



Engineers, Surveyors, Planners, Scientists

April 21, 2022

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

Subject: Variance for Alkire & Norton Road Site Wet Basins

Dear Mr. Fedner,

We are requesting a Type II variance to the Stormwater Drainage Manual, Section 3.4.1 Dry and Wet Detention Basins. The project is known as Alkire & Norton Road Site and is located on the southeast corner of the intersection at Alkire Road and Norton Road within the City of Columbus. The project is adjacent to the Bolton Field airport. The site will be developing an existing agricultural field into an industrial/manufacturing site. There are two wet basins (01 and 03) being proposed with the Phase 1 CC-plan (CC-19505) that provide 4.04 acre-feet and 3.97 acre-feet of volume, respectively, for water quality and quantity control. An additional wet basin (04) will be added in the Full build condition of this site at approximately 6.73 acre-feet for water quality and quantity control of the northern portion of the site. The Full build layout of the site can be seen in Exhibit 1.

Wet basins are being proposed onsite to help mitigate for earthwork shortages and to reduce the amount of earthwork import the site will be required to do. Improvements are being proposed on the outfall ditch to allow the lowest possible stormwater outfall for the site. Additionally, the grading for the remainder of the site has been lowered as much as possible to reduce earthwork import. With the lower site elevations and wet basin excavation, the entire site is short approximately 48,000 cubic yards of earthwork. Due to the close proximity to Bolton Field airport, the Columbus Regional Airport Authority (CRAA) has reviewed the proposed plans to provide guidance on waterfowl mitigation for the proposed wet basins. The CRAA has advised that the proposed wet basins have side slopes that are 1.5H: 1V above normal pool for a horizontal distance of 4.5 feet and a vertical distance of 3.0 feet. The CRAA has also advised that the banks of the wet basins have a tall grass mixture planted to prevent a desirable habitat for waterfowl. The proposed slopes do not meet the City of Columbus's standard side slopes of 4H:1V. We are requesting permission to deviate from the standard side slopes in order to meet CRAA guidance for waterfowl prevention.

The Preferred Development Plan can be seen in Exhibits 3 and 5. The Preferred option proposes two wet basins in Phase 1 and one additional wet basin in the Full build with the steep side slopes per the CRAA guidance. All wet basins will still have a safety bench below normal pool per City of Columbus requirements. Table 1 summarizes the volume provided in each wet basin to meet water quality and quantity control requirements. Table 1 also provides the normal pool surface area provided in each basin. This option meets the CRAA guidance with the steep side slopes and would meet City of Columbus detention requirements.

Table 1 – Wet Basin Volume and Normal Pool Summary

Basin ID	Volume Provided Above Normal Pool (acre-feet)	Normal Pool Surface Area (acres)
Wet Basin 01	4.04	0.41
Wet Basin 03	3.97	0.75
Future Wet Basin 04	6.73	1.13

The Alternative Development Plan can be seen in Exhibits 2 and 4. The alternative option proposes that the wet basins all have the required 4H:1V side slopes, which meet City of Columbus side slope requirements. All wet basins will still have a safety bench below normal pool per City of Columbus requirements and would have the properties established in Table 1. Without the steep side slopes above normal pool, this alternative would require other means of waterfowl prevention to be compliant with CRAA guidance. This alternative proposes that bird balls be placed in the wet basins. Bird balls are physical waterfowl deterrents that would be required to cover the entire surface area of the basin normal pool area, plus 10% to account for movement of the balls. The bird balls for waterfowl prevention would cost approximately \$4 per square foot of surface area (Bird-X quote can be provided upon request). The two proposed wet basins and one future wet basin have a total normal pool surface area of 2.29 acres, or 99,753 square feet. Adding an additional 10% to the normal pool surface area would be 109,728 square feet for the site. This alternative would meet City of Columbus and CRAA requirements, but would create an additional \$438,910 cost to the project.

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 614-775-4235.

Thank you for your consideration on this matter.

Sincerely,

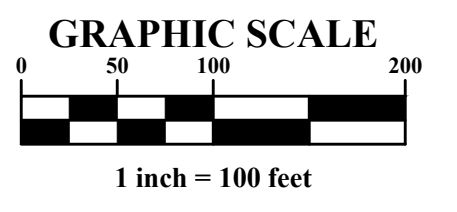
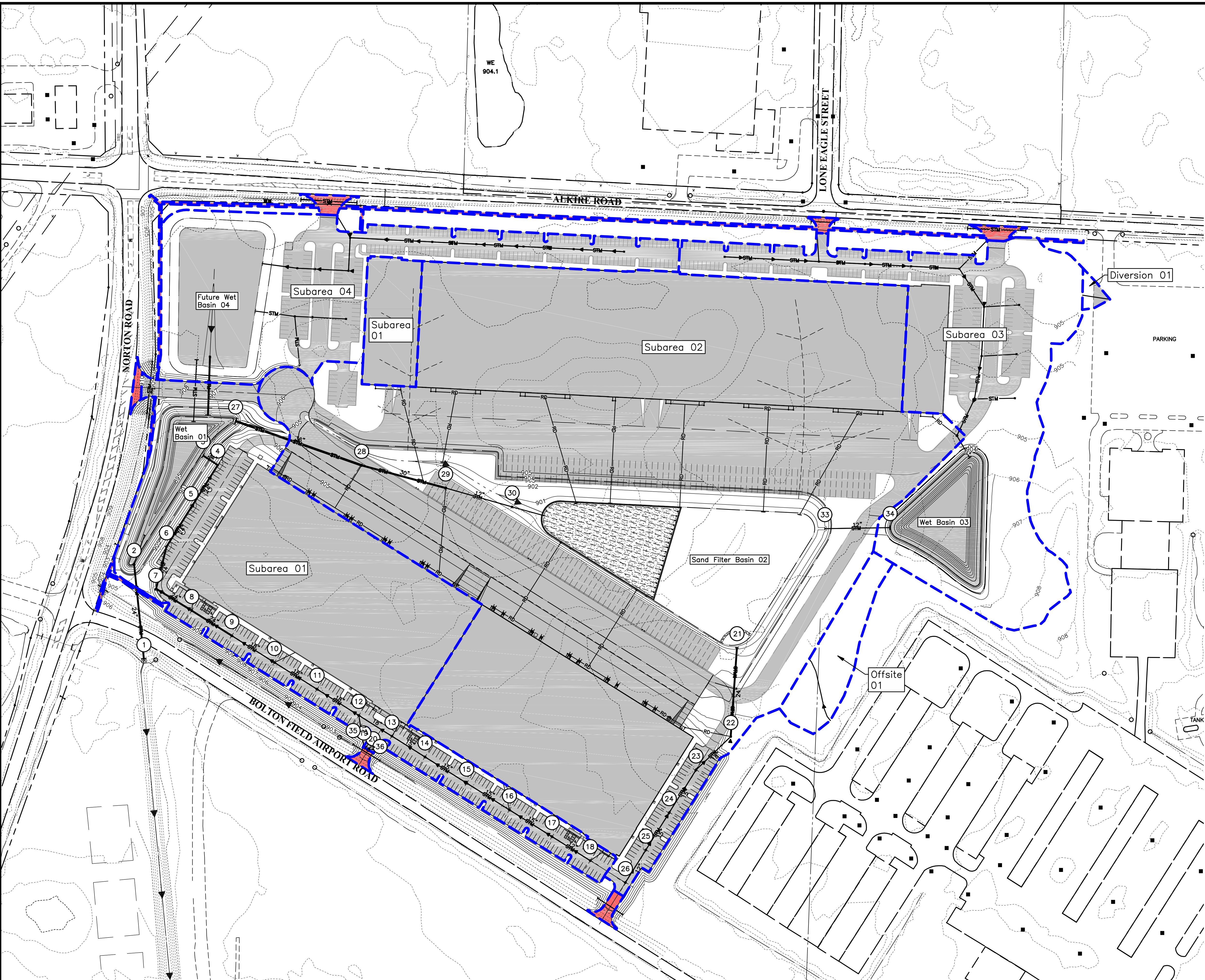


Mariah B. Anderson, P.E.



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LEGEND

- TRIBUTARY BOUNDARY
- TIME OF CONCENTRATION PATH
- IMPERVIOUS AREA
- UNDETAINED 01 IMPERVIOUS AREA
- SAND FILTER AREA

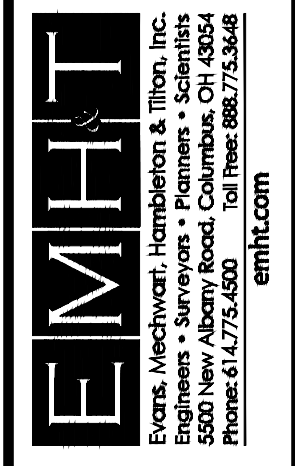
PROPOSED CONDITIONS

- SUBAREA 01
 TRIBUTARY AREA = 8.75 AC.
 RCN = 94
 TC = 13.0 MIN.
- SUBAREA 02
 TRIBUTARY AREA = 26.32 AC.
 RCN = 93
 TC = 8.2 MIN.
- SUBAREA 03
 TRIBUTARY AREA = 6.25 AC.
 RCN = 86
 TC = 10.2 MIN.
- SUBAREA 04
 TRIBUTARY AREA = 4.53 AC.
 RCN = 90
 TC = 9.7 MIN.
- UNDETAINED 01
 TRIBUTARY AREA = 0.55 AC.
 RCN = 98
 TC = 5.0 MIN.
- OFFSITE 01
 TRIBUTARY AREA = 0.73 AC.
 RCN = 74
 TC = 26.1 MIN.
- DIVERSION 01
 TRIBUTARY AREA = 0.07 AC.
 RCN = 83
 TC = 5.3 MIN.

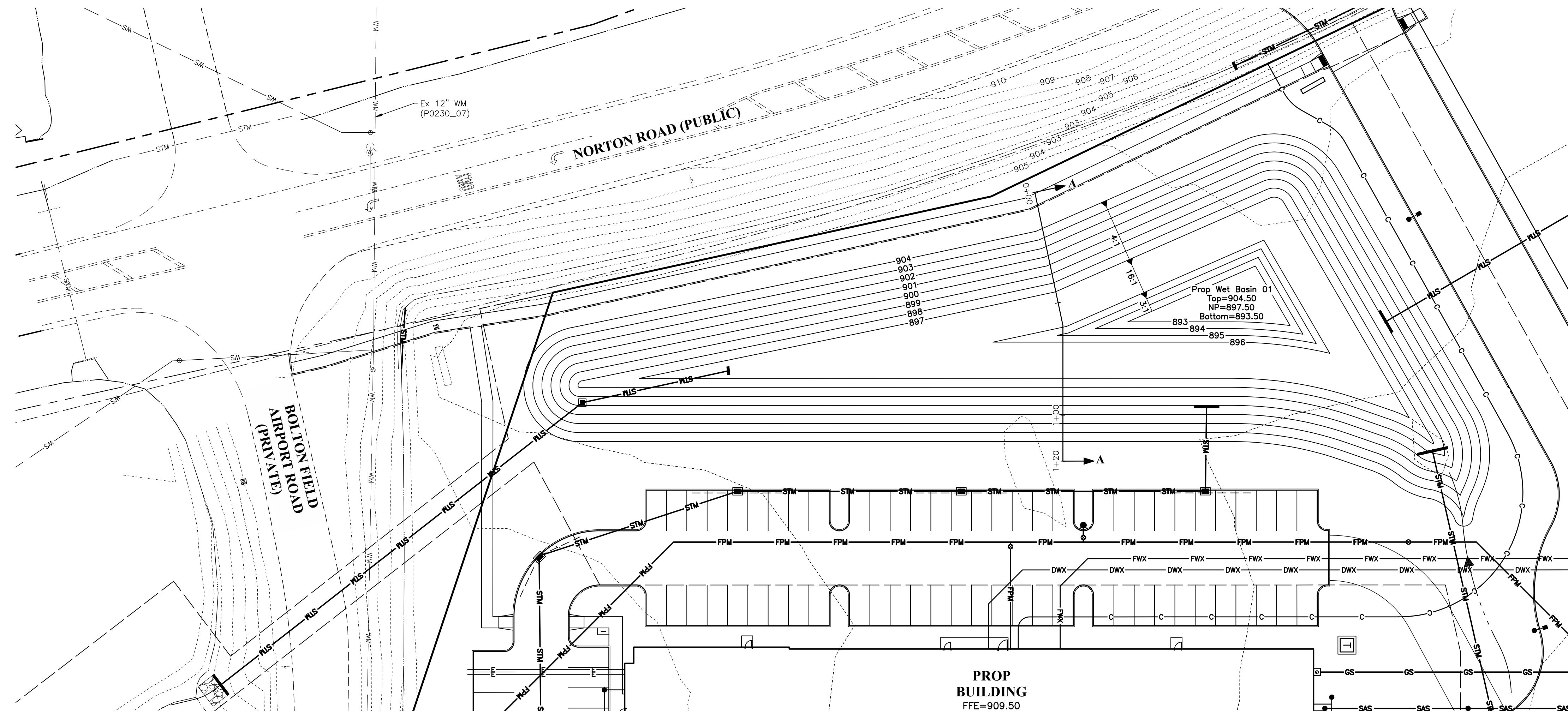
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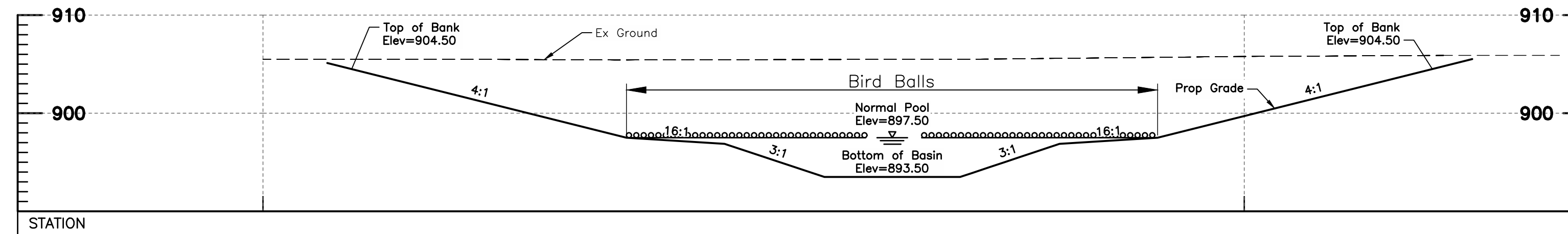
CITY OF COLUMBUS, FRANKLIN COUNTY, OHIO
 STORMWATER MANAGEMENT
 FOR
ALKIRE & NORTON ROAD SITE
FULL BUILD
 POST-TRIBUTARY MAP



DATE	April 21, 2022
SCALE	1" = 100'
JOB NO.	2021-0268
SHEET	1/5



WET BASIN 01 DETAIL
Scale: 1" = 30'



WET BASIN SECTION A-A
NO IMPACT
Scale: H: 1" = 10'
V: 1" = 10'

MARK	DATE	DESCRIPTION

REVISIONS

VANTRUST

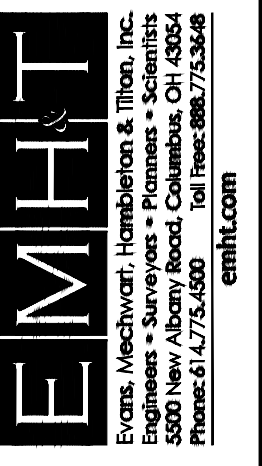
CITY OF COLUMBUS, FRANKLIN COUNTY, OHIO

FOR EXHIBIT

ALKIRE & NORTON ROAD SITE

XXXX NORTON ROAD

BASIN 01 VARIANCE EXHIBIT - NO IMPACT



DATE

April 21, 2022

SCALE

As Noted

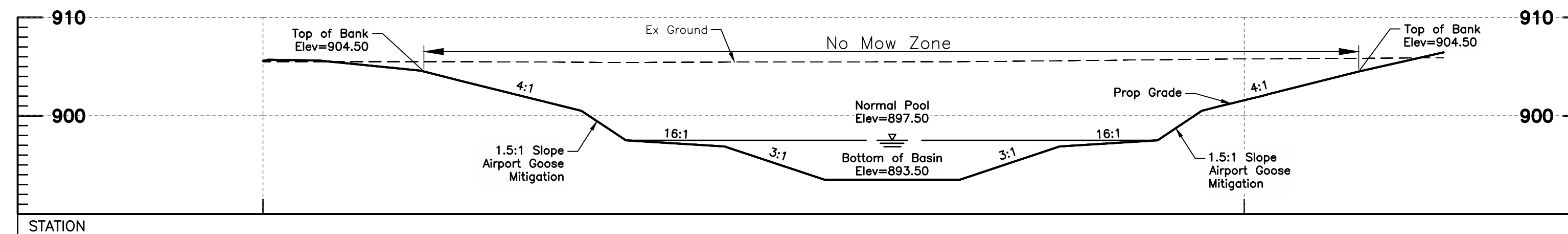
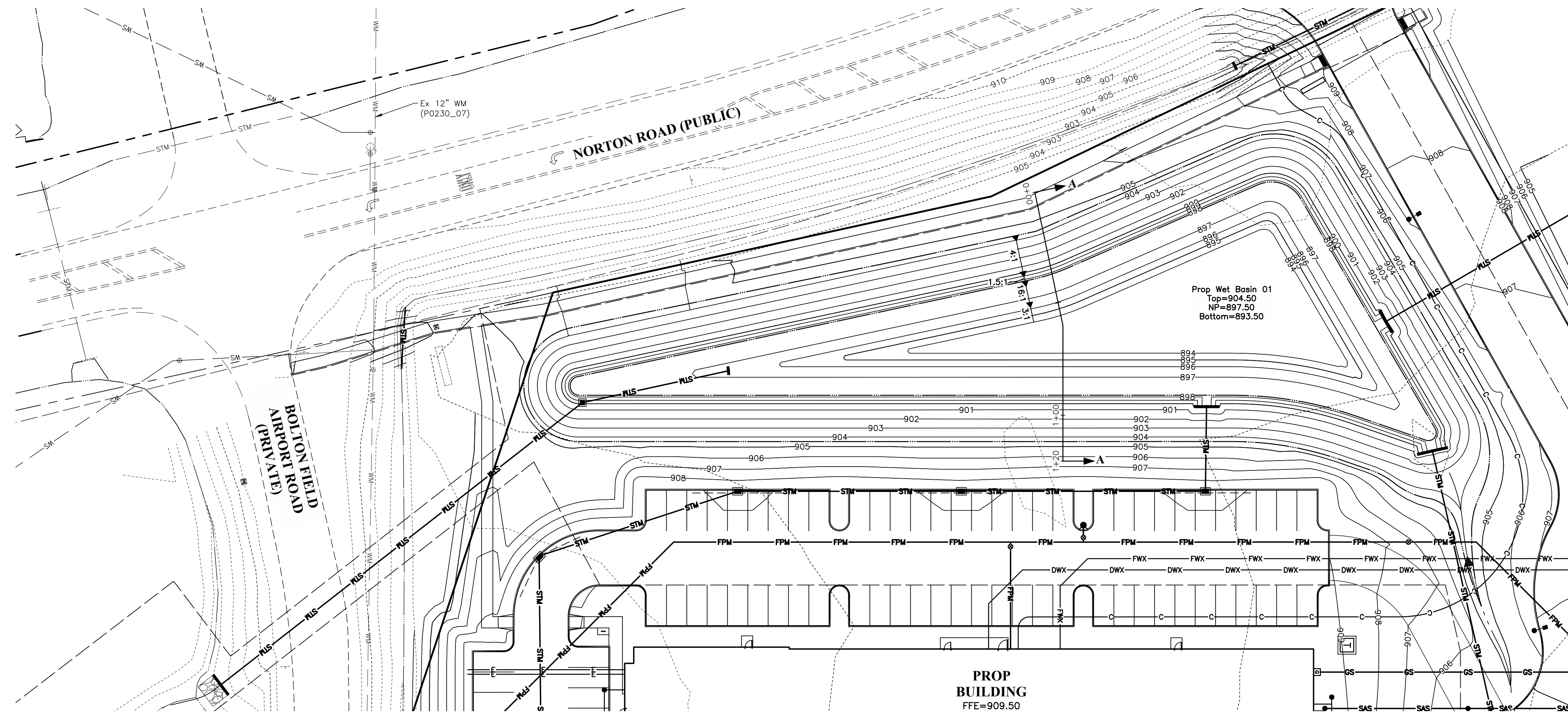
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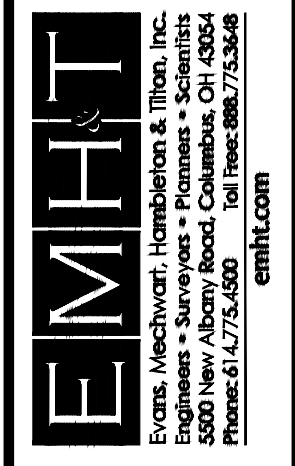
CITY OF COLUMBUS, FRANKLIN COUNTY, OHIO

FOR EXHIBIT

ALKIRE & NORTON ROAD SITE

XXXX NORTON ROAD

BASIN 01 VARIANCE EXHIBIT - PREFERRED



DATE

April 21, 2022

SCALE

As Noted

JOB NO.

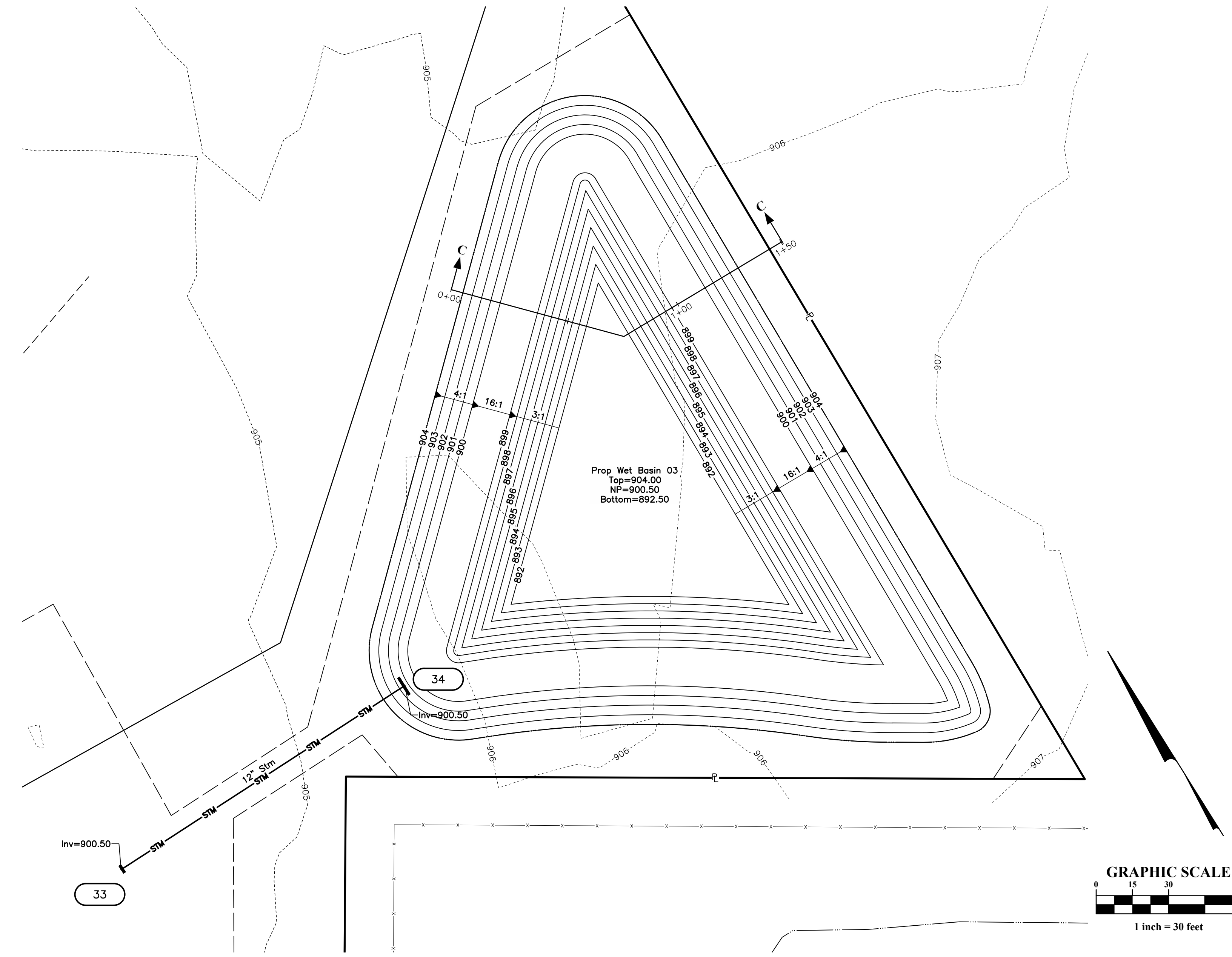
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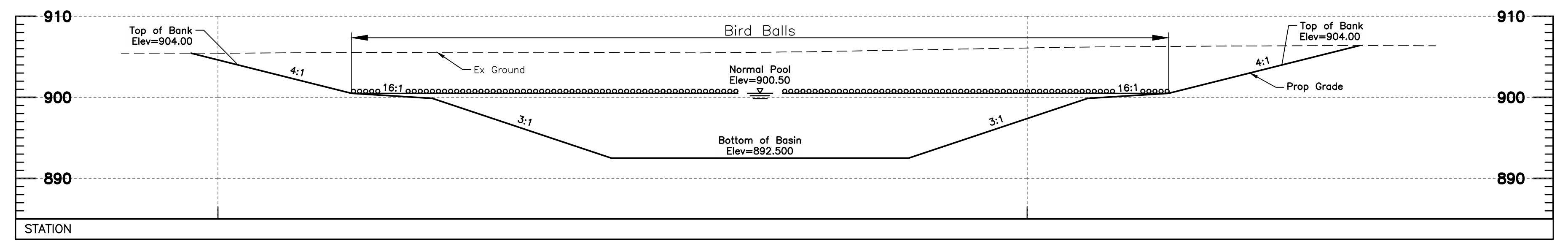
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WET BASIN 03 DETAIL
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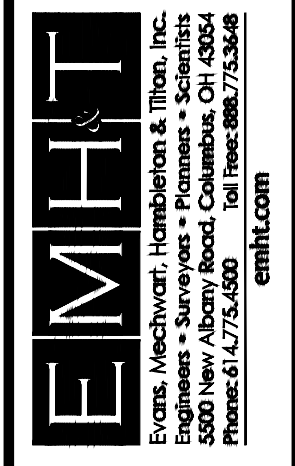


WET BASIN SECTION C-C
NO IMPACT
 Scale: H: 1" = 10'
 V: 1" = 10'

MARK	DATE	DESCRIPTION	REVISIONS

VANTRUST

CITY OF COLUMBUS, FRANKLIN COUNTY, OHIO
 EXHIBIT FOR
ALKIRE & NORTON ROAD SITE
XXXX NORTON ROAD
 BASIN 03 VARIANCE EXHIBIT - NO IMPACT

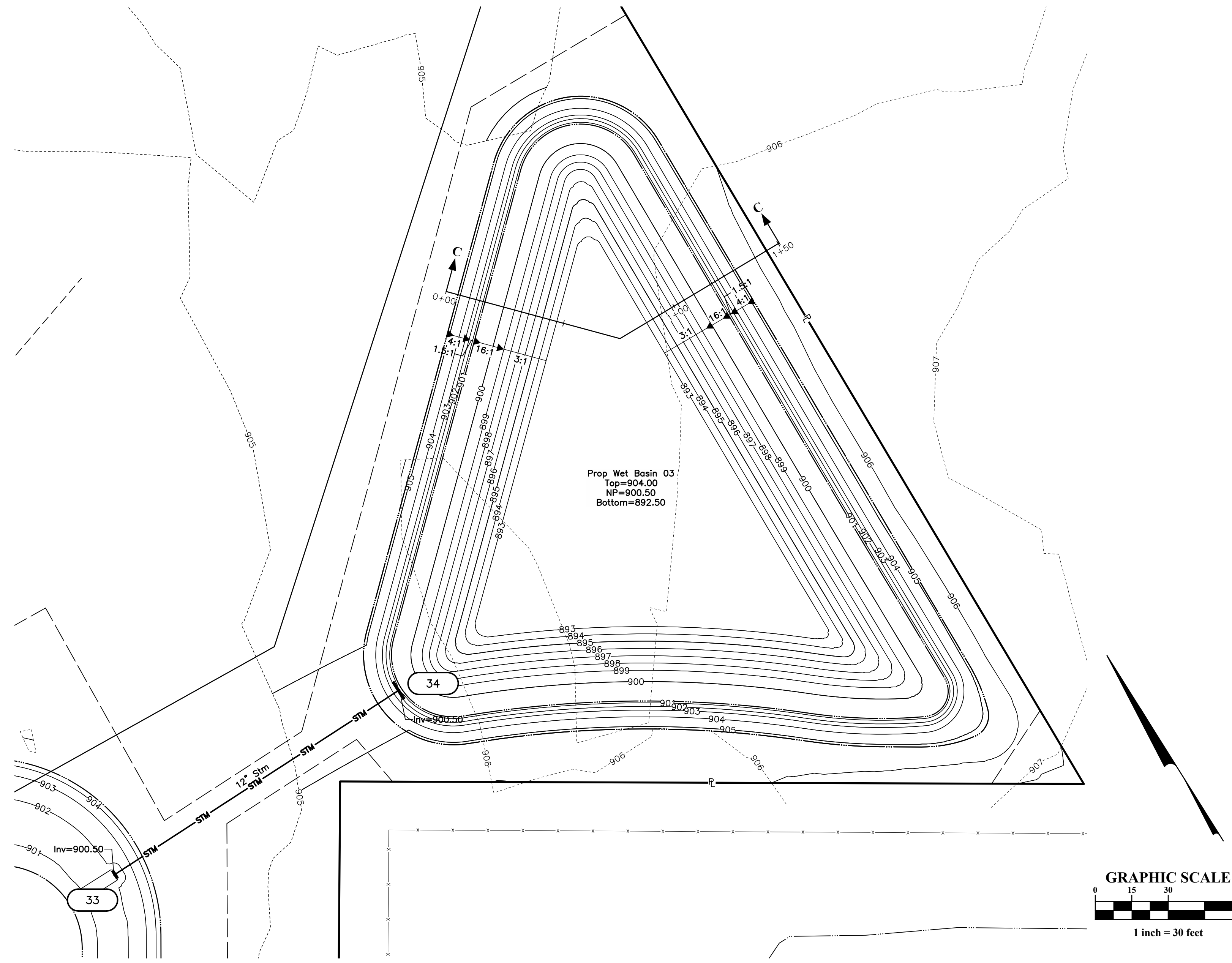


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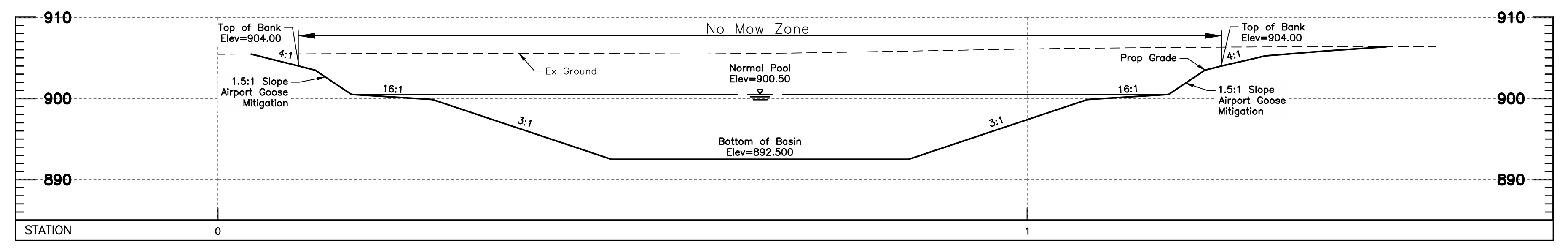
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JOB NO.
 2021-0268

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WET BASIN 03 DETAIL
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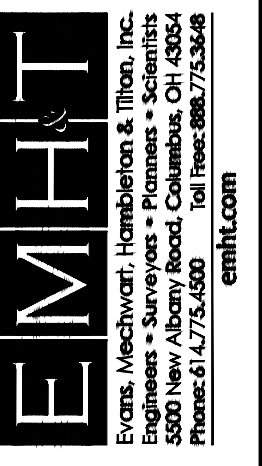


WET BASIN SECTION C-C
PREFERRED
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V: 1" = 5'

MARK	DATE	DESCRIPTION	REVISIONS

VANTRUST

CITY OF COLUMBUS, FRANKLIN COUNTY, OHIO
FOR EXHIBIT
ALKIRE & NORTON ROAD SITE
XXXX NORTON ROAD
BASIN 03 VARIANCE EXHIBIT - PREFERRED



DATE
April 21, 2022

SCALE
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