




# Stormwater Pollution Prevention Plan (SWPPP)

Heron Homes Pace Street Development  
McMinnville, Warren County, Tennessee  
November 2023



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**LJA ENGINEERING**

# Table of Contents

<b>1. INTRODUCTION</b>	<b>1</b>
1.0 INTRODUCTION	1
<b>2. PROJECT DESCRIPTION</b>	<b>1</b>
2.1 SITE LOCATION	1
2.2 EXISTING CONDITIONS	2
2.3 PROPOSED CONDITIONS	5
<b>3. HYDROLOGY AND HYDRAULIC EVALUATION</b>	<b>6</b>
<b>4. EROSION PREVENTION AND SEDIMENT CONTROL</b>	<b>10</b>
<b>6. SITE ASSESSMENT</b>	<b>15</b>
<b>7. INSPECTIONS AND DOCUMENTATION</b>	<b>16</b>
<b>8. RELEASES IN EXCESS OF REPORTABLE QUANTITIES</b>	<b>17</b>
<b>9. NOTICE OF TERMINATION</b>	<b>18</b>
<b>10. DOCUMENTS AND RECORD KEEPING</b>	<b>18</b>
<b>11. CERTIFICATIONS</b>	<b>20</b>

## Figures

Figure 1 USGS 7.5 Minute Quadrangle Map, McMinnville, Tennessee (2023)	2
Figure 2 FEMA Flood Insurance Rate Map, Pace Street, McMinnville, TN	3
Figure 3A Drainage Areas Prior to Disturbance	4
Figure 3B Drainage Areas After Disturbance	5
Figure 4 USDS Soil Map for Project Location	6

## Tables

TABLE 1: DRAINAGE AREA SUMMARY	8
TABLE 2: DRAINAGE RATIONAL-METHOD RUNOFF COEFFICIENTS	8
TABLE 3: NRSC STORM DATA, WARREN COUNTY TN	9
TABLE 4: 2-YEAR, 24-HOUR PEAK DESIGN FLOWS (RATIONAL METHOD)	9
TABLE 5: LAND USE CLASSIFICATION SUMMARY	10
TABLE 6: WINTR-55 TIME OF CONCENTRATION	10
TABLE 7: WINTR-55 2-YEAR, 24-HOUR DESIGN PEAK FLOW	11
TABLE 9: PROPOSED TEMPORARY BERM/DITCH PARAMETERS	11
TABLE 10: HYDRAFLOW CHANNEL - FLOW DEPTH SUMMARY	12
TABLE 11: STORM CULVERT PARAMETERS	12
TABLE 12: HYDRAFLOW CULVERTS SUMMARY	13

## Appendices

- APPENDIX A: TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION- GENERAL PERMIT FORMS
- APPENDIX B: CONSTRUCTION PLANS AND MAPS
- APPENDIX C: HYDROLOGIC AND HYDRAULIC SUMMARY AND WINTR55 HYDROLOGY REPORTS
- APPENDIX D: USDA SOIL MAPS

# » 1. Introduction

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## 1.0 Introduction

This Stormwater Pollution Prevention Plan (SWPPP) along with a Notice of Intent (NOI) for a General NPDES Permit for Stormwater Discharges Associated with Construction Activities, provided in Appendix A, have been prepared by LJA Engineering, Inc. (LJA) for areas to be disturbed by activities associated with the clearing of trees for the future construction of a new housing development by Heron Homes, located in McMinnville, Warren County, Tennessee. The tree clearing will be a part of project currently being developed by for a parcel of property located on a undeveloped property on Pace Street, said properties having Map ID No. 058, Parcel 2.0 as identified by Warren County, Tennessee, Tax Assessors Office. See Appendix B for current Parcel Details for subject property while preparing the SWPPP.

The intent of this SWPPP is to address erosion prevention and sedimentation control measures to be implemented during tree clearing activities, as needed to prepare construction plans for the development of approximately 30, one-half acre residential lots along with subdivision roads and underground and aboveground utilities as needed to serve the new development. The SWPPP was developed in accordance with the effective National Pollutant Discharge Elimination System (NPDES), General Permit for Discharges of Stormwater Associated with Construction Activities Permit Number TNR100000 (General Permit) due to a disturbance area greater than one acre.

# » 2. Project Description

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## 2.1 Site Location

The project site is located within the city limits of McMinnville, Tennessee in Warren County along Pace Street near Bobby Ray Memorial Parkway. The site has a parcel number of 058 002.00 with an acreage of 34.14. The property is zoned as Residential (R-1) and is bounded by residential properties to the north, east and west, and Pace Street to the south.

Figure 1 provided shows the site, as located on United States Geologic Survey 7.5 Minute McMinnville, Tennessee Quadrangle dated 2023:

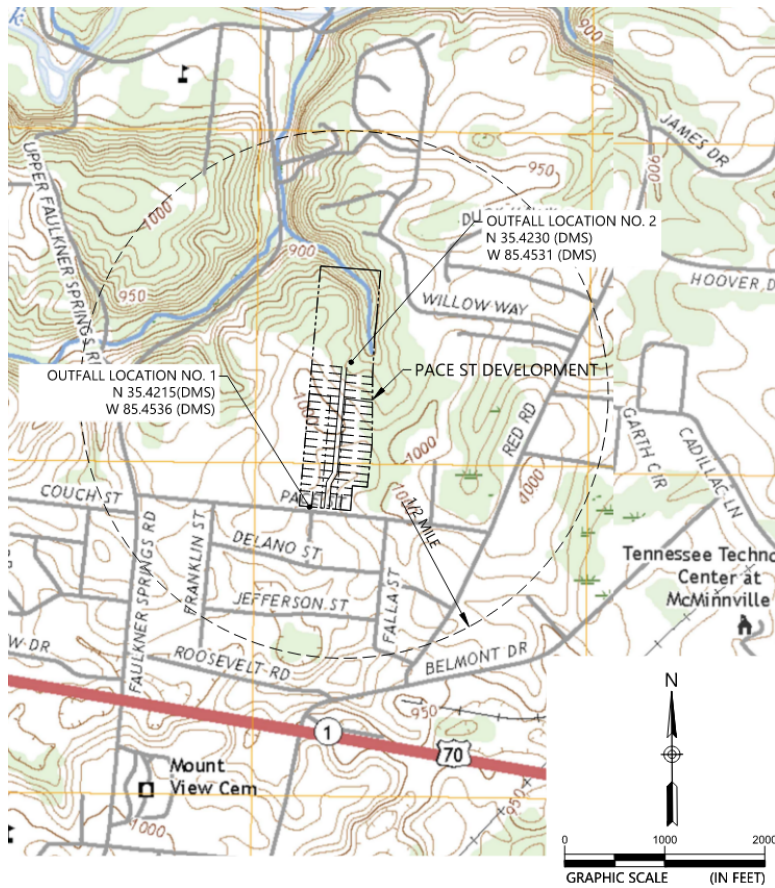


Figure 1 USGS 7.5 Minute Quadrangle Map, McMinnville, Tennessee (2023)

## 2.2 Existing Conditions

The site is an undeveloped wooded area. Based on the existing topography with moderate slopes two outfalls were determined on the perimeter. The site has 500 feet of road frontage on Pace Street with an existing drainage ditch that drains to a culvert crossing Pace Street on the southwest corner of the property. The surrounding area is made up of rolling hills at approximately a five-percent average slope.

The extents of the limits of disturbance are shown on Sheet Numbers EC-01 to EC-03 of the Erosions Control Plan set provided in Appendix B. The disturbance area includes work to be performed to install a sediment basin and channels needed to mitigate the impact of runoff.

A Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRMette) was obtained for the project site location to determine potential impacts to potential streams. See Figure 2 below for the location of project with respect to potential flooding.



Figure 2 FEMA Flood Insurance Rate Map, Pace Street, McMinnville, TN

The FIRMette indicates that the disturbance for the development north of Pace Street will be in an area classified as Zone X, Area of Minimal Flood Hazard, away from any identified streams.

The drainage areas that will be affected by the disturbance are shown in Figure 3A below.

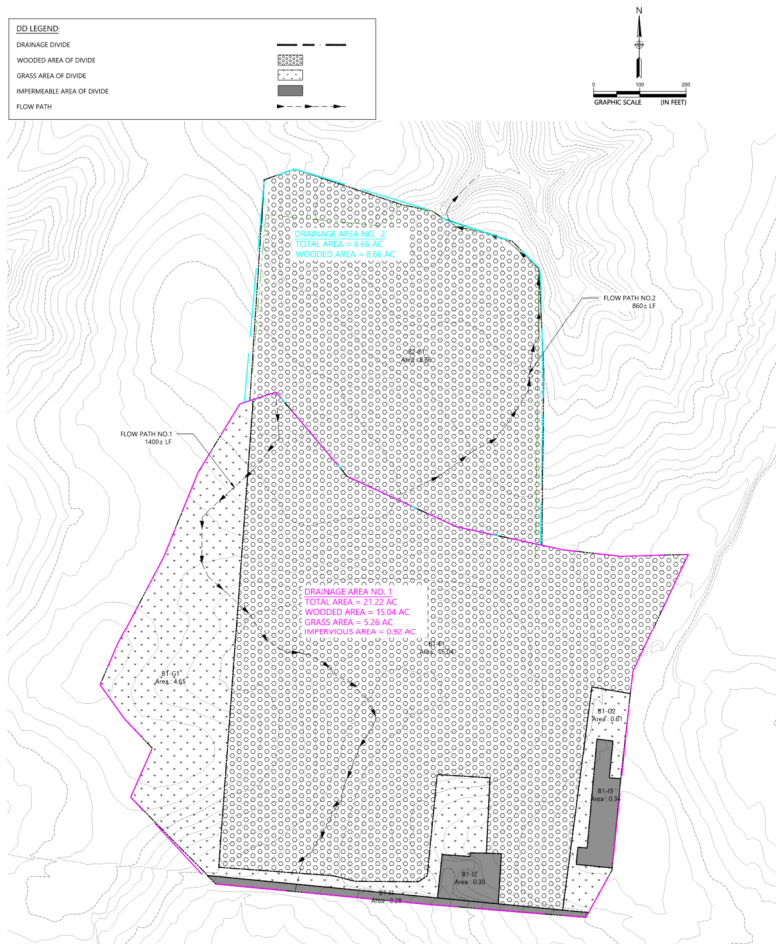


Figure 3A Drainage Areas Prior to Disturbance

Based on the drainage map provided in Figure 3A, most of the existing groundcover will be wooded on moderate slopes draining the southeast side of the development, with the remaining area draining to the southwest.

The drainage areas affected by the disturbance are shown in Figure 3B below.

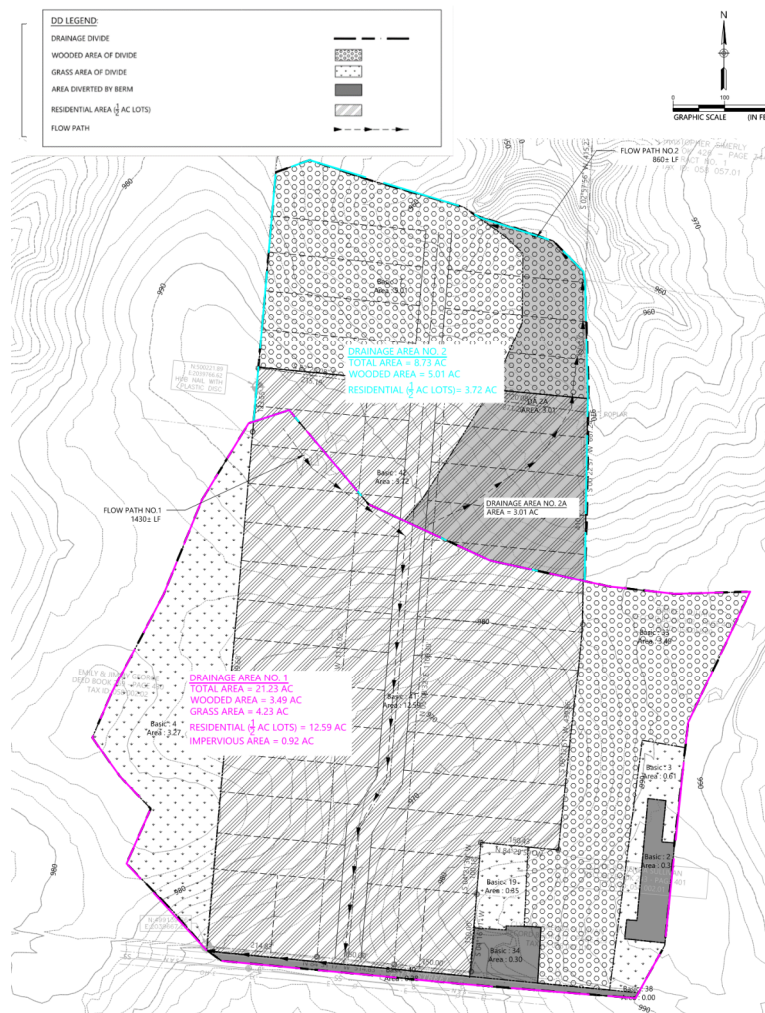


Figure 3B Drainage Areas After Disturbance

Based on the drainage map provided in Figure 3B, most of the post disturbance groundcover will be developed to half acre lots with some grass and wooded area remaining.

The drainage flows in drainage area 1 are collected in channels along Pace Street and sent to a culvert under the road at Outfall Number 1. The drainage flows in drainage area 2 are collected by berms on the north side of the property directed to Outfall Number 2. Based on site reconnaissance of the site along with a desktop study performed for the location, all concentrated drainage at the site was determined to be wet weather conveyances not supporting an aquatic ecosystem.

Soil data for the site, as shown, in Figure 4 was obtained from the United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Web Soil Survey at <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm> for general soil classification at the site. The Soil Map generated for the project site is in Appendix D.



Figure 4 USDS Soil Map for Project Location

The areas that will be disturbed by construction consist mainly of Waynesboro Loam, Mountview Silt Loam, and Lawrence Silt Loam soil types, as described by the United States Department of Agriculture, Soil Conservation Service Soil Survey for Warren County, TN. These soils in summary are:

- Wa(B, C, C2, C3)– Waynesboro Loam, 2 to 5 percent slopes located on the grass land and 5 to 12 percent slopes on the north and south edges of the property– Approximately sixty five percent (65%) of the Soil Survey “Area of Interest”. Soil being a Soil Group B Soil with Soil Group B being moderately well drained.
- MoB – Mountview Silt Loam, 2 to 5 percent slopes located in the center of the site– Approximately thirteen percent (13%) of the Soil Survey “Area of Interest”. Soil being a Group C Soil with moderately high runoff rates.
- La – Lawrence Silt Loam, located in the center of the site– Approximately three percent (3%) of the Soil Survey “Area of Interest”. Soil being a Group D Soil with high runoff rates.

Given the predominate soils on the site are Group B and Group C, The Hydrologic Soil Group C will be used for determining peak storm flows for hydrologic calculations provided in other sections. Group C soil classification will give larger runoff coefficient (CN) values which will result in higher peak flows. Disturbance due to the construction activities shall be contained by appropriate erosion and sediment control measures and should minimize sediment laden stormwater from leaving the site.

### 2.3 Proposed Conditions

Approximately 20.3 acres of trees and overgrowth will be cleared and grubbed in order to prepare for future design and construction of 30 half-acre residential lots. Minimal land disturbance will be performed to the site as needed to clear the land.

## » 3. Hydrology and Hydraulic Evaluation

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To provide adequate temporary and permanent erosion prevention and sediment control protection measures for construction activities, a hydrologic and hydraulic evaluation was performed for all ditches, culverts, construction slopes, and areas impacted by construction.

To determine erosion prevention and sediment control measures to be implemented at the site to meet Part 5 and Part 6 of the current General Permit, a desktop study was performed to determine if site location is in an area where stormwater discharges into waters with "*Unavailable Parameters or Exceptional Tennessee Waters*" as identified by TDEC. The findings are as follows:

#### Unavailable Parameters Study:

The Tennessee Department of Environment and Conservation, Division of Water Resources (DWR) public current EPA approved "*303d List for Impaired and Threatened Waters*" (2022) was reviewed for the Collins River, Hydrologic Unit Code 8 (HUC8) 05130107, for impaired streams at the project location. Findings concluded that the outfalls from the project location do not discharge stormwater runoff into an impaired stream due to siltation for the Collins River waterbody as identified by TDEC and the EPA.

#### Exceptional Waters Study:

The DWR's public database (DataViewer) was for exceptional streams searched. No waterbody along the Collins River including the Bybee Branch at the project location was identified as a "Known Exceptional Tennessee Waters and Outstanding National Resource Water".

Given that no impaired streams or exceptional streams were identified based on the desktop research, the construction will be required to exceed the 2-year, 24-Hour design storm event meeting good engineering practices for stabilization and structural practices in required as part of the General Permit. All practices will be in conformance with the current edition of the *Tennessee Erosion and Sediment Control Handbook*. Additionally, given that permitting requirements with the Tennessee Department of Transportation (TDOT) will require the permanent drainage features and stabilization measures be designed for a 50-year, 24-hour design storm event, the erosion prevention and sediment control measures will far exceed the minimal General Permit requirements for construction activities.

## **Hydrologic Evaluation**

A Hydrologic evaluation has been performed for the drainage areas as shown in the Hydrology and Hydraulic Calculations provided in Appendix C. A summary of the Drainage Areas is shown in Table 1 below.

**Table 1: Drainage Area Summary**

<b>Drainage Area</b>	<b>Area Description</b>	<b>Area (Acres)</b>
1	Drainage Area No 1 - (OUTFALL NO. 1 at Pace Street)	21.2
2	Drainage Area No. 2 – (OUTFALL NO. 2 at northern end of property.	9.6
2A	Drainage Area No. 2A – Temporary Diversion Berm East of Outfall No. 2	3.1

The calculated drainage areas were used to determine peak flows for drainage features to be installed as part of this project. The features include all drainage ditches, temporary sediment basins, temporary check dams, and permanent erosion prevention and sediment control features needed to stabilize the site and minimize erosion. As previously discussed, the peak flow design event for a 2-year, 24-hour, design storm event will be used for all peak flow calculations to meet TDEC guidelines for streams determined not to be impaired due to siltation and non-exceptional streams recognized.

To calculate the Peak design flows for temporary diversion berms and ditches, the rational method is applicable for small drainage area of less than 100 acres as a general practice. The rational method was developed on the premise that the Peak Design Flow (Q) for a design storm event equals the drainage runoff coefficient (C) times the rainfall intensity (I) times the Drainage Area (A).

To determine the Drainage Runoff Coefficient (C) for the drainage areas, area classifications was determined for the acreage within a drainage area having different land classifications based on aerial photography and USGS Quadrangle Maps at the site location. A weighted C value was determined by calculating the sum each area times the established C value for the land classification divided by the total area of the drainage areas. The summary for each area is shown in Table 2 below.

**Table 2: Drainage Rational-Method Runoff Coefficients**

<b>Drainage Area</b>	<b>Area Description</b>	<b>C</b>
2A	Drainage Area for Temporary Diversion Berm No. 2A (Bare Earth, Per TDOT Drainage Manual, Table 4-2, Moderate Slope)	0.50

The Rainfall Intensity (I) for the drainage areas using the National Resources Conservation Service (NRSC) storm data as indicated in the WinTR55 software for Warren County, Tennessee. The rainfall intensities were compared to Point Precipitation Frequency estimates and were determined at the outfall locations using the National Weather Service Precipitation Frequency Data Server. The intensity for the 2-Year, 24-Hour 25-Year, 24-Hour

design storm event at the Outfall No. 1 location will generate 3.6 inches and 5.8 inches, respectively. See summary of NRSC Rainfall Intensities provided in Table 3 below.

**Table 3: NRSC Storm Data, Warren County, Tennessee**

Storm Event	NRSC's Point Precipitation Estimate, Warren, Tennessee					
	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year
24-Hour Rainfall Amount (inches)	<b>3.60</b>	4.50	5.00	5.80	6.40	6.90

To calculate the anticipated flow for the site, the 2-year, 24-hour Peak Design Flows were determined by rational method ( $Q2=C \times I2 \times A$ ) for the values provided in Tables 1, 2, and 3. A summary of peak Discharge is summarized in Table 4.

**Table 4: 2-year, 24-Hour Peak Design Flows (Rational Method)**

Drainage Area	Area Description	2-Year Peak Design Flow, (CFS)
2A	Drainage Area for Temporary Diversion Berm No. 2A	5.6

The peak design flow values are used to determine the size diversion berm on the northeastern perimeter of the property needed to divert stormwater minimize sediment laden water from discharging offsite.

**Construction Peak Flow Discharge Determination**

To determine the preconstruction, during construction, and post construction peak storm water flows, WinTR-55 software was utilized to develop the peak design flows for the 2-Year, 24-hour design storm event as required by the General Permit. The reports for the pre, during, and post construction activities generated from WinTR-55 are provided in Appendix C.

All calculations were based on the Hydraulic Soils Group C given that most of the soils on property are classified Group B with will result in more discharge off site, see Appendix D. The land use classification for all drainage areas changed based on the pre, during, and post constructions conditions at the site. The Land Use Classification along with the calculated CN number for pre, during, and post construction conditions are summarized in Table 5 provided below.

**Table 5: Land Use Classification Summary**

Drainage Area	Pre-Construction		During Construction		Post Construction	
	Land Use	CN	Land Use	CN	Land Use	CN
1	Wooded, Meadow, and Impervious	74	Wooded, Meadow, and Fallow	86	Wooded and Meadow	72
2	Wooded, Grass	73	Wooded, Meadow, and Fallow	73	Wooded and Meadow	72

The rainfall intensity used pre, during, and post construction discharges as provided by WinTR-55 for NRCS storm data for NOAA-B storm intensity for Warren County, Type II Storm Event. For the 2-year, 24-hour storm event the rainfall amount was 3.6 inches.

The Time of Concentration (Tc) as needed to determine design peak flows was inputted into the WinTR-55 software based on existing and proposed topography at the project site. In general, all areas would assume first 100 feet to sheet flow at the initial slope calculated at the high point of the drainage area, shallow concentration for a distance until channel flow encountered by exiting or proposed contours, as applicable, and channel flows to the outflow locations as indicated in the Drainage Area Map provided in Figure 2. A summary of the times of concentration is provided in Table 6 below.

**Table 6: WinTR-55 Time of Concentration**

Drainage Area	Area Description	Tc (hr)
1-PRE	Drainage Area No. 1- Pre-Construction	0.297
1-DURI	Drainage Area No. 1- During Construction	0.184
1-POST	Drainage Area No. 1- Post Construction	0.160
2-PRE	Drainage Area No. 2- Pre-Construction	0.235
2-DURI	Drainage Area No. 2- During Construction	0.100
2-POST	Drainage Area No. 2- Post Construction	0.108

Based on the drainage areas, CN numbers, and the time of concentration values generated, the 2-year, 24-Hour Peak Design Flow was determined and provided in Table 7 below.

**Table 7: WinTR-55 2-Year, 24-Hour Design Peak Flow**

Drainage Area	Area Description	Pre-Construction Peak Design Flow (CFS)	During Construction Peak Design Flow (CFS)	Post Construction Peak Design Flow (CFS)	Initial to Final - Percent Increase
1	Drainage Area No. 1	32.26	66.21	34.22	6%
2	Drainage Area No. 2	14.88	18.00	16.75	21%

As anticipated, the peak design flows occur during construction where most disturbed soils area exposed to the rainfall. Additionally, when comparing the pre and post construction peak flows for the outfall locations from the site, there is a 6% and 21% percent increase peak flows from preconstruction conditions for Outfall No. 1 and Outfall No. 2, respectively. The increase of flows would be anticipated given that wooded areas would be cleared leaving grass meadow areas which would have higher peak runoff.

**Hydraulic Evaluation**

Hydraulic calculations were performed on all stormwater drainage systems and temporary diversion berms to be installed. See Appendix C for all hydraulic calculations generated for the project.

See Drainage Area Map provided in Figure 3 and Drainage Area Summary in Table 1 for location of all ditches and contributing drainage areas. Hydraflow Express and Hydraflow Hydrographs, was utilized to evaluate the 2-year, 24-hour Peak Design Flows calculated in previous section and as shown in the Construction Plans developed for temporary diversion berms and temporary sediment basin. See Appendix B for Construction Plans.

Temporary Diversion Berm/Ditch Evaluation

To evaluate the temporary diversion berms, Hydraflow Channels were utilized. The berm’s ditch parameters were taken from the construction plans for the berms requiring analysis. A summary of the ditch parameters is provided in Table 9 below.

**Table 8: Proposed Temporary Berm/Ditch Parameters**

Berm Location	Proposed Temporary Berm/Ditch Parameters					
	2-Year Peak Design Flow (CFS)	Contributing Drainage Areas	Depth (FT)	Slope (%)	Side Slopes	Slope Stabilization (Manning’s N-Value)
Northeast Property (DA 2A)	5.6	3.1	1.5	5.00	2(h):1(h)	Grass lined with Erosion Control Blankets (N-Value = 0.025)

The location was evaluated using Hydraflow Express Channels which determines the channel depth based on utilizing Manning’s open channel flow equations for the parameters provided. The water depth for each ditch is

provided in Table 10 below.

**Table 9: Hydraflow Channel - Flow Depth Summary**

Berm Location	Proposed Ditch Flow Depth		
	2-Year Design Peak Velocity (ft/s)	Peak Flow Depth (FT)	Comments
Northeast Property (DA 2A)	7.8	0.30	Okay, Depth does not overtop banks and Velocity does exceed a velocity of 3 ft/s. Erosion control matting required.

All proposed ditches are adequate to handle the 2-Year, 24-Hour Peak Design flows to be installed for the project. Hydraflow Express Channel reports for all ditches are provided in Appendix C.

Stormwater Culvert Evaluation

In similar fashion, a storm culvert to be installed at the temporary sediment basin location was designed using Hydraflow Express Culverts to determine if the culvert sizes are adequately size to handle peak design flows. Hydraflow Express Culverts Computes hydraulic grade line (HGL) with any flow regime (inlet or outlet control), including supercritical flow, hydraulic jumps, pressure flow, and roadway/embankment overtopping for peak flow design event. A summary for the storm culvert evaluated at the 18-inch corrugated metal pipe (CMP) crossing Drive No. 2 is provided in Table 11 below.

**Table 10: Storm Culvert Parameters**

Culvert Location	Pipe Size & Material	N-Value	Pipe Length (FT)	Pipe Slope (%)	Invert Elev. In (FT)	Invert Elev. Out (FT)	Overtopping Elev. (FT)
SB-01 Outfall	18-in CMP	0.024	33	0.5	968.00	967.83	973.0

Based on the culvert parameters shown the 2-Year, 24-Hour Peak Design Flow for the culvert was analyzed using Hydraflow. Calculations are provided in Appendix C. All calculations set the critical depth of the culvert as tail water conditions which assumes that all ditch flow is functioning under sublaminal flow conditions. Critical depth conditions allow more accurate flow conditions assuming ditches have a tail water depth when peak flow occurs. The culvert summary for the report for the 2-year, 24-hour peak storm for the culvert is provided in Table 12 Below.

**Table 11: Hydraflow Culverts Summary**

Culvert Location	2-Year Peak Design Flow (CFS)	Overtopping Elev. (FT)	Headwater Elev. (FT)	Downstream Velocity (ft/s)	Comment
SB-01 Outfall	14.0*	No-Overtopping	969.21	8.23 (> 3 ft/s)	Outlet Controlled Flow Regime, No Overtopping. Outlet Protection Required.

\* Peak Flow from discharge from temporary sediment basin (See hydraulic calculations for sediment basin provided in section below)

The analysis shows that pipe layout as shown in the constructions plans provided will be adequate for the 2-year, 24-Hour Peak Flow anticipated at the culvert without overtopping the berm. Outlet protection will be required to stabilize the ditch at the downstream location of the culvert based on velocity encountered at the culvert.

Temporary Sediment Basin

Given that the total land disturbance is greater than 10 acres and an outfall drainage area of greater than 10 acres, a temporary sediment basin is required to be installed to settle sediment laden runoff through the site for the southern part of the property along the frontage of Pace Creek. Based on TDEC best management practices a sediment pond with a volume of the drainage area x (67cy dry Storage and 67 cy of wet storage) was designed. See Sheet EPC-04 for a summary of required basin volumes and the riser structure to drain the 2-year, 24-hour Peak Design Storm. Due to vertical constraints at the site, only the wet storage could be contained within the graded slopes shown to the top of the forebay berm elevation as shown. The dry weather storage will be contained by the sediment basin, but the backwaters will be allowed to flood the natural basin on upland side of the forebay. The flooded area will be contained on the property. This would require more frequent maintenance of the sediment basin during construction activities. To minimize sediment in the area upland and maintenance of the forebay, hay wattles will be installed above the flooded area elevations to allow sediment to settle before entering the forebay. Other alternatives considered to contain the dry weather volumes were deemed unfeasible, due to excessive modifications that would be required to the existing 24-inch corrugated metal pipe with diverts water under Pace Street at Outfall No. 1. See Hydraflow Hydrographs Summary Report in the appendices for pond routing calculations required for the 2-year, 24-hour design storm event.

## » 4. Erosion Prevention and Sediment Control

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The escape of sediment from the site shall be prevented by the installation of erosion prevention and sediment control measures and practices prior to, or concurrent with, land disturbing activities. Temporary and permanent erosion prevention and sediment control Best Management Practices (BMP's) will be implemented throughout the project to achieve the general objectives of controlling pollutants in stormwater discharges. Selected BMP's are consistent with, and no less stringent than, those practices contained in the most recent edition of The State of Tennessee Erosion and Sediment Control Handbook.

BMP's selected for this project include:

- Sediment Basin
- CD – Check Dams
- CE – Construction Exit
- DI – Temporary Diversion Berms
- ECM - Erosion Control Matting
- OP – Outlet Protection
- PS – Permanent Vegetation
- TS – Temporary Vegetation
- SB – Temporary Sediment Basin
- SF – Silt Fence

### **Pre-Construction BMP's**

Prior to initiating earth-disturbing activities, perimeter BMP's will be implemented as shown on LJA Plan Sheets. This includes installation of one (1) Construction Exit (CE), in accordance with section 7.28 of the TDEC Erosion and Sediment Control Handbook - All vehicles and equipment entering and exiting the site shall utilize the exit. Silt fence will also be installed as shown on LJA Plan Sheets, in accordance with section 7.34 of the Handbook, Pages 250-257 of the Tennessee Erosion Prevention and Sediment Control Handbook (Handbook). Additionally silt fence (SF) will be installed on the downgradient side of grading activities and around areas to be protected from disturbance and to serve as a buffer to limit disturbance.

A sediment basin will be installed, as detailed in the plans, to capture runoff from Drainage Area 1 until final clearing occurs, following Section 7.31, pages 215-240 of the Handbook. This basin will be sized to hold the TDEC required amount of runoff based on the total drainage area of 21.2 acres. The installation of the sediment basin and berms will change the drainage pattern for the stormwater draining off the site. To address the drainage changes in Basin 1, adequately sized ditches will be installed along the roadway to convey stormwater to a culvert under Pace Street at Outfall Number 1. Berms constructed on the north side of the site will divert flow that otherwise would flow offsite to a different point and discharge it an Outfall Number 2.

These measures will stay in place for the duration of the project until permanent vegetation is established as determined by the Engineer.

## **Temporary BMP's**

Clearing and grubbing will be staged such that primary sediment controls will already be in place. Clearing will be performed in accordance with TWRA guidelines and communication to ensure no threatened species are affected. No trees shall be affected outside the clearing and grubbing area defined by LJA Plan Sheets, unless directed by the engineer.

BMP measures, as shown on the Construction Plans provided in Appendix B, will be installed as clearing of the site along with the installation of the ditches, culverts, and sediment basin commences. To minimize sedimentation leaving the construction site, permanent temporary vegetation (TS), and/or Erosion Control Matting (ECM) will be installed immediately after the site is cleared and grubbed, graded and culvert and ditch installation is completed. Disturbed areas outside the erosion control matting will receive Permanent Vegetation (PS) to establish vegetative growth.

Extended stockpiling of excavated material should be required, perimeter BMP's such as additional Silt Fence shall be utilized and installed on the downgradient side of the piled soils, and the stockpile(s) shall be seeded with the seasonally appropriate temporary seed mixture according to the Handbook.

Any inactive disturbed area left exposed for a period greater than fourteen (14) days shall be stabilized with vegetation (TS). All disturbed areas will be temporarily or permanently stabilized as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than fourteen (14) days after the construction activity in that portion of the site has temporarily or permanently ceased. In all disturbed areas where there are steep slopes, either natural or created slopes of thirty-five percent (35%) grade or greater, and/or an elevation change of twenty feet (20-feet) or more, the slopes shall be stabilized with temporary or permanent vegetation, as applicable, no later than seven (7) days after construction activity on the slope has temporarily or permanently ceased.

A record of the dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are implemented, shall be maintained, and kept with the SWPPP.

## **Post-Construction BMP's**

Upon completion of construction activities, all temporary BMP's will be removed and permanent BMP's, including Disturbed Area Stabilization, will be initiated in areas not already stabilized. The temporary sediment basin will be removed, and the location regraded to match preexisting contours, Topsoiled, mulched and permanent vegetation added. All accumulated sediment from temporary BMP's shall be spread out and seeded and mulched with seasonally appropriate permanent seed mixture per the Handbook.

All areas where permanent vegetation (PS) has been applied will be inspected and maintained until a permanent vegetation is established as defined by the Handbook, section 7.9 (Pages 113-121) and to the satisfaction of the Engineer. The TDEC Notice of Termination (NOT) shall not be submitted to the Environmental Field Office until established vegetation is achieved and is considered stabilized by the Engineer.

## **General Criteria and Requirements**

In addition to the measures described above, the following site practices shall be implemented where appropriate:

1. The design, inspection, and maintenance of BMP's must be prepared in accordance with good engineering practices, and at a minimum shall be consistent with the requirements and recommendations contained in the current edition of The State of Tennessee Erosion and Sediment Control Handbook (Current Edition) as well as the current State of Tennessee National Pollutant Discharge Elimination System (NPDES) Permit.
2. In addition, all control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications (where applicable) and good engineering practices in order to slow runoff so that rill and gully formation is prevented. When steep slopes and/or fine particle soils are present at the site, additional physical or chemical treatment of stormwater runoff may be required. Proposed physical and/or chemical treatment must be researched and applied according to the manufacturer's guidelines and fully described in the SWPPP. If periodic inspections or other information indicates a control has been used inappropriately, or incorrectly, the permittee must replace or modify the control for relevant site situations.
3. Erosion prevention and sediment control measures must be in place and functional before earth moving operations begin and must be constructed and maintained throughout the construction period. Temporary measures may be removed as needed to perform work, but must be replaced as soon as work activities requiring measures be removed are completed or before a rain event regardless of intensity or duration. Sediment will be removed from sediment control structures when fifty percent (50%) of the capacity is filled with sediment.
4. Any maintenance to temporary erosion prevention and sediment control BMP's as identified in inspections or by other means shall be accomplished before the next storm event, but in no case more than seven (7) days after the need is identified.
5. Pre-construction vegetative ground cover shall not be destroyed, removed, or disturbed more than fourteen (14) days prior to grading or earth moving unless the area is seeded and/or mulched or other temporary cover is installed.
6. Clearing and grubbing must be held to the minimum necessary for grading and equipment operation.
7. Stabilization measures shall be initiated as soon as possible in portions of the site where construction activities have temporarily or permanently ceased. Temporary or permanent soil stabilization must be completed not later than fourteen (14) days after the construction activity in that portion of the site has temporarily or permanently ceased. In the following situations, temporary stabilization measures are not required:
  - a. Where the initiation of stabilization measures is precluded by snow cover or frozen ground conditions or adverse soggy ground conditions, stabilization measures shall be initiated as soon as practicable; or
  - b. Where construction activity on that portion of the site is temporarily ceased, and earth disturbing activities will be resumed within fourteen (14) days.

- c. Steep slopes of three-to-one (3:1) or steeper (natural or created slopes of thirty-five percent [35%] grade or greater and an elevation change of twenty feet [20-feet] or more) shall be stabilized not later than seven (7) days after construction activity on the slope has temporarily or permanently ceased.
8. Discharges from any dewatering and cleaning activities must be held in settling basins, filtered, or chemically treated prior to release. Water must be discharged through a pipe, well-grassed or lined channel, or other equivalent means so that the discharge does not cause erosion and sedimentation.
9. Silt fence shall be installed along the base of all sloped cuts and fills, on the downhill sides of stockpiled soil, and along stream banks.
10. Sediment should be removed from sediment traps, silt fences, sedimentation ponds, and other sediment controls as necessary, and must be removed when design capacity has been reduced by fifty percent (50%).
11. Litter, construction debris, and construction chemicals exposed to stormwater shall be picked up prior to anticipated storm events or before being carried off the site by wind, or otherwise prevented from becoming a pollutant source for stormwater discharges. After use, materials used for erosion prevention and sediment control, such as silt fence, should be removed or otherwise prevented from becoming a pollutant source for stormwater discharges. Excavation, trenching, backfilling, and grading operations to elevations as needed to meet the requirements for construction shall be performed in such a manner as to cause the least amount of soil erosion and siltation.
12. Offsite vehicle tracking of sediments and the generation of dust shall be minimized.
13. Silt fence shall be installed along the base of all sloped cuts and fills, on the downhill sides of stockpiled soil, and along stream banks.
14. Stormwater runoff that is to be pumped from excavation and work areas must be held in settling basins and/or treated by filtration prior to its discharge into surface waters.
15. All concrete trucks leaving the site must clean the pouring chute at designated concrete truck washout (CO) area to be determined by the Engineer during construction.
16. There shall be no distinctly visible floating scum, oil, or other matter contained in the stormwater discharge.
17. The stormwater discharge must not cause an objectionable color contrast in the receiving stream.
18. The stormwater discharge must not contain concentrations of materials or substances that may be hazardous or otherwise detrimental to humans, livestock, wildlife, plant life, or fish and aquatic life in the receiving stream.
19. Trenches or pits shall be backfilled as soon as practical to reduce erosion potential.
20. Erosion control measures shall be removed/replaced when they have served their useful purpose.

21. If sediment escapes the permitted area, offsite accumulations of sediment that have not reached a stream must be removed before the next anticipated rain event so that it is not subsequently washed into storm drains and streams, and/or so that it does not pose a safety hazard, or at a frequency sufficient to minimize offsite impacts (e.g., fugitive sediment that has escaped the construction site and has collected in a street must be removed so that it is not subsequently washed into storm sewers and streams by the next rain and/or so that it does not pose a safety hazard to users of public streets).
22. Permittees shall not initiate remediation/restoration of a stream without consulting the TDEC Division of Water Resources (formerly the Division of Water Pollution Control – WPC) first. Arrangements concerning removal of sediment on adjoining property must be settled by the permittee with the adjoining land owner(s) prior to removal.
23. This SWPPP does not authorize access to private property. All temporary erosion prevention and sediment control measures should be placed within the property's boundaries, and inspected and maintained as required by the General Permit.
24. Permanent stabilization with perennial vegetation (using native herbaceous and woody plants where practicable) or other permanently stable, non-eroding surface shall replace any temporary measures as soon as practicable. Uncompacted gravel containing fines (silt and clay sized particles) or crusher runs will not be considered a non-eroding surface.
25. Permittees shall maintain a rain gauge and daily rainfall records at the site or use a reference site for a record of daily amount of precipitation. A Rain Gauge and Daily Rainfall Record prepared by the developer's duly representative shall be recorded in the SWPPP kept on site.

### **Buffer Zone Requirements**

According to Section 6.4.2. of the Tennessee Construction General Permit (No. TNR100000) the riparian buffer zone for receiving waters with unavailable parameters for siltation or designated as Exceptional Tennessee Waters should be established between the top of the stream bank and the disturbed construction area. Silt fence to serve as a visual barrier and a best management practice for sediment control will be installed along downgradient side of the area to be cleared for the installation under Suck Creek Road once clearing has been completed and before land disturbance is to commence for the installation of the culvert and permanent riprap outlet protection.

### **Vegetative Controls**

1. Pre-construction vegetative ground cover shall not be destroyed, removed, or disturbed for more than fourteen (14) calendar days prior to grading or earth moving.
2. Whenever possible, a buffer strip of vegetative cover shall be maintained adjacent to grading operations.
3. To the extent feasible, appropriate cover shall be applied within seven (7) days to areas that will remain unfinished for more than fourteen (14) calendar days.
4. Permanent soil stabilization shall be accomplished within fourteen (14) days after final grading or other earth work. Permanent stabilization with perennial vegetation (native grasses and/or herbaceous and



woody plants) shall replace any temporary measures as soon as practicable.

5. Seeding for permanent or temporary vegetative control shall as a minimum meet the schedule as shown in the Construction Plans

### **Post-Construction Stormwater Management**

Upon completion of the proposed construction activities and final stabilization, no additional stormwater management is planned, as the site will be considered stabilized and restored to its original state.

## **» 5. Site Assessment**

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Quality assurance of erosion prevention and sediment controls shall be done by performing site assessments at the construction site. Site assessments are conducted at specified outfalls involving drainage totaling ten (10) acres or more, or five (5) or more acres if draining to an impaired or exceptional quality waters, the 20.3 acre disturbed area on site will be assessed progressively as the construction progresses.

Typically, assessments shall occur within one (1) month of commencement of construction activities at each portion of the site related to current construction. However, this project is expected to be substantially completed within approximately three (3) months. If required, the site assessment shall be performed by individuals with one (1) of the following qualifications:

- A licensed professional engineer or landscape architect;
- A Certified Professional in Erosion and Sediment Control (CPESC); or
- A person who has successfully completed the State of Tennessee Department of Environment and Conservation (TDEC) "Design Principles for Erosion Prevention and Sediment Control for Construction Sites – Level II" course.

As a minimum, site assessment should be performed to verify the installation, functionality, and performance of the Erosion Prevention and Sediment Control (EPSC) measures designed in the Stormwater Pollution Prevention Plan (SWPPP). The site assessment should be performed with the Residential Project Representative (RPR), and should include a review and update (if applicable) of the SWPPP.

Modifications of plans and specifications for any building or structure, including the design of sediment basins or other sediment controls involving structural, hydraulic, hydrologic, or other engineering calculations shall be prepared by a licensed Profession Engineer (PE) or landscape architect, and stamped and certified in accordance with § The Tennessee Code Annotated, Title 62, Chapter 2, and the rules of the *Tennessee Board of Architectural and Engineering Examiners*.

The site assessment can take the place of one (1) of the two (2) weekly inspections requirement. The site assessment finding shall be documented, and the documentation kept with the SWPPP at the site. At a minimum, the documentation shall include information from the inspection form provided in Appendix A. The documentation must contain the printed name and signature of the individual performing the site assessment, and the following certification:

*"I certify under penalty of law that this report and all attachments are, 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 for knowing violations."*

The State of Tennessee Department of Environment and Conservation (TDEC) – Division of Water Resources (formerly the Division of Water Pollution Control WPC) may require additional site assessments to be performed if a site inspection by the Division personnel reveals site conditions that have the potential of causing pollution to the water of the State. The site assessment can take the place of one (1) of the twice weekly inspections requirement from Section 7.0 below.

## » 6. Inspections and Documentation

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Qualified personnel shall be designated to be responsible for erosion and sediment controls inspection on each project site. Inspections shall be performed at least two (2) times every calendar week and shall be performed at least seventy-two (72) hours apart. Where the site or portions of the site have been temporarily stabilized, or runoff is unlikely due to winter conditions, inspections only have to be performed upon one (1) occasion per month until thawing results in runoff or construction activity resumes. Written notification of the intent to conduct only monthly inspections and the justification for such request must be submitted to the local Tennessee Department of Environment and Conservation (TDEC) Environmental Field Office, located at 1301 Riverfront Parkway, Suite 206, Chattanooga, Tennessee 37402. Inspection requirements do not apply to definable areas that have already undergone final stabilization as determined by the Engineer.

### **Inspector Certification**

Inspectors performing the required twice-weekly inspections must have an active certification by completing the Fundamentals of Erosion Prevention and Sediment Control – Level I course. The engineer or landscape architect that prepared the drainage and structure design portion of the Stormwater Pollution Prevention Plan (SWPPP) must be a registered engineer in the State of Tennessee, a Certified Professional in Erosion and Sediment Control (CPESC), or have successfully completed the *Level II, Design Principles for Erosion Prevention and Sediment Control for Construction Sites* course to conduct the required quality assurance site assessments. A copy of the certification or training record for inspector certification shall be kept on-site with the SWPPP.

### **Scope of Inspections**

Each inspection shall encompass:

1. Disturbed areas of the construction site that have not been finally stabilized;
2. Areas used for storage of materials that are exposed to precipitation;
3. Structural control measures;
4. Locations where vehicles enter and exit the site; and
5. Each outfall.

Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion prevention and sediment control measures identified in this SWPPP shall be observed to ensure that they are operating correctly. Locations where vehicles enter and exit the site shall be inspected for evidence of offsite sediment tracking. Outfall points shall be inspected to determine whether erosion prevention and sediment control measures are effective in preventing significant impacts to receiving waters. Where discharge locations are inaccessible, nearby downstream locations shall be inspected.

Based on the results of each inspection, any inadequate control measures or control measures in disrepair shall be replaced, modified, or repaired as necessary, before the next rain event, if possible, but in no case more than seven (7) days after the need is identified. If warranted, the SWPPP shall be revised as appropriate, but in no case later than seven (7) days following the inspection. SWPPP revisions shall provide for timely implementation of any required changes, but in no case later than fourteen (14) days following the inspection where the need is identified.

### **Inspection Documentation**

All twice-weekly inspections shall be documented on the "Construction Stormwater Inspection Certification" form provided in Appendix A, and include:

- The scope of the inspection;
- Name(s) and title of personnel making the inspection;
- The date(s) of the inspection;
- Major observations relating to the implementation of the SWPPP, including the locations of discharges of sediment or other pollutants from the site; and
- Any control device that failed to operate as designed or proved inadequate for a particular location, and actions taken.

Inspection documentation will be maintained on site and made available to the division upon request. Inspection reports must be submitted to the division within ten (10) days of the request. Trained certified inspectors shall complete inspection documentation to the best of their ability. Falsifying inspection records or other documentation or failure to complete inspection documentation shall result in a violation of the Tennessee General National Pollution Discharge Elimination System (NPDES) Construction General Permit (TNCGP) for Discharges of Stormwater Associated with Construction Activities.

## **» 7. Releases In Excess of Reportable Quantities**

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The discharge of hazardous substances or oil in the stormwater discharge(s) from this site shall be prevented or minimized in accordance with the SWPPP. No equipment shall be staged or parked in the vicinity of streams, wetlands, or stormwater conveyances. Equipment maintenance should not be performed in the vicinity of streams, wetland areas, or stormwater conveyances unless necessitated by breakdown. Fueling should not be performed directly adjacent to the stream or stormwater conveyance. Rather, move equipment far enough away from these features to allow for deployment of spill containment devices. Leaks and spills from equipment maintenance shall be removed, containerized, and properly disposed of, as soon as they are discovered. Spill kits shall be staged and maintained in the construction area at all times during construction.

Where a release containing a hazardous substance in an amount equal to or in excess of a reportable quantity

established under either 40 CFR 117 or 40 CFR 302 occurs during a twenty-four (24) hour period:

1. The permittee is required to notify the National Response Center (NRC) at 800-424-8802 and the Tennessee Emergency Management Agency at 800-262-3300 (emergency) or 800-262-3400 (non-emergency) in accordance with requirements of 40 CFR 117 or 40 CFR 302 as soon as he or she has knowledge of the discharge;
2. The permittee shall submit within fourteen (14) days of knowledge of the release a written description of the release (including the type and estimate of the amount of material released), the date that such release occurred, the circumstances leading to the release, what actions were taken to mitigate the effects of the release, and steps to be taken to minimize the chance for future occurrences to the appropriate TDEC Environmental Field Office; and
3. The SWPPP must be modified within fourteen (14) days of knowledge of the release to provide a description of the release, the circumstances leading to the release, and the date of the release. In addition, the SWPPP must be reviewed to identify measures to prevent the reoccurrence of such releases and to respond to such releases and modified where appropriate.

## » 8. Notice of Termination

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Permittees wishing to terminate coverage under this permit must submit a completed notice of termination (NOT) within thirty (30) days of final stabilization for a permitted project. Failure to submit a NOT is a violation of permit conditions. The notice shall be submitted on the State of Tennessee Department of Environment and Conservation (TDEC) NOT form provided in Appendix A (or copy thereof). TDEC will review NOT's for completeness and accuracy and, when necessary, investigate the proposed termination of coverage.

The primary permittee must request termination of coverage when the site, or portion of the site, has been finally stabilized and all stormwater discharges from construction activities covered by the Notice of Intent (NOI) and the Stormwater Pollution Prevention Plan (SWPPP) are eliminated. Compliance with this SWPPP and the Tennessee General National Pollution Discharge Elimination System (NPDES) Construction General Permit (TNCGP) for Discharges of Stormwater Associated with Construction Activities is required until the NOT has been submitted. As long as there is a portion of a site that has not been completed, and is therefore not finally stabilized, one or more permittees must retain coverage for stormwater discharges from the unfinished portion or portions of the site. Contractors must request a termination of coverage when they are no longer operators at the construction site.

## » 9. Documents and Record Keeping

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### Site Posting

The permittee shall post a notice near the main entrance of the site accessible to the public with the following information:

1. A copy of the Notice of Coverage (NOC) with the National Pollution Discharge Elimination System

(NPDES) tracking number for the construction project;

2. Name, company name, e-mail address (if available), telephone number, and address of the project site owner or a local contact person;
3. A brief description of the project; and
4. The location of the Stormwater Pollution Prevention Plan (SWPPP).

The notice must be maintained in a legible condition. If posting this information near a main entrance is infeasible due to safety concerns, or the location is not accessible to the public, the notice shall be posted in a local public building. If the construction project is near a linear construction project (e.g.: a pipeline, highway, etc.), the notice must be placed in a publicly accessible location near where construction is actively underway and moved as necessary.

This permit does not provide the public with any right to trespass on a construction site for any reason, including inspection of a site. This permit does not require that permittees allow members of the public access to a construction site.

## **Documents**

The permittee shall also retain the following items/information in an appropriate location on-site:

1. The location of the SWPPP if the site is inactive or does not have an on-site location to store the plan;
2. A rain gauge;
3. A copy of twice weekly inspection reports; and
4. A documentation of quality assurance site assessments;
5. A copy of the site inspector's Fundamentals of Erosion Prevention and Sediment Control – Level 1 certification or equivalent certification.

The permittee shall retain copies of Stormwater Pollution Prevention Plans (SWPPP's) and all reports required by the Tennessee Construction General Permit (TNCGP), and records of all data used to complete the Notice of Intent (NOI) and the Notice of Termination (NOT) to be covered by this permit, for a period of at least three (3) years from the date the NOT is submitted. This period may be extended by written request to the Director of the Division.

## **Accessibility and Retention of Records**

The permittee shall retain a copy of this SWPPP (including a copy of the TNCGP) at the construction site or other local location accessible to the Director and the public from the date construction commences to the date of termination of coverage. Permittees with day-to-day operational control over SWPPP implementation shall have a copy of the SWPPP available at a central location on-site for the use of all operators and those identified as having responsibilities under the plan whenever they are on the construction site.

Once coverage has been terminated, the permittee shall maintain a copy of all records for a period of three (3) years.

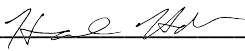
# »10. Certifications

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The SWPPP shall be signed by the operators in accordance with Subpart 8.7, and in applicable, certified according to requirements in Section 5.2 of the General Permit. Signatures on electronically submitted documents are deemed equivalent to original signatures. A SWPPP that does not bear a valid signature will be deemed incomplete.

## Primary Permittees

I certify under penalty of law that this document and all attachments were prepared 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 the Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under the penalty of perjury.

Printed Name: Harrison Hale  
Title: Owner  
Signature:   
Title: \_\_\_\_\_ Date: 11/02/2023

## Secondary Permittees

I certify under penalty of law that I have reviewed this document, any attachments, and the SWPPP referenced above. Based on my inquiry of the construction site owner/developer identified above and/or my inquiry of the person directly responsible for assembling this NOI and SWPPP, I believe information submitted accurate. I am aware that this NOI, if approved, makes the above-described construction activity subject to NPDES permit number TNR100000, and that certain of my activities on-site are thereby regulated. I am aware that there are significant penalties, including the possibility of fine and imprisonment for knowing violations, and the failure to comply with these permit requirements. As specified in the Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under the penalty of perjury.

Printed Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Signature: \_\_\_\_\_  
Title: \_\_\_\_\_ Date: \_\_\_\_\_

## **Appendix A:**

**TDEC – Notice of Intent (NOI) for General NPDES Permit for Stormwater Discharge from Construction Activities (TNR100000)**

**TDEC- Notice of Coverage (NOC) (PENDING)**

**TDEC – Notice of Termination (NOT)**

**TDEC- Construction Stormwater Inspection Certification  
(Twice-Weekly Inspections)**





**TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION**  
**DIVISION OF WATER RESOURCES**  
 William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11<sup>th</sup> Floor  
 Nashville, TN 37243  
 Toll Free Number: 1-888-891-8332 (TDEC)

**NOTICE OF INTENT (NOI) FOR GENERAL NPDES PERMIT FOR  
 STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES (TNR100000)**

<b>Site or Project Name:</b>		<b>NPDES Tracking Number: TNR</b>	
Street Address including city or zip code or Location:		Construction Start Date:	
Site Description:		Estimated End Date:	
County(ies):		Latitude (dd.dddd):	
MS4 Jurisdiction (if applicable):		Longitude (-dd.dddd):	
		Acres Disturbed:	
		Total Acres:	
Are there any streams <input type="checkbox"/> and/or wetlands <input type="checkbox"/> on or adjacent to the construction site? If wetlands are located on-site and may be impacted, attach wetlands delineation report. If an Aquatic Resource Alteration Permit has been obtained for this site, what is the permit number? ARAP Number:			
Receiving waters:			
Include the SWPPP with the NOI <input type="checkbox"/> SWPPP Included		Include a site location map <input type="checkbox"/> Map Included	

<b>Name of Site Owner or Developer (Site-Wide Permittee):</b> (correct legal name of person, company, or entity that has operational or design control over construction plans and specifications)			
For corporate entities only, provide the Tennessee Secretary of State (SOS) Control Number: 001282388			
Site Owner or Developer Contact Name: (individual responsible for site)		Title or Position: (the party who signs the certification below):	
Mailing Address:	City:	State:	Zip:
Phone:	E-mail:		

Optional Contact Name:		Title or Position:	
Mailing Address:	City:	State:	Zip:
Phone:	E-mail:		

**Owner or Developer Certification:** (must be signed by president, vice-president or equivalent, or ranking elected official) (Primary Permittee)

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.

Owner or Developer Name: (print or type):	Signature:	Date:
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**Contractor(s) Certification:** (must be signed by president, vice-president or equivalent, or ranking elected official) (Secondary Permittee)

I certify under penalty of law that I have reviewed this document, any attachments, and the SWPPP referenced above. Based on my inquiry of the construction site owner/developer identified above and/or my inquiry of the person directly responsible for assembling this NOI and SWPPP, I believe the information submitted is accurate. I am aware that this NOI, if approved, makes the above-described construction activity subject to NPDES permit number TNR100000, and that certain of my activities on-site are thereby regulated. I am aware that there are significant penalties, including the possibility of fine and imprisonment for knowing violations, and for failure to comply with these permit requirements. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Primary contractor name, address, and SOS control number (if applicable): (print or type)	Signature:	Date:
Primary contractor name, address, and SOS control number (if applicable): (print or type)	Signature:	Date:
Primary contractor name, address, and SOS control number (if applicable): (print or type)	Signature:	Date:

**NOTICE OF INTENT (NOI) FOR GENERAL NPDES PERMIT FOR  
STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES (TNR100000)**

Purpose of this form - A completed notice of intent (NOI) must be submitted to obtain coverage under the Tennessee General NPDES Permit for Discharges of Stormwater Associated with Construction Activity (permit). **Requesting coverage under this permit means that an applicant has obtained and examined a copy of this permit, and thereby acknowledges applicant's claim of ability to be in compliance with permit terms and conditions.** This permit is required for stormwater discharge(s) from construction activities including clearing, grading, filling, and excavating (including borrow pits) of one or more acres of land. This form should be submitted at least 30 days prior to the commencement of land disturbing activities, or no later than 48 hours prior to when a new operator assumes operational control over site specifications or commences work at the site.

The appropriate permit application fee must accompany the NOI and is based on total acreage to be disturbed by an entire project, including any associated construction support activities (e.g., equipment staging yards, material storage areas, excavated material disposal areas, borrow or waste sites):

(i) Projects equal to or greater than 150 acres	\$10,000
(ii) Projects equal to or greater than 50 acres and less than 150 acres	\$6,000
(iii) Projects equal to or greater than 20 acres and less than 50 acres	\$3,000
(iv) Projects equal to or greater than 5 acres and less than 20 acres	\$1,000
(v) Projects equal to or greater than 1 acre and less than 5 acres	\$250
(vi) Projects seeking subsequent coverage under an actively covered larger common plan of development or sale	\$100

There is no fee for sites less than 1 acre. A separate annual maintenance fee is also required for construction activities that exceed 1 year under general permit coverage. Tennessee Rules, Chapter 0400-40-11-.02(b)(12)).

Who must submit the NOI form? Per Section 2 of the permit, all site operators must submit an NOI form. "Operator" for the purpose of this permit and in the context of stormwater associated with construction activity means any person associated with a construction project who meets either or both of the following two criteria: (1) The person has operational or design control over construction plans and specifications, including the ability to make modifications to those plans and specifications. This person is typically the owner or developer of the project or a portion of the project (e.g. subsequent builder), or the person that is the current landowner of the construction site. This person is considered the primary permittee; or (2) The person has day-to-day operational control of those activities at a project which are necessary to ensure compliance with a SWPPP for the site or other permit conditions. This person is typically a contractor or a commercial builder who is hired by the primary permittee and is considered a secondary permittee.

Owners, developers, and all contractors that meet the definition of the operator in subsection 2.2 of the permit shall apply for permit coverage on the same NOI, insofar as possible. After permit coverage has been granted to the primary permittee, any separate or subsequent NOI submittals must include the site's previously assigned permit tracking number and the project name. The site-wide site-specific SWPPP shall be prepared in accordance with the requirements of part 5 of the permit and must be submitted with the NOI unless the NOI being submitted is to only add a contractor (secondary permittee) to an existing coverage. Artificial entities (e.g., corporations or partnerships excluding entities not required to register) must submit the TN Secretary of State, Division of Business Services, control number. The Division reserves the right to deny coverage to artificial entities that are not properly registered and in good standing with the TN Secretary of State.

Notice of Coverage - The division will review the NOI for completeness and accuracy and prepare a notice of coverage (NOC). Stormwater discharge from the construction site is authorized as of the effective date of the NOC.

Complete the form - Type or print clearly, using ink and not markers or pencil. Answer each item or enter "NA," for not applicable, if a particular item does not fit the circumstances or characteristics of your construction site or activity. If you need additional space, attach a separate piece of paper to the NOI form. **The NOI will be considered incomplete without a permit fee, a map, and the SWPPP.**

Describe and locate the project - Use the legal or official name of the construction site. If a construction site lacks street name or route number, give the most accurate geographic information available to describe the location (reference to adjacent highways, roads, and structures, e.g., intersection of state highways 70 and 100). Latitude and longitude (expressed in decimal degrees) of the center of the site can be located on USGS quadrangle maps. The maps can be obtained at the USGS World Wide Web site: <http://www.usgs.gov/>; latitude and longitude information can be found at numerous other web sites. Attach a copy of a portion of a 7.5-minute topographic map, a city map, or a county map showing location of site, with boundaries at least one mile outside the site boundaries. Provide estimated starting date of clearing activities and completion date of the project, and an estimate of the number of acres of the site on which soil will be disturbed, including borrow areas, fill areas, stockpiles and the total acres. For linear projects, give location at each end of the construction area.

Give name of the receiving waters - Trace the route of stormwater runoff from the construction site and determine the name of the river(s), stream(s), creek(s), wetland(s), lake(s) or any other water course(s) into which the stormwater runoff drains. Note that the receiving water course may or may not be located on the construction site. If the first water body receiving construction site runoff is unnamed ("unnamed tributary"), determine the name of the water body that the unnamed tributary enters.

**An ARAP may be required - If your work will disturb or cause alterations of a stream or wetland, you must obtain an appropriate Aquatic Resource Alteration Permit (ARAP).** If you have a question about the ARAP program, contact your local Environmental Field Office (EFO).

Submitting the form and obtaining more information - Note that this form must be signed by the company President, Vice-President, or a ranking elected official in the case of a municipality, for details see subpart 2.5. For more information, contact your local EFO at the toll-free number 1-888-891-8332 (TDEC). Submit the completed NOI form (keep a copy for your records) to the appropriate EFO for the county(ies) where the construction activity is located, addressed to **Attention: Stormwater NOI Processing** or use MyTDEC Forms for electronic submittal.

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 Parkway, Suite 206	37402-2013
Nashville	711 R S Gass Boulevard	37243	Knoxville	3711 Middlebrook Pike	37921
Columbia	1421 Hampshire Pike	38401	Johnson City	2305 Silverdale Road	37601



**TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION**  
**DIVISION OF WATER RESOURCES**  
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 Nashville, TN 37243  
 Toll Free Number: 1-888-891-8332 (TDEC)

**NOTICE OF INTENT (NOI) FOR GENERAL NPDES PERMIT FOR  
 STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES (TNR100000)**

<b>Site or Project Name:</b>		<b>NPDES Tracking Number: TNR</b>	
Street Address including city or zip code or Location:		Construction Start Date:	
Site Description:		Estimated End Date:	
County(ies):		MS4 Jurisdiction (if applicable):	Latitude (dd.dddd):
			Longitude (-dd.dddd):
			Acres Disturbed:
			Total Acres:
Are there any streams <input type="checkbox"/> and/or wetlands <input type="checkbox"/> on or adjacent to the construction site? If wetlands are located on-site and may be impacted, attach wetlands delineation report. If an Aquatic Resource Alteration Permit has been obtained for this site, what is the permit number? ARAP Number:			
Receiving waters:			
Include the SWPPP with the NOI <input type="checkbox"/> SWPPP Included		Include a site location map <input type="checkbox"/> Map Included	

<b>Name of Site Owner or Developer (Site-Wide Permittee):</b> (correct legal name of person, company, or entity that has operational or design control over construction plans and specifications)			
For corporate entities only, provide the Tennessee Secretary of State (SOS) Control Number:			
Site Owner or Developer Contact Name: (individual responsible for site)		Title or Position: (the party who signs the certification below):	
Mailing Address:	City:	State:	Zip:
Phone:	E-mail:		

Optional Contact Name:		Title or Position:	
Mailing Address:	City:	State:	Zip:
Phone:	E-mail:		

**Owner or Developer Certification:** (must be signed by president, vice-president or equivalent, or ranking elected official) (Primary Permittee)

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.

Owner or Developer Name: (print or type):	Signature:	Date:
---	------------	-------

**Contractor(s) Certification:** (must be signed by president, vice-president or equivalent, or ranking elected official) (Secondary Permittee)

I certify under penalty of law that I have reviewed this document, any attachments, and the SWPPP referenced above. Based on my inquiry of the construction site owner/developer identified above and/or my inquiry of the person directly responsible for assembling this NOI and SWPPP, I believe the information submitted is accurate. I am aware that this NOI, if approved, makes the above-described construction activity subject to NPDES permit number TNR100000, and that certain of my activities on-site are thereby regulated. I am aware that there are significant penalties, including the possibility of fine and imprisonment for knowing violations, and for failure to comply with these permit requirements. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Primary contractor name, address, and SOS control number (if applicable): (print or type)	Signature:	Date:
Primary contractor name, address, and SOS control number (if applicable): (print or type)	Signature:	Date:
Primary contractor name, address, and SOS control number (if applicable): (print or type)	Signature:	Date:



**TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION (TDEC)**  
 DIVISION OF WATER RESOURCES  
 William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11<sup>th</sup> Floor  
 Nashville, Tennessee 37243  
 1-888-891-8332 (TDEC)

**General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)**  
**Construction Stormwater Inspection Certification (Inspection Form)**

<b>Site or Project Name:</b>		<b>NPDES Tracking Number: TNR</b>
Primary Permittee Name:		Date of Inspection:
Current approximate disturbed acreage:	Has rainfall been checked/documented daily? <input type="checkbox"/> Yes <input type="checkbox"/> No	Name of Inspector:
Current weather/ground conditions:	Rainfall total since last inspection:	Inspector's TNEPSC Certification Number:
Site Assessment <input type="checkbox"/> Yes <input type="checkbox"/> No	Assessor's TN PE registration number:	Assessor's TNEPSC Level II/CPESC number:

<b>Check the box if the following items are on-site:</b>	
<input type="checkbox"/>	Notice of Coverage (NOC)
<input type="checkbox"/>	Stormwater Pollution Prevention Plan (SWPPP)
<input type="checkbox"/>	Weekly inspection documentation
<input type="checkbox"/>	Site contact information
<input type="checkbox"/>	Rain Gage
Off-site Reference Rain Gage Location	

**Best Management Practices (BMPs):**

<b>Are the Erosion Prevention and Sediment Controls (EPSCs) functioning correctly?</b>			
If "No," describe below in Comment Section			
1.	Are all applicable EPSCs installed and maintained per the SWPPP per the current phase?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
2.	Are EPSCs functioning correctly at all disturbed areas/material storage areas? (permit section 5.5.3)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
3.	Are EPSCs functioning correctly at outfall/discharge points such that there is no objectionable color contrast in the receiving stream, and no other water quality impacts? (permit section 5.5.3.5 and 6.3.2)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
4.	Are EPSCs functioning correctly at ingress/egress points such that there is no evidence of track-out? (permit section 5.5.3.1)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
5.	If applicable, have discharges from dewatering activities been managed by appropriate controls? (permit section 4.1.3) If "No," describe below the measure to be implemented to address deficiencies.	<input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
6.	If construction activity at any location on-site has temporarily/permanently ceased, was the area stabilized within 14 days? (permit section 5.5.3.4) If "No," describe below each location and measures taken to stabilize the area(s).	<input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
7.	Have pollution prevention measures been installed, implemented, and maintained to minimize the discharge of pollutants from wash waters, exposure of materials and discharges from spills and leaks per section 4.1.4? If "No," describe below the measure to be implemented to address deficiencies.	<input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No



## Construction Stormwater Inspection Certification Form (Inspection Form)

### Purpose of this form / Instructions

An inspection, as described in subsection 5.5.3.9. of the General Permit for Stormwater Discharges from Construction Activities ("Permit"), shall be performed at the specified frequency and documented on this form. Inspections shall be performed at least 72 hours apart. Where sites or portion(s) of construction sites have been temporarily stabilized, or runoff is unlikely due to winter conditions (e.g., site covered with snow or ice), such inspection only has to be conducted once per month until thawing results in runoff or construction activity resumes.

Inspections can be performed by:

- a) a person with a valid certification from the "Fundamentals of Erosion Prevention and Sediment Control Level I" course,
- b) a licensed professional engineer or landscape architect,
- c) a Certified Professional in Erosion and Sediment Control (CPESC), or
- d) a person who has successfully completed the "Level II Design Principles for Erosion Prevention and Sediment Control for Construction Sites" course.

Qualified personnel, as defined in subsection 5.5.3.10 of the Permit (provided by the permittee or cooperatively by multiple permittees) shall inspect disturbed areas of the construction site that have not been permanently stabilized, areas used for storage of materials that are exposed to precipitation, structural control measures, locations where vehicles enter or exit the site, and each outfall.

Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the site's drainage system. Erosion prevention and sediment control measures shall be observed to ensure that they are operating correctly.

Outfall points (where discharges leave the site and/or enter waters of the state) shall be inspected to determine whether erosion prevention and sediment control measures are effective in preventing significant impacts to receiving waters. Where discharge locations are inaccessible, nearby downstream locations shall be inspected. Locations where vehicles enter or exit the site shall be inspected for evidence of offsite sediment tracking.

Based on the results of the inspection, any inadequate control measures or control measures in disrepair shall be replaced or modified, or repaired as necessary, before the next rain event if possible, but in no case more than 7 days after the need is identified.

Based on the results of the inspection, the site description identified in the SWPPP in accordance with section 5.5.1 of the Permit and pollution prevention measures identified in the SWPPP in accordance with section 5.5.2 of the Permit, shall be revised as appropriate, but in no case later than 7 days following the inspection. Such modifications shall provide for timely implementation of any changes to the SWPPP, but in no case later than 14 days following the inspection.

All inspections shall be documented on this Construction Stormwater Inspection Certification form. Alternative inspection forms may be used as long as the form contents and the inspection certification language are, at a minimum, equivalent to the Division's form and the permittee has obtained a written approval from the Division to use the alternative form. Inspection documentation will be maintained on site and made available to the Division upon request. Inspection reports must be submitted to the Division within 10 days of the request.

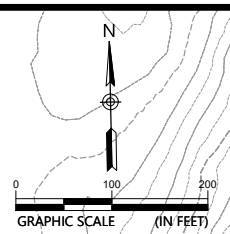
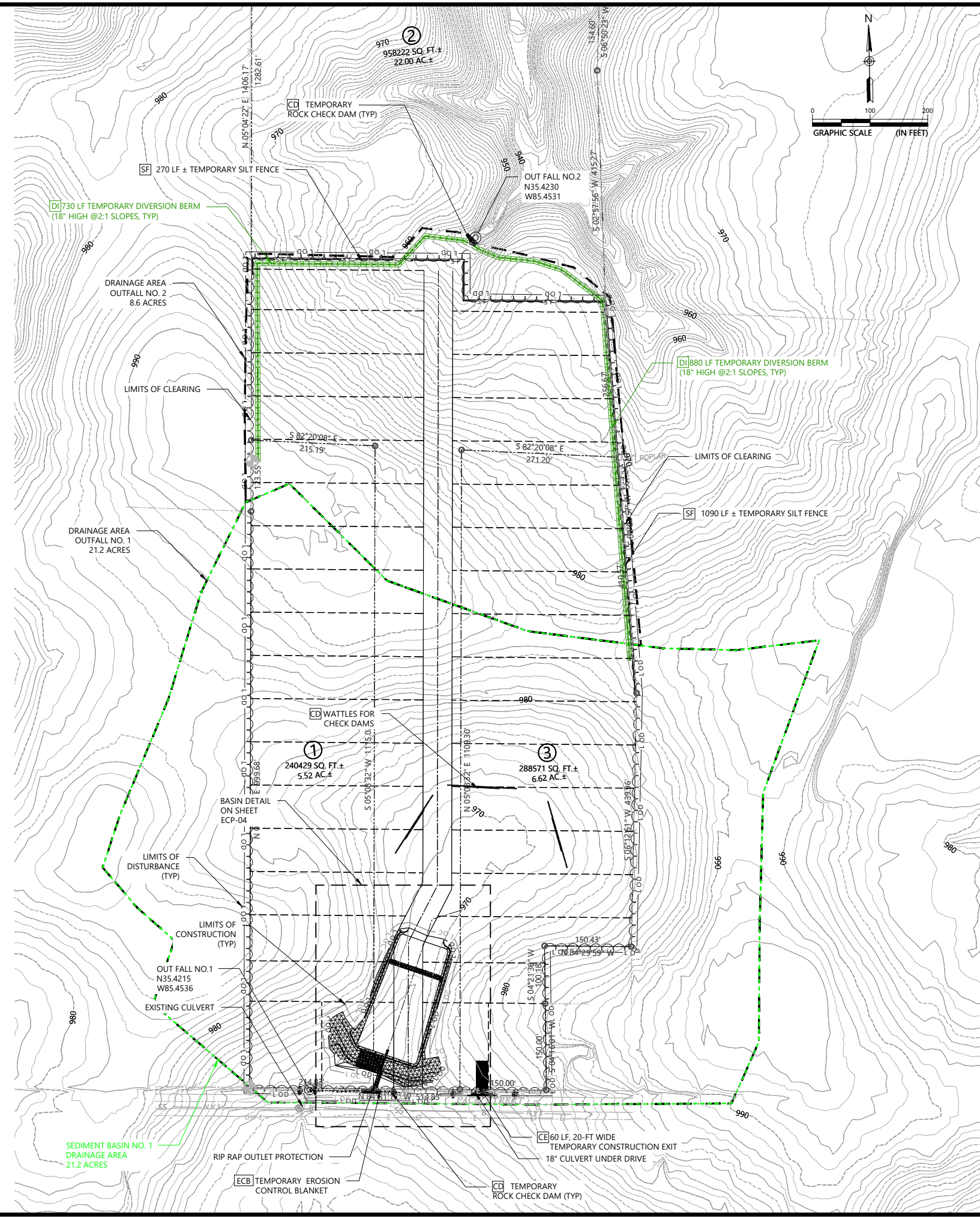
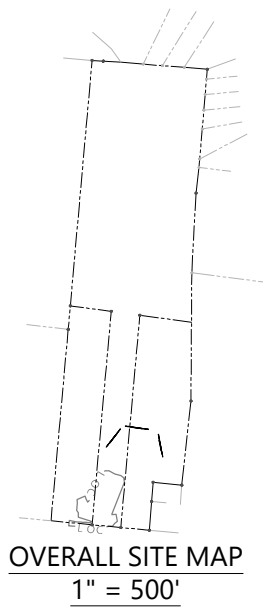
Trained certified inspectors shall complete inspection documentation to the best of their ability. Falsifying inspection records or other documentation or failure to complete inspection documentation shall result in a violation of this permit and any other applicable acts or rules.

# **Appendix B:**

## **Construction Plans**

**EROSION PREVENTION AND SEDIMENT CONTROL GENERAL NOTES:**

- A. THE TOTAL DISTURBANCE AREA ANTICIPATED FOR ALL WORK ACTIVITIES IS 21.3 ACRES, MORE OR LESS, WHICH INCLUDES WORK TO BE AS NEEDED FOR ACCESS IN THE ROADWAY RIGHT-OF-WAY.
- B. THE WORK SHALL BE LIMITED TO TREE CLEARING ACTIVITIES ONLY WHICH IS TO INCLUDE CUTTING OF TREES WITHOUT ALLOWING THE REMOVAL OF STUMPS AND GRADING/EXPOSING DIRT.
- C. FOR TOTAL DISTURBANCE AREAS OF ONE ACRE OR GREATER, ALL WORK TO BE PERFORMED AS DEPICTED IN THE CONSTRUCTION PLANS SHALL BE CONDUCTED IN ACCORDANCE WITH THE GENERAL TDEC PERMIT TN100000 AND THE SITE SPECIFIC STORM WATER POLLUTION PREVENTION PLAN (SWPPP) PREPARED AND APPROVED FOR THE DEVELOPMENT UNDER THE NOTICE OF COVERAGE (NOC) ISSUED BY TDEC.
- D. FOR TOTAL DISTURBANCE AREAS OF LESS THAN ONE ACRE, ALL WORK TO BE PERFORMED AS DEPICTED IN THE CONSTRUCTION PLANS SHALL BE CONSTRUCTED IN ACCORDANCE WITH LATEST TDEC EROSION CONTROL HANDBOOK AND THE BEST MANAGEMENT PRACTICES AS DEPICTED IN THE DRAWINGS.
- E. THE EROSION PREVENTION AND SEDIMENT CONTROL MEASURES DEPICTED IN THE DRAWING WERE DEVELOPED USING BEST MANAGEMENT PRACTICES BASED FIELD INFORMATION. ADDITIONAL MEASURES MAY BE NECESSARY TO PREVENT SEDIMENT FROM LEAVING THE SITE AS WORK PROGRESSES. ADDITIONAL MEASURES NEEDED WILL BE CONSIDERED INCIDENTAL WITH NO ADDITIONAL COMPENSATION MADE BY THE OWNER.
- F. WORK TO INCLUDE ALL INSPECTIONS, MAINTENANCE, AND REPAIRS AS REQUIRED TO PREVENT EROSION AND CONTROL SEDIMENT AS A RESULT OF THE WATER MAIN INSTALLATION IN ACCORDANCE TO THE GENERAL PERMIT IF APPLICABLE.
- G. THE CONTRACTOR SHALL MAINTAIN PROPER DRAINAGE OF THE FLOWS UPSTREAM OF THE CONSTRUCTION SITES. ALL TRENCHES ARE TO BE BACKFILLED IMMEDIATELY AFTER INSTALLATION. FOLLOWING THE BACKFILLING OF THE TRENCH, THE GROUND SURFACE WILL BE ROUGH GRADED TO THE EXISTING CONTOURS TO ALLOW FOR PROPER DRAINAGE.
- H. SLOPES WITH A GRADE 3 (H) TO 1 (V) OR STEEPER WILL REQUIRE SPECIAL TREATMENT SUCH AS TEMPORARY WATER DIVERSION BERMS, SODDING, AND/OR THE USE OF EROSION CONTROL MATTING (ECM) TO PROPERLY STABILIZE THE SLOPES. ALL ECMS TO BE INSTALLED AND PROPERLY ANCHORED PER MANUFACTURER'S RECOMMENDATIONS. ALL TEMPORARY WATER DIVERSION BERMS TO BE REMOVED ONCE SLOPES HAVE BEEN STABILIZED WITH PERMANENT VEGETATION.
- I. PROPERLY INSTALLED SILT BARRIERS (SILT FENCE, TUBES & WATTLES, STRAW BALES, ETC.) SHALL BE USED FOR EROSION/SEDIMENT CONTROL AS REQUIRED TO PREVENT SILT FROM LEAVING THE CONSTRUCTION SITE, AND BE PROPERLY MAINTAINED UNTIL PERMANENT VEGETATIVE COVER HAS BEEN SUCCESSFULLY ESTABLISHED.
- J. SILT FROM CONSTRUCTION OPERATIONS SHALL NOT BE PERMITTED TO ENTER STORM SEWER SYSTEMS. WHEN CONSTRUCTION OCCURS NEAR OR AFFECTS STORM SEWERS INLETS, EROSION CONTROL MEASURES SUCH AS INLET FILTERS AND STRAW BALES WILL BE USED AND MAINTAINED TO PREVENT SILT FROM ENTERING THE STORM SEWERS. SUCH EROSION CONTROL MEASURES SHALL NOT IMPEDE THE NORMAL FLOW OF TRAFFIC.
- K. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS POSSIBLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED WHICH REQUIRES TEMPORARY OR PERMANENT SOIL STABILIZATION AT THE CONSTRUCTION SITE MUST BE COMPLETED NO LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.
- L. ALL DISTURBED AREAS RECEIVING PERMANENT VEGETATIVE STABILIZATION SHALL RECEIVE A 4-INCH MINIMUM THICKNESS VEGETATIVE LAYER PRIOR TO SEEDING AND MULCHING OR APPLYING EROSION CONTROL MATTING.
- M. REMOVE ONLY THOSE TREES, SHRUBS, AND GRASSES THAT MUST BE REMOVED FOR CONSTRUCTION; PROTECT THE REST TO PRESERVE THEIR AESTHETIC AND EROSION CONTROL VALUES.
- N. ALL DEWATERING FROM TRENCHES ARE TO BE SETTLED IN SILTATION BASINS OR DIRECTED THROUGH FILTERS BEFORE DISCHARGE TO STABILIZED SITES, SUCH AS STREAMS, WATER BODIES, OR STORM SEWERS; NOT ONTO EXPOSED SOILS, STREAM BANKS, OR ANY OTHER SITES WHERE THE FLOW COULD CAUSE EROSION.
- O. NO CHEMICALS, FUELS, LUBRICANTS, BITUMINOUS MATERIAL, RAW SEWAGE, TREES, BRUSH, OR DEBRIS FROM DEMOLITION OR EXCAVATION ACTIVITIES WILL BE DISCHARGED OR DISPOSED OF ONTO OR ALONGSIDE ANY STREAM, WATER BODY, FLOODPLAIN, OR WETLAND UNDER ANY CIRCUMSTANCES.
- P. SURFACE DRAINAGE: CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SURFACE DRAINAGE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING ITEMS:
  - PROVISION, INSTALLATION, MAINTENANCE, AND REMOVAL OF TEMPORARY CULVERTS AT ACCESS DRIVE AND CONSTRUCTION EXIT LOCATIONS.
  - MAINTAIN OR IMPROVE EXISTING ROADSIDE DITCHES TO CARRY STORM WATER FLOWS THROUGHOUT THE DURATION OF THE PROJECT.
- N. DISPOSAL OF EXCAVATED MATERIAL IN WETLANDS OR FLOODPLAINS REGARDLESS OF PERMISSION GRANTED BY PROPERTY OWNER IS STRICTLY PROHIBITED.
- O. PUMPING OF SEDIMENT-LADEN WATER FROM TRENCHES OR OTHER EXCAVATIONS DIRECTLY INTO ANY SURFACE WATERS, ANY STREAM CORRIDORS, ANY WETLANDS, OR STORM SEWERS IS PROHIBITED.
- P. DISCHARGING POLLUTANTS SUCH AS CHEMICALS, FUELS, LUBRICANTS, BITUMINOUS MATERIALS, RAW SEWAGE AND OTHER HARMFUL WASTES INTO OR ALONGSIDE OF RIVERS, STREAMS, IMPOUNDMENTS, OR INTO NATURAL OR MAN-MADE WET WEATHER CONVEYANCES IS PROHIBITED.
- Q. PERMANENT OR UNSPECIFIED ALTERATION OF THE FLOW LINE OF A STREAM, DAMAGING VEGETATION OUTSIDE OF THE CONSTRUCTION AREA, DISPOSAL OF TREES, BRUSH, AND OTHER DEBRIS IN ANY STREAM OR STORM WATER CONVEYANCE CORRIDOR IS PROHIBITED.



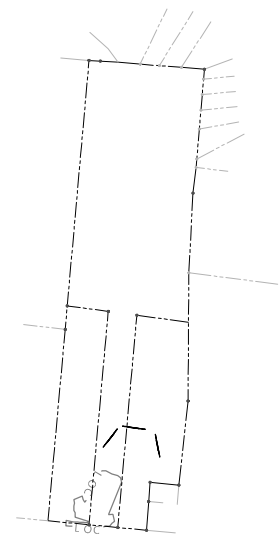
**ESPC LEGEND:**

CE	TEMPORARY CONSTRUCTION EXIT	
CD	TEMPORARY ROCK CHECK DAM	
CD	TEMPORARY TUBES AND STRAW WATTLES FOR CHECKS DAMS	
ECM	TOPSOIL, PERMANENT VEGETATION, & EROSION CONTROL MATTING	
ECB	TEMPORARY EROSION CONTROL BLANKET	
PS	TOP SOIL, PERMANENT VEGETATION, AND STRAW MULCH	
TS	TEMPORARY VEGETATION AND STRAW MULCH (AS REQUIRED BY PERMIT)	
SF	TEMPORARY SILT FENCE	
DI	TEMPORARY DIVERSION BERM	
	LIMITS OF CLEARING	

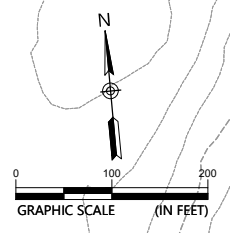
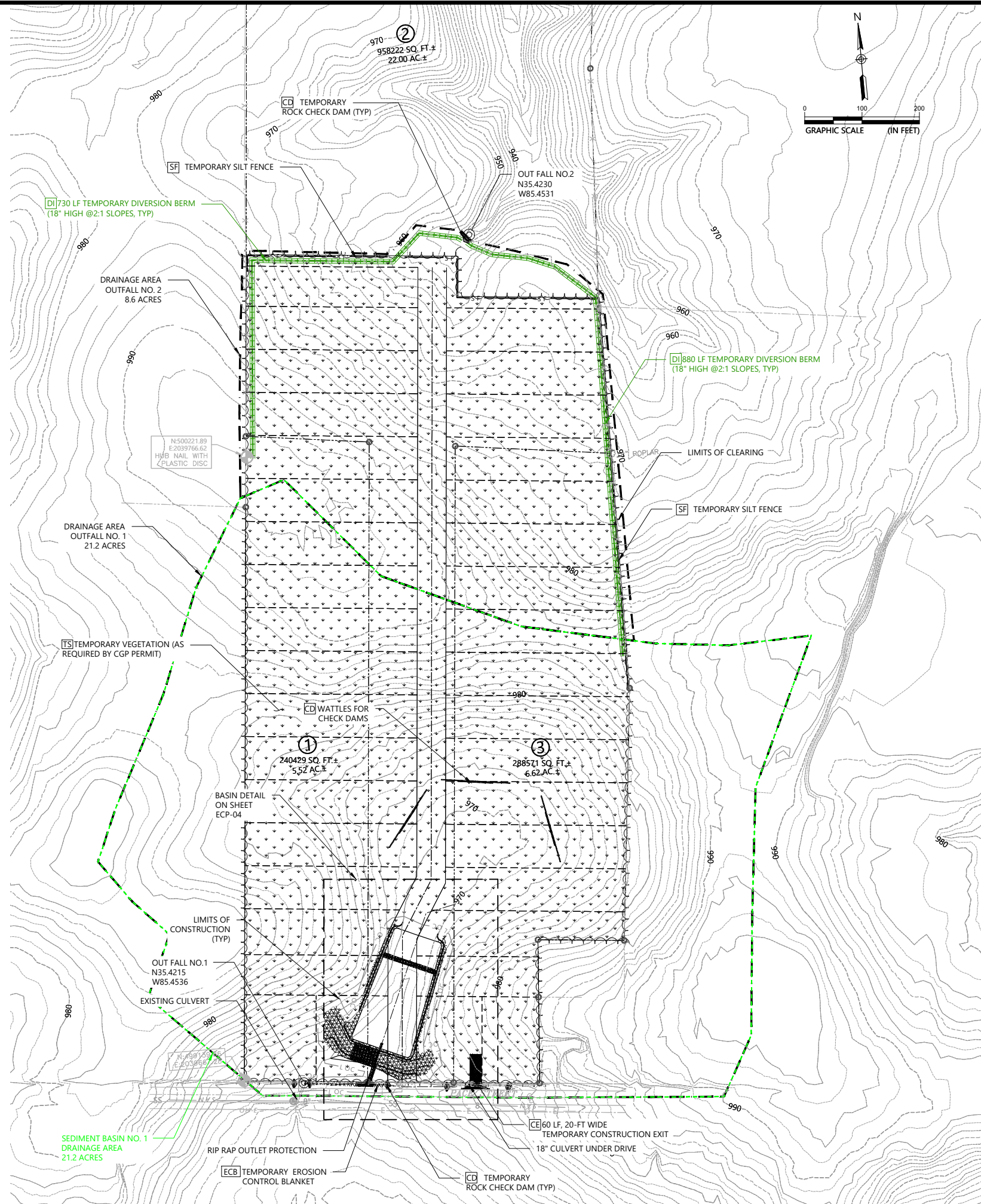
NOTE: SEE SHEET EC-05 FOR DETAILS

	APV
	CHK
	BY
	DESCRIPTION
	DATE
	NO.
<p><b>HERON HOMES</b> 270 BRIARWOOD DRIVE MANCHESTER, TN 37355 (931) 743-2239</p> <p><b>LJA</b></p> <p>1110 MARKET ST. SUITE 300 CHATTANOOGA, TN 37402 (423) 720-2743</p> <p>MARC B. HAWKINS REGISTERED ENGINEER AGRICULTURE EXPIRES 12/31/23 No. 104991 STATE OF TENNESSEE</p>	
INITIAL EROSION CONTROL PLAN	PACE STREET DEVELOPMENT MCMINNVILLE, WARREN, TENNESSEE
PROJECT NUMBER 3243-0001	
SHEET NUMBER EC-01	

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OVERALL SITE MAP  
1" = 500'



**ESPC LEGEND:**

CE	TEMPORARY CONSTRUCTION EXIT	
CD	TEMPORARY ROCK CHECK DAM	
CD	TEMPORARY TUBES AND STRAW WATTLES FOR CHECKS DAMS	
ECM	TOPSOIL, PERMANENT VEGETATION, & EROSION CONTROL MATTING	
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SF	TEMPORARY SILT FENCE	
DI	TEMPORARY DIVERSION BERM	
	LIMITS OF CLEARING	

NOTE: SEE SHEET EC-05 FOR DETAILS

NO.	DATE	DESCRIPTION	BY	CHK	APV

**HERON HOMES**  
270 BRIARWOOD DRIVE  
MANCHESTER, TN 37355  
(931) 743-2239

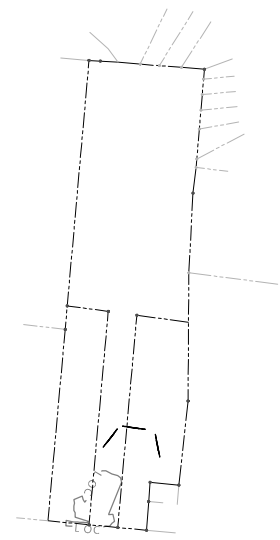


1110 MARKET ST.  
SUITE 300  
CHATTANOOGA, TN 37402  
(423) 720-2743

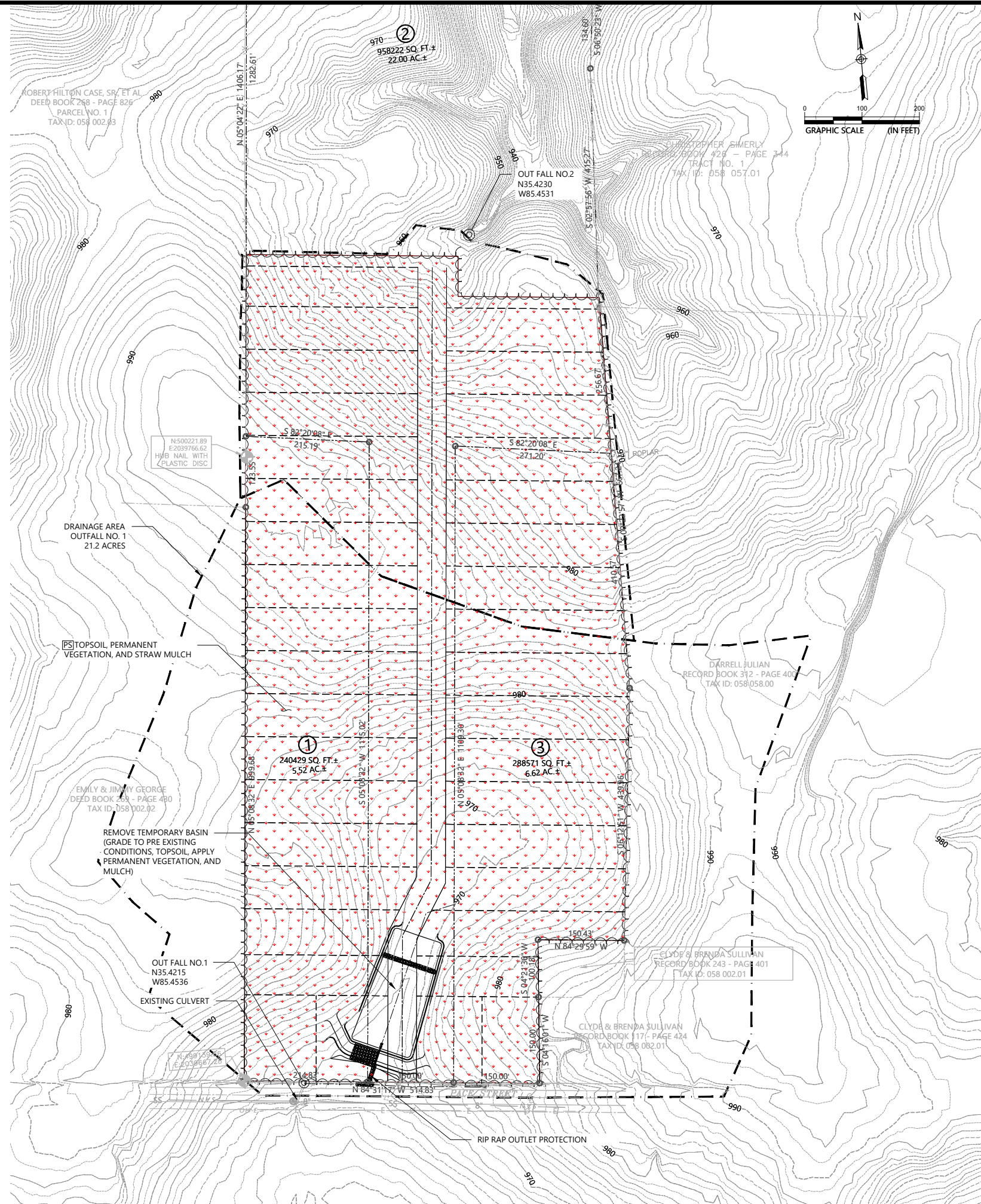


INTERMEDIATE EROSION CONTROL PLAN	PACE STREET DEVELOPMENT MCMINNVILLE, WARREN, TENNESSEE
PROJECT NUMBER 3243-0001	SHEET NUMBER ECP-02

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OVERALL SITE MAP  
1" = 500'



**ESPC LEGEND:**

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	TEMPORARY ROCK CHECK DAM	
	TOPSOIL, PERMANENT VEGETATION, & EROSION CONTROL MATTING	
	TEMPORARY EROSION CONTROL BLANKET	
	TOP SOIL, PERMANENT VEGETATION, AND STRAW MULCH	
	TEMPORARY VEGETATION AND STRAW MULCH (AS REQUIRED BY PERMIT)	
	TEMPORARY SILT FENCE	
	TEMPORARY DIVERSION BERM	
	LIMITS OF CLEARING	

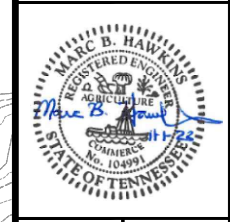
NOTE: SEE SHEET EC-05 FOR DETAILS

NO.	DATE	DESCRIPTION	BY	CHK	APV

**HERON HOMES**  
270 BRIARWOOD DRIVE  
MANCHESTER, TN 37355  
(931) 743-2239

**LJA**

1110 MARKET ST.  
SUITE 300  
CHATTANOOGA, TN 37402  
(423) 720-2743



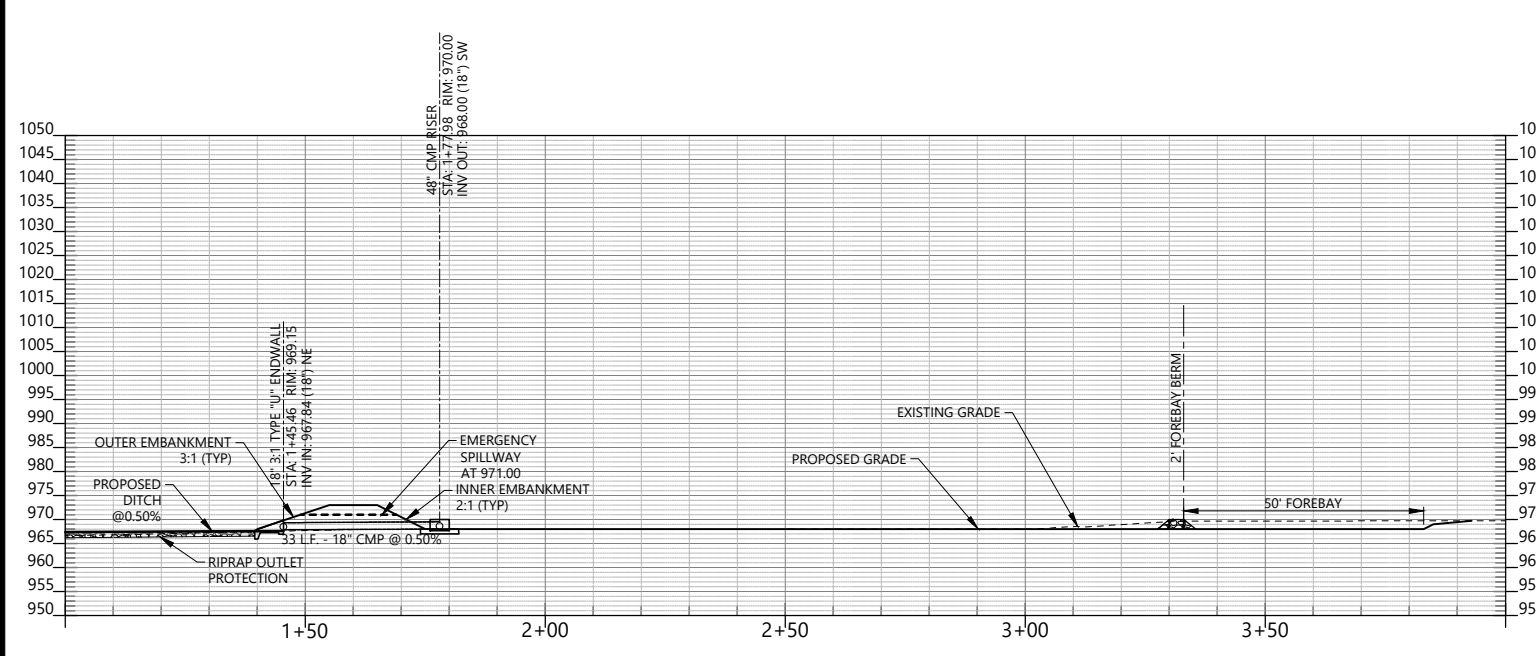
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PACE STREET DEVELOPMENT  
MCMINNVILLE, WARREN, TENNESSEE

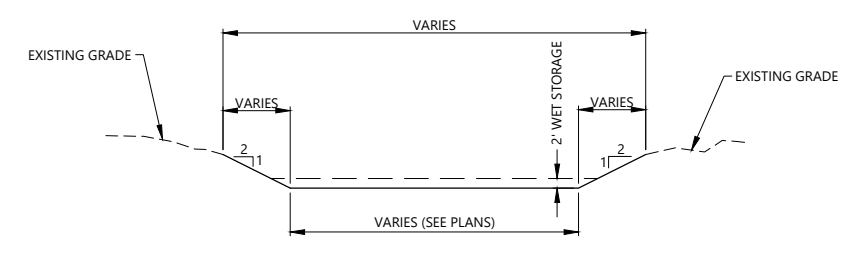
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SHEET NUMBER  
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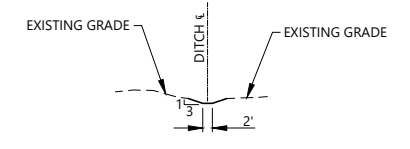
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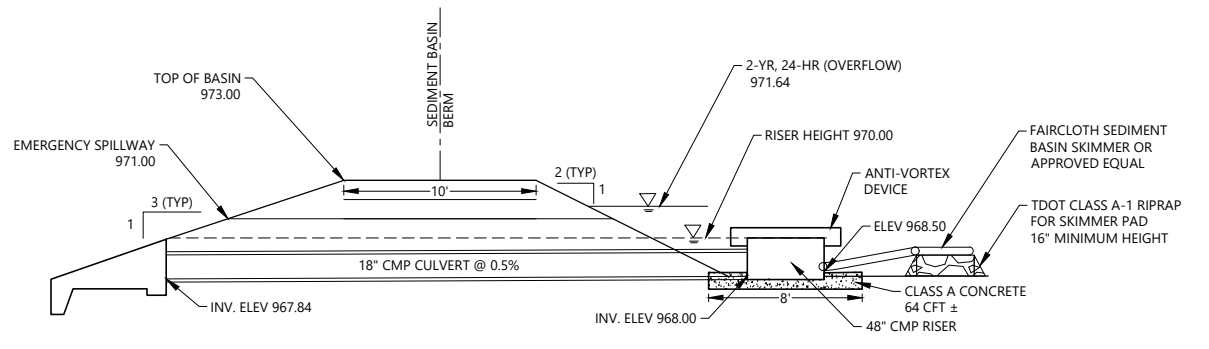
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SECTION B-B  
SCALE 1"=20'



SECTION C-C  
SCALE 1"=20'



SECTION D-D  
SCALE 1"=5'

**ESPC LEGEND:**

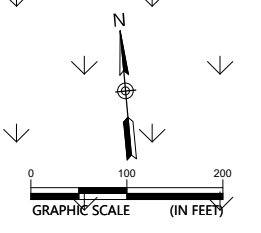
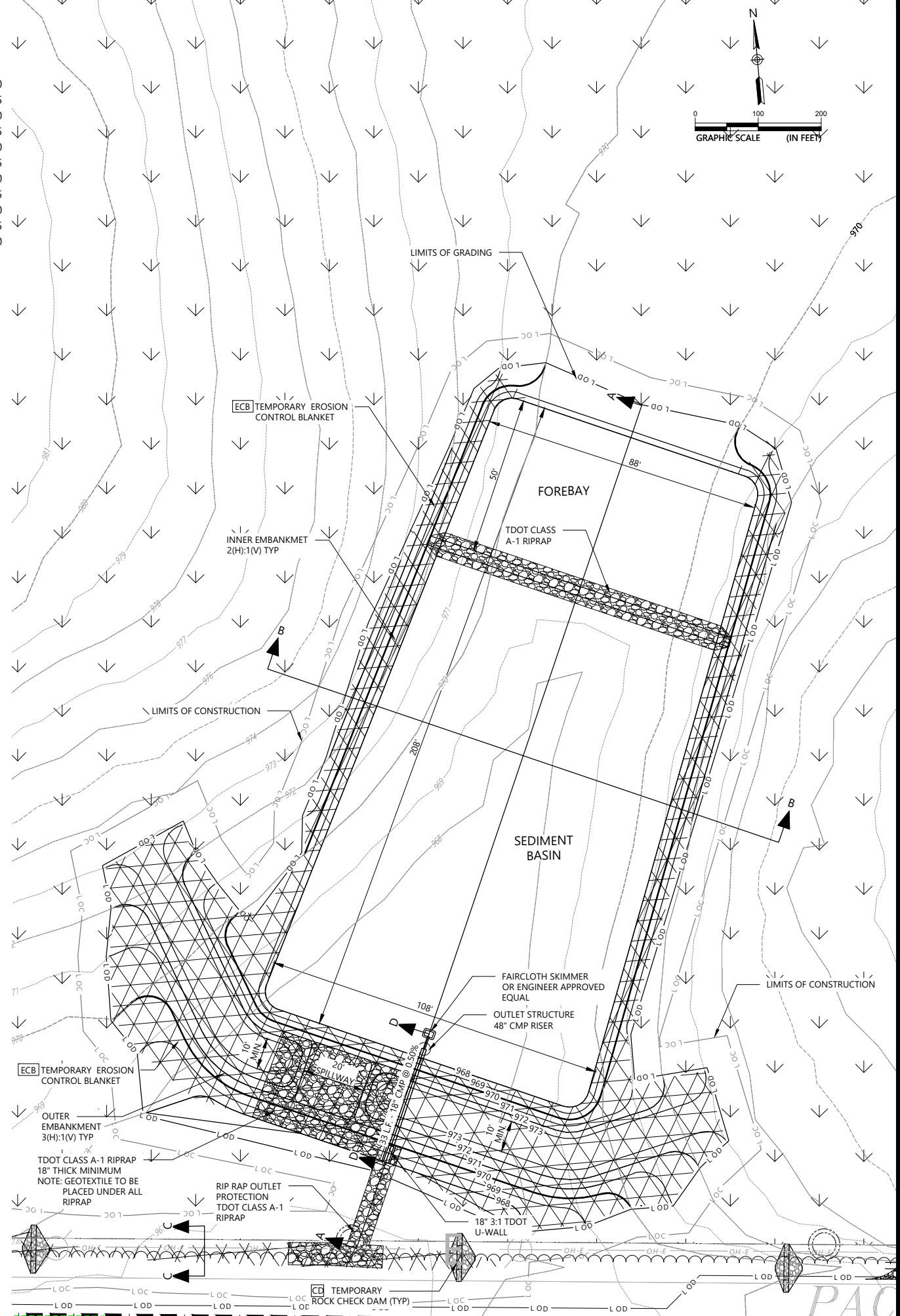
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<b>CD</b>	TEMPORARY ROCK CHECK DAM	
<b>CD</b>	TEMPORARY TUBES AND STRAW WATTLES FOR CHECKS DAMS	
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<b>SF</b>	TEMPORARY SILT FENCE	
<b>DI</b>	TEMPORARY DIVERSION BERM	
	LIMITS OF CLEARING	

NOTE: SEE SHEET EC-05 FOR DETAILS

**SEDIMENT BASIN NOTES:**

ENTIRE BASIN:  
 DRAINAGE AREA: 21.2 AC  
 INNER SIDE SLOPE: 2:1  
 OUTER SIDE SLOPE: 3:1  
 REQUIRED VOL: 76702 CFT  
 PROVIDED VOL: 85,502 CFT  
 LENGTH: 208± FT  
 WIDTH: 100± FT & 80± FT  
 DEPTH: 5 FT

FOREBAY:  
 INNER SIDE SLOPE: 2:1  
 OUTER SIDE SLOPE: 3:1  
 PROVIDED VOL: 19500 CFT  
 LENGTH: 50± FT  
 WIDTH: 80± FT  
 DEPTH: 2 FT



NO.	DATE	DESCRIPTION	BY	CHK	APV

**HERON HOMES**  
 270 BRIARWOOD DRIVE  
 MANCHESTER, TN 37355  
 (931) 743-2239



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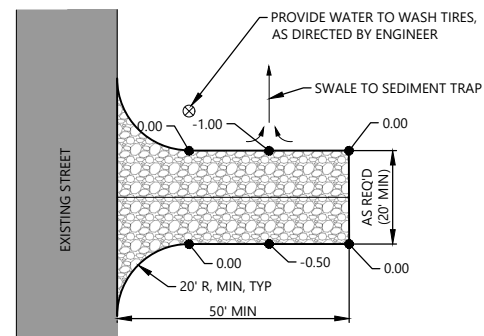


SEDIMENT BASIN  
 PACE STREET DEVELOPMENT  
 MCMINNVILLE, WARREN, TENNESSEE

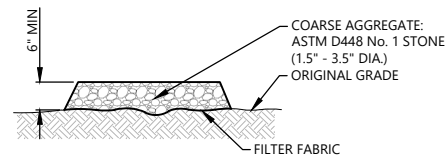
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 SHEET NUMBER

ECP-04

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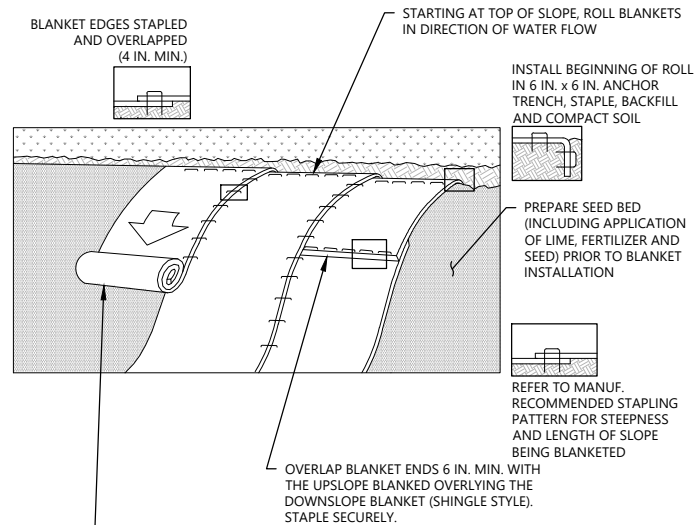


PLAN VIEW



SECTION

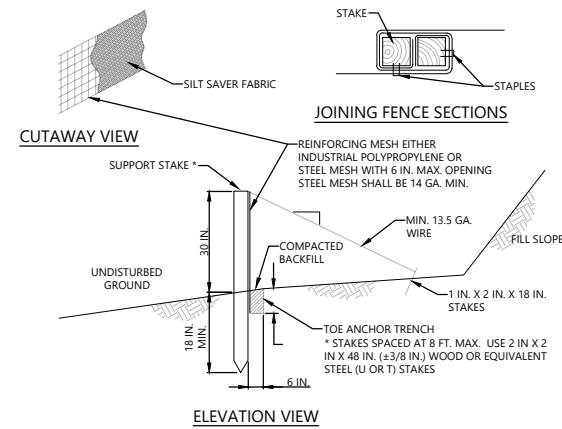
TEMPORARY CONSTRUCTION ENTRANCE  
NO SCALE



NOTES:

- SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.
- EROSION CONTROL BLANKETS MANUFACTURED BY AMERICAN EXCELSIOR (CUREX I), NORTH AMERICAN GREEN (S75BN), OR ENGINEER APPROVED EQUAL SHOULD BE USED ON ALL SLOPES THAT ARE 3H:1V OR STEEPER AND WHERE POTENTIAL EXISTS FOR SEDIMENT POLLUTION TO RECEIVING SURFACE WATER.
- EROSION CONTROL BLANKETS SHOULD BE USED FOR ALL SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER - 100 FEET OF A SPECIAL PROTECTION WATER - REGARDLESS OF SLOPE.
- PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.
- SLOPE SURFACE SHALL BE FREE OF ROCKS, CLDS, STICKS, AND GRASS.
- BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.
- THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

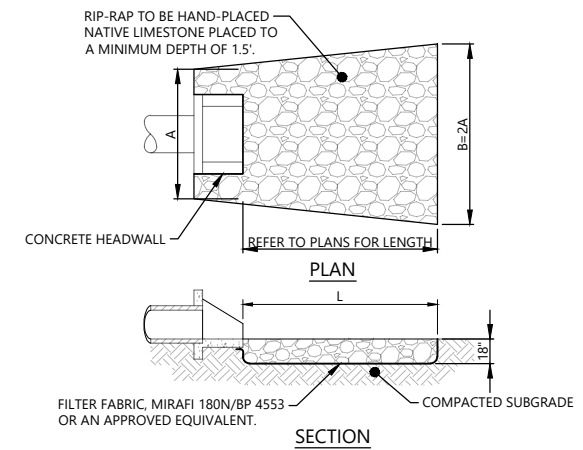
EROSION CONTROL BLANKET INSTALLATION  
NO SCALE



NOTES:

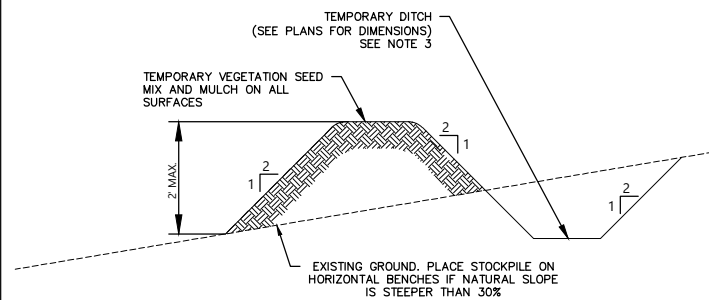
- FABRIC SHALL HAVE THE MINIMUM PROPERTIES AS SHOWN IN TDEC EROSION CONTROL MANUAL.
- FABRIC WIDTH SHALL BE 42 IN. MINIMUM. STAKES SHALL BE HARDWOOD OR EQUIVALENT STEEL (U OR T) STAKES. AN 18 IN. SUPPORT STAKE SHALL BE DRIVEN 12 IN. MINIMUM INTO UNDISTURBED GROUND.
- SILT FENCE SHALL BE PLACED AT LEVEL EXISTING GRADE. BOTH ENDS OF THE FENCE SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT.
- SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH HALF THE ABOVE GROUND HEIGHT OF THE FENCE.
- ANY SECTION OF SILT FENCE WHICH HAS BEEN UNDERMINED OR TOPPED SHALL BE IMMEDIATELY REPLACED WITH A ROCK FILTER OUTLET (STANDARD CONSTRUCTION DETAIL # 4-6).
- FENCE SHALL BE REMOVED AND PROPERLY DISPOSED OF WHEN TRIBUTARY AREA IS PERMANENTLY STABILIZED.

REINFORCED SILT FENCE (30" HIGH)  
NO SCALE



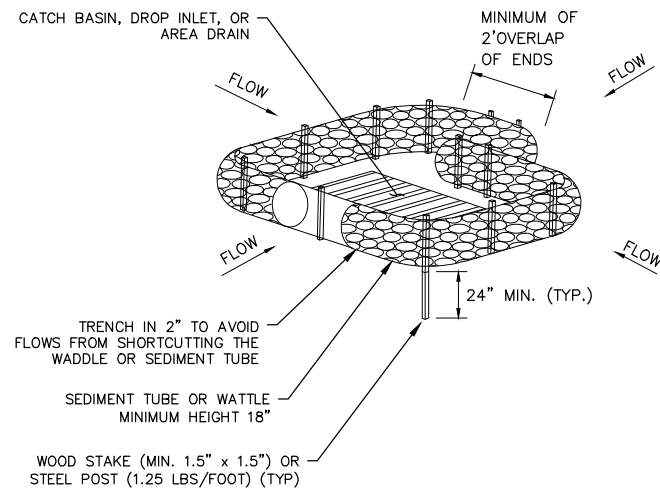
- RIP-RAP STONE SHALL BE "FRACTURED FACED" WITH AT LEAST THREE DISTINCT SIDES. PROVIDE AND INSTALL IN ACCORDANCE WITH SECTION 709 OF THE CURRENT EDITION OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS - NASHVILLE - STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
- d50 BY DEFINITION = 50 PERCENT OF THE STONE BY WEIGHT SHALL BE THE SIZE NOTED OR SMALLER.
- THE CONTRACTOR SHALL UNIFORMLY DISTRIBUTE STONE SIZES THROUGHOUT THE RIP-RAP PAD.

RIP-RAP OUTLET PROTECTION  
NO SCALE



- IN WETLANDS, THE TOP 6 TO 12 INCHES OF TRENCH SHOULD NORMALLY BE BACKFILLED WITH TOPSOIL FROM THE TRENCH. THE TRENCH CANNOT BE CONSTRUCTED OR BACKFILLED IN SUCH A MANNER AS TO DRAIN WATER OF THE U.S. (E.G. BACKFILLING WITH EXTENSIVE GRAVEL LAYERS, CREATING A FRENCH DRAIN EFFECT).
- SOIL STOCKPILE MAINTENANCE
- STOCKPILE TOPSOIL OR EXCAVATED SOIL MATERIAL AT LOCATIONS SHOWN FOR EACH PHASE OF CONSTRUCTION.
  - HEIGHT AND SIDE SLOPES SHALL NOT EXCEED MAXIMUM VALUES SHOWN ON DETAIL UNLESS DEPICTED IN DRAWINGS.
  - APPLY EROSION CONTROL BLANKETS IN CHANNEL WHERE FLOW VELOCITIES EXCEED 3 FPS WHERE INDICATED IN THE SITE-SPECIFIC STORM WATER POLLUTION PREVENTION PLAN (SWPPP).
  - APPLY A TEMPORARY OR PERMANENT VEGETATION SEED MIX AND MULCH WHEN PILE WILL REMAIN INACTIVE FOR 15 CALENDAR DAYS OR MORE.

TEMPORARY DIVERSION BERM  
NO SCALE



NOTE:

- INLET PROTECTION TO BE APPLIED AT CATH BASINS, DROP INLETS, OR YARD DRAINS TO PREVENT SEDIMENT FROM ENTERING STORM DRAINAGE SYSTEMS.
- PERIODICALLY REMOVE SEDIMENT AS REQUIRED PER SITE SPECIFIC SWPPP PREPARED FOR THE PROJECT.

SEDIMENT TUBE OR HAY WATTLE  
INLET PROTECTION  
NO SCALE

ALLOWABLE PERMANENT SEED MIXES AND PLANTING DATES*				
	ZONE	BEST	MARGINAL	RATE/MIX (LB/ACRE PLS)
REGION III	<2500 STEEP SLOPES	AUG 15 – SEPT 1 MAR 1 – APR 1	SEPT 1 – SEPT 15 APR 1 – JUNE 10	15 BROWN MILLET (NURSE CROP) 5 PURPLETOP 10 LITTLE BLUESTEM 10 INDIAN GRASS 2 BLACK-EYED SUSAN 0.5 MONADRA (BERAMOT) 4 MARYLAND SENNA

\* SEE TENNESSEE EROSION & SEDIMENT CONTROL HANDBOOK, SECTION 7.9, STABILIZATION WITH PERMANENT VEGETATION FOR TOPSOIL AND SEEDBED PREPARATION PRIOR TO SEEDING.

PERMANENT VEGETATION

ALLOWABLE TEMPORARY SEED MIXES AND PLANTING DATES*		
SEASON	LOCATION - DATES	RATE/MIX (LB/ACRE PLS)
LATE WINTER EARLY SPRING	EAST (ABOVE 2500 FEET) - FEB.15 - MAY 15 EAST (BELOW 2500 FEET) - FEB. -MAY 1 MIDDLE - JAN. 1- MAY 1 BELOW - DEC.1 - APRIL 15	120 RYE
SUMMER	EAST - MAY 15 – AUGUST 15 MIDDLE - MAY. 1 – AUGUST 15 WEST - APRIL. 15 – AUGUST 15	60 OAKS 30 BROWN TOP MULLET
FALL	EAST - AUG 15 – DEC 15 MIDDLE - AUG. 15 – DEC 30 WEST - AUG. 15 – DEC 30	30 OATS 30 WINTER WHEAT

\* SEE TENNESSEE EROSION & SEDIMENT CONTROL HANDBOOK, SECTION 7.8, STABILIZATION WITH TEMPORARY VEGETATION FOR TOPSOIL AND SEEDBED PREPARATION PRIOR TO SEEDING.

TEMPORARY VEGETATION

TEMPORARY AND PERMANENT VEGETATION  
NO SCALE

NO.	DATE	DESCRIPTION	BY	CHK	APV

HERON HOMES  
270 BRIARWOOD DRIVE  
MANCHESTER, TN 37355  
(931) 743-2239



1110 MARKET ST.  
SUITE 300  
CHATTANOOGA, TN 37402  
(423) 720-2743



EROSION CONTROL DETAILS  
PACE STREET DEVELOPMENT  
MCMINNVILLE, WARREN, TENNESSEE

PROJECT NUMBER  
3243-0001  
SHEET NUMBER

EC-01



# **Appendix C:**

**Hydrologic & Hydraulic Summary**

**Hydrologic – WinTR55™ Reports**

**Hydraflow Hydrographs- Sediment Pond Report**

WinTR-55 Current Data Description

--- Identification Data ---

User: MMirza Date: 10/24/2023  
 Project: Pace St Units: English  
 SubTitle: WinTR-55 Model Pre, During, and Post Areal Units: Acres  
 State: Tennessee  
 County: Warren  
 Filename: Z:\SoutheastRegion\Projects\2023\3243-0001-Pace St Development-Heron Homes\Design\Calculations\

--- Sub-Area Data ---

Name	Description	Reach	Area (ac)	RCN	Tc
DA-01-PRE	Drainage area 1 southern	Outlet	21.76	74	0.297
DA-01-POST	Drainage area 1 southern	Outlet	21.76	72	.184
DA-02-PRE	Drainage area 2 northern	Outlet	9.64	73	0.235
DA-02-POST	Drainage area 2 northern	Outlet	9.64	73	0.100
DA-01-DURI		Outlet	21.76	86	0.160
DA-02-DURI		Outlet	9.64	72	.108

Total area: 94.20 (ac)

--- Storm Data ---

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	1-Yr (in)
3.6	4.5	5.0	5.8	6.4	6.9	3.0

Storm Data Source: Warren County, TN (NRCS)  
 Rainfall Distribution Type: Type II  
 Dimensionless Unit Hydrograph: <standard>

MMirza

Pace St  
WinTR-55 Model Pre, During, and Post  
Warren County, Tennessee

Storm Data

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	1-Yr (in)
3.6	4.5	5.0	5.8	6.4	6.9	3.0

Storm Data Source: Warren County, TN (NRCS)  
Rainfall Distribution Type: Type II  
Dimensionless Unit Hydrograph: <standard>

MMirza

Pace St  
WinTR-55 Model Pre, During, and Post  
Warren County, Tennessee

Watershed Peak Table

Sub-Area or Reach Identifier	Peak Flow by Rainfall Return Period					
	2-Yr (cfs)	5-Yr (cfs)	10-Yr (cfs)	25-Yr (cfs)	50-Yr (cfs)	100-Yr (cfs)
-----						
SUBAREAS						
DA-01-PRE	32.26	49.51	59.64	76.14	88.96	99.87
DA-01-POST	34.22	53.44	64.84	83.66	98.19	110.50
DA-02-PRE	14.88	23.03	27.85	35.75	41.84	47.05
DA-02-POST	18.00	27.93	33.77	43.44	50.88	57.16
DA-01-DURI	66.21	90.19	103.57	124.90	141.01	154.36
DA-02-DURI	16.75	26.33	32.01	41.39	48.66	54.84
REACHES						
OUTLET	173.78	256.83	304.93	383.92	444.26	495.15

MMirza

Pace St  
WinTR-55 Model Pre, During, and Post  
Warren County, Tennessee

Hydrograph Peak/Peak Time Table

Sub-Area or Reach Identifier	Peak Flow and Peak Time (hr) by Rainfall Return Period					
	2-Yr (cfs) (hr)	5-Yr (cfs) (hr)	10-Yr (cfs) (hr)	25-Yr (cfs) (hr)	50-Yr (cfs) (hr)	100-Yr (cfs) (hr)
-----						
SUBAREAS						
DA-01-PRE	32.26 12.09	49.51 12.08	59.64 12.07	76.14 12.07	88.96 12.07	99.87 12.07
DA-01-POST	34.22 12.03	53.44 12.02	64.84 12.01	83.66 12.01	98.19 12.01	110.50 12.00
DA-02-PRE	14.88 12.04	23.03 12.04	27.85 12.04	35.75 12.04	41.84 12.04	47.05 12.03
DA-02-POST	18.00 11.94	27.93 11.94	33.77 11.93	43.44 11.93	50.88 11.93	57.16 11.93
DA-01-DURI	66.21 11.98	90.19 11.97	103.57 11.97	124.90 11.97	141.01 11.97	154.36 11.96
DA-02-DURI	16.75 11.95	26.33 11.94	32.01 11.94	41.39 11.94	48.66 11.94	54.84 11.94
REACHES						
OUTLET	173.78	256.83	304.93	383.92	444.26	495.15

MMirza

Pace St  
WinTR-55 Model Pre, During, and Post  
Warren County, Tennessee

Sub-Area Summary Table

Sub-Area Identifier	Drainage Area (ac)	Time of Concentration (hr)	Curve Number	Receiving Reach	Sub-Area Description
DA-01-PRE	21.76	0.297	74	Outlet	Drainage area 1 southern
DA-01-POST	21.76	0.184	72	Outlet	Drainage area 1 southern
DA-02-PRE	9.64	0.235	73	Outlet	Drainage area 2 northern
DA-02-POST	9.64	0.100	73	Outlet	Drainage area 2 northern
DA-01-DURI	21.76	0.160	86	Outlet	
DA-02-DURI	9.64	0.108	72	Outlet	

Total Area: 94.20 (ac)



MMirza

Pace St  
WinTR-55 Model Pre, During, and Post  
Warren County, Tennessee

Sub-Area Land Use and Curve Number Details

Sub-Area Identifier	Land Use	Hydrologic Soil Group	Sub-Area Area (ac)	Curve Number
DA-01-PRE	Paved parking lots, roofs, driveways	C	1.01	98
	Meadow -cont. grass (non grazed)	C	5.71	71
	Woods (fair)	C	15.04	73
	Total Area / Weighted Curve Number		21.76	74
			=====	==
DA-01-POST	Paved parking lots, roofs, driveways	C	1.01	98
	Meadow -cont. grass (non grazed)	C	20.75	71
	Total Area / Weighted Curve Number		21.76	72
			=====	==
DA-02-PRE	Woods (fair)	C	9.64	73
	Total Area / Weighted Curve Number		9.64	73
			=====	==
DA-02-POST	Paved parking lots, roofs, driveways	C	.33	98
	Meadow -cont. grass (non grazed)	C	3.8	71
	Woods (fair)	C	5.51	73
	Total Area / Weighted Curve Number		9.64	73
			=====	==
DA-01-DURI	Paved parking lots, roofs, driveways	C	1.01	98
	Newly graded area (pervious only)	C	15.04	91
	Meadow -cont. grass (non grazed)	C	5.71	71
	Total Area / Weighted Curve Number		21.76	86
			=====	==
DA-02-DURI	Meadow -cont. grass (non grazed)	C	3.8	71
	Woods (fair)	C	5.84	73
	Total Area / Weighted Curve Number		9.64	72
			=====	==

# Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2019.2

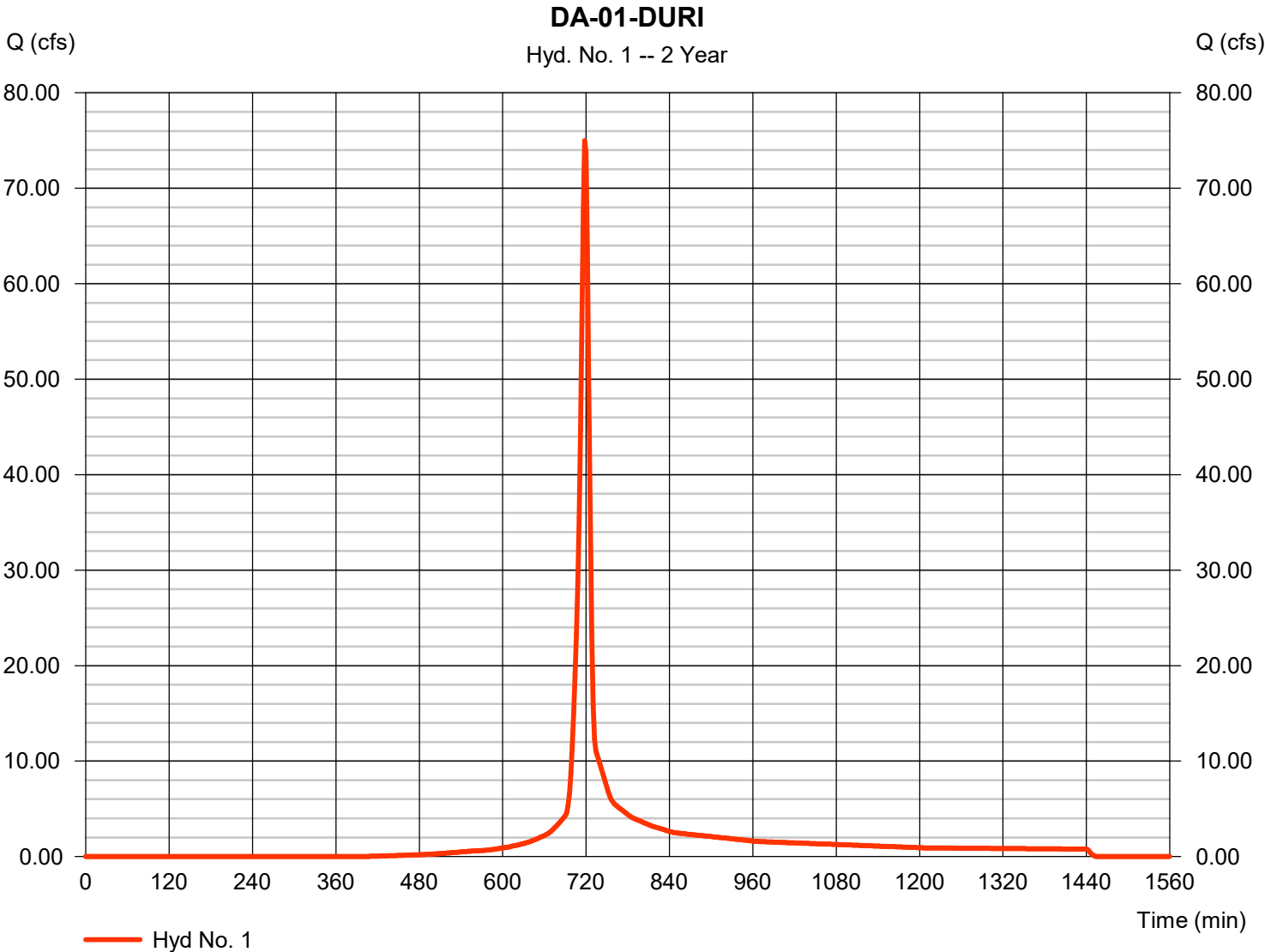
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	74.98	2	718	172,755	-----	-----	-----	DA-01-DURI
2	Reservoir	14.03	2	732	157,908	1	970.53	85,502	TEMP-SB-01

# Hydrograph Report

## Hyd. No. 1

DA-01-DURI

Hydrograph type	= SCS Runoff	Peak discharge	= 74.98 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 172,755 cuft
Drainage area	= 21.760 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 9.60 min
Total precip.	= 3.60 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



# Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2019.2

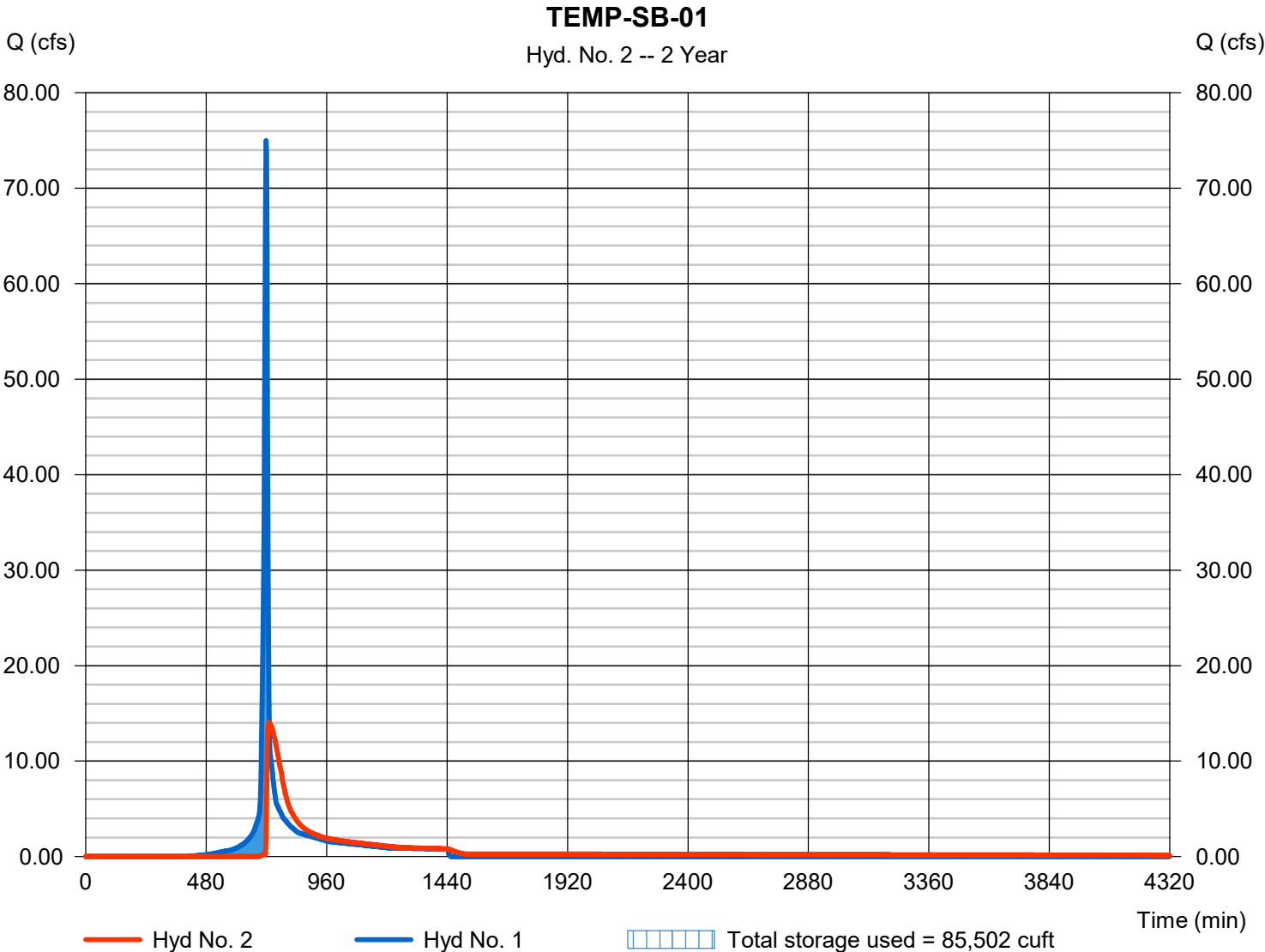
Tuesday, 10 / 24 / 2023

## Hyd. No. 2

TEMP-SB-01

Hydrograph type	= Reservoir	Peak discharge	= 14.03 cfs
Storm frequency	= 2 yrs	Time to peak	= 732 min
Time interval	= 2 min	Hyd. volume	= 157,908 cuft
Inflow hyd. No.	= 1 - DA-01-DURI	Max. Elevation	= 970.53 ft
Reservoir name	= TEMP-SB-01	Max. Storage	= 85,502 cuft

Storage Indication method used.



## Pond No. 1 - TEMP-SB-01

### Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 968.00 ft

### Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	968.00	20,355	0	0
1.00	969.00	21,572	20,958	20,958
2.00	970.00	47,004	33,470	54,428
3.00	971.00	70,363	58,286	112,714
4.00	972.00	99,092	84,310	197,025
5.00	973.00	122,225	110,445	307,470
6.00	974.00	130,354	126,255	433,725

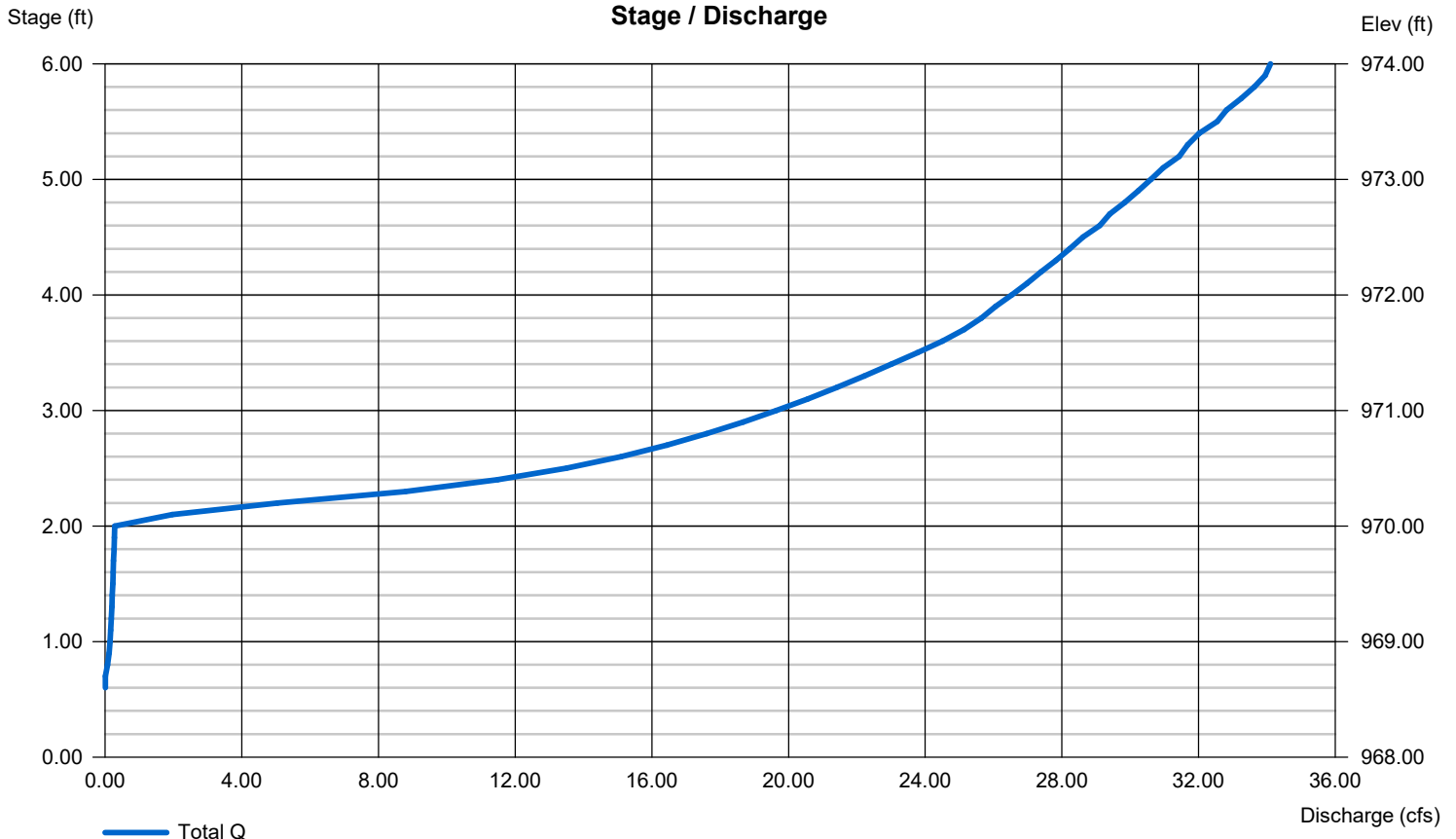
### Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 15.00	0.00	0.00	0.00
Span (in)	= 15.00	0.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 968.00	968.50	0.00	0.00
Length (ft)	= 33.00	1.00	0.00	0.00
Slope (%)	= 0.50	0.10	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

### Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 15.96	0.00	0.00	0.00
Crest El. (ft)	= 970.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	---	---	---
Multi-Stage	= Yes	No	No	No
Exfil. (in/hr)	= 0.000 (by Contour)			
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



# Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2019.2

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	140.88	2	718	333,305	-----	-----	-----	DA-01-DURI
2	Reservoir	24.76	2	732	318,432	1	971.64	166,758	TEMP-SB-01
Pace_Development_Temp_Sediment Basin.gpr						Return Period: 25 Year		Tuesday, 10 / 24 / 2023	

# Hydrograph Report

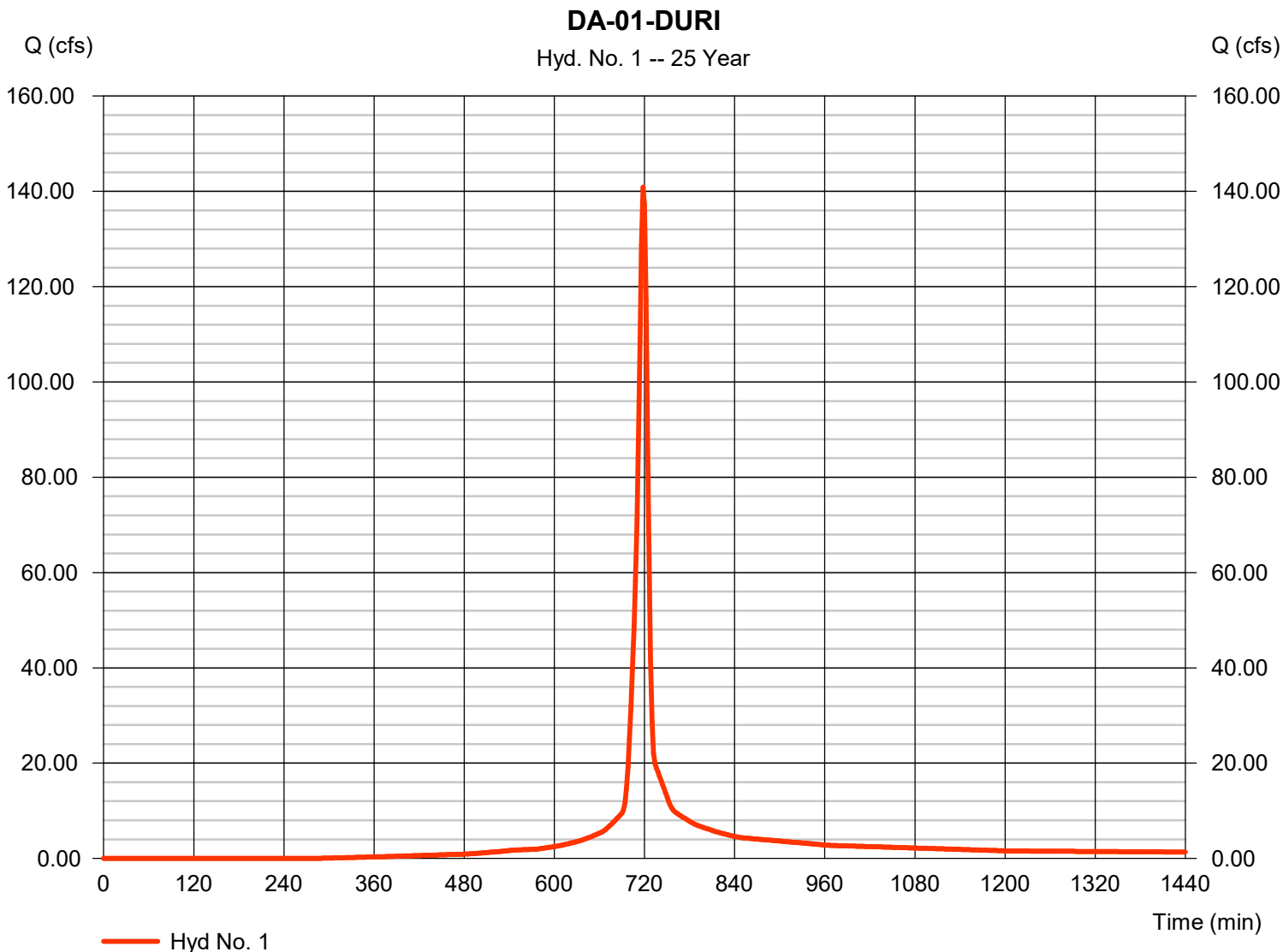
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2019.2

Tuesday, 10 / 24 / 2023

## Hyd. No. 1

DA-01-DURI

Hydrograph type	= SCS Runoff	Peak discharge	= 140.88 cfs
Storm frequency	= 25 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 333,305 cuft
Drainage area	= 21.760 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 9.60 min
Total precip.	= 5.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



# Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v2019.2

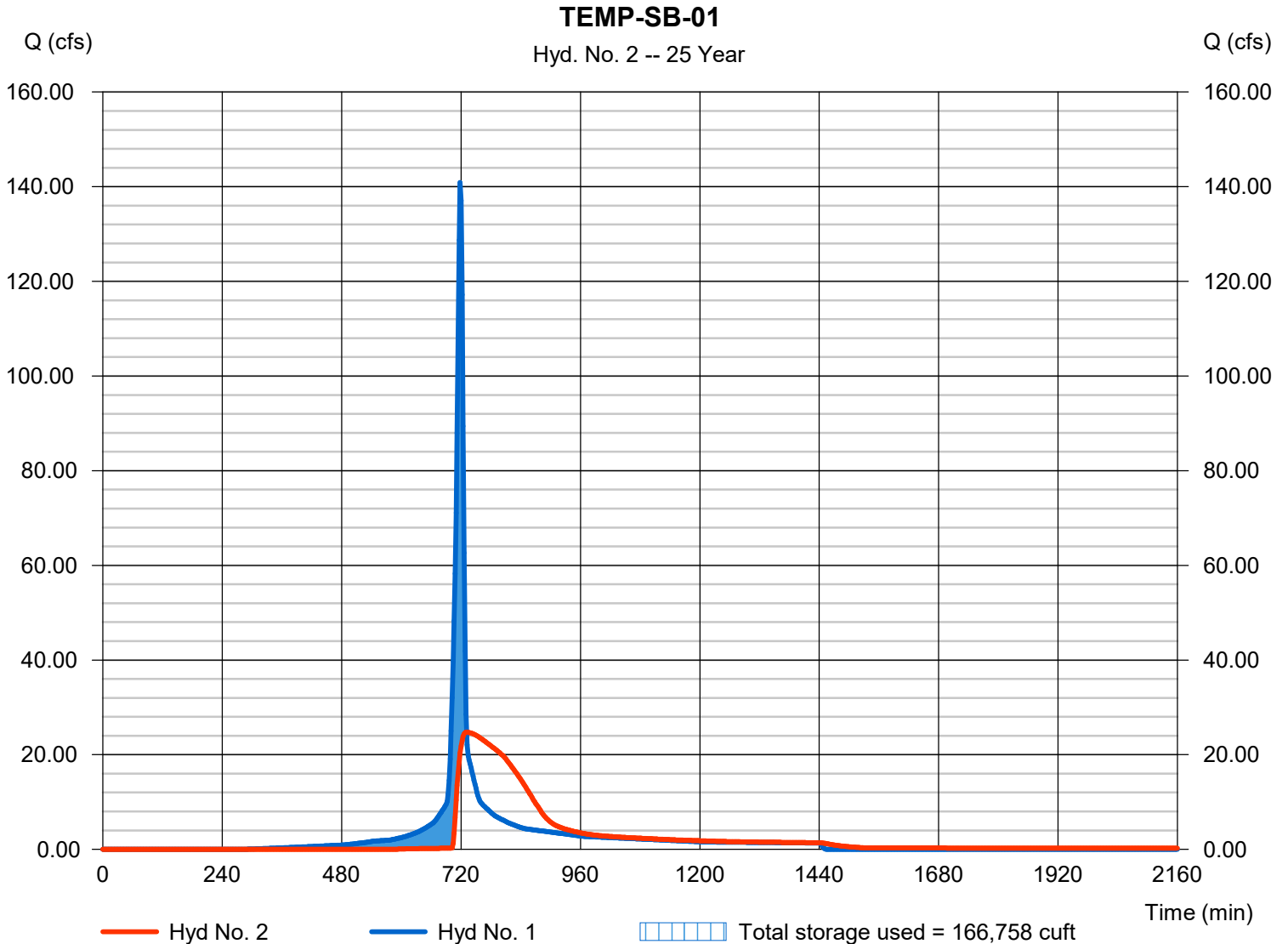
Tuesday, 10 / 24 / 2023

## Hyd. No. 2

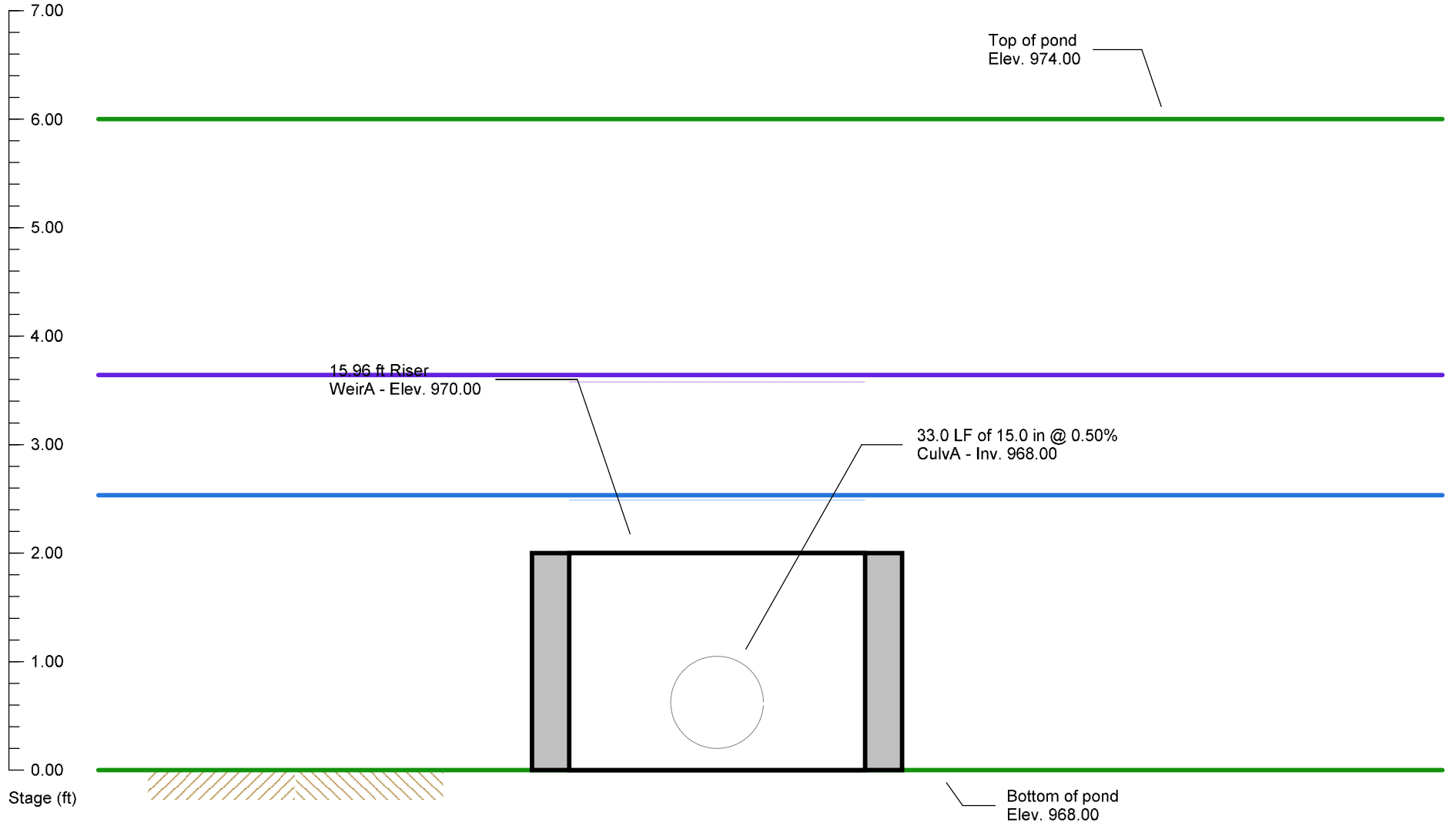
TEMP-SB-01

Hydrograph type	= Reservoir	Peak discharge	= 24.76 cfs
Storm frequency	= 25 yrs	Time to peak	= 732 min
Time interval	= 2 min	Hyd. volume	= 318,432 cuft
Inflow hyd. No.	= 1 - DA-01-DURI	Max. Elevation	= 971.64 ft
Reservoir name	= TEMP-SB-01	Max. Storage	= 166,758 cuft

Storage Indication method used.



# Pond No. 1 - TEMP-SB-01



**Front View**  
NTS - Looking Downstream

— 25-yr  
— 2-yr

Inflow hydrograph = 1. SCS Runoff - DA-01-DURI

# Culvert Report

## Heron Pace Development- 18-in CMP OUTLET STRUCTURE (Q(2)=14 CFS)

Invert Elev Dn (ft)	= 967.83
Pipe Length (ft)	= 33.00
Slope (%)	= 0.52
Invert Elev Up (ft)	= 968.00
Rise (in)	= 18.0
Shape	= Circular
Span (in)	= 18.0
No. Barrels	= 1
n-Value	= 0.024
Culvert Type	= Circular Corrugate Metal Pipe
Culvert Entrance	= Headwall
Coeff. K,M,c,Y,k	= 0.0078, 2, 0.0379, 0.69, 0.5

**Embankment**

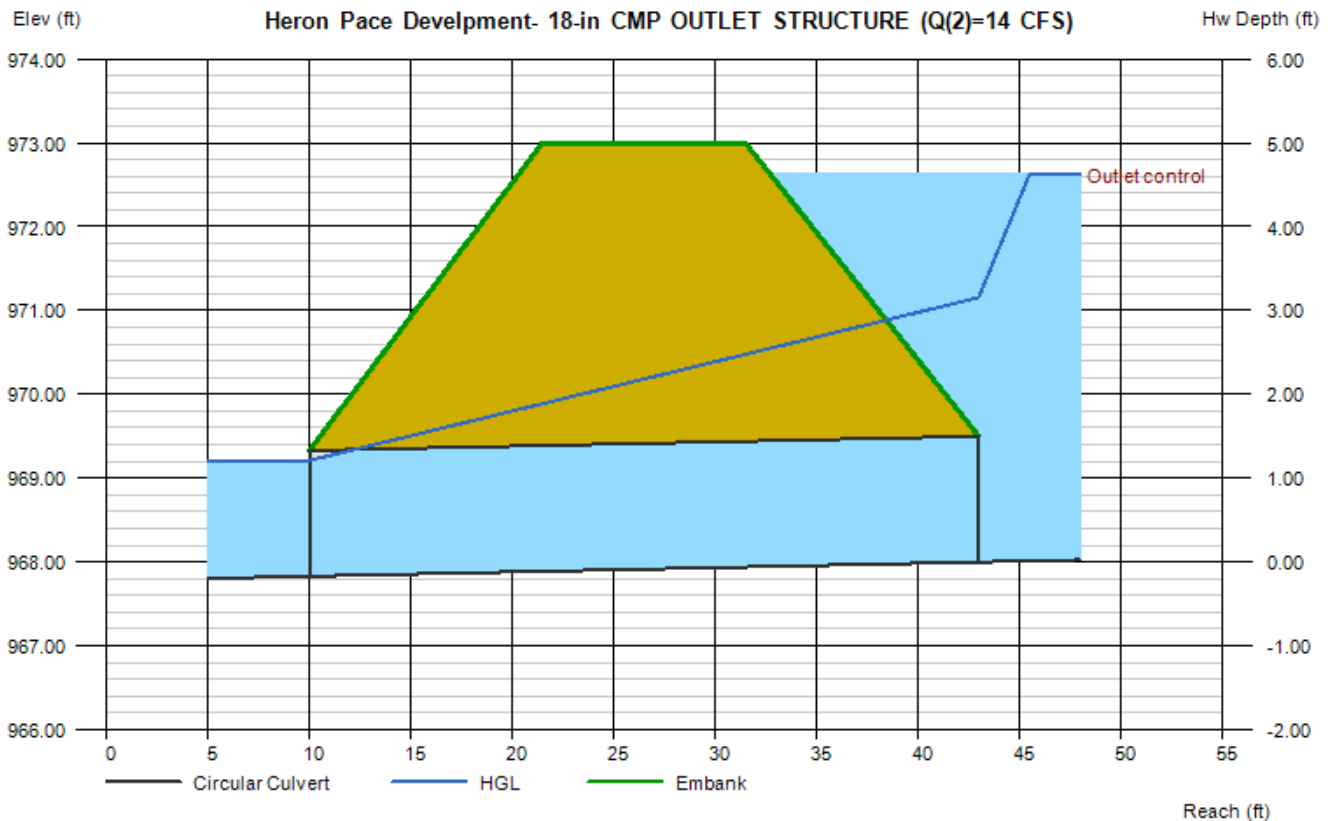
Top Elevation (ft)	= 973.00
Top Width (ft)	= 10.00
Crest Width (ft)	= 25.00

**Calculations**

Qmin (cfs)	= 10.00
Qmax (cfs)	= 15.00
Tailwater Elev (ft)	= Critical

**Highlighted**

Qtotal (cfs)	= 14.00
Qpipe (cfs)	= 14.00
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 8.23 RIP-RAP REQ
Veloc Up (ft/s)	= 7.92
HGL Dn (ft)	= 969.21
HGL Up (ft)	= 971.15
Hw Elev (ft)	= 972.62
Hw/D (ft)	= 3.08
Flow Regime	= Outlet Control



# Channel Report

## Pace Street Development- Diversion Ditch (Q2= 5.6 cfs)

### Trapezoidal

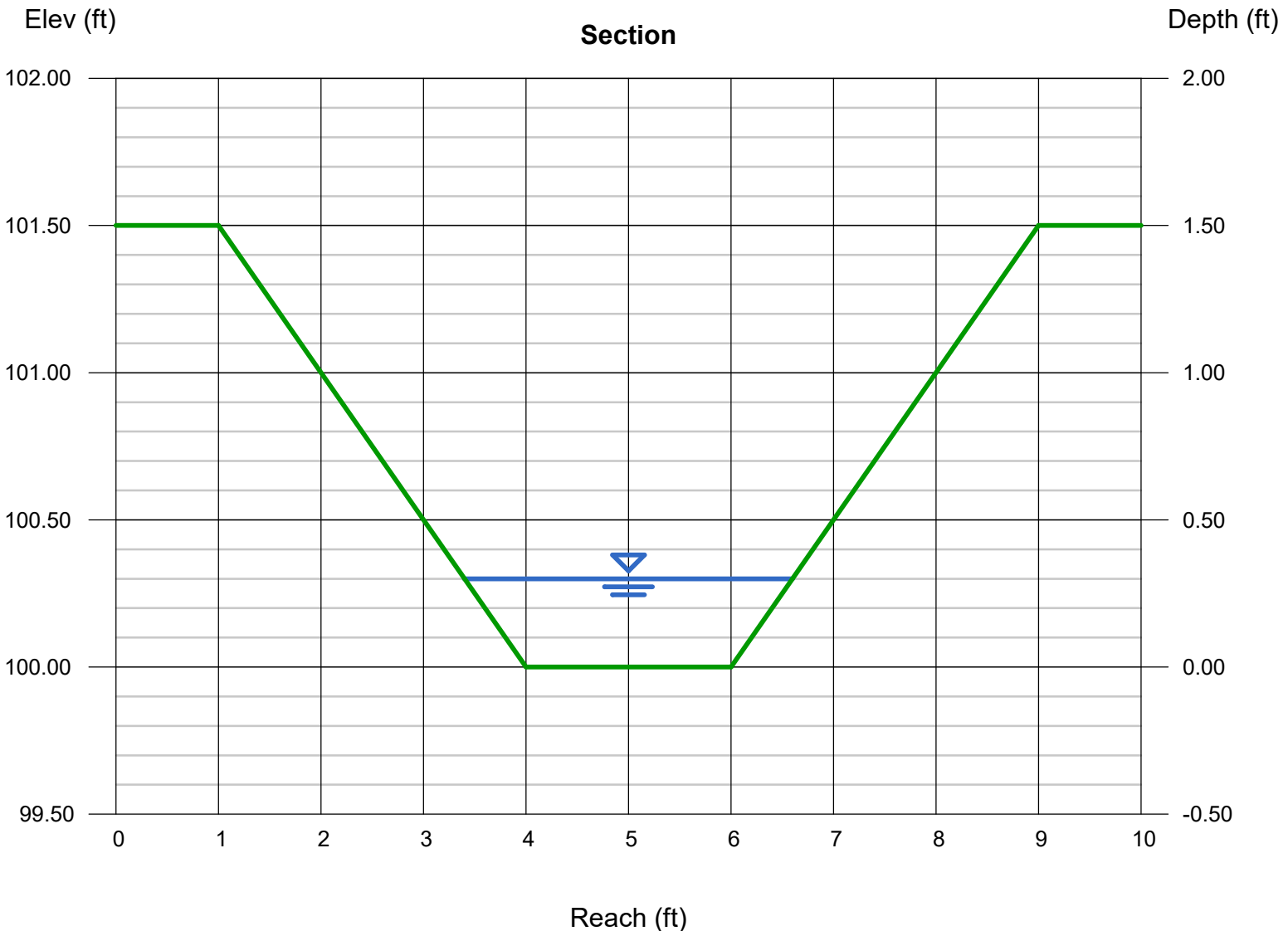
Bottom Width (ft) = 2.00  
Side Slopes (z:1) = 2.00, 2.00  
Total Depth (ft) = 1.50  
Invert Elev (ft) = 100.00  
Slope (%) = 9.00  
N-Value = 0.023

### Highlighted

Depth (ft) = 0.30  
Q (cfs) = 5.600  
Area (sqft) = 0.78  
Velocity (ft/s) = 7.18  
Wetted Perim (ft) = 3.34  
Crit Depth, Yc (ft) = 0.53  
Top Width (ft) = 3.20  
EGL (ft) = 1.10

### Calculations

Compute by: Known Q  
Known Q (cfs) = 5.60



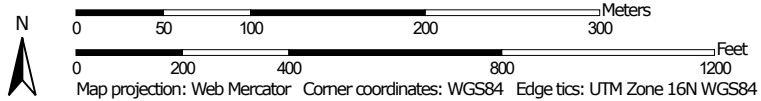
# **Appendix D:**

## **USDA- Soils Map**

Soil Map—Warren County, Tennessee  
(Pace St )




Map Scale: 1:4,330 if printed on A portrait (8.5" x 11") sheet.




## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

### Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

### Water Features



Streams and Canals

### Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

### Background



Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

**Warning:** Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Warren County, Tennessee

Survey Area Data: Version 15, Sep 12, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 20, 2021—Apr 27, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BaC	Sengtown gravelly silt loam, 5 to 12 percent slopes	1.2	1.4%
BaD	Sengtown gravelly silt loam, 12 to 20 percent slopes	5.2	6.2%
BaE	Baxter cherty silt loam, 20 to 30 percent slopes	5.0	5.9%
CaB	Captina silt loam, 1 to 3 percent slopes	0.7	0.8%
DkB	Dickson silt loam, 2 to 5 percent slopes	3.8	4.5%
La	Lawrence silt loam	2.5	3.0%
MoB	Mountview silt loam, 2 to 5 percent slopes	11.0	13.1%
WaB	Waynesboro loam, 2 to 5 percent slopes	25.3	29.9%
WaC	Waynesboro loam, 5 to 12 percent slopes	9.8	11.6%
WaC2	Waynesboro loam, 5 to 12 percent slopes, eroded	16.1	19.1%
WcC3	Waynesboro clay loam, 5 to 12 percent slopes, severely eroded	3.9	4.6%
<b>Totals for Area of Interest</b>		<b>84.6</b>	<b>100.0%</b>