

# Agenda Item Report



**Winnebago County**  
*The Wave of the Future*

DATE: June 21, 2022  
FROM: Parks and Expo Director and Expo Manager  
RE: Waukau Dam Master Plan

**General Description:** The Parks Department is presenting the master plan for the Waukau Dam Nature Area.

**Requested Action:**

The Parks Department recommends that the Parks and Recreation Committee approves the master plan for the Waukau Dam Nature Area.

**Procedural Steps:**

Parks and Recreation Committee  
Action taken:

Meeting date: 6/27/22  
Vote:

**Background:**

The Waukau Dam Nature Area is located within the Town of Rushford on the western side of Winnebago County. The park consists of a three-dam pond and river system. It also has a single-track biking trail, walking trails, and nature viewing. This nature area is utilized by many visitors for the purposes of hiking, biking, fishing, and nature viewing. The Rushford Fire Department also utilizes the lake as a fill station. This park is near the Waukau Nature Preserve located to the north.

**Justification:**

Over the last several years, the Waukau Dam Nature Area has received damage due to the larger rain events that have been occurring at the site. During these rain events, the east pond embankment erodes multiple times per year and causing damage that needs to be repaired by staff. The area around the dams and the creek have also received considerable washout and erosion due to above average rain events.

MSA was hired to perform a hydraulic/hydrology analysis on the site. The goal was to see if the county could adjust the dams by either resizing them or adjusting the stop logs in order to prevent the pond from overtopping the trail and the embankment. The Waukau Dam is within the 100-year flood plain. Unfortunately, we found that we cannot adjust the dams or rebuild the dams in a way that would permanently fix the overtopping of the pond.

The Parks Department and MSA are proposing creating an avenue for the pond to spill over in such a way that the county will not lose the pond or one of the dams due to erosion but will also have minimal repairs to make in the case of a large rain event. The plan is to add an area where we install Armorflex or a similar material to allow the water to flow over the pond when the elevation of the water increases.

Then, we will add turf reinforcement to ensure that there is a very large rain event, that the remainder of the levee remains in place. We also plan to add additional rip rap around the dams and creek in order to provide more protection against erosion.

With this project, the Parks Department also plans to provide some improvements to the park including paving the parking lot, adding site lighting, adding a parking on CTH K for the bikers, and adding additional fishing piers. The Parks Department also proposes improving accessibility on the walks above each dam by adding railings and replacing the catwalks.

**Attachments:**

- Waukau Dam Master Plan Report and Cost Estimate provided by MSA

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**To:** Winnebago County – Parks and Recreation Committee  
**From:** Raine Gardner, PE & Eric Thompson, PE  
**Subject:** Waukau Dam Site Master Plan  
**Date:** June 13, 2022

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Upon completion of the Waukau Dam Site concept plan and study in July 2021, MSA was asked to consider an overall site Master Plan that would further refine the concept plan, study the hydraulics of the site, and develop a proposed cost estimate for the plan. The Waukau site currently includes a fish holding pond that is extremely popular and is controlled by an existing dam system. In addition, to the pond area, the surrounding area has about 3-miles of mountain bike trails that flow along steep hillsides and through deep ravines on the north and north eastern sides of the properties.

In May 2022, MSA concluded the Waukau Dam Site Master Plan. The Master Plan phase included a site topographic survey, hydraulic/hydrology analysis, and a final park master plan with a proposed cost estimate. The overall topographic survey was completed to cover the entire park area to not only provide data for the site hydraulic analysis, but to provide the county with information that can be utilized to develop a park map of the site amenities, including the bike trails. Upon completion of the topographic survey, the information was utilized to consider the effects of the overall park dam system to develop a better understand of how to control the flows of the Waukau Creek through the park and lower maintenance issues due to flooding. The below section describes the overall hydraulic analysis performed:

A Flood Insurance Study (FIS) for Winnebago County was published in 1982, which included Rusk Creek/Waukau Creek from STH 116 to 1.73 miles upstream of 8 Mile Creek. This FIS study included a detailed one-dimensional model of the reach; flow rates for the 10-year (10% annual exceedance probability (AEP)), 50-year (2% AEP), 100-year (1% AEP), and 500-year (0.2% AEP) storm events; and base flood elevations (BFEs) for various sections of Rush Creek/Waukau Creek. See Figure 1: FEMA FIRM Map attached.

Additionally, MSA reviewed the original dam plans developed by Ayers Associates in 1966 and dam repair plans developed in 2004. MSA also received information from Wisconsin Department of Natural Resources (WDNR) regarding past discussions and concepts for modifying the pond and river dams. With the review of the site, the information gathered and processed would provide guidance as to whether the dam structures needed to be replaced, modified, repaired, or just need some minor adjustments to help control the flooding within the site.

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### **Waukau Site Hydrology**

Approximately 82.1 square miles drain to Rush Creek/Waukau Creek at the Waukau Dam Pond site. See the drainage watershed boundary map which illustrates the area draining to the park location, including Rush Lake and Eightmile Creek. Using StreamStats, USGS Regression equations, and gage analysis of four (4) nearby gages, MSA confirmed the validity of the flows from the FIS and extrapolated flows for the 2-year (50% AEP), 5-year (20% AEP), 25-year (4% AEP), and 200-year (0.5% AEP) storm events to assess a wide range of events within the park. Additionally, during the analysis MSA looked at several flows to determine when and how the pond overflows. See Figure 2: Watershed Boundary Map attached.

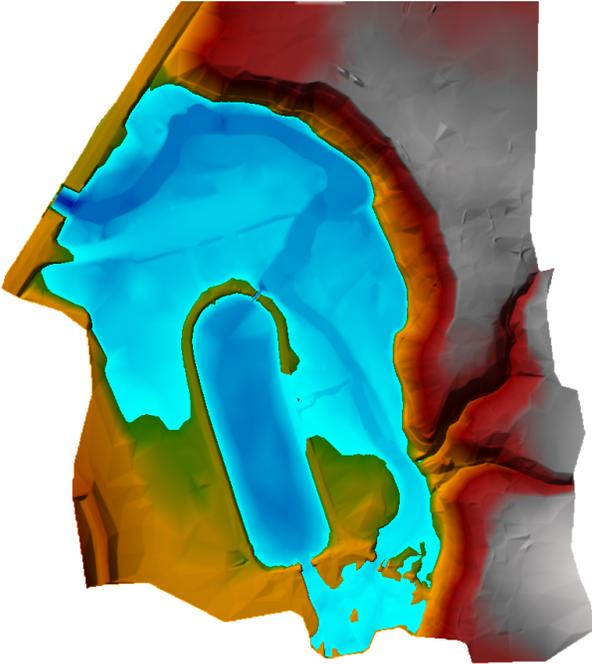
### **Site Hydraulics**

Given the complicated nature of the creek and pond dams within the park, MSA felt that a one-dimensional model would not adequately capture the flow split at the Upper Pond Dam and River Dam, or the overtopping of the pond. Therefore, MSA built a two-dimensional model of the site based on survey of the park performed by MSA in December 2021. The model included the park land from STH 116 to the southern boundary. Structures included in the model are the Upper Pond Dam, Lower Pond Dam, River Dam, and the bridge at STH 116. (*See Site Master Plan for dam and bridge locations on the site.*) The surveyed surface includes the bike trails to the east, the parking lot to the north, the pond berm, walkways, and the creek. See the attached Park Master Plan for the dam locations within the site.

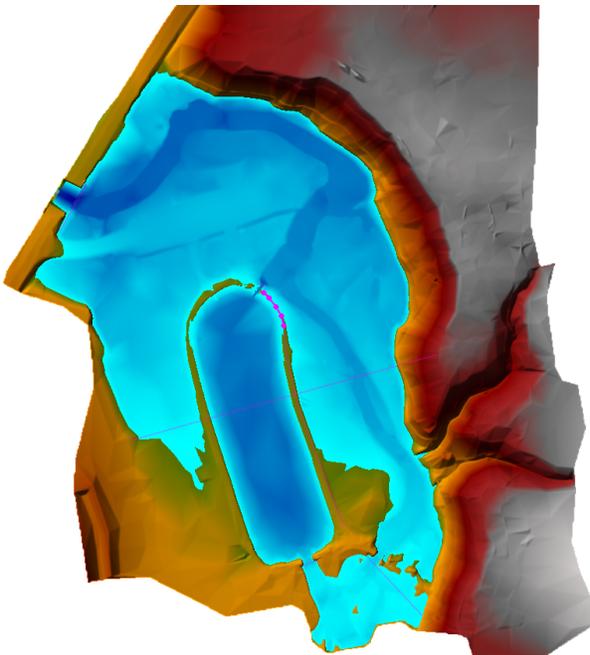
### **Existing Hydraulics**

Two “existing conditions” models were developed. One model included the current washed out berm and ditch created from the last pond overflow and the other assumed this breach was fixed. These models were run to show at what flow the pond overflows with the dam stoplogs at their existing elevations. The pond with the washout included overtops at 200 cfs, while the repaired berm overtops at 260 cfs. Note that these flows are well below even the 2-year (50% AEP) storm event, which has a flow of 600 cfs. In both conditions, during the 100-year (1% AEP) flow of 1,976 cfs, the entirety of the pond and creek are inundated. See the below figures snipped from the hydraulic model developed for the site:

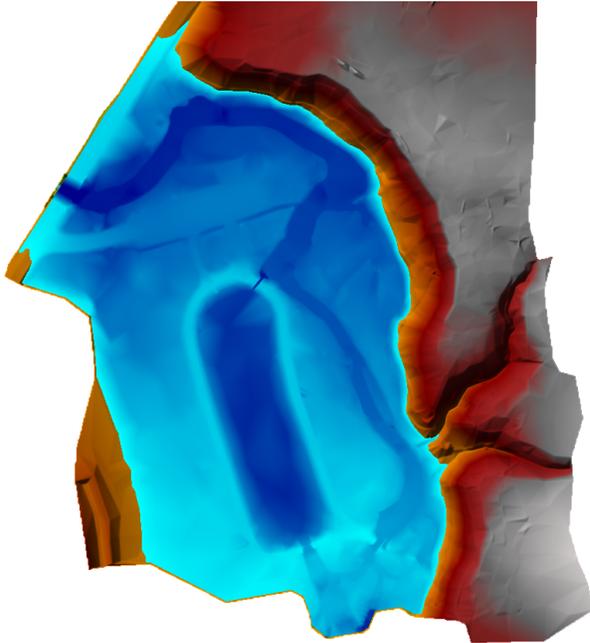
**Existing Site with a flow of 200 CFS**



**Repaired Site with a 260 CFS flow**



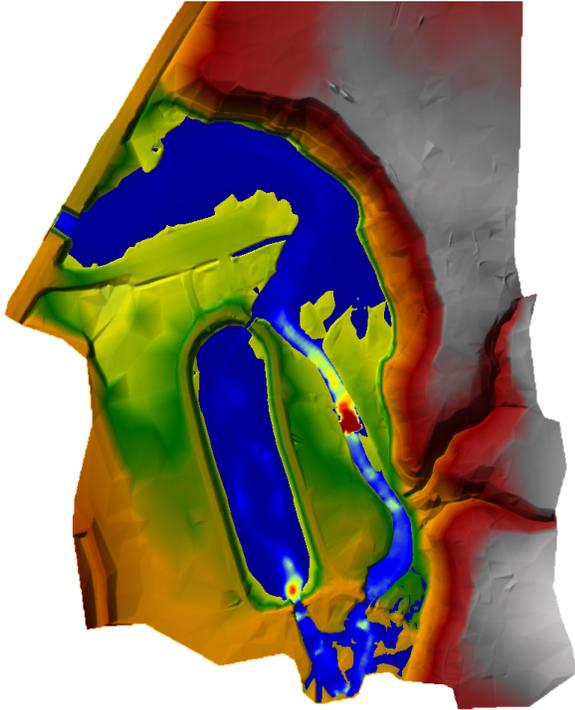
**Repaired Site at the 100 year Storm Event**



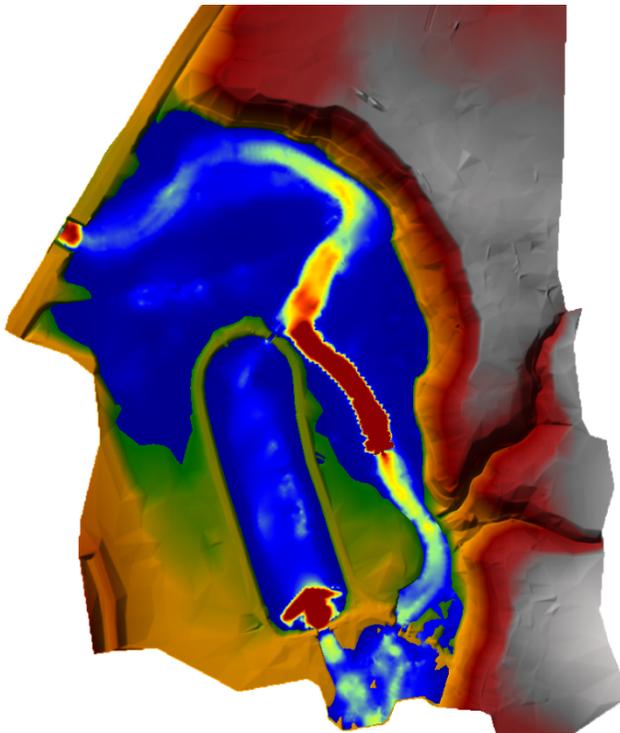
**Erosion**

Given the three dams and bends in the creek, there are areas with high velocities and shear stresses on the banks. MSA is recommending armoring on several of the banks based on site observations and velocities obtained from the hydraulic model. The figures below show the locations of high velocity for flows of 50 cfs, 260 cfs, 1,495 cfs (25-year, 4% AEP), and 1,976 cfs (100-year, 1% AEP). See the below the figures indicating the high erosive areas during each event.

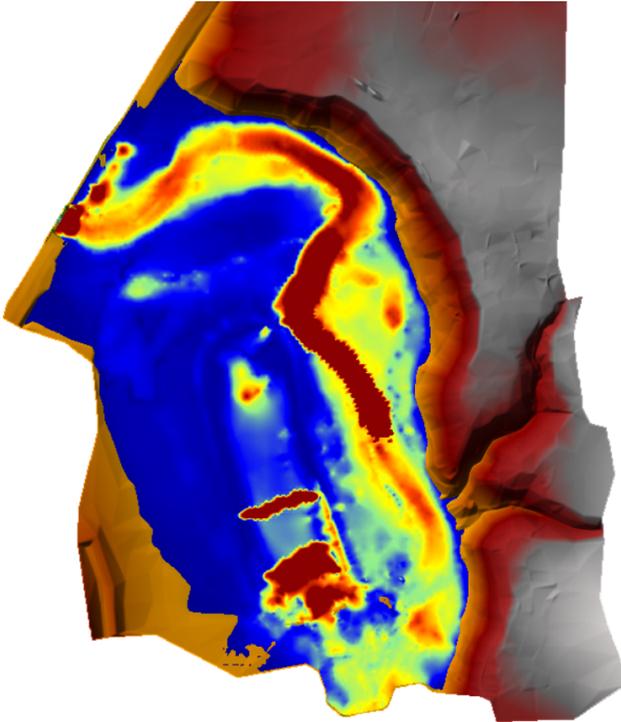
**Overall Site indicating Erosive Velocities at 50 CFS**



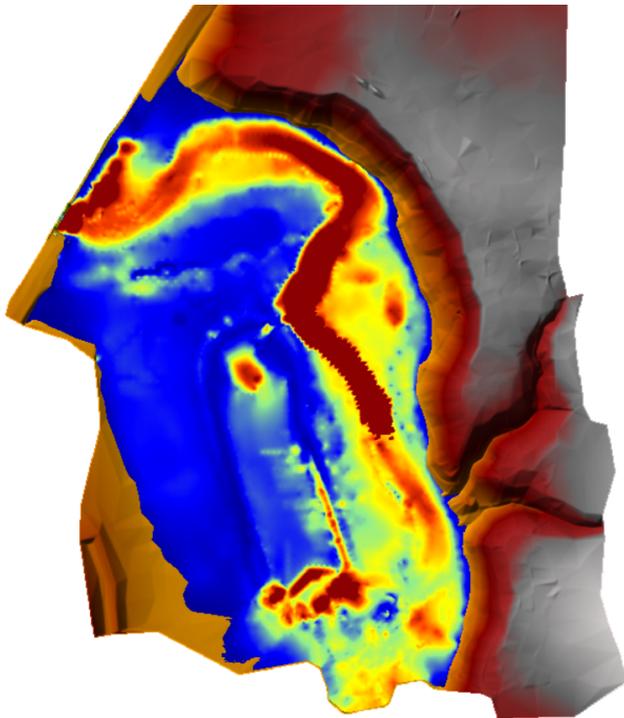
**Overall Site indicating Erosive Velocities at 260 CFS**



**Overall Site indicating Erosive Velocities at Q25**



**Overall Site indicating Erosive Velocities at Q100**



## MEMO

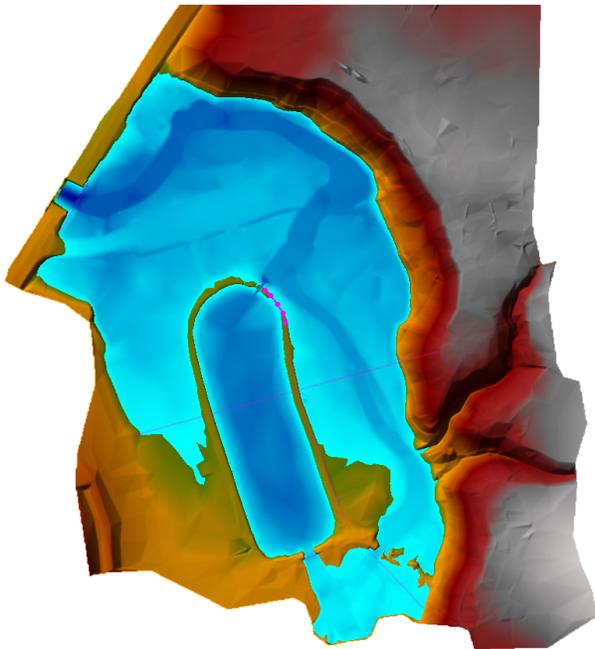
June 14, 2022

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### **Alternative Solutions**

MSA looked at three (3) potential alternative solutions to reduce the washout potential of the Waukau Dam Pond. The alternatives analyzed included:

Alternate 1 consists of closing one bay on the Upper Pond Dam and lowering the stoplog elevations at the River Dam to be even with the Upper Pond Dam. This alternative served to reduce the amount of flow overtopping the pond berm by approximately 0.3-ft. However, the overtopping flow remains at 260 cfs. See the below Figure: Alternative 1: Closed 1 Bay on Upper Pond Dam & Lowered Stoplogs on River Dam – 260 CFS.

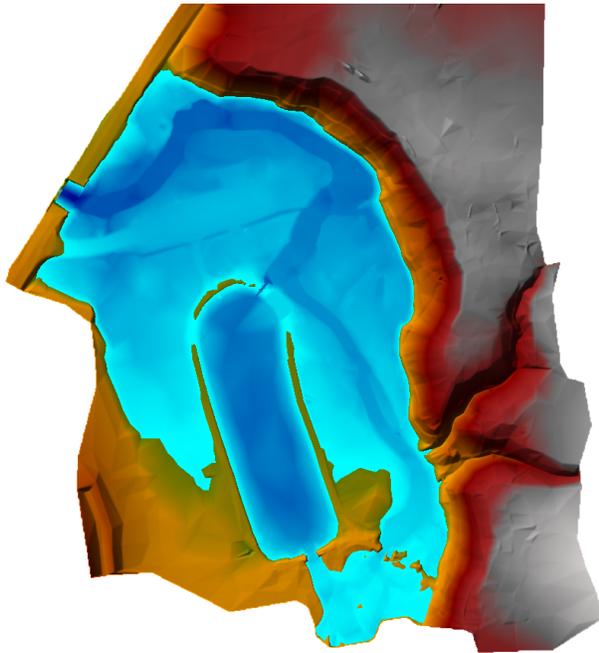


Alternate 2 includes installing a 50-ft wide, 2-ft deep emergency spillway with a trail bridge across the pond berm (set at the existing elevation of the path), as suggested by WDNR in 2004. Alternative 2 pushes back overtopping slightly, containing the water so that 275 cfs can flow through the system. See the below Figure: Alternative 2: Emergency Spillway Across Berm (with Trail Bridge) – 275 CFS.

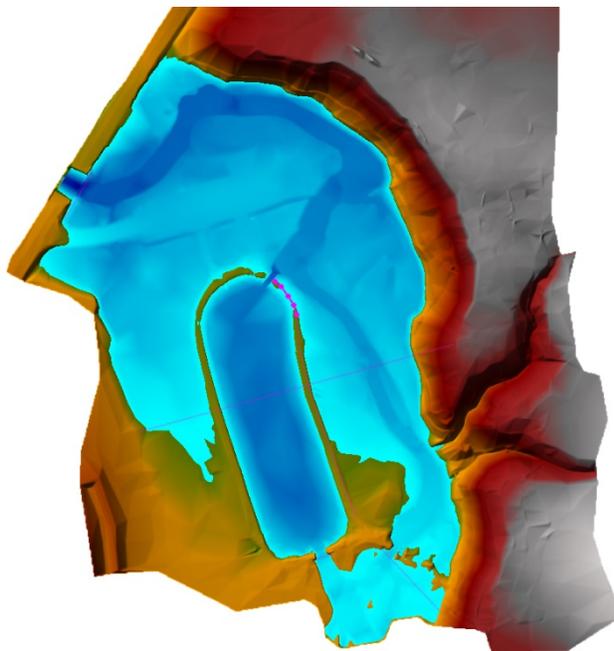
**MEMO**

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Alternate 3 proposes increasing the capacity of the Lower Pond Dam by increasing the opening from 8-ft to 12-ft wide. Alternative 3 also overtops at a flowrate of 260 cfs but allows less overtopping at that flowrate as compared to Alternative 1 by approximately 0.2-ft. See the below Figure: Alternative 3: Increased Capacity of Lower Pond Dam – 275 CFS.



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Based on the results of the possible alternates analyzed as listed above, making structural changes to the dams would not significantly affect the flooding or overtopping of the Waukau Dam Pond. In addition, after understanding the overall dam system and the area is completely within the floodplain, there is not a high enough cost benefit with any of the above options to make it worth the cost of the repair/retrofit investment. Therefore, it is recommended to change stop log elevations for the Upper Pond Dam and River Dam before large storms to balance the flows or as the pond nears its overtopping elevation to prevent washout. Additionally, as the 2-year (50% AEP) storm event inundates the park and overtops the pond, armoring adjacent to the dams and along known washout locations of the berm are recommended to reduce washout potential when the pond overtops. Maintenance crews should plan to assess and remedy any damage done to the berm or dam locations after large rain events.

### **Dam Structure Visual Review**

The existing dam structures on the site were reviewed in the field for visual observations performed by a structural engineer. Visual observations provided MSA with direction on how to address the dam structures for repairs, if the structures were to remain on the site. MSA was able to provide options to repair the overall park area, dam structures, more resilient pond and creek shorelines, and consider ADA compliance of the overall space.

The structural visual review provided the following comments:

- No major concerns were observed with the structural elements of each dam structure.
- Replacement of the Upper and River dam catwalks would be important to reestablish trail connections.
- Upper Dam could utilize some epoxy crack sealing.
- Removing the existing trees and stumps overgrowing the Upper and River Dam structures would be critical to help prevent future damage to them.

With the above hydraulic and physical site evaluations, MSA assembled a Waukau Dam Site Master plan that was presented to the Parks and Recreation Committee in May 2022. Prior to the presentation and after, County staff have provided comments to help support and modify the plan to develop and bring forth a final and feasible Park Master Plan to present to the County for future engineering and development in 2023/2024. Again, with these comments, the final park master plan includes the following recommendations that are highlighted in the attached colored plan with supporting character images:

- **Dam Structures-**

- Upper Pond Dam Repairs: repair fish deterrent, replace catwalk and railing over the dam, reinforce side slopes around dam walls, clear and grub trees around and away from the structure, pave the approaches to the structure and add railings for ADA compliance and safety.
- Lower Pond Dam Repairs: adjust the stop logs, replace the existing railings with complaint ones, reinforce the side slopes with Armorflex matting in overflow area and a turf reinforcement mat in other areas that have had previous erosion. Further supplement the rip-rap around the dam and adjacent along the creek to prevent future erosion, pave the approaches to the dam and add railings along the approach paths, as shown on the plan.
- River Dam Repairs: add Armorflex matting alongside of the dam walls to prevent further erosion along the dam, replace the catwalk and railing over the dam, reinforce the side

slopes with rip-rap and/or gabion baskets, clear and grub alongside the dam walls, repair the stone walls east of the dam and reestablish the trail connection, pave the approaches to the dam and add railings for ADA compliance and safety.

- **Parking Lots –**

- **Lower Lot** - Regrade the parking lot to correct the drainage issues within the lot, provide a new base and pave the parking lot with asphalt pavement along with the entrance driveway. Then strip and sign the lot for ADA and parking stalls. New parking lot lighting with an electrical service shall be added for security and safety purposes. A concrete sidewalk shall be added per the master plan to connect the trails and accessible parking stalls to them. In addition, this walk will connect the accessible picnic areas and portable bathrooms.
- **Upper Lot** – Add a new parking lot on the north end of the site to allow for mountain bikers to access the upper trails from CTH K. The lot shall include extra pavement reinforcing to allow for farm equipment access along the parking lot driveway which also overlaps a farm easement. The parking lot shall be paved, stripped, and marked for ADA compliance. An adjacent concrete sidewalk shall be added to connect the stalls to the trails, a bench and a bike fix it station. Lastly, a new electrical service and one parking lot light shall be added at this northern lot location again for security and safety purposes. With the addition of this parking lot, the mountain bike access point off of STH 116 shall be closed off and restored as turf, as this entrance is not a safe location for the public to be parking and accessing the trails.

- **Overall Park Area –**

- Accessible trails shall be re-established within the space to connect the various amenities. These trails shall be graded to ADA compliant slopes and compacted with proper trail gravel for accessibility. The trails shall connect various benches on concrete pads around the pond, ADA compliant floating fishing piers, and the existing stationary fishing pier. The trails shall connect to the existing dam structures to access over them as well. The main easterly trail between the parking lot and pond shall be maintained for fire truck access to allow local fire departments access to the pond for water usage. The trail shall be paved with additional reinforcement to withstand the truck weights.
- Various shoreline armorment along the pond and creek slopes shall be considered as well to prevent further erosion and vegetation re-establishment. Just south of the lower pond dam, the trial will dip slightly to work like a weir along the pond to force the pond water to exit the pond through an area that has a reinforced shoreline, to hopefully prevent future erosion when the pond needs to overflow to the creek directly.
- Two new floating fishing piers shall be developed on the site to access various points of fishing on the pond. The existing stationary pier shall be re-decked and new railing established on the pier.
- Between the pond and parking area, this area shall be turned into a picnic area. Another picnic table will be located on a concrete pad for accessibility. East of the main trial between the pond and parking lot, a paved concrete pad covered with an open-air (20'x20') shelter will be established to provide a covered, accessible picnic area.
- New and existing park signage and information will be established in the park.
- Portable bathrooms shall be placed on the designated concrete pads to allow for restrooms at the site. Permanent restrooms would not be allowed at this site, due to the floodplain restrictions. In addition, no other enclosed structures are allowed, due to the floodplain.

## MEMO

June 14, 2022

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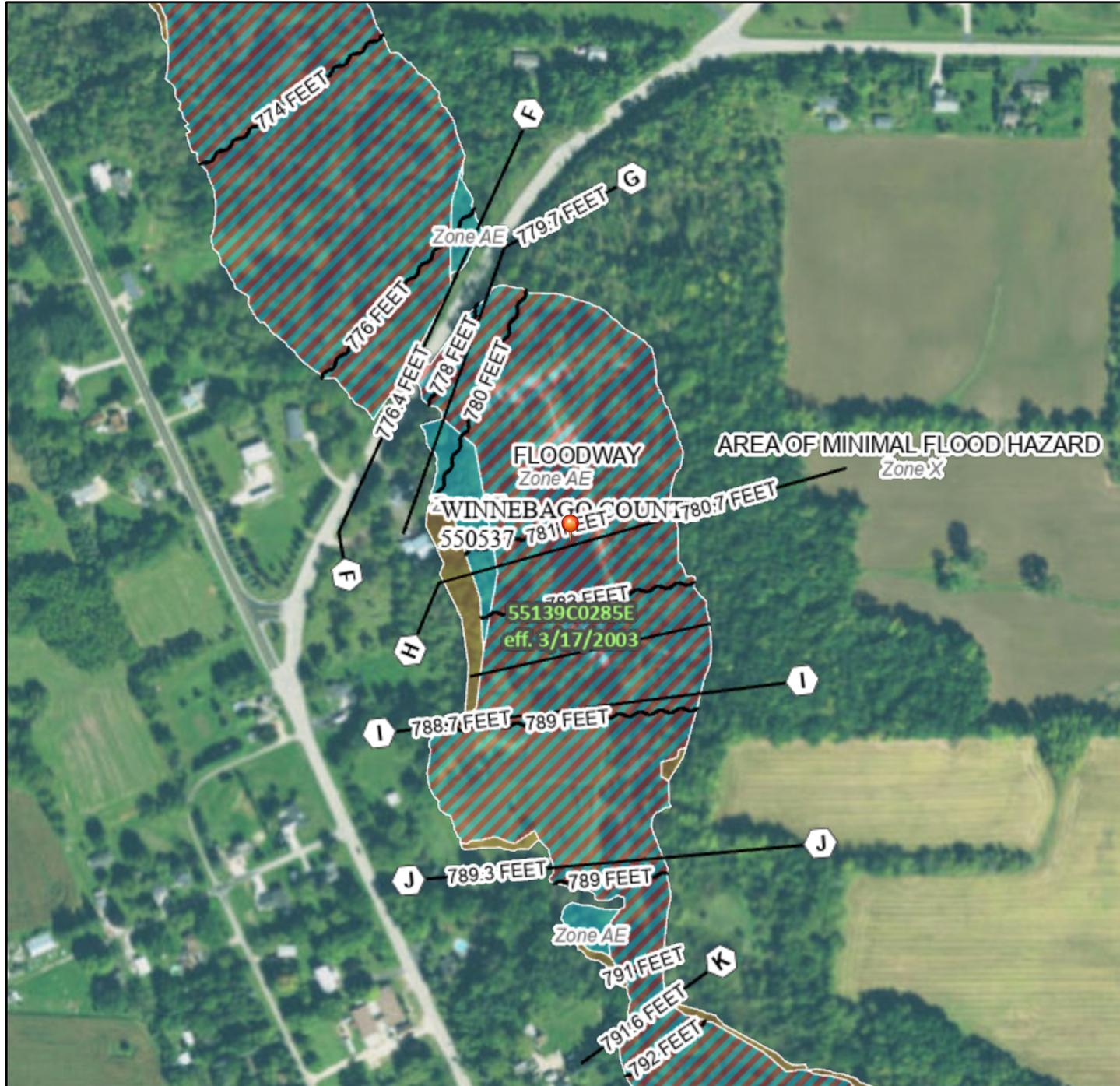
All the above recommendations can be viewed in the attached **Park Master Plan** with leaders denoting the proposed amenity locations on the site. With these recommendations, MSA has developed an overall proposed construction cost estimate for the total project. The estimate is attached for the County to consider for future project funding and timing to complete the proposed plan. No phasing was considered with this project, as the Parks Committee provided recommendations to consider the full project as one to complete the project overall and bring the site into compliance for not only usage, but accessibility. In addition, with the park master plan, it is planned and desired that the proposed repairs will establish the site to be more resilient to flood events to lower the County's park maintenance in the future.

# National Flood Hazard Layer FIRMette



Figure 1.

88°46'36"W 43°59'50"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
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
OTHER FEATURES		Levee, Dike, or Floodwall
		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
MAP PANELS		17.5
		Coastal Transect
OTHER FEATURES		Base Flood Elevation Line (BFE)
		Limit of Study
OTHER FEATURES		Jurisdiction Boundary
		Coastal Transect Baseline
OTHER FEATURES		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.

0 250 500 1,000 1,500 2,000 Feet 1:6,000  
 Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020  
 88°45'59"W 43°59'24"N

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 6/14/2022 at 11:51 AM 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.

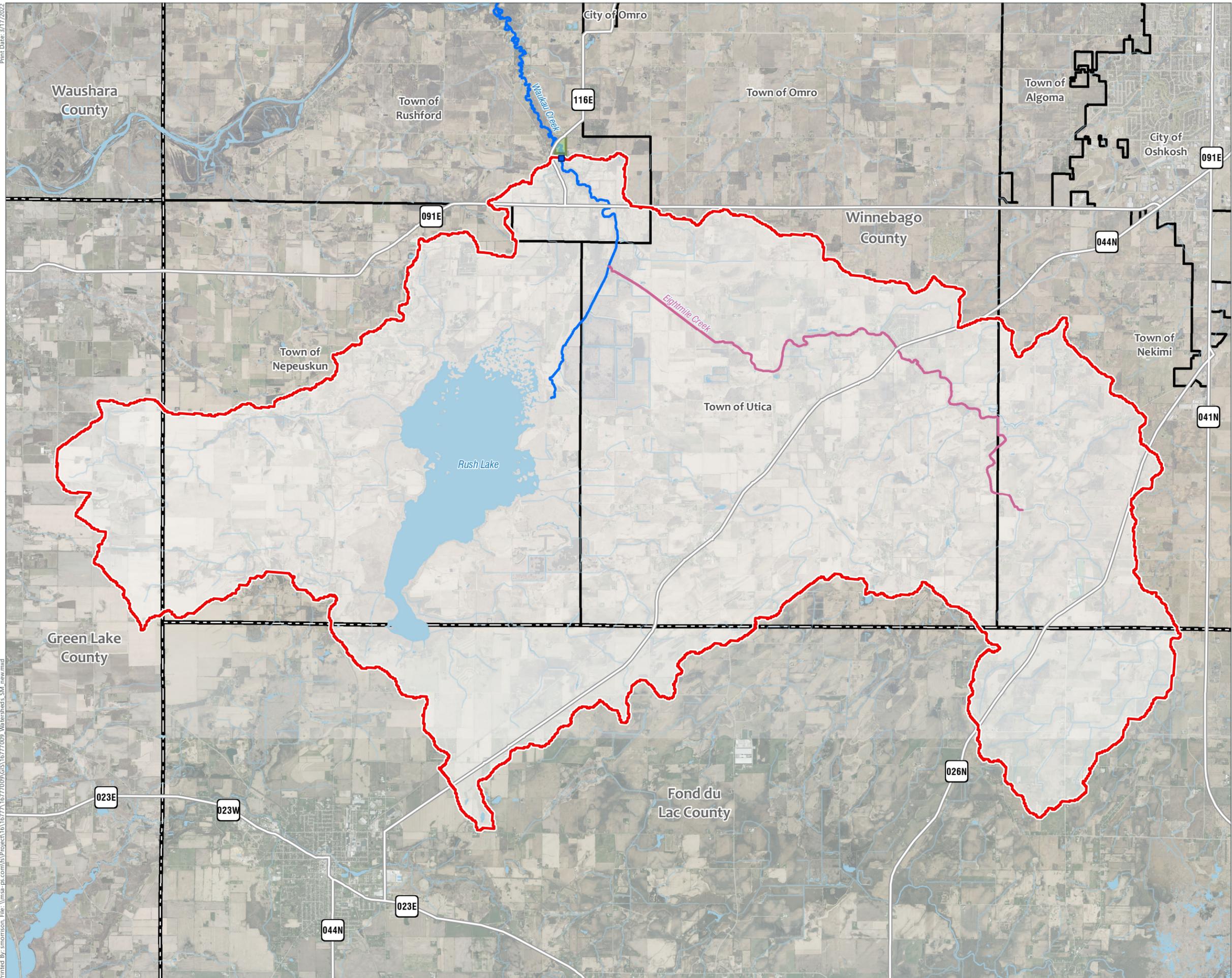
This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory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

Figure 2.

# Watershed Boundary

Waukau Dam Master Plan

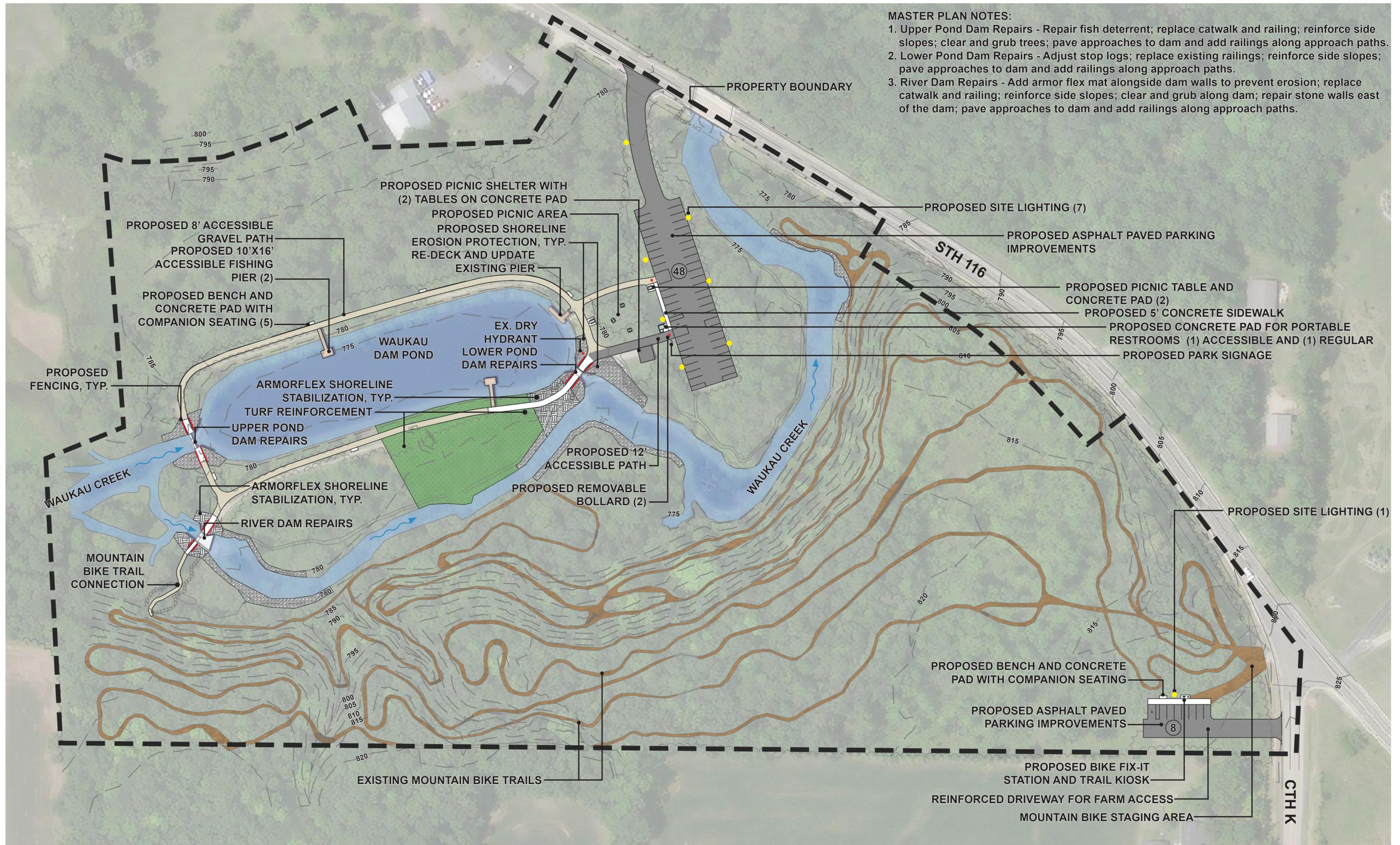
Town of Rushford  
Winnebago County, WI



- Global Watershed Point
- Wisdot Major Highways
- ~ Eightmile Creek
- ~ Waukau Creek
- ~ Waterway
- Waterbody
- Global Watershed Boundary
- Park Location
- Municipal Boundary
- County Boundary

Data Sources:  
 Winnebago County GIS (2021)  
 WDNR: County Bounds and Waterways  
 Basemap: WDNR (2020)  
 FIS Report: MSA (2022)

Print Date: 3/17/2022  
 Printed By: smorison, File: \\msa-ps.com\GIS\Project\161677\167709\GIS\1677099\_Watersheds\_SM\_new.mxd



# Waukau Dam

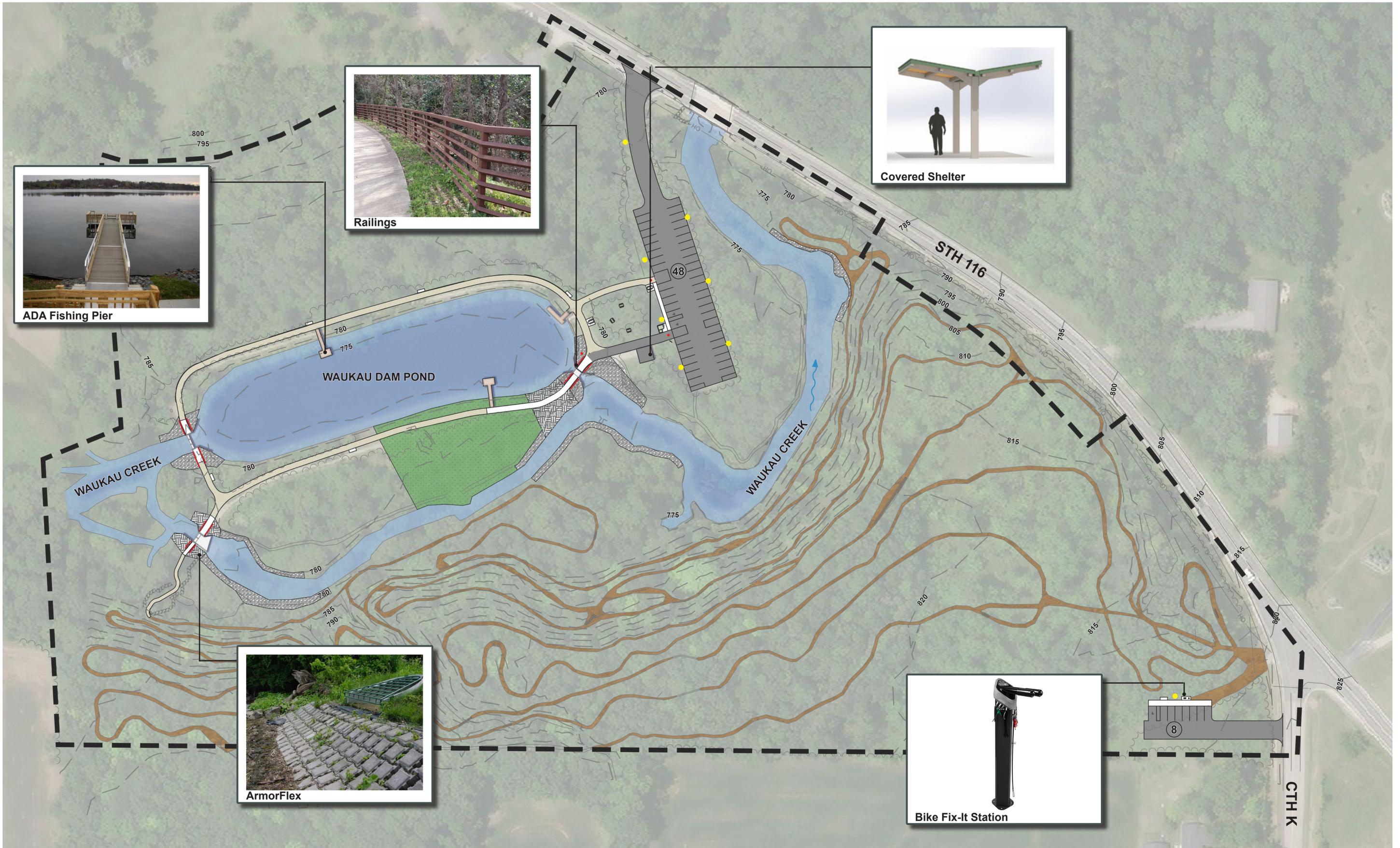
## Master Plan

Winnebago County, WI  
06.14.2022



SCALE  
0 30' 60' 120'  
CONTOUR INTERVAL = 5'-0"

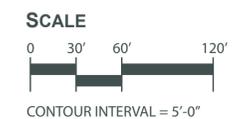




# Waukau Dam

Character Images

Winnebago County, WI  
06.14.2022



**WAUKAU DAM MASTER PLAN  
ENGINEER'S ESTIMATE OF PROBABLE COSTS  
WINNEBAGO COUNTY, WISCONSIN  
JUNE 2022**

ITEM NO.	ITEM DESCRIPTION	ESTIMATED QUANTITY	UNITS	UNIT PRICE	TOTAL PRICE
<b>SITE</b>					
1.	Mobilization, Bonds, and Insurance	1	LS	\$ 100,000.00	\$ 100,000.00
2.	Erosion Control and Matting	1	LS	\$ 20,000.00	\$ 20,000.00
3.	Turf and Site Restoration	1	LS	\$ 15,000.00	\$ 15,000.00
4.	Unclassified Excavation	1	LS	\$ 30,000.00	\$ 30,000.00
5.	Clearing and Grubbing	1	LS	\$ 25,000.00	\$ 25,000.00
6.	Shoreline Armorment	2,300	SY	\$ 65.00	\$ 149,500.00
7.	Armoflex Matting	2,350	SF	\$ 30.00	\$ 70,500.00
8.	Reinforced Turf	21,750	SF	\$ 10.00	\$ 217,500.00
9.	Site Lighting	1	LS	\$ 25,000.00	\$ 25,000.00
10.	Concrete Sidewalk with Base	3,400	SF	\$ 10.00	\$ 34,000.00
11.	Asphaltic Concrete Pavement	625	TON	\$ 125.00	\$ 78,125.00
12.	Base Course	1,570	TON	\$ 20.00	\$ 31,400.00
13.	Pavement Markings	1	LS	\$ 5,000.00	\$ 5,000.00
14.	Gravel Paths	22,000	SF	\$ 3.50	\$ 77,000.00
15.	Shelter	1	LS	\$ 40,000.00	\$ 40,000.00
16.	Bench w/ Concrete Pad	6	EA	\$ 2,500.00	\$ 15,000.00
17.	Picnic Table	5	EA	\$ 1,500.00	\$ 7,500.00
18.	Removable Bollard	2	EA	\$ 1,500.00	\$ 3,000.00
19.	Signage (Park and Traffic)	1	LS	\$ 5,500.00	\$ 5,500.00
20.	Accessible Fishing Piers	2	EA	\$ 50,000.00	\$ 100,000.00
21.	Repair Existing Pier	1	LS	\$ 15,000.00	\$ 15,000.00
22.	Bike Fix-It Station	1	EA	\$ 4,500.00	\$ 4,500.00
23.	Kiosk	1	EA	\$ 3,000.00	\$ 3,000.00
<b>SUBTOTAL: Items #1 - #23</b>					<b>Subtotal = \$ 1,068,525.00</b>

<b>DAMS</b>					
24.	Upper Dam - Replace Catwalk/Rail System	1	LS	\$ 25,000.00	\$ 25,000.00
25.	Upper Dam - Add Pedestrian Rail on Approaches to Shield Dropoff	80	LF	\$ 300.00	\$ 24,000.00
26.	Upper Dam - Repair Fish Deterrent	1	LS	\$ 5,000.00	\$ 5,000.00
27.	Lower Dam - Replace Steel Rails	1	LS	\$ 8,000.00	\$ 8,000.00
28.	Lower Dam - Add Pedestrian Rail on Approaches to Shield Drop-Off	80	LF	\$ 300.00	\$ 24,000.00
29.	River Dam - Replace Catwalk/Rail System	1	LS	\$ 25,000.00	\$ 25,000.00
30.	River Dam - Add Pedestrian Rail on Approaches to Shield Drop-Off	80	LF	\$ 300.00	\$ 24,000.00
31.	River Dam - Add Armoflex Matting	1,300	SF	\$ 30.00	\$ 39,000.00
32.	River Dam - Repair Stone Walls	1	LS	\$ 7,500.00	\$ 7,500.00
<b>SUBTOTAL: Items #24- #32</b>					<b>Subtotal = \$ 181,500.00</b>

**Subtotal Bid= \$ 1,250,025.00**  
**20% Contingency = \$ 250,005.00**  
**Engineering= \$ 230,000.00**  
**Total Project Cost= \$ 1,730,030.00**

### SURVEY NOTES

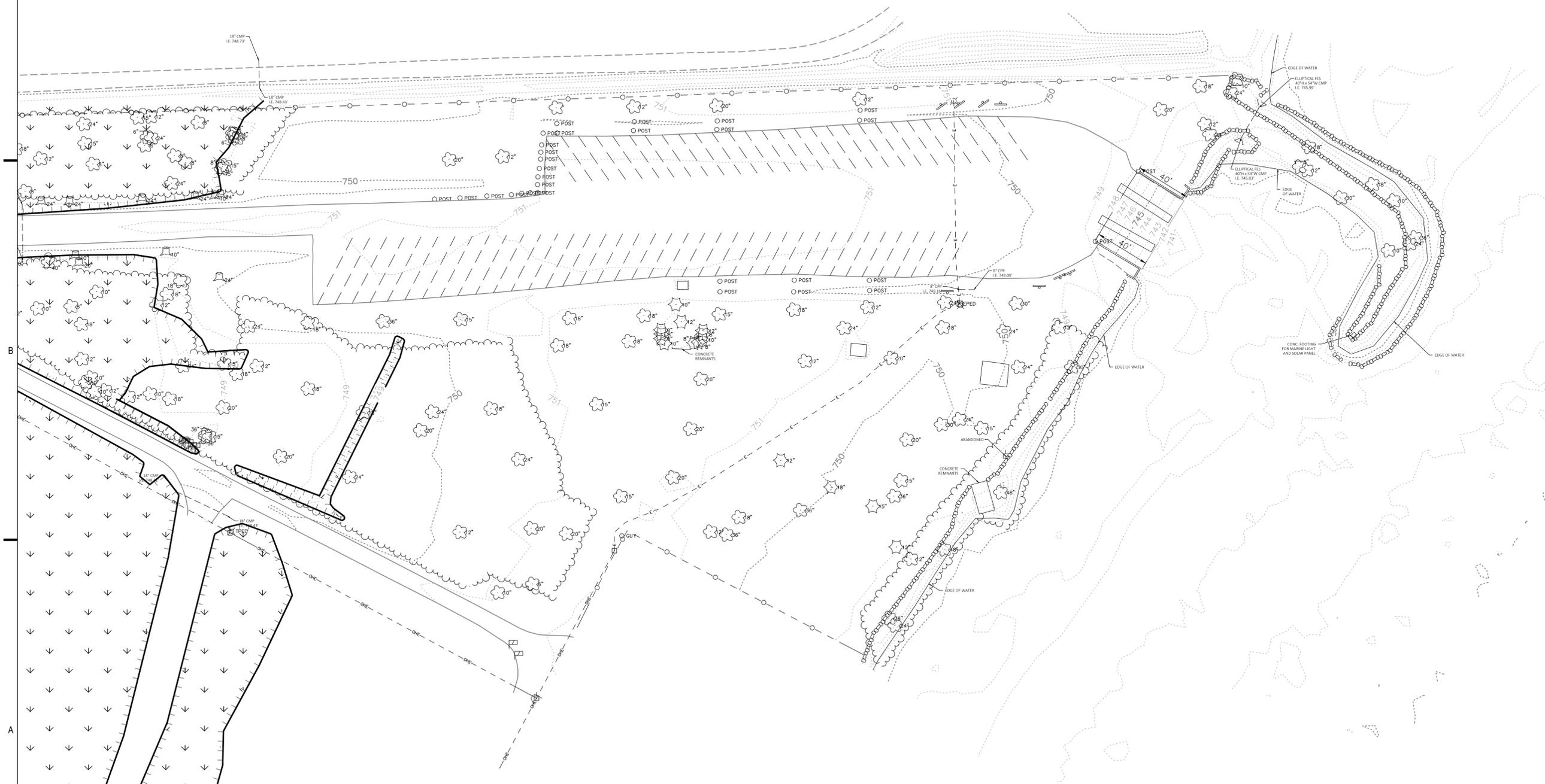
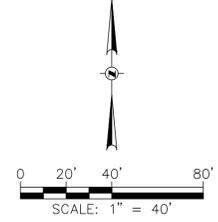
1. THE BASE SURVEY WAS PREPARED BY GRAEF IN 2022 ALL UNDERGROUND UTILITIES AND STRUCTURES HAVE BEEN SHOWN TO A REASONABLE DEGREE OF ACCURACY AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THEIR EXACT LOCATION AND TO AVOID DAMAGE THERETO.
2. COORDINATES ARE BASED ON THE WISCONSIN COORDINATE REFERENCE SYSTEMS (WISCRS), WINNEBAGO COUNTY, NORTH AMERICAN DATUM OF 1983, 2011 ADJUSTMENT (NAD83(2011)), NORTH AMERICAN VERTICAL DATUM OF 1988, 2012 ADJUSTMENT (NAVD88(2012)), GEOID G18A-WI
3. DIGGERS HOTLINE PLANNING PRINT TICKET #20221204238

### BENCHMARKS

- BM #1000 FOUND RAILROAD SPIKE IN NORTH FACE OF POWERPOLE LOCATED APPROXIMATELY 17 FEET SOUTHWEST OF GRUNDMAN LANE AND APPROXIMATELY 200 FEET NORTHWEST OF THE ENTRANCE TO GRUNDMAN COUNTY BOAT LAUNCH. ELEVATION = 750.34' (SHOWN)
- BM #1001 FOUND RAILROAD SPIKE IN SOUTH FACE OF LIGHTPOLE LOCATED ON THE NORTH SIDE OF THE PARKING LOT OF GRUNDMAN COUNTY BOAT LAUNCH AND APPROXIMATELY 150 FEET NORTHWEST FROM THE BOAT RAMP. ELEVATION = 751.55' (SHOWN)

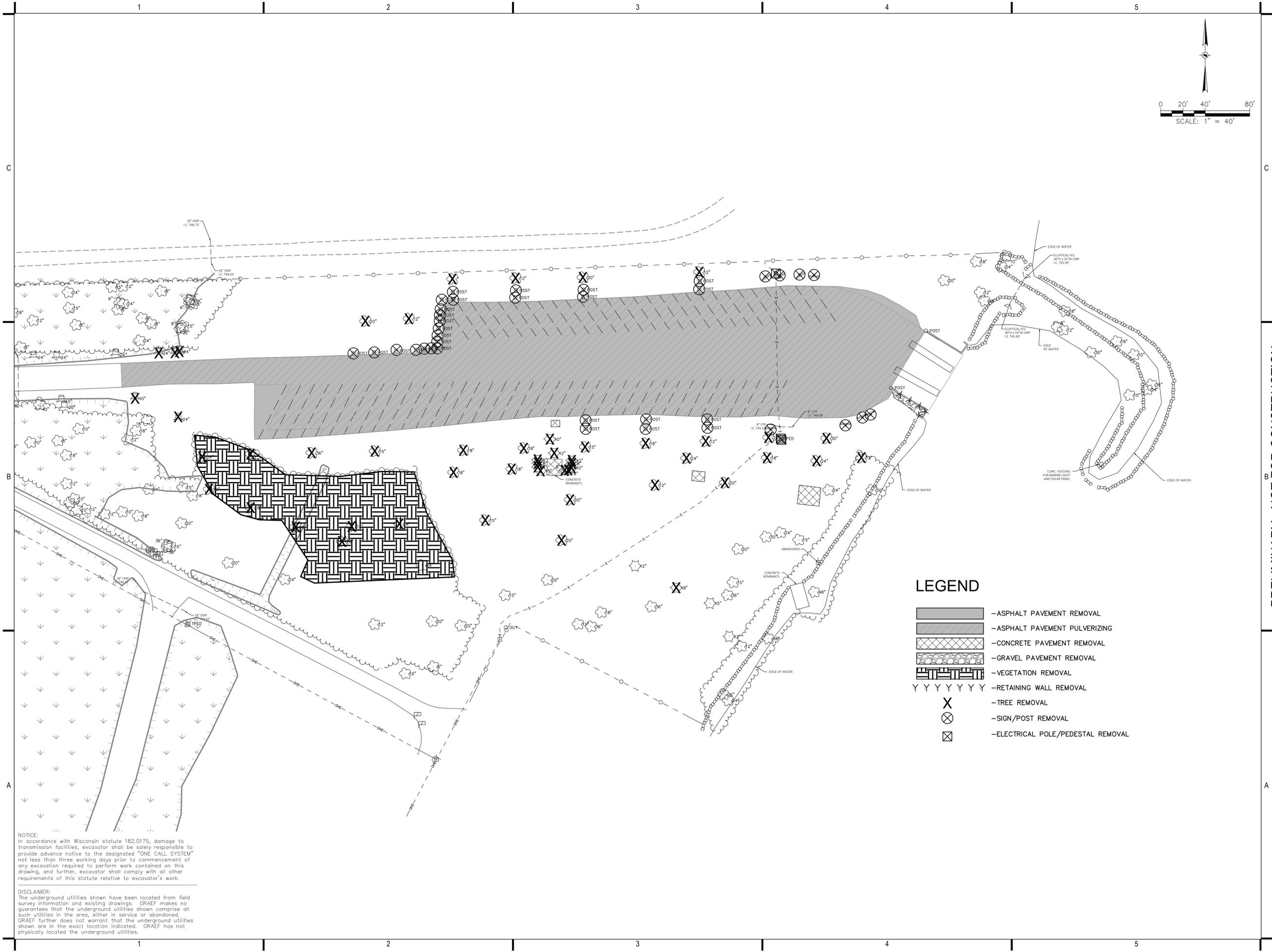
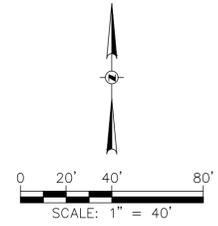
### CONTROL POINTS

- |  |  |
|--|--|
| CP-900<br>SET MAGNAIL<br>N. 505,181.78'<br>E. 806,322.56'<br>EL. 750.07'   | CP-902<br>SET MAGNAIL<br>N. 504,942.03'<br>E. 806,721.02'<br>EL. 750.04' |
| CP-901<br>FOUND MAGNAIL<br>N. 505,127.58'<br>E. 806,996.22'<br>EL. 751.10' | CP-903<br>SET MAGNAIL<br>N. 505,166.04'<br>E. 807,285.01'<br>EL. 750.04' |



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### LEGEND

- ASPHALT PAVEMENT REMOVAL
- ASPHALT PAVEMENT PULVERIZING
- CONCRETE PAVEMENT REMOVAL
- GRAVEL PAVEMENT REMOVAL
- VEGETATION REMOVAL
- RETAINING WALL REMOVAL
- TREE REMOVAL
- SIGN/POST REMOVAL
- ELECTRICAL POLE/PEDESTAL REMOVAL

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PROJECT TITLE:

GRUNDMAN BOAT LAUNCH

1801 GRUNDMAN LANE  
OSHKOSH, WI

NO.	DATE	REVISIONS	BY

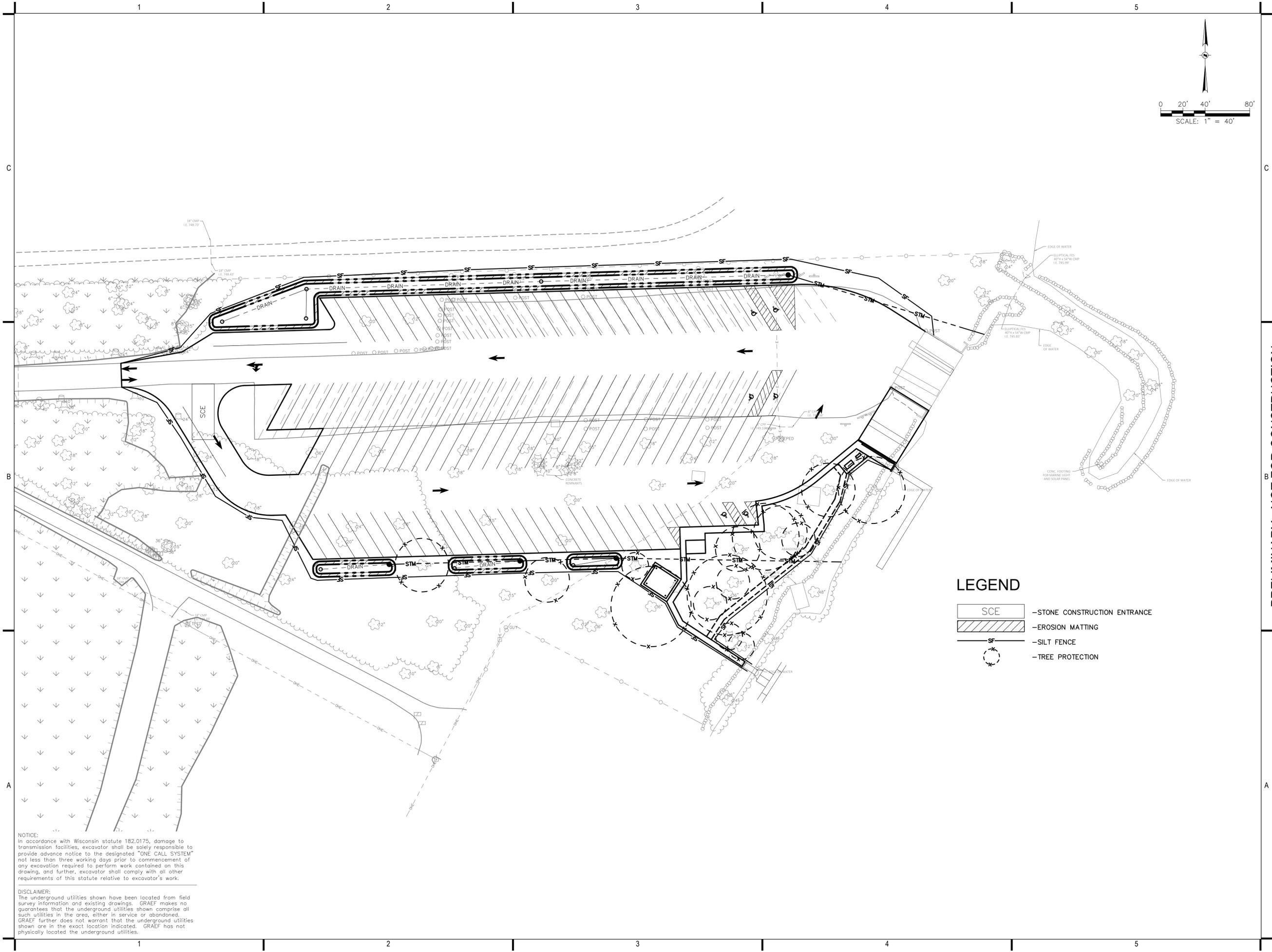
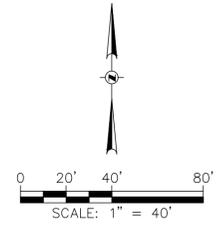
PROJECT INFORMATION:

PROJECT NUMBER: 2022-2004.00  
DATE: 05-27-2022  
DRAWN BY: CEP  
CHECKED BY: RPV  
APPROVED BY: RPV  
SCALE: AS NOTED

SHEET TITLE:

SITE DEMOLITION PLAN

SHEET NUMBER:



### LEGEND

- SCE - STONE CONSTRUCTION ENTRANCE
- EROSION MATTING
- SF - SILT FENCE
- TREE PROTECTION

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PROJECT TITLE:

GRUNDMAN BOAT LAUNCH

1801 GRUNDMAN LANE  
OSHKOSH, WI

PRELIMINARY - NOT FOR CONSTRUCTION

NO.	DATE	REVISIONS	BY

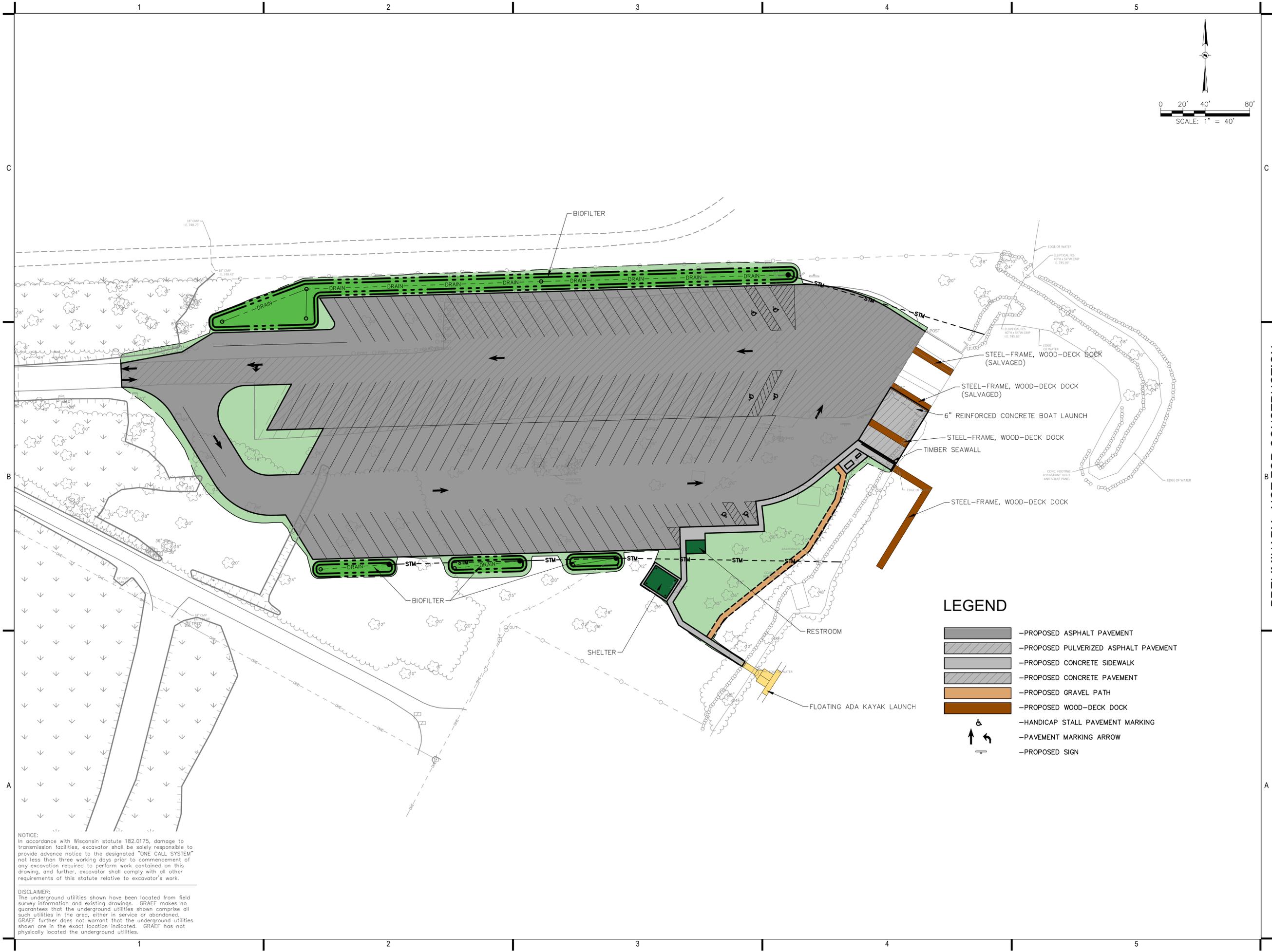
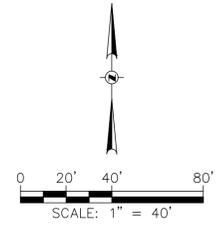
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APPROVED BY: RPV  
SCALE: AS NOTED

SHEET TITLE:

SITE EROSION CONTROL PLAN

SHEET NUMBER:



### LEGEND

- PROPOSED ASPHALT PAVEMENT
- PROPOSED PULVERIZED ASPHALT PAVEMENT
- PROPOSED CONCRETE SIDEWALK
- PROPOSED CONCRETE PAVEMENT
- PROPOSED GRAVEL PATH
- PROPOSED WOOD-DECK DOCK
- HANDICAP STALL PAVEMENT MARKING
- PAVEMENT MARKING ARROW
- PROPOSED SIGN

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GRUNDMAN BOAT LAUNCH

1801 GRUNDMAN LANE  
OSHKOSH, WI

NO.	DATE	REVISIONS	BY

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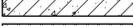
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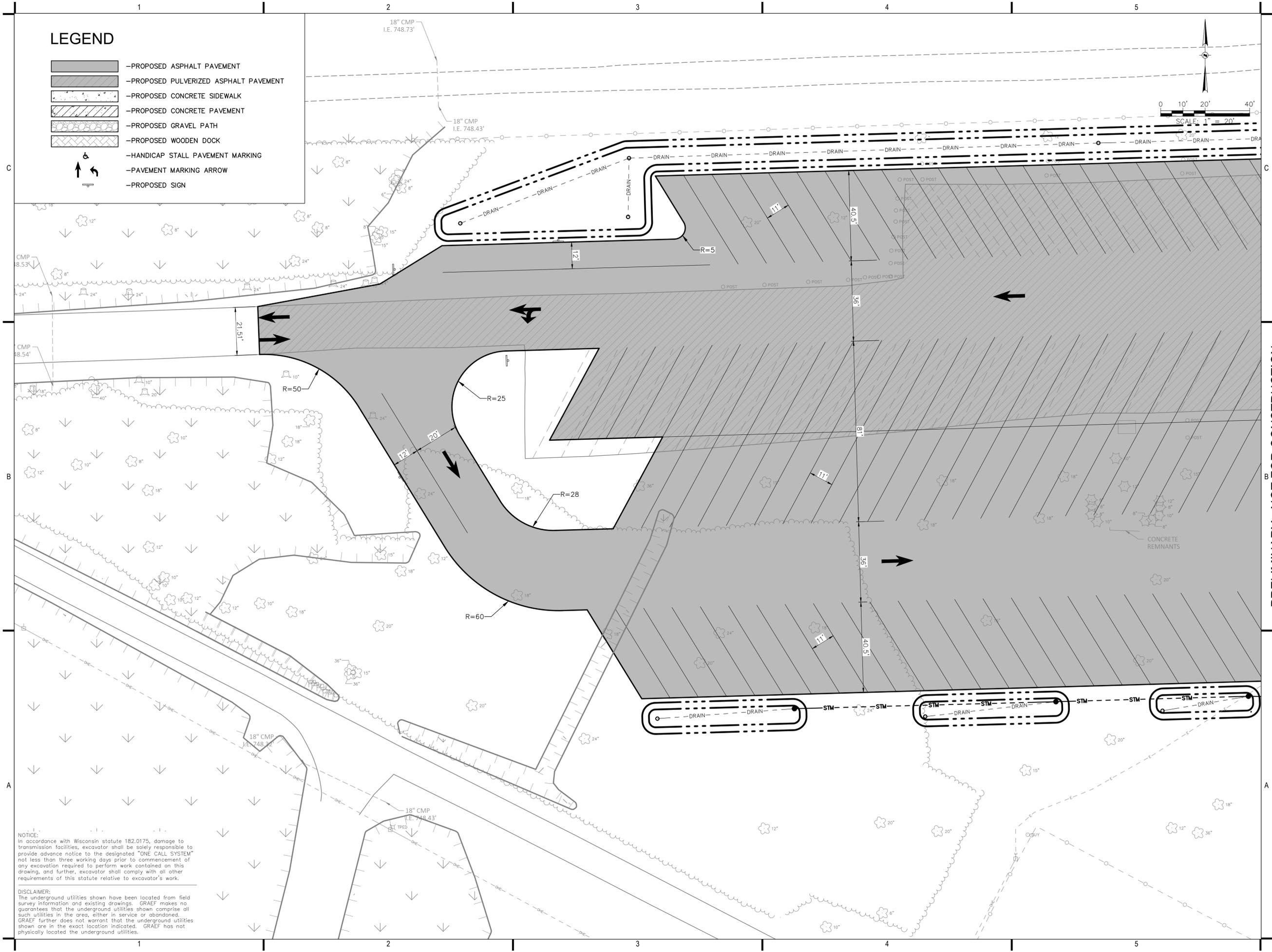
SHEET TITLE:

OVERALL SITE LAYOUT PLAN

SHEET NUMBER:

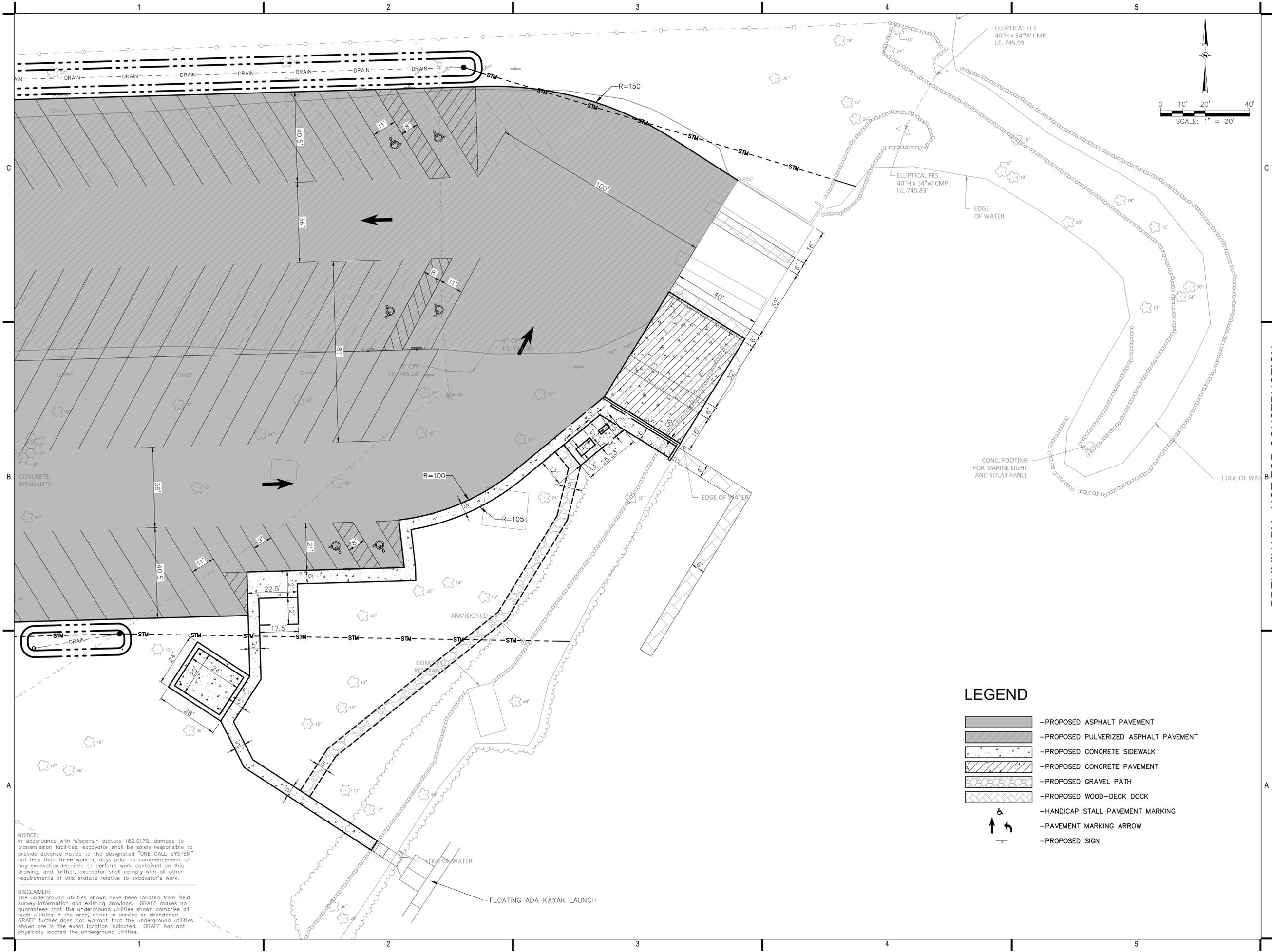
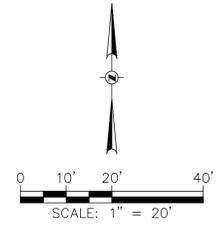
## LEGEND

-  -PROPOSED ASPHALT PAVEMENT
-  -PROPOSED PULVERIZED ASPHALT PAVEMENT
-  -PROPOSED CONCRETE SIDEWALK
-  -PROPOSED CONCRETE PAVEMENT
-  -PROPOSED GRAVEL PATH
-  -PROPOSED WOODEN DOCK
-  -HANDICAP STALL PAVEMENT MARKING
-  -PAVEMENT MARKING ARROW
-  -PROPOSED SIGN



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GRUNDMAN BOAT LAUNCH

1801 GRUNDMAN LANE  
OSHKOSH, WI

PRELIMINARY - NOT FOR CONSTRUCTION

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SHEET TITLE:

SITE LAYOUT PLAN - EAST

SHEET NUMBER:

### LEGEND

- PROPOSED ASPHALT PAVEMENT
- PROPOSED PULVERIZED ASPHALT PAVEMENT
- PROPOSED CONCRETE SIDEWALK
- PROPOSED CONCRETE PAVEMENT
- PROPOSED GRAVEL PATH
- PROPOSED WOOD-DECK DOCK
- HANDICAP STALL PAVEMENT MARKING
- PAVEMENT MARKING ARROW
- PROPOSED SIGN

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1150 Springhurst Drive,  
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Green Bay, WI 54304-5947  
920 / 592 9440  
920 / 592 9445 fax

www.graef-usa.com

PROJECT TITLE:

GRUNDMAN BOAT LAUNCH

1801 GRUNDMAN LANE  
OSHKOSH, WI

NO.	DATE	REVISIONS	BY
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SHEET TITLE:

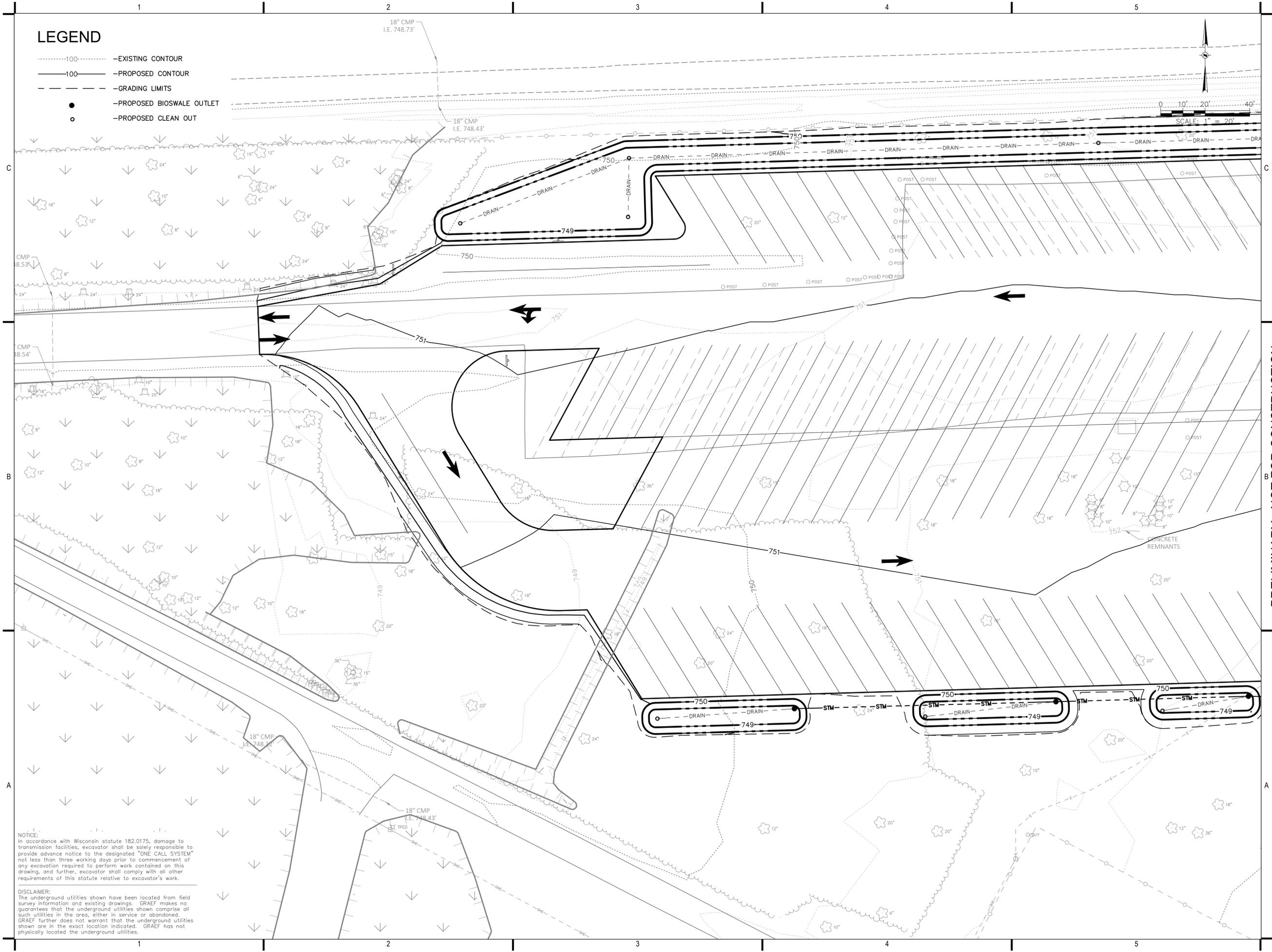
SITE GRADING PLAN - WEST

SHEET NUMBER:

**C401**

**LEGEND**

- 100----- -EXISTING CONTOUR
- 100————— -PROPOSED CONTOUR
- - - - - -GRADING LIMITS
- -PROPOSED BIOSWALE OUTLET
- -PROPOSED CLEAN OUT



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PROJECT TITLE:

GRUNDMAN BOAT LAUNCH

1801 GRUNDMAN LANE  
OSHKOSH, WI

NO.	DATE	REVISIONS	BY

PROJECT INFORMATION:

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DATE: 05-27-2022

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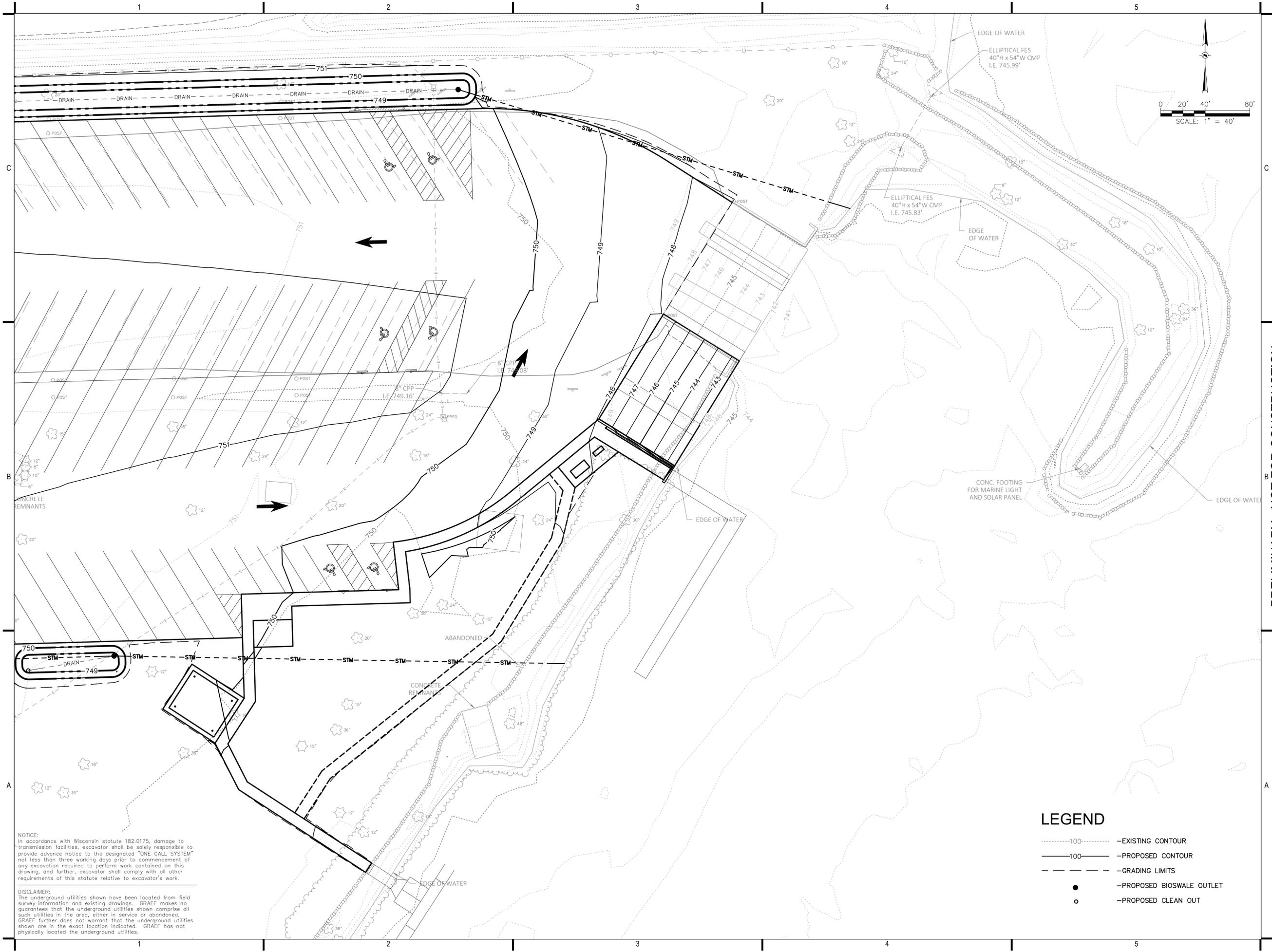
SCALE: AS NOTED

SHEET TITLE:

SITE GRADING PLAN - EAST

SHEET NUMBER:

**C402**



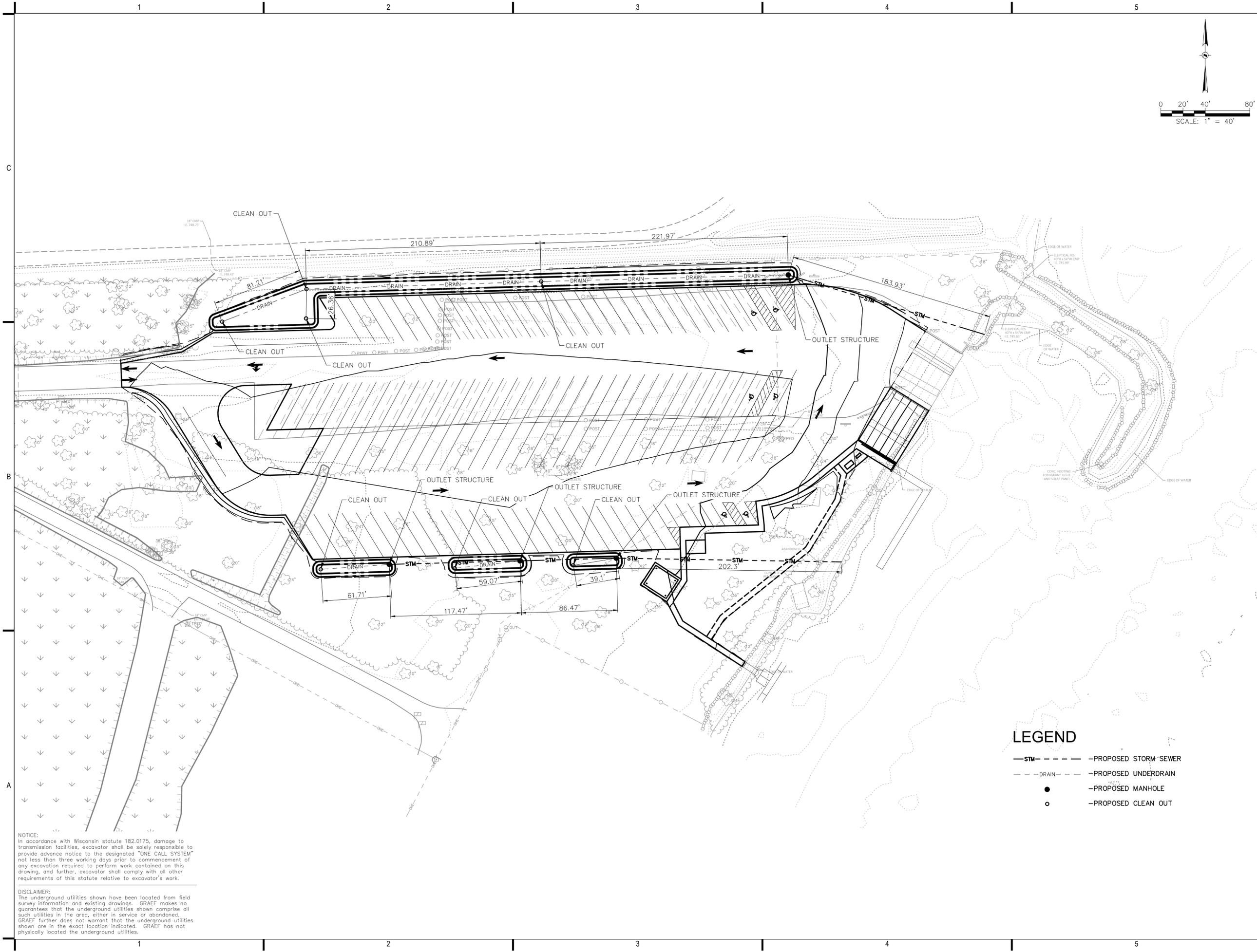
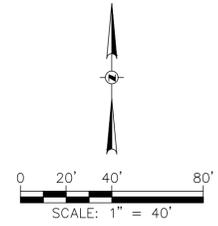
**LEGEND**

- 100--- -EXISTING CONTOUR
- 100— -PROPOSED CONTOUR
- - - - -GRADING LIMITS
- -PROPOSED BIOSWALE OUTLET
- -PROPOSED CLEAN OUT

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PROJECT TITLE:  
GRUNDMAN BOAT LAUNCH

1801 GRUNDMAN LANE  
OSHKOSH, WI

NO.	DATE	REVISIONS	BY

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SCALE: AS NOTED

SHEET TITLE:  
SITE UTILITIES PLAN

SHEET NUMBER:

# C500

### LEGEND

- PROPOSED STORM SEWER
- PROPOSED UNDERDRAIN
- PROPOSED MANHOLE
- PROPOSED CLEAN OUT

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X:\GB\2022\2022004\Design\Civil\00\C500\_Utilities 6/1/2022 11:51 AM

GENERAL NOTES

- 1. EXISTING CONDITIONS FOR THIS PLAN ARE BASED ON SURVEY BY GRAEF-USA DATED 2022. ALL UNDERGROUND STRUCTURES AND UTILITIES HAVE BEEN SHOWN TO A REASONABLE DEGREE OF ACCURACY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THEIR EXACT LOCATION AND DEPTH.
2. IN ACCORDANCE WITH WISCONSIN STATUTE 182.0175, DAMAGE TO TRANSMISSION FACILITIES, EXCAVATOR SHALL BE SOLELY RESPONSIBLE TO PROVIDE ADVANCE NOTICE TO THE DESIGNATED "ONE CALL SYSTEM" NOT LESS THAN THREE WORKING DAYS PRIOR TO COMMENCEMENT OF ANY EXCAVATION REQUIRED TO PERFORM WORK CONTAINED ON THIS DRAWING, AND FURTHER, EXCAVATOR SHALL COMPLY WITH ALL OTHER REQUIREMENTS OF THIS STATUTE RELATIVE TO CONTRACTOR'S WORK.
3. ALL CONSTRUCTION WASTE SHALL BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF IN ACCORDANCE WITH STATE STATUTES.
4. ALL STORM SEWER CONSTRUCTION MUST BE COMPLETED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, SIXTH EDITION, DATED DECEMBER 22, 2003 AND ALL SUPPLEMENTALS.
5. ALL ROADWAY, GRADING AND OTHER SITE WORK MUST BE COMPLETED IN ACCORDANCE WITH THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, CURRENT EDITION AND ALL SUPPLEMENTALS.
6. THE CONTRACTOR SHALL COMPLY WITH ALL PERTINENT PROVISIONS OF THE "SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION" ISSUED BY THE U.S. DEPARTMENT OF LABOR.
7. THE CONTRACTOR SHALL PROTECT ALL UTILITIES AND SITE IMPROVEMENTS TO REMAIN. ANY DAMAGE TO EXISTING UTILITIES OR SITE IMPROVEMENTS TO REMAIN SHALL BE REPAIRED BY THE CONTRACTOR TO THE OWNERS SPECIFICATIONS AT THE CONTRACTOR'S EXPENSE.
8. IN THE EVENT OF ANY DISCREPANCIES AND/OR ERRORS FOUND IN THE DRAWINGS, OR IF PROBLEMS ARE ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY, BEFORE PROCEEDING WITH THE WORK. IF THE ENGINEER IS NOT NOTIFIED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF ANY REVISION.
9. PROTECT EXISTING PLANTINGS FROM DAMAGE. PLANTINGS INTENDED TO REMAIN OR BE RELOCATED THAT ARE DAMAGED BY CONTRACTOR SHALL BE REPLACED AT CONTRACTOR'S EXPENSE.

DEMOLITION NOTES

- 1. ASPHALT AND CONCRETE PAVEMENT NOTED FOR REMOVAL SHALL BE SAW CUT TO FULL DEPTH PRIOR TO REMOVAL.
2. REMOVAL DIMENSIONS SHALL CORRESPOND TO THE PROPOSED WORK INDICATED ON THE SITE PLAN AND OTHER SITE/CIVIL PLAN SHEETS.
3. ALL REMOVALS OR OTHER WORK WITHIN PUBLIC RIGHT-OF-WAY MUST BE COORDINATED WITH WINNEBAGO COUNTY PRIOR TO BEGINNING WORK.

LAYOUT NOTES

- 1. ALL DIMENSIONS SHOWN ARE TO DECIMAL FEET AND MEASURED FROM FACE OF CURB OR EDGE OF PAVEMENT, UNLESS SPECIFIED OTHERWISE. PRIOR TO START OF CONSTRUCTION, THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE.
2. RADIUS DIMENSIONS NOT NOTED SHALL BE 3 FEET.
3. ALL WORK DONE WITHIN THE RIGHT OF WAY SHALL BE DONE PER WINNEBAGO COUNTY STANDARDS.
4. A CAD DRAWING WILL BE PROVIDED TO CONTRACTOR FOR COMPLETE LAYOUT OF SITE ELEMENTS.

GRADING NOTES

- 1. THIS PLAN SHOWS NEW CONTOURS AND FINISHED GRADES. FOR ROUGH GRADES OF ALL PAVEMENT AREAS, SUBTRACT THICKNESS OF PAVEMENT AND BASE COURSE SPECIFIED.
2. WHEN SPOT ELEVATIONS SHOWN REFER TO CRITICAL POINTS SUCH AS PAVEMENT ANGLE POINTS AND CURVE-TANGENT INTERSECTIONS, THEIR LOCATION WILL CORRESPOND WITH COORDINATES SHOWN.

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EROSION CONTROL NOTES

- 1. CONTRACTOR SHALL EMPLOY EROSION CONTROL METHODS AS SHOWN AND SPECIFIED IN THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES CONSTRUCTION SITE TECHNICAL STANDARDS AND THE WISDOT EROSION CONTROL PRODUCT ACCEPTABILITY LISTS (PAL).
2. ALL EROSION CONTROL MEASURES SHALL BE ADJUSTED TO MEET FIELD CONDITIONS AT THE TIME OF CONSTRUCTION AND SHALL BE INSTALLED PRIOR TO ANY GRADING OR DISTURBANCE OF EXISTING SURFACE MATERIAL ON THE SITE.
3. ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED FOR STABILITY AND OPERATION AFTER A RAINFALL OF 0.5 INCHES OR MORE BUT NO LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS WILL BE MADE IMMEDIATELY. WRITTEN REPORTS WILL BE KEPT OF ALL EROSION AND SEDIMENT CONTROL INSPECTIONS AS REQUIRED BY THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES (WDNR).
4. SILT FENCE SHALL BE INSTALLED IN THE LOCATIONS SHOWN ON THE CONSTRUCTION PLANS. SILT FENCE SHALL BE INSTALLED PER DETAILS ON SHEET C601. SEDIMENT DEPOSITS WILL BE REMOVED FROM BEHIND THE SILT FENCE WHEN DEPOSITS REACH A DEPTH OF 6 INCHES. THE SILT FENCE WILL BE REPAIRED OR REPLACED AS NECESSARY TO MAINTAIN A BARRIER.
5. EROSION CONTROL MEASURES SHALL BE MAINTAINED ON A CONTINUING BASIS UNTIL THE SITE IS PERMANENTLY STABILIZED. SITE STABILIZATION INVOLVING SEEDING WHICH IS NOT COMPLETED PRIOR TO SEPTEMBER 15 SHALL BE COMPLETED WITH DORMANT SEEDING BY NOVEMBER 1. SODDING MAY OCCUR ANYTIME SOD IS AVAILABLE AND SOD AND SOIL IS NOT FROZEN.
6. EROSION CONTROL MEASURES MUST BE IN PLACE AT THE END OF EACH WORK DAY.
7. ALL OFF-SITE SEDIMENT DEPOSITS OCCURRING AS A RESULT OF CONSTRUCTION WORK OR A STORM EVENT SHALL BE CLEANED UP BY THE END OF EACH DAY. FLUSHING SHALL NOT BE ALLOWED.
8. WHERE CONSTRUCTION ACTIVITIES HAVE PERMANENTLY CEASED OR HAVE TEMPORARILY BEEN SUSPENDED FOR MORE THAN FOURTEEN DAYS, OR WHEN FINAL GRADES ARE REACHED IN ANY PORTION OF THE SITE, STABILIZATION SHALL BE IMPLEMENTED WITHIN SEVEN DAYS. TEMPORARY STABILIZATION PRACTICES SUCH AS MULCH/TACKIFIER, EROSION MAT, OR WISDOT TYPE B SOIL STABILIZER (POLYMER) SHALL BE APPLIED TO THE SOIL SURFACE WHEN THE SITE IS NOT READY FOR PERMANENT RESTORATION. WHEN STABILIZATION IS NOT POSSIBLE DUE TO SNOW COVER, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS POSSIBLE.
9. DUST CONTROL SHALL BE IMPLEMENTED THROUGHOUT CONSTRUCTION AND SHALL UTILIZE THE METHODS OUTLINED IN WDNR TECH STD. 1068.
10. THE REMOVAL OF VEGETATIVE COVER AND IMPERVIOUS SURFACES AND EXPOSURE OF THE BARE GROUND MUST BE RESTRICTED TO THE MINIMUM AMOUNT NECESSARY FOR CONSTRUCTION AREAS WHERE SOIL IS EXPOSED MUST BE PROTECTED FROM EROSION BY SEEDING AND MULCHING, SODDING, DIVERSION OF SURFACE RUNOFF, INSTALLATION OF STRAW BALES OR SILT SCREENS, CONSTRUCTION OF SETTLING BASINS, OR SIMILAR METHODS AS SOON AS POSSIBLE AFTER REMOVAL OF ORIGINAL GROUND COVER AS DESCRIBED IN THE WISCONSIN DNR TECHNICAL STANDARDS. ANY STOCKPILE THAT REMAINS OVER 7 DAYS MUST BE STABILIZED WITH MIXTURE NO. 20 FROM WISDOT SECTION 630.
11. STORM WATER AND GROUND WATER PUMPED FROM EXCAVATIONS AND/OR DEWATERING WELLS SHALL BE DISPOSED OF IN ACCORDANCE WITH THE WISCONSIN STATUTES. SEDIMENT BASINS, SEDIMENT TRAPS AND/OR THE USE OF POLYMERS TO CONTROL SEDIMENT SHALL BE UTILIZED AND MEET THE REQUIREMENTS OF THE WISCONSIN DNR TECHNICAL STANDARDS. DISCHARGE OR PUMPED WATER TO SANITARY SEWERS WILL NOT BE ALLOWED.
12. EROSION MAT SHALL CONSIST ENTIRELY OF BIODEGRADABLE COMPONENTS.
13. AFTER THE SITE IS UNIFORMLY STABILIZED ACROSS 80% OF THE SITE AREA, OR PRIOR TO, AT THE DIRECTION OF THE DEPARTMENT OF NATURAL RESOURCES, ALL TEMPORARY EROSION CONTROL MEASURES MUST BE REMOVED AND DISPOSED OF PROPERLY. ANY REMAINING TEMPORARY EROSION CONTROL DEVICES AFTER THIS POINT CONSTITUTE LITTERING AND MAY BE ENFORCED AS DETERMINED NECESSARY BY THE DEPARTMENT OF NATURAL RESOURCES.
14. CONTRACTOR SHALL MAINTAIN A LOG OF THE EROSION CONTROL INSPECTIONS, REPAIRS MADE, AND RAIN EVENTS. THIS MUST BE MADE AVAILABLE TO DEPARTMENT OF NATURAL RESOURCES PERSONNEL UPON REQUEST AND MUST REMAIN ON THE PROJECT SITE AT ALL TIMES WORK IS BEING PERFORMED.

LEGEND

- ▲ TRAVERSE POINT
□ POWER POLE
⌵ TPED TELEPHONE PEDESTAL
⌵ LIGHT POLE
○ WELL
□ MAIL BOX
≡ SIGN
○ POST BOLLARD
☀ 2' DECIDUOUS TREE
☀ 2' CONIFEROUS TREE
⌵ 2' STUMP
~ EDGE OF WOODS
- - - - OVERHEAD ELECTRIC LINE
- - - - UNDERGROUND ELECTRIC LINE
- - ○ - - CHAIN-LINK FENCE
- - □ - - WOOD FENCE
- - - - RIP-RAP



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PROJECT TITLE:

GRUNDMAN BOAT LAUNCH

1801 GRUNDMAN LANE OSHKOSH, WI

NO. DATE REVISIONS BY

PROJECT INFORMATION:

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SCALE: AS NOTED

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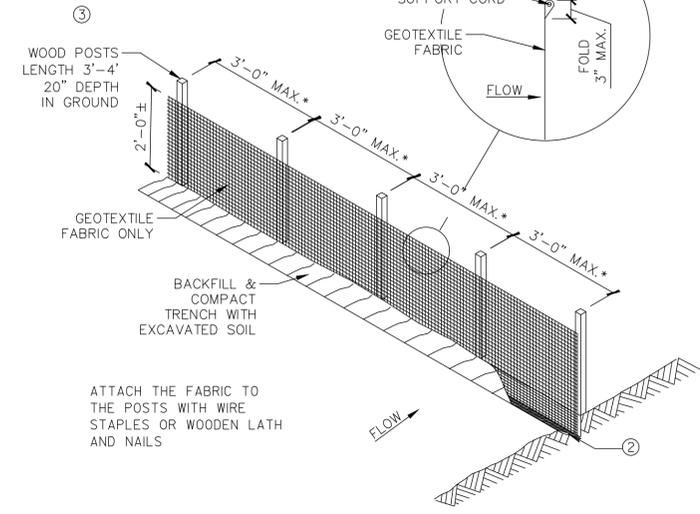
CONSTRUCTION NOTES

SHEET NUMBER:

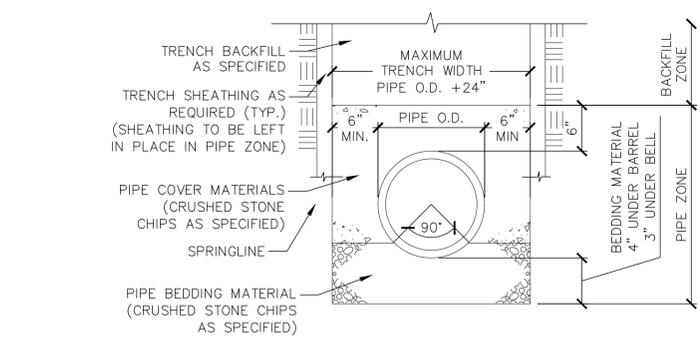
C600

- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.

NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS



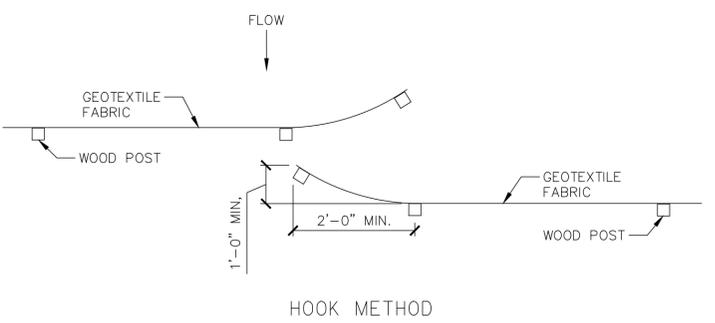
① **SILT FENCE**  
SCALE N.T.S.



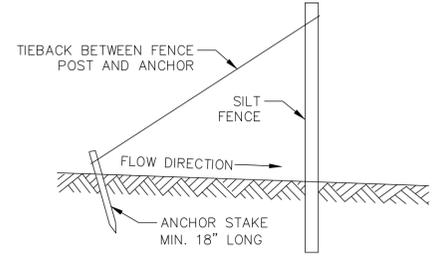
④ **CLASS "C" BEDDING DETAIL FOR STORM SEWER**  
SCALE N.T.S.

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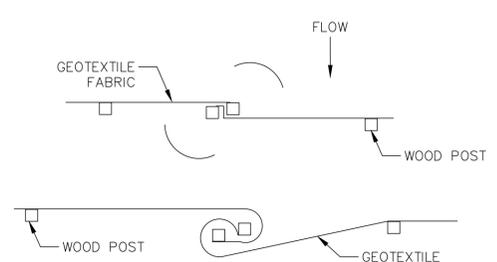
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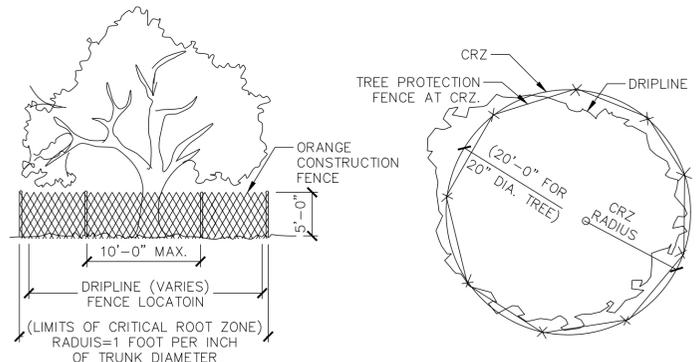
⑤ **JOINING TWO LENGTHS OF SILT FENCE**



SILT FENCE TIE BACK  
(WHEN ADDITIONAL SUPPORT REQUIRED)



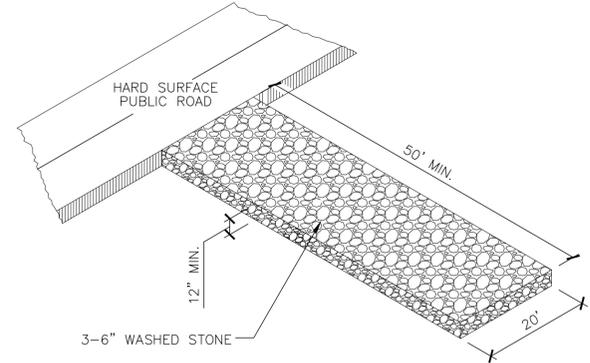
TWIST METHOD



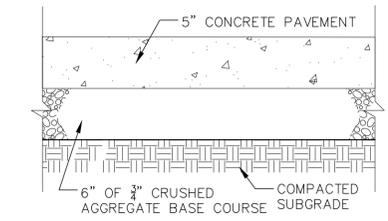
**TREE PROTECTION FENCE - ORANGE CONSTRUCTION FENCE**

1. ALL TREES SHOWN TO BE RETAINED WITHIN THE LIMITS OF CONSTRUCTION ON THE PLANS, SHALL BE PROTECTED DURING CONSTRUCTION WITH FENCING.
2. TREE PROTECTION FENCES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF ANY SITE PREPARATION WORK (CLEARING, GRUBBING, OR GRADING).
3. EROSION AND SEDIMENTATION CONTROL BARRIERS SHALL BE INSTALLED OR MAINTAINED IN A MANNER WHICH DOES NOT RESULT IN SOIL BUILD-UP WITHIN TREE DRIPLINES.
4. FENCES SHALL COMPLETELY SURROUND THE TREE OR CLUSTERS OF TREES, LOCATED AT THE OUTERMOST LIMITS OF THE TREE BRANCHES (DRIPLINE) OR CRITICAL ROOT ZONE (CRZ), WHICHEVER IS GREATER; AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PROJECT.
5. ANY ROOTS EXPOSED BY CONSTRUCTION ACTIVITY SHALL BE PRUNED FLUSH WITH THE SOIL AND BACKFILLED WITH GOOD QUALITY TOP SOIL WITHIN TWO DAYS. IF EXPOSED ROOT AREAS CANNOT BE BACKFILLED WITHIN 2 DAYS, AN ORGANIC MATERIAL WHICH REDUCES SOIL TEMPERATURE AND MINIMIZES WATER LOSS DUE TO EVAPORATION SHALL BE PLACED TO COVER THE ROOTS UNTIL BACKFILL CAN OCCUR.
6. PRIOR TO EXCAVATION OR GRADE CUTTING WITHIN TREE DRIPLINES, A CLEAN CUT SHALL BE MADE WITH A ROCK SAW OR SIMILAR EQUIPMENT, TO MINIMIZE DAMAGE TO REMAINING ROOTS.
7. NO LANDSCAPE TOPSOIL DRESSING GREATER THAN FOUR (4) INCHES SHALL BE PERMITTED WITHIN THE DRIPLINE OR CRZ OF TREES, WHICHEVER IS GREATER. NO TOPSOIL IS PERMITTED ON ROOT FLARES OF ANY TREE.
8. PRUNING TO PROVIDE CLEARANCE FOR STRUCTURES, VEHICULAR TRAFFIC, AND CONSTRUCTION EQUIPMENT SHALL TAKE PLACE BEFORE CONSTRUCTION BEGINS. ALL PRUNING MUST BE DONE AS OUTLINED IN LITERATURE PROVIDED BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA PRUNING TECHNIQUES).

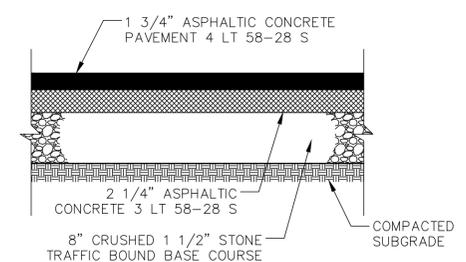
⑤ **TREE PROTECTION DETAIL**  
SCALE N.T.S.



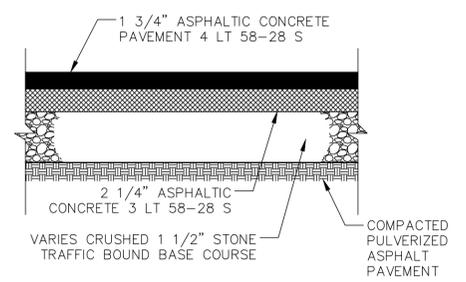
② **STONE CONSTRUCTION ENTRANCE**  
SCALE N.T.S.



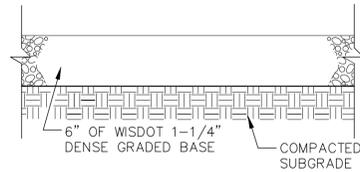
③ **CONCRETE SIDEWALK**  
SCALE N.T.S.



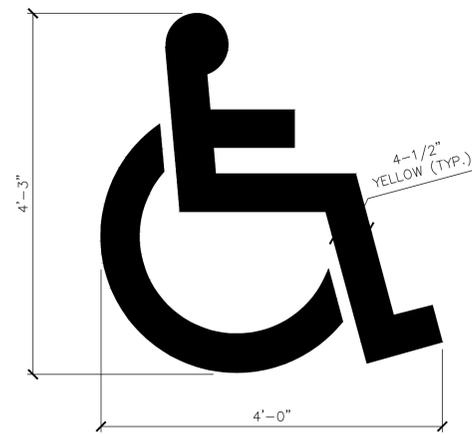
⑥ **TYPICAL ASPHALT PAVEMENT SECTION**  
SCALE N.T.S.



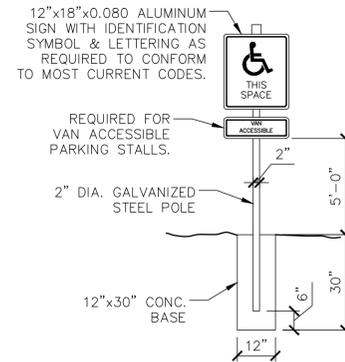
⑦ **PULVERIZED ASPHALT PAVEMENT SECTION**  
SCALE N.T.S.



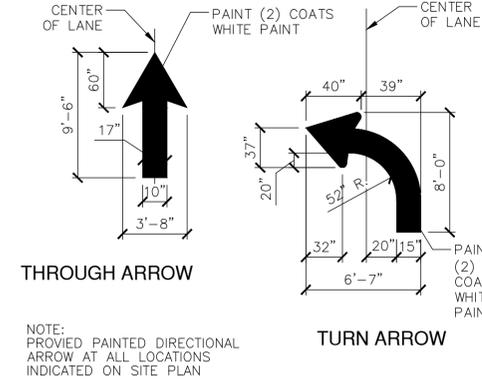
**1 GRAVEL PAVEMENT**  
SCALE N.T.S.



**2 PAVEMENT MARKING HANDICAP SYMBOL**  
SCALE N.T.S.

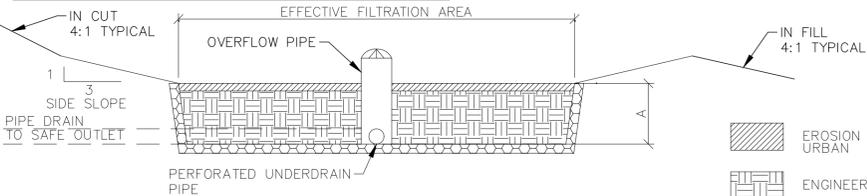


**3 WHEELCHAIR ACCESSIBLE SIGN**  
SCALE N.T.S.

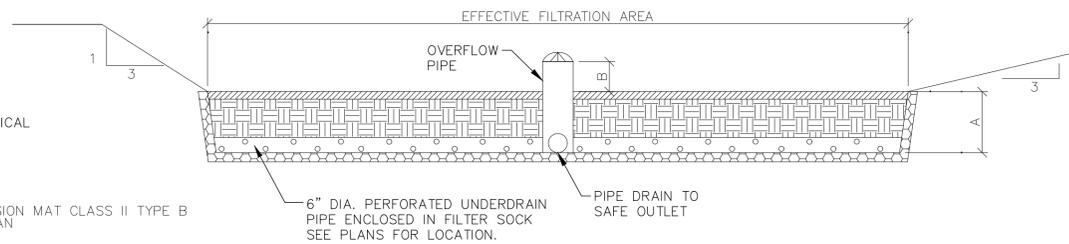


**4 PAVEMENT ARROW**  
SCALE N.T.S.

DEVICE NAME	DIMENSIONS		WEIR OVERFLOW ELEV.	BASIN ELEVATION
	A	B		
BIOFILTRATION BASIN 1	2.00'	0.25'	749.75	749.00
BIOFILTRATION BASIN 2	2.00'	0.25'	749.75	749.00
BIOFILTRATION BASIN 3	2.00'	0.25'	749.75	749.00
BIOFILTRATION BASIN 4	2.00'	0.25'	749.75	749.00



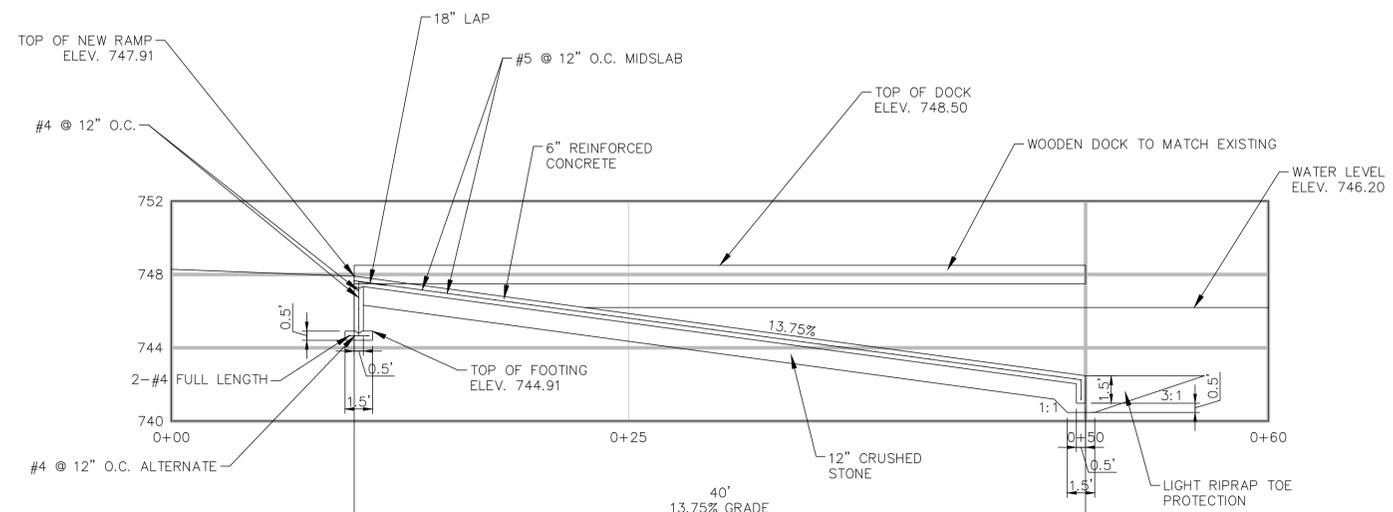
CROSS SECTION ACROSS WIDTH OF DEVICE



CROSS SECTION ACROSS LENGTH OF DEVICE

**5 BIOFILTRATION BASIN DETAIL**  
SCALE N.T.S.

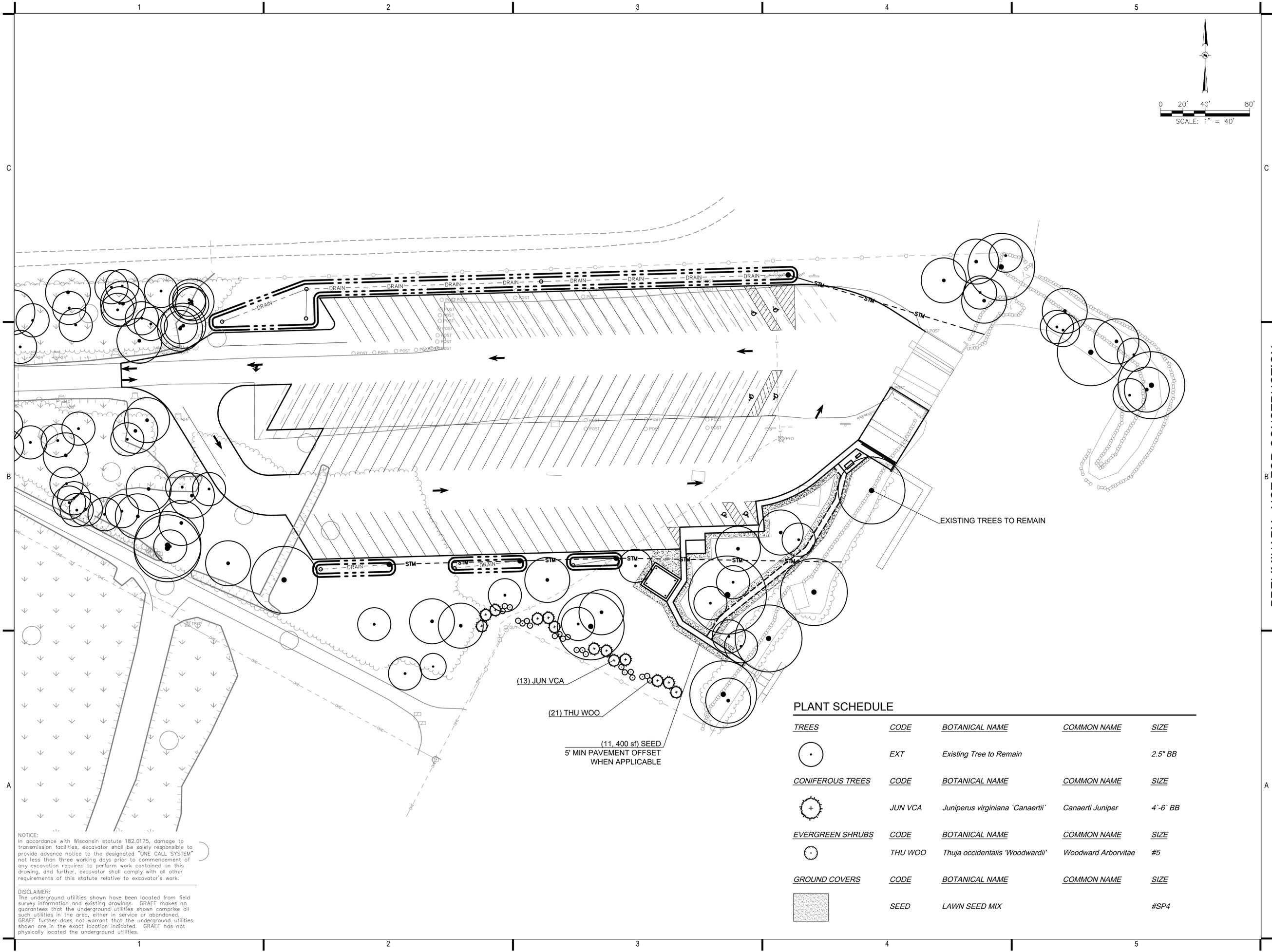
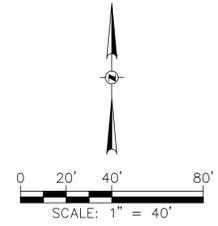
- EROSION MAT CLASS II TYPE B URBAN
- ENGINEERED SOIL
- 2' CLAY LINER OR IMPERMEABLE MEMBRANE LINER



**6 BOAT LAUNCH SECTION**  
SCALE N.T.S.

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PROJECT TITLE:  
GRUNDMAN BOAT LAUNCH

1801 GRUNDMAN LANE  
OSHKOSH, WI

NO.	DATE	REVISIONS	BY

PROJECT INFORMATION:

PROJECT NUMBER: 2022-2004.00  
DATE: 05-27-2022  
DRAWN BY: CEP  
CHECKED BY: RPV  
APPROVED BY: RPV  
SCALE: AS NOTED

SHEET TITLE:  
LANDSCAPE PLAN

SHEET NUMBER:

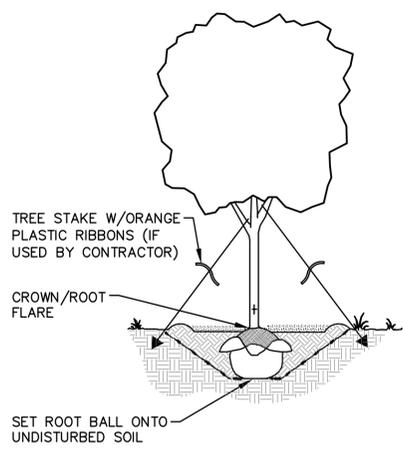
PLANT SCHEDULE

TREES	CODE	BOTANICAL NAME	COMMON NAME	SIZE
	EXT	Existing Tree to Remain		2.5" BB
CONIFEROUS TREES	CODE	BOTANICAL NAME	COMMON NAME	SIZE
	JUN VCA	<i>Juniperus virginiana 'Canaertii'</i>	Canaertii Juniper	4'-6" BB
EVERGREEN SHRUBS	CODE	BOTANICAL NAME	COMMON NAME	SIZE
	THU WOO	<i>Thuja occidentalis 'Woodwardii'</i>	Woodward Arborvitae	#5
GROUND COVERS	CODE	BOTANICAL NAME	COMMON NAME	SIZE
	SEED	LAWN SEED MIX		#SP4

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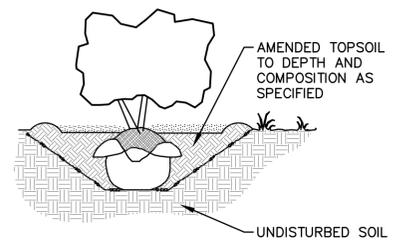
X:\GB\2022\2022004\Design\Civil\100L\100\_Landscape Plan 6/1/2022 11:52 AM



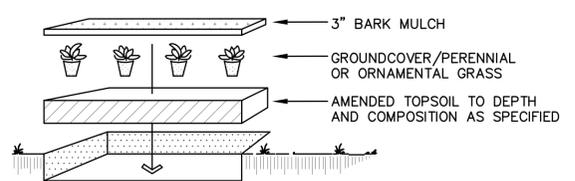
- PRIOR TO DIGGING TREE, MARK NORTH SIDE OF TRUNK. INSTALL TREE IN SAME ORIENTATION.
- EXCAVATE PLANTING PIT 3-TIMES THE DIA. & APPROXIMATELY THE HEIGHT OF ROOT BALL DEPTH. ROOT FLARE SHALL BE AT OR SLIGHTLY HIGHER THAN ADJACENT F.G.
- LOOSEN SUBSOIL W/PICK TO ENSURE POROSITY.
- SELECT BEST VIEWING ANGLE, LIFT STOCK BY BALL AND PLACE IN PLANTING PIT.
- CUT AND REMOVE ALL STRING AND WIRE AND UNWRAP TOP HALF OF ROOT BALL. BACKFILL PLANTING PIT WITH EXISTING SOIL UP TO BASE OF ROOT FLARE.
- PACK BACKFILL AROUND BASE OF ROOT BALL TO STABILIZE IT.
- BACKFILL REMAINDER OF PLANTING HOLE USING WATER PERIODICALLY TO REDUCE AIR POCKETS.
- FORM 3" HT. SAUCER IN 6"-0" DIAMETER AROUND TREE & FILL WITH 3" SHREDDED HARDWOOD BARK MULCH. ONLY APPLY MULCH WHEN TREE IS IN MANICURED TURF AREAS.
- KEEP MULCH 1-2 INCHES AWAY FROM TRUNK.
- WATER IMMEDIATELY & FREQUENTLY.
- PLANT SIZES SPECIFIED ARE MINIMUM ACCEPTABLE.

1 TREE PLANTING DETAIL

- EXCAVATE PLANTING PIT TWICE THE DIAMETER OF BALL & EQUAL IN DEPTH
- LOOSEN SUBSOIL W/PICK TO ENSURE POROSITY
- PLACE PLANTING SOIL IN PLANTING PIT & FOOT TAMP
- SELECT BEST VIEWING ANGLE, LIFT STOCK BY BALL & PLACE IN PLANTING PIT
- UNWRAP TOP HALF OF ROOT BALL
- BACKFILL TO FINISHED GRADE WITH AMENDED TOPSOIL & TAMP
- FORM 3" SAUCER TO ENCIRCLE STOCK & FILL WITH 3" SHREDDED BARK MULCH
- WATER IMMEDIATELY & FREQUENTLY.
- PLANT SIZES SPECIFIED ARE MINIMUM ACCEPTABLE

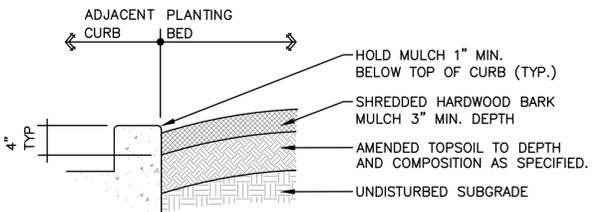


2 SHRUB PLANTING DETAIL

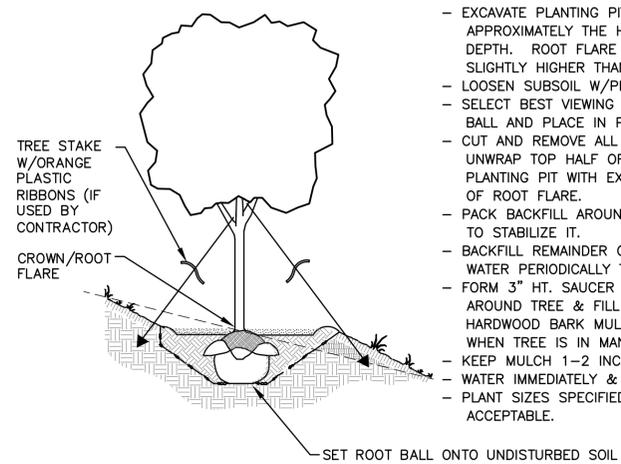


- LAYOUT PLANT MATERIAL AT SPACING AS SHOWN PER PLANT MATERIALS SCHEDULE
- HAND BROADCAST UNIFORM 3" HARDWOOD MULCH THROUGHOUT GROUNDCOVER / PERENNIAL / ORNAMENTAL GRASS BED.
- FLOOD IMMEDIATELY & WATER FREQUENTLY PER WRITTEN SPECIFICATIONS
- PLANT SIZES SPECIFIED ARE MINIMUM ACCEPTABLE

3 GROUND COVER / ORNAMENTAL GRASS / PERENNIAL PLANTING DETAIL



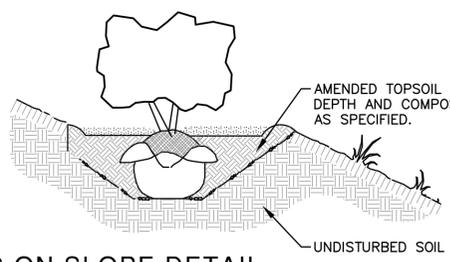
5 PLANT BED EDGE AT CURB



- EXCAVATE PLANTING PIT 3-TIMES THE DIA. & APPROXIMATELY THE HEIGHT OF ROOT BALL DEPTH. ROOT FLARE SHALL BE AT OR SLIGHTLY HIGHER THAN ADJACENT F.G.
- LOOSEN SUBSOIL W/PICK TO ENSURE POROSITY.
- SELECT BEST VIEWING ANGLE, LIFT STOCK BY BALL AND PLACE IN PLANTING PIT.
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- KEEP MULCH 1-2 INCHES AWAY FROM TRUNK.
- WATER IMMEDIATELY & FREQUENTLY.
- PLANT SIZES SPECIFIED ARE MINIMUM ACCEPTABLE.

6 TREE PLANTING ON SLOPE DETAIL

- EXCAVATE PLANTING PIT TWICE THE DIAMETER OF BALL & EQUAL IN DEPTH.
- LOOSEN SUBSOIL W/PICK TO ENSURE POROSITY
- PLACE PLANTING SOIL IN PLANTING PIT & FOOT TAMP.
- SELECT BEST VIEWING ANGLE, LIFT STOCK BY BALL & PLACE IN PLANTING PIT.
- UNWRAP TOP HALF OF ROOT BALL.
- BACKFILL TO FINISHED GRADE WITH AMENDED TOPSOIL & TAMP
- FORM 3" SAUCER TO ENCIRCLE STOCK & FILL WITH 3" SHREDDED BARK MULCH.
- WATER IMMEDIATELY & FREQUENTLY.
- PLANT SIZES SPECIFIED ARE MINIMUM ACCEPTABLE



7 SHRUB PLANTING ON SLOPE DETAIL

LANDSCAPING NOTES:

1. VERIFY EXISTING AND PROPOSED CONDITIONS, UTILITIES, PIPES, AND STRUCTURES, ETC. PRIOR TO BIDDING AND CONSTRUCTION.
2. INSPECT THE SITE PRIOR TO COMMENCING WORK. DOCUMENT IN WRITING AND PHOTOGRAPH EXISTING CONDITIONS WITHIN, AND IN AREAS ADJACENT TO, THE LIMITS OF CONSTRUCTION. PROVIDE DIGITAL COPIES OF PHOTOGRAPHS TO THE LANDSCAPE ARCHITECT. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES NOT DOCUMENTED IN THE SUBMITTAL PRIOR TO COMMENCEMENT OF DEMOLITION ACTIVITIES.
3. REFER TO GEOTECHNICAL REPORT, IF ONE EXISTS, FOR INFILTRATION RATES AND SOIL TYPES / CONDITIONS.
4. SEE WRITTEN SPECIFICATIONS AND DETAILS FOR PLANTING METHODS, REQUIREMENTS, MATERIALS, EXECUTION AND PLANT PROTECTION, PLANT STAKING METHODS, PLANT PIT DIMENSIONS, BACKFILL AND OTHER RELATED REQUIREMENTS.
5. PLANT PLACEMENT IS REQUIRED AS SHOWN ON THE LAYOUT, PLANTING, AND OTHER DRAWINGS.
6. PLANT NAMES ARE ABBREVIATED ON THE DRAWINGS. SEE PLANT LIST FOR SYMBOLS, ABBREVIATIONS, BOTANICAL/Common NAMES, SIZES, ESTIMATED QUANTITIES (IF GIVEN) AND OTHER REMARKS.
7. WHERE PROVIDED, AREA TAKEOFFS AND PLANT QUANTITY ESTIMATES ARE FOR INFORMATION ONLY. LANDSCAPE CONTRACTOR IS RESPONSIBLE TO CONDUCT QUANTITY TAKE-OFFS FOR PLANT MATERIALS AND SIZES SHOWN ON PLANS. PLANT SYMBOLS INDICATED ON THE PLAN TAKE PRECEDENCE IN CASE OF DISCREPANCIES BETWEEN CALLOUTS AND THE PLANT LIST.
8. MAINTAIN AND WARRANT PLANT MATERIALS AS DESCRIBED IN WRITTEN SPECIFICATIONS.
9. PLANT BEDS AND TREE PLANTING PITS ARE TO RECEIVE 3" DEEP LAYER OF SHREDDED HARDWOOD BARK MULCH PER WRITTEN SPECIFICATIONS AND DETAILS.
10. FORM 72-INCH, OR AS OTHERWISE INDICATED, WATERING BASIN AROUND TREES WHEN THEY ARE INSTALLED IN MANICURED TURF AREAS. SEE PLANTING DETAILS.
11. FINE GRADE, RAKE, AND ENSURE POSITIVE DRAINAGE AWAY FROM STRUCTURES AND THROUGHOUT SITE WITHIN THE LIMITS OF CONSTRUCTION, WITH ACCURATELY SET FLOW LINES. LOW SPOTS OR PONDING OF SURFACE WATER WILL NOT BE ACCEPTED IN THE FINAL WORK. ROCKS OR DEBRIS WILL NOT BE ACCEPTED. FINAL GRADE TOLERANCES ARE +/-0.1 FOOT MAXIMUM.
12. COORDINATE THE INSTALLATION OF PLANT MATERIAL WITH INSTALLATION OF ADJACENT PAVEMENTS, DRAINAGE, CURB AND RELATED STRUCTURES WITH OTHER TRADES.
13. RESTORE AREAS OF THE SITE, OR ADJACENT AREAS, WHERE DISTURBED. DAMAGE CAUSED DURING LANDSCAPE INSTALLATION TO EXISTING CONDITIONS AND IMPROVEMENTS IS THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR.
14. ALL PLANT BED AREAS SHALL BE PREPARED AS DESCRIBED IN WRITTEN SPECIFICATIONS. PROVIDE ANY SOIL AMENDMENTS REQUIRED TO ADEQUATELY ESTABLISH PLANT MATERIAL AND PREVENT REPLACEMENT.
15. PROVIDE (2) FERTILIZATION APPLICATIONS TO PLANT BEDS WITHIN THE FIRST GROWING SEASON.
16. TAKE NECESSARY SCHEDULING AND OTHER PRECAUTIONS TO AVOID WINTER, CLIMATIC, OR OTHER DAMAGE TO PLANTS.
17. PLANTING BEDS ARE TO BE SEPARATED FROM ADJACENT TURF AREAS WITH ALUMINUM EDGING PER WRITTEN SPECIFICATIONS. INSTALL AT LOCATIONS INDICATED ON DRAWINGS AND PER LANDSCAPE DETAILS.
18. CONTRACTOR SHALL DETERMINE THE NEED FOR TREE STAKING. IF DETERMINED NECESSARY, PROVIDE TREE STAKING AS DESCRIBED IN WRITTEN SPECIFICATIONS.
19. PROVIDE WARRANTY OF PLANT MATERIALS AS DESCRIBED IN WRITTEN SPECIFICATIONS.
20. DECORATIVE STONE MULCH: "MISSISSIPPI, MEDIUM SIZE" AS PRODUCED BY HALQUIST STONE COMPANY (OR APPROVED EQUAL), 3" THICK. CONTACT JOSH KAYSAR @ 262-246-9000.
21. PLANT SUBSTITUTIONS WILL NOT BE PERMITTED UNLESS THE LANDSCAPE CONTRACTOR CAN DEMONSTRATE THE PLANTS ARE NOT AVAILABLE FROM NURSERY SOURCES LOCATED WITHIN 100 MILES FROM THE PROJECT SITE. ANY PROPOSED PLANT SUBSTITUTION WILL REQUIRE PRIOR REVIEW AND WRITTEN ACCEPTANCE BY THE LANDSCAPE ARCHITECT.
22. CONTRACTOR SHALL CONTACT CITY FORESTRY AT LEAST ONE WEEK PRIOR TO PLANTING TO SCHEDULE INSPECTION OF NURSERY STOCK AND REVIEW PLANTING SPECIFICATIONS WITH THE LANDSCAPER.
23. ROOT TREATMENT OF EXISTING TREES TO BE COMPLETED BY CERTIFIED ARBORIST.

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1150 Springhurst Drive,  
Suite 201  
Green Bay, WI 54304-5947  
920 / 592 9440  
920 / 592 9445 fax

www.graef-usa.com

PRELIMINARY - NOT FOR CONSTRUCTION

PROJECT TITLE:

GRUNDMAN BOAT LAUNCH

1801 GRUNDMAN LANE  
OSHKOSH, WI

NO.	DATE	REVISIONS	BY

PROJECT INFORMATION:

PROJECT NUMBER: 2022-2004.00  
DATE: 05-27-2022  
DRAWN BY: CEP  
CHECKED BY: RPV  
APPROVED BY: RPV  
SCALE: AS NOTED

SHEET TITLE:

LANDSCAPE DETAILS

SHEET NUMBER:

L900

PRELIMINARY - NOT FOR CONSTRUCTION

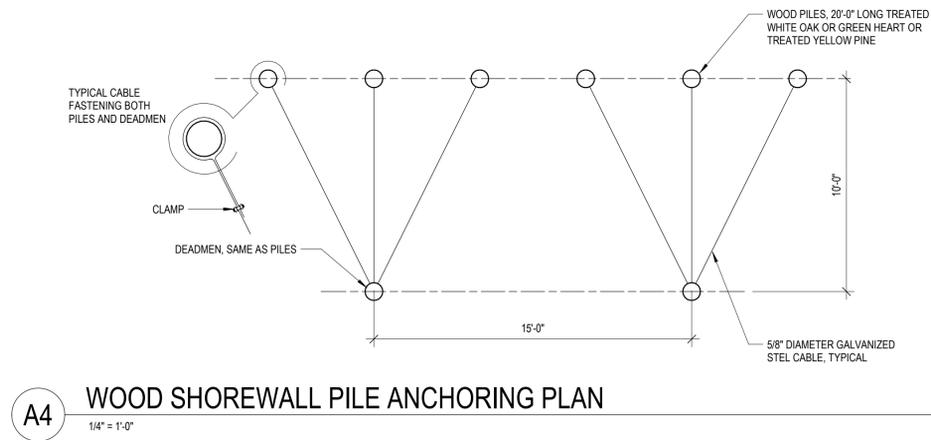
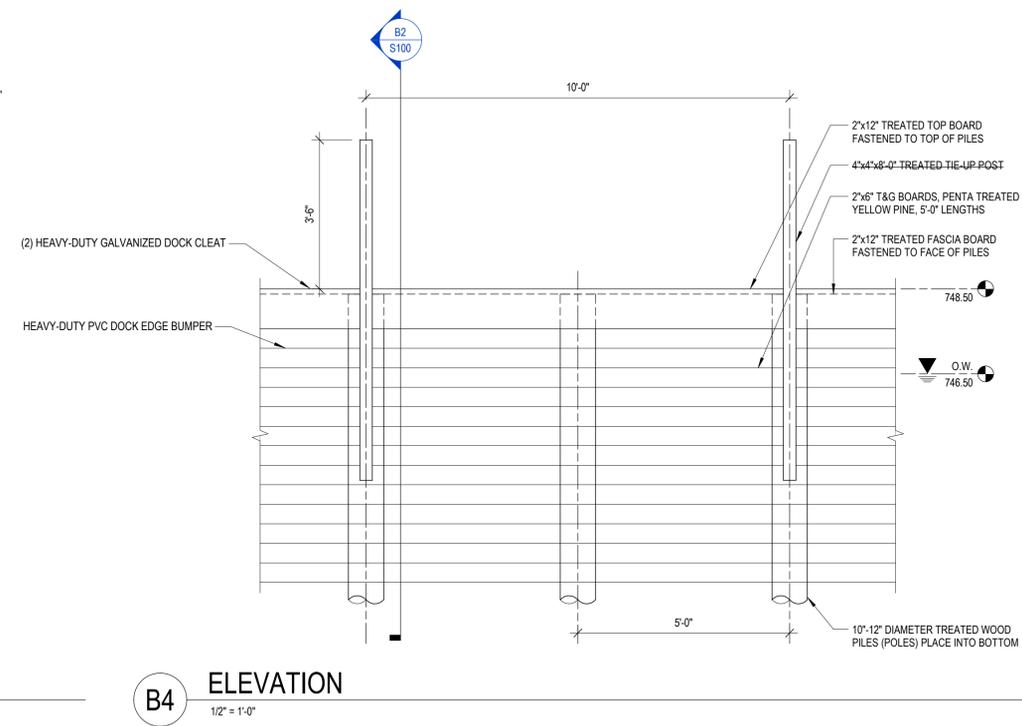
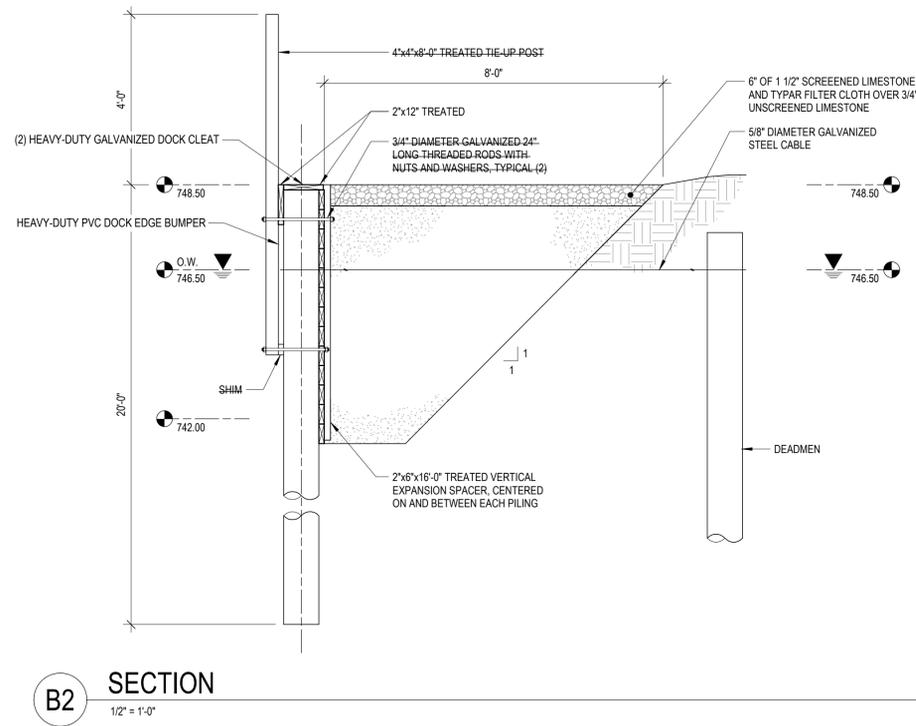
PROJECT INFORMATION:

PROJECT NUMBER: 2022-2004  
DATE: 05/25/22  
DRAWN BY: AMZ  
CHECKED BY:  
APPROVED BY: JSR  
SCALE: AS NOTED

SHEET TITLE:  
STRUCTURAL PLAN, ELEVATION  
AND SECTION

SHEET NUMBER:

## S100



**ELECTRICAL SHEET INDEX**

- E001 ELECTRICAL SITE PLAN
- E002 ELECTRICAL PHOTOMETRIC PLAN
- E003 LIGHT FIXTURE CUT SHEETS

**ELECTRICAL SYMBOLS**

-  POLE LUMINAIRE
-  LIGHT FIXTURE WALL PACK

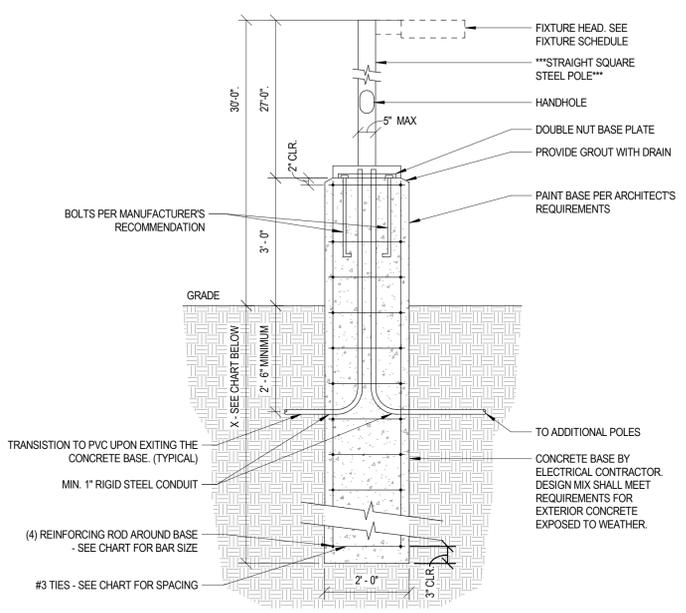
**LIGHT FIXTURE SCHEDULE**

**GENERAL NOTES:**  
 A. SEE SPECIFICATION SECTION FOR ADDITIONAL INFORMATION REGARDING FIXTURE AND INSTALLATION REQUIREMENTS.  
 B. MANUFACTURERS LISTED AS ACCEPTABLE SHALL MEET ALL REQUIREMENTS AND FEATURES INDICATED. ACCEPTABLE MANUFACTURERS MUST MEET THE PHOTOMETRIC PERFORMANCE OF THE LISTED UNIT. ELECTRICAL CONTRACTOR SHALL ENSURE THE FIXTURE DEPTH / HEIGHT WILL COMPLY WITH ADA REQUIREMENTS AND WILL NOT INTERFERE WITH OTHER TRADES WITHIN THE CEILING CAVITY.  
 C. ELECTRICAL CONTRACTOR SHALL COORDINATE T-GRID, WOOD AND SPECIALTY CEILING SYSTEMS WITH ARCHITECT PRIOR TO ORDERING.  
 D. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL REQUIRED PARTS AND PIECES FOR A COMPLETE INSTALLATION.  
 E. ALL REMOTE DRIVERS SHALL BE LOCATED IN AN ACCESSIBLE LOCATION THAT MEETS THE AMBIENT TEMPERATURE REQUIREMENTS OF THE DRIVER. ELECTRICAL CONTRACTOR SHALL VERIFY WITH SUBMITTED SHOP DRAWING WIRING DIAGRA...

**NOTES:**

1.

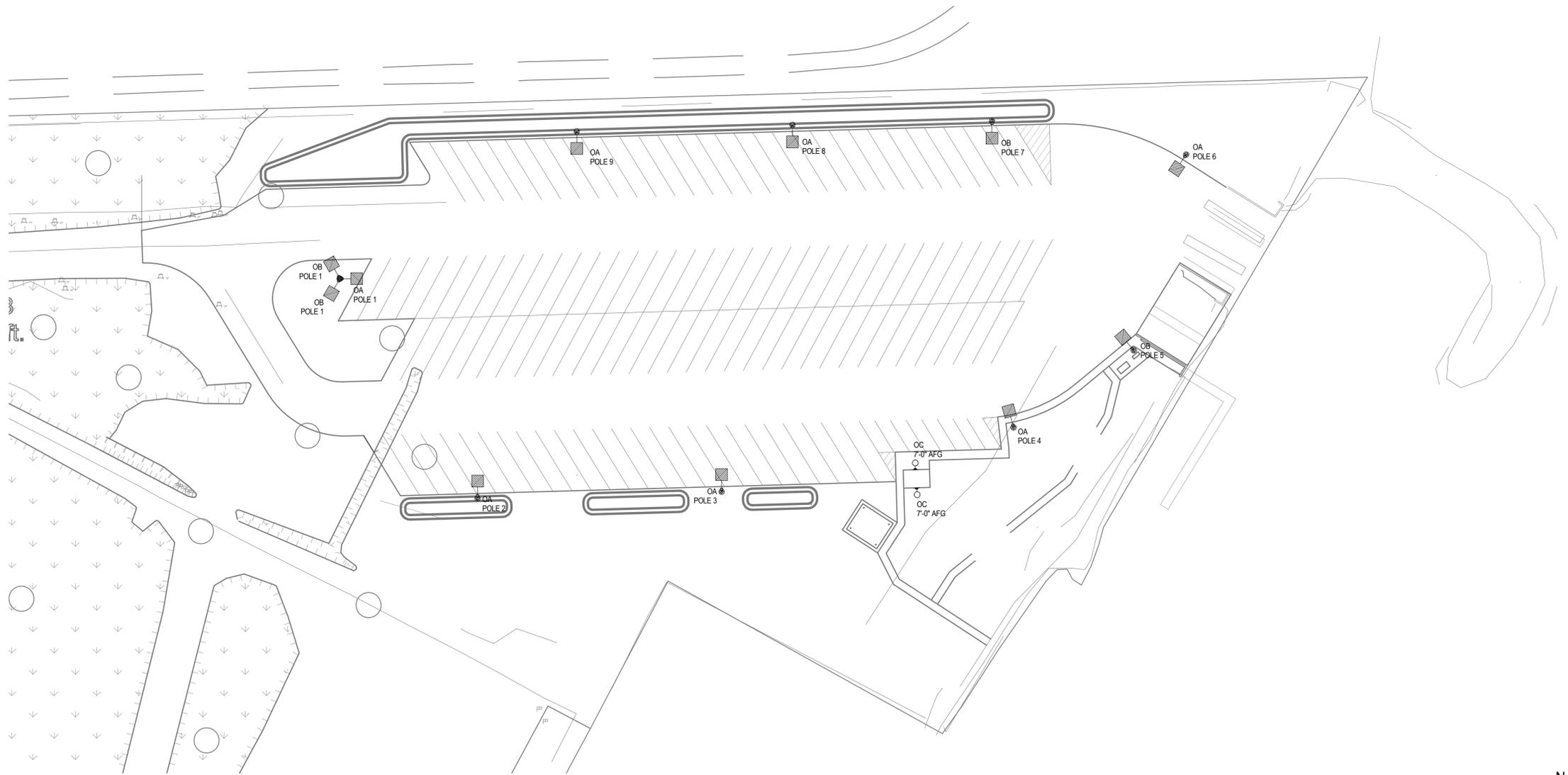
TAG	PERFORMANCE & ELECTRICAL DATA				LIGHT FIXTURE PROPERTIES			MOUNTING			SEE NOTE
	LUMENS	KELVIN TEMP	LOAD	FIXTURE VOLTAGE	DESCRIPTION	MANUFACTURER	CATALOG SERIES	DEPTH OR HEIGHT	TYPE	HEIGHT	
OA	20519	4000K	166 VA	120-277V	TYPE IV LED POLE	MCGRAW-EDISON	GLEON SA3 C 740 U SL4 BZ	30' - 0"	POLE	SHOWN IN BASE DETAIL	
OB	21596	4000K	166 VA	120-277V	TYPE III LED POLE	MCGRAW-EDISON	GLEON SA3 C 740 U SL3 BZ	30' - 0"	POLE	SHOWN IN BASE DETAIL	
OC	5008	4000K	34 VA	120-277V	TYPE IV LED WALL PACK	MCGRAW-EDISON	GWC SA1 A 740 U T4FT BZ	0' - 9"	WALL	SHOWN ON SITE PLAN	



- NOTES:**
1. A DRILLED 2'-0" DIA. HOLE SHALL BE USED AS THE FORM FOR THE CONCRETE BASE IN UNDISTURBED EARTH, EXCLUDING FILL MATERIAL.
  2. BACKFILL AROUND CONCRETE BASE WITH COMPACTED GRANULAR BASE A MINIMUM OF 2'-0" IN ALL DIRECTIONS IN EXCAVATED AREAS OR IN EXISTING SOIL CONTAINING FILL OF OBJECTIONABLE MATERIAL.
  3. DESIGN BASED ON IBC 2015:  
 100 MPH WIND SPEED - EXPOSURE C (1609.4.3)  
 150 PSF/FT - LATERAL SOIL PRESSURE (1610)  
 OCCUPANCY CATEGORY II (1604.5)  
 IMPORTANCE FACTOR 1.0 (ASCE 7 TABLE 1.5-1)

POLE HEIGHT	X	REBAR SIZE	#3 TIE SPACING
27'-0"	103"	#5	10"

**C3 LIGHT FIXTURE POLE BASE DETAIL**  
 NTS



**A1 ELECTRICAL SITE PLAN**  
 1" = 40'-0"



1150 Springhurst Drive,  
 Suite 201  
 Green Bay, WI 54304-5947  
 920 / 592 9440  
 920 / 592 9445 fax

www.graef-usa.com

CLIENT:  
 Owner

PROJECT TITLE:  
 GRUNDMAN BOAT LAUNCH

Enter address here

ISSUE:

PROJECT INFORMATION:  
 PROJECT NUMBER: 2022-2004.00  
 DATE: 05/11/22  
 DRAWN BY: JO  
 CHECKED BY: ES  
 APPROVED BY: ES  
 SCALE: AS NOTED

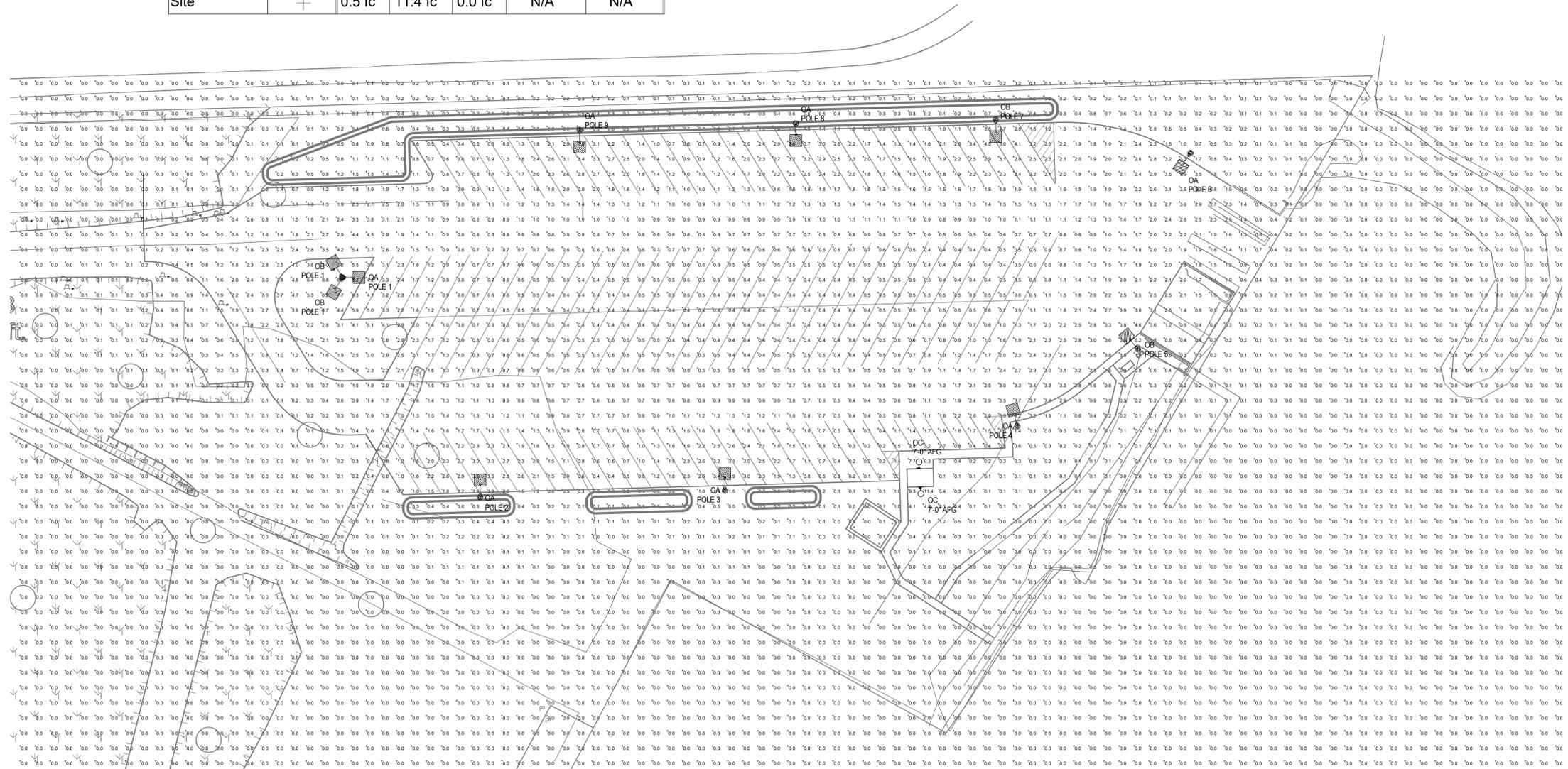
SHEET TITLE:  
 ELECTRICAL SITE PLAN

SHEET NUMBER:

**E001**

5/27/2022 1:14:45 PM

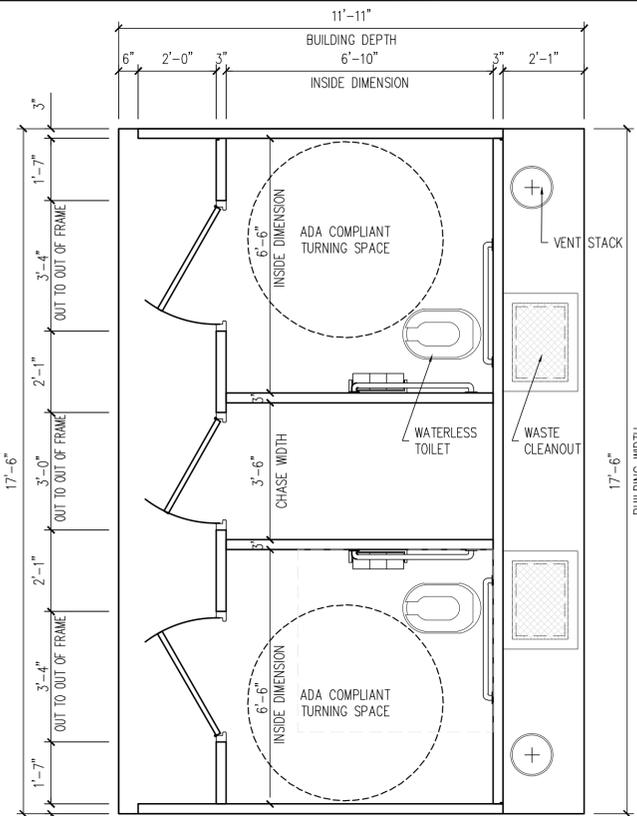
Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Parking Lot	+	1.3 fc	10.0 fc	0.1 fc	100.0:1	13.0:1
Site	+	0.5 fc	11.4 fc	0.0 fc	N/A	N/A



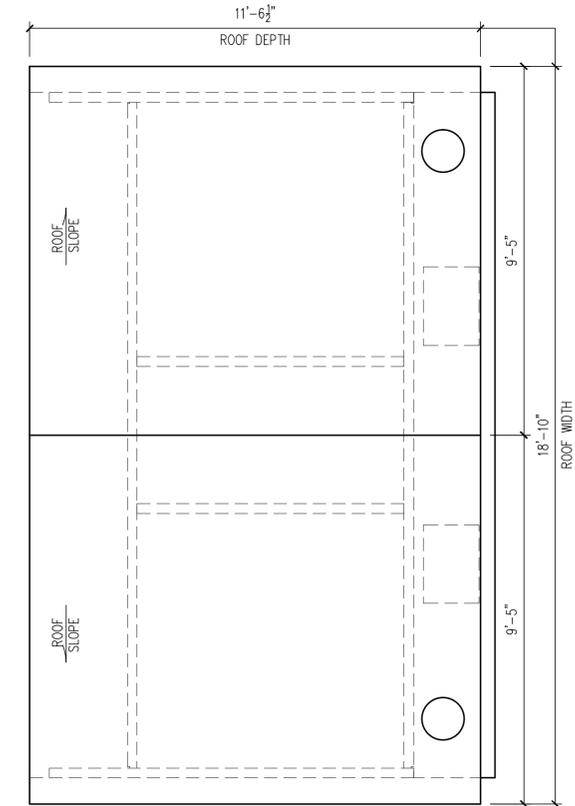
A1 ELECTRICAL PHOTOMETRIC PLAN  
 1" = 40'-0"





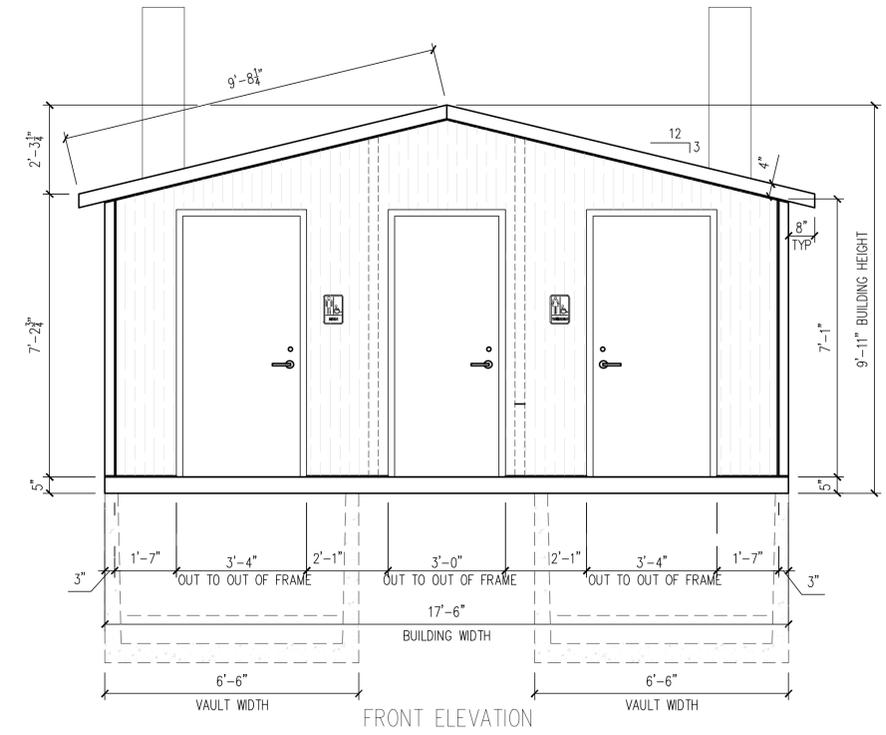


FLOOR PLAN

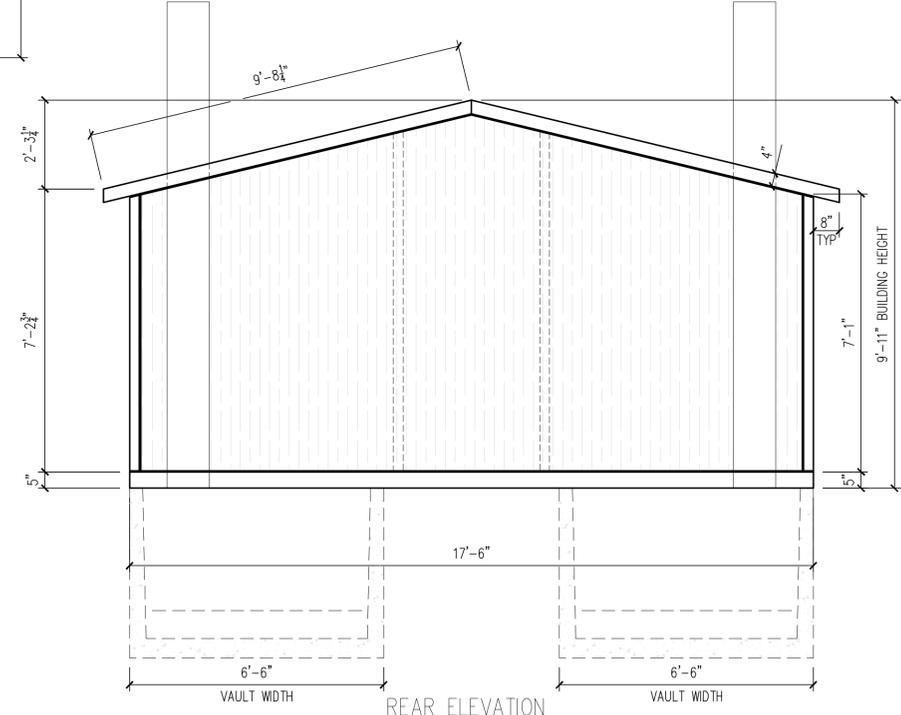


ROOF PLAN

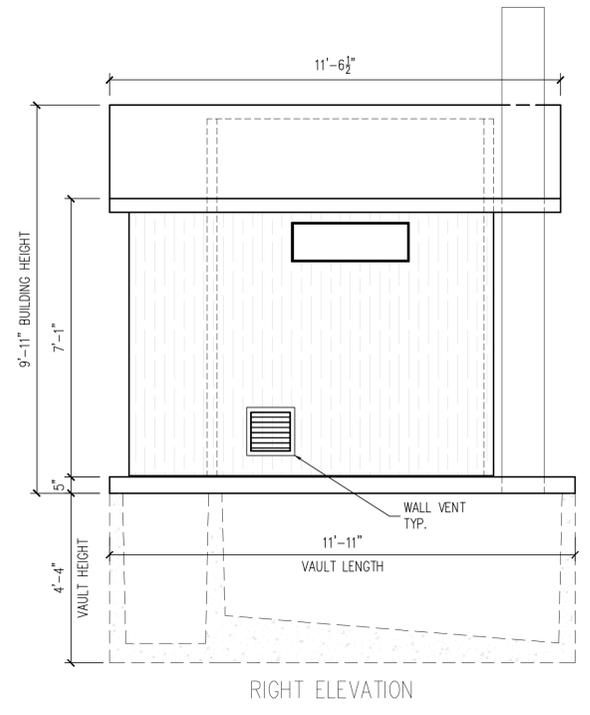
BUILDING LAYOUT



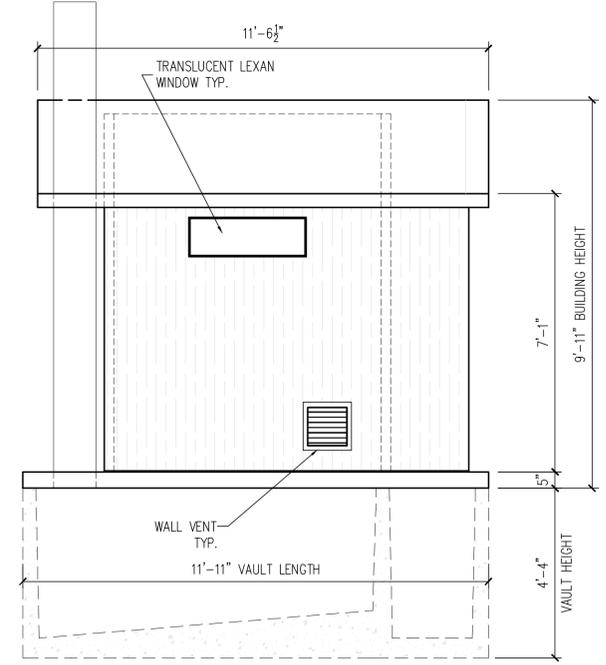
FRONT ELEVATION



REAR ELEVATION



RIGHT ELEVATION



LEFT ELEVATION

NOTE: FINISH OPTIONAL, VARIOUS FINISHES ARE AVAILABLE

- EASI-BRICK
- EXPOSED AGGREGATE
- BROOM
- OTHER: \_\_\_\_\_

- GENERAL NOTES:
- ALL REQUIRED OPENINGS FOR ELECTRIC, MECHANICAL, LOUVERS, ETC. MUST BE SIZED AND LOCATED BY BUYER ON THIS DRAWING (OPENING SIZES AND LOCATIONS MAY HAVE TO BE ALTERED IF THEY INTERFERE WITH CONNECTIONS OR REINFORCING)
  - ALL VIEWS ARE FROM EXTERIOR
  - A SIGNED COPY MUST BE RETURNED BEFORE BUILDING CAN BE RELEASED FOR PRODUCTION

MESSAGE CENTER	
BUILDING FINISH	_____
BUILDING STAIN	_____
DOOR COLOR	_____
BUILDING WEIGHT	_____
CUSTOMER APPROVAL	
APPROVED BY:	DATE:

DATE	DESCRIPTION	INI.	REV

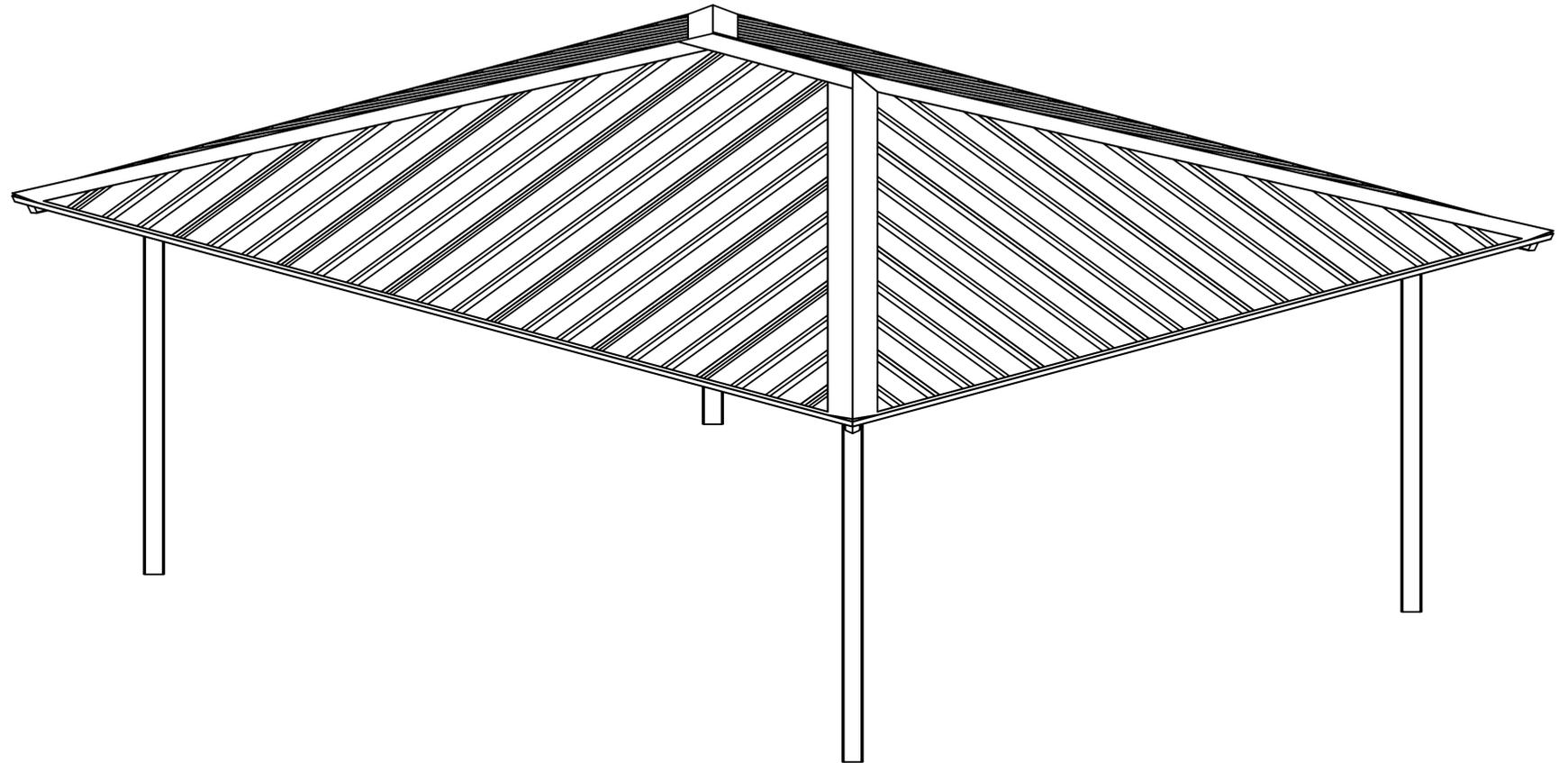
PROJECT: 11'-11" x 17'-6" x 9'-11"  
 EASI-SET CARSON VAULT RESTROOM  
 CONTRACTOR: \_\_\_\_\_

BUILDING LAYOUT
JOB #
DRAWN BY RBK
CHECK BY RKP
ISSUE DATE 09-03-15
SHEET LAYOUT

**EASI-SET® WORLDWIDE**  
 5119 Catlett Rd. • Midland, VA 22728 • info@EasiSet.com  
 WWW.EasiSet.com • 800-547-4045 • Fax 540-439-2541

# poligon<sup>®</sup>

PROJECT: \_\_\_\_\_  
 LOCATION: \_\_\_\_\_  
 BUILDING TYPE: RAM-20X24  
 ROOF TYPE: MULTI-RIB



**DRAWING LIST:**

SHEET NUMBER	DRAWING DESCRIPTION
CS	COVER SHEET
1	ARCHITECTURAL ELEVATIONS
2	STRUCTURAL FRAMING PLAN
3	COLUMN LAYOUT

**FABRICATOR APPROVALS:**

CITY OF PHOENIX, AZ APPROVED FABRICATOR #C08-2010  
 CITY OF LOS ANGELES, CA APPROVED FABRICATOR #1596  
 CITY OF RIVERSIDE, CA APPROVED FABRICATOR #SP06-0033  
 CITY OF HOUSTON, TX APPROVED FABRICATOR #470  
 CLARK COUNTY, NV APPROVED FABRICATOR #264  
 STATE OF UTAH APPROVED FABRICATOR 02008-14

**CERTIFICATES:**

MIAMI-DADE COUNTY CERTIFICATE OF COMPETENCY NO. 16-0813.16  
 PCI (POWDER COATING INSTITUTE) 4000 CERTIFIED

**MATERIALS:**

DESCRIPTION	ASTM DESIGNATION
TUBE STEEL	A500 (GRADE B)
SCHEDULE PIPE	A53 (GRADE B)
RMT PIPE	A519
LIGHT GAGE COLD FORMED	A1003 (GRADE 50)
STRUCTURAL STEEL PLATE	A36
ROOF PANELS (STEEL)	A653

**GENERAL NOTES:**

UNLESS NOTED OTHERWISE, THIS STRUCTURE WAS DESIGNED TO ONLY SUPPORT WHAT IS SHOWN ON THESE DRAWINGS. POLIGON MUST BE CONTACTED IF ANYTHING ELSE IS TO BE ATTACHED TO THIS STRUCTURE (WALLS, COLUMN WRAPS, RAILINGS, ETC.) SO THE DESIGN OF THIS STRUCTURE CAN BE REVIEWED AND POSSIBLY REVISED.

UNLESS NOTED OTHERWISE, THIS STRUCTURE WAS DESIGNED ASSUMING A 20' SEPARATION BETWEEN ANY ADJACENT STRUCTURE WITH AN EAVE HEIGHT EQUAL TO OR GREATER THAN THE EAVE HEIGHT OF THIS STRUCTURE. IF THAT SEPARATION DOES NOT EXIST, POLIGON MUST BE CONTACTED SO THE DESIGN OF THIS STRUCTURE CAN BE REVIEWED AND POSSIBLY REVISED.

STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) SPECIFICATION MANUAL.

ALL WELDING IS PERFORMED BY AMERICAN WELDING SOCIETY CERTIFIED WELDERS AND CONFORMS TO THE LATEST EDITION OF AWS D1.1 OR D1.3 AS REQUIRED.

PARTS SHOWN MAY BE UPGRADED DUE TO STANDARDIZED FABRICATION. REFER TO THE SHIPPING BILL OF MATERIALS FOR POSSIBLE SUBSTITUTIONS.

FOR PROPER FIELD INSTALLATION OF THE BUILDING IT IS RECOMMENDED THAT THE PRIMARY FRAME INSTALLER AND THE ROOF INSTALLER HAVE A MINIMUM FIVE (5) YEARS DOCUMENTED EXPERIENCE INSTALLING THIS TYPE OF PRODUCT.

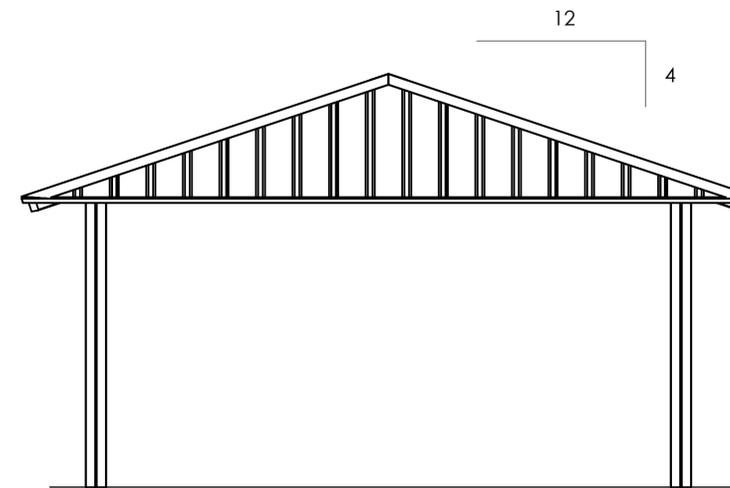
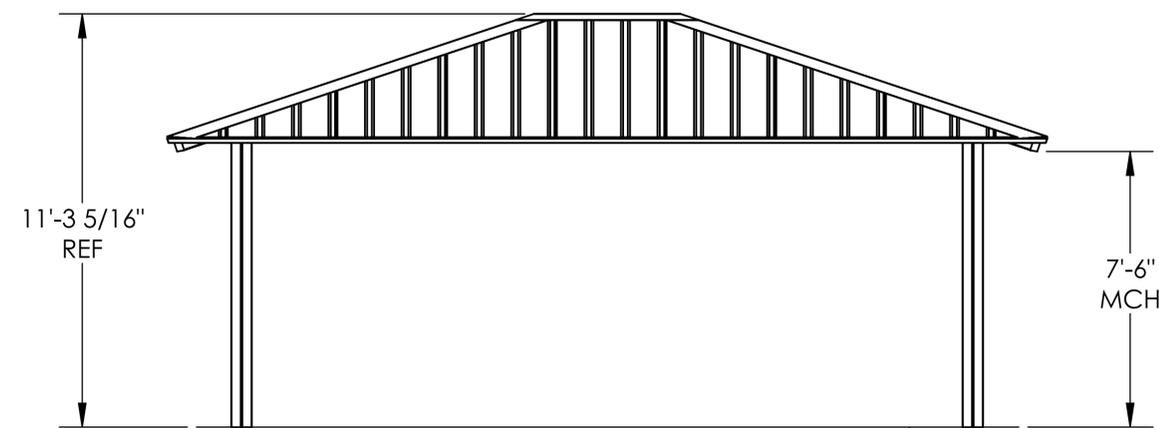
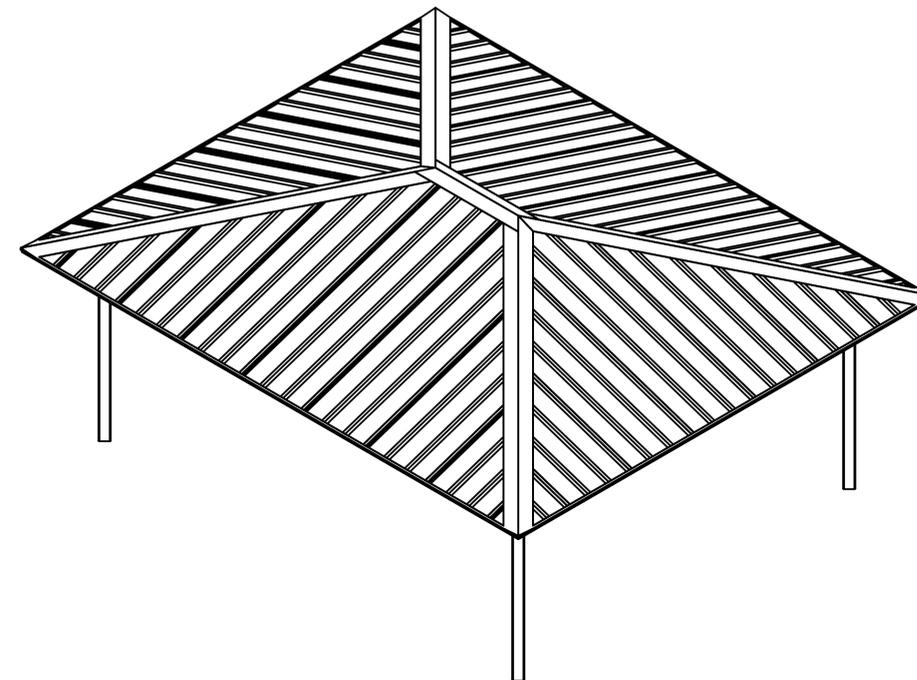
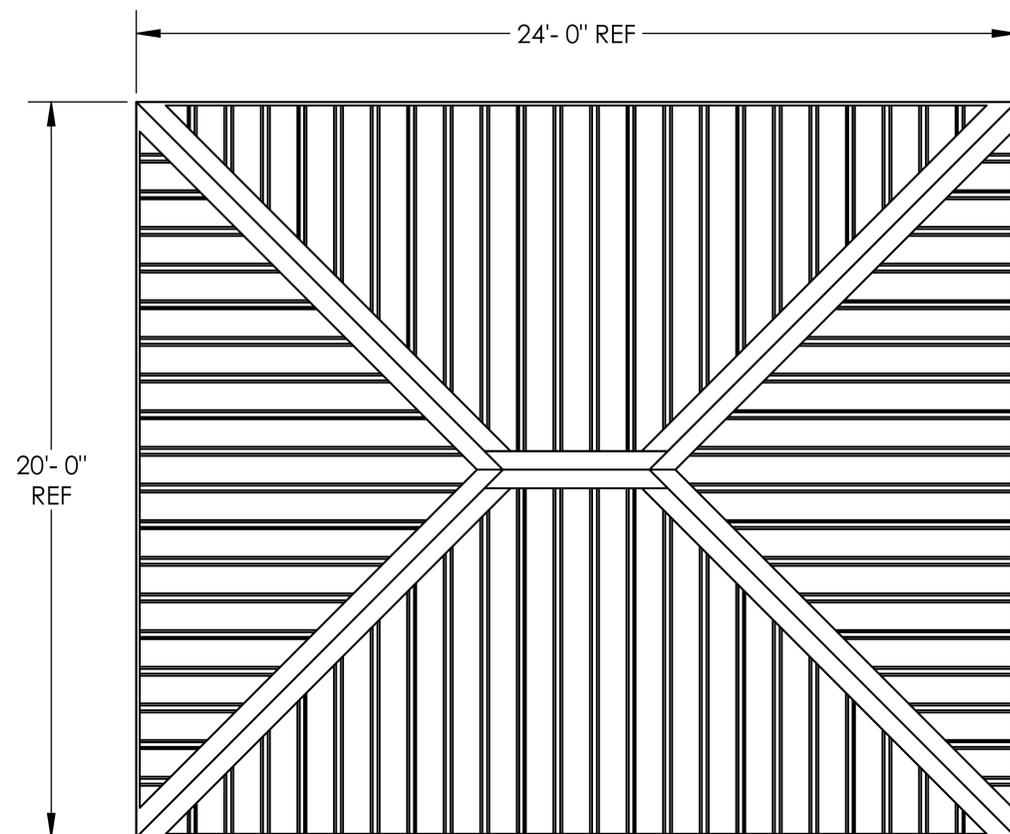
FOR PROPER FIELD INSTALLATION OF THE BUILDING IT IS RECOMMENDED THAT ELECTRIC WIRING, IF REQUIRED, BE RUN THROUGH THE STRUCTURAL MEMBERS BEFORE THE BUILDING IS ERECTED.

**STOP!!**  
**NOT FOR CONSTRUCTION**  
 USE FOR PRELIMINARY  
 PLANNING AND ESTIMATING  
 ONLY

DRAWING: COVER SHEET		REV LEVEL: A
SCALE: 1:40		
 (616)399-1963 www.poligon.com by PORTERCORP		SHEET <b>CS</b>
<small>COPYRIGHT 2016                  PATENTED OR PATENTS PENDING                  PORTERCORP 4240 N. 136th AVE HOLLAND, MI 49424</small>		

**GENERAL ROOF NOTES:**

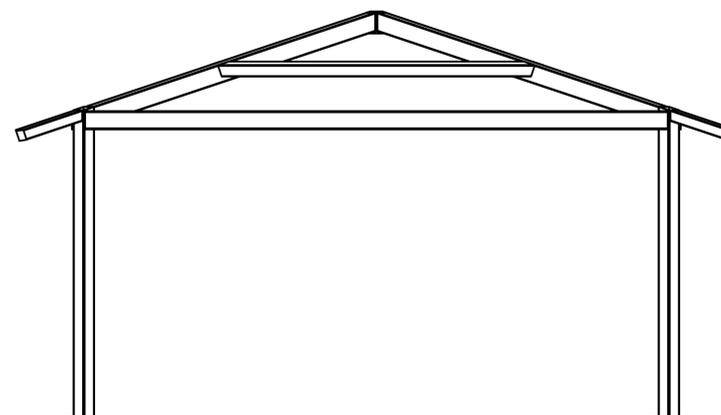
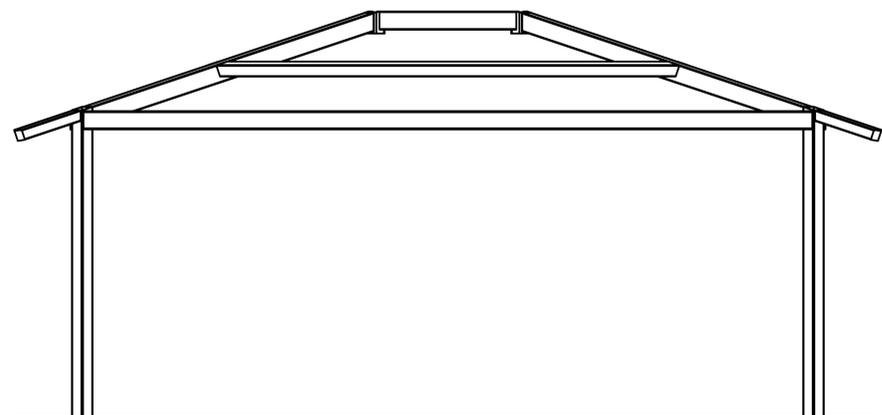
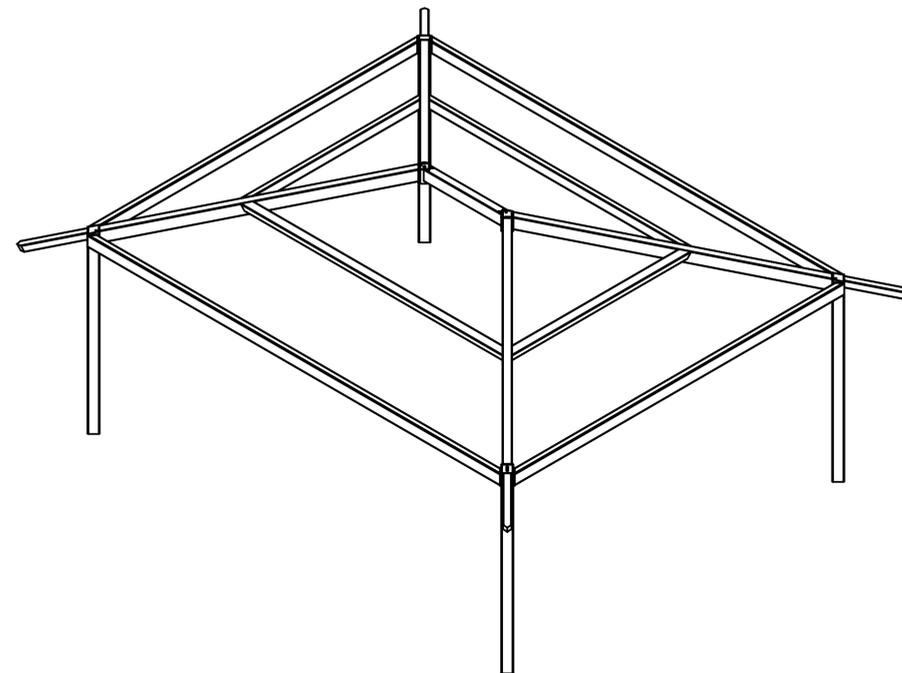
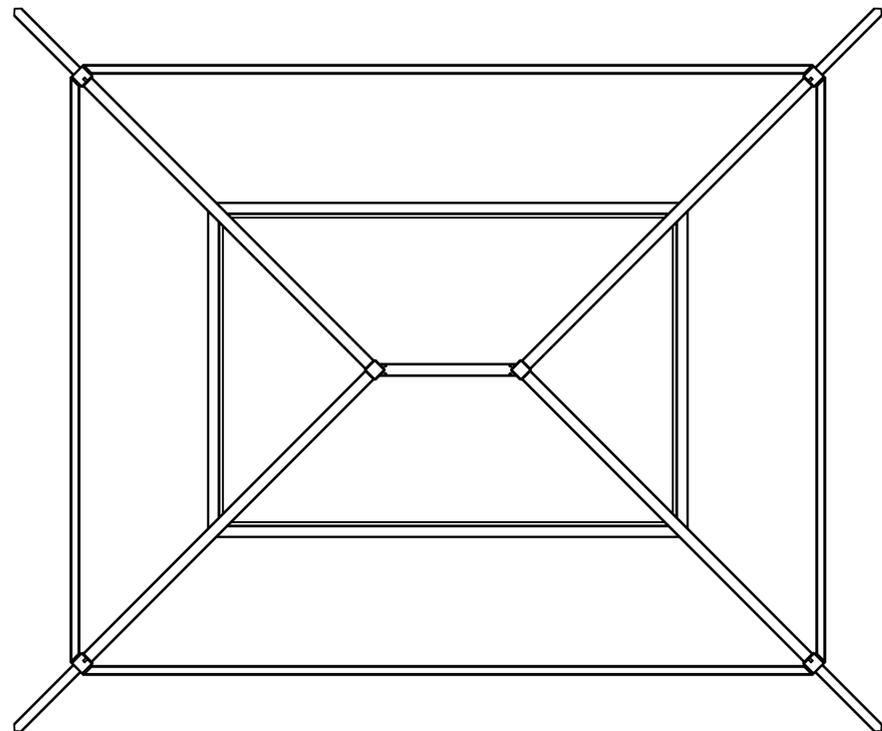
1. METAL ROOFING:
  - 24 GAUGE
  - GALVALUME COATED
  - KYNAR 500 PAINTED
2. TRIM COLOR MATCHES ROOF
3. SEE [POLIGON.COM](http://POLIGON.COM) FOR COLOR OPTIONS



FINISH GRADE.  
MOUNTING VARIES  
BASED ON ENGINEERING  
REQUIREMENTS.

**STOP!!**  
NOT FOR CONSTRUCTION  
  
USE FOR PRELIMINARY  
PLANNING AND ESTIMATING  
ONLY

DRAWING: ARCHITECTURAL ELEVATIONS		REV LEVEL: A
SCALE: 1:60	(616)399-1963	SHEET 1
www.poligon.com by PORTERCORP		
COPYRIGHT 2016 PATENTED OR PATENTS PENDING PORTERCORP 4240 N. 136th AVE HOLLAND, MI 49424		



FINISH GRADE.  
MOUNTING VARIES  
BASED ON ENGINEERING  
REQUIREMENTS.

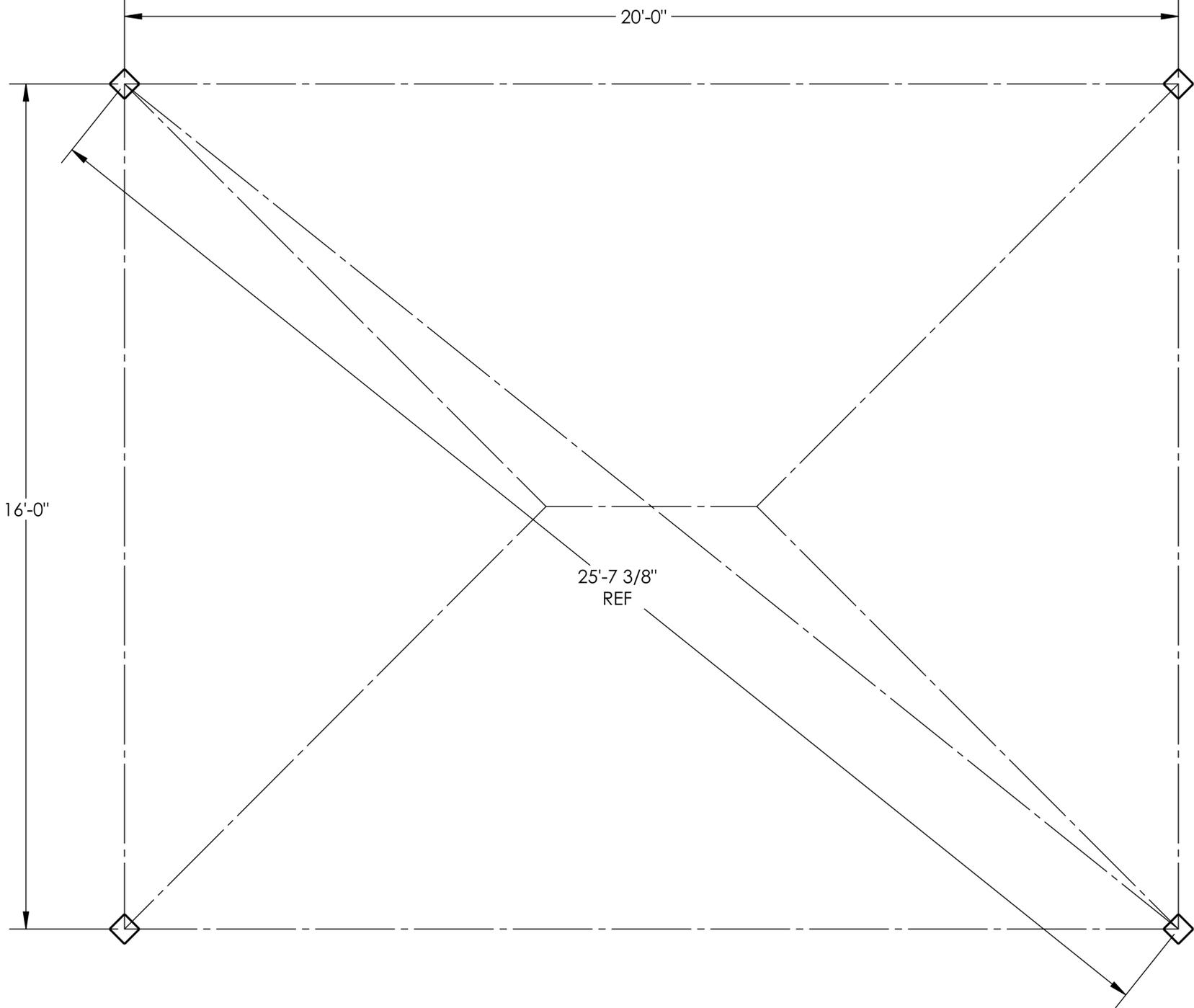
**STOP!!**  
NOT FOR CONSTRUCTION

USE FOR PRELIMINARY  
PLANNING AND ESTIMATING  
ONLY

DRAWING: STRUCTURAL FRAMING PLAN		REV LEVEL: A
SCALE: 1:60	(616)399-1963 www.poligon.com	
<b>poligon</b> <sup>©</sup> <small>COPYRIGHT 2016 PATENTED OR PATENTS PENDING PORTERCORP 4240 N. 136th AVE HOLLAND, MI 49424</small>		by <b>PORTERCORP</b> SHEET <b>2</b>

**BASEPLATE NOTES:**

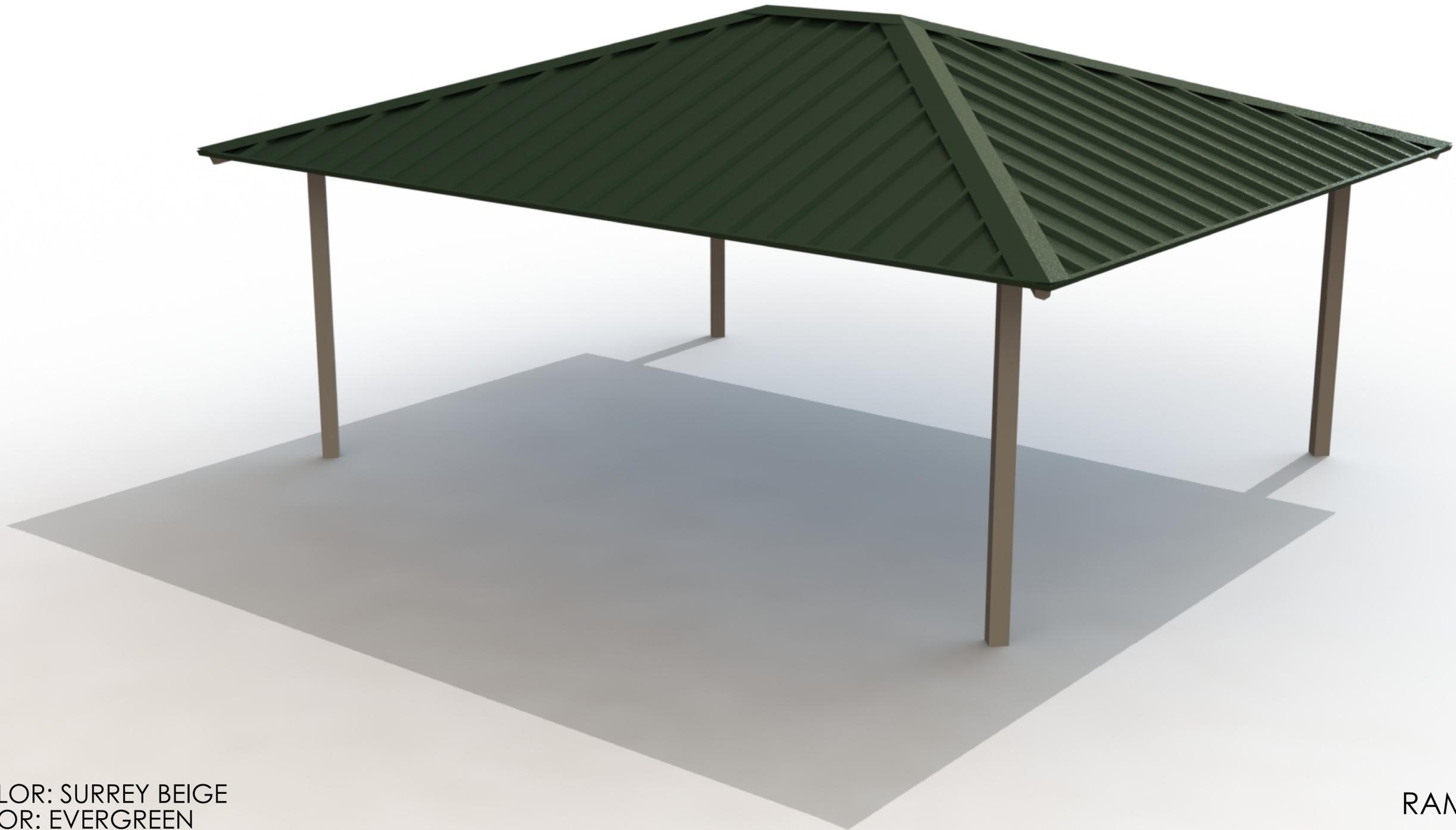
- 1. POLIGON ENGINEERING WILL DETERMINE REQUIRED BASEPLATE DESIGN AFTER ENGINEERING PACKAGE IS ORDERED.
- 2. CUSTOMER MAY SUGGEST PREFERRED BASEPLATE DESIGN.



**STOP!!**  
**NOT FOR CONSTRUCTION**  
**USE FOR PRELIMINARY**  
**PLANNING AND ESTIMATING**  
**ONLY**

DRAWING: COLUMN LAYOUT		REV LEVEL: A
SCALE: 1:30		
<b>poligon</b> <sup>®</sup> <small>COPYRIGHT 2016 PATENTED OR PATENTS PENDING PORTERCORP 4240 N. 136th AVE HOLLAND, MI 49424</small>	(616)399-1963 <a href="http://www.poligon.com">www.poligon.com</a> by <b>PORTERCORP</b>	SHEET <b>3</b>

**poligon**<sup>®</sup>



FRAME COLOR: SURREY BEIGE  
ROOF COLOR: EVERGREEN

COLORS SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. FOR OTHER  
COLOR SELECTIONS, PLEASE SUBMIT AN E1 DRAWING REQUEST.

RAM-20X24



DATE: 6/1/2022  
 BY: RPV  
 CHK'D: PJS

**Grundman Boat Landing**  
 Winnebago County, WI  
**ESTIMATE OF PROBABLE CONSTRUCTION COSTS**

ITEM	UNITS	QUAN.	UNIT PRICE	TOTAL
<b>GENERAL</b>				
Mobilization/Demobilization (8%)	LS	1	\$105,100.00	\$105,100.00
			<b>Subtotal</b>	<b>\$105,100.00</b>
<b>DEMOLITION</b>				
Clearing and Grubbing	AC	1	\$5,000.00	\$5,000.00
Tracking Pad	EA	1	\$2,500.00	\$2,500.00
Perimeter Control (silt fence or erosion wattle)	LF	1,785	\$4.00	\$7,140.00
Turbidity Barrier	LF	200	\$12.50	\$2,500.00
Tree Protection	EA	15	\$200.00	\$3,000.00
Pulverize Asphaltic Pavement & Compact	SY	7,400	\$2.00	\$14,800.00
Remove Misc. Structure (kiosk, picnic shelter, conc. foundation & well shelter)	EA	4	\$1,000.00	\$4,000.00
Remove Light Pole (including base)	EA	2	\$550.00	\$1,100.00
Remove Post or Sign	EA	37	\$65.00	\$2,405.00
Remove Timber Seawall	LF	55	\$110.00	\$6,050.00
Abandon Exist Well	LS	1	\$2,000.00	\$2,000.00
			<b>Subtotal</b>	<b>\$50,495.00</b>
<b>SITE IMPROVEMENTS</b>				
Earthwork	CY	5,600	\$10.00	\$56,000.00
Base Aggregate Dense, 1.25-inch (or 3/4-inch)	TN	9,822	\$15.00	\$147,330.00
Limestone Screenings (path)	SY	114	\$30.00	\$3,420.00
Excavation Below Subgrade (EBS)	CY	1,200	\$40.00	\$48,000.00
Hot-mix Asphalt Pavement, 3LT, 2.25-inch (binder course)	TN	1,920	\$70.00	\$134,400.00
Hot-mix Asphalt Pavement, 4LT, 1.75-inch (surface course)	TN	1,490	\$80.00	\$119,200.00
Geotextile Fabric, Type SAS	SY	7,400	\$2.00	\$14,800.00
Concrete Sidewalk, 5-inch	SF	3,160	\$6.00	\$18,960.00
Pavement Striping, Paint, White, 4-inch	LF	7,150	\$3.00	\$21,450.00
Pavement Markings & Symbols	EA	15	\$250.00	\$3,750.00
Sign, Traffic & ADA (including post & fasteners)	EA	10	\$250.00	\$2,500.00
Wood Posts (Bollards)	LF	20	\$80.00	\$1,600.00
			<b>Subtotal</b>	<b>\$571,410.00</b>
<b>BOAT LAUNCH</b>				
Cofferdam	SF	5,000	\$25.00	\$125,000.00
Reinforced Concrete Pavement, 8-inch	SF	2,210	\$18.00	\$39,780.00
Reinforced Concrete Shoreline Footing	CY	6	\$1,000.00	\$6,000.00
Riprap, Light (toe protection)	CY	15	\$70.00	\$1,050.00
Timber Seawall	LF	55	\$450.00	\$24,750.00
Misc. Existing Launch Repair	SF	400	\$30.00	\$12,000.00
			<b>Subtotal</b>	<b>\$208,580.00</b>
<b>PIERS</b>				
Steel-frame, Wood-deck Dock System, 6-foot wide, 120-ft long (L-shaped)	FT	120	\$400.00	\$48,000.00
Steel-frame, Wood-deck Loading Dock, 6-foot wide, 40-ft long	FT	40	\$400.00	\$16,000.00
Kayak Launch, ADA (including dock, gangway & transition plate)	EA	1	\$50,000.00	\$50,000.00
			<b>Subtotal</b>	<b>\$114,000.00</b>
<b>BUILDINGS</b>				
Kiosk	LS	1	\$5,000.00	\$5,000.00
Open Air Shelter, Prefabricated	LS	1	\$71,000.00	\$71,000.00
Vault Restroom Building, Prefabricated (including foundation, vaults, delivery & install)	LS	1	\$71,400.00	\$71,400.00
			<b>Subtotal</b>	<b>\$147,400.00</b>
<b>ELECTRICAL PROVISIONS</b>				
Control Panel	EA	1	\$2,250.00	\$2,250.00
Service Reconnection	EA	1	\$3,000.00	\$3,000.00
Meter Socket & Pedestal	EA	1	\$1,000.00	\$1,000.00
Receptacles	EA	3	\$125.00	\$375.00
Exterior Lighting - Fixture	EA	11	\$350.00	\$3,850.00
Exterior Lighting - Pole	EA	9	\$1,350.00	\$12,150.00
Pole Concrete Base	EA	9	\$1,800.00	\$16,200.00
Conduit & Wiring, 1-inch PVC, 10 AWG (exterior)	LF	1,400	\$5.00	\$7,000.00
Conduit & Wiring, 1-inch Steel (interior)	LF	125	\$10.00	\$1,250.00
Building Lighting - Wall Pack/Strip Light (interior & exterior)	EA	5	\$300.00	\$1,500.00
Security Camera	EA	4	\$1,250.00	\$5,000.00
Automated Pay Station	EA	1	\$15,000.00	\$15,000.00
Communications Server	EA	1	\$5,000.00	\$5,000.00
			<b>Subtotal</b>	<b>\$73,575.00</b>
<b>STORMWATER MANAGEMENT</b>				
Storm Sewer, PVC, 6-inch	LF	590	\$30.00	\$17,700.00
Underdrain, PVC, 6-inch	LF	660	\$8.00	\$5,280.00
Cleanout, PVC, 6-inch	EA	7	\$500.00	\$3,500.00
HDPE or PPL Liner, Type B	SY	1,180	\$4.50	\$5,310.00
Biobasin(s) (including fine grading, engineered soil, aggregate storage, & filter fabric)	SY	775	\$100.00	\$77,500.00
			<b>Subtotal</b>	<b>\$109,290.00</b>
<b>SITE RESTORATION</b>				
Erosion Mat	SY	500	\$2.00	\$1,000.00
Turf Reinforcement Mat	SY	50	\$9.00	\$450.00
Turf Restoration	SY	2,500	\$4.50	\$11,250.00
Seeding - Rain Garden Mix	SY	775	\$18.00	\$13,950.00
Plantings - Trees	EA	13	\$600.00	\$7,800.00
Plantings - Shrubs	EA	21	\$200.00	\$4,200.00
			<b>Subtotal</b>	<b>\$38,650.00</b>
<b>Subtotal Construction Costs</b>				<b>\$1,418,500.00</b>
Contingency (15%)				\$212,800.00
<b>TOTAL CONSTRUCTION COSTS</b>				<b>\$1,631,300.00</b>
Engineering/Delivery				\$137,000.00
<b>TOTAL PROJECT COST</b>				<b>\$1,768,300.00</b>