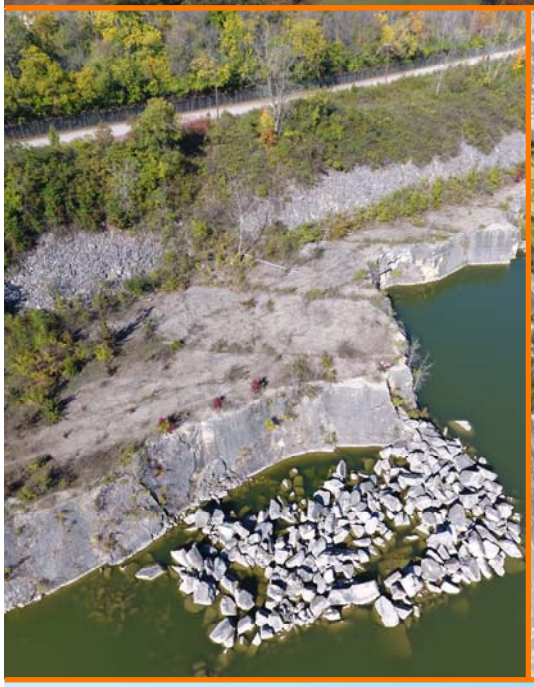


Marble Cliff Quarry Development

Type II
Variance Request

Dublin Road, Columbus, OH 43204

PID: 560-298027, 560-298029, 560-298030, 560-298033

E.P. Ferris & Associates, Inc.

Attn. Brian Saunders, P.E.
(614) 299-2999
bsaunders@epferris.com

wagenbrenner DEVELOPMENT

Metro Parks

E. P. FERRIS AND ASSOCIATES INC
Consulting Civil Engineers and Surveyors

BURGESS & NIPLE
Engineers ■ Planners ■ Environmental Scientists

E. P. FERRIS AND ASSOCIATES INC
CONSULTING CIVIL ENGINEERS AND SURVEYORS
880 KING AVENUE
COLUMBUS, OHIO 43212
614-299-2999
614-299-2992 FAX

August 29, 2019

City of Columbus
John Newsome, P.E. Administrator, DOSD
Attn: Greg Fedner, P.E., Private Development Section Manager
Stormwater and Regulatory Management Section
1250 Fairwood Avenue
Columbus, Ohio 43206

Re: Type II Variance Request
Marble Cliff Quarry Development

Project Name: Marble Cliff Quarry Development
Property Address: Dublin Road, Columbus, Ohio 43204
PID: 560-298027, 560-298029, 560-298030, 560-298033
Date Acquired: February 28, 2018
Site Disturbance: 114 Ac.
Total Site Area: 143 Ac.
Primary Contact: E.P. Ferris & Associates, Inc.
Attn: Brian Saunders, P.E.
(614) 299-2999
Email: bsaunders@epferris.com

Dear Mr. Fedner,

On behalf of Marble Cliff Canyon, LLC (MCC) and the Columbus and Franklin County Metro Park District, E.P. Ferris and Associates, Inc. and Burgess and Niple, Inc. are seeking approval of a Type II variance from the City of Columbus Stormwater Drainage Manual's (SWDM) Section 3.1. This variance is being requested for the purpose of completing site improvements related to a new Metro Park and mixed-use development throughout a former quarry and landfill site located northeast of Dublin Road between Trabue Road and Old Dublin Road, adjacent to the Scioto River. The proposed site will support a variety of multi-family, single-family, retail, and commercial properties as well as a dedicated public Metro Park that will present numerous recreational opportunities for the community. The project boundary, which includes the Quarry Trails Metro Park, was master planned to maximize the recreational space. This initial phase has set aside 62 Ac. of its 143 Ac. for a public park, which is 43% of its total area.

According to the City of Columbus Storm Water Drainage Manual (SWDM) Section 3.1, stormwater controls shall not be located within the designated Federal Emergency Management

Agency (FEMA) floodplain boundaries and runoff generated from onsite areas shall be controlled before being released from the development site. Our team requires a variance from these criteria to pursue the project's preferred development plan, which will utilize the existing quarry pond system within the 100-year floodplain and Metro Park's property as part of the site's water quality solution. As outlined in this variance request, there are multiple reasons for this preferred water quality plan. These include the ability to implement an effective method of quality through extended detention within existing natural resources without adversely affecting flooding conditions and the opportunity to minimize water quality solutions within Ohio EPA (OEPA) Rule 13 former landfill boundaries.

If approved, a variance from Section 3.1 will allow for a volume of runoff accounting for the difference between 0.75-inch and 0.90-inch rainfalls across the western side of the development and a volume of runoff for the 0.90-inch rainfall across the Metro Park to flow into the quarry pond system for extended detention quality treatment. All runoff up to a 0.75-inch rainfall and tributary to the ponds will be treated on the mixed-use development site and outside of the 100-year floodplain. Additionally, all eastern areas of the site tributary to the Scioto river will fully comply with SWDM requirements by providing water quality for runoff volumes up to a 0.90-inch rainfall on-site and outside the 100-year flood limits. Following this plan, SWDM water quality volume requirements will be met across the entire site, while utilizing only a portion of available storage in pond system in a good faith effort to maximize public park space.

Our team respectfully requests approval of this variance to follow the project's preferred water quality alternative. Please find enclosed our technical request in support of the variance briefly explained above.

Very truly yours,
E. P. FERRIS & ASSOCIATES, INC.

Brian Saunders, P.E.
Project Engineer

Table of Contents

Appendices

Introduction

The proposed Marble Cliff Quarry Development site, located in the west central portion of the City of Columbus, adjacent to the Scioto River and between Trabue Road and Dublin Rd., resides on over 100 Ac. of land previously used as a limestone quarry and landfill. The proposed 62 ac. Quarry Trails Metro Park also resides on land previously used as a limestone quarry between Dublin Road and the proposed Marble Cliff Quarry Development. Historical records indicate that the site was developed as a limestone quarry in the 1850's as part of a larger area known as the Marble Cliff Quarry that encompassed nearly 2,000 Ac. After supplying material for developments throughout Columbus and Ohio, much of the site's eastern portion was then used as a landfill until 1974. After the sale of the Marble Cliff Quarry Co. in approximately 1985, mining operations extended into its northern sections. As quarry operations ceased, land around the site experienced significant development and transitioned into various tracts of residential and commercial properties.

Investigation of the existing site conditions revealed that approx. 42 Ac. contain solid waste. These areas, primarily located on the eastern side of the site adjacent to the Scioto River, were identified to fall within OEPA Rule 13 property boundaries and include solid waste with varying cover. Since acquiring the property, MCC has initiated the containment of these solid waste areas by installing a minimum 4-ft. clay cap to prepare them for intended development. This capping operation has been completed in accordance with an approved Remedial Action Plan (RAP) through OEPA's Voluntary Action Program (VAP). As a general design principal for this site, proposed development plans include efforts to avoid disturbance of this clean clay cap in order to reduce potential groundwater contamination.

The existing site also contains two large quarry ponds within the dedicated Metro Parks parcel that were created by former limestone quarry operations and have a combined surface water area of approx. 17 Ac. There are currently no observed outflow structures associated with these ponds, the upper pond overflows through a series of shallow channels into the lower pond, and the lower pond has no current outlet to the Scioto River. Along the pond's outer limits, there is a drainage channel identified as Roberts Millikin Ditch that directs water flow from areas west of the site and south of the ponds before discharging to the Scioto River through a concrete culvert.

According to current FEMA flood mapping, both ponds and a majority of the Quarry Trails Metro Park parcel were determined to be in Zone AE, where the base flood elevation has been determined. An area in the central part of the site, between the two quarry ponds and extending nearly to the Scioto River is also shown on FEMA mapping within the same zone. However, this area is currently being filled in accordance with a previously accepted variance from SWDM Section 1.4 for the site. Due to this filling operation, a LOMR application to update FEMA

mapping will be submitted as preferred grading conditions are achieved. 100-year floodplain limits shown within this variance request's development alternative exhibits reflect conditions anticipated from proposed site grading.

Proposed development within the Marble Cliff quarry site will include a variety of multi-family, single-family, retail, and commercial uses and included within close to half of the overall site will be dedicated parks and recreational areas developed by Columbus and Franklin County Metro Parks (Figure 1). Throughout the development will be over 15,000 linear feet of new roadway and over 5,000 linear feet of new trails for local residents, Metro Park users, and the entire Central Ohio community. Additionally, a new water sports adventure complex will be developed within the Metro Park that would connect the two existing quarry ponds, Roberts Millikin Ditch, and the Scioto River, creating a continuous, multifaceted water "trail" available to park visitors. This unique Metro Park amenity will receive runoff from a diverted Roberts Millikin Ditch and the Marble Cliff Quarry and Gateway Lofts developments, while its water levels will be managed by a spillway weir controlling the system's outlet to the Scioto River.

Figure 1: Preferred Alternative development plan.

Since this "water trail" will be accepting runoff from surrounding sources to consistently maintain adequate flow for its recreational capabilities, stormwater drainage easements were recorded for outlets into the proposed Metro Park. Available storage within the pond system under a proposed weir control design was also studied. Through B&N's hydraulic modeling, an adequate amount of storage was indicated to manage a portion of the Quarry Trails Metro Park and Marble Cliff Quarry

Development's water quality through extended detention. With this finding and in a preferred effort to utilize available storage, the ponds will not only receive runoff from these improvements as originally planned, but will also provide water quality treatment for various rainfall events.

In our Preferred Alternative, water runoff volumes resulting from a 0.90-inch rainfall throughout developed areas tributary to the Scioto River will be treated for quality on-site and outside the 100-year floodplain through stormtech chambers in accordance with the manual. However, runoff volumes resulting from a 0.75-inch rainfall across areas tributary to the quarry ponds will be treated on-site and outside the 100-year floodplain in stormtech chambers, while the remaining 0.15-inch rainfall volume will be treated within the quarry pond system. Stormwater runoff volumes resulting from a 0.90-inch rainfall throughout the Quarry Trails Metro Park will be treated within the quarry pond system as well. As outlined in the following sections, this preferred development plan will sufficiently account for water quality treatment, but through an approach that appropriately harnesses the Marble Cliff Quarry's existing natural features.

Section 1 – Reason Variance is Requested

As previously discussed, this SWDM variance request is being sought to implement water quality solutions that deviate from requirements within Section 3.1, but will sufficiently treat the anticipated runoff from both the proposed Marble Cliff Quarry Development and Quarry Trails Metro Park without disrupting Metro Park planning. By following the team's preference of utilizing the quarry pond system for a portion of the Marble Cliff Quarry Development's overall water quality treatment, stormwater controls will technically be located off-site and within the 100-year floodplain. Stormwater quality controls for the Quarry Trails Metro Park will also utilize the quarry pond system within the 100-year floodplain.

The development team prefers this alternative for several reasons. First, it was found through B&N's hydraulic studies of the quarry ponds that an adequate amount of storage is available for extended detention water quality under proposed weir control designs. A total of 2.5 ac-ft (108,900 $ft.^3$) of storage is available in the pond system for stormwater quality treatment. Approx. 1.8 ac-ft (78,408 $ft.^3$) of storage is allotted to treat all of the water quality volume from the Quarry Trails Metro Park proposed development for a 0.90-inch rainfall volume and approx. 0.7 ac.-ft. (30,492 $ft.^3$) of storage is available to treat a portion of runoff from the Marble Cliff Quarry Development's western side without causing the ponds to approach an elevation impacting their weir designed to avoid any flooding frequency increase. As detailed in the site development alternative exhibits (Appendix A), a volume of runoff less than the available storage value will be directed for quality to the quarry pond system from the Marble Cliff Quarry Development, which accounts for 0.75-inch to 0.90-inch rainfall volumes across the western side of the mixed-use site tributary to the pond system. Therefore, despite being directed off-site and within the 100-year floodplain, the

Marble Cliff Quarry Development will utilize a portion of the pond's available storage to achieve fully compliant water quality volumes without impacting any flooding conditions or park planning.

In addition to underground quality chambers and extended detention in the pond system, runoff volumes up to a 0.90-inch rainfall throughout the Marble Cliff Quarry Development will also receive pre-treatment through vegetated "greenways" and pervious pavement. "Greenways" will be included between multiple developed sections as shown in the development alternatives (Appendix A) and pervious pavement sections will be designed over areas where quality chambers are built. These controls will further ensure thorough quality treatment of runoff from the site's developed areas.

Multiple site conditions also make locating stormwater controls difficult and essentially led to the design team pursuing water quality within the pond system. The primary condition being former landfill areas occupying nearly half of the site that have already been capped. With these areas covering a substantial amount of space, completely avoiding stormwater controls within previously capped trash is not possible and multiple quality systems designed with protective barriers will be located within Rule 13 boundaries. However, utilizing storage within the quarry pond system/100-year floodplain can help reduce the amount of quality chambers in former landfill areas. This reduction will occur where possible along the development's western-most roadway and will ultimately benefit our team's goal of avoiding potential groundwater contamination.

Regarding the Quarry Trails Metro Park, a majority of that parcel, including a large portion of the quarry pond system, is located within the 100-year floodplain. There are not sufficient areas located outside of the 100-year floodplain, Millikin Ditch Stream Corridor Protection Zone (SCPZ), or steeply graded areas to be able to reasonably provide stormwater quality controls for its runoff other than through extended detention in the quarry pond system.

For these reasons, the development team believes restricting water quality from the pond system will deprive reasonable use of the site and our implementation of the project's best water quality solution.

Section 2 – Site Development Alternatives

No Impact Development Alternative Plan:

The No Impact option related to this site's SWDM Section 3.1 variance involves restricting utilization of available storage within the existing quarry pond system for water quality (Appendix A). This option includes an equal amount of underground Stormtech Chambers across the Marble Cliff Quarry Development's eastern side as the preferred plan since our team intends to treat runoff

volumes tributary to the Scioto River resulting from a 0.90-inch rainfall per the manual. However, additional underground Stormtech chambers accounting for over 23,000 more cubic feet of storage than in our Preferred Alternative will be designed across the western side of the site. These will treat the entire runoff volume tributary to the quarry ponds resulting from a 0.90-inch rainfall on-site and out of the 100-year flood limits per the SWDM.

This additional storage on the western side of the site will include a combination of underground storage within landfill-free and capped landfill areas (see Rule 13 boundary). As previously discussed, site designs attempt to avoid underground utilities within the Rule 13 boundary where possible to reduce clean cap breeching, but substantial amounts of various utilities serving the site makes this difficult. Due to horizontal clearance requirements from proposed water and sanitary lines in addition to avoiding impacts to mixed-use units and Metro Park planning, over 3,000 more cubic feet of underground storage will be installed within the Rule 13 boundary area in the Full Compliance plan. These additional chambers in the trash boundary will also require deeper installation as shown in the Full Compliance exhibit due to preferred grading plans. All underground utilities within capped former landfill areas will be protected by clean barriers as shown in Appendix B, but limiting stormwater controls in trash is a priority for our team to reduce the possibility of future groundwater contamination.

The No Impact option would also not allow utilization of the quarry pond system and a majority of the Quarry Trails Metro Park parcel for its water quality treatment, as they are located in the 100-year floodplain. There is very little usable area outside the 100-year floodplain, Millikin Ditch SCPZ, and steeply graded areas to provide quality control per the manual for these areas. Therefore, the No Impact option would highly restrict development of public park amenities, including pedestrian trails, parking areas, and buildings for restrooms and recreational uses.

The Full Compliance alternative makes planning across the site difficult as discussed and ultimately prevents our reasonable use of its existing ponds. Despite B&N's studies showing storage is available for effective water quality, full compliance with the SWDM will not allow our use of the quarry pond system for this purpose due to off-site utilization for the Marble Cliff Quarry Development and its location within the 100-year floodplain.

Preferred Development Plan:

This project's Preferred Alternative development plan will incorporate water quality designs previously described in this report to effectively treat runoff volumes resulting from a 0.90-inch rainfall. By utilizing less than the off-site quarry pond's total available quality volume to treat Marble Cliff Quarry Development tributary runoff from a 0.75-inch to 0.90-inch rainfall, overall underground Stormtech chambers will be reduced by over 23,000 ft.^{3}, including over 3,000 ft.^{3}

within capped landfill areas. Additionally, the mixed-use development's runoff tributary to the ponds up to a 0.90-inch rainfall will receive further water quality pre-treatment through vegetated "greenways" and pervious pavement. The Quarry Trails Metro Park will utilize 1.8 ac-ft of the quarry pond's available water quality volume to treat all runoff from a 0.90-inch rainfall from the parcel. A total of approx. 94% of the quarry pond's available quality volume will be utilized to treat runoff from both the Marble Cliff Quarry Development and Quarry Trails Metro Park.

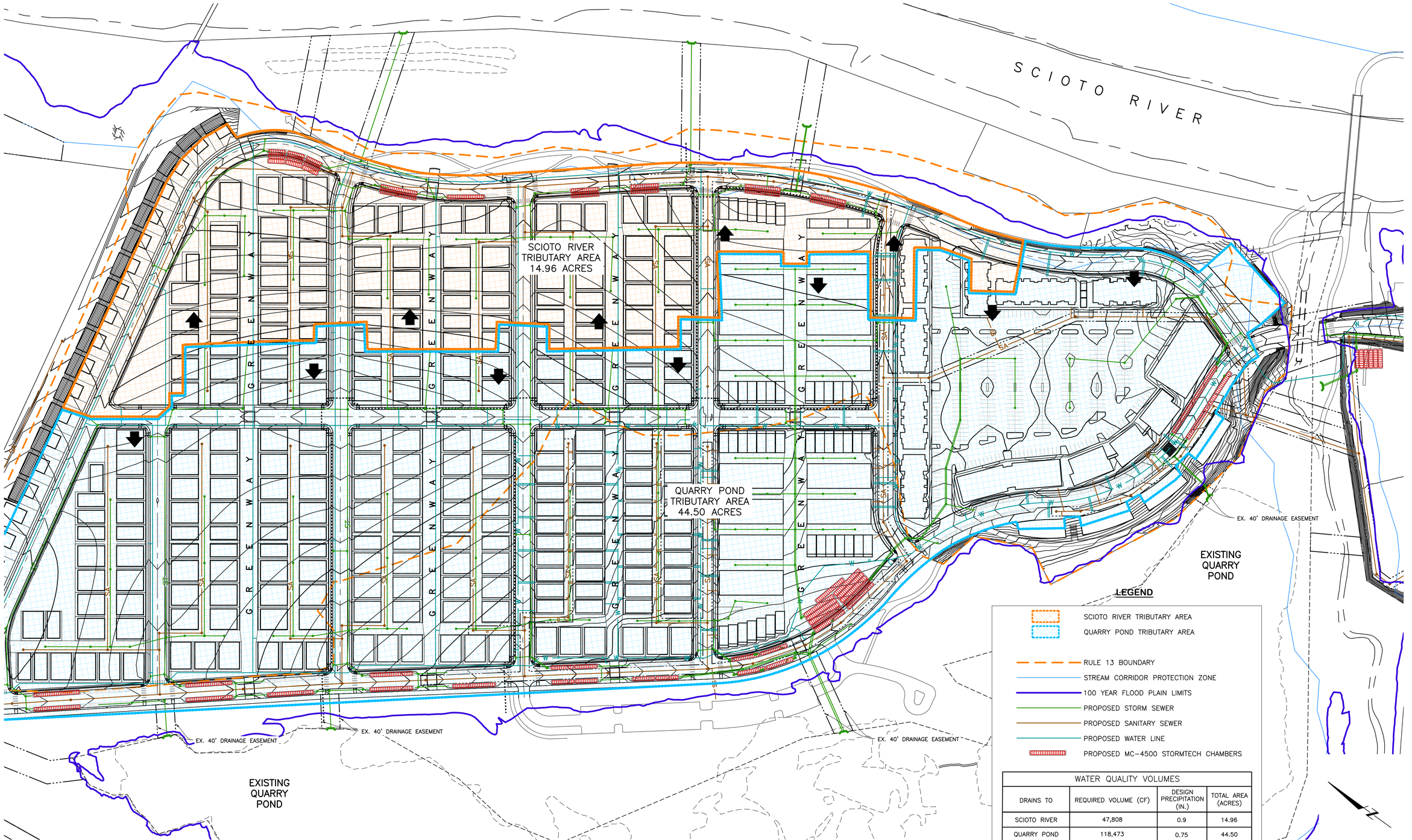
Routing the rainfall runoff tributary to the pond system will result in utilizing storage within the 100-year floodplain. However, as previously discussed, this will not impact weir controls designed to avoid any flooding frequency increase. In a good faith effort to maximize public park space, all runoff from the 0.75-inch rainfall across the Marble Cliff Quarry Development's western side will be treated for water quality outside of the floodplain and within Stormtech chambers as shown in our Preferred Alternative exhibit (Appendix A).

Section 4 – Executive Summary

Existing conditions of the Marble Cliff Quarry site present various unique design challenges and opportunities to be considered. By granting the Type II Stormwater Drainage Manual variance sought by this request, the City of Columbus will allow improvements to be completed through this project's Preferred Alternative plan. This plan will utilize storage available within the quarry pond system and the 100-year floodplain for water quality through an extended detention method. It will also reduce underground storage/quality chambers within capped former landfill areas and help maximize Metro Park planning. The unusual design challenges that this site possesses warrants the request of the above-mentioned variance from the SWDM and our team appreciates the City's consideration for its approval.

APPENDIX A

Site Development Alternatives



WATER QUALITY VOLUMES			
DRAINS TO	REQUIRED VOLUME (CF)	DESIGN PRECIPITATION (IN.)	TOTAL AREA (ACRES)
SCIOTO RIVER	47,808	0.9	14.96
QUARRY POND	118,473	0.75	44.50
TOTAL	**166,281**		**59.46**

REVISIONS	DATE	BY	CHK.

E. P. FERRIS AND ASSOCIATES INC
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880 KING AVENUE
COLUMBUS, OHIO 43212
(614) 299-2999
(614) 299-2992 (Fax)
www.EPFERRIS.com

COLUMBUS, OHIO

QUARRY TRAILS

WAGENBRENNER DEVELOPMENT

JOB NO.	1005_013
DESIGNED BY:	JLC
DRAWN BY:	JLC
CHECKED BY:	MJO
APPROVED BY:	___
DATE:	8/22/19

PREFERRED ALTERNATIVE

SCALE: 1" = 100'

SHEET NO. 1 OF 2

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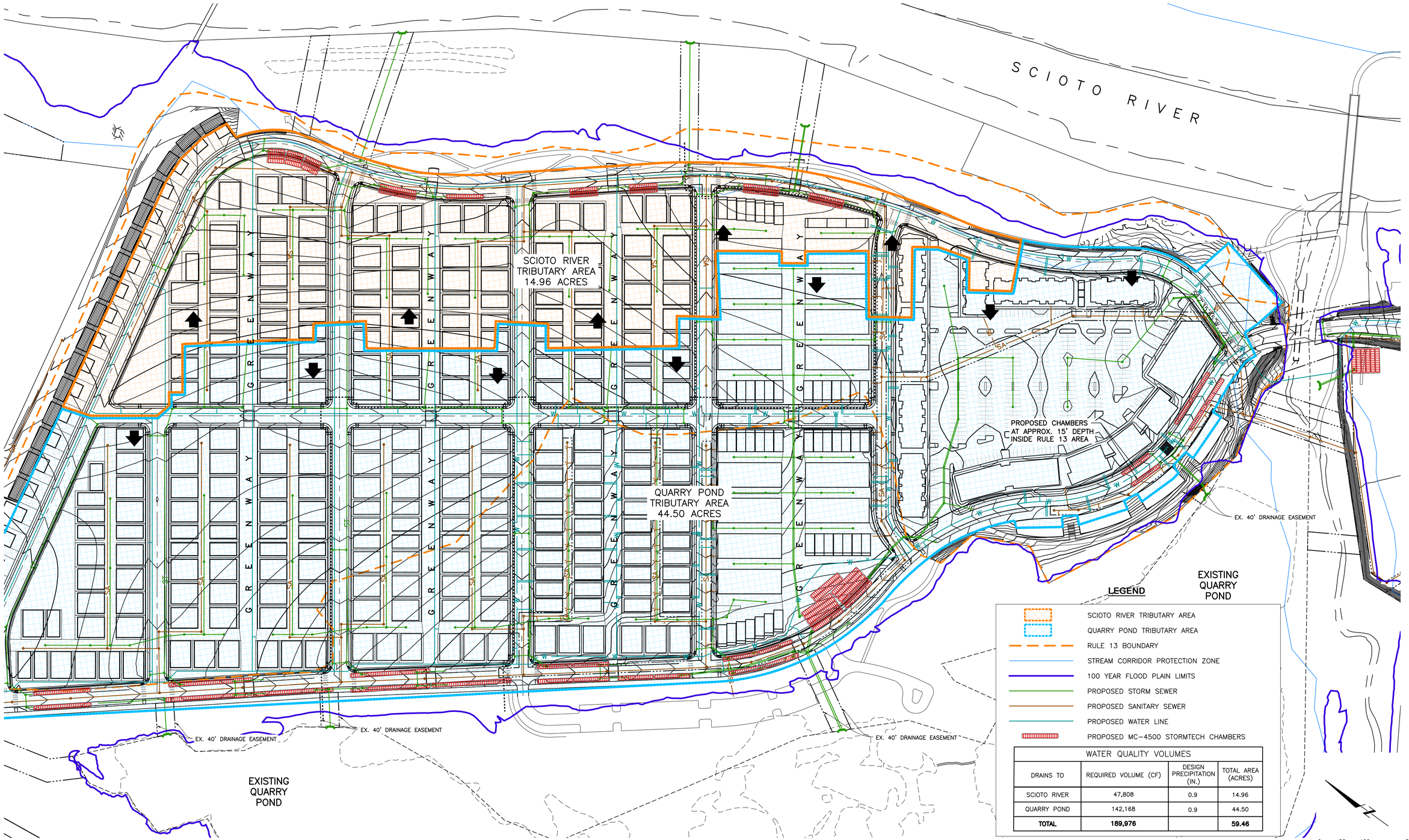

WATER QUALITY VOLUMES

DRAINS TO	REQUIRED VOLUME (CF)	DESIGN PRECIPITATION (IN.)	TOTAL AREA (ACRES)
SCIOTO RIVER	47,808	0.9	14.96
QUARRY POND	142,168	0.9	44.50
TOTAL	**189,976**		**59.46**

REVISIONS	DATE	BY	CHK.

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(614) 299-2992 (Fax)
www.EPFERRIS.com

COLUMBUS, OHIO

QUARRY TRAILS

WAGENBRENNER DEVELOPMENT

JOB NO.	1005_013
DESIGNED BY:	JLC
DRAWN BY:	JLC
CHECKED BY:	CJB
APPROVED BY:	___
DATE:	8/22/19

FULL COMPLIANCE

SCALE: 1" = 100'

SHEET NO. 2 OF 2

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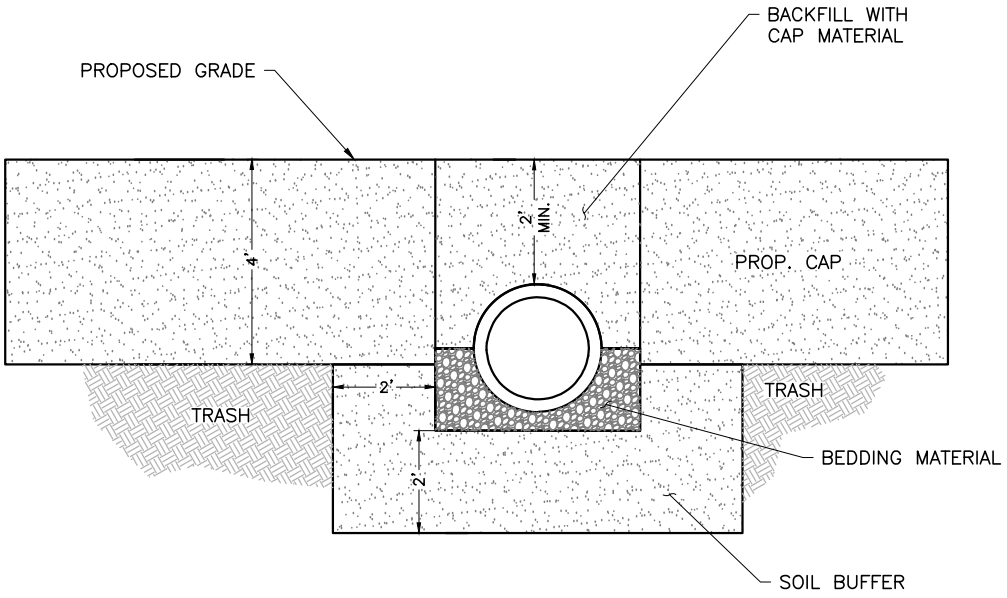
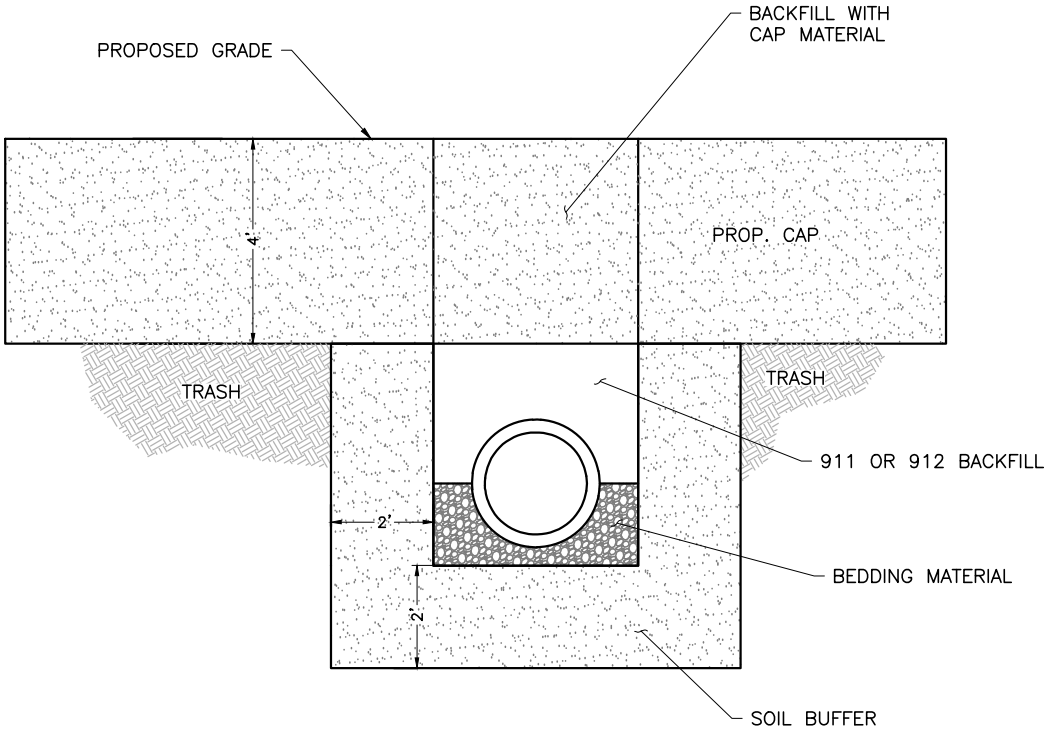
APPENDIX B

Utility in Trash Detail



UTILITY IN CAP

N.T.S.



UTILITY BELOW CAP

N.T.S.

AS PER PLAN: UTILITY IN CAP

SOME OF THE UTILITY LINES MAY BE INSTALLED BELOW THE EXISTING SOIL CAP LAYER. WHERE THIS OCCURS, THE TRENCHES WILL BE OVER EXCAVATED AND A MINIMUM OF 2 FEET OF CLEAN, COMPACTED FILL PLACED PRIOR TO THE INSTALLATION OF THE UTILITY LINE.

BENTONITE TRENCH PLUGS WILL BE INSTALLED WHERE UTILITY TRENCHES ENTER THE SITE AND ARE EXCAVATED BELOW THE SOIL CAP.

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UTILITY IN TRASH DETAIL

JOB NO.	____.__
DESIGNED BY:	___
DRAWN BY:	___
CHECKED BY:	___
APPROVED BY:	___
DATE:	7/15/19