CITY OF COLUMBUS STORM WATER DRAINAGE MANUAL
TYPE III STREAM PROTECTION VARIANCE

FOR

RETREAT AT SCIOTO CREEK
4646 HALL ROAD
City of Columbus, Ohio
Project # 1067
April 2022

Prepared By:

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SECTION 1:

I. Variance Introduction

This report provides information regarding a Type III Stream Protection Variance request from the City of Columbus Stormwater Drainage Manual (SWDM) for the Retreat at Scioto Creek apartment development. Per Section 1.3 of the SWDM, the purpose of the stream corridor protection zone (SCPZ) is "to allow the natural, lateral movement of open water courses, provide sufficient area for flood conveyance, protect water quality and prevent structures from being impacted by natural streambank erosion." A variance granting the preferred alternative will result in the following SWDM impacts:

1) SWDM Section 1.3.2 and 1.3.3 (Table 1-1) – Filling of approximately 297' of an unnamed (ST-006) ephemeral stream. 0.37 acres of impact to the SCPZ.

2) SWDM Section 1.3.2 and 1.3.3 (Table 1-1) – Street Crossing including pipe culvert and impact of 86' of an intermittent stream (ST-001) as a permitted use within the SCPZ under 1.3.4.7. 0.13 acres of impact to the SCPZ are caused by the street crossing.

II. Proposed Development Summary

The existing property at 4646 Hall Road is currently undeveloped and used for agricultural farming. Multiple streams cross the property and will be placed in a conservation easement based on the width of the stream corridor protection zone calculation for each stream. The total area of conservation easement due to the stream corridor protection zones is 10.62 acres, which is 30.5% of the property of 34.845 acres. See Appendix A, Exhibit 1 for site schematic and stream corridor protection zone map. See below for existing site photos.

Existing site topography – Jan. 2022

Stream ST-001, facing southwest – Jan. 2022

Stream ST-006, facing south – Jan. 2022

The proposed development is bound by I-270 to the west, Hall Road to the south and residential uses to the north and east. The development includes 12 three-story garden-style apartment buildings (264 units), club house with pool and other amenity areas including: playgrounds, gaming / recreational space, grills and cooking space, picnic tables, dog park, meeting and classroom space.

The City of Columbus currently has a deficit of more than 50,000 affordable housing units and this proposed development will certainly help bridge this current deficit. While working to address this gap we have garnered support from the Greater Hilltop Area Commission (GHAC), Affordable Housing Trust for Columbus and Franklin County, Economic Development and Planning, Department of Development, Neighbors for More Neighbors (N4MN), and the Affordable Housing Alliance of Central Ohio (AHACO).

We believe the best use for this location is to support workforce affordable housing given its proximity to I-270, public transportation, jobs, and nearby retail amenities.

The existing SCPZ of stream ST-006 would force a redesign eliminating a 12-unit apartment building, 6 garages, a 2-bay utility space, and 17 surface parking spaces. The proposed 12-unit building would contain all four-bedroom units affordable at 60% Average Median Income (AMI). There has been strong support and desire from the City of Columbus and specifically the Greater Hilltop Area Commission to develop larger units to support Columbus families. In fact, a market study conducted in December 2021 showed comparable affordable housing vacancy rates of 1.6% or lower.

III. Determination of Stream Corridor Protection Zones

The existing SCPZ widths shown on Exhibit 1 of Appendix A was determined using the following equation from Section 1.3.1 of the SWDM.

SPCZ, in feet of width = $147(DA)^{0.38}$
Where DA = drainage area of the stream in square miles

Drainage areas used in the SCPZ calculations were determined using the U.S. Geological Survey (USGS) StreamStats application. See Appendix G for StreamStats calculation for ST-001. The overall tributary area for ST-006 is less than two acres. The SCPZ calculations for the two stream of interest in this report are as follows:

ST-001
Drainage Area (DA) = 0.0469 square miles (per StreamStats)
SPCZ Width = $147(0.0469)^{0.38}$ = 45.96 feet (minimum of 50 feet width per 1.3.1)

ST-006
Drainage Area (DA) = Less than 2 acres = 0.003 square miles (per topography)
SPCZ Width = $147(0.003)^{0.38}$ = 16.17 feet (minimum of 50 feet width per 1.3.1)

Both streams of interest in this report have SCPZ widths of 50 feet per the minimum requirement of section 1.3.1 of the SWDM.

IV. Impacts to Stream and Water Quality

Stream ST-001 is an intermittent stream and received an HHEI score of 34. ST-006 is an ephemeral stream and received an HHEI score of 23. See Appendix D for existing conditions HHEI scoring forms. Both streams are heavily modified and currently flow through an agricultural field with no riparian area for a majority of the flow path. The stream channels are currently entrenched, and the stream banks are eroding heavily in areas. Dominant substrates within both streams include silt and sand.

The proposed impacts to the stream centerline of ST-001 include 86 linear feet due to culvert, headwall, and rock channel protection installation to facilitate the construction of a street crossing. The proposed impacts to ST-006 include 297 linear feet due to construction and grading of apartment building, garages, association parking and related infrastructure. These proposed impacts are localized to the impacted stream reaches and are not anticipated to impact the upstream or downstream portions of the streams. The flow regime of both streams will remain intact and the substrates, bankful width, and maximum pool depth are anticipated to remain the same. Construction Best Management Practices (BMPs) should be implemented during construction, including working within the streams only during low flow periods and installing and maintaining appropriate erosion and sediment control around the streams prior to construction. Therefore, the physical habitat and HHEI scores are not anticipated to decrease following the proposed construction completion.

In addition, an approximate 0.49-acre riparian area adjacent to ST-001 will be enhanced with a floodplain seed mix, live stakes, and tree plantings. This riparian enhancement area will increase the quality of ST-001 by providing erosion control, shade and cooler water temperatures, food and habitat for aquatic macroinvertebrates, nutrient and sediment filtration, a vegetated buffer to slow water and help limit increased flows which can cause entrenchment, as well as increase adjacent floodplain/upland habitat.

V. Statement of Hardship

In conversations with the Greater Hilltop Area Commission on December 7, 2021, we understood that the lack of affordable housing has impacted this neighborhood especially hard, particularly for families seeking larger units. Avoidance of the ST-006 would result in a substantial loss of developable land and thus limit the amount of affordable housing we would be able to deliver. In addition, the loss of income would make this development infeasible to build. A large portion of the site (approximately 10.6 acres) in un-usable given the Stream Corridor Protection Zone (SCPZ) and further limitation of usable land would result in the inability to deliver affordable rents to the community. This change would be especially impactful as the Greater Hilltop Neighborhood Association has expressed their desire to see more four-bedroom units as it is becoming increasingly difficult for larger families to find safe, decent, affordable housing that fits their family composition. The elimination of Building #11 would result in all four-bedroom units being removed from the property.

Discussion of the no impact development plan, minimum impact development plan, and preferred development plan is provided below. In addition, a summary and comparison of the economic benefits of each alternative development plan is provided in Appendix B.

Scenario 1 – No Impact

As shown in Appendix A – Exhibit 3, this option eliminates building #11 along the eastern side of the desired site plan. This building is intended to house twelve four-bedroom affordable housing units at 60% AMI. Further, this option would significantly impact surface parking design, as well as the availability of garages or storage space that are in high demand currently. A reduction of 6 garages would result in loss of additional income and would also leave the development 3 garages short of the required zoning.

Finanical & Developmental Impact:

As summarized in Appendix B, implementation of a "No Impact" plan would create the following financial challenges to the development of Retreat at Scioto Creek:

- Annual rental income deficit of $182,880
- Annual garage and other income defiict of $6,738
- Total 10-year income deficit of $1,896,180
- Reduction of permenant debt allowed by $1,991,000, causing a financial gap in underwriting.

Social Implications:

In addition to financial and development related challenges outlined above, the social and community impacts of a "No Impact" approach generate the following:

- The loss of twelve (12) much needed affordable housing units during a time when the City of Columbus has an estimated deficit of over 50,000 affordable housing

units. This is even more impactful as affordable, four-bedroom units are most needed wihtin the Greater Hilltop neighborhood according to feedback received during the December 7, 2021 Area Commission Meeting.

- The loss of temporary construction jobs, estimated to be 1.16 jobs per unit according to the National Association of Homebuilders, resulting in fourteen (14) lost constrution jobs at an estimated loss of income of $400,000.

Scenario 2 – Minimum Impact

While this option allows the development to retain desired parking, it continues to impact unit count by eliminating building #11 along the eastern side of of the desired site plan, as shown in Appendix A – Exhibit 4.

Finanical & Developmental Impact:

As summarized in Appendix B, implementation of a "Minimum Impact" plan would create the following financial challenges to the development of Retreat at Scioto Creek:

- Annual rental income deficit of $182,880
- Annual garage and other income deficit of $2,058
- Total 10-year income deficit of $1,849,380
- Reduction of permenant debt allowed by $1,991,000

Social Implications:

In addition to financial and development related challenges outlined above, the social and community impacts of a "Minimum Impact" approach generate the following:

- The loss of twelve (12) much needed affordable housing units during a time when the City of Columbus has an estimated a deficit of over 50,000 affordable housing units. This is even more impactful as affordable, four-bedroom units are most needed wihtin the Greater Hilltop neighborhood according to feedback received during the December 7, 2021 Area Commission Meeting.
- The loss of temporary construction jobs, estimated to be 1.16 jobs per unit according to the National Association of Homebuilders, resulting in fourteen (14) lost constrution jobs at an estimated loss of income of $400,000.

Scenario 3 – Preferred Plan

This option is the most desired of the proposed options and allows the development to optomize unit count, parking, traffic patterns while still perseving green space and minimally disturbing streams, as shown in Appendix A – Exhibit 5.

Finanical, Developmental & Social Impact:

As summarized in Appendix B, implementation of the "Preferred" plan would create no financial challenges to the development of Retreat at Scioto Creek and would allow for the

greatest benefit from tax credits, permanent debt, and long-term income to support the viability of the development.

Additionally, the "Preferred" plan option would allow an optimal solution for residents and the community by providing much needed affordable housing and specifically units that accommodate larger families; which have been scarce in the Greater Hilltop and surrounding areas.

SECTION 2:

VI. Site Development Alternatives

a) No Impact alternative

The No Impact alternative decreases the usable site development acreage by 0.75 acres over the preferred alternative. The reduction of this area negatively impacts the financial feasibility of the project. Within this area, an additional apartment building with 12 units, 6 garage units and 17 additional parking spaces can be added. The No Impact Alternative causes the number of required garage units to be below code requirement by 3 garage units per zoning requirements. See Appendix A, Exhibit 3 for No Impact Alternative Exhibit.

b) Minimal Impact Alternative

The Minimal Impact Alternative would impact 0.25 acres of SCPZ of stream ST-006. This alternative would allow for the preferred number of garage units and surface parking spaces but would not allow for the apartment building with 12 units. Additional impacts to the SCPZ are required to design and grade the proposed building. See Appendix A, Exhibit 4 for Minimal Impact Alternative Exhibit.

c) Preferred Alternative

The Preferred Alternative would impact 0.37 acres of SCPZ of stream ST-006. The additional 0.12 acres (5,227 square feet) of impact over the Minimal Impact Alternative would allow space for the proposed 12 unit apartment building. The financial impact of this building makes the project financially feasible at a small increase in SCPZ impact. The proposed mitigation of the SCPZ will result in an increase to the ecological value of the overall SCPZ of the site. See Appendix A, Exhibit 5 for Preferred Alternative Exhibit.

VII. Comparison of Development Alternatives

As summarized in the table below, the impact to the SCPZ is necessary to meet the number of required garage units per zoning code and to provide the number of buildings/units to make the project financially feasible. The amount of SCPZ proposed to be impacted (0.37 acres) is 3.5% of the total SCPZ area (10.61 acres) that is required to be placed in conservation easement over the property. The Preferred Alternative will mitigate for all impacts and mitigation will be a net positive effect on the ecology of the property.

Summary of Alternatives					
Alternative	**Total SCPZ Impact (acres)**	**Buildings**	**Apartment Units**	**Garage Units**	**Surface Spaces**
No Impact	0.0	11	252	60*	380
Minimal Impact	0.34	11	252	66	397
Preferred	0.46	12	264	66	397

*Does not meet required number of garage units per code

SECTION 3:

VIII. Mitigation

a) Impact to SCPZ

Under the preferred alternative, the proposed apartment building, garage units, and parking area will impact 0.37 acres of stream ST-006 SCPZ. The proposed street crossing over stream ST-001 will impact 0.12 acres of SCPZ for a total SCPZ impact of 0.46 acres. Proposed mitigation will occur on-site at a required ratio of 1:1. The equivalent mitigation is required to preserve the same function as the disturbed SPCZ. The proposed SPCZ disturbance occurs within bare ground with no existing vegetation other than row crops and bare soil.

The proposed 0.46-acre mitigation area includes the riparian area of stream ST-001 and will involve restoring the area with native vegetation. This will include the following:

- A native seed mix, containing wildflowers and grasses;
- A quick cover crop seed mix, containing grasses, which establish quickly and help protect the area from sedimentation and erosion, while the long-term native seed mix takes time to become established;

- Native shrub live stakes, which are planned to be planted in two rows with 10 foot spacing, one row along the bank of stream ST-001 and a second row behind. Approximately 160 shrub live stakes are anticipated to be planted;
- Native tree species. Approximately 8 trees will be planted within the area, with 2 trees in each section of the mitigation area (i.e., northeast, southeast, northwest, southwest areas).

These plantings will significantly increase the ecological value within the stream corridor protection zone. This riparian enhancement area will increase the quality of ST-001 by providing erosion control, shade and cooler water temperatures, food and habitat for aquatic macroinvertebrates, nutrient and sediment filtration, a vegetated buffer to slow water and help limit increased flows which can cause entrenchment, as well as increase adjacent floodplain/upland habitat.

b) Impact Directly to Stream

The proposed impacts are localized to the impacted stream reaches and are not anticipated to impact the upstream or downstream portions of the streams. The flow regime of both streams will remain intact and the substrates, bankful width, and maximum pool depth are anticipated to remain the same. The HHEI scores for existing conditions and mitigated preferred alternative are in Appendix D and E. The partial impact of the streams is not expected to alter the health or quality of the remainder of the stream that will be left undisturbed.

IX. Conclusion

The preferred alternative design provides adequate garage space, surface parking and apartment units that make the project development financially feasible with minor impacts to the surrounding stream and surrounding environment. All disturbances will be mitigated on site in accordance with the Stormwater Drainage Manual. See Mitigation Plan in Appendix A, Exhibit 6 for details. The existing conditions of the impacted stream corridor protection zones is of low quality (bare surface and row crops) and the overall ecological impact of this variance request is minor to negligible. The proposed mitigation will enhance the overall stream corridor protection zone quality of the site.

Appendix A – Exhibits

SCALE: 1" = 100'

100 50 0 100 200

FLOOD PLAIN INFORMATION

FLOOD DESIGNATION - ZONE X, AE
MAP NUMBER - 39049C0311K
EFFECTIVE DATE - JUNE 17, 2008
BASE FLOOD ELEV. - N/A

LEGEND

EX. CONSERVATION EASEMENT
INSTR. #: 199810080258206
DATE: 10/09/1998

STREAM CORRIDOR PROTECTION ZONE DATA

IDENTIFICATION	TRIB AREA (SQ MILES)	SCPZ WIDTH (FT)
1 (ST-001)	0.05	50*
2 (ST-002)	0.05	50*
3 (ST-003)	4.3	250*
4 (ST-004)	0.32	96
5 (ST-005)	0.13	68
6 (ST-006)	2 ACRES	50*

* MINIMUM SCPZ = 50 FT
** MAXIMUM SCPZ = 250 FT
SCPZ AREA CALCULATED USING: SCPZ = 147(DA)^0.38 = WIDTH (FT)

REVISION RECORD		
NO.	DATE	REVISION DESCRIPTION

TEBBE CIVIL ENGINEERING, LLC
4700 Lakehurst Court, Suite 135
Dublin, Ohio 43016
Phone (614) 845-5885 ● Chris@TebbeCivil.Com

SITE SCHEMATIC AND STREAM PROTECTION ZONE PLAN
RETREAT AT SCIOTO CREEK
4646 HALL ROAD
COLUMBUS, OHIO

JOB NO.	1067
DRAWN BY	MJM
DESIGN BY	JSG
CHECKED BY	CMT

SHEET

1

SCALE: 1" = 80'

80 40 0 80 160

LEGEND

= RIPARIAN SETBACK, TO REMAIN (10.24 AC.)

= RIPARIAN SETBACK, MITIGATED (0.38 AC.)

= DEDICATED OPEN SPACE, TO REMAIN (5.75 AC.)

NO.	DATE	REVISION DESCRIPTION

REVISION RECORD

TEBBE CIVIL ENGINEERING, LLC
4700 Lakehurst Court, Suite 135
Dublin, Ohio 43016
Phone (614) 845-5885 ● Chris@TebbeCivil.Com

OVERALL SCPZ/OPEN SPACE DEDICATION MAP
RETREAT AT SCIOTO CREEK
4646 HALL ROAD
COLUMBUS, OHIO

JOB NO.	1067
DRAWN BY	MJM
DESIGN BY	JSG
CHECKED BY	CMT

SHEET

2

SITE DATA

TOTAL APARTMENT BUILDINGS	11
TOTAL RESIDENTIAL UNITS	252
ASPHALT PARKING SPACES	380
GARAGE PARKING SPACES	60

* 1 LESS APARTMENT BUILDING THAN PREFERRED
* 12 LESS RESIDENTIAL UNITS THAN PREFERRED
* 17 LESS ASPHALT PARKING SPACES THAN PREFERRED
* 6 LESS GARAGE PARKING SPACES THAN PREFERRED
* 3 LESS GARAGE PARKING SPACES THAN REQUIRED BY CODE

REVISION RECORD

NO.	DATE	REVISION DESCRIPTION

TEBBE CIVIL ENGINEERING, LLC
4700 Lakehurst Court, Suite 135
Dublin, Ohio 43016
Phone (614) 845-5885 ● Chris@TebbeCivil.Com

NO IMPACT ALTERNATIVE
RETREAT AT SCIOTO CREEK
4646 HALL ROAD
CITY OF COLUMBUS, OHIO

JOB NO.	1067
DRAWN BY	MJM
DESIGN BY	JSG
CHECKED BY	CMT

SHEET

3

I-270 (SOUTH)

I-270 (NORTH)

HALL RD.

ST-001
50' SCPZ

ST-004
96' SCPZ

ST-006
50' SCPZ

ST-002
50' SCPZ

0.17 AC.

0.09 AC.

0.17 AC

0.25 AC.

DETENTION BASIN

ST

LEGEND

DISTURBED SCPZ (0.34 ACRES)

MITIGATION AREA (0.34 ACRES)

SITE DATA

TOTAL APARTMENT BUILDINGS	11
TOTAL RESIDENTIAL UNITS	252
ASPHALT PARKING SPACES	397
GARAGE PARKING SPACES	66

* 1 LESS APARTMENT BUILDING THAN PREFERRED
* 12 LESS RESIDENTIAL UNITS THAN PREFERRED

SCALE: 1" = 50'

50 25 0 50 100

REVISION RECORD

NO.	DATE	REVISION DESCRIPTION

TEBBE CIVIL ENGINEERING, LLC
4700 Lakehurst Court, Suite 135
Dublin, Ohio 43016
Phone (614) 845-5885 ● Chris@TebbeCivil.Com

MINIMAL IMPACT ALTERNATIVE

RETREAT AT SCIOTO CREEK

4646 HALL ROAD
CITY OF COLUMBUS, OHIO

JOB NO.	1067
DRAWN BY	MJM
DESIGN BY	JSG
CHECKED BY	CMT

SHEET

4

I-270 (SOUTH)

I-270 (NORTH)

HALL RD.

ST-001
50' SCPZ

ST-002
50' SCPZ

ST-004
96' SCPZ

ST-006
50' SCPZ

0.23 AC.

0.09 AC.

0.23 AC

0.37 AC.

DETENTION BASIN

LEGEND

DISTURBED SCPZ (0.46 ACRES)

MITIGATION AREA (0.46 ACRES)

SITE DATA

TOTAL APARTMENT BUILDINGS	12
TOTAL RESIDENTIAL UNITS	264
ASPHALT PARKING SPACES	397
GARAGE PARKING SPACES	66

SCALE: 1" = 50'

50 25 0 50 100

REVISION RECORD

NO.	DATE	REVISION DESCRIPTION

TEBBE CIVIL ENGINEERING, LLC
4700 Lakehurst Court, Suite 135
Dublin, Ohio 43016
Phone (614) 845-5885 ● Chris@TebbeCivil.Com

PREFERRED ALTERNATIVE

RETREAT AT SCIOTO CREEK

4646 HALL ROAD
CITY OF COLUMBUS, OHIO

JOB NO.	1067
DRAWN BY	MJM
DESIGN BY	JSG
CHECKED BY	CMT

SHEET

5

Sheet 1 of 2

Drafted By: TL
Reviewed By: MS

Project: C1283-002-21

STREAM BUFFER ZONE MITIGATION PLAN

Retreat at Scioto Creek

Columbus, Franklin County, Ohio

STONE ENVIRONMENTAL, ENGINEERING & SCIENCE

Date: April 11, 2022

SEEDING AND PLANTING NOTES

ESTABLISHED NON-NATIVE VEGETATION WITHIN THE MITIGATION AREA SHALL BE REMOVED PRIOR TO THE INSTALLATION OF SEED MIX AND PLANTINGS. THE MITIGATION AREA SHALL BE RESTORED BY PLACING SEEDING AND MULCHING PER ODOT ITEM 659. SEED AND MULCHING SHALL BE ODOT ITEM 659 CLASS 5B ANNUAL AND PERENNIAL WILDFLOWER MIXTURE WITH CLASS 7 TEMPORARY EROSION CONTROL MIXTURE.

ALL TREES, SHRUBS AND GROUNDCOVER TO BE FERTILIZED WITH A COMMERCIAL GRADE FERTILIZER CONSISTING OF FAST AND SLOW RELEASE NITROGEN.

ALL PLANT MATERIAL SHALL BE OF THE SIZE AND TYPE SPECIFIED. IF SUBSTITUTIONS ARE APPROVED BY THE CITY OF COLUMBUS, THE SIZE AND GRADING STANDARDS SHALL CONFORM TO THOSE OF THE AMERICAN ASSOCIATION OF NURSERYMEN. ALL PLANTED MATERIALS SHALL BE NATIVE TO OHIO.

ALL PLANTS SHALL MEET OR EXCEED STANDARDS SET IN THE AMERICAN STANDARD FOR NURSERY STOCK, ANSI Z60.1, CURRENT EDITION. ALL PLANTS SHALL EQUAL OR EXCEED THE MEASUREMENTS AND SIZES SPECIFIED.

CONTRACTOR MAY SLIGHTLY FIELD ADJUST PLANT LOCATIONS AS NECESSARY TO AVOID UTILITIES OR OTHER OBSTRUCTIONS.

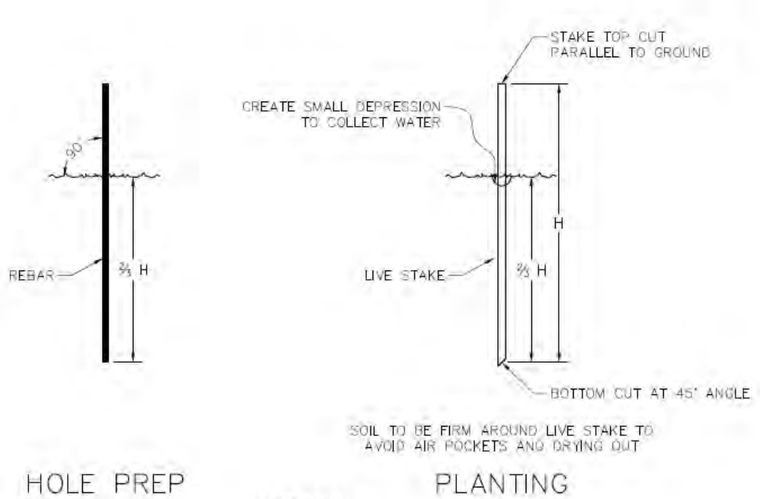
ENSURE ALL NEWLY PLANTED ITEMS ARE SET PLUMB. ESTABLISH FINAL GRADE PRIOR TO ANY PLANTING OR SEEDING.

PLANTS MAY ONLY BE INSTALLED BETWEEN OCTOBER 1 TO NOVEMBER 30, AND PRIOR TO FROZEN GROUND CONDITIONS.

PLANTING BACKFILL MIX SHALL BE BLENDED, MANUFACTURED SOIL CONSISTING OF THREE (3) PARTS TOPSOIL, ONE (1) PART COMPOST, ONE (1) PART SAND. TOPSOIL SHALL BE PER ASTM D5268, PH RANGE OF 5.5 TO 7, MINIMUM 4 PERCENT ORGANIC MATERIAL, FREE OF STONES AND SOIL CLUMPS ¾ INCH AND LARGER. COMPOST SHALL BE YARD WASTE COMPOST FROM AN EPA RATED CLASS IV COMPOST FACILITY OR COM-TIL COMPOST FROM CITY OF COLUMBUS DEPARTMENT OF PUBLIC UTILITIES. SAND SHALL BE PER ITEM ASTM C33. PROPRIETARY MANUFACTURED PLANTING MIX SUCH AS KURTZ BROS. PROFESSIONAL BLEND OR JONES SUPERSOIL MAY BE USED.

CONTRACTOR SHALL THROROUGHLY WATER ALL PLANTS AT TIME OF INSTALLATION AND AS NEEDED UNTIL PROJECT ACCEPTANCE. CONTRACTOR SHALL GUARANTEE ALL PLANTS INSTALLED FOR ONE FULL YEAR FROM DATE OF ACCEPTANCE. ALL PLANTS SHALL BE ALIVE AND AT A VIGOROUS RATE OF GROWTH AT THE END OF THE GUARANTEE PERIOD.

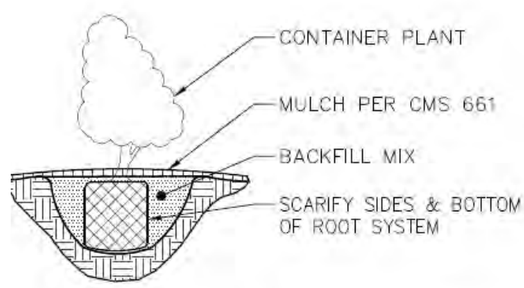
TREES				
ScientificName	**Common Name**	**Size**	**Root**	**Spacing**
Cornus florida	Flowering Dogwood	1" CAL. MIN.	CONTAINER	100' ON CENTER
Salix nigra	Black Willow	1" CAL. MIN.	CONTAINER	100' ON CENTER
Acer rubrum	Red Maple	1" CAL. MIN.	CONTAINER	100' ON CENTER
Platanus occidentalis	Sycamore	1" CAL. MIN.	CONTAINER	100' ON CENTER
LIVE STAKES				
Salix exigua	Sandbar Willow	0.5" - 1.5" CAL., 3 ft	LIVESTAKE	10' ON CENTER, 2 ROWS, STAGGARD
Salix sericea	Silky Willow	0.5" - 1.5" CAL., 3 ft	LIVESTAKE	10' ON CENTER, 2 ROWS, STAGGARD
Cornus amomum	Silky Dogwood	0.5" - 1.5" CAL., 3 ft	LIVESTAKE	10' ON CENTER, 2 ROWS, STAGGARD
Cornus sericea	Red Osier Dogwood	0.5" - 1.5" CAL., 3 ft	LIVESTAKE	10' ON CENTER, 2 ROWS, STAGGARD
Physocarpus opulifolius	Ninebark	0.5" - 1.5" CAL., 3 ft	LIVESTAKE	10' ON CENTER, 2 ROWS, STAGGARD



NOTES

1. LIVE STAKES SHALL BE LIVE DORMANT WOODY CUTTINGS THAT ARE CUT AND TRIMMED, 0.5" TO 1.5" CALIPER, 2' TO 4' LONG LIVE CUTTINGS OF SPECIFIED SPECIES. THE NURSERY SUPPLYING THE LIVE STAKES SHALL BE A COMPANY SPECIALIZING IN GROWING AND CULTIVATING OF PLANTS WITH A MINIMUM OF 10 YEARS OF EXPERIENCE. IF LESS THAN 75% OF STAKES ARE ALIVE AND EXHIBITING GROWTH ONE YEAR FROM PROJECT COMPLETION THEN ALL DEAD STAKES SHALL BE REPLACED 12 TO 13 MONTHS FROM PROJECT COMPLETION.
2. SOAK LIVE STAKES FOR 5 TO 7 DAYS IMMEDIATELY PRIOR TO PLANTING. LIVE STAKES SHALL BE PLANTED THE SAME DAY THEY ARE REMOVED FROM WATER AND CONTRACTOR SHALL NOT ALLOW LIVE STAKES TO DRY OUT. PILOT HOLES SHALL BE INSTALLED IN FIRM SOIL WITH A REBAR OR STEEL ROD AS SHOWN PRIOR TO PLANTING LIVE STAKES. PLANT STAKES WITH BUDS POINTING UP AT RIGHT ANGLES TO THE GROUND AND ONLY 2 TO 5 BUDS SHALL BE ABOVE THE GROUND.

LIVE STAKE PLANTING



CONTAINER PLANTING

–NOT TO SCALE–

Sheet 2 of 2	**STREAM BUFFER ZONE MITIGATION PLAN**	STONE ENVIRONMENTAL, ENGINEERING & SCIENCE
Drafted By: TL Reviewed By: MS	Retreat at Scioto Creek	Date: April 11, 2022
Project: C1283-002-21	Columbus, Franklin County, Ohio	

Appendix B – Financial Implications

	Scenario 1 No Impact	Scenario 2 Min Impact	Scenario 3 Preferred
Unit Count	**250**	**250**	**264**
1BR	72	72	72
2BR	126	126	126
3BR	54	54	54
4BR			12
Parking Spaces	**440**	**463**	**463**
Surface Parking	380	397	397
Garage Spaces	60	66	66
Rental Revenue			
Units	$2,989,440	$2,989,440	$3,172,320
Garages	$46,800	$51,480	$51,480
Other Income	$43,218	$43,218	$45,276
Annual Total	$3,079,458	$3,084,138	$3,269,076
10-Year	$30,794,580	$30,841,380	$32,690,760
% Reduction	5.8%	5.8%	0%
Tax Credit Equity	$23,415,021	$23,415,021	$24,367,188
NOI			
Stabalized	$944,652	$946,470	$963,741
10-Year	$16,808,843	$16,844,089	$17,951,158
% Reduction	6.4%	6.2%	0%
Perm Debt Allowed	$28,300,000	$28,300,000	$30,291,000

Appendix C – Ecological Site Survey

ENVIRONMENTAL, ENGINEERING & SCIENCE

PRELIMINARY JURISDICTIONAL WETLAND/WATERS DELINEATION REPORT

Hall Road Apartments
Columbus, Franklin County, Ohio

Prepared for:

KCG - Ascent Ventures, LLC
9311 N. Meridian Street, Suite 100
Indianapolis, Indiana 46260

Prepared by:

Stone Environmental Engineering and Science, Inc.
748 Green Crest Drive
Westerville, OH 43081

January 26, 2022
C1283-001-22

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APPENDICES

January 26, 2022
C1283-001-21

Mr. Senthil Rajakrishnan
KCG - Ascent Ventures, LLC
9311 N. Meridian Street, Suite 100
Indianapolis, Indiana 46260

Re: Preliminary Jurisdictional Wetland/Waters Delineation
Hall Road Apartments
Columbus, Franklin County, Ohio

Dear Mr. Rajakrishnan,

In accordance with your authorization, STONE has conducted a Preliminary Jurisdictional Wetland/Waters Delineation for the above-referenced project proposed for construction activity. A report of our findings is herewith submitted.

Based on our preliminary assessment, the following resources exist within the study area:

- 0.06 acres of Category 1, emergent wetland
- 517 linear feet of ephemeral stream
- 1,900 linear feet of intermittent stream
- 3,123 linear feet of perennial stream

If you have any questions about this submittal, please contact us at 614-865-1874.

Sincerely,
STONE Environmental Engineering & Science, Inc.

Teagan Loew, Cert Sr Ecologist, PWS, CESSWI
Ecologist/Natural Resources Division Manager

Taylor Gleaves
Project Ecologist

Submitted: one electronic copy (PDF), via email

PRELIMINARY JURISDICTIONAL WETLAND/WATERS DELINEATION REPORT
Hall Road Apartments
Columbus, Franklin County, OH

1. INTRODUCTION

1.1 Project Location and Description
This report presents the results of the preliminary jurisdictional wetland/waters delineation conducted by Stone Environmental Engineering and Science, Inc. (STONE) for an approximate 35-acre parcel (Franklin County Parcel 570-144455) located in Columbus, Franklin County, Ohio. The surrounding land use generally consists of residential and commercial developments, and forested area. A Project Location Map can be found in Appendix A – Figure 1.

1.2 Limitations
The conclusions presented herein are professional opinions based on the information contained in this report and are specific to the area investigated and on information provided by others. The findings of this report are applicable and representative of the conditions encountered on the date of this assessment and may not represent conditions at a later date. These conclusions represent STONE's professional opinion based on knowledge and experience with the United States Army Corps of Engineers (USACE) and Ohio Environmental Protection Agency (EPA) regulatory guidance documents and published methodology. These conclusions are subject to review and revision by the USACE and Ohio EPA.

2. REGULATORY BACKGROUND

Jurisdictional waters and wetlands are regulated by the USACE and Ohio EPA. Both Section 404 and Section 401 of the federal Clean Water Act (CWA) provide the USACE and Ohio EPA with the regulatory framework to implement these regulatory programs.

Section 404 of the CWA regulates the discharge of dredged material, placement of fill material, or certain types of excavation, which may result in more than incidental fallback material, within "Waters of the United States" (WOTUS). This Section grants the Secretary of the Army, through the Chief of Engineers, to issue permits for these actions. WOTUS are defined by the CWA as territorial seas and traditional navigable waters, intermittent and perennial tributaries, lakes, pond, and impoundments of jurisdictional waters, and adjacent wetlands. Wetlands are defined by the CWA as areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Section 401 of the CWA requires that any applicant requesting a Federal permit for activities resulting in a discharge to "Waters of the State" (State Waters) shall provide the Federal permitting agency a Certification from the State. This certification, known as a Section 401 Water Quality Certification (WQC), ensures that the Federal permit meets the State water quality standards. A Federal permit cannot be granted unless a Section 401 WQC is applied for, and received, from the State. Within the State of Ohio, the Ohio EPA Division of Surface Water 401

WQC Section is the regulatory entity for this certification. State laws and rules have been created in order to implement Section 401 and regulate impacts to State Waters, which includes isolated wetlands and ephemeral streams.

According to Section 404 of the CWA, a permit must be acquired from the USACE to authorize discharge of dredge or fill material into WOTUS. The USACE has established several Nationwide Permits (NWPs) to expedite the permitting process for common discharges which have been determined to have minimal individual or cumulative impacts on the environment. Ohio EPA Section 401 water quality certifications have been pre-approved for the NWPs. The NWP process typically requires three to six months for completion. Several criteria/limitations are associated with NWPs and can be discussed in further detail if it is determined that the on-site jurisdictional waters will be impacted by future site development. If NWP limitations are exceeded, typically an individual Section 404/401 permit must be obtained.

3. LITERATURE REVIEW

3.1 Soils

The United States Department of Agriculture (USDA) Natural Resource Conversation Service (NRCS) Soil Survey Data within the study area boundaries are listed below in Table 3-1 (Appendix A – Figure 2).

Table 3-1. Soil Map Units Within the Study Area

Soil Map Unit Symbol	Mapping Unit Name	Hydric Percentage
CeB	Celina silt loam, 2 to 6 percent slopes	1% to 32%
CeB2	Celina silt loam, 2 to 6 percent slopes, eroded	1% to 32%
Mh	Medway silt loam, occasionally flooded	1% to 32%
MlC2	Miamian silty clay loam, 6 to 12 percent slopes, eroded	1% to 32%
MmC3	Miamian clay loam, shallow to dense till substratum, 6 to 12 percent slopes, severely eroded	1% to 32%

3.2 USGS Topography

The study area is located on the United States Geological Survey (USGS) Southwest Columbus (7.5 minute) topographic map (Appendix A – Figure 1). The topography of the study area is generally uniform, ranging from 875 mean sea level (MSL) to 830 MSL. The study area drainage is divided by Scioto Big Run, with the southwestern portion of the study area draining northeast and the northeastern portion of the study area draining southwest.

3.3 National Wetlands Inventory Mapping

The United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Map displays riverine habitat within the study area (Appendix A – Figure 3).

3.4 USGS NHD Mapping

The USGS National Hydrography Dataset (NHD) map shows two perennial streams (Scioto Big Run and Unnamed Tributary to Scioto Big Run) within the study area and flowing to the southeast and east, respectively (Appendix A – Figure 3).

3.5 Ohio EPA Watershed & Designated Use Information

The study area is located within the Scioto Big Run Watershed (HUC 12: 050600012301). Scioto Big Run has an Ohio EPA designated use of Warmwater Habitat (WWH) and is located in the northern portion of the study area.

3.6 Floodplain Mapping

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) displays Regulatory Floodway, 100-year floodplain and 500-year floodplain within the study area (Panel 39049C0311K, effective 6/17/2008) (Appendix A – Figure 4).

4. METHODOLOGY

Taylor Gleaves (STONE) and Jordan Brennan (STONE), performed an on-site assessment of the study area on January 11, 2022. The total study area size is approximately 35 acres. A hand-held Global Positioning System (GPS) unit capable of submeter accuracy was used to gather data points and determine boundaries of the aquatic resources.

Wetland determination data points were collected in accordance with methodology outlined in the *United States Army Corps of Engineers (USACE) Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region*. Data points were collected for each wetland, including different data points per different Cowardin Habitat Classifications, and surrounding upland area. During the field review, the Ohio EPA's ORAM was used to evaluate the wetlands identified within the study area and the Primary Headwater Habitat Evaluation Index (HHEI) was used to evaluate streams with drainage areas less than one square mile and/or with pools less than 40 centimeters deep. All other streams were evaluated using the Qualitative Headwater Habitat Evaluation (QHEI).

5. RESULTS

STONE identified 0.06 acres of Category 1 emergent wetland, 517 feet of ephemeral stream, 1,900 linear feet of intermittent stream, and 3,123 linear feet of perennial stream. Details of the wetlands and streams can be found in Tables 5-1 and 5-2, respectively. Representative photographs of the wetlands and streams can be found in Appendix B. Completed ORAM forms for the wetlands and HHEI/QHEI forms for the streams are included in Appendix C.

Table 5-1. Wetlands Identified within Study Area

Wetland ID	Cowardin Habitat Classification[1]	ORAM Category (Score)	Acreage within Study Area[2]	Jurisdiction	Connection to Nearest Waterway[3]	Latitude	Longitude
WTL-001	PEM	1 (27)	0.03	WOTUS and State Water	Abuts RPW	39.932541	-83.120751
WTL-002	PEM	1 (15)	0.03	WOTUS and State Water	Abuts RPW	39.930529	-83.123158
TOTAL			**0.06 Acres**				

[1]PEM = Palustrine Emergent
[2]Note that delineated wetlands may extend outside the study area.
[3]RPW = Relatively Permanent Water

WTL-001 and WTL-002 are small, Category 1 emergent wetlands that have been directly impacted by adjacent agricultural activities. Both wetlands directly abut ST-001, a Relatively Permanent Water (RPW), and are therefore considered federally jurisdictional.

Table 5-2. Streams Identified within Study Area

Stream ID	Stream Hydrology	USACE Flow Type[1]	HHEI Class/QHEI Rating (Score)	Length within Study Area (Feet)[2]	Jurisdiction[3]	Waterway Name	Latitude	Longitude
ST-001	Intermittent	RPW	Modified Class II (34)	1,295	WOTUS and State Water	Unnnamed Tributary	39.9305	-83.1231
ST-002	Intermittent	RPW	Class II (51)	605	WOTUS and State Water	Unnnamed Tributary to Scioto Big Run	39.9325	-83.1205
ST-003	Perennial	RPW	Good (68)	1,391	WOTUS and State Water	Scioto Big Run	39.9334	-83.1213
ST-004	Perennial	RPW	Class II (63)	1,062	WOTUS and State Water	Unnnamed Tributary to Scioto Big Run	39.9335	-83.1220
ST-005	Perennial	RPW	Class II (69)	670	WOTUS and State Water	Unnnamed Tributary to Scioto Big Run	39.9339	-83.1232
ST-006	Ephemeral	NRPW	Modified Class I (23)	517	WOTUS and State Water	Unnnamed Tributary	39.9312	-83.1209
TOTAL				**5,540 Feet**				

[1] RPW = Relatively Permanent Water; NRPW Non-Relatively Permanent Water
[2] Note that the delineated streams may extend outside the study area.
[3] Streams colored gray will require the Significant Nexus Test.

All streams identified within the study area flow to ST-003 (Scioto Big Run), which is a Warmwater Habitat stream, per the Ohio EPA. ST-003 appears to contain perennial flow and received a QHEI score of 68, giving it a narrative rating of "Good". ST-004 and ST-005 are also perennial streams located within the forested area within the northern portion of the study area. Both streams enter the study area from a culvert to the west. ST-002 is an intermittent stream that flows along the eastern portion of the study area. ST-002 begins within the study area and appears to be fed by both groundwater, drainage from WTL-001, and drainage from an adjacent development. ST-001 and ST-006 both flow through an agricultural field and have been heavily modified. ST-001 is an intermittent stream that enters the study area from a culvert under I-270. ST-006 is an ephemeral stream that receives drainage from an adjacent development. This increased surface runoff is likely why ST-006 contained flow during the field review, when base flows were present. ST-006 appears to be a Non-Relatively Permanent Water (NRPW) and will therefore require the Significant Nexus Test.

6. CONCLUSIONS

STONE identified two emergent wetlands, three perennial streams, two intermittent streams, and one ephemeral stream. No other aquatic resources were observed during the on-site assessment.

Since the USACE has authority to determine and/or verify the geographical boundaries of wetlands and other WOTUS, to this point, this investigation is termed "preliminary." USACE verification (also referred to as a Jurisdictional Determination "JD") is typically required for completion of the Section 404, Section 401, and/or isolated wetland permitting process. It is the responsibility of any party that intends to discharge dredge or fill material into jurisdictional waters of the U.S. to comply with all applicable regulations.

7. REFERENCES

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APPENDIX A

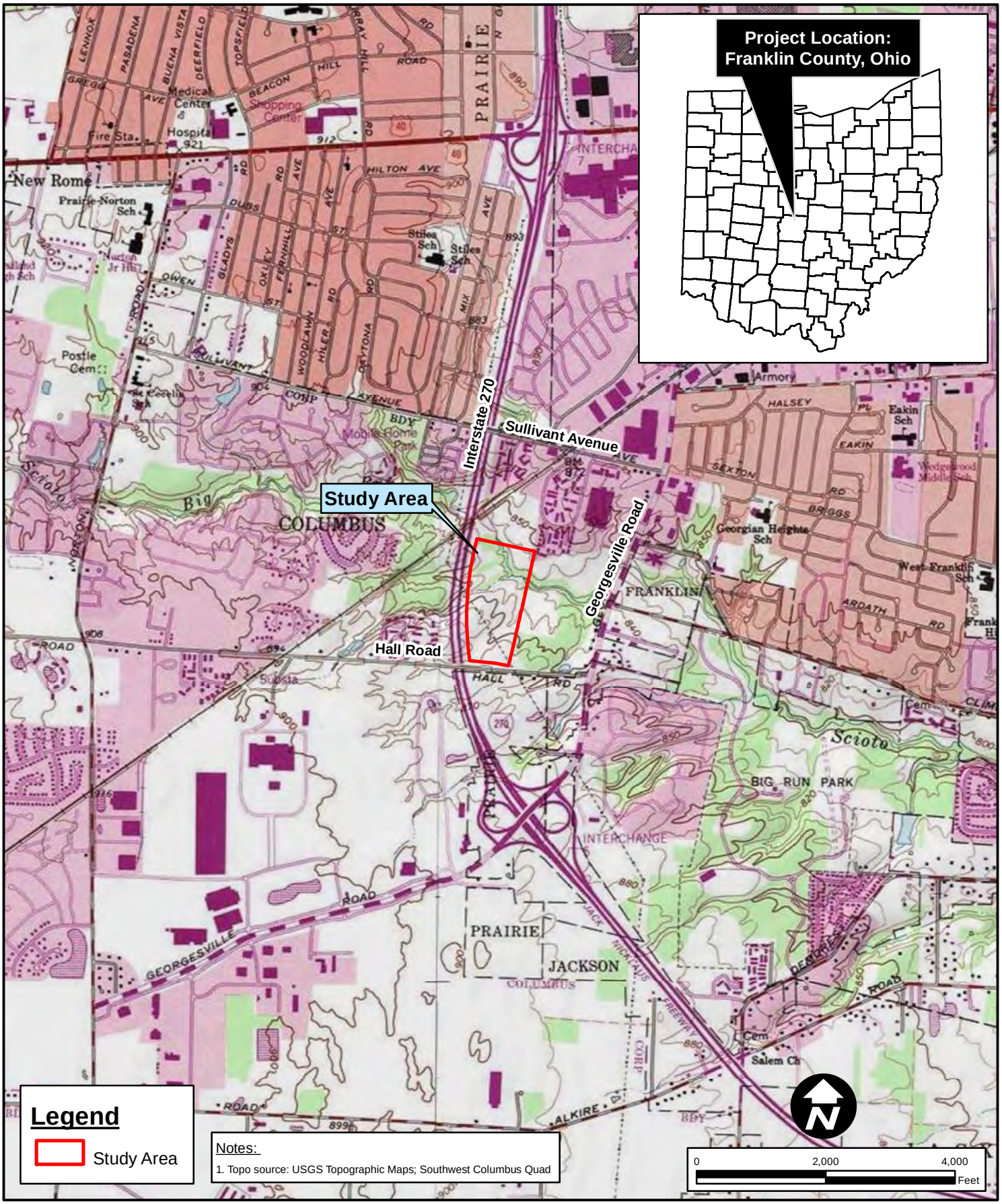

Figure 1

Drafted By: TG
Reviewed By: TL

Project: C1283-001-21

PROJECT LOCATION MAP

Hall Road Apartments

Columbus, Franklin County, Ohio

STONE ENVIRONMENTAL, ENGINEERING & SCIENCE

Date: January 10, 2022

Figure 2

Drafted By: TG
Reviewed By: TL

Project: C1283-001-21

SOIL UNIT MAP

Hall Road Apartments

Columbus, Franklin County, Ohio

STONE ENVIRONMENTAL, ENGINEERING & SCIENCE

Date: January 20, 2022

Figure 3 Drafted By: TG Reviewed By: TL Project: C1283-001-21	**USFWS NWI AND USGS NHD MAP** Hall Road Apartments Columbus, Franklin County, Ohio	STONE ENVIRONMENTAL, ENGINEERING & SCIENCE Date: January 20, 2022

Figure 4	**FEMA MAP**	STONE ENVIRONMENTAL, ENGINEERING & SCIENCE
Drafted By: TG Reviewed By: TL	Hall Road Apartments	
Project: C1283-001-21	Columbus, Franklin County, Ohio	Date: January 20, 2022

Figure 5

Drafted By: TG
Reviewed By: TL

Project: C1283-001-21

DELINEATION RESULTS MAP

Hall Road Apartments

Columbus, Franklin County, Ohio

STONE ENVIRONMENTAL, ENGINEERING & SCIENCE

Date: January 20, 2022

APPENDIX B

01 - Viewing ST-001 upstream.

02 - Viewing ST-001 downstream.

03 - Viewing ST-002 upstream.

04 - Viewing ST-002 downstream.

05 - Viewing ST-003 upstream.

06 - Viewing ST-003 downstream.

07 - Viewing ST-004 upstream.

08 - Viewing ST-004 downstream

09 - Viewing ST-005 upstream.

10 - Viewing ST-005 downstream.

11 - Viewing ST-006 upstream.

12 - Viewing ST-006 downstream.

13 - Viewing east within WTL-001.

14 - Viewing west within WTL-002.

15 - Viewing across study area to the south.

16 - Viewing across study area to the east.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Hall Road Apartments City/County: Columbus/Franklin Sampling Date: 1/11/2022

Applicant/Owner: Ascent Development Group State: OH Sampling Point: DP-001

Investigator(s): Taylor Gleaves, Jordan Brennan Section, Township, Range: VMD 1425

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave

Slope (%): 6 Lat: 39.9325419 Long: -83.1207512 Datum: NAD83

Soil Map Unit Name: Miamian silty clay loam, 6 to 12 percent slopes, eroded NWI classification: n/a

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

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

Are Vegetation N , Soil N , or Hydrology N 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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
WTL-001, PEM

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1. *Fraxinus pennsylvanica*	5	Yes	FACW
2.			
3.			
4.			
5.			
	5 =Total Cover		
Herb Stratum (Plot size: ____)			
1. *Cinna arundinacea*	10	No	FACW
2. *Symphyotrichum lateriflorum*	20	Yes	FACW
3. *Phleum pratense*	30	Yes	FACU
4. *Solidago canadensis*	10	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
	70 =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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	35	x 2 =	70
FAC species	0	x 3 =	0
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column Totals:	75 (A)		230 (B)

Prevalence Index = B/A = 3.07

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 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** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DP-001

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/2	95	10YR 3/6	5	C	PL	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)
- 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)

- X Surface Water (A1)
- X High Water Table (A2)
- X 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)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches): 1
Water Table Present?	Yes X	No ___	Depth (inches): 8
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 8

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

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Hall Road Apartments | City/County: Columbus/Franklin | Sampling Date: 1/11/2022

Applicant/Owner: Ascent Development Group | State: OH | Sampling Point: DP-002

Investigator(s): Taylor Gleaves, Jordan Brennan | Section, Township, Range: VMD 1425

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

Slope (%): 6 | Lat: 39.9324191 | Long: -83.1206718 | Datum: NAD83

Soil Map Unit Name: Miamian silty clay loam, 6 to 12 percent slopes, eroded | NWI classification: n/a

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

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

Are Vegetation N, Soil N, or Hydrology N 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:
Upland for WTL-001

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1. *Lonicera japonica*	90	Yes	FACU
2.			
3.			
4.			
5.			
	90 =Total Cover		
Herb Stratum (Plot size: ____)			
1. *Solidago canadensis*	10	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	10 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals:	100 (A)		400 (B)

Prevalence Index = B/A = 4.00

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.)

SOIL

Sampling Point: DP-002

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	100					Loamy/Clayey	

[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? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

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

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Hall Road Apartments | City/County: Columbus/Franklin | Sampling Date: 1/11/2022

Applicant/Owner: Ascent Development Group | State: OH | Sampling Point: DP-003

Investigator(s): Taylor Gleaves, Jordan Brennan | Section, Township, Range: VMD 1425

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

Slope (%): 6 | Lat: 39.9331754 | Long: -83.1212480 | Datum: NAD83

Soil Map Unit Name: Miamian silty clay loam, 6 to 12 percent slopes, eroded | NWI classification: n/a

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

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

Are Vegetation N, Soil N, or Hydrology N 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:
Upland point

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.	90	Yes	
2.			
3.			
4.			
5.			
	90 =Total Cover		
Herb Stratum (Plot size: ____)			
1. *Solidago canadensis*	10	No	FACU
2. *Setaria faberi*	40	Yes	FACU
3. *Sorghum bicolor*	40	Yes	UPL
4.			
5.			
6.			
7.			
8.			
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: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	50	x 4 =	200
UPL species	40	x 5 =	200
Column Totals:	90 (A)		400 (B)

Prevalence Index = B/A = 4.44

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.)

SOIL

Sampling Point: DP-003

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
0-8	10YR 3/4	100					Loamy/Clayey	

[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: Frozen groud

Depth (inches): 8

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? (includes capillary fringe) Yes ___ No X Depth (inches): ___

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

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Hall Road Apartments | City/County: Columbus/Franklin | Sampling Date: 1/11/2022

Applicant/Owner: Ascent Development Group | State: OH | Sampling Point: DP-004

Investigator(s): Taylor Gleaves, Jordan Brennan | Section, Township, Range: VMD 1425

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

Slope (%): 6 | Lat: 39.9305296 | Long: -83.1231585 | Datum: NAD83

Soil Map Unit Name: Miamian silty clay loam, 6 to 12 percent slopes, eroded | NWI classification: n/a

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

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

Are Vegetation N , Soil N , or Hydrology N 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 X No ____ Hydric Soil Present? Yes X No ____ Wetland Hydrology Present? Yes X No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____

Remarks:
WTL-002, PEM

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ =Total Cover		
Herb Stratum (Plot size: ____)			
1. *Typha angustifolia*	100	Yes	OBL
2. *Epilobium coloratum*	10	No	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	110 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ =Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	110	x 1 =	110
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	110 (A)		110 (B)

Prevalence Index = B/A = 1.00

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 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** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DP-004

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 4/2	95	10YR 3/6	5	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)
- X 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** 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)

- X Surface Water (A1)
- X High Water Table (A2)
- X 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)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	X	No ___	Depth (inches):	3
Water Table Present?	Yes	X	No ___	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes	X	No ___	Depth (inches):	0

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

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Hall Road Apartments City/County: Columbus/Franklin Sampling Date: 1/11/2022

Applicant/Owner: Ascent Development Group State: OH Sampling Point: DP-005

Investigator(s): Taylor Gleaves, Jordan Brennan Section, Township, Range: VMD 1425

Landform (hillside, terrace, etc.): field Local relief (concave, convex, none): convex

Slope (%): 6 Lat: 39.9344564 Long: -83.1224493 Datum: NAD83

Soil Map Unit Name: Miamian silty clay loam, 6 to 12 percent slopes, eroded NWI classification: n/a

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

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

Are Vegetation N , Soil N , or Hydrology N 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:
Upland for WTL-002

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	____	=Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.	90	Yes	
2.			
3.			
4.			
5.			
	90	=Total Cover	
Herb Stratum (Plot size: ____)			
1. *Glycine max*	10	Yes	UPL
2. *Cardamine hirsuta*	30	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	40	=Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	30	x 4 =	120
UPL species	10	x 5 =	50
Column Totals:	40 (A)		170 (B)

Prevalence Index = B/A = 4.25

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.)

SOIL

Sampling Point: DP-005

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	100					Loamy/Clayey	

[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:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Hall Road Apartments City/County: Columbus/Franklin Sampling Date: 1/11/2022

Applicant/Owner: Ascent Development Group State: OH Sampling Point: DP-006

Investigator(s): Taylor Gleaves, Jordan Brennan Section, Township, Range: VMD 1425

Landform (hillside, terrace, etc.): field Local relief (concave, convex, none): convex

Slope (%): 6 Lat: 39.9344564 Long: -83.1224493 Datum: NAD83

Soil Map Unit Name: Miamian silty clay loam, 6 to 12 percent slopes, eroded NWI classification: n/a

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

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

Are Vegetation N , Soil N , or Hydrology N 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:
Upland for WTL-002

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1. *Juniperus virginiana*	20	Yes	FACU
2.			
3.			
4.			
5.			
	20 =Total Cover		
Herb Stratum (Plot size: ____)			
1. *Solidago canadensis*	10	No	FACU
2. *Lonicera japonica*	50	Yes	FACU
3. *Daucus carota*	10	No	UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	70 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	80	x 4 =	320
UPL species	10	x 5 =	50
Column Totals:	90 (A)		370 (B)

Prevalence Index = B/A = 4.11

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.)

SOIL

Sampling Point: DP-006

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	100					Loamy/Clayey	

[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:

Background Information

Name: Taylor Gleaves
Date: 1/11/2022
Affiliation: STONE Environmental Engineering & Science, Inc.
Address: 748 Green Crest Drive, Westerville, Ohio 43081
Phone Number: (614) 865 - 1874
e-mail address: TaylorGleaves@StoneEnvironmental.com
Name of Wetland: WTL-001
Vegetation Communit(ies): PEM
HGM Class(es): Riverine
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. See PJWD Report.

Lat/Long or UTM Coordinate	See PJWD Report.
USGS Quad Name	See PJWD Report.
County	See PJWD Report.
Township	See PJWD Report.
Section and Subsection	See PJWD Report.
Hydrologic Unit Code	See PJWD Report.
Site Visit	See PJWD Report.
National Wetland Inventory Map	See PJWD Report.
Ohio Wetland Inventory Map	See PJWD Report.
Soil Survey	See PJWD Report.
Delineation report/map	See PJWD Report.

Name of Wetland: WTL-001	
Wetland Size (acres, hectares):	0.03 acre

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

See PJWD Report

Comments, Narrative Discussion, Justification of Category Changes:

Final score : 27	**Category:** 1

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland*. In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Unit if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a mitigation site, conservation site, etc.	x	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	x	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	x	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	x	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		x
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	x	

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap. The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is a legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Reynoldsburg Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	**Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	(NO) Go to Question 2
2	**Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	(NO) Go to Question 3
3	**Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	(NO) Go to Question 4
4	**Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	(NO) Go to Question 5
5	**Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis*, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	(NO) Go to Question 6
6	**Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	(NO) Go to Question 7
7	**Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is the saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	(NO) Go to Question 8a

#	Question	Circle one	
8a	**"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	(NO) Go to Question 8b
8b	**Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	(NO) Go to Question 9a
9a	**Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	(NO) Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 9d	(NO) Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	(NO) Go to Question 9d
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	(NO) Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	(NO) Go to Question 10
10	**Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	(NO) Go to Question 11
11	**Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio, Erie County, and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	(NO) Complete Quantitative Rating

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus grosseserratus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia quadriflora*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum virginianum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium terebinthinaceum*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

ORAM v. 5.0 Field Form Quantitative Rating

Site: Hall Road Apartments		Date:	January 11, 2022
Wetlands:	WTL-001	Rater:	Taylor Gleaves

0 Subtotal | 0 Points

Metric 1. Wetland Area (size). (max 6 pts)

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [X] <0.1 acres (0.04ha) (0 pts)

3 Subtotal | 3 Points

Metric 2. Upland buffers and surrounding land use. (max 14 pts)

2a. Calculate average buffer width (select one, do not double check)

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [X] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use (select one or double check & average)

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [X] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [X] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

13 Subtotal | 10 Points

Metric 3. Hydrology. (max 30 pts)

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [X] Precipitation (1)
- [X] Seasonal/Intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [X] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only 1.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [X] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation.

(select one or double check & average)

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [X] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime.

(select one or double check & average)

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [X] Recovering (3)
- [X] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] dike
- [x] tile
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other- list

24 Subtotal | 11 Points

Metric 4. Habitat Alteration and Development. (max 20 pts.)

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [X] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select one.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [X] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [X] Recovered (6)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [x] nutrient enrichment

24 subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site:	Hall Road Apartments	Date:	January 11, 2022
Wetland:	WTL-001	Rater:	Taylor Gleaves

24 subtotal first page

24 Subtotal | 0 Points

Metric 5. Special Wetlands. (max 10 pts.)

Check all that apply and score as indicated

	Bog (10 pts)
	Fen (10 pts)
	Old Growth Forest (10 pts)
	Mature forested wetland (5 pts)
	Lake Erie coastal/tributary wetland-unrestricted hydrology (10 pts)
	Lake Erie coastal/tributary wetland-restricted hydrology (5 pts)
	Lake Plain Sand Prairies (Oak Openings) (10 pts)
	Relict Wet Prairies (10 pts)
	Known occurrence state/federal threatened or endangered species (10)
	Significant migatory songbird/waterfowl habitat or usage (10 pts)
	Category 1 Wetland. See Question 1 of Qualitative Rating. (-10 pts)

27 Subtotal | 3 Points

Metric 6. Plant Communities, interspersion, microtopography. (max 20 pts.)

6a. Wetland Vegetation Communities

Score all present using 0 to 3 scale

0	Aquatic bed
1	Emergent
0	Shrub
0	Forest
0	Mudflats
0	Open water
0	Other (list)

6b. Horizontal (plan view) interspersion

Select only one

	High (5)
	Moderately high (4)
	Moderate (3)
	Moderately low (2)
X	Low (1)
	None (0)

6c. Coverage of invasive plants.

Refer to Table 1 ORAM long form for list.
Add or deduct points for coverage

	Extensive >75 % cover (-5)
	Moderate 25-75% cover (-3)
	Sparse 5-25% cover (-1)
	Nearly Absent <5% cover (0)
X	Absent (1)

6d. Microtopography

Score all present using 0 to 3 scale

0	Vegetated hummocks/tussocks
0	Coarse woody debris >15 cm (6")
0	Standing dead > 25 cm (10") dbh
0	Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1 ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
moderate	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp.
high	A predominance of native species, with nonnative spp. and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1 ha (0.2471 acres)
1	Low 0.1 ha to <1 ha (0.2471 acres to 2.47 acres)
2	Moderate 1 ha to <4 ha (2.47 acres 9.88 acres)
3	High 4 ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

27 **GRAND TOTAL (max 100 pts)** Provisional Wetland Category: Category 1

WTL-001

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0	
	Metric 2. Buffers and surrounding land use	3	
	Metric 3. Hydrology	10	
	Metric 4. Habitat	11	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	3	
	TOTAL SCORE Consult most recent score calibration report at http://www.epa.ohio.gov/dsw/401/index.aspx to determine the wetland's category based on its quantitative score	27	Category based on score breakpoints Category 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

WTL-001

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	(NO)	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	(NO)	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	(NO)	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	(YES) Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	(NO)	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	(NO) Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name: Taylor Gleaves
Date: 1/11/2022
Affiliation: STONE Environmental Engineering & Science, Inc.
Address: 748 Green Crest Drive, Westerville, Ohio 43081
Phone Number: (614) 865 - 1874
e-mail address: TaylorGleaves@StoneEnvironmental.com
Name of Wetland: WTL-002
Vegetation Communit(ies): PEM
HGM Class(es): Depression
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. See PJWD Report.

Lat/Long or UTM Coordinate	See PJWD Report.
USGS Quad Name	See PJWD Report.
County	See PJWD Report.
Township	See PJWD Report.
Section and Subsection	See PJWD Report.
Hydrologic Unit Code	See PJWD Report.
Site Visit	See PJWD Report.
National Wetland Inventory Map	See PJWD Report.
Ohio Wetland Inventory Map	See PJWD Report.
Soil Survey	See PJWD Report.
Delineation report/map	See PJWD Report.

Name of Wetland: WTL-002	
Wetland Size (acres, hectares):	0.03 acre

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

See PJWD Report

Comments, Narrative Discussion, Justification of Category Changes:

Final score : 15	**Category:** 1

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland*. In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Unit if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a mitigation site, conservation site, etc.	x	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	x	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	x	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	x	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		x
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	x	

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap. The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is a legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Reynoldsburg Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	**Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	(NO) Go to Question 2
2	**Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	(NO) Go to Question 3
3	**Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	(NO) Go to Question 4
4	**Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	(NO) Go to Question 5
5	**Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis*, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	(NO) Go to Question 6
6	**Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	(NO) Go to Question 7
7	**Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is the saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	(NO) Go to Question 8a

#	Question	Circle one	
8a	**"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	(NO) Go to Question 8b
8b	**Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	(NO) Go to Question 9a
9a	**Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	(NO) Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 9d	(NO) Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	(NO) Go to Question 9d
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	(NO) Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	(NO) Go to Question 10
10	**Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	(NO) Go to Question 11
11	**Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio, Erie County, and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	(NO) Complete Quantitative Rating

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus grosseserratus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia quadriflora*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum virginianum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium terebinthinaceum*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

ORAM v. 5.0 Field Form Quantitative Rating

Site: Hall Road Apartments		Date:	January 11, 2022
Wetlands:	WTL-002	Rater:	Taylor Gleaves

0 Subtotal | 0 Points

Metric 1. Wetland Area (size). (max 6 pts)

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [X] <0.1 acres (0.04ha) (0 pts)

3 Subtotal | 3 Points

Metric 2. Upland buffers and surrounding land use. (max 14 pts)

2a. Calculate average buffer width (select one, do not double check)

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [X] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use (select one or double check & average)

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [X] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [X] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

12 Subtotal | 9 Points

Metric 3. Hydrology. (max 30 pts)

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [X] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [X] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only 1.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [X] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation.

(select one or double check & average)

- [ ] Semi- to permanently inundated/saturated (4)
- [X] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime.

(select one or double check & average)

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [X] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [✓] ditch
- [ ] dike
- [✓] tile
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [✓] road bed/RR track
- [ ] dredging
- [ ] other- list

19 Subtotal | 7 Points

Metric 4. Habitat Alteration and Development. (max 20 pts.)

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [X] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select one.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [X] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [X] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [✓] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [✓] nutrient enrichment

19 subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site:	Hall Road Apartments	Date:	January 11, 2022
Wetland:	WTL-002	Rater:	Taylor Gleaves

19 subtotal first page

19 Subtotal | 0 Points

Metric 5. Special Wetlands. (max 10 pts.)

Check all that apply and score as indicated

	Bog (10 pts)
	Fen (10 pts)
	Old Growth Forest (10 pts)
	Mature forested wetland (5 pts)
	Lake Erie coastal/tributary wetland-unrestricted hydrology (10 pts)
	Lake Erie coastal/tributary wetland-restricted hydrology (5 pts)
	Lake Plain Sand Prairies (Oak Openings) (10 pts)
	Relict Wet Prairies (10 pts)
	Known occurrence state/federal threatened or endangered species (10)
	Significant migatory songbird/waterfowl habitat or usage (10 pts)
	Category 1 Wetland. See Question 1 of Qualitative Rating. (-10 pts)

15 Subtotal | -4 Points

Metric 6. Plant Communities, interspersion, microtopography. (max 20 pts.)

6a. Wetland Vegetation Communities

Score all present using 0 to 3 scale

0	Aquatic bed
1	Emergent
0	Shrub
0	Forest
0	Mudflats
0	Open water
0	Other (list)

6b. Horizontal (plan view) interspersion

Select only one

	High (5)
	Moderately high (4)
	Moderate (3)
	Moderately low (2)
	Low (1)
X	None (0)

6c. Coverage of invasive plants.

Refer to Table 1 ORAM long form for list.
Add or deduct points for coverage

X	Extensive >75 % cover (-5)
	Moderate 25-75% cover (-3)
	Sparse 5-25% cover (-1)
	Nearly Absent <5% cover (0)
	Absent (1)

6d. Microtopography

Score all present using 0 to 3 scale

0	Vegetated hummocks/tussocks
0	Coarse woody debris >15 cm (6")
0	Standing dead > 25 cm (10") dbh
0	Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1 ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
moderate	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp.
high	A predominance of native species, with nonnative spp. and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1 ha (0.2471 acres)
1	Low 0.1 ha to <1 ha (0.2471 acres to 2.47 acres)
2	Moderate 1 ha to <4 ha (2.47 acres 9.88 acres)
3	High 4 ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

15 **GRAND TOTAL (max 100 pts)** Provisional Wetland Category: Category 1

WTL-002

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0	
	Metric 2. Buffers and surrounding land use	3	
	Metric 3. Hydrology	9	
	Metric 4. Habitat	7	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	-4	
	TOTAL SCORE Consult most recent score calibration report at http://www.epa.ohio.gov/dsw/401/index.aspx to determine the wetland's category based on its quantitative score	15	Category based on score breakpoints Category 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

WTL-002

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Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	(YES) Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	(NO)	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	(NO) Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 34

SITE NAME/LOCATION: Hall Road Apartments, Columbus, Franklin County, Ohio

SITE NUMBER: ST-001 RIVER BASIN: Upper Scioto DRAINAGE AREA (mi^2): 0.04

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.93057 LONG.: -83.12319 RIVER CODE: N/A RIVER MILE: N/A

DATE: 01/11/22 SCORER: T. Gleaves COMMENTS:

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]	35%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	15%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	10%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	35%	☐	ARTIFICIAL [3 pts]	5%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 15.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 **TOTAL NUMBER OF SUBSTRATE TYPES:** 5

HHEI Metric Points

Substrate Max = 40: 14

A + B

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):** 7

Pool Depth Max = 30: 15

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):** 0.67

Bankfull Width Max=30: 5

This information must also be completed

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

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		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	☐	Moist Channel, isolated pools, no flow (Intermittent)
☐	Subsurface flow with isolated pools (Interstitial)	☐	Dry channel, no water (Ephemeral)

COMMENTS: Intermittent Stream

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: **Scioto Big Run** Distance from Evaluated Stream **325.00**

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

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

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

County: **Franklin** Township / City: **Columbus**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **01/09/22** Quantity: **0.58**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **100%**

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

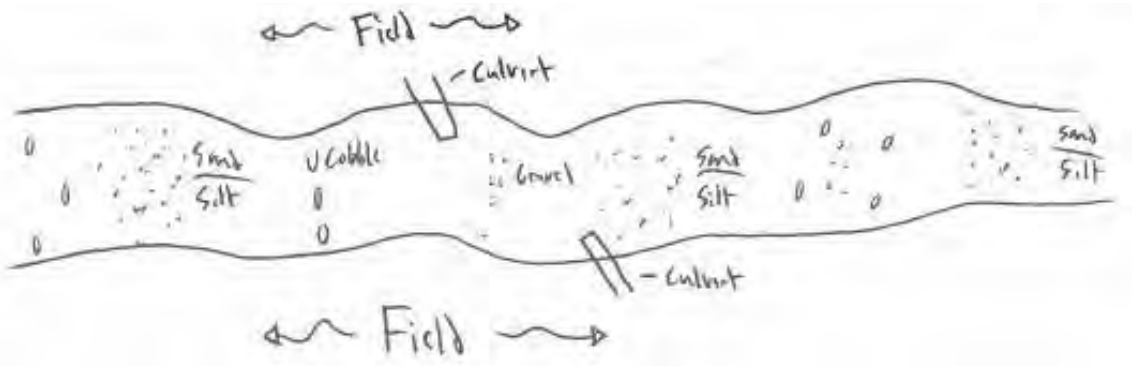
Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

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

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 51

SITE NAME/LOCATION: Hall Road Apartments, Columbus, Franklin County, Ohio

SITE NUMBER: ST-002 RIVER BASIN: Upper Scioto DRAINAGE AREA (mi^2): 0.05

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.93258 LONG.: -83.12055 RIVER CODE: 02-092 RIVER MILE: N/A

DATE: 01/11/22 SCORER: T. Gleaves COMMENTS:

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]	15%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	10%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	5%	☐	CLAY or HARDPAN [0 pt]	5%
☑	GRAVEL (2-64 mm) [9 pts]	30%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	35%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 5.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 **TOTAL NUMBER OF SUBSTRATE TYPES:** 6

HHEI Metric Points

Substrate Max = 40

21

A + B

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):** 8

Pool Depth Max = 30

15

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):** 1.00

Bankfull Width Max=30

15

This information must also be completed

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

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		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	☐	Moist Channel, isolated pools, no flow (Intermittent)
☐	Subsurface flow with isolated pools (Interstitial)	☐	Dry channel, no water (Ephemeral)

COMMENTS: Intermittent Stream

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: **Scioto Big Run** Distance from Evaluated Stream **0.00**

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

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

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

County: **Franklin** Township / City: **Columbus**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **01/09/22** Quantity: **0.58**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **15%**

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)

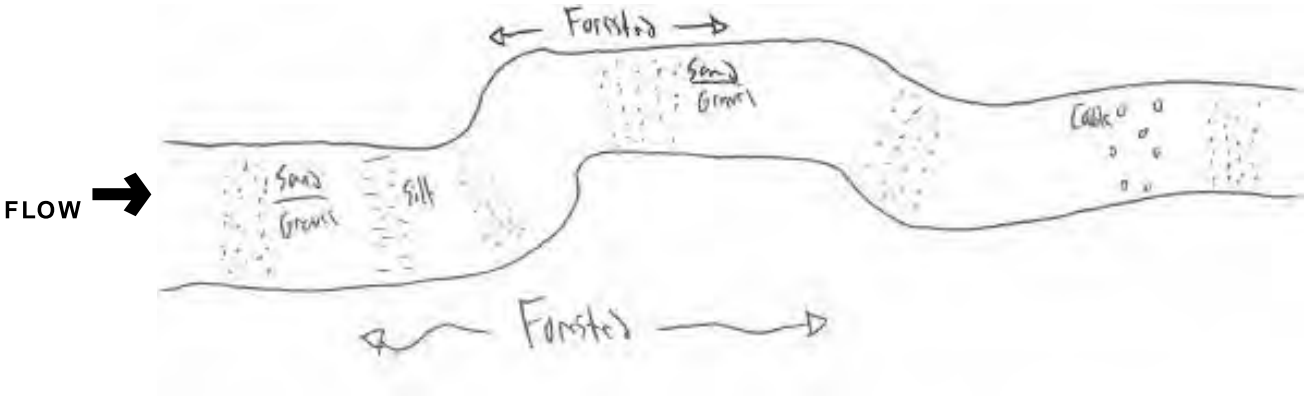
Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

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

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



Save as pdf Reset Form

Report ID: ST-003

Ohio EPA Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 68.00

Stream & Location: Scioto Big Run **RM:** 19 4.3 **Date:** 01/11/22

pH: **Scorers Full Name & Affiliation:** Taylor Gleaves (STONE) Jordan Brennan (STONE)

River Code: 000-002-092 **STORET #:** _____ **Lat./ Long.:** (NAD 83 - decimal °) 39.9334 / 83.1213 Office verified location ■

1] SUBSTRATE

Check *ONLY* **Two** substrate *TYPE BOXES*; estimate % or note every type present

Check ONE (*Or 2 & average*)

BEST TYPES	POOL	RIFFLE	OTHER TYPES	POOL	RIFFLE
☐☐ BLDR /SLABS [10]			☐☐ HARDPAN [4]		
☐☐ BOULDER [9]			☐☐ DETRITUS [3]		
■☐ COBBLE [8]	20%	40%	☐☐ MUCK [2]		
☐■ GRAVEL [7]	25%	30%	☐☐ SILT [2]	15%	10%
☐☐ SAND [6]	30%	15%	☐☐ ARTIFICIAL [0]	10%	5%
☐☐ BEDROCK [5]					

(Score natural substrates; ignore sludge from point-sources)

NUMBER OF BEST TYPES: ☐ 4 or more [2] ■ 3 or less [0]

ORIGIN	EMBEDDEDNESS	QUALITY
☐ LIMESTONE [1]	SILT	☐ HEAVY [-2]
■ TILLS [1]		☐ MODERATE [-1]
☐ WETLANDS [0]		■ NORMAL [0]
☐ HARDPAN [0]		☐ FREE [1]
☐ SANDSTONE [0]		☐ EXTENSIVE [-2]
☐ RIP/RAP [0]		☐ MODERATE [-1]
☐ LACUSTURINE [0]		■ NORMAL [0]
☐ SHALE [-1]		☐ NONE [1]
☐ COAL FINES [-2]		

Substrate **16.0** *Maximum 20*

Comments

2] INSTREAM COVER

Indicate presence 0 to 3: **0**-Absent; **1**-Very small amounts or if more common of marginal quality; **2**-Moderate amounts, but not of highest quality or in small amounts of highest quality; **3**-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

1 UNDERCUT BANKS [1]	2 POOLS > 70cm [2]	____ OXBOWS, BACKWATERS [1]
1 OVERHANGING VEGETATION [1]	____ ROOTWADS [1]	____ AQUATIC MACROPHYTES [1]
____ SHALLOWS (IN SLOW WATER) [1]	____ BOULDERS [1]	1 LOGS OR WOODY DEBRIS [1]
1 ROOTMATS [1]		

AMOUNT

Check ONE (*Or 2 & average*)

☐ EXTENSIVE >75% [11]
■ MODERATE 25-75% [7]
☐ SPARSE 5-<25% [3]
☐ NEARLY ABSENT <5% [1]

Comments

Cover Maximum 20 **13**

3] CHANNEL MORPHOLOGY

Check ONE in each category (*Or 2 & average*)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
☐ HIGH [4]	☐ EXCELLENT [7]	☐ NONE [6]	☐ HIGH [3]
■ MODERATE [3]	■ GOOD [5]	■ RECOVERED [4]	■ MODERATE [2]
☐ LOW [2]	☐ FAIR [3]	☐ RECOVERING [3]	☐ LOW [1]
☐ NONE [1]	☐ POOR [1]	☐ RECENT OR NO RECOVERY [1]	

Comments

Channel Maximum 20 **14.0**

4] BANK EROSION AND RIPARIAN ZONE

Check **ONE** in each category for *EACH BANK* (*Or 2 per bank & average*)

River right looking downstream

L	R	EROSION
☐	☐	NONE / LITTLE [3]
■	■	MODERATE [2]
☐	☐	HEAVY / SEVERE [1]

L	R	RIPARIAN WIDTH
☐	■	WIDE > 50m [4]
☐	☐	MODERATE 10-50m [3]
■	☐	NARROW 5-10m [2]
☐	☐	VERY NARROW < 5m [1]
☐	☐	NONE [0]

L	R	FLOOD PLAIN QUALITY
☐	☐	FOREST, SWAMP [3]
■	■	SHRUB OR OLD FIELD [2]
☐	☐	RESIDENTIAL, PARK, NEW FIELD [1]
☐	☐	FENCED PASTURE [1]
☐	☐	OPEN PASTURE, ROWCROP [0]

L	R	
☐	☐	CONSERVATION TILLAGE [1]
☐	☐	URBAN OR INDUSTRIAL [0]
☐	☐	MINING / CONSTRUCTION [0]

Indicate predominant land use(s) past 100m riparian.

Comments

Riparian Maximum 10 **7.00**

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH (Check **ONE** (*ONLY!*))

☐ > 1m [6]
■ 0.7-<1m [4]
☐ 0.4-<0.7m [2]
☐ 0.2-<0.4m [1]
☐ < 0.2m [0]

CHANNEL WIDTH (Check ONE (*Or 2 & average*))

■ POOL WIDTH > RIFFLE WIDTH [2]
☐ POOL WIDTH = RIFFLE WIDTH [1]
☐ POOL WIDTH < RIFFLE WIDTH [0]

CURRENT VELOCITY (Check ALL that apply)

☐ TORRENTIAL [-1]	☐ SLOW [1]
☐ VERY FAST [1]	☐ INTERSTITIAL [-1]
☐ FAST [1]	☐ INTERMITTENT [-2]
■ MODERATE [1]	☐ EDDIES [1]

Indicate for reach - pools and riffles.

Recreation Potential
Primary Contact
Secondary Contact
(circle one and comment on back)

Comments

Pool / Current Maximum 12 **7.0**

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (*Or 2 & average*). ☐ NO RIFFLE [metric=0]

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
☐ BEST AREAS > 10cm [2]	☐ MAXIMUM > 50cm [2]	☐ STABLE (e.g., Cobble, Boulder) [2]	☐ NONE [2]
■ BEST AREAS 5-10cm [1]	■ MAXIMUM < 50cm [1]	■ MOD. STABLE (e.g., Large Gravel) [1]	☐ LOW [1]
☐ BEST AREAS < 5cm [metric=0]		☐ UNSTABLE (e.g., Fine Gravel, Sand) [0]	■ MODERATE [0]
			☐ EXTENSIVE [-1]

Comments

Riffle / Run Maximum 8 **3.0**

6] GRADIENT

(14.00 ft/mi)

DRAINAGE AREA

(4.30 mi²)

☐ VERY LOW - LOW [2-4]
■ MODERATE [6-10]
☐ HIGH - VERY HIGH [10-6]

%POOL: 25 **%GLIDE:** 30 **%RUN:** 30 **%RIFFLE:** 15

Gradient Maximum 10 **8**

A] SAMPLED REACH

Check ALL that apply

METHOD

- ☐ BOAT
- ■ WADE
- ☐ L. LINE
- ☐ OTHER

DISTANCE

- ☐ 0.5 Km
- ☐ 0.2 Km
- ☐ 0.15 Km
- ☐ 0.12 Km
- ■ OTHER

0.61 meters

CANOPY

- ☐ > 85%- OPEN
- ☐ 55%-<85%
- ☐ 30%-<55%
- ■ 10%-<30%
- ☐ <10%- CLOSED

STAGE

1st -sample pass-		2nd
☐	HIGH	☐
☐	UP	☐
■	NORMAL	■
☐	LOW	☐
☐	DRY	☐

CLARITY

1st --sample pass--		2nd
☐	< 20 cm	☐
☐	20-<40 cm	☐
☐	40-70 cm	☐
■	> 70 cm/ CTB	☐
☐	SECCHI DEPTH	☐

1st pass _____ cm

2nd _____ cm

Comment RE: Reach consistency/ Is reach typical of steam?*, Recreation/* Observed - Inferred, *Other/* Sampling observations, Concerns, Access directions, etc.

B] AESTHETICS

- ☐ NUISANCE ALGAE
- ☐ INVASIVE MACROPHYTES
- ☐ EXCESS TURBIDITY
- ☐ DISCOLORATION
- ☐ FOAM / SCUM
- ☐ OIL SHEEN
- ■ TRASH / LITTER
- ☐ NUISANCE ODOR
- ☐ SLUDGE DEPOSITS
- ☐ CSOs/SSOs/OUTFALLS

C] RECREATION

	AREA	DEPTH
POOL:	☐ >100ft²	☐ >3ft

D] MAINTENANCE

Circle some & *COMMENT*

PUBLIC / PRIVATE / BOTH / NA
ACTIVE / HISTORIC / BOTH / NA
YOUNG-SUCCESSION-OLD
SPRAY / SNAG / REMOVED
MODIFIED / DIPPED OUT / NA
LEVEED / ONE SIDED
RELOCATED / CUTOFFS
MOVING-BEDLOAD-STABLE
ARMOURED / SLUMPS
ISLANDS / SCOURED
IMPOUNDED / DESICCATED
FLOOD CONTROL / DRAINAGE

E] ISSUES

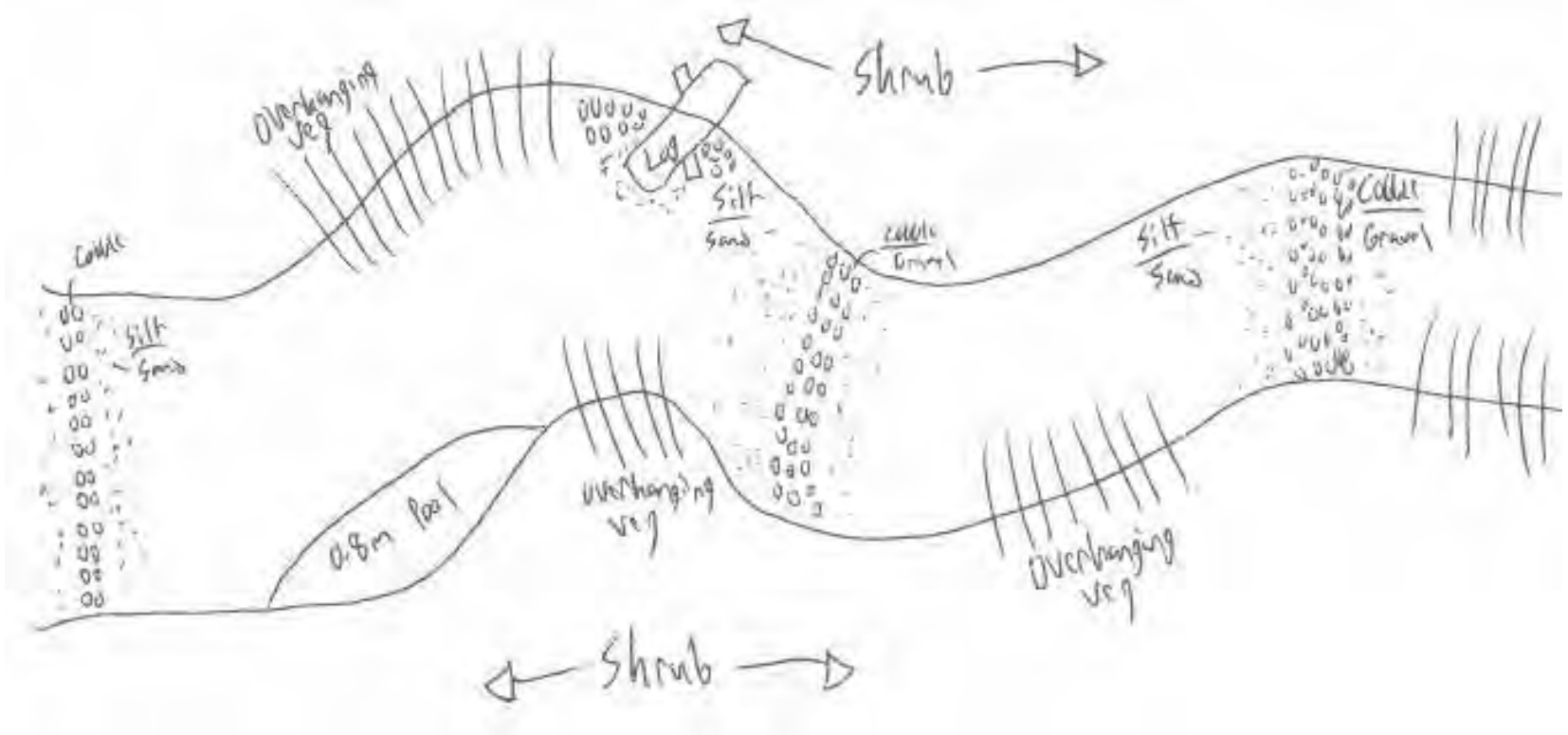
WWTP / CSO / NPDES / INDUSTRY
HARDENED / URBAN / DIRT&GRIME
CONTAMINATED / LANDFILL
BMPs-CONSTRUCTION-SEDIMENT
LOGGING / IRRIGATION / COOLING
BANK / EROSION / SURFACE
FALSE BANK / MANURE / LAGOON
WASH H_20 / TILE / H_20 TABLE
ACID / MINE / QUARRY / FLOW
NATURAL / WETLAND / STAGNANT
PARK / GOLF / LAWN / HOME
ATMOSPHERE / DATA PAUCITY

F] MEASUREMENTS

- $\bar{x}$ width
- $\bar{x}$ depth
- max. depth
- $\bar{x}$ bankfull width
- bankfull $\bar{x}$ depth
- W/D ratio
- bankfull max. depth
- floodprone x^2 width
- entrench. ratio

Legacy Tree:

Stream Drawing:



Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 63

SITE NAME/LOCATION: Hall Road Apartments, Columbus, Franklin County, Ohio

SITE NUMBER: ST-004 RIVER BASIN: Upper Scioto DRAINAGE AREA (mi^2): 0.05

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.93390 LONG.: -83.12235 RIVER CODE: 02-092 RIVER MILE: N/A

DATE: 01/11/22 SCORER: T. Gleaves COMMENTS:

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]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☑	COBBLE (65-256 mm) [12 pts]	30%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	15%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	40%	☐	ARTIFICIAL [3 pts]	5%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 30.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 18 **TOTAL NUMBER OF SUBSTRATE TYPES:** 5

HHEI Metric Points

Substrate Max = 40: 23

A + B

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

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 18

Pool Depth Max = 30: 20

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

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

COMMENTS: **AVERAGE BANKFULL WIDTH (meters):** 2.50

Bankfull Width Max=30: 20

This information must also be completed

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

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		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: Perennial Stream

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: **Scioto Big Run** Distance from Evaluated Stream **0.00**

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

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

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

County: **Franklin** Township / City: **Columbus**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **01/09/22** Quantity: **0.58**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **15%**

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

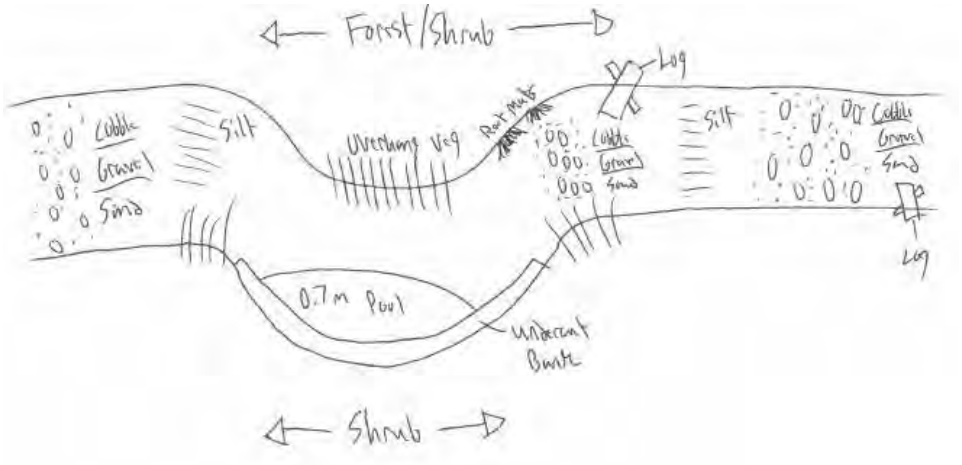
Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

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 →



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Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 69

SITE NAME/LOCATION: Hall Road Apartments, Columbus, Franklin County, Ohio

SITE NUMBER: ST-005 RIVER BASIN: Upper Scioto DRAINAGE AREA (mi^2): 0.05

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.93396 LONG.: -83.12329 RIVER CODE: 02-092 RIVER MILE: N/A

DATE: 01/11/22 SCORER: T. Gleaves COMMENTS:

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]	15%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☑	COBBLE (65-256 mm) [12 pts]	20%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	15%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	40%	☐	ARTIFICIAL [3 pts]	5%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 20.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 18 **TOTAL NUMBER OF SUBSTRATE TYPES:** 6

HHEI Metric Points

Substrate Max = 40: 24

A + B

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

Pool Depth Max = 30: 25

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 18

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

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

Bankfull Width Max=30: 20

COMMENTS: **AVERAGE BANKFULL WIDTH (meters):** 2.00

This information must also be completed

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

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		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: Perennial Stream

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

- ☐ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☑ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >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: **Scioto Big Run** Distance from Evaluated Stream **0.00**

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

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

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

County: **Franklin** Township / City: **Columbus**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **01/09/22** Quantity: **0.58**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **15%**

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

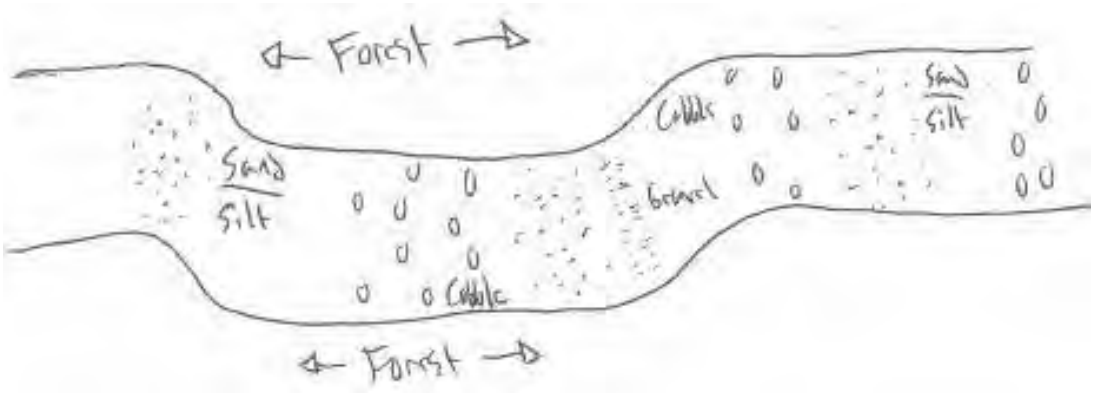
Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

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 →



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Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 23

SITE NAME/LOCATION: Hall Road Apartments, Columbus, Franklin County, Ohio

SITE NUMBER: ST-006 RIVER BASIN: Upper Scioto DRAINAGE AREA (mi^2): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.93122 LONG.: -83.12095 RIVER CODE: N/A RIVER MILE: N/A

DATE: 01/11/22 SCORER: T. Gleaves COMMENTS:

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

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 10.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

HHEI Metric Points

Substrate Max = 40: 13

A + B

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

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 3

Pool Depth Max = 30: 5

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

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

COMMENTS: **AVERAGE BANKFULL WIDTH (meters):** 0.55

Bankfull Width Max=30: 5

This information must also be completed

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

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		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: Ephemeral Stream

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

- ☐ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☑ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >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: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

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

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

County: Franklin Township / City: Columbus

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 01/09/22 Quantity: 0.58

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)

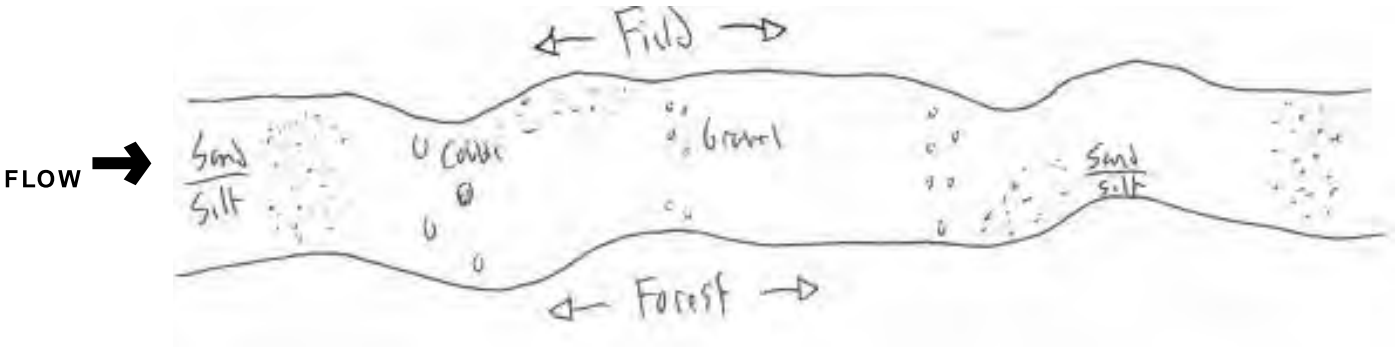
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

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

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



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Appendix D – Existing Conditions Stream HHEI Scores

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 34

SITE NAME/LOCATION: Hall Road Apartments, Columbus, Franklin County, Ohio

SITE NUMBER: ST-001 RIVER BASIN: Upper Scioto DRAINAGE AREA (mi^2): 0.04

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.93057 LONG.: -83.12319 RIVER CODE: N/A RIVER MILE: N/A

DATE: 01/11/22 SCORER: T. Gleaves COMMENTS:

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]	35%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	15%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	10%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	35%	☐	ARTIFICIAL [3 pts]	5%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 15.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 **TOTAL NUMBER OF SUBSTRATE TYPES:** 5

HHEI Metric Points

Substrate Max = 40: 14

A + B

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):** 7

Pool Depth Max = 30: 15

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):** 0.67

Bankfull Width Max=30: 5

This information must also be completed

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

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		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	☐	Moist Channel, isolated pools, no flow (Intermittent)
☐	Subsurface flow with isolated pools (Interstitial)	☐	Dry channel, no water (Ephemeral)

COMMENTS: Intermittent Stream

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: **Scioto Big Run** Distance from Evaluated Stream **325.00**

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

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

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

County: **Franklin** Township / City: **Columbus**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **01/09/22** Quantity: **0.58**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **100%**

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

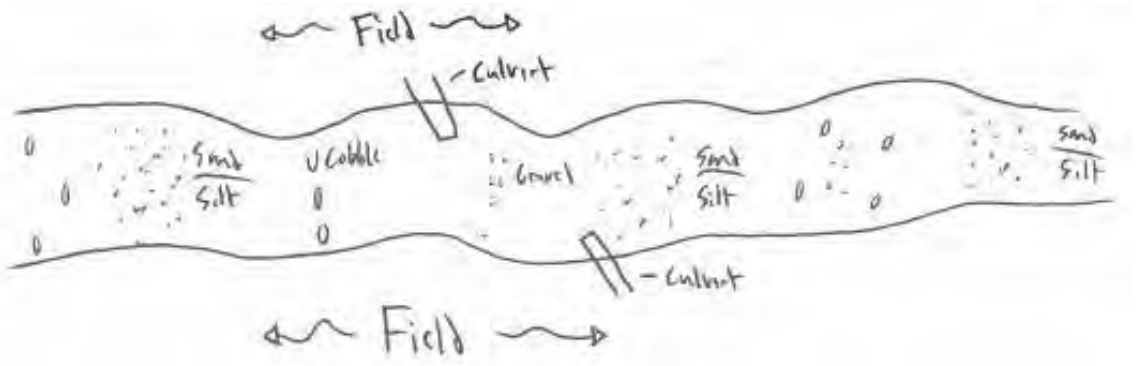
Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

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

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 23

SITE NAME/LOCATION: Hall Road Apartments, Columbus, Franklin County, Ohio

SITE NUMBER: ST-006 RIVER BASIN: Upper Scioto DRAINAGE AREA (mi^2): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.93122 LONG.: -83.12095 RIVER CODE: N/A RIVER MILE: N/A

DATE: 01/11/22 SCORER: T. Gleaves COMMENTS:

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

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 10.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

HHEI Metric Points

Substrate Max = 40: 13

A + B

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

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 3

Pool Depth Max = 30: 5

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

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

COMMENTS: **AVERAGE BANKFULL WIDTH (meters):** 0.55

Bankfull Width Max=30: 5

This information must also be completed

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

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		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: Ephemeral Stream

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

- ☐ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☑ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >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: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

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

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

County: Franklin Township / City: Columbus

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 01/09/22 Quantity: 0.58

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)

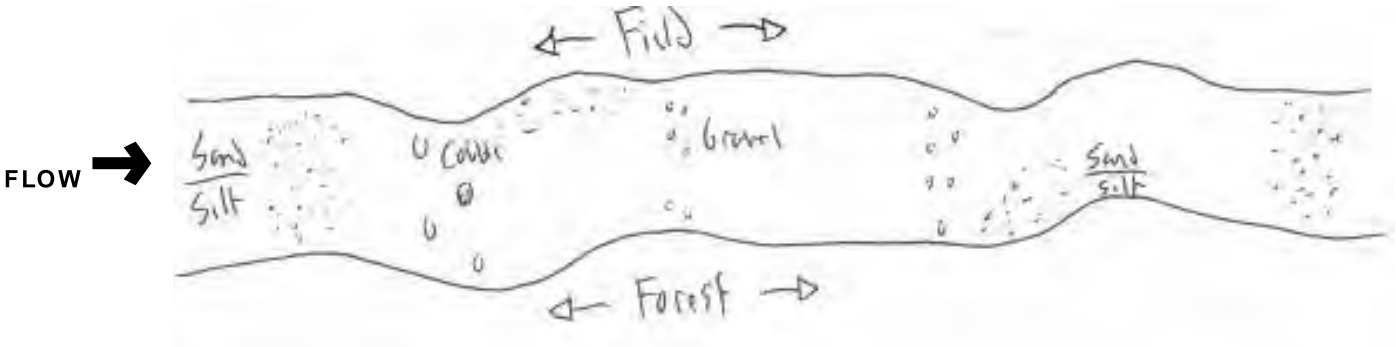
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

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

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



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Appendix E – Mitigation Conditions Stream HHEI Scores

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : **34**

SITE NAME/LOCATION: **Hall Road Apartments, Columbus, Franklin County, Ohio**

SITE NUMBER: **ST-001** RIVER BASIN: **Upper Scioto** DRAINAGE AREA (mi²): **0.04**

LENGTH OF STREAM REACH (ft): **200** LAT.: **39.93057** LONG.: **-83.12319** RIVER CODE: **N/A** RIVER MILE: **N/A**

DATE: _____ SCORER: **T.Loew** COMMENTS: **Anticipated HHEI for post construction**

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]	35%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	15%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	10%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	35%	☐	ARTIFICIAL [3 pts]	5%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: **15.00%** (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **9** **TOTAL NUMBER OF SUBSTRATE TYPES:** **5**

HHEI Metric Points

Substrate Max = 40

14

A + B

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):** **7**

Pool Depth Max = 30

15

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):** **0.67**

Bankfull Width Max=30

5

This information must also be completed

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

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		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: Mitigation area surrounds portion of stream (scrub-shrub, young forest)

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

☑ Stream Flowing ☐ Moist Channel, isolated pools, no flow (Intermittent)

☐ Subsurface flow with isolated pools (Interstitial) ☐ Dry channel, no water (Ephemeral)

COMMENTS: Intermittent Stream

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: **Scioto Big Run** Distance from Evaluated Stream **325.00**

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

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

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

County: **Franklin** Township / City: **Columbus**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: _____ Quantity: _____

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

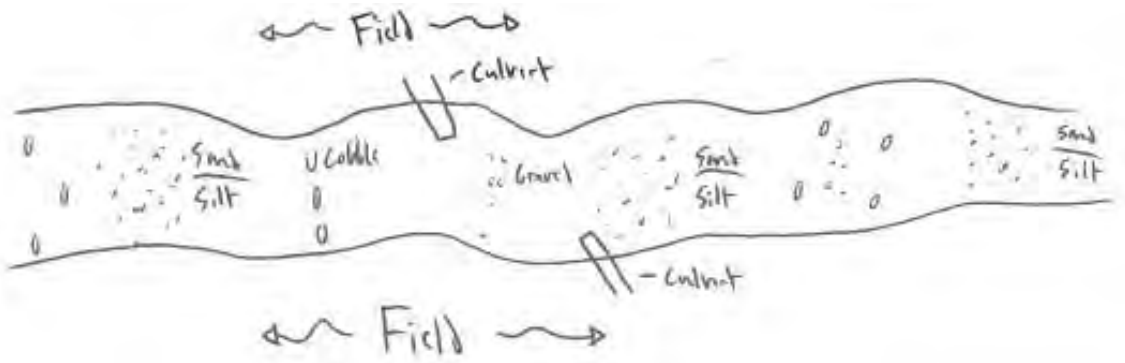
Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

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

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : **23**

SITE NAME/LOCATION: Hall Road Apartments, Columbus, Franklin County, Ohio

SITE NUMBER: ST-006 RIVER BASIN: Upper Scioto DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.93225 LONG.: -83.12089 RIVER CODE: N/A RIVER MILE: N/A

DATE: SCORER: T. Loew COMMENTS: Anticipated HHEI for post construction

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

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 10.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

HHEI Metric Points

Substrate Max = 40: 13

A + B

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):** 3

Pool Depth Max = 30: 5

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):** 0.55

Bankfull Width Max=30: 5

This information must also be completed

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

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		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: Remaining young forest and new residential development.

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: Ephemeral Stream

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: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

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

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

County: **Franklin** Township / City: **Columbus**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: _____ Quantity: _____

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)

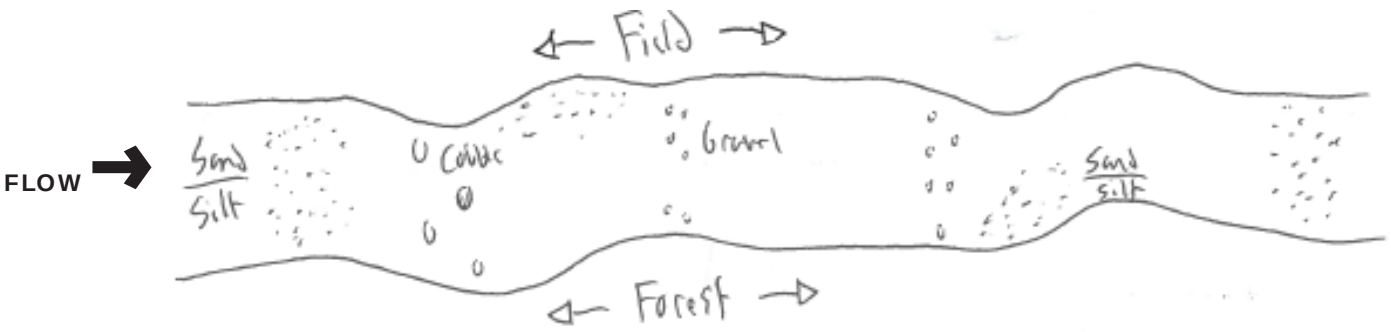
Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

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

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



Save as pdf Reset Form

Appendix F – Nationwide Permit

NATIONWIDE PERMIT #29 APPLICATION

Retreat at Scioto Creek
Columbus, Franklin County, Ohio

Prepared for:
KCG - Ascent Ventures, LLC
9311 N. Meridian Street, Suite 100
Indianapolis, Indiana 46260

Prepared by:

Stone Environmental Engineering and Science, Inc.
748 Green Crest Drive
Westerville, Ohio 43081

March 7, 2022
C1238-002-22

APPENDICES

A. APPLICATION FORMS

- USACE ENG FORM 6082
- USACE ENG FORM 6082 Supplemental Information

B. PLANS & MAPS

- Project Location Map (Figure 1)
- FEMA Map (Figure 2)
- Proposed Impacts Map (Figure 3)
- Preferred Alternative Plan Sheet
- Site Schematic and Stream Protection Zone Plan Sheet
- Cast-in-Place Pipe Culvert Headwalls Standard Drawings

C. PRELIMINARY JURISDICTIONAL WETLAND/WATERS DELINEATION (PJWD) REPORTS

-Hall Road Apartments PJWD Report

D. SUPPORTING DOCUMENTATION

- SHPO GIS Records Map
- USFWS IPaC Official Species List
- ODNR Environmental Review Request Letter Submittal

APPENDIX A. APPLICATION FORMS

U.S. Army Corps of Engineers (USACE)

NATIONWIDE PERMIT PRE-CONSTRUCTION NOTIFICATION (PCN)

33 CFR 330. The proponent agency is CECW-CO-R.

Form Approved - OMB No. 0710-0003 Expires: 02-28-2022

DATA REQUIRED BY THE PRIVACY ACT OF 1974

Authority	Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Regulatory Program of the Corps of Engineers (Corps); Final Rule 33 CFR 320-332.
Principal Purpose	Information provided on this form will be used in evaluating the nationwide permit pre-construction notification.
Routine Uses	This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of the agency coordination process.
Disclosure	Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued.

The public reporting burden for this collection of information, 0710-0003, is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

PLEASE DO NOT RETURN YOUR RESPONSE TO THE ABOVE EMAIL.

One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (*see sample drawings and/or instructions*) and be submitted to the district engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME	8. AUTHORIZED AGENT'S NAME AND TITLE (*agent is not required*)
First - Michael Middle - Patrick Last - Rodriguez	First - Teagan Middle - K Last - Loew
Company - KCG - Ascent Ventures, LLC	Company - STONE Environmental Engineering & Science, Inc.
Company Title - Principal	E-mail Address - TeaganLoew@StoneEnvironmental.com
E-mail Address - mrodriguez@ascentdevgrp.com	
6. APPLICANT'S ADDRESS	**9. AGENT'S ADDRESS**
Address- 9311 N. Meridian Street, Suite 100	Address- 748 Green Crest Drive
City - Indianapolis State - IN Zip - 46260 Country - USA	City - Columbus State - OH Zip - 43081 Country - USA
7. APPLICANT'S PHONE NOs. with AREA CODE	**10. AGENT'S PHONE NOs. with AREA CODE**
a. Residence b. Business (317) 964-1302 c. Fax d. Mobile	a. Residence b. Business (614) 865-1874 c. Fax d. Mobile

STATEMENT OF AUTHORIZATION

11. I hereby authorize, Teagan Loew to act in my behalf as my agent in the processing of this nationwide permit pre-construction notification and to furnish, upon request, supplemental information in support of this nationwide permit pre-construction notification.

Michael Rodriguez Digitally signed by Michael Rodriguez Date: 2022.03.04 13:13:28 -05'00' — SIGNATURE OF APPLICANT

2022-03-04 — DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME or TITLE (*see instructions*)
Retreat at Scioto Creek

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

13. NAME OF WATERBODY, IF KNOWN (*if applicable*)
Two Unnamed Tributaries of Scioto Big Run

14. PROPOSED ACTIVITY STREET ADDRESS (*if applicable*)
4646 Hall Road

15. LOCATION OF PROPOSED ACTIVITY (*see instructions*)

Latitude °N	Longitude °W
39.931284	-83.122317

City: Columbus
State: OH
Zip: 43228

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (*see instructions*)

State Tax Parcel ID
Franklin County Parcel 570-144455)

Municipality

Section	Township	Range
VMD 1425	NA	NA

17. DIRECTIONS TO THE SITE
Take WV-527 N to OH-7 S/Ohio River Scenic Byway in Union Township. Merge onto OH-7 S/Ohio River Scenic Byway. Get on US-23 N in Valley Township from State Rte 823. Follow US-23 N to Georgesville Rd in Columbus. Take exit 5 from I-270 W. Drive to Hall Rd

18. IDENTIFY THE SPECIFIC NATIONWIDE PERMIT(S) YOU PROPOSE TO USE
Nationwide Permit 29

19. DESCRIPTION OF PROPOSED NATIONWIDE PERMIT ACTIVITY (*see instructions*)
The project proposes to impact 86 linear feet (0.005-acre) of intermittent stream (ST-001) due to a road crossing, including a 54" concrete pipe culvert, concrete headwalls, and rock channel protection installed at the inlet and outlet. The project also proposes to impact 322 linear feet (0.01-acre) of ephemeral stream due to grading and the construction of multi-family homes, clubhouse and recreational areas, residential roads, and related utilities. Approximately 93% of the streams within the project area are being avoided and a large majority will be protected via a conservation easement. Avoiding all resources would be infeasible. Impacts will be minimal and work will be performed during low-flow conditions. See the attached Supplemental Information document for more information.

20. DESCRIPTION OF PROPOSED MITIGATION MEASURES (*see instructions*)
The proposed impacts to streams are under the 0.03-acre threshold. A large majority of streams on the site are being avoided and only 7% of streams are proposed for impact. All wetlands (0.06-acre) are being avoided. In addition, a 0.41-acre mitigation area around ST-001 will be implemented focused on riparian restoration (seed mix, live stakes, and tree plantings). Approximately 5,218 linear feet of stream are also being protected via a conservation easement, which will include the wetland areas. See the attached Supplemental Information document.

21. PURPOSE OF NATIONWIDE PERMIT ACTIVITY (*Describe the reason or purpose of the project, see instructions*)
The purpose of the project is to construct multi-family residential units within Columbus, Ohio, which has seen a population growth increase of 17.10% since 2010, with an anticipated 3,000,000 residents by the year 2050. In addition, there is a housing shortage within Columbus, as the number of new homes built each year is currently less than the number of new residents and home buyers. The proposed project will add approximately 264 homes to the Columbus area, with related infrastructure, such as a clubhouse and recreational areas, residential roads, and utilities. Construction is anticipated to begin October 2022 and be completed in October 2024.

22. QUANTITY OF WETLANDS, STREAMS, OR OTHER TYPES OF WATERS DIRECTLY AFFECTED BY PROPOSED NATIONWIDE PERMIT ACTIVITY (*see instructions*)

Acres	Linear Feet	Cubic Yards Dredged or Discharged
0.02-acre of stream	408 linear of stream	62 cubic yards discharged

Each PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site.

23. List any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. (*see instructions*)
NA

24. If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and requires pre-construction notification, explain how the compensatory mitigation requirement in paragraph (c) of general condition 23 will be satisfied, or explain why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required for the proposed activity.
NA

25. Is any portion of the nationwide permit activity already complete? ☐ Yes ☒ No If Yes, describe the completed work:

26. List the name(s) of any species listed as endangered or threatened under the Endangered Species Act that might be affected by the proposed NWP activity or utilize the designated critical habitat that might be affected by the proposed NWP activity. (*see instructions*)

An Official Species List was obtained from the USFWS via the Information for Planning and Consultation (IPAC) Tool on February 28, 2022. The list includes the Indiana bat (endangered), Northern long-eared bat (threatened), Scioto madtom (endangered), and monarch butterfly (candidate). The project area contains Suitable Summer Habitat for both listed bat species. See the attached Supplemental Information document for more information.

27. List any historic properties that have the potential to be affected by the proposed NWP activity or include a vicinity map indicating the location of the historic property or properties. (*see instructions*)

The State Historic Preservation Office (SHPO) GIS Records Map does not show any records within the project area.

28. For a proposed NWP activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, identify the Wild and Scenic River or the "study river":

NA

29. If the proposed NWP activity also requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, have you submitted a written request for section 408 permission from the Corps district having jurisdiction over that project? ☐ Yes ☐ No

If "yes", please provide the date your request was submitted to the Corps district:

30. If the terms of the NWP(s) you want to use require additional information to be included in the PCN, please include that information in this space or provide it on an additional sheet of paper marked Block 30. (*see instructions*)

NA

31. Pre-construction notification is hereby made for one or more nationwide permit(s) to authorize the work described in this notification. I certify that the information in this pre-construction notification is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

Michael Rodriguez Digitally signed by Michael Rodriguez Date: 2022.03.04 13:13:58 -05'00'	2022-03-04	TeaganLoew Digitally signed by TeaganLoew Date: 2022.03.04 10:38:40 -05'00'	2022-03-04
SIGNATURE OF APPLICANT	DATE	SIGNATURE OF AGENT	DATE

The pre-construction notification must be signed by the person who desires to undertake the proposed activity (applicant) and, if the statement in Block 11 has been filled out and signed, the authorized agent.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

USACE ENG FORM 6082 SUPPLEMENTAL INFORMATION

A Preliminary Jurisdictional Wetland/Waters (PJWD) Delineation Report dated January 26, 2022 was completed by STONE and is being submitted with this NWP #29 Application. A copy of the PJWD Report is included in Appendix C.

Streams

Three perennial streams totaling 3,123 linear feet in length, two intermittent streams totaling 1,900 linear feet, and one ephemeral stream totaling 517 linear feet, were identified within the study area. A majority of these streams were primary headwater habitat streams and scored as Class 1 or 2 streams, per the Headwater Habitat Evaluation Index (HHEI). One stream (ST-003) named Scioto Big Run received a Qualitative Habitat Evaluation Index (QHEI), narrative rating of "good."

Wetlands

Two emergent wetlands totaling 0.06-acre in size were identified within the study area. These wetlands all scored as Ohio Rapid Assessment Method (ORAM) Category 1 wetlands. Both wetlands abut a Relatively Permanent Water (RPW) and were therefore considered federally jurisdictional.

BLOCK 19. DESCRIPTION OF PROPOSED NATIONWIDE PERMIT ACTIVITY (CONTINUED)

The project proposes to construct a residential development consisting of multi-family homes, clubhouse and recreational areas, residential roads, green space, and related utilities.

ST-001, an intermittent stream, transects the site and requires a crossing to access both areas of the site. The project proposes to impact 86 linear feet (0.005-acre) of ST-001 due to a road crossing. This crossing will include a 54" concrete pipe culvert, concrete headwalls (design per City of Columbus specifications), and rock channel protection installed at the inlet and outlet. These proposed impacts account for 7% of the total stream length for ST-001.

ST-006, a low quality, ephemeral stream, flows along the eastern boundary of the site. This stream appears to begin within an agricultural field and may receive hydrology from agricultural tiles. The project proposes to impact 322 linear feet (0.01-acre) of ST-006 due to grading in order to facilitate the construction of multi-family homes, residential roads, and utility infrastructure. These proposed impacts account for approximately half of the total stream length of ST-003.

No indirect adverse environmental effects are anticipated. All impacts are anticipated to be minimal in nature.

BLOCK 20. DESCRIPTION OF PROPOSED MITIGATION MEASURES (CONTINUED)

General

Construction limits were kept to a minimum to avoid impacts to water resources and tree clearing as much as feasibly possible. Best Management Practices (BMPs) and stormwater controls will be utilized during construction to minimize and reduce impacts.

Wetlands

Two wetlands totaling 0.06-acre were identified within the study area. Design was modified to avoid impacts to all wetland resources. In addition, both wetland areas are situated in proposed stream conservation easement areas.

Streams

A total of 5,540 linear feet of stream was identified within the study area. The project proposes to impact 408 linear feet of stream, which accounts for only 7% of the total stream length within the site. All proposed stream impacts were minimized to the extent possible. The proposed impacts (0.02-acre) are under the 0.03-acre mitigation threshold. Regardless, the following stream mitigation is being proposed to comply with City of Columbus requirements:

- An approximate 0.41-acre riparian area adjacent to ST-001 will be enhanced with a seed mix, live stakes, and tree plantings.
- All remaining stream length (5,218 linear feet) will be preserved via a conservation easement, which includes 3,123 linear feet of perennial stream within forested riparian. This includes approximately 9.9 acres of protected riparian areas, which includes 0.06-acre of wetland.

BLOCK 22. QUANTITY OF WETLANDS, STREAMS, OR OTHER TYPES OF WATERS DIRECTLY AFFECTED BY PROPOSED NATIONWIDE PERMIT ACTIVITY (CONTINUED)

Streams

One Modified Class 2, intermittent stream (ST-001) and Modified Class 1, ephemeral stream (ST-006) are proposed for impact. See the following table which summarizes stream impacts for the project. See the attached Figure 3 – Proposed Impacts Map for a general display of proposed impacts to streams. See the attached plan sheets for more details on the proposed impacts, protected areas, and proposed culvert headwalls.

SUMMARY OF PROPOSED STREAM IMPACTS Retreat at Scioto Creek – Columbus, Franklin County, Ohio								
Stream ID	**Stream Hydrology**	**HHEI Class**	**Length Within Study Area (Linear Feet)**	**Impact (Linear Feet/Acres)**	**Fill (Cubic Yards)**	**Fill Type**	**Fill Purpose**	**Fill Material**
ST-001	Intermittent	Modified Class 2	1,295	86 (LF) 0.005 (Acre)	15	Permanent	Road Crossing	Earthen fill, culvert/headwall/RCP installation
ST-006	Ephemeral	Modified Class 1	605	322 (LF) 0.01 (Acre)	47	Permanent	Grading for Housing and Related Infrastructure	Earthen fill
TOTAL			**1,900 (LF)**	**408 (LF) 0.02 (Acre)**	**62 (CY)**			

OTHER RESOURCES DISCUSSION

Threatened and Endangered Species

USFWS

An Official Species List was obtained from the USFWS via the Information for Planning and Consultation (IPaC) Tool on February 28, 2022. The proposed project is located in the range of the federally endangered Indiana bat (*Myotis sodalis*), federally threatened Northern long-eared bat (*Myotis septentrionalis*), federally endangered Scioto madtom (*Noturus trautmani*), and federal candidate species monarch butterfly (*Danaus plexippus*). Suitable summer habitat for the Indiana and Northern long-eared bat exists within the site. The project proposes to clear approximately 1.41 acres of trees. It is anticipated USFWS will recommend the project implement seasonal tree clearing (tree clearing between October 1 and March 31) to avoid impacts to these species. See Appendix D for a copy of the USFWS IPaC species list.

ODNR

An Environmental Review letter for the project was submitted to the Ohio Department of Natural Resources (ODNR) on March 1, 2022. A response has not been received. See Appendix D for a copy of the environmental review request letter submitted to ODNR.

APPENDIX B. PLANS AND MAPS

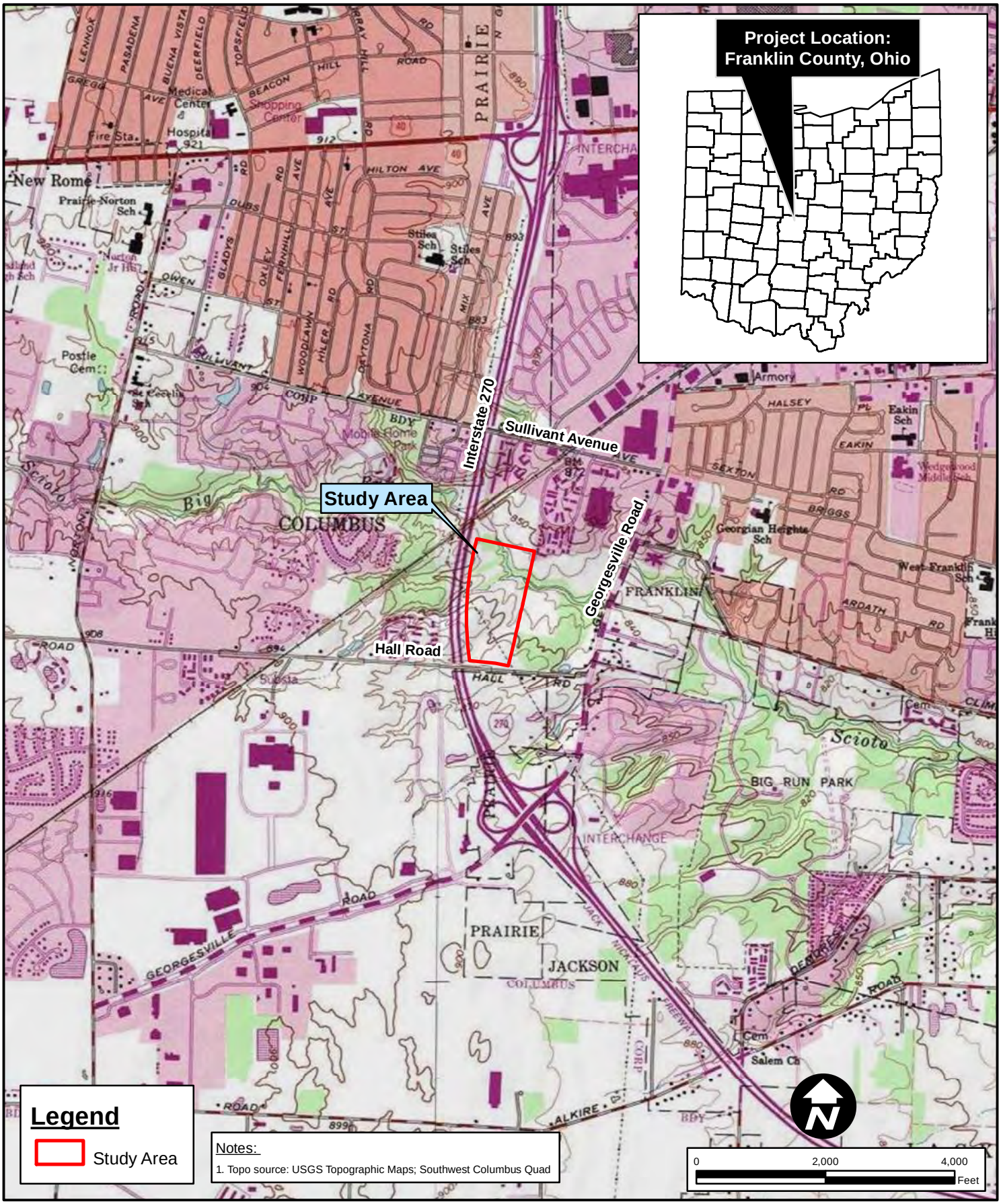


Figure 1

Drafted By: TG
Reviewed By: TL

Project: C1283-001-21

PROJECT LOCATION MAP

Retreat at Scioto Creek

Columbus, Franklin County, Ohio

STONE ENVIRONMENTAL, ENGINEERING & SCIENCE

Date: January 10, 2022

Figure 2	**FEMA MAP**	STONE ENVIRONMENTAL, ENGINEERING & SCIENCE
Drafted By: TG Reviewed By: TL	Retreat at Scioto Creek	
Project: C1283-001-21	Columbus, Franklin County, Ohio	Date: January 20, 2022

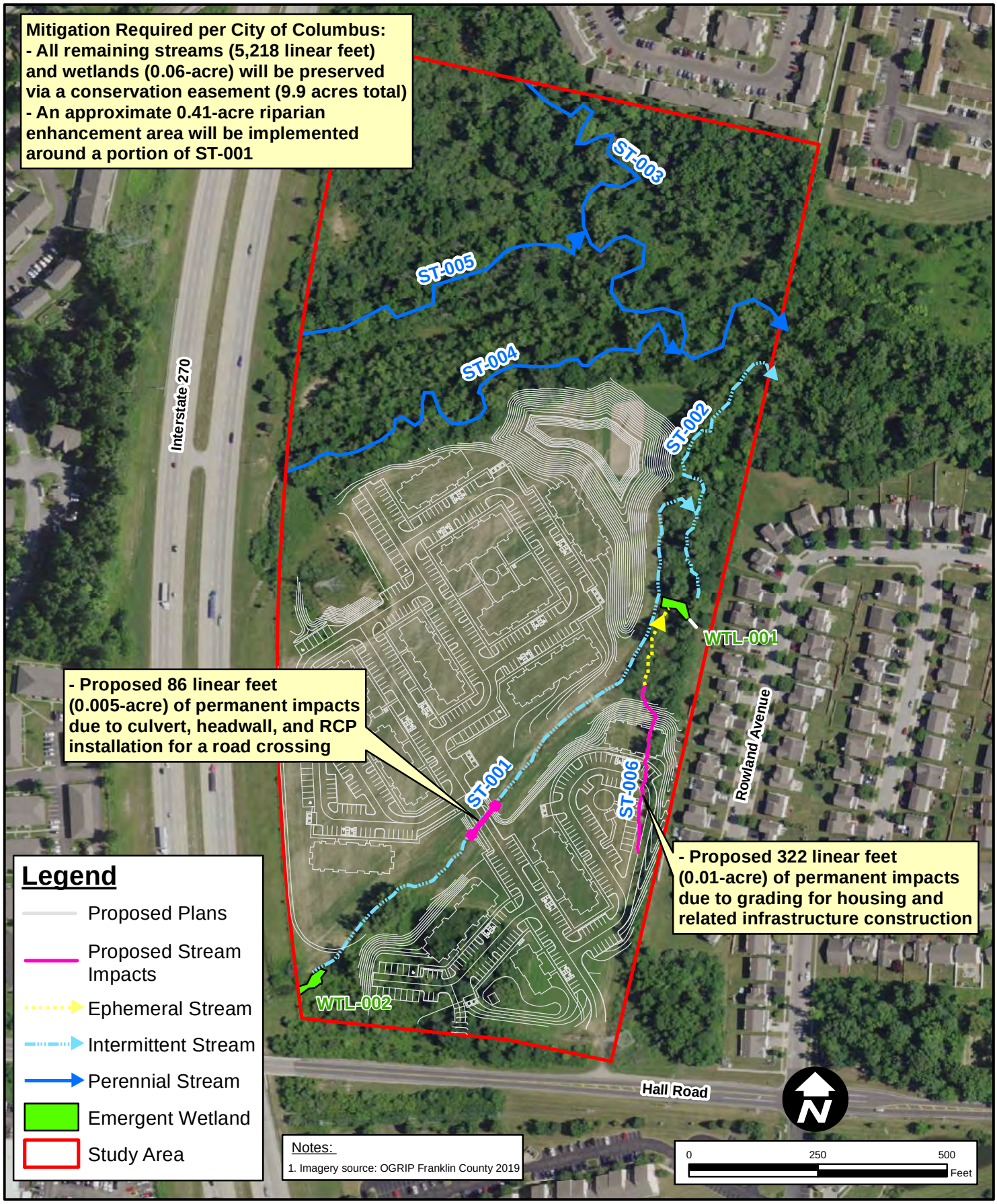


Figure 3

Drafted By: TL
Reviewed By: MS

Project: C1283-001-21

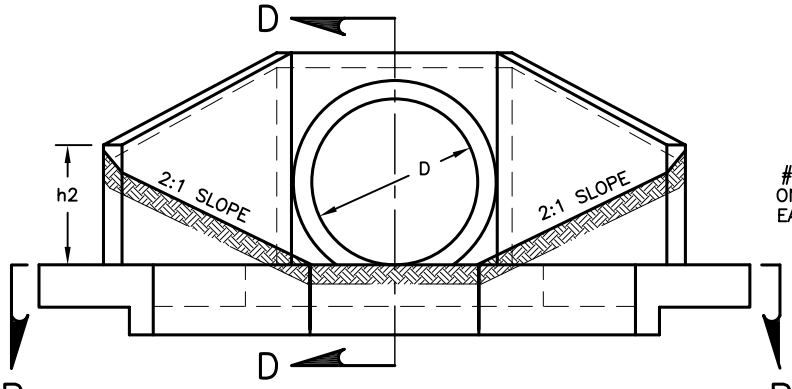
PROPOSED IMPACTS MAP

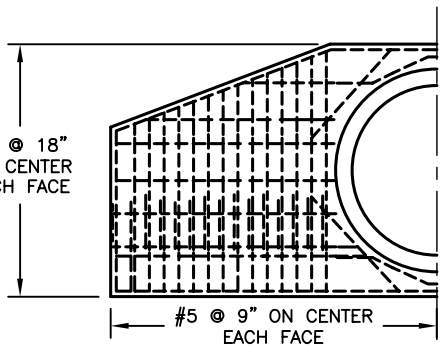
Retreat at Scioto Creek

Columbus, Franklin County, Ohio

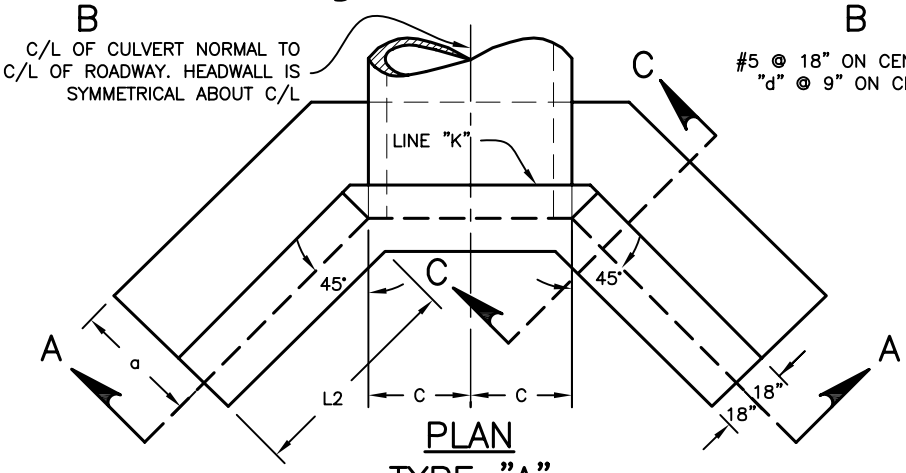
STONE ENVIRONMENTAL, ENGINEERING & SCIENCE

Date: March 1, 2022

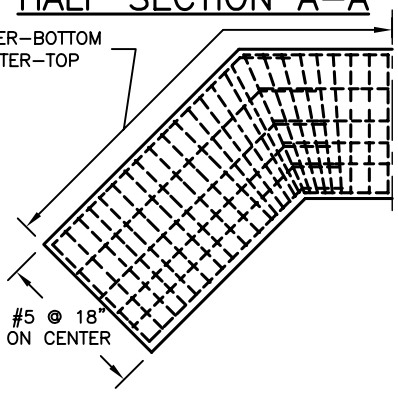




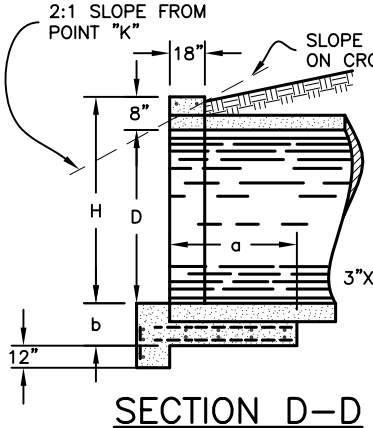
HALF SECTION A–A



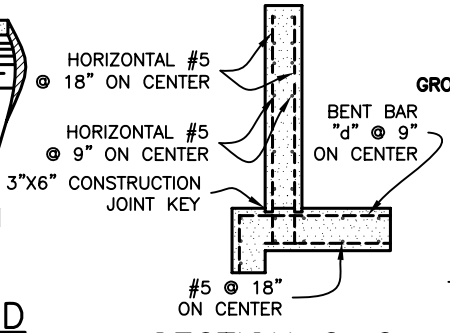
PLAN
TYPE "A"



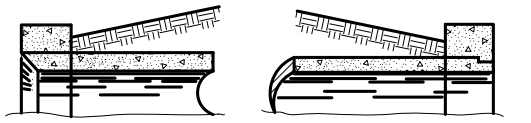
HALF SECTION B–B



SECTION D–D

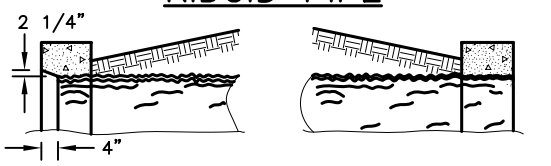


SECTION C–C



GROOVE OR BELL UPSTREAM

RIDGID PIPE



CORRUGATED PIPE
END TREATMENT OF HEADWALL

NOTES:
CHART CONTINUED ON SHEET 2 OF 2

* ONE WALL

						⌀ = 0°					⌀ = 15°						
PIPE DIA. "D"	H	a	b	c	BAR "d"	L2	h2	C.Y. * CONC. C.M.P.	C.Y. * CONC. R.C.P.	STEEL LBS.	L1	L2	h1	h2	C.Y. * CONC. C.M.P.	C.Y. * CONC. R.C.P.	STEEL LBS.
42"	4'–11"	3'–3"	1'–6"	2'–6"	#5	3'–7"	3'–1"	7.0	6.7	598	8'–9"	4'–6"	3'–8"	3'–2"	7.3	7.1	619
48"	5'–5"	3'–6"	1'–6"	2'–9"	#5	4'–4"	3'–4"	8.5	8.2	793	10'–0"	5'–4"	4'–1"	3'–5"	9.0	8.7	776
54"	5'–11"	3'–9"	1'–6"	3'–0"	#5	5'–2"	3'–8"	10.3	10.0	1069	11'–4"	6'–3"	4'–6"	3'–8"	10.9	10.5	1026
60"	6'–6"	4'–0"	1'–6"	3'–3"	#5	5'–11"	3'–11"	12.3	11.8	1149	12'–7"	7'–2"	4'–10"	4'–0"	12.9	12.4	1174
72"	7'–7"	4'–6"	1'–7"	3'–9"	#7	7'–5"	4'–5"	17.0	16.2	1783	15'–1"	8'–11"	5'–7"	4'–6"	17.8	17.1	1811
84"	8'–8"	5'–0"	1'–10"	4'–3"	#8	9'–0"	5'–0"	23.7	22.8	2595	17'–7"	10'–9"	6'–4"	5'–1"	24.8	23.9	2596

CITY OF COLUMBUS, OHIO
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF SEWERAGE & DRAINAGE

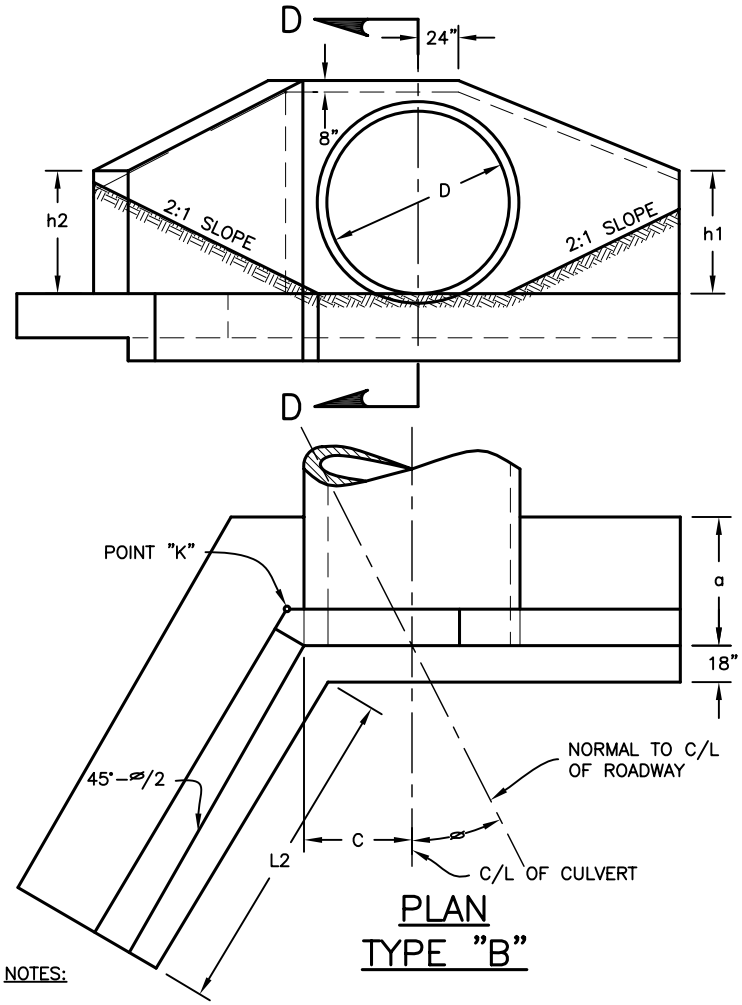
SSES MANAGER

CAST–IN–PLACE
PIPE CULVERT
HEADWALLS
42" TO 84"

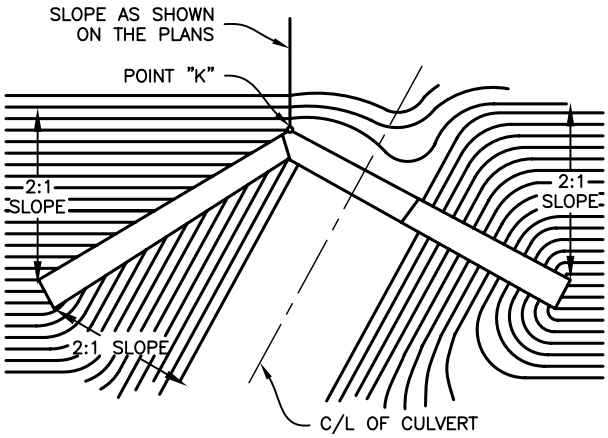
STANDARD DRAWING
AA–S167

REVISED 12/6/13

PAGE 1 2



PLAN
TYPE "B"



LOCATION AND GRADING PLAN
FOR SKEWED PIPE CULVERT – TYPE "B"

NOTES:

1. HEADWALL WHERE REQUIRED WILL BE PROVIDED FOR SKEWED AND NONSKEWED CULVERTS HAVING A DIAMETER OR RISE OF 43" TO 84". TYPE "A" IS USED WHEN SKEW ANGLE(⌀) IS 10° OR LESS AND TYPE "B" WHEN ANGLE IS 11° OR OVER.
2. REINFORCING STEEL SHALL BE #5 BAR.
3. DIMENSIONS AND QUANTITIES ARE SHOWN FOR CIRCULAR SECTIONS ONLY. CALCULATE REINFORCEMENT FOR ELLIPTICAL CONCRETE OR CORRUGATED PIPE ARCHES IN ACCORDANCE WITH NEAREST SIZE CIRCULAR PIPE. ESTABLISHED DIMENSIONS FOR VERTCAL DIAMETER SHALL APPLY FOR RISE AND DIMENSIONS FOR HORIZONTAL DIAMETER SHALL APPLY TO SPAN.
4. CONCRETE SHALL BE CLASS "C".
5. FOUNDATION: INCREASE WIDTH OF BASE WHERE SOIL BORINGS INDICATE A BEARING CAPACITY LESS THAN 2600 LBS. PER SQ. FT. IT WILL BE NECESSARY TO INCREASE THE WIDTH OF THE FOOTING.
6. WHEN SLOPES OTHER THAN 2:1 ARE USED ADJUST LENGTH "L_1" & "L_2" AND HEIGHT "h_1" & "h_2" AS REQUIRED.
7. HEADWALL LOCATION TO BE DETERMINED BY THE INTERSECTION OF THE EMBANKMENT SLOPE AT THE BACK OF THE HEADWALL AT POINT "K". THE SLOPES ADJACENT TO THE HEADWALL SHALL BE 2:1.
8. THE CONTRACTOR MAY PROPOSE TO USE PRECAST IN LIEU OF CAST IN PLACE BUT MUST SUBMIT DETAILED DRAWINGS OF THE PROPOSED STRUCTURE WITH AN OHIO REGISTERED PROFESSIONAL ENGINEER'S STAMP OF APPROVAL.

* ONE WALL

						⌀ = 30°							⌀ = 45°						
PIPE DIA. "D"	H	a	b	c	BAR "d"	L_1	L_2	h_1	h_2	C.Y.* CONC. C.M.P.	C.Y.* CONC. R.C.P.	STEEL LBS.	L_1	L_2	h_1	h_2	C.Y.* CONC. C.M.P.	C.Y.* CONC. R.C.P.	STEEL LBS.
42"	4'-11"	3'-3"	1'-6"	2'-6"	#5	7'-10"	5'-9"	3'-2"	3'-3"	7.5	7.3	633	7'-10"	7'-9"	3'-2"	3'-3"	8.7	8.5	718
48"	5'-5"	3'-6"	1'-6"	2'-9"	#5	8'-9"	6'-10"	3'-5"	3'-6"	9.1	8.8	801	8'-9"	9'-2"	3'-5"	3'-7"	10.6	10.3	925
54"	5'-11"	3'-9"	1'-6"	3'-0"	#5	9'-8"	7'-11"	3'-8"	3'-9"	10.8	10.5	1,024	9'-8"	10'-7"	3'-8"	3'-10"	12.6	12.2	1,188
60"	6'-6"	4'-0"	1'-6"	3'-3"	#5	10'-7"	9'-0"	3'-10"	4'-1"	12.7	12.3	1,157	10'-7"	12'-0"	3'-10"	4'-1"	14.8	14.3	1,354
72"	7'-7"	4'-6"	1'-7"	3'-9"	#7	12'-5"	11'-2"	4'-3"	4'-7"	17.3	16.6	1,788	12'-5"	14'-10"	4'-3"	4'-8"	20.2	19.6	2,076
84"	8'-8"	5'-10"	1'-10"	4'-3"	#8	14'-7"	13'-4"	4'-10"	5'-2"	24.1	23.3	2,511	14'-3"	17'-8"	4'-8"	5'-2"	27.9	27.0	2,990

CITY OF COLUMBUS, OHIO
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF SEWERAGE & DRAINAGE

SSES MANAGER

CAST-IN-PLACE
PIPE CULVERT
HEADWALLS
42" TO 84"

STANDARD DRAWING
AA-S167

REVISED 12/6/13

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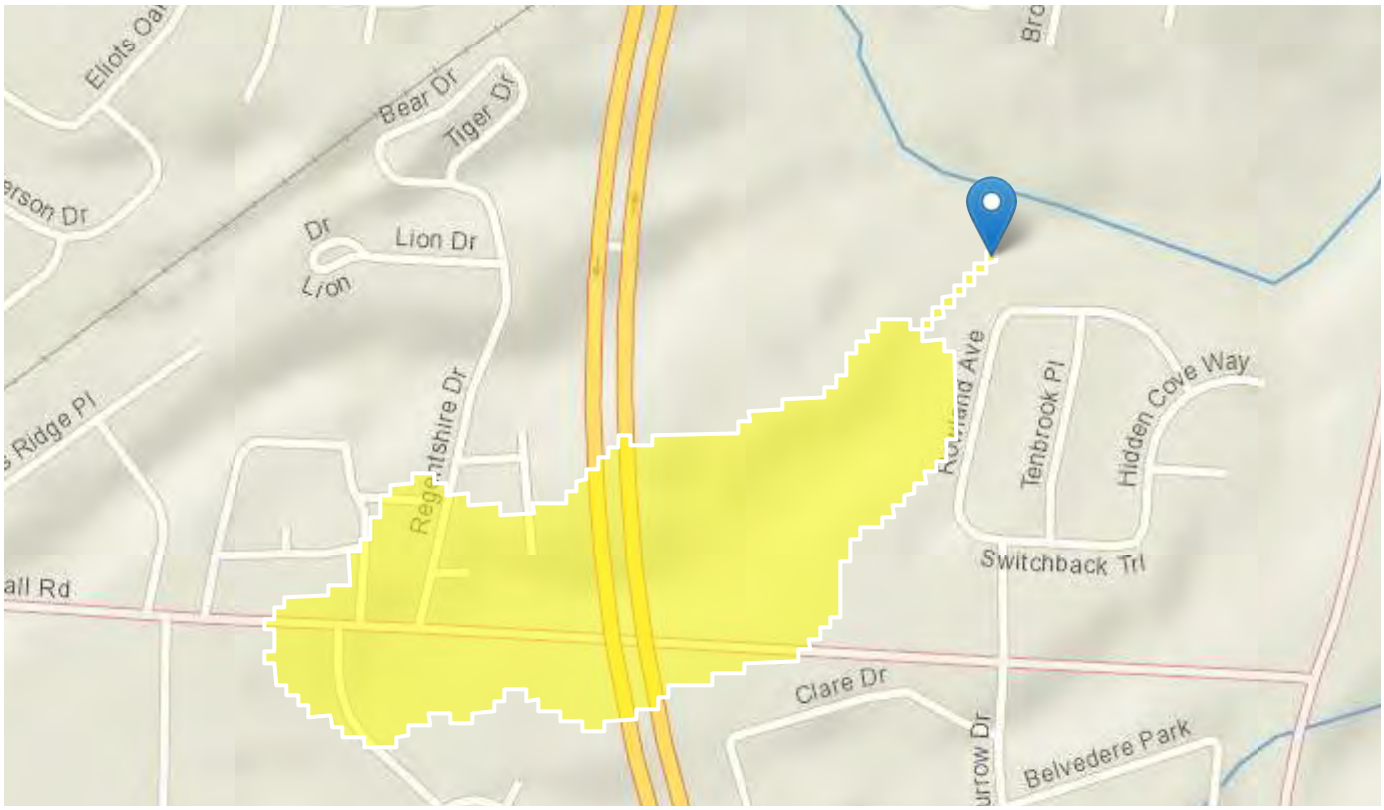
Appendix G – StreamStats Data (ST-001)

StreamStats Report

Region ID: OH
Workspace ID: OH20220406170736881000
Clicked Point (Latitude, Longitude): 39.93329, -83.11996
Time: 2022-04-06 13:07:57 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.0471	square miles

Application Version: 4.8.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.1.2