REQUEST FOR TYPE III VARIANCE FROM CITY OF COLUMBUS SWDM

Del Taco – 1466 Harrisburg Pike
Columbus, Ohio 43223
January 15, 2020

VARIANCE REPORT

CLIENT Armstrong Development

ADDRESS 1466 Harrisburg Pike

COUNTY Franklin

CITY, STATE Columbus, OH

PREPARED BY Jeffry Lonchor, P.E.

CESO Inc

ADDRESS 2800 Corporate Exchange Dr., Suite 400

CITY, STATE Columbus, OH 43231

PHONE 614.942.3017

DATE January 15, 2020

Table of Contents

SECTION 1

I. Project Overview

The purpose of this report is to request a Type III variance for the Stream Corridor Protection Zone (SCPZ) requirement established by the Columbus Stormwater Drainage Manual for the proposed Del Taco site on PID 570-126717.

The project site is located at the south corner property at the intersection of Harrisburg Pike and Big Tree Drive in the southwest region of Columbus. Armstrong Development is proposing the development of a 2,418 square foot fast-food restaurant with a drive-thru, outdoor dining area, dumpster enclosure, and associated parking lot to include both regular and ADA parking spaces. The proposed site improvements are strictly on the northern parcel (PID 570-126717), which is approximately 0.888 acres. The total construction limits for the "preferred alternative" layout will be approximately 0.90 acres, which includes development within both the project boundary and the right-of-way. Please refer to Appendix A for a detailed Site Plan for the proposed development.

The proposed site is adjacent to Early Run, on the eastern side. Based on the constraints established by the SCPZ and the City Zoning requirements, a Type III Variance is being requested from Section 1.3.3 of the City of Columbus Stormwater Drainage Manual. In order to fully develop a proposed Del Taco Restaurant at this location, impact to the Stream Corridor Protection Zone will be necessary.

II. Existing Conditions

The existing site is currently undeveloped and comprised of a densely wooded area. Along the perimeter of the site are small, mowed strips of grass with a sidewalk located along the southern side of Harrisburg Pike. Runoff from the site is currently draining over land directly to Early Run. The flood storage component is also limited as the impacted area is outside of the 100 year floodplain, with the development only slightly encroaching on the 500 year floodplain, which is depicted on the site layout alternatives. Thus, the impact is solely to the SCPZ and not to the stream itself. Therefore, mitigation will be performed to offset this encroachment.

CESO, Inc. completed a botanical study for the proposed site in November of 2020. It was determined that most of the existing native species within the SCPZ were invasive, which will be remediated in the mitigation efforts. The study also observed approximately 40 trees in the northern property SCPZ. An official tree survey was not completed during the botanical study; however, a tree survey will be completed prior to the full mitigation design being completed. Additionally, any area within the SCPZ that is disturbed will be revegetated, and any trees that are removed will be replaced. For additional information regarding the existing site conditions, please refer to Appendix B.

III. Proposed Conditions

The proposed site will include the construction of a new 2,418 S.F. fast-food restaurant. The site will include a drive thru, outdoor dining patio, parking, dumpster enclosure, and retaining wall. Portion of the parking, dumpster enclosure, and retaining wall will infringe on the established SCPZ (see Exhibit 3, Appendix A). The proposed improvements will be developing the area of dense shrubbery and trees into a building and associated parking. These improvements will take place on 0.23 acres of designated SCPZ. All proposed improvements avoid impacting the 100 year floodplain (see FEMA Map, Appendix C).

IV. Determination of Stream Corridor Protection Zone (SCPZ)

The City of Columbus Stormwater Drainage Manual stipulates the following criteria for determination of the Stream Corridor Protection Zone (SCPZ):

1.) Area within the FEMA Designated 100 year Floodway
2.) Area calculated by the equation 147 $(DA)^{0.38}$ (Maximum of 250')
3.) 50 feet from the top of bank for 4th order or larger streams

Evaluating the site, the proposed development is clear of the 100 year floodway at the project location so method one does not apply. Early Run is a 3rd order stream at the project location so method 3 does not apply. Therefore, the equation listed in method two was used to calculate the SCPZ width, with the SCPZ centered over Early Run. The following is the calculation used:

The drainage area of Early Run was determined by StreamStats (Appendix D) from USGS to be 3.14 square miles. Per the formula provided in the City of Columbus Stormwater Drainage Manual,

$147*(3.14)^{0.38}$ = 227-ft width.

Based on the above calculation, the SCPZ is 227-ft wide, laid out 113.5-ft on either side of the centerline of Early Run.

SECTION 2

At the request of a variance for storm water management requirements, the City of Columbus requires three alternatives for development of the subject project. These alternatives are included in this section below.

I. Alternative 1: Full Compliance Development Plan

To achieve full compliance, there will be no site improvements within the limits of the SCPZ. The site, which includes a 2,418 S.F. building and all surrounding pavement, will cover 0.33 acres of the parcel. With the overall construction limits covering approximately 0.45 acres (includes right-of-way disturbance). This proposed layout would only develop upon the northern lot, closest to the intersection of Harrisburg Pike and Big Tree Drive. Not only is this layout undesirable from a site circulation standpoint, it also lacks the necessary amount of patron parking that Del Taco aims for on their sites. Del Taco has found that their "sweet spot" for parking spaces is between 20-30 spaces. The typical annual revenue for a Del Taco is approximately $2 Million on average, per store. Indoor dining provides approximately 30% ($600,000) of a Del Taco's annual revenue. Therefore, with this layout proposing only three (3) parking spaces on-site, a direct financial impact of approximately $480,000 - $520,000 per year would be expected. This would directly impact the financial viability of this project and most likely terminate the project.

The developer only plans to purchase Parcel 1 for development of the Del Taco site. With the idea of purchasing Parcel 2 if mitigation would be required if the SCPZ was impacted. However, if the developer were to purchase Parcel 2 (to the south) to be developed-on for additional parking, the proposed site layout would be SCPZ-1A in Appendix A. The SCPZ-1A layout would provide additional parking for the overall development. The proposed parking would then become approximately twenty-four (24) spaces. Although,

this would in theory bridge the financial gap created by the original Full-Compliance layout (SCPZ-1), there are other factors that would then come in to play. First, the retaining wall required would be lengthened by approximately 200 linear feet which would add a substantial cost to the development of the project. Second, the overall circulation of the site layout would not provide safe and feasible access to parking and the drive-thru lane for patrons. Patrons would only be able to access the drive-thru lane strictly from Harrisburg Pike; the rear parking and drive aisle does not help the existing circulation issues avoiding developing in the SCPZ provides. Third, most patrons would be required to walk 100-200 feet to the main entrance door of the Del Taco Restaurant, if parking in the rear of the site. The distance from the provided parking and the entrance door would deter patrons from parking at the site for dine-in, thus decreasing sales. Another issue with the layout would be the requirement for patrons to not only walk a far distance but across the drive aisles and the drive-thru lane which is unsafe. With the increase in up-front development costs, anticipated decrease in dine-in sales, and poor overall site circulation, Del Taco would not approve of this layout for development of this project.

II. Alternative 2: Minimal Impact Development Plan

Per the variance requirements a minimal impact alternative is presented which would impact a small portion of the Stream Corridor Protection Zone while preserving the natural flow of Early Run and permit the proposed development. The site, to include a 2,418 S.F. building and all surrounding pavement, will cover 0.55 acres of the parcel. With the overall construction limits covering approximately 0.67 acres (includes right-of-way disturbance). The proposed building will be located completely outside of the SCPZ, with proposed pavement, the dumpster enclosure, and retaining wall all located within portion of the SCPZ. This proposed layout would only develop upon the northern lot, closest to the intersection of Harrisburg Pike and Big Tree Drive but provide mitigation on the adjacent property to the south. The proposed minimal impact layout provides nine (9) total parking spaces, and seven (7) stacking spaces. The Big Tree Drive access will be upgraded to a two-directional drive, and a passing lane will be added to the right of the drive-thru lane for traffic flow. The overall site will remain one directional, however, the ingress/egress drives both allow for two-way traffic. The overall site plan circulation would function adequately to not cause many interior issues; however, variances would have to be granted by the City of Columbus Zoning Department. Assuming the variances could be granted by the City, this overall layout is indeed an upgrade from the No Impact Alternative. However, with only (9) total parking spaces provided on-site, this layout still lacks the necessary amount of patron parking that Del Taco aims for on their sites. As previously mentioned, Del Taco has found that their “sweet spot” for parking spaces is between 20-30 spaces. The typical annual revenue for a Del Taco is approximately $2 Million on average, per store. Indoor dining provides approximately 30% ($600,000) of a Del Taco’s annual revenue. Therefore, with this layout proposing only 9 parking spaces on-site, a direct financial impact of approximately $300,000 - $400,000 per year would be expected. This would directly impact the financial viability of this project and could potentially terminate the project.

Within the SCPZ, 0.16 acres will be impacted from the minimal impact plan, therefore at a 1:1 match ratio, 0.16 acres will be included within the on-site mitigation area. The designated mitigation area will be placed on the neighboring parcel, PID 570-143607, directly southeast of the site parcel. Armstrong Development is in negotiations to potentially acquire both properties (labeled *Parcel 1* and *Parcel 2* on the conceptual plans) *if necessary*, in order to adequately provide mitigation for the project area.

III. Alternative 3: Preferred Development Plan

The preferred development plan would impact a slightly more significant portion of the Stream Corridor Protection Zone. This development plan will include a 2,418 S.F. building, all surrounding pavement, as well

as an outdoor dining area. The preferred development plan layout will encompass 0.61 acres of the parcel. The overall construction limits for this plan would be approximately 0.90 acres (which includes disturbance in the right-of-way). The proposed building will be located completely outside of the SCPZ, with proposed pavement, the dumpster enclosure, retaining wall, and portion of the outdoor dining area all located within portion of the SCPZ. This development plan would meet all City of Columbus' zoning requirements for the Highway Oriented Commercial district (C-5). Both access locations will be two-directional, as well as the parking area to the west of the proposed building to reduce congestion. The lanes along the south, east, and north of the building will remain one-way. This will allow for less impact to the SCPZ, while also creating easy and safe site circulation, two full-access ingress/egress drive aprons, as well as a bypass lane for the drive-thru. The preferred development plan has been approved by Del Taco and provides (24) parking spaces which is right in their "sweet spot". All aspects of this Preferred Development layout check the boxes necessary for Del Taco to develop at this location without financial hardship before development.

Within the SCPZ, 0.23 acres will be impacted from the preferred development plan, therefore at a 1:1 match ratio, 0.23 acres will be included within the on-site mitigation area. The designated mitigation area will be placed on the neighboring parcel, PID 570-143607, directly southeast of the site parcel. Armstrong plans) in order to adequately provide mitigation for the project area.

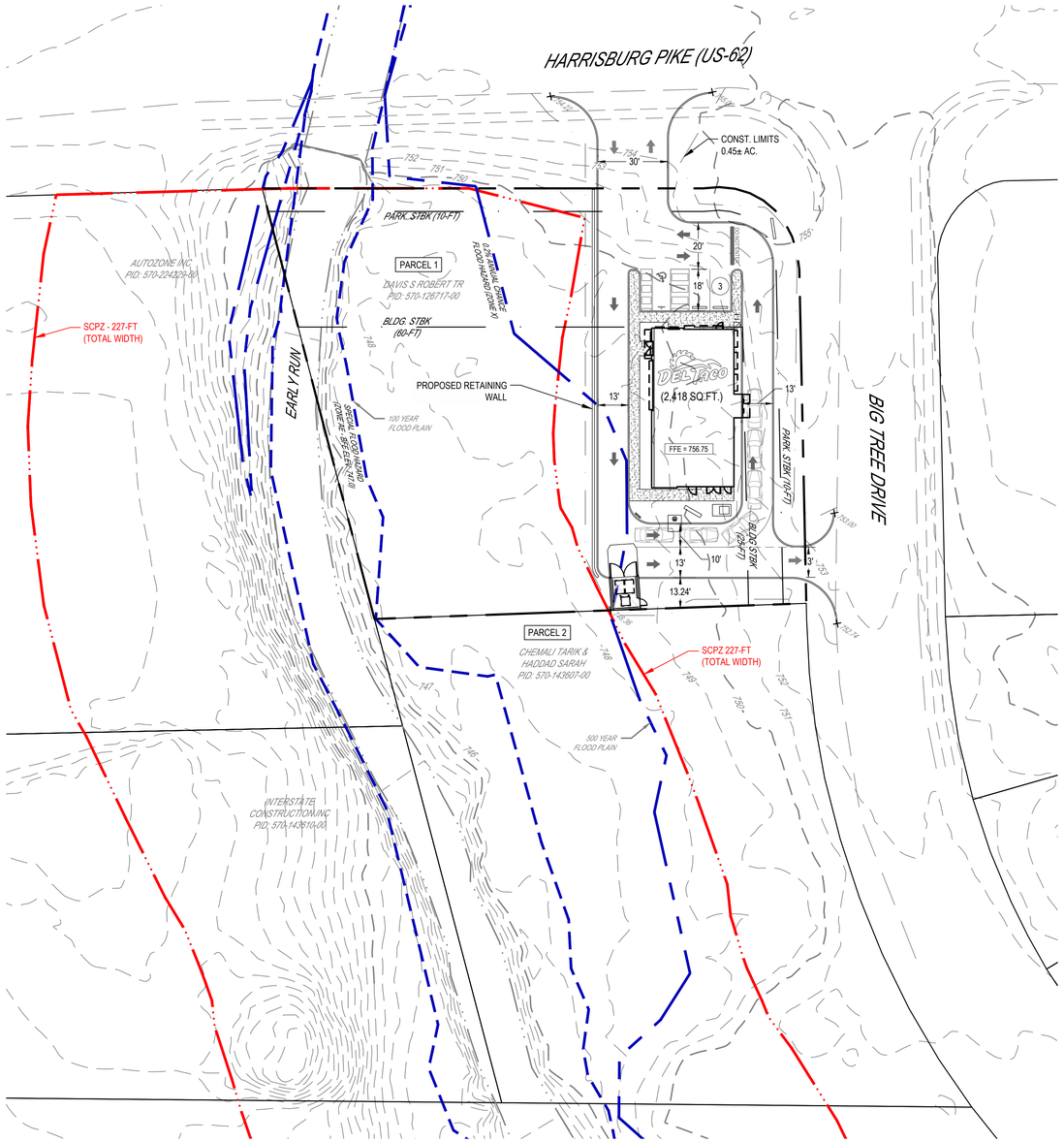
SECTION 3

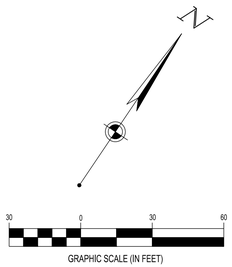
I. Mitigation

Per the City of Columbus Stormwater Drainage Manual, adequate mitigation must be provided for any designed impacts within the SCPZ. At this site impacts are affecting the SCPZ, however, not directly impacting the stream. Therefore, mitigation shall be considered adequate with the creation of additional SCPZ area. Because the additionally created area is to be on-site, it must meet the minimum 1:1 ratio requirement.

To meet the required 1:1 ratio requirement, 0.23 acres of on-site mitigation will be added directly southeast of the site on the neighboring property, to be acquired by the developer. This area will be north of Early Run and mitigated using native plants to vegetate the area and prevent invasive species from dominating the corridor region. The existing invasive species in the SCPZ on-site and on the newly acquired adjacent site will be removed as part of the mitigation plan. Additionally, all existing native species trees that are damaged or encroached upon by the development located within the SCPZ area, will be replaced in the mitigation area as well. The proposed mitigation area and corresponding conservation easement on-site can be seen illustrated in Appendix A on the proposed site plans.

APPENDIX A: DEVELOPMENT ALTERNATIVES



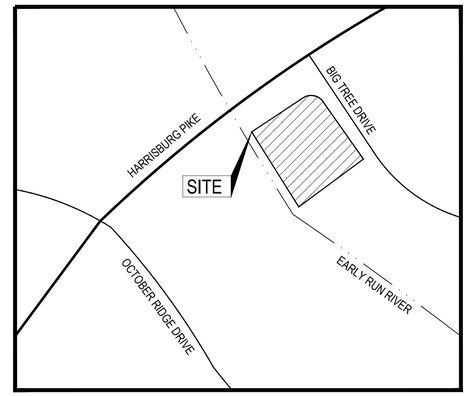


PROPERTY DATA:

PARCEL OWNER:	ROBERT S DAVIS 1304 N RIVERSIDE DR POMPANO BEACH, FL 33062
PARCEL ID:	570-126717
ADDRESS:	1466 HARRISBURG PIKE COLUMBUS, OH 43223
PROPERTY AREA:	PARCEL 1 - 0.888 ACRES PARCEL 2 - 0.935 ACRES
ZONING:	HIGHWAY ORIENTED COMMERCIAL, C-5
PROPOSED USE:	FAST-FOOD (RESTAURANT WITH DRIVE-THRU)

SETBACKS	
BUILDING (HARRISBURG PIKE):	60' (HALF OF PROP THOROUGHFARE PLAN ROW)
BUILDING (BIG TREE DR):	25'
BUILDING SIDE:	N/A
BUILDING REAR:	N/A
PARKING (ALL FRONTAGES)	10'

PARKING	REQUIRED	PROVIDED
TOTAL PARKING SPACES*:	14	3
ADA PARKING SPACES:	1	1
BICYCLE SPACES:	2	2
*PARKING CALCULATION:	1 SPACE PER 175 SF FLOOR SPACE 2,418 / 175 = 14 SPACES REQUIRED	
STACKING SPACES:	8	6



VICINITY MAP
NO SCALE

LEGEND

PROPOSED

- BUILDING
- CONCRETE CURB
- PAVEMENT/WALK
- LIMITS OF DISTURBANCE
- (7) PARKING SPACE COUNT
- CONCRETE SIDEWALK

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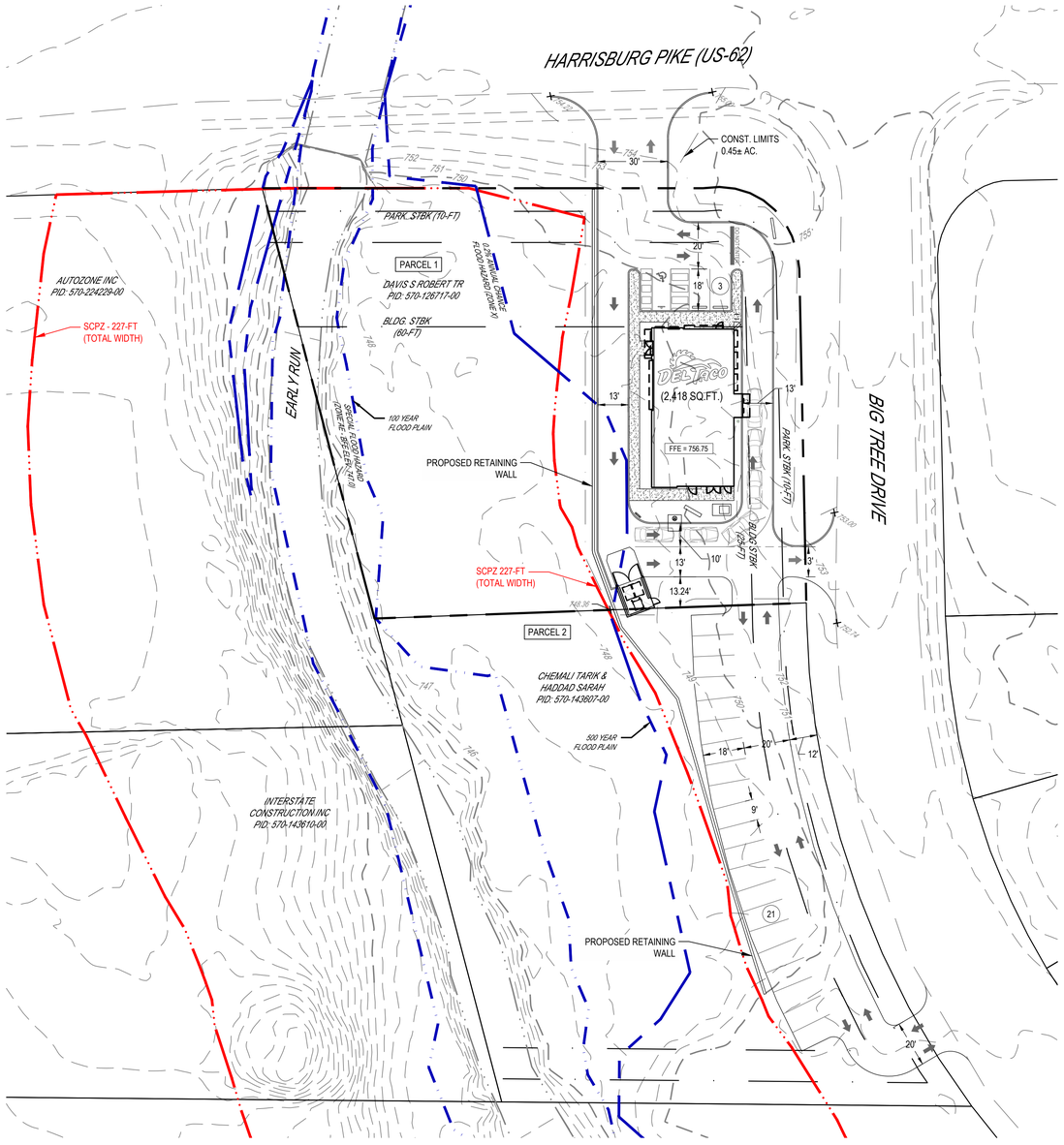
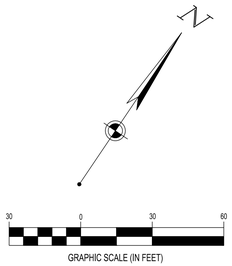
NO.	DATE	REVISION DESCRIPTION

DEL TACO
COLUMBUS, OHIO
1466 HARRISBURG PIKE, COLUMBUS, OHIO 43223

ALTERNATIVE 1
FULL COMPLIANCE

ISSUE:	CONCEPT
DATE:	01/15/2020
JOB NO.:	757715
DESIGN:	JRM
DRAWN:	JRM
CHECKED:	JRM
SHEET NO.	SCPZ-1





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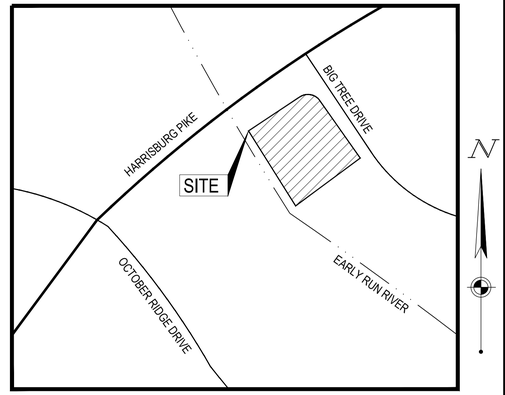
PROPOSED USE:	FAST-FOOD (RESTAURANT WITH DRIVE-THRU)

SETBACKS

BUILDING (HARRISBURG PIKE):	60' (HALF OF PROP THOROUGHFARE PLAN ROW)
BUILDING (BIG TREE DR):	25'
BUILDING SIDE:	N/A
BUILDING REAR:	N/A
PARKING (ALL FRONTAGES)	10'

PARKING	REQUIRED	PROVIDED
TOTAL PARKING SPACES*:	14	24
ADA PARKING SPACES:	1	1
BICYCLE SPACES:	2	2
*PARKING CALCULATION:	1 SPACE PER 175 SF FLOOR SPACE 2,418 / 175 = 14 SPACES REQUIRED	
STACKING SPACES:	8	6



VICINITY MAP
NO SCALE

LEGEND

PROPOSED

- BUILDING
- CONCRETE CURB
- PAVEMENT/WALK
- LIMITS OF DISTURBANCE
- (7) PARKING SPACE COUNT
- CONCRETE SIDEWALK

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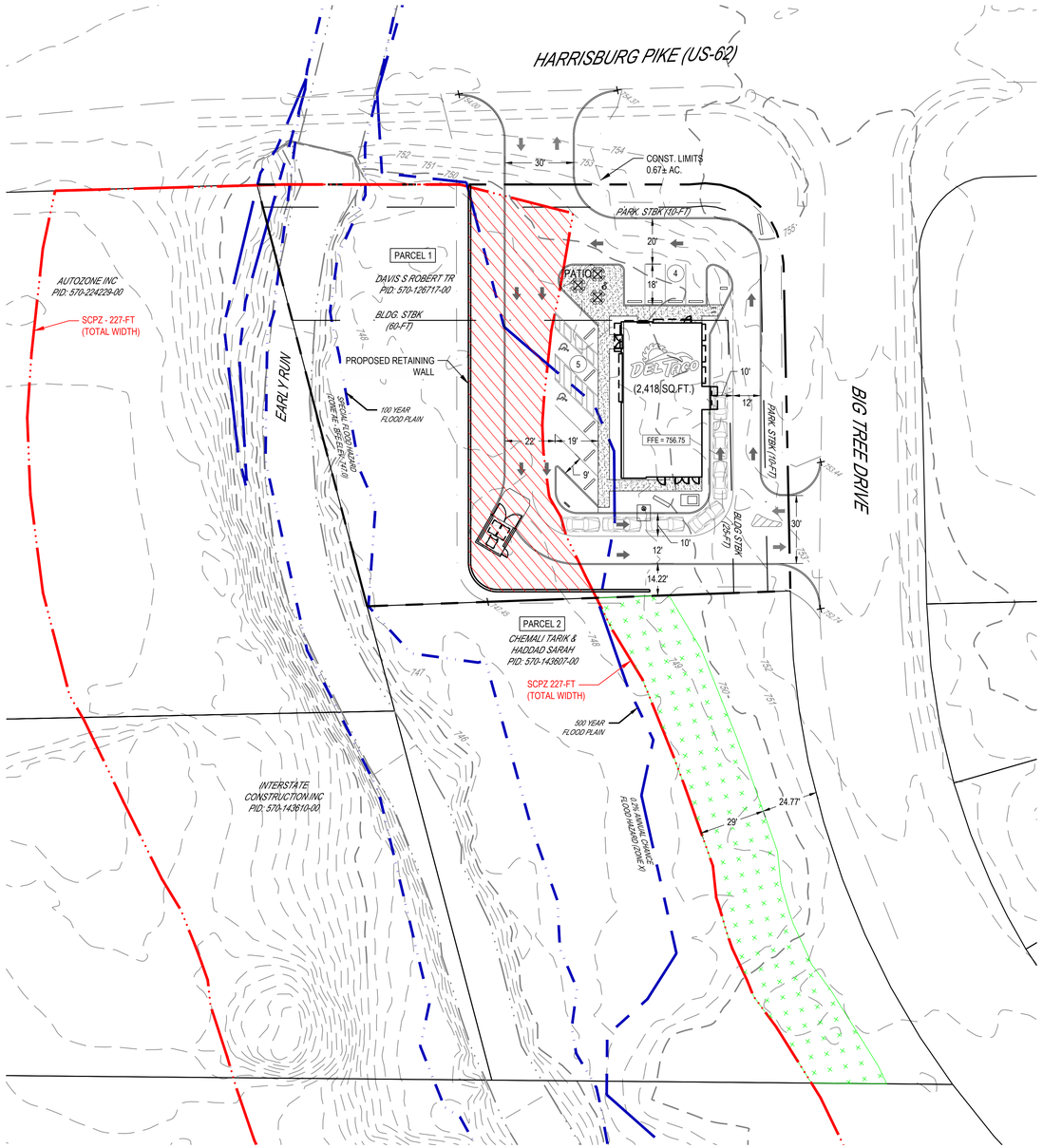
NO.	DATE	REVISION DESCRIPTION

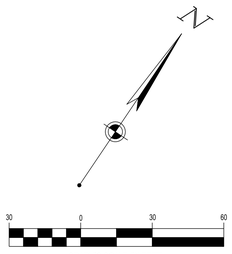
DEL TACO
COLUMBUS, OHIO
1466 HARRISBURG PIKE, COLUMBUS, OHIO 43223

ALTERNATIVE 1
FULL COMPLIANCE - ALTERNATIVE

ISSUE:	CONCEPT
DATE:	1/15/2021
JOB NO.:	757715
DESIGN:	JRM
DRAWN:	JRM
CHECKED:	JRM

SHEET NO.
SCPZ-1A





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ZONING:	HIGHWAY ORIENTED COMMERCIAL, C-5
PROPOSED USE:	FAST-FOOD (RESTAURANT WITH DRIVE-THRU)

SETBACKS	
BUILDING (HARRISBURG PIKE):	60' (HALF OF PROP THOROUGHFARE PLAN ROW)
BUILDING (BIG TREE DR):	25'
BUILDING SIDE:	N/A
BUILDING REAR:	N/A
PARKING (ALL FRONTAGES)	10'

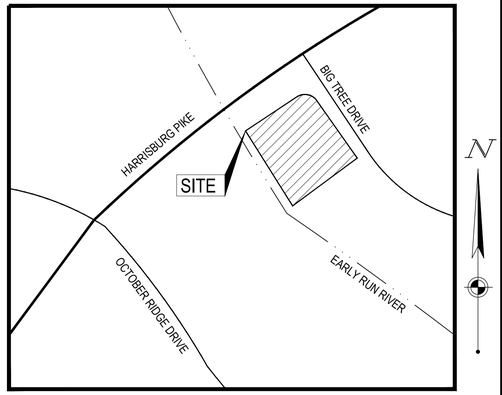
PARKING	REQUIRED	PROVIDED
TOTAL PARKING SPACES*:	14	9
ADA PARKING SPACES:	1	2
BICYCLE SPACES:	2	2
*PARKING CALCULATION:	1 SPACE PER 175 SF FLOOR SPACE 2,418 / 175 = 14 SPACES REQUIRED	
STACKING SPACES:	8	7

STREAM CORRIDOR PROTECTION ZONE (SCPZ) IMPACT / MITIGATION SUMMARY:

SCPZ IMPACT AREA: 0.16 AC

ON-SITE MITIGATION AREA: 0.16 AC

*MITIGATION CALCULATION:
ON-SITE MIT. AREA x (1:1 RATIO CREDIT) > IMPACT AREA
(0.16 AC x 1/1) = 0.16 AC



VICINITY MAP
NO SCALE

LEGEND

PROPOSED

- BUILDING
- CONCRETE CURB
- PAVEMENT/WALK
- LIMITS OF DISTURBANCE
- (7) PARKING SPACE COUNT
- CONCRETE SIDEWALK

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NO.	DATE	REVISION DESCRIPTION

DEL TACO
COLUMBUS, OHIO
1466 HARRISBURG PIKE, COLUMBUS, OHIO 43223

ALTERNATIVE 2
MINIMAL IMPACT

ISSUE:	CONCEPT
DATE:	1/15/2021
JOB NO.:	757715
DESIGN:	JRM
DRAWN:	JRM
CHECKED:	JRM
SHEET NO.	SCPZ-2

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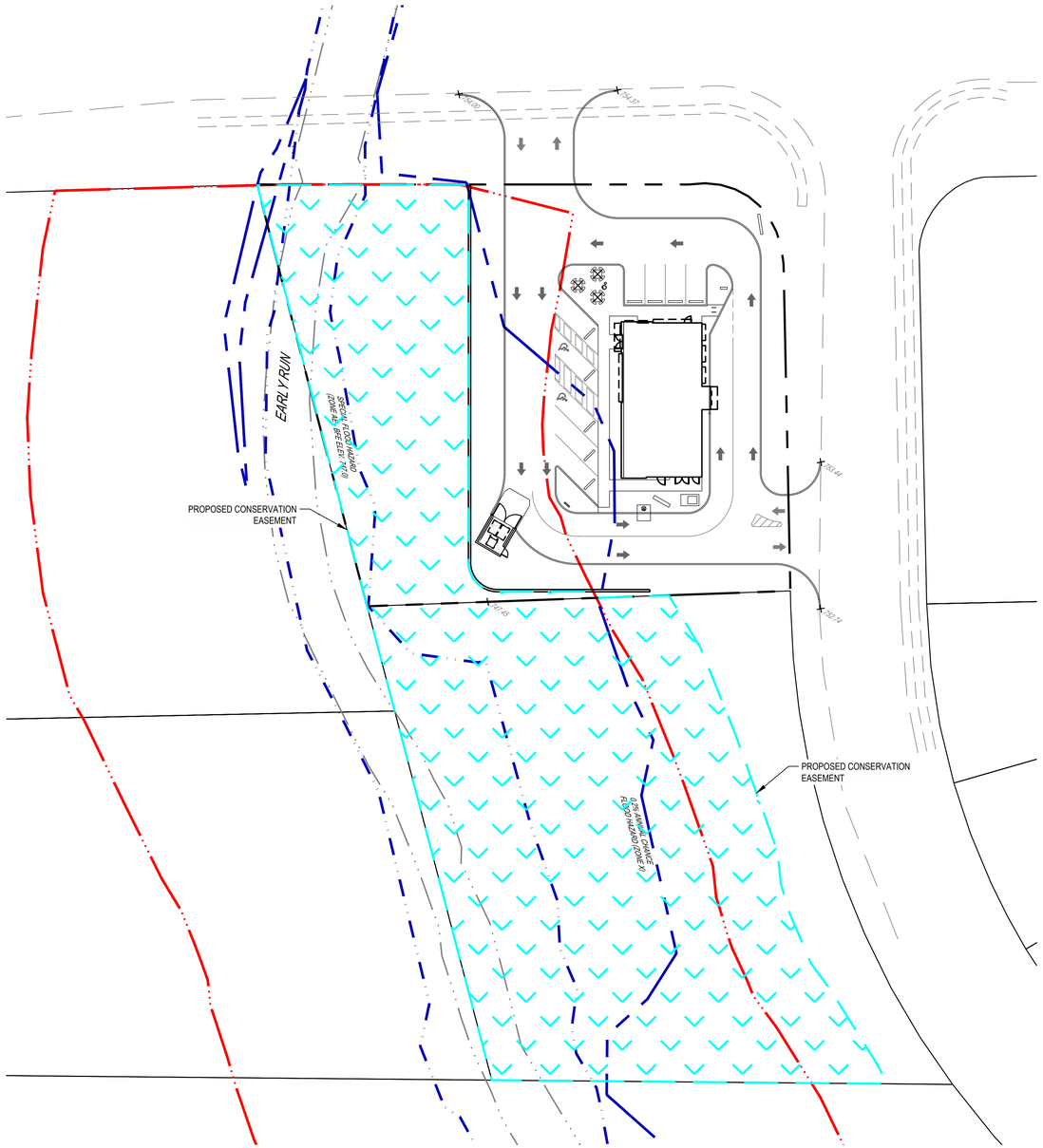

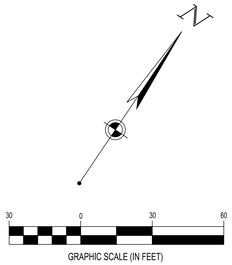

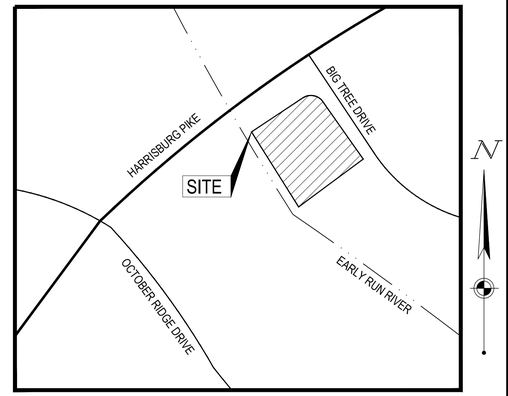

VICINITY MAP
NO SCALE

LEGEND

PROPOSED

- BUILDING
- CONCRETE CURB
- PAVEMENT/WALK
- EASEMENT LINE
- LIMITS OF DISTURBANCE
- (7) PARKING SPACE COUNT
- CONSERVATION EASEMENT AREA

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NO.	DATE	REVISION DESCRIPTION

DEL TACO

COLUMBUS, OHIO

1466 HARRISBURG PIKE, COLUMBUS, OHIO 43223

ALTERNATIVE 2
CONSERVATION
EASEMENT

ISSUE:	CONCEPT
DATE:	1/15/2021
JOB NO.:	757715
DESIGN:	JRM
DRAWN:	JRM
CHECKED:	JRM

SHEET NO.
SCPZ-2A

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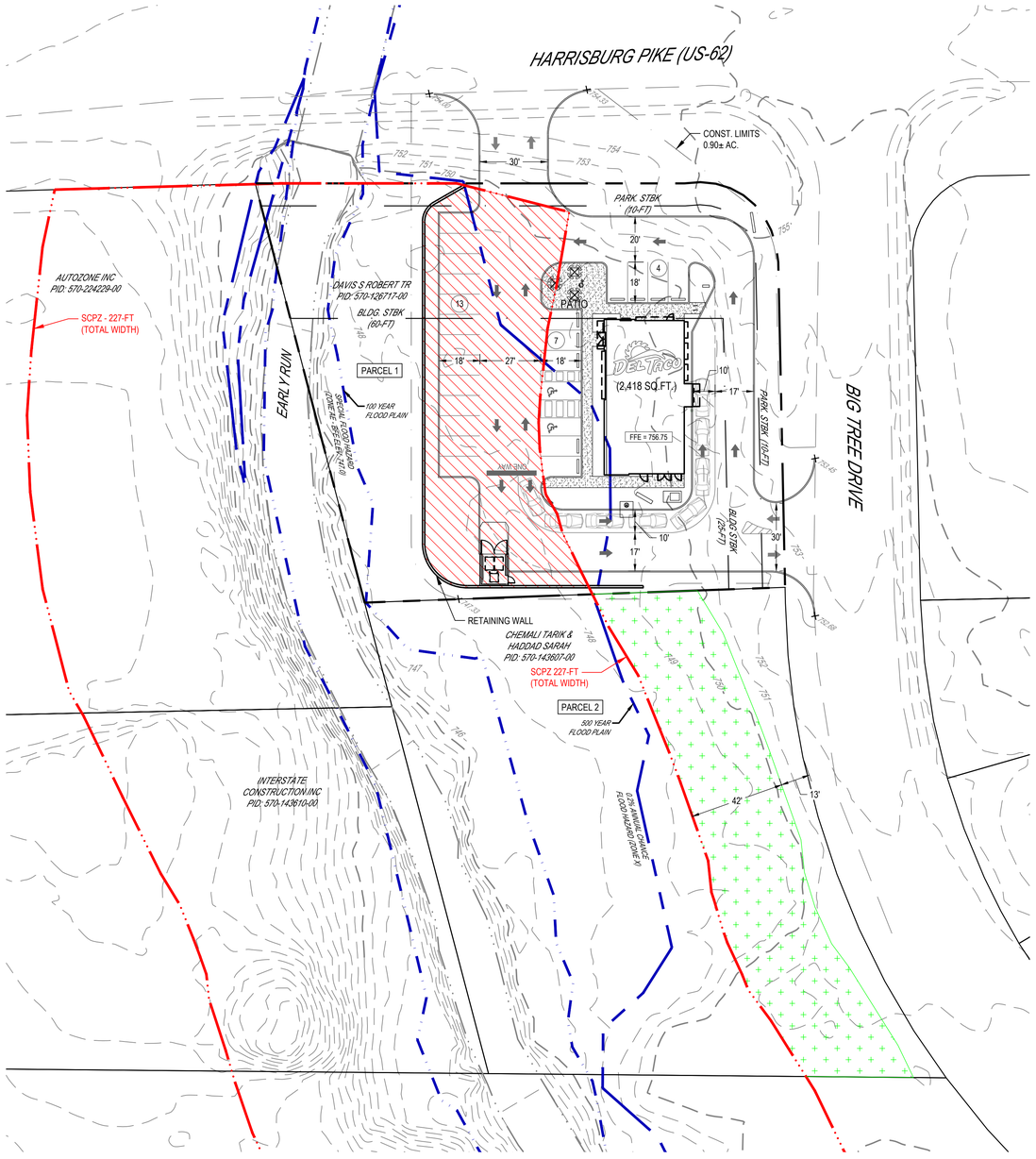

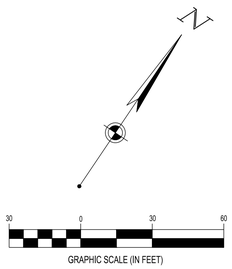

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PROPOSED USE:	FAST-FOOD (RESTAURANT WITH DRIVE-THRU)

SETBACKS	
BUILDING (HARRISBURG PIKE):	60' (HALF OF PROP THOROUGHFARE PLAN ROW)
BUILDING (BIG TREE DR):	25'
BUILDING SIDE:	N/A
BUILDING REAR:	N/A
PARKING (ALL FRONTAGES)	10'

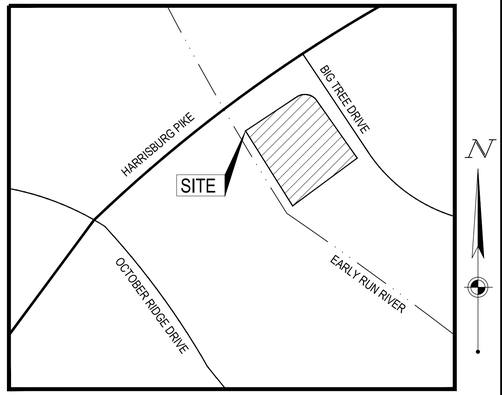
PARKING	REQUIRED	PROVIDED
TOTAL PARKING SPACES*:	14	24
ADA PARKING SPACES:	1	2
BICYCLE SPACES:	2	2
*PARKING CALCULATION:	1 SPACE PER 175 SF FLOOR SPACE 2,418 / 175 = 14 SPACES REQUIRED	
STACKING SPACES:	8	8

STREAM CORRIDOR PROTECTION ZONE (SCPZ) IMPACT / MITIGATION SUMMARY:

SCPZ IMPACT AREA: 0.23 AC

ON-SITE MITIGATION AREA: 0.23 AC

*MITIGATION CALCULATION:
ON-SITE MIT. AREA x (1:1 RATIO CREDIT) ≥ IMPACT AREA
(0.23 AC x 1/1) = 0.23 AC



VICINITY MAP
NO SCALE

LEGEND

PROPOSED

- BUILDING
- CONCRETE CURB
- PAVEMENT/WALK
- LIMITS OF DISTURBANCE
- (7) PARKING SPACE COUNT
- CONCRETE SIDEWALK

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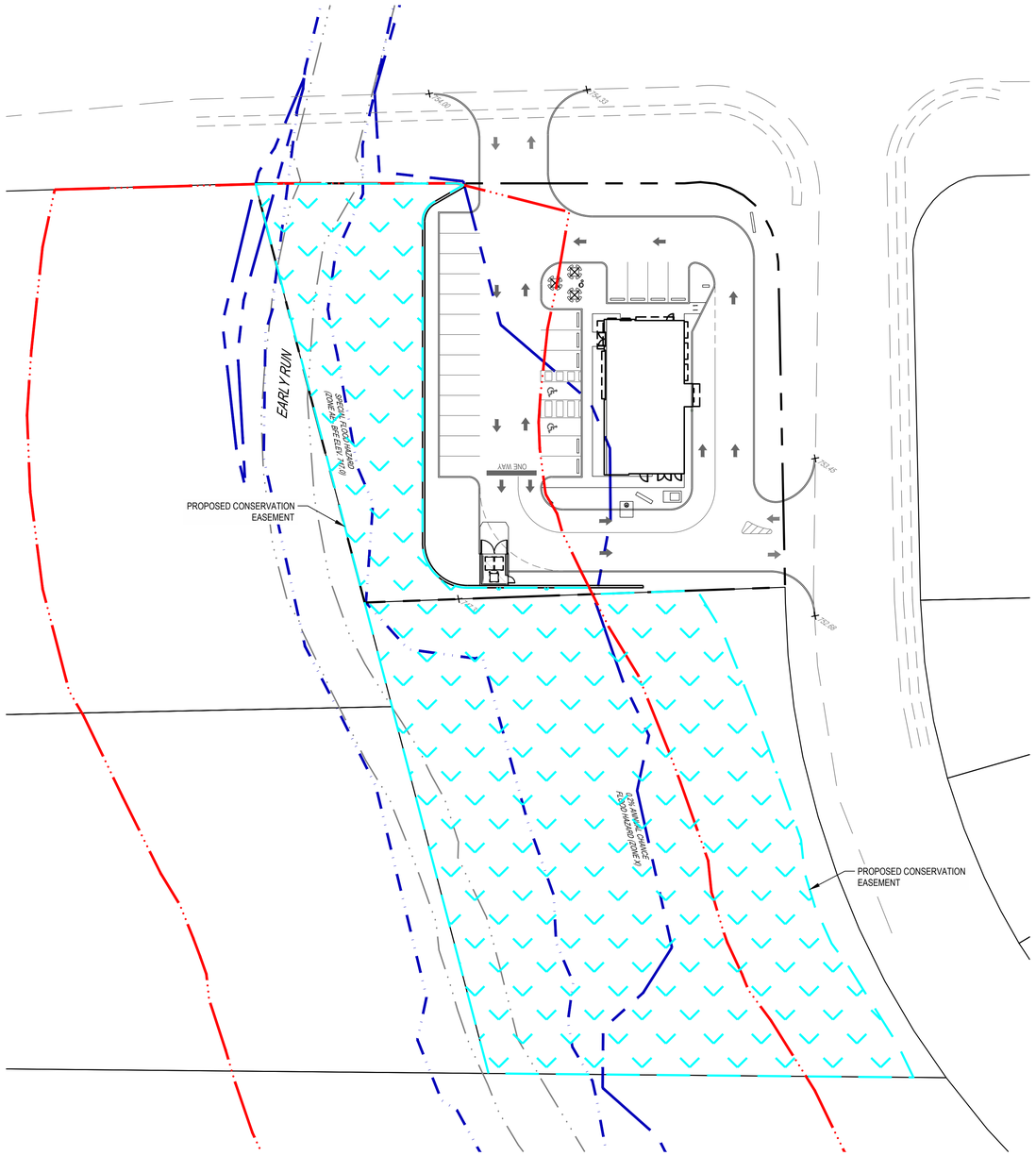
NO.	DATE	REVISION DESCRIPTION

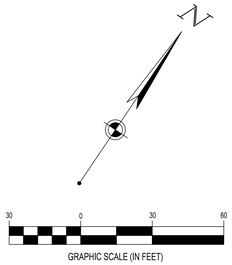
DEL TACO
COLUMBUS, OHIO
1466 HARRISBURG PIKE, COLUMBUS, OHIO 43223

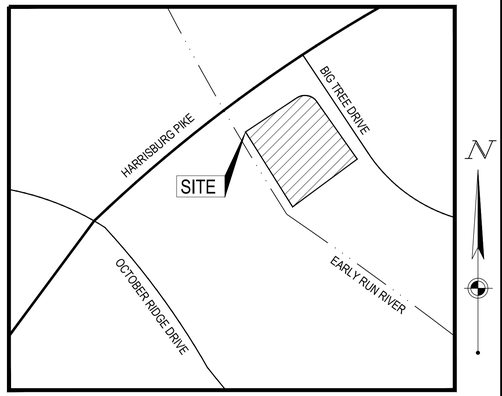
ALTERNATIVE 3
PREFERRED
OPTION

ISSUE:	CONCEPT
DATE:	1/15/2021
JOB NO.:	757715
DESIGN:	JRM
DRAWN:	JRM
CHECKED:	JRM

SHEET NO.
SCPZ-3







VICINITY MAP
NO SCALE

N

LEGEND

PROPOSED

- BUILDING
- CONCRETE CURB
- PAVEMENT/WALK
- EASEMENT LINE
- LIMITS OF DISTURBANCE
- (7) PARKING SPACE COUNT
- CONSERVATION EASEMENT AREA

Ohio Utilities Protection Service
Call 811 before you dig

CESO
WWW.CESOINC.COM

NO.	DATE	REVISION DESCRIPTION

DEL TACO
COLUMBUS, OHIO
1466 HARRISBURG PIKE, COLUMBUS, OHIO 43223

ALTERNATIVE 3
CONSERVATION
EASEMENT

ISSUE:	CONCEPT
DATE:	1/15/2021
JOB NO.:	757715
DESIGN:	JRM
DRAWN:	JRM
CHECKED:	JRM

SHEET NO.
SCPZ-3A

APPENDIX B: BOTANICAL STUDY

800 Bursca Drive, Suite 803
Bridgeville, PA 15017
(412) 221-2236
www.cesoinc.com

Amanda Bonetti
Armstrong Development Properties, Inc.
One Armstrong Place
Butler, PA 16001

abonetti@agoc.com
(724) 283-0925

January 11, 2021

Re: Del Taco – Columbus, OH
Wetland & Stream Delineation & Botanical Study Results Letter
Franklin Township, Franklin County, Ohio

Dear Ms. Bonetti:

CESO, Inc. is pleased to provide you with this results letter summarizing the wetland and stream delineation along with the botanical study recently completed at the 1.77-acre parcel (Parcel ID 570-0126717) located in Franklin Township, Franklin County, Ohio. The parcel is in the southwest quadrant of the intersection of Harrisburg Pike (US-62) and Big Tree Drive. The area of investigation (AOI) consists of forested scrub/shrub and open herbaceous habitat. A Topographical Location Map is provided as Attachment 1 and an Existing Environmental Conditions Map is provided as Attachment 2.

On November 12, 2020, CESO, Inc. conducted a wetland and stream delineation along with a botanical study within the parcel boundary. The approximate locations of stream and upland areas were collected with a GPS Unit, classified, and documented with photographs. This letter report details the methodology and findings of both the delineation and botanical study conducted at the subject site.

METHODOLOGY

Wetland and Stream Delineation

The AOI was investigated for aquatic resources such as streams and wetlands on November 12, 2020. Prior to the field investigation, published resource information pertaining to the AOI was gathered and reviewed. The information sources used to prepare this report include but were not limited to:

- U.S. Geological Survey (USGS) 7.5-minute quadrangle maps (Southwest Columbus, OH);
- United States Fish and Wildlife Service (USFWS) National Wetlands Inventory website (USFWS 2012);
- Aerial photography (1:2400) of the Project Vicinity (ESRI, ArcGIS, GoogleEarth)
- National Hydrology Dataset

This information was used to identify high probability wetland locations prior to the field investigation. No NWI wetlands were mapped within the AOI, and the aerial imagery did not display evidence of inundation within the AOI. The NWI information is displayed on the Existing Environmental Conditions Map and the aerial photography is included in Attachment 3.

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(412) 221-2236
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Botanical Study

CESO, Inc. conducted a botanical study within the stream corridor protection zone (SCPZ). The SCPZ boundary was divided into northern and southern zones to differentiate different vegetative communities if present. Dominant vegetation within the established corridor (e.g. mature trees, canopy, shrub, field etc.) was identified and documented in both the northern half and southern half SCPZ areas. The Existing Environmental Conditions Map portrays the SCPZ boundaries within the AOI.

FIELD OBSERVATIONS

Wetland and Stream Delineation

The parcel is in the southwest quadrant of the intersection of Harrisburg Pike (US-62) and Big Tree Drive. The area of investigation (AOI) consists of forested scrub/shrub upland and open herbaceous areas. CESO identified one stream (S-1-PER) within the 1.77-acre AOI. The type and approximate length of the stream present is displayed in Table 1: Aquatic Resources below.

Table 1: Aquatic Resources

Stream	*Type*	*Approximate Length (FT)*
S-1-PER	*Perennial*	*424*
Total		424

Wetlands
No wetland resources were identified within the AOI.

Streams
One perennial stream, S-1-PER, was delineated within the AOI. S-1-PER is mapped as Early Run and is classified by Ohio EPA as a Cold Water Habitat according to Chapter 3745-1. The sampled areas of the stream had average bank widths of 15-feet and an average pool depth of 30 centimeters and average riffle depth of 10 centimeters. The substrate consisted of 40% cobble, 40% gravel, 10% silt, 5% boulder, and 5% bedrock. The wide riparian buffer of the stream was composed of immature forest and shrubs that provided shading.

Attachment 2 includes the Existing Environmental Conditions Map which displays the AOI and the stream identified. Color photographs of the identified stream and AOI are included as Attachment 4.

Botanical Study

The northern and southern SCPZ consisted mostly of scrub/shrub and forested habitat with minor amounts of herbaceous habitat along the eastern edges. Vegetation in the understory of the northern half was heavily dominated by Amur's honeysuckle (*Lonicera maacki*). There were also minor amounts of herbaceous vegetation in the understory dominated by beggar's lice (*Hackelia virginiana*), lesser burdock (*Arctium minus*), and devil's beggar-ticks (*Bidens frondosa*). The canopy was dominated by American elm (*Ulmus Americana*), Eastern cottonwood (*Populus deltoides*), American sycamore (*Platanus occidentalis*), and silver maple (*Acer saccharinum*). Vegetation in the understory of the southern half was also heavily dominated by Amur's honeysuckle (*Lonicera maacki*). There were also minor amounts of herbaceous vegetation in the understory dominated by wild onion (*Allium canadense*). The canopy in the southern half was dominated by the American elm (*Ulmus Americana*) and American sycamore (*Platanus occidentalis*).

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CONCLUSION

CESO, Inc. conducted a wetland and stream delineation on November 12, 2020. There was one perennial stream identified within the AOI. A botanical study was also conducted within the northern and southern SCPZ. Both the northern and southern SCPZ areas were heavily dominated by Amur's honeysuckle (*Lonicera maacki*) in the understory. The canopy in both the northern and southern SCPZ was dominated by the American elm (*Ulmus Americana*) and American sycamore (*Platanus occidentalis*). The northern corridor canopy was also dominated by Eastern cottonwood (*Populus deltoides*) and silver maple (*Acer saccharinum*). Herbaceous vegetation was present in minor amounts in both the northern and southern SCPZ. The northern

SCPZ. The herbaceous vegetation in the northern SCPZ was dominated by beggar's lice (*Hackelia virginiana*), lesser burdock (*Arctium minus*), and devil's beggar-ticks (*Bidens frondosa*) while the southern SCPZ was dominated by wild onion (*Allium canadense*).

We appreciate the opportunity to be of service to you. If you have any questions regarding the wetland and stream presence / absence survey or botanical survey summary, please feel free to call me at (412) 504-0687.

Sincerely,
CESO, Inc.

Sara Krampe

Sara Krampe, PWS
Environmental Manager

Attachment 1: Topographical Location Map
Attachment 2: Existing Environmental Conditions Map
Attachment 3: Aerial Photography
Attachment 4: Site Photographs
Attachment 5: Field Data Sheets

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Attachment 1: Topographical Location Map

N

0 2,000 4,000
Feet

Southwest Columbus

Southeast Columbus

Area of Investigation (AOI)
USGS Quadrangle Boundaries

DEL TACO - Columbus, OH

Topographical Location Map (Southwest Columbus Quad)
Franklin Township, Franklin County, Ohio

CESO

Date: 11/11/2020
By: J. Stascak

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Attachment 2: Existing Environmental Conditions Map

Del Taco - Columbus, OH

Existing Environmental Conditions Map

Franklin Township, Franklin County, Ohio

CESO

Date: 12/15/2020

By: J. Stascak

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Attachment 3: Aerial Photography


Del Taco - Columbus, OH
2019
Harrisburg Pike
Big Tree Dr
October Ridge Dr
Google Earth
N
300 ft


Del Taco - Columbus, OH
2016
Harrisburg Pike
Big Tree Dr
October Ridge Dr
Google Earth
N
300 ft


Del Taco - Columbus, OH
2010
Harrisburg Pike
Big Tree Dr
October Ridge Dr
Google Earth
N
300 ft


Del Taco - Columbus, OH
2007
Harrisburg Pike
Big Tree Dr
October Ridge Dr
Google Earth
Image State of Ohio / OSIP
N
300 ft


Del Taco - Columbus, OH
2004
Harrisburg Pike
Big Tree Dr
October Ridge Dr
Google Earth
N
300 ft


Del Taco - Columbus, OH
2003
Harrisburg Pike
Big Tree Dr
October Ridge Dr
Google Earth
Image © 2020 Maxar Technolcgies
N
300 ft


Del Taco - Columbus, OH
1994
Harrisburg Pike
Big Tree Dr
October Ridge Dr
Google Earth
Image U.S. Geological Survey
N
300 ft

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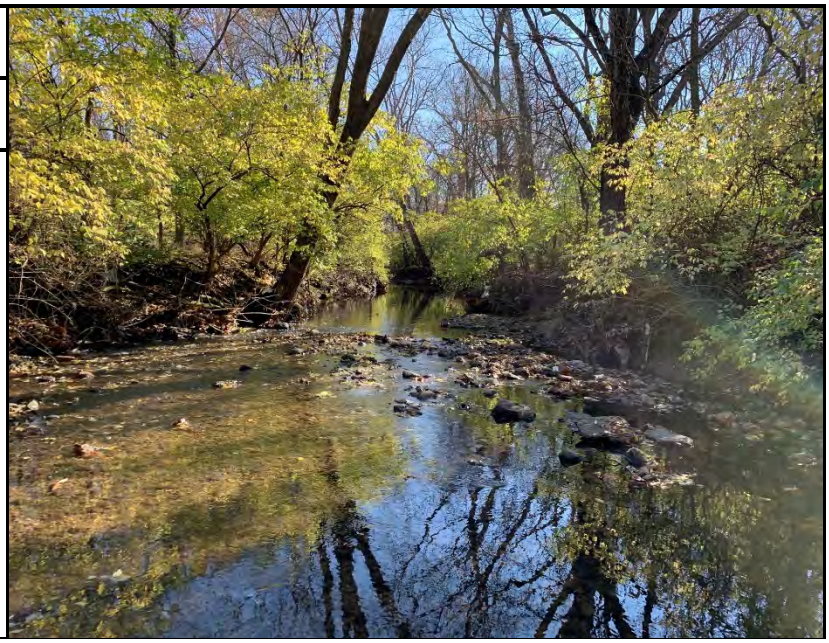
Attachment 4: Site Photographs

Photograph #	*1*
Date:	*11-12-2020*
Description: *View of perennial stream S-1-PER facing downstream.*	

Photograph #	*2*
Date:	*11-12-2020*
Description: *View of perennial stream S-1-PER facing upstream.*	

Photograph #	*3*
Date:	*11-12-2020*
Description: *View of upland data point U-1 along the eastern edge of the SCPZ facing north.*	

Photograph #	*4*
Date:	*11-12-2020*
Description: *View of upland data point U-1 along the eastern edge of the SCPZ facing west.*	

Photograph #	*5*
Date:	*11-12-2020*
Description: *View of upland data point U-2 in the southern SCPZ facing northeast.*	

Photograph #	*6*
Date:	*11-12-2020*
Description: *View of upland data point U-2 in the southern SCPZ facing west.*	

Photograph #	*7*
Date:	*11-12-2020*
Description: *View of northern SCPZ in the northwestern portion of AOI facing east.*	

Photograph #	*8*
Date:	*11-12-2020*
Description: *View of southern SCPZ in the southwestern portion of AOI facing east.*	

Photograph #	*9*
Date:	*11-12-2020*
Description: *View in the middle portion of the AOI facing east.*	

Photograph #	*10*
Date:	*11-12-2020*
Description: *View of the middle portion of AOI facing south.*	

Photograph #	*11*
Date:	*11-12-2020*
Description: *View of the northcentral portion of AOI facing east.*	

Photograph #	*12*
Date:	*11-12-2020*
Description: *View in the middle of eastern edge of AOI facing west.*	

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(412) 221-2236
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Attachment 5: Field Data Sheets

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 76

SITE NAME/LOCATION: Del Taco - Columbus, OH

SITE NUMBER: | RIVER BASIN: 05060001 | DRAINAGE AREA (mi^2): 3.17

LENGTH OF STREAM REACH (ft): 442 | LAT.: 39.92748 | LONG.: -83.05508 | RIVER CODE: | RIVER MILE:

DATE: 11/12/20 | SCORER: JNS | COMMENTS: S-1-PER is classified as a perennial stream

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	10%
☐	BOULDER (>256 mm) [16 pts]	5%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	5%	☐	FINE DETRITUS [3 pts]	0%
☑	COBBLE (65-256 mm) [12 pts]	40%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2-64 mm) [9 pts]	40%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 50.00% (A) | Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 21 **TOTAL NUMBER OF SUBSTRATE TYPES:** 5

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☑	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 105

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☑	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: **AVERAGE BANKFULL WIDTH (meters):** 9.50

HHEI Metric Points

Substrate Max = 40	26
A + B	
Pool Depth Max = 30	20
Bankfull Width Max=30	30

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH L	R	(Per Bank)	FLOODPLAIN QUALITY L	R	(Most Predominant per Bank)	L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☑ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐ None	☐ 1.0	☐ 2.0	☐ 3.0
☑ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☑ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: _____ Distance from Evaluated Stream _____

☑ CWH Name: Early Run Distance from Evaluated Stream 0.00

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Southwest Columbus NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Franklin Township / City: Franklin

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 11/10/20 Quantity: 0.10

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 50%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) Y Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) Y

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

Save as pdf Reset Form

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Del Taco - Columbus, OH | City/County: Franklin / Franklin | Sampling Date: 11/12/2020

Applicant/Owner: Armstrong Development Properties, Inc. | State: OH | Sampling Point: U-1

Investigator(s): J.S | Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Floodplain | Local relief (concave, convex, none): None

Slope (%): 1 | Lat: 39.927604 | Long: -83.054704 | Datum: NAD 83

Soil Map Unit Name: Crosby silt loam, Southern Ohio Till Plain, 2 to 6 percent slopes | NWI classification: Non-Wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
U-1 is along stream corridor protection zone within AOI

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharinum*	5	Yes	FACW
2. *Populus deltoides*	3	Yes	FAC
3. *Quercus rubra*	3	Yes	FACU
4. *Ulmus americana*	3	Yes	FACW
5.			
	14	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Lonicera maackii*	10	Yes	UPL
2. *Rubus occidentalis*	5	Yes	UPL
3.			
4.			
5.			
	15	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Hackelia virginiana*	30	Yes	FACU
2. *Danthonia spicata*	15	Yes	UPL
3. *Bidens frondosa*	15	Yes	FACW
4. *Geum urbanum*	10	No	UPL
5. *Elymus villosus*	5	No	FACU
6. *Daucus carota*	5	No	UPL
7. *Solidago canadensis*	5	No	FACU
8. *Symphyotrichum ericoides*	5	No	FACU
9.			
10.			
	90	=Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 44.4% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	23	x 2 =	46
FAC species	3	x 3 =	9
FACU species	48	x 4 =	192
UPL species	45	x 5 =	225
Column Totals:	119 (A)		472 (B)

Prevalence Index = B/A = 3.97

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)
None

SOIL

Sampling Point: U-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 3/1	97	10YR 5/8	2	C	M	Loamy/Clayey	Prominent redox concentrations
			5YR 4/6	1	C	M		Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? Yes ___ No X Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

None

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Del Taco - Columbus, OH | City/County: Franklin / Franklin | Sampling Date: 11/12/2020

Applicant/Owner: Armstrong Development Properties, Inc. | State: OH | Sampling Point: U-2

Investigator(s): J.S | Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Floodplain | Local relief (concave, convex, none): None

Slope (%): 1 | Lat: 39.927117 | Long: -83.054026 | Datum: NAD 83

Soil Map Unit Name: Crosby silt loam, Southern Ohio Till Plain, 2 to 6 percent slopes | NWI classification: Non-Wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
U-2 is within the stream corridor protection zone within AOI.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus americana*	15	Yes	FACW
2. *Platanus occidentalis*	10	Yes	FACW
3.			
4.			
5.			
	25	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Lonicera maackii*	70	Yes	UPL
2.			
3.			
4.			
5.			
	70	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Allium canadense*	5	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	5	=Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	0	x 3 =	0
FACU species	5	x 4 =	20
UPL species	70	x 5 =	350
Column Totals:	100 (A)		420 (B)

Prevalence Index = B/A = 4.20

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)
None

SOIL

Sampling Point: U-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/4	98	10YR 5/8	2	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? Yes ___ No X Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

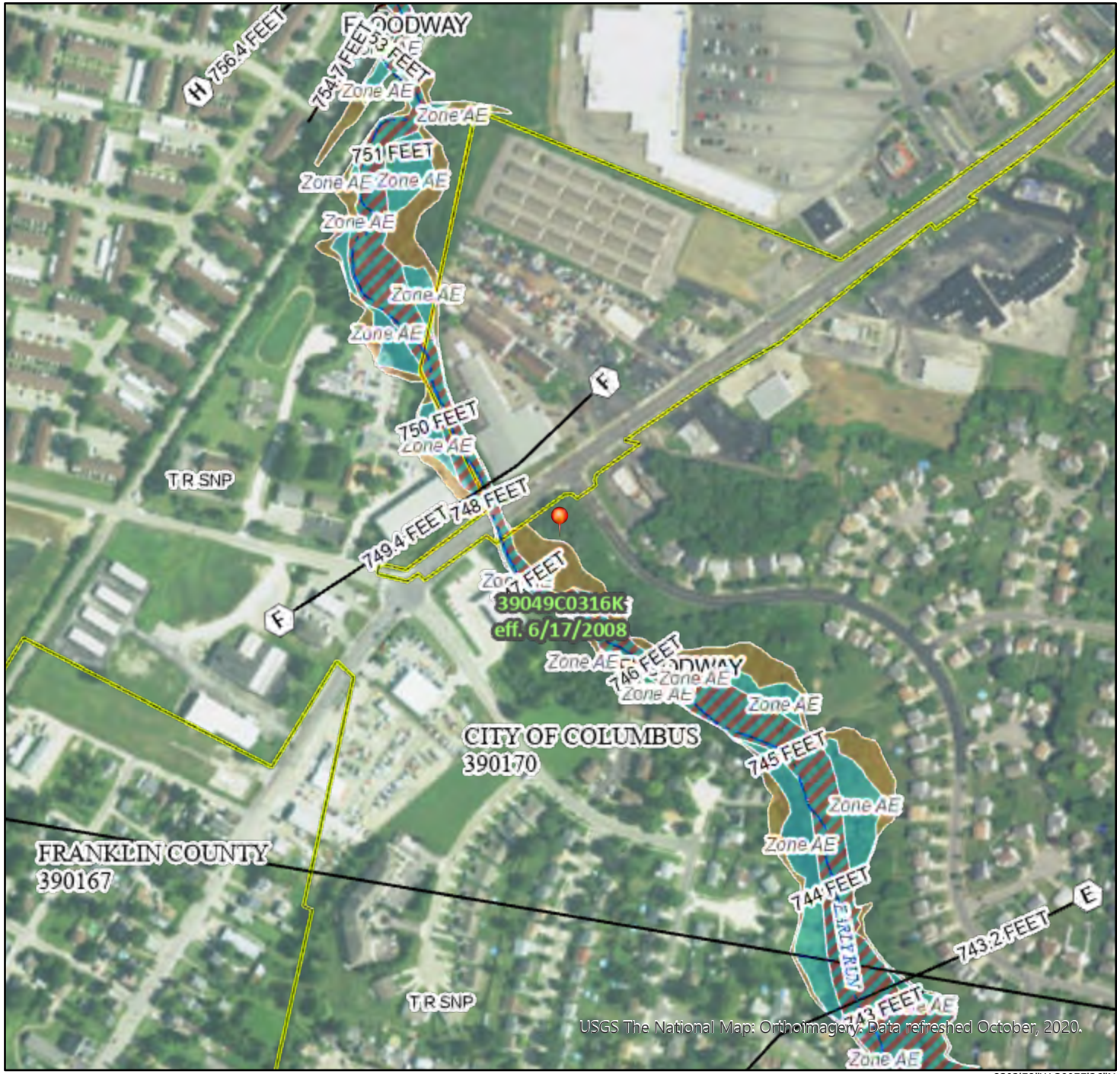
None

APPENDIX C: FEMA MAP

National Flood Hazard Layer FIRMette

FEMA

83°3'36"W 39°55'54"N



83°2'58"W 39°55'26"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

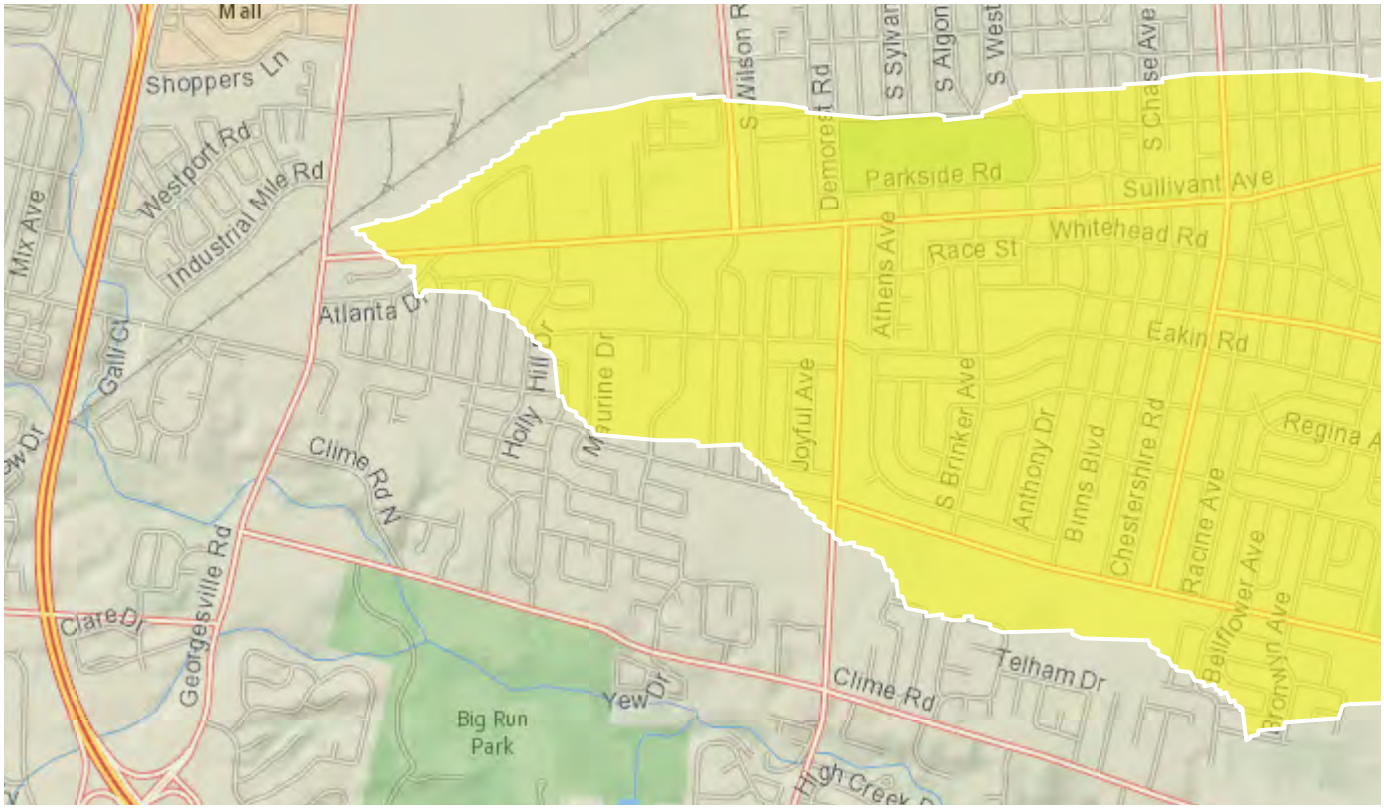
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 11/11/2020 at 1:00 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

APPENDIX D: STREAMSTATS REPORT

StreamStats Report

Region ID: OH
Workspace ID: OH20191022172507325000
Clicked Point (Latitude, Longitude): 39.92779, -83.05495
Time: 2019-10-22 13:25:24 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	3.14	square miles
OHREGC	Ohio Region C Indicator	0	dimensionless
OHREGA	Ohio Region A Indicator	1	dimensionless
CSL1085LFP	Change in elevation divided by length between points 10 and 85 percent of distance along the longest flow path to the basin divide, LFP from 2D grid	34.5	feet per mi
LC92STOR	Percentage of water bodies and wetlands determined from the NLCD	0.19	percent

Peak-Flow Statistics Parameters[Peak Flow Full Model Reg A SIR2019 5018]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	3.14	square miles	0.04	5989
OHREGC	Ohio Region C Indicator 1 if in C else 0	0	dimensionless	0	1
OHREGA	Ohio Region A Indicator 1 if in A else 0	1	dimensionless	0	1
CSL1085LFP	Stream Slope 10 and 85 Longest Flow Path	34.5	feet per mi	1.53	516
LC92STOR	Percent Storage from NLCD1992	0.19	percent	0	25.35

Peak-Flow Statistics Flow Report[Peak Flow Full Model Reg A SIR2019 5018]

PIl: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PIl	PIu	SEp
2 Year Peak Flood	265	ft^3/s	140	500	40.1
5 Year Peak Flood	466	ft^3/s	262	831	37.2
10 Year Peak Flood	630	ft^3/s	346	1150	37.6
25 Year Peak Flood	868	ft^3/s	474	1590	38.1
50 Year Peak Flood	1070	ft^3/s	576	1970	37.8
100 Year Peak Flood	1280	ft^3/s	684	2400	39.6
500 Year Peak Flood	1850	ft^3/s	977	3490	40.3

Peak-Flow Statistics Citations

Koltun, G.F.,2019, Flood-frequency estimates for Ohio streamgages based on data through water year 2015 and techniques for estimating flood-frequency characteristics of rural, unregulated Ohio streams: U.S. Geological Survey Scientific Investigations Report 2019–5018, 25 p. (https://dx.doi.org/10.3133/sir20195018)

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Application Version: 4.3.8