CREW SC TRAINING COMPANY, LLC

COLUMBUS CREW TRAINING FACILITY (CC-18728)

1 Black & Gold Boulevard Columbus, Ohio 43211

Variance Request and Report to the Stormwater Management Report

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Variance Request and Report to the Stormwater Management Report

Crew SC Training Company, LLC Columbus Crew Training Facility (CC-18728)

Purpose

The purpose of this report is to request a Type II Non-Stream Protection Variance from the City of Columbus' Stormwater Drainage Manual for the **Columbus Crew Training Facility**, located at 1 Black & Gold Boulevard in Columbus.

Based on the constraints of the site and the existing conditions of the detention basin, we are requesting the following variances:

Variance to Section 3.2.4 of the City of Columbus Stormwater Drainage Manual to allow water depth more than 1.0 feet in parking lots prior to flood routing.

Variance to Section 3.2.3.1 of the City of Columbus Stormwater Drainage Manual to allow for a non-compliant emergency overflow spillway.

Variance to Section 3.2.3.1 and 3.2.3.2 of the City of Columbus Stormwater Drainage Manual to allow side slopes within and adjacent to the detention basin to be 3 (H) to 1 (V) or flatter.

The site cannot meet the above requirements due to the following constraints:

- 1) The existing conditions for the detention basin, overland flow and flood routing are such that the 79.3-acre site sits in a bowl. Runoff from the parking lots south of Black and Gold Boulevard are tributary to the existing detention basin but do not have an overflow path to it. The current overflow path is to the parking lots south of Black and Gold Boulevard and beyond. In order to have a flood routing path for the entire site without exceeding more than a foot of ponding in parking lots, approximately 25 total acres of property outside of the Crew Training Facility project limits will be impacted, including redevelopment and regrading of 20 acres of State of Ohio Fairgrounds parking. This would require a significant amount of financial investment and disruption to normal State of Ohio Fairgrounds operations to provide the embankment within the offsite areas.
- 2) The existing detention basin thus does not have a compliant emergency overflow path as the water will back up through the storm sewer system and discharge of existing catch basins in the parking lots to the east. The detention basin will reverse flow to these parking lots and the parking lots will flood route prior to the detention basin overtopping. This creates ponding of up to 3.39' of water in the lowest areas of the parking lots before flood routing occurs. In order to have a compliant overflow path and spillway, approximately 5 acres of existing parking south of Black & Gold will need to be redeveloped.
- 3) The existing detention basin is sloped at 3 (H) to 1 (V) or flatter. With the relocation of the basin, it is not ideal to keep a 4 (H) to 1 (V) slope as the intent of the relocation is to minimize the disturbance footprint in line with the negotiations between Crew Ownership, State Governor's Office, and the State of Ohio Fairgrounds. Constructing a detention basin using 3:1 slopes preserves approximately 200 parking spaces for use by the State of Ohio

Fairgrounds. Saving the parking spaces is the most critical component of the aforementioned negotiations.

Per the City of Columbus guidelines for a Type II Non-Stream Protection Variance, three alternatives for development are required to be presented. They are as follows:

• Alternative 1 – Full Compliance

A site plan has been roughed in to show a detention basin design that would meet the 4 (H) to 1 (V) slopes, with a compliant emergency spillway and overflow path by utilizing an engineered overland emergency spillway channel. This option greatly increases the footprint of the detention basin and removes approximately 200 vital parking spaces currently in use for State of Ohio Fairgrounds events critical to the local economy. It also impacts approximately 25 acres of property outside of the Crew Training Facility project, including redevelopment and regrading of 20 acres of State of Ohio Fairgrounds parking to ensure the parking areas to the south of Black and Gold Boulevard do not pond with more than 1' of water. The 5 acres of property south of the proposed detention basin will be redeveloped to create a 625-foot-long emergency spillway and overflow path. This in turn impacts additional parking on site.

Alternative 2 – Slope Compliant

O An alternative site plan has been provided showing a detention basin design that would meet the 4 (H) to 1 (V) slope requirement while keeping a non-compliant emergency overflow. This alternate greatly increases the size of the detention basin and results in the loss of approximately 200 vital parking spaces currently in use for State of Ohio Fairgrounds events critical to the local economy.

• Alternative 3 – Preferred

The preferred site plan has been shown using 3 (H) to 1 (V) side slopes with a non-compliant emergency overflow. The preferred detention basin would provide the least impact on site parking while conforming to all the guidelines provided by the City of Columbus Stormwater Drainage Manual with the exception of the variances being requested in this document.

Section 1 - Variance Request

Existing Conditions

The existing dry detention basin, located west of MAPFRE Stadium, receives stormwater from the 79.3-acre site via a storm sewer system within the parking lots surrounding MAPFRE Stadium. A majority of the site slopes toward the detention basin. The outlet for the site is an existing 72" storm sewer (RP982) running north of Black & Gold Boulevard from east to west. It exits the site to the west, flowing under East 20th Avenue and the Norfolk and Western Railroad. Current site conditions do not have a compliant emergency overflow spillway nor compliant 4 (H) to 1 (V) slopes. Flood routing is also non-compliant as the detention basin will overflow into parking lots to the east and pond up a max depth of 3.39' before flood routing to the south occurs.

Proposed Conditions

The **Columbus Crew Training Facility** is a re-development project that will disturb approximately 25 acres. Approximately 2,272,089 sf/51.53 acres of impervious area will be added to the site as compared to the predevelopment site dated 1997, prior to MAPFRE

Stadium. It is therefore subject to the requirements of the April 2018 Ohio EPA General Permit for Storm Water Discharges Associated with Construction Activity, and the August 2012 City of Columbus Stormwater Drainage Manual.

The proposed project includes relocating and expanding the existing extended dry detention basin, rerouting the existing storm sewers to the new detention basin, and providing new storm sewer systems for the fields, training facility and temporary parking lot. The proposed system will tie into the existing system and outlet into the new extended dry detention basin. A series of outlet control structures, which connect back into the existing 72" storm sewer, will control water quality, critical storm, and 100-year outflows to meet the Water Quality and Quantity requirements of the permit and manual. It is important to note that relocating the detention basin south of Black and Gold Boulevard clears the way for not only the Columbus Crew Training Facility but also for the future Community Sports Park (Refer to Appendix D, Crew Training Facility & Community Fields Site Rendering).

Section 2 – Proposed Alternatives

Per the City of Columbus guidelines for a Type II Non-Stream Protection Variance, three alternatives for development of this project are presented in this report. They are as follows:

Alternative 1 – Full Compliance Site Plan

In order to meet the full intent of the Stormwater Drainage Manual, water depth before flood routing in parking areas cannot exceed 1'. This is not financially responsible as it would require disturbance to approximately 25 acres and regrading and redevelopment of approximately 20 acres of the site, largely paved, with an average fill of 3'. Additionally, the detention basin side slopes must be limited to be (4) H to (1) V or flatter. This Full Compliance Site Plan has been proposed as an option that would meet the full intent of the Manual.

This option greatly increases the size of the detention basin which in turn increases our disturbed area and removes approximately 200 parking spaces from the site. It also adds 625 feet of engineered overland emergency spillway channel to allow for a compliant emergency overflow path. The emergency overflow/flood routing would be through the engineered spillway to direct flow to the south. Approximately 5 acres of existing parking will need to be redeveloped to create spillway, which impacts the Korbel North Campgrounds. With the regrading of parking lots south of Black and Gold Avenue, the ponding in the parking lots will be limited to 1' maximum at their lowest point before this emergency overflow is utilized. This is shown in Appendix A.

The increase in disturbed area increases the amount of storage required in the detention basin, which further adds to the detention basin footprint. In order to reduce impact on the site and to be reasonable financially, this option is not recommended.

Cost implications for the Full Compliance alternative are as follows:

Construction Costs:

625' of overland emergency spillway channel (5 acres) - \$625,000
20 acres of regrading, including pavement replacement - \$7,500,000
200 parking spaces removed - \$50,000
Increased size of detention basin/cut (30,000+/- CY) - \$750,000

 Imported fill for raising the site (97,000+/-CY) – 	\$1,936,000
Design & Inspection Costs:	
 Estimated Design & Inspection – 	\$2,000,000
TOTAL COST*	\$12.861.000

^{*}Does not include revenue lost from future State of Ohio Fairgrounds Events

Alternative 2 – Slope Compliant Site Plan

To reduce disturbance further from Alternative 1, a second option is to propose a basin that complies with only the 4 (H) to 1 (V) side slope requirement. In this option, there is no regrading for a compliant emergency overflow. The emergency overflow/flood routing would be catch basins in the parking lots to the southeast, as the detention basin will fill up and reverse flow to these areas. The catch basins will act as weirs to direct flow to the south away from the site as seen in Appendix D. Since flood routing will not occur until the parking lots are ponding with up to 3.39' of water, signage will be placed in areas to warn about the possible depth of water during storm events exceeding the 100-year event. While this option reduces cost and impact, it still greatly increases the size of the detention basin and the amount of parking spaces removed.

Cost implications for the Slope Compliant alternative are as follows:

Construction Costs:

 200 parking spaces removed - 	\$50,000
 Increased size of detention basin/cut (\$16,000+/- CY) – 	\$160,000
Design & Inspection Costs:	
 Estimated Design & Inspection - 	\$40,000
TOTAL COST*	\$250,000

^{*}Does not include revenue lost from future State of Ohio Fairgrounds Events

Alternative 3 – Preferred Site Plan

The preferred alternative would be the construction of a detention basin with 3 (H) to 1 (V) slopes to reduce impact on the site. By minimizing the surface area and maximizing the slopes, the useable surface area is maximized and reduces the amount of parking impacted which is paramount to the project. This site plan saves up to 2 acres of useable parking space, approximately 200 parking spaces, for future State of Ohio Events such as the State Fair, All American Quarter Horse Congress, concerts and other events at MAPFRE Stadium. Appendix D has exhibits that show the existing and proposed parking counts on site for reference. Approximately 347 spaces are being removed as part of the Crew Training Facility project in the Preferred Site Plan and an additional 1,202 spaces (including 372 temporary spaces) are being removed for the Community Sports Park project. This leaves approximately 3,115 spaces remaining over the 79.3-acre site. With the amount of parking already being removed by this project and the future Community Sports Park project, any parking that can be saved is at a premium as revenue would be lost due to less paid parking and fewer patrons per event.

The emergency overflow/flood routing is in the parking lots to the southeast as the detention basin will fill up and reverse flow to these areas. The catch basins will act as

weirs to direct flow to the south away from the site and they will help prevent storm sewer blockage from coming into the parking areas. Since flood routing will not occur until the parking lots are ponding with up to 3.39' of water, signage will be placed in areas to warn about the possible depth of water during storm events exceeding the 100-year event.

Appendix C shows the proposed and existing flood routing conditions for comparison. The parking lot storage has been accounted for in all calculations and exhibits in regard to ponding depths. This exhibit shows that the proposed conditions do not exceed the existing and it states the maximum ponding depth at the lowest areas. Flood routing will remain constant even if one section of piping is backed up as the entire 79 acre site has the same flood routing location to the southern part of the site.

Cost implications for the preferred alternative are as follows:

Construction Costs:

None as the project was bid for this option.

Design Costs:

None as the plans were designed for this option.

Projected Loss in Revenue:

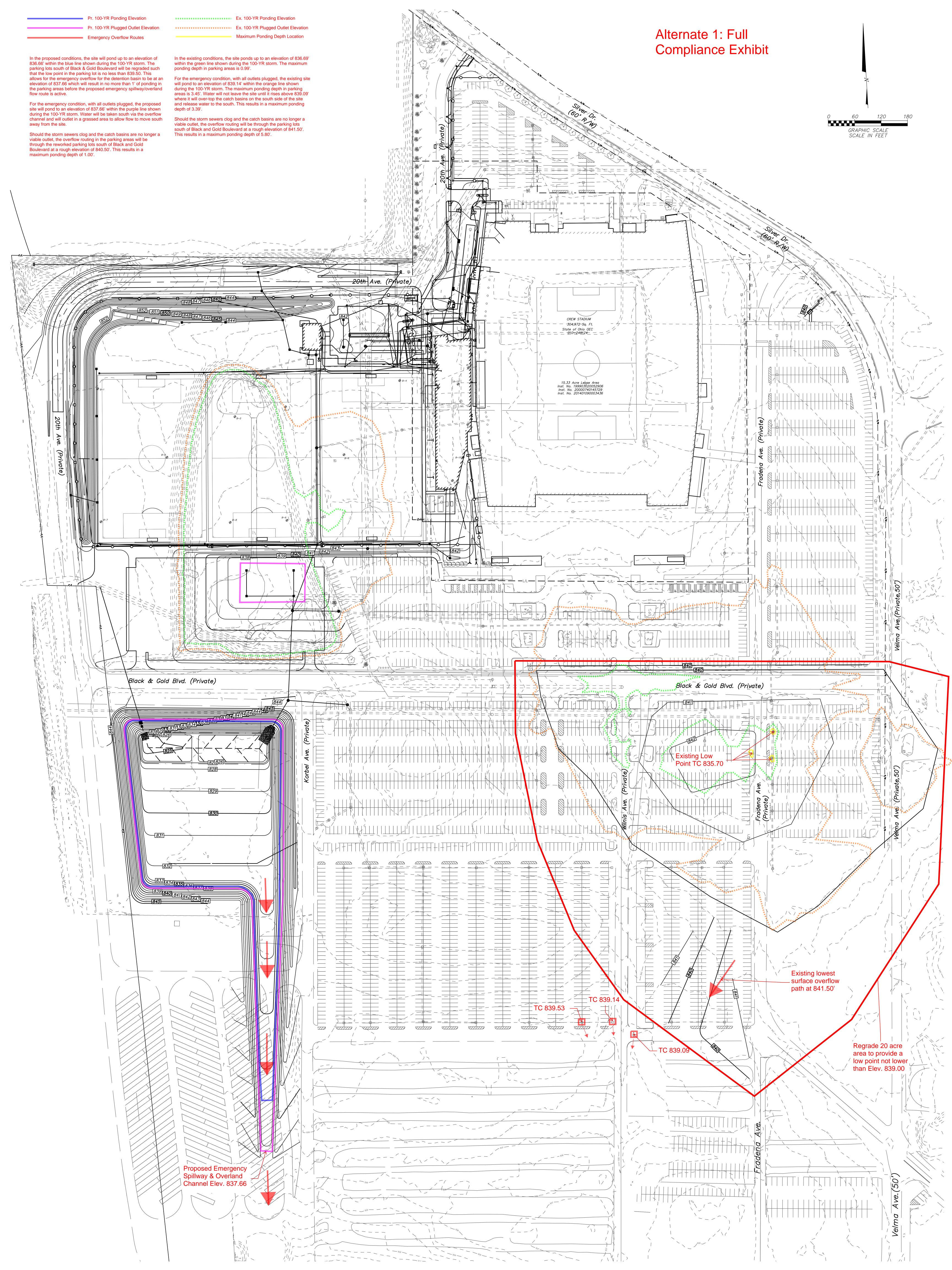
• No additional loss in revenue as the plans were designed for keeping the parking.

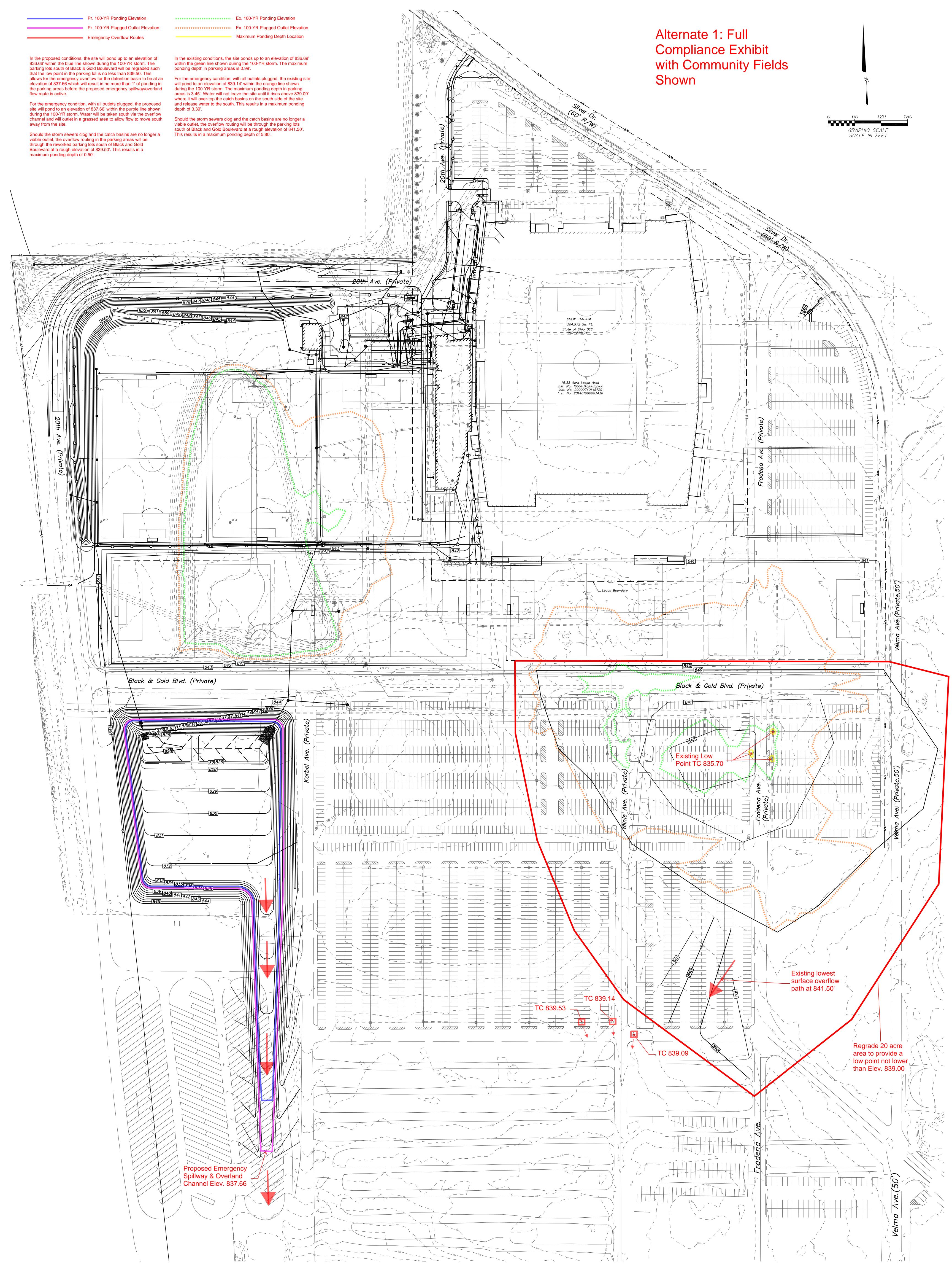
The preferred alternative remains the most efficient option with minimal impact to the parking areas and site as a whole. On an existing site with non-compliant conditions while trying to minimize site impact, the 3 (H) to 1 (V) detention basin with non-compliant flood routing and emergency spillway is the most efficient way to properly provide both drainage and detention.

Appendix A

Full Compliance Alternative Site Plan

Exhibit without Community Fields
Exhibit with Community Fields

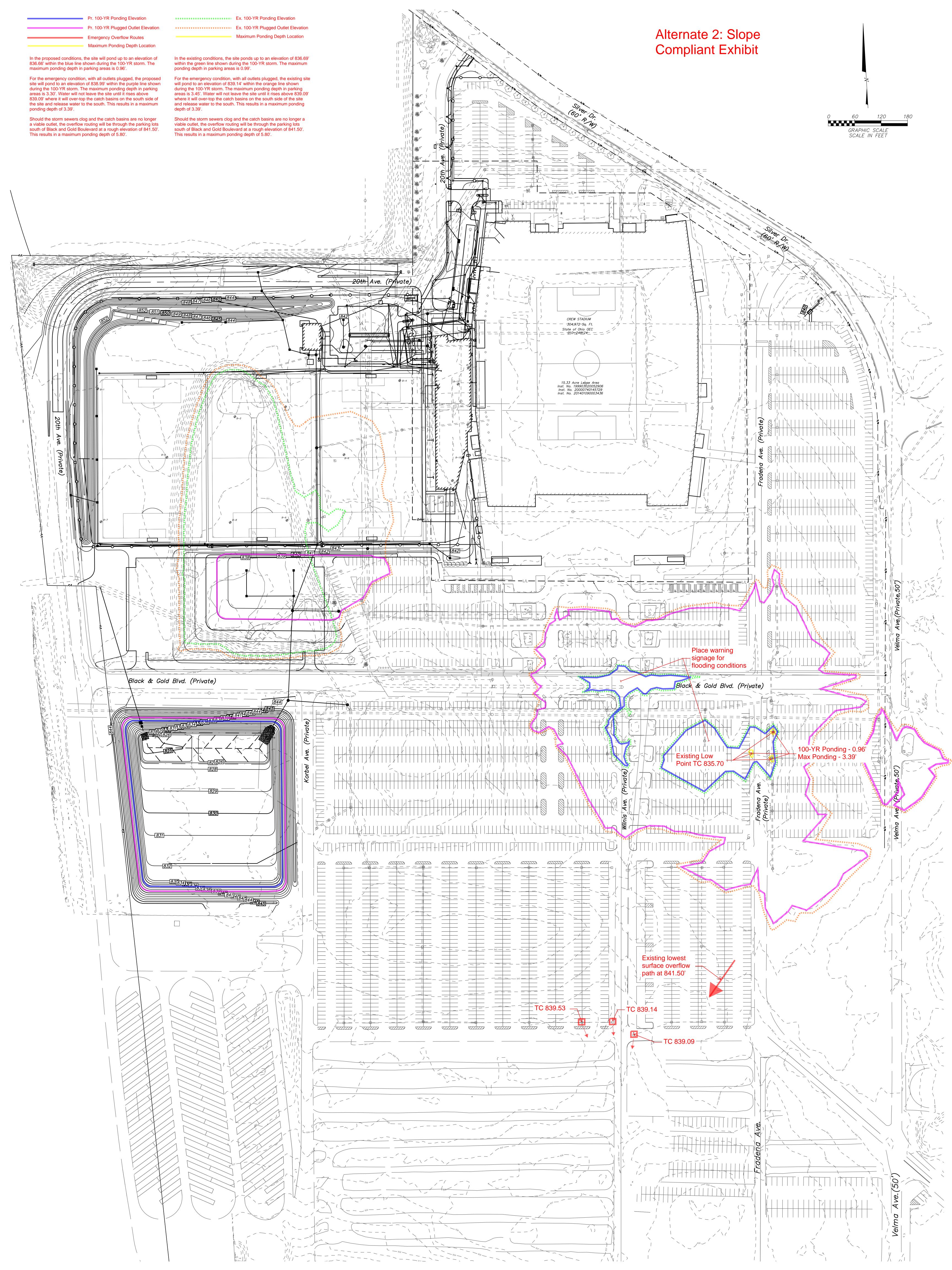




Appendix B

Slope Compliant Alternative Site Plan

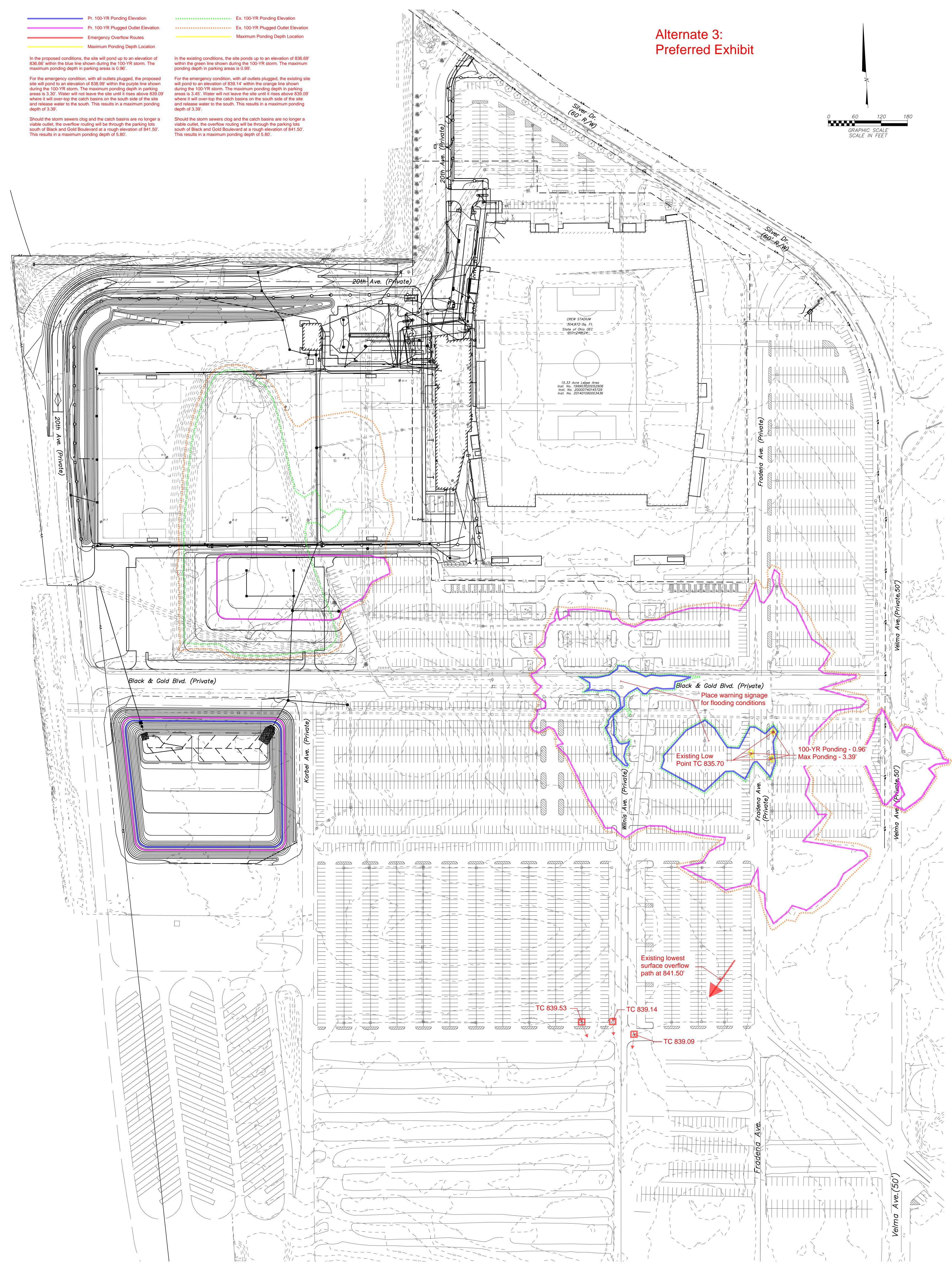
Exhibit without Community Fields
Exhibit with Community Fields

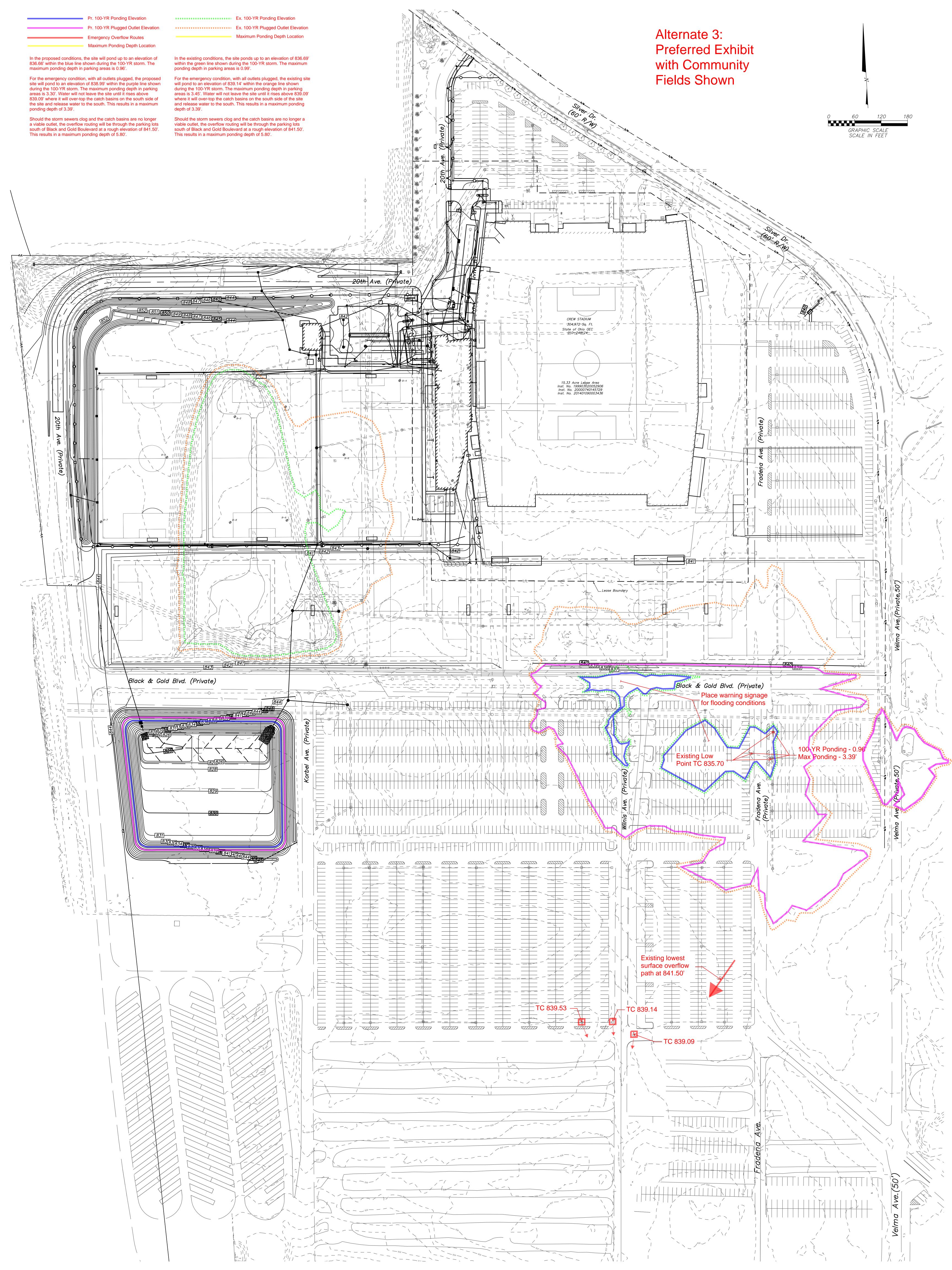




Appendix CPreferred Alternative Site Plan

Exhibit without Community Fields Exhibit with Community Fields





Appendix D

Additional Supporting Documents & Exhibits

Aerial Parking Exhibit During State of Ohio Fairground Events
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PARKING IMPACTS



Aerial Image Taken October 2018 - During Quarter Horse Congress



