



# HARTMAN ENGINEERING

150 South Parkway Drive Delaware, Ohio 43015  
Phone/Fax: (740) 548-4702

May 9, 2016

Mr. Greg Fedner, PE  
Private Development Section Manager  
Division of Sewerage and Drainage  
City of Columbus  
910 Dublin Road  
Columbus, OH 43215

Re: Stormwater Drainage Manual Variance Request  
Hoover Reservoir, Oxbow Road Boat Ramp Improvements

Dear Mr. Fedner:

Hartman Engineering is under contract with the Ohio Department of Natural Resources (ODNR) to prepare construction documents for a proposed boat ramp improvement project at Hoover Reservoir. The project site is located in Delaware County on land owned by the City of Columbus (COC). ODNR is funding the design and construction of the project through Federal gas tax funds and has obtained permission from COC to construct the project, but COC will be responsible for future maintenance of the infrastructure. The COC Department of Public Utilities is partnering with the COC Department of Recreation and Parks in reviewing and approving the proposed improvements.

## Existing Conditions

There is currently a designated ramp facility at the site but the "ramp" is essentially the lake bottom with no paved or gravel surface and no permanent boarding docks. There is one floating dock at the site which must frequently be relocated as the lake level fluctuates to provide boater access. Access to the site from Oxbow Road consists of an approximately 1200-foot long, single-lane gravel drive with a couple pull-off locations to accommodate passing of vehicles. A gravel parking lot and ramp maneuver area are located near the ramp.

## Proposed Conditions / Preferred Alternative

As shown on the enclosed drawings, the project as currently proposed includes providing the following: a 20' wide asphalt access drive from the end of Oxbow Road to the ramp area with concrete curbs on each side, car-only and car-trailer (boat trailer) asphalt parking areas, a concrete single-lane boat launch ramp with adjacent floating boarding docks anchored by pipe piles, rock shoreline protection near the ramp and the car-trailer parking lot, and a 5' wide concrete ADA accessible sidewalk along the north side of the access drive to facilitate access to popular fishing areas along the drive and to connect the proposed parking lot area with an existing COC parking lot on the west side of the overall site near Oxbow Road.

A 404 Nationwide permit from the Corps of Engineers has been obtained for the preferred alternative, and the OEPA has also been contacted regarding obtaining the necessary 401 Water Quality Certification.

## Full Compliance / No-Impact Alternative

As described more fully below, essentially the entire site is located within a FEMA designated floodplain and the bulk of the development site is within a COC Stream Corridor Protection Zone (SCPZ). Thus construction of any major component of the proposed project is not possible without some impact to the SCPZ, and the full compliance alternative is a no build scenario.



Mr. Greg Fedner, PE  
May 9, 2016  
Page 2

## Need for Variances

Based on the FEMA FIRM maps, essentially the entire proposed development site is located within Zone A and thus within the 100-year floodplain for Hoover Reservoir. Only a few small areas in the site area are outside of the FEMA designated floodplain, as can be seen from the attached proposed development plans. Since the floodplain area is designated as Zone A, the actual 100-year flood elevation has not been determined by FEMA, but pool level records obtained from COC Division of Water for the last 25 years indicate the area has been inundated several times during that period and thus the FEMA floodplain designation appears to be reasonable.

A significant portion of the area is also defined by the COC Stormwater Drainage Manual (SWDM) as being in a Stream Corridor Protection Zone (SCPZ). Item 3 of Section 1.3.1 of the SWDM indicates the SCPZ shall be established as being 50 feet from the top of bank for fourth order streams or larger and it is understood this criterion also applies to the banks along a lake such as Hoover Reservoir. The SCPZ for the proposed development site based on this criterion is also shown on the attached development plans. Again, as can be seen from these plans, only a small portion of the proposed development site is outside of the SCPZ as defined above. Table 1-1 of the SWDM lists numerous facilities and activities that are prohibited within an SCPZ. Since many of these are needed to construct the proposed project, various variances will be needed to allow some of the currently prohibited facilities and activities.

As noted above, no construction of any major component of the proposed project is possible without some impact to the SCPZ. Thus various variances from the criteria specified in the SWDM will be needed in order to construct the project. These variances are summarized below.

1. **Variance for Filling, Excavation, and Change in Topography within an SCPZ.** Some excavation will be required to remove existing topsoil and subgrade material in the area of the proposed parking lot and fill will be required to allow the parking lot to properly drain. Fill will also be needed to widen the access road to facilitate safer access to the ramp area and to provide an ADA accessible sidewalk and fishing area along the access road. Rock slope protection fill material is also proposed along the shore line adjacent to the ramp and car-trailer parking lot to protect the area from future erosion. No mitigation is proposed for any of these activities for reasons explained in Variance 5 below.
2. **Variance for Constructing Parking Lots within an SCPZ.** A paved access drive and paved parking lot are proposed to better accommodate users and facilitate maintenance of the area. No mitigation is proposed for this activity.
3. **Variance for Installing Signs and an Entrance Gate within an SCPZ.** Additional signs are proposed to better control parking and traffic flow and an entrance gate is proposed to allow COC to close access to the area during periods of high pool levels, etc. No mitigation is proposed for this activity.
4. **Variance for Removing Trees within an SCPZ.** Existing trees along the north side of the access drive will need to be removed to allow for widening of the drive. COC Recreation and Parks has agreed to cut the trees with in-house personnel if desired by ODNR. Additional trees will be planted in areas immediately adjacent to the development to compensate for those removed in accordance with the COC's Tree Protection and Mitigation Policy.



Mr. Greg Fedner, PE  
May 9, 2016  
Page 3

**5. Variance from Compensatory Storage Requirements.** A variance is also being requested to waive the requirement to provide any compensatory storage, as specified in Section 1.4 of the SWDM, for the proposed development. That section reads in part: *“The Division of Sewerage and Drainage prohibits the filling of FEMA designated floodplains without compensation due to potential for problems associated with flooding, erosion, and environmental impact. With the exception of fills associated with widening an existing public roadway within a FEMA designated Flood Hazard Area, fill within the FEMA delineated 100-year floodplain outside of the Stream Corridor Protection Zone must be compensated by removing an equivalent volume of material or greater”.*

Based on the information from the SWDM cited above, it is understood that if the access road is considered a public road no compensatory storage would be required for the proposed fill to widen that road, which is approximately 1800 cubic yards of fill above the normal pool level, but the proposed development will still require more than 1500 cubic yards of fill in the parking lot area and along the adjacent shoreline. The proposed fill in the parking lot area will provide proper drainage of the lot and reduce the frequency of flooding of the lot by high pool levels, and the rock fill along the shoreline will reduce the potential for additional shoreline erosion in the site area.

As noted above, essentially the entire area of the proposed improvements and adjacent areas are within the FEMA designated 100-year floodplain. Thus nearly all fill activity will be within a FEMA designated floodplain. Furthermore, surrounding areas consist of wetlands and wooded areas, some of which are known to be unique bird nesting areas. Based on previous conversations with personnel from COC, excavation in surrounding areas to compensate for the proposed fill within the floodplain would not be acceptable, and thus to provide the specified compensatory storage an off-site location within the reservoir area would be required.

However, given the size of Hoover Reservoir compared to the amount of fill proposed, it is not conceivable that the proposed fill has any potential to create *“problems associated with flooding, erosion, and environmental impact”* as noted in the SWDM and cited above. The surface area of Hoover Reservoir at the normal pool level is more than 3200 acres and the total storage in Hoover Reservoir between the normal pool level and the estimated 100-year flood elevation, based on the FEMA designated 100-year floodplain, is more than 25,000,000 cubic yards. Thus the placement of 1500 to 3300 cubic yards for the proposed development will have an imperceptible impact on the 100-year flood elevations in Hoover Reservoir, will not contribute to any shoreline erosion within the lake area or along Big Walnut Creek downstream of the reservoir, and will have no adverse environmental impact either within the reservoir or downstream of the reservoir. Thus it is respectively requested that the compensatory storage requirement be waived for this project and that no compensatory storage be required at an off-site location.

**6. Variance from COC Stormwater Management Requirements.** The total disturbed area for the proposed project is about 3 acres, including the access road and the parking lot area. An approximate comparison of existing or pre-developed and post-development conditions is provided in the following table.

<u>Land Use</u>	<u>Existing Conditions</u>	<u>Post-Development Conditions</u>
Impervious Area	1.5 Acres	2.0 Acres
Non Impervious Area	1.5 Acres	1.0 Acres



Mr. Greg Fedner, PE  
May 9, 2016  
Page 4

Based on the above conditions, the existing or pre-developed conditions 1-year runoff is 1.00" and the post-development 1-year runoff is 1.27". Thus the increase in runoff volume is 27% and the critical storm is the 5-year storm event. Based on preliminary calculations, approximately 15,000 cubic feet of storage would be required to meet the SWDM criteria for stormwater quantity control.

It is not possible to provide a stormwater management facility of this size at the site outside the FEMA designated floodplain boundaries, as stipulated in SWDM Section 3.1, because, as noted above, almost the entire development site is within the Hoover Reservoir 100-year flood plain. Since all runoff from the site directly discharges into Hoover Reservoir, and since the site area (3 acres) is substantially smaller than the Hoover Reservoir normal pool surface area (more than 3000 acres), as noted above, the impact of runoff from the site, either instantaneous without on-site detention or more slowly metered out with detention, will have no perceptible impact to flood elevations in the reservoir. Thus a waiver of the requirement to provide stormwater quantity detention at the site is also requested for the proposed development. However, to mitigate for the loss of stormwater quantity storage at the proposed development site, stormwater detention is proposed to be provided at another City-owned off-site location, along with stormwater quality storage, as described in the following paragraphs.

Due to limited space on site outside the 100-year floodplain, as noted above, it is also not possible to provide a facility meeting the required SWDM stormwater quality criteria on site. Thus the primary stormwater quality controls are proposed to be provided at the off-site location described in the following paragraphs. But to provide some limited on-site stormwater quality control, runoff from the parking lot will be directed to grassed areas adjacent to the parking lot before discharging into the lake.

For the off-site stormwater management facilities, two sites near the west end of Hoover Dam have been identified and coordinated with the Columbus Division of Water. These sites are shown on the enclosed exhibit. At one site it is proposed to divert a portion of the flow from an existing 36" storm sewer outfall to a new detention basin located on the east side of Sunbury Road just south of the dam. This facility will be sized to provide as much of the stormwater quality and quantity storage requirements for the proposed development as space at this site will permit. The tributary area to this storm sewer outfall is about 25 acres, and there are currently no stormwater management controls within this tributary area. The channel below this storm sewer outfall is currently experiencing significant erosion, so diversion of some flow from the outfall to an adjacent detention basin may reduce the erosion in the channel.

The other site is also located east of Sunbury Road but north of Hoover Dam. As shown on the attached exhibit, the City previously constructed a water quality basin in this general area, but it is proposed to potentially expand this basin to provide additional water quality storage at this site and to help meet the water quality and quantity storage requirements for the proposed ramp development site.

Each site will be further evaluated during detailed design to determine which site provides the greatest overall stormwater quantity and quality benefits given existing site constraints. The area available at the selected site will be used to the maximum extent possible to provide a stormwater management facility that meets or exceeds the size requirements for the proposed development.



## *HARTMAN ENGINEERING*

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Mr. Greg Fedner, PE  
May 9, 2016  
Page 5

As evident from the above information, several variances from the criteria listed in the City Stormwater Drainage Manual will be required to construct the proposed project. Thus, in summary, due to the above considerations, we respectfully request that the variances summarized above be granted for the preferred alternative.

Thank you for your cooperation. Please call me at 740 548 4702 or email me at [dhartman4@msn.com](mailto:dhartman4@msn.com) if you have any questions or if you need additional information.

Sincerely,

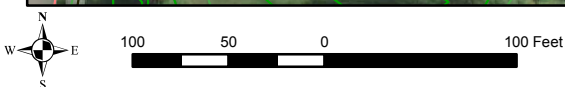
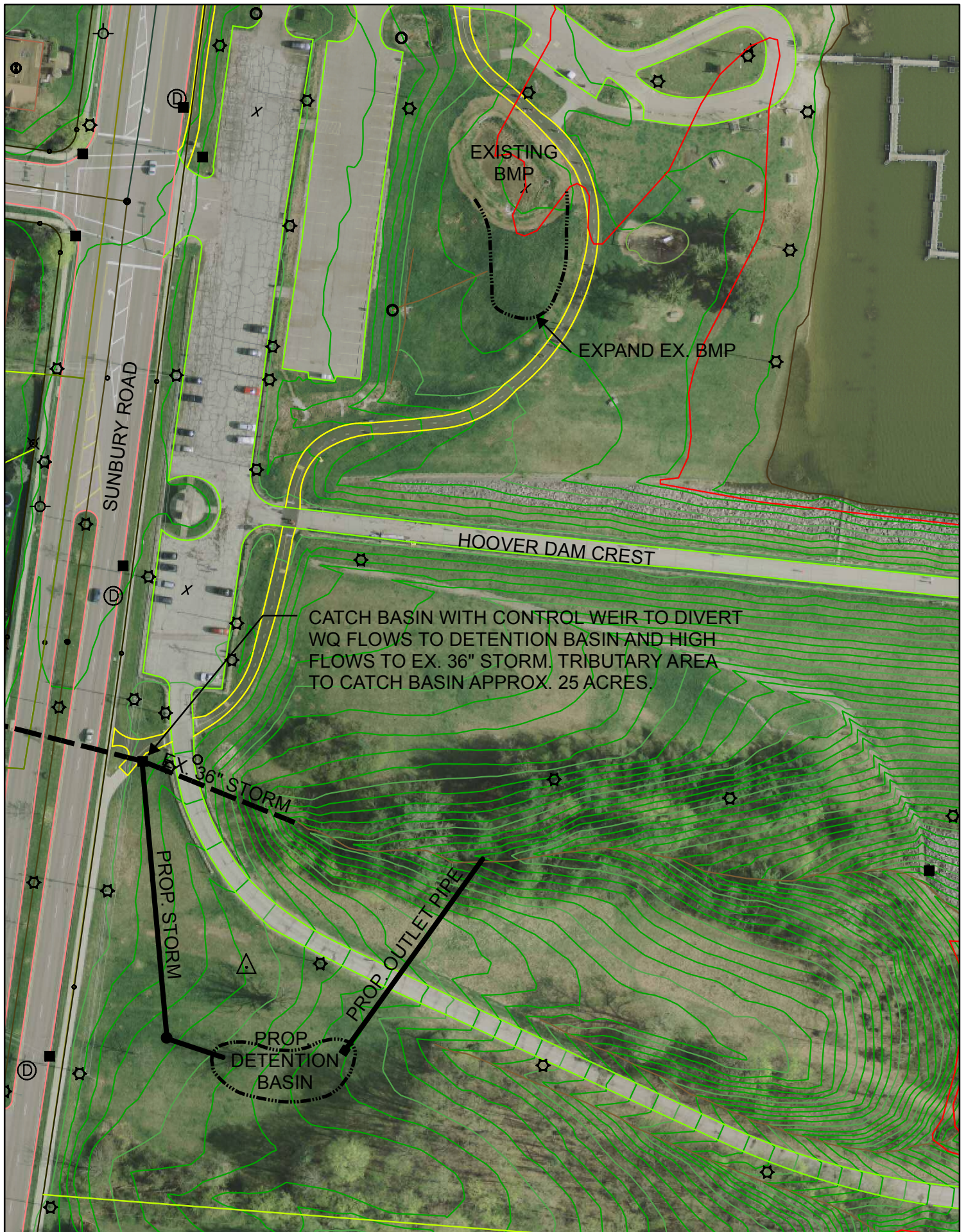
HARTMAN ENGINEERING

Doyle E. Hartman, P.E.

Enclosures

Cc: Gary Harsanye, ODNR Engineering

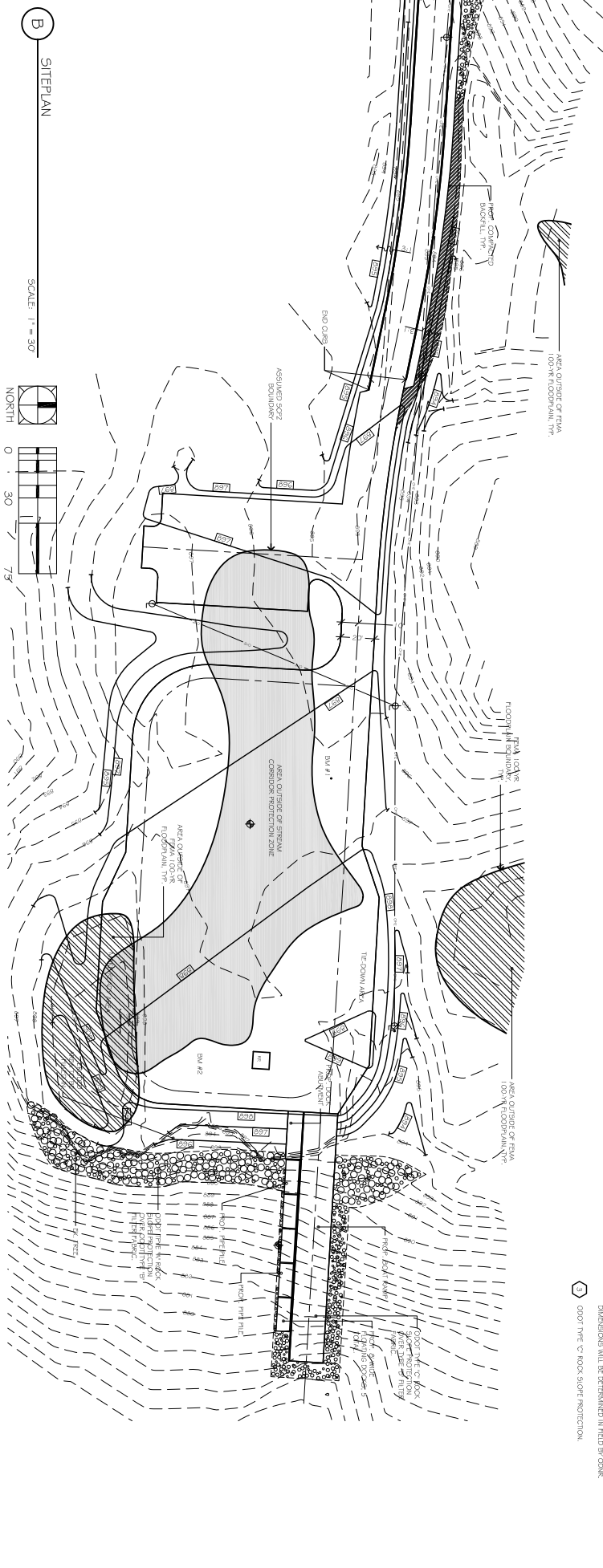
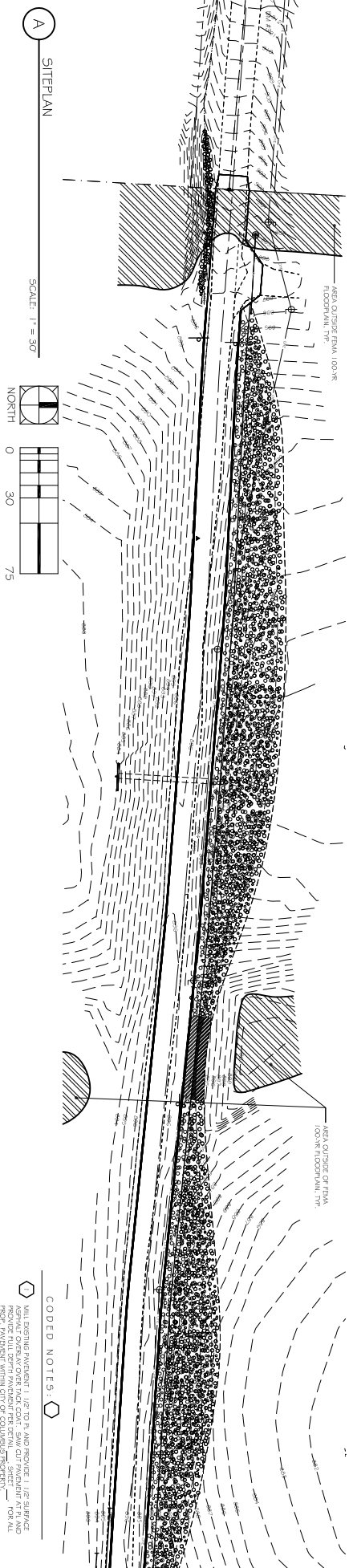




HOOVER DAM BMP SITES





CODED NOTES: ☐

1. ALL EXISTING PAVEMENT 1" 1/2" TO 2" PL. AND PROVIDE 1" 1/2" SURFACE ASPHALT OVERLAY OVER ROCK COARSE SAND FILL PAVEMENT IN PL. AND FILL EXISTING PAVEMENT WITHIN CITY OF COLUMBIA TOWNSHIP. FOR ALL
2. PLACE DODOT TYPE "C" ROCK OVER DODOT TYPE "B" FILTER FABRIC. REINFORCE DODOT TYPE "C" NECESSARY TO PROPERLY PLACE FILTER FABRIC AND ROCK. REPT APPROX. 5 MFT X 100 LONG X 2' DEPT. ACTUAL DIMENSIONS WILL BE DETERMINED BY CONDR.
3. DODOT TYPE "C" ROCK, SLOPE PROTECTION.





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Dear Mr. Fedner:

Enclosed for your consideration is a request for a variance from the City of Columbus Stormwater Drainage Manual (SWDM) for a proposed boat ramp improvement project at Hoover Reservoir. The project site is located in Delaware County on land owned by the City of Columbus (COC).

The proposed project is being designed through a contract between the Ohio Department of Natural Resources (ODNR) and Hartman Engineering. ODNR has obtained permission to access the site from the COC and will bid and fund construction of the project, but COC will be responsible for future maintenance of the infrastructure. The COC Division of Water is partnering with the COC Department of Recreation and Parks in reviewing and approving the proposed improvements.

The following items are enclosed for your review:

1. 2 Copies of the Variance Request Letter.
2. 2 Copies of Exhibits.
3. 1 Copy of CD with above submittal information.

Thank you for your cooperation. Please call me at 740 548 4702 or email me at [dhartman4@msn.com](mailto:dhartman4@msn.com) if you have any questions or if you need additional information.

Sincerely,

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Doyle E. Hartman, P.E.

Enclosures

Cc: Gary Harsanye, ODNR Engineering