

Type III Stormwater Manual Variance Request

For: Columbus Metropolitan Housing Authority

Post Oak Station Renovation and Early Learning Center Development

1383 Vida Way, Columbus, OH 43228

September 24, 2020

Prepared By:



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1.0 Variance Requested

- 1.1 A Type III (Stream Protection) variance is requested from section 1.3.3 “Prohibited Uses in the Stream Corridor Protection Zone” in order to allow the redevelopment of a Stream Corridor Protection Zone with new building and parking.

2.0 Project Information

2.1 Project Overview

The Project:

The Post Oak renovation project includes the renovation 142 existing housing units, construction of an Early Learning Center and the construction of two new one-story accessible residential buildings (8 units total). The new residential buildings are being added to meet the UFAS requirement of providing 5% accessible units for the project. The project is pursuing funding through OHFA’s LIHTC and HUD. For the entire project to be feasible for CMHA, all three components of in the project (Renovation of existing units, Early Learning Center and Accessible Buildings) must occur at the same time. The CMHA Post Oak Station Development in southwest Columbus at 1383 Vida Way and the project parcel number is 570-138784. The new construction portion of the proposed project involves removal of one existing residential structure and construction of the new ADA accessible residential structures as well as a new Early Learning Center (ELC) in addition to the renovation of the remainder of the buildings in the Post Oak Station complex. The addition of the early learning center will allow CMHA to leverage their existing development to provide childcare and Early Childhood Education to an area in the community that is currently underserved.

The site of the proposed development is adjacent to Scioto Big Run. Due to changes in regulation issued in the 2006 City of Columbus Stormwater Drainage Manual, a portion of the site which was previously developed, now lies in the Stream Corridor Protection Zone (SCPZ) as established by the Columbus Stormwater Drainage Manual. In order to redevelop this area, a Type III variance is being requested from the SCPZ requirement.

2.2 Existing Condition

The site of the proposed development is currently utilized as mowed lawn area within the existing apartment complex. The site was previously developed with three residential structures that were demolished during a previous renovation project with one remaining that will be demolished with the proposed project. The portion of the SCPZ that will be impacted is currently lawn area is separated from the riparian corridor by Vida Way, the perimeter circulation drive in the complex. Runoff from the development area is collected by an existing storm sewer and conveyed to an outlet into Scioto Big Run. The existing area where impacts are proposed to the SCPZ is of a lower quality and is not currently functioning in to accomplish the stated goals of the manual of erosion protection and water quality protection. The flood storage component is also limited as the impacted area is outside the 100 year floodplain and only slightly encroached on by the 500 year floodplain. The photos below document the areas current condition.



Pic 1) SCPZ area impacted by ELC

Pic 2) SCPZ impacted by ADA Building

2.3 Proposed Developed Condition

The developed condition will include two new ADA accessible residential buildings as well as the ELC building. A portion of the ELC building as well as Residential structure #2 and the associated parking will infringe on the established SCPZ (see Exhibit 1, Appendix 3). The development of the building and parking area is separated from the Scioto Big Run corridor by the existing private street, Vida Way. The net change will be developing maintained lawn to building and parking on .24

acres of designated SCPZ. The proposed development is clear of the 100 year floodplain (see FEMA Floodmap, Appendix 2).

2.4 Stream Corridor Protection Zone Determination

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

- 1) Area within the FEMA designated 100 year Floodway
- 2) Area calculated by the equation $147(DA)^{.38}$ (Maximum of 250')
- 3) 50 feet from the top of bank for 4th order or larger streams

Evaluating the site, the proposed development is clear of the 100 year floodway at the project location so method one does not apply. Scioto Big Run is a 3rd order stream at the project location so method 3 does not apply. Therefore, the equation listed in method two was used to calculate the SCPZ width as the 250' maximum and the width was centered over the Scioto Big Run Channel. The following is the calculation used:

The drainage area of Scioto Big Run was determined using StreamStats from USGS to be 7.3 square miles.

Per the formula provided in the City of Columbus Stormwater Drainage Manual

$$147(7.3)^{0.38}=312.88 \text{ (Max=250)}$$

Based on this calculation, the 250' maximum is used, laid out 125' on either side of the stream centerline.

3.0 Site Development Alternatives

3.1 Preferred Alternative

The preferred alternative includes the development of the proposed two residential buildings and Early Learning Center. A site plan depicting the buildings and SCPZ infringement is included in Appendix 3, Exhibit 3. This alternative infringes on .24 acres of the designated Stream Corridor Protection Zone on the eastern edge of the site. The impact of infringement on the corridor is less significant than typical due to the previously developed nature of the site. The area of impact is not part of the riparian corridor and has been orphaned from the corridor by previous development including the Vida Way roadway. Mitigation for the proposed impact can be provided on site at a 1:1 ratio by re-establishing and extending a stream corridor protection zone area in the southwest portion of the site. This area is adjacent the stream and will be designated as stream corridor protection area by new signage. The area being converted to corridor protection area will no longer be mowed and to assist in its return to a natural state will be planted with a native short meadow seed mix. The specification for the proposed seed mix is included in appendix 4.

Appendix 3, Exhibit 1 illustrates the proposed site plan and impacted stream corridor protection zone. The proposed development will include stormwater controls to address stormwater quality and quantity in accordance with the City of Columbus Stormwater Drainage Manual.

3.2 Minimal Impact Alternative

The minimal impact alternative would maintain the site plan from the preferred alternative but limit the impact to south of ODonnell Court. The proposed ELC building size would need to be reduced in order to keep the footprint outside the area where the calculated SCPZ cuts across the site. This would require that the ELC programming be reduced to a level that would make running the center infeasible, or that a 2-story footprint be used. The hardships of these changes are documented below in the statement of hardship in Section 4.0 but the overall implication of this alternative is that the ELC would no longer be a feasible component of the project due operation and cost issues. The proposed site plan for this alternative is illustrated in Appendix 3, Exhibit 2.

3.3 Full Compliance/No Impact Alternative

The full compliance alternative available for this site requires reducing the footprint of both the ELC building as well as removing 2 units from the proposed ADA building. An exhibit of the full compliance plan is included in Appendix 3, Exhibit 2. The impact of this solution is the ELC becomes infeasible as in the partial compliance alternative and additionally, the lack of ADA units jeopardizes the funding for the renovation of the existing complex.

4.0 Statement of Hardship

The proposed impacts to the Stream Corridor Protection Zone are the result of the developers need to provide updated ADA access and Early Childhood Education amenities with this fully developed site. The Stream Corridor Protection Zone as adopted in 2006 and calculated per the current Columbus Stormwater Drainage Manual has limited the owners ability to redevelop significant portions of this previously developed parcel. Due to the previous development that occurred on the site, the new development does not impact the waterway or remaining riparian corridor. The no impact and minimal impact alternatives have been studied as presented and through additional research on building placement and the current preferred alternative was concluded as the only configuration that would suit the use of the site. The two story option for the ELC was ruled out in favor of the one story footprint due to the following:

- a) Eliminates the need for any vertical circulation (elevators, stairs) etc. which are difficult to navigate for kids aged 0-5 years.
- b) A two-story building will need two stairs and an elevator. Eliminating stairs and elevator reduces the overall building cost.
- c) The single-story scheme provides connections from each classroom to an outdoor play/learning area which enhances the learning experience of the child.
- d) Classrooms with a direct exit to the outdoors makes the building occupants safer.
- e) The classrooms with kids aged 0-5 years need to be on the same floor to make best use of the common staff amenities and facilities.
- f) A single-story building best meets the operational needs of the Center.

For all the above reasons, a single-story building design is best suited for the Early Learning Center. In order to meet the financial feasibility of the project, the number of classrooms in the Early Learning Center cannot be reduced to limit the overall single story footprint.

For the accessible buildings, the location was selected in order to provide access to the common areas of the site (Community building, playground, parking, etc.). The Uniform Federal Accessibility Standards (UFAS) require 5% of the units on site to be accessible units and for this project 8 units are required to meet that criteria. The existing buildings could not be retrofitted due to being 2 story in addition to floor plans designed prior to UFAS standards. Additional areas of the site such as the west side were considered but eliminated due to the lack of proximity to the amenities and the difficulty in providing accessible routes from those locations to the parking and community building due to significant grade changes on site.

The proposed improvements are needed to facilitate the renovation of the existing complex which is in significant need of the additional investment. The overall project simply does not work without all of the proposed components as would be the case in the partial or full compliance options. Due to the negligible environmental impact to the SCPZ that was modified by previous development, ability to provide mitigation adjacent and contiguous to a higher quality portion of the stream corridor in addition to the community benefit provided, we request approval of the preferred alternative.

Appendix 1

StreamSTATS Report

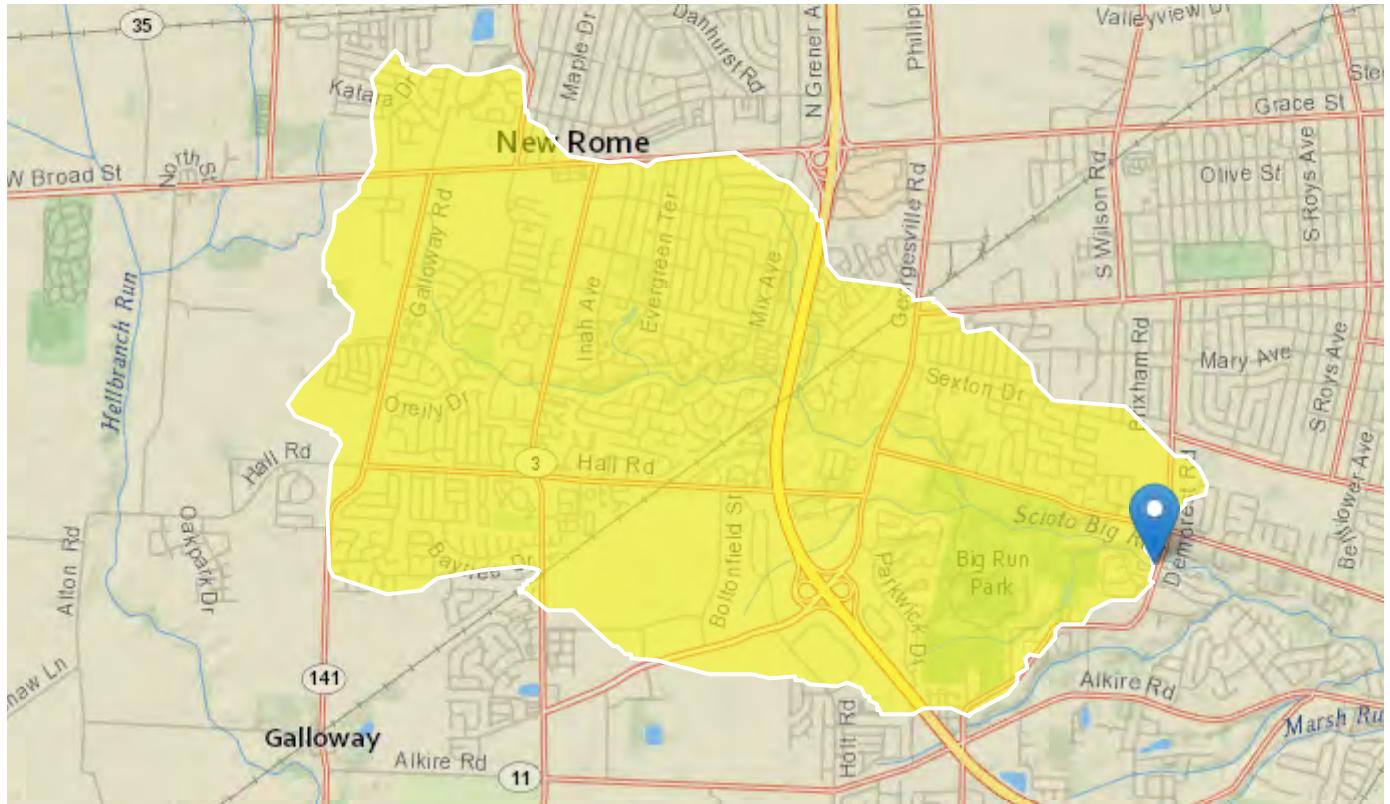
Post Oak Scioto Big Run StreamStats Report

Region ID: OH

Workspace ID: OH20200729172819407000

Clicked Point (Latitude, Longitude): 39.92519, -83.09168

Time: 2020-07-29 13:28:36 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	7.3	square miles
PRECIP	Mean Annual Precipitation	39.3	inches
LAT_CENT	Latitude of Basin Centroid	39.9348	decimal degrees
LC92STOR	Percentage of water bodies and wetlands determined from the NLCD	0.79	percent
FOREST	Percentage of area covered by forest	14.4	percent

Parameter Code	Parameter Description	Value	Unit
STREAM_VARG	Streamflow variability index as defined in WRIR 02-4068, computed from regional grid	0.64	dimensionless

Monthly Flow Statistics Parameters^[Low Flow LatLE 41.2 wri02 4068]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	7.3	square miles	0.12	7422
LC92STOR	Percent Storage from NLCD1992	0.79	percent	0	19
PRECIP	Mean Annual Precipitation	39.3	inches	34	43.2
FOREST	Percent Forest	14.4	percent	0	99.1
LAT_CENT	Latitude of Basin Centroid	39.9348	decimal degrees	38.68	41.2
STREAM_VARG	Streamflow Variability Index from Grid	0.64	dimensionless	0.25	1.13

Monthly Flow Statistics Flow Report^[Low Flow LatLE 41.2 wri02 4068]

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

Statistic	Value	Unit	SE	SEp
January Mean Flow	11.3	ft ³ /s	16.6	16.6
February Mean Flow	13.4	ft ³ /s	11.9	11.9
March Mean Flow	15.1	ft ³ /s	14	14
April Mean Flow	13.8	ft ³ /s	11.2	11.2
May Mean Flow	8.89	ft ³ /s	19.5	19.5
June Mean Flow	5.35	ft ³ /s	27	27
July Mean Flow	3.06	ft ³ /s	28.2	28.2
August Mean Flow	2.32	ft ³ /s	36.8	36.8
September Mean Flow	1.43	ft ³ /s	43.6	43.6
October Mean Flow	1.37	ft ³ /s	50.8	50.8
November Mean Flow	3.8	ft ³ /s	37.5	37.5

Statistic	Value	Unit	SE	SEp
December Mean Flow	7.71	ft ³ /s	21.8	21.8

Monthly Flow Statistics Citations

Koltun, G. F., and Whitehead, M. T.,2002, Techniques for Estimating Selected Streamflow Characteristics of Rural, Unregulated Streams in Ohio: U. S. Geological Survey Water-Resources Investigations Report 02-4068, 50 p
(<https://pubs.er.usgs.gov/publication/wri024068>)

Annual Flow Statistics Parameters[Low Flow LatLE 41.2 wri02 4068]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	7.3	square miles	0.12	7422
PRECIP	Mean Annual Precipitation	39.3	inches	34	43.2
LAT_CENT	Latitude of Basin Centroid	39.9348	decimal degrees	38.68	41.2

Annual Flow Statistics Flow Report[Low Flow LatLE 41.2 wri02 4068]

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

Statistic	Value	Unit	SE	SEp
Mean Annual Flow	7.94	ft ³ /s	11.4	11.4

Annual Flow Statistics Citations

Koltun, G. F., and Whitehead, M. T.,2002, Techniques for Estimating Selected Streamflow Characteristics of Rural, Unregulated Streams in Ohio: U. S. Geological Survey Water-Resources Investigations Report 02-4068, 50 p
(<https://pubs.er.usgs.gov/publication/wri024068>)

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Application Version: 4.3.11

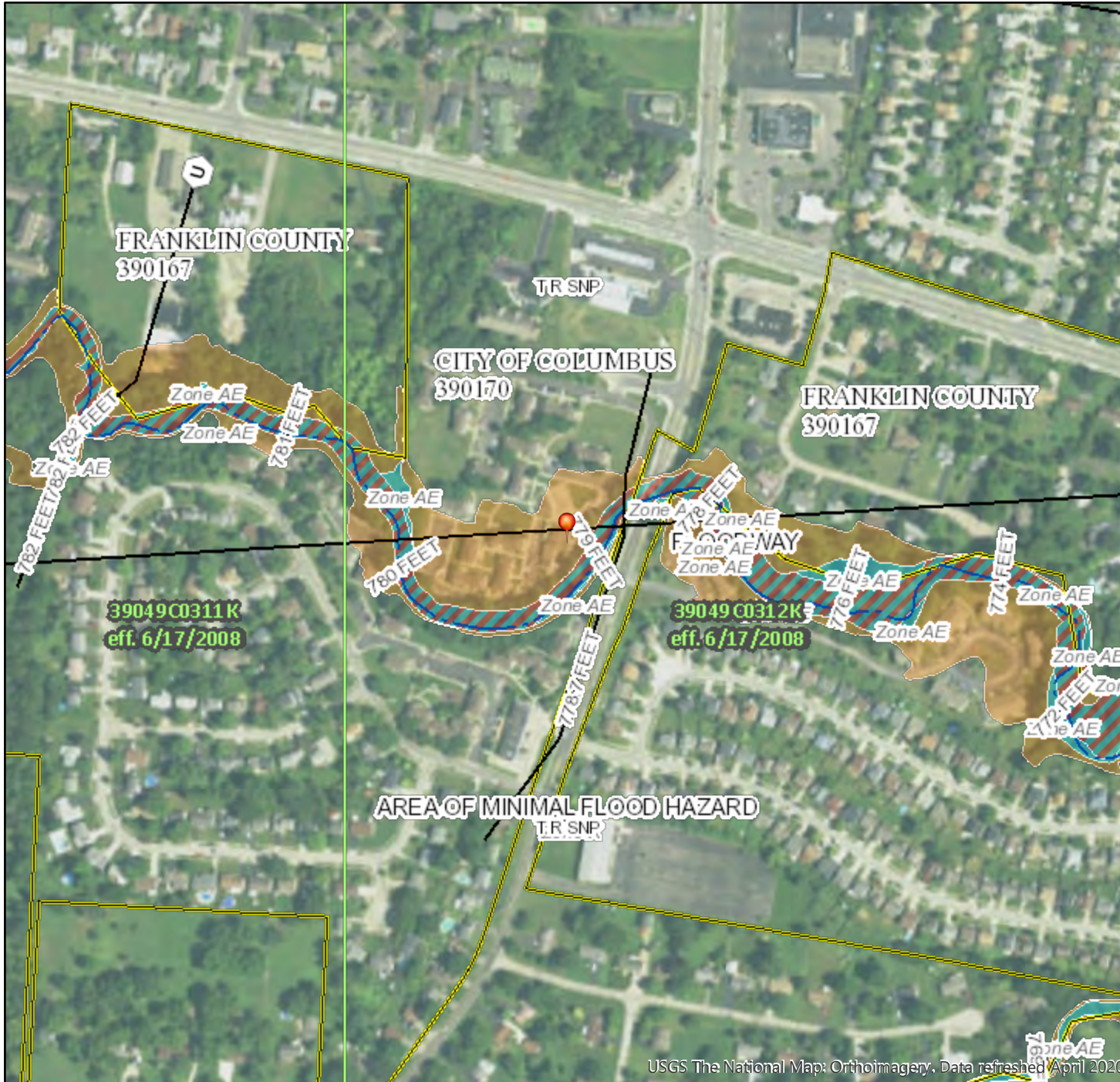
Appendix 2

FEMA Floodmap

National Flood Hazard Layer FIRMMette



83 549'W 39 55'45"N



Legend

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

- | | | |
|------------------------------------|--|---|
| SPECIAL FLOOD HAZARD AREAS | | Without Base Flood Elevation (BFE)
Zone A, V, A99 |
| | | With BFE or Depth Zone AE, AO, AH, VE, AR |
| | | Regulatory Floodway |
| OTHER AREAS OF FLOOD HAZARD | | 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X |
| | | Future Conditions 1% Annual Chance Flood Hazard Zone X |
| | | Area with Reduced Flood Risk due to Levee. See Notes, Zone X |
| | | Area with Flood Risk due to Levee Zone D |
| OTHER AREAS | | NO SCREEN Area of Minimal Flood Hazard Zone X |
| | | Effective LOMRs |
| | | Area of Undetermined Flood Hazard Zone D |
| GENERAL STRUCTURES | | Channel, Culvert, or Storm Sewer |
| | | Levee, Dike, or Floodwall |
| OTHER FEATURES | | Cross Sections with 1% Annual Chance Water Surface Elevation |
| | | Coastal Transect |
| | | Base Flood Elevation Line (BFE) |
| | | Limit of Study |
| | | Jurisdiction Boundary |
| | | Coastal Transect Baseline |
| | | Profile Baseline |
| | | Hydrographic Feature |
| MAP PANELS | | Digital Data Available |
| | | No Digital Data Available |
| | | Unmapped |
- The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **7/29/2020 at 1:51 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

0 250 500 1,000 1,500 2,000 Feet 1:6,000

USGS The National Map: Orthoimagery. Data refreshed April 2020

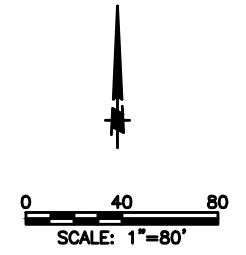
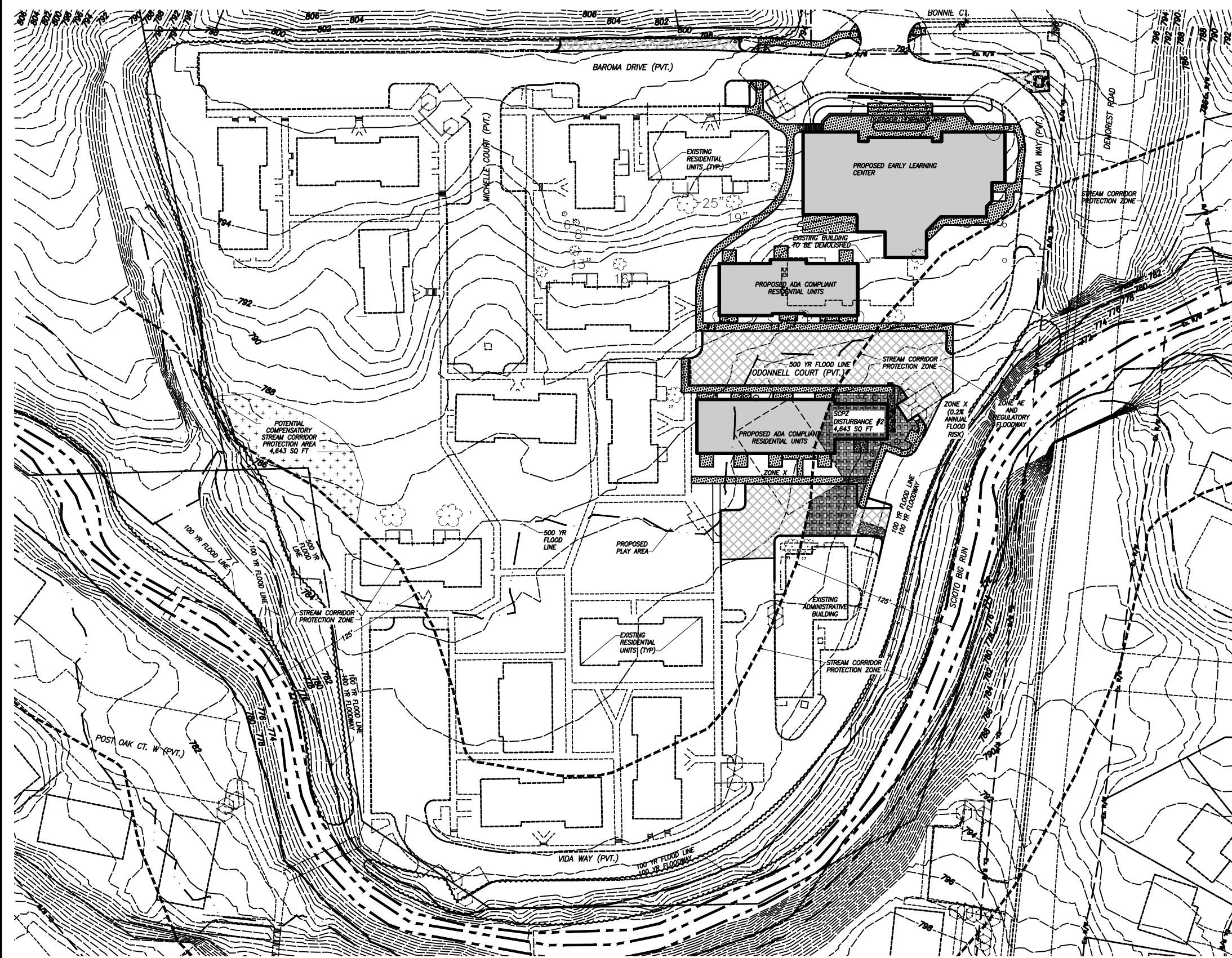
83 511'W 39 55'18"N

Appendix 3

Exhibit 1-Preferred Alternative

Exhibit 2-Partial Compliance

Exhibit 3-Full Compliance

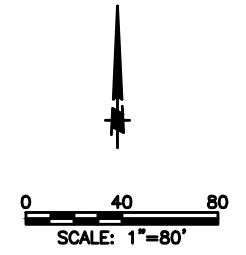
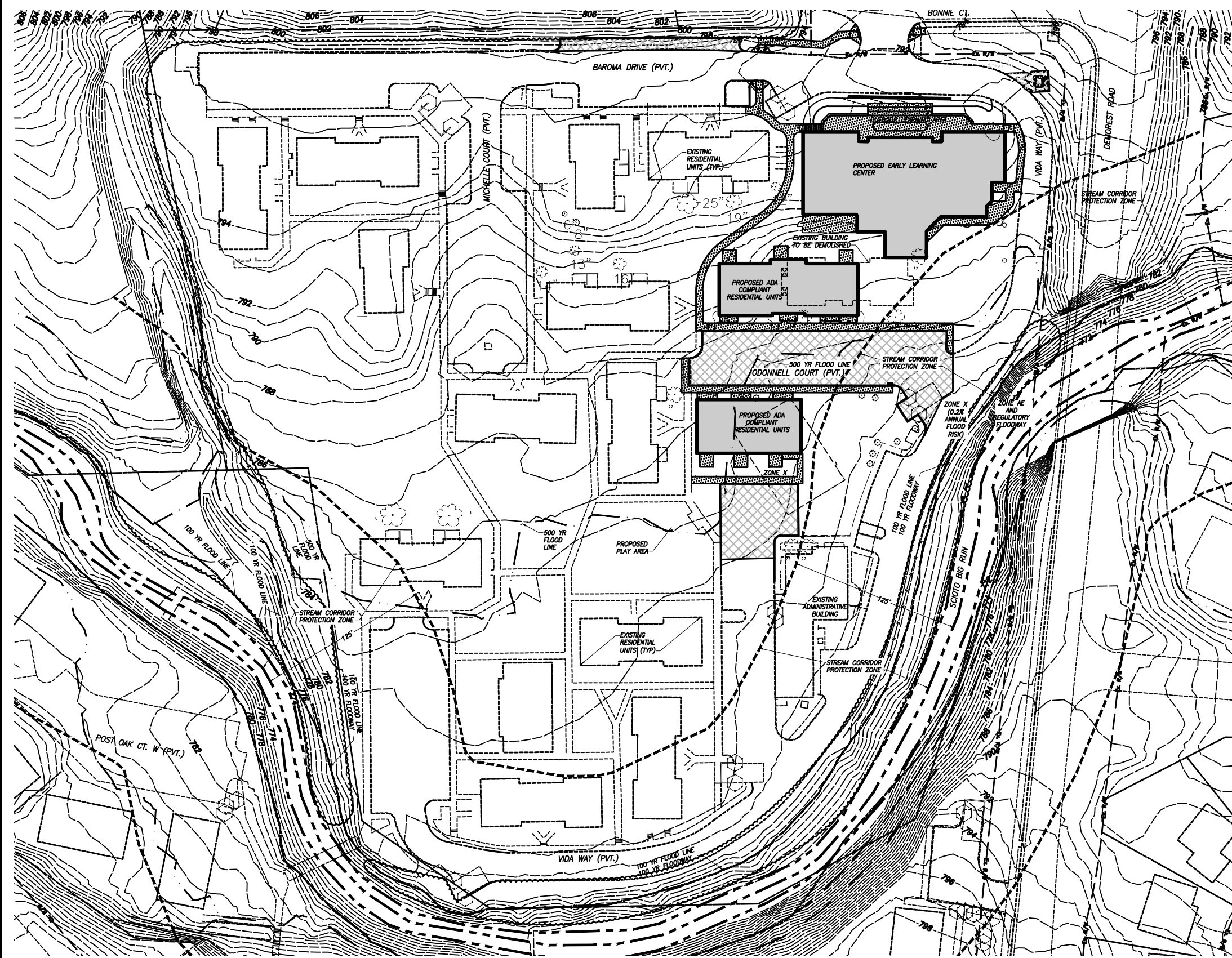


LEGEND



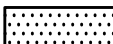

- SCPZ DISTURBED
- POTENTIAL COMPENSATORY SCPZ
- PROPOSED CONCRETE SIDEWALK
- PROPOSED BUILDING
- PROPOSED ASPHALT PAVEMENT

DRAWING: P:\19087 CMHA Post Oak\CAD\19087 C101 SCPZ Exhibit_2_for John.dwg
 September 24, 2020, 11:00am


 MOODY ENGINEERING MOODY-ENG.COM	300 SPRUCE STREET SUITE 200 COLUMBUS, OHIO 43215 P: 614 280 8999	CMHA - POST OAK STATION EARLY LEARNING CENTER 3570 O'DONNELL CT MINIMAL IMPACT ALTERNATIVE
	EXHIBIT 2	



LEGEND

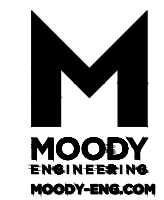
	SCPZ DISTURBED		PROPOSED BUILDING
	PROPOSED CONCRETE SIDEWALK		PROPOSED ASPHALT PAVEMENT

DRAWING: P:\19087 CMHA Post Oak\CAD\19087 C101 SCPZ Exhibit_3_for John.dwg
September 24, 2020, 11:01am

 MOODY ENGINEERING MOODY-ENG.COM	300 SPRUCE STREET SUITE 200 COLUMBUS, OHIO 43215 P: 614 280 8999	CMHA - POST OAK STATION EARLY LEARNING CENTER 3570 O'DONNELL CT FULL COMPLIANCE NO IMPACT ALTERNATIVE
		EXHIBIT 3

Appendix 4

Exhibit 3-Site Aerial Photo



300 SPRUCE STREET
SUITE 200
COLUMBUS, OHIO 43215
P: 614 280 8999

CMHA - POST OAK STATION
EARLY LEARNING CENTER
3570 O'DONNELL CT

EXHIBIT 4

DRAWING: P:\19087 CMHA Post Oak\000\19087 SCZP Exhibit Aerial.dwg
September 24, 2020, 10:45am

Appendix 5

Native Short Grass Meadow Seed Specification

Native Short Grass Meadow - Econo Native Short Meadow seed mix by: Ohio Prairie Nursery. This mix stays true to creating habitat and supporting sustainability, but with a higher ratio of grasses to wildflowers. Works well in areas with well-drained soils and receives at least 6 hours of sunlight a day. The native wildflowers in this mix will bloom spring through fall. This is a short meadow grass seed mix with colorful wildflowers mixed in.

Description:

Flower Color: Yellow, Purple, Green, White, Pink, Blue

Height: 3 to 5 Feet

Light Requirements: Full Sun

Soil Hydrology: Mesic Soils

Bloom Time: Spring through Fall

Plant Type: Annuals/Perennials

Attracts: Birds, Bees, Butterflies, Pollinators

Contains the following species:

Grasses:

Elymus virginicus - Virginia Wild Rye

Elymus canadensis - Nodding Wild Rye

Schizachyrium scoparium - Little Bluestem

Bouteloua curtipendula - Side-oats Grama

Tridens flavus - Purple Top

Wildflowers:

Chamaecrista fasciculata - Partridge Pea

Desmanthus illinoensis - Illinois Bundleflower

Echinacea purpurea - Purple Coneflower

Heliopsis helianthoides - Ox Eye Sunflower

Rudbeckia hirta - Black-eyed Susan

Gaillardia pulchella - Indian Blanket

Asclepias tuberosa - Butterfly Milkweed

Asclepias syriaca - Common Milkweed

Centaurea cyanus - Cornflower

Dalea purpurea - Purple Prairie Clover

Coreopsis lanceolata - Lanceleaf Coreopsis

Monarda citriodora - Lemon Mint

Lespedeza capitata - Roundheaded Bushclover

Dalea candida - White Prairie Clover

Monarda fistulosa - Wild Bergamot

Aster azureus - Sky Blue Aster