Engineers, Surveyors, Planners, Scientists

October 24, 2022

City of Columbus, Department of Public Utilities
Attn: Greg Fedner, P.E.
Section manager, Private Development
910 Dublin Road
Columbus, Ohio 43215

Subject: Type II Variance for Phoenix Cargo Site (Groves Road)

Dear Mr. Fedner,

We are requesting a Type II variance to the Stormwater Drainage Manual, Section 3.1.7 General Criteria. The project is known as the Phoenix Cargo Site and is located on the north side of Groves Road currently within the Franklin County & City of Columbus. The project is adjacent to Big Walnut Creek which has a FEMA studied flood plain. The site we will be developing an existing agricultural field into a commercial truck maintenance and storage facility. There is one dry detention basin being proposed with the development located parallel to and north of Groves Road. All basins will provide water quality and detention for the development. The basins will outlet to the roadside ditch/culverts along Groves Road which drain east to Big Walnut Creek. The proposed site plan is attached as Exhibit 1.

The relative elevation of the south side of the site along Groves Road is between 751 and 753 and the north side falls generally from south to north with the majority of the site being around 753. The FEMA flood plain along the Big Walnut Creek varies from approximately 754 to 752 from north to south through the site. The dry detention basin will be located within the flood plain of Big Walnut Creek (per current FEMA flood plain lines) and outside the City of Columbus defined stream corridor protection zone/floodway limits. The proposed basin outlets are located along the roadside ditch at locations that would equate to FEMA base flood elevations of 748.50. These elevations are very close to the elevations of the actual site elevations, thus, limiting the available storage space between the base flood elevation and the proposed site grading. Compensatory storage will be utilized to offset flood plain fills onsite.

As the site was being evaluated for storm water control, the understanding that having storm water control practices below the floodplain elevation requires specific design elements to prevent floodwaters from compromising the performance of the storm water control practice (SCP). Specifically, the following are the minimum requirements:

1. The top of embankment of the basin, including any primary or emergency spillways must have an elevation higher than the 100-year base flood elevation.
2. All outlets from the basin to the stream must have a backflow preventer to prevent flood water from flowing into the basin.

These requirements preserve the volume of the SCP to be used for water quality and peak flow rate control. However, the elevation of the stream during a flood event may prevent the SCP from draining properly and could cause the basin to overtop releasing flow to the stream at a rate that may exceed allowable peak flow rates. Overtopping of the basin may also weaken the embankment increasing risk of an embankment breach and failure. A joint probability analysis was not performed for this variance because Big Walnut Creek peaks well after the peak of the rainfall event; however, it should be noted that the previously mentioned minimum criteria will be met with the final engineering and design.

The purpose of this variance request for the following three items which are further explained below. Additionally, within Variance #2 we discuss preferred, minimal impact, and no impact options.

- Variance #1: The SCP storage volume is located below the Big Walnut FEMA flood plain elevations.
- Variance #2: The SCP footprint is partially located within the Big Walnut FEMA 100 year floodplain
- Variance #3: Modification of the standard City plan approval process to allow the proposed SCP location to be approved on a CC plan with additional notes on construction sequencing.

For Variance #1, Big Walnut Creek will peak much later than the project site location; therefore, the SCP will have drawn down significantly by the time Big Walnut Creek elevations rise limiting the ability of the SCP from draining. As previously stated, a probability analysis was not completed due to the size of the Big Walnut Creek watershed upstream of our site, but the final stormwater report will take into account the minimum requirements for the SCP design. Additionally, we have completed preliminary post-developed allowable release rates for the site and they are significantly limited based on existing tributary areas and the necessary location of the SCP on the south side of the site. The post-developed tributary areas of the site will divert runoff to the SCP on the south side of the site rather than flowing to the north towards the stream corridor protection zone and Big Walnut Creek. This results in a larger required storage volume capacity for the SCP due to the limited release rates which helps the stormwater design when Big Walnut Creek peaks because we are not relying on a large outflow from the SCP.

For Variance #2, the SCP is located in the only location that will work with the proposed facility as well as with the floodplain elevations. Please see the following options we reviewed positioning the BMP around the site:

- Option 01 – Preferred and Minimal Impact: SCP located on south side of the site – Reference Exhibit 1 – Preferred and Minimal Impact
    - The south side of the site is the logical location of the SCP as it relates to the flood plain elevations, site access, and basin location with flood plain lines. The flood plain elevation reduces in elevation as you move north to south across the site. Existing topography actually shows a larger area of the southern portion of the site as being out of the flood plain. By placing the SCP on the south side we feel we are the impactful as the flood plain lines because we are actually out of the flood plain (vertically) without doing any work. Site access for the trucks is critical off of Groves Road as the elevation are between 750 and 751. By flowing water towards the SCP on the south side we are able to design a smooth transition into the site conducive for truck turning movements.
- Option 02 – Largest Impact: SCP located on north side of the site (lowest portion of the site) – Reference Exhibit 2 – Largest Impact
    - The north side of the site is the logical location of the SCP as it works with the existing topography and tributary areas; however, the floodplain elevations work in the opposite direction (higher flood plain elevation at the north side and lower as you move south across the site). This would place the SCP further within the floodplain and closer to the Stream Corridor Protection Zone/Floodway of Big Walnut Creek. To meet the minimum design criteria of the SCP the proposed grades of the site would need to be raised approximately 3 to 4 feet to get the top of the berm out of the flood plain elevation increasing imported fill by 17,000 CY or $600,000 at $35/CY. Additionally, it would be detrimental to accessing the site along Groves Road (only public ROW access point to site) because the south side of the site would need to be up around 757 to 758 to flow water north to the SCP and existing road elevations of Groves Road ranges from 750 to

751. The grade differential from Groves Road into site would not work for the proposed semi's coming in/out of the site.

- Option 03 – No Impact: SCP located on the southwest corner of the site (area outside of the existing flood plain) – Exhibit 3
    - The only area onsite that is outside of the existing flood plain is located at the southwest corner of the site along Groves Road. By placing this SCP at this location it would eliminate the ability to place a second access point into the site which is detrimental to the proposed operations of the site and truck turning movements. The site is designed to have an inbound/outbound access point or circular traffic flow. There is a future building that is being planned for with the initial project which is a pull through design for semi cabs as well as trailered semi's. Without the circular traffic flow the building does not fit on the site due to the required semi turning movements to utilize one access point to/from Groves Road.

For Variance #3, we are requesting that the proposed site plan be approved on the CC plan rather than doing a separate mass excavation plan first. Based on previous discussions and past projects, the mass grading plan would be submitted and approved by the City to allow the placement of fill to remove portions of the site from the flood plain by means of a final LOMR-F.

- The timing of this is problematic to permitting and construction because additional fill would need to be placed to final pavement elevations to obtain the necessary survey elevations to file the LOMR-F. The fill would then be removed and pavement sections installed, but elevations could ultimately vary so another updated LOMR-F would need to be filed.
- By filing the LOMR-F we are saying that the filled area will be removed from the flood plain; however, this isn't true because we ultimately will dig out the future SCP location. FEMA doesn't view the backwater valve on the outfall as justification for eliminating the pond interior from the flood plain so we would technically need to update the LOMR-F again after the pond is constructed or exclude it all together from the original filing. This creates the issue that the pond will never fully be removed from the flood plain even after the LOMR-F is approved thus creating an issue with obtaining a final CC Plan approval
- Additionally, timing is affected by erosion control phasing and final stabilization because the sediment pond will need to be filled in for the final LOMR-F and can't be until the site is stabilized.

We feel that the appropriate path for this project would be to review and approve it with the CC plan for the final reasons:

- The FEMA flood plain lines don't actually follow the actual site elevations. The south side of the site has more area outside of the flood plain based on existing topographic elevations. This would result in all of the SCP to be outside of the flood plain elevation with the exception of the storage volume internal of the SCP.
- The final SCP location will serve as the sediment pond for the project and thus never filled in; therefore, portions can't be removed from the flood plain with the LOMR-F.
- FEMA ultimately views the pond storage volume below the flood plain elevation as within the flood plain.

If you have any questions or need more clarity on any of the issues described please do not hesitate to give me a call at 614-775-4370.

Thank you for your consideration on this matter.

Sincerely,

Brian. R. Rossi, PE

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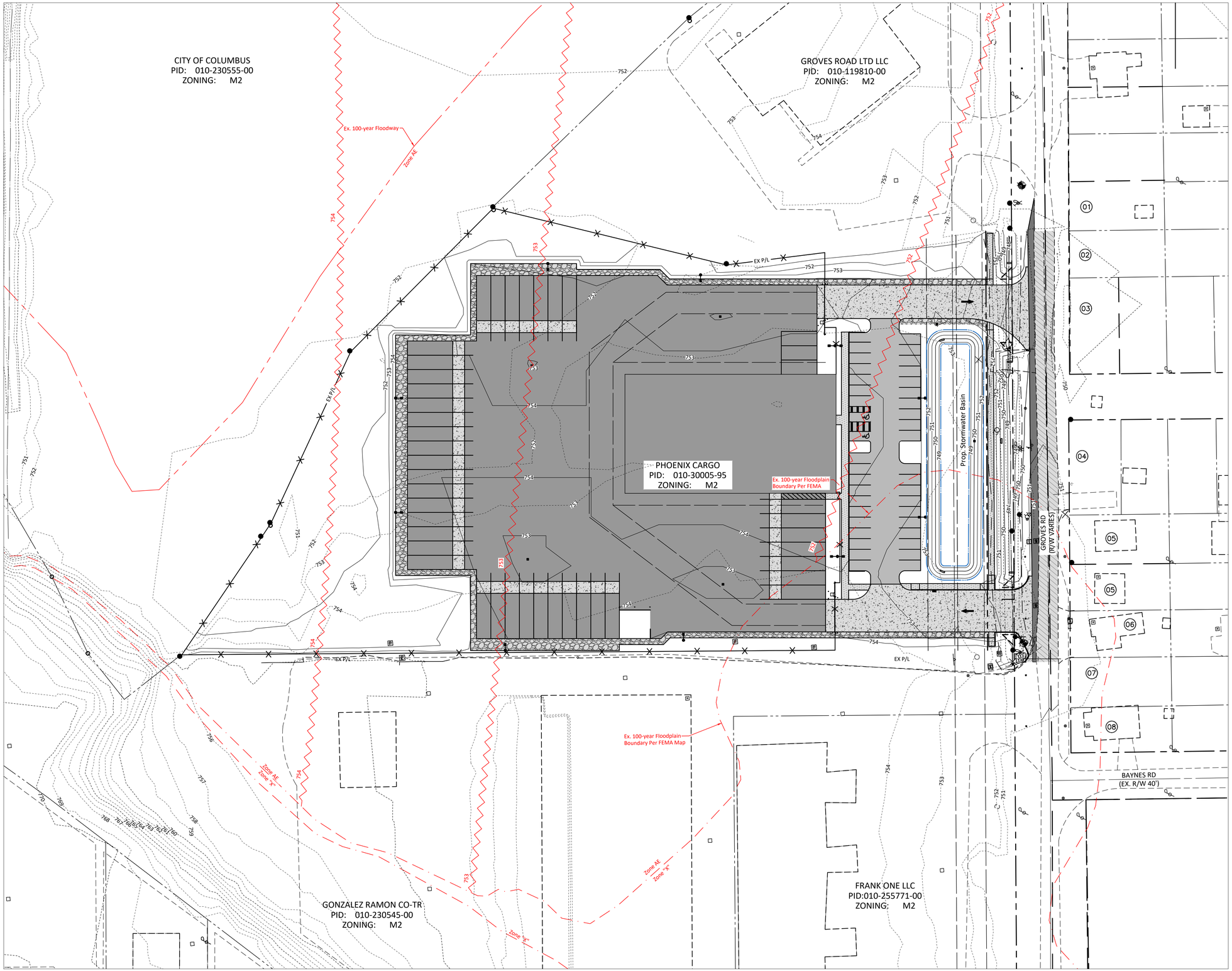

LEGEND

- Prop. Pavement Marking
- Prop. Aluminum Fence Gate
- Prop. Edge Of Drive
- Prop. Edge Of Gravel
- Ex. Roadway
- EX. R/W
- FLHA 500 - Year Floodplain
- FLHA Base Flood Elevations
- Prop. Fence
- Ex. Building
- Prop. Pond
- Ex. Drive
- Ex. Parcel Boundary
- Prop. Site Boundary
- Ex. Water Meter
- Ex. Storm Basin
- Ex. Power Pole
- Ex. Fire Hydrant
- Ex. Water Valve
- Ex. Sanitary Sewer Structure
- Prop. Heavy Duty Pavement
- Prop. Normal Duty Pavement
- Prop. Concrete Pavement
- Prop. Concrete Sidewalk

(01) HATFIELD ANTHONY
PID:010-01188-40
ZONING: R2

(02) CITY OF COLUMBUS
PID:010-01188-41
R2

(03) CITY OF COLUMBUS
PID:010-01188-42
ZONING: R2

(04) PRINCE PHILLIP & JOYCE
PID:010-01188-44
ZONING: R2

(05) PRINCE PHILLIP & JOYCE
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(06) NOTABLE HOUSES LLC
PID:010-01188-47
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(07) PRESTIGIOUS AUTHENTIC CREATIVE PAC LLC
PID:010-01188-48
ZONING: R2

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GRAPHIC SCALE
0 20 40 80

PERMIT SET
NOT TO BE USED FOR CONSTRUCTION

PLAN SET DATE
MAY 11, 2021

REVISIONS

MARK	DATE	DESCRIPTION

PHOENIX CARGO

CITY OF COLUMBUS, FRANKLIN COUNTY, OHIO
Preliminary SITE COMPLIANCE PLAN
FOR
PHOENIX CARGO SITE IMPROVEMENTS
Variance Exhibit 1 - Preferred/Minimal Impact

EMHT
Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers • Surveyors • Planners • Scientists
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

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1"=40'

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2021-0627

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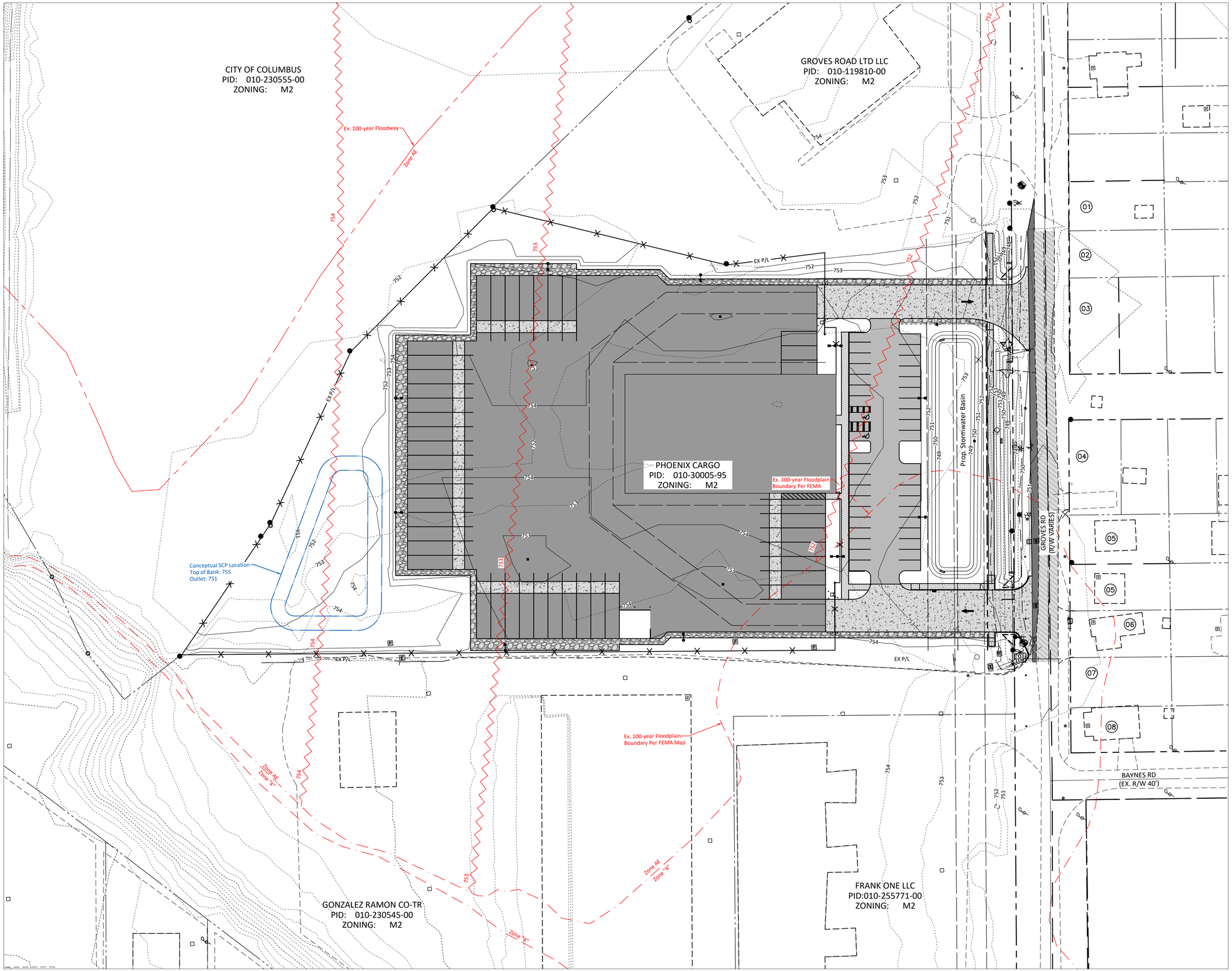
EXHIBIT 1



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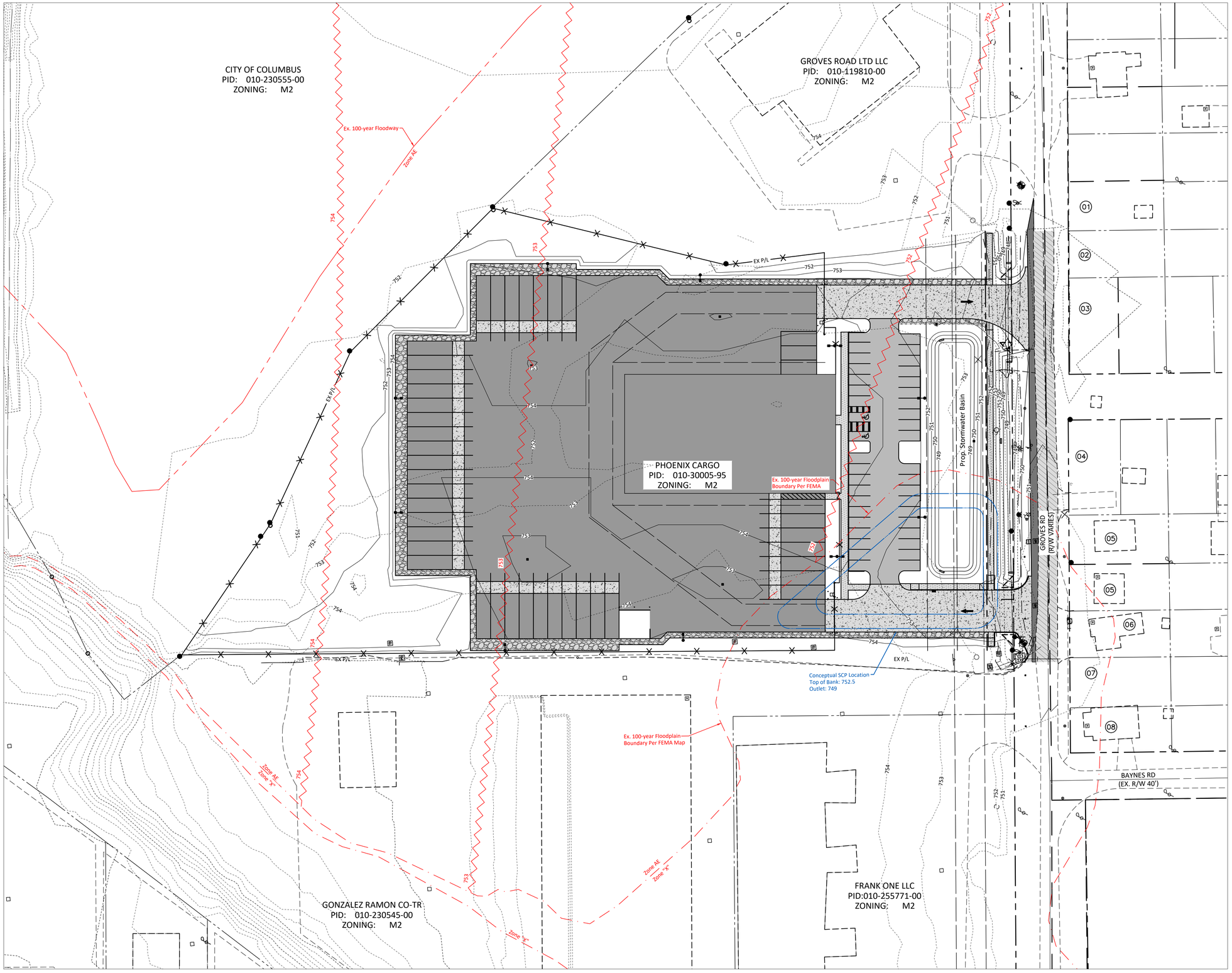

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Variance Exhibit 3 - No Impact

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