



May 29, 2018

City of Columbus, Division of Sewerage & Drainage  
Attn: Mr. Greg Fedner, P.E.  
Private Development Section Manager  
111 N Front Street  
Columbus, Ohio 43215

**Re: Hyatt Place – Polaris Parkway**  
**2006 Polaris Parkway, Columbus, OH 43240**  
**PID: 31844302002004**  
**Type III Variance from Stormwater Drainage Manual**

Dear Mr. Fedner:

On behalf of The Witness Group, The Mannik and Smith Group, Inc. is submitting an application for a Type III variance from the City of Columbus Stormwater Drainage Manual (SWDM) for the proposed Hyatt Place Improvements at 2006 Polaris Parkway, located in Columbus, OH.

According to Section 1.3.3 of the SWDM, facilities and activities which are prohibited in the stream corridor protection zone (SCPZ) include parking lots and filling. The proposed improvements consist of a new 7 story hotel, a new 7,000 square foot restaurant building, associated parking, landscaping and storm sewer system. A portion of the proposed parking for the development will impact SCPZ.

The total site area is approximately 5 acres of which 4 acres will be disturbed. A SCPZ of variable width is present on the north side of the property along an existing stream. The preferred improvements will result in a minor encroachment within the SCPZ. The encroachment will directly impact the ephemeral stream at the northeast corner of the site, but will not impact the primary route of the stream. The client is seeking a Type III variance for approval of 0.21 acres of SCPZ encroachment associated with the preferred site improvements. The onsite mitigation plan included in this variance application has been developed per the City of Columbus SWDM.

Sincerely,

Steven E. Fox, PE  
Project Manager  
[SFox@manniksmithgroup.com](mailto:SFox@manniksmithgroup.com)  
614-441-4222 (Office)  
614-452-4628 (Direct)

**TECHNICAL SKILL.**  
**CREATIVE SPIRIT.**

**HYATT PLACE  
2006 POLARIS PARKWAY, COLUMBUS, OH  
CITY OF COLUMBUS SWDM  
TYPE III VARIANCE APPLICATION**

MAY 2018

PREPARED FOR:  
BADRIVISHAL LLC  
POLARIS PARKWAY  
COLUMBUS, OHIO

PREPARED BY:  
**THE MANNIK & SMITH GROUP, INC.**  
1160 DUBLIN ROAD, SUITE 100  
COLUMBUS, OHIO 43215



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## 1.0 INTRODUCTION

The following report provides information pertaining to a variance request from the City of Columbus Stormwater Drainage Manual (SWDM) for the Hyatt Place Improvements project. 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.”

The proposed development is located at 2006 Polaris Parkway, Columbus OH, east of Orion Place and the existing Ohio Farmers Insurance Company building. The site is currently undeveloped and has an existing stream on the north side of the property. The information below supports the requested Type III variance to maximize development for the site. The proposed improvements consist of a new 7 story hotel, a new 7,000 square foot restaurant building, associated parking, landscaping and storm sewer system. Under the preferred alternative the proposed parking lot encroaches on the existing SCPZ.

## 2.0 DETERMINATION OF THE STREAM CORRIDOR PROTECTION ZONE

The existing (SCPZ) shown on Exhibit 1 was determined per Section 1.3.1 of the (SWDM). The stream has a drainage area of approximately 30.07 acres. The width of the SCPZ varies as a result of steep slopes in certain areas. Refer to Exhibit 1 for the existing limits of the SCPZ. As a result of a small drainage area to the stream, a minimum 50 foot wide SCPZ was used. In addition, the SCPZ was extended in certain areas to include slopes greater than 15 percent that the 50 foot SCPZ did not protect.

## 3.0 TYPE III VARIANCE (STREAM PROTECTION)

### 3.1 Proposed SCPZ Impacts

Under the preferred alternative, the proposed parking lot and grading limits will impact 0.21 acres of the existing SCPZ (refer to Exhibit 4). A retaining wall will also be required and impacts the existing SCPZ.

### 3.2 Existing Conditions

The existing site is currently open greenspace and undeveloped with the exception of an existing drive entrance that serves the existing property to the southwest. The stream runs from west to east for approximately 536 feet on the north side of the property and eventually discharges to an existing 24" storm sewer constructed under CC14222. There is an ephemeral stream located at the northeast portion of the property that commences approximately 145 feet to the south and has a tributary area of approximately 0.5 acres.

### 3.3 Site Development Alternatives

#### 3.3.1 Proposed Conditions – No Impact Alternative

According to the City of Columbus Municipal Code 3312.49- parking requirements, a hotel should provide 1 parking space/room. For the proposed restaurant space, the Municipal Code requires 1 space per 75 square feet minimum for buildings over 5,000 square feet. This would require the site to provide, in total, 204 parking spaces. Additionally, the hotel brand requires 5 employee spaces, but this is not included as part of this calculation. This is not included in the 204 calculated required parking spaces. The no impact plan



provides 182 parking spaces and would not meet the parking requirements. Refer to Exhibit 2 and Table 3.1.

### 3.3.2 Proposed Conditions – Minimal Impact Alternative

As shown on Exhibit 3, the proposed development would impact 0.14 acres of the existing SCPZ. This alternative would still impact the existing ephemeral portion of the stream but reduce the grading limits by providing additional retaining wall. The current minimal impact alternative provides adequate parking for the site (Table 3.1).

### 3.3.3 Proposed Conditions – Preferred Alternative

As shown on Exhibit 4, the proposed development would impact 0.21 acres of the existing SCPZ. The preferred alternative will fill in approximately 78 feet of the existing ephemeral portion of the stream. The remaining 67 feet of the ephemeral stream beyond the grading and development limits will remain undisturbed. The existing 0.50-acre tributary to the ephemeral portion of the stream will still be routed to the stream via the proposed storm sewer system. This alternative provides the most parking and reduces the amount of retaining wall required. However, additional mitigation for the disturbed SCPZ would be required offsite. Refer to section 4.0 for mitigation details.

### 3.3.4 Comparison of Project Alternatives

As summarized in Table 3.1, the encroachment within the SCPZ is necessary to meet the City of Columbus Zoning Code parking requirements. It is possible to reduce the impact on the SCPZ with the minimal impact plan, however this results in approximately 50% more retaining wall to reduce grading impacts.

**Table 3.1 Summary of Alternatives**

Alternative	SCPZ Impact Area (AC.)	Required Parking	Provided
No Impact Plan	0	204	182
Minimal Impact Plan	0.14	204	229
Preferred Plan	0.21	204	236

\*Includes impact area to ephemeral stream.

## 3.4 Impacts to Stormwater Detention and Water Quality

All hydrologic parameters will be determined using methodology described in the City of Columbus SWDM and the Ohio Environmental Protection Agency (OEPA) "General Permit for Construction Storm Water Discharge" before discharging to the existing stream. The proposed development will drain into an underground detention system to meet the City and OEPA water quantity and quality requirements. This system will outlet to the existing stream. Outlet protection in the form of rip rap will be sized accordingly for the proposed discharge rates. The storm sewer system design is preliminary at this time and will be finalized upon resolution of this variance request.

Geotechnical Consultants Inc. (GCI) performed a stream study per the attached report dated April 26, 2018. The Headwater Habitat Evaluation Index (HHEI) assessment method was used to score the habitat features of the stream. The stream received an HHEI score of 11 out of a possible 100 points. The stream is classified as a Modified Class 1 PHWH (ephemeral) stream. The stream generally has water present for short periods of time and does not support any aquatic life. The

partial impact of this ephemeral stream is not expected to alter the health or quality of the remainder of the stream that will be left undisturbed.

### 3.5 Statement of Hardship

The impact to the SCPZ for the proposed Hyatt Place development under the preferred and minimal impact alternative is a result of providing adequate parking per the City of Columbus Zoning Code for hotel and restaurant use. Impacts to the SCPZ are minimal and the existing watershed to the stream on the north side of the site will not be impacted. As stated previously, the no impact alternative results in a significant shortage in parking (Table 3.1). The primary difference between the preferred alternative (Exhibit 4) and the minimal impact alternative (Exhibit 3) is the extent of grading required that either increases or decreases the amount of retaining wall required. The minimal impact alternative requires approximately 50% more retaining wall than the preferred alternative which is a significant increase in cost that results in further hardship for the project.

### 4.0 MITIGATION

Per the SWDM, mitigation will be required for impacts to the SCPZ by creating equivalent mitigation for the impacted area. The preferred alternative (Exhibit 4) will impact 0.21 acres within the SCPZ. The impact area to the SCPZ will be mitigated both onsite and offsite. Onsite mitigation will occur at a 1:1 ratio for 0.13 acres. Offsite mitigation will occur adjacent to the site at a 1:1.5 ratio for the remaining 0.07 acres. Per the ecological site survey completed by GCI (Appendix B), the stream health and functionality will not be negatively impacted.

The minimal impact alternative will impact 0.14 acres within the SCPZ. Mitigation will be provided onsite at a 1:1 ratio for the corresponding area impacted per the Stormwater Drainage Manual Guidance Document. See Exhibit 3 for mitigation areas. Both the preferred option and minimal impact option will require filing for a Nationwide Permit (NWP) 39 to fill the ephemeral stream for the purposed of commercial development.

### 5.0 CONCLUSION

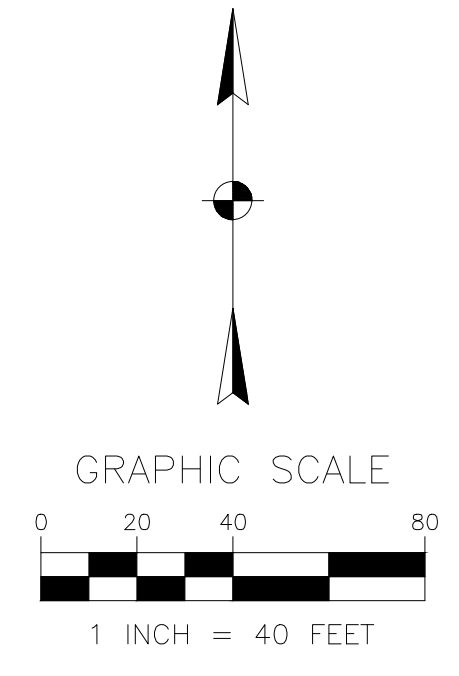
The preferred alternative design provides adequate parking for the development with minor impacts to the existing stream and surrounding environment. All disturbances will be mitigated accordingly per the SWDM. If approved, encroachment to the SCPZ of approximately 0.21 acres will be mitigated as discussed in Section 4. The stream generally only has water for short periods of time during rain and snow melt events with little to no aquatic life, therefore the overall ecological impact is negligible.

APPENDIX A  
CONDITIONS AND ALTERNATIVES





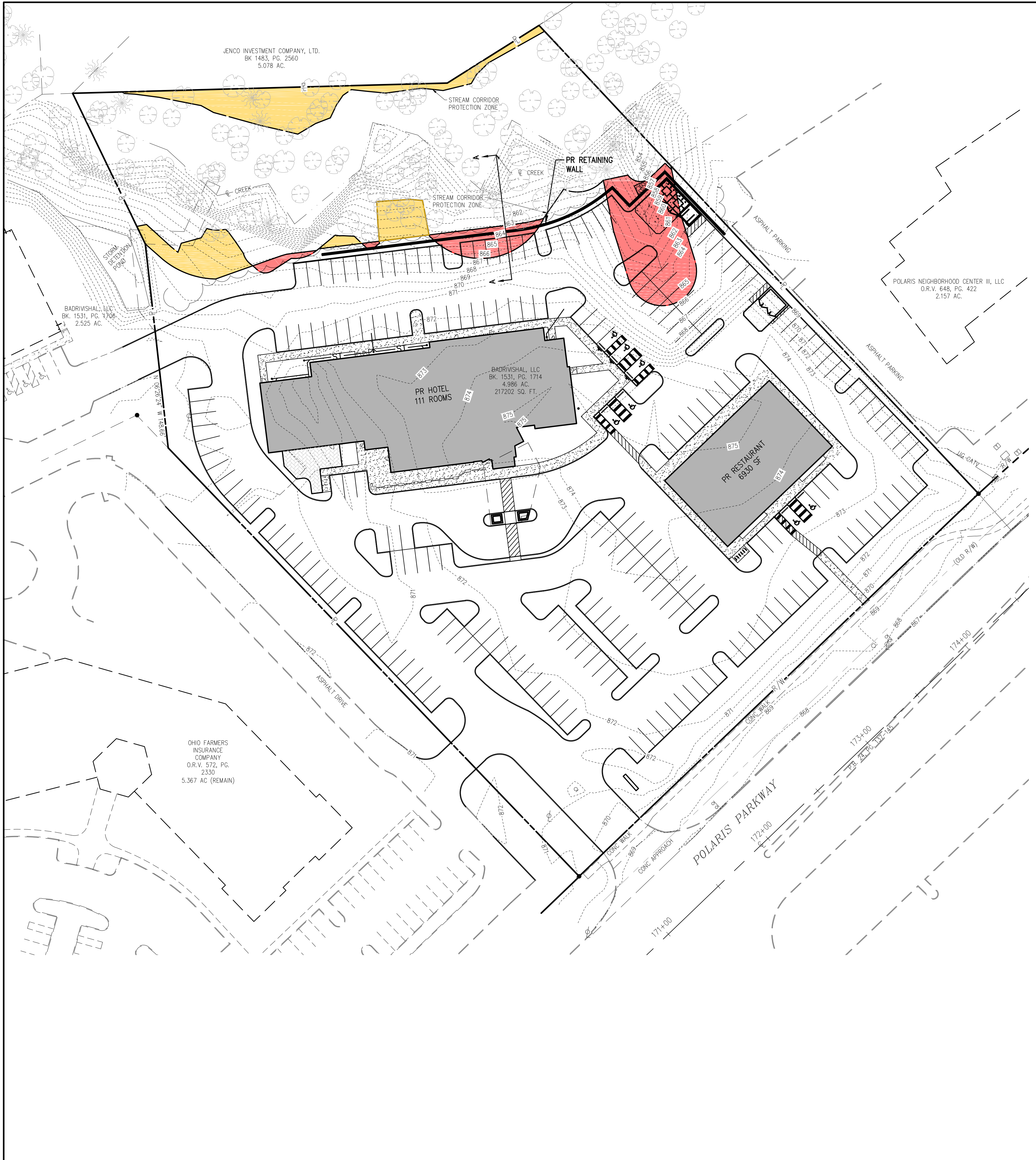
L:\Projects\Projects\12\10\1000\GAPPS\27010000\EXHIBIT 1 EXISTING CONDITIONS.dwg, Last printed: 5/20/2018 8:46 AM



<p>1160 DUBLIN ROAD SUITE 100 COLUMBUS, OH 43215 TEL: 614.441.4222 FAX: 888.486.7340</p> <p>PROJECT DATE: 4/12/2018 PROJECT NO.: W3010004 DRAWN BY: KJW CHECKED BY: MAM</p>	<p>NO.</p> <p>DATE</p> <p>BY</p> <p>DESCRIPTION</p>
<p>TECHNICAL SKILL: CREATIVE SPIRIT.</p> <p><b>Mannik Smith Group</b></p> <p>www.MannikSmithGroup.com</p>	<p><b>EXISTING CONDITIONS</b></p>
<p><b>HYATT PLACE</b></p> <p>2006 POLARIS PARKWAY COLUMBUS, OH 43240</p>	<p><b>EXHIBIT 1</b></p>







**PROJECT DESCRIPTION**

THE SCOPE OF THIS PROJECT INVOLVES THE CONSTRUCTION OF A HOTEL AND RESTAURANT/RETAIL BUILDING AND ASSOCIATED UTILITIES ON AN EMPTY LOT.

**SITE DATA**

ADDRESS: POLARIS PARKWAY  
PID: 318-443-02-002-004

TOTAL SITE AREA: 4.99 AC

ZONING: LC4, COMMERCIAL W/  
H-110, HEIGHT DISTRICT

SETBACKS: FRONT 50' SIDE 15' REAR 10'  
BUILDING 50' PARKING 50' 3' 3'

**HOTEL**

HEIGHT: 77' (7 STORIES)  
ROOMS: 111  
REQUIRED AUTO: 1/ROOM = 111  
PROVIDED AUTO: 1/ROOM + 5 EMPLOYEE = 116  
REQUIRED BICYCLE: 1/20 CARS = 12 (6 RACKS)  
PROVIDED BICYCLE: 12 (6 RACKS)  
REQUIRED LOADING: 1  
PROVIDED LOADING: 1

**RESTAURANT**

AREA: 6,930 SF  
PARKING: REQUIRED AUTO (RESTAURANT): 1/75 MIN, 1/50 MAX = 93-139  
PROVIDED AUTO (RESTAURANT): 93  
REQUIRED BICYCLE: 1/20 CARS = 12 (6 RACKS)  
PROVIDED BICYCLE: 12 (6 RACKS)

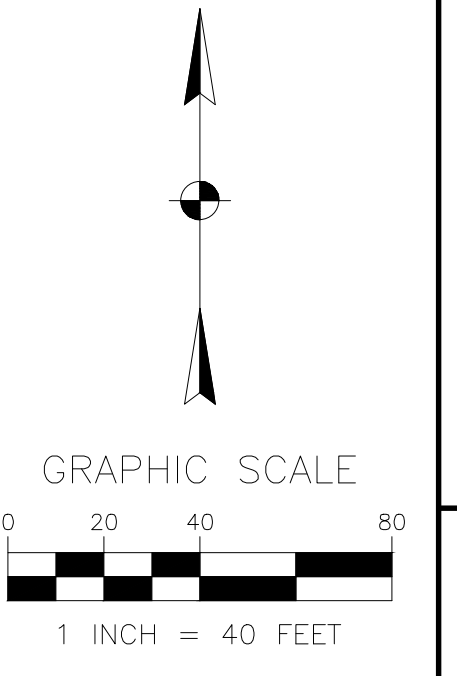
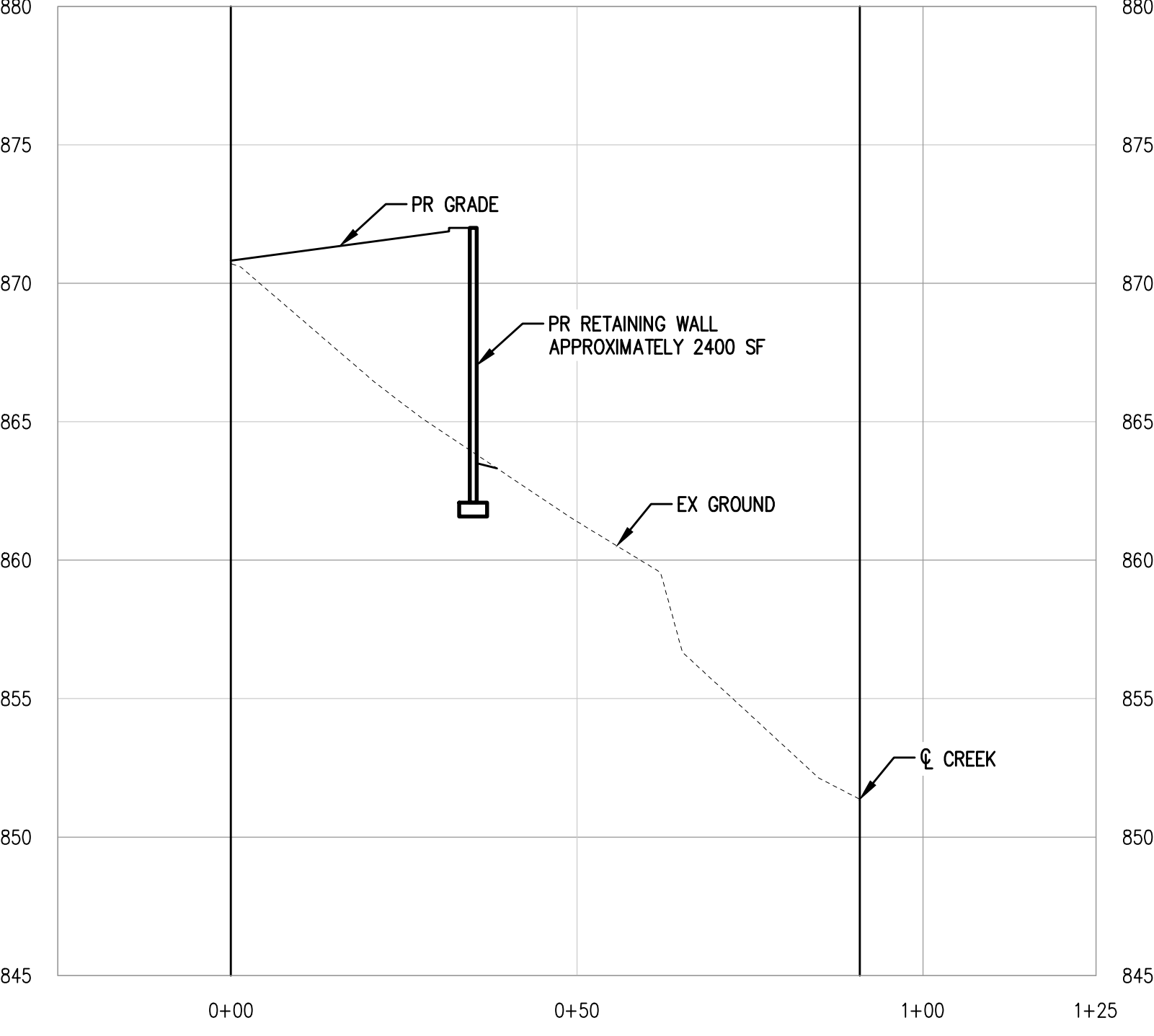
TOTAL: SPACES REQUIRED: 204 (PER COC)

PARKING SHADE TREES: REQUIRED: 1/10 PARKING SPACES  
229 TOTAL SPACES = 23 TREES  
PROVIDED: 23 TREES

PROPOSED LOT COVERAGE: 62%

**LEGEND**

- DISTURBED SCPZ 0.14 ACRES
- MITIGATION AREA 0.15 ACRES



NO.	DATE	BY	DESCRIPTION

1160 DUBLIN ROAD SUITE 100 COLUMBUS, OH 43215 TEL: 614.441.4222 FAX: 888.887.7340	PROJECT DATE: 4/12/2018 PROJECT NO.: W3010004 DRAWN BY: KJW CHECKED BY: MAM
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TECHNICAL SKILL  
CREATIVE SPIRIT.

**Mannith Smith Group**  
www.MannithSmithGroup.com

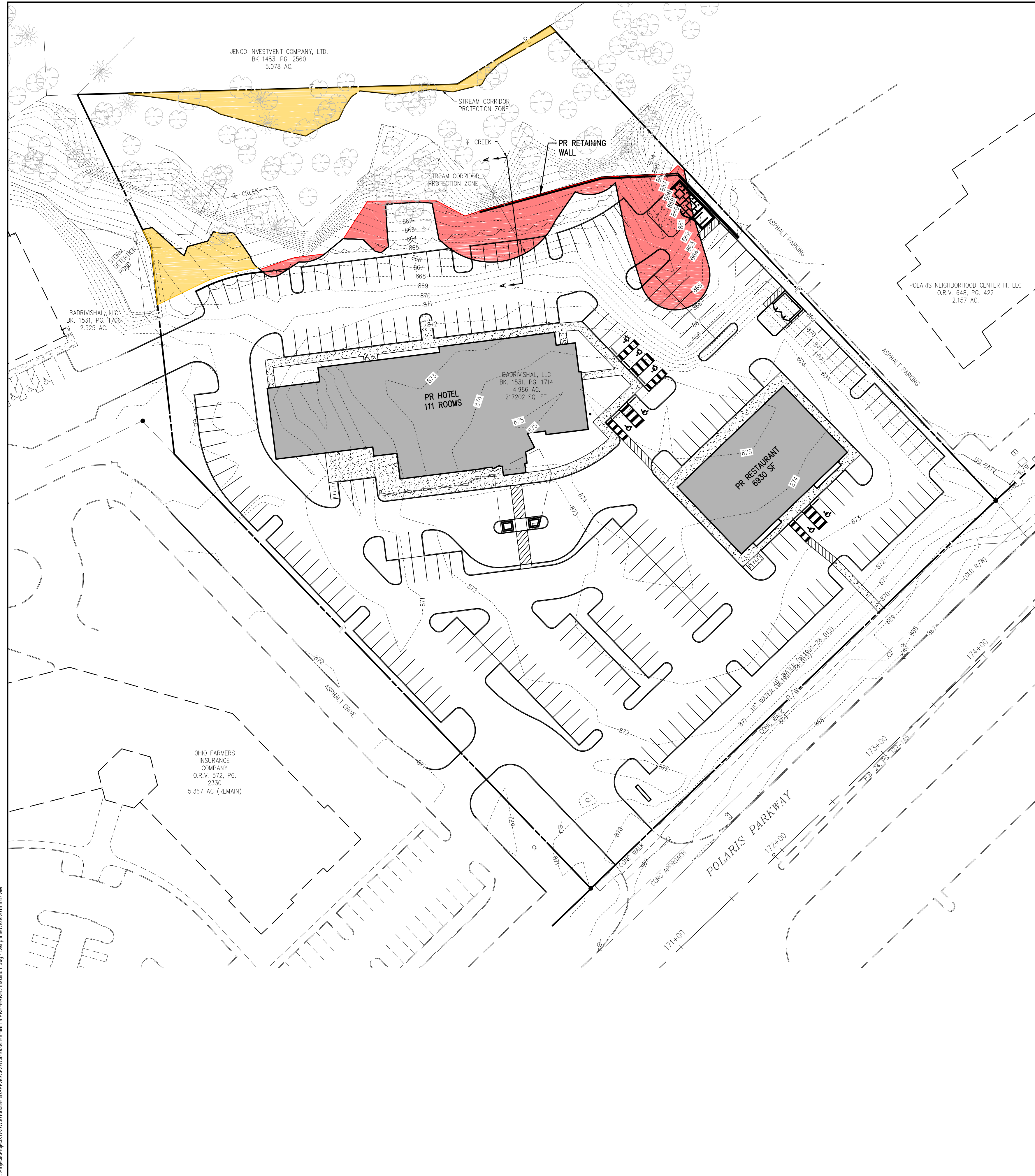
PREPARED FOR:	THE WITNESS GROUP 600 ENTERPRISE DRIVE LEWIS CENTER OH 43035
HYATT PLACE	2006 POLARIS PARKWAY COLUMBUS, OH 43240
MINIMAL IMPACT ALTERNATIVE	

**EXHIBIT 3**

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### PROJECT DESCRIPTION

THE SCOPE OF THIS PROJECT INVOLVES THE CONSTRUCTION OF A HOTEL AND RESTAURANT/RETAIL BUILDING AND ASSOCIATED UTILITIES ON AN EMPTY LOT.

### SITE DATA

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PID: 318-443-02-002-004

TOTAL SITE AREA: 4.99 AC

ZONING: LC4, COMMERCIAL W/  
H-110, HEIGHT DISTRICT

SETBACKS: FRONT SIDE REAR  
BUILDING 50' 15' 10'  
PARKING 50' 3' 3'

### HOTEL

HEIGHT: 77' (7 STORIES)  
ROOMS: 111  
REQUIRED AUTO: 1/ROOM = 111  
PROVIDED AUTO: 1/ROOM + 5 EMPLOYEE = 116  
REQUIRED BICYCLE: 1/20 CARS = 12 (6 RACKS)  
PROVIDED BICYCLE: 12 (6 RACKS)  
REQUIRED LOADING: 1  
PROVIDED LOADING: 1

### RESTAURANT

AREA: 6,930 SF  
PARKING: REQUIRED AUTO (RESTAURANT): 1/75 MIN, 1/50 MAX = 93-139  
PROVIDED AUTO (RESTAURANT): 93  
REQUIRED BICYCLE: 1/20 CARS = 12 (6 RACKS)  
PROVIDED BICYCLE: 12 (6 RACKS)

TOTAL: SPACES REQUIRED: 204 (PER COC)

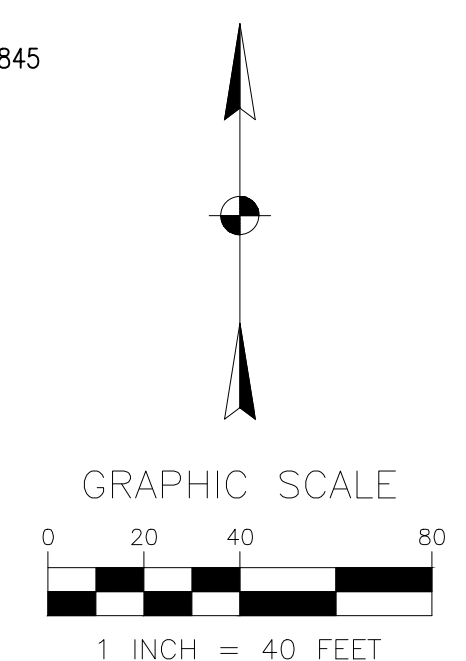
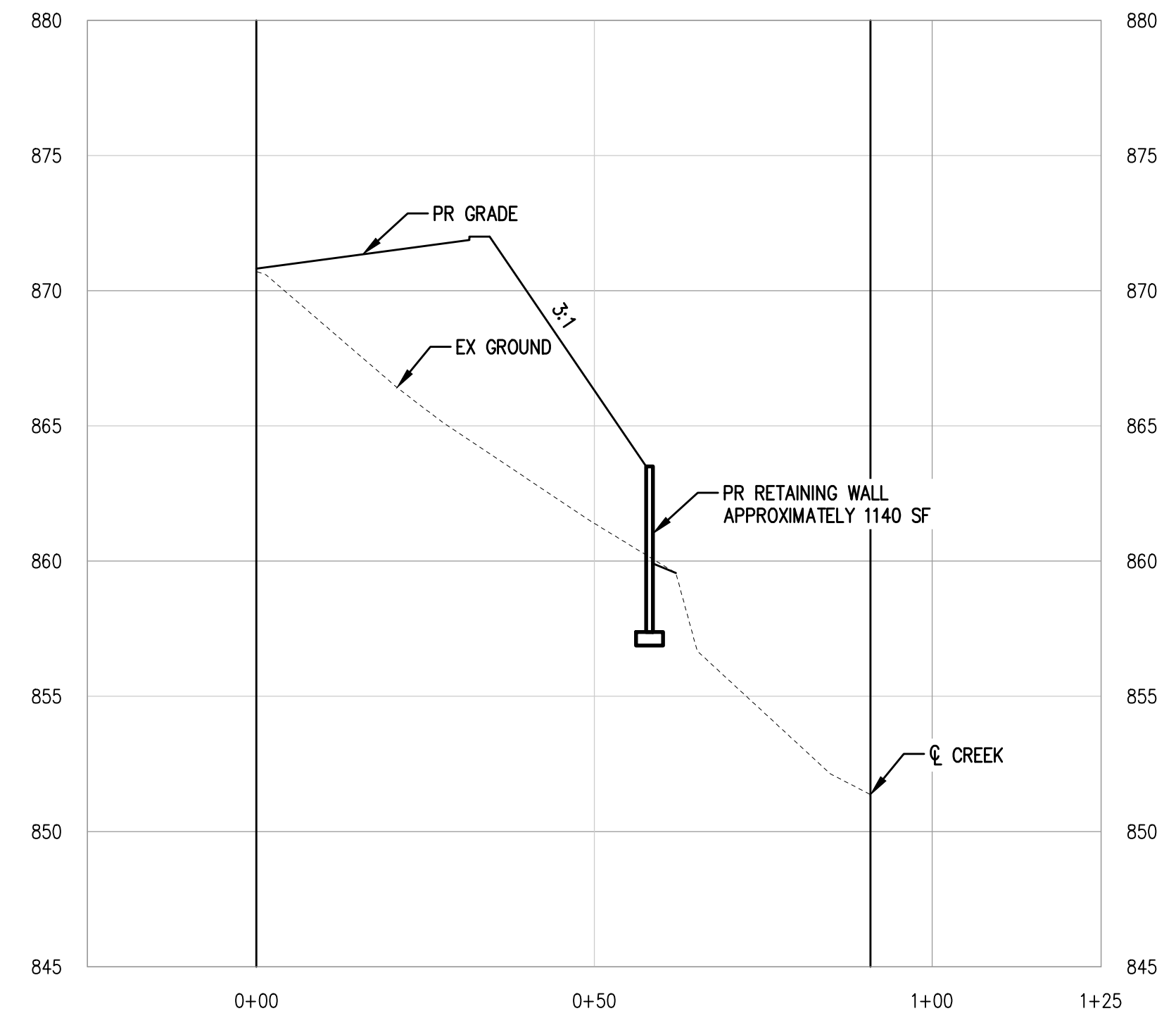
PARKING SHADE TREES: REQUIRED: 1/10 PARKING SPACES  
236 TOTAL SPACES = 24 TREES  
PROVIDED: 24 TREES

PROPOSED LOT COVERAGE: 62%

### LEGEND

DISTURBED SCPZ 0.21 ACRES

MITIGATION AREA 0.13 ACRES (ONSITE)



NO.	DATE	BY	DESCRIPTION

1160 DUBLIN ROAD  
SUITE 100  
COLUMBUS, OH 43215  
TEL: 614.441.4222  
FAX: 888.887.7340

PROJECT DATE: 4/12/2018  
PROJECT NO.: W3010004  
DRAWN BY: KJIW  
CHECKED BY: MAM

TECHNICAL SKILL:  
CREATIVE SPIRIT.

**Mammitt Smith Group**  
www.MammittSmithGroup.com

PREPARED FOR:  
**THE WITNESS GROUP**  
600 ENTERPRISE DRIVE,  
LEWIS CENTER OH 43035

**HYATT PLACE**  
2006 POLARIS PARKWAY  
COLUMBUS, OH 43240

**PREFERRED ALTERNATIVE**

**EXHIBIT 4**

APPENDIX B  
ECOLOGICAL SITE SURVEY







GEOTECHNICAL  
CONSULTANTS INC.

MAIN OFFICE  
720 Greencrest Drive 614.895.1400 phone  
Westerville, OH 43081 614.895.1171 fax

YOUNGSTOWN OFFICE  
8433 South Avenue 330.965.1400 phone  
Bldg 1, Suite 1 330.965.1410 fax  
Boardman, OH 44514

[www.gci2000.com](http://www.gci2000.com)

April 26, 2018

Ms. Melissa Miller  
The Mannik & Smith Group, Inc.  
1160 Dublin Rd., Suite 100  
Columbus, Ohio 43215

**Reference: Badrivishal LLC Property  
2006 Polaris Parkway  
Columbus, Delaware County, Ohio  
GCI Project #18-E-21746**

Dear Ms. Miller:

Geotechnical Consultants, Inc. (GCI) provides this letter as support for your variance application to the City of Columbus *Stormwater Drainage Manual* for the above reference property. The property consists of 4.99± acres of vacant land on the north side of Polaris Parkway, east of Orion Place. The property is identified by Delaware County parcel number 31844302002004.

GCI previously identified and documented an ephemeral stream located on the northeast portion of the property during our site visit dated March 20, 2018. Approximate latitude and longitude coordinates for the beginning and end of the assessed ephemeral stream are 40.145217 / -82.964076 and 40.145579 / -82.964209.

GCI understands the property is proposed for future commercial development, as indicated by the site plan attached to this letter. Development of the property, per *Site Plan Option 2b*, appears to encroach upon the aforementioned ephemeral stream. According to the site plan, it appears approximately 78 linear feet of this ephemeral stream will be filled for construction of parking areas. Approximately 67 linear feet of the ephemeral stream are located beyond the limits of grading/development and will remain undisturbed.

GCI used the Ohio Environmental Protection Agency (Ohio EPA) Primary Headwater Habitat (PHWH) Evaluation Form to score the stream, in accordance with the October 2009 Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams (Version 2.3). The Headwater Habitat Evaluation Index (HHEI) assessment method was used to score the physical habitat features of the stream because its drainage area is less than one square mile, has no pools, and has no possibility of supporting fish communities.

The stream received a score of 11 out of a possible 100 points. Per Ohio EPA guidelines, the stream is classified as a Modified Class I PHWH (ephemeral) stream. Class I PHWH streams are generally defined as having water present for short periods of


time during snow melt and rain events and have little to no aquatic life. The stream scored poorly because it lacks high quality substrate, pools, and width. The stream has a severe gradient and is also lacking in riparian width, flow, and sinuosity.

GCI anticipates the partial impact (78± linear feet) of this ephemeral stream will not alter the health, functionality, or PHWH score of the remainder of the stream (67± linear feet) that will remain undisturbed.

GCI appreciates the opportunity to serve you on this project. Please contact our office with any questions or concerns regarding this information.

Respectfully submitted,

**Geotechnical Consultants, Inc. (GCI)**

  
Matthew R. Kaminski, EP  
Senior Project Manager  
Wetland Scientist, 401/404 Specialist

Attachments:

Delaware County Auditor's GIS Map  
2016 USGS Topographic Map  
Site Plan Option 2b  
Site Plan Option 2b with Approximate Stream Location  
1997, 2002, 2006, 2008, 2010, 2013, 2015, and 2017 Aerial Photograph  
PHWH HHEI Form (2 pages)  
Property Photographs (Photo 1 through Photo 12)

Cc: File



GEOTECHNICAL  
CONSULTANTS INC.

**MAIN OFFICE**  
720 Greencrest Drive  
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614.895.1400 **phone**  
614.895.1171 **fax**

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Boardman, OH 44514  
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330.965.1410 **fax**

**DAYTON OFFICE**  
2380 Bellbrook Avenue  
Xenia, OH 45385  
937.736.2053 **phone**

[www.gci2000.com](http://www.gci2000.com)

**Matthew R. Kaminski, EP**  
**Senior Project Manager**

▪ **Education:**

2003 BS Environmental Geography, Ohio University

▪ **Active Registration & Certification:**

2006 38 Hour Army Corps of Engineers Wetland Delineation & Management Training Program

2011 OSHA 40-hour Hazardous Waste Operations

2017 GBA's *Fundamentals of Professional Practice (FOPP)*

Mr. Kaminski is qualified as an Environmental Professional as defined by U.S. EPA's All Appropriate Inquiry legislation, and by ASTM Practice E1527-13.

▪ **Experience & Qualifications:**

Since joining GCI in 2005, Mr. Kaminski has been responsible for conducting numerous Phase I environmental site assessments (Phase I ESAs) of residential, commercial, industrial, and agricultural properties in Ohio, Michigan, West Virginia, and Pennsylvania.

Mr. Kaminski is responsible for preparing reports required to meet compliance under the American Society for Testing and Materials (ASTM), and federal, state, and local regulations including the National Environmental Policy Act (NEPA), Ohio Department of Development (ODOD), Ohio Housing Finance Agency (OHFA), and the U.S. Department of Housing and Urban Development (HUD).

Mr. Kaminski's experience includes managing and performing multidisciplinary environmental projects including Phase I ESAs, Ohio Voluntary Action Program (Ohio VAP) Phase I property assessments, wetland delineations, stream evaluations, 401/404 permit applications, groundwater sampling, and hazardous materials surveys.

▪ **Selected Projects**

- Performed ground water well development and sampling using low-flow methods in accordance with Ohio EPA requirements for numerous Ohio Voluntary Action Program (VAP) projects.
- Multiple hazardous materials surveys and Phase I ESAs for the Grandview Yard project, Grandview Heights, OH
- Phase I ESA Nine Brookside Corporate Center Office Buildings, Westerville, OH
- Phase I ESA Shell Station, Bexley, Franklin County, OH
- Jurisdictional Water Delineation 25-Acre Property, Mansfield, OH
- Phase I ESA and Preliminary Wetland and Stream Assessment 7+ Acre Proposed Office/Warehouse Property, Delaware, Delaware County, OH
- Jurisdictional Water Delineation 735-Acre Property, Sunbury, OH



GEOTECHNICAL  
CONSULTANTS INC.



ATTACHMENTS





PROPERTY  
BOUNDARY

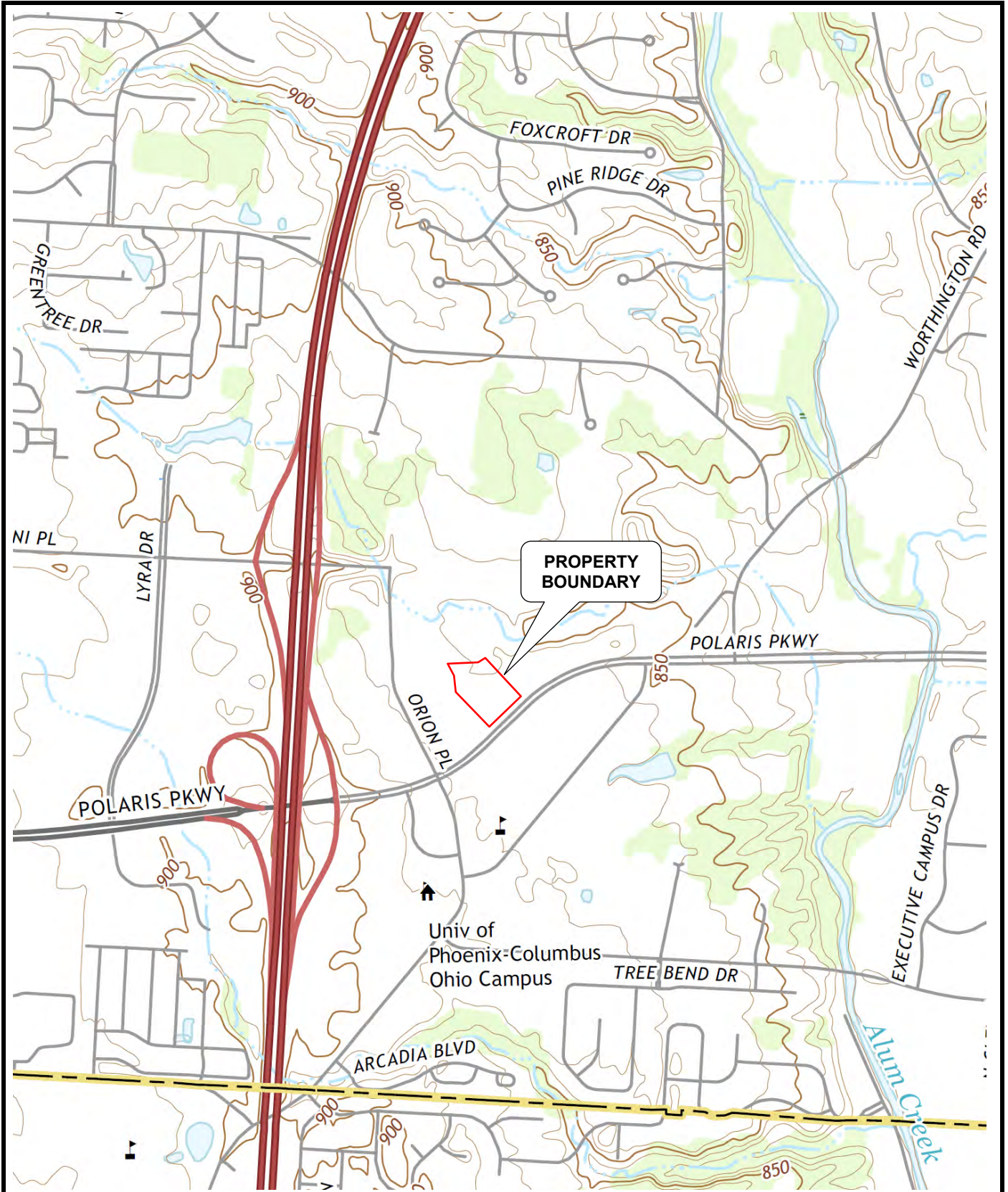


North

**BADRIVISHAL LLC PROPERTY**  
**2006 POLARIS PARKWAY**  
**COLUMBUS, DELAWARE COUNTY, OHIO**



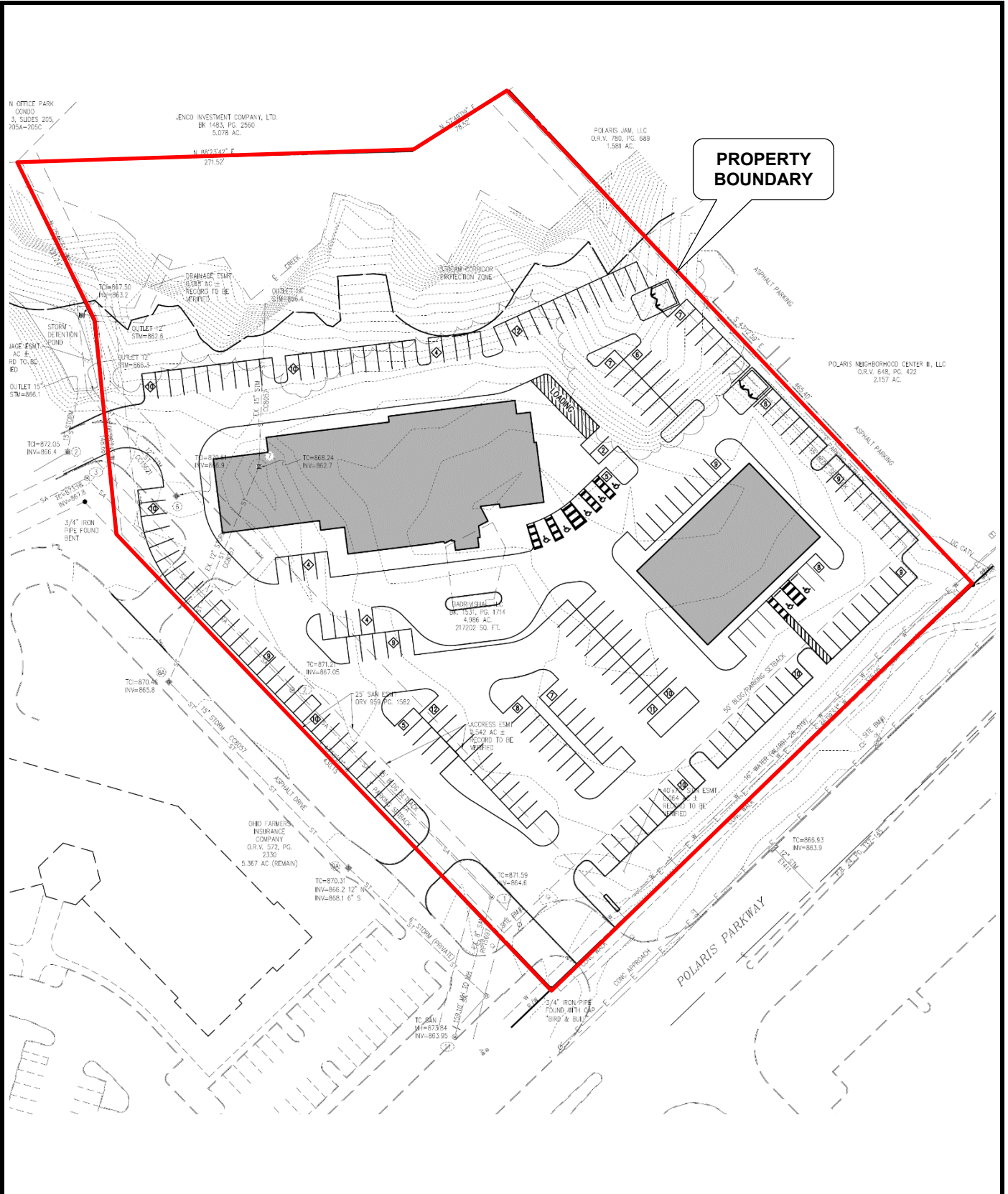




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**BADRIVISHAL LLC PROPERTY  
2006 POLARIS PARKWAY  
COLUMBUS, DELAWARE COUNTY, OHIO**

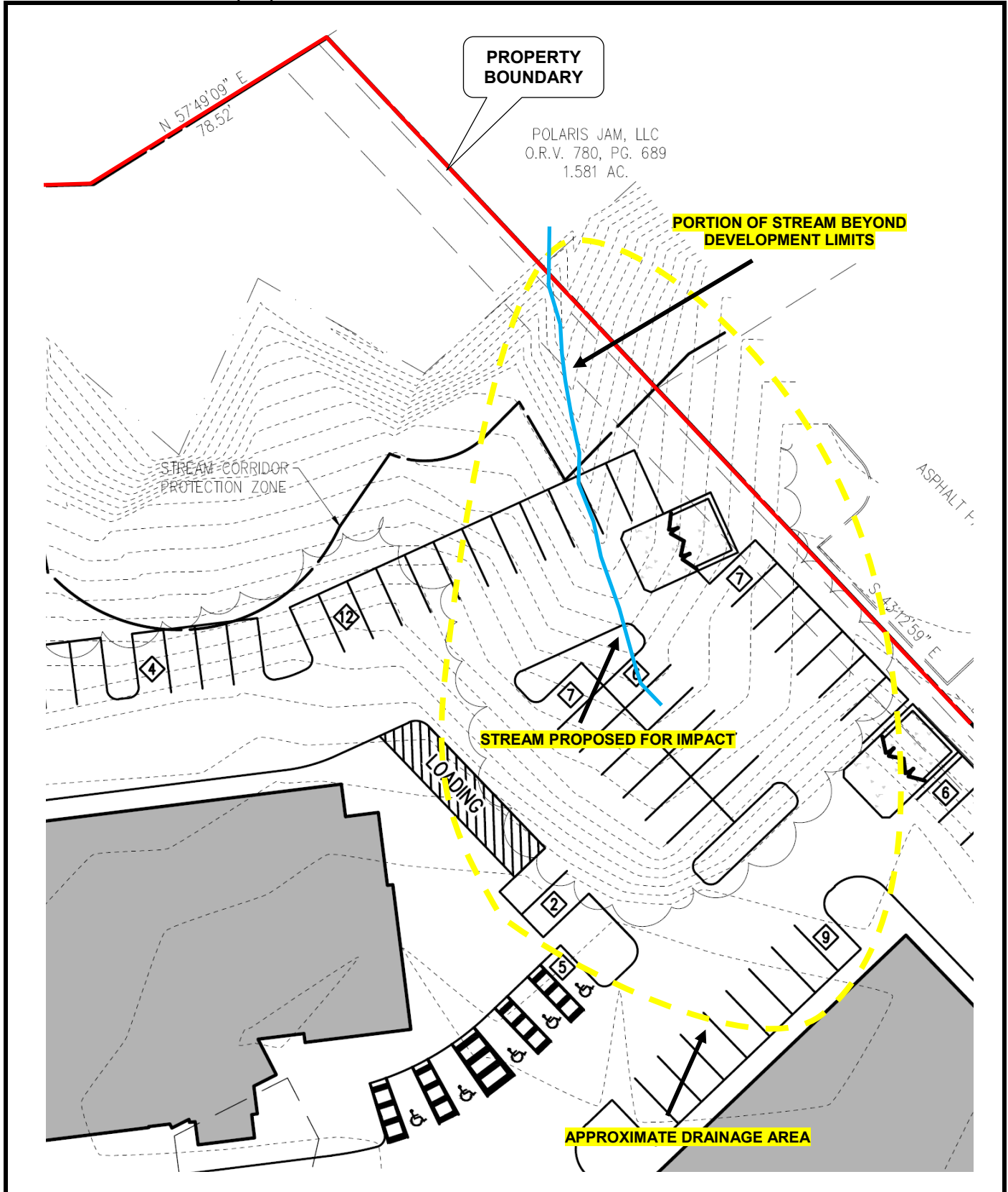




**BADRIVISHAL LLC PROPERTY**  
**2006 POLARIS PARKWAY**  
**COLUMBUS, DELAWARE COUNTY, OHIO**







**BADRIVISHAL LLC PROPERTY**  
**2006 POLARIS PARKWAY**  
**COLUMBUS, DELAWARE COUNTY, OHIO**







**BADRIVISHAL LLC PROPERTY  
2006 POLARIS PARKWAY  
COLUMBUS, DELAWARE COUNTY, OHIO**







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**BADRIVISHAL LLC PROPERTY**  
**2006 POLARIS PARKWAY**  
**COLUMBUS, DELAWARE COUNTY, OHIO**





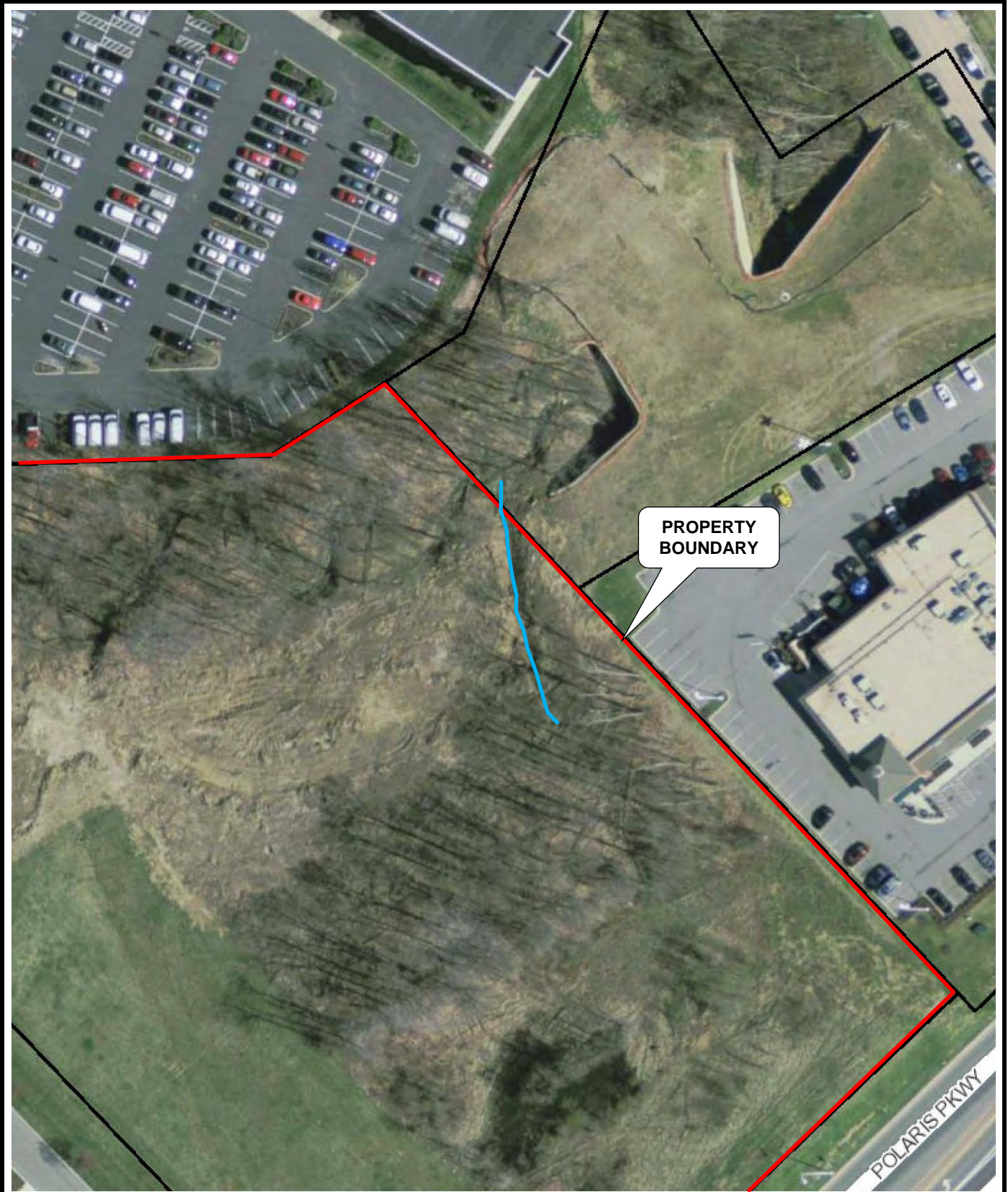


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**BADRIVISHAL LLC PROPERTY  
2006 POLARIS PARKWAY  
COLUMBUS, DELAWARE COUNTY, OHIO**







North

**BADRIVISHAL LLC PROPERTY**  
**2006 POLARIS PARKWAY**  
**COLUMBUS, DELAWARE COUNTY, OHIO**





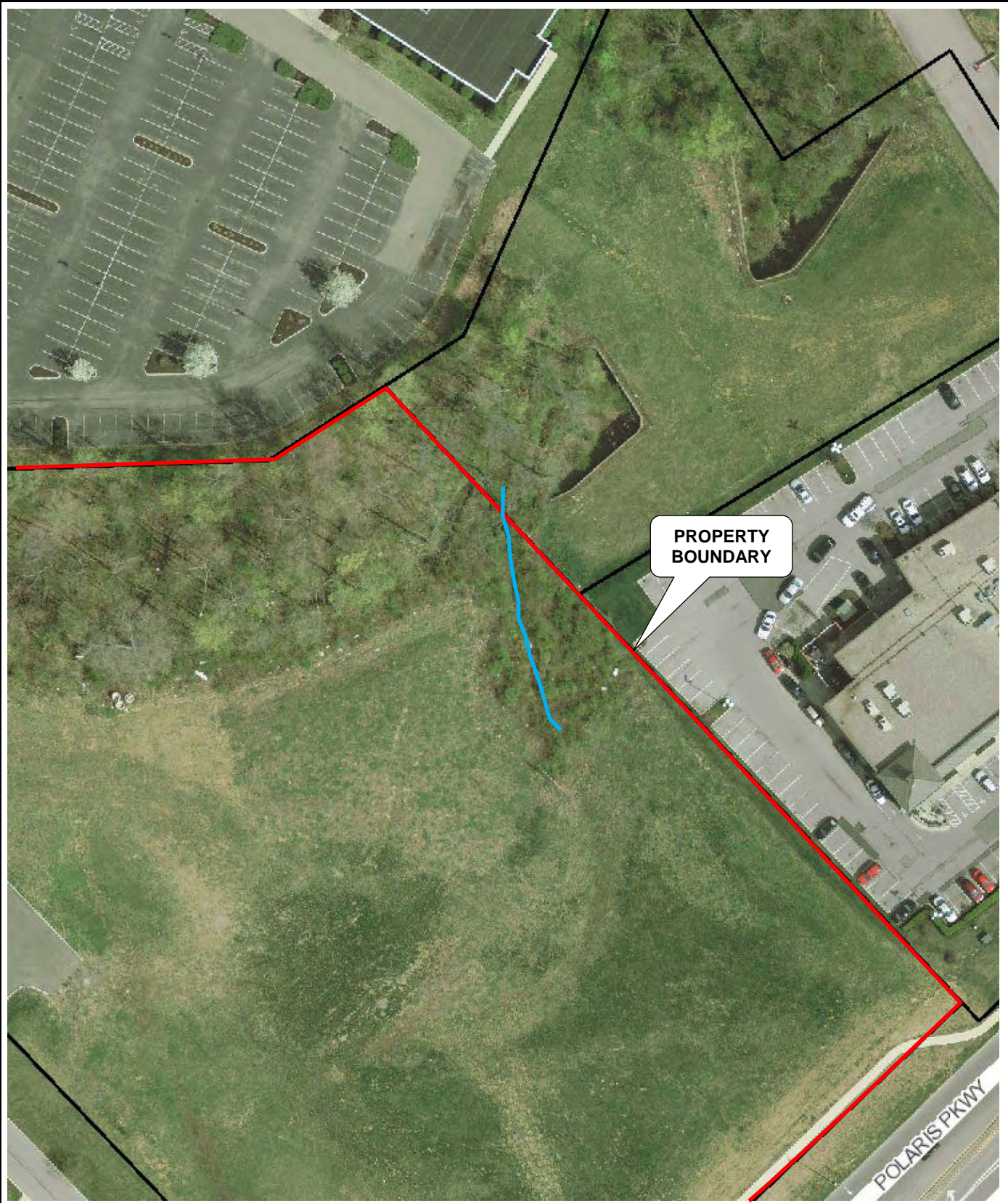


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**BADRIVISHAL LLC PROPERTY**  
**2006 POLARIS PARKWAY**  
**COLUMBUS, DELAWARE COUNTY, OHIO**







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COLUMBUS, DELAWARE COUNTY, OHIO**







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2006 POLARIS PARKWAY  
COLUMBUS, DELAWARE COUNTY, OHIO**







**BADRIVISHAL LLC PROPERTY  
2006 POLARIS PARKWAY  
COLUMBUS, DELAWARE COUNTY, OHIO**







# Primary Headwater Habitat Evaluation Form

11

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

SITE NAME/LOCATION **2006 Polaris Parkway, Columbus, Delaware County, OHIO**

SITE NUMBER  RIVER BASIN  DRAINAGE AREA (mi<sup>2</sup>) **0.00**

LENGTH OF STREAM REACH (ft) **145** LAT. **40.14538** LONG. **-82.96412** RIVER CODE  RIVER MILE

DATE **03/20/18** SCORER **MK** COMMENTS **Drainage area is approx. 1/2 acre or 0.0007 sq miles**

**NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PWH 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
<input type="checkbox"/> <input type="checkbox"/> BLDR SLABS [16 pts]	<input type="text"/> 0%	<input type="checkbox"/> <input type="checkbox"/> SILT [3 pt]	<input type="text"/> 10%
<input type="checkbox"/> <input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="text"/> 0%	<input checked="" type="checkbox"/> <input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="text"/> 60%
<input type="checkbox"/> <input type="checkbox"/> BEDROCK [16 pt]	<input type="text"/> 0%	<input type="checkbox"/> <input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="text"/> 0%
<input type="checkbox"/> <input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="text"/> 0%	<input type="checkbox"/> <input checked="" type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="text"/> 30%
<input type="checkbox"/> <input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="text"/> 0%	<input type="checkbox"/> <input type="checkbox"/> MUCK [0 pts]	<input type="text"/> 0%
<input type="checkbox"/> <input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="text"/> 0%	<input type="checkbox"/> <input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="text"/> 0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock **0.00%** (A)

Substrate Percentage Check **100%** (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **3**

TOTAL NUMBER OF SUBSTRATE TYPES: **3**

**HHEI Metric Points**

Substrate Max = 40

**6**

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):**

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input checked="" type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS **no visible pools; slope too severe** MAXIMUM POOL DEPTH (centimeters): **0**

Pool Depth Max = 30

**0**

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

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

COMMENTS  AVERAGE BANKFULL WIDTH (meters): **0.30**

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

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 **moist channel observed, but no flow or isolated pools**

**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)**

<input type="checkbox"/> WWH Name: <input type="text"/>	Distance from Evaluated Stream <input type="text"/>
<input type="checkbox"/> CWH Name: <input type="text"/>	Distance from Evaluated Stream <input type="text"/>
<input type="checkbox"/> EWH Name: <input type="text"/>	Distance from Evaluated Stream <input type="text"/>

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

USGS Quadrangle Name:  NRCS Soil Map Page:  NRCS Soil Map Stream Order   
County:  Township / City:

**MISCELLANEOUS**

Base Flow Conditions? (Y/N):  Date of last precipitation:  Quantity:   
Photograph Information:   
Elevated Turbidity? (Y/N):  Canopy (% open):   
Were samples collected for water chemistry? (Y/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)  If not, please explain:

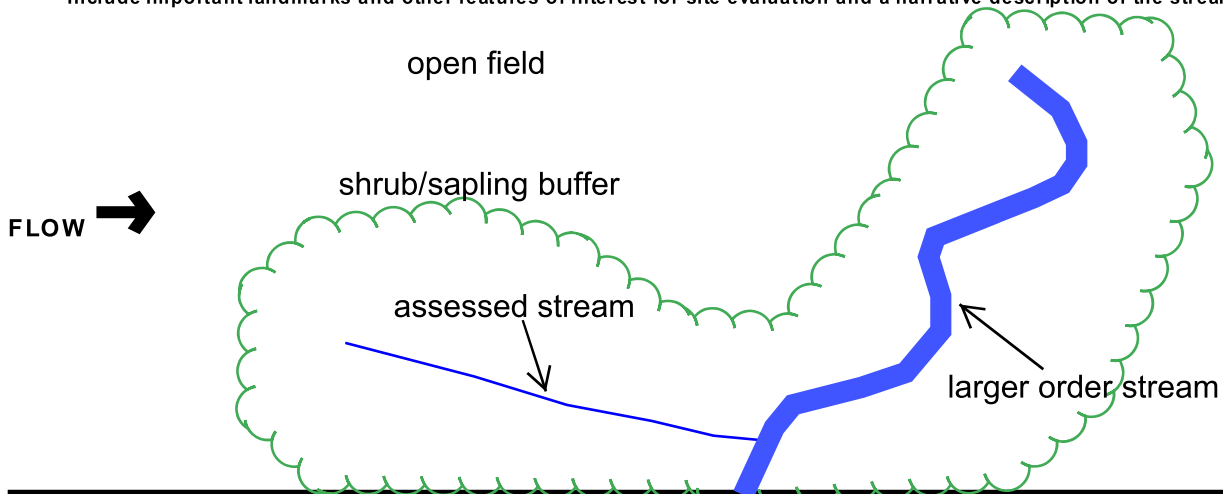
Additional comments/description of pollution impacts:

**BIOTIC EVALUATION**

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





**Photo 1:** Southeasterly view from the east central portion of the property.



**Photo 2:** Southerly view from the east central portion of the property.





**Photo 3:** Westerly view from the east central portion of the property.



**Photo 4:** Northerly view of the northeast part of the property containing the ephemeral stream.





**Photo 5:** Easterly view of the vegetated depression containing the ephemeral stream.



**Photo 6:** Typical interior view and vegetation within the depression on the northeast portion of the property containing the ephemeral stream.





**Photo 7:** Downstream view from near the beginning of the ephemeral stream.



**Photo 8:** Close-up view near the beginning of the ephemeral stream.





**Photo 9:** Upstream view from the central part of the ephemeral stream.



**Photo 10:** Upstream view from near the termination of the ephemeral stream.





**Photo 11:** Another upstream view from near the termination of the ephemeral stream.



**Photo 12:** Southerly view from off-site at the confluence of the ephemeral stream with a larger order stream.