

TAYLOR SPRING DETENTION BASIN PROGRESS REPORT

October 4

2022

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Director of Engineering, Rockingham County

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I. BACKGROUND

In recent years, residential neighborhoods that border the headwaters of Congers Creek (a major tributary to Lake Shenandoah) have experienced localized flooding, some severely inundating their homes. Timmons Group was retained by Rockingham County to determine and analyze alternative solutions for improving drainage and reducing flooding within these neighborhoods.

Engineers modeled watershed hydrology and channel/culvert hydraulics to confirm areas of existing drainage problems and to determine anticipated future conditions associated with development within the upper watershed. Based on the results of this evaluation, various engineering and land-use alternatives strategies were presented to improve drainage along Conger's Creek and throughout the greater watershed of Lake Shenandoah. The first and most-beneficial solution the County elected to pursue was to construct a regional stormwater detention basin.

II. PROJECT LOCATION

The project site is located south of Taylor Spring Lane between Boyers Road and Cumberland Drive in Rockingham County. The 28.9-acre parcel was purchased from Mr. David O'Donnell in October 2020.

III. PROJECT DESCRIPTION

The proposed project will be the construction of a 6.7-acre regional detention basin. Proposed work includes a 19-foot-high earth dam embankment with an emergency spillway, riser structure, and a 54-inch diameter pipe extending through the embankment. The proposed detention basin is not designed to permanently store water and is expected to drain within a few days after a rain event.

Mass grading will require cuts of up to 8 feet and fills of up to 5 feet outside the proposed embankment area. Fills of up to 20 feet will be required to construct the proposed embankment. Work will also be performed to replace approximately 300 linear feet of sanitary sewer main and to raise existing manhole lids.

Additional projects on-site may be requested such as demolition, debris and tree removal, construction of walking trails, and others. Such additional projects may be added to the project scope on a negotiated change order.

IV. PROFESSIONAL DESIGNS

Timmons Group was contracted to perform professional engineering designs and to prepare construction documents. Designs and specifications were reviewed and approved in October 2020.

V. GRANT FUNDING

On February 24, 2022, the County was awarded a Hazard Mitigation Grant (FEMA-DR-4411-VA-017) from the Federal Emergency Management Agency (FEMA) through the Virginia Department of Emergency Management (VDEM) in the total amount of \$730,000. Rockingham County's share for the grant is \$36,500.

Realizing the County would be unable to complete the project in the time frame allocated, a project extension request was submitted to VDEM on August 31, 2022. The letter called for the Period of Performance ("POP") to be extended by one full calendar year (from December 18, 2022 to December 18, 2023). Reasons for the extension requests are as follows:

1. Lateness of grant approval and announcement of award by FEMA and VDEM (February 24, 2022);
2. Market availability and considerable lead times of required construction materials; and
3. Seasonal weather (winter) conditions anticipated during current schedule and the potential impacts it may have on earthwork activities, vegetative growth, and site stabilization.

The County is currently waiting on FEMA's response for the extension.

Reviewing the project budget, the County recognized certain tasks and anticipated construction costs no longer aligned as originally requested and awarded. Therefore, a budget amendment request was submitted to VDEM on September 27, 2022. The letter did not request an increase to the overall budget – rather to shift funds from one activity line to another as follows:

Activity	Current Budget	Requested Budget
Legal Fees	\$10,000.00	\$0.00
Construction Management	\$10,000.00	\$26,889.00
Land Acquisition	\$115,000.00	\$0.00
Design	\$50,000.00	\$2,000.00
Construction	\$545,000.00	\$701,111.00
Total Budget	\$730,000.00	\$730,000.00

The County is currently waiting on FEMA's response for the amendment.

VI. BID INVITATION AND SELECTION

Bid invitation documents were posted on the County's website on April 20, 2022 with a due date of May 18, 2022. The County received a single proposal for \$1,868,000. Deeming this bid higher than anticipated and significantly over budget, the Board of Supervisors rejected the bid on May 25, 2022.

Bid invitation documents were reposted on the County's website on May 26, 2022 with a due date of June 16, 2022. The County received five proposals. The winning bid (based on the lowest construction cost) was Partners Excavating with a proposal of \$854,460. The Board of Supervisors approved the winning bid on June 22, 2022. A contract for construction with Partners was finalized on July 11, 2022.

VII. PROJECT TIMELINE

Task	Anticipated Completion
Survey Site and Mobilize Contractor	July 18, 2022
Site Clearing	July 22, 2022
Sanitary Sewer Upgrades & Pipe Replacement	September 23, 2022
Grading & Final Seeding Above Embankment	October 19, 2022
Storm Inlet/Outlet Structure Installation	December 13, 2022
Embankment Construction	December 23, 2022
Outlet Protection	January 13, 2023
Temporary Seeding Below Embankment	January 20, 2023
Grading & Final Seeding Below Embankment	April 21, 2023
Project Closeout	May 26, 2023

← Approximately two weeks ahead of schedule

PREVIOUS INSPECTIONS AND COMPLETED TASKS

(Reports may be produced upon request)

May 26, 2021: Thorough inspection of site performed to collect data and photos for FEMA grant application.

July 29, 2022: Limits of disturbance and key project components surveyed. Site is approximately 33% cleared of vegetation in preparation for earthwork activities. Existing culvert at construction entrance to be replaced to allow for better drainage from ditch along Taylor Spring Lane.

August 22, 2022: Site is approximately 80% cleared of vegetation in preparation for earthwork activities. Replacement sanitary sewer pipe was delivered today for installation. Installation of construction entrance and graveled maintenance road began this week as well.

September 12, 2022: Clearing of site vegetation completed at the end of August (mulching and debris removal remains). Borrow area cleared and soil stockpiled the week of August 29th. Rehabilitation and upgrades of the sanitary sewer are to be completed week this week. Earthwork to grade and shape the basin in progress.

VIII. CURRENT PROJECT STATUS

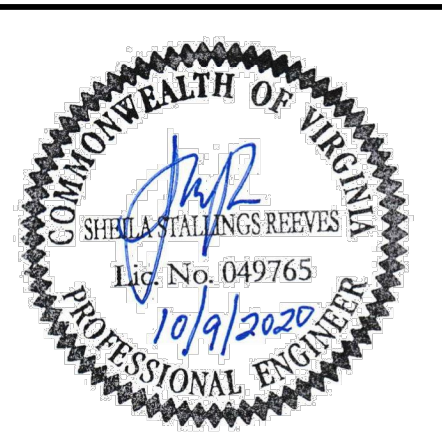
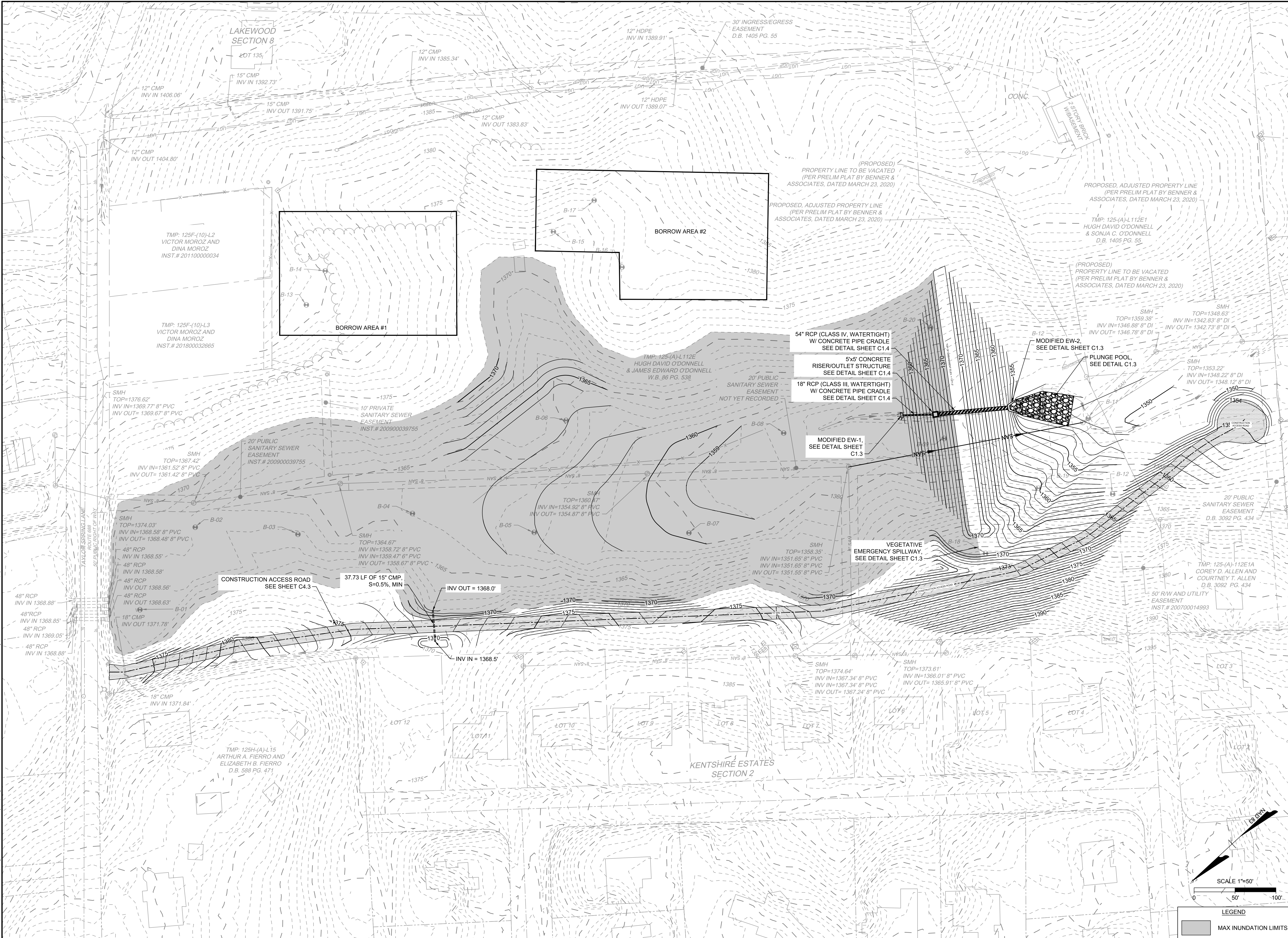
October 4, 2022: Final grading of areas above the embankment completed the week of September 26th. Excavation of the embankment cutoff trench was also started the same week. Seed and straw to stabilize the site was placed down on September 29th. Of note, the project site sustained no damage from extended rains caused by Hurricane Ian between September 30th and October 2nd.

Earthwork to construct the embankment and to finalize the access road currently in progress. Due to manufacturer's delay, concrete storm pipes and outlet structure to be delivered in early to mid-November. Until materials are received, contractor will be limited as to how much of the embankment may be constructed.

IX. APPENDIX

- A. PROJECT DESIGNS
- B. CONSTRUCTION INSPECTION PHOTOS

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APPROVED
BY ROCKINGHAM COUNTY
DEPARTMENT OF
COMMUNITY DEVELOPMENT

YOUR VISION ACHIEVED THROUGH OURS.

DATE	DATE
	10/9/2020

DRAWN BY	I. GORDON
DESIGNED BY	I. GORDON
CHECKED BY	S. REEVES
SCALE	1" = 50'

TIMMONS GROUP

TAYLOR SPRINGS STORMWATER BASIN
HARRISONBURG - VA

GRADING & SITE LAYOUT PLAN

JOB NO.	39009.004
SHEET NO.	C4.0

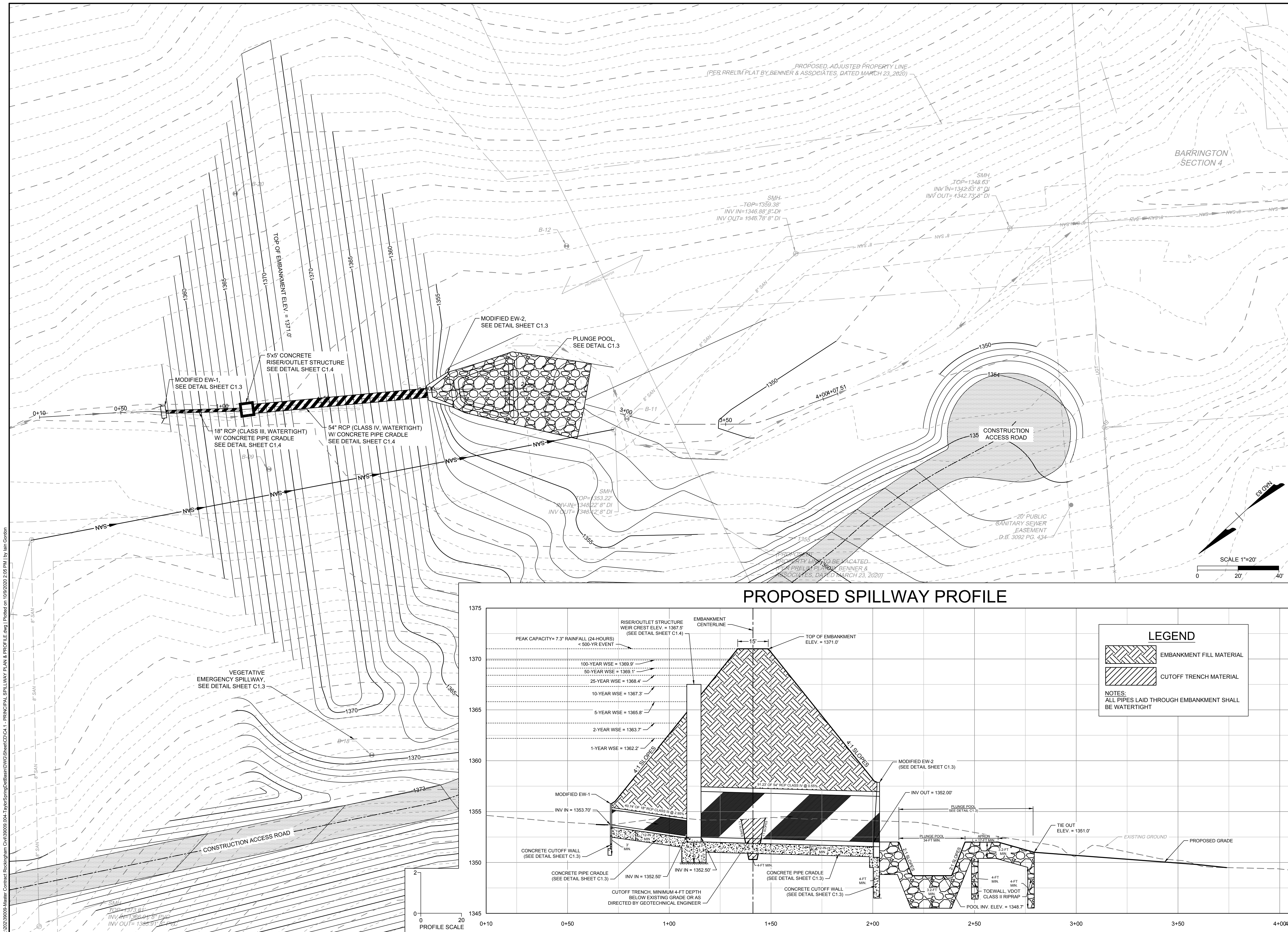
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Not To Scale



Sanitary sewer manhole rehabilitation (above) and upper basin graded and seeded (below)





Construction road and final grading





Construction road and final grading





Middle basin final grading





Access road to borrow area (above) and middle basin final grading (below)





Borrow area





Lower basin and excavation for embankment cutoff trench





Excavation for embankment cutoff trench





Excavation for embankment cutoff trench





Aerial photos from cardinal directions





Aerial photo project site



Aerial photo of embankment construction