HOLDINGS, LLC

5055 Pleasant View Road

Memphis, TN 38134

Prepared By:

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Section 6: Project Description

Section 6.1

Scope of Project

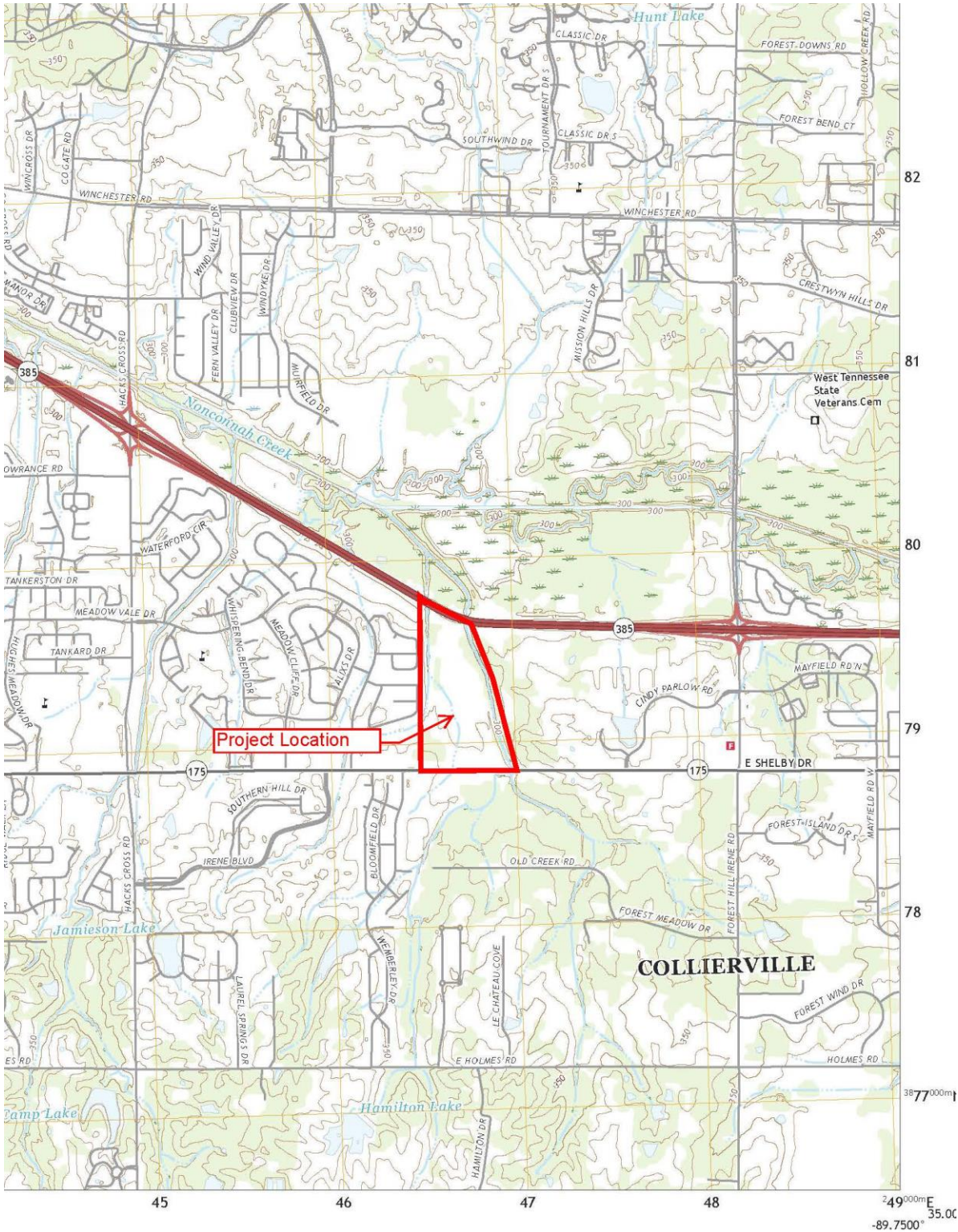
The Woodlands Subdivision consists of subdividing 62.14 acres for the development of 120 residential lots. The project site is located approximately 4800 feet west of the EAST SHELBY DRIVE and Forest Hill Irene Road intersection. The site is bordered by the Buckingham Farms Subdivision and the Polk Chapel CME Church to the east, by EAST SHELBY DRIVE and Bill Morris Parkway to the south and north, respectively, and by the Southwest Tennessee Community College to the east. The approximate latitude and longitude of the area is 35° 01' 15"N and 89° 46' 385"W. The drainage generate from the property flows towards the east into a miscellaneous tributary of Nonconnah Creek (ID: TN0801021100720_0999) (Stream classifications are based on a review of the TDEC Division of Water Resources online database.)

Three wetland are present on this site, per an environmental analysis of the site was conducted by SWCA Environmental Consultants on October 7, 2020. The analysis resulted in a total of 6.31 acres of wetlands on the site, which are separated in three separate location. The proposed development will remove a portion of Wetland WA001 (0.280 acres). Wetland WA002 (2.70 acres) and WA003 (3.33 acres) are located within the proposed common open space and will not be impacted by this development. The total impact to wetland WA001 is 0.13 acres, which falls within the general ARAP for wetland disturbance. The environmental assessment was conducted by SWCA.

Lastly, the general ARAP will cover two (2) outfall pipes entering an unnamed tributary of Nonconnah Creek on the eastern property line of the development. The pipes will extend into the western bank of the tributary and will be protected with rip-rap around the pipe and extending into the stream to prevent scour.

Section 6.2

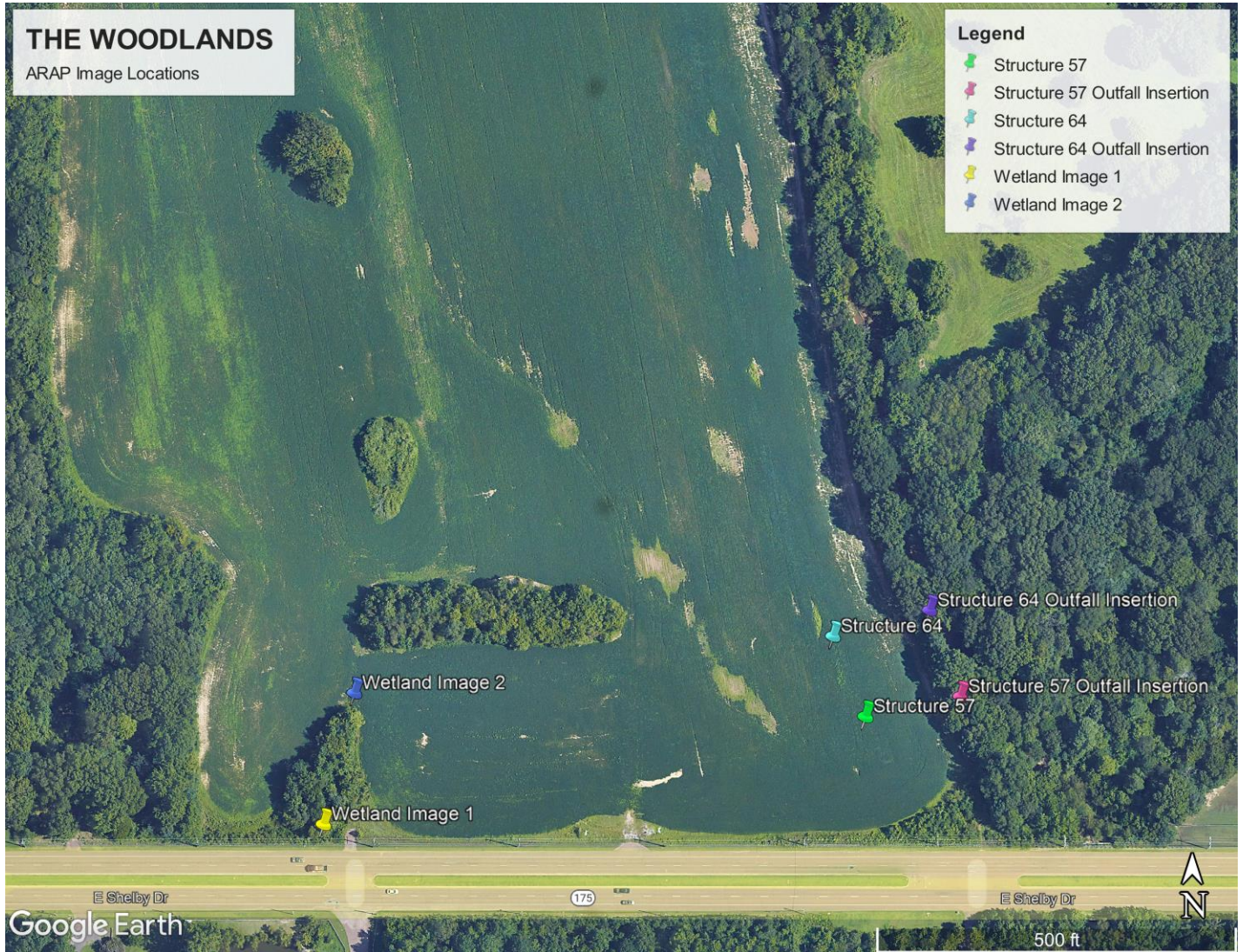
USGS Topographic Map



Section 6.3

Photographs

- see Aquatic Delineation conducted by SWCA Environment Consultants





Wetland (WA001) Image 1
(South, Looking North)



Wetland (WA001) Image 2
(North, Looking South)



Structure 57 Insertion



(Looking downstream, to the north)

Structure 57 Insertion

(Looking upstream, to the south)

The Woodlands Subdivision

General ARAP



Structure 64 Insertion
(Looking downstream, to the north)



Structure 64 Insertion
(Looking upstream, to the South)

Section 6.4

Existing Stream

The subject stream required for the General ARAP is a miscellaneous tributary of Nonconnah Creek. It borders the east side of the property, with approximately 2,700 feet of the stream within the property line, and flows from south to north. The predominant soil type on the site is Falaya silt loam. The ditch is 13 to 14 feet deep and 42 to 58 feet wide at the top banks. The riparian vegetation consists primarily of bottomland hardwoods.

Existing Wetland

Three wetlands are present on the site. Two wetlands (one forested, the other scrub-shrub) are located on the north portion of the site, south of SR-385. Wetland WA002 is a forested wetland and totals 2.70 acres. Wetland WA003 is a scrub-shrub wetland and totals 3.33 acres. An additional wetland is located on the south side of the property near Shelby Drive. Wetland WA001 is a forested wetland and totals 0.28 acres.

Section 6.5

Proposed Stream

The miscellaneous tributary of Nonconnah Creek will maintain the same cross section pre and post construction. At the locations of structures 57A and 64A, the proposed drainage pipe will be constructed flush with the slope of the existing stream banks. The pipe will be positioned towards the direction of flow at an angle of 45 degrees. Approximately 15-feet of TDOT Class "B" rip-rap (at both locations) measures along the centerline of the stream shall be installed to protect the stream from erosion and scour. The disturbed areas associated with installing the pipes and rip-rap is expected to be approximately 25 to 30 feet at each location. Hard armoring, rip-rap, will measure approximately 15 feet.

Proposed Wetland

Wetlands WA002 and WA003 will not be impacted with development activities associated with this development and therefore will maintain the current wetland characteristics. Wetland WA001 is located at the westernmost entrance to the proposed development. Of the 0.28 acres of existing wetland, 0.13 acres will be removed to make way for the proposed entrance. The remaining 0.15 acres of wetland are to not to be altered and shall maintain its current characteristics.

Section 6.6

Wetland Delineation

Wetlands are located on the site, see the Environmental Assessment conducted by SWCA Environment Consultants on October 08, 2020. The report determined that there are 6.31 acres of wetlands within the

project boundary. The majority of the wetlands are located within proposed common open spaces and are not to be altered.

Section 6.7

Hydrologic Jurisdictional Determinations

SWCA conducted a site assessment on October 8, 2020. Three wet weather conveyances were located within the Area of Determination. However, the miscellaneous tributary of Nonconnah Creek was not considered in the determination, but was assumed to be a stream.

Section 7.0: Project Rationale

The proposed development is located adjacent to wetlands, per the Environment Assessment conducted by SWCA. The projects intends to keep most of the sensitive areas unaltered to the greatest intent possible. This permit is intended to cover work associated with the construction of lots and detention basin on existing wetlands. Additionally, the construction of the development will require the installation of drainage and sewer infrastructure to service the development.

Wetlands

A wetland exists in the southwest quarter of the site and pools around an existing concrete box culvert. A portion of this wetland will be disturbed to make way for the proposed Right-of-Way. The alignment for the Right-of-Way was maintained to keep with the intent of East Shelby Drive's construction of East Shelby Drive has existing median cuts, allowing for direction changes and denoting the intended location for future turning lanes. Additionally, the affected wetland is a man-made wetland. During the construction of East Shelby Drive, a reinforced concrete box culvert was constructed to allow drainage to flow from south to north. However, the outlet of the box culvert is located within a low spot on the property, and without proper maintenance, the area was allowed to become a wetland.

The location of the western subdivision entrance was controlled by the median cut, which also coincides with the existing wetland. Due to the proximity of the wetland adjacent to East Shelby Drive, outright avoidance was not practicable. Therefore, impact minimization was the reasonable approach. The entrance road nearly bisects the wetland. In an effort to impact the least amount of wetland possible, a retaining wall is proposed outside the proposed road's right-of-way. The retaining wall will create a barrier between the proposed improvements and the existing wetland. Silt-fence will be installed behind the retaining wall to limit the amount sediment leaving the disturbed area. To address the drainage flowing from the existing box culvert, the runoff will be collected in a storm sewer system via a headwall. The flowline of the culvert is to be placed at grade or above to ensure that water will not be forced out of the wetland at a greater rate than currently exists. The headwall

shall not be installed below the existing ground. Minimal excavation shall be allowed in installing the headwall.

Drainage along Shelby Drive in the area of the subject wetland, flows in an east/west direction. The proposed entrance will obstruct the flow of water. Therefore, a cross-drain will be necessary to convey water through the entrance. A TDOT Type "U" headwall will be installed in and adjacent to the existing wetland. The contractor shall make every effort to disturb the least amount of wetland when installing the headwall.

The wetlands to north are not proposed to be disturbed with the activities of this development. Silt-fence and an average 30 foot natural buffer are to be maintained between the disturbed area and the edge of the wetlands.

General ARAP



Outfalls

Outfall pipes shall be constructed for drainage structures 57 and 64. These pipes will be directed towards the downstream flow of the main tributary to avoid scouring within the main channel. TDOT Class "B" rip-rap shall be installed around the pipe and shall extend downstream of the invert at a length measured along the stream of 4 times the diameter of the pipe.

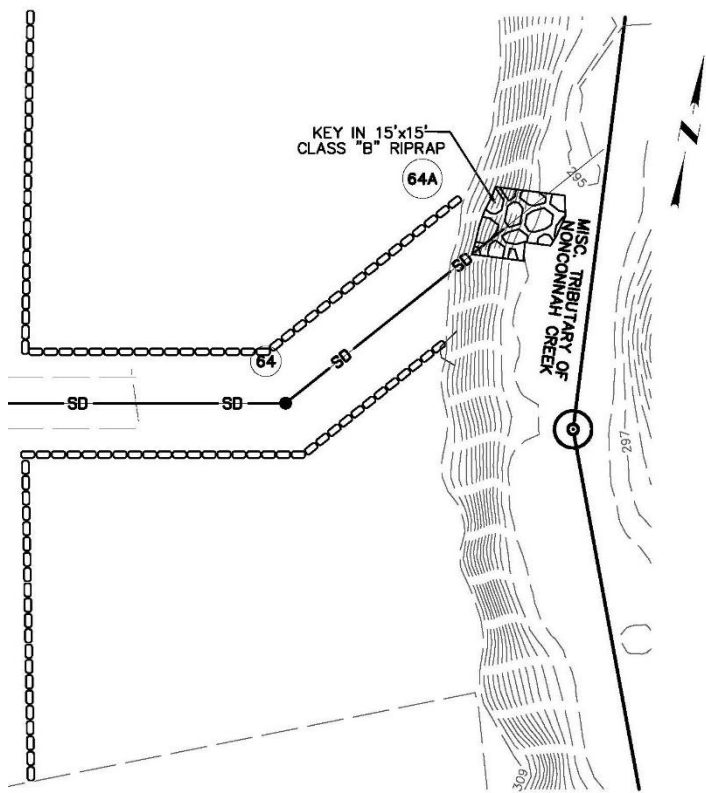


Exhibit 2 – Structure 64 Outfall – Plan

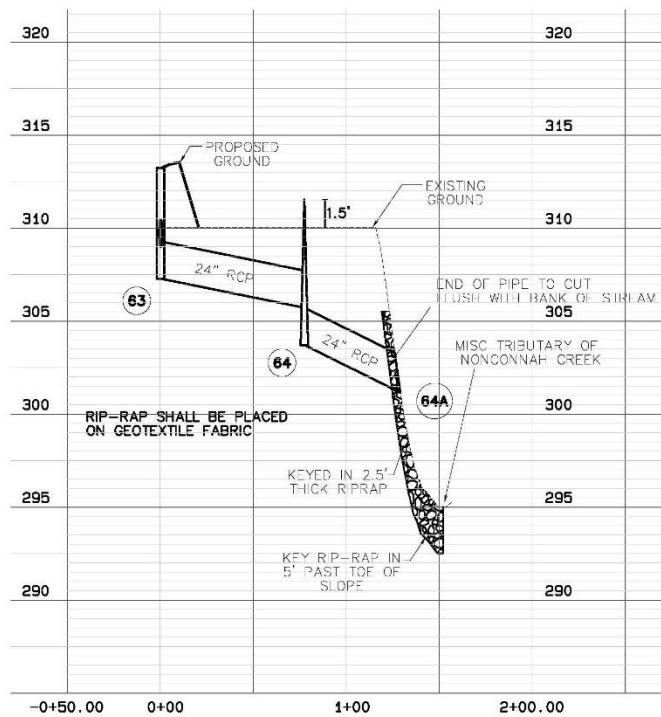


Exhibit 3 – Structure 64 Outfall – Profile

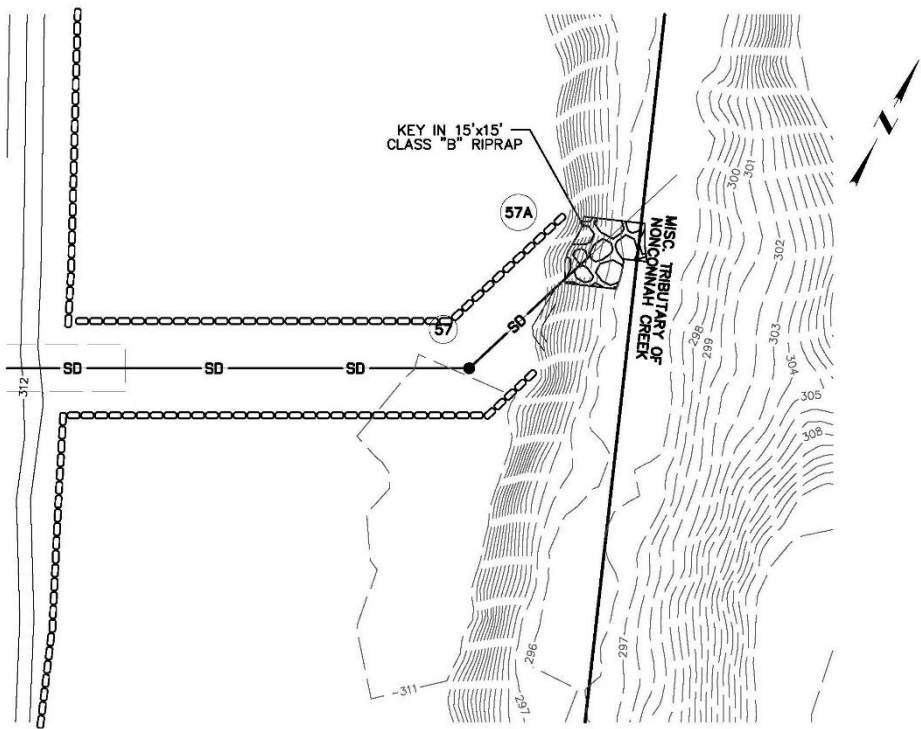


Exhibit 4 – Structure 57 Outfall – Plan

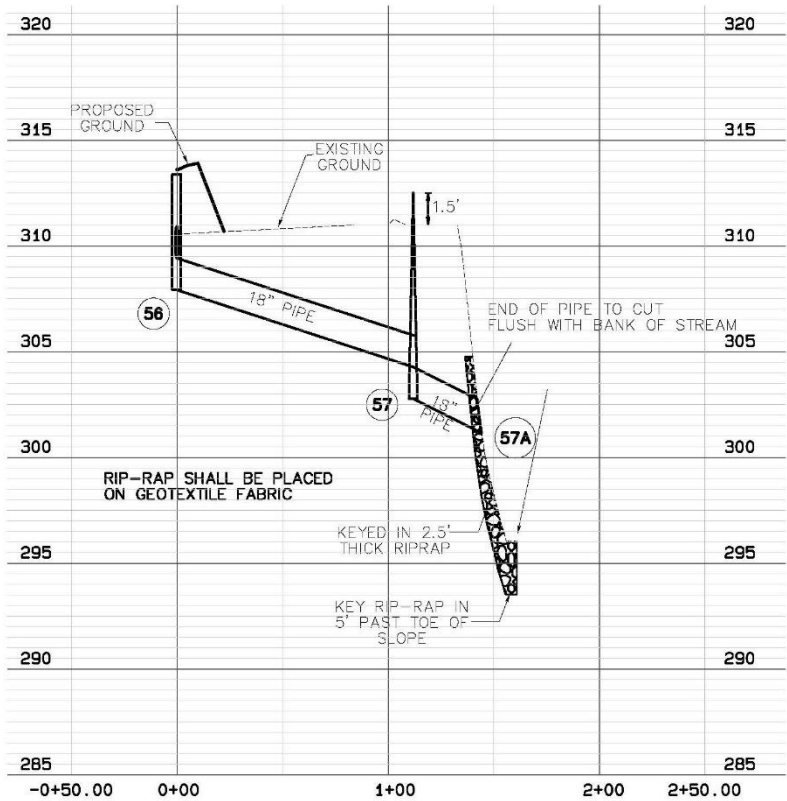


Exhibit 5 – Structure 57 Outfall – Profile

Section 8: Technical Information

Section 8.1

See attached.

Section 8.2

Wetland

First, orange silt-fence will be placed three (3) feet off of the proposed retaining wall. No alterations to the wetlands will occur beyond this point. Silt-fence will also be installed 3-5 feet outside of the headwall's base to establish a work zone for installing the structure. Once the silt-fence has been installed, construction of the drainage headwalls and retaining wall may begin. Minimal excavation shall be utilized to install the headwalls. Only the dimensions of the headwalls shall be disturbed to install the structures. If prefabricated, the headwall shall be lowered in place with very little foot traffic within the wetland boundary. When the headwalls and retaining wall is complete, grading activities may begin for the road embankment over the exiting wetland to be removed. During construction activities, it is imperative that no silt shall be allowed to enter the wetland. The contractor shall be responsible for installing additional BMPs to ensure that the wetland remains protected.

The initial excavation work shall be conducted when little rainfall is expected to keep sediment laden water from encroaching in to the exiting wetlands. Heavy duty equipment will be utilized for fill operation when constructing the roadway, but at no point shall equipment be allowed to enter the wetland.

Stream

The storm drainage system will connect to the eastern stream in two locations. Prior to excavation work, the silt-fence shall be installed adjacent to the proposed swale. The contractor will begin work by excavating a swale from the proposed headwall locations to the western bank of the stream. Once the swale has is complete, sod shall be installed to immediately stabilize the ditch. The headwalls will be installed and work associated with the storm sewer system shall commence. Finally, rip-rap shall be installed at the headwall to control scouring and rip-rap shall be installed along the western bank of the stream at its confluence with the proposed ditch. The rip-rap shall be installed flush with the surface of the stream.

The initial excavation work shall be conducted when little rainfall is expected to keep sediment laden water from encroaching in to the exiting wetlands. Heavy duty equipment will be utilized for fill operation when constructing the roadway, but at no point shall equipment be allowed to enter the wetland.

Section 8.3

Silt-fence will be placed three (3) feet off the embankment limits of the retaining wall. Additional silt-fence will be installed 3-5 feet headwall base. No work shall be allowed past this point. The contractor shall have the option of placing addition silt-fence or other BMPs to ensure that no run-off from the site enters the unaltered wetlands.

The contractor shall perform all work associated with this permit during dry periods and rain is not expected during the duration of the work. When the contractor is excavating the ditches to the stream, the contractor will ensure that upstream drainage shall not be allowed to enter the storm drainage system until the work associated with the outfall ditch is complete. However, as a minimum Dandy Bag sediment control devices shall be installed at all inlets conveying water to the outfall ditches.

Silt-fence and an average 30 foot natural buffer are to be maintained between the disturbed area and the edge of the wetlands WA002 and WA003.

Section 10: Alternative

Being the nature of the proposed work, no alternatives were studied.

Section 11: Mitigation

No mitigation is warranted for this project.



TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
Division of Water Resources
William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor,
Nashville, Tennessee, 37243
1-888-891-8332 (TDEC)

Application for Aquatic Resource Alteration Permit (ARAP) & State §401 Water Quality Certification

OFFICIAL STATE USE ONLY	Site #:		Permit #:	
Section 1. Applicant Information (individual responsible for site, signs certification below)				
Applicant Name (company or individual):			SOS #:	Status:
Primary Contact/Signatory:		Signatory's Title or Position:		
Mailing Address:		City:	State:	Zip:
Phone:	Fax:	E-mail:		
Section 2. Alternate Contact/Consultant Information (a consultant is not required)				
Alternate Contact Name:				
Company:		Title or Position:		
Mailing Address:		City:	State:	Zip:
Phone:	Fax:	E-mail:		
Section 3. Fee (application will be incomplete until fee is received)				
No Fee		Fee Submitted with Application		Amount Submitted: \$ _____
Current application fee schedules can be found at the Division of Water Resources webpage at: https://www.tn.gov/environment/permit-permits/water-permits1/aquatic-resource-alteration-permit--arap-.html or by calling (615) 532-0625. Please make checks payable to "Treasurer, State of Tennessee".				
Billing Contact (if different from Applicant):		Name:	Email:	
Address:		Phone:		
Section 4. Project Details (fill in information and check appropriate boxes)				
Site or Project Name:		Nearest City, Town or Major Landmark:		
Street Address or Location (include zip):				
County(ies):		MS4 Jurisdiction:	Latitude (dd.dddd):	
			Longitude (dd.dddd):	
Resources Proposed for Alteration:		Stream / River	Wetland	Reservoir
Name of Water Resource (for more information, access http://tdeconline.tn.gov/dwr):				
Brief Project Description (a more detailed description is required under Section 8):				
Does the proposed activity require approval from the U.S. Army Corps of Engineers, the Tennessee Valley Authority, or any other federal, state, or local government agency? Yes No				
If Yes, provide the permit reference numbers:				
Will the activity require a 401 Water Quality Certification: Yes No				
If Yes, attach any 401 WQC pre-filing meeting request documentation				
Is the proposed activity associated with a larger common plan of development: Yes No				
If Yes, submit site plans and identify the location and overall scope of the common plan of development.				
Plans attached? Yes No				
If applicable, indicate any other federal, state, or local permits that are associated with the overall project site (common plan of development) that have been obtained in the past (e.g., construction general permit and/or other ARAP):				

Application for Aquatic Resource Alteration Permit (ARAP) & State §401 Water Quality Certification

Section 5. Project Schedule (fill in information and check appropriate boxes)		
Proposed start date:	Estimated end date:	
Is any portion of the activity complete now?	Yes	No
If yes, describe the extent of the completed portion:		

The required information in Sections 6-11 must be submitted on a separate sheet(s) and submitted in the same numbered format as presented below. If any question is not applicable, state the reason why it is not applicable.

Section 6. Description	Attached Yes No
6.1 A narrative description of the scope of the project	
6.2 USGS topographic map indicating the exact location of the project (can be a photographic copy)	
6.3 Photographs of the resource(s) proposed for alteration with location description (photo locations should be noted on map)	
6.4 A narrative description of the existing stream and/or wetland characteristics including, but not limited to, dimensions (e.g., depth, length, average width), substrate and riparian vegetation	
6.5 A narrative description of the proposed stream and/or wetland characteristics including, but not limited to, dimensions (e.g., depth, length, average width), substrate and riparian vegetation	
6.6 In the case of wetlands, include a wetland delineation with delineation forms and site map denoting location of data points	
6.7 A copy of all hydrologic or jurisdictional determination documents issued for water resources on the project site	

Section 7. Project Rationale	Attached Yes No
Describe the need for the proposed activity, including, but not limited to the purpose, alternatives considered and rationale for selection of least impactful alternative, and what will be done to avoid or minimize impacts to water resources	

Section 8. Technical Information	Attached Yes No
8.1 Detailed plans, specifications, blueprints, or legible sketches of present site conditions and the proposed activity. Plans must be 8.5.x 11 inches. Additional larger plans may also be submitted to aid in application review. The detailed plans should be superimposed on existing and new conditions (e.g., stream cross sections where road crossings are proposed)	
8.2 For the proposed activity and compensatory mitigation, provide a discussion regarding the sequencing of events and construction methods and any proposed monitoring	
8.3 Depiction and narrative on the location and type of erosion prevention and sediment control (EPSC) measures for the proposed alterations and any other measures to treat, control, or manage impacts to waters	

Section 9. Water Resources Degradation (degree of proposed impact)
Note that in most cases, activities that exceed the scope of the General Permit limitations are considered greater than <i>de minimis</i> degradation to water quality. Please provide your basis for concluding the proposed activity will cause one of the following levels of water quality degradation: a. <i>De minimis</i> degradation, no appreciable permanent loss of resource values b. Greater than <i>de minimis</i> degradation (if greater than <i>de minimis</i> complete Sections 10-11) For information and guidance on the definition of <i>de minimis</i> and degradation, refer to the Antidegradation Statement in Chapter 0400-40-03-.06 of the Tennessee Water Quality Criteria Rule: https://publications.tnsosfiles.com/rules/0400/0400-40/0400-40.htm For more information on specifics on what General Permits can cover, refer to the Natural Resources Unit webpage at: https://www.tn.gov/environment/permit-permits/water-permits1/aquatic-resource-alteration-permit--arap-.html

Application for Aquatic Resource Alteration Permit (ARAP) & State §401 Water Quality Certification

Section 10. Detailed Alternatives Analysis		Attached Yes No	
10.1	Analyze all reasonable alternatives and describe the level of degradation and permanent loss of resource value caused by each alternative. Assessment must consider options other than the "Preferred" and "No Action" alternatives. Provide associated rationale for selecting or rejecting all alternatives considered and demonstration that the least impactful practicable alternative was selected.	☐	☐
10.2	Discuss the social and economic consequences of each alternative	☐	☐
10.3	Demonstrate that the degradation associated with the preferred alternative will not violate water quality criteria for uses designated in the receiving waters, and is necessary to accommodate important economic and social development in the area	☐	☐

Section 11. Compensatory Mitigation		Attached Yes No	
11.1	A detailed discussion of the proposed compensatory mitigation. Provide evidence of credit reservation if proposing to utilize a third-party provider.	☐	☐
11.2	Analysis of any proposed appreciable loss of resource value using the TN Stream Mitigation Guidelines. Provide Stream Quantification Tool (SQT) results if applicable. Include Existing Condition Score (ECS) and debit/credit calculations.	☐	☐
11.3	Describe how the compensatory mitigation would result in no net loss of resource value	☐	☐
11.4	Provide a detailed monitoring plan for the compensatory mitigation site if permittee-responsible project is proposed	☐	☐
11.5	Describe the long-term protection measures for the compensatory mitigation site if permittee-responsible project is proposed (e.g., deed restrictions, conservation easement)	☐	☐

Certification and Signature			
An application submitted by a corporation must be signed by a principal executive officer; from a partnership or proprietorship, by the partner or proprietor respectively; from a municipal, state, federal or other public agency or facility, the application must be signed by either a principal executive officer, ranking elected official, or other duly authorized employee. I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information 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 and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury. The project proponent hereby requests that the certifying authority review and take action on this CWA 401 certification request within the applicable reasonable period of time.			
<u>Frances M. Terhune</u> Printed Name	<u>Secretary</u> Official Title	<u>[Signature]</u> Signature	<u>11/11/21</u> Date

Note that this form must be signed by the principal executive officer, partner or proprietor, or a ranking elected official in the case of a municipality; for details see **Certification and Signature** statement above. For more information, contact your local EFO at the toll-free number 1-888-891-8332 (TDEC). Submit the completed ARAP Application form (keep a copy for your records) to the appropriate EFO for the county(ies) where the proposed activity is located, addressed to **Attention: ARAP Processing**. You may also electronically submit the complete application and all associated attachments to water.permits@tn.gov.

EFO	Street Address	Zip Code	EFO	Street Address	Zip Code
Memphis	8383 Wolf Lake Drive, Bartlett	38133-4119	Cookeville	1221 South Willow Ave.	38506
Jackson	1625 Hollywood Drive	38305-4316	Chattanooga	1301 Riverfront Pkwy., Ste. 206	37402
Nashville	711 R S Gass Boulevard	37243	Knoxville	3711 Middlebrook Pike	37921
Columbia	1421 Hampshire Pike	38401	Johnson City	2305 Silverdale Road	37601

