



Engineers, Surveyors, Planners, Scientists

December 19, 2017

City of Columbus, Division of Sewerage & Drainage
Attn: Mr. Greg Fedner, P.E.
Private Development Section Manager
910 Dublin Road
Columbus, Ohio 43215

**Subject: East/West Road Improvements
Type III Variance from Stormwater Drainage Manual**

Dear Mr. Fedner,

On behalf of the City of Columbus Department of Public Service, EMH&T is submitting an application for a Type III variance from the City of Columbus Stormwater Drainage Manual (SWDM) for the proposed East/West Road Improvements project.

The proposed improvements include portions of Projects 3391-E, 3401-E and 3406-E. Collectively, these public roadway improvements are intended to support the planned OhioHealth campus expansion to located east of Olentangy River Road and south of West North Broadway. The improvements include reconstruction of approximately 560 feet of East/West Road along Slyh Run between Olentangy River Road and the proposed Ohio Health Parkway, and construction of two box culvert crossings over Slyh Run to provide access to adjoining parcels to the south.

A 147-foot-wide Stream Corridor Protection Zone (SCPZ) is present along Slyh Run, which flows west to east for approximately 600 linear feet through the project area. The existing roadway already encroaches within the SCPZ and the planned improvements will result in minor additional encroachment within the SCPZ. The two crossings will result in direct impacts to Slyh Run; however, these street crossings are a permitted use in the SCPZ and as such do not require a variance from the SWDM. Accordingly, the City is seeking a Type III variance for approval of 0.77 acre of SCPZ encroachment associated with the construction of the East/West Roadway Improvements.

The mitigation plan included as part of this variance application has been developed following pre-application coordination with the City. The mitigation includes options for both onsite and offsite SCPZ enhancements that will provide ecological benefits that exceed the SCPZ impacts associated with the proposed roadway improvements.

The following information is provided in support of the application:

- Project Name: East/West Road Improvements
- Address, PID, Site Disturbance and Total Site Area:

****Note: Project is a public roadway and does not have an address or PID****

Closest Address: 3440 Olentangy River Road, Columbus, OH 43202

PIDs in Project Area: 010-139500, 010-183740, 010-129667, 010-103251344

Site Disturbance: 1.1 acres

Total Site Area: 10.78 acres (includes Projects 3391-E, 3401-E and 3406-E)

- Primary (Owner) Contact:
City of Columbus, Department of Public Service
Attn: Steve Schmidt, P.E., Project Manager
50 West Gay Street, Columbus OH 43215
(614) 645-3966
SMSchmidt@columbus.gov

Additional information pertaining to the requested variance is included in the enclosed application document. Two hardcopies with CD have been provided. Please contact me with any questions you may have at (614) 775-4523, or by email at hdardinger@emht.com.

Sincerely,



Heather L. Dardinger
Senior Environmental Scientist

C: Steve Schmidt, City of Columbus, Department of Public Service



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20170329

EAST/WEST ROAD IMPROVEMENTS

City of Columbus SWDM Type III Variance Application

City of Columbus Department of Public Service

December 19, 2017

emht.com



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1.0 INTRODUCTION

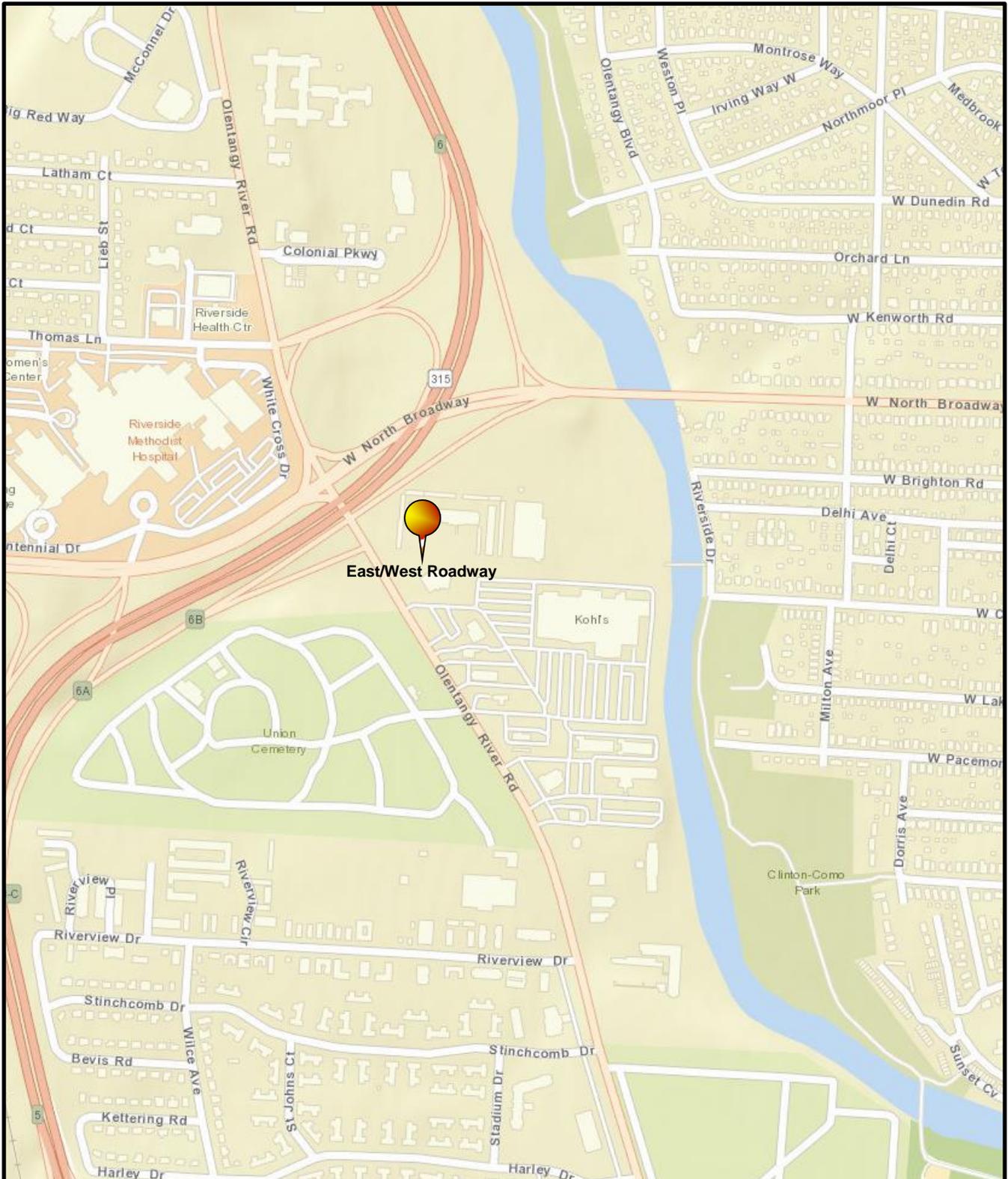
The following report provides information pertaining to a requested variance from the City of Columbus Stormwater Drainage Manual (the Manual) for the proposed East/West Road Improvements project.

The proposed improvements are to be completed by the City of Columbus in association with Projects 3391-E (OhioHealth Parkway), 3401-E (Olentangy River Road) and 3406-E (OhioHealth East/West Road). Collectively, these public roadway improvements are intended to support the planned OhioHealth campus expansion to be located east of Olentangy River Road and south of West North Broadway. The primary purpose of the proposed project is to upgrade the East/West Road to provide a connection from Olentangy River Road to the proposed OhioHealth Parkway. The City of Columbus must upgrade the existing roadway to accommodate the additional vehicle traffic that is anticipated with the planned redevelopment of the surrounding area, and relieve traffic congestion on Olentangy River Road.

The road improvements will be completed along an existing service road located east of Olentangy River Road and south of W. North Broadway (refer to Figure 1). This service road currently provides access to Canterbury Apartments and existing OhioHealth facilities to be redeveloped. The proposed improvements include reconstruction of $560\pm$ feet of roadway, including straight curb, shared-use path, storm sewers, street lighting, concrete drives, and two box culverts. The two box culvert crossings over Slyh Run will provide access to adjoining parcels to the south.

A 147-foot-wide Stream Corridor Protection Zone (SCPZ) is present along Slyh Run, which flows west to east for approximately 600 linear feet through the project area. The proposed road crossings will involve installation of two 4-sided box culverts and associated rock channel protection (RCP) in Slyh Run, resulting in 176 linear feet of direct channel impacts and 0.33 acre of impact to the SCPZ. A Section 404 Nationwide Permit from the U.S. Army Corps of Engineers has been requested for the channel impacts. The street crossings are a permitted use in the SCPZ, and do not require a variance from the Manual. As required by the Manual, the SCPZ vegetation disturbed by construction of the crossings will be restored as part of the project's landscaping plan.

The existing service road currently encroaches within the SCPZ and the planned improvements will result in minor additional encroachment within the SCPZ. This encroachment is not considered a permitted use per the Manual. As such, the City is seeking a Type III variance for encroachment within the Slyh Run SCPZ for the purpose of completing the proposed roadway reconstruction.





2.0 TYPE III VARIANCE (STREAM PROTECTION)

The Stream Corridor Protection Zone (SCPZ) consists of the stream channel and the adjacent riparian area. Its purpose is to allow the natural, lateral movement of the stream, provide sufficient area for flood conveyance, protect water quality and prevent structures from being impacted by natural streambank erosion. A SCPZ is present along Slyh Run at the East/West Roadway project site and the Preferred Plan will encroach upon the SCPZ. The encroachment will occur primarily within land that is currently paved.

The City of Columbus is requesting a variance from Section 1.3.2 and 1.3.3 of the Manual for the East/West Roadway Improvements, specifically a variance allowing for earthwork and paving within the SCPZ. The roadway improvements will also result in direct impacts to the stream channel for roadway crossings; however, these impacts are permitted within the SCPZ and a variance is not required for these impacts per the Manual.

2.1 Proposed SCPZ Impacts

As shown on Exhibit Sheet 1, Slyh Run has a drainage area of 0.99 square mile. Accordingly, based upon the criteria provided in the Manual, Slyh Run has a SCPZ width of 147 feet. Under the Preferred Alternative, discussed below, the proposed area of impact within the SCPZ is 0.77 acre (refer to Sheet 2). The majority of the requested encroachment (0.53 acre) will occur within the limits of existing pavement.

2.2 Existing Conditions

The project area is currently composed of the existing service roadway, a portion of the Canterbury Apartments parking lot, existing driveways and sidewalks, and a portion of the narrow riparian corridor along Slyh Run, which parallels the project area directly to the south. The existing roadway and other paved surfaces pre-date the current SCPZ requirements, and are located within the designated SCPZ of Slyh Run. The existing riparian corridor along Slyh Run ranges from less than 10 feet wide to approximately 20 feet wide between the existing road and the stream channel. The riparian corridor consists of mature hardwood trees and a significant amount of invasive honeysuckle.

2.3 Site Development Alternatives

2.3.1 Proposed Conditions / Preferred Alternative

As shown on Exhibit Sheet 2, the improved East/West Road will be located within the Slyh Run SCPZ, resulting in **0.77 acre** of impact. The proposed impact includes 0.24 acre of existing pervious surface and 0.53 acre existing impervious (paved) surface. These impacts are necessary in order to improve the existing service road to accommodate the anticipated increase in vehicle traffic associated with the surrounding redevelopment. Under the Preferred Alternative, only 0.04 acre of new impervious surface will be constructed within the SCPZ.

2.3.2 Full Compliance / No-Impact Alternative

As described herein, the encroachment proposed within the Slyh Run SCPZ is located primarily within the limits of existing pavement (0.53 acre). Based on conversations with City of Columbus



staff, it is understood that milling and resurfacing the existing pavement within the SCPZ is not subject to regulation under the Manual. Accordingly, the full compliance / no-impact alternative (shown on Exhibit Sheet 3) includes only milling and resurfacing the existing pavement within the SCPZ to make use of the existing roadway. The no-impact alternative would maintain the existing conditions within the SCPZ.

2.3.3 Comparison of Project Alternatives

As summarized in Table 1, the Preferred Alternative will result in slightly more impervious surface (0.04 acre) in the SCPZ as compared to the no impact plan / existing conditions. The encroachment within the SCPZ is necessary in order to complete the proposed roadway improvements as the existing road is already located within the SCPZ. It was not possible to relocate the roadway outside of the SCPZ given the configuration of the proposed redevelopment, and the proximity of adjacent buildings and parking lots.

**Table 1
Comparison of Alternatives for East/West Roadway Improvements**

Alternative	SCPZ Cover (acres)*		
	Impervious	Pervious	Total
Existing Conditions	0.53	0.24	0.77
Preferred Plan Alternative	0.57	0.20	0.77
No Impact Alternative	0.53	0.24	0.77

*Includes only the areas impacted by the proposed project

2.4 Impacts to Stormwater Detention and Water Quality

The existing roadway to be improved is already located within the SCPZ and the Preferred Alternative only slightly increases the impervious cover within the SCPZ. Moreover, appropriate Best Management Practices will be implemented to provide stormwater detention and water quality treatment prior to discharge to Slyh Run, as required by the City. Therefore, the impact on Slyh Run as compared to existing conditions will be minimal. The existing Slyh Run channel is highly modified. Upstream of the project area, the stream is contained within a concrete lined channel and a culvert beneath State Route 315 for approximately 0.6 mile. The open stream channel below Olentangy River Road has been straightened/channelized, and exhibits very low functionality. The stream received a Qualitative Habitat Evaluation Index (QHEI) score of 33 within the project area, which is indicative of habitat in the “poor” narrative range according to Ohio EPA.

2.5 Statement of Hardship

The proposed impact to the SCPZ for the East/West Roadway Improvements under the Preferred Alternative is driven by the projected increase in traffic to this area stemming from the planned OhioHealth redevelopment, and the need to provide access to adjoining properties to the south. The existing roadway was constructed in the 1960s and no major rehabilitation has been conducted since that time. Regular maintenance and improvements are required to support the planned redevelopment of the area. Implementation of the No-Impact Alternative would hinder the City’s ability to provide safe roadway conditions commensurate with expected traffic conditions. Thus, the City respectfully requests approval of the variance for the Preferred Plan Alternative.



3.0 MITIGATION

As described in the Manual, adequate mitigation must be provided for impacts to the SCPZ by creating equivalent mitigation also within a SCPZ. The proposed area of SCPZ impact for the East/West Road Improvements is **0.77 acre**. Within this area, only 0.24 acre of the impact will be to pervious surface; the remainder is existing pavement. The Manual states, “Generally, mitigation SCPZ will be considered equivalent if it performs the same function as the disturbed SPCZ.”

It is the City’s preference that mitigation occur on the same site as the SCPZ encroachment, or as close as possible if onsite mitigation is infeasible. The Manual specifies that mitigation should consist of equivalent SCPZ created at the following ratios: 1:1 onsite, 1:1.5 on an adjacent site, 1:2 in the same watershed assessment unit, 1:3 in the same county, and 1:5 in a contiguous county.

Therefore, the City evaluated several options for onsite mitigation. Onsite mitigation will consist of riparian corridor enhancement, i.e., invasive species control and native woody planting, along Slyh Run and/or the Olentangy River. Approximately 0.91 acre of riparian enhancement may occur in the following locations (refer to Exhibit Sheet 4):

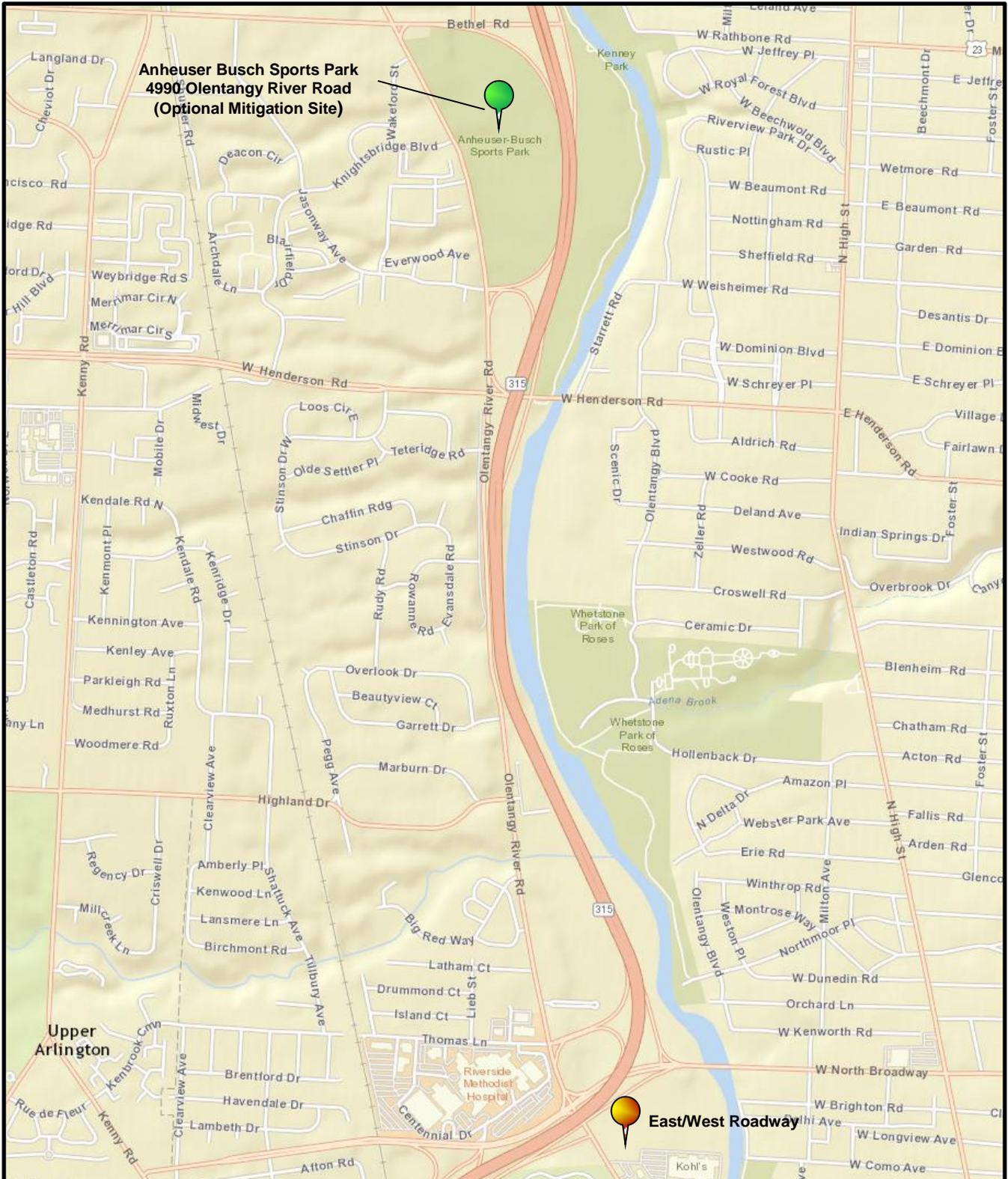
1. 0.47 acre on north bank of Slyh Run, east of OhioHealth Parkway (owned by OhioHealth);
2. 0.13 acre on north bank of Slyh Run, west of OhioHealth Parkway (0.04 ac owned by OhioHealth; 0.09 ac owned by City of Columbus);
3. ±0.06 acre on south bank of Slyh Run, west of OhioHealth Parkway (owned by OGGI Properties II, LLC); and
4. ±0.25 acre along west bank of Olentangy River (owned by City of Columbus).

Completion of riparian enhancement activities on the south bank of Slyh Run and the west bank of the Olentangy River is subject to further coordination and approval by OGGI Properties and the City of Columbus Recreation and Park Department (CRPD), respectively. At the time of submittal of this variance application, such coordination is still ongoing. A response from CRPD is still pending and a temporary easement from OGGI Properties has been added to the right-of-way plans, but not yet approved. Assuming CRPD and OGGI Properties provide approval, sufficient mitigation should be available onsite to exceed the required 1:1 onsite mitigation ratio for the proposed impacts of 0.77 acre.

Should it be determined that the City cannot achieve at least 0.77 acre of mitigation onsite, the City will complete sufficient additional mitigation at the Anheuser-Busch Sports Park, located at 4990 Olentangy River Road (refer to Figure 2). This park is located approximately 2 miles north of the project site, in the same watershed as the proposed impacts (HUC12: 05060001-11-03).

The park includes approximately 65 acres between Olentangy River Road and State Route 315. It is composed of baseball fields, parking lots and open grassy areas. Two tributaries to the Olentangy River, Coe Ditch and Bowers Ditch, flow west to east across the property. There are approximately 10 acres of woods on the property, primarily located along the two streams.

SCPZ mitigation at the Anheuser-Busch Sports Park was previously approved in conjunction with the Type III Variance for the OhioHealth Administrative Offices and North Parking Lot. If necessary, the City may complete up to 0.92 acres of additional SCPZ mitigation to complement this previous effort (refer to Exhibit Sheet 5). This mitigation would include riparian enhancement within the woodlot along Coe Ditch, the northern tributary on the site.



3.1 Existing Onsite SCPZ Conditions

As previously described, Slyh Run has a watershed area of 0.99 acre and a calculated SCPZ width of 147 feet. The majority of the SCPZ is composed of impervious surfaces (parking lots, roadways, buildings, etc.) The very narrow riparian corridor that is present along the north and south banks of Slyh Run ranges from approximately 10 to 20 feet wide. The wooded corridor includes mature native tree and shrub species, as well as extensive coverage of invasive and noxious weed species, including bush honeysuckle (*Lonicera* spp.), wild grapevine (*Vitis* spp.), and tree-of-heaven (*Ailanthus altissima*).

3.2 Existing Offsite SCPZ Conditions

Coe Ditch has a watershed area of 0.54 square mile and a calculated SCPZ width of 117 feet, which is shown on Exhibit Sheet 5. The existing canopy of the forested riparian along Coe Ditch is primarily composed of native tree species, with some invasive tree-of-heaven also present. The understory, however, is comprised of dense thickets of invasive bush honeysuckle. Wild grapevine is also present throughout the canopy and understory.

3.3 Proposed SCPZ Enhancements

The proposed riparian enhancement includes invasive species removal and native plantings. Both bush honeysuckle and tree-of-heaven are highly invasive, and wild grapevine is considered a noxious weed. These species suppress and displace native trees and shrubs with their aggressive growth and dispersal. Moreover, studies have shown that vegetation in riparian zones can have a significant effect on overall stream health. Natural stream vegetation protects against erosion and provides bank stability, provides organic matter, wood and cover for aquatic species, provides nutrient management, and serves as a buffer from nonpoint source pollution. Invasive species, particularly bush honeysuckle, cause direct and indirect impacts to water quality, as listed below:

1. Changes in the acidity levels of the soil in the riparian zone;
2. Changes in water chemistry and creation of hypoxic conditions due to faster rates of leaf litter decomposition in the stream channel;
3. Reduced inputs of organic matter and woody debris needed by aquatic species; and
4. Reduced water flow rates due to higher transpiration rates.

The proposed riparian enhancements, as shown on Exhibit Sheet 4, will include mechanical (cutting) and chemical treatment of these species, followed by planting of native trees and shrubs. The native plantings will serve to reestablish a diverse and functional understory in the riparian corridor. If enhancement activities are conducted along the Olentangy River and/or offsite at the Anheuser Busch Sports Park, the implementation of the mitigation plan will be coordinated with the Department of Recreation and Parks to ensure the activities completed do not conflict with any preexisting recreational uses of the area(s).

3.4 Proposed SCPZ Mitigation Ratio

The proposed onsite mitigation, i.e., Options 1, 2A, 2B, 3 and 4 (total of 0.91 acre) shown on Exhibit Sheet 4 and listed in Table 2, would provide mitigation at an approximate ratio of 1.2:1 based on the 0.77 acre of impact, which exceeds the required 1:1 onsite mitigation ratio. As compared to the total amount of impervious area to be added within the SCPZ (0.04 acre), this



mitigation represents a ratio of more than 22:1. Moreover, it should be noted the mitigation includes a two-step process of removal of the invasive species from the corridor followed by native plantings. Either one of these activities could be considered a standalone mitigation activity.

Should it be determined following further coordination with OGGI Properties and the CRPD that there is not sufficient mitigation available onsite, i.e., at least 0.77 acre, additional mitigation may be provided offsite at the Anheuser-Busch Sports Park to make up the shortfall. In all cases, whether performed onsite or offsite, the proposed mitigation will perform a significantly higher function than the majority of the area to be impacted, which includes 0.53 acre of existing pavement.

**Table 2
SCPZ Mitigation Alternatives for East/West Roadway Improvements**

Option	Owner	Area (ac)	Status*
Onsite Mitigation			
Option 1	OhioHealth	0.47	Approved
Option 2A	OhioHealth	0.04	Approved
Option 2B	Columbus	0.09	Approved
Option 3	OGGI Properties	0.06	Pending
Option 4	Columbus	0.25	Pending
Subtotal	--	0.91 (Ratio = 1.2:1)	
Optional Offsite Mitigation			
Anheuser Busch Park	Columbus	≤0.92	Approved

* "Approved" indicates the property owner has provided preliminary approval of this area for mitigation. "Pending" indicates that coordination with property owners regarding these areas is ongoing.



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4.0 CONCLUSIONS

The City requests approval of the Type III variance for the Preferred Project Alternative for the East/West Roadway Improvements project. This project is an important component of the overall redevelopment of this area in association with the planned OhioHealth campus expansion. The proposed impact to 0.77 acre of Slyh Run SCPZ is driven by the need to improve this public roadway to meet anticipated traffic conditions, and results in a net gain of only 0.04 acre of impervious surface within the SCPZ.

The mitigation proposed for these impacts includes approximately 0.91 acre of forested riparian corridor enhancement onsite along Slyh Run and the Olentangy River, subject to further coordination with adjacent property owners and the City's Recreation and Parks Department. If approved, the proposed onsite mitigation would be provided at a ratio of approximately 1.2:1. Should it prove infeasible to provide at least 0.77 acre of mitigation onsite, the City will pursue additional forested riparian corridor enhancement at the Anheuser-Busch Sports Park at a ratio of at least 1:2 for the remainder of the required mitigation. Considering just the impacts to pervious surface within the SCPZ (0.04 acre), the mitigation to be provided represents a ratio of approximately 22:1.



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PHOTOGRAPHS



Photograph 1 – View along existing roadway and narrow riparian buffer along northern bank of Slyh Run, facing east (EMH&T, 11/8/2016)



Photograph 2 – View of along existing roadway and narrow riparian buffer along northern bank of Slyh Run, facing west (EMH&T, 2/17/17)



Photograph 3 – View of Slyh Run looking downstream (east) from service road east of Olentangy River Road (EMH&T, 2/17/17)



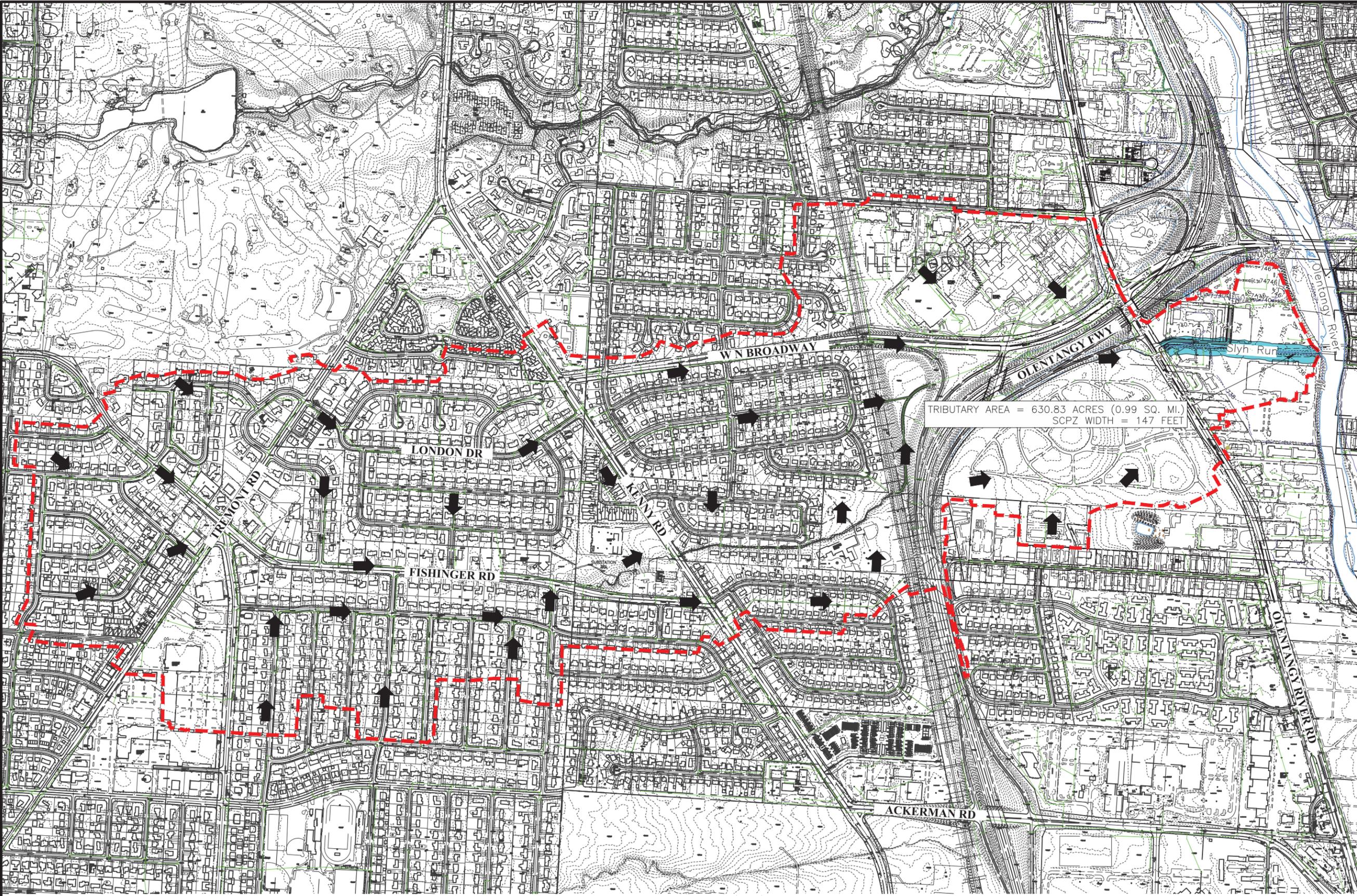
Photograph 4 – View of Slyh Run looking upstream (west) from eastern end of project area (EMH&T, 11/8/16).



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EXHIBITS

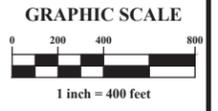
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Legend

- Tributary Boundary
- Stream Corridor Protection Zone
- Flow Arrow
- Storm Sewer (Source: City of Columbus Storm Sewer Utilities, September 2014)

Topography Source: Franklin County Auditor GIS (January 2017)



MARK	DATE	DESCRIPTION

CITY OF COLUMBUS

CITY OF COLUMBUS, FRANKLIN COUNTY, OHIO
 EXHIBIT FOR PUBLIC IMPROVEMENTS
 FOR
EAST/WEST ROAD
3440 OLENANGY RIVER ROAD
 SLYH RUN WATERSHED AND SCPZ



DATE
December 13, 2017

SCALE
1" = 400'

JOB NO.
2016-1324

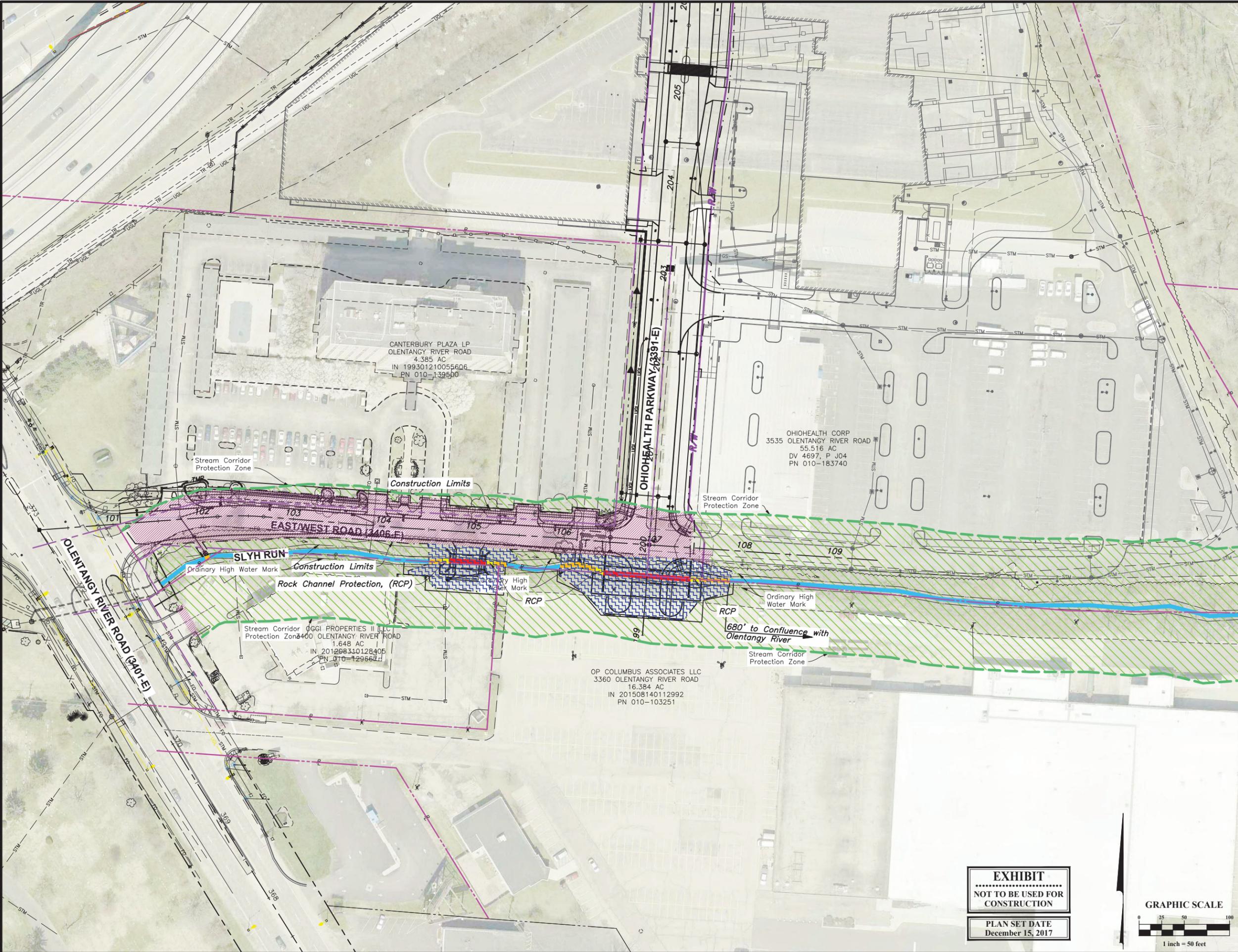
SHEET
1/5

LEGEND

- Stream Corridor Protection Zone (147' Wide)
- Portion of SCPZ to Remain Undisturbed by Public Projects
- Portion of SCPZ to be Disturbed by Public Projects (0.77 Ac. = 0.53 Ac. Impervious, 0.24 Ac. Pervious)
- Portion of SCPZ to be Disturbed for Road Crossings (0.33 Ac. = 0.07 Ac. Impervious, 0.26 Ac. Pervious)
- Stream to be Enclosed (136 Ft. + 40 Ft. RCP = 176 Ft.)
- RCP
- Stream to be Disturbed but Not Enclosed. Stream shall be Restored to the Pre-Disturbance Conditions (107 Ft.)
- Stream to Remain Undisturbed

Total Length of Stream Impacts (176 Ft. + 107 Ft. = 283 Ft.)

NOTE: EDA Includes Projects 3391-E, 3401-E, 3406-E



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EXHIBIT
 NOT TO BE USED FOR
 CONSTRUCTION
 PLAN SET DATE
 December 15, 2017



CITY OF COLUMBUS, FRANKLIN COUNTY, OHIO
 EXHIBIT FOR PUBLIC IMPROVEMENTS
 FOR
EAST/WEST ROAD
3440 OLENTANGY RIVER ROAD
 SCPZ VARIANCE - PREFERRED PLAN

	DATE: December 15, 2017
	SCALE: 1" = 50'
	JOB NO: 20170329
	SHEET: 2 of 5

LEGEND

- Stream Corridor Protection Zone (147' Wide)
- Existing Impervious/Area to be Milled and Resurfaced = 0.53 Ac.
- Property Line
- Top of Stream Bank

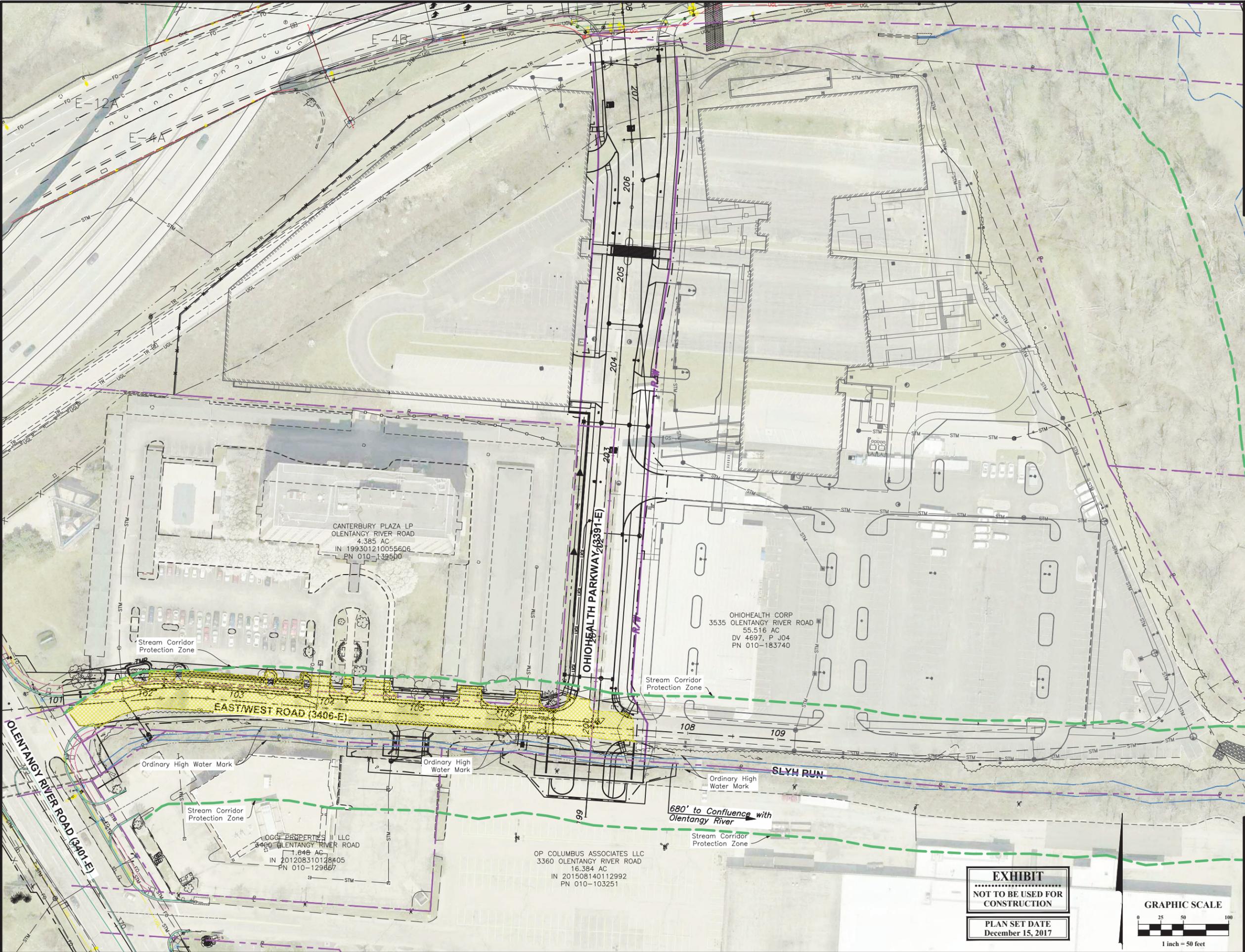
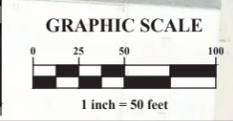


EXHIBIT
 NOT TO BE USED FOR
 CONSTRUCTION
 PLAN SET DATE
 December 15, 2017



CITY OF COLUMBUS, FRANKLIN COUNTY, OHIO
 EXHIBIT FOR PUBLIC IMPROVEMENTS
 FOR
**EAST/WEST ROAD
 3440 OLENTANGY RIVER ROAD
 SCPZ VARIANCE - NO IMPACT PLAN**

EMHT
 Evans, Meacham, Hamilton & Thomas, Inc.
 Engineers • Surveyors • Planners • Scientists
 3800 New Albany Road, Columbus, OH 43204
 Phone: 614.778.4800 Fax: 614.778.9648
 emht.com

DATE: December 15, 2017
 SCALE: 1" = 50'
 JOB NO.: 20170329
 SHEET: 3 of 5

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TABLE 1: OPEN CANOPY PLANTING					
COMMON NAME	SCIENTIFIC NAME	QUANTITY	MATERIAL	SIZE	MIN SPACING
TREES					
RED OAK	QUERCUS RUBRA		BARE ROOT	18"	9' X 9'
AMERICAN SYCAMORE	PLATANUS OCCIDENTALIS		BARE ROOT	18"	
EASTERN COTTONWOOD	POPULUS DELTOIDES		BARE ROOT	18"	
OAK (S)	QUERCUS SPP.		BARE ROOT	18"	
BLACK CHERRY*	PRUNUS SEROTINA		BARE ROOT	18"	
SHRUBS					
GRAY DOGWOOD	CORNUS RACEMOSA		BARE ROOT	18"	14' X 14'
ARROWWOOD VIBURNUM	VIBURNUM DENTATUM		BARE ROOT	18"	

* Acceptable substitutes:
 Easternredbud (Cercis canadensis)
 Honey locust (thornless) (Gleditsia triacanthos 'inermis')

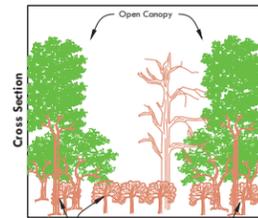
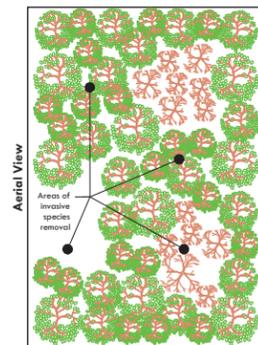
TABLE 2: UNDERSTORY PLANTING					
COMMON NAME	SCIENTIFIC NAME	QUANTITY	MATERIAL	SIZE	MIN SPACING
TREES					
BLUE-BEECH	CARPINUS CAROLINIANA		BARE ROOT	18"	14' X 14'
RED BUD	CERCIS CANADENSIS		BARE ROOT	18"	
PERSIMMON	DIOSPEROS VIRGINIANA		BARE ROOT	18"	
SASSAFRAS	SASSAFRAS ALBIDIUM		BARE ROOT	18"	
SHRUBS					
FLOWERING DOGWOOD	CORNUS FLORIDA		BARE ROOT	18"	9' X 9'
WITCH HAZEL	HAMAMELIS VIRGINIANA		BARE ROOT	18"	
SPICE BUSH	LINDERA BENZOIN		BARE ROOT	18"	
NANNY BERRY*	VIBURNUM LENTAGO		BARE ROOT	18"	

* Acceptable substitutes:
 Black-haw (Viburnum prunifolium)
 Rough leaved dogwood (Cornus drummondii)

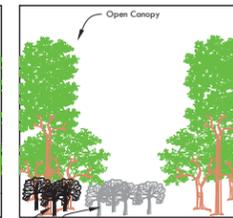
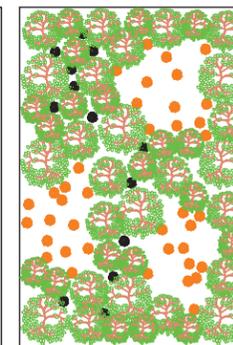
INVASIVE TREATMENT

- Invasive treatment shall occur within the area identified on this sheet during the late summer, July - October.
- The contractor shall remove all invasive bush honeysuckle (Lonicera sp.) and Tree-of-Heaven (Ailanthus altissima) saplings and trees within the area indicated on this sheet. Plants shall be cut close to the ground either by hand or via mechanized clearing, leaving low stumps (1-2 inches high) in place. If mechanized clearing is used, no grubbing or ground disturbance shall occur.
- The contractor shall remove all grape vines by tracing them to the area(s) where rooted into the ground and cutting the vine on both sides of where it is rooted.
- The contractor shall apply water-based glyphosate herbicide (trade name Rodeo, Accord, or approved equal) to the cut surface of shrubs, trees, and vines immediately (within 3 minutes) after cutting. Apply at least 40% of active ingredient. A 100% solution is recommended for best results, following specifications provided on product label.
- The contractor shall apply the herbicide directly to the freshly cut surface using a hand-held sprayer or paintbrush. Care should be taken not to apply herbicide to adjacent native vegetation.
- The contractor may chip plant material onsite and place chips/mulch within the invasive treatment area. Chips/mulch shall also be used to stabilize access routes. Chips/mulch placed in the work area shall be spread in a layer no more than 4 inches thick. Any cut plant material not chipped and spread within the work area must be removed and disposed of off-site.

RIPARIAN CORRIDOR IMPROVEMENT (INVASIVE SPECIES REMOVAL)



ENHANCED CONDITIONS (NATIVE PLANTINGS)



NOTES:

- Invasive species to be removed by cutting and herbicide application as specified above.
- Areas with open canopy (full sun) will be planted as described in Table 1.
- Areas with intact canopy trees (resulting in partial to full shade) will be planted as described in Table 2.
- Bare root plant material will be installed between November 1 and November 30.
- Any substitutions of plant material will be submitted to the City site contact; only the city may approve such substitutions.

LEGEND

- Stream Corridor Protection Zone (147' Wide)
- Portion of SCPZ to be Disturbed by Public Projects (0.77 Ac. = 0.53 Ac. Impervious, 0.24 Ac. Pervious)
- Portion of SCPZ to be Disturbed for Road Crossings (0.33 Ac. = 0.07 Ac. Impervious, 0.26 Ac. Pervious)
- Property Line
- Top of Stream Bank
- Mitigation Option 1 - OhioHealth (0.47 Ac.)
- Mitigation Option 2A - Ohio Health (0.04 Ac.)
- Mitigation Option 2B - City of Columbus (0.09 Ac.)
- Mitigation Option 3 - OGGI Properties (0.06 Ac.)
- Mitigation Option 4 - City of Columbus (0.25 Ac.)

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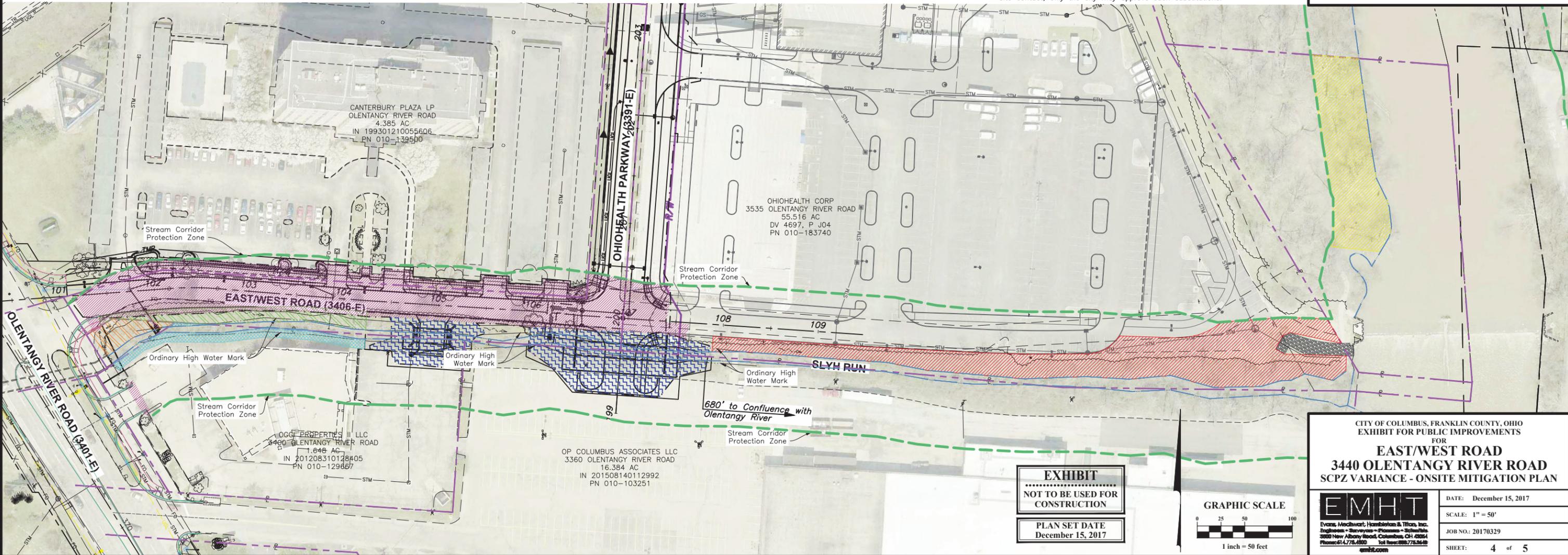
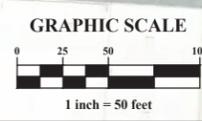


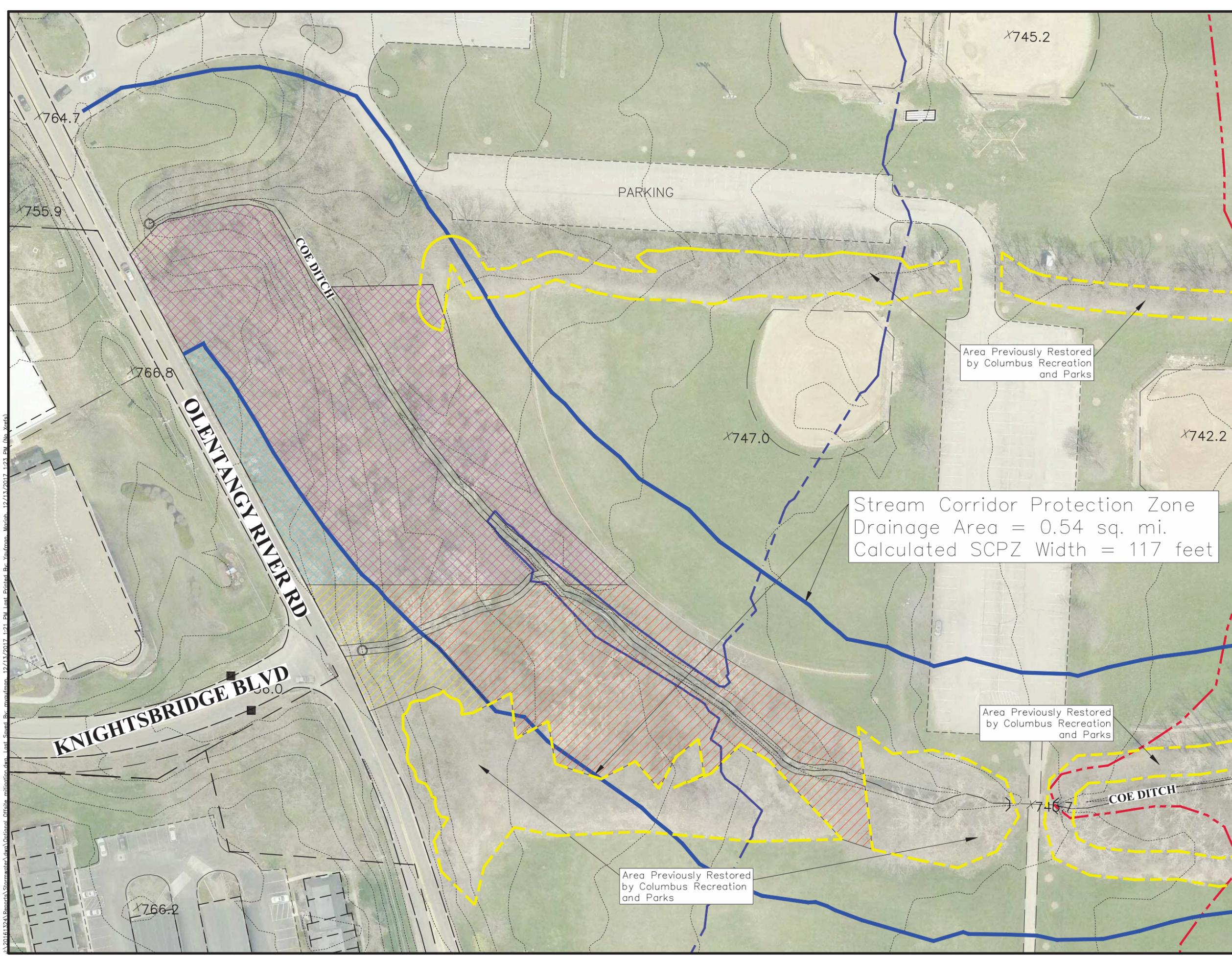
EXHIBIT
 NOT TO BE USED FOR CONSTRUCTION
 PLAN SET DATE
 December 15, 2017



CITY OF COLUMBUS, FRANKLIN COUNTY, OHIO
 EXHIBIT FOR PUBLIC IMPROVEMENTS
 FOR
EAST/WEST ROAD
3440 OLENTANGY RIVER ROAD
 SCPZ VARIANCE - ONSITE MITIGATION PLAN

EMHT
 Evans, Mechwart, Hamilton & Tibbitts, Inc.
 Engineers • Surveyors • Planners • Scientists
 3800 New Albany Road, Columbus, OH 43204
 Phone: 614.778.4000 Fax: 614.778.9646
 emht.com

DATE: December 15, 2017
 SCALE: 1" = 50'
 JOB NO: 20170329
 SHEET: 4 of 5



- LEGEND**
- - - 100-YEAR FLOODPLAIN (2008 FIRM)
 - - - 500-YEAR FLOODPLAIN (2008 FIRM)
 - - - AREAS OF PREVIOUS RESTORATION
- APPROVED FOR PRIVATE SITE IMPROVEMENTS**
- ▨ RIPARIAN MITIGATION AREA WITHIN SCPZ = 1.50 ACRES (SECTION A)
 - ▨ RIPARIAN MITIGATION AREA OUTSIDE OF SCPZ = 0.18 ACRES (SECTION A)
- PROPOSED MITIGATION FOR PUBLIC SITE IMPROVEMENTS**
- ▨ RIPARIAN MITIGATION AREA WITHIN SCPZ = 0.92 ACRES (SECTION B)
 - ▨ RIPARIAN MITIGATION AREA OUTSIDE OF SCPZ = 0.18 ACRES (SECTION B)

*SECTION A OF THE PROPOSED MITIGATION AREA IS A PART OF THE APPROVED CC-17899
 **SECTION B OF THE PROPOSED MITIGATION AREA IS SPECULATIVE AND RESERVED FOR USE IN ASSOCIATION WITH A FUTURE POTENTIAL TYPE III VARIANCE FOR PUBLIC ROADWAY IMPROVEMENTS

MARK	DATE	DESCRIPTION

CITY OF COLUMBUS
 CITY OF COLUMBUS, FRANKLIN COUNTY, OHIO

EXHIBIT FOR PUBLIC IMPROVEMENTS
FOR
EAST/WEST ROAD
4990 OLENTANGY RIVER ROAD
SCPZ VARIANCE - OPTIONAL OFFSITE MITIGATION PLAN



DATE
 December 13, 2017

SCALE
 1" = 40'

JOB NO.
 2016-1324

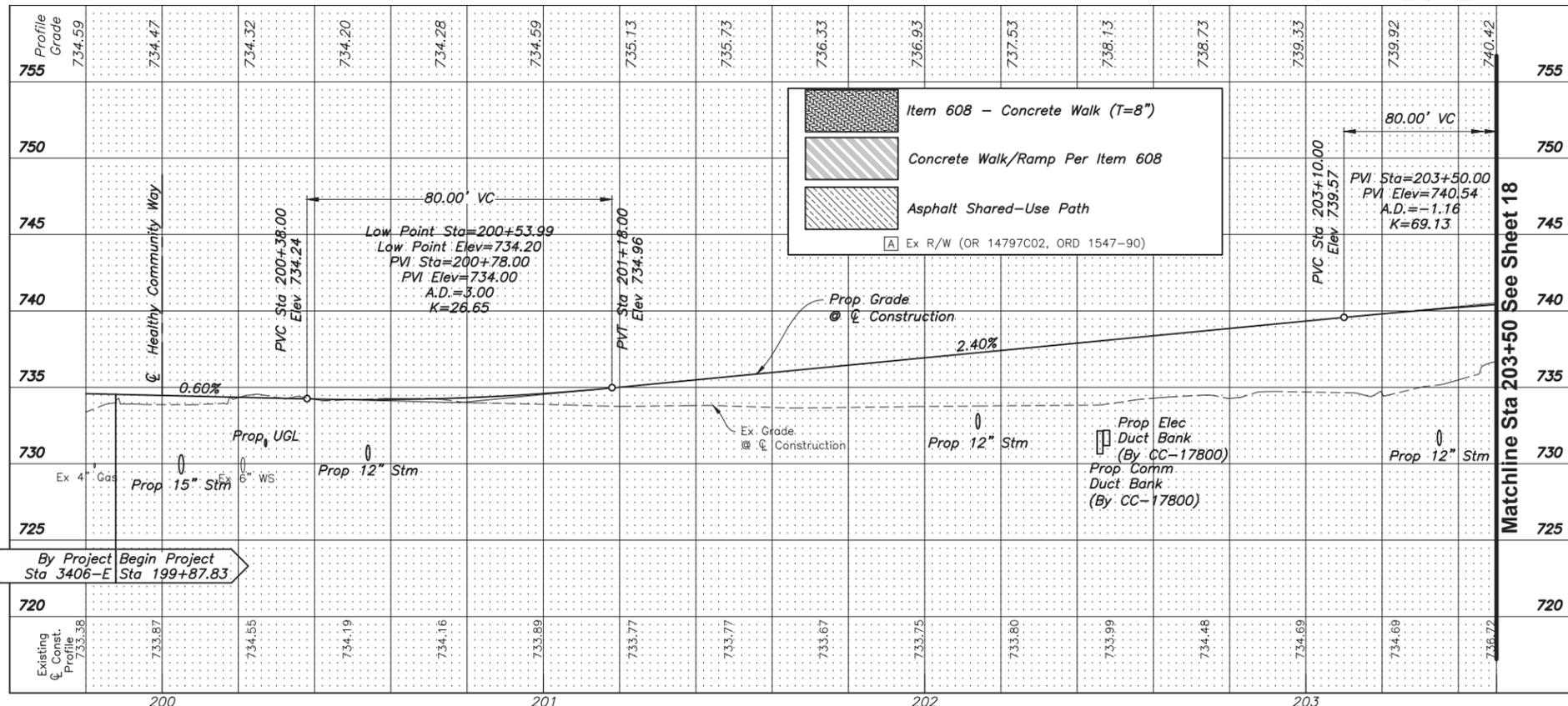
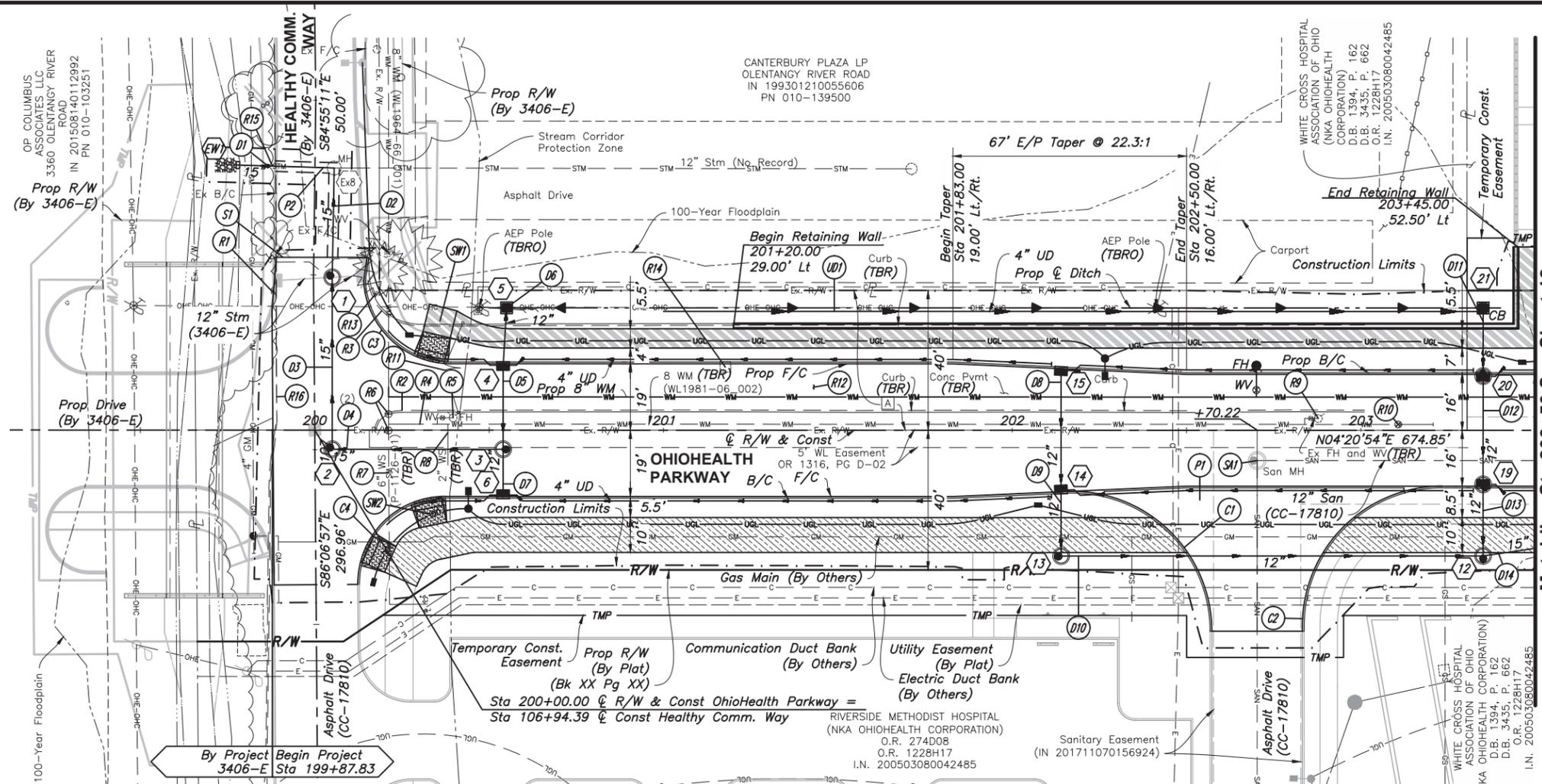
SHEET
 5/5

201613241_Records\Stormwater\4990_OleNTangy_River_Road\Optional_Offsite_Mitigation.dwg, Last Saved By: rvaufman, 12/13/2017 1:21 PM, Last Printed By: Youfman, March 12/13/2017 1:23 PM (No Xrefs)



A legacy of **experience**. A reputation for **excellence**.

APPENDIX A



CROSS REFERENCES	
Sheet No.	Description
3-4	Typical Sections
7	Material Placement Plan
20-21	Cross Sections
26	Intersection Details
27	Drive Details
30-31	Storm Sewer Profiles
33	Water Main Plan
35-39	Retaining Wall
41	Traffic Control
43	Lighting Plan
45	Landscape Plan

CALCULATED
 CPG
 CHECKED
 MFB

PLAN AND PROFILE
STA 199+35 TO STA 203+50

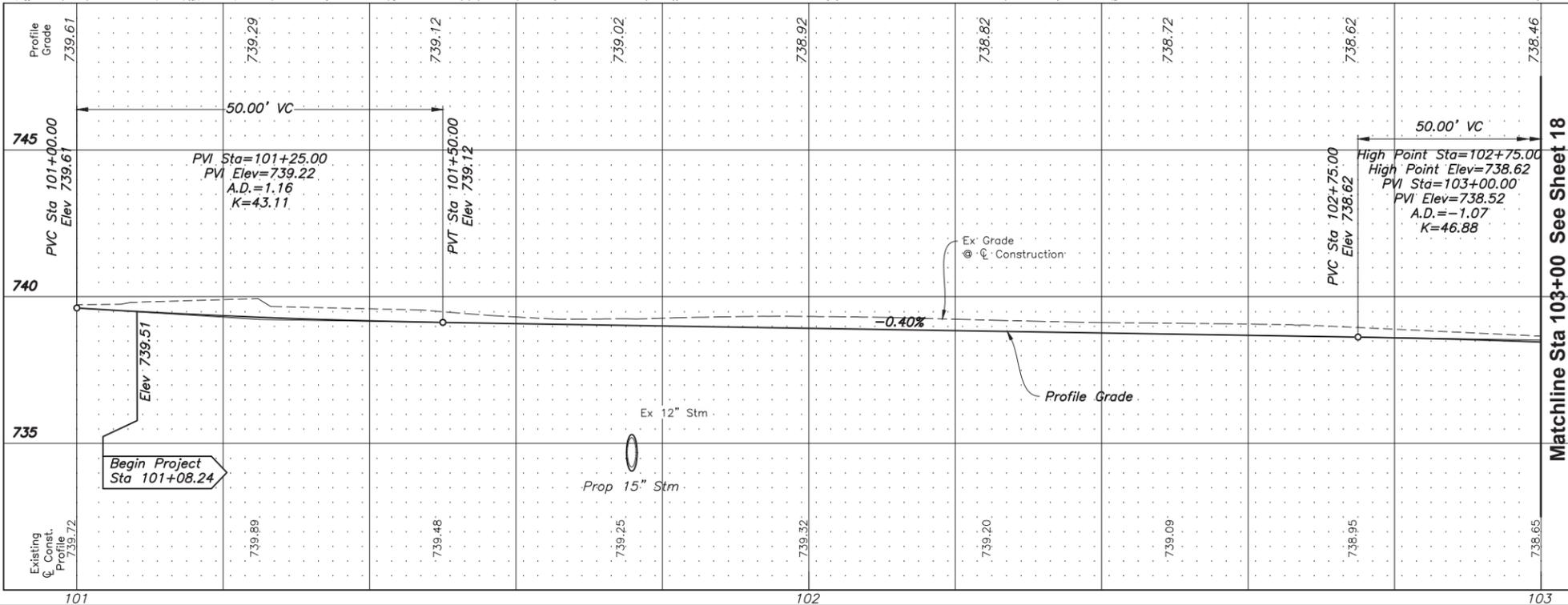
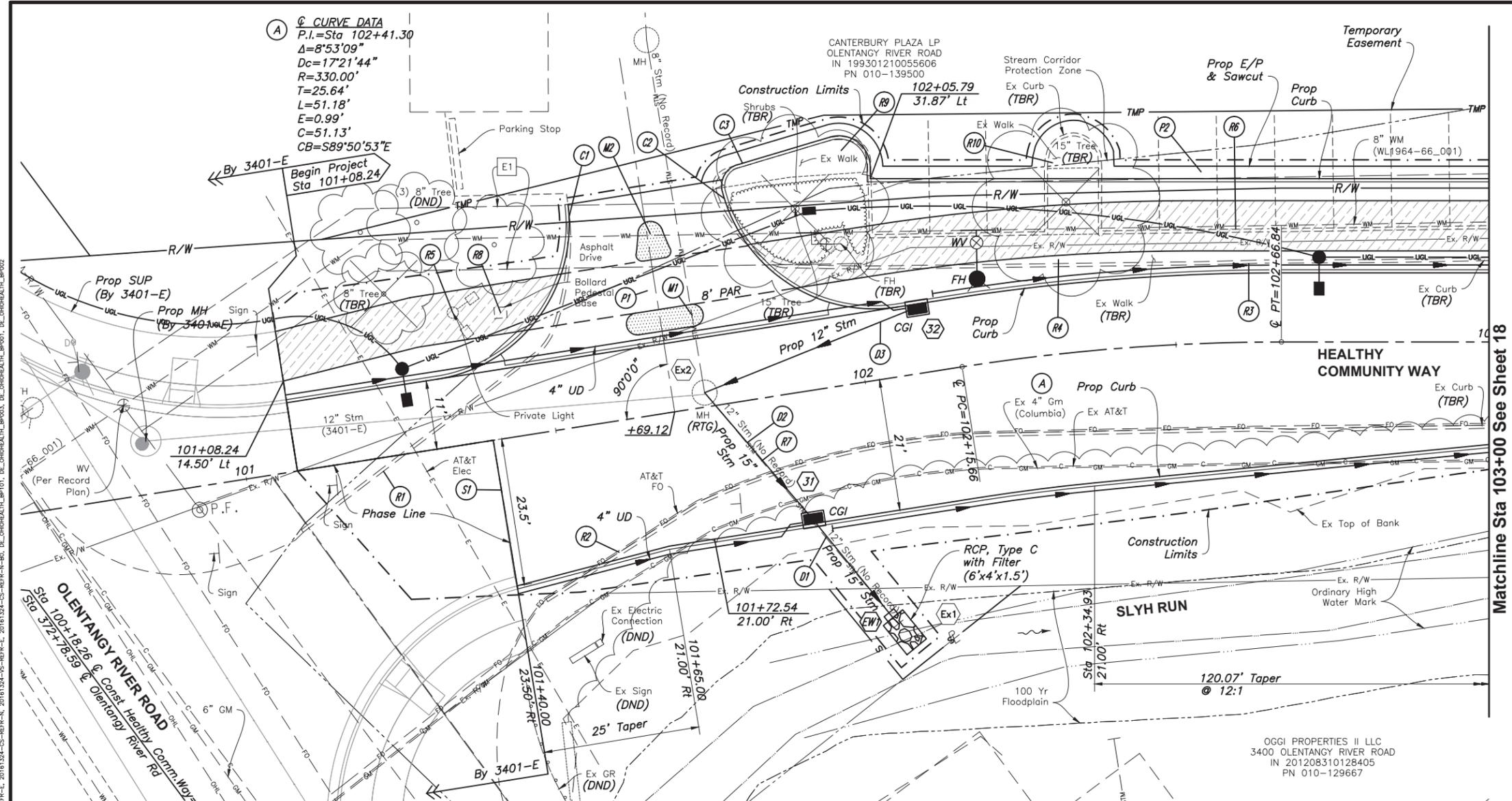
OHIOHEALTH PARKWAY

Matchline Sta 203+50 See Sheet 18

Matchline Sta 203+50 See Sheet 18

A:\2016\1428\Ohio Health Road\2016_1428\2017_10\17 AM Last Printed By: Goodrich, Christian, 12/14/2017 11:18 AM (No Xrefs)

Q CURVE DATA
 P.I.=Sta 102+41.30
 $\Delta=8^{\circ}53'09''$
 $Dc=1721'44''$
 $R=330.00'$
 $T=25.64'$
 $L=51.18'$
 $E=0.99'$
 $C=51.13'$
 $CB=S89^{\circ}50'53''E$



QUANTITIES CARRIED TO GENERAL SUMMARY

REF. NO.	STATION	SIDE	DRAINAGE							
			601	602	604	901	901	901		
	FROM	TO								
D1	101+88	101+99	RT	1.33	0.35					21
D2	101+74	101+88	RT/LT							27
D3	101+74	102+10	LT							37
TOTAL				1.33	0.35	1	2	37		48

QUANTITIES CARRIED TO GENERAL SUMMARY

REF. NO.	STATION	SIDE	REMOVALS					
			202	202	202	202	202	
	FROM	TO						
R1	101+07	101+57	LT	70				
R2	101+44	103+00	RT	157				
R3	101+80	103+00	LT	129				
R4	102+04	103+00	LT		51			
R5	101+37	103+00	LT				1	
R6	101+81	103+00	LT	169				
R7	101+74	102+00	RT			53		
R8	101+45	102+00	LT				1	
R9	101+81	102+05	LT		11			
R10	102+32	102+40	LT		4			
TOTAL				525	66	53	1	1

QUANTITIES CARRIED TO GENERAL SUMMARY

REF. NO.	STATION	SIDE	DRIVEWAY PAVEMENT						
			204	259	423	452	609	609	
	FROM	TO							
C1	101+37	101+57	LT	7				39	
C2	101+82	102+07	LT	7				39	
C3	101+82	103+00	LT	22				129	
M1	101+63	101+76	LT	5				5	
M2	101+67	101+72	LT	3				3	
P1	101+32	101+79	LT	85			85		
P2	101+79	103+00	LT		13				
S1	101+08	101+40	LT/RT			34			
TOTAL				129	13	34	85	207	8

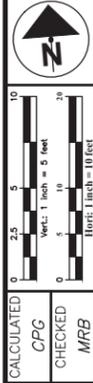
See Sheet 21 for Hydrant Relocation Quantities



E1 WM Easement DB 2601 P 78-79

CROSS REFERENCES

Sheet No.	Description
3-4	Typical Sections
7	Material Placement Plan
22-23	Cross Sections
26	Intersection Details
28	Drive Details
31	Storm Sewer Profiles
21	Hydrant Details
40-41	Traffic Control
43-44	Lighting Plan
45-52	Right-of-Way Plan



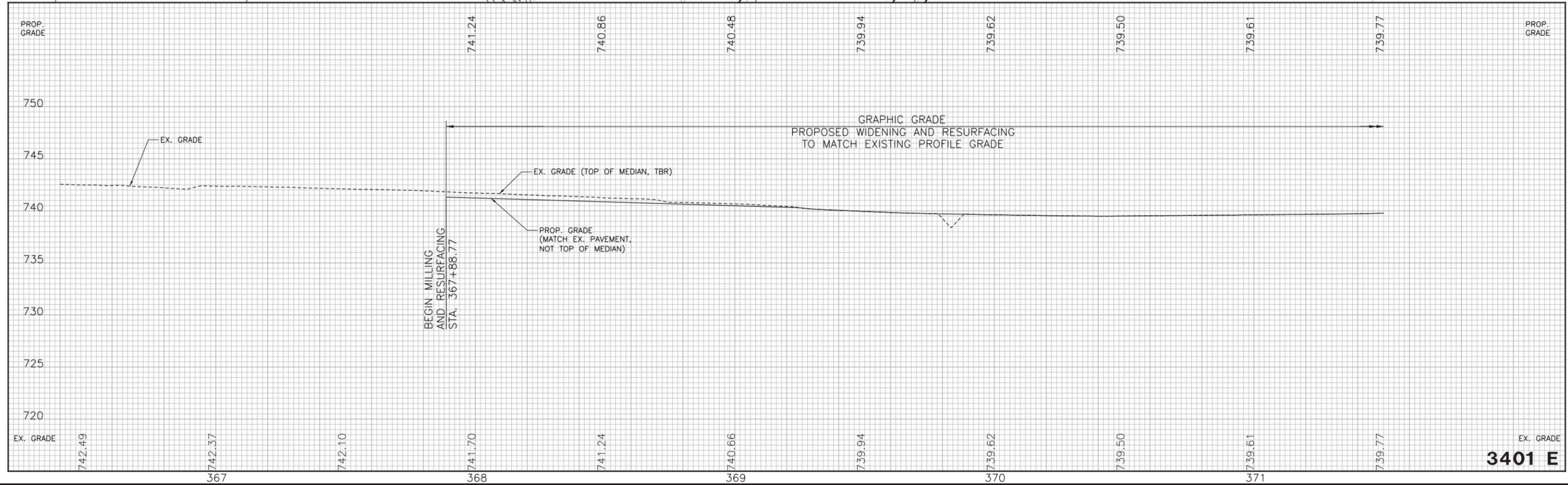
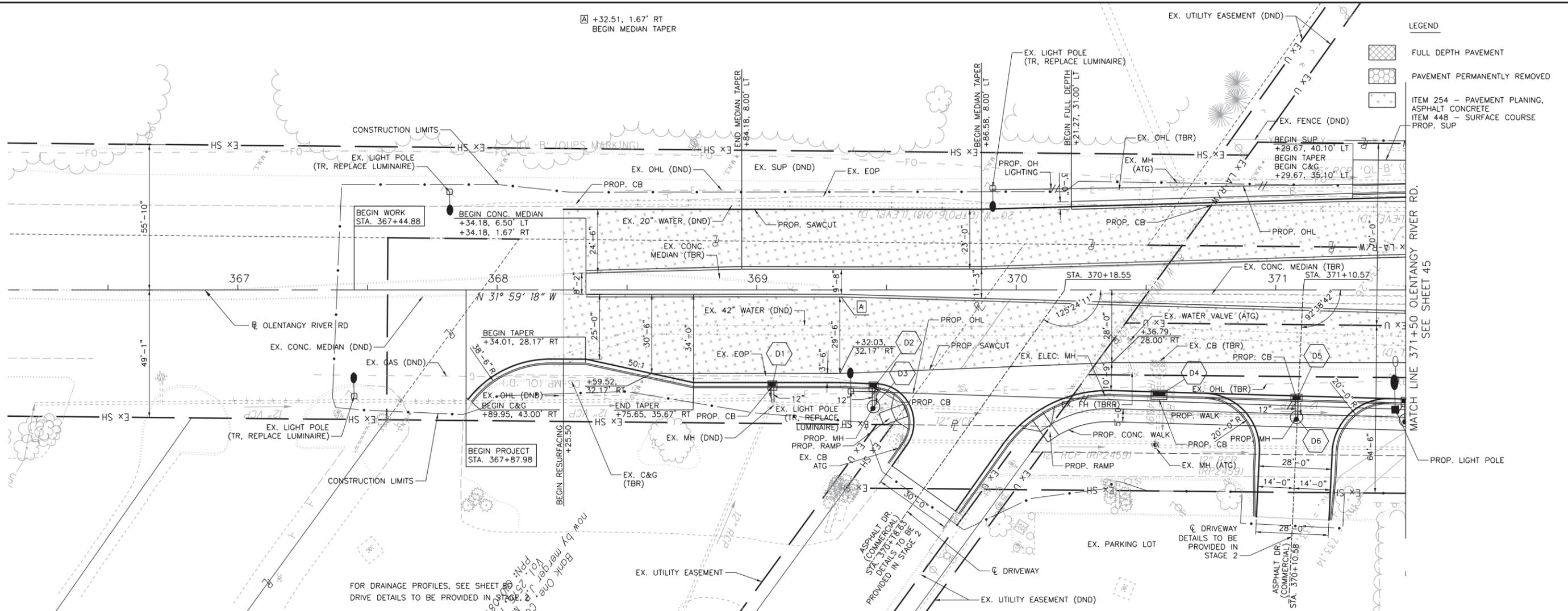
PLAN AND PROFILE
 STA 100+18.47 TO STA 102+50

OHIOHEALTH
 EASTWEST ROAD

Matchline Sta 103+00 See Sheet 18

Matchline Sta 103+00 See Sheet 18

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OLENTANGY RIVER RD
 PLAN AND PROFILE - OLENTANGY RIVER RD.
 BEGIN WORK TO STA. 371+50.00

44
 108

SCALE IN FEET
 HORIZONTAL
 0 20 40

CHECKED ALR
 MSLS
 CALCULATED