

**VILLAGE OF GERMANTOWN
N112 W17001 MEQUON ROAD
GERMANTOWN, WI 53022**

MEETING:	REGULAR MEETING OF THE PLAN COMMISSION
DATE AND TIME:	Monday, May 8, 2023 6:30 PM
LOCATION:	Germantown Village Hall Board Room N112 W17001 Mequon Road

NOTICE: Any member of the body and/or citizen may also attend the meeting virtually through the WebEx platform, Meeting #: 2553 216 2843 Password: qRNIkJY345 which can be accessed by phone at 408-418-9388 or by logging on at <https://villageofgermantown.my.webex.com/villageofgermantown.my/j.php?MTID=mc9dce1f069066f4f2d3614fe9ee4ae0f>
The meeting will also be live streamed on YouTube. A video recording of the meeting will be available on the Village YouTube channel. Citizens not wishing to attend the meeting may submit written comments by sending an email to comments@germantownwi.gov by 4 p.m. on the day of the meeting so that they can be provided to the members of the body for their consideration. Previously recorded Plan Commission Meeting videos can be viewed at: https://www.youtube.com/channel/UCOYp0EgELzTCa9X_iCohyhQ.

AGENDA

- I. **CALL TO ORDER:** *This meeting has been given public notice in accordance with Section 19.83 and 19.84, Wis. Stats, in such form that will apprise the general public and news media of subject matter that is intended for consideration and action.*
- II. **ROLL CALL:**
- III. **PUBLIC INPUT/PUBLIC APPEARANCE:** *Please be advised per §19.84(2) that information and comment will be received from the public. It is the policy of this municipality that public input be limited to a three (3) minute period per person with a time extension granted at the discretion of the Chairperson. Be advised that there may be limited discussion of the information received but no action will be taken.*
- IV. **APPROVAL OF MINUTES:**
 - A. April 24, 2023
- V. **NEW BUSINESS:**
 - A. Accurate Surveying & Engineering, Agent for Bast Family LTD Partnership, Property Owner - W204 N13917 Goldendale Road. 2-Lot Extraterritorial Plat Review to Divide the Property. **(ACTION)**
 - B. MSI General Inc., Agent for Moldmakers Investments LLC, Property Owner of MGS Manufacturing, W188 N11707 Maple Road. Site Plan Review for a 118,652 sqft Innovation Center Addition. **(ACTION)**
 - C. Lemberg Electric , Agent for St. John United Church of Christ, Property Owner, N104 W14181 Donges Bay Road; Sign Review **(ACTION)**
 - D. Troy Wetterau, Agent for Homestead Transfer & Storage LLC, Property Owner of N128 W20563 Holy Hill Road. Site Plan Review for a 7,200 sqft accessory building. **(ACTION)**
 - E. AVN Group 109 LLC, Agent for Everett Frenz and the Anton & Bertram Frenz Trust, Property Owners of 62.5 acres on Fond du Lac Avenue North of Donges Bay Road. Planned Development District (PDD) and Site Plan Consultation for

a Proposed Mixed-Use Residential & Commercial Development.
(DISCUSSION)

- F. Village of Germantown - 2050 Comprehensive Plan; Implementation & Action Steps **(DISCUSSION)**

VI. ANNOUNCEMENTS

VII. ADJOURNMENT:

UPON REASONABLE NOTICE, efforts will be made to accommodate the needs of disabled individuals through appropriate aids and services. For additional information or to request this service please contact the Village Clerk at (262)250-4740 at least 2 days prior to the meeting. Notice is given that a majority of the Village Board may attend this meeting to gather information about an item over which they have decision making responsibility. This may constitute a meeting of the Village Board per State ex rel. Badke v. Greendale Village Board, even though the Village Board will not take formal action at this meeting

PLAN COMMISSION MINUTES

April 24, 2023

CALL TO ORDER: Chairman Wolter called the meeting to order at 6:31 pm.

ROLL CALL: Chairman Dean Wolter, Trustee Representative David Baum, Commissioners Tony Laszewski, Peter Nilles, Bob Williams, Bill Shadid and Josh Tarantino were present. Also present were Community Development Director Jeff Retzlaff and Planning Assistant Lori Johnson.

PUBLIC INPUT:

- Melanie Smythe, N140 W17938 Cedar Lane, spoke on how to conduct neighborhood meetings and distributed a handout to PC members.

APPROVAL OF MINUTES:

MOTION Laszewski second Shadid to Approve the minutes from April 10, 2023.

MOTION carried unanimously.

Chairman Wolter asked for a motion to postpone Item E to the next Plan Commission Meeting.

MOTION Shadid second Laszewski to Postpone Item E to May 8, 2023.

MOTION carried unanimously.

Michael Doran for U.S. Cellular, Agent for Faith Lutheran Church, Property Owner – W172 N11183

Division Road. Conditional Use Permit (CUP) and Site Plan Review for a 190' monopole tower and wireless telecommunication facility. Director Retzlaff summarized the proposal. He indicated the fall zone had been revised and redesigned to no greater than 45 percent of the tower height which would put it at 85 feet and addresses one of the concerns raised by staff. He explained at the April 10th meeting, the discussion and action was postponed pending additional information. Discussion with the Police Chief indicated no changes are proposed to the equipment or towers and Washington County indicated there is a trunk upgrade project but no sooner than 2 years at this location. The ability to alter the location of the existing tower would need significant analysis to determine if the whip antennae could be moved to make space for the new mobile service. He stated staff has reached out to a private consultant, CityScape Consultants, Inc., to do a review of the validity of the search ring and we are discussing a service agreement. Their preliminary information confirms the ½ mile search ring is closer to reality for the way things are in terms of infrastructure development for wireless communication even though the Village tower is less than 600 feet away outside of the ½ mile search ring. But it is within the information US Cellular provided as a potential target area for a new tower. The consultant indicated it may be worth looking into further. The consultant also said they are willing to provide a report based on their review and verification of the US Cellular engineer's conclusions and evaluate the search ring to determine if it is credible for the area. He said US Cellular has offered to extend the application period to June 30th subject to some conditions including that action be postponed until the May 8th meeting.

A lengthy discussion followed. Commissioner Williams asked how US Cellular came to the conclusion that they are not responsible for the cost of hiring a consultant. Brian Sajdak, Village Attorney, commented on the State Statute language. His interpretation is that legislature states we cannot pass on the cost for travel expenses but could charge other similar costs as part of that. But there is a \$3,000 cap on fees and it is probably a reasonable interpretation that the \$3000 would include the cost of an engineer that would review the application and provide an opinion.

Discussion continued. Director Retzlaff stated US Cellular has offered to do a cursory review of the Village tower, even though it is outside the search ring. But if it is a viable option does that mean US Cellular would collocate there. Shaun Hemsted, agent for US Cellular, explained they had asked for information on the tower and structural analysis but have not received anything and he wasn't comfortable talking about and wouldn't

make any statements regarding it. Discussion continued on how the search ring is determined. Chairman Wolter said he didn't have a problem with the site chosen but had a problem with how the practice comes about where they place the dot. He doesn't want to see two towers so close to one another and it seems a waste of cost when you could possibly co-locate. Mr. Hemsted said they meet every regulation of the Wisconsin State Statute and are willing to abide by the conditions that Director Retzlaff suggested in the approval except for the two as noted in their packet and feels that is the right decision. Anything CityScape talks about is not substantial evidence because it is outside of the search ring and the State says is irrelevant. Attorney Sajdak said he thought Mr. Hemsted was incorrect on that and doesn't believe the Statute contemplates because a line is drawn on a map at the same elevation it is excluded from the search ring. And that is one of the things CityScape will review. Discussion continued.

Chairman Wolter asked Attorney Sajdak for his opinion on resetting the application period because of revised information that was submitted. Attorney Sajdak believes it may reset the clock but it is not 100 percent clear in the Statute. He said if the Village is looking for additional time, the way to do that would be to take the offer to extend the timeframe 45 days. Chairman Wolter said it would work with within the Plan Commission and Village Board schedule. Director Retzlaff said the extension would take the deadline to June 30. The consultant thinks they could turn around a report within the 45-day period but not for the current May 16th cycle. Mr. Hemsted confirmed the 45-day extension is still open with the understanding that the search ring submitted 2 weeks ago dated 2022 is the search ring and that they submitted a corrected co-location statement. Discussion continued.

***MOTION Shadid second Nilles to Table to the May 8th Plan Commission Meeting.
MOTION carried 6-1 (Laszewski)***

Zilber 7 – W210 N13145 Gateway Crossing - Andrew Shoaf, Pinnacle Engineering, and Frank Dekan, agents for the Zilber Property Group and TI Investors Germantown VI LLC, property owner, is requesting approval of site development and building plans for a 254,851 sqft industrial building (Zilber 7) in the Germantown Gateway Corporate Park. Director Retzlaff summarized the proposal.

Chad Navis, Zilber Property Group, complimented staff on the professionalism and expeditious review of the project. He stated they will work with staff to make any adjustments to the plans. Chairman Wolter said he appreciated the comments about staff and Zilber's willingness to work together to see the park succeed.

MOTION Shadid second Baum to Approve the site development and building plans for the 254,851 sqft "Zilber 7" industrial building located at W210 N13145 Gateway Crossing in the Germantown Gateway Corporate Park subject to the following conditions:

- 1. This approval is subject to all the conditions and requirements set forth herein and adopted by the Plan Commission. Approval is granted for the following architectural and engineering plans unless superseded by subsequent plan sheets approved by Village Staff pursuant to revisions required herein and/or by the Plan Commission:***
 - a. "Onsite Civil Engineering Infrastructure Plans for Germantown Manufacture BTS" dated April 11, 2023;***
 - b. Architectural plans labeled "Zilber Germantown Industrial 7" dated April 14, 2023;***
 - c. Exterior lighting plans labeled "Z7 Lighting Plan" dated April 13, 2023;***
 - d. Landscaping Plans labeled "Landscape Overview & Tree Plan" dated March 27, 2023***
- 2. All landscaping, screening, grading, and paving improvements shown on the approved site plans shall be installed as proposed prior to issuance of an occupancy permit unless a cash***

bond or letter of credit in an amount equal to 120 percent of the estimated installation and material costs reviewed and approved by the Village is submitted to the Village as necessary to ensure that installation of the proposed features and improvements will be completed within one (1) year after issuance of the occupancy permit.

3. *All exterior doors (except primary entrance) shall be clearly marked with reflective 5" or larger letters/numbers to aid emergency personnel access as required by the Police Department.*
4. *All outstanding items, issues and plan revisions required by Village Staff in the following review memos shall be resolved and reflected in additional information and/or revised plans submitted to Staff for further review, comment and approval prior to issuance of a building permit for the Zilber 7 building (excluding "early start" site clearing and footing/foundation work approved by the Village and/or WI DSPS):*
 - a. *April 21, 2023, memo from Public Works Director, Larry Ratayczak*
5. *State agency (DSPS) approved plans and a \$20,000 occupancy bond are required by Inspection Services at the time of building permit application. The Village of Germantown is an authorized delegated agent of DSPS to provide all commercial plan review and inspection services through SAFEBuilt of WI and the Village of Germantown (if necessary).*
6. *The Zilber Property Group shall notify the prospective tenant that the tenant is responsible for providing a roof plan with the location of all roof-mounted HVAC units and any other roof-mounted equipment along with sightline diagrams as part of all future building "build out" plans at the time a Zoning/Occupancy Permit is obtained. RTU's shall be setback a minimum of 14 feet from the perimeter roof/wall edge to obscure the view of all RTU's from property lines around the building and the centerline of the Gateway Crossing. If RTU's cannot be hidden from view, screen walls or other mutually acceptable features intended to shield the view of said RTU's shall be submitted to the Village Planner (or Plan Commission if determined necessary by the Village Planner) for review and approval prior to build out construction and issuance of an occupancy permit.*
7. *Dumpster enclosures shall be designed to meet the Village's dumpster enclosure guidelines. Future tenants shall be required to provide proposed dumpster enclosure plans for review and approval by the Village Planner prior to issuance of an occupancy permit.*
8. *The Village Forester is requiring that the landscape plan be revised to specially address the following:*
 - a. *Increase the number of trees planned "inside" the parking lot to meet a minimum one tree (minimum 2" caliper) per every 10 parking spaces; and*
 - b. *Substitute the Acer x freemanii 'Autumn Fantasy' Maples listed in the landscape plan with one of the following species to promote better tree diversity:*
 - i. *London Planetree. Platanus x acerifolia*
 - ii. *Tuliptree. Liriodendron tulipifera.*
9. *A revised landscape plan shall be submitted to the Village for review and approval prior to issuance of an occupancy permit. Said plan shall specify the minimum required number, species and planted size of trees intended to satisfy both the street tree and parking lot landscaping requirements.*
10. *The proposed berm along Rockfield Road shall be revised to include higher and more undulating berms (less symmetrical; more "bumps") and additional plantings located on the road side of the berm. Said revised berm shall be reflected in the revised landscape plan required under Condition #9 above and approved by Village Staff prior to completing the filling/grading required for the berm and installation of plantings.*

Trustee Baum asked why the building elevations have so many knockout panels. Mr. Navis explained the building was designed for future flexibility. Discussion followed on when Plan Commission would review a

change to the knockout panels. Trustee Baum was concerned the lower knockout panels could be changed to overhead doors.

MOTION to Amend Baum second Tarantino that if the knockout panels on the north or east side of the building are used for overhead doors, Plan Commission approval is required.

MOTION to Amend carried unanimously.

MOTION to Approve as Amend carried unanimously.

Bauer Sign & Lighting, agent for Virginia Highlands Care & Rehab Center, property owner, and the Frontida Assisted Living Community, property owner, W173 N10915 Bernies Way – The request is for approval of a new monument sign and an off-premise sign located at the corner of Virginia Avenue @ Division Road. Director Retzlaff summarized the proposal.

Trustee Baum asked if the meter socket on the left end of the sign would stay or be removed. Scott Boese, Bauer Sign, stated the socket is not being used. Turner Ramsey, Frontida, explained the lights currently at the sign base are solar. Director Retzlaff said specifications for the lights are required to determine the intensity of the light level.

MOTION Baum second Shadid to Approve the proposed monument & off-premise sign for the Virginia Highlands Care & Rehab Center and the Frontida Assisted Living Community located at the southwest corner of the Virginia Ave @ Division Road intersection subject to the following conditions including the addition of condition #6.

- 1. A revised landscape plan for the area around the sign base shall be submitted and approved by Village Staff prior to installation of the sign.***
- 2. Following installation of the sign, an as-built survey shall be completed and submitted to ensure that all sign components meet the required 5' setback from the property line/road right-of-way along Virginia Ave and Division Road.***
- 3. Address coordinates with a minimum 5" high lettering shall be added to the sign base as required in the sign regulations.***
- 4. The existing floodlights in the vicinity of the proposed sign location are not code compliant. If external lighting is proposed for the new sign, lighting shall be incorporated into the landscaping around the base of the sign and shielded. Detailed specifications for any external lighting shall be provided to the Village Planner for review and approval prior to installation.***
- 5. An electrical permit is required for any electrical installation or modifications to ensure code compliance. Contact Inspection Services staff (SAFEBuilt) for details.***
- 6. The applicant shall work with WE Energies to remove the meter socket.***

MOTION carried unanimously.

Maxwell Ours, property owner, is seeking approval to install a 6' wooden privacy fence within an existing public drainage easement on the residential lot located at N103 W17082 Wildrose Lane in the Country Meadows West subdivision. Director Retzlaff summarized the proposal.

MOTION Baum second Shadid to Approve the zoning permit application to install a 6' wooden privacy fence within the public drainage easement along the rear lot line of the property located at N103 W17082 Wildrose Lane subject to the following conditions:

- 1. The fence shall be installed a minimum setback of 2 feet from the Donges Bay Road right-of-way/property line and the bottom of the boards a minimum of 2 inches above the finished grade.***
- 2. It shall be the responsibility of the homeowner to maintain a free flow of water within the private drainage easement at all times.***

3. ***A fence permit is required from the Building Inspection Department. Contact SafeBuilt for more information.***
4. ***If the fence needs to be removed to make improvements and/or conduct maintenance within the drainage easement, the property owner shall be responsible for all costs associated with removing the fence to the extent necessary within seven (7) days of being notified by the Village (or another mutually agreeable deadline). The property owner shall be responsible for any and all costs associated with any damage, removal or re-installation of said fence.***

Discussion followed. Max Ours explained he had two little kids and the fence would box the kids in for security and safety when outside. Commissioner Tarantino commented the fence may impede the flow of water and suggested using plants instead. Chairman Wolter said he would like the fence to be brought in more from the sidewalk adding that it would change the aesthetics of the neighborhood. He understands why the fence is wanted and advised Mr. Ours that any maintenance in the easement would require removal of the fence.

MOTION carried 4-3 (Laszewski, Nilles, Tarantino)

ANNOUNCEMENTS: Peter Nilles said he would not be available for the May 8th meeting.

ADJOURNMENT: There being no further business the meeting was adjourned at 8:22 pm.

Respectfully submitted,

Lori Johnson
Planning Assistant

BUSINESS OF THE PLAN COMMISSION

MEETING DATE: May 8, 2023

PLACEMENT: Action Item

ITEM TITLE: Accurate Surveying & Engineering, Agent for Bast Family LTD Partnership, Property Owner - W204 N13917 Goldendale Road. 2-Lot Extraterritorial Plat Review to Divide the Property.
(ACTION)

SUBMITTED BY:

SUMMARY EXPLANATION:

ATTACHMENT:

1. 1-FINAL PDF Bast CSM 5-8-23

RECOMMENDATION:

ACTION BY Committee:

CERTIFIED SURVEY MAP (CSM) APPLICATION

5/8/23 Plan Commission Meeting

Bast Family LTD Partnership

Village Planner Report

Germantown, Wisconsin

Summary

Accurate Surveying & Engineering, agent for the Bast Family LTD Partnership, property owner, is requesting approval of a 1-lot certified survey map (CSM) to divide a 3.5-acre lot with an existing house and accessory buildings located at W204 N13917 Goldendale Road in the Town of Germantown. Village of Germantown review/approval under the Village's extraterritorial plat authority.

Location: W204 N13917 Goldendale Road (Town of Germantown)

Applicant/

Property Owners: Don Thoma Bast Family LTD Partnership c/o Ron Bast
2911 Wildlife Lane W202 N13925 Fond du Lac Ave
Richfield, WI Richfield, WI

Zoning District: Agricultural

Adjacent Land Uses		Zoning
North	Agricultural (T. of Germantown)	"A"
South	Agricultural (T. of Germantown)	"A"
East	Agricultural (T. of Germantown)	"A"
West	Agricultural (T. of Germantown)	"A"



Proposal

Accurate Surveying & Engineering, agent for the Bast Family LTD Partnership, property owner, is requesting approval of a 1-lot certified survey map (CSM) to divide a 3.5-acre lot with an existing house and accessory buildings located at W204 N13917 Goldendale Road in the Town of Germantown. Village of Germantown review/approval under the Village's extraterritorial plat authority.

As shown in the preliminary CSM, Lot 1 will be 3.0 acres after right-of-way dedication along Goldendale Road. The remaining area of the parcel, approximately 25.5 acres, will remain in agriculture use and is not required to be included in the CSM given that it exceeds 20 acres in area (per the Germantown Subdivision & Platting Code).

Staff Comments

Village of Germantown review/approval is required under the Village's extraterritorial plat authority where divisions of land in an adjacent town located within 1,000 feet of the common municipal boundary require Village Plan Commission and Board approval.

Review and approval of the CSM by the Town of Germantown has been granted subject to Village of Germantown review and action. The Town did not require right-of-way dedication to match the partial, unimproved existing right-of-way for the extension of Cedar Lane along the north side of the proposed lot (as shown on the CSM).

Soil evaluations for determining on-site sanitary system requirements are not required given the presence of an existing private on-site sanitary wastewater system (POWTS).

The Village Engineer has provided review comments in an April 11, 2023 letter (copy attached) noting a few minor technical corrections that will need to be made prior to recording the CSM, including a requirement to dedicate right-of-way for Cedar Lane. Although the Town did not require any right-of-way dedication. Given existing municipal boundaries, an extension of Cedar Lane between Goldendale Road and Fond du Lac Ave would be in the Town and under Town jurisdiction.

VILLAGE STAFF RECOMMENDATION

APPROVE the proposed 1-lot certified survey map (CSM) to divide a 3.5-acre lot with an existing house and accessory buildings located at W204 N13917 Goldendale Road in the Town of Germantown subject to the following conditions:

1. All technical issues and plan corrections identified by the Public Works Department consulting engineer in the April 11, 2023 letter shall be addressed and reflected in a revised CSM submitted to the Village prior to recording the CSM, except for the following:
 - a. No right-of-way dedication is required
 - b. Interim Village Clerk name for signature purposes is "Angel Rettler"



Village of

Germantown

...Willkommen

Fee must accompany application

☐ \$2,900 with public improvements

☐ \$1,960 no public improvements

Paid _____ Date _____

CERTIFIED SURVEY MAP APPLICATION

Pursuant to Section 18.06 of the Municipal Code

Please read and complete this application carefully. **All applications must be signed and dated.**

1 APPLICANT OR AGENT Accurate Surveying & Engineering, LLP Donald J. Thoma 2911 Wildlife Lane, Richfield WI 53076 Phone (262) 677-2120 Fax () E-Mail don@accuratesurveying.net	PROPERTY OWNER Bast Family LTD Partnership Roanld Bast W202N13925 Fond du Lac Ave. Richfield WI 53076 Phone (414) 570-5209 or 414 881-1250
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PROPERTY ADDRESS OR GENERAL LOCATION

TAX KEY NUMBER

2 W204N13917 Goldendale Rd. Richfield WI 53076	T5-014400Z
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3 PURPOSE OF LAND SPLIT

EXTRATERRITORIAL REVIEW: To separate the existing house and building from the farm land.	Will the land split require rezoning?	
	No	
	From	To

4 READ AND INITIAL THE FOLLOWING:

- DT* I understand that the Certified Survey Map is not valid until recorded at the Washington County Register of Deeds. The Village will record the document and charge the applicant all applicable recording fees.
- DT* I understand that the Map will not be placed on the Village Board agenda until all the technical corrections to the CSM are made, the payment of any outstanding impact fees are paid to the Village Clerk's Department, and the original signed and stamped copy of the Map is submitted on the proper paper.
- DT* I understand that parcels created outside the Sewer Service Area will require a soil test. I also understand that all properties abutting a State Highway will require DOT approval and I will be responsible for securing such approval prior to recording.
- DT* I understand all delinquent property taxes on any of the properties involved shall be paid prior to recording.

5 SIGNATURES -- ALL APPLICATIONS MUST BE SIGNED BY OWNER!

<i>Donald J. Thoma</i>	<i>3-14-23</i>	<i>Ronald Bast</i>	<i>3-14-23</i>
Applicant	Date	Owner	Date

Washington County

Ascent Land Records Suite

User: Public Choose Product: Land Records Suite Choose Category: <Select Task> Help ?

Browser Setup Help

Return to search results

Property Summary

Owner (s): BAST FAMILY LTD PARTNERSHIP		Location: NW-SW, Sect. 5, T9N, R20E	
Mailing Address: BAST FAMILY LTD PARTNERSHIP W202N13925 FOND DU LAC AVE RICHFIELD, WI 53076 Request Mailing Address Change		School District: 2058 - GERMANTOWN SCHOOL	
Tax Parcel ID Number: 014400Z	Tax District: T5-TOWN OF GERMANTOWN	Status: Active	
Alternate Tax Parcel Number:	Government Owned:	Acres: 29.0900	
Description - Comments (Please see Documents tab below for related documents. For a complete legal description, see recorded document.): NW SW V138 P429+V1651 P387 EXC PTS SOLD+PT ANNEXED 2.44 AC EXEMPT			
Site Address (es): (Site address may not be verified and could be incorrect. DO NOT use the site address in lieu of legal description.) W204N13917 GOLDENDALE RD RICHFIELD, WI 53076			
Printer Friendly Page View Interactive Map			

Taxes

Assessments

Attachments

Districts

Documents

Description	Doc. #	Vol./Pg.	Recorded	Document Date	Geom.	Exception	MFL Order	Imaging
WARRANTY DEED	733793	1651/387	11/21/1996	11/20/1996	No	No		Purchase
ORDER	204413	138/429	03/07/1949	03/07/1949	No	No		Purchase

You may purchase copies of the documents listed above online.

NOTE: There may be other documents related to this parcel that are not shown here. For more information regarding document history, please contact the Register of Deeds office at (262) 335-4318.

Notes

Parcel History

Permits

Sales History

Survey History

Log in

View Disclaimer

Washington County Certified Survey Map

Part of the NW 1/4 of the SW 1/4 of Section 5, Township 9 North, Range 20 East, Town of Germantown and the Village of Germantown, Washington County, Wisconsin.

Bearings are referenced to the Wisconsin State Plane Coordinate Grid System, South Zone, (NAD83/2011). The west line of the SW 1/4 of Sec. 5-9-20 has a grid bearing of N 01°02'59" W.

0 50 100 200
Scale in feet
1" = 100'



(r.a.) - means "recorded as"

(meas.) - means "measured as"

● - indicates 1.3" od iron pipe found unless noted.

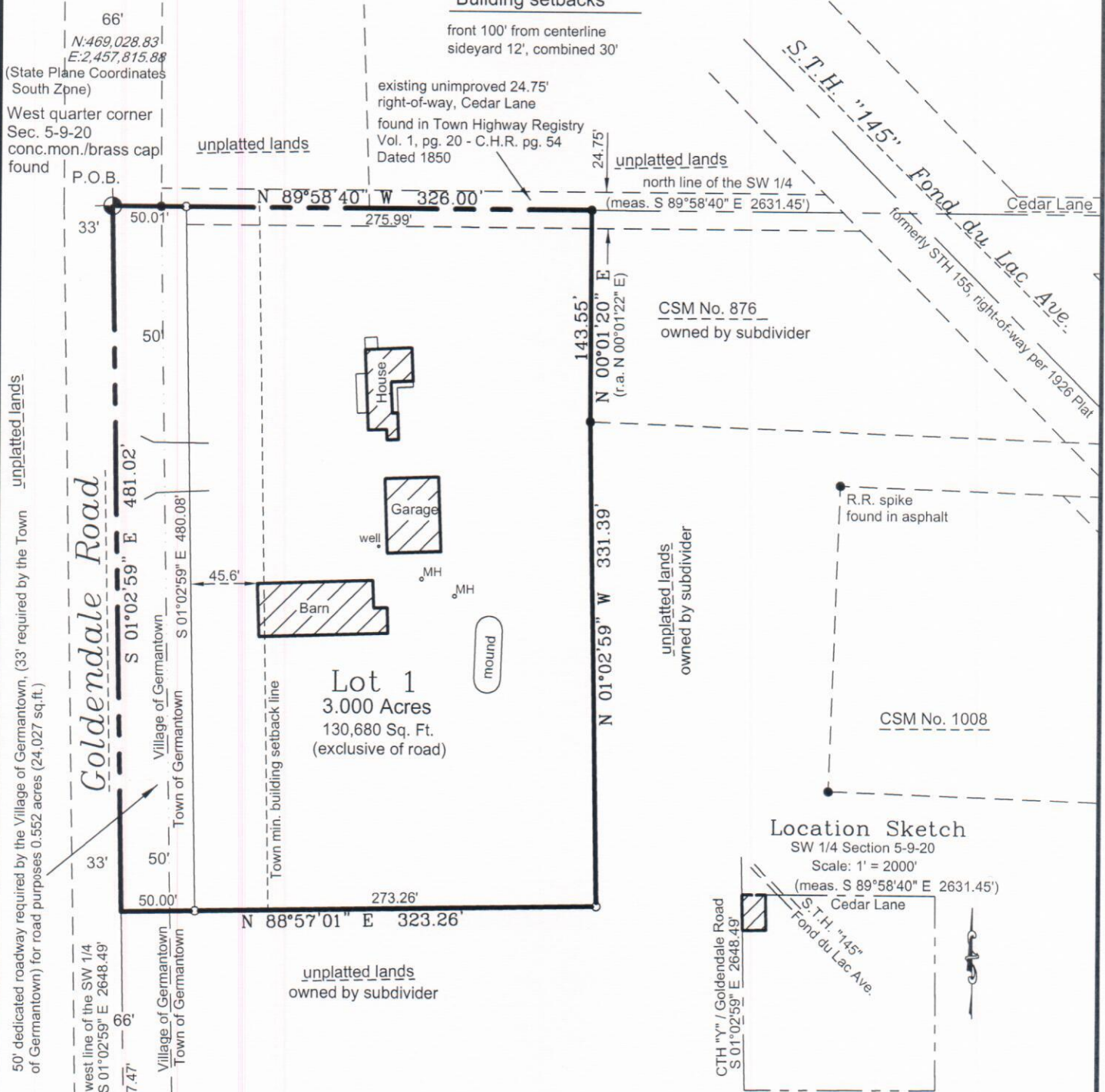
○ - indicates 1.3" od x 18" iron pipe weighing 1.68 lbs./ft. set.

Zoning Ag (subject to change)

Building setbacks

front 100' from centerline
sideyard 12', combined 30'

existing unimproved 24.75'
right-of-way, Cedar Lane
found in Town Highway Registry
Vol. 1, pg. 20 - C.H.R. pg. 54
Dated 1850



Sheet 1 of 3

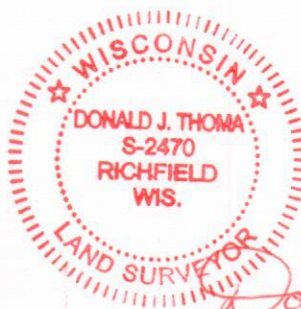
Southwest corner
Sec. 5-9-20
conc.mon./brass cap
found

Owner/Subdivider

Bast Family LTD Partnership
Ronald Bast
6970 S. 6th St.
Oak Creek, WI 53154

Surveyor

Donald J. Thoma
Accurate Surveying &
Engineering, LLP.
2911 Wildlife Lane
Richfield, WI 53076
(262)677-2120



Donald J. Thoma, S-2470

Dated this 5th day of March, 2023.
Revised this 14th day of March, 2023.

This instrument was drafted by Donald J. Thoma, S-2470

Washington County Certified Survey Map

Sheet 2 of 3

Part of the NW 1/4 of the SW 1/4 of Section 5, Township 9 North, Range 20 East, Town of Germantown and the Village of Germantown, Washington County, Wisconsin.

Surveyor's Certificate:

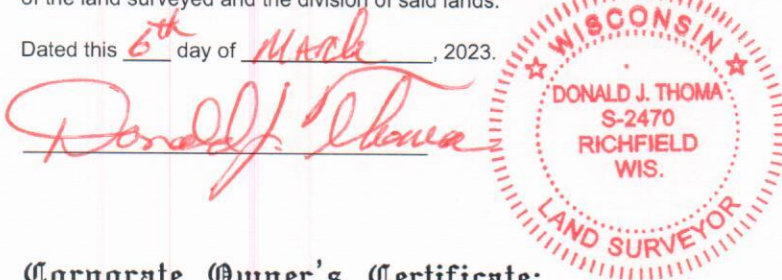
I, Donald J. Thoma, Professional Land Surveyor, hereby certify that by the direction of Ronald Bast, I have surveyed, divided, mapped and dedicated the land shown and described hereon, Part of the NW 1/4 of the SW 1/4 of Section 5, Township 9 North, Range 20 East, Town of Germantown and the Village of Germantown, Washington County, Wisconsin, which is bounded and described as follows:

Beginning at the West quarter corner of said Section 5; thence S 01°02'59" E, along the west line of said SW 1/4, 481.02 feet; thence N 88°57'01" E, at right angles, 323.26 feet; thence N 01°02'59" W, at right angles and parallel with said west line of the SW 1/4, 331.39 feet, to the southwest corner of Certified Survey Map No. 876, as recorded in the Washington County Registry in Volume 4 of Certified Survey Maps on pages 355-356 as Document No. 350989; thence N 00°01'20" E, along the west line of said Certified Survey Map No. 876, 143.55 feet, to the intersection of the north line of said SW 1/4; thence S 89°58'40" E, along said north line of said SW 1/4, 326.00 feet, to the point of beginning.

Containing 3.552 acres (154,707 square feet) more or less.

I further certify that I have fully complied with the provisions of sec. 236.34 of Wisconsin Statutes and the Town of Germantown Ordinance in surveying, dividing, mapping and dedicating said lands, and that this map is a correct representation of the exterior boundaries of the land surveyed and the division of said lands.

Dated this 6th day of MARCH, 2023.



Corporate Owner's Certificate:

Bast Family Limited Partnership, a corporation duly organized and existing under and by virtue of the laws of the State of Wisconsin, as owner, does hereby certify that said corporation caused the land on this Certified Survey Map to be surveyed, divided, mapped and dedicated that part of C.T.H. "Y" / Goldendale Road for public road purposes as represented on Sheet 1 of 3 of this Certified Survey Map.

Bast Family Limited Partnership, does further certify that there is no mortgage on this property and this Certified Survey Map is required by sec. 236.34 of Wisconsin Statutes to be submitted to the following for approval.

Town of Germantown Plan Commission
Town of Germantown Town Board

Village of Germantown Plan Commission
Village of Germantown Village Board

IN WITNESS WHEREOF, Bast Family Limited Partnership, has caused these presents

to be signed by Ronald Bast, its Officer,

at _____, Wisconsin,

and its corporate seal to be hereunto affixed this _____ day of _____, 202__.

In the presence of:

Bast Family Limited Partnership

Corporate Name

Officer

Ronald Bast
(Print)

STATE OF WISCONSIN)
WASHINGTON COUNTY)s.s

Personally came before me this _____ day of _____, 202__, _____ Ronald Bast

Officer of the above named corporation, to me known to be the persons who executed the foregoing instrument, and to me known to be such Officer of said corporation, and acknowledge that they executed the foregoing instrument as such officers as the deed of said corporation, by its authority.

(Notary Seal) _____, Notary Public, _____, Wisconsin.

My commission expires _____

Washington County Certified Survey Map

Sheet 3 of 3

Part of the NW 1/4 of the SW 1/4 of Section 5, Township 9 North, Range 20 East, Town of Germantown and the Village of Germantown, Washington County, Wisconsin.

Town of Germantown Plan Commission Approval:

This land division is hereby approved by the Town of Germantown Plan Commission

this ____ day of _____, 202__.

Paul Metz - Chairperson

Chad Dhein - Zoning Administrator

Town of Germantown Town Board Approval:

This land division is hereby approved, and accepted by the Town of Germantown Town Board

this ____ day of _____, 202__.

Paul Metz - Chairperson

Kristin Dhein - Clerk

Village of Germantown Plan Commission Approval:

This Certified Survey Map is hereby approved by the Planning Commission of the Village

of Germantown on this ____ day of _____, 202__.

Dean Wolter - Chairperson

Laura A. Johnson - Secretary

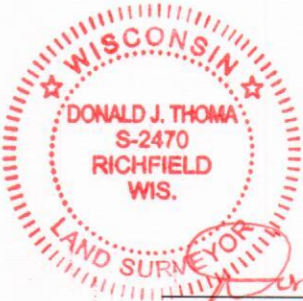
Village of Germantown, Village Board Approval:

This Certified Survey Map, being part of the NW 1/4 of the SW 1/4 of Section 5, Township 9 North, Range 20 East, Town of Germantown and the Village of Germantown, Washington County, Wisconsin, having been approved by the Planning Commission being the same, is hereby approved and (50' dedication of that part of Goldendale Road for public road purposes as shown on Sheet 1 of 3 is hereby) accepted by the Village Board of Trustees of the Village of Germantown on

this ____ day of _____, 202__.

Dean Wolter - Village President

Deanna Boldrey - Village Clerk



Donald J. Thoma, S-2470

Dated this 5th day of MARCH, 2023.
Revised this 14th day of March, 2023.



The Avenue
275 West Wisconsin Avenue, Suite 300
Milwaukee, WI 53203
414 / 259 1500
414 / 259 0037 fax
www.graef-usa.com

collaborāte / formulāte / innovāte

April 11, 2023

Jeff Retzlaff, Village Planner
Village of Germantown
N112 W17001 Mequon Road
Germantown, WI 53022

SUBJECT: Bast Family Limited Partnership CSM Review

Certified Survey Map

Applicant or Owner: Bast Family Limited Partnership

Land Surveyor/Firm: Donald J. Thoma / Accurate Surveying and Engineering, LLP

1. The south right of way of Cedar Lane should be dedicated.
2. All existing utility and drainage easements with recording information will be shown and dimensioned.
3. Soil borings should be labeled, and their results provided with the CSM.
4. The last paragraph of the Surveyor's Certificate should reference "Chapter 18 of the Village of Germantown Subdivision Control Ordinance in surveying, dividing, mapping and dedicating the same".
5. The Village Clerk's name is Deanna Braunschweig.

No further review comments.

Document Approval and Recording

For this CSM to be approved by the Village Board and recorded at the Washington County Register of Deeds, the document must be provided to the Village Clerk's office in a completed format including all original signatures of the owner and lending institution, original seals of the professional land surveyor on the recordable media the Wednesday prior to the scheduled Village Board meeting.

Any documents or digital files not submitted by the due date or contain outstanding technical review comments that have not be addressed, will be moved to the next scheduled Village Board meeting agenda.

Document Submittals and Data Conversion

As of October 2005, the Village of Germantown requires a digital copy of all Certified Survey Maps, Condominium Plats and Subdivision Plats in addition to the documents as required by Wisconsin Statute and Village Ordinances as part of the land division approval.

Prior to Recording the Certified Survey Map or Subdivision Plat, The professional land surveyor is responsible for submitting a copy of the AutoCad drawing file (.dwg) of the document in version 2019 on compact disk (CD) or via email to the Village Surveyor for mapping purposes.

All digital professional land surveyor seals and signatures will be purged from the digital copy prior to submittal.

Note: In 2020, the Village will be upgrading its municipal code to recognize the NAD83 Datum, 2011 adjustment for horizontal control and NAVD88 for vertical control for mapping all land division documents and plan submittals for review.

There are new dossier sheets for all the Public Land Survey System monuments that contain the new coordinate positions and elevations available currently on the State Cartographer's website by using the Survey Control Finder application

Prior to Recording the Certified Survey Map or Final Subdivision Plat, the Village Engineering Department will verify that the boundary markers have been installed as described on the submitted map. All boundary corners are to be clearly marked in the field by the professional land surveyor of record.

Sincerely,



Burt J. Naumann, PLS
Senior Vice President

BUSINESS OF THE PLAN COMMISSION

MEETING DATE: May 8, 2023

PLACEMENT: Action Item

ITEM TITLE: MSI General Inc., Agent for Moldmakers Investments LLC,
Property Owner of MGS Manufacturing, W188 N11707 Maple
Road. Site Plan Review for a 118,652 sqft Innovation Center
Addition. **(ACTION)**

SUBMITTED BY:

SUMMARY EXPLANATION:

ATTACHMENT:

1. 1-FINAL PDF MGS Site Plan Review 5-8-23

RECOMMENDATION:

ACTION BY Committee:

SITE PLAN APPLICATION

5/8/23 Plan Commission Meeting

MSI General Inc. / MGS Manufacturing / Moldmakers Investments LLC *Village Planner Report* *Germantown, Wisconsin*

Summary

John Kutz, MSI General, agent for Moldmakers Investments LLC, property owner, and MGS Manufacturing Group Inc., is requesting site development & building plans for a 118,650 sqft industrial building addition and related site improvements for the MGS Manufacturing campus located at W188 N11707 Maple Road in the Germantown Industrial Park.

Location: W188 N11707 Maple Road

Applicant/

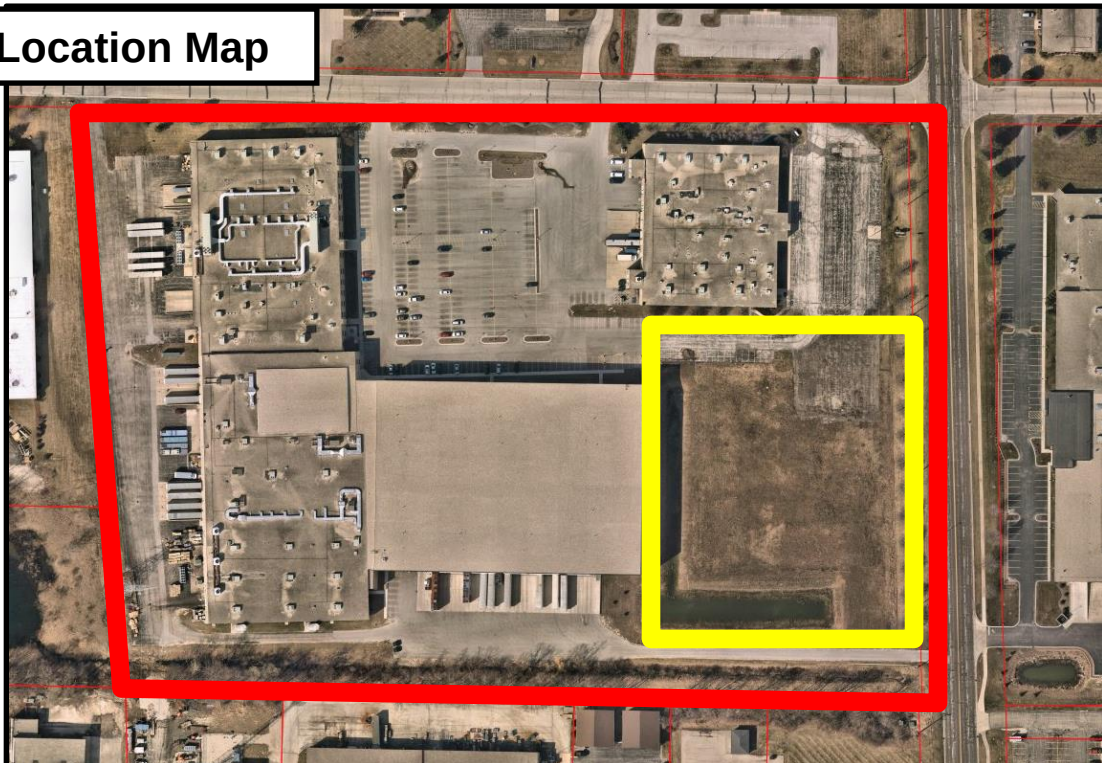
Property Owner: John Kutz
MSI General
W215 East Wisconsin
Nashotah, WI

MGS Manufacturing
W188 N11707 Maple Road
Germantown, WI

Current Zoning: M-1: Industrial

Adjacent Land Uses		Zoning
North	Industrial	M-1
South	Industrial	M-1
East	Industrial	M-1
West	Industrial	M-1

Location Map



Background/Proposal

John Kutz, MSI General, agent for Moldmakers Investments LLC, property owner, and MGS Manufacturing Group Inc., is requesting site development & building plans for a 118,650 sqft industrial building addition and related site improvements for the MGS Manufacturing campus located at W188 N11707 Maple Road in the Germantown Industrial Park.

MGS is a world-wide provider of tooling, molding, and equipment technology for the manufacturing of plastic injected molded parts healthcare, automotive and consumer electronics markets. The “Innovation Center” project will provide additional office and manufacturing space to the facility and allow approximately 30 employees from two other facilities to relocate to the MGS campus.

With the Innovation Center addition, the 24-acre MGS campus will have buildings totaling 491,872 sqft including the following:

- 187,976 sqft “Molding” building
- 121,736 sqft “Warehouse”
- 63,510 sqft “Tooling” building
- 118,650 sqft “Innovation Center” (proposed)

As detailed in the plans, the site and building improvements include the following:

- 118,650 sqft total area (95,370 1st floor + 23,280 sqft 2nd floor mezzanine)
 - 51,570 sqft manufacturing
 - 22,800 sqft warehouse
 - 21,000 sqft office (1st floor)
 - 23,280 sqft office (2nd floor)
- building w/ 34’ interior clear height
 - Pre-cast wall panels 30’ w/ corduroy and towel texture finish
 - Pre-finished articulated curtainwall off-set east façade
 - Earthtone color palette to match existing buildings
 - Aluminum-framed anodized windows & door system
- On-site storm basin along south property line with enhanced berm & capacity w/ roof drains & on-site storm sewer
- Additional paved parking area w/ 151 parking stalls (east of Tooling & Innovation Center buildings)
- 1 overhead loading dock (west side of Innovation Center)
- Approximately 10,000 sqft of “Tooling” building renovations to tie into Innovation Center (Sheet a-111.1)

Parking, Access & Traffic Circulation

Access will not change with the new Innovation Center having internal driveway connections to the west and north sides of the campus. Access to/from the new parking lot will be provided to/from Maple Road (right-turn exit only) and to Fulton Drive that currently serves the “Tooling” building. As a result of the addition and reconfiguration of the parking lot serving the “Tooling” building that will displace 92 parking stalls, a new combined parking lot east of the Tooling & Innovation Center buildings will provide 151 parking stalls in addition to the 269 stalls in the central parking lot and 100 stalls on the west side of campus (for a total of 520 parking stalls throughout the MGS campus). MGS projects a need for 450 stalls for their total campus workforce.

Storm Water Management. A total of 108,307 square feet (2.5 acres) of additional impervious surfaces are proposed to be added to the site as part of the proposed site & building improvements. The total area of impervious surface on the site will be 18.2 acres or 792,241 sqft or 75.7% of the total 24.02 acres leaving 24.3% of the site as open/green space. Wet detention and infiltration basins are proposed in the southeast corner of the site along Maple Road. Storm sewer, controlled roof drains, catch basins, sheet flow and outlet control features are provided with connections to off-site drainage to two different regional drainage basins: the existing regional stormwater basin west of the property and the north regional basin on the Wago property. The existing basin in the southeast corner of the site will be partially filled and modified with additional berm height to increase capacity necessary for the new addition.

Landscaping & Buffering. Additional landscaping is limited to new foundation plantings along the east side of the proposed building addition and within and around the perimeter of the new parking lot east of the addition. Plantings include a variety of deciduous street and shade trees, ornamental trees, evergreen trees, deciduous and evergreen shrubs, perennial plantings, and ornamental grasses.

Lighting. Additional exterior lighting of building includes:

- (4) 133w 5000k LED cut-off style pole-mounted fixtures (one single fixture per pole) mounted on a 20' pole with 3' base (total height: 23') for parking lot illumination

Signage. No new signage is proposed. A separate sign permit application meeting the requirements of Chapter 17.46 will be required for any proposed signage.

Staff Comments

Community Development: Planning & Zoning

The proposed addition completes a campus expansion plan that has been shared and discussed with the Village for many years. Issues such as storm water management, wetlands, access, etc. have been anticipated and addressed as part of previous plan and permit approvals.

Roof-top mechanicals are shown on Sheet A-321. Several RTU's are shown above the office areas closer to the east elevation. While there is a modest parapet proposed along portions of the roof line and screen wall, the sight line diagram (Sheet A-320) shows that the RTU's are set back far enough from the east elevation edge that the RTU's will not be visible from Maple Road. No screening is proposed at this time either.

Public Works/ Village Engineer

The Village Engineer and Public Works Director have identified several technical issues and plan revisions that need to be resolved by the Developer prior to commencing construction activities and issuance of building permits.

Nonetheless, Staff is recommending conditional approval of the site development and building plans subject to all the outstanding items identified in the following review memos being resolved and reflected in additional information and/or revised plans submitted to Village Staff for further review, comment, and approval prior to commencing any site construction or issuance of building permits (excluding early start site preparation and footing and foundation installation):

- April 6, 2023, memo from Larry Ratayczak, Public Works Director

Fire & Police Departments

All exterior doors (except primary entrance) shall be clearly marked with reflective 5" or larger letters/numbers to aid emergency personnel access.

Community Development: Inspection Services

State agency (DSPS) approved plans and a \$20,000 occupancy bond are required at the time of building permit application. The Village of Germantown is an authorized delegated agent of DSPS to provide all commercial plan review and inspection services through SAFEBuilt of WI and the Village of Germantown.

VILLAGE STAFF RECOMMENDATIONS

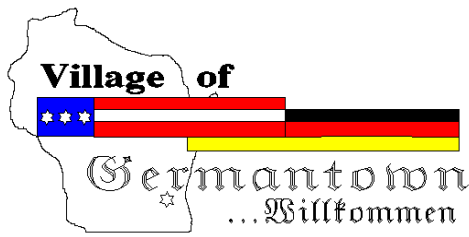
APPROVE the site development and building plans for the 118,650 sqft Innovation Center office & manufacturing facility addition and related site improvements to the MGS Manufacturing campus located in the Germantown Industrial Park subject to the following conditions:

1. This approval is subject to all the conditions and requirements set forth herein and adopted by the Plan Commission. Approval is granted for the following plans unless superseded by subsequent plan sheets approved by Village Staff pursuant to revisions required herein and/or by the Plan Commission:
 - a. *Architectural plans dated March 13, 2023;*
 - b. *Civil Engineering plans dated March 13, 2023;*
 - c. *Landscaping plans dated February 2, 2023;*
 - d. *Lighting plans (photometric plan) dated March 13, 2023;*
 - e. *Storm Water Management Report dated March 13, 2022*

If revised plan sheets are necessary, each revised sheet shall contain the date of said revision clearly stamped in the lower right corner.

2. All landscaping, screening, grading, and paving improvements shown on the approved site plans shall be installed as proposed prior to issuance of an occupancy permit unless a cash bond or letter of credit in an amount equal to 120 percent of the estimated installation and material costs reviewed and approved by the Village is submitted to the Village as necessary to ensure that installation of the proposed features and improvements will be completed within one (1) year after issuance of the occupancy permit for the shell building.

-
3. All exterior doors (except primary entrance) shall be clearly marked with reflective 5" or larger letters/numbers to aid emergency personnel access as required by the Police Department.
 4. All outstanding items and issues identified by Village Staff in the following review memos shall be resolved and reflected in additional information and/or revised plans submitted to Staff for further review, comment, and approval prior to commencing construction or issuance of building permits (excluding "early start" site clearing and footing/foundation work approved by the Village and/or WI DSPS):
 - a. April 6, 2023 memo from Larry Ratayczak, Public Works Director
 5. State agency (DSPS) approved plans and a \$20,000 occupancy bond are required by Inspection Services at the time of building permit application. The Village of Germantown is an authorized delegated agent of DSPS to provide all commercial plan review and inspection services through SAFEBuilt of WI and the Village of Germantown.
 6. All permanent signage, including any wall signage and monument/ground signage will require separate sign permit review and approval by the Plan Commission.



Engineering Department Memorandum

To : Jeffrey W. Retzlaff, AICP, Planning Director/Zoning Administrator
From : Lawrence Ratayczak, P.E., Director of Public Works
Date : April 6, 2023
Re : MGS Expansion

Items Reviewed:

1. Civil Plan Set Dated: 03-13-23

General Comments:

1. Please respond to each item below. **A written response addressing each item shall be included in your submittal.**
2. The submitted plans have been reviewed for general conformance with State and Village design guidelines. Additional comments could arise as a result of the plan completion and modifications. The items listed below will need to be fully resolved before the Engineering Dept. can recommend a formal approval of the plans and permit for construction.
3. This project will require a WRAPP/NOI from the DNR. Please submit a copy of the approved permit prior to final approval.
4. As-builts prepared to Village standards shall be prepared and provided to the Village post-construction (for all applicable items).
5. A professional engineer's original seal is to be affixed, signed and dated on the final set of construction plans.
6. Utility permits and permits for work within the ROW are required. Contact the Village engineering department to obtain permits.
7. As a guide to the review response: Items in *italics* are resolved or acknowledged, items in regular font are to be addressed yet, items in **Bold** are additional feedback to remaining original comment.

Wasterwater Utility Comments

1. Connection to existing sanitary sewer will be made with a factory wye with rigid couplings.

C-101 Site Plan

1. Clarify extents of proposed verse existing sidewalk to the north of the proposed addition.
2. Show and callout ADA ramps, truncated domes, and ADA signage.

C-102 Grading and Erosion Control Plan

1. Clarify proposed and existing storm sewer in the north parking lot. Are the existing inlets remaining and new storm sewer being added? The structures show up on the plans but not all the of the linework is shown.
2. Provide additional spot elevations to evaluate drainage. High and low points, pavement edges, etc.
3. Show curb ramp locations and spot elevations to evaluate ADA access.
4. Show match in spot elevations for the curb line and island being added to the existing north east parking lot.
5. Show ground grade elevations at the south end of the proposed building. Ground grade appears to be close to the overflow elevation and could pond water against the building.
6. Revise pond overflow location to not conflict with the existing hydrant or re-locate the hydrant outside of the overflow route.
7. Top of berm shall be 1' above the overflow elevation.

Stormwater Management Plan Comments

1. Report talks about upflow filters being re-located. Show filter locations on the plans. Add a requirement for contractor to clean existing systems and evaluate if filters need replacement.
2. Existing drainage map appears to show the 2020 site improvements as the existing condition. Please revise the map to show the land covers used for the existing condition.
3. Confirm that all roof overflows drains will be direct south or east and tributary to the pond and not west and tributary to the Wago pond.
4. Please add info on the start and end times used for the critical time period to the narrative section of the report. Critical time period should start at 11.75 hours.
5. Plans note a max ponding of 7" for the 100-year event on the roof top. Confirm structural design for the roof accounts for this ponding.
6. Previous SWMP for the 2020 addition had 12 controlled flow roof drains. Proposed SWMP appears to only have 2 controlled flow roof drains. Why the change?
7. Please adjust the SLAMM calcs to use the pounds of TSS produced with no controls instead of a weighted average for the percentages. I.E. model the prior redevelopment area and new redevelopment area in SLAMM and multiply the no control pounds produced by 40%. Model the new development area and multiply the no controls pounds by 80%, add the two together and then show the proposed site improvements remove at least that much.
8. The upflow filter is being used supplement the Wago basin and should not be used to for the water quality calc for the remainder of the site.

**Fee must accompany application**

- ☐ \$700 Minor Addition
- ☐ \$1,240 Construction <10,000 SF
- ☐ \$2,095 Construction 10,000 SF to 50,000
- ☐ \$3,460 Industrial Construction >50,000 SF
- ☐ \$3,460 Commercial Construction >50,000
- ☒ \$200 Plan Commission Consultation
- ☐ \$125 Fire Department Plan Review

PAID _____ DATE _____

SITE PLAN REVIEW APPLICATION

Pursuant to Section 17.43 of the Municipal Code

Please read and complete this application carefully. All applications must be signed and dated.

1 APPLICANT OR AGENT

MSI GENERAL INC.
JOHN KUTZ
W215 E. WISCONSIN AVE.
NASHOTAH, WI 53058

Phone (262) 563-5379

E-Mail john@msigeneral.com**PROPERTY OWNER**

MGS MANUFACTURING
MGS PRESIDENT
W188 N11707 MAPLE ROAD
GERMANTOWN, WI

Phone (262) 255-5790

E-Mail shawn.krenke@mgsmfg.com**2 PROPERTY ADDRESS**

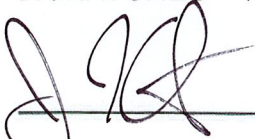
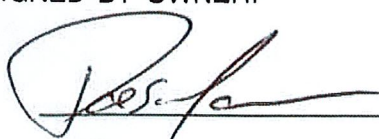
W188 N11707 MAPLE ROAD

3 NEIGHBORING USES – Specify name and type of use, e.g. Enviro Tech – Industrial, Smith – Residential, etc.

North	South	East	West
GKN SINTER METALS - INDUSTRIAL	LASER FINISHING - INDUSTRIAL	GDI ADHESIVES - INDUSTRIAL	FUREY FILTER &PUMP-INDUSTRIAL

4 READ AND INITIAL THE FOLLOWING:

- ☒ I am aware of the Village of Germantown ordinance requiring fire sprinklers in most new construction.
- ☒ I understand that all new development is subject to Impact and/or Connection Fees that must be paid before building permits will be issued.
- ☒ I understand that an incomplete application will be withdrawn from the Plan Commission agenda and that all resubmissions to the Plan Commission are subject to a new application fee.

5 SIGNATURES – ALL APPLICATION MUST BE SIGNED BY OWNER!
Applicant3/9/23
Date
Owner3/8/23
Date



3/13/2023

Village of Germantown
Department of Planning and Zoning
N112W17001 Mequon Road
Germantown, WI 53022

Project Narrative

MGS Manufacturing is expanding their office and manufacturing space in Germantown, WI. The proposed addition that will connect both of their existing buildings along Fulton Drive and Maple Road into a single campus building. The new addition will serve as the new main entrance for customers as they visit the growing MGS campus. Expanded parking on-site will serve the additional employees of the expansion. The proposed addition will utilize existing loading docks and will only require a single on-grade overhead door in the rear.

Site Zoning

Current Zoning	M-1 Limited Industrial
Adjacent Property Zoning	M-1 Limited Industrial

Project Data

Building	
Construction Type	IIB
Occupancy	
Major	F-1 (Factory Moderate Hazard)
Minor	S-1 (Storage Moderate Hazard)
Office	B (Business)

Separated uses: none

Non-separated uses:	F-1, S-1, B
Sprinkler System	Yes
Number of Stories	1 with mezzanine
Gross Building Area #1 (Molding)	
Existing First Floor Area	288,178 s.f.
Existing Mezzanine Area	21,878 s.f.
Gross Building Area #2 (Tooling Bldg)	
Existing First Floor Area	49,696 s.f.
Existing Mezzanine Area	15,110 s.f.

Proposed Building Addition:

<i>Proposed First Floor Area</i>	<i>95,369 s.f.</i>
<i>Proposed Mezzanine Area</i>	<i>23,283 s.f.</i>
<i>Total Proposed Building Addition:</i>	<i>118,652 s.f.</i>

Allowable Building Area:	Unlimited per IBC 507.4 & 507.5
Existing Building Height	Varies from 32'-7" to 45'-0"
Proposed Building Height:	Varies from 30'-0" to 36'-0"
Actual Employee Count:	
1st Shift: 126 (179 max)	
2nd Shift: 15 (67 max)	
3rd Shift: 13 (67 max)	
Total: 350 max	

Sincerely,
MSI General Inc.



MGS Manufacturing Group, Inc.
Innovation Center Project in Germantown, WI
Updated – May 2023 Board Meeting

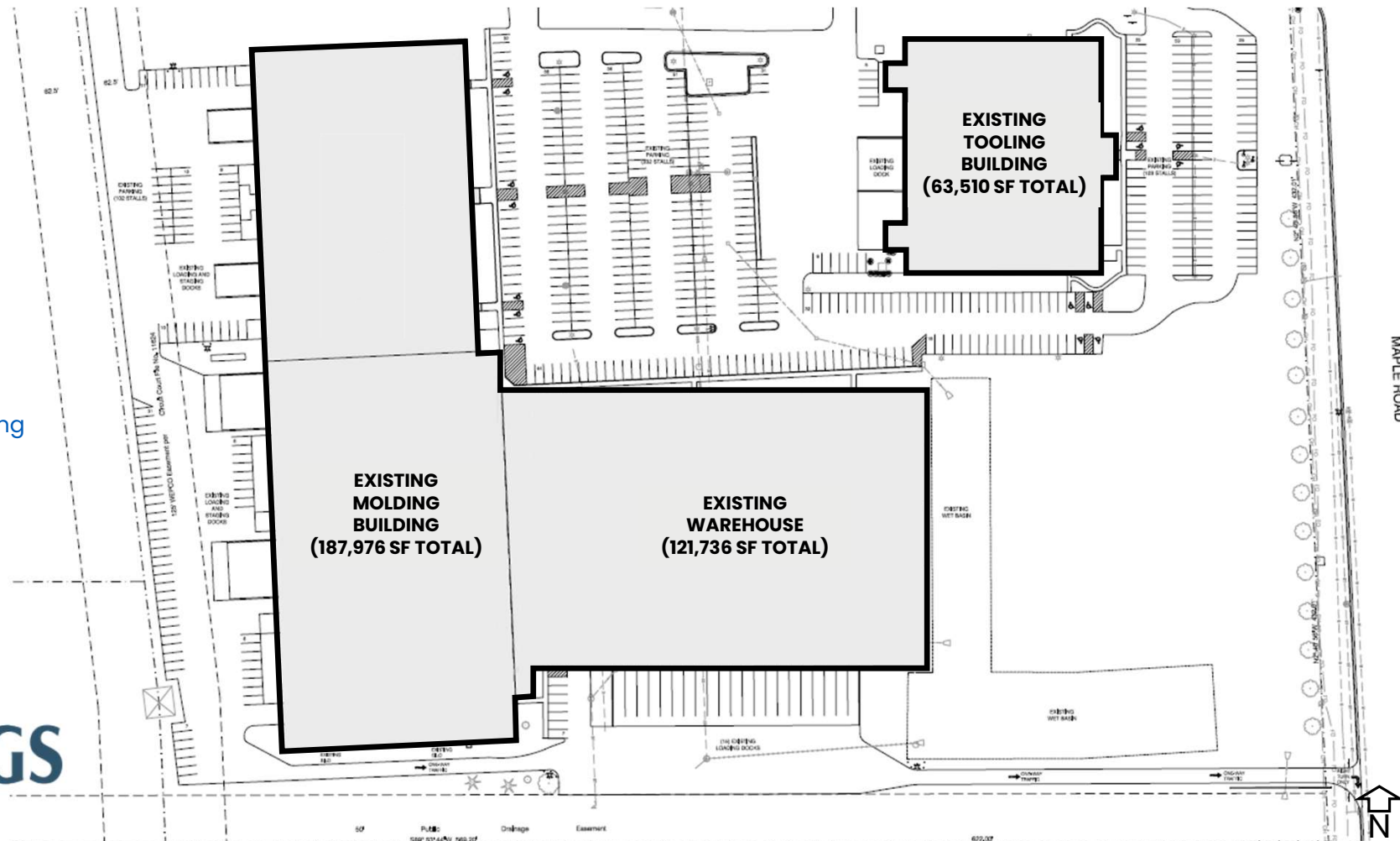


Designing Excellence. Building Trust.™



Site Plan – Existing

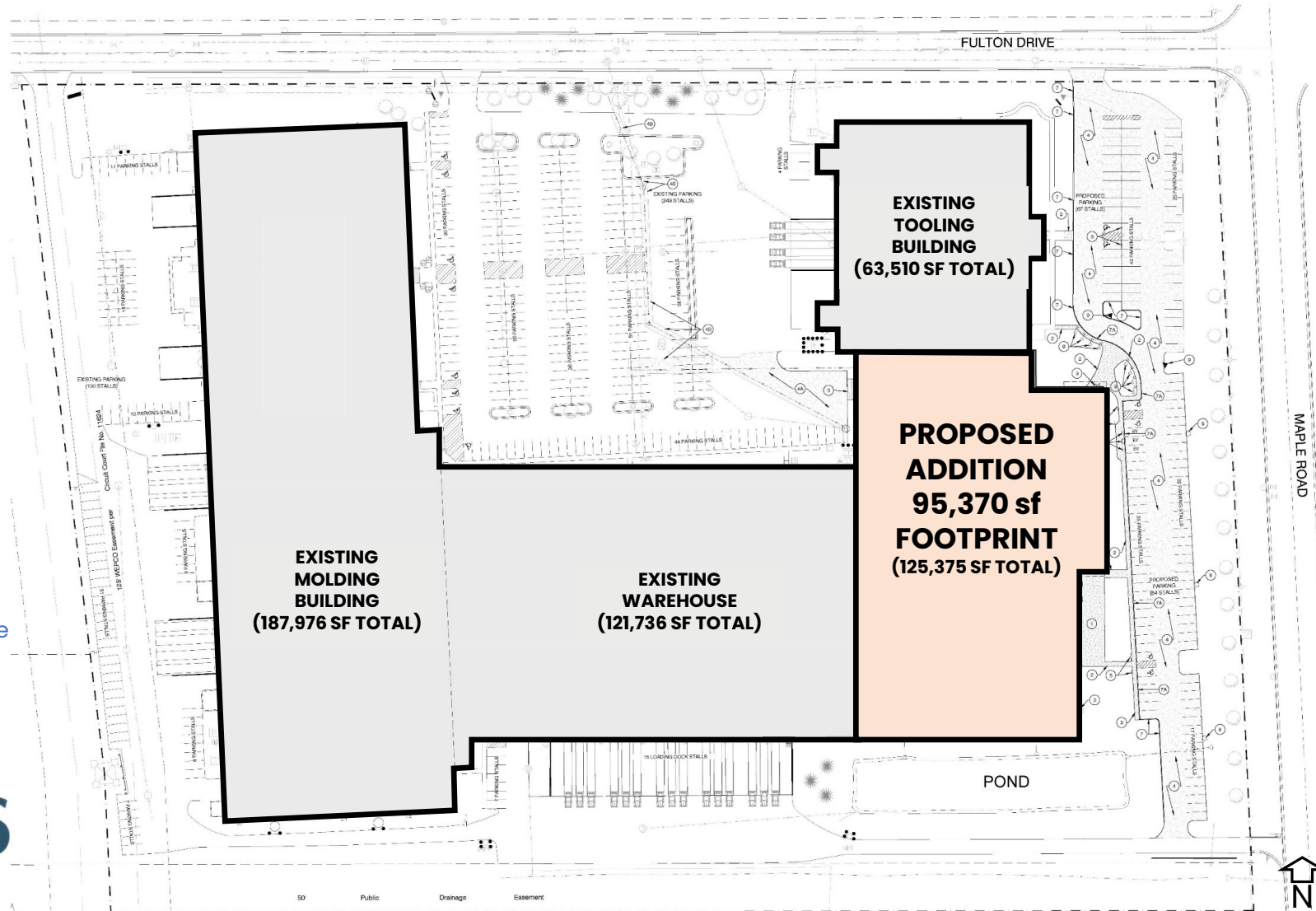
- 544 parking stalls existing
- On-site retention pond



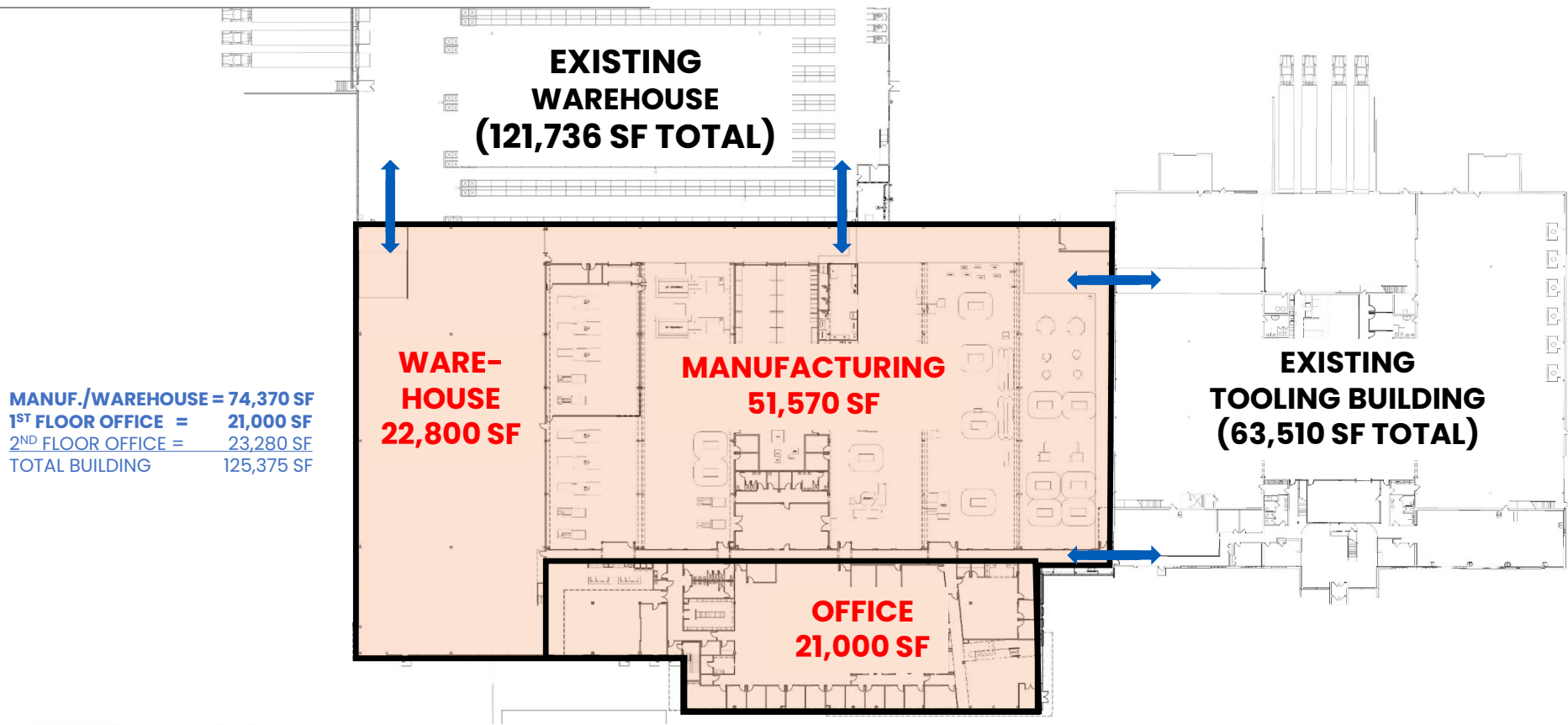
Site Plan

MANUF./WAREHOUSE = 74,370 SF
 1ST FLOOR OFFICE = 21,000 SF
 2ND FLOOR OFFICE = 23,280 SF
 TOTAL BUILDING 125,375 SF

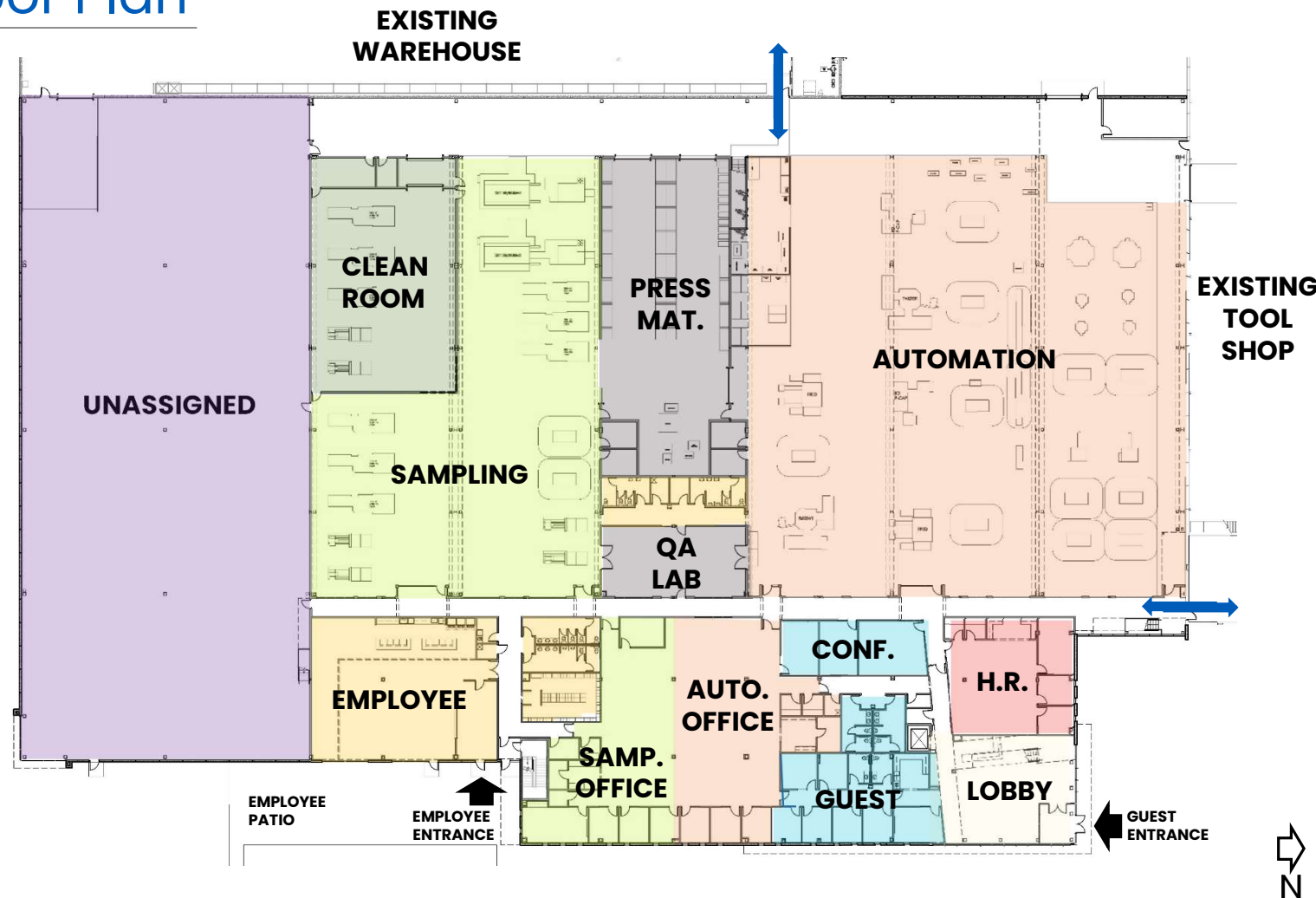
- 550 parking stalls proposed
- Retention pond on south side



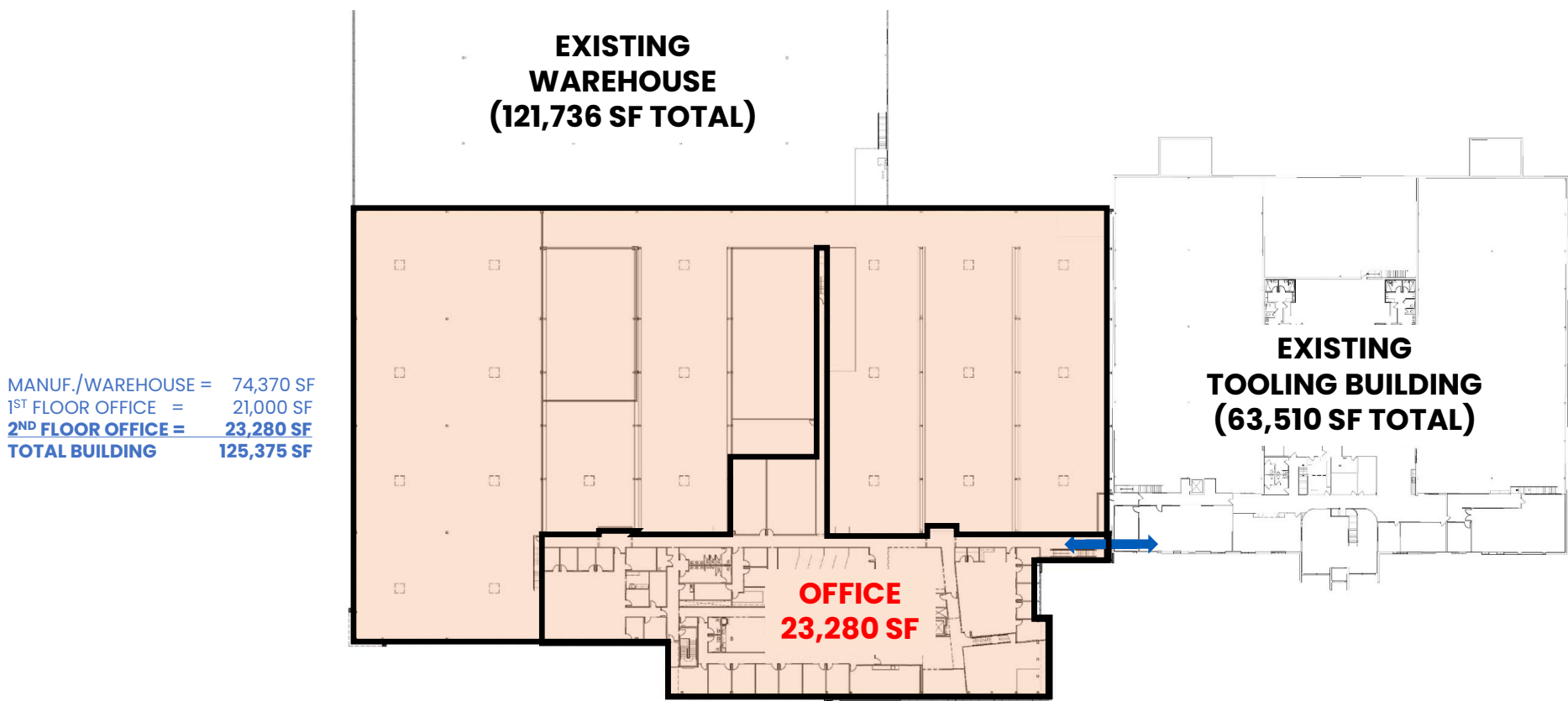
Overall First Floor Plan



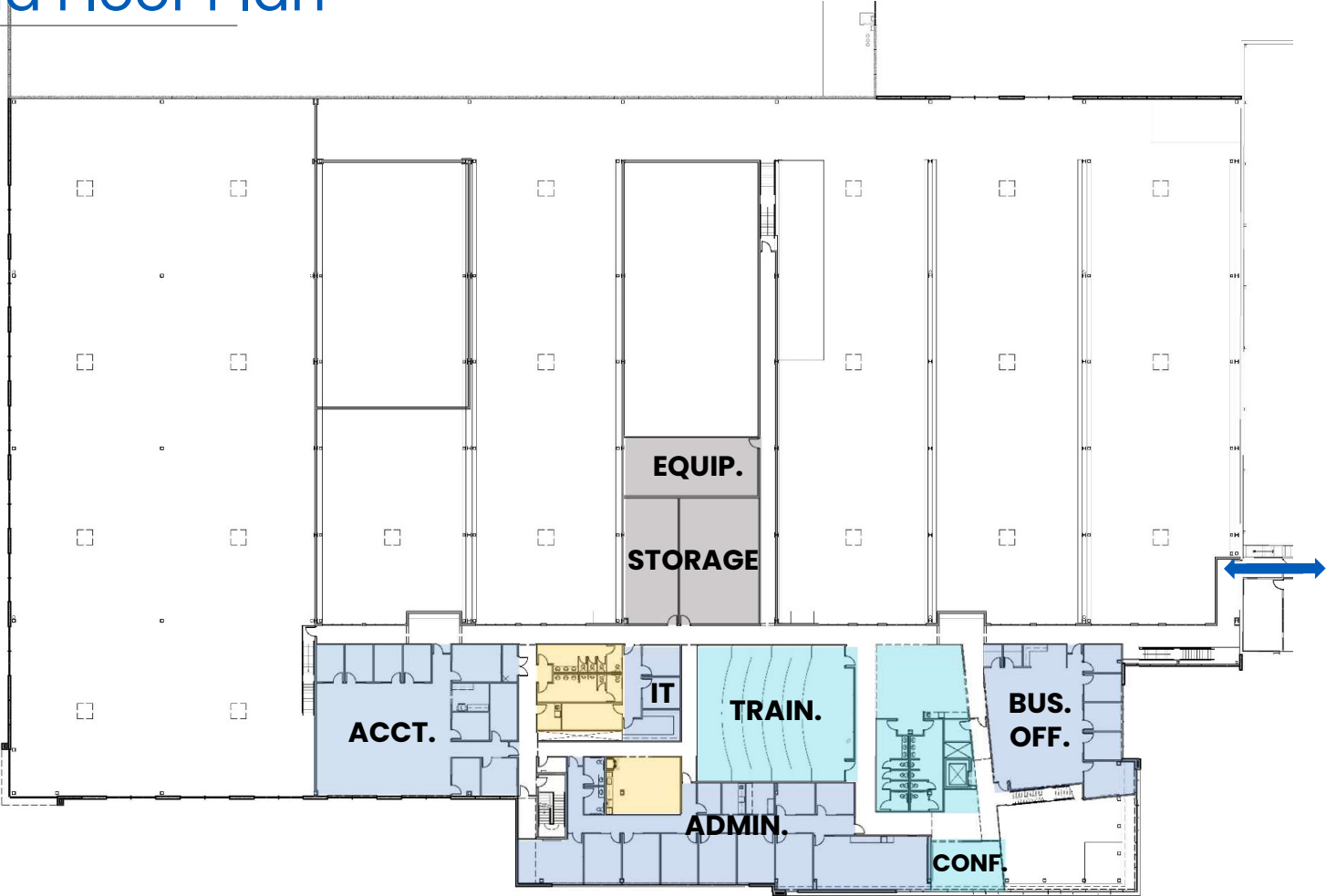
Enlarged First Floor Plan



Overall Second Floor Plan



Enlarged Second Floor Plan



Campus Aerial View



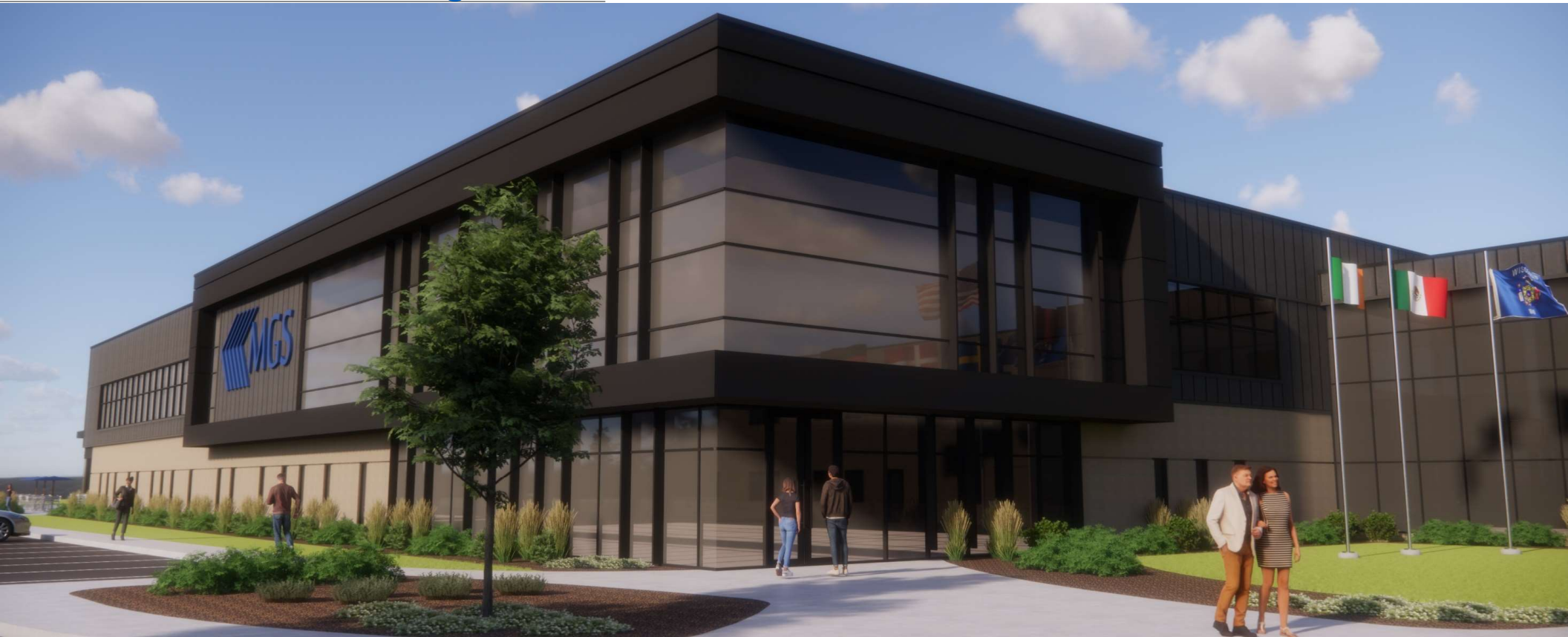
Exterior Rendering



Exterior Rendering



Exterior Rendering

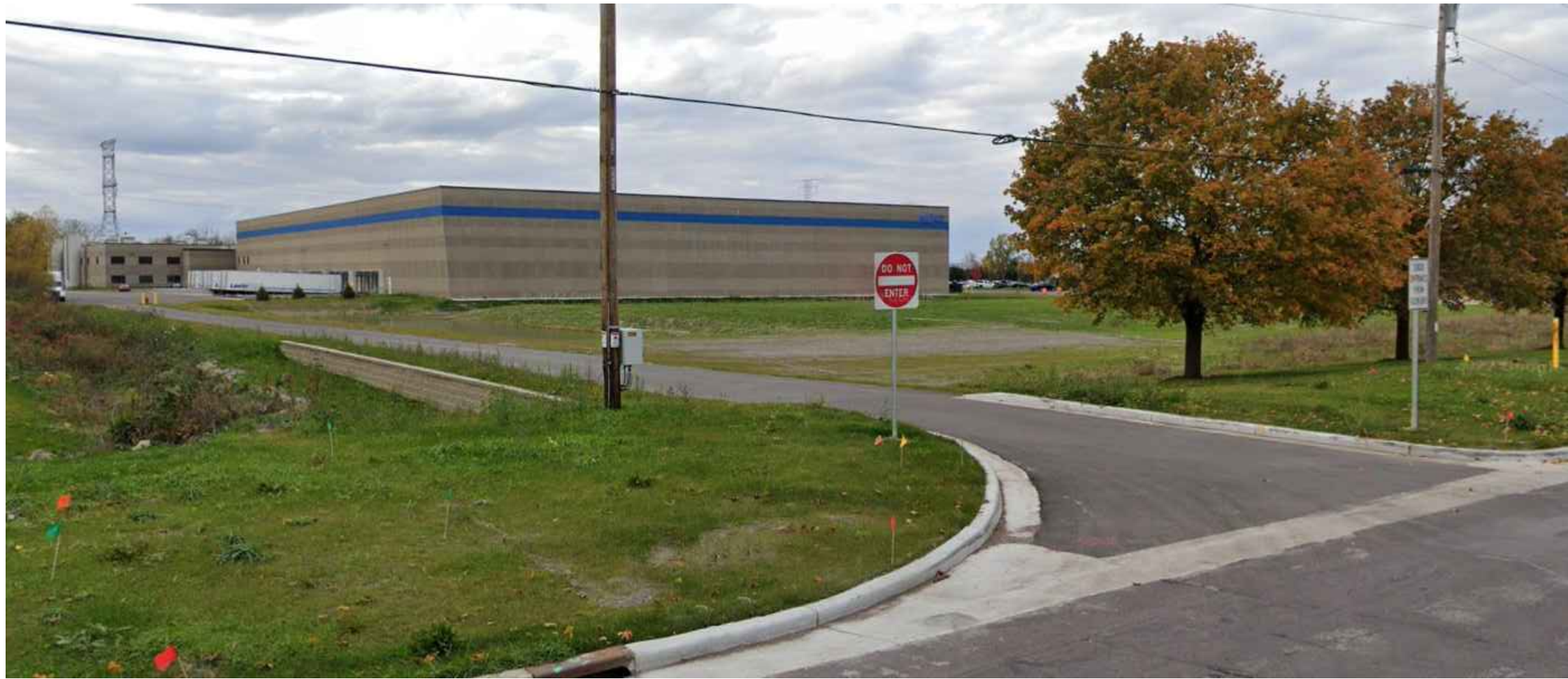


Exterior Rendering



Exterior Rendering





EXISTING VIEW FROM MAPLE ROAD



EXISTING VIEW FROM MAPLE ROAD



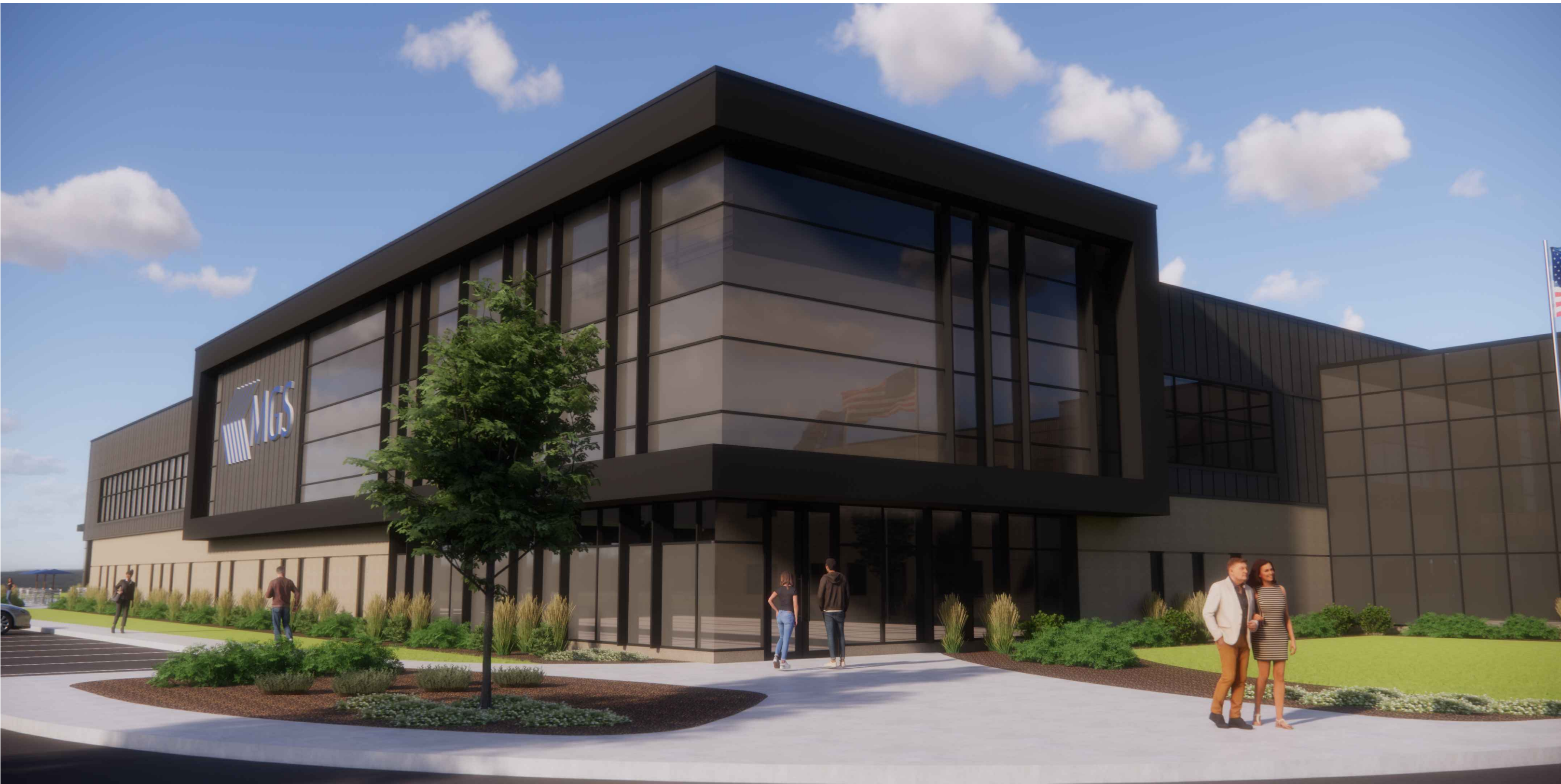
NORTHWEST VIEW FROM MAPLE ROAD



SOUTHWEST VIEW FROM MAPLE ROAD



EMPLOYEE PATIO & ENTRANCE



NEW MAIN ENTRY



MSI GENERAL CORPORATION
P.O. BOX. 7
OCONOMOWOC, WI 53066
PHONE: 262-367-5661

WWW.MSIGENERAL.COM
SINGLE SOURCE RESPONSIBILITY™

ISSUE DATES:
Owner Review: 03.02.2023
Plan Commission Submittal: 03.13.2023

REVISIONS:



PROJECT ADDRESS:

PROJECT NAME
MGS INNOVATION CENTER ADDITION
STREET ADDRESS
W188 N11707 Maple Road
CITY/ STATE / ZIP
GERMANTOWN, WI 53022

ALL WORK TO BE COMPLETED AS SHOWN, AND IN ACCORDANCE WITH THE LATEST EDITION OF THE MSI GENERAL MASTER SPECIFICATION

Architect: AMH/BGK Engineer: Pierce Reviewed By: BGK

Sheet Title:

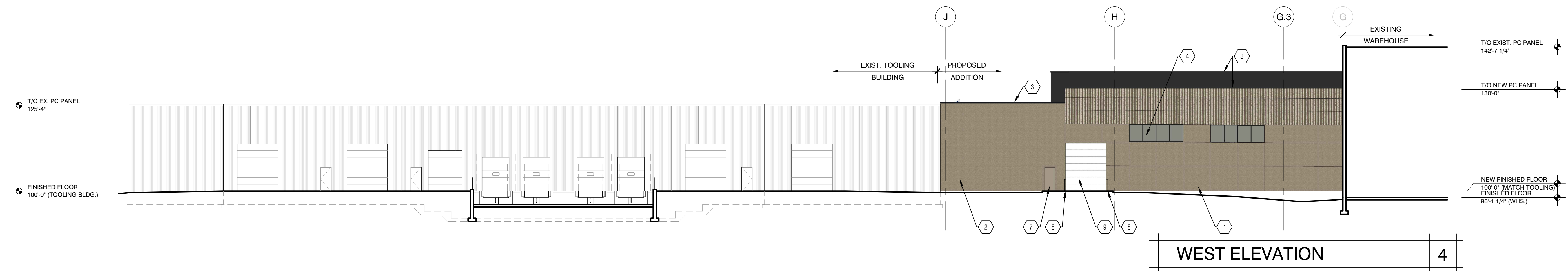
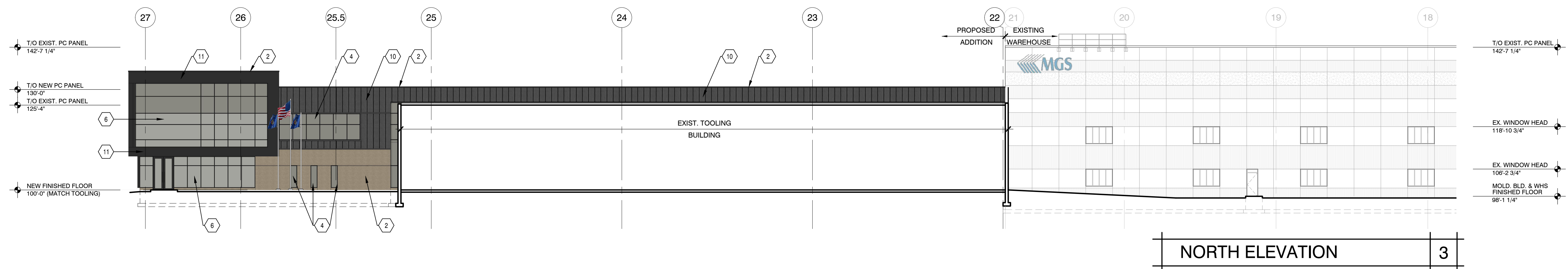
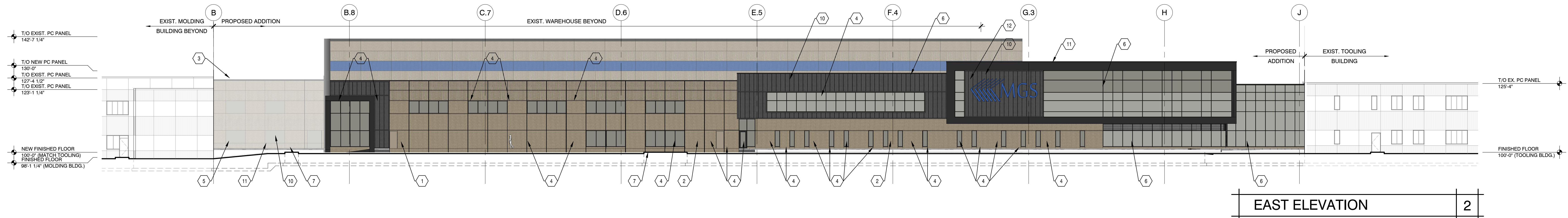
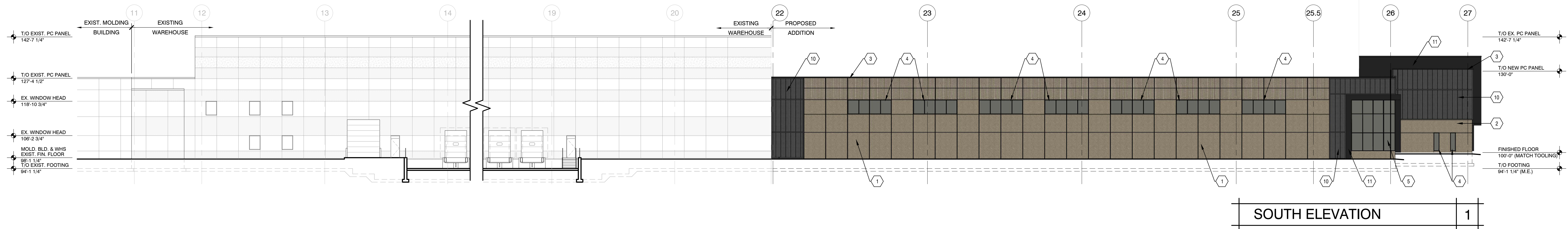
EXTERIOR RENDERINGS

Sheet Number:

A-202

Project Number:

P13175



EXTERIOR MATERIAL KEY NOTES

- | | | | |
|--|---|--|---|
| 1 PRECAST CONCRETE WALL PANEL w/ CORDUROY TEXTURE & TOWELED TEXTURE
-MATCH EXISTING TEXTURE & COLOR | 4 PRE-FINISHED ALUMINUM FRAMED STOREFRONT GLAZING SYSTEM w/ LOW-E INSULATED GLAZING
-MATCH EXISTING FRAME AND GLASS | 7 INSULATED HM DOOR & FRAME
-PAINT TO MATCH ADJACENT MATERIAL | 11 ACM METAL PANEL SYSTEM OVER MOISTURE BARRIER AND METAL STUD FRAMING;
COLOR: DARK BRONZE |
| 2 PRECAST CONCRETE WALL PANEL w/ TOWELED TEXTURE
-MATCH EXISTING TEXTURE & COLOR | 5 PRE-FINISHED ALUMINUM FRAMED CURTAINWALL GLAZING SYSTEM w/ LOW-E INSULATED GLAZING
-MATCH EXISTING FRAME AND GLASS | 8 6\" DIA CONCRETE FILLED PIPE BOLLARD
-PAINT | 12 SIGNAGE BY OWNER; TBD |
| 3 PRE-FINISHED METAL COPING CAP
-MATCH EXISTING | 6 PRE-FINISHED ALUMINUM FRAMED CURTAINWALL WINDOW w/ LOW-E INSULATED GLAZING
-MATCH EXISTING FRAME; CLEAR GLASS (SPANDREL AND FINS SHOWN ON ELEVATION) | 9 12W x 14H OVERHEAD DOOR; COLOR:WHITE | |
| | | 10 VERTICAL METAL SIDING PANEL; COLOR:GREY | |

ELEVATIONS 1/16" = 1'-0"



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ISSUE DATES:
Owner Review: 03.02.2023
Plan Commission Submittal: 03.13.2023

REVISIONS:



PROJECT ADDRESS:

PROJECT NAME
MGS INNOVATION CENTER ADDITION
STREET ADDRESS
W188 N11707 Maple Road
CITY/ STATE / ZIP
GERMANTOWN, WI 53022

ALL WORK TO BE COMPLETED AS SHOWN, AND IN ACCORDANCE WITH THE LATEST EDITION OF THE MSI GENERAL MASTER SPECIFICATION

Architect: AMH/BGK Engineer: Pierce Reviewed By: BGK

Sheet Title:
EXTERIOR ELEVATIONS

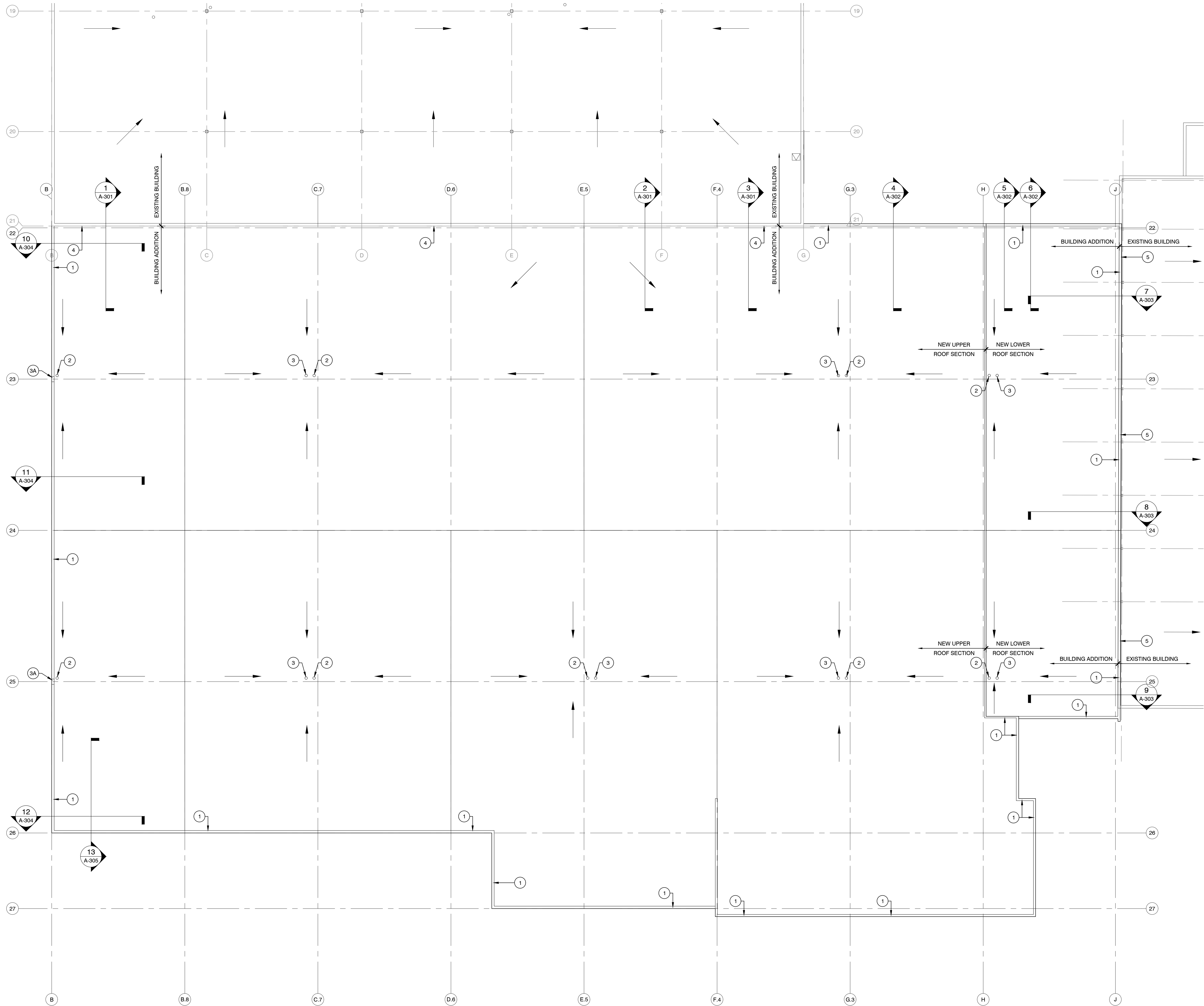
Sheet Number:
A-201
Project Number:
P13175

MANAGERS

ENGINEERS

CONTRACTORS

ARCHITECTS



ROOF PLAN NOTES

- 1 PREFINISHED METAL COPING CAP AND GRAVEL STOP
MATCH EXISTING
- 2 CONTROL FLOW ROOF DRAIN
- 3 OVERFLOW ROOF DRAIN
NOTE: TO BE SET 6" HIGHER THAN PRIMARY ROOF DRAINS
- 3A OVERFLOW ROOF SCUPPER THRU PRECAST WALL
NOTE: TO BE SET 6" HIGHER THAN PRIMARY ROOF DRAINS
- 4 TERMINATION BAR AT EXISTING PRECAST WALL
TO RUN NEW ROOFING MEMBRANE UP TO

- 5 NEW SHORT PARAPET WALL ON TOP OF EXISTING
RUN NEW ROOFING MEMBRANE UP AND OVER,
AND ONTO EXISTING ROOF

ROOF PLAN GENERAL NOTES:
1. ROOF STRUCTURE (ROOF JOISTS AND GIRDERS)
TO BE SLOPED TOWARD ROOF DRAINS
2. BALLASTED EPDM MEMBRANE ROOFING OVER
RIGID INSULATION TO MATCH EXISTING

ROOF PLAN - ADDITION

1/16" = 1'-0"



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Architect: AMH/BGK Engineer: Pierce Reviewed By: BGK

Sheet Title:

ROOF PLAN - ADDITION

Sheet Number:

A-130

Project Number:

P13175

P13175

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Project Number: P13175

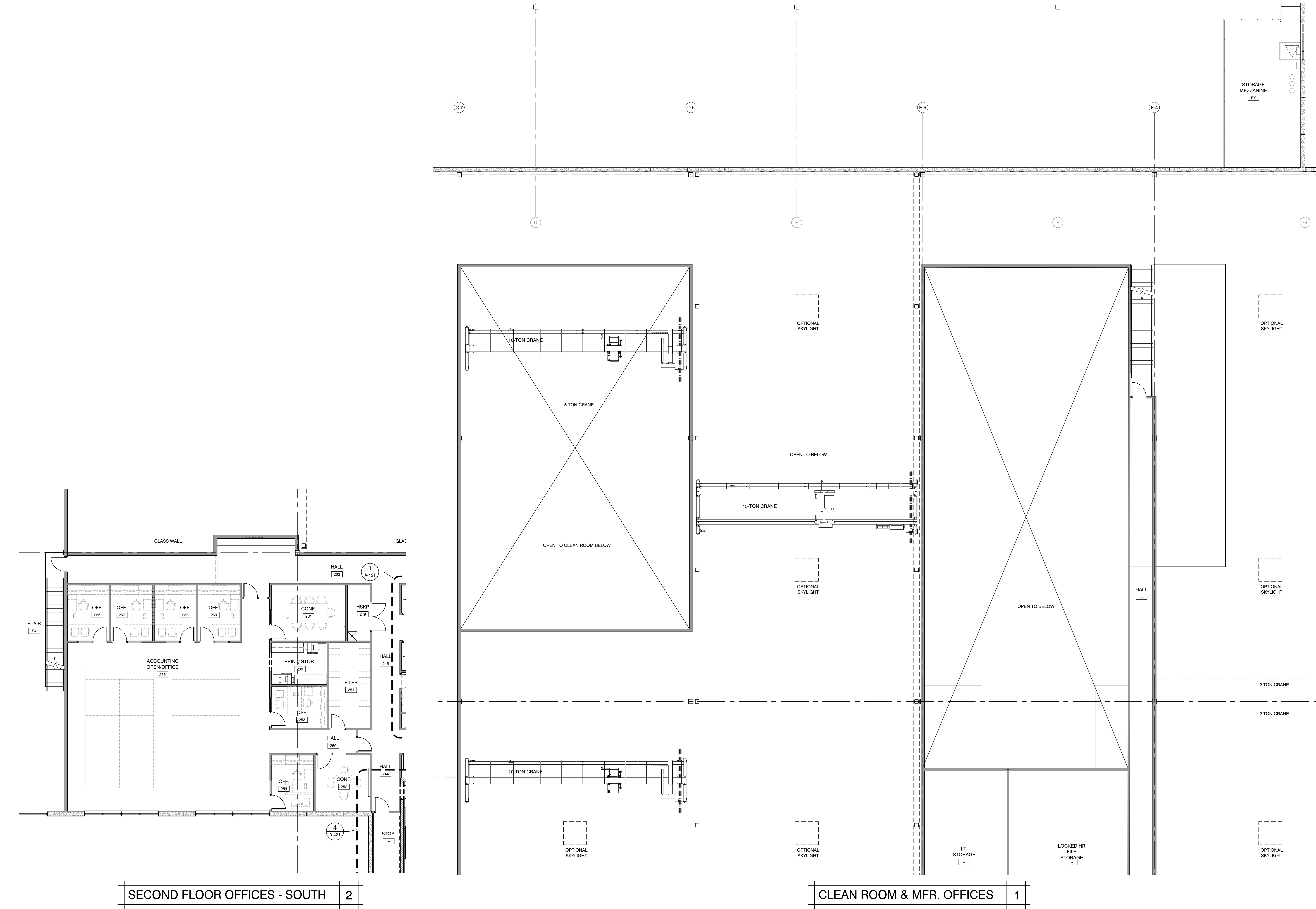
CONTRACTORS

ARCHITECTS

FLOOR PLAN NOTES

① XXXX

FIRST FLOOR PLAN - TOOLING BUILDING 1/8" = 1'-0"



SECOND FLOOR OFFICES - SOUTH 2

CLEAN ROOM & MFR. OFFICES 1

FLOOR PLAN NOTES

SECOND FLOOR PLAN - ADDITION SOUTH

1/8" = 1'-0"



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Architect: AMH/BGK Engineer: Pierce Reviewed By: BGK
Sheet Title:
SECOND FLOOR PLAN - ADDITION SOUTH
Sheet Number:
A-120.2
Project Number: P13175

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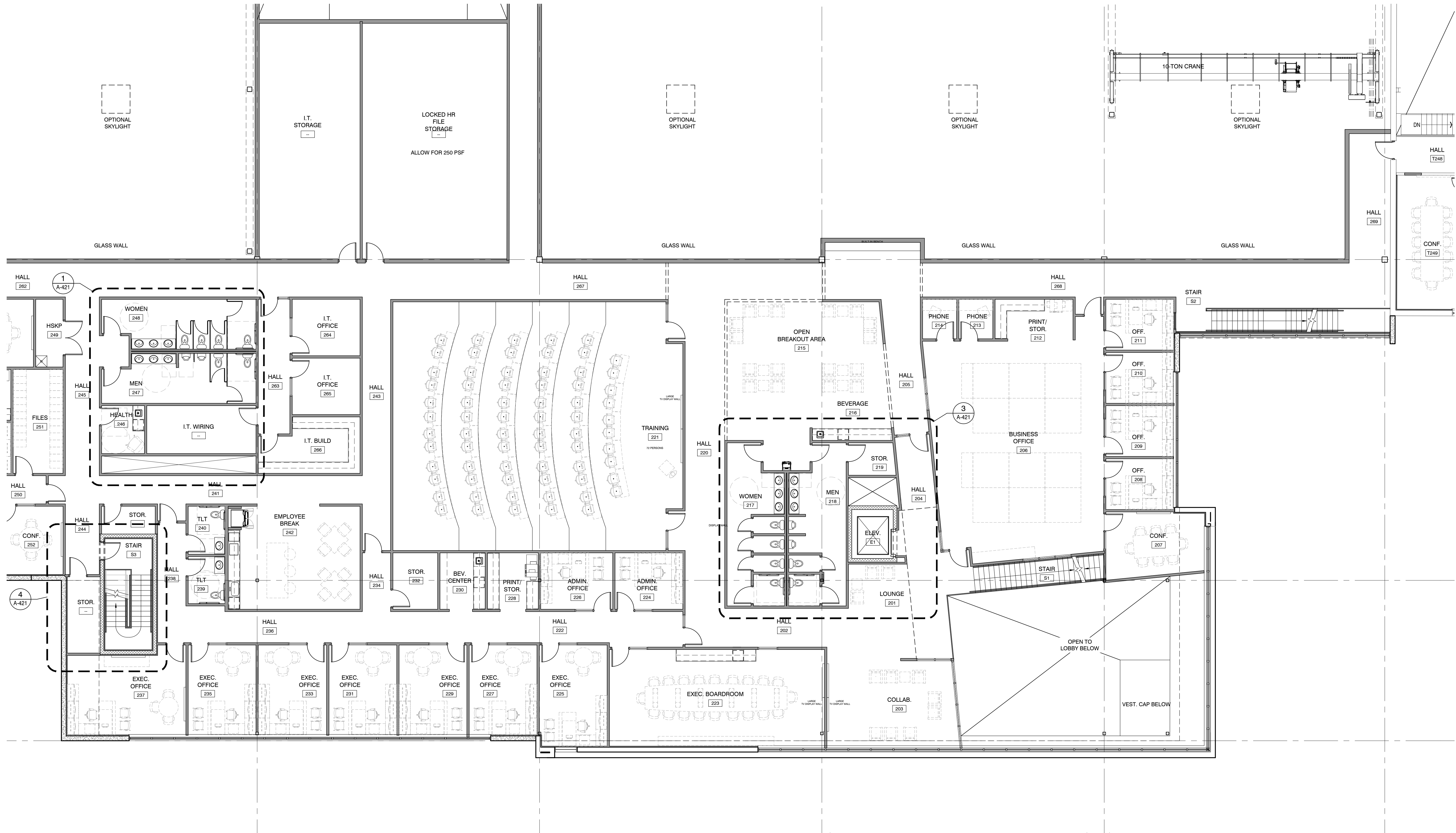
Architect: Engineer: Reviewed By:
AMH/BGK Pierce BGK

Sheet Title:
SECOND FLOOR PLAN - ADDITION NORTH
Sheet Number:

A-120.1

Project Number: P13175

P13175



SECOND FLOOR OFFICE - NORTH

1

FLOOR PLAN NOTES

SECOND FLOOR PLAN - ADDITION NORTH 1/8" = 1'-0"

MANAGERS

ENGINEERS

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Architect: AMH/BGK Engineer: Pierce Reviewed By: BGK

Sheet Title:
OVERALL SECOND FLOOR
PLAN - ADDITION
Sheet Number:

A-120

Project Number: P13175

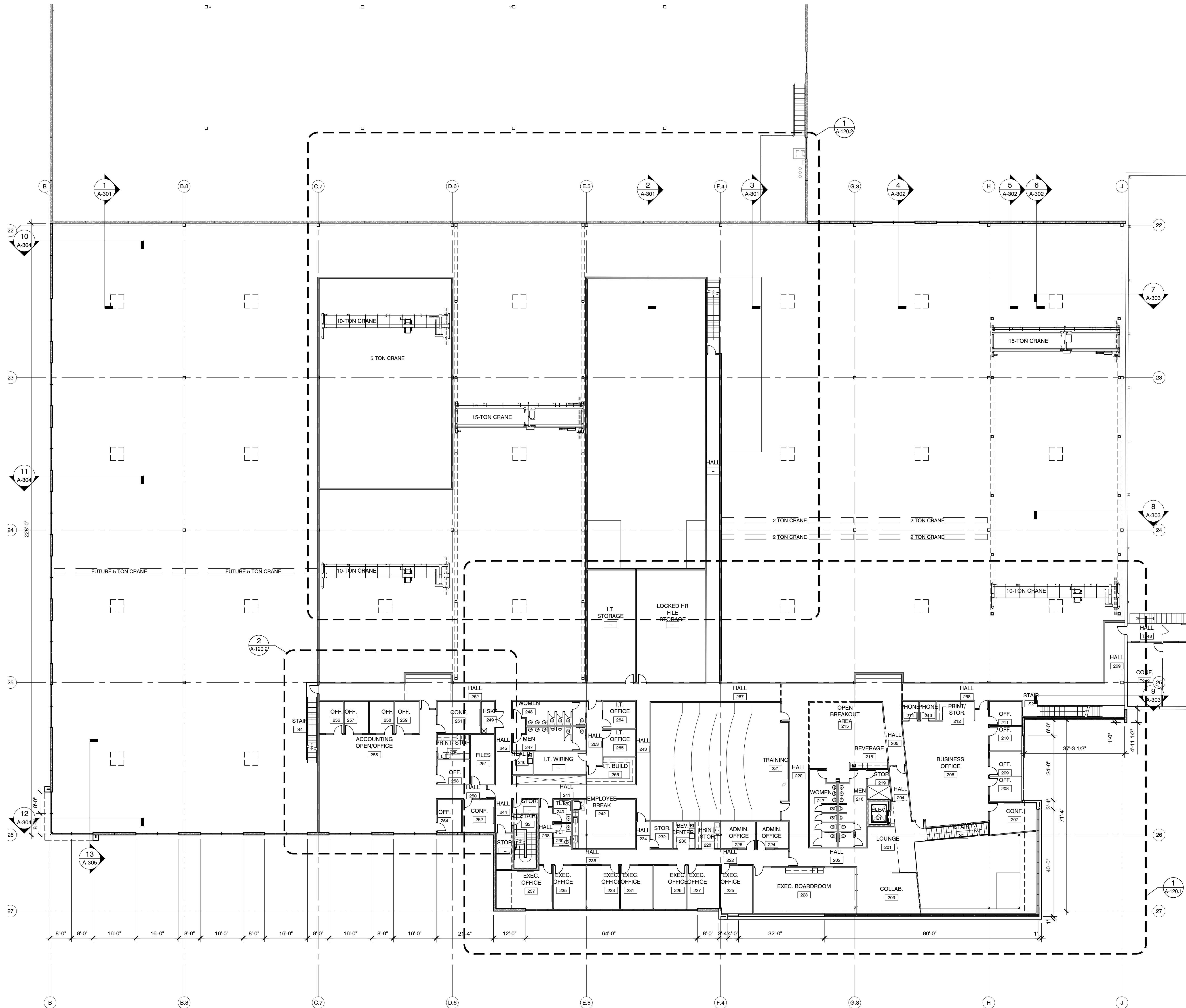
P13175

MANAGERS

ENGINEERS

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FLOOR PLAN NOTES

SECOND FLOOR PLAN - ADDITION 1/16"= 1'-0"



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Architect: Engineer: Reviewed By:
AMH/BGK Pierce BGK

Sheet Title:
OVERALL SECOND FLOOR
PLAN - ADDITION
Sheet Number:

A-120

Project Number: P13175

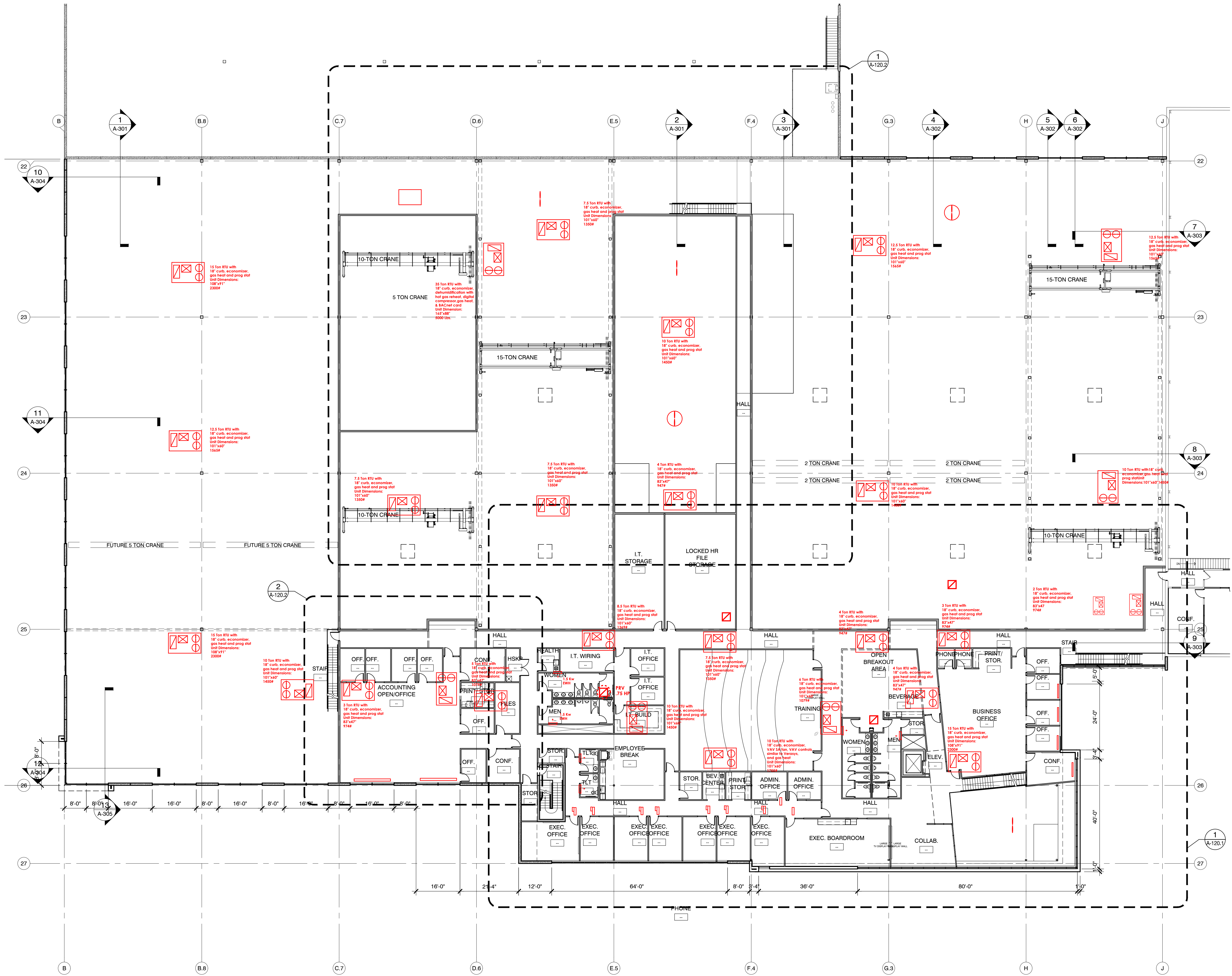
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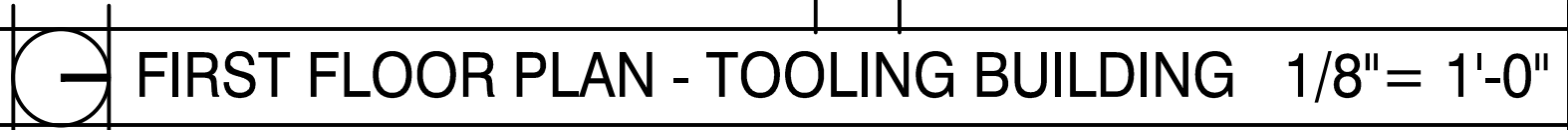
CONTRACTORS

ARCHITECTS



FLOOR PLAN NOTES

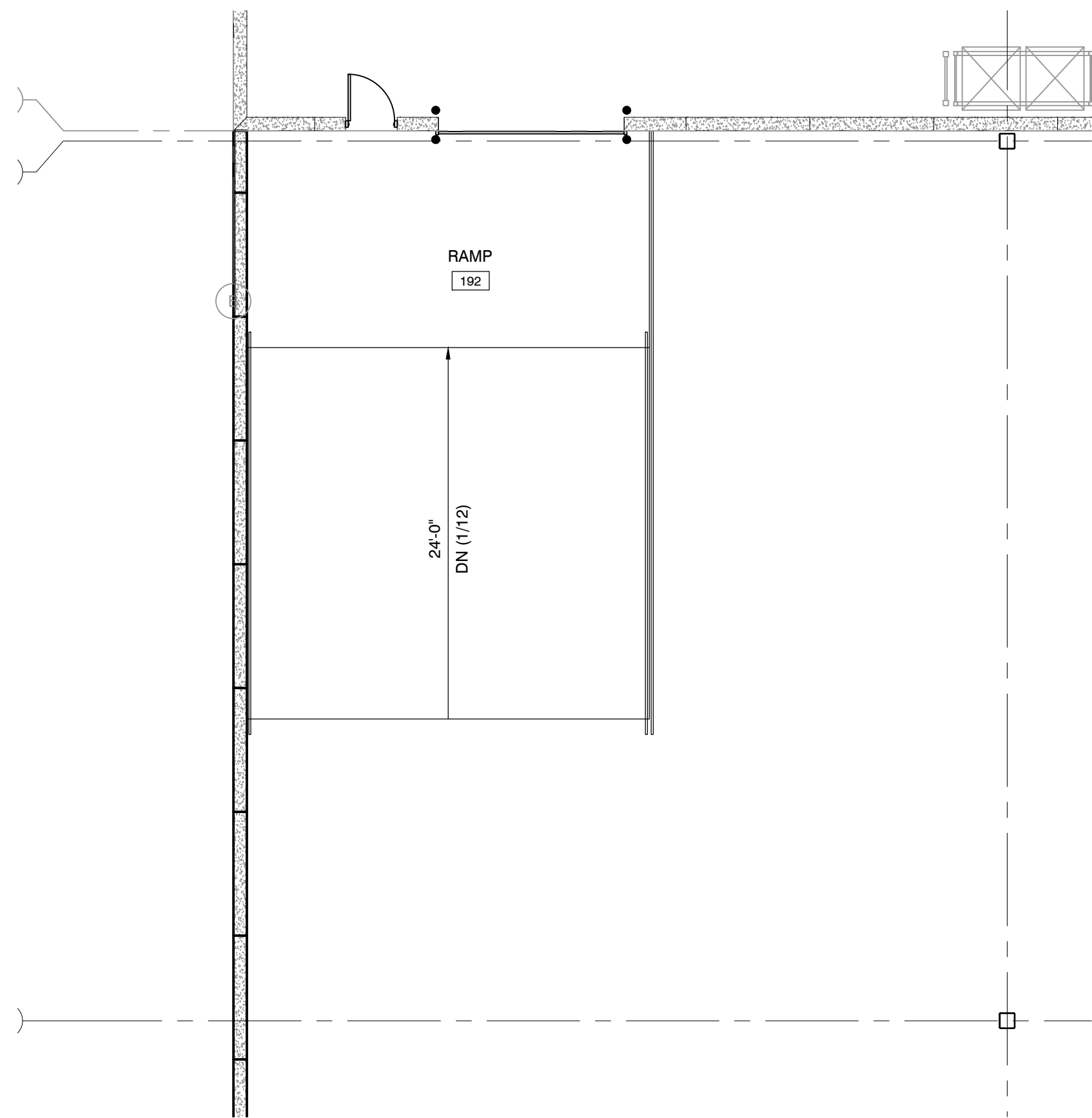
SECOND FLOOR PLAN - ADDITION 1/16"= 1'-0"



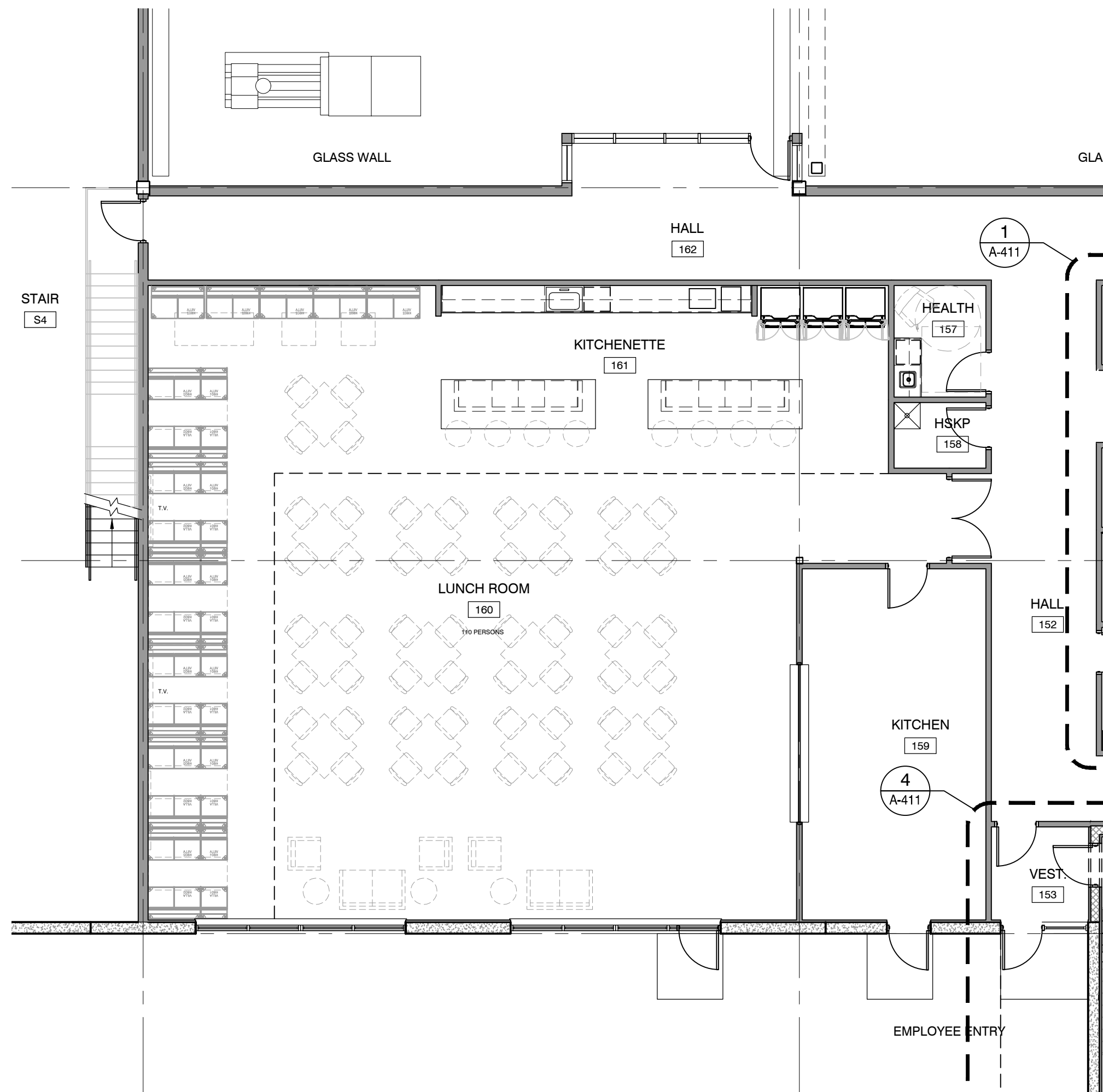
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ARCHITECTS

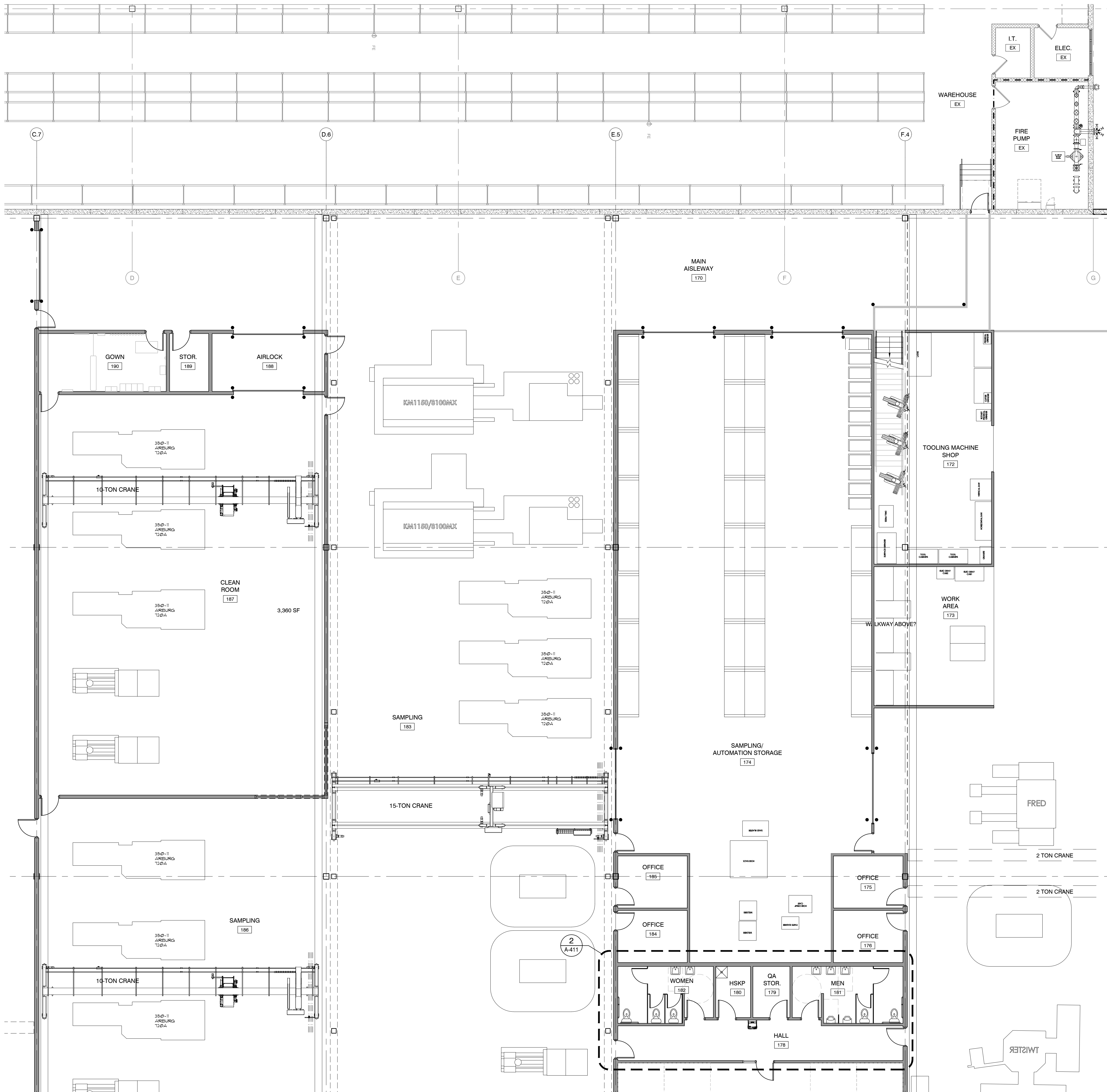


CONNECTOR RAMP 3



LUNCH ROOM

2



CLEAN ROOM & MFR. OFFICES

1

FLOOR PLAN NOTES



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Architect: AMH/BGK Engineer: Pierce Reviewed By: BGK

Sheet Title:
FIRST FLOOR PLAN - ADDITION SOUTH
Sheet Number:

A-110.2

Project Number: P13175

P13175

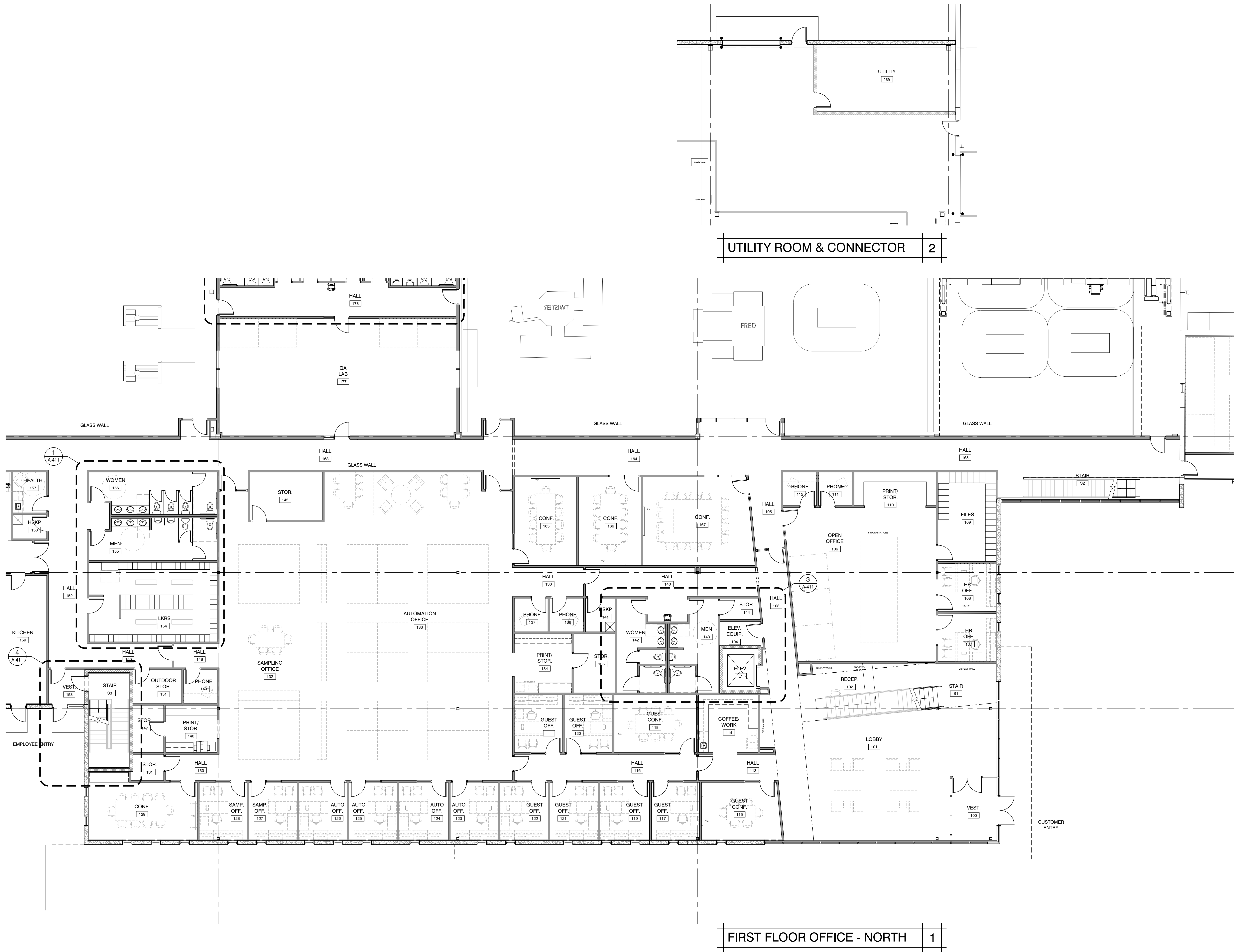
FIRST FLOOR PLAN - ADDITION SOUTH 1/8" = 1'-0"

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FIRST FLOOR OFFICE - NORTH

1

UTILITY ROOM & CONNECTOR

2

FLOOR PLAN NOTES



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Architect: AMH/BGK Engineer: Pierce Reviewed By: BGK

Sheet Title:
FIRST FLOOR PLAN
- ADDITION NORTH

Sheet Number:
A-110.1

Project Number: P13175

P13175

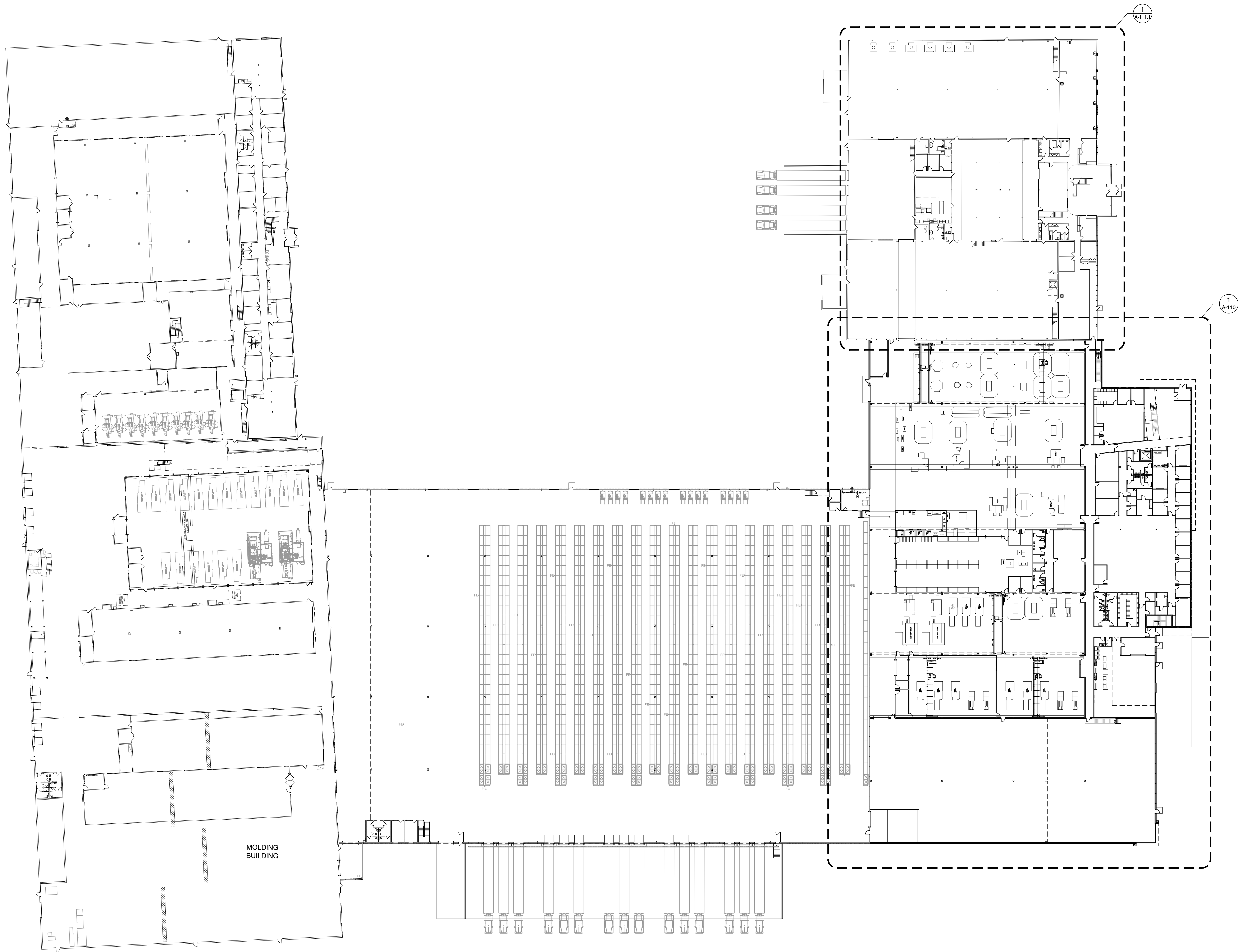
FIRST FLOOR PLAN - ADDITION NORTH 1/8" = 1'-0"

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Architect: AMH/BGK Engineer: Pierce Reviewed By: BGK

Sheet Title:
OVERALL CAMPUS
FLOOR PLAN

Sheet Number:

A-100

Project Number: P13175

P13175

OVERALL CAMPUS FLOOR PLAN 1/32" = 1'-0"

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Architect: Engineer: Reviewed By:
AMH/BGK Pierce BGK

SHEET TITLE:
SITE PHOTOMETRICS &
EXTERIOR LIGHTING

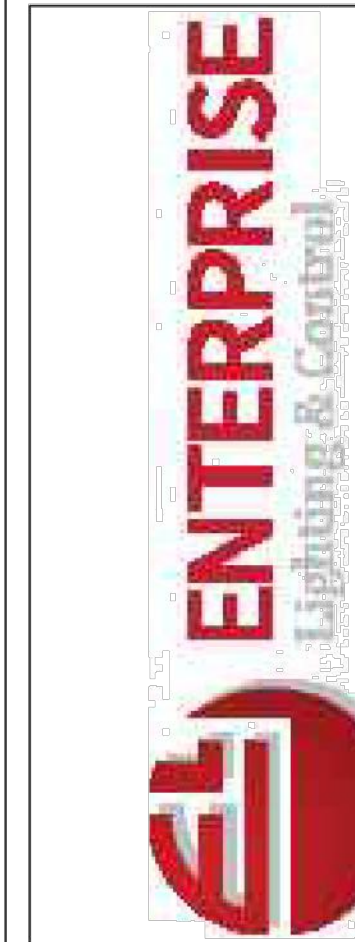
Sheet Number

ES-101

Project Number:

P13175

P13175



COMMENTS

DATE

#

REVISIONS

DRAWN BY : AD

DATE : MAR 9, 2023

SCALE : 1" = 40'- 0"

MGS

GERMANTOWN, WI

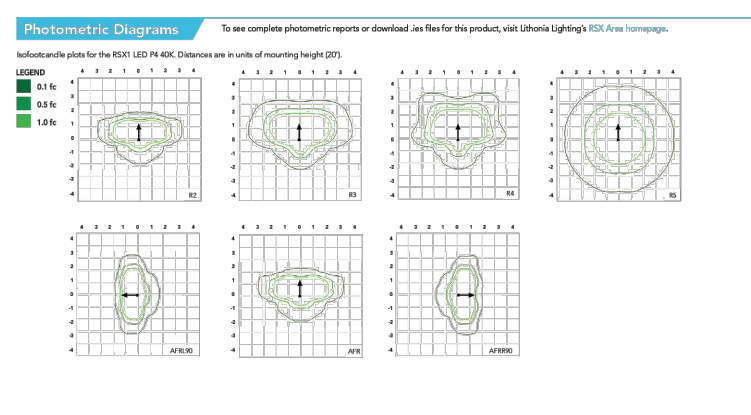
LIGHTING LAYOUT



EXAMPLE: RSX1 LED PA NEW 90 WASH SPACING									
SPACING	10'	12'	14'	16'	18'	20'	22'	24'	26'
10'	100	100	100	100	100	100	100	100	100
12'	100	100	100	100	100	100	100	100	100
14'	100	100	100	100	100	100	100	100	100
16'	100	100	100	100	100	100	100	100	100
18'	100	100	100	100	100	100	100	100	100
20'	100	100	100	100	100	100	100	100	100
22'	100	100	100	100	100	100	100	100	100
24'	100	100	100	100	100	100	100	100	100
26'	100	100	100	100	100	100	100	100	100



EXAMPLE: RSX1 LED PA NEW 90 WASH SPACING									
SPACING	10'	12'	14'	16'	18'	20'	22'	24'	26'
10'	100	100	100	100	100	100	100	100	100
12'	100	100	100	100	100	100	100	100	100
14'	100	100	100	100	100	100	100	100	100
16'	100	100	100	100	100	100	100	100	100
18'	100	100	100	100	100	100	100	100	100
20'	100	100	100	100	100	100	100	100	100
22'	100	100	100	100	100	100	100	100	100
24'	100	100	100	100	100	100	100	100	100
26'	100	100	100	100	100	100	100	100	100



EXAMPLE: RSX1 LED PA NEW 90 WASH SPACING									
SPACING	10'	12'	14'	16'	18'	20'	22'	24'	26'
10'	100	100	100	100	100	100	100	100	100
12'	100	100	100	100	100	100	100	100	100
14'	100	100	100	100	100	100	100	100	100
16'	100	100	100	100	100	100	100	100	100
18'	100	100	100	100	100	100	100	100	100
20'	100	100	100	100	100	100	100	100	100
22'	100	100	100	100	100	100	100	100	100
24'	100	100	100	100	100	100	100	100	100
26'	100	100	100	100	100	100	100	100	100

SITE PHOTOMETRICS 1" = 40'-0"

GENERAL PLANTING NOTES

- THE LAYOUT OF ALL PLANTING BEDS AND INDIVIDUAL TREES AND SHRUBS SHALL BE STAKED BY THE CONTRACTOR IN ADVANCE OF INSTALLATION. FLAGGING, STAKES, OR PAINT MAY BE USED TO DELINEATE LOCATIONS AS SCALED FROM THE PLANS. AN APPROVED REPRESENTATIVE WILL REVIEW THESE LOCATIONS WITH THE CONTRACTOR AND MAKE MINOR ADJUSTMENTS AS NECESSARY. BED LAYOUT SHALL ALSO INCLUDE PERENNIAL GROUPINGS BY SPECIES.
- THE CONTRACTOR IS RESPONSIBLE FOR INDEPENDENTLY DETERMINING THE PLANT MATERIAL QUANTITIES REQUIRED BY THE LANDSCAPE PLANS. REPORT ANY DISCREPANCIES TO THE LANDSCAPE ARCHITECT.
- NO PLANT MATERIAL OR PLANT SIZE SUBSTITUTIONS WILL BE ACCEPTED. WITHOUT APPROVAL BY THE LANDSCAPE ARCHITECT. ANY CHANGES SHALL BE SUBMITTED TO THE LANDSCAPE ARCHITECT IN WRITING PRIOR TO INSTALLATION.
- ALL BNB STOCK SHALL BE NURSERY GROWN IN A CLAY LOAM SOIL FOR A MINIMUM OF THREE GROWING SEASONS WITHIN 200 MILES OF PROJECT LOCATION, IN A ZONE COMPATIBLE WITH USDA HARDINESS ZONE 5A. SEED SHALL BE PROVIDED FROM A NURSERY (WITHIN 200 MILES) WITH A SIMILAR PLANT HARDINESS ZONE AS PROJECT LOCATION. EXISTING SOIL SHALL BE AMENDED PER SOIL ANALYSIS REPORT TO ENSURE A PROPER GROWING MEDIUM IS ACHIEVED.
- ALL PLANT MATERIAL SHALL COMPLY WITH STANDARDS DESCRIBED IN AMERICAN STANDARD OF NURSERY STOCK - Z60.1 ANSI. LANDSCAPE ARCHITECT OR OWNERS AUTHORIZED REPRESENTATIVE RESERVES THE RIGHT TO INSPECT AND POTENTIALLY REJECT ANY PLANT MATERIAL DEEMED TO NOT MEET THE REQUIRED STANDARDS.
- ALL STOCK SHALL BE FREE OF DISEASES AND HARMFUL INSECTS, DAMAGE, DISORDERS AND DEFORMITIES.
- TREES SHALL HAVE SINGLE, STRAIGHT TRUNKS AND WELL BALANCED BRANCH SYSTEMS. MULTI-STEM TREES SHALL HAVE 3-4 STRAIGHT TRUNKS AND WELL BALANCED BRANCH SYSTEMS. HEIGHT-TO-CALIPER RATIOS SHALL BE CONSISTENT WITH THE LATEST EDITION OF ANSI Z60.1.
- ROOT SYSTEMS SHALL BE LARGE ENOUGH TO ALLOW FOR FULL RECOVERY OF THE TREE, AND SHALL CONFORM TO STANDARDS AS THEY APPEAR IN THE MOST CURRENT REVISION OF THE AMERICAN ASSOCIATION OF NURSERYMEN'S AMERICAN STANDARD OF NURSERY STOCK ANSI Z60.1.
- BNB TREES SHALL BE DUG WITH A BALL OF SOIL, NOT SOFT BALLED OR POTTED AND SHALL BE FIRM IN THEIR ROOTBALL. ROOT BALL SHALL BE WRAPPED (WITH BIODEGRADABLE MATERIAL). THE TREE ROOT FLARE, OR COLLAR, SHALL BE AT OR WITHIN THE TOP THREE INCHES OF GRADE.
- ALL SPRING TREES MUST BE FRESHLY DUG IN THE MOST RECENT SPRING.
- ALL AUTUMN TREES MUST BE FRESHLY DUG IN THE MOST RECENT AUTUMN.
- TREES SHALL BE ALIVE, HEALTHY AND APPROPRIATELY MOIST, AT TIME OF DELIVERY. TREES SHALL BE SUBJECT TO INSPECTION FOR CONFORMITY TO SPECIFICATION REQUIREMENTS AND APPROVAL BY THE LANDSCAPE ARCHITECT OR OWNERS REPRESENTATIVE. THE LANDSCAPE ARCHITECT OR OWNERS REPRESENTATIVE RESERVES THE RIGHT TO REJECT ANY TREES THAT DO NOT MEET THE SPECIFICATIONS OR THAT HAVE BEEN DAMAGED DURING SHIPMENT. THE LANDSCAPE INSTALLER MUST RECEIVE APPROVAL FROM LANDSCAPE ARCHITECT FOR ANY SUBSTITUTIONS OR ALTERATIONS.
- ALL PLANT MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH PLANTING DETAILS. FOR STREET TREE PLANTINGS, REFER TO TREE PLANTING DETAIL, AND TO THE VILLAGE OF GERMANTOWN SPECIFICATIONS FOR PLANTING STREET TREES.
- ALL PLANTING BEDS SHALL HAVE A MINIMUM 10" DEPTH OF PREPARED SOIL. WITH APPROVAL, EXISTING SOIL MAY BE UTILIZED PROVIDED THE PROPER SOIL AMENDMENTS ARE TILLED THOROUGHLY INTO THE TOP 10" OF SOIL. REFER TO SOIL PLACEMENT NOTES.
- WHILE PLANTING TREES AND SHRUBS, BACKFILL $\frac{1}{2}$ OF PLANTING HOLE AND WATER TREE THOROUGHLY BEFORE INSTALLING THE REMAINDER OF SOIL MIXTURE. AFTER ALL SOIL HAS BEEN PLACED INTO THE PLANTING HOLE WATER THOROUGHLY AGAIN.
- THE CONTRACTOR MUST LABEL ALL TREES WITH THE COMMON AND BOTANICAL NAMES PRIOR TO FINAL INSPECTION.
- ALL PLANTING BEDS SHALL BE MULCHED WITH 3" DEEP SHREDDED HARDWOOD MULCH, AND ALL TREES PLANTED IN TURF AREAS SHALL RECEIVE A 3" DEEP SHREDDED HARDWOOD MULCHED RING AS SHOWN IN PLANTING DETAILS.
- ALL PLANTING BEDS AND TREE RINGS SHALL HAVE A 4" DEEP TRENCHED BED EDGE CREATED BY EITHER A FLAT LANDSCAPE SPADE OR MECHANICAL EDGER. BED EDGES ARE TO BE CUT CLEAN AND SMOOTH AS SHOWN ON LANDSCAPE PLANS WITH A CLEAN DEFINITION BETWEEN TURF AND PLANTING AREAS.
- ALL TURF SEED AREAS SHALL RECEIVE A MINIMUM OF 6" DEPTH OF TOPSOIL. WITH APPROVAL, EXISTING SOIL MAY BE UTILIZED PROVIDED THE PROPER SOIL AMENDMENTS ARE TILLED THOROUGHLY INTO THE TOP 6" OF SOIL AS INDICATED IN THE SOIL PLACEMENT NOTES. REQUIRED AMENDMENTS SHALL BE DETERMINED BASED ON A SOIL ANALYSIS TO BE PERFORMED. ALL TOPSOIL AMENDMENT SHALL BE AGED WEED FREE MANURE OR CLASS 1 ORGANIC MATTER.
- FOR LAWN SEEDING, APPLY A STARTER FERTILIZER AND SEED UNIFORMLY AT THE RATE RECOMMENDED BY MANUFACTURER, AND PROVIDE A MULCH COVERING THAT IS SUITABLE TO PROMOTE SEED GERMINATION AND TURF ESTABLISHMENT. CONTRACTOR TO PROVIDE FERTILIZER, SEED, AND MULCH SPECIFICATIONS TO THE LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION. EROSION CONTROL MEASURES ARE TO BE INSTALLED IN THOSE AREAS REQUIRING STABILIZATION (SWALES, SLOPES EXCEEDING 1:3, AND THOSE LOCATIONS INDICATED IN CIVIL DRAWINGS).
- THE CONTRACTOR TO ENSURE A SMOOTH, UNIFORM QUALITY TURF IS ACHIEVED WITH NO BARE SPOTS LARGER THAN 6" X 6". ANY BARE SPOTS LARGER THAN 6" X6" AT THE END OF ESTABLISHMENT PERIOD SHALL BE RESEEDD AT THE CONTRACTORS EXPENSE TO OBTAIN A DENSE, UNIFORM LAWN.
- ALL FINISH GRADING AND LAWN AREAS TO BE INSTALLED BY LANDSCAPE CONTRACTOR.
- ALL DISTURBED AREAS WITHIN THE PROJECT SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION.
- ALL DISTURBED AREAS OUTSIDE THE LIMITS OF WORK SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES, INCLUDING ANY IRRIGATION LINES, PRIOR TO DIGGING. CONSULT DIGGERS HOTLINE.
- TREES SHALL BE INSTALLED A MINIMUM DISTANCE OF 5' FROM ANY SEWER AND WATER LINES, 10' FROM DRIVEWAYS, LIGHT POLES, AND FIRE HYDRANTS.
- TREES SHALL BE INSTALLED A MINIMUM OF 25' FROM STREET CORNERS OF MINOR ROADS, AND 50' FROM STREET CORNERS OF ARTERIAL ROADS.
- THE CONTRACTOR SHALL ENSURE THAT SOIL CONDITIONS AND COMPACTION ARE ADEQUATE TO ALLOW FOR PROPER DRAINAGE AROUND THE CONSTRUCTION SITE. UNDESIRABLE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT PRIOR TO BEGINNING OF WORK. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE PROPER SURFACE AND SUBSURFACE DRAINAGE IN ALL AREAS
- THE CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS, FEES, AND LICENSES NECESSARY FOR THE INSTALLATION OF THIS PLAN.
- THE CONTRACTOR IS TO REVIEW ALL SITE ENGINEERING DOCUMENTS PRIOR TO INSTALLATION. ANY CONFLICTS MUST BE REPORTED TO THE LANDSCAPE ARCHITECT. THESE LANDSCAPE DRAWINGS ARE FOR THE INSTALLATION OF PLANT MATERIALS ONLY UNLESS OTHERWISE STATED.
- THE CONTRACTOR SHALL PROVIDE WATERING AND MAINTENANCE SERVICES FOR A PERIOD OF 60 DAYS TO ENSURE VEGETATIVE ESTABLISHMENT. UPON COMPLETION OF THE PROJECT, CONTRACTOR SHALL SUPPLY THE OWNER IN WRITING WITH ONGOING WATERING AND MAINTENANCE INSTRUCTIONS.
- PLANT MATERIALS SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM TIME OF OWNER ACCEPTANCE. ONLY ONE REPLACEMENT PER PLANT WILL BE REQUIRED DURING THE WARRANTY PERIOD EXCEPT IN THE EVENT OF FAILURE TO COMPLY WITH THE SPECIFIED REQUIREMENTS.
- THE CONTRACTOR IS RESPONSIBLE TO CONDUCT A FINAL WALK THROUGH WITH THE LANDSCAPE ARCHITECT, VILLAGE FORESTER, AND OR OWNERS REPRESENTATIVE TO ANSWER QUESTIONS, PROVIDE INSTRUCTIONS, AND ENSURE THAT PROJECT REQUIREMENTS HAVE BEEN MET.

SOIL PLACEMENT NOTES

- LOOSEN SUBGRADE TO A MINIMUM DEPTH INDICATED IN PLANTING NOTES USING A CULTI-MULCHER OR SIMILAR EQUIPMENT, AND REMOVE STONES MEASURING OVER 1-1/2 INCHES IN ANY DIMENSION, STICKS, RUBBISH AND OTHER EXTRANEIOUS MATTER. AREAS ADJACENT TO WALKS AND PAVEMENT SHALL BE FREE OF EXCESS STONE AND PAVING MATERIALS SO AS TO PROVIDE AN UNINTERRUPTED CROSS SECTION OF SOIL. INTERNAL PARKING ISLANDS SHALL BE LOOSENEED TO A DEPTH OF 30".
- THOROUGHLY BLEND PLANTING SOIL MIX FOR PLANTING BED AREAS. (1 PART EXISTING SOIL, 1 PART TOPSOIL, 1 PART ORGANIC SOIL AMENDMENT, 2.9 POUNDS PER CUBIC YARD OF 4-4-4 ANALYSIS SLOW-RELEASE FERTILIZER)
- TREE AND SHRUB HOLES SHALL BE FILLED WITH A PREPARED PLANTING MIXTURE OF 1 PART TOPSOIL, 2 PARTS PLANTING SOIL MIX.
- SPREAD SOIL AND SOIL AMENDMENTS TO DEPTH INDICATED ON DRAWINGS, BUT NOT LESS THAN REQUIRED TO MEET FINISH GRADES AFTER NATURAL SETTLEMENT. (FINISH GRADE OF PLANTING BEDS SHALL BE 3" BELOW ALL ADJACENT SURFACES, FINISH GRADE OF TURF SEEDING AREAS SHALL BE 1" BELOW ALL ADJACENT HARD SURFACES, WALKS, AND CURBS.)
- PLACE APPROXIMATELY 1/2 OF TOTAL AMOUNT OF SOIL REQUIRED, WORK INTO TOP OF LOOSENEED SUBGRADE TO CREATE A TRANSITION LAYER, THEN PLACE REMAINDER OF THE SOIL. SOIL TRANSITION LAYER SHALL BE TILLED TO A MINIMUM DEPTH OF 6" BELOW THE DEPTH OF NEWLY PLACED SOIL. PARKING LOT ISLANDS SHALL BE CROWNED TO A HEIGHT OF 6" TO PROVIDE PROPER DRAINAGE UNLESS OTHERWISE NOTED.
- DO NOT SPREAD IF PLANTING SOIL OR SUBGRADE IS FROZEN, MUDDY, OR EXCESSIVELY WET.
- FINISH GRADING: GRADE SOIL TO A SMOOTH, UNIFORM SURFACE PLANE WITH A LOOSE, UNIFORMLY FINE TEXTURE.
- ROLL AND RAKE, REMOVE RIDGES, AND FILL DEPRESSIONS TO MEET FINISH GRADES.
- RESTORE PLANTING BEDS IF ERODED OR OTHERWISE DISTURBED AFTER FINISH GRADING AND BEFORE PLANTING.

NATIVE SEEDING & PLUG PLANTINGS

ESTABLISHMENT OF A VIABLE VEGETATION COMMUNITY WITHIN THE BIO INFILTRATION BASINS WILL BE COMPLETED BY HAND-BROADCASTING OF PRE-DESIGNED SEED MIXES AND PLANTING OF PERENNIALS TO CREATE A DYNAMIC PLANTING.

PRIOR TO SEEDING/PLUG PLANTING:

- ALL WEEDS AND EXISTING VEGETATION SHALL BE REMOVED. EXISTING VEGETATION SHALL BE TREATED WITH GLYPHOSATE OR SIMILAR HERBICIDE BY A LICENSED PROFESSIONAL. TREATMENT SHALL OCCUR A MINIMUM OF 10 DAYS PRIOR TO SEEDING/PLANTING. VEGETATION STILL ALIVE AFTER INITIAL HERBICIDE TREATMENT SHALL BE TREATED A SECOND TIME PRIOR TO TILLING INTO THE SOIL. TREATED VEGETATION SHALL BE TILLED INTO THE SOIL NO EARLIER THAN 1 DAY PRIOR TO SEEDING.
- PREPARATION OF SOIL PRIOR TO SEEDING
 - REFER TO CIVIL PLANS FOR SOIL MIXTURE.
 - ALL FOREIGN MATERIALS LARGER THAN 1-INCH SHALL BE REMOVED FROM THE SOIL PRIOR TO SEEDING OR PLANTING.
 - AREA SHOULD BE FREE FROM UNSIGHTLY VARIATIONS, RIDGES, AND DEPRESSIONS.
 - AVOID DRIVING OVER THE SPECIFIED AREA WITH MACHINERY.

SPECIFICATIONS FOR HAND BROADCASTING:

SEEDING SHALL BE CONDUCTED IN LATE FALL (SEPTEMBER 1- SOIL FREEZE) SO THAT SEEDS MAY LIE DORMANT DURING THE WINTER, ALLOWING FOR STRATIFICATION, OR SPRING (MARCH 1-JUNE 1) TO ALLOW A COMPLETE GROWING SEASON TO BECOME ESTABLISHED.

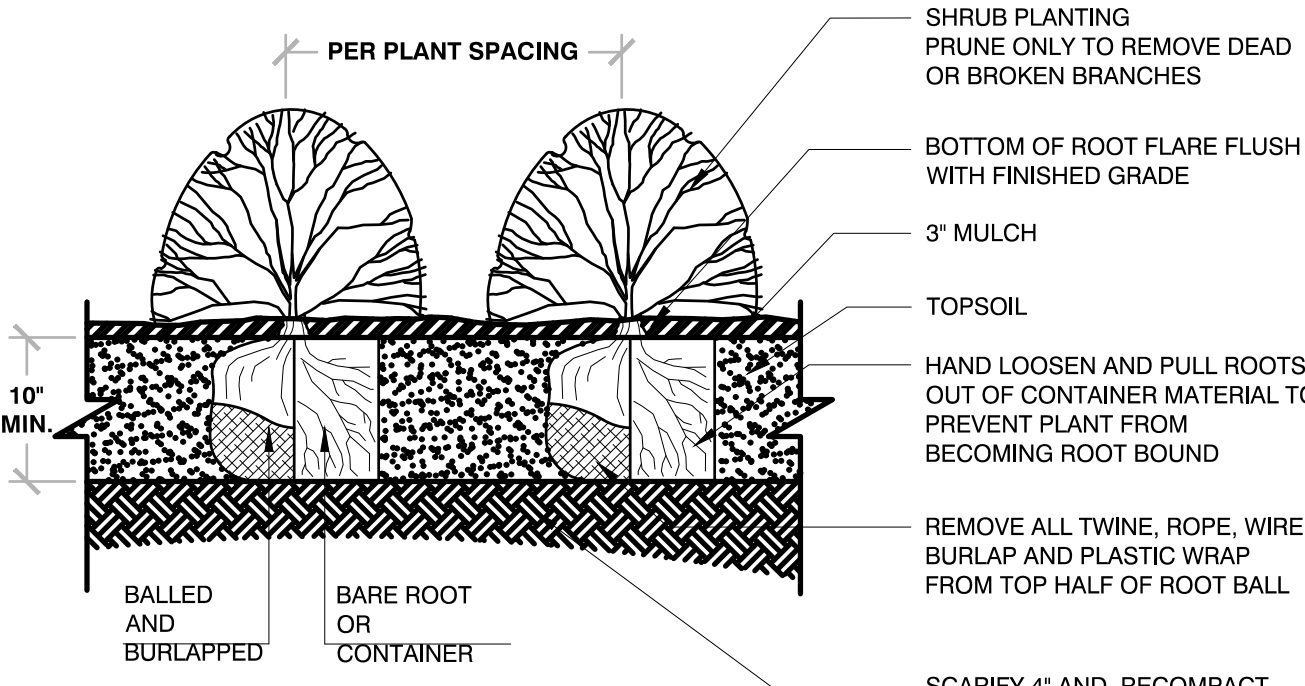
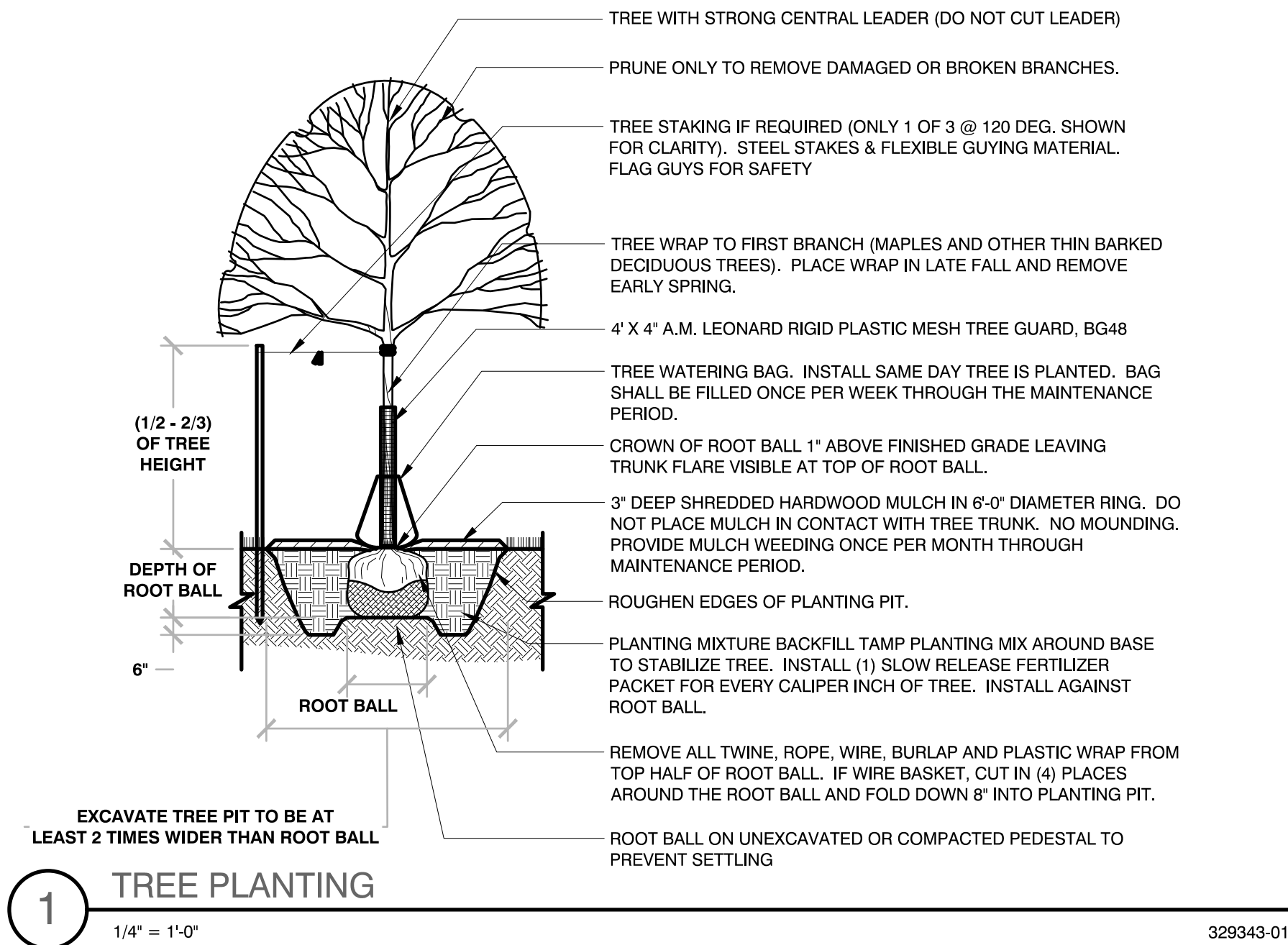
A. COVER CROP

- ANNUAL RYE SHALL BE SPREAD AT A DENSITY OF 20 POUNDS PER ACRE DURING THE PLANTING OR SEEDING OF THE NATIVE PLANT SPECIES TO STABILIZE THE SOIL AND REDUCE THE GROWTH OF UNWANTED VEGETATION. THIS ANNUAL GRASS GROWS RAPIDLY WITHOUT COMPETING WITH THE WILDFLOWERS AND GRASSES THAT ARE PLANTED IN THE TARGET AREAS.
- WINTER WHEAT OR PERENNIAL RYE SHALL NOT BE USED AS A COVER CROP. THESE GRASSES MAY OUT COMPETE PRAIRIE SEEDLINGS, LEADING TO A REDUCTION IN THE SUCCESS OF THE PLANTINGS.

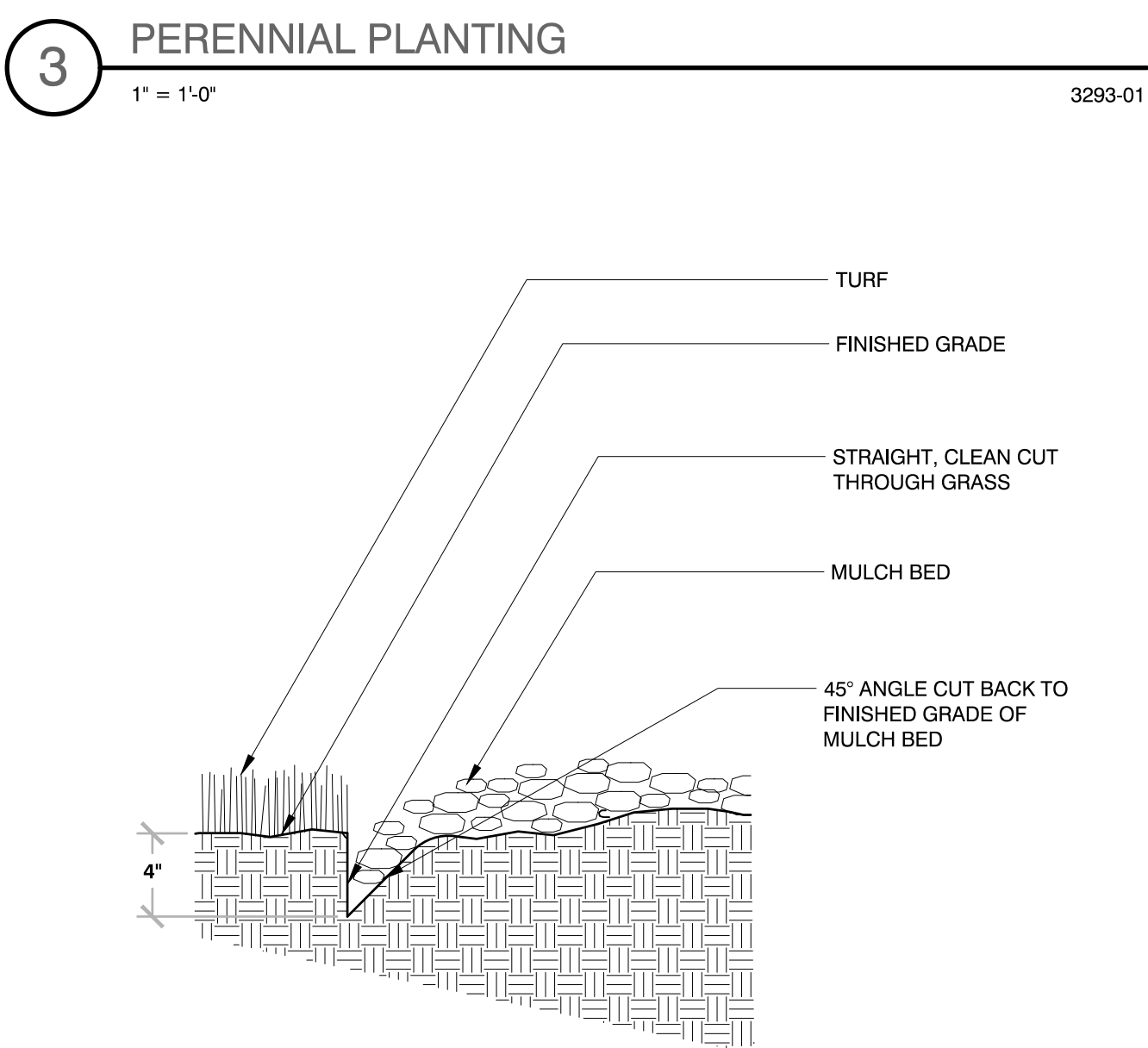
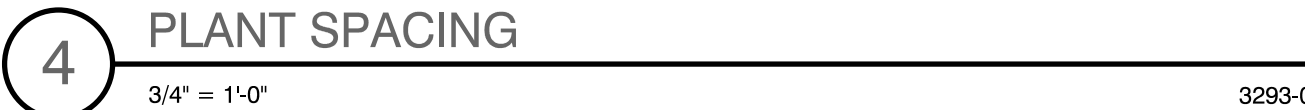
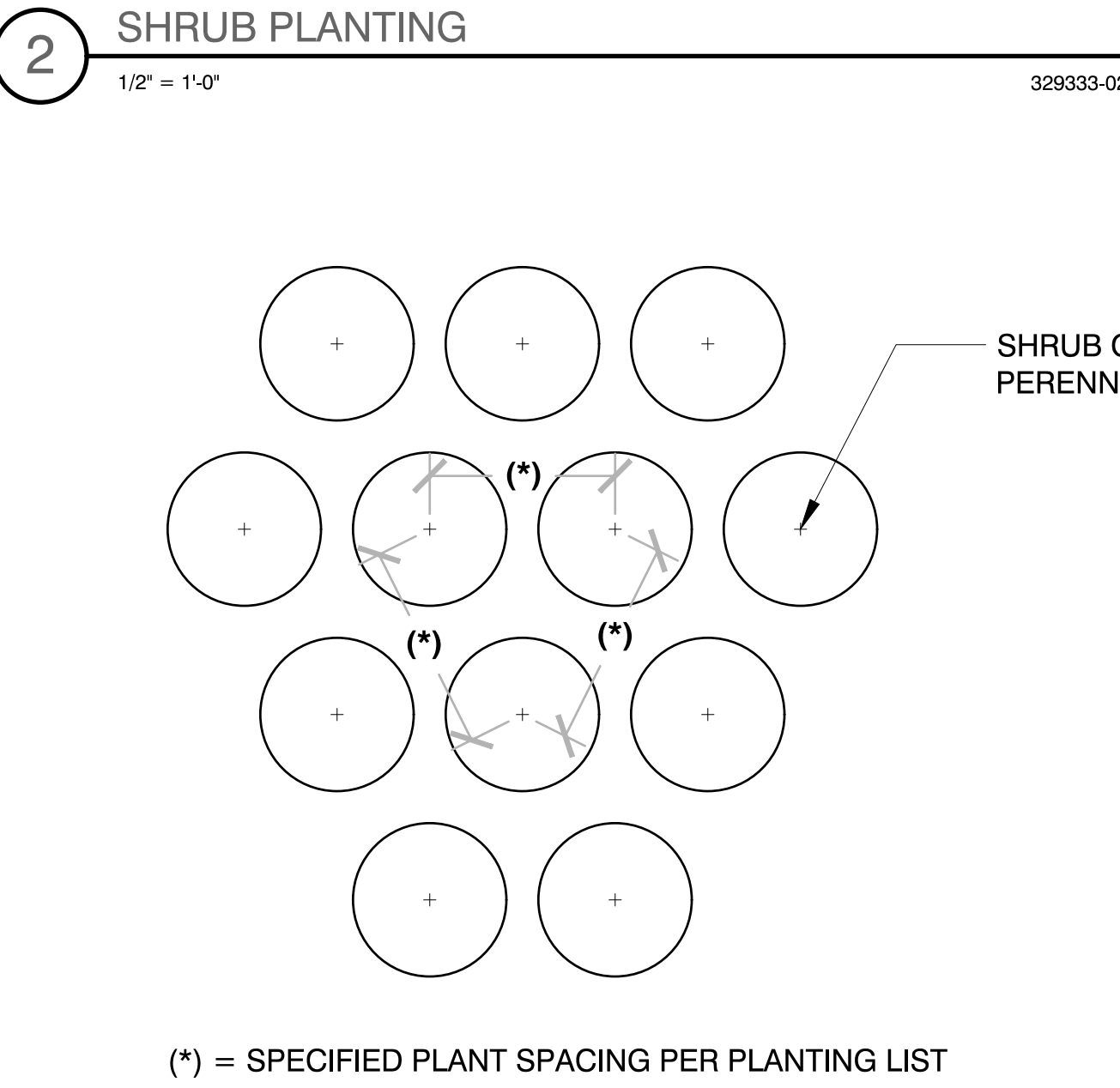
B. SEED MIX:

- MIX ALL NATIVE SEED WITH VERMICULITE ACCORDING TO AGRECOL RECOMMENDATIONS AND INSTALLATION GUIDELINES.
- BROADCAST HALF THE SEED OVER THE ENTIRE SITE OR TARGET AREA.
- BROADCAST THE OTHER HALF OF SEED PERPENDICULAR TO THE DIRECTION THAT THE FIRST HALF OF THE SEED WAS BROADCAST.
- COVER SEED WITH $\frac{1}{4}$ -INCH TO $\frac{1}{2}$ -INCH OF SOIL (USE ANY EXCESS SOIL FROM THE SITE) WITH RAKE OR DRAG.
- ROLL SITE TO ENSURE FIRM SEED-TO-GROUND CONTACT.
- KEEP SEED CONSTANTLY WET THROUGH GERMINATION PERIOD, GENERALLY 3 WEEKS.

ALL SEEDING SHALL BE COVERED WITH 1-INCH OF CLEAN, NON-INVASIVE STRAW (NO MARSH HAY, OR REED CANARY GRASS) WITHOUT SEEDS, WITHIN SEVEN DAYS. WHEAT, RYE, OATS, OR BARLEY ARE ACCEPTABLE FORMS OF STRAW. THOSE AREAS OF SLOPES STEEPER THAN 8:1 (EIGHT FEET HORIZONTAL TO ONE FOOT VERTICAL) SHALL BE PLANTED NO LATER THAN OCTOBER 1 AND STAKED WITH AN EROSION CONTROL BLANKET TO PREVENT EROSION.



- BAREROOT PLANTING NOTES:
- SOAK ROOTS IN WATER FOR AT LEAST ONE HOUR BUT NOT MORE THAN 24 HOURS PRIOR TO PLANTING.
 - SCARIFY SIDES AND BOTTOMS OF HOLE.
 - PROCEED WITH CORRECTIVE PRUNING OF THE TOP AND BOTTOM ROOTS.
 - TRANSFER PLANT DIRECTLY FROM WATER TO HOLE. SET PLANT SO THE ROOT FLARE IS APPROXIMATELY AT THE FINISHED SOIL ELEVATION. SPREAD ROOTS OUT EVENLY. PLUMB AND IMMEDIATELY BACKFILL WITH PLANTING SOIL MIX.
 - WATER THOROUGHLY WITHIN 2 HOURS TO SETTLE PLANTS AND FILL VOIDS.
 - BACKFILL VOIDS TWO WATER SECOND TIME.
 - PLACE MULCH WITHIN 48 HOURS OF THE SECOND WATERING UNLESS SOIL MOISTURE IS EXCESSIVE.



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Architect: AMH/BGK Engineer: AEK Reviewed By: AEK
Sheet Title: LANDSCAPE NOTES & DETAILS
Sheet Number: L-200
Project Number: P13175



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Architect: AMH/BGK Engineer: AEK Reviewed By: AEK

Sheet Title:
LANDSCAPE PLAN

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L-100

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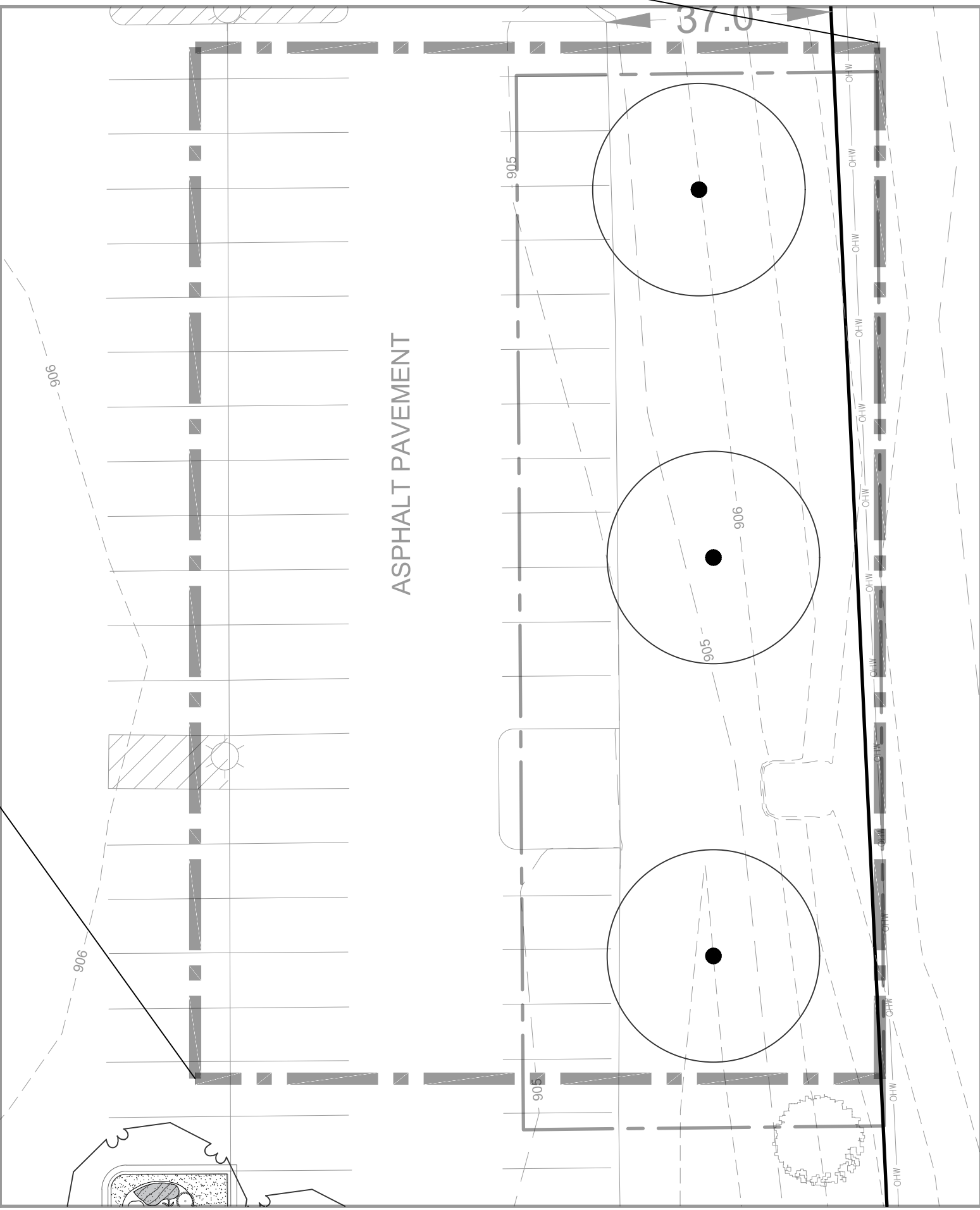
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ENLARGEMENT L-1A
SCALE: 1"=20'

CONCEPT PLANT SCHEDULE

TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE
6	6	DECIDUOUS TREE Tilia cordata 'Greenspire'	Greenspire Littleleaf Linden	2' Cal.
3	3	STREET TREES Acer freemanii 'Celzam'	Celebration Maple	2' Cal.
5	5	ORNAMENTAL TREE Carpinus caroliniana 'JN Strain' Magnolia stellata 'Centennial Blush'	Fire King Muscadenberry Centennial Blush Star Magnolia	1.5' Cal. 1.5' Cal.
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE
3	3	LARGE DECIDUOUS SHRUB Corylus americana 'Purple Haze' Cotinus coggygia 'Royal Purple' Hydrangea paniculata 'SMNHMP'	Purple Haze American Hazelnut Royal Purple Smokebush Quick Fire Fab® Hydrangea	--- 18' Ht. ---
11	11	MEDIUM EVERGREEN SHRUB Juniperus chinensis 'Mint Julep' Picea abies 'Nidiformis' Thuja occidentalis 'Holmstrup'	Mint Julep Juniper Nest Spruce Holmstrup Cedar	2' Ht. 18' Ht. 5' Ht.
5	5	MEDIUM DECIDUOUS SHRUB Aronia melanocarpa 'Viking' Sambucus nigra 'Black Lace'	Viking Chokeberry Black Lace Elderberry	2' Ht. 15' Ht.
77	77	SMALL DECIDUOUS SHRUB Colinus coggygia 'Lilla' Diervilla lonicera 'Kodak Orange' Hydrangea paniculata 'Bobo' Syringa x 'SMNJRPI'	Lilla Dwarf Smoke Tree Kodak Orange Dwarf Bush Honeysuckle Bobo Hydrangea Bloomerang Dwarf Pink Lilac	18' Ht. 18' Ht. 18' Ht. 18' Ht.
61	61	SHORT ORNAMENTAL GRASS Deschampsia cespitosa 'Northern Lights' Pennisetum alopecuroides 'Little Bunny' Pennisetum alopecuroides 'Hameln'	Northern Lights Tufted Hair Grass Little Bunny Fountain Grass Hameln Dwarf Fountain Grass	1 gal. 1 gal. 1 gal.
107	107	TALL ORNAMENTAL GRASS Calamagrostis x scutiflora 'Karl Foerster'	Feather Reed Grass	1 gal.
81	81	SMALL EVERGREEN SHRUB Juniperus horizontalis 'Blue Forest' Pinus strobus 'Blue Shag' Taxus x media 'Everlow' Thuja occidentalis 'Hetz Midget'	Blue Forest Creeping Juniper Blue Shag White Pine Everlow Yew Hetz Midget Arborvitae	24" W 24" Ht. 18" W 18" W
SHRUB AREAS	QTY	BOTANICAL NAME	COMMON NAME	SIZE
443 sf	443 sf	PERENNIALS Echinacea x 'Big Sky Sunrise' Perovskia atriplicifolia 'Little Spire' Rudbeckia fulgida 'Early Bird Gold'	Big Sky Sunrise Coneflower Little Spire Russian Sage Early Bird Gold Coneflower	4.5' Cont. 4.5' Cont. 4.5' Cont.
GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	SIZE
1,499 sf	1,499 sf	RAINWATER RENEWAL SEED MIX		
26,031 sf	26,031 sf	TURF Turf Hydroseed	Drought Tolerant Fescue Blend	



GRAPHICAL SCALE (FEET)

0 1" = 20' 40'

CONTROLLED FLOW ROOF DRAINS TO BE
INSTALLED ON NEW ADDITION. INITIAL
DESIGN INCLUDES 8 x Z-105 FIXTURES W/ 6
NOTCHES EACH & 8 OVERFLOWS AT 6"
ABOVE DRAIN. PEAK 100-YEAR WATER
ELEVATION = 7" ABOVE ROOF AT DRAIN

DIRECT EXISTING ROOF
FROM PREVIOUS ADDITION
TO EXISTING WET POND

DIRECT ROOF TO
EXISTING WET POND

POND

NEW 100-YR WATER ELEV = 904.0

INSTALL NEW OUTLET
STRUCTURE ON EXISTING
12" LINE - SEE DETAIL

12" CULVERT
INV=898.87

GENERAL SPECIFICATIONS FOR CONSTRUCTION ACTIVITIES

1. THE PROPOSED IMPROVEMENTS SHALL BE CONSTRUCTED ACCORDING TO THE WISCONSIN D.O.T. STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION, THE STANDARD SPECIFICATIONS FOR SEWER & WATER IN WISCONSIN, AND WISCONSIN ADMINISTRATIVE CODE, SPS 360.382-383, AND THE LOCAL ORDINANCES AND SPECIFICATIONS.
2. THE CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED FOR EXECUTION OF THE WORK. THE CONTRACTOR SHALL CONDUCT HIS WORK ACCORDING TO THE REQUIREMENTS OF THE PERMITS.
3. THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE MUNICIPALITY FORTY- EIGHT (48) HOURS PRIOR TO THE START OF CONSTRUCTION.
4. THE MUNICIPALITY SHALL HAVE THE RIGHT TO INSPECT, APPROVE, AND REJECT THE CONSTRUCTION OF THE PUBLIC PORTIONS OF THE WORK. THE OWNER SHALL HAVE THE RIGHT TO INSPECT, APPROVE, AND REJECT THE CONSTRUCTION OF ALL PRIVATE PORTIONS OF THE WORK.
5. THE CONTRACTOR SHALL INDEMNIFY THE OWNER, THE ENGINEER, AND THE MUNICIPALITY, THEIR AGENTS, ETC. FROM ALL LIABILITY INVOLVED WITH THE CONSTRUCTION, INSTALLATION, AND TESTING OF THE WORK ON THIS PROJECT.
6. SITE SAFETY SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
7. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL UTILITY INFORMATION SHOWN ON THE PLANS PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL CALL DIGGER'S HOTLINE AT 1-800-242-8511 TO NOTIFY THE UTILITIES OF HIS INTENTIONS, AND TO REQUEST FIELD STAKING OF EXISTING UTILITIES.
8. SILT FENCE AND OTHER EROSION CONTROL FACILITIES MUST BE INSTALLED PRIOR TO CONSTRUCTION OR ANY OTHER LAND DISTURBING ACTIVITY. FOLLOW THE SEQUENCE OF CONSTRUCTION ON THE EROSION CONTROL PLAN FOR MORE DETAILS. INSPECTIONS SHALL BE MADE WEEKLY OR AFTER EVERY RAINFALL OF .15" OR MORE. REPAIRS SHALL BE MADE IMMEDIATELY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL EROSION CONTROL FACILITIES ONCE THE THREAT OF EROSION HAS PASSED WITH THE APPROVAL OF THE GOVERNING AGENCY.
9. ANY ADJACENT PROPERTIES OR ROAD RIGHT-OF-WAYS THAT ARE DAMAGED DURING CONSTRUCTION MUST BE RESTORED BY THE CONTRACTOR.
10. TRASH AND DEBRIS SHALL BE NOT BE ALLOWED TO ACCUMULATE ON THIS SITE AND THE SITE SHALL BE CLEAN UPON COMPLETION OF WORK.
11. THE OWNER SHALL HAVE THE RIGHT TO HAVE ALL MATERIALS USED IN CONSTRUCTION TESTED FOR COMPLIANCE WITH THESE SPECIFICATIONS.

SPECIFICATIONS FOR GRADING & EROSION CONTROL

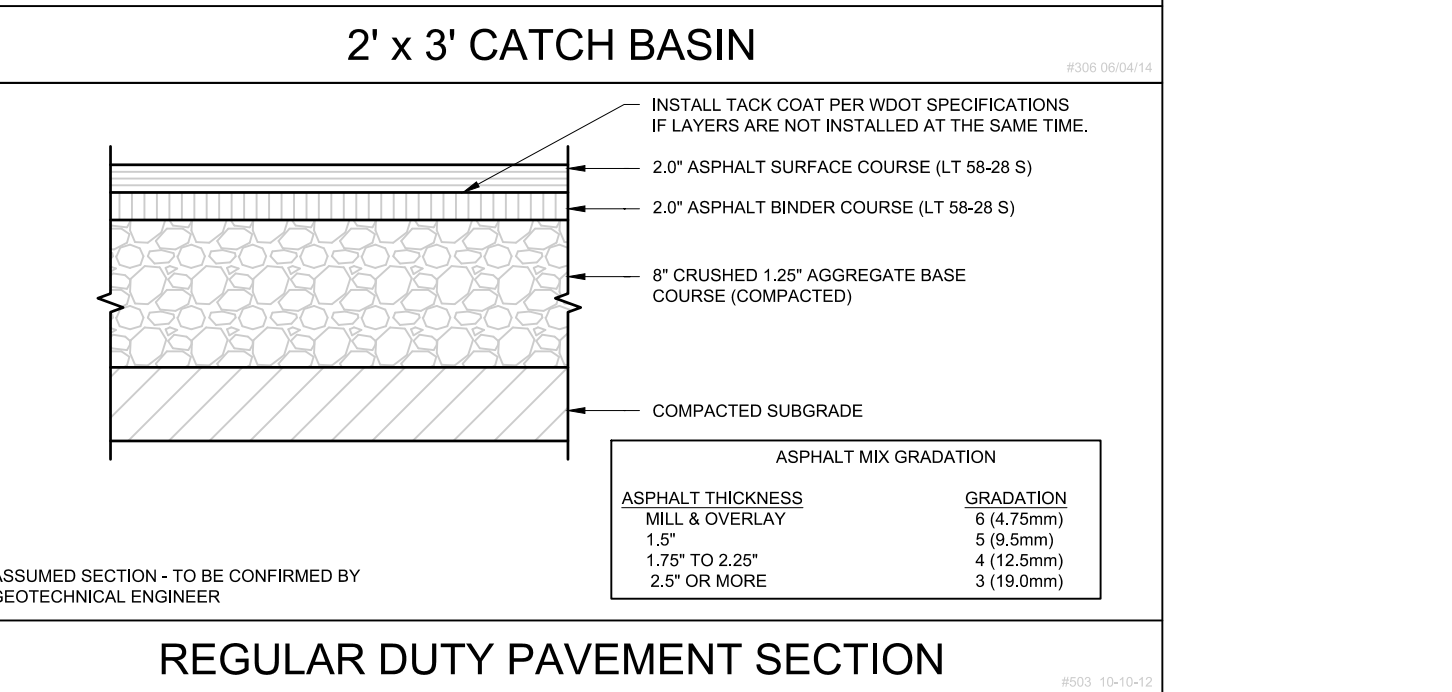
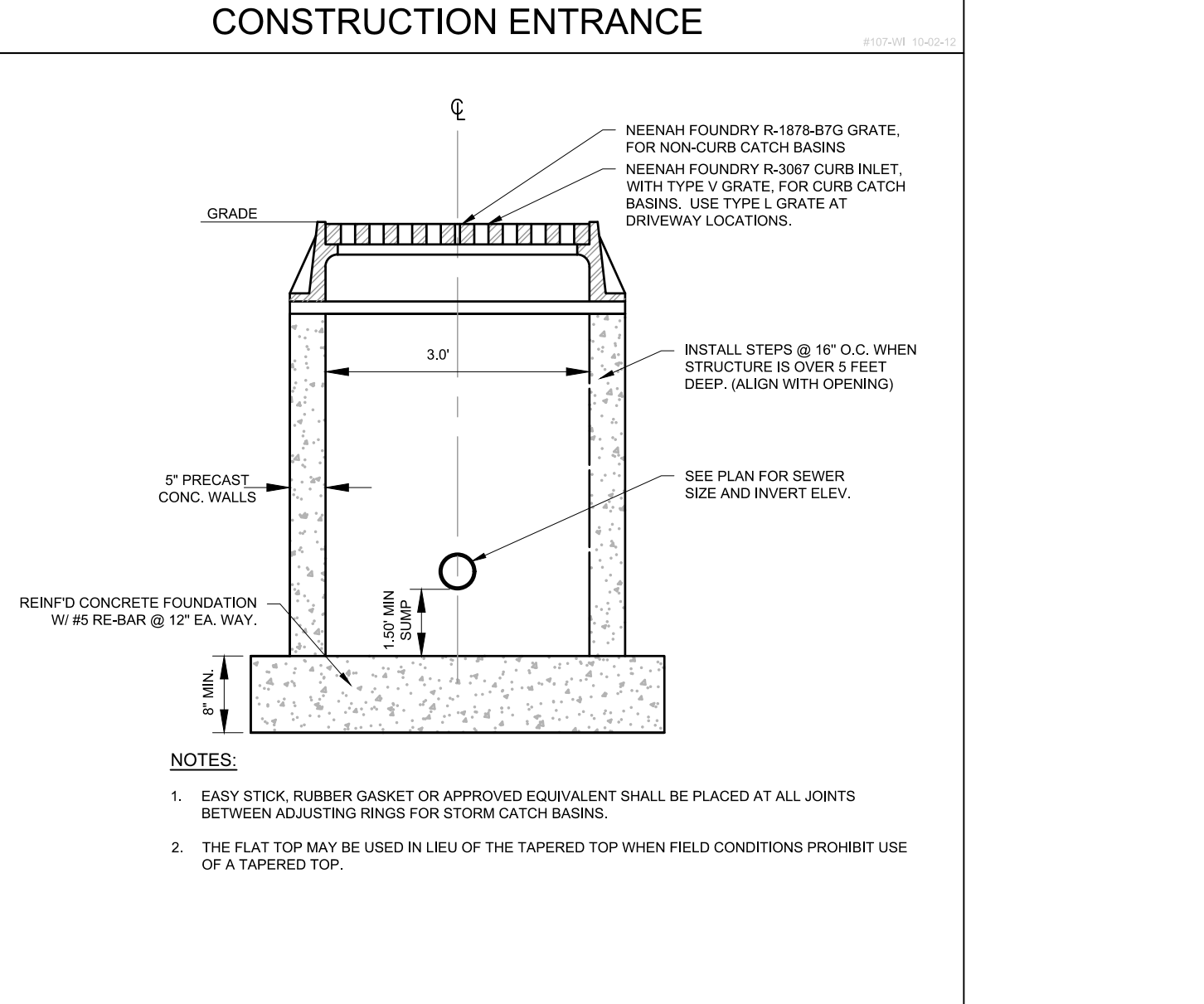
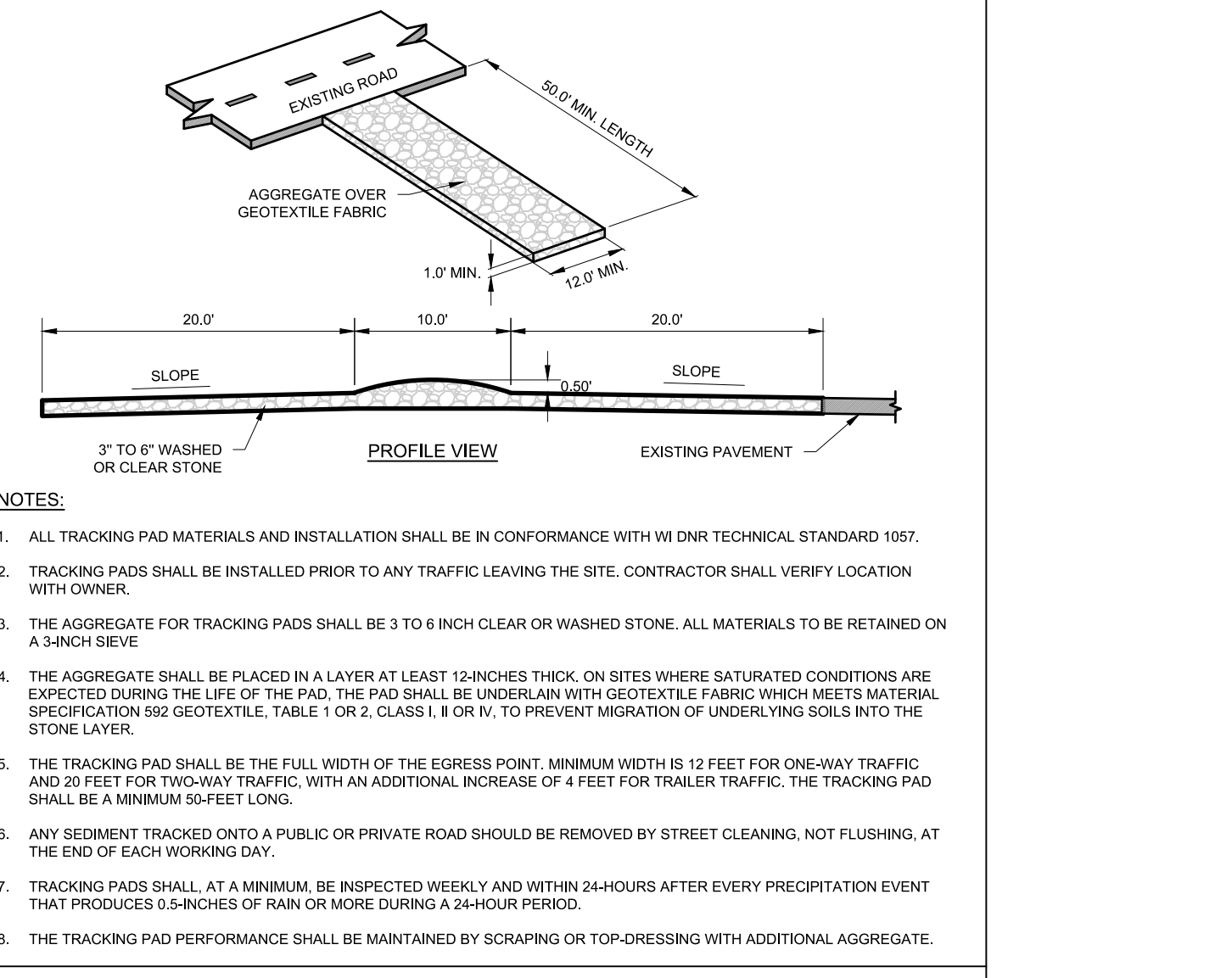
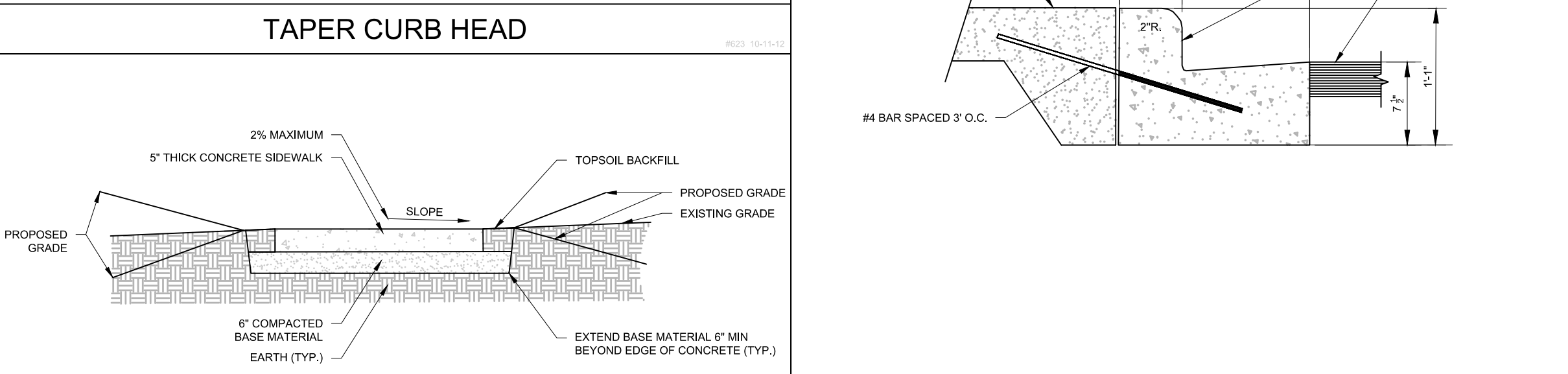
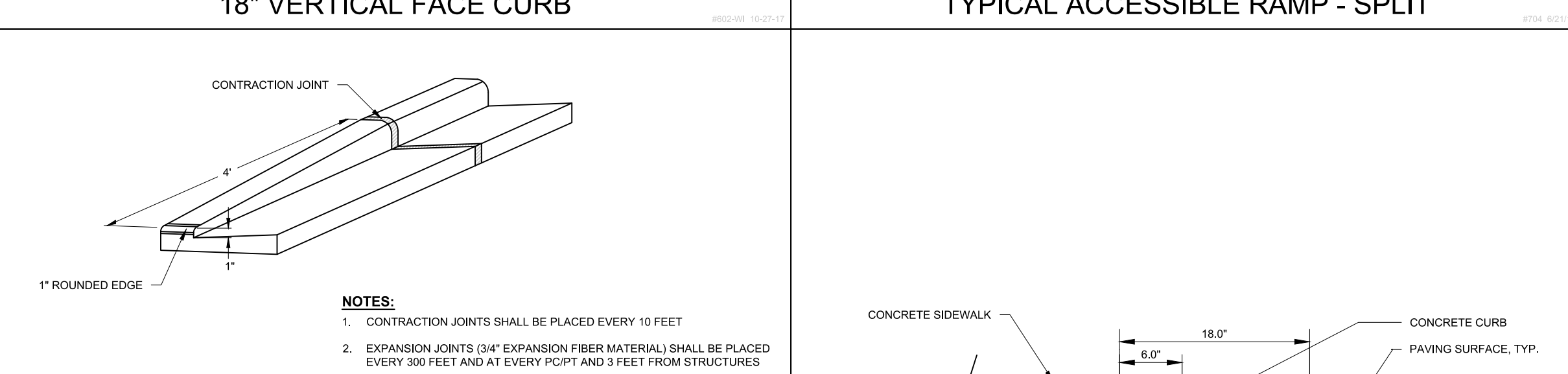
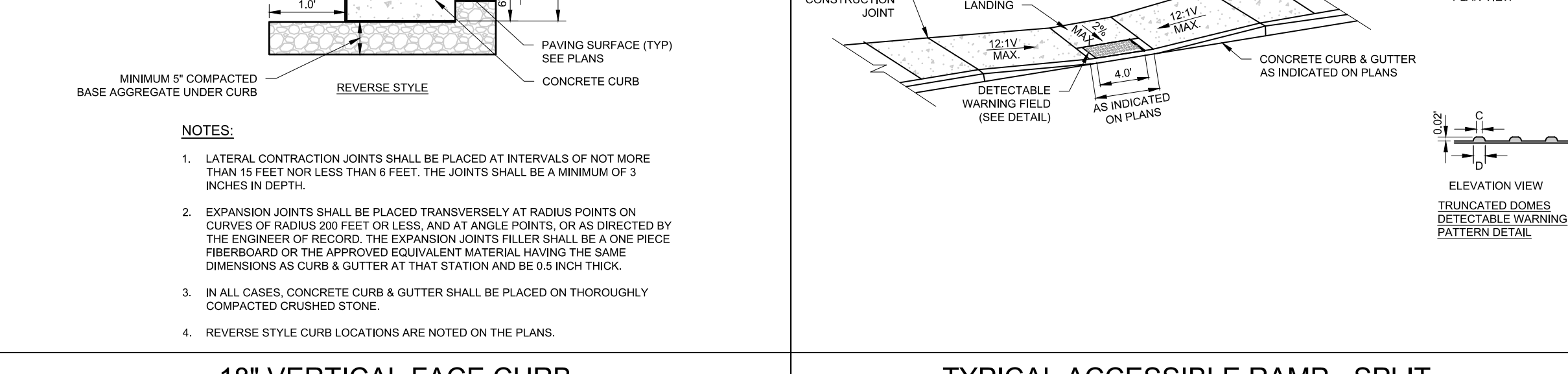
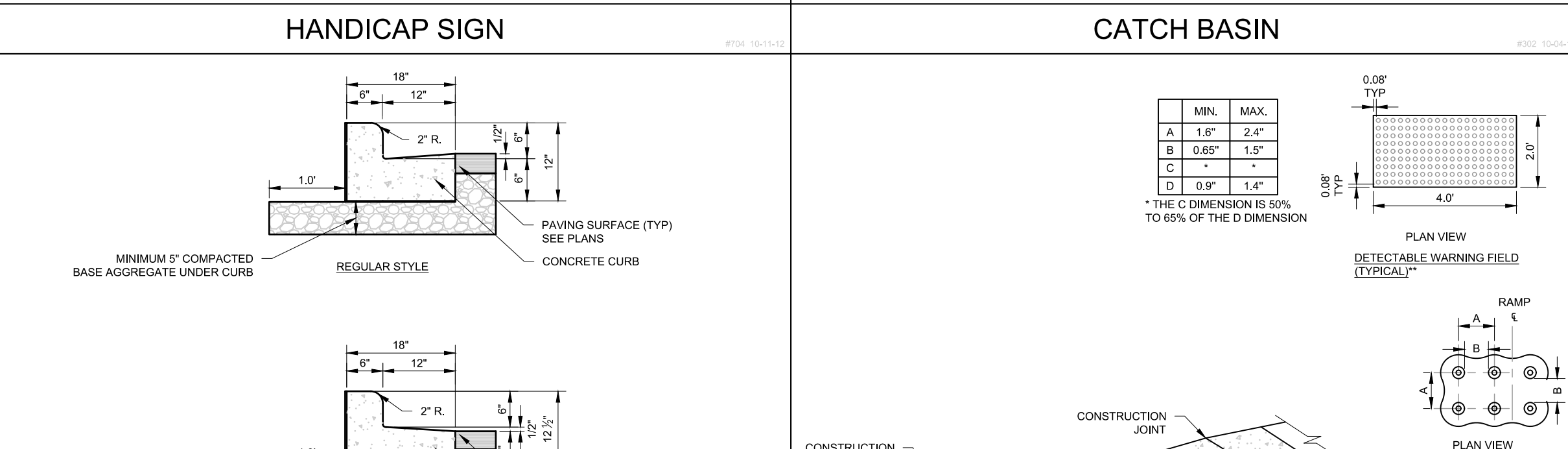
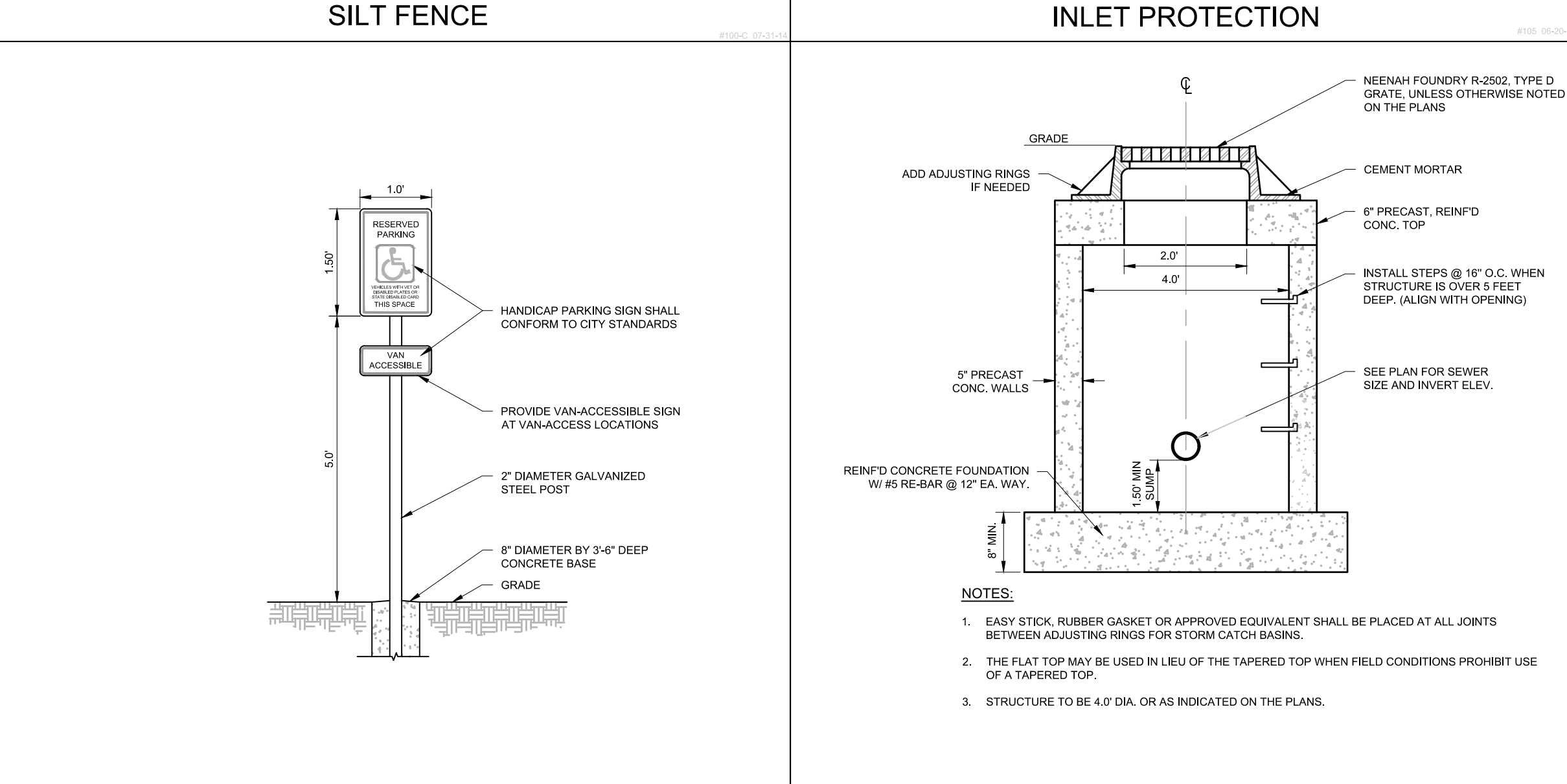
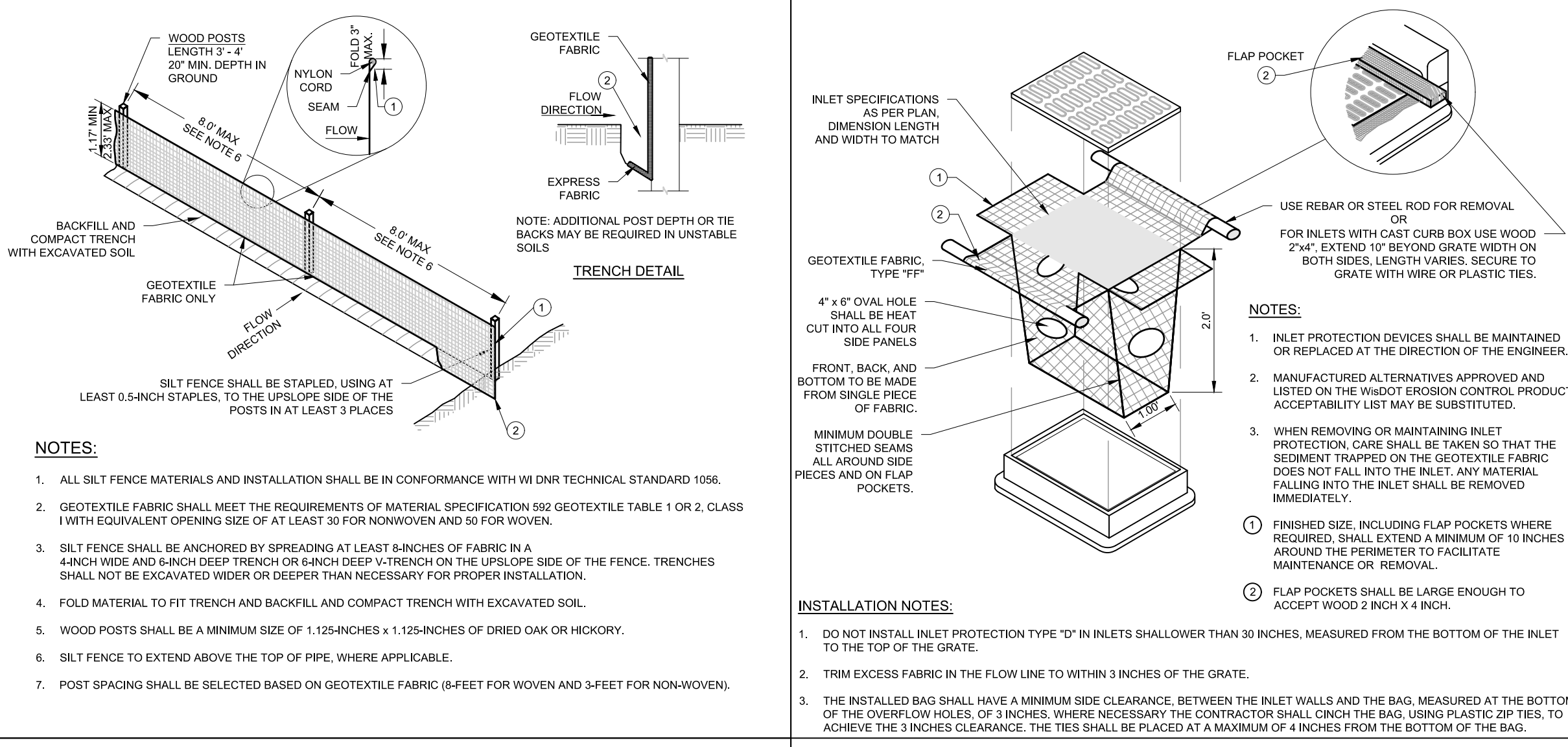
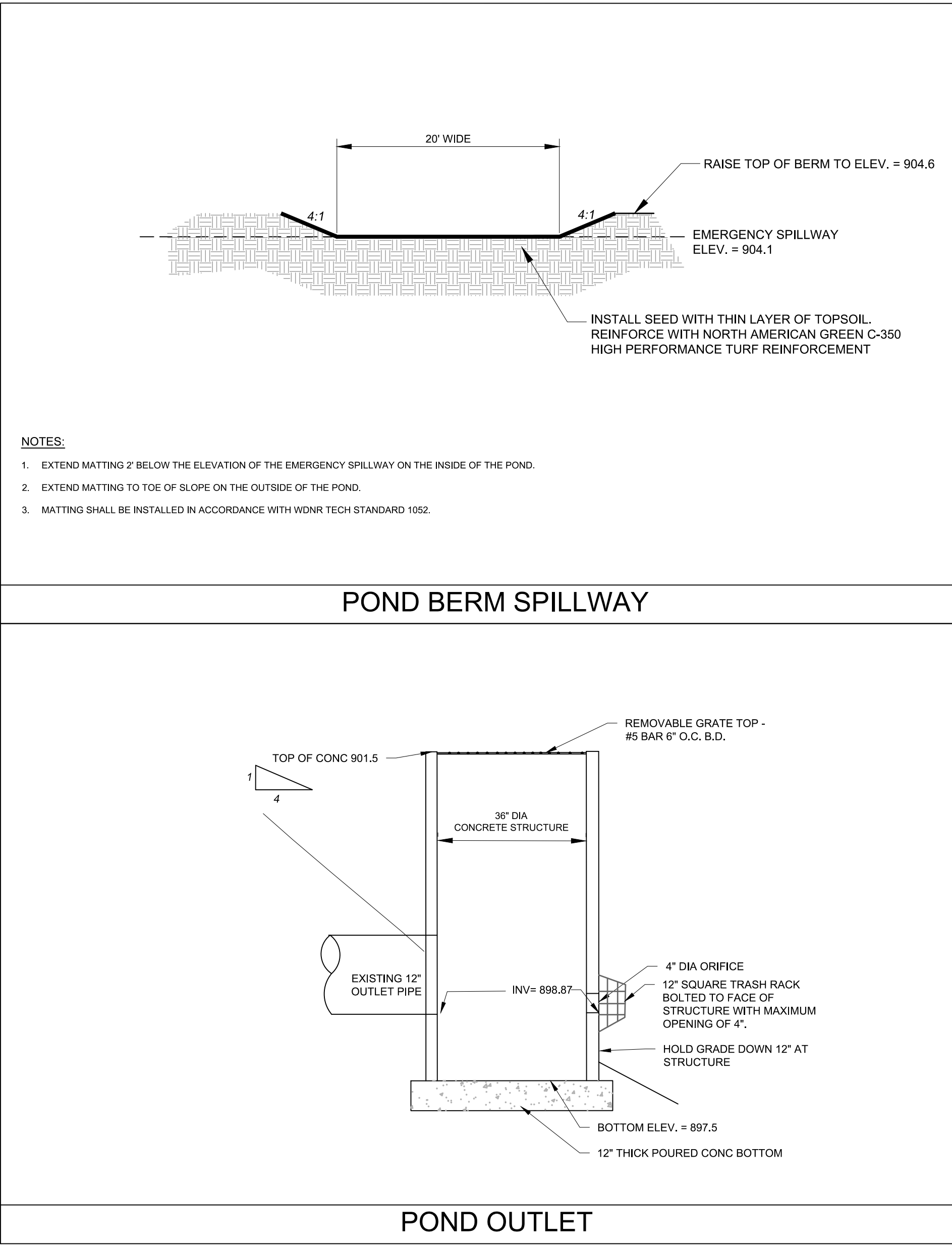
1. THE CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR THE COMPUTATIONS OF ALL GRADING AND FOR ACTUAL LAND BALANCE, INCLUDING UTILITY TRENCH SPOIL. THE CONTRACTOR SHALL IMPORT OR EXPORT MATERIAL AS NECESSARY TO COMPLETE THE PROJECT. CONTRACTOR SHALL NOTIFY OWNER OF THE NEED TO IMPORT OR HAUL OFF SOIL. ON-SITE LOCATIONS SUITABLE FOR BORROW OR FILL MAY BE PRESENT. COORDINATE WITH OWNER.
2. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING SOIL CONDITIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION. A GEOTECHNICAL REPORT MAY BE AVAILABLE FROM THE OWNER.
3. SITE SHALL BE CLEARED TO THE LIMITS SHOWN ON THE PLANS. REMOVE VEGETATION FROM THE SITE. BURNING IS NOT PERMITTED. PROTECT TREES AND OTHER FEATURES FROM DAMAGE WITH FENCING. STOCKPILES SHALL NOT BE LOCATED CLOSER THAN 25' TO A DRAINAGE STRUCTURE OR FEATURE AND SHALL BE SURROUNDED WITH SILT FENCE.
4. THE GEOTECHNICAL ENGINEER IS RESPONSIBLE FOR VERIFYING COMPACTION AND FILL PLACEMENT IN THE FIELD. THE GEOTECHNICAL ENGINEER MAY SUPERCEDE THESE SPECIFICATIONS IF THERE IS GOOD CAUSE TO DO SO. AN EXPLANATION MUST BE SUBMITTED TO THE ENGINEER IN WRITING BEFORE ANY DEVIATIONS ARE MADE.
5. IF NO GEOTECHNICAL RECOMMENDATION IS AVAILABLE, THEN THE FOLLOWING SPECIFICATIONS SHALL APPLY. ALL FILL SHALL BE CONSIDERED STRUCTURAL FILL AND SHALL BE PLACED IN ACCORDANCE WITH THE FOLLOWING: THE COMPACTED FILL SUBGRADE SHALL BE UNDERLAIN BY SUITABLE BEARING MATERIALS, FREE OF ALL ORGANIC, FROZEN OR OTHER DESTRUCTIVE MATERIAL, AND INSPECTED AND APPROVED BY THE RESIDENT GEOTECHNICAL ENGINEER. PREPARATION OF THE SUBGRADE, AFTER STRIPPING, SHALL CONSIST OF PROOF-ROLLING TO DETECT UNSTABLE AREAS THAT MIGHT BE UNDERCUT, AND COMPACTING THE SCARIFIED SURFACE TO THE SAME MINIMUM DENSITY INDICATED BELOW. THE COMPACTED FILL MATERIALS SHALL BE FREE OF ANY DELETERIOUS, ORGANIC OR FROZEN MATTER AND SHALL HAVE A MAXIMUM LIQUID LIMIT (ASTM D-4243) AND PLASTICITY INDEX (ASTM D-4241) IF-30 AND 10 RESPECTIVELY. UNLESS SPECIFICALLY TESTED AND FOUND TO HAVE LOW EXPANSIVE PROPERTIES AND APPROVED BY AN EXPERIENCED SOILS ENGINEER, THE TOP TWELVE (12) INCHES OF COMPACTED FILL SHOULD HAVE A MAXIMUM THREE (3) INCH PARTICLE DIAMETER AND ALL UNDERLYING COMPACTED FILL A MAXIMUM SIX (6) INCH PARTICLE DIAMETER UNLESS SPECIFICALLY APPROVED BY AN EXPERIENCED SOILS ENGINEER. ALL FILL MATERIAL MUST BE TESTED AND APPROVED UNDER THE DIRECTION AND SUPERVISION OF AN EXPERIENCED SOILS ENGINEER PRIOR TO PLACEMENT. IF THE FILL IS TO PROVIDE NON-FROST SUSCEPTIBLE CHARACTERISTICS, IT MUST BE CLASSIFIED AS A CLEAN GW, GP, SW, OR SP PER UNITED SOIL CLASSIFICATION SYSTEM (ASTM D-2487). FOR STRUCTURAL FILL, THE DENSITY OF THE STRUCTURAL COMPACTED FILL AND SCARIFIED SUBGRADE AND GRADES SHALL NOT BE LESS THAN 95 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR (ASTM D-698). FOR NON-STRUCTURAL FILL, THE DENSITY SHALL BE A MINIMUM 90 PERCENT OF THE MAXIMUM DRY DENSITY. ON 5 PERCENT HEAVIER THAN UNDERLYING FILL MATERIALS, THE MOISTURE CONTENT OF COHESIVE SOIL SHALL NOT VARY BY MORE THAN +1 TO +3 PERCENT AND GRANULAR SOIL .43 PERCENT OF OPTIMUM WHEN PLACED AND COMPACTED OR RECOMPACTED, UNLESS SPECIFICALLY APPROVED BY THE SOILS ENGINEER TAKING INTO CONSIDERATION THE TYPE OF MATERIALS AND COMPACTION EQUIPMENT BEING USED. THE COMPACTION EQUIPMENT SHOULD CONSIST OF SUITABLE MECHANICAL EQUIPMENT SPECIFICALLY DESIGNED FOR SOIL COMPACTION. BUILDERS OR OTHER TRACKED VEHICLES ARE TYPICALLY NOT SUITABLE FOR COMPACTION. MATERIAL THAT IS TOO WET TO PERMIT PROPER COMPACTION MAY BE SPREAD ON THE FILL AND PERMITTED TO DRY, DISCING, HARROWING OR PULVERISING MAY BE NECESSARY TO REDUCE THE MOISTURE CONTENT TO A SATISFACTORY VALUE, AFTER WHICH IT SHALL BE COMPACTED. THE FINISHED SUBGRADE AREAS OF THE SITE SHALL BE COMPACTED TO 100 PERCENT OF THE STANDARD PROCTOR (ASTM D-398) MAXIMUM DENSITY.
6. NO FILL SHALL BE PLACED ON A WET OR SOFT SUBGRADE. THE SUBGRADE SHALL BE PROOF-ROLLED AND INSPECTED BY THE GEOTECHNICAL ENGINEER BEFORE ANY MATERIAL IS PLACED.
7. SUBGRADE TOLERANCES ARE +1/2" FOR LANDSCAPE AREAS AND +/- 1/2" FOR ALL PAVEMENT AND BUILDING AREAS.
8. TOPSOIL SHALL BE FREE OF DELETERIOUS MATERIALS, ROOTS, OLD VEGETATION, ROCKS OVER 2" DIAMETER AND SHALL NOT BE EXCESSIVELY CLAYEY IN NATURE. NO CLUMPS LARGER THAN 4" ARE ACCEPTABLE. TOPSOIL MAY BE AMENDED AS NEEDED WITH SAND OR COMPOST TO BE LOOSE WHEN SPREAD.
9. THE CONTRACTOR SHALL MAINTAIN SITE DRAINAGE THROUGHOUT CONSTRUCTION. THIS MAY INCLUDE THE EXCAVATION OF TEMPORARY DITCHES OR PUMPING TO ALLEViate WATER PONDING. ANY DEWATERING SHALL NOT GO DIRECTLY TO STREAMS, CREEKS, WETLANDS OR OTHER ENVIRONMENTALLY SENSITIVE AREAS WITHOUT BEING TREATED FIRST. A DIRT BAG OR OTHER DEWATERING TREATMENT DEVICE MAY BE USED TO CAPTURE SEDIMENT FROM THE PUMPED WATER.
10. CONTRACTOR IS ADVISED THAT ALL MUD AND DEBRIS MUST NOT BE DEPOSITED ONTO THE ADJACENT ROADWAYS PER THE REQUIREMENT OF THE MUNICIPALITY OR OTHER APPROPRIATE GOVERNMENT AGENCIES. IN THE EVENT THIS OCCURS, THE ROADWAYS SHALL BE POWER SWEEP IMMEDIATELY AND ALL SEDIMENT REMOVED FROM DOWNSTREAM FACILITIES.

SPECIFICATIONS FOR PRIVATE UTILITIES

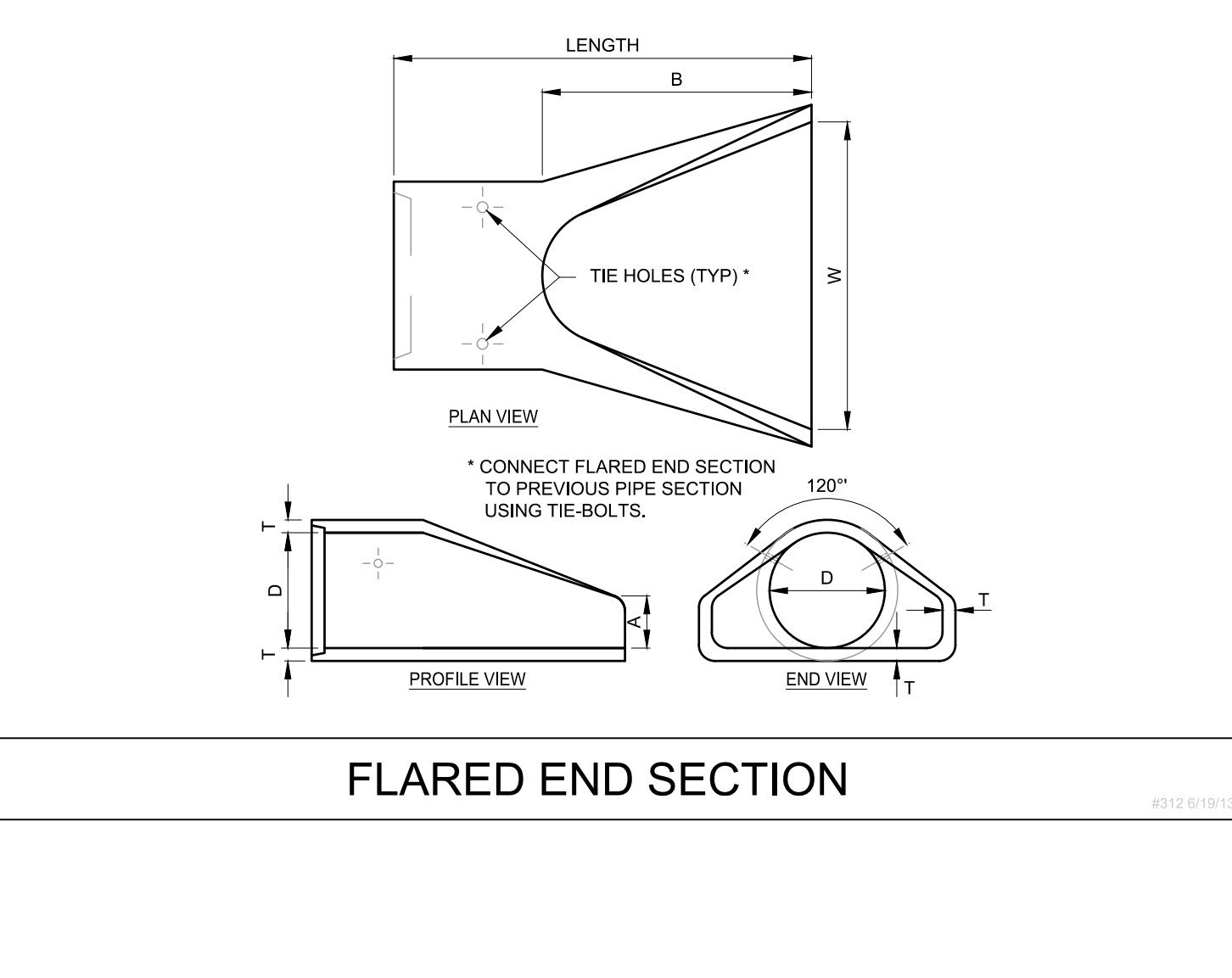
1. BEFORE PROCEEDING WITH ANY UTILITY CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE EACH EXISTING LATERAL OR POINT OF CONNECTION AND VERIFY THE LOCATION AND ELEVATION OF ALL UTILITIES. IF ANY EXISTING UTILITIES ARE NOT AS SHOWN ON THE DRAWINGS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY FOR POSSIBLE REDESIGN.
2. ALL CONNECTIONS TO EXISTING PIPES AND MANHOLES SHALL BE CORED CONNECTIONS. CONNECTIONS TO WATERMAIN SHALL BE WET TAPED WITH A STAINLESS STEEP TAPPING SLEEVE.
3. PROPOSED SANITARY SEWER AND INTERNALLY CONNECTED STORM SEWER SHOWN ON THIS PLAN SHALL TERMINATE AT A POINT FIVE (5) FEET FROM THE EXTERIOR BUILDING WALL. THE EXACT LOCATION OF ALL DOWN SPOUTS CONNECTIONS SHALL BE PER THE ARCHITECTURAL PLANS.
4. CONTRACTOR SHALL NOT SHUT OFF WATER OR PLUG SANITARY LINES WITHOUT PRIOR APPROVAL.
5. MATERIALS FOR STORM SEWER SHALL BE AS FOLLOWS: STORM SEWER PIPE 48" OR LESS SHALL BE HIGH DENSITY POLYETHYLENE (HDPE) CORRUGATED PIPE WITH AN INTEGRALLY FORMED SMOOTH WATERWAY SUCH AS ADS N-12. FOR PIPE 10" OR LESS IN DIAMETER, PVC, ASTM D-3034, SDR-26, MAY ALSO BE USED, WHERE SPECIFICALLY REQUIRED. REINFORCED CONCRETE PIPE (RCP), ASTM C-478, CLASS III OR HIGHER, MAY BE USED. TRENCH SECTION SHALL BE CLASS "B" FOR PVC AND HDPE AND CLASS "C" FOR CONCRETE (PER STANDARD SPECIFICATIONS). MANHOLES, INLETS AND CATCH BASINS SHALL BE PRE CAST REINFORCED CONCRETE, ASTM C-478. CASTINGS SHALL BE HEAVY DUTY CAST IRON. AREA DRAINS SHALL BE PER DETAIL ON PLAN OR EQUIVALENT AND SHALL BE A MINIMUM OF 24" IN DIAMETER. CONNECTIONS TO EXISTING PIPES SHALL BE MADE WITH INSERTA WYE OR EQUIVALENT.
6. WHERE STORM SEWER ENTERS POND OR FREE DISCHARGES, THE LAST THREE PIPE SECTIONS OR 30' MINIMUM SHALL BE ROD RESTRAINED TO THE END SECTION.
7. MATERIALS FOR SANITARY SEWER SHALL BE AS FOLLOWS: SANITARY SEWER SHALL BE PVC, ASTM D-3034, SDR-35 WITH RUBBER GASKETED JOINTS, CONFORMING TO ASTM D-3212. TRENCH SECTIONS SHALL BE CLASS "B" BEDDING (PER STANDARD SPECIFICATIONS). CRUSHED STONE CHIPS SHALL BE USED FOR BEDDING MATERIAL. CONNECTIONS SHALL BE MAD WITH A INSERTA WYE OR EQUIVALENT. A MINIMUM OF 6" OF COVER IS REQUIRED FOR ALL SANITARY SEWER.
8. MATERIALS FOR WATER SERVICES AND PRIVATE HYDRANTS SHALL BE AS FOLLOWS: WATER SERVICES SHALL BE PVC, HDPE, OR DI AS ALLOWED BY MUNICIPAL CODE. PVC SHALL BE AWWA C-900, DI SHALL BE AWWA C151, CLASS S2 (OR AS REQUIRED BY LOCAL CODE). TRENCH SECTIONS SHALL BE CLASS "B" BEDDING (PER STANDARD SPECIFICATIONS). CRUSHED STONE CHIPS SHALL BE USED FOR BEDDING MATERIAL. CONNECTION SHALL BE MADE WITH A WET TAP. CORPORATE STOP AND VALVE BOX PER MUNICIPAL STANDARDS. A MINIMUM OF 6" COVER IS REQUIRED FOR ALL WATERMAIN. VALVES SHALL BE NONRISING STEM, RESILIENT SEATED GATE VALVES COMPLYING WITH AWWA C509 WITH A THREE PIECE CAST IRON VALVE BOX. INSTALL THRUST BLOCKS AT ALL BENDS AND TEES. DISINFECT ALL NEW LINES AND OBTAIN SAFE WATER SAMPLE PRIOR TO USE.
9. EXTREME CAUTION MUST BE FOLLOWED REGARDING THE COMPACTION OF ALL UTILITY TRENCHES. MECHANICALLY COMPACTED GRANULAR BACKFILL IS REQUIRED UNDER & WITHIN 5 FEET OF ALL PAVEMENT INCLUDING SIDEWALKS. FLOODING OF BACKFILL MATERIAL IS NOT ALLOWED.
10. TRACER WIRE (NO. 8 SINGLE STRAND COPPER) AND WARNING TAPE SHALL BE INSTALLED ON ALL UTILITIES IN ACCORDANCE WITH THE LOCAL AND STATE CODES. TRACER WIRE SHALL TERMINATE IN A VALVECO TERMINAL BOX AT EACH END.
11. MANDREL TESTING ON SANITARY LINES AND PRESSURE TESTING ON WATERMAIN MAY BE REQUIRED BY THE OWNER OR MUNICIPALITY.
12. UPON COMPLETION OF FINAL PAVING OPERATIONS, THE UTILITY CONTRACTOR SHALL ADJUST ALL MANHOLE AND INLET RIMS AND VALVE BOXES TO FINISHED GRADE.

SPECIFICATIONS FOR PAVING

1. AGGREGATES USED IN THE CRUSHED STONE BASE SHALL CONFORM TO THE GRADATION REQUIREMENTS SECTIONS 301.2 AND 305.2.2 OF THE STANDARD SPECIFICATIONS. THICKNESS SHALL BE PER THE DETAIL ON THE PLANS. BASE SHALL BE 1 1/2 INCH DIAMETER LimestONE TRAFFIC BOND AGGREGATE BASE COURSE UNLESS NOTED OTHERWISE. SUBSTITUTION AND/OR RECYCLED MATERIALS MAY BE ALLOWED WITH APPROVAL FROM THE OWNER.
2. SUBGRADE SHALL BE PROOFROLLED AND APPROVED BY A GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF STONE BASE. EXCAVATE UNSUITABLE AREAS AND REPLACE WITH BREAKER RUN STONE AND RECOMPACT. REFER TO THE GEOTECHNICAL REPORT FOR ADDITIONAL SPECIFICATIONS.
3. EXISTING PAVEMENT SHALL BE SAUCUT IN NEAT STRAIGHT LINES TO FULL DEPTH AT ANY POINT WHERE EXISTING PAVEMENT IS REMOVED. CURB AND WALK SHALL BE REMOVED TO THE NEAREST JOINT. REMOVED PAVEMENT SHALL BE REPLACED WITH THE SAME SECTION AS EXISTING. MUNICIPAL STANDARDS MAY REQUIRE ADDITIONAL WORK.
4. ASPHALT FOR PARKING AREAS AND THE PRIVATE ROAD SHALL BE PER THE DETAILS MATERIALS AND PLACEMENT SHALL CONFORM TO THE DOT STANDARD SPECIFICATIONS, SECTION 450 AND 460. LT 58-28 S IS REQUIRED UNLESS NOTED OTHERWISE. A COMMERCIAL GRADE MK MAY BE SUBSTITUTED ONLY WITH APPROVAL FROM THE OWNER.
5. CONCRETE FOR CURB, DRIVEWAY, WALKS AND NOW-FLOOR SLABS SHALL CONFORM TO SECTION 415 OF THE STANDARD SPECIFICATIONS. GRADE A, ASTM C-94, 6 BAG MIX, WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,500 PSI. JOINTING SHALL BE PER SECTION 415.3.7, 602.3.2.5, AND 601.3.4.5. OF THE STANDARD SPECIFICATIONS. CONSTRUCTION JOINTS SHALL BE SPACED NOT FURTHER THAN 10' FOR PAVEMENT, 10' FOR SIDEWALKS (OR THE WIDTH OF THE WALK), AND 15' FOR CURB. EXPANSION JOINTS SHALL BE SPACED NO FURTHER THAN 50' FOR PAVEMENT, 300' FOR CURB, AND 100' FOR WALKS. CONCRETE SHALL BE FINISHED PER SECTION 415.3.8 WITH A MEDIUM BROOM TEXTURE, A CURING MEMBRANE IN CONFORMANCE WITH SECTION 415.3.12 IS REQUIRED.



PIPE DIAMETER	LENGTH	T	A	B	W	WEIGHT PER SECTION
INCHES	FEET	INCHES	INCHES	INCHES	INCHES	LBS.
12	6'-0"	2	4	24	24	530
15	6'-0"	2 1/4	6	27	30	740
18	6'-0"	2 1/2	9	27	36	990
21	6'-0"	2 3/4	9	36	42	1280
24	6'-0"	3	9 1/2	43 1/2	48	1520
27	6'-0"	3 1/4	10 1/2	49 1/2	54	1820
30	6'-0"	3 1/2	12	54	60	2100
33	6'-0"	3 3/4	13 1/2	58 1/2	66	2380
36	6'-0"	4	15	63	72	2700
42	6'-0"	4 1/2	21	63	78	3380
48	6'-0"	5	24	72	84	4050
54	6'-0"	5 1/2	27	81	90	4850
60	6'-0"	6	30	90	96	5700



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GERMANTOWN, WI 53022

ALL WORK TO BE COMPLETED AS SHOWN, AND IN ACCORDANCE WITH THE LATEST EDITION OF THE MSI GENERAL MASTER SPECIFICATION

Architect: AMH/BGK
Engineer: AEK
Reviewed By: AEK

Sheet Title:

SITE DETAILS

Sheet Number:

C-104

Project Number:

P13175

P13175



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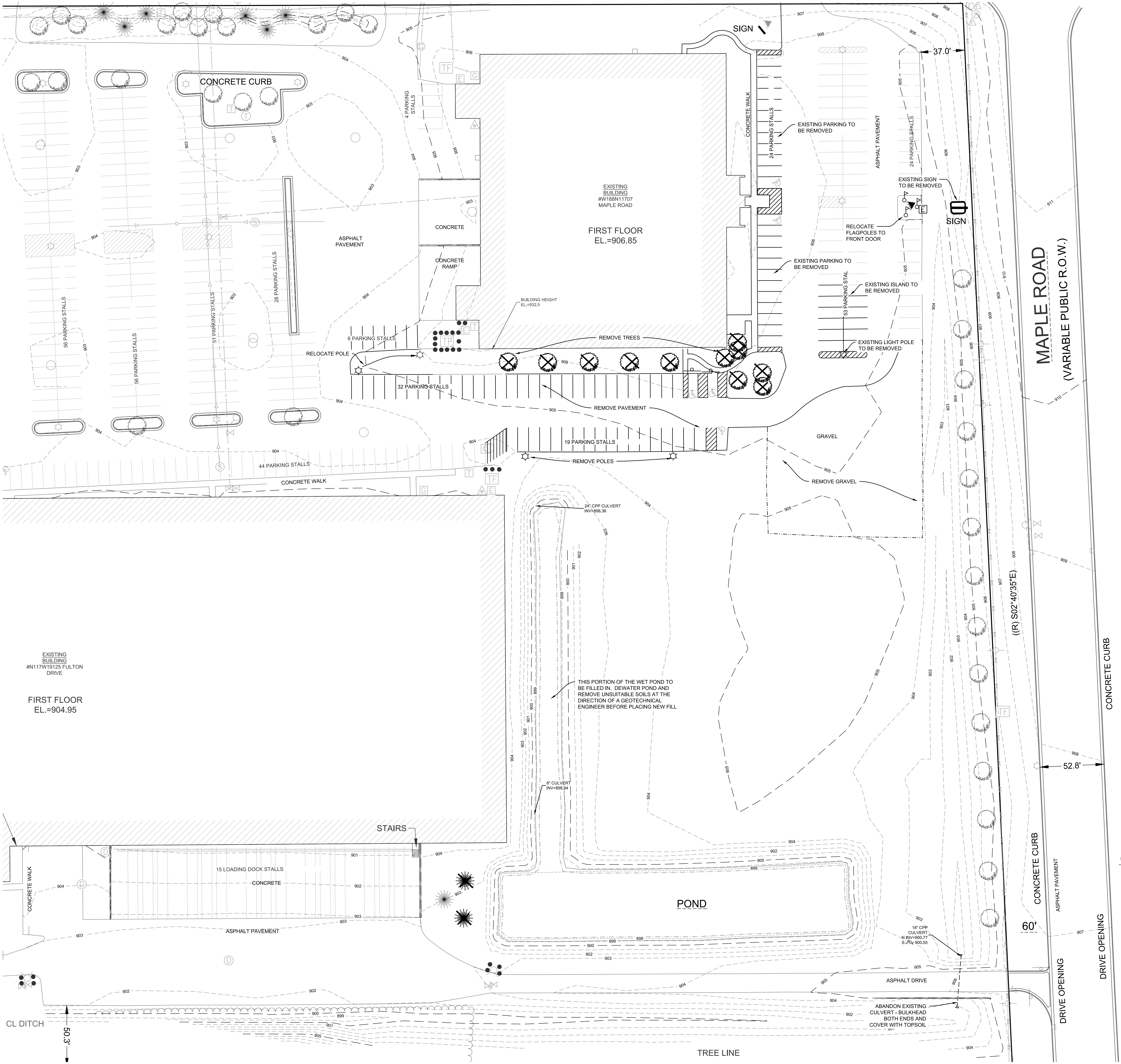
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ENGINEERS

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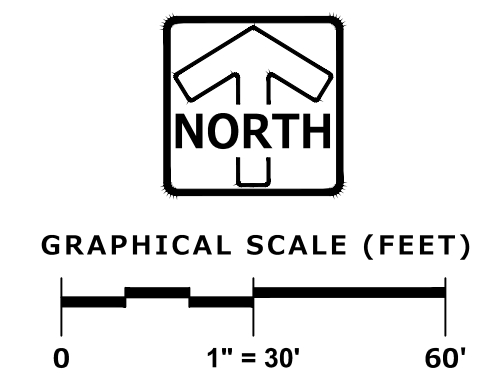


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Architect: AMH/BGK
Engineer: AEK
Reviewed By: AEK
Sheet Title: EXISTING CONDITIONS AND SITE DEMOLITION PLAN
Sheet Number: C-100
Project Number: P13175



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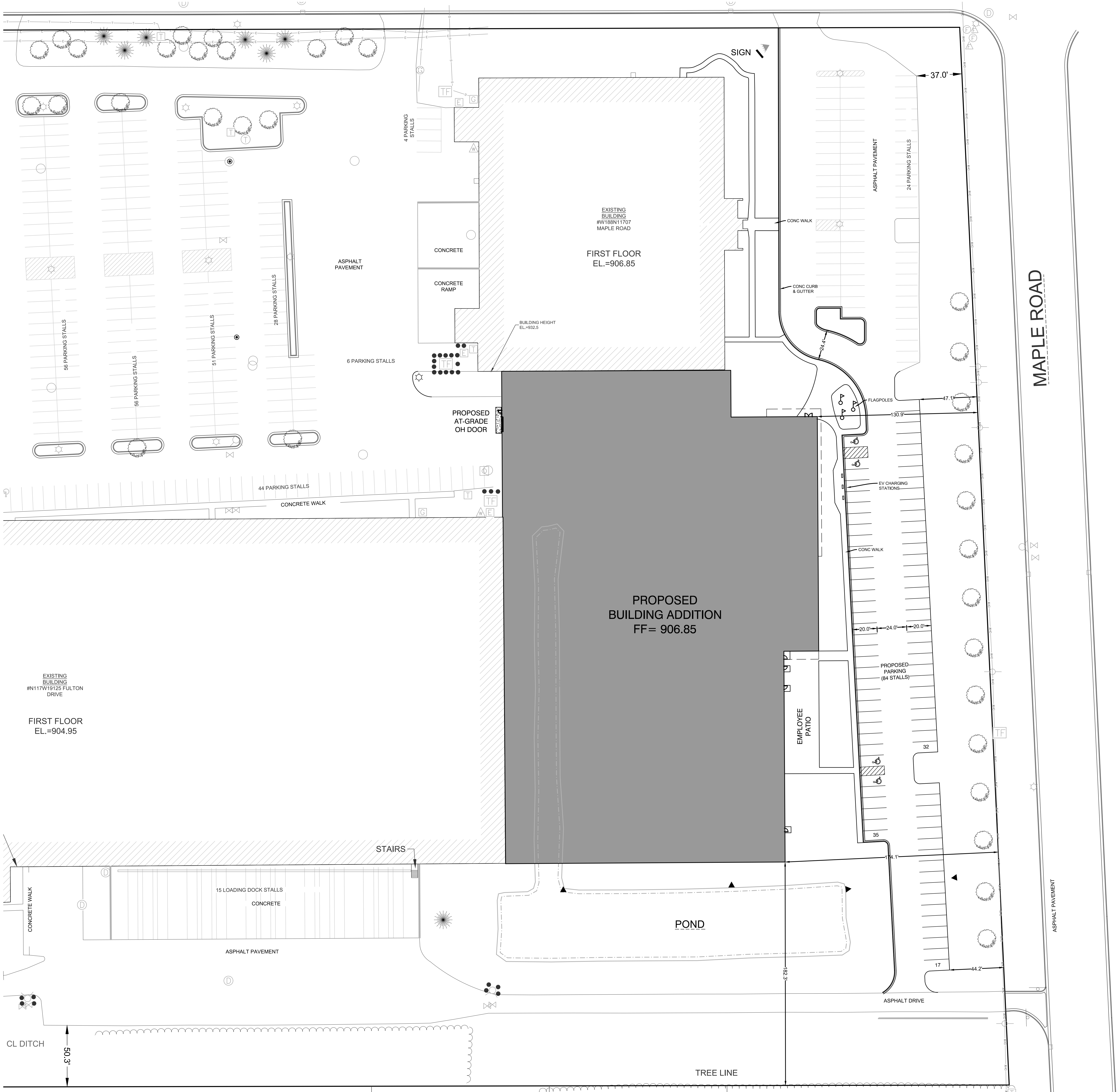
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GRAPHICAL SCALE (FEET)

0 1" = 30' 60'



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Architect: AMH/BGK Engineer: AEK Reviewed By: AEK

Sheet Title: SITE PLAN

Sheet Number: C-101

Project Number: P13175

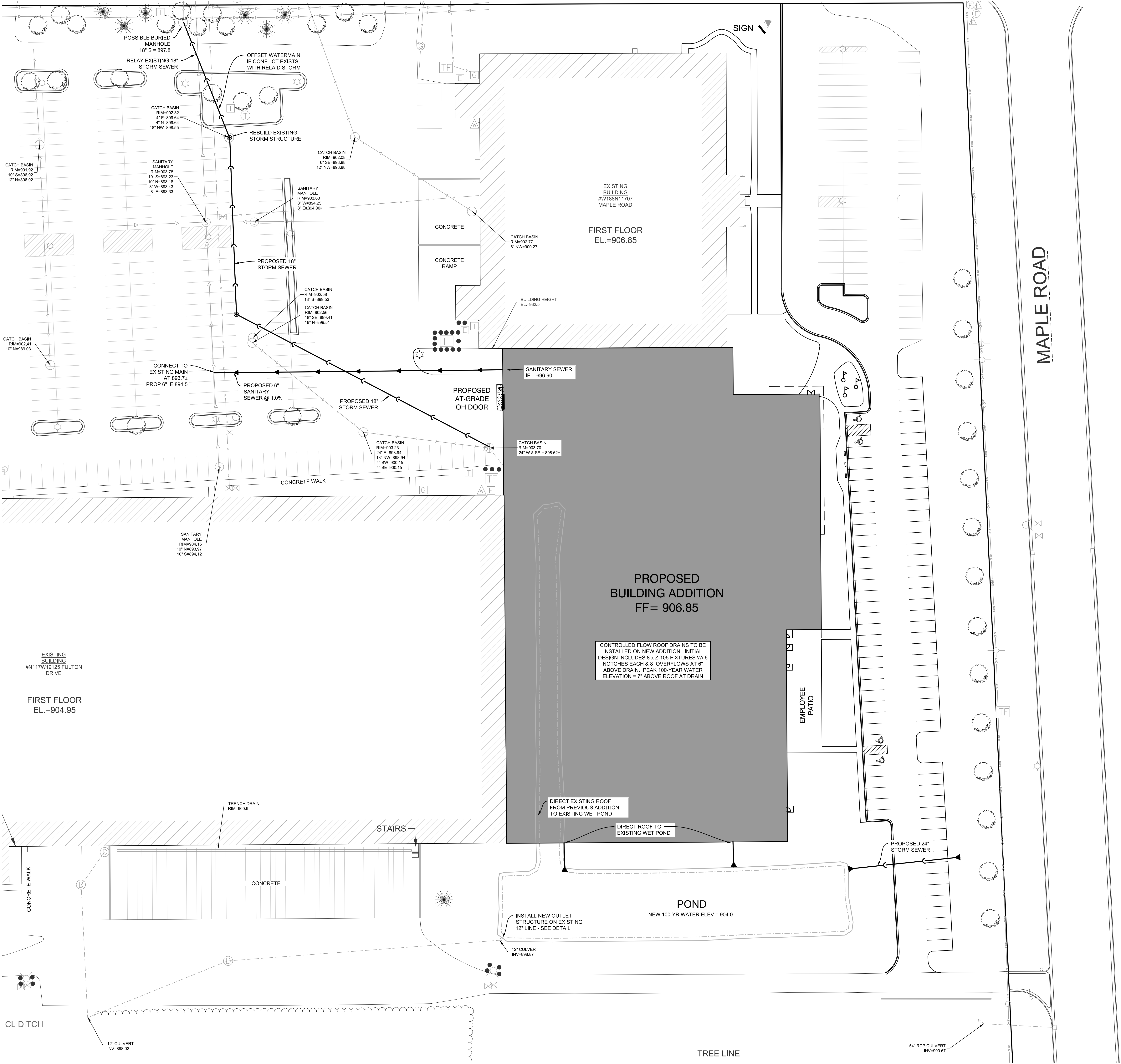
P13175

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ALL WORK TO BE COMPLETED AS SHOWN, AND IN ACCORDANCE WITH THE LATEST EDITION OF THE MSI GENERAL MASTER SPECIFICATION

Architect: AMH/BGK
Engineer: AEK
Reviewed By: AEK
Sheet Title:
UTILITY PLAN

Sheet Number:
C-103
Project Number:
P13175



GRAPHICAL SCALE (FEET)

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CONTRACTORS

ARCHITECTS

THE PROPOSED IMPROVEMENTS SHALL BE CONSTRUCTED ACCORDING TO THE WISCONSIN D.O.T. STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, THE STANDARD SPECIFICATIONS FOR SEWER & WATER IN WISCONSIN, AND WISCONSIN ADMINISTRATIVE CODE, SPRS 360, 363-365, AND THE LOCAL ORDINANCES AND SPECIFICATIONS.

THE CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED FOR EXECUTION OF THE WORK. THE CONTRACTOR SHALL CONDUCT HIS WORK ACCORDING TO THE REQUIREMENTS OF THE PERMITS AND THE STANDARD SPECIFICATIONS.

THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE MUNICIPALITY FORTY- EIGHT (48) HOURS PRIOR TO THE START OF CONSTRUCTION.

THE MUNICIPALITY SHALL HAVE THE RIGHT TO INSPECT, APPROVE AND REJECT THE CONSTRUCTION OF THE PUBLIC PORTIONS OF THE WORK. THE OWNER SHALL HAVE THE RIGHT TO INSPECT, APPROVE, AND REJECT THE CONSTRUCTION OF ALL PRIVATE PORTIONS OF THE WORK.

THE CONTRACTOR SHALL INDEMNIFY THE OWNER, THE ENGINEER, AND THE MUNICIPALITY, THEIR AGENTS, ETC. FROM ALL LIABILITY INVOLVED WITH THE CONSTRUCTION, INSTALLATION, AND TESTING OF THE WORK ON THIS PROJECT.

SITE SAFETY SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL UTILITY INFORMATION, SHOWING ON THE PLANS PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL CALL 800-485-6151 TO NOTIFY THE UTILITY LOCATOR OF ANY CHANGES TO THE PLANS, AND TO REQUEST FIELD STAKING OF EXISTING UTILITIES.

SILT FENCE AND OTHER EROSION CONTROL FACILITIES MUST BE INSTALLED PRIOR TO CONSTRUCTION OR ANY OTHER LAND DISTURBING ACTIVITY. FOLLOW THE SEQUENCE OF CONSTRUCTION TO PREVENT EROSION. EROSION CONTROL FACILITIES MUST BE MAINTAINED THROUGHOUT THE CONSTRUCTION. REPAIRS TO EROSION CONTROL FACILITIES MUST BE MADE IMMEDIATELY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL EROSION CONTROL FACILITIES ONCE THE THREAT OF EROSION HAS PASSED WITH THE APPROVAL OF THE GOVERNING AGENCY.

TRASH AND DEBRIS OR ROAD RIGHT-OF-WAYS WHICH ARE DAMAGED DURING CONSTRUCTION MUST BE RESTORED BY THE CONTRACTOR.

TRASH AND DEBRIS SHALL NOT BE ALLOWED TO ACCUMULATE ON THIS SITE AND THE SITE SHALL BE CLEAN UPON COMPLETION OF WORK.

THE OWNER SHALL HAVE THE RIGHT TO HAVE ALL MATERIALS USED IN CONSTRUCTION TESTED FOR COMPLIANCE WITH THESE SPECIFICATIONS.

[illegible]

BEFORE PROCEEDING WITH ANY UTILITY CONSTRUCTION, THE CONTRACTOR SHALL EXAMINE EACH EXISTING LOCAL OR PORT OF CONNECTION AND VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES IF ANY EXISTING UTILITIES ARE NOT AS SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY FOR POSSIBLE REVISION.

ALL CONNECTIONS TO EXISTING PIPES AND MANHOLES SHALL BE COURED CONNECTIONS, CONNECTIONS TO WATERMAIN SHALL BE WET TAPPED WITH A STEELLESS STEP TAPPING MACHINE.

PROPOSED SANITARY SEWER AND INTERNALLY CONNECTED STORM SEWER SHOWN ON THIS PLAN SHALL TERMINATE AT A FIVE (5) FEET FROM THE EXTERIOR BUILDING WALL. THE EXACT LOCATION OF ALL DOWN SPOTS CONNECTIONS SHALL BE PER THE ARCHITECTURAL PLANS.

CONTRACTOR SHALL NOT SHUT OFF WATER OR PLUS SANITARY SEWER IN MUNICIPAL LINES WITHOUT PRIOR APPROVAL.

MATERIALS FOR SANITARY SEWER SHALL BE AS FOLLOWS: WATER SERVICES SHALL BE PVC, HDPE OR POLYETHYLENE HOPE; CORRUGATED PIPE WITH AN INTEGRALLY FORMED SMOOTH WATERWAY SUCH AS ADS C-12, FOR PIPE 10" OR LESS IN DIAMETER, PVC, ASTM D 3034, SDR-26 MAY ALSO BE USED, WHERE SPECIFICALLY REQUIRED. REINFORCED CONCRETE PIPE (RCP), ASTM C59, CLASS II OR HIGHER MAY BE USED. TRENCH SECTION SHALL BE CLASS "B" FOR PVC AND HDPE AND CLASS "C" FOR CONCRETE (PER STANDARD SPECIFICATIONS). MINIMUM COVER SHALL BE 18" FOR ALL MATERIALS. VALVES SHALL BE NONRRISING STEM, RESILIENT SEATED GATE VALVES COMPLYING WITH AWWA C600 WITH A THREE PRICE CAST IRON DISK. ALL VALVE BOXES SHALL BE 18" DIA. RISE TO TOP OF BOX SHALL BE 18" MINIMUM.

AREA DRAINS SHALL BE PER DETAIL ON PLAN OR EQUIVALENT AND SHALL BE A MINIMUM OF 2" IN DIAMETER. CONNECTIONS TO EXISTING PIPES SHALL BE MADE WITH INSERTS AND WYE ADAPTERS.

WHERE STORM SEWER ENTERS POND OR FLOOD DISCHARGES, THE LAST THREE PIPE SECTIONS OR 30' MINIMUM SHALL BE ROO RESTRAINED TO THE END SECTION.

TRENCHES FOR SANITARY SEWER SHALL BE AS FOLLOWS: SANITARY SEWER SHALL BE PVC, ASTM D 3034, SDR-35 WITH RUBBER GASKETED JOINTS, CONFORMING TO ASTM D 3212. TRENCH SECTION SHALL BE CLASS "B" BEDDING (PER STANDARD SPECIFICATIONS), CRUSHED STONE CHIPS SHALL BE USED FOR BEDDING MATERIAL. CONNECTIONS SHALL BE MADE BY MEANS OF WELD.

WATER SERVICES FOR WATER SERVICES AND PRIVATE HYDRANTS SHALL BE AS FOLLOWS: WATER SERVICES SHALL BE PVC, HDPE, OR ADS OALOWED BY MUNICIPAL CODE. PVC SHALL BE MATERIAL C-600, DIAMETER SHALL BE CLASS C2 (OR AS REQUIRED BY LOCAL CODE). TRENCH SECTION SHALL BE CLASS "B" BEDDING (PER STANDARD SPECIFICATIONS), CRUSHED STONE CHIPS SHALL BE USED FOR BEDDING MATERIAL. CONNECTIONS SHALL BE MADE BY MEANS OF WELD.

MINIMUM COVER IS REQUIRED FOR ALL WATERMAIN. VALVES SHALL BE NONRRISING STEM, RESILIENT SEATED GATE VALVES COMPLYING WITH AWWA C600 WITH A THREE PRICE CAST IRON DISK. ALL VALVE BOXES SHALL BE 18" DIA. RISE TO TOP OF BOX SHALL BE 18" MINIMUM.

EXTREME CAUTION MUST BE FOLLOWED REGARDING THE COMPACTIOAN OF ALL UTILITY TRENCHES. MECHANICALLY COMPACTED GRANULAR BACKFILL IS REQUIRED UNDER & WITHIN 5 FEET OF ALL PAVEMENT INCLUDING SIDEWAYS. FLOODING OF BACKFILL MATERIAL IS NOT ALLOWED.

TRACER WIRE NO. 1 SINGLE STRAND COPPERI AND WARNING TAPE SHALL BE INSTALLED ON ALL UTILITIES IN ACCORDANCE WITH THE LOCAL AND STATE CODES. TRACER WIRE SHALL TERMINATE IN A VALVE/TURN TERMINAL BOX AT EACH END OF THE LINE.

MANDREL TESTING ON SANITARY LINES AND PRESSURE TESTING ON WATERMAIN MAY BE REQUIRED BY THE OWNER OR MUNICIPALITY.

UPON COMPLETION OF FINAL PAVING OPERATIONS, THE UTILITY CONTRACTOR SHALL ADJUST ALL MANHOLE AND INLET RISERS AND VALVE BOXES TO FINISHED GRADE.

AGGREGATES USED IN THE CRUSHED STONE BASE SHALL CONFORM TO THE GRADATION REQUIREMENTS SECTIONS 302.2 AND 306.2 OF THE STANDARD SPECIFICATIONS. THICKNESS SHALL BE PER THE DETAIL ON THE PLANS. BASE SHALL BE 1-1/8" DIAMETER LIMESTONE TRAFFIC BOND COATED AGGREGATE BASE COURSE UNLESS NOTED OTHERWISE.

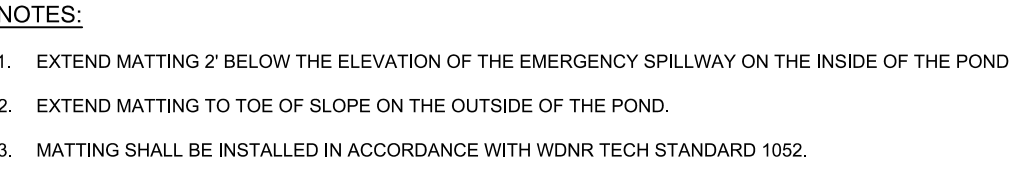
CONCRETE CURBS SHALL BE CAST IN PLACE WITH A MINIMUM 12" THICKNESS. CURB SHALL BE FINISHED PER THE DETAIL ON THE PLANS.

SUBGRADE SHALL BE PROFILESOLLED AND APPROVED BY A GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF STONE BASE. EXCAVATE UNSUITABLE AREAS AND REPLACE WITH BREAKER RUN STONE AND RECOMPACT. REFER TO THE GEOTECHNICAL REPORT FOR ADDITIONAL SPECIFICATIONS.

EXISTING PAVEMENT SHALL BE SAWCUT IN NEAR STRAIGHT LINES TO FULL DEPTH AT ANY POINT WHERE EXISTING PAVEMENT IS REMOVED. COTS AND WALK SHALL BE REMOVED TO THE SUBGRADE. EXISTING PAVEMENT SHALL BE REPAVED TO MEET THE STANDARD SPECIFICATION GRADATIONS. EXISTING DRIVEWAYS SHALL BE REPAVED TO MEET THE STANDARD SPECIFICATIONS.

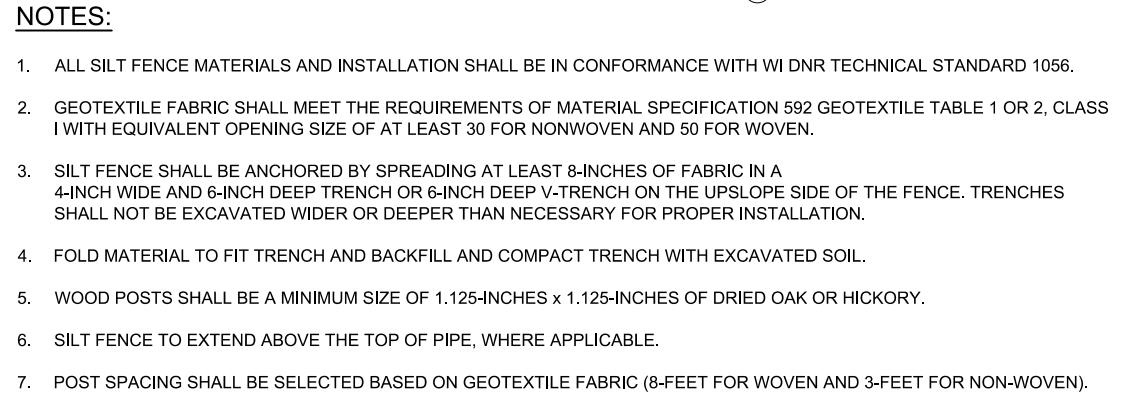
ASPHALT FOR PARKING AREAS AND THE PRIVATE ROAD SHALL BE PER THE DETAILS MATERIALS AND PLACEMENT SHALL CONFORM TO THE DOT STANDARD SPECIFICATIONS. SECTION 450 AND 460. 17-DW-9 IS REQUIRED UNLESS NOTED OTHERWISE. A COMMERCIAL GRADE MIX MAY BE SUBSTITUTED ONLY WITH APPROVAL FROM THE OWNER.

CONCRETE FOR CURB, DRIVEWAYS, WALKS AND NONFLOOR SLABS SHALL CONFORM TO SECTION 415 OF THE STANDARD SPECIFICATIONS. GRADE A ASTM C-68, 6 X 8 MIX, MAXIMUM ALLOWED FINE AGGREGATE SIZE SHALL BE 1/4". ALL CONSTRUCTION JOINTS SHALL BE SPACED NOT FURTHER THAN 10' FOR PAVEMENT, 10' FOR SIDEWALKS (OR THE WIDTH OF THE WALK), AND 15' FOR CURB. EXPANSION JOINTS SHALL BE SPACED NO MORE THAN 10' FOR DRIVEWAYS, WALKS AND NONFLOOR SLABS. CONCRETE SHALL BE FINISHED PER SECTION 415.6 WITH A MEDIUM BROOM TEXTURE. A CURING MEMBRANE IN CONFORMANCE WITH SECTION 415.3.2 IS REQUIRED.



Technical drawing of a trash rack structure. The drawing shows a cross-section of a concrete structure with a trash rack. Key dimensions and components include:

- Overall width: 601.5
- Structure width: 36" DIA CONCRETE STRUCTURE
- Trash rack width: 12" SQUARE TRASH RACK
- Trash rack opening: MAXIMUM OPENING OF 4"
- Trash rack height: 4" DIA ORIFICE
- Trash rack support: BOLTED TO FACE OF STRUCTURE WITH MAXIMUM OPENING OF 4"
- Trash rack position: HOLD GRADE DOWN 12" AT STRUCTURE
- Trash rack material: 12" THICK POURED CONG BOTTOM
- Trash rack elevation: BOTTOM ELEV. = 897.5
- Trash rack material: REMOVABLE GRATE TOP - R5 BAR 6" O.C. B.D.
- Trash rack material: EXISTING 12" OUTLET PIPE
- Trash rack material: IRV = 898.87



REGULAR STYLE

PAVING SURFACE (TYP)
SEE PLANS

CONCRETE CURB

REVERSE STYLE

PAVING SURFACE (TYP)
SEE PLANS

CONCRETE CURB

PIPE DIAMETER INCHES	LENGTH FEET	T INCHES	A INCHES	B INCHES	W INCHES	WEIGHT PER SECTION LBS
12	8'-0"	2	4	26	24	530
15	8'-0"	2 1/4	6	27	30	740
18	6'-0"	2 1/2	9	27	36	990
21	6'-0"	2 3/4	9	36	42	1280
24	6'-0"	3	9 1/2	43 1/2	48	1520
27	6'-0"	3 1/4	10 1/2	49 1/2	54	1930
30	6'-0"	3 1/2	12	50	60	2190
33	6'-0"	3 3/4	13 1/2	58 1/2	66	3850
36	8'-2"	4	15	63	72	4100
42	8'-2"	4 1/2	21	73	78	5380
48	8'-2"	5	24	73	84	6560
54	8'-2 1/2"	5 1/2	27	65	90	8240
60	8'-3"	6	35	80	96	8730

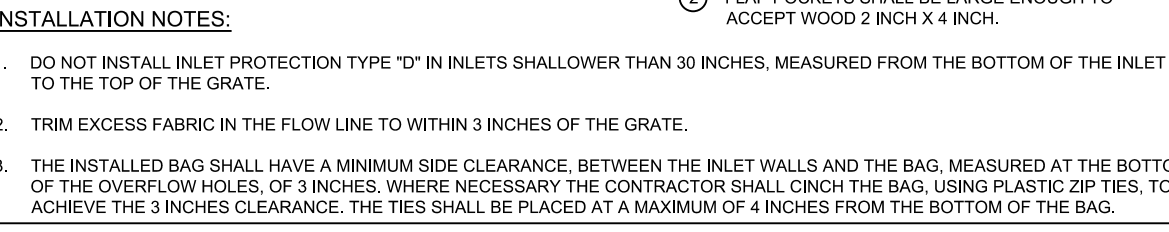
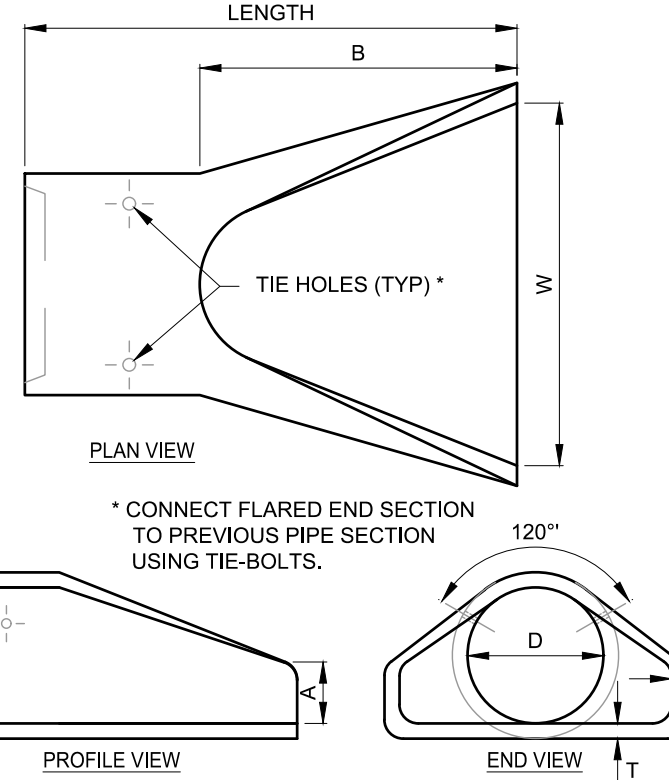


Diagram illustrating the cross-section of a manhole structure, showing the following components and dimensions:

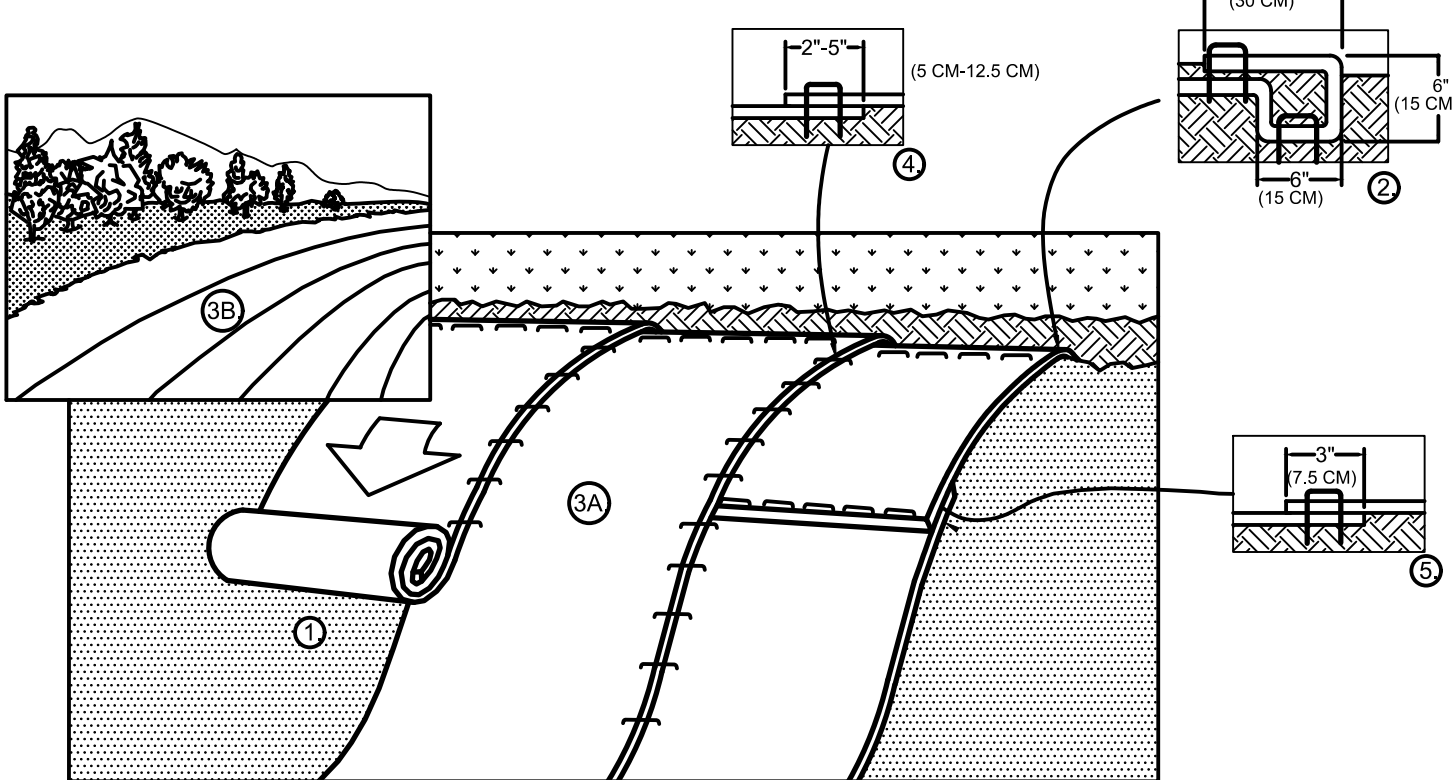
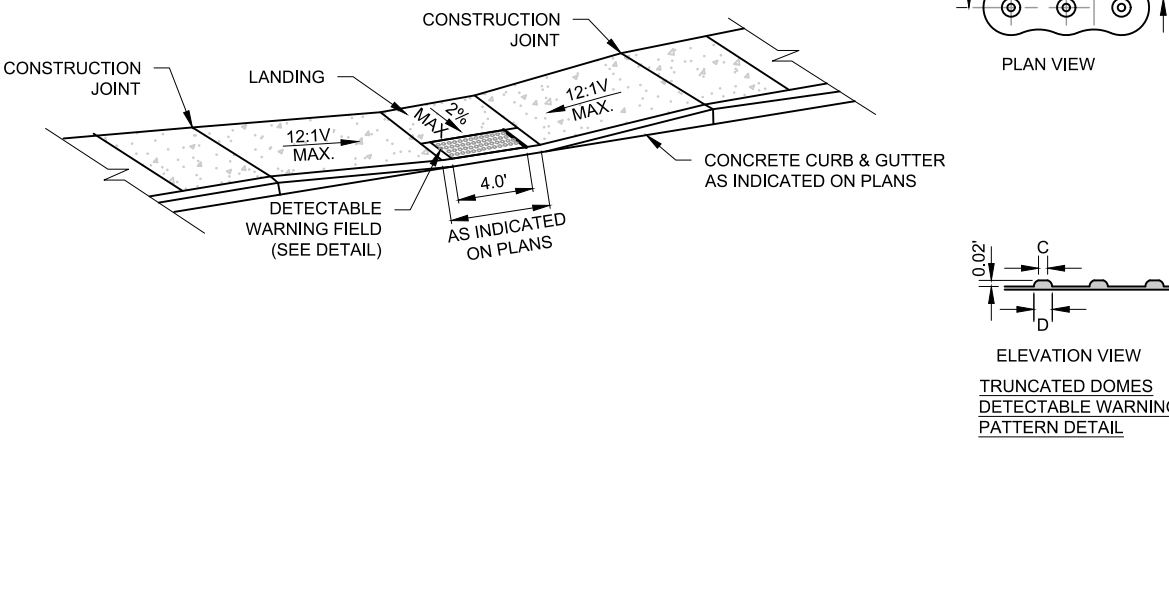
- NEENAH FOUNDRY R-202, TYPE D GRATE, UNLESS OTHERWISE NOTED ON THE PLANS** (Top grate)
- CEMENT MORTAR** (Layer below grate)
- 8" PRECAST, REINFD CONG. TOP** (Top concrete ring)
- 2.0'** (Dimension for top concrete ring thickness)
- 4.0'** (Dimension for top concrete ring width)
- STEEL STEPS @ 18" O.C. WHEN STRUCTURE IS OVER 3 FEET DEEP. (ALIGN WITH OPENING)** (Internal steps)
- SEE PLAN FOR SEWER SIZE AND INVERT ELEV.** (Reference to plan for sewer details)
- MANHOLE** (Label for the structure)
- SEWER** (Label for the pipe at the bottom)

	MIN.	MAX.
A	1.0"	2.4"
B	0.65"	1.5"
C	0	0.9"
D	0.9"	1.4"

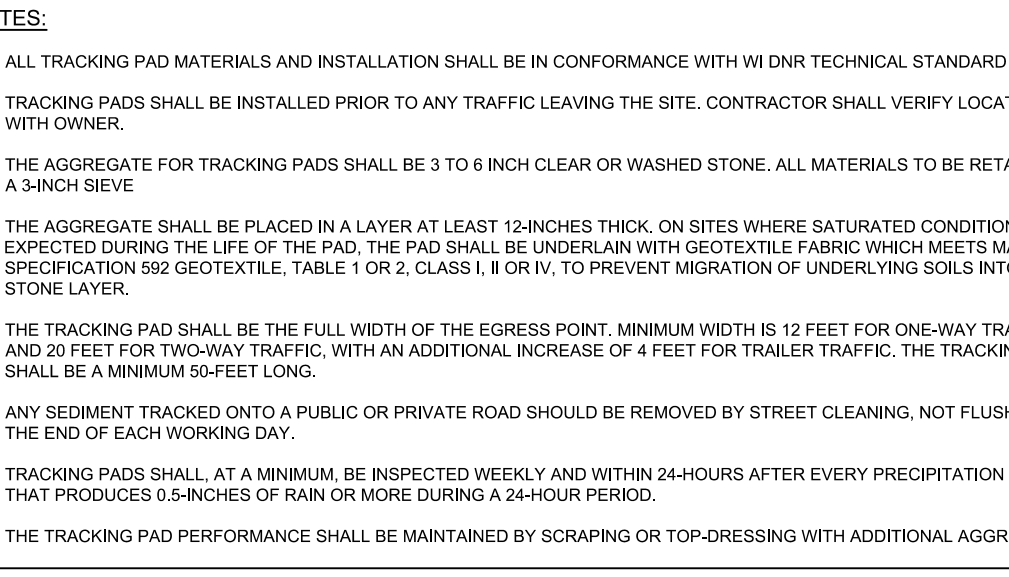
* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION

PLAN VIEW
 DETECTABLE WELDING FIELD
 (TYPICAL)*

DETAIL VIEW: RAMP
 Dimensions: A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, AA, AB, AC, AD, AE, AF, AG, AH, AI, AJ, AK, AL, AM, AN, AO, AP, AQ, AR, AS, AT, AU, AV, AW, AX, AY, AZ, BA, BB, BC, BD, BE, BF, BG, BH, BI, BJ, BK, BL, BM, BN, BO, BP, BQ, BR, BS, BT, BU, BV, BW, BX, BY, BZ, CA, CB, CC, CD, CE, CF, CG, CH, CI, CJ, CK, CL, CM, CN, CO, CP, CQ, CR, CS, CT, CU, CV, CW, CX, CY, CZ, DA, DB, DC, DD, DE, DF, DG, DH, DI, DJ, DK, DL, DM, DN, DO, DP, DQ, DR, DS, DT, DU, DV, DW, DX, DY, DZ, EA, EB, EC, ED, EE, EF, EG, EH, EI, EJ, EK, EL, EM, EN, EO, EP, EQ, ER, ES, ET, EU, EV, EW, EX, EY, EZ, FA, FB, FC, FD, FE, FF, FG, FH, FI, FJ, FK, FL, FM, FN, FO, FP, FQ, FR, FS, FT, FU, FV, FW, FX, FY, FZ, GA, GB, GC, GD, GE, GF, GG, GH, GI, GJ, GK, GL, GM, GN, GO, GP, GQ, GR, GS, GT, GU, GV, GW, GX, GY, GZ, HA, HB, HC, HD, HE, HF, HG, HH, HI, HJ, HK, HL, HM, HN, HO, HP, HQ, HR, HS, HT, HU, HV, HW, HX, HY, HZ, IA, IB, IC, ID, IE, IF, IG, IH, II, IJ, IK, IL, IM, IN, IO, IP, IQ, IR, IS, IT, IU, IV, IW, IX, IY, IZ, JA, JB, JC, JD, JE, JF, JG, JH, JI, JJ, JK, JL, JM, JN, JO, JP, JQ, JR, JS, JT, JU, JV, JW, JX, JY, JZ, KA, KB, KC, KD, KE, KF, KG, KH, KI, KJ, KK, KL, KM, KN, KO, KP, KQ, KR, KS, KT, KU, KV, KW, KX, KY, KZ, LA, LB, LC, LD, LE, LF, LG, LH, LI, LJ, LK, LL, LM, LN, LO, LP, LQ, LR, LS, LT, LU, LV, LW, LX, LY, LZ, MA, MB, MC, MD, ME, MF, MG, MH, MI, MJ, MK, ML, MM, MN, MO, MP, MQ, MR, MS, MT, MU, MV, MW, MX, MY, MZ, NA, NB, NC, ND, NE, NF, NG, NH, NI, NJ, NK, NL, NM, NN, NO, NP, NQ, NR, NS, NT, NU, NV, NW, NX, NY, NZ, OA, OB, OC, OD, OE, OF, OG, OH, OI, OJ, OK, OL, OM, ON, OO, OP, OQ, OR, OS, OT, OU, OV, OW, OX, OY, OZ, PA, PB, PC, PD, PE, PF, PG, PH, PI, PJ, PK, PL, PM, PN, PO, PP, PQ, PR, PS, PT, PU, PV, PW, PX, PY, PZ, QA, QB, QC, QD, QE, QF, QG, QH, QI, QJ, QK, QL, QM, QN, QO, QP, QQ, QR, QS, QT, QU, QV, QW, QX, QY, QZ, RA, RB, RC, RD, RE, RF, RG, RH, RI, RJ, RK, RL, RM, RN, RO, RP, RQ, RR, RS, RT, RU, RV, RW, RX, RY, RZ, SA, SB, SC, SD, SE, SF, SG, SH, SI, SJ, SK, SL, SM, SN, SO, SP, SQ, SR, SS, ST, SU, SV, SW, SX, SY, SZ, TA, TB, TC, TD, TE, TF, TG, TH, TI, TJ, TK, TL, TM, TN, TO, TP, TQ, TR, TS, TT, TU, TV, TW, TX, TY, TZ, UA, UB, UC, UD, UE, UF, UG, UH, UI, UJ, UK, UL, UM, UN, UO, UP, UQ, UR, US, UT, UY, UZ, VA, VB, VC, VD, VE, VF, VG, VH, VI, VJ, VK, VL, VM, VN, VO, VP, VQ, VR, VS, VT, VU, VV, VW, VX, VY, VZ, WA, WB, WC, WD, WE, WF, WG, WH, WI, WJ, WK, WL, WM, WN, WO, WP, WQ, WR, WS, WT, WU, WV, WW, WX, WY, WZ, XA, XB, XC, XD, XE, XF, XG, XH, XI, XJ, XK, XL, XM, XN, XO, XP, XQ, XR, XS, XT, XU, XV, XW, XX, XY, XZ, YA, YB, YC, YD, YE, YF, YG, YH, YI, YJ, YK, YL, YM, YN, YO, YP, YQ, YR, YS, YT, YU, YV, YW, YX, YY, YZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH, ZI, ZJ, ZK, ZL, ZM, ZN, ZO, ZP, ZQ, ZR, ZS, ZT, ZU, ZV, ZW, ZX, ZY, ZZ.



1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING 0-3-0-SEED DO NOT SEED PREPARED AREA. CELL-0-SEED MUST BE INSTALLED ON PAPER SIDE DOWN.
 2. UNROLL THE FIRST STAPLE AND THE BLANKET. STAPLE THE BLANKET TO THE SOIL SURFACE AT THE TRENCH END OF THE TRENCH AT APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH STAPLES AT THE TRENCH END AND AT THE DOWN-SLOPE PORTION OF THE TRENCH. STAPLE THE BLANKET TO THE SOIL SURFACE AT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FILL REMAINING 12" (30 CM) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) OVER THE STAPLE PATTERN USED TO STAPLE THE BLANKET TO THE SOIL SURFACE.
 3. ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SOLE. BLANKETS WILL UNROLL WITH APPROPRIATE SIZE AND WEIGHT. STAPLES/STAKES SHOULD BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED AT THE CORNERS OF EACH DOT AND AT THE MIDDLE OF EACH SIDE OF EACH DOT.
 4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" - 5" (CM - 12.5 CM) OVERLAP DEPENDING ON BLANKET TYPE.
 5. CONSECUTIVE BLANKETS SPICED DOWN THE SLOPE MUST BE PLACED END OVER END (SINGLE STAPLE) WITH AN APPROXIMATE 3" (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30 CM) APART, ACROSS ENTIRE BLANKET WIDTH.
- NOTE: IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 12" (31 CM) MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

[illegible]

IP LAYERS ARE NOT INSTALLED AT THE SAME

2.0\" ASPHALT SURFACE COURSE (LT 58-28 S)

2.0\" ASPHALT BINDER COURSE (LT 58-28 S)

8\" CRUSHED 1 1/2\" AGGREGATE BASE COURSE (COMPACTED)

COMPACTED SUBGRADE

ASPHALT MIX GRADATION	
ASPHALT THICKNESS MILL & OVERLAY	GRADATION
1.5"	0 (4.75)
1.75" TO 2.25"	5 (9.5mm)
2.5" OR MORE	4 (12.5mm)
	3 (19.0mm)

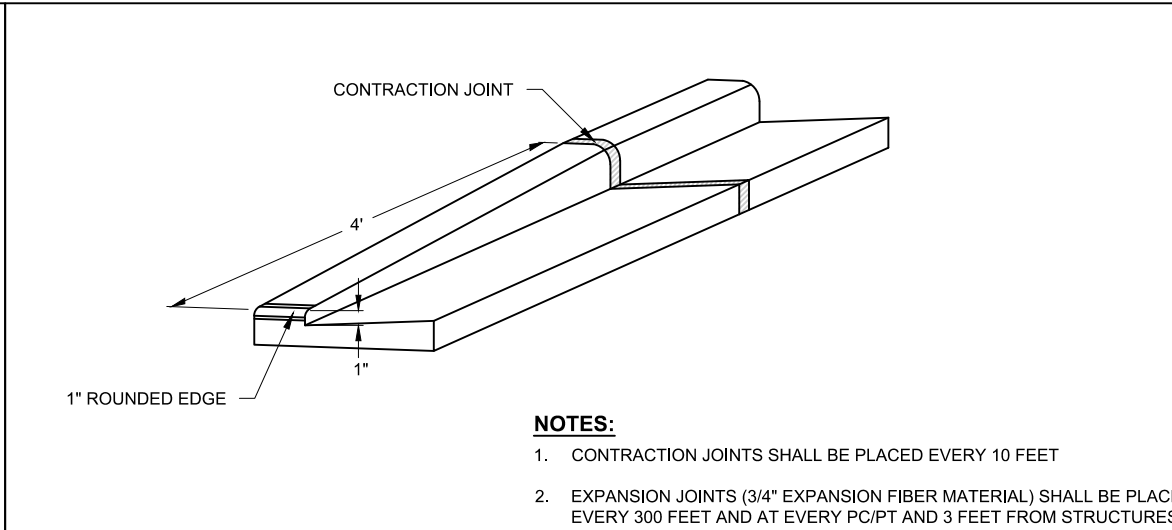
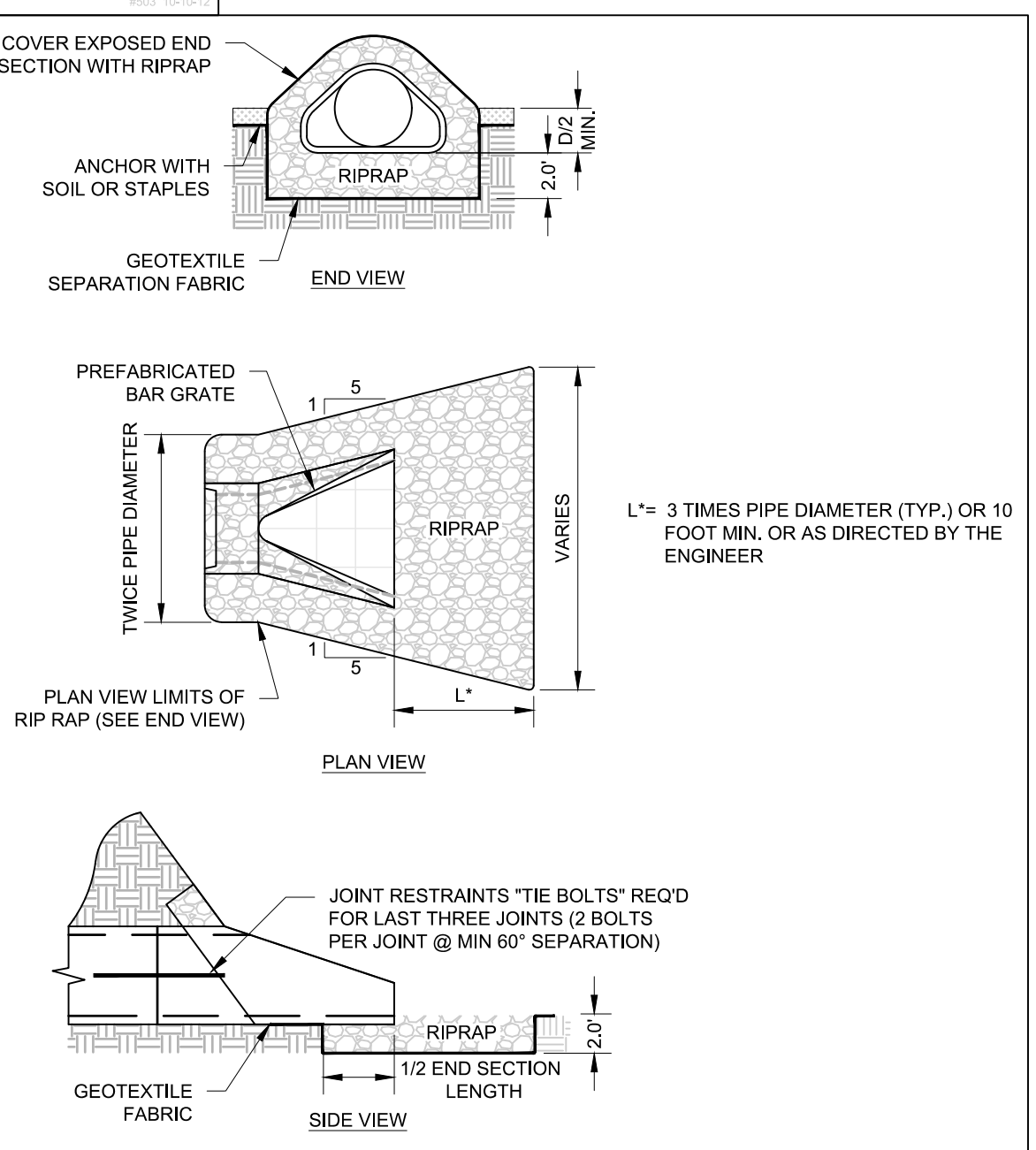
SECTION W

ANG
SOIL, CH

SEPAR

PRE

PLAN V
RIP RAP



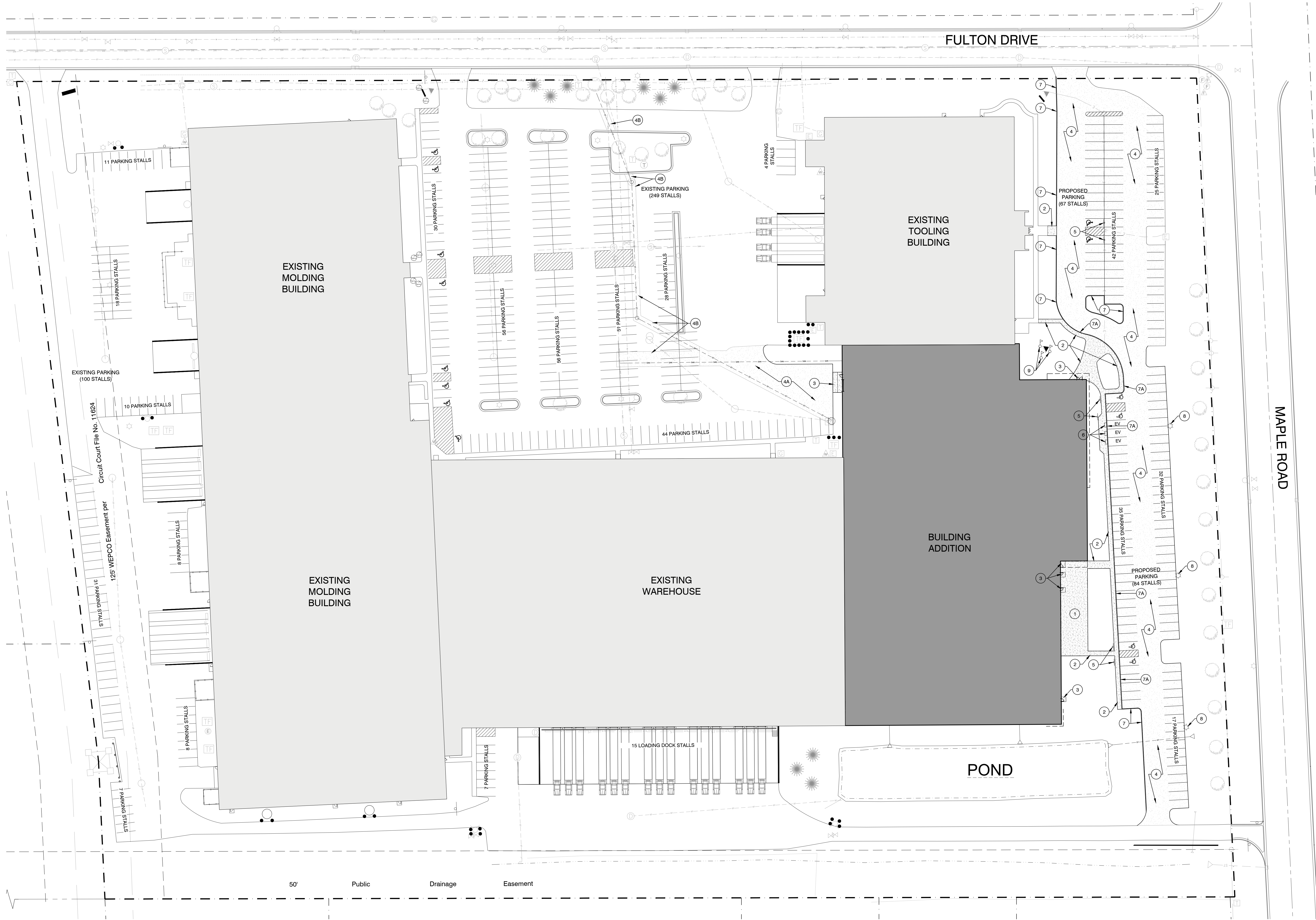
A cross-sectional diagram of a concrete sidewalk. The diagram shows a concrete sidewalk on the left, sloping downwards to the right. The concrete has a maximum thickness of 2 1/4 inches. Below the concrete is a 6-inch layer of compacted base material, which is typical earth. To the right of the concrete, there is a layer of topsoil backfill. A proposed concrete curb is shown on the right, with existing ground indicated by a dashed line. The base material extends 6 inches beyond the edge of the concrete.

Labels in the diagram include:

- 2 1/4" MAXIMUM CONCRETE SIDEWALK
- SLOPE
- TOPSOIL BACKFILL
- PROPOSED CURB
- EXISTING GROUND
- 6" COMPACTED BASE MATERIAL (EARTH (TYP.))
- EXTEND BASE MATERIAL 6" MIN BEYOND EDGE OF CONCRETE (TYP.)

CONCRETE SIDEWALK

[illegible]



PROPOSED SITE STATISTICS	
ZONING	M-1: LIMITED INDUSTRIAL
LOT SIZE	±1,046,403 SF (±24.02 ACRES)
EXISTING BUILDING FOOTPRINTS WITH PROPOSED ADDITION	288,178 SF (MOLDING BUILDING & WAREHOUSE) + 49,696 SF (TOOLING BUILDING) + 95,369 SF (BUILDING ADDITION) = 433,243 SF / 41.40%
PAVING AREA TOTAL	358,998 SF / 34.31%
HARDSCAPE TOTAL	792,241 SF / 75.71% (MAX 80%)
GREEN SPACE TOTAL	254,145 SF / 24.29% (MIN 20%)
PARKING SPACES	500 TOTAL STALLS (INCLUDING 14 ACCESSIBLE SPACES) THIS PROVIDES 1 SPACE / EMPLOYEE AT LARGEST SHIFT EVEN WITH OVERLAP OF ADDITIONAL SHIFT
EMPLOYEES	400 EMPLOYEES TOTAL: 1ST SHIFT OF 225 EMPLOYEES MAX, 2ND SHIFT OF 100 EMPLOYEES, 3RD SHIFT OF 75 EMPLOYEES

SITE PLAN NOTES

- 1

NEW CONCRETE PATIO
- 2

NEW CONCRETE SIDEWALK
- 3

NEW CONCRETE STOOP AND/OR APRON
- 4

NEW STANDARD DUTY ASPHALT PAVING
- 4A

NEW HEAVY DUTY ASPHALT PAVING
- 4B

PATCH ASPHALT PAVING
- 5

NEW ACCESSIBLE PARKING SIGNAGE
- 6

EV CHARGING STATION
- 7

NEW CONCRETE CURB
- 7A

NEW CONCRETE CURB w/ INTEGRAL SIDEWALK
- 8

NEW LIGHT POLE -MATCH EXISTING
- 9

RELOCATED FLAG POLES -PROVIDE & INSTALL ACCENT LIGHTING

ARCHITECTURAL SITE PLAN 1" = 40'-0"



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ISSUE DATES:
Owner Review: 03.02.2023
Plan Commission Submittal: 03.13.2023

REVISIONS:



PROJECT ADDRESS:

PROJECT NAME
MGS INNOVATION CENTER ADDITION
STREET ADDRESS
W188 N11707 Maple Road
CITY/ STATE / ZIP
GERMANTOWN, WI 53022

ALL WORK TO BE COMPLETED AS SHOWN, AND IN ACCORDANCE WITH THE LATEST EDITION OF THE MSI GENERAL MASTER SPECIFICATION

Architect: AMH/BGK Engineer: Pierce Reviewed By: BGK

Sheet Title:
ARCHITECTURAL
SITE PLAN

Sheet Number

AS-101

Project Number:

P13175

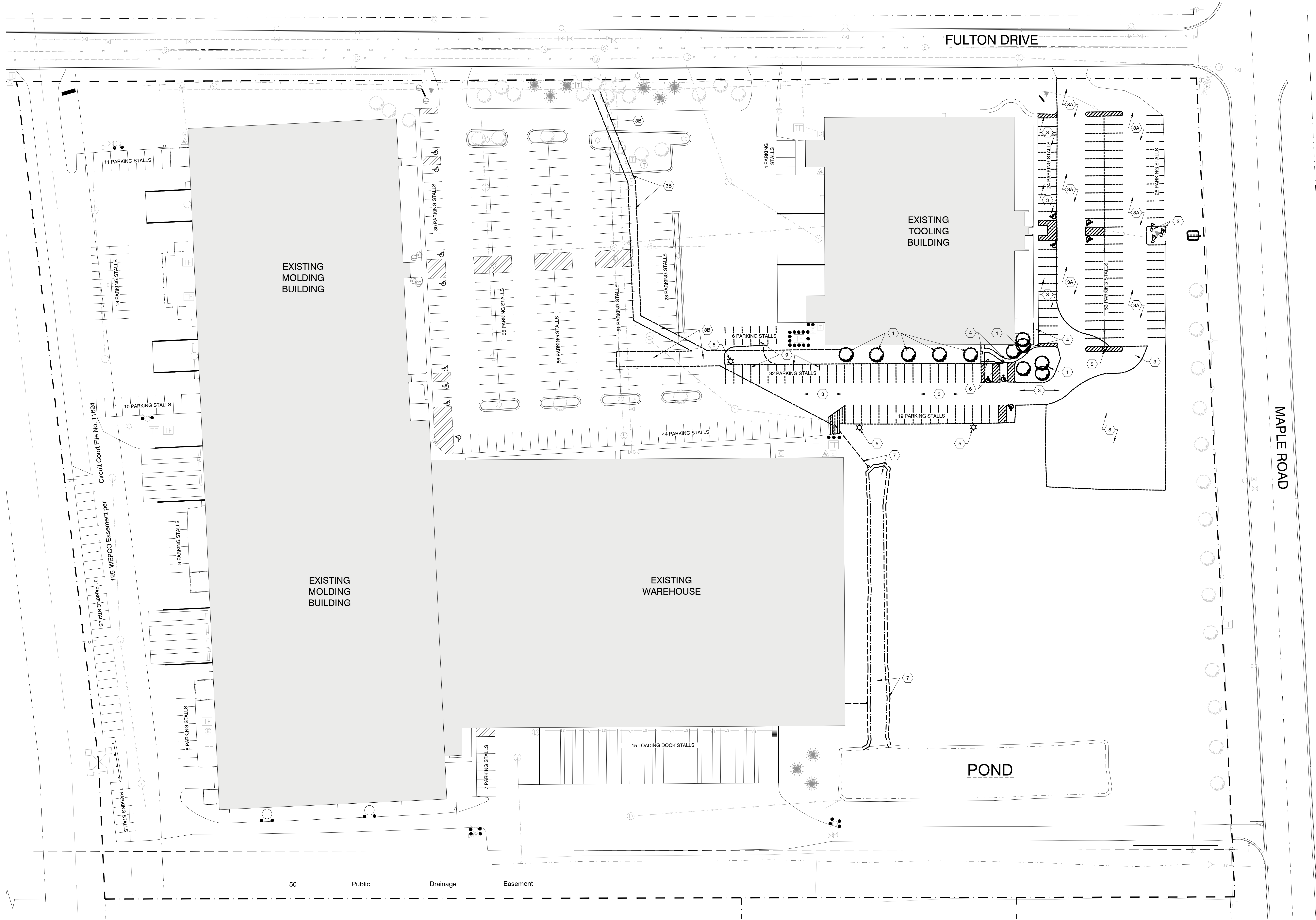
P13175

MANAGERS

ENGINEERS

CONTRACTORS

ARCHITECTS



EXISTING SITE STATISTICS	
ZONING	M-1: LIMITED INDUSTRIAL
LOT SIZE	±1,046,403 SF (±24.02 ACRES)
EXIST. BUILDING FOOTPRINT	288,178 SF (MOLDING BUILDING & WAREHOUSE) + 49,696 SF (TOOLING BLDG.) = 337,874 SF / 32.29%
EXIST. PAVING AREA TOTAL	346,060 SF / 33.07%
EXISTING HARDSCAPE TOTAL	683,934 SF / 65.36%
EXISTING GREEN SPACE	362,468 SF / 34.64%
EXISTING PARKING SPACES	508 SPACES (INCLUDING 15 ACCESSIBLE SPACES)

SITE DEMO NOTES	
1 REMOVE AND DISPOSE OF EXISTING LANDSCAPING	4 REMOVE AND DISPOSE OF EXISTING SIDEWALK
2 REMOVE AND SALVAGE EXISTING FLAG POLES	5 REMOVE AND SALVAGE EXISTING LIGHT POLE FOR POSSIBLE REUSE
3 REMOVE AND DISPOSE OF EXISTING PAVEMENT AND SUB-BASE	6 REMOVE AND DISPOSE OF EXISTING SIGNAGE
3A MILL AND DISPOSE OF EXISTING PAVEMENT AND PREP FOR NEW ASPHALT PAVEMENT -PATCH AND REPAIR SUB-BASE AS REQUIRED	7 REMOVE AND INFILL PORTION OF EXISTING STORM POND AS REQUIRED FOR NEW BUILDING ADDITION
3B REMOVE AND DISPOSE PORTION OF EXISTING PAVEMENT FOR NEW UTILITIES	8 REMOVE EXISTING GRAVEL AND ASPHALT MILLINGS
	9 EXISTING PARKING STALLS TO BE ELIMINATED -ASPHALT PAVEMENT TO REMAIN

ARCHITECTURAL DEMO SITE PLAN 1" = 40'-0"



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Architect: AMH/BGK Engineer: Pierce Reviewed By: BGK

Sheet Title:
ARCHITECTURAL
DEMO SITE PLAN

Sheet Number:

AS-100

Project Number: P13175

P13175

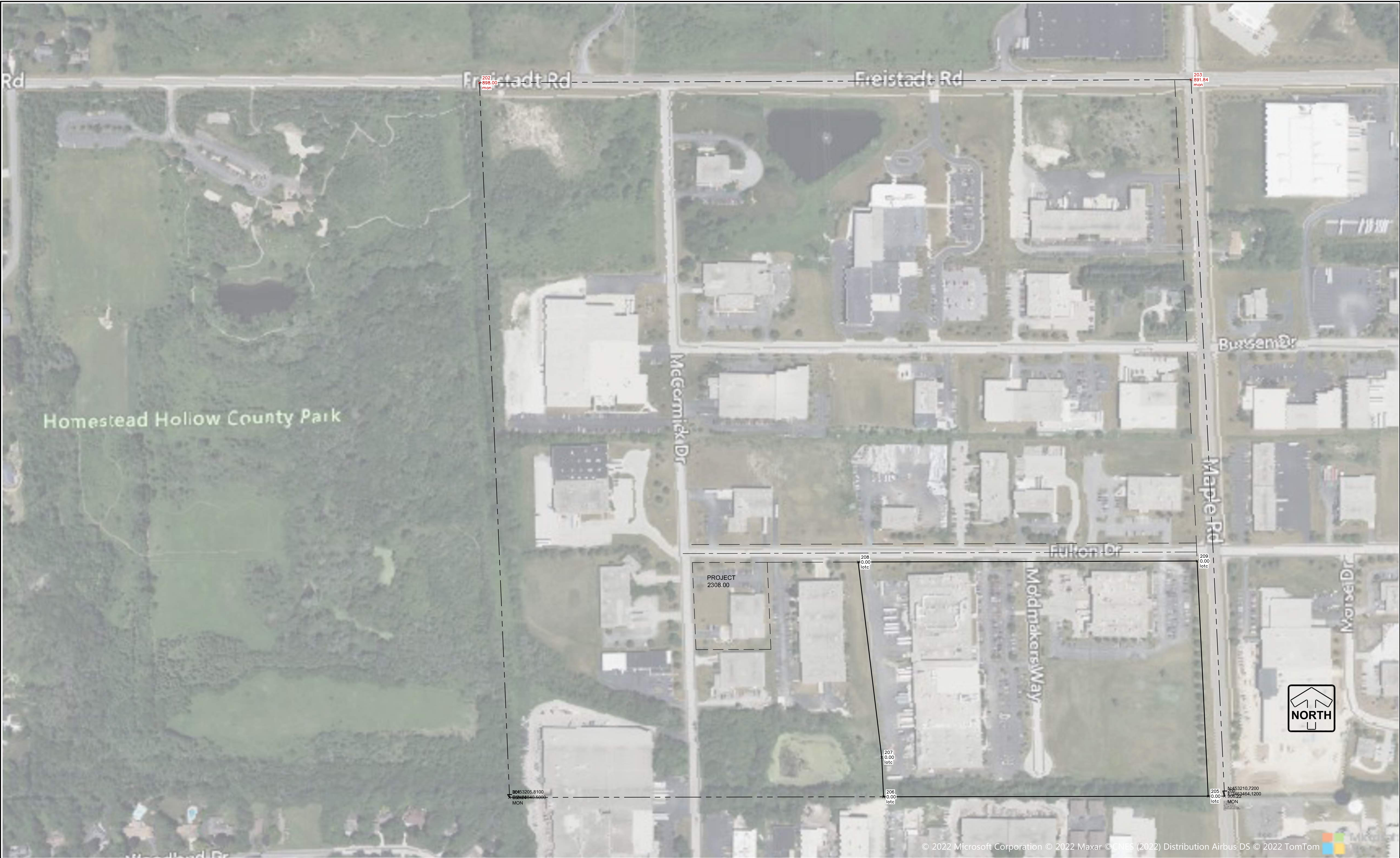
MANAGERS

ENGINEERS

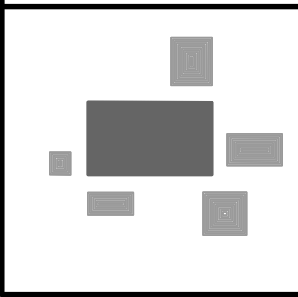
CONTRACTORS

ARCHITECTS

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MGS EXPANSION

GERMANTOWN, WI

PRELIMINARY

REVISIONS	

REG JOB No. **3048.00**

REG PM **1**

DATE **12/26/2022**

SCALE **SCALE**

SHEET **1**

1

SURVEY



RSX1 LED Area Luminaire

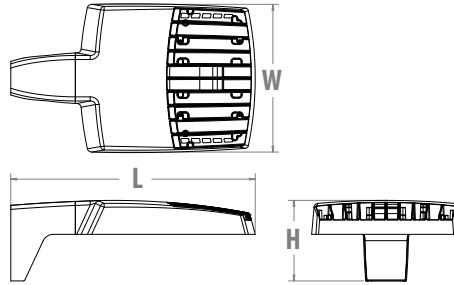


Catalog Number
Notes
Type

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

EPA (ft ² @0°):	0.57 ft ² (0.05 m ²)
Length:	21.8" (55.4 cm) (SPA mount)
Width:	13.3" (33.8 cm)
Height:	3.0" (7.6 cm) Main Body 7.2" (18.4 cm) Arm
Weight: (SPA mount):	22.0 lbs (10.0 kg)



Introduction

The new RSX LED Area family delivers maximum value by providing significant energy savings, long life and outstanding photometric performance at an affordable price. The RSX1 delivers 7,000 to 17,000 lumens allowing it to replace 70W to 400W HID luminaires.

The RSX features an integral universal mounting mechanism that allows the luminaire to be mounted on most existing drill hole patterns. This "no-drill" solution provides significant labor savings. An easy-access door on the bottom of mounting arm allows for wiring without opening the electrical compartment. A mast arm adaptor, adjustable integral slipfitter and other mounting configurations are available.

Ordering Information

EXAMPLE: RSX1 LED P4 40K R3 MVOLT SPA DDBXD

RSX1 LED					
Series	Performance Package	Color Temperature	Distribution	Voltage	Mounting
RSX1 LED	P1	30K 3000K	R2 Type 2 Wide	MVOLT (120V-277V) ²	SPA Square pole mounting (3.0" min. SQ pole for 1 at 90°, 3.5" min. SQ pole for 2, 3, 4 at 90°)
	P2	40K 4000K	R3 Type 3 Wide	HVOLT (347V-480V) ³	RPA Round pole mounting (3.2" min. dia. RND pole for 2, 3, 4 at 90°, 3.0" min. dia. RND pole for 1 at 90°, 2 at 180°, 3 at 120°)
	P3	50K 5000K	R3S Type 3 Short	XVOLT (277V-480V) ⁴	MA Mast arm adaptor (fits 2-3/8" OD horizontal tenon)
	P4		R4 Type 4 Wide	(use specific voltage for options as noted)	IS Adjustable slipfitter (fits 2-3/8" OD tenon) ⁶
			R4S Type 4 Short	120 ³ 277 ⁵	WBA Wall bracket ¹
			R5 Type 5 Wide ¹	208 ³ 347 ⁵	WBASC Wall bracket with surface conduit box
			R5S Type 5 Short ¹	240 ³ 480 ⁵	AASP Adjustable tilt arm square pole mounting ⁶
			AFR Automotive Front Row		AARP Adjustable tilt arm round pole mounting ⁶
			AFRR90 Automotive Front Row Right Rotated		AAWB Adjustable tilt arm with wall bracket ⁶
			AFRL90 Automotive Front Row Left Rotated		AAWSC Adjustable tilt arm wall bracket and surface conduit box ⁶

Options			Finish
Shipped Installed			DDBXD Dark Bronze
HS	House-side shield ⁷	Shipped Installed	DBLXD Black
PE	Photocontrol, button style ^{8,9}	*Standalone and Networked Sensors/Controls (factory default settings, see table page 9)	DNAXD Natural Aluminum
PER7	Seven-wire twist-lock receptacle only (no controls) ^{9,10,11}	NLTAIR2 PIRHN nLight AIR generation 2, with Networked, Bi-Level motion/ambient sensor ^{9,12,13,14}	DWHXD White
SF	Single fuse (120, 277, 347) ⁵	BAA Buy America(n) Act Compliant	DDBTXD Textured Dark Bronze
DF	Double fuse (208, 240, 480) ⁵	CCE Coastal Construction ¹⁵	DBLXD Textured Black
SPD20KV	20KV Surge pack (10KV standard)	*Note: NLTAIR2 PIRHN with nLight Air can be used as a standalone or networked solution. Sensor coverage pattern is affected when luminaire is tilted.	DNATXD Textured Natural Aluminum
FAO	Field adjustable output ⁹	Shipped Separately (requires some field assembly)	DWHGXD Textured White
DMG	0-10V dimming extend out back of housing for external control (control ordered separate) ⁹	EGS External glare shield ⁷	
		EGFV External glare full visor (360° around light aperture) ⁷	
		BS Bird spikes ¹⁶	



COMMERCIAL OUTDOOR

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Lithonia RSX1 Area LED
Rev. 01/11/23
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Ordering Information

Accessories

Ordered and shipped separately.

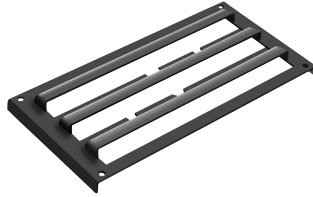
RSX1HS	RSX1 House side shield (includes 1 shield)
RSX1HSAFRR U	RSX1 House side shield for AFR rotated optics (includes 1 shield)
RSX1EGS (FINISH) U	External glare shield (specify finish)
RSX1EGFV (FINISH) U	External glare full visor (specify finish)
RSXRPA (FINISH) U	RSX Universal round pole adaptor plate (specify finish)
RSXWBA (FINISH) U	RSX WBA wall bracket (specify finish) ¹
RSXSCB (FINISH) U	RSX Surface conduit box (specify finish, for use with WBA, WBA not included)
DLL127F 1.5 JU	Photocell -SSL twist-lock (120-277V) ¹⁷
DLL347F 1.5 CUL JU	Photocell -SSL twist-lock (347V) ¹⁷
DLL480F 1.5 CUL JU	Photocell -SSL twist-lock (480V) ¹⁷
DSHORT SBK U	Shorting cap ¹⁸

NOTES

- Any Type 5 distribution, is not available with WBA.
- MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
- HVOLT driver operates on any line voltage from 347-480V (50/60 Hz).
- XVOLT driver not available with P1 or P2. XVOLT driver operates on any line voltage from 277V-480V (50/60 Hz). XVOLT not available with fusing (SF or DF) and not available with PE.
- Single fuse (SF) requires 120V, 277V or 347V. Double fuse (DF) requires 208V, 240V or 480V.
- Maximum tilt is 90° above horizontal.
- It may be ordered as an accessory.
- Requires MVOLT or 347V.
- Two or more of the following options cannot be combined including PE, DMG, PER7, FAO and NLTAIR2 PIRHN. (Exception: PE and FAO can be combined; also PE and DMG can be combined.)
- Compatible with standard twist-lock photocells for dusk to dawn operation or advanced control nodes that provide 0-10V dimming

- signals. Wire 4/Wire 5 wired to dimming leads on driver. Wire6/Wire7 capped inside luminaire. Twistlock photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories. Shorting Cap included.
- For units with option PER7, the mounting must be restricted to +/- 45° from horizontal aim per ANSI C136.10-2010.
 - Must be ordered with PIRHN.
 - Requires MVOLT or HVOLT.
 - Must be ordered with NLTAIR2. For additional information on PIRHN visit [here](#).
 - CCE option not available with WBA, WBASC, AASP, AARP, AAWB, AAWBSC, EGS, EGFV and BS.
 - Must be ordered with fixture for factory pre-drilling.
 - Requires luminaire to be specified with PER7 option. Ordered and shipped as a separate line item from Acuity Brands Controls.

External Shields



House Side Shield



External Glare Shield

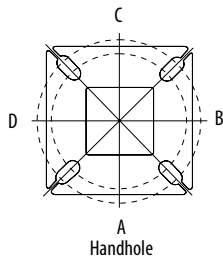


External 360 Full Visor

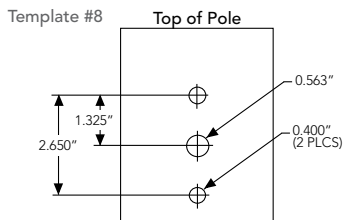
Pole/Mounting Information

Accessories including bullhorns, cross arms and other adapters are available under the accessories tab at Lithonia's Outdoor Poles and Arms product page. Click here to visit [Accessories](#).

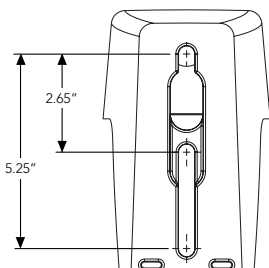
HANDHOLE ORIENTATION



RSX POLE DRILLING



RSX STANDARD ARM & ADJUSTABLE ARM



Round Tenon Mount - Pole Top Slipfitters

Tenon O.D.	RSX Mounting	Single	2 at 180°	2 at 90°	3 at 120°	3 at 90°	4 at 90°
2 - 3/8"	RPA, AARP	AS3-5 190	AS3-5 280	AS3-5 290	AS3-5 320	AS3-5 390	AS3-5 490
2 - 7/8"	RPA, AARP	AST25-190	AST25-280	AST25-290	AST25-320	AST25-390	AST25-490
4"	RPA, AARP	AST35-190	AST35-280	AST35-290	AST35-320	AST35-390	AST35-490

Drill/Side Location by Configuration Type

Drilling Template	Mounting Option	Single	2 @ 180	2 @ 90	3 @ 120	3 @ 90	4 @ 90
	Head Location	Side B	Side B & D	Side B & C	Round Pole Only	Side B, C & D	Side A, B, C & D
#8	Drill Nomenclature	DM19AS	DM28AS	DM29AS	DM32AS	DM39AS	DM49AS

RSX1 - Luminaire EPA

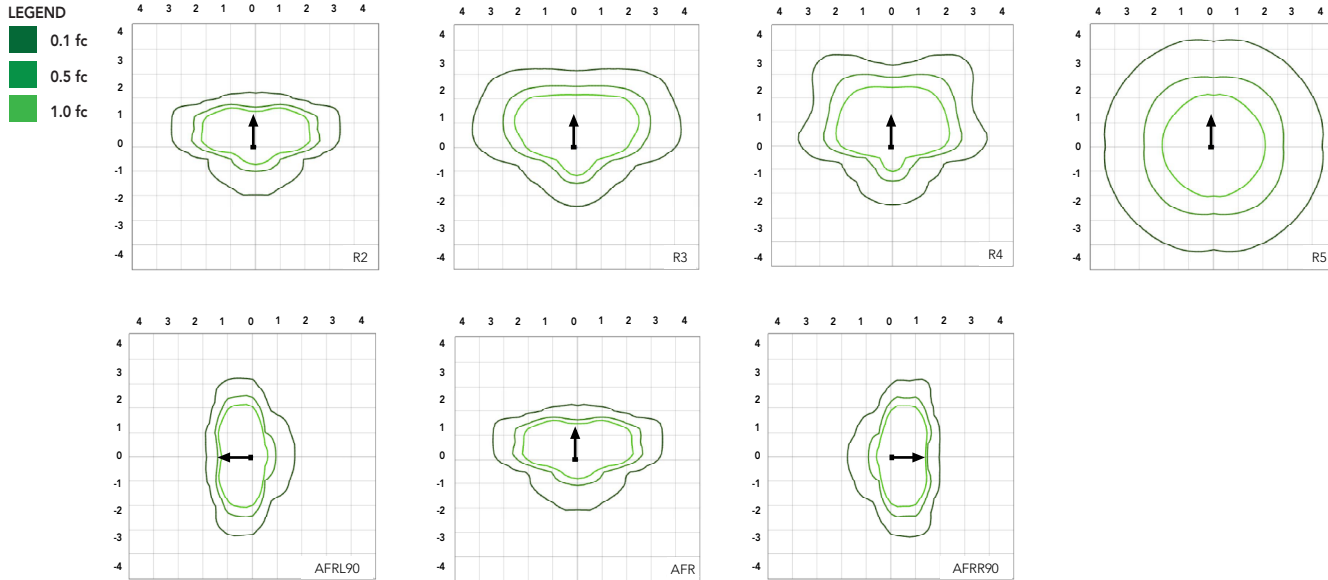
*Includes luminaire and integral mounting arm. Other tenons, arms, brackets or other accessories are not included in this EPA data.

Fixture Quantity & Mounting Configuration		Single	2 @ 90	2 @ 180	3 @ 90	3 @ 120	4 @ 90	2 Side by Side	3 Side by Side	4 Side by Side
Mounting Type	Tilt									
SPA - Square Pole Adaptor	0 °	0.57	1.03	1.05	1.52	1.36	2.03	1.31	1.7	2.26
RPA - Round Pole Adaptor		0.62	1.08	1.15	1.62	1.46	2.13	1.36	1.8	2.36
MA - Mast Arm Adaptor		0.49	0.95	0.89	1.36	1.2	1.87	1.23	1.54	2.1
IS - Integral Slipfitter AASP/AARP - Adjustable Arm Square/Round Pole	0 °	0.57	1.03	1.05	1.52	1.36	2.03	1.31	1.7	2.26
	10°	0.68	1.34	1.33	2	1.74	2.64	1.35	2.03	2.71
	20°	0.87	1.71	1.73	2.56	2.26	3.42	1.75	2.62	3.49
	30°	1.24	2.19	2.3	3.21	2.87	4.36	2.49	3.73	4.97
	40°	1.81	2.68	2.98	3.85	3.68	5.30	3.62	5.43	7.24
	45°	2.11	2.92	3.44	4.2	4.08	5.77	4.22	6.33	8.44
	50°	2.31	3.17	3.72	4.52	4.44	6.26	4.62	6.94	9.25
	60°	2.71	3.66	4.38	5.21	5.15	7.24	5.43	8.14	10.86
	70°	2.78	3.98	4.54	5.67	5.47	7.91	5.52	8.27	11.03
	80°	2.76	4.18	4.62	5.97	5.76	8.31	5.51	8.27	11.03
	90°	2.73	4.25	4.64	6.11	5.91	8.47	5.45	8.18	10.97

Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's [RSX Area homepage](#).

Isofootcandle plots for the RSX1 LED P4 40K. Distances are in units of mounting height (20').



Performance Data

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-50°C (32-122°F).

Ambient	Ambient	Lumen Multiplier
0°C	32°F	1.05
5°C	41°F	1.04
10°C	50°F	1.03
15°C	59°F	1.02
20°C	68°F	1.01
25°C	77°F	1.00
30°C	86°F	0.99
35°C	95°F	0.98
40°C	104°F	0.97
45°C	113°F	0.96
50°C	122°F	0.95

Electrical Load

Performance Package	System Watts (W)	Current (A)					
		120V	208V	240V	277V	347V	480V
P1	51W	0.42	0.25	0.21	0.19	0.14	0.11
P2	72W	0.60	0.35	0.30	0.26	0.21	0.15
P3	109W	0.91	0.52	0.45	0.39	0.31	0.23
P4	133W	1.11	0.64	0.55	0.48	0.38	0.27

Projected LED Lumen Maintenance

Operating Hours	50,000	75,000	100,000
Lumen Maintenance Factor	>0.97	>0.95	>0.92

Values calculated according to IESNA TM-21-11 methodology and valid up to 40°C.



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Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

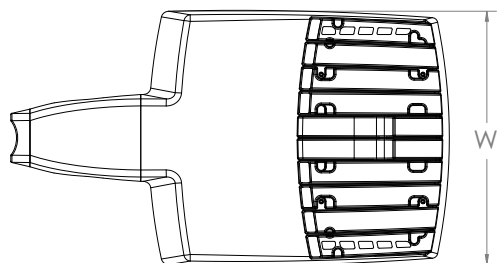
Performance Package	System Watts	Distribution Type	30K (3000K, 70 CRI)					40K (4000K, 70 CRI)					50K (5000K, 70 CRI)				
			Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
P1	51W	R2	6,482	1	0	1	126	7,121	1	0	1	139	7,121	1	0	1	139
		R3	6,459	1	0	2	127	7,096	1	0	2	139	7,096	1	0	2	139
		R3S	6,631	1	0	1	129	7,286	1	0	2	142	7,286	1	0	2	142
		R4	6,543	1	0	2	128	7,189	1	0	2	141	7,189	1	0	2	141
		R4S	6,313	1	0	1	124	6,936	1	0	1	136	6,936	1	0	1	136
		R5	6,631	3	0	2	130	7,286	3	0	2	143	7,286	3	0	2	143
		R5S	6,807	3	0	1	133	7,479	3	0	1	147	7,479	3	0	1	147
		AFR	6,473	1	0	1	127	7,112	1	0	1	139	7,112	1	0	1	139
		AFRR90	6,535	2	0	2	127	7,179	2	0	2	140	7,179	2	0	2	140
		AFRL90	6,562	2	0	1	128	7,210	2	0	2	140	7,210	2	0	2	140
P2	72W	R2	8,991	2	0	1	123	9,878	2	0	1	135	9,878	2	0	1	135
		R3	8,959	2	0	2	124	9,843	2	0	2	137	9,843	2	0	2	137
		R3S	9,198	2	0	2	126	10,106	2	0	2	139	10,106	2	0	2	139
		R4	9,077	2	0	2	126	9,972	2	0	2	139	9,972	2	0	2	139
		R4S	8,757	1	0	2	122	9,622	2	0	2	134	9,622	2	0	2	134
		R5	9,198	4	0	2	128	10,106	4	0	2	140	10,106	4	0	2	140
		R5S	9,443	3	0	1	131	10,374	3	0	1	144	10,374	3	0	1	144
		AFR	8,979	2	0	1	125	9,865	2	0	1	137	9,865	2	0	1	137
		AFRR90	9,064	3	0	2	124	9,959	3	0	2	137	9,959	3	0	2	137
		AFRL90	9,102	3	0	2	125	10,001	3	0	2	137	10,001	3	0	2	137
P3	109W	R2	12,808	2	0	1	117	14,072	2	0	2	129	14,072	2	0	2	129
		R3	12,763	2	0	2	117	14,023	2	0	2	129	14,023	2	0	2	129
		R3S	13,104	2	0	2	120	14,397	2	0	2	132	14,397	2	0	2	132
		R4	12,930	2	0	2	119	14,206	2	0	2	130	14,206	2	0	2	130
		R4S	12,475	2	0	2	114	13,707	2	0	2	126	13,707	2	0	2	126
		R5	13,104	4	0	2	120	14,397	4	0	2	132	14,397	4	0	2	132
		R5S	13,452	3	0	2	123	14,779	3	0	2	136	14,779	3	0	2	136
		AFR	12,791	2	0	1	117	14,053	2	0	2	129	14,053	2	0	2	129
		AFRR90	12,913	3	0	3	118	14,187	3	0	3	130	14,187	3	0	3	130
		AFRL90	12,967	3	0	2	118	14,247	3	0	3	130	14,247	3	0	3	130
P4	133W	R2	14,943	2	0	2	112	16,417	2	0	2	123	16,417	2	0	2	123
		R3	14,890	2	0	3	112	16,360	2	0	3	123	16,360	2	0	3	123
		R3S	15,287	2	0	2	115	16,796	2	0	2	126	16,796	2	0	2	126
		R4	15,085	2	0	3	113	16,574	2	0	3	125	16,574	2	0	3	125
		R4S	14,554	2	0	2	109	15,991	2	0	2	120	15,991	2	0	2	120
		R5	15,287	4	0	2	115	16,796	4	0	2	126	16,796	4	0	2	126
		R5S	15,693	4	0	2	118	17,242	4	0	2	130	17,242	4	0	2	130
		AFR	14,923	2	0	2	112	16,395	2	0	2	123	16,395	2	0	2	123
		AFRR90	15,065	3	0	3	113	16,551	3	0	3	124	16,551	3	0	3	124
		AFRL90	15,128	3	0	3	114	16,621	3	0	3	125	16,621	3	0	3	125

Dimensions & Weights

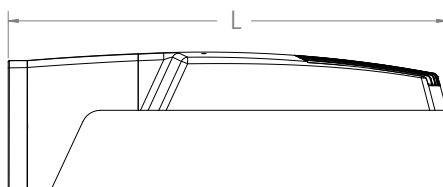
Luminaire Weight by Mounting Type

Mounting Configuration	Total Luminaire Weight
SPA	22 lbs
RPA	24 lbs
MA	22 lbs
WBA	25 lbs
WBASC	28 lbs
IS	25 lbs
AASP	25 lbs
AARP	27 lbs
AAWB	28 lbs
AAWSC	31 lbs

RSX1 with Round Pole Adapter (RPA)



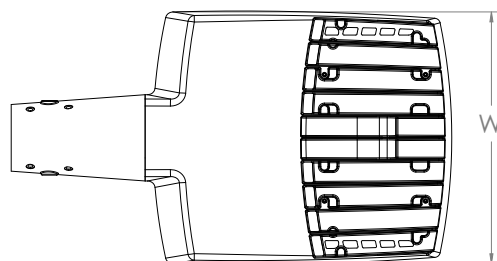
Length: 22.8" (57.9 cm)
 Width: 13.3" (33.8 cm)
 Height: 3.0" (7.6 cm) Main Body
 7.2" (18.4 cm) Arm



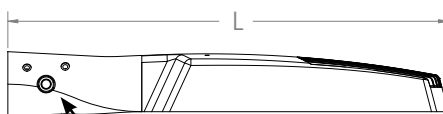
Note: RPA — Round Pole mount can also be used to mount on square poles by omitting the round pole adapter plate shown here.



RSX1 with Mast Arm Adapter (MA)

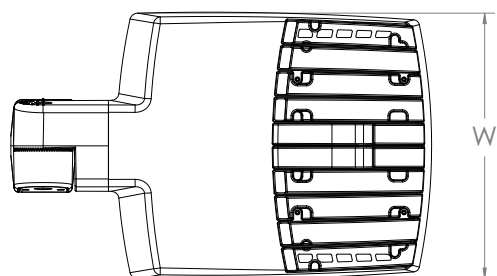


Length: 23.2" (59.1 cm)
 Width: 13.3" (33.8 cm)
 Height: 3.0" (7.6 cm) Main Body
 3.5" (8.9 cm) Arm

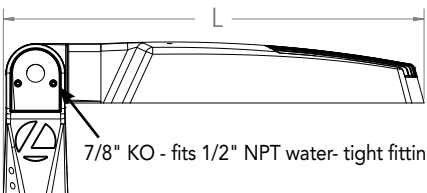


7/16" locking thru bolt/nut provided

RSX1 with Adjustable Slipfitter (IS)



Length: 20.7" (52.7 cm)
 Width: 13.3" (33.8 cm)
 Height: 3.0" (7.6 cm) Main Body
 7.6" (19.3 cm) Arm



7/8" KO - fits 1/2" NPT water-tight fitting



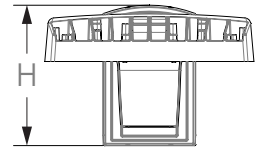
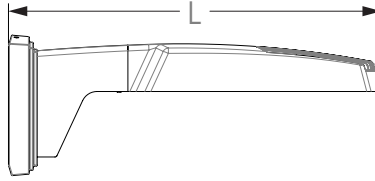
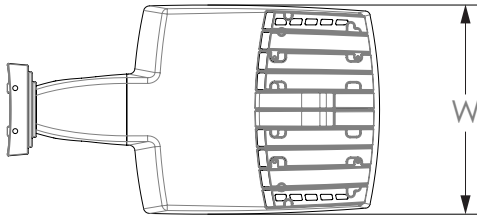
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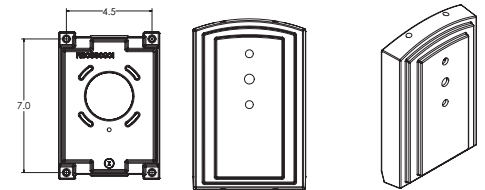
Dimensions

RSX1 with Wall Bracket (WBA)

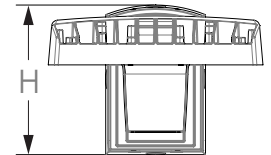
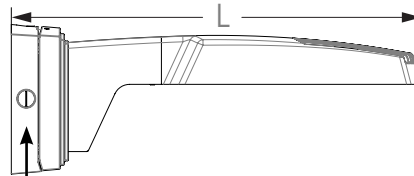
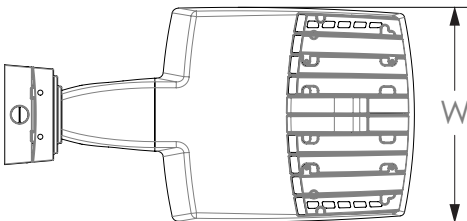


Length: 23.6" (59.9 cm)
 Width: 13.3" (33.8 cm)
 Height: 3.0" (7.6 cm) Main Body
 8.9" (22.6 cm) Arm

Wall Bracket (WBA) Mounting Detail



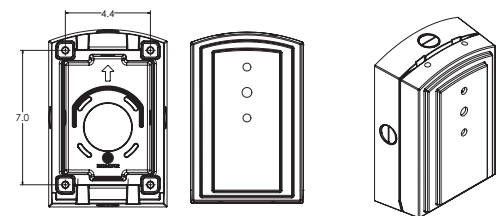
RSX1 with Wall Bracket with Surface Conduit Box (WBASC)



3/4" NPT taps with plugs - Qty (4) provided

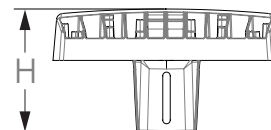
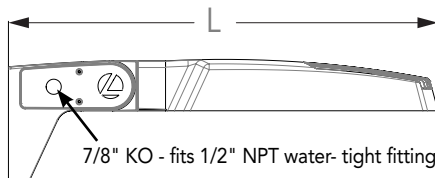
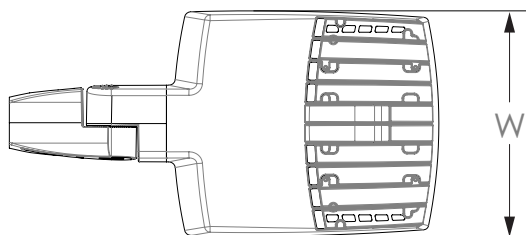
Length: 25.3" (64.3 cm)
 Width: 13.3" (33.8 cm)
 Height: 3.0" (7.6 cm) Main Body
 9.2" (23.4 cm) Arm

Surface Conduit Box (SCB) Mounting Detail

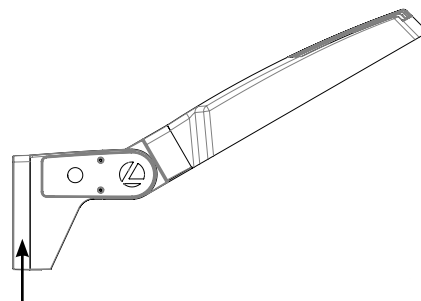


Dimensions

RSX1 with Adjustable Tilt Arm - Square or Round Pole (AASP or AARP)



Length: 25.3" (65.3 cm) **AASP**
 26.3" (66.8 cm) **AARP**
 Width: 13.3" (33.8 cm)
 Height: 3.0" (7.6 cm) Main Body
 7.2" (18.2 cm) Arm



NOTE:
 RPA - Round Pole mount can also be used to mount on square poles by omitting the round pole adapter plate shown here.

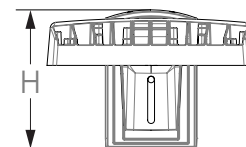
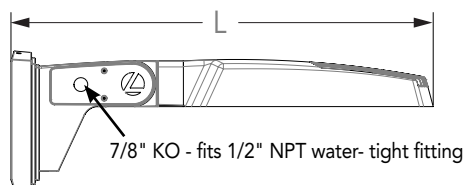
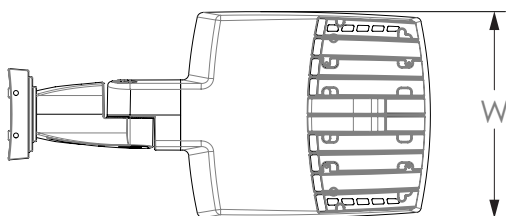


Notes

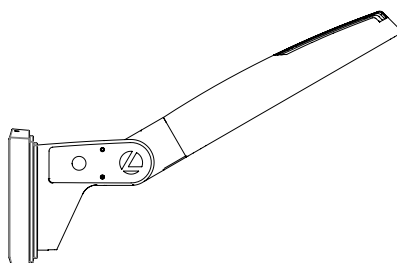
AASP: Requires 3.0" min. square pole for 1 at 90°. Requires 3.5" min. square pole for mounting 2, 3, 4 at 90°.

AARP: Requires 3.2" min. dia. round pole for 2, 3, 4 at 90°. Requires 3.0" min. dia. round pole for mounting 1 at 90°, 2 at 180°, 3 at 120°.

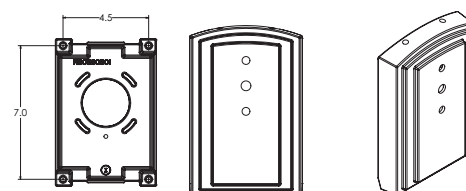
RSX1 with Adjustable Tilt Arm with Wall Bracket (AAWB)



Length: 27.1" (68.8 cm)
 Width: 13.3" (33.8 cm)
 Height: 3.0" (7.6 cm) Main Body
 8.9" (22.6 cm) Arm



Wall Bracket (WBA) Mounting Detail



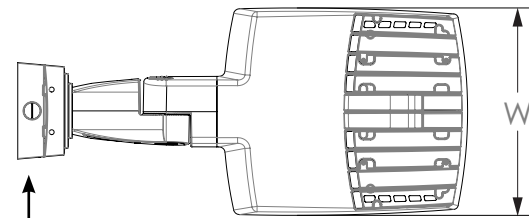
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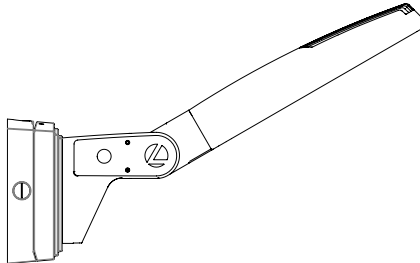
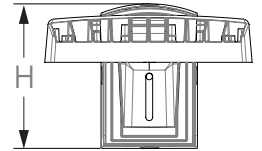
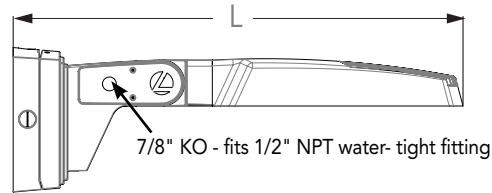
Dimensions

RSX1 with Adjustable Tilt Arm with Wall Bracket and Surface Conduit Box (AAWSC)

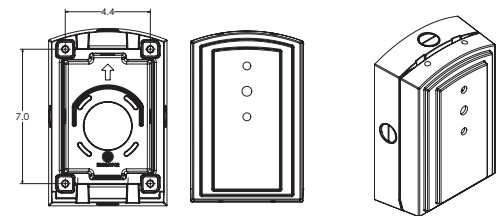


3/4" NPT taps
with plugs - Qty (4)
provided

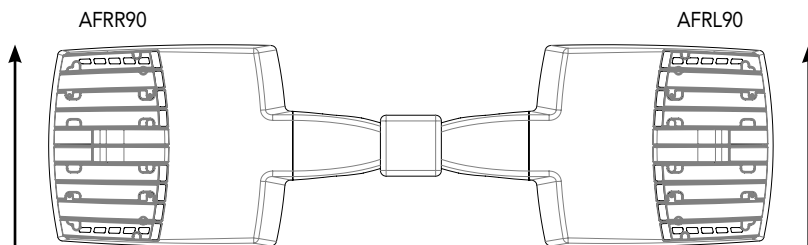
Length: 28.8" (73.2 cm)
Width: 13.3" (33.8 cm)
Height: 3.0" (7.6 cm) Main Body
9.2" (23.4 cm) Arm



Surface Conduit Box (SCB) Mounting Detail

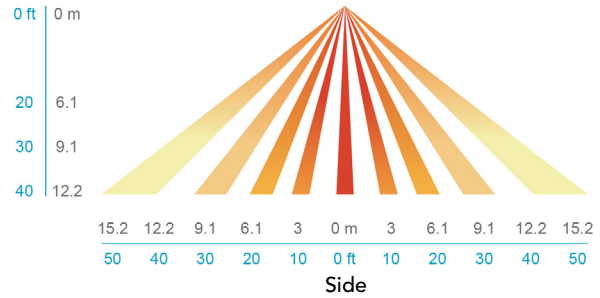
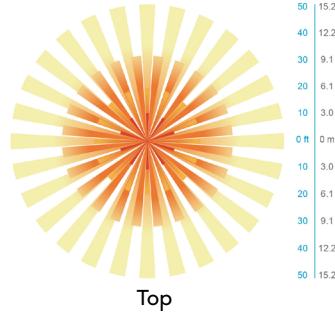
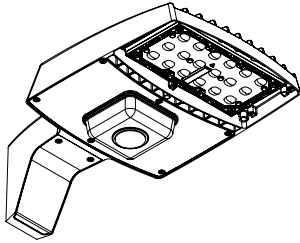


Automotive Front Row - Rotated Optics (AFRL90/R90)



(Example: 2@180 - arrows indicate direction of light exiting the luminaire)

nLight Sensor Coverage Pattern NLTAIR2 PIRHN



Motion Sensor Default Settings - Option PIRHN						
Option	Dimmed State (unoccupied)	High Level (when occupied)	Photocell Operation	Dwell Time (occupancy time delay)	Ramp-up Time (from unoccupied to occupied)	Ramp-down Time (from occupied to unoccupied)
NLTAIR2 PIRHN	Approx. 30% Output	100% Output	Enabled @ 1.5FC	7.5 minutes	3 seconds	5 minutes

*Note: NLTAIR2 PIRHN default settings including photocell set-point, high/low dim rates, and occupancy sensor time delay are all configurable using the Clairity Pro App. Sensor coverage pattern shown with luminaire at 0°. Sensor coverage pattern is affected when luminaire is tilted.

FEATURES & SPECIFICATIONS

INTENDED USE

The RSX LED area family is designed to provide a long-lasting, energy-efficient solution for the one-for-one replacement of existing metal halide or high pressure sodium lighting. The RSX1 delivers 7,000 to 17,000 lumens and is ideal for replacing 70W to 400W HID pole-mounted luminaires in parking lots and other area lighting applications.

CONSTRUCTION

The RSX LED area luminaire features a rugged die-cast aluminum main body that uses heat-dissipating fins and flow-through venting to provide optimal thermal management that both enhances LED performance and extends component life. Integral "no drill" mounting arm allows the luminaire to be mounted on existing pole drillings, greatly reducing installation labor. The light engines and housing are sealed against moisture and environmental contaminants to IP66. The low-profile design results in a low EPA, allowing pole optimization. All mountings are rated for minimum 1.5 G vibration load per ANSI C136.31. 3G Mountings: Include SPA, RPA, MA, IS, AASP, and AARP rated for 3G vibration. 1.5G Mountings: Include WBA, WBASC, AAWB and AAWSC rated for 1.5G vibration.

FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures superior adhesion as well as a minimum finish thickness of 3 mils. The result is a high-quality finish that is warranted not to crack or peel.

COASTAL CONSTRUCTION (CCE)

Optional corrosion resistant construction is engineered with added corrosion protection in materials and/or pre-treatment of base material under superdurable paint. Provides additional corrosion protection for applications near coastal areas. Finish is salt spray tested to over 5,000 hours per ASTM B117 with crevice rating of 10. Additional lead-times apply.

OPTICS

Precision acrylic refractive lenses are engineered for superior application efficiency, distributing the light to where it is needed most. Available in short and wide pattern distributions including Type 2, Type 3, Type 3S, Type 4, Type 4S, Type 5, Type 5S, AFR (Automotive Front Row), and AFR rotated ARFL90 and ARFL90.

ELECTRICAL

Light engine(s) configurations consist of high-efficacy LEDs mounted on metal-core circuit boards and aluminum heat sinks to maximize heat dissipation. Light engines are IP66 rated. LED lumen maintenance is >L92/100,000 hours. CCT's of 3000K, 4000K and 5000K (minimum 70 CRI) are available. Fixtures ship standard with 0-10v dimming driver. Class 1 electronic drivers ensure system power factor >90% and THD <20%. Easily serviceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).

STANDARD CONTROLS

The RSX LED area luminaire has a wide assortment of control options. Dusk to dawn controls include MVOLT and 347V button-type photocells and NEMA twist-lock photocell receptacles.

nLIGHT AIR CONTROLS

The RSX LED area luminaire is also available with nLight® AIR for the ultimate in wireless control. This powerful controls platform provides out-of-the-box basic motion sensing with photocell functionality and is suitable for mounting heights up to 40 feet. No commissioning is required when using factory default settings that provide basic stand-alone motion occupancy dimming that is switched on and off with a built-in photocell. See chart above for motion sensor default out-of-box settings. For more advanced wireless functionality, such as group dimming, nLight AIR can be commissioned using a smartphone and the easy-to-use CLAIRITY app. nLight AIR equipped luminaires can be grouped, resulting in motion sensor and photocell group response without the need for additional equipment. Scheduled dimming with motion sensor over-ride can be achieved when used with the nLight Eclipse. Additional information about nLight Air can be found [here](#).

INSTALLATION

Integral "no-drill" mounting arm allows for fast, easy mounting using existing pole drillings. Select the "SPA" option for square poles and the "RPA" option to mount to round poles. Note, the RPA mount can also be used for mounting to square poles by omitting the RPA adapter plate. Select the "MA" option to attach the luminaire to a 2 3/8" horizontal mast arm or the "IS" option for an adjustable slipfitter that mounts on a 2 3/8" OD tenon. The adjustable slipfitter has an integral junction box and offers easy installation. Can be tilted up to 90° above horizontal. Additional mountings are available including a wall bracket, adjustable tilt arm for direct-to-pole and wall and a surface conduit box for wall mount applications.

LISTINGS

CSA Certified to meet U.S. and Canadian standards. Suitable for wet locations. Rated for -40°C minimum ambient. DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

International Dark-Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 3000K color temperature only. U.S. Patent No. D882, 146S

BUY AMERICAN ACT

Product with the BAA option is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT regulations. Please refer to www.acuitybrands.com/buy-american for additional information.

WARRANTY

5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at:

www.acuitybrands.com/support/warranty/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.



COMMERCIAL OUTDOOR

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Lithonia RSX1 Area LED
Rev. 01/11/23
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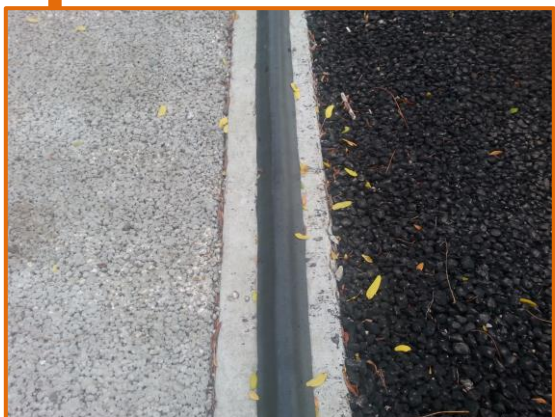
STORMWATER MANAGEMENT PLAN

MGS 2023 Expansion

Germantown, Wisconsin

PEG Project Number: 3048.00-WI

March 13, 2022



PINNACLE ENGINEERING GROUP

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Questions and comments can be directed to:

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INTRODUCTION

The proposed project consists of a new expansion to the MGS campus. The last expansion was completed in 2021. This report is intended to supersede the design from that expansion including the previous Sigma report dated October 27, 2020 as several of the stormwater components that were considered interim under that design will be revised in the design for the new addition. The Village of Germantown, MMSD, and WI DNR have jurisdiction over the stormwater on this site. PEG has prepared a plan to meet the requirements of the agencies.

DESIGN CRITERIA

Village of GermantownChapter 27

Wisconsin Department of Natural Resources:.....NR 216 & NR 151

MMSDChapter 13

Water Quantity: Reduce runoff rate per MMSD Chapter 13. In this case, the volumetric method is employed due the fringe areas that cannot be readily captured and the existing impervious areas.

Water Quality: The minimum Village and DNR requirements are to remove 40% of the total suspended solids (TSS) load on an average annual basis for redevelopment areas and 80% TSS for new development areas. In this case, some areas of the site are considered new and others are considered redevelopment. A weighted average is generated to define the TSS removal goal.

Infiltration: Underlying soils consist of a variety of soil types including sand, clay, and silt. Based on previous infiltration testing, the sandy soils do not meet the 0.6 in/hr minimum infiltration rate and thus the site was previously determined to be exempt from infiltration requirements.

Protective Areas: Wetlands are present to the south of the site. No new impervious runoff will drain towards the wetlands directly, therefore the protective areas do not apply.

EXISTING CONDITIONS

The site is currently vacant. The site is divided into two drainage areas. While the addition area itself flows to the south, the north parking lot is divided into two drainage areas, with one area flowing north to the regional Wago pond and a smaller area that drains south. Since the area that drains south will be blocked off by the new addition, it would be much preferred to reroute the south flowing area of the north parking lot back to the north. An analysis of the effects of this change on the Wago pond is included in the proposed section. The remainder of the site flows south to a drainageway that travels west and to an existing regional pond. That regional pond does not have the capacity to handle additional runoff and thus stormwater will be provided for on site for the south – west flows areas. Since both regional ponds that

the site drains to are ultimately tributary to the Goldendale Creek and ultimately the Menomonee River, there is little concern with this minor change in watershed.

Soils on site are predominantly Kendall silt loam which is classified as a group B/D soil. However, the soil borings indicate predominantly silt and clay soils in the top 5 to 13 feet with the sandy soils underneath that. Since the new addition will connect vertically with the existing building to the north at a floor elevation of approximately 906.8, the new expansion area will be several feet higher than the existing grade. Thus, there is very little excavation into the sandy subsoils anticipated which would mean that the existing upper soil layers are most appropriate to use for determining a curve number, which would mean using group C soils for the silt and clay.

POST-DEVELOPMENT CONDITIONS

It is proposed to construct a new 96,000 s.f. building addition with driveway and parking. A wet detention pond, controlled flow roof, and two upflow filters were included in the previous addition design. While the controlled flow roof will be unaffected by the new addition, the wet pond is located partially within the building footprint and will need to be partially filled. In addition, the northerly of the upflow filters will be relocated as well. The new addition will also have controlled flow roof drains. Since the current wet pond was only meant to be interim, it was not optimized. By updating the outlet structure and modifying the pond berm, additional volume is realized in the remaining portion of the wet pond. Combined with the controlled flow roof, the peak flow reduction and volume control can be achieved.

Note that the south draining north parking lot area is no longer included in the analysis as this area will be redirected to the Wago regional pond. A storage analysis of that pond was done which shows that there is no appreciable change to the functionality of that pond. A SLAMM analysis has not been completed for that pond since the parking area being redirected already had an upflow filter for treatment which is being relocated to continue to serve the area. Water quality will also be greatly augmented by the Wago pond which is a large wet detention pond. Thus, water quality is expected to easily exceed the 40% TSS removal for that area and that area is not included in the model.

ANALYSIS METHODS

HydroCAD® (Version 10.00) software has been used to analyze stormwater characteristics for this stormwater management plan. HydroCAD uses the accepted TR-55 methodology for determining peak discharge runoff rates. Rainfall depths for the 1-year, 2-year, and 100-year storm events are 2.35, 2.65 and 6.41 inches in accordance with ATLAS 14 rainfall depths. The volumetric method is selected for this design because the undetained fringe areas would take up a substantial portion of the allowable release rate if the unit rate release method were used. The volumetric method also enables credit to be taken for existing impervious areas (prior to the previous addition). The Menomonee River has a critical time period of 9.5 hours which will be used in the HydroCAD model.

TSS reduction characteristics for the proposed water quality facilities were determined using WinSLAMM® (Version 10.4) Source Loading and Management Model.

SUMMARY OF RESULTS

Existing Drainage Data

Area	Area (ac)	CN	Tc (min)	Peak Flows 1-year (cfs)	Peak Flows 2-year (cfs)	Volume 2-year (ac-ft)	Peak Flows 100-year (cfs)	Volume 100-year (ac-ft)
EXISTING SOUTH	10.7	80	15.0	11.3	14.3	0.855	58.1	3.107

Proposed Drainage Data

Area	Area (ac)	CN	Tc (min)	Peak Flows 1-year (cfs)	Peak Flows 2-year (cfs)	Volume 2-year (ac-ft)	Peak Flows 100-year (cfs)	Volume 100-year (ac-ft)
2020 ADD UP ROOF	2.6	98	6.0*	8.6	9.8	---	24.0	---
2020 ADD UP ROOF DISCHARGE	---	---	---	3.2	3.4	---	8.2	---
2020 ADD LOW ROOF	0.2	98	6.0*	0.7	0.8	---	1.8	---
2020 ADD LOW ROOF DISCHARGE	---	---	---	0.6	0.6	---	1.4	---
NEW ADD ROOF	2.2	98	6.0*	7.3	8.3	---	20.3	---
NEW ADD ROOF CF DISCHARGE	---	---	---	4.4	5.0	---	11.7	---
DIRECT AREA TO WET POND	4.4	86	6.0*	8.7	10.8	---	35.8	---
SOUTH POND DISCHARGE	---	---	---	0.6	0.6	---	4.3	---
UNDETAINED	1.3	98	6.0*	4.1	4.7	---	11.9	---
PROP SOUTH DISCHARGE	10.7	---	---	4.5	5.1	0.637	13.6	3.105

* A value of 6.0 min is used since the actually computed is less than the 6.0 minimum allowed by TR-55.

Pond Data

Pond	Bottom	Normal Water	Peak W.S. Elev. 2-year	Peak W.S. Elev. 100-year	Spillway	Top of Berm
South Pond	893.5	898.5	901.2	904.0	904.1	904.6

The modeling indicates that the ponds will detain the flows so that the 1 year and 2 year storms do not have an increase in peak flows from existing conditions. The system will also control the volume such that there is a reduction over the critical time period.

Water Quality Summary

Refer to the SLAMM Area exhibit for the depiction of the redevelopment and new development areas. The weighted average is as follows:

Redevelopment area @ 40% required = 3.0ac

New development area @ 80% required = 5.7ac

Undeveloped area @ 0% required = 2.0ac

Weighted Average = 42.6% TSS removal required for south draining area

SLAMM Summary for Proposed Conditions

Area/Pond	Ponds of TSS Generated	Pounds of TSS Remaining	Percent Removal
Area to South Pond	3046	442	85.5%
Area to South Upflow filter	420	72	82.7%
Undetained	1030	1030	0%
Site Total	4496	1545	65.6%

The wet pond and south upflow filter will achieve the required TSS removal goal. Note that the north area that is being rerouted to the WAGO pond already has an upflow filter from the previous addition. Under the new scenario, the WAGO pond itself will greatly augment the upflow filter. Therefore, the north area being rerouted to the WAGO pond is not reanalyzed in this report.

Wago Regional Pond Summary

The Wago regional pond was modeled using the latest model from the September 9, 2021 JSD Memo and recreating the Post Enercon Improvements conditions. The normal water surface of the pond is 858.7. The overflow point is the low point in Freistadt Road which is estimated at 876.7. Based on the result below, a very minimal impact is anticipated but should not affect overall pond functionality or performance nor have any adverse impacts to adjacent properties. Therefore, we would suggest that the Wago pond can accommodate the stormwater needs from the extra acreage from the MGS expansion.

Condition	Pond Discharge (cfs)			Pond Elevations		
	2-year	10-year	100-year	2-year	10-year	100-year
Post Enercon Improvements (w/ Volume compensation)	15.1	26.3	39.3	871.0	872.6	876.3
With MGS additional 1.5 acres	15.5	26.6	39.6	871.0	872.7	876.4

Infiltration

Infiltration is not a part of the design plan due to the fact that the infiltration tests show the sandy loam to be less than 0.6 in/hr rates.

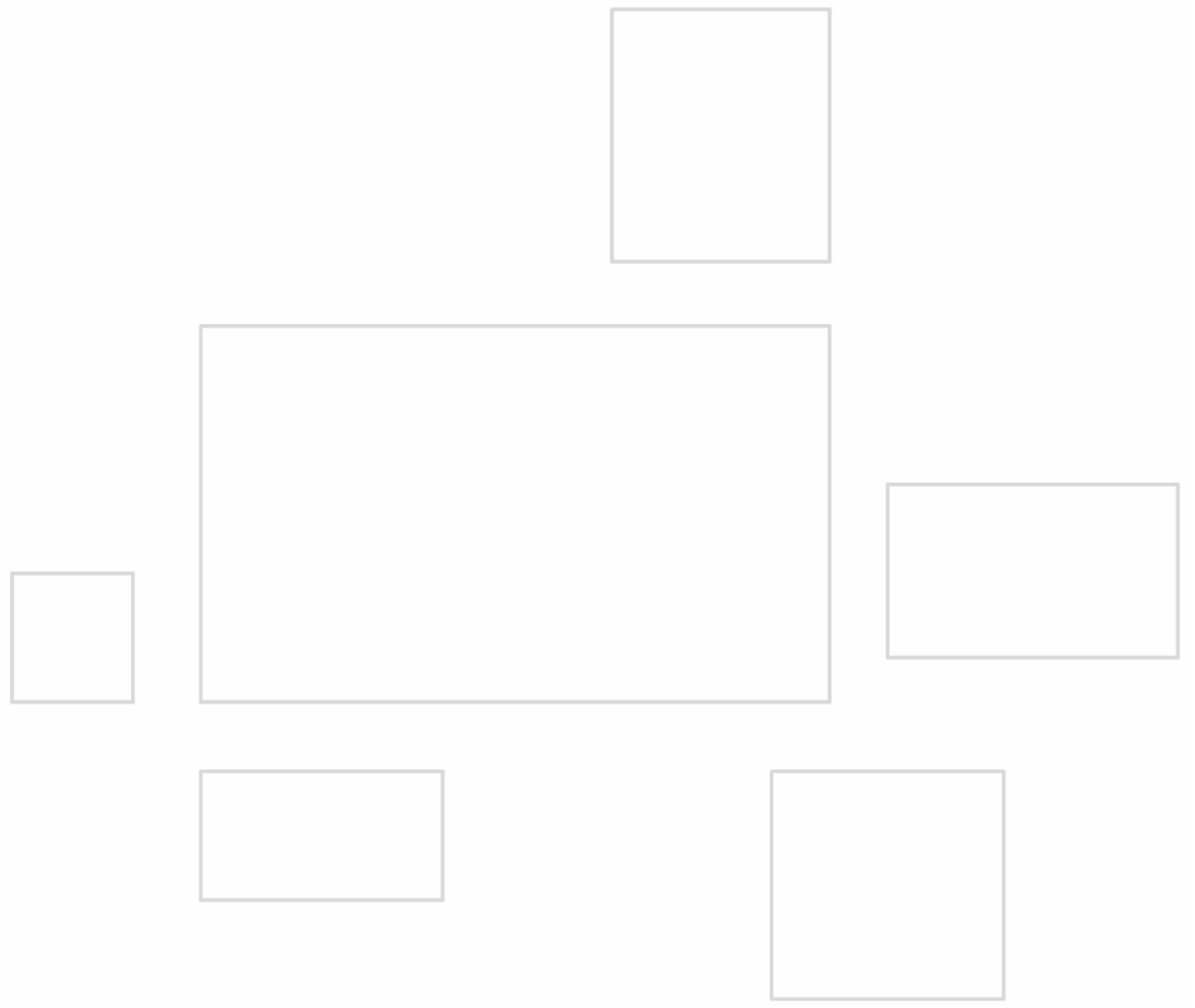
Protective Areas

Wetlands are present to the south of the site, but no impervious area from this new phase will be directed to them, thus the protective areas do not apply.

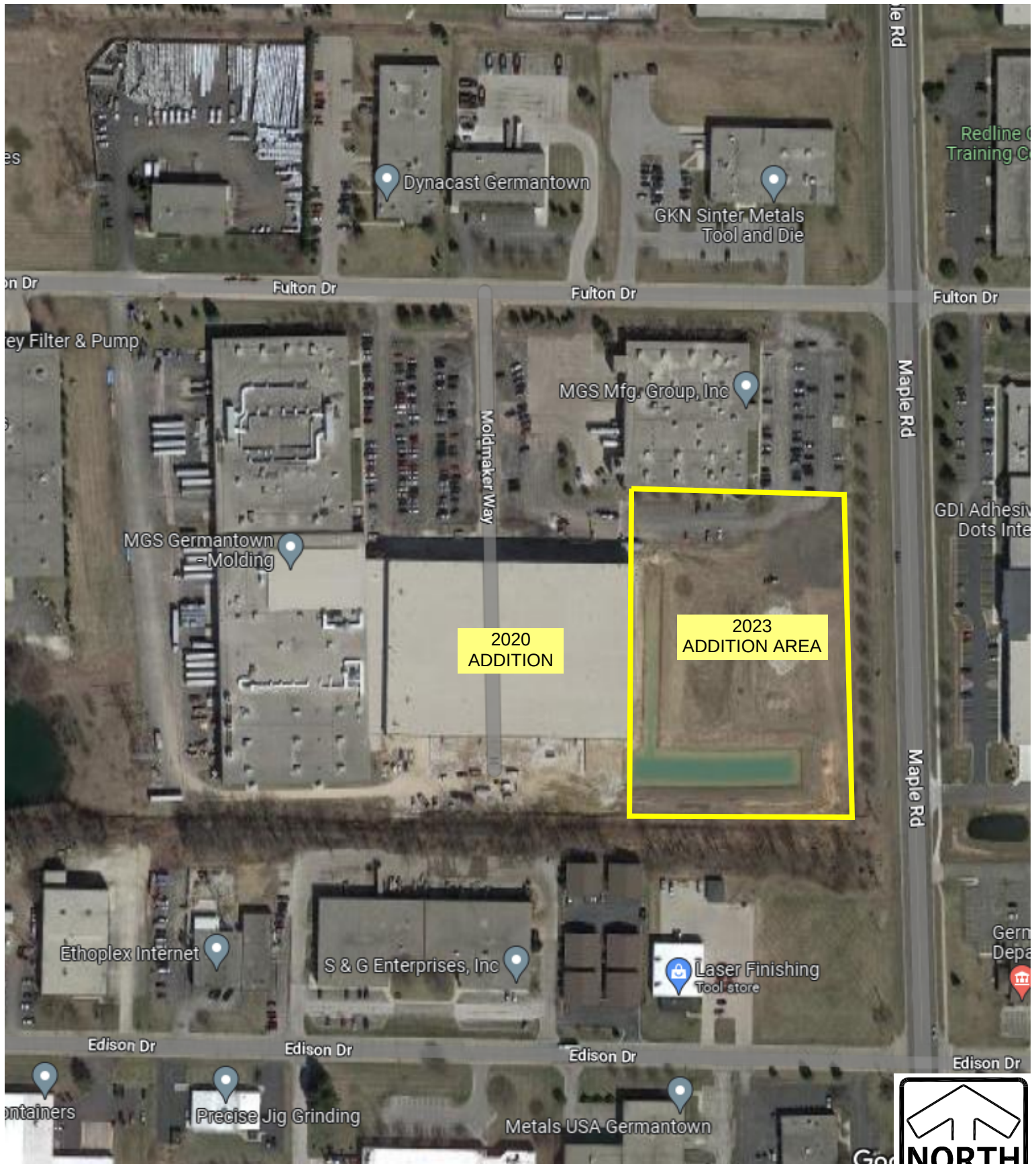
CONCLUSION

This project is subject to Village of Germantown, MMSD, and DNR regulations. Runoff will be attenuated and treated through the reuse of an existing detention pond, controlled flow roof drains, and upflow filters to meet the pertinent regulations and ordinances. Maintenance is expected to occur on a regular basis. An agreement with the Village of Germantown will be executed to ensure this occurs.

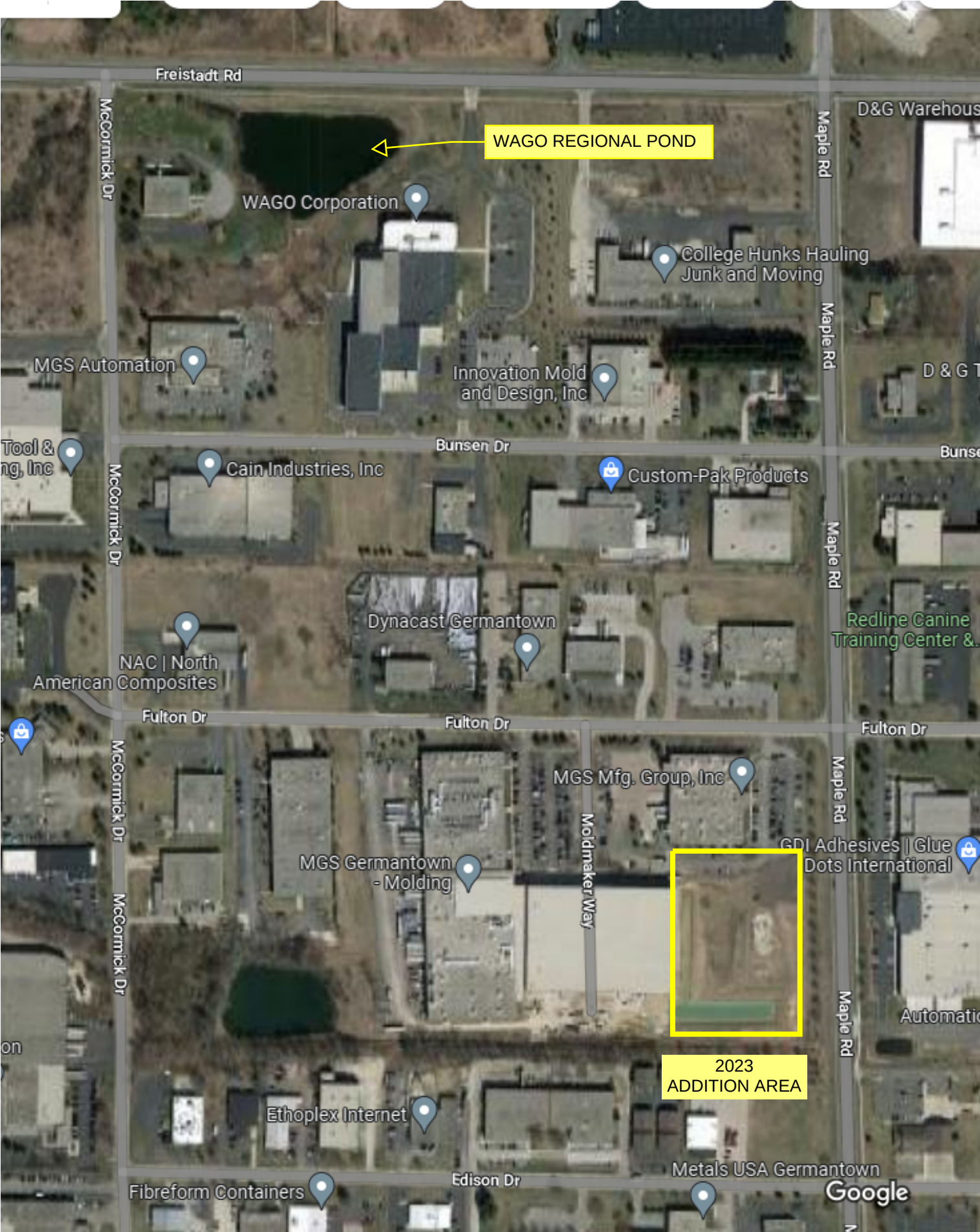
APPENDIX 1 MAPS



Aerial Photo

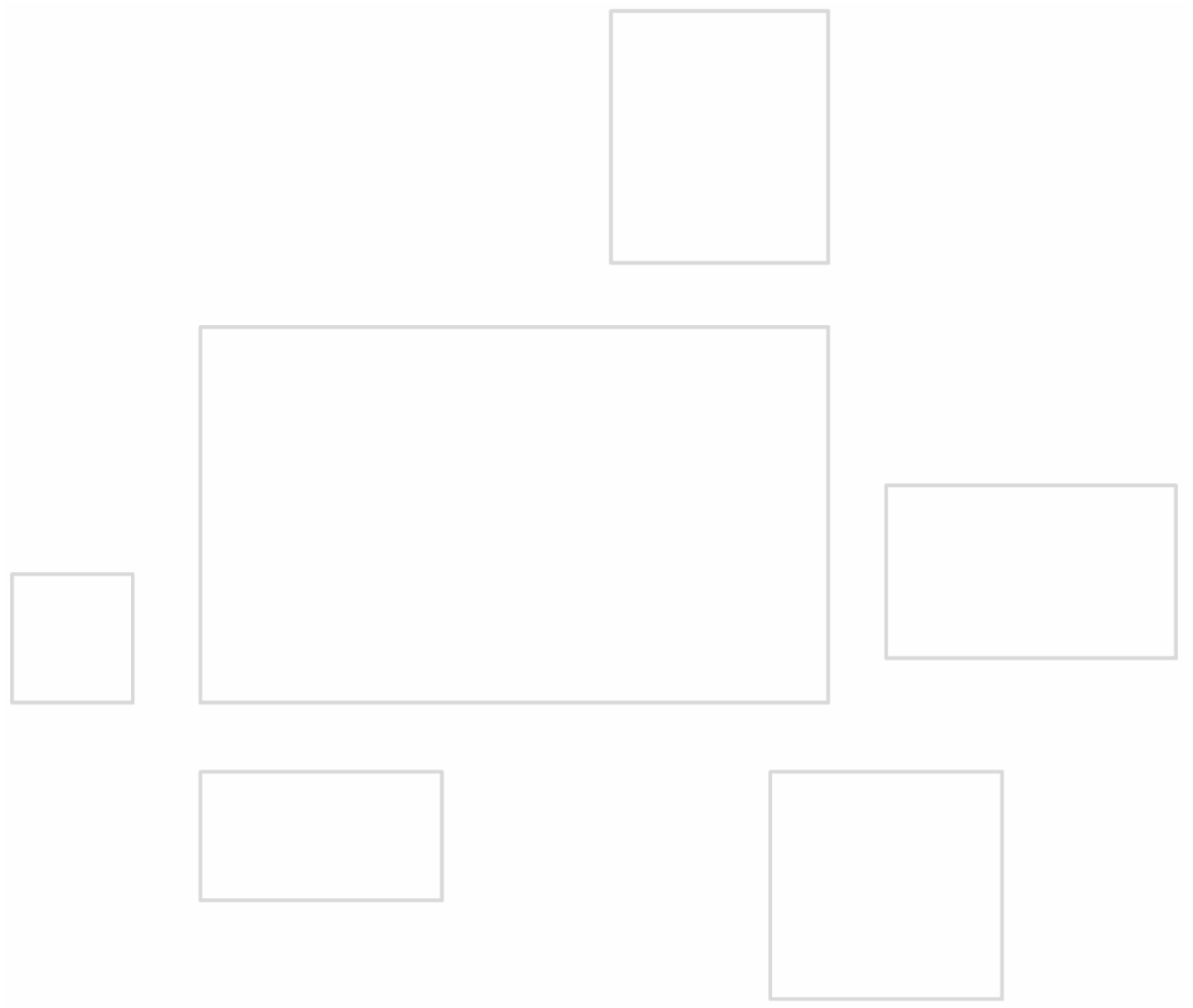


Vicinity Map

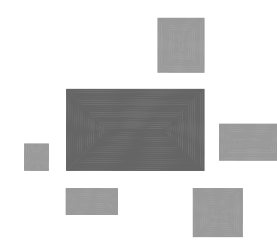
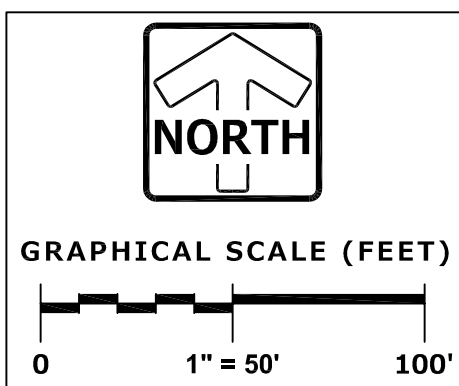
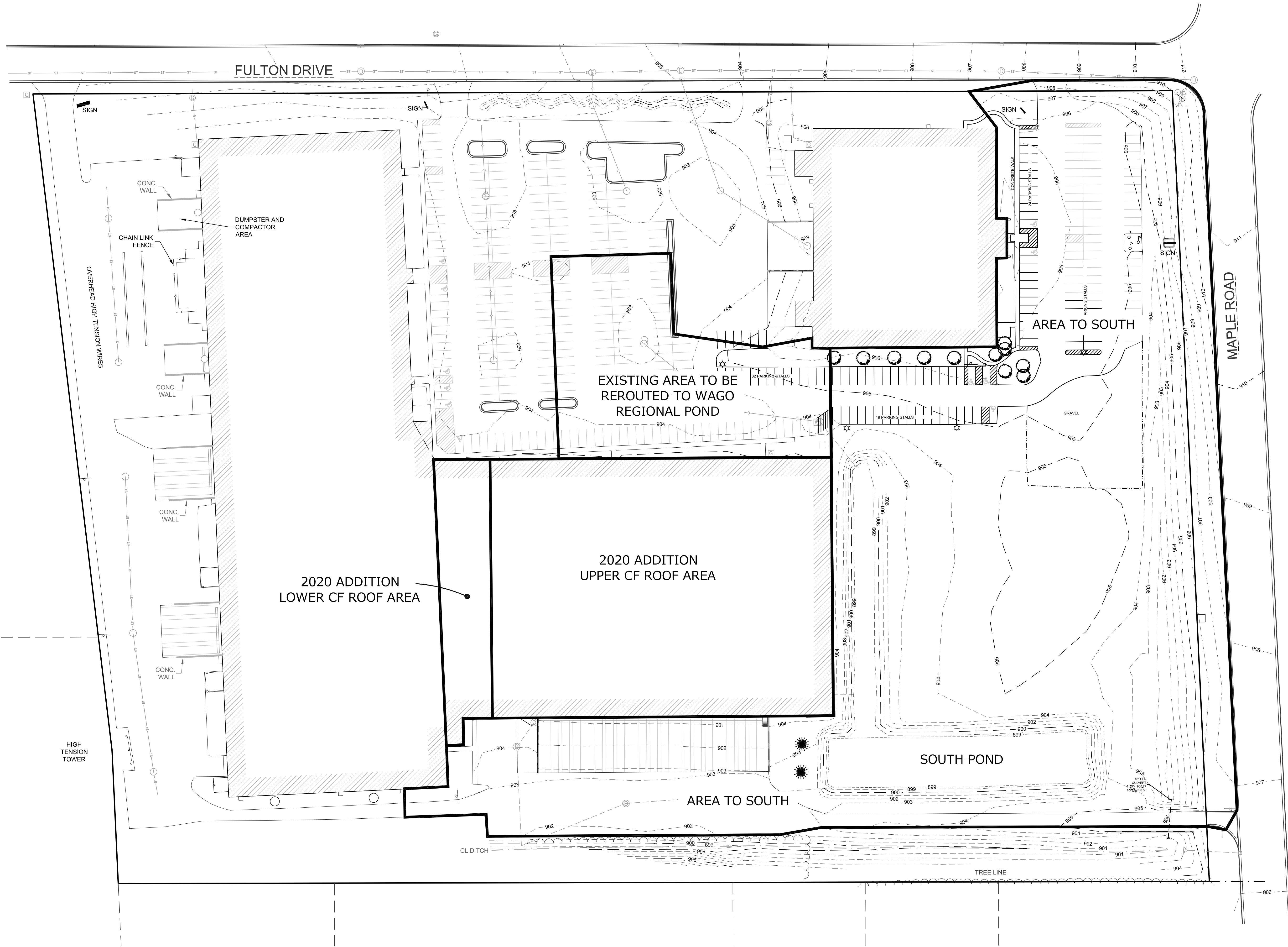


APPENDIX 2

PRE DEVELOPMENT CONDITIONS



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MGS

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EXISTING

MSE 24-hr 3 1-YR Rainfall=2.35"

Printed 3/10/2023

Page 1

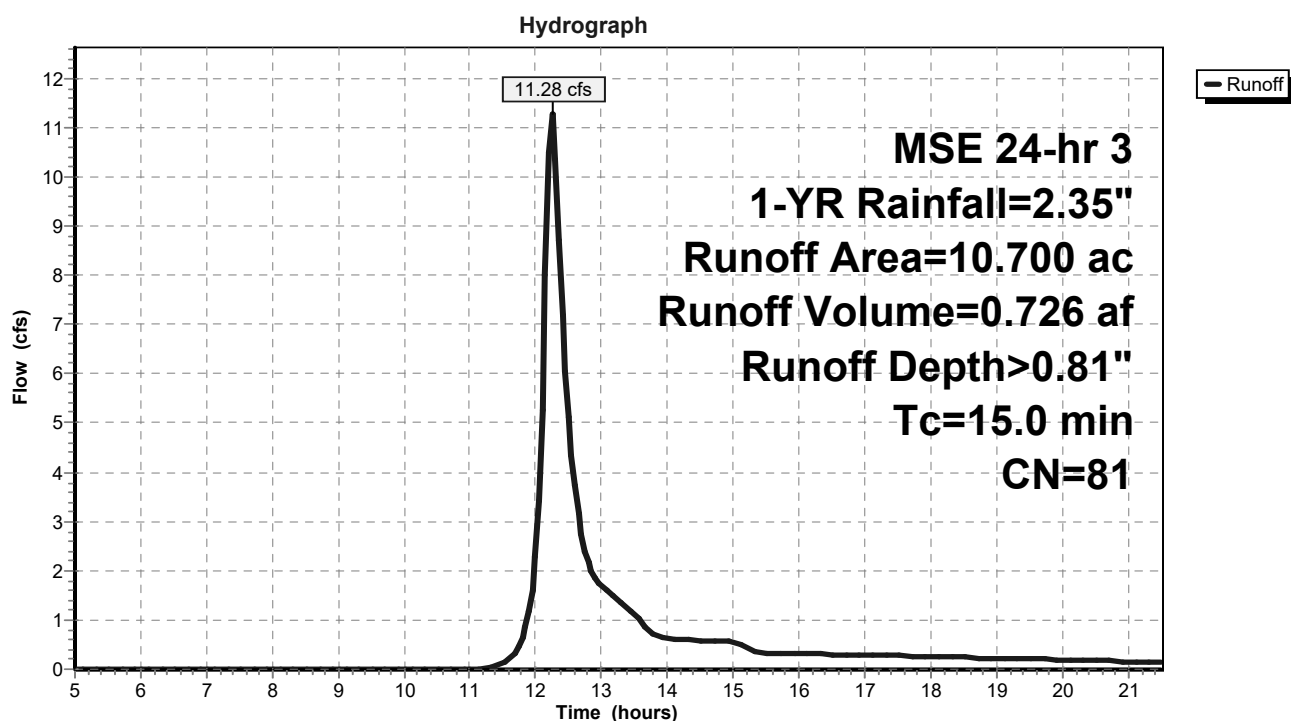
Summary for Subcatchment ESA: EXISTING SOUTH SITE AREA

Runoff = 11.28 cfs @ 12.25 hrs, Volume= 0.726 af, Depth> 0.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
MSE 24-hr 3 1-YR Rainfall=2.35"

Area (ac)	CN	Description
* 2.900	98	PAVEMENT
* 7.800	74	GRASS
10.700	81	Weighted Average
7.800		72.90% Pervious Area
2.900		27.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					Direct Entry, ASSUMED FOR NOW

Subcatchment ESA: EXISTING SOUTH SITE AREA

MGS

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EXISTING

MSE 24-hr 3 2-YR Rainfall=2.65"

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Page 2

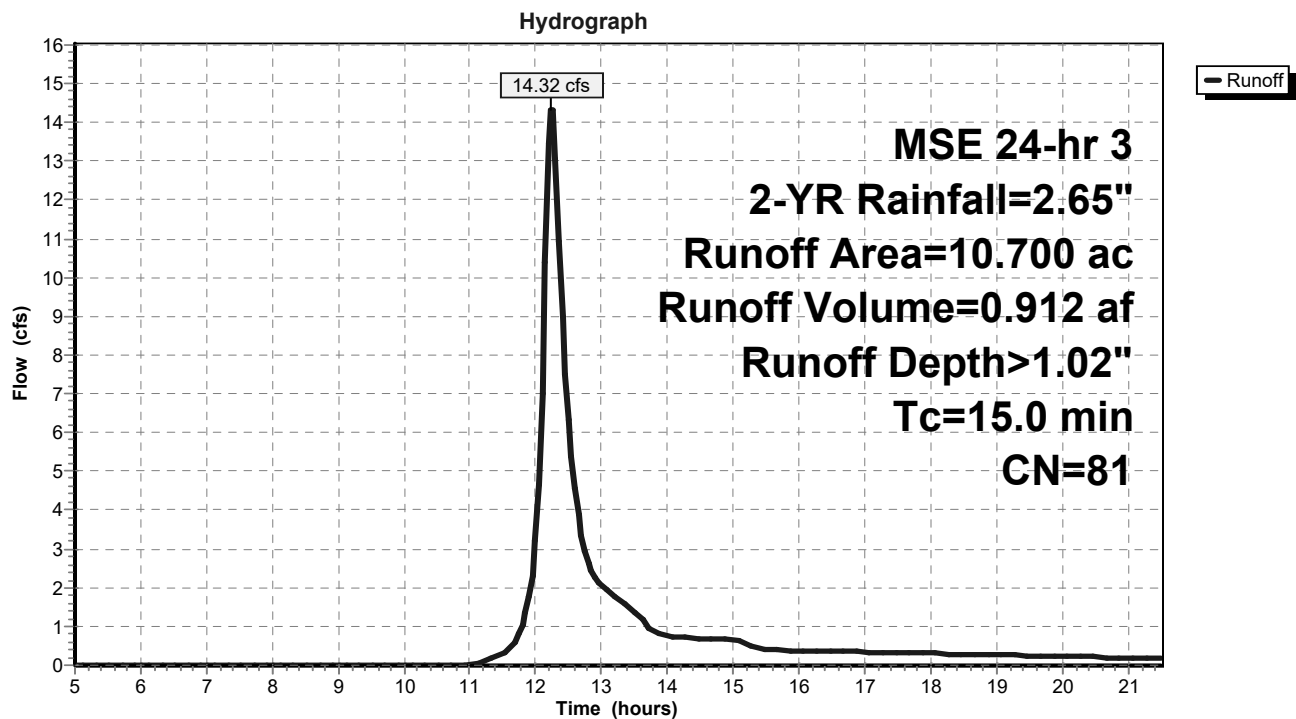
Summary for Subcatchment ESA: EXISTING SOUTH SITE AREA

Runoff = 14.32 cfs @ 12.25 hrs, Volume= 0.912 af, Depth> 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-YR Rainfall=2.65"

Area (ac)	CN	Description
* 2.900	98	PAVEMENT
* 7.800	74	GRASS
10.700	81	Weighted Average
7.800		72.90% Pervious Area
2.900		27.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					Direct Entry, ASSUMED FOR NOW

Subcatchment ESA: EXISTING SOUTH SITE AREA

MGS

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EXISTING

MSE 24-hr 3 100-YR Rainfall=6.41"

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Page 3

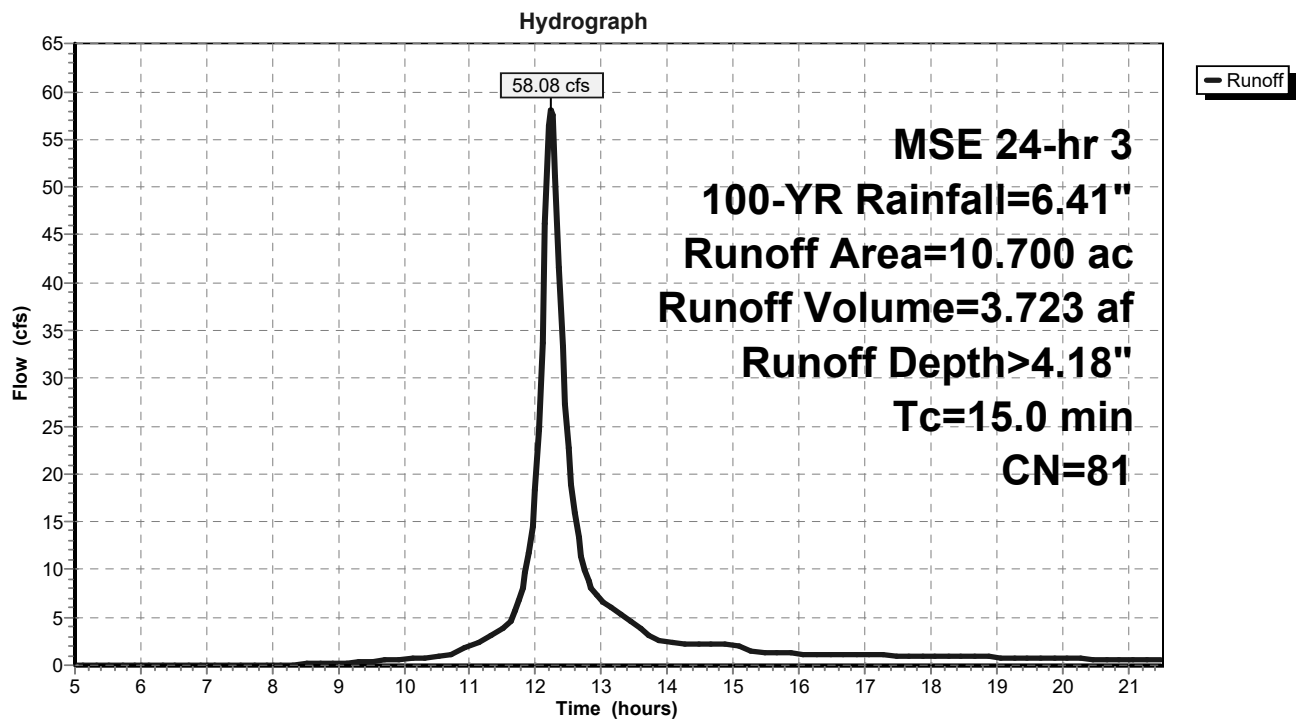
Summary for Subcatchment ESA: EXISTING SOUTH SITE AREA

Runoff = 58.08 cfs @ 12.23 hrs, Volume= 3.723 af, Depth> 4.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-YR Rainfall=6.41"

Area (ac)	CN	Description
* 2.900	98	PAVEMENT
* 7.800	74	GRASS
10.700	81	Weighted Average
7.800		72.90% Pervious Area
2.900		27.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					Direct Entry, ASSUMED FOR NOW

Subcatchment ESA: EXISTING SOUTH SITE AREA

EXISTING CRITICAL TIME PERIOD VOLUMES						
Time (hours)	2 year			100-year		
	Outflow (cfs)	Incremental Volume (Ac-ft)	Total Volume (Ac-ft)	Outflow (cfs)	Incremental Volume (Ac-ft)	Total Volume (Ac-ft)
12.00	3.2	X	X	18.34	X	X
12.05	4.65	0.019	0.019	24.47	0.101	0.101
12.10	7	0.029	0.048	33.74	0.139	0.240
12.15	10.4	0.043	0.091	46.22	0.191	0.431
12.20	13.46	0.056	0.147	56.41	0.233	0.664
12.25	14.31	0.059	0.206	57.63	0.238	0.902
12.30	13.07	0.054	0.260	51.07	0.211	1.113
12.35	10.92	0.045	0.305	41.62	0.172	1.285
12.40	8.97	0.037	0.342	33.44	0.138	1.424
12.45	7.5	0.031	0.373	27.38	0.113	1.537
12.50	6.31	0.026	0.399	22.66	0.094	1.630
12.55	5.36	0.022	0.421	18.94	0.078	1.708
12.60	4.57	0.019	0.440	15.95	0.066	1.774
12.65	3.9	0.016	0.456	13.47	0.056	1.830
12.70	3.35	0.014	0.470	11.45	0.047	1.877
12.75	2.92	0.012	0.482	9.92	0.041	1.918
12.80	2.63	0.011	0.493	8.85	0.037	1.955
12.85	2.42	0.010	0.503	8.1	0.033	1.988
12.90	2.27	0.009	0.512	7.55	0.031	2.020
12.95	2.15	0.009	0.521	7.14	0.029	2.049
13.00	2.06	0.009	0.530	6.82	0.028	2.077
13.05	1.98	0.008	0.538	6.53	0.027	2.104
13.10	1.91	0.008	0.546	6.27	0.026	2.130
13.15	1.84	0.008	0.553	6.02	0.025	2.155
13.20	1.77	0.007	0.561	5.79	0.024	2.179
13.25	1.7	0.007	0.568	5.55	0.023	2.202
13.30	1.63	0.007	0.574	5.33	0.022	2.224
13.35	1.57	0.006	0.581	5.1	0.021	2.245
13.40	1.5	0.006	0.587	4.87	0.020	2.265
13.45	1.43	0.006	0.593	4.64	0.019	2.284
13.50	1.36	0.006	0.599	4.41	0.018	2.302
13.55	1.29	0.005	0.604	4.17	0.017	2.320
13.60	1.21	0.005	0.609	3.9	0.016	2.336
13.65	1.1	0.005	0.613	3.56	0.015	2.350
13.70	0.99	0.004	0.618	3.2	0.013	2.364
13.75	0.9	0.004	0.621	2.9	0.012	2.376
13.80	0.84	0.003	0.625	2.69	0.011	2.387
13.85	0.8	0.003	0.628	2.56	0.011	2.397
13.90	0.77	0.003	0.631	2.48	0.010	2.408
13.95	0.76	0.003	0.634	2.42	0.010	2.418
14.00	0.75	0.003	0.637	2.39	0.010	2.427
14.05	0.74	0.003	0.641	2.35	0.010	2.437
14.10	0.73	0.003	0.644	2.33	0.010	2.447
14.15	0.72	0.003	0.647	2.31	0.010	2.456
14.20	0.72	0.003	0.650	2.29	0.009	2.466
14.25	0.71	0.003	0.652	2.28	0.009	2.475
14.30	0.71	0.003	0.655	2.26	0.009	2.485
14.35	0.71	0.003	0.658	2.25	0.009	2.494
14.40	0.7	0.003	0.661	2.24	0.009	2.503
14.45	0.7	0.003	0.664	2.22	0.009	2.512
14.50	0.7	0.003	0.667	2.21	0.009	2.521
14.55	0.69	0.003	0.670	2.2	0.009	2.530
14.60	0.69	0.003	0.673	2.18	0.009	2.539
14.65	0.68	0.003	0.676	2.17	0.009	2.548
14.70	0.68	0.003	0.678	2.16	0.009	2.557
14.75	0.68	0.003	0.681	2.14	0.009	2.566
14.80	0.67	0.003	0.684	2.13	0.009	2.575
14.85	0.67	0.003	0.687	2.11	0.009	2.584
14.90	0.67	0.003	0.689	2.1	0.009	2.592
14.95	0.66	0.003	0.692	2.09	0.009	2.601
15.00	0.66	0.003	0.695	2.08	0.009	2.610
15.05	0.65	0.003	0.698	2.05	0.008	2.618
15.10	0.63	0.003	0.700	2	0.008	2.626
15.15	0.59	0.002	0.703	1.86	0.008	2.634
15.20	0.54	0.002	0.705	1.69	0.007	2.641
15.25	0.49	0.002	0.707	1.53	0.006	2.647
15.30	0.45	0.002	0.709	1.42	0.006	2.653

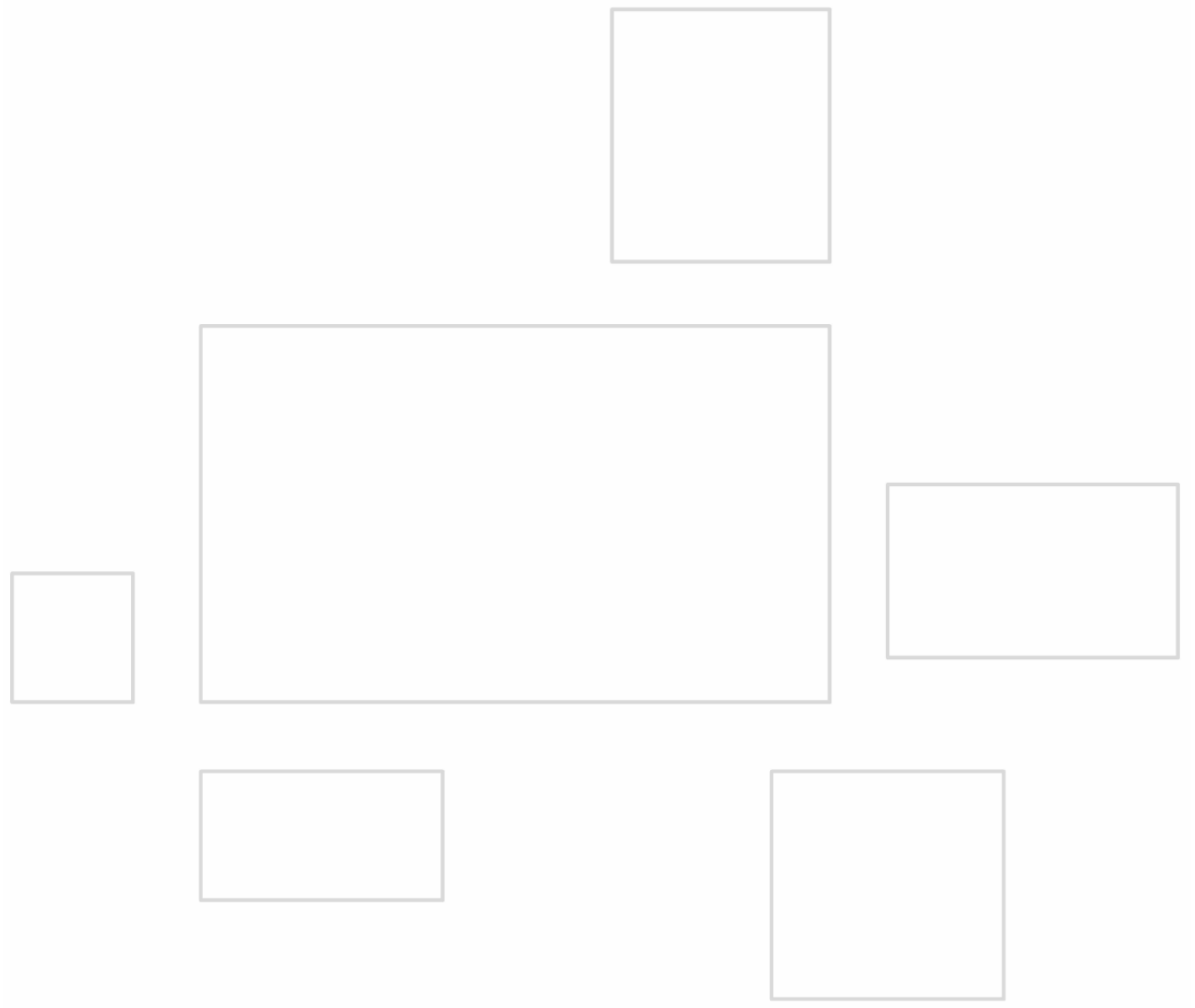
EXISTING CRITICAL TIME PERIOD VOLUMES						
Time (hours)	2 year			100-year		
	Outflow (cfs)	Incremental Volume (Ac-ft)	Total Volume (Ac-ft)	Outflow (cfs)	Incremental Volume (Ac-ft)	Total Volume (Ac-ft)
15.35	0.43	0.002	0.710	1.36	0.006	2.659
15.40	0.42	0.002	0.712	1.31	0.005	2.664
15.45	0.41	0.002	0.714	1.28	0.005	2.669
15.50	0.4	0.002	0.716	1.26	0.005	2.675
15.55	0.4	0.002	0.717	1.25	0.005	2.680
15.60	0.39	0.002	0.719	1.24	0.005	2.685
15.65	0.39	0.002	0.720	1.23	0.005	2.690
15.70	0.39	0.002	0.722	1.22	0.005	2.695
15.75	0.39	0.002	0.724	1.21	0.005	2.700
15.80	0.38	0.002	0.725	1.21	0.005	2.705
15.85	0.38	0.002	0.727	1.2	0.005	2.710
15.90	0.38	0.002	0.728	1.19	0.005	2.715
15.95	0.38	0.002	0.730	1.19	0.005	2.720
16.00	0.38	0.002	0.732	1.18	0.005	2.725
16.05	0.38	0.002	0.733	1.17	0.005	2.730
16.10	0.37	0.002	0.735	1.17	0.005	2.734
16.15	0.37	0.002	0.736	1.16	0.005	2.739
16.20	0.37	0.002	0.738	1.16	0.005	2.744
16.25	0.37	0.002	0.739	1.15	0.005	2.749
16.30	0.37	0.002	0.741	1.14	0.005	2.753
16.35	0.36	0.001	0.742	1.14	0.005	2.758
16.40	0.36	0.001	0.744	1.13	0.005	2.763
16.45	0.36	0.001	0.745	1.13	0.005	2.768
16.50	0.36	0.001	0.747	1.12	0.005	2.772
16.55	0.36	0.001	0.748	1.12	0.005	2.777
16.60	0.36	0.001	0.750	1.11	0.005	2.781
16.65	0.35	0.001	0.751	1.1	0.005	2.786
16.70	0.35	0.001	0.753	1.1	0.005	2.790
16.75	0.35	0.001	0.754	1.09	0.005	2.795
16.80	0.35	0.001	0.755	1.08	0.004	2.799
16.85	0.35	0.001	0.757	1.08	0.004	2.804
16.90	0.34	0.001	0.758	1.07	0.004	2.808
16.95	0.34	0.001	0.760	1.07	0.004	2.813
17.00	0.34	0.001	0.761	1.06	0.004	2.817
17.05	0.34	0.001	0.762	1.05	0.004	2.821
17.10	0.34	0.001	0.764	1.05	0.004	2.826
17.15	0.33	0.001	0.765	1.04	0.004	2.830
17.20	0.33	0.001	0.767	1.04	0.004	2.834
17.25	0.33	0.001	0.768	1.03	0.004	2.839
17.30	0.33	0.001	0.769	1.02	0.004	2.843
17.35	0.33	0.001	0.771	1.02	0.004	2.847
17.40	0.33	0.001	0.772	1.01	0.004	2.851
17.45	0.32	0.001	0.773	1.01	0.004	2.855
17.50	0.32	0.001	0.775	1	0.004	2.860
17.55	0.32	0.001	0.776	0.99	0.004	2.864
17.60	0.32	0.001	0.777	0.99	0.004	2.868
17.65	0.32	0.001	0.779	0.98	0.004	2.872
17.70	0.31	0.001	0.780	0.98	0.004	2.876
17.75	0.31	0.001	0.781	0.97	0.004	2.880
17.80	0.31	0.001	0.783	0.96	0.004	2.884
17.85	0.31	0.001	0.784	0.96	0.004	2.888
17.90	0.31	0.001	0.785	0.95	0.004	2.892
17.95	0.31	0.001	0.786	0.94	0.004	2.896
18.00	0.3	0.001	0.788	0.94	0.004	2.899
18.05	0.3	0.001	0.789	0.93	0.004	2.903
18.10	0.3	0.001	0.790	0.93	0.004	2.907
18.15	0.3	0.001	0.791	0.92	0.004	2.911
18.20	0.3	0.001	0.793	0.91	0.004	2.915
18.25	0.29	0.001	0.794	0.91	0.004	2.918
18.30	0.29	0.001	0.795	0.9	0.004	2.922
18.35	0.29	0.001	0.796	0.89	0.004	2.926
18.40	0.29	0.001	0.797	0.89	0.004	2.929
18.45	0.29	0.001	0.799	0.88	0.004	2.933
18.50	0.28	0.001	0.800	0.88	0.004	2.937
18.55	0.28	0.001	0.801	0.87	0.004	2.940
18.60	0.28	0.001	0.802	0.87	0.004	2.944
18.65	0.28	0.001	0.803	0.86	0.004	2.948

EXISTING CRITICAL TIME PERIOD VOLUMES						
Time (hours)	2 year			100-year		
	Outflow (cfs)	Incremental Volume (Ac-ft)	Total Volume (Ac-ft)	Outflow (cfs)	Incremental Volume (Ac-ft)	Total Volume (Ac-ft)
18.70	0.28	0.001	0.804	0.85	0.004	2.951
18.75	0.27	0.001	0.805	0.85	0.004	2.955
18.80	0.27	0.001	0.807	0.84	0.003	2.958
18.85	0.27	0.001	0.808	0.83	0.003	2.961
18.90	0.27	0.001	0.809	0.83	0.003	2.965
18.95	0.27	0.001	0.810	0.82	0.003	2.968
19.00	0.27	0.001	0.811	0.82	0.003	2.972
19.05	0.26	0.001	0.812	0.81	0.003	2.975
19.10	0.26	0.001	0.813	0.8	0.003	2.978
19.15	0.26	0.001	0.814	0.8	0.003	2.982
19.20	0.26	0.001	0.815	0.79	0.003	2.985
19.25	0.25	0.001	0.816	0.78	0.003	2.988
19.30	0.25	0.001	0.817	0.78	0.003	2.991
19.35	0.25	0.001	0.818	0.77	0.003	2.994
19.40	0.25	0.001	0.819	0.77	0.003	2.998
19.45	0.25	0.001	0.820	0.76	0.003	3.001
19.50	0.25	0.001	0.822	0.75	0.003	3.004
19.55	0.24	0.001	0.823	0.75	0.003	3.007
19.60	0.24	0.001	0.824	0.74	0.003	3.010
19.65	0.24	0.001	0.825	0.74	0.003	3.013
19.70	0.24	0.001	0.825	0.73	0.003	3.016
19.75	0.24	0.001	0.826	0.72	0.003	3.019
19.80	0.23	0.001	0.827	0.72	0.003	3.022
19.85	0.23	0.001	0.828	0.71	0.003	3.025
19.90	0.23	0.001	0.829	0.7	0.003	3.028
19.95	0.23	0.001	0.830	0.7	0.003	3.031
20.00	0.23	0.001	0.831	0.69	0.003	3.034
20.05	0.22	0.001	0.832	0.69	0.003	3.036
20.10	0.22	0.001	0.833	0.68	0.003	3.039
20.15	0.22	0.001	0.834	0.67	0.003	3.042
20.20	0.22	0.001	0.835	0.67	0.003	3.045
20.25	0.22	0.001	0.836	0.66	0.003	3.048
20.30	0.21	0.001	0.837	0.65	0.003	3.050
20.35	0.21	0.001	0.838	0.65	0.003	3.053
20.40	0.21	0.001	0.838	0.64	0.003	3.056
20.45	0.21	0.001	0.839	0.64	0.003	3.058
20.50	0.21	0.001	0.840	0.63	0.003	3.061
20.55	0.2	0.001	0.841	0.62	0.003	3.063
20.60	0.2	0.001	0.842	0.62	0.003	3.066
20.65	0.2	0.001	0.843	0.61	0.003	3.068
20.70	0.2	0.001	0.843	0.6	0.002	3.071
20.75	0.2	0.001	0.844	0.6	0.002	3.073
20.80	0.19	0.001	0.845	0.59	0.002	3.076
20.85	0.19	0.001	0.846	0.59	0.002	3.078
20.90	0.19	0.001	0.847	0.58	0.002	3.081
20.95	0.19	0.001	0.847	0.57	0.002	3.083
21.00	0.19	0.001	0.848	0.57	0.002	3.085
21.05	0.18	0.001	0.849	0.56	0.002	3.088
21.10	0.18	0.001	0.850	0.56	0.002	3.090
21.15	0.18	0.001	0.850	0.55	0.002	3.092
21.20	0.18	0.001	0.851	0.54	0.002	3.095
21.25	0.18	0.001	0.852	0.54	0.002	3.097
21.30	0.17	0.001	0.853	0.53	0.002	3.099
21.35	0.17	0.001	0.853	0.52	0.002	3.101
21.40	0.17	0.001	0.854	0.52	0.002	3.103
21.45	0.17	0.001	0.855	0.51	0.002	3.105
21.50	0.17	0.001	0.855	0.51	0.002	3.107

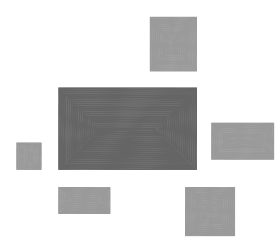
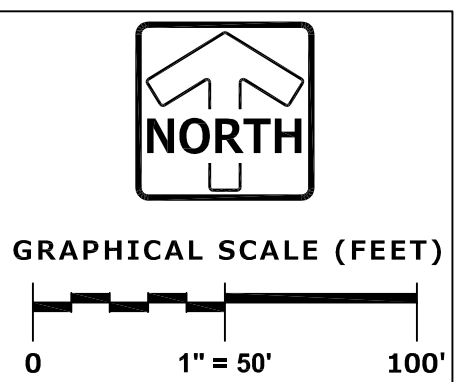
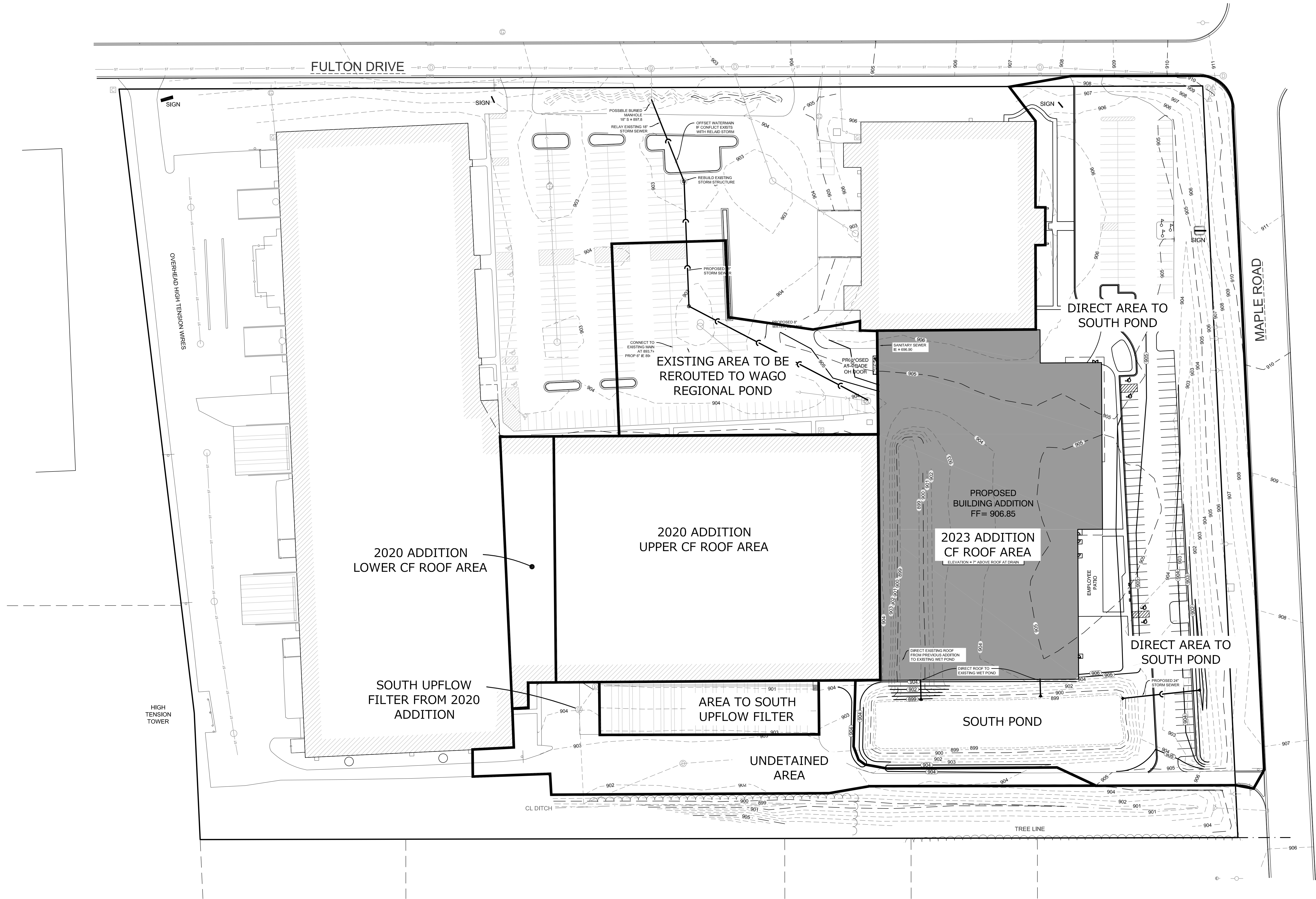
APPENDIX 3

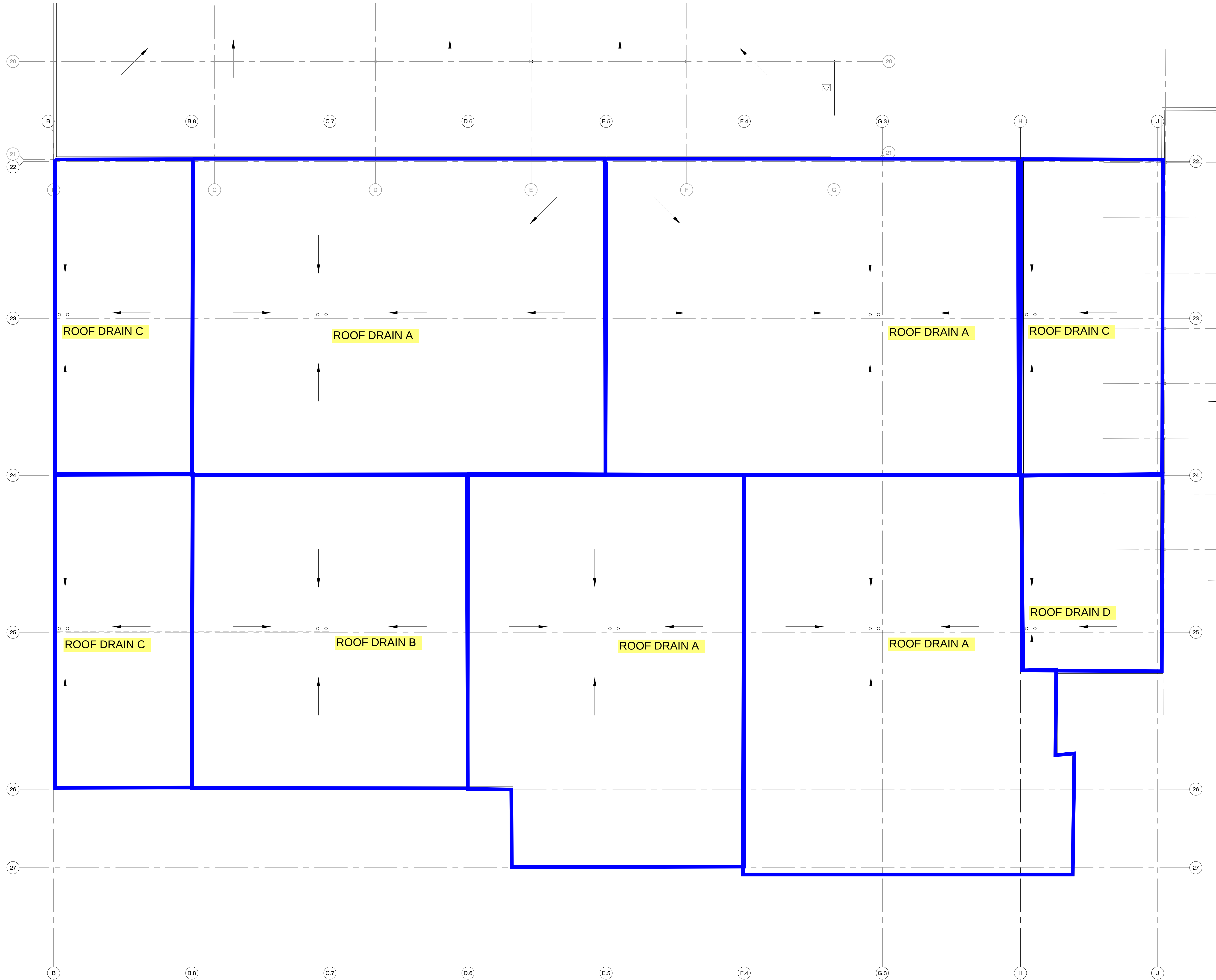
POST DEVELOPMENT CONDITIONS

RATE ATTENUATION



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ROOF PLAN NOTES

ROOF DRAINS ARE DIVIDED INTO 4 TYPES (A-D) BASED ON SIMILAR DRAINAGE AREA AND AVAILABLE STORAGE AREAS

ROOF TO BE SLOPED AT 1/4 IN PER FT

USE ZURN Z-105 FIXTURE WITH SEPARATE 6" DIAMETER UNRESTRICTED OVERFLOW

ROOF PLAN - SOUTH

1/16" = 1'-0"



MSI GENERAL CORPORATION
P.O. BOX. 7
OCONOMOWOC, WI 53066
PHONE: 262-367-5661

WWW.MSIGENERAL.COM
SINGLE SOURCE RESPONSIBILITY™

ISSUE DATES:
Owner Review: 11.17.2022
Owner Review: 02.24.2023
Owner Review: 03.02.2023

REVISIONS:



PROJECT ADDRESS:

PROJECT NAME
MGS INNOVATION CENTER ADDITION
STREET ADDRESS
W188 N11707 Maple Road
CITY/ STATE / ZIP
GERMANTOWN, WI 53022

ALL WORK TO BE COMPLETED AS SHOWN, AND IN ACCORDANCE WITH THE LATEST EDITION OF THE MSI GENERAL MASTER SPECIFICATION

Architect: AMH/BGK Engineer: DJS Reviewed By: BGK

Sheet Title:
ROOF PLAN - SOUTH

Sheet Number:
A-131.2

Project Number: P13175

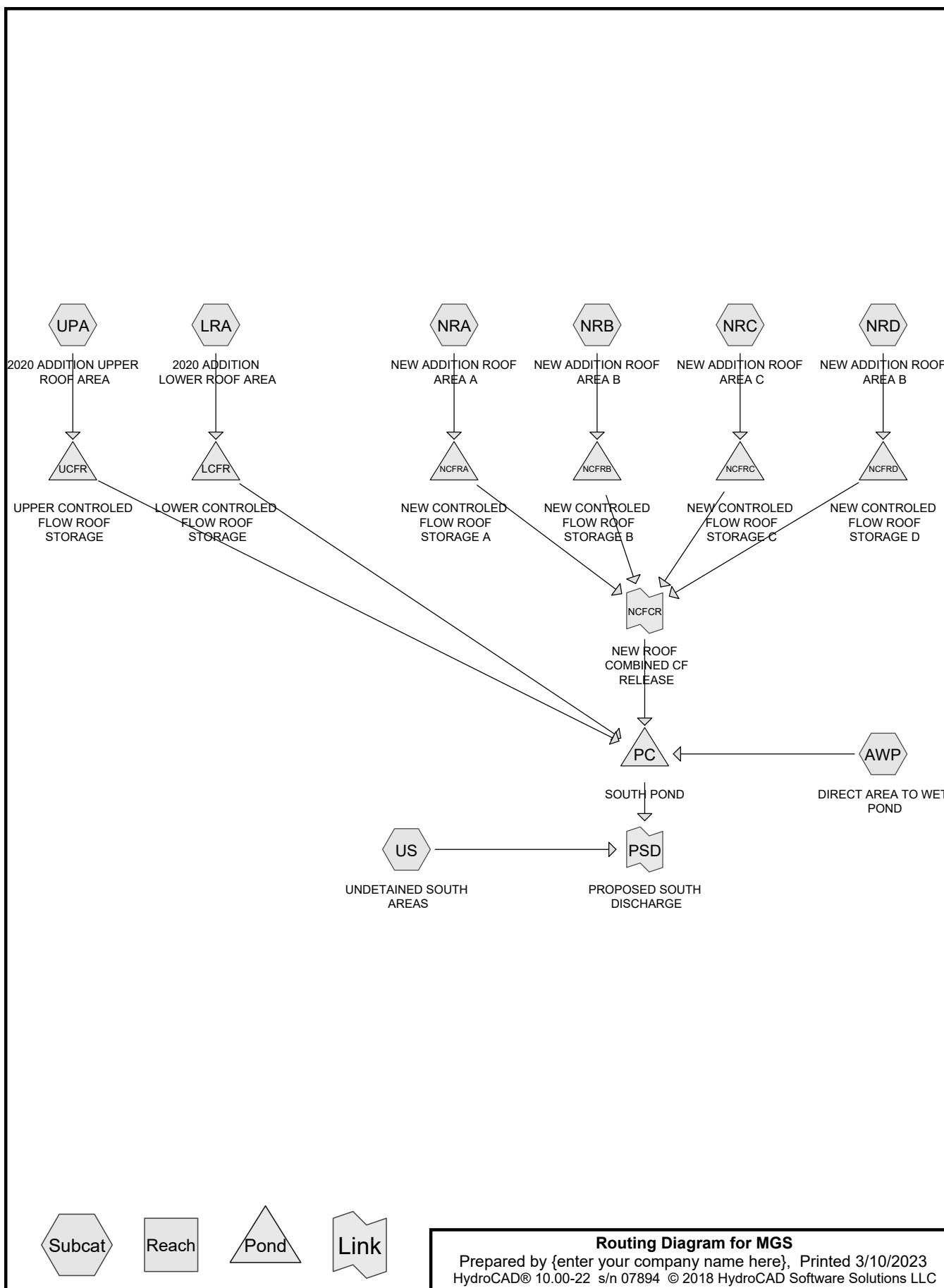
P13175

MANAGERS

ENGINEERS

CONTRACTORS

ARCHITECTS



MGS

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PROPOSED

MSE 24-hr 3 1-YR Rainfall=2.35"

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Page 2

Time span=5.00-21.50 hrs, dt=0.05 hrs, 331 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentAWP: DIRECT AREA TO	Runoff Area=4.400 ac 47.73% Impervious Runoff Depth>1.10" Tc=6.0 min CN=86 Runoff=8.86 cfs 0.402 af
SubcatchmentLRA: 2020 ADDITION	Runoff Area=0.200 ac 100.00% Impervious Runoff Depth>2.08" Tc=6.0 min CN=98 Runoff=0.66 cfs 0.035 af
SubcatchmentNRA: NEW ADDITION	Runoff Area=1.450 ac 100.00% Impervious Runoff Depth>2.08" Tc=6.0 min CN=98 Runoff=4.81 cfs 0.252 af
SubcatchmentNRB: NEW ADDITION	Runoff Area=0.250 ac 100.00% Impervious Runoff Depth>2.08" Tc=6.0 min CN=98 Runoff=0.83 cfs 0.043 af
SubcatchmentNRC: NEW ADDITION	Runoff Area=0.400 ac 100.00% Impervious Runoff Depth>2.08" Tc=6.0 min CN=98 Runoff=1.33 cfs 0.069 af
SubcatchmentNRD: NEW ADDITION	Runoff Area=0.100 ac 100.00% Impervious Runoff Depth>2.08" Tc=6.0 min CN=98 Runoff=0.33 cfs 0.017 af
SubcatchmentUPA: 2020 ADDITION	Runoff Area=2.600 ac 100.00% Impervious Runoff Depth>2.08" Tc=6.0 min CN=98 Runoff=8.63 cfs 0.451 af
SubcatchmentUS: UNDETAINEDSOUTH	Runoff Area=1.300 ac 92.31% Impervious Runoff Depth>1.88" Tc=6.0 min CN=96 Runoff=4.10 cfs 0.204 af
Pond LCFR: LOWER CONTROLLED FLOW	Peak Elev=1,000.09' Storage=68 cf Inflow=0.66 cfs 0.035 af Outflow=0.58 cfs 0.035 af
Pond NCFRA: NEW CONTROLLED FLOW	Peak Elev=1,000.37' Storage=1,910 cf Inflow=4.81 cfs 0.252 af Outflow=2.69 cfs 0.252 af
Pond NCFRB: NEW CONTROLLED FLOW	Peak Elev=1,000.29' Storage=293 cf Inflow=0.83 cfs 0.043 af Outflow=0.47 cfs 0.043 af
Pond NCFRC: NEW CONTROLLED FLOW	Peak Elev=1,000.21' Storage=233 cf Inflow=1.33 cfs 0.069 af Outflow=1.02 cfs 0.069 af
Pond NCFRD: NEW CONTROLLED FLOW	Peak Elev=1,000.18' Storage=31 cf Inflow=0.33 cfs 0.017 af Outflow=0.29 cfs 0.017 af
Pond PC: SOUTH POND	Peak Elev=900.80' Storage=42,631 cf Inflow=16.20 cfs 1.270 af Outflow=0.58 cfs 0.442 af
Pond UCFR: UPPER CONTROLLED FLOW	Peak Elev=1,000.25' Storage=4,889 cf Inflow=8.63 cfs 0.451 af Outflow=3.18 cfs 0.451 af
Link NCFRC: NEW ROOF COMBINED CF RELEASE	Inflow=4.42 cfs 0.382 af Primary=4.42 cfs 0.382 af

PROPOSED

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Link PSD: PROPOSED SOUTH DISCHARGE

Inflow=4.45 cfs 0.646 af

Primary=4.45 cfs 0.646 af

Total Runoff Area = 10.700 ac Runoff Volume = 1.475 af Average Runoff Depth = 1.65"
22.43% Pervious = 2.400 ac 77.57% Impervious = 8.300 ac

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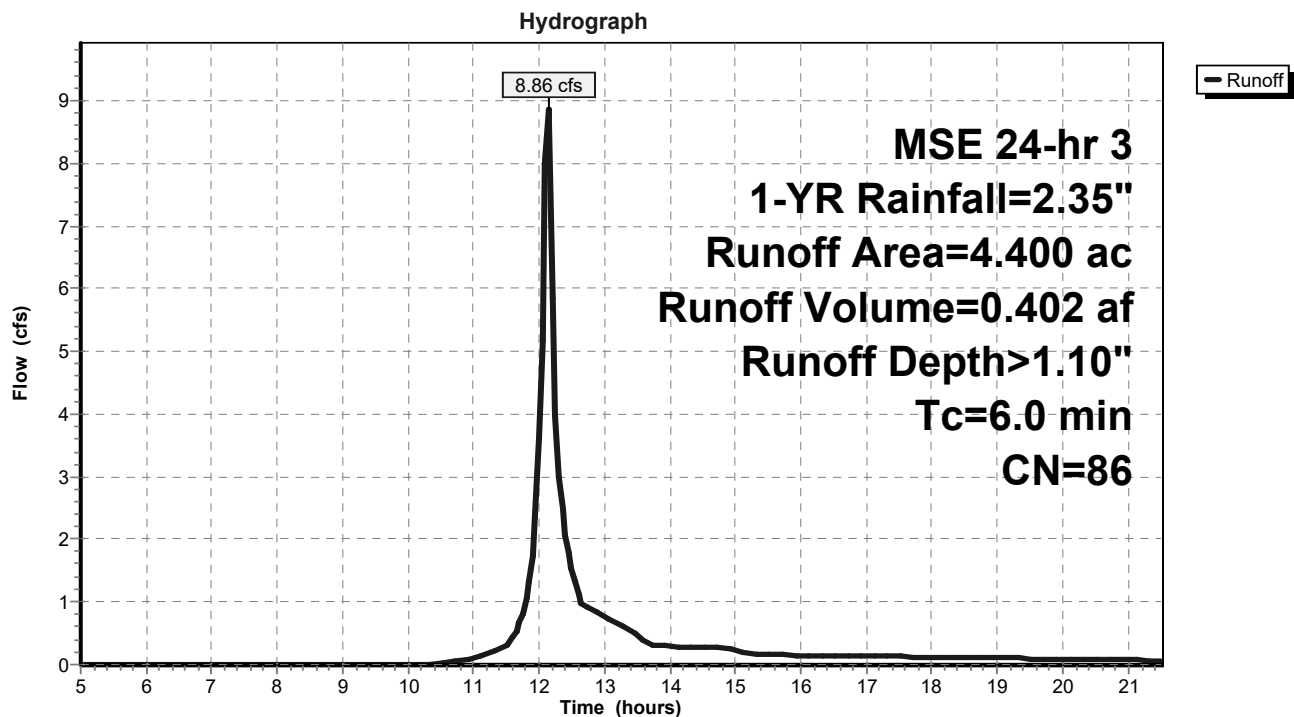
Summary for Subcatchment AWP: DIRECT AREA TO WET POND

Runoff = 8.86 cfs @ 12.13 hrs, Volume= 0.402 af, Depth> 1.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
MSE 24-hr 3 1-YR Rainfall=2.35"

	Area (ac)	CN	Description
*	1.700	98	PAVEMENT
*	2.300	74	GRASS
*	0.400	99	WATER SURFACE
	4.400	86	Weighted Average
	2.300		52.27% Pervious Area
	2.100		47.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, MIN PER TR55

Subcatchment AWP: DIRECT AREA TO WET POND

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PROPOSED

MSE 24-hr 3 1-YR Rainfall=2.35"

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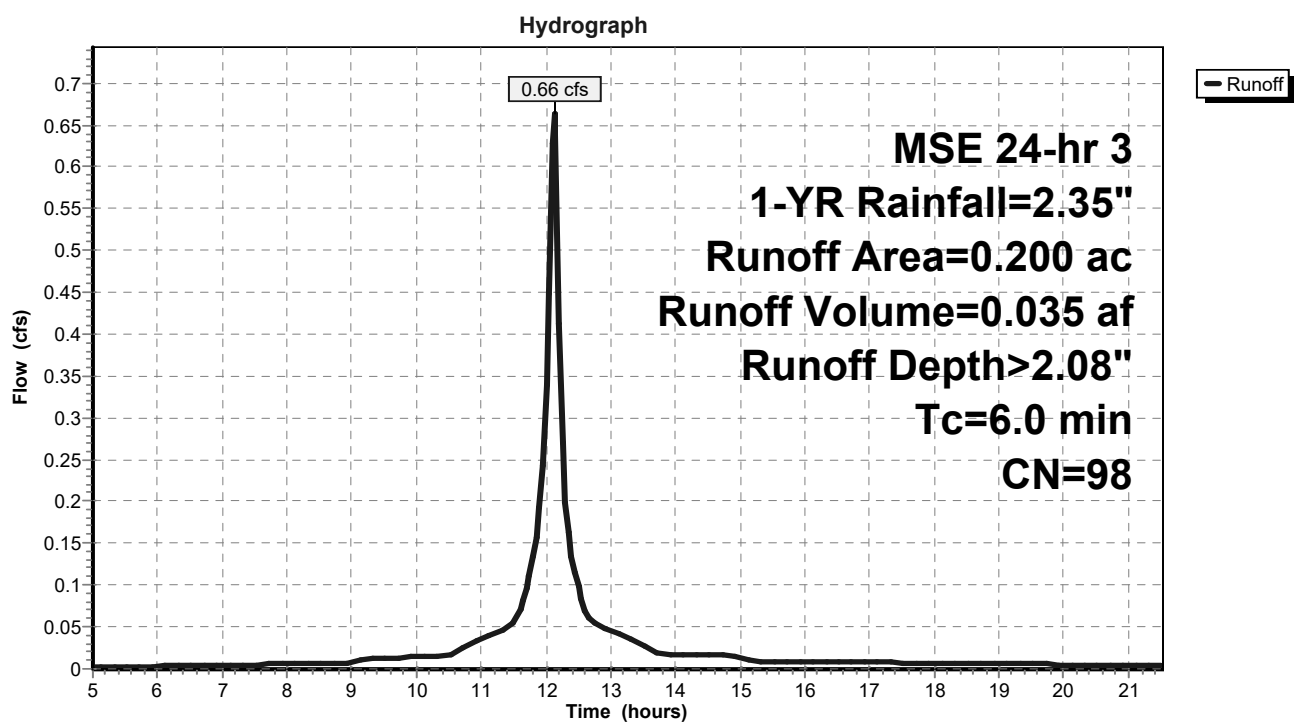
Summary for Subcatchment LRA: 2020 ADDITION LOWER ROOF AREA

Runoff = 0.66 cfs @ 12.13 hrs, Volume= 0.035 af, Depth> 2.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
MSE 24-hr 3 1-YR Rainfall=2.35"

Area (ac)	CN	Description
* 0.200	98	ROOF
0.200		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, MIN PER TR55

Subcatchment LRA: 2020 ADDITION LOWER ROOF AREA

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PROPOSED

MSE 24-hr 3 1-YR Rainfall=2.35"

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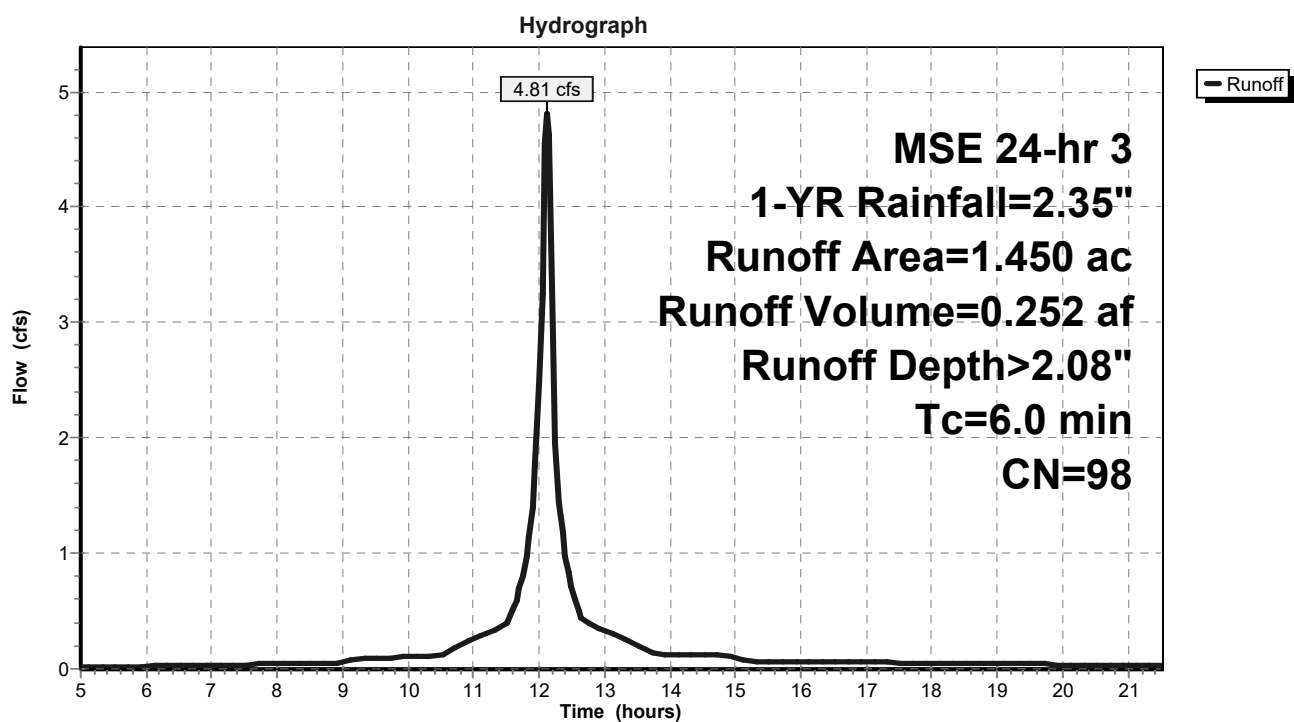
Summary for Subcatchment NRA: NEW ADDITION ROOF AREA A

Runoff = 4.81 cfs @ 12.13 hrs, Volume= 0.252 af, Depth> 2.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
MSE 24-hr 3 1-YR Rainfall=2.35"

Area (ac)	CN	Description
* 1.450	98	ROOF
1.450		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, MIN PER TR55

Subcatchment NRA: NEW ADDITION ROOF AREA A

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PROPOSED

MSE 24-hr 3 1-YR Rainfall=2.35"

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Summary for Subcatchment NRB: NEW ADDITION ROOF AREA B

Runoff = 0.83 cfs @ 12.13 hrs, Volume= 0.043 af, Depth> 2.08"

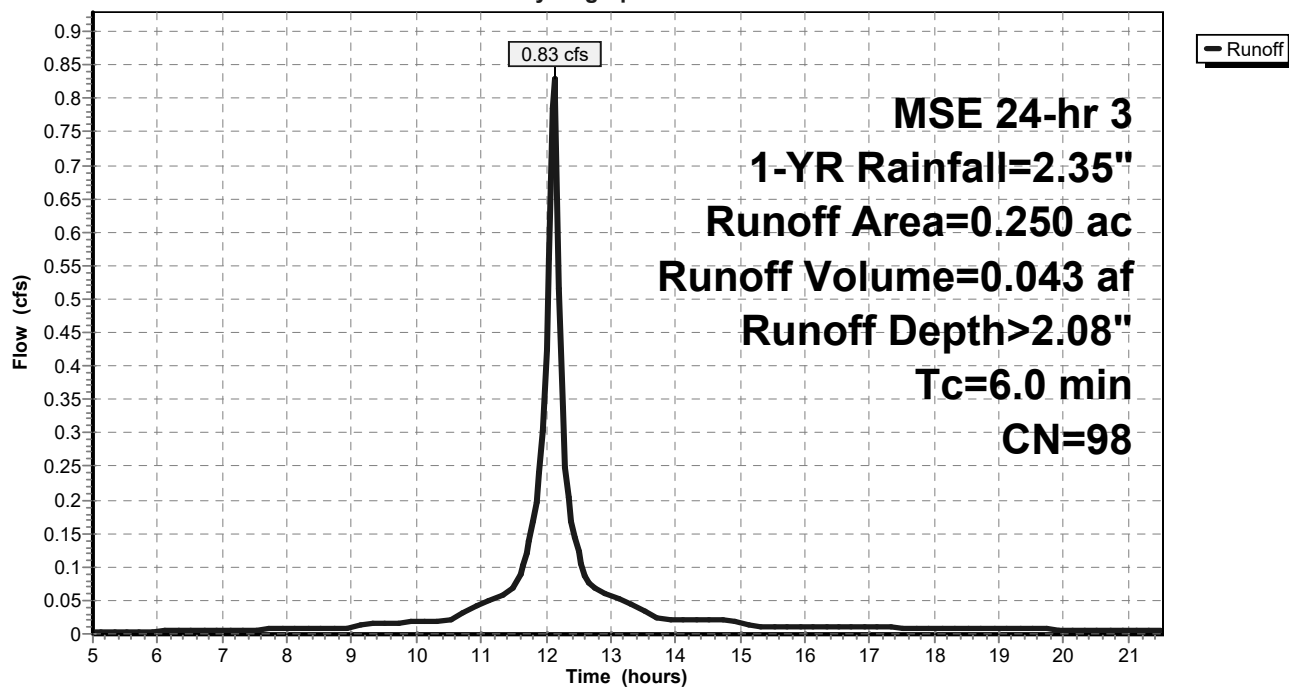
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
MSE 24-hr 3 1-YR Rainfall=2.35"

Area (ac)	CN	Description
* 0.250	98	ROOF
0.250		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, MIN PER TR55

Subcatchment NRB: NEW ADDITION ROOF AREA B

Hydrograph



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PROPOSED

MSE 24-hr 3 1-YR Rainfall=2.35"

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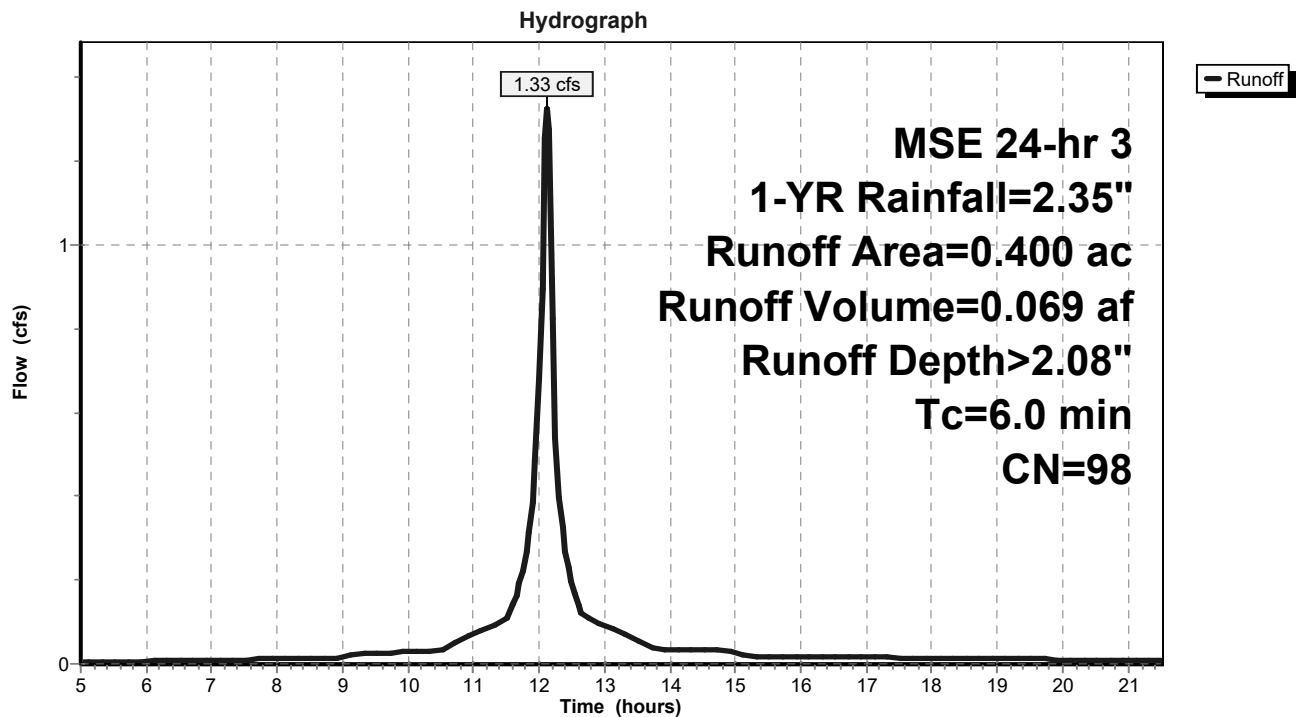
Summary for Subcatchment NRC: NEW ADDITION ROOF AREA C

Runoff = 1.33 cfs @ 12.13 hrs, Volume= 0.069 af, Depth> 2.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
MSE 24-hr 3 1-YR Rainfall=2.35"

Area (ac)	CN	Description
* 0.400	98	ROOF
0.400		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, MIN PER TR55

Subcatchment NRC: NEW ADDITION ROOF AREA C

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PROPOSED

MSE 24-hr 3 1-YR Rainfall=2.35"

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Summary for Subcatchment NRD: NEW ADDITION ROOF AREA B

Runoff = 0.33 cfs @ 12.13 hrs, Volume= 0.017 af, Depth> 2.08"

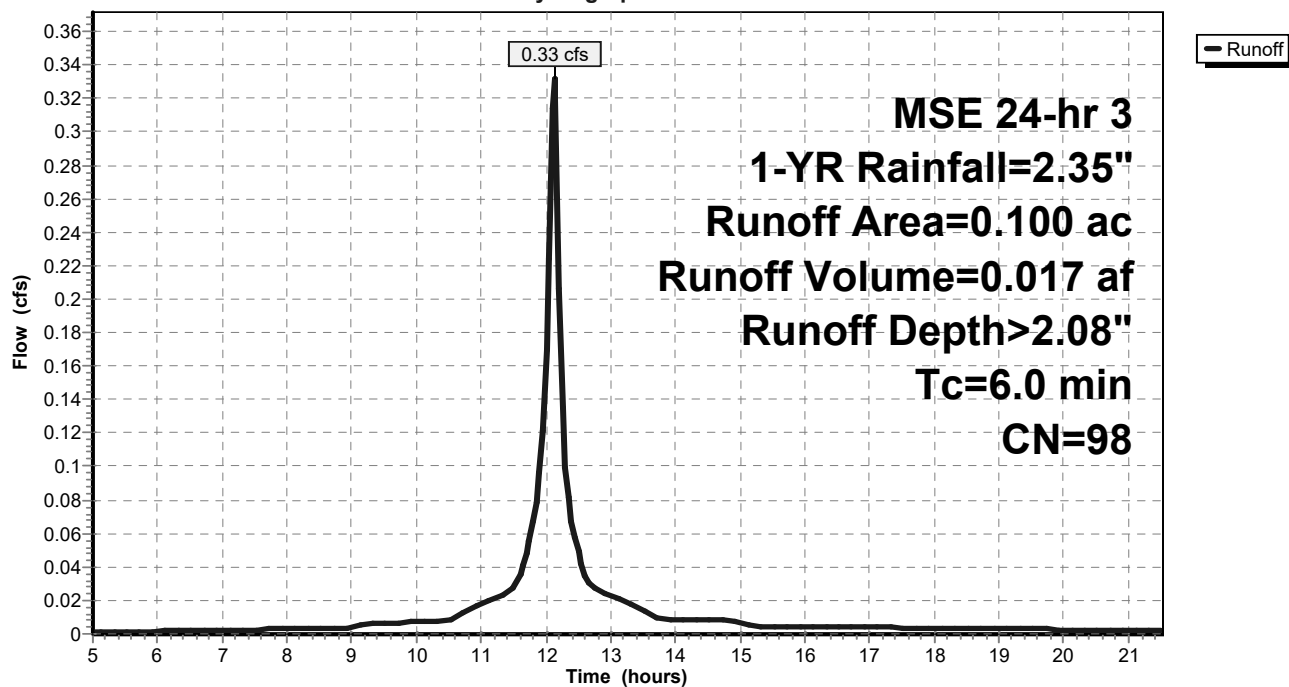
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
MSE 24-hr 3 1-YR Rainfall=2.35"

Area (ac)	CN	Description
* 0.100	98	ROOF
0.100		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, MIN PER TR55

Subcatchment NRD: NEW ADDITION ROOF AREA B

Hydrograph



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MSE 24-hr 3 1-YR Rainfall=2.35"

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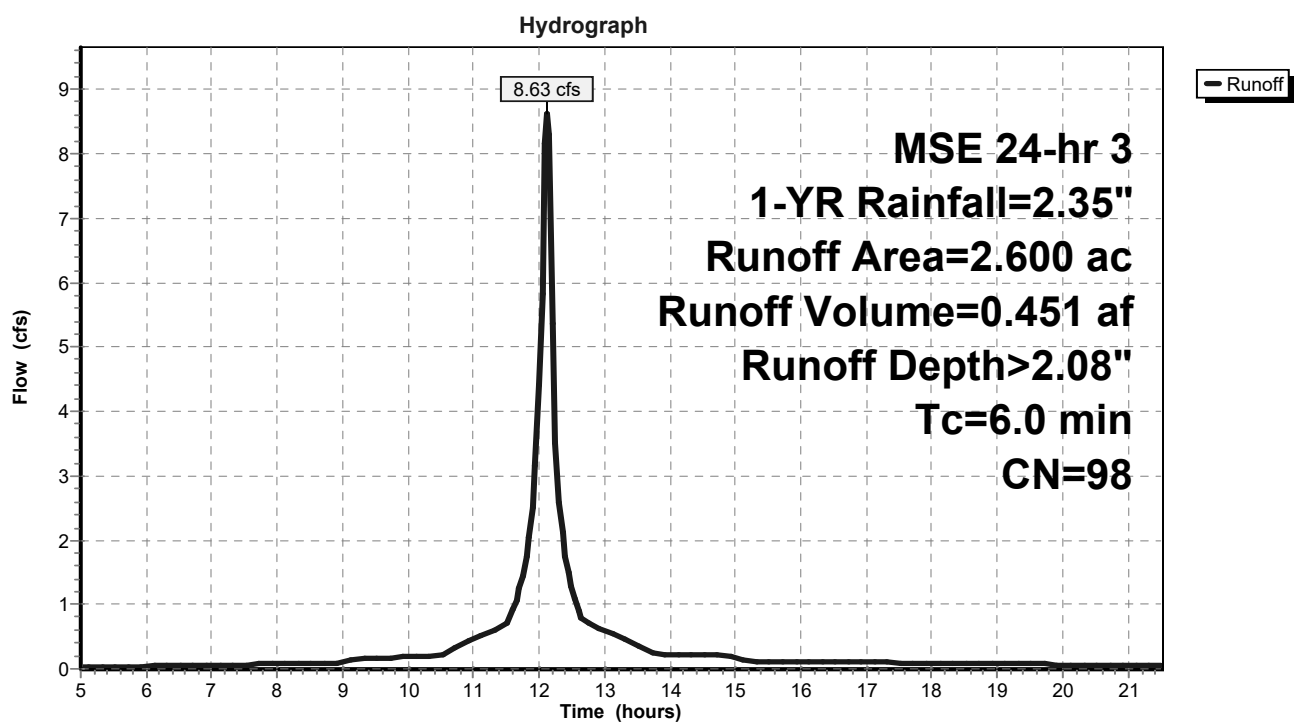
Summary for Subcatchment UPA: 2020 ADDITION UPPER ROOF AREA

Runoff = 8.63 cfs @ 12.13 hrs, Volume= 0.451 af, Depth> 2.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
MSE 24-hr 3 1-YR Rainfall=2.35"

Area (ac)	CN	Description
* 2.600	98	ROOF
2.600		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, MIN PER TR55

Subcatchment UPA: 2020 ADDITION UPPER ROOF AREA

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MSE 24-hr 3 1-YR Rainfall=2.35"

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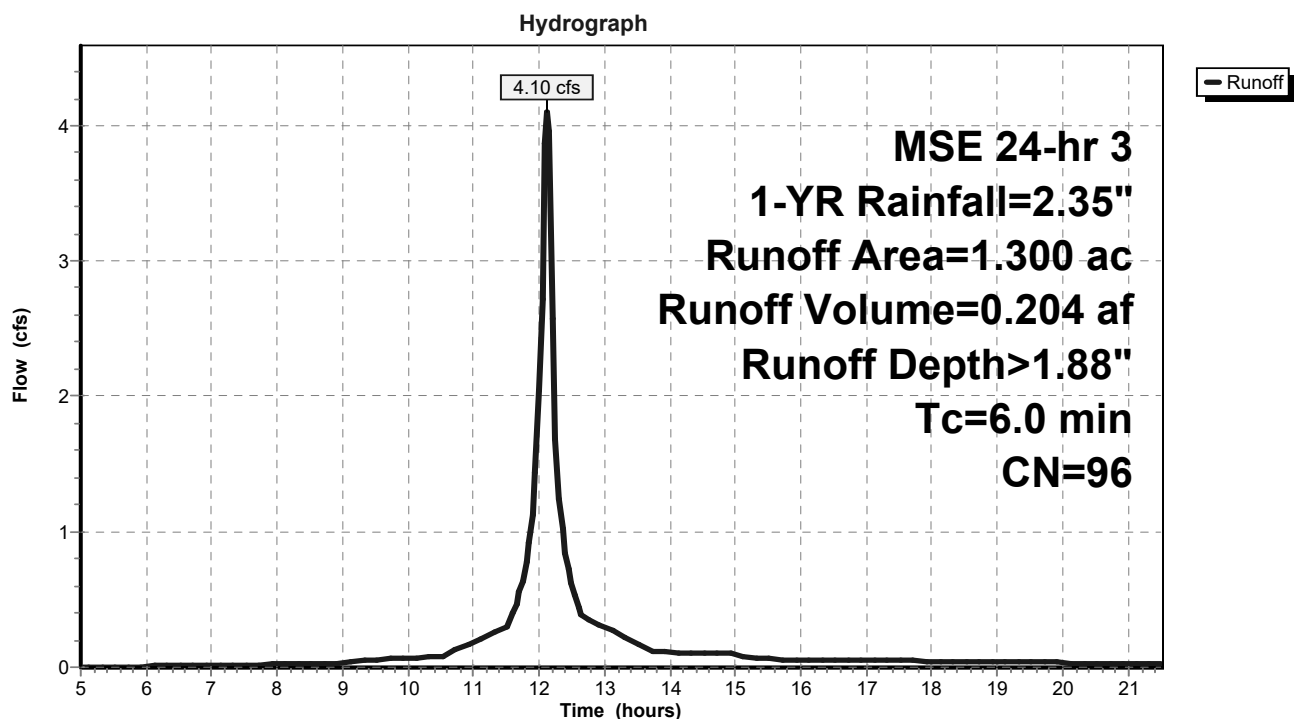
Summary for Subcatchment US: UNDETAINED SOUTH AREAS

Runoff = 4.10 cfs @ 12.13 hrs, Volume= 0.204 af, Depth> 1.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
MSE 24-hr 3 1-YR Rainfall=2.35"

Area (ac)	CN	Description
* 1.200	98	PAVEMENT
* 0.100	74	GRASS
1.300	96	Weighted Average
0.100		7.69% Pervious Area
1.200		92.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, MINE PER TR55

Subcatchment US: UNDETAINED SOUTH AREAS

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Summary for Pond LCFR: LOWER CONTROLLED FLOW ROOF STORAGE

Inflow Area = 0.200 ac, 100.00% Impervious, Inflow Depth > 2.08" for 1-YR event
 Inflow = 0.66 cfs @ 12.13 hrs, Volume= 0.035 af
 Outflow = 0.58 cfs @ 12.16 hrs, Volume= 0.035 af, Atten= 13%, Lag= 2.2 min
 Primary = 0.58 cfs @ 12.16 hrs, Volume= 0.035 af

Routing by Stor-Ind method, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
 Peak Elev= 1,000.09' @ 12.16 hrs Surf.Area= 1,500 sf Storage= 68 cf

Plug-Flow detention time= 0.7 min calculated for 0.035 af (100% of inflow)
 Center-of-Mass det. time= 0.7 min (751.0 - 750.3)

Volume	Invert	Avail.Storage	Storage Description
#1	1,000.00'	3,727 cf	Custom Stage Data (Prismatic) Listed below (Recalc) x 4

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,000.00	1	0	0
1,000.67	2,780	932	932

Device	Routing	Invert	Outlet Devices
#1	Primary	1,000.00'	6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH X 4.00 Head (feet) 0.00 0.50 Disch. (cfs) 0.000 0.800
#2	Primary	1,000.31'	6.0" Horiz. 6" DIA WEIR WITHIN FIXTURE X 4.00 C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.57 cfs @ 12.16 hrs HW=1,000.09' (Free Discharge)
 1=6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH (Custom Controls 0.57 cfs)
 2=6" DIA WEIR WITHIN FIXTURE (Controls 0.00 cfs)

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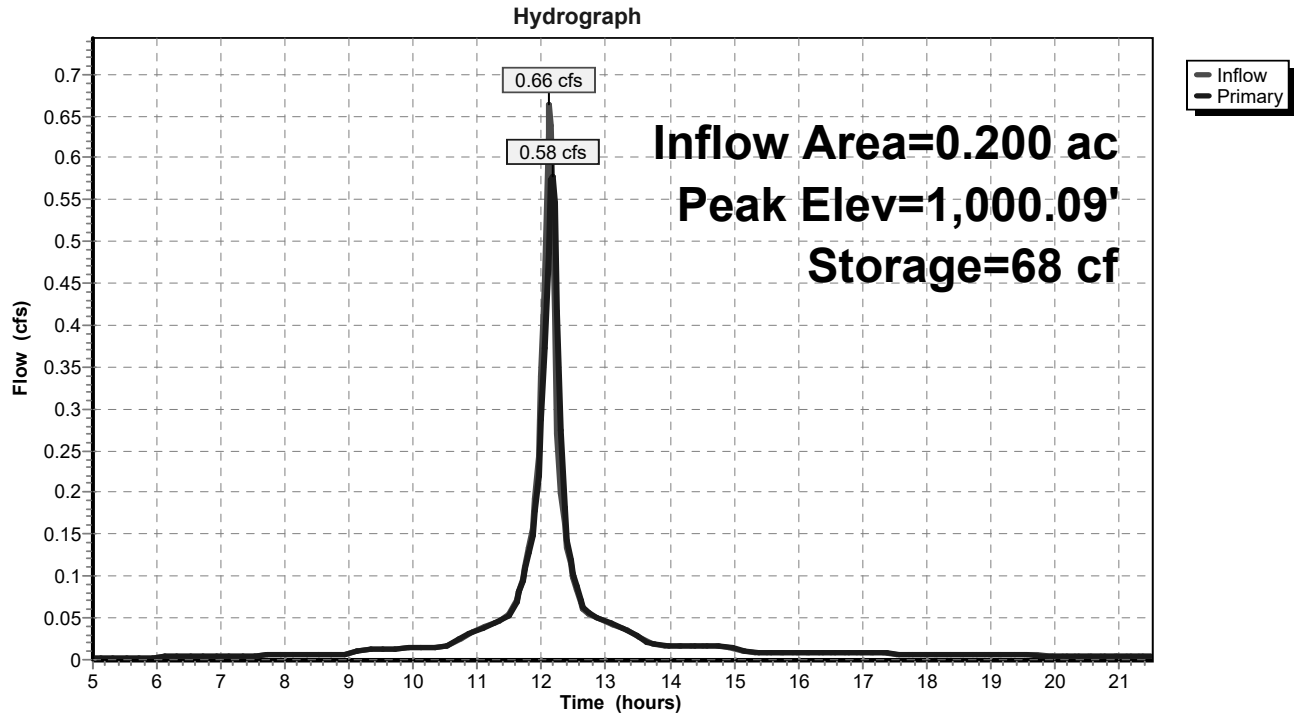
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MSE 24-hr 3 1-YR Rainfall=2.35"

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Pond LCFR: LOWER CONTROLLED FLOW ROOF STORAGE



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Summary for Pond NCFRA: NEW CONTROLLED FLOW ROOF STORAGE A

Inflow Area = 1.450 ac, 100.00% Impervious, Inflow Depth > 2.08" for 1-YR event
 Inflow = 4.81 cfs @ 12.13 hrs, Volume= 0.252 af
 Outflow = 2.69 cfs @ 12.22 hrs, Volume= 0.252 af, Atten= 44%, Lag= 5.5 min
 Primary = 2.69 cfs @ 12.22 hrs, Volume= 0.252 af

Routing by Stor-Ind method, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
 Peak Elev= 1,000.37' @ 12.22 hrs Surf.Area= 10,274 sf Storage= 1,910 cf

Plug-Flow detention time= 5.7 min calculated for 0.251 af (100% of inflow)
 Center-of-Mass det. time= 5.6 min (755.9 - 750.3)

Volume	Invert	Avail.Storage	Storage Description
#1	1,000.00'	7,770 cf	Custom Stage Data (Prismatic) Listed below (Recalc) x 4

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,000.00	0	0	0
1,000.75	5,180	1,943	1,943

Device	Routing	Invert	Outlet Devices
#1	Primary	1,000.00'	6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH X 4.00 Head (feet) 0.00 0.50 Disch. (cfs) 0.000 0.800
#2	Primary	1,000.31'	6.0" Horiz. 6" DIA WEIR WITHIN FIXTURE X 4.00 C= 0.600 Limited to weir flow at low heads
#3	Primary	1,000.50'	6.0" Horiz. OVERFLOW X 4.00 C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.65 cfs @ 12.22 hrs HW=1,000.37' (Free Discharge)
 1=6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH (Custom Controls 2.36 cfs)
 2=6" DIA WEIR WITHIN FIXTURE (Weir Controls 0.29 cfs @ 0.79 fps)
 3=OVERFLOW (Controls 0.00 cfs)

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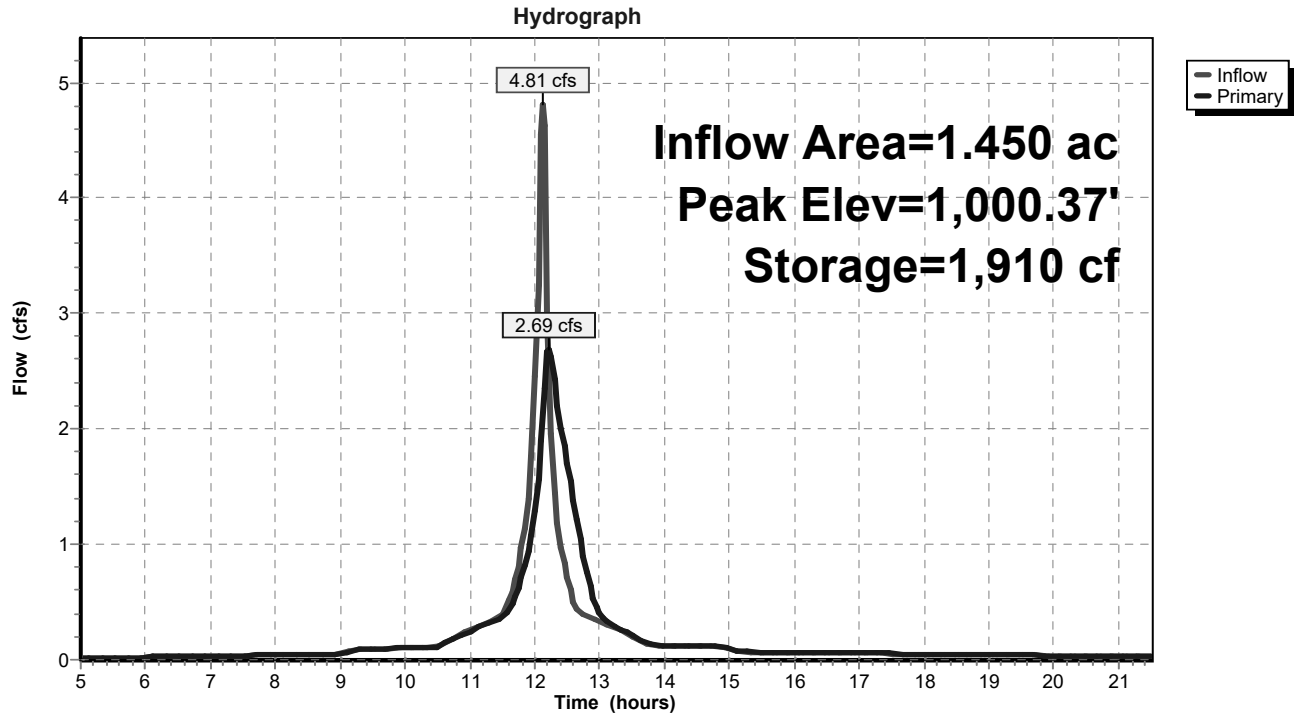
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Pond NCFRA: NEW CONTROLLED FLOW ROOF STORAGE A



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Summary for Pond NCFRB: NEW CONTROLLED FLOW ROOF STORAGE B

Inflow Area = 0.250 ac, 100.00% Impervious, Inflow Depth > 2.08" for 1-YR event
 Inflow = 0.83 cfs @ 12.13 hrs, Volume= 0.043 af
 Outflow = 0.47 cfs @ 12.22 hrs, Volume= 0.043 af, Atten= 44%, Lag= 5.5 min
 Primary = 0.47 cfs @ 12.22 hrs, Volume= 0.043 af

Routing by Stor-Ind method, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
 Peak Elev= 1,000.29' @ 12.22 hrs Surf.Area= 2,012 sf Storage= 293 cf

Plug-Flow detention time= 4.4 min calculated for 0.043 af (100% of inflow)
 Center-of-Mass det. time= 4.4 min (754.7 - 750.3)

Volume	Invert	Avail.Storage	Storage Description
#1	1,000.00'	1,943 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,000.00	0	0	0
1,000.75	5,180	1,943	1,943

Device	Routing	Invert	Outlet Devices
#1	Primary	1,000.00'	6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH Head (feet) 0.00 0.50 Disch. (cfs) 0.000 0.800
#2	Primary	1,000.31'	6.0" Horiz. 6" DIA WEIR WITHIN FIXTURE C= 0.600 Limited to weir flow at low heads
#3	Primary	1,000.50'	6.0" Horiz. OVERFLOW C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.46 cfs @ 12.22 hrs HW=1,000.29' (Free Discharge)
 1=6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH (Custom Controls 0.46 cfs)
 2=6" DIA WEIR WITHIN FIXTURE (Controls 0.00 cfs)
 3=OVERFLOW (Controls 0.00 cfs)

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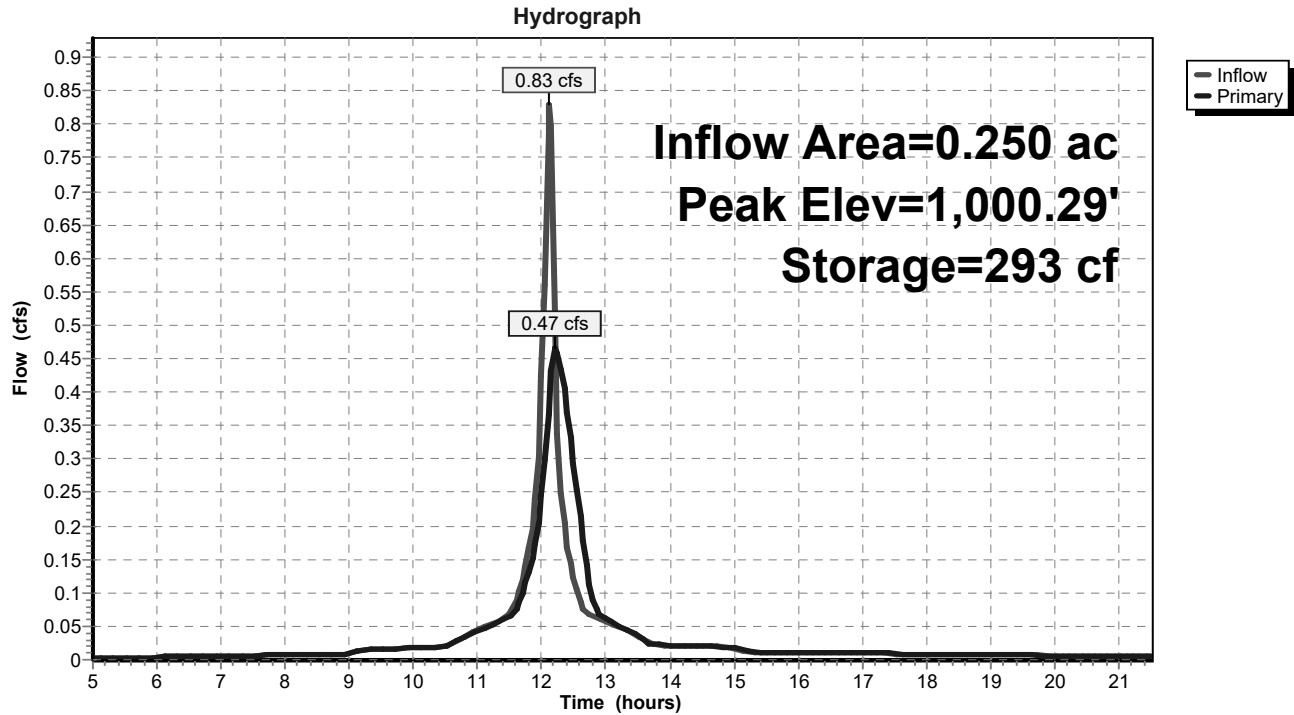
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Pond NCFRB: NEW CONTROLLED FLOW ROOF STORAGE B



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Summary for Pond NCFRC: NEW CONTROLLED FLOW ROOF STORAGE C

Inflow Area = 0.400 ac, 100.00% Impervious, Inflow Depth > 2.08" for 1-YR event
 Inflow = 1.33 cfs @ 12.13 hrs, Volume= 0.069 af
 Outflow = 1.02 cfs @ 12.18 hrs, Volume= 0.069 af, Atten= 23%, Lag= 3.3 min
 Primary = 1.02 cfs @ 12.18 hrs, Volume= 0.069 af

Routing by Stor-Ind method, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
 Peak Elev= 1,000.21' @ 12.18 hrs Surf.Area= 2,198 sf Storage= 233 cf

Plug-Flow detention time= 1.4 min calculated for 0.069 af (100% of inflow)
 Center-of-Mass det. time= 1.4 min (751.7 - 750.3)

Volume	Invert	Avail.Storage	Storage Description
#1	1,000.00'	2,914 cf	Custom Stage Data (Prismatic) Listed below (Recalc) x 3

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,000.00	0	0	0
1,000.75	2,590	971	971

Device	Routing	Invert	Outlet Devices
#1	Primary	1,000.00'	6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH X 3.00 Head (feet) 0.00 0.50 Disch. (cfs) 0.000 0.800
#2	Primary	1,000.31'	6.0" Horiz. 6" DIA WEIR WITHIN FIXTURE X 3.00 C= 0.600 Limited to weir flow at low heads
#3	Primary	1,000.50'	6.0" Horiz. OVERFLOW X 3.00 C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.00 cfs @ 12.18 hrs HW=1,000.21' (Free Discharge)
 1=6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH (Custom Controls 1.00 cfs)
 2=6" DIA WEIR WITHIN FIXTURE (Controls 0.00 cfs)
 3=OVERFLOW (Controls 0.00 cfs)

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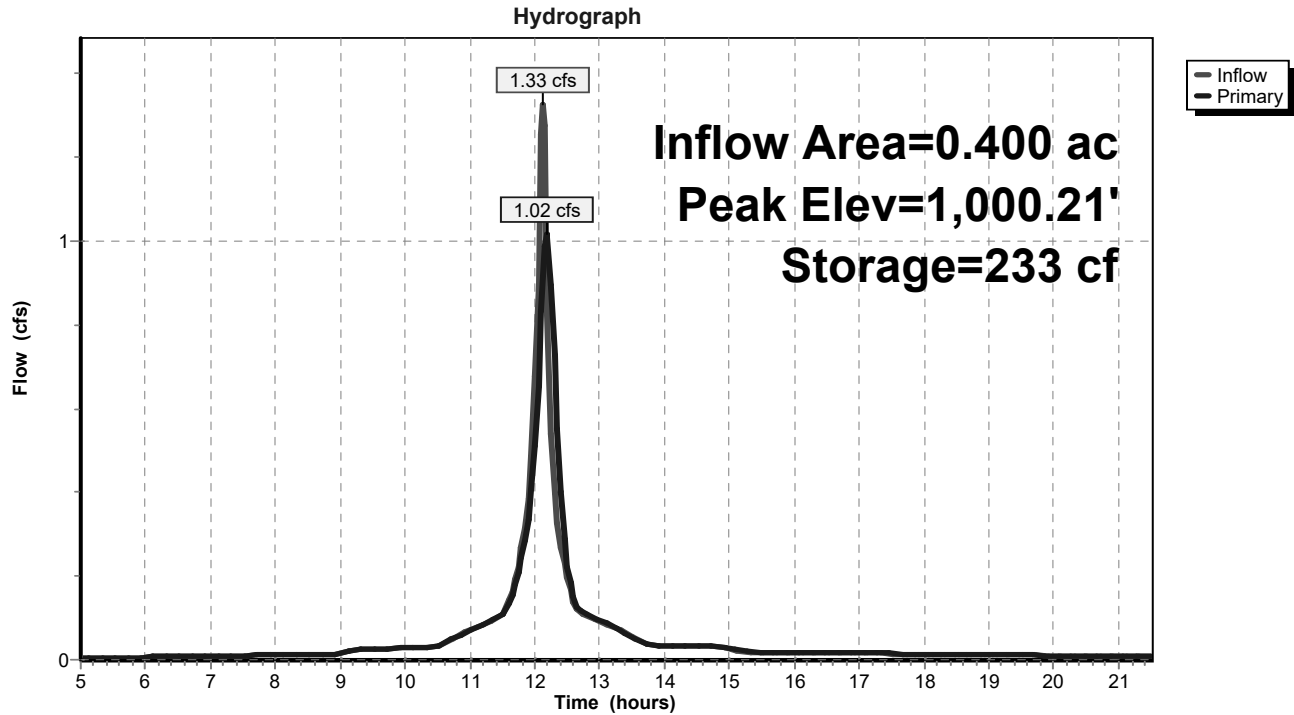
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Pond NCFRC: NEW CONTROLLED FLOW ROOF STORAGE C



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Summary for Pond NCFRD: NEW CONTROLLED FLOW ROOF STORAGE D

Inflow Area = 0.100 ac, 100.00% Impervious, Inflow Depth > 2.08" for 1-YR event
 Inflow = 0.33 cfs @ 12.13 hrs, Volume= 0.017 af
 Outflow = 0.29 cfs @ 12.16 hrs, Volume= 0.017 af, Atten= 12%, Lag= 2.0 min
 Primary = 0.29 cfs @ 12.16 hrs, Volume= 0.017 af

Routing by Stor-Ind method, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
 Peak Elev= 1,000.18' @ 12.16 hrs Surf.Area= 341 sf Storage= 31 cf

Plug-Flow detention time= 0.6 min calculated for 0.017 af (100% of inflow)
 Center-of-Mass det. time= 0.6 min (750.9 - 750.3)

Volume	Invert	Avail.Storage	Storage Description
#1	1,000.00'	525 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,000.00	0	0	0
1,000.75	1,400	525	525

Device	Routing	Invert	Outlet Devices
#1	Primary	1,000.00'	6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH Head (feet) 0.00 0.50 Disch. (cfs) 0.000 0.800
#2	Primary	1,000.31'	6.0" Horiz. 6" DIA WEIR WITHIN FIXTURE C= 0.600 Limited to weir flow at low heads
#3	Primary	1,000.50'	6.0" Horiz. OVERFLOW C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.29 cfs @ 12.16 hrs HW=1,000.18' (Free Discharge)
 1=6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH (Custom Controls 0.29 cfs)
 2=6" DIA WEIR WITHIN FIXTURE (Controls 0.00 cfs)
 3=OVERFLOW (Controls 0.00 cfs)

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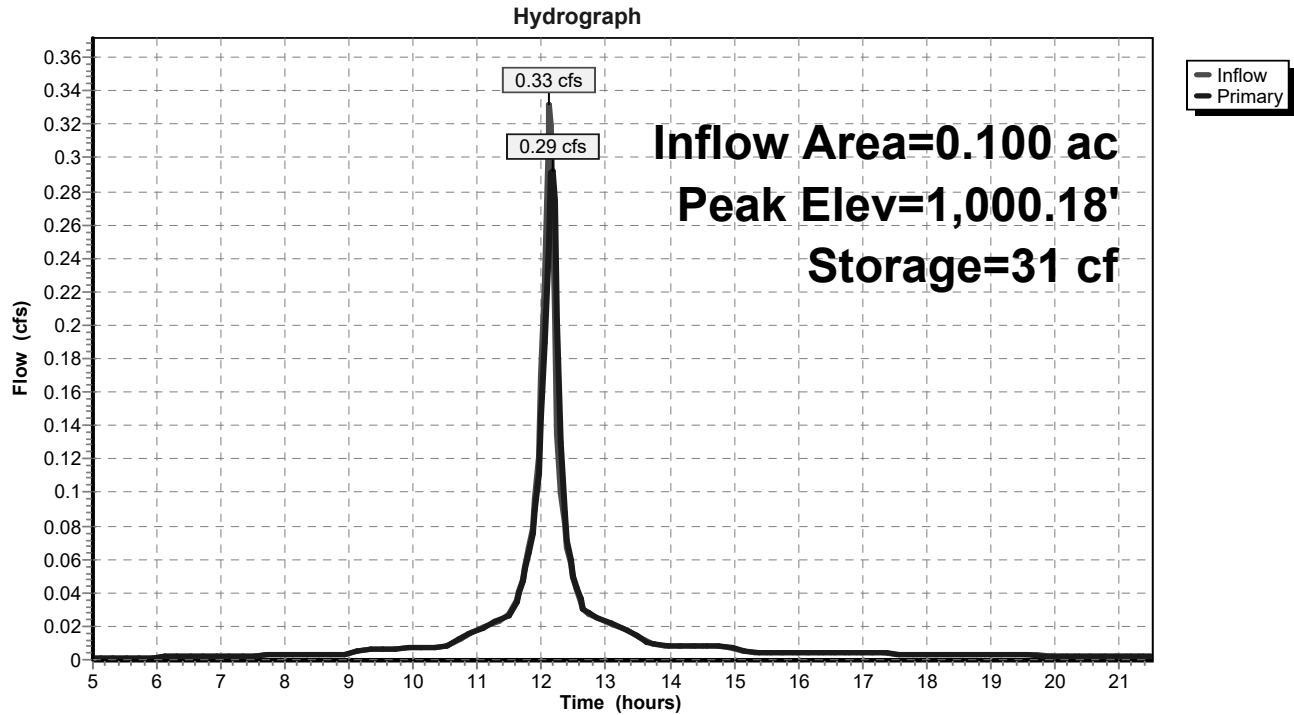
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Pond NCFRD: NEW CONTROLLED FLOW ROOF STORAGE D



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Summary for Pond PC: SOUTH POND

Inflow Area = 9.400 ac, 75.53% Impervious, Inflow Depth > 1.62" for 1-YR event
 Inflow = 16.20 cfs @ 12.15 hrs, Volume= 1.270 af
 Outflow = 0.58 cfs @ 15.06 hrs, Volume= 0.442 af, Atten= 96%, Lag= 175.0 min
 Primary = 0.58 cfs @ 15.06 hrs, Volume= 0.442 af

Routing by Stor-Ind method, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
 Peak Elev= 900.80' @ 15.06 hrs Surf.Area= 21,331 sf Storage= 42,631 cf

Plug-Flow detention time= 331.7 min calculated for 0.442 af (35% of inflow)
 Center-of-Mass det. time= 234.1 min (1,005.2 - 771.1)

Volume	Invert	Avail.Storage	Storage Description
#1	898.50'	144,070 cf	MODIFIED WET POND (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
898.50	15,500	0	0
899.00	16,900	8,100	8,100
900.00	19,400	18,150	26,250
901.00	21,800	20,600	46,850
902.00	24,400	23,100	69,950
903.00	27,000	25,700	95,650
904.00	31,500	29,250	124,900
904.60	32,400	19,170	144,070

Device	Routing	Invert	Outlet Devices
#1	Primary	898.87'	12.0" Round Culvert L= 344.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 898.87' / 898.02' S= 0.0025 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	898.50'	4.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	901.50'	36.0" Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=0.58 cfs @ 15.06 hrs HW=900.80' (Free Discharge)

1=Culvert (Passes 0.58 cfs of 2.57 cfs potential flow)
 2=Orifice/Grate (Orifice Controls 0.58 cfs @ 6.70 fps)
 3=Orifice/Grate (Controls 0.00 cfs)

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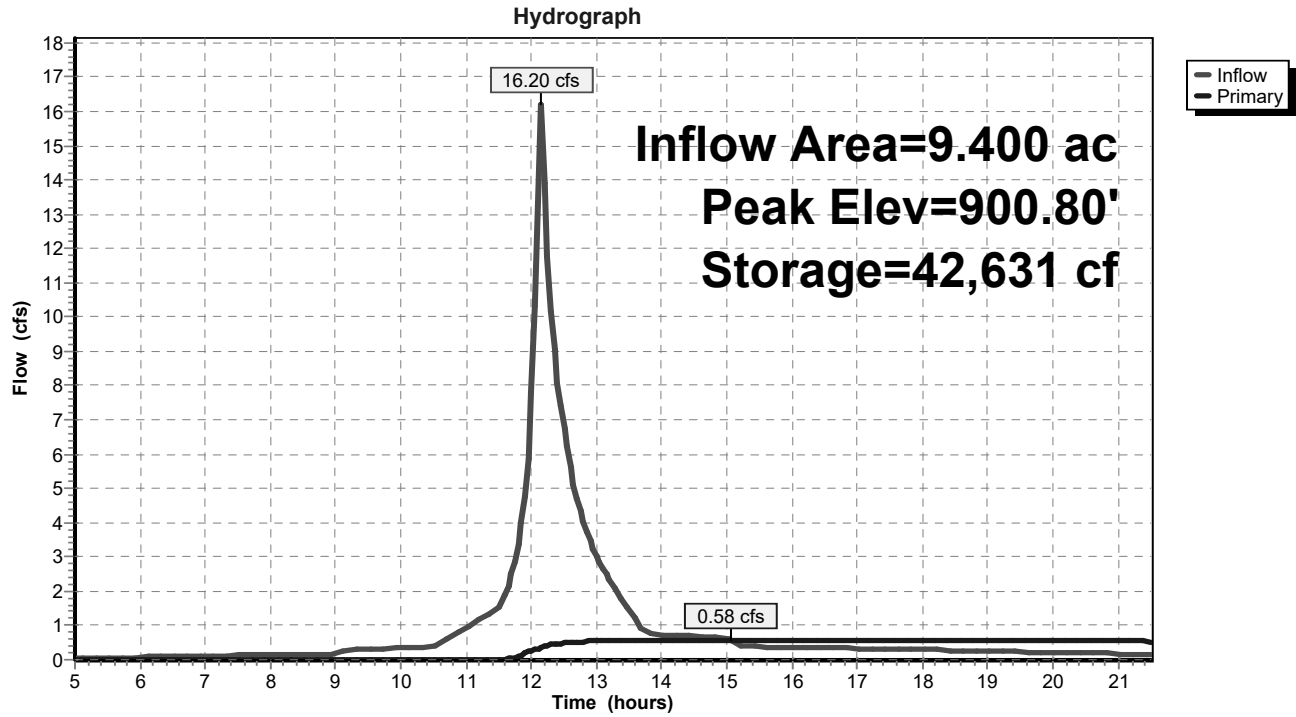
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Pond PC: SOUTH POND



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MSE 24-hr 3 1-YR Rainfall=2.35"

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Summary for Pond UCFR: UPPER CONTROLLED FLOW ROOF STORAGE

Inflow Area = 2.600 ac, 100.00% Impervious, Inflow Depth > 2.08" for 1-YR event
 Inflow = 8.63 cfs @ 12.13 hrs, Volume= 0.451 af
 Outflow = 3.18 cfs @ 12.27 hrs, Volume= 0.451 af, Atten= 63%, Lag= 8.6 min
 Primary = 3.18 cfs @ 12.27 hrs, Volume= 0.451 af

Routing by Stor-Ind method, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
 Peak Elev= 1,000.25' @ 12.27 hrs Surf.Area= 39,391 sf Storage= 4,889 cf

Plug-Flow detention time= 12.4 min calculated for 0.450 af (100% of inflow)
 Center-of-Mass det. time= 12.3 min (762.6 - 750.3)

Volume	Invert	Avail.Storage	Storage Description
#1	1,000.00'	35,625 cf	Custom Stage Data (Prismatic) Listed below (Recalc) x 8

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,000.00	1	0	0
1,000.67	13,292	4,453	4,453

Device	Routing	Invert	Outlet Devices
#1	Primary	1,000.00'	6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH X 8.00 Head (feet) 0.00 0.50 Disch. (cfs) 0.000 0.800
#2	Primary	1,000.31'	6.0" Horiz. 6" DIA WEIR WITHIN FIXTURE X 8.00 C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.17 cfs @ 12.27 hrs HW=1,000.25' (Free Discharge)
 1=6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH (Custom Controls 3.17 cfs)
 2=6" DIA WEIR WITHIN FIXTURE (Controls 0.00 cfs)

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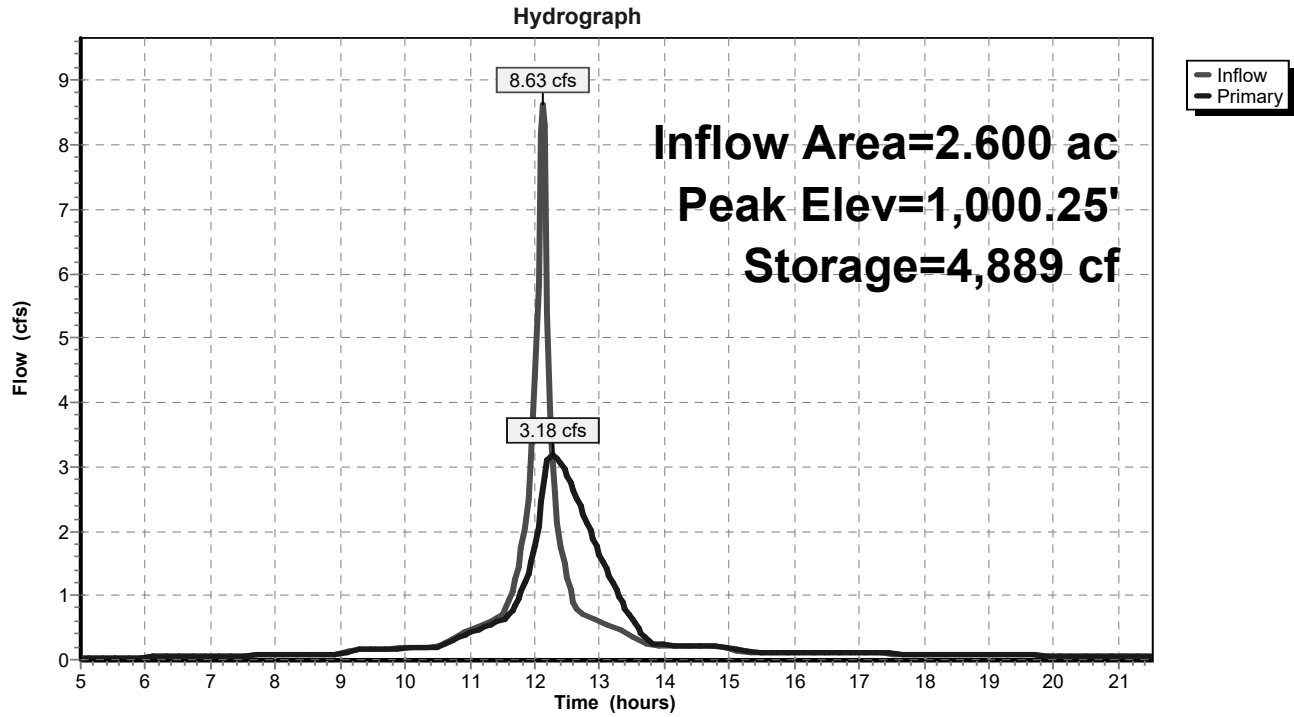
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Pond UCFR: UPPER CONTROLLED FLOW ROOF STORAGE



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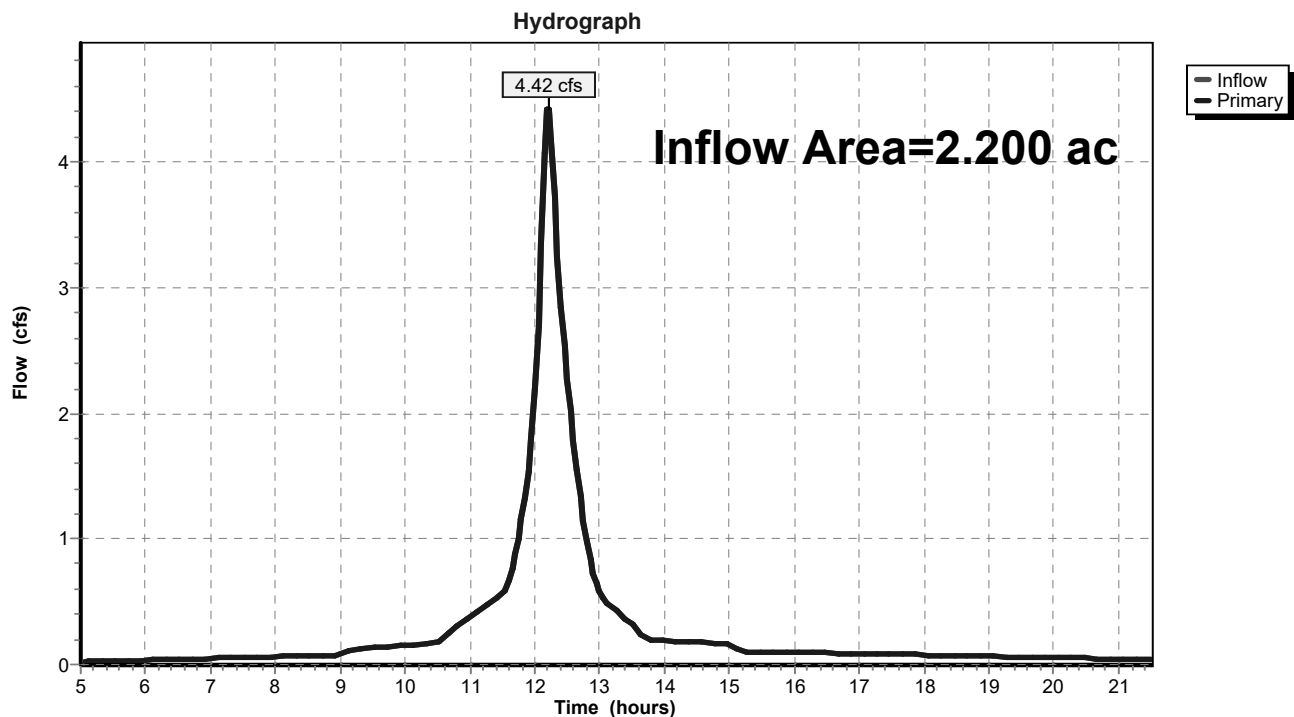
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Summary for Link NCFCR: NEW ROOF COMBINED CF RELEASE

Inflow Area = 2.200 ac, 100.00% Impervious, Inflow Depth > 2.08" for 1-YR event
Inflow = 4.42 cfs @ 12.20 hrs, Volume= 0.382 af
Primary = 4.42 cfs @ 12.20 hrs, Volume= 0.382 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs

Link NCFCR: NEW ROOF COMBINED CF RELEASE



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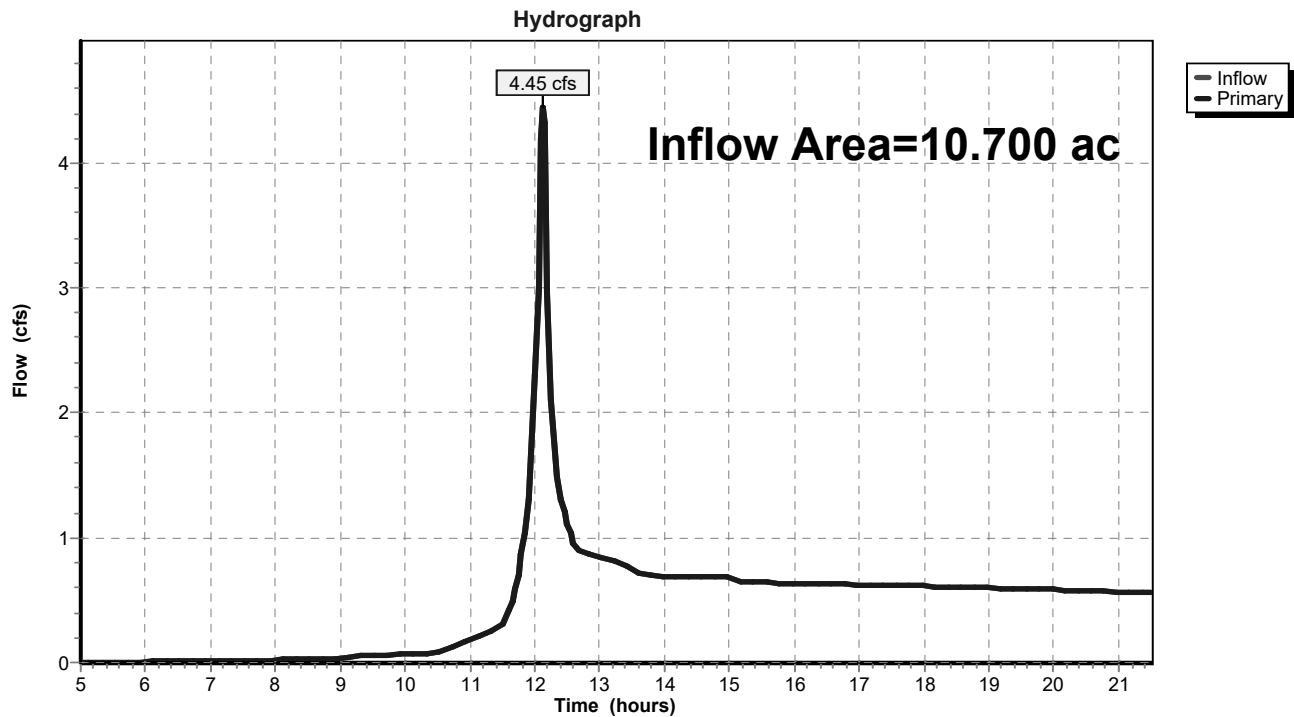
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Summary for Link PSD: PROPOSED SOUTH DISCHARGE

Inflow Area = 10.700 ac, 77.57% Impervious, Inflow Depth > 0.72" for 1-YR event
Inflow = 4.45 cfs @ 12.13 hrs, Volume= 0.646 af
Primary = 4.45 cfs @ 12.13 hrs, Volume= 0.646 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs

Link PSD: PROPOSED SOUTH DISCHARGE



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Time span=5.00-21.50 hrs, dt=0.05 hrs, 331 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentAWP: DIRECT AREA TO	Runoff Area=4.400 ac 47.73% Impervious Runoff Depth>1.34" Tc=6.0 min CN=86 Runoff=10.77 cfs 0.491 af
SubcatchmentLRA: 2020 ADDITION	Runoff Area=0.200 ac 100.00% Impervious Runoff Depth>2.37" Tc=6.0 min CN=98 Runoff=0.75 cfs 0.040 af
SubcatchmentNRA: NEW ADDITION	Runoff Area=1.450 ac 100.00% Impervious Runoff Depth>2.37" Tc=6.0 min CN=98 Runoff=5.45 cfs 0.287 af
SubcatchmentNRB: NEW ADDITION	Runoff Area=0.250 ac 100.00% Impervious Runoff Depth>2.37" Tc=6.0 min CN=98 Runoff=0.94 cfs 0.049 af
SubcatchmentNRC: NEW ADDITION	Runoff Area=0.400 ac 100.00% Impervious Runoff Depth>2.37" Tc=6.0 min CN=98 Runoff=1.50 cfs 0.079 af
SubcatchmentNRD: NEW ADDITION	Runoff Area=0.100 ac 100.00% Impervious Runoff Depth>2.37" Tc=6.0 min CN=98 Runoff=0.38 cfs 0.020 af
SubcatchmentUPA: 2020 ADDITION	Runoff Area=2.600 ac 100.00% Impervious Runoff Depth>2.37" Tc=6.0 min CN=98 Runoff=9.77 cfs 0.514 af
SubcatchmentUS: UNDETAINEDSOUTH	Runoff Area=1.300 ac 92.31% Impervious Runoff Depth>2.17" Tc=6.0 min CN=96 Runoff=4.68 cfs 0.235 af
Pond LCFR: LOWER CONTROLLED FLOW	Peak Elev=1,000.10' Storage=84 cf Inflow=0.75 cfs 0.040 af Outflow=0.64 cfs 0.040 af
Pond NCFRA: NEW CONTROLLED FLOW	Peak Elev=1,000.40' Storage=2,210 cf Inflow=5.45 cfs 0.287 af Outflow=3.11 cfs 0.287 af
Pond NCFRB: NEW CONTROLLED FLOW	Peak Elev=1,000.32' Storage=350 cf Inflow=0.94 cfs 0.049 af Outflow=0.51 cfs 0.049 af
Pond NCFRC: NEW CONTROLLED FLOW	Peak Elev=1,000.23' Storage=285 cf Inflow=1.50 cfs 0.079 af Outflow=1.13 cfs 0.079 af
Pond NCFRD: NEW CONTROLLED FLOW	Peak Elev=1,000.20' Storage=39 cf Inflow=0.38 cfs 0.020 af Outflow=0.33 cfs 0.020 af
Pond PC: SOUTH POND	Peak Elev=901.15' Storage=50,125 cf Inflow=18.90 cfs 1.480 af Outflow=0.63 cfs 0.485 af
Pond UCFR: UPPER CONTROLLED FLOW	Peak Elev=1,000.27' Storage=5,734 cf Inflow=9.77 cfs 0.514 af Outflow=3.44 cfs 0.514 af
Link NCFRC: NEW ROOF COMBINED CF RELEASE	Inflow=5.03 cfs 0.435 af Primary=5.03 cfs 0.435 af

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Link PSD: PROPOSED SOUTH DISCHARGE

Inflow=5.07 cfs 0.721 af

Primary=5.07 cfs 0.721 af

Total Runoff Area = 10.700 ac Runoff Volume = 1.715 af Average Runoff Depth = 1.92"
22.43% Pervious = 2.400 ac 77.57% Impervious = 8.300 ac

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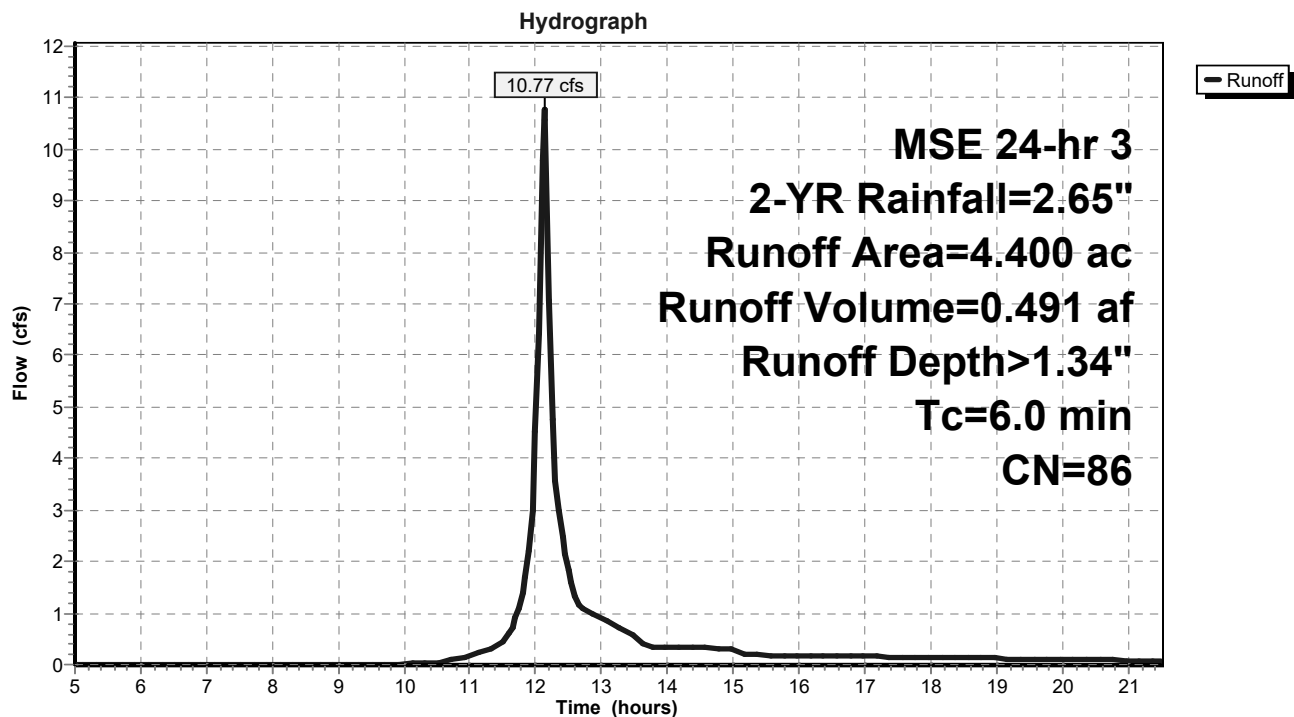
Summary for Subcatchment AWP: DIRECT AREA TO WET POND

Runoff = 10.77 cfs @ 12.13 hrs, Volume= 0.491 af, Depth> 1.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-YR Rainfall=2.65"

Area (ac)	CN	Description
* 1.700	98	PAVEMENT
* 2.300	74	GRASS
* 0.400	99	WATER SURFACE
4.400	86	Weighted Average
2.300		52.27% Pervious Area
2.100		47.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, MIN PER TR55

Subcatchment AWP: DIRECT AREA TO WET POND

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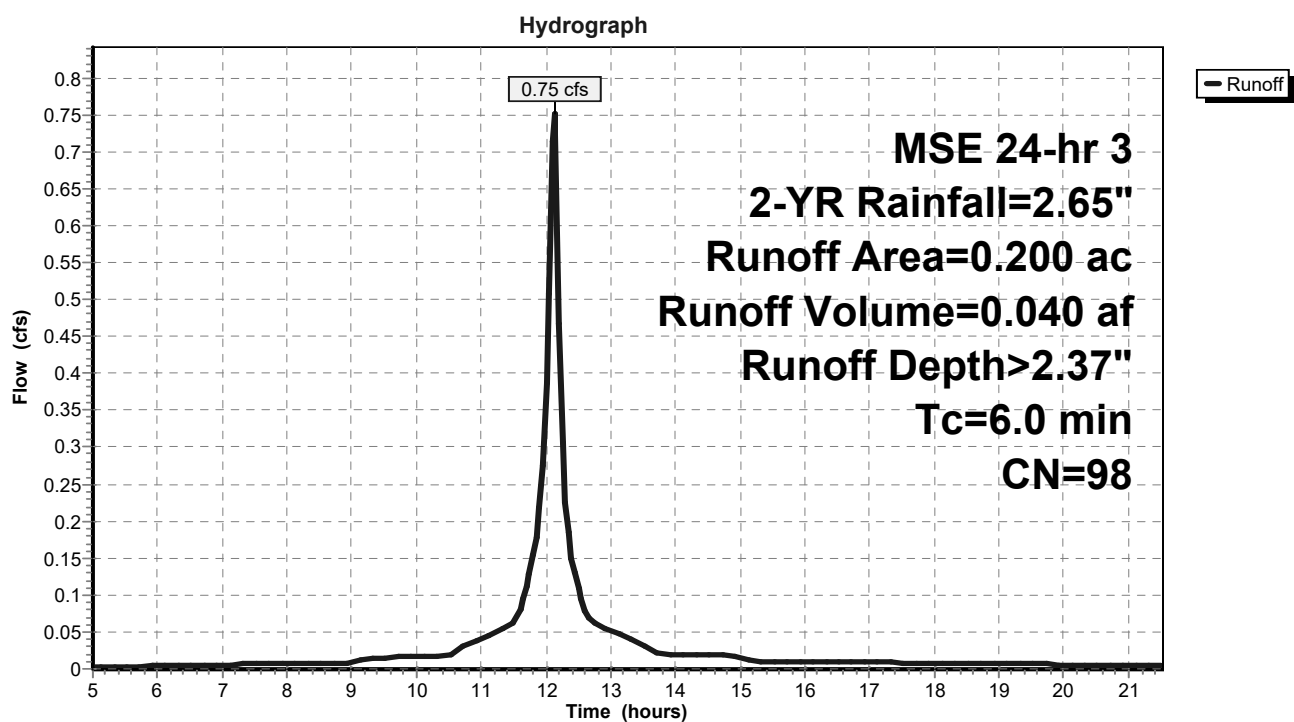
Summary for Subcatchment LRA: 2020 ADDITION LOWER ROOF AREA

Runoff = 0.75 cfs @ 12.13 hrs, Volume= 0.040 af, Depth> 2.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-YR Rainfall=2.65"

Area (ac)	CN	Description
* 0.200	98	ROOF
0.200		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, MIN PER TR55

Subcatchment LRA: 2020 ADDITION LOWER ROOF AREA

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MSE 24-hr 3 2-YR Rainfall=2.65"

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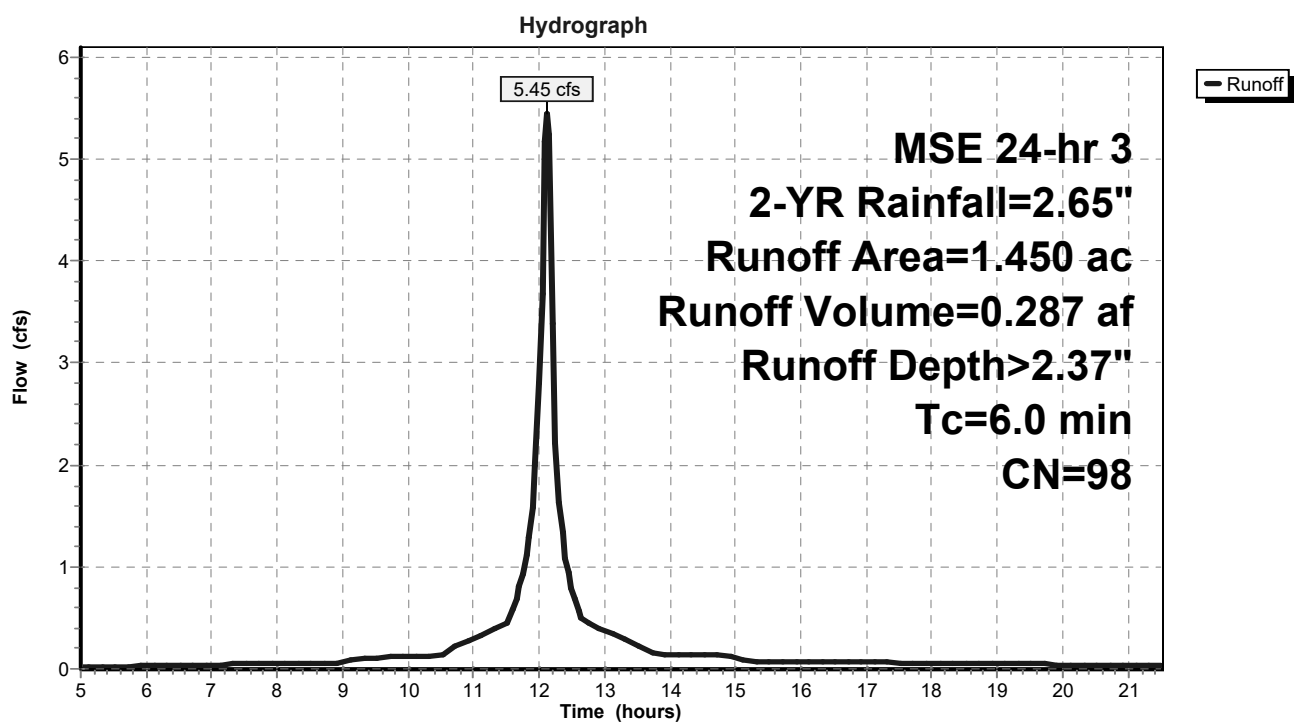
Summary for Subcatchment NRA: NEW ADDITION ROOF AREA A

Runoff = 5.45 cfs @ 12.13 hrs, Volume= 0.287 af, Depth> 2.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-YR Rainfall=2.65"

Area (ac)	CN	Description
* 1.450	98	ROOF
1.450		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, MIN PER TR55

Subcatchment NRA: NEW ADDITION ROOF AREA A

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MSE 24-hr 3 2-YR Rainfall=2.65"

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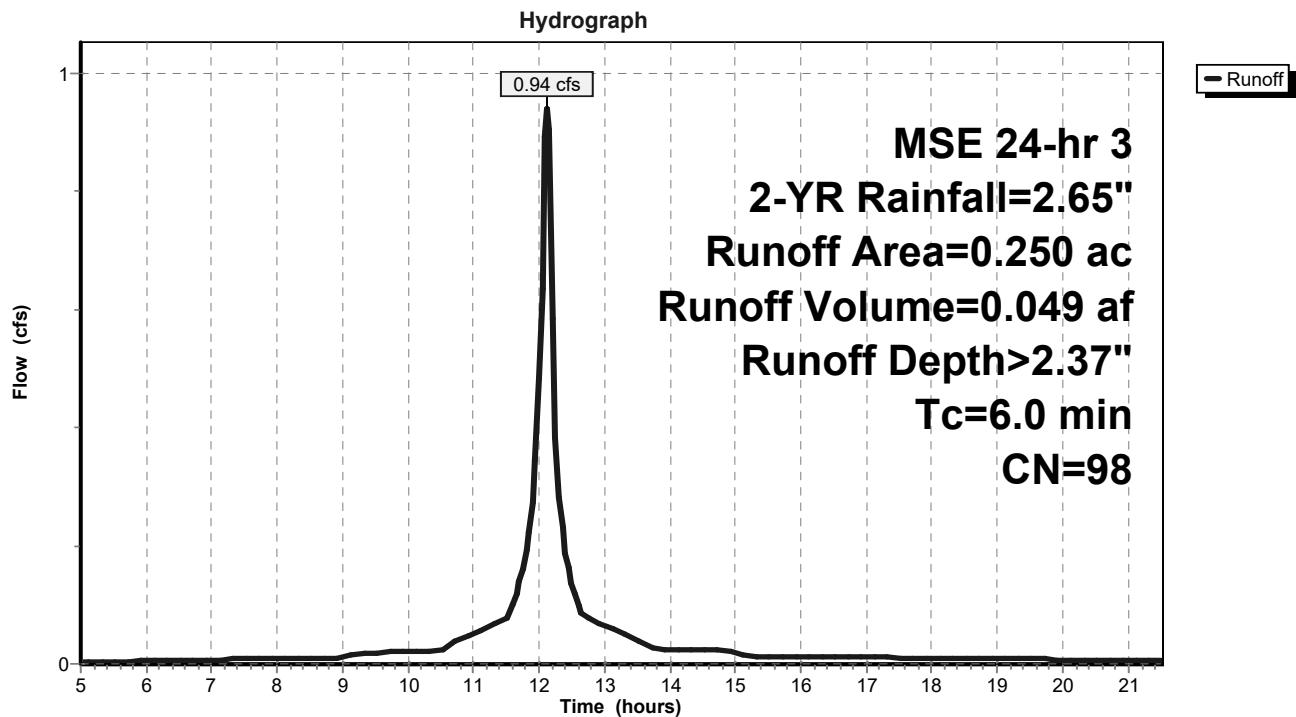
Summary for Subcatchment NRB: NEW ADDITION ROOF AREA B

Runoff = 0.94 cfs @ 12.13 hrs, Volume= 0.049 af, Depth> 2.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-YR Rainfall=2.65"

Area (ac)	CN	Description
* 0.250	98	ROOF
0.250		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, MIN PER TR55

Subcatchment NRB: NEW ADDITION ROOF AREA B

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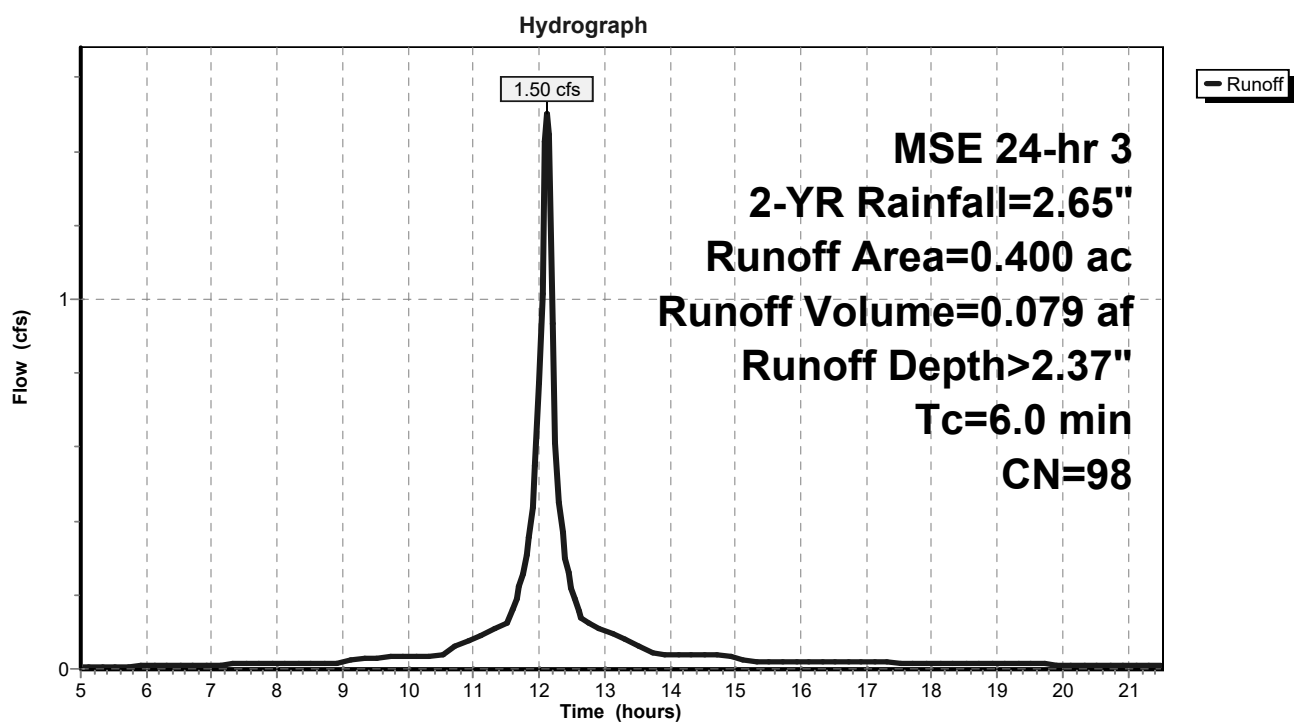
Summary for Subcatchment NRC: NEW ADDITION ROOF AREA C

Runoff = 1.50 cfs @ 12.13 hrs, Volume= 0.079 af, Depth> 2.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-YR Rainfall=2.65"

Area (ac)	CN	Description
* 0.400	98	ROOF
0.400		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, MIN PER TR55

Subcatchment NRC: NEW ADDITION ROOF AREA C

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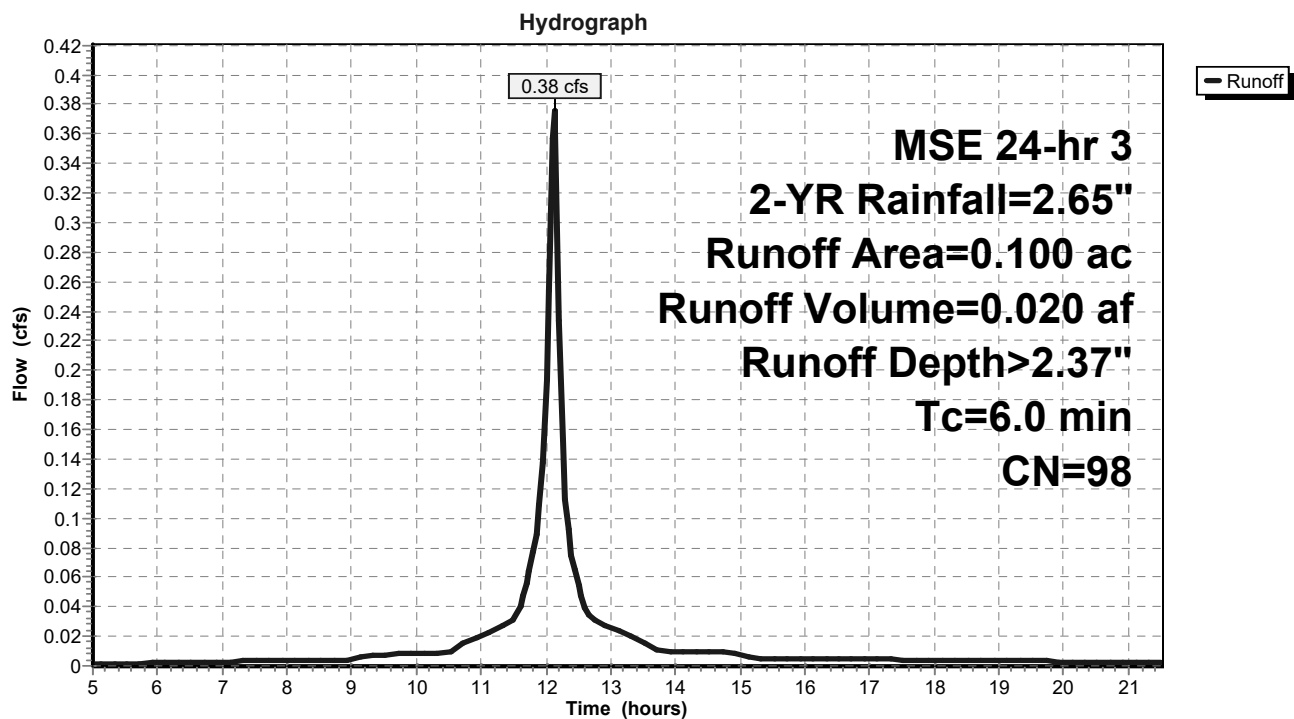
Summary for Subcatchment NRD: NEW ADDITION ROOF AREA B

Runoff = 0.38 cfs @ 12.13 hrs, Volume= 0.020 af, Depth> 2.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-YR Rainfall=2.65"

Area (ac)	CN	Description
* 0.100	98	ROOF
0.100		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, MIN PER TR55

Subcatchment NRD: NEW ADDITION ROOF AREA B

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MSE 24-hr 3 2-YR Rainfall=2.65"

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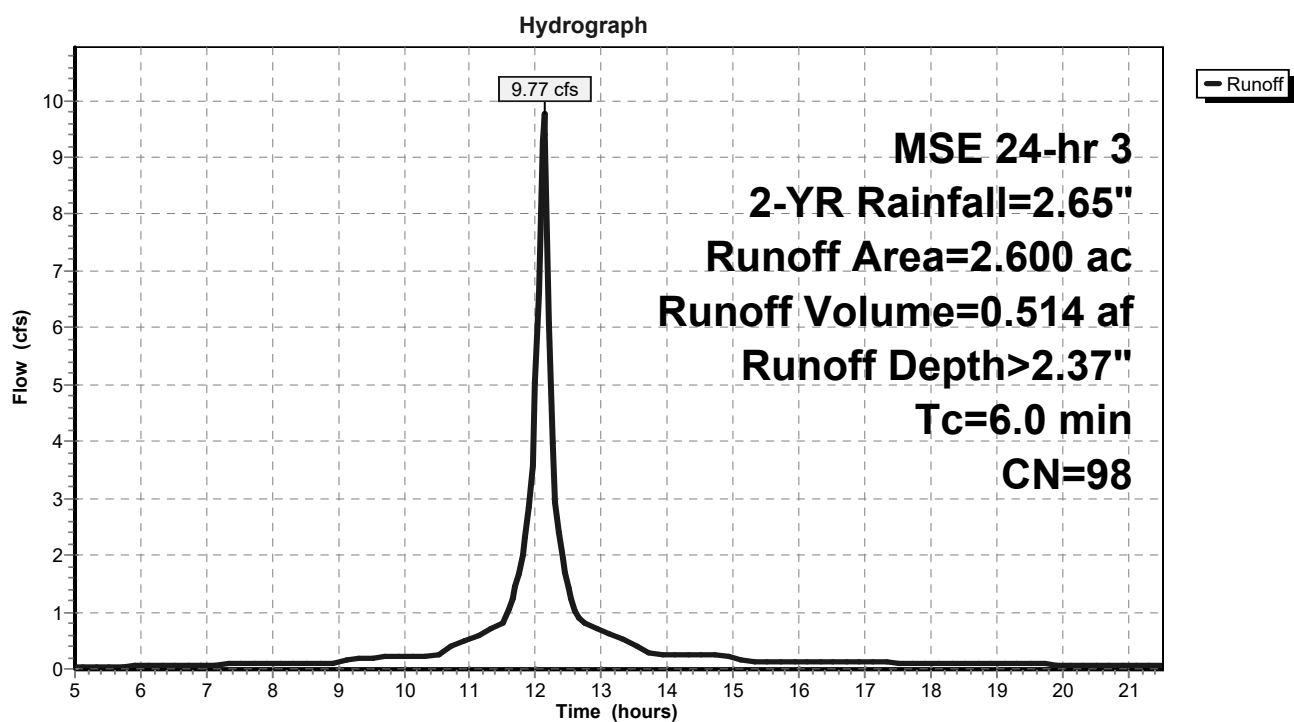
Summary for Subcatchment UPA: 2020 ADDITION UPPER ROOF AREA

Runoff = 9.77 cfs @ 12.13 hrs, Volume= 0.514 af, Depth> 2.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-YR Rainfall=2.65"

Area (ac)	CN	Description
* 2.600	98	ROOF
2.600		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, MIN PER TR55

Subcatchment UPA: 2020 ADDITION UPPER ROOF AREA

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MSE 24-hr 3 2-YR Rainfall=2.65"

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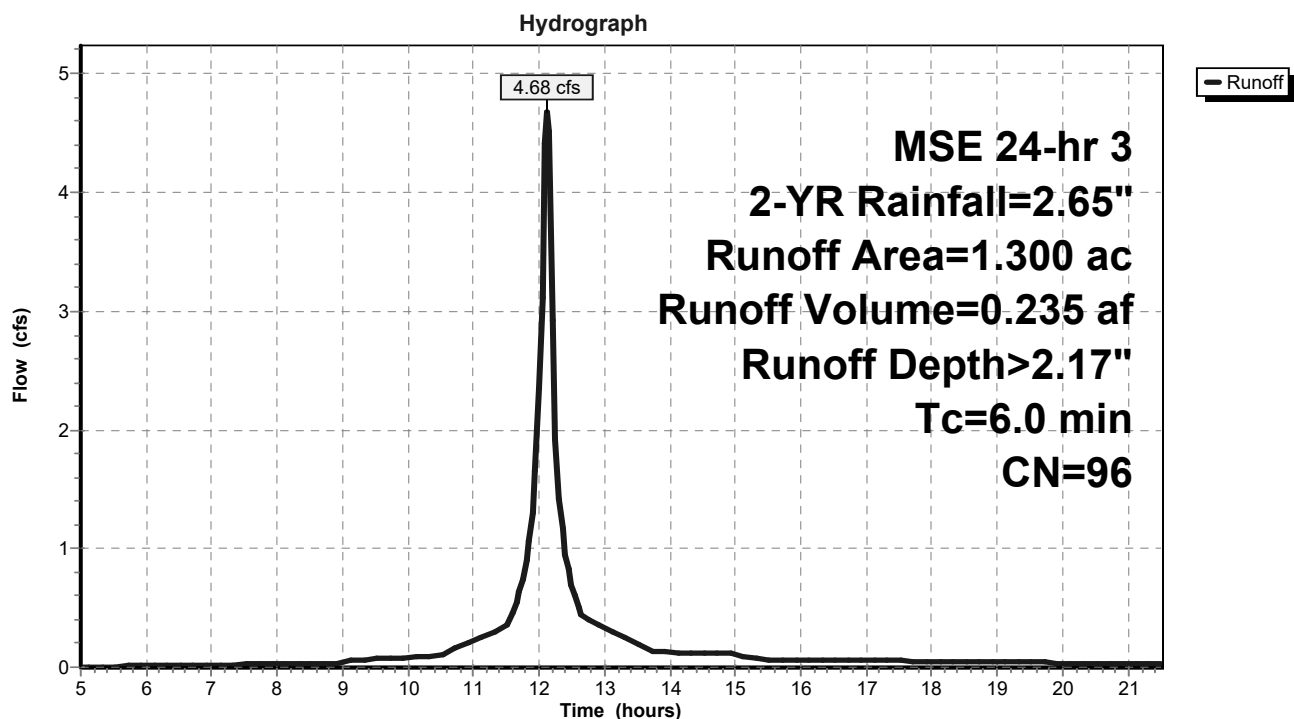
Summary for Subcatchment US: UNDETAINED SOUTH AREAS

Runoff = 4.68 cfs @ 12.13 hrs, Volume= 0.235 af, Depth> 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-YR Rainfall=2.65"

Area (ac)	CN	Description
* 1.200	98	PAVEMENT
* 0.100	74	GRASS
1.300	96	Weighted Average
0.100		7.69% Pervious Area
1.200		92.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, MINE PER TR55

Subcatchment US: UNDETAINED SOUTH AREAS

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MSE 24-hr 3 2-YR Rainfall=2.65"

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Summary for Pond LCFR: LOWER CONTROLLED FLOW ROOF STORAGE

Inflow Area = 0.200 ac, 100.00% Impervious, Inflow Depth > 2.37" for 2-YR event
 Inflow = 0.75 cfs @ 12.13 hrs, Volume= 0.040 af
 Outflow = 0.64 cfs @ 12.17 hrs, Volume= 0.040 af, Atten= 14%, Lag= 2.3 min
 Primary = 0.64 cfs @ 12.17 hrs, Volume= 0.040 af

Routing by Stor-Ind method, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
 Peak Elev= 1,000.10' @ 12.17 hrs Surf.Area= 1,671 sf Storage= 84 cf

Plug-Flow detention time= 0.8 min calculated for 0.040 af (100% of inflow)
 Center-of-Mass det. time= 0.8 min (749.5 - 748.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,000.00'	3,727 cf	Custom Stage Data (Prismatic) Listed below (Recalc) x 4

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,000.00	1	0	0
1,000.67	2,780	932	932

Device	Routing	Invert	Outlet Devices
#1	Primary	1,000.00'	6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH X 4.00 Head (feet) 0.00 0.50 Disch. (cfs) 0.000 0.800
#2	Primary	1,000.31'	6.0" Horiz. 6" DIA WEIR WITHIN FIXTURE X 4.00 C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.63 cfs @ 12.17 hrs HW=1,000.10' (Free Discharge)
 1=6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH (Custom Controls 0.63 cfs)
 2=6" DIA WEIR WITHIN FIXTURE (Controls 0.00 cfs)

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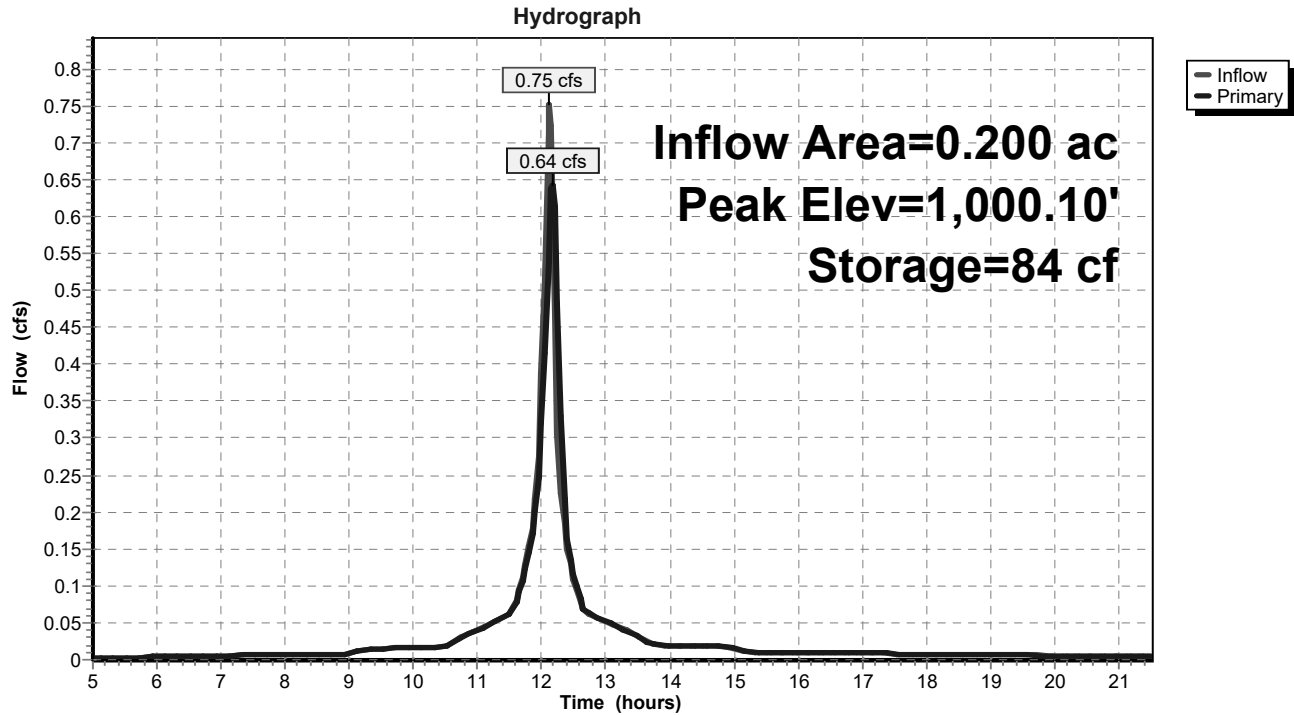
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MSE 24-hr 3 2-YR Rainfall=2.65"

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Pond LCFR: LOWER CONTROLLED FLOW ROOF STORAGE



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MSE 24-hr 3 2-YR Rainfall=2.65"

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Summary for Pond NCFRA: NEW CONTROLLED FLOW ROOF STORAGE A

Inflow Area = 1.450 ac, 100.00% Impervious, Inflow Depth > 2.37" for 2-YR event
 Inflow = 5.45 cfs @ 12.13 hrs, Volume= 0.287 af
 Outflow = 3.11 cfs @ 12.22 hrs, Volume= 0.287 af, Atten= 43%, Lag= 5.4 min
 Primary = 3.11 cfs @ 12.22 hrs, Volume= 0.287 af

Routing by Stor-Ind method, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
 Peak Elev= 1,000.40' @ 12.22 hrs Surf.Area= 11,050 sf Storage= 2,210 cf

Plug-Flow detention time= 5.9 min calculated for 0.287 af (100% of inflow)
 Center-of-Mass det. time= 5.9 min (754.7 - 748.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,000.00'	7,770 cf	Custom Stage Data (Prismatic) Listed below (Recalc) x 4

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,000.00	0	0	0
1,000.75	5,180	1,943	1,943

Device	Routing	Invert	Outlet Devices
#1	Primary	1,000.00'	6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH X 4.00 Head (feet) 0.00 0.50 Disch. (cfs) 0.000 0.800
#2	Primary	1,000.31'	6.0" Horiz. 6" DIA WEIR WITHIN FIXTURE X 4.00 C= 0.600 Limited to weir flow at low heads
#3	Primary	1,000.50'	6.0" Horiz. OVERFLOW X 4.00 C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.07 cfs @ 12.22 hrs HW=1,000.40' (Free Discharge)
 1=6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH (Custom Controls 2.54 cfs)
 2=6" DIA WEIR WITHIN FIXTURE (Weir Controls 0.53 cfs @ 0.96 fps)
 3=OVERFLOW (Controls 0.00 cfs)

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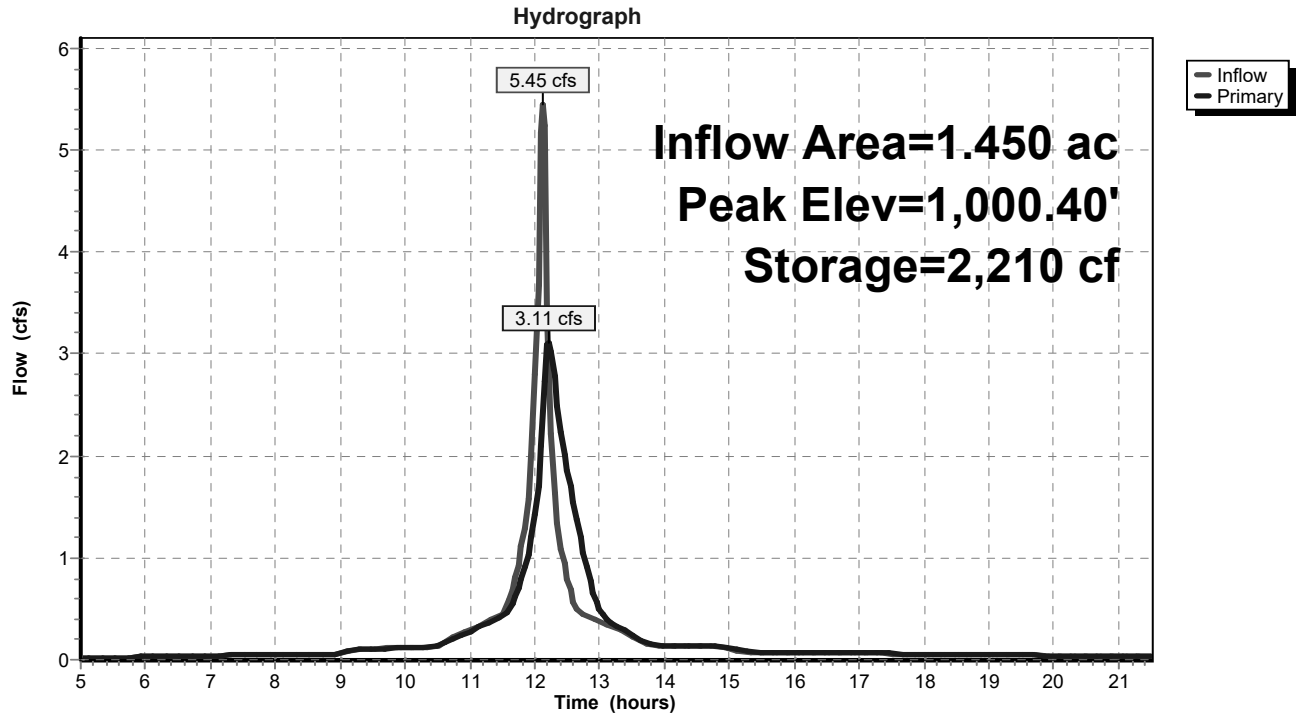
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Pond NCFRA: NEW CONTROLLED FLOW ROOF STORAGE A



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MSE 24-hr 3 2-YR Rainfall=2.65"

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Summary for Pond NCFRB: NEW CONTROLLED FLOW ROOF STORAGE B

Inflow Area = 0.250 ac, 100.00% Impervious, Inflow Depth > 2.37" for 2-YR event
 Inflow = 0.94 cfs @ 12.13 hrs, Volume= 0.049 af
 Outflow = 0.51 cfs @ 12.22 hrs, Volume= 0.049 af, Atten= 45%, Lag= 5.6 min
 Primary = 0.51 cfs @ 12.22 hrs, Volume= 0.049 af

Routing by Stor-Ind method, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
 Peak Elev= 1,000.32' @ 12.22 hrs Surf.Area= 2,198 sf Storage= 350 cf

Plug-Flow detention time= 4.9 min calculated for 0.049 af (100% of inflow)
 Center-of-Mass det. time= 4.8 min (753.6 - 748.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,000.00'	1,943 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,000.00	0	0	0
1,000.75	5,180	1,943	1,943

Device	Routing	Invert	Outlet Devices
#1	Primary	1,000.00'	6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH Head (feet) 0.00 0.50 Disch. (cfs) 0.000 0.800
#2	Primary	1,000.31'	6.0" Horiz. 6" DIA WEIR WITHIN FIXTURE C= 0.600 Limited to weir flow at low heads
#3	Primary	1,000.50'	6.0" Horiz. OVERFLOW C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.51 cfs @ 12.22 hrs HW=1,000.32' (Free Discharge)
 1=6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH (Custom Controls 0.50 cfs)
 2=6" DIA WEIR WITHIN FIXTURE (Weir Controls 0.00 cfs @ 0.24 fps)
 3=OVERFLOW (Controls 0.00 cfs)

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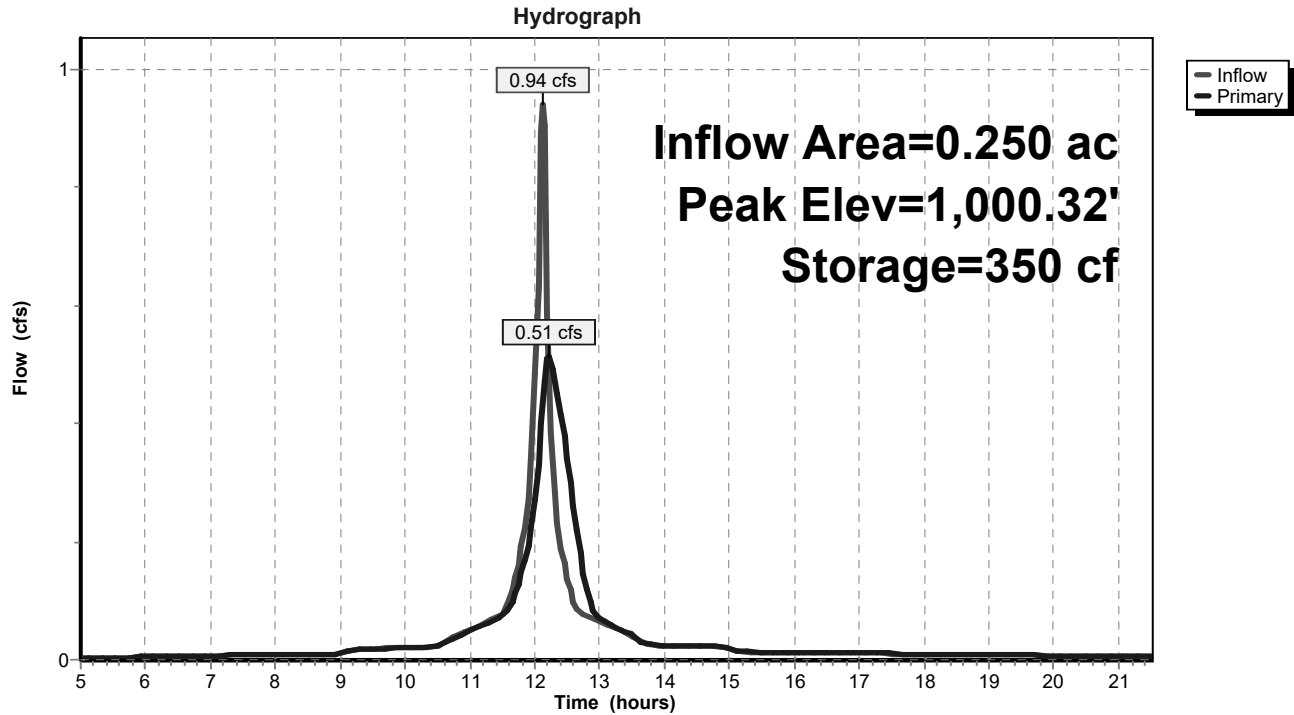
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MSE 24-hr 3 2-YR Rainfall=2.65"

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Pond NCFRB: NEW CONTROLLED FLOW ROOF STORAGE B



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MSE 24-hr 3 2-YR Rainfall=2.65"

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Summary for Pond NCFRC: NEW CONTROLLED FLOW ROOF STORAGE C

Inflow Area = 0.400 ac, 100.00% Impervious, Inflow Depth > 2.37" for 2-YR event
 Inflow = 1.50 cfs @ 12.13 hrs, Volume= 0.079 af
 Outflow = 1.13 cfs @ 12.19 hrs, Volume= 0.079 af, Atten= 25%, Lag= 3.5 min
 Primary = 1.13 cfs @ 12.19 hrs, Volume= 0.079 af

Routing by Stor-Ind method, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
 Peak Elev= 1,000.23' @ 12.19 hrs Surf.Area= 2,431 sf Storage= 285 cf

Plug-Flow detention time= 1.6 min calculated for 0.079 af (100% of inflow)
 Center-of-Mass det. time= 1.6 min (750.3 - 748.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,000.00'	2,914 cf	Custom Stage Data (Prismatic) Listed below (Recalc) x 3

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,000.00	0	0	0
1,000.75	2,590	971	971

Device	Routing	Invert	Outlet Devices
#1	Primary	1,000.00'	6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH X 3.00 Head (feet) 0.00 0.50 Disch. (cfs) 0.000 0.800
#2	Primary	1,000.31'	6.0" Horiz. 6" DIA WEIR WITHIN FIXTURE X 3.00 C= 0.600 Limited to weir flow at low heads
#3	Primary	1,000.50'	6.0" Horiz. OVERFLOW X 3.00 C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.11 cfs @ 12.19 hrs HW=1,000.23' (Free Discharge)
 1=6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH (Custom Controls 1.11 cfs)
 2=6" DIA WEIR WITHIN FIXTURE (Controls 0.00 cfs)
 3=OVERFLOW (Controls 0.00 cfs)

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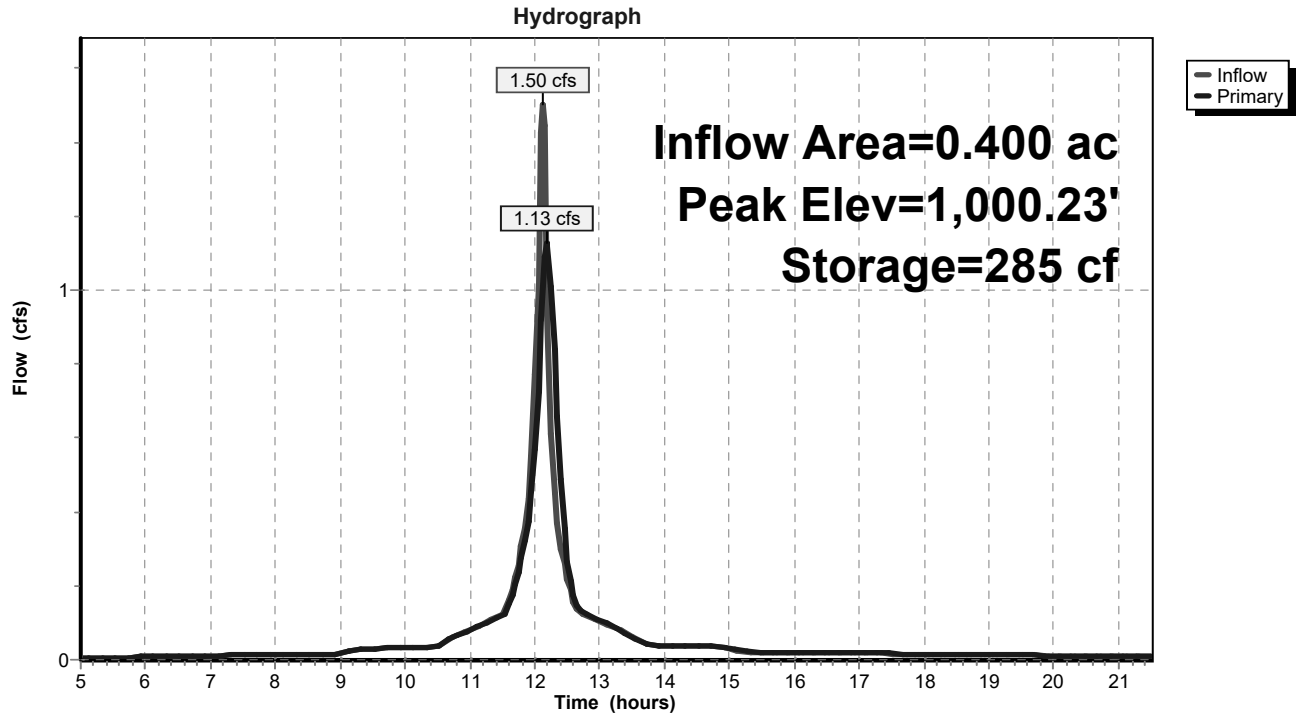
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Pond NCFRC: NEW CONTROLLED FLOW ROOF STORAGE C



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MSE 24-hr 3 2-YR Rainfall=2.65"

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Summary for Pond NCFRD: NEW CONTROLLED FLOW ROOF STORAGE D

Inflow Area = 0.100 ac, 100.00% Impervious, Inflow Depth > 2.37" for 2-YR event
 Inflow = 0.38 cfs @ 12.13 hrs, Volume= 0.020 af
 Outflow = 0.33 cfs @ 12.16 hrs, Volume= 0.020 af, Atten= 13%, Lag= 2.2 min
 Primary = 0.33 cfs @ 12.16 hrs, Volume= 0.020 af

Routing by Stor-Ind method, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
 Peak Elev= 1,000.20' @ 12.16 hrs Surf.Area= 381 sf Storage= 39 cf

Plug-Flow detention time= 0.7 min calculated for 0.020 af (100% of inflow)
 Center-of-Mass det. time= 0.7 min (749.4 - 748.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,000.00'	525 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,000.00	0	0	0
1,000.75	1,400	525	525

Device	Routing	Invert	Outlet Devices
#1	Primary	1,000.00'	6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH Head (feet) 0.00 0.50 Disch. (cfs) 0.000 0.800
#2	Primary	1,000.31'	6.0" Horiz. 6" DIA WEIR WITHIN FIXTURE C= 0.600 Limited to weir flow at low heads
#3	Primary	1,000.50'	6.0" Horiz. OVERFLOW C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.32 cfs @ 12.16 hrs HW=1,000.20' (Free Discharge)
 1=6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH (Custom Controls 0.32 cfs)
 2=6" DIA WEIR WITHIN FIXTURE (Controls 0.00 cfs)
 3=OVERFLOW (Controls 0.00 cfs)

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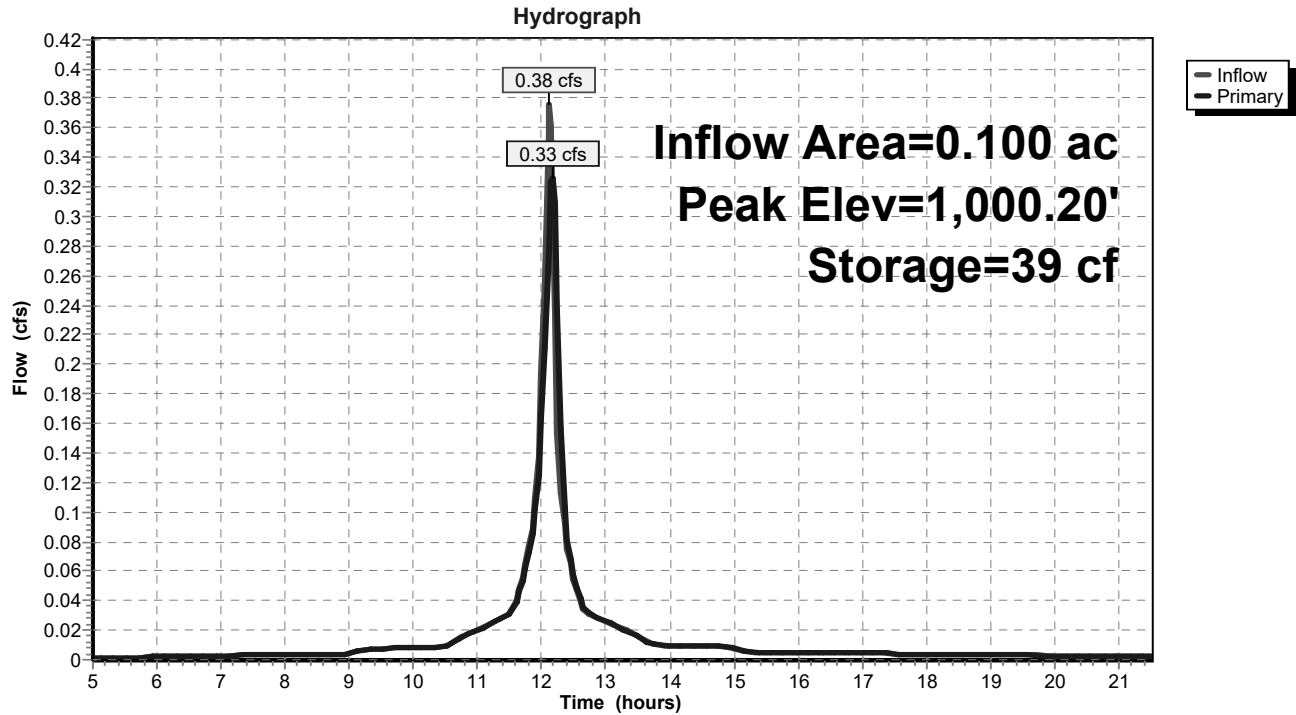
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MSE 24-hr 3 2-YR Rainfall=2.65"

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Pond NCFRD: NEW CONTROLLED FLOW ROOF STORAGE D



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Summary for Pond PC: SOUTH POND

Inflow Area = 9.400 ac, 75.53% Impervious, Inflow Depth > 1.89" for 2-YR event
 Inflow = 18.90 cfs @ 12.15 hrs, Volume= 1.480 af
 Outflow = 0.63 cfs @ 15.09 hrs, Volume= 0.485 af, Atten= 97%, Lag= 176.4 min
 Primary = 0.63 cfs @ 15.09 hrs, Volume= 0.485 af

Routing by Stor-Ind method, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
 Peak Elev= 901.15' @ 15.09 hrs Surf.Area= 22,187 sf Storage= 50,125 cf

Plug-Flow detention time= 335.8 min calculated for 0.485 af (33% of inflow)
 Center-of-Mass det. time= 234.0 min (1,003.9 - 769.9)

Volume	Invert	Avail.Storage	Storage Description
#1	898.50'	144,070 cf	MODIFIED WET POND (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
898.50	15,500	0	0
899.00	16,900	8,100	8,100
900.00	19,400	18,150	26,250
901.00	21,800	20,600	46,850
902.00	24,400	23,100	69,950
903.00	27,000	25,700	95,650
904.00	31,500	29,250	124,900
904.60	32,400	19,170	144,070

Device	Routing	Invert	Outlet Devices
#1	Primary	898.87'	12.0" Round Culvert L= 344.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 898.87' / 898.02' S= 0.0025 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	898.50'	4.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	901.50'	36.0" Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=0.63 cfs @ 15.09 hrs HW=901.15' (Free Discharge)

1=Culvert (Passes 0.63 cfs of 2.81 cfs potential flow)
 2=Orifice/Grate (Orifice Controls 0.63 cfs @ 7.27 fps)
 3=Orifice/Grate (Controls 0.00 cfs)

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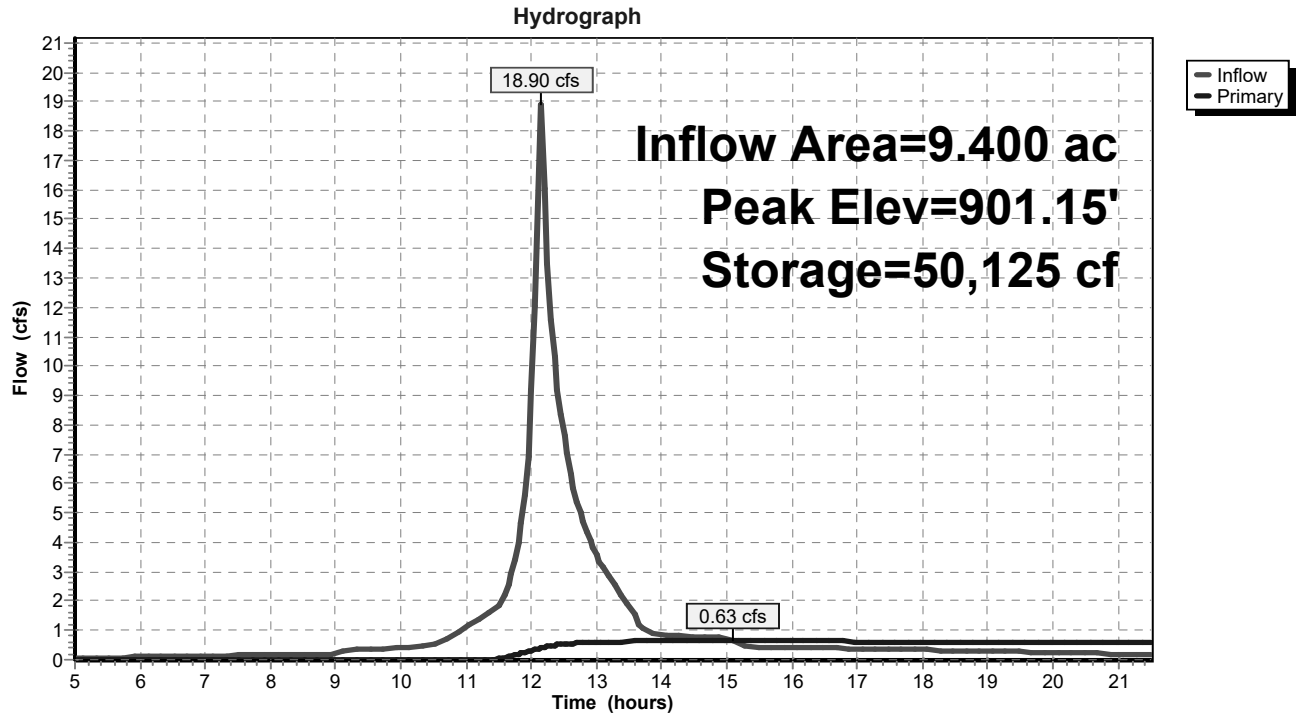
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Pond PC: SOUTH POND



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MSE 24-hr 3 2-YR Rainfall=2.65"

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Summary for Pond UCFR: UPPER CONTROLLED FLOW ROOF STORAGE

Inflow Area = 2.600 ac, 100.00% Impervious, Inflow Depth > 2.37" for 2-YR event
 Inflow = 9.77 cfs @ 12.13 hrs, Volume= 0.514 af
 Outflow = 3.44 cfs @ 12.28 hrs, Volume= 0.514 af, Atten= 65%, Lag= 8.9 min
 Primary = 3.44 cfs @ 12.28 hrs, Volume= 0.514 af

Routing by Stor-Ind method, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
 Peak Elev= 1,000.27' @ 12.28 hrs Surf.Area= 42,662 sf Storage= 5,734 cf

Plug-Flow detention time= 13.6 min calculated for 0.513 af (100% of inflow)
 Center-of-Mass det. time= 13.5 min (762.2 - 748.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,000.00'	35,625 cf	Custom Stage Data (Prismatic) Listed below (Recalc) x 8

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,000.00	1	0	0
1,000.67	13,292	4,453	4,453

Device	Routing	Invert	Outlet Devices
#1	Primary	1,000.00'	6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH X 8.00 Head (feet) 0.00 0.50 Disch. (cfs) 0.000 0.800
#2	Primary	1,000.31'	6.0" Horiz. 6" DIA WEIR WITHIN FIXTURE X 8.00 C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.44 cfs @ 12.28 hrs HW=1,000.27' (Free Discharge)
 1=6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH (Custom Controls 3.44 cfs)
 2=6" DIA WEIR WITHIN FIXTURE (Controls 0.00 cfs)

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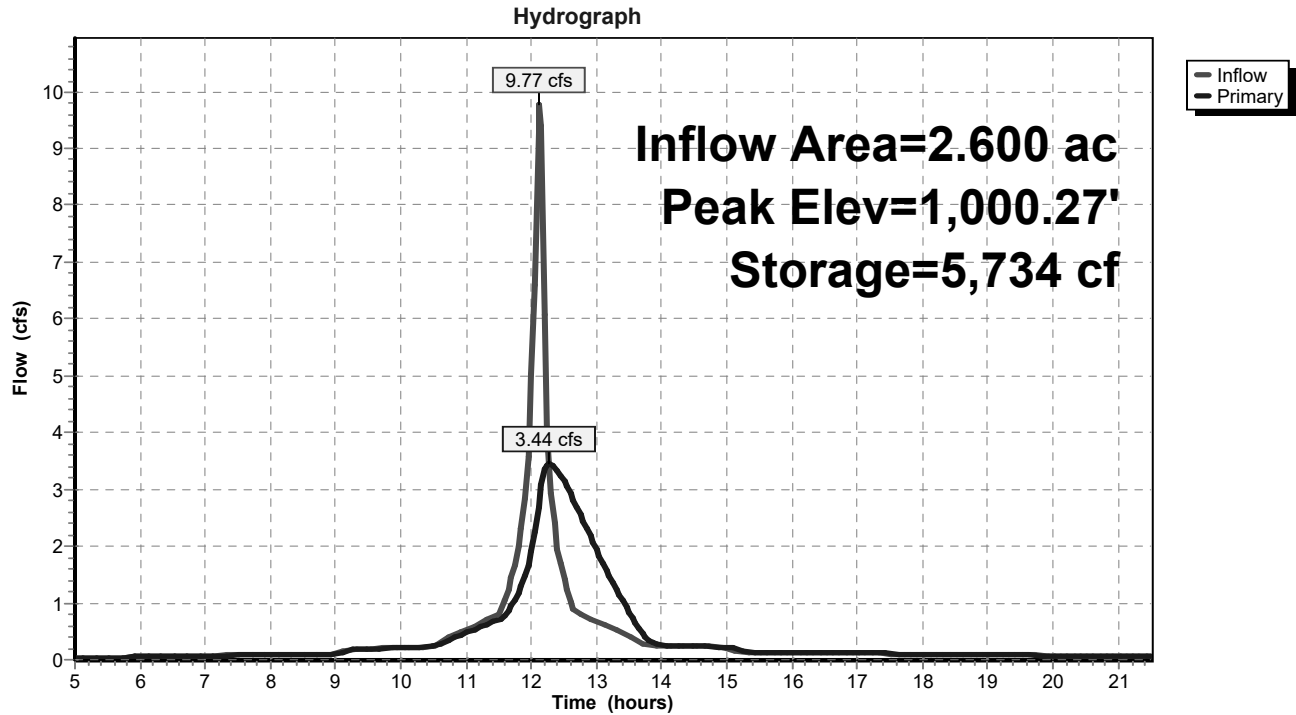
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MSE 24-hr 3 2-YR Rainfall=2.65"

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Pond UCFR: UPPER CONTROLLED FLOW ROOF STORAGE



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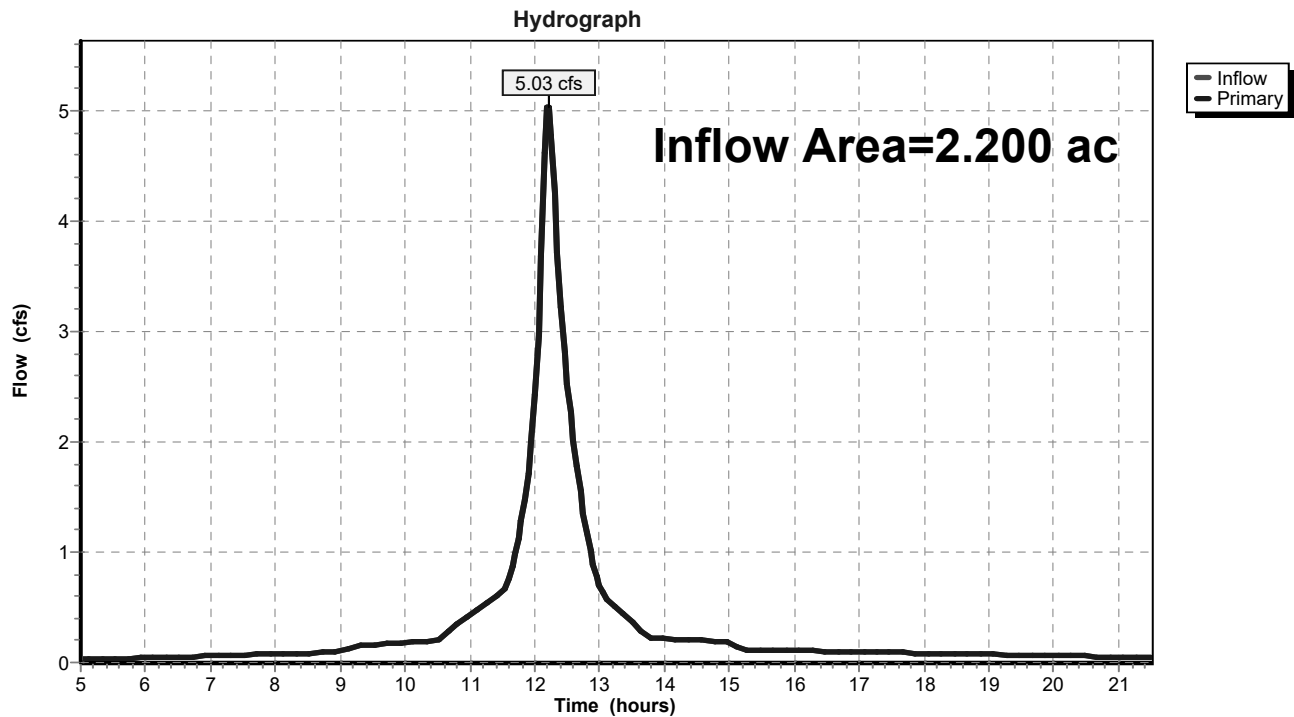
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Summary for Link NCFCR: NEW ROOF COMBINED CF RELEASE

Inflow Area = 2.200 ac, 100.00% Impervious, Inflow Depth > 2.37" for 2-YR event
Inflow = 5.03 cfs @ 12.21 hrs, Volume= 0.435 af
Primary = 5.03 cfs @ 12.21 hrs, Volume= 0.435 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs

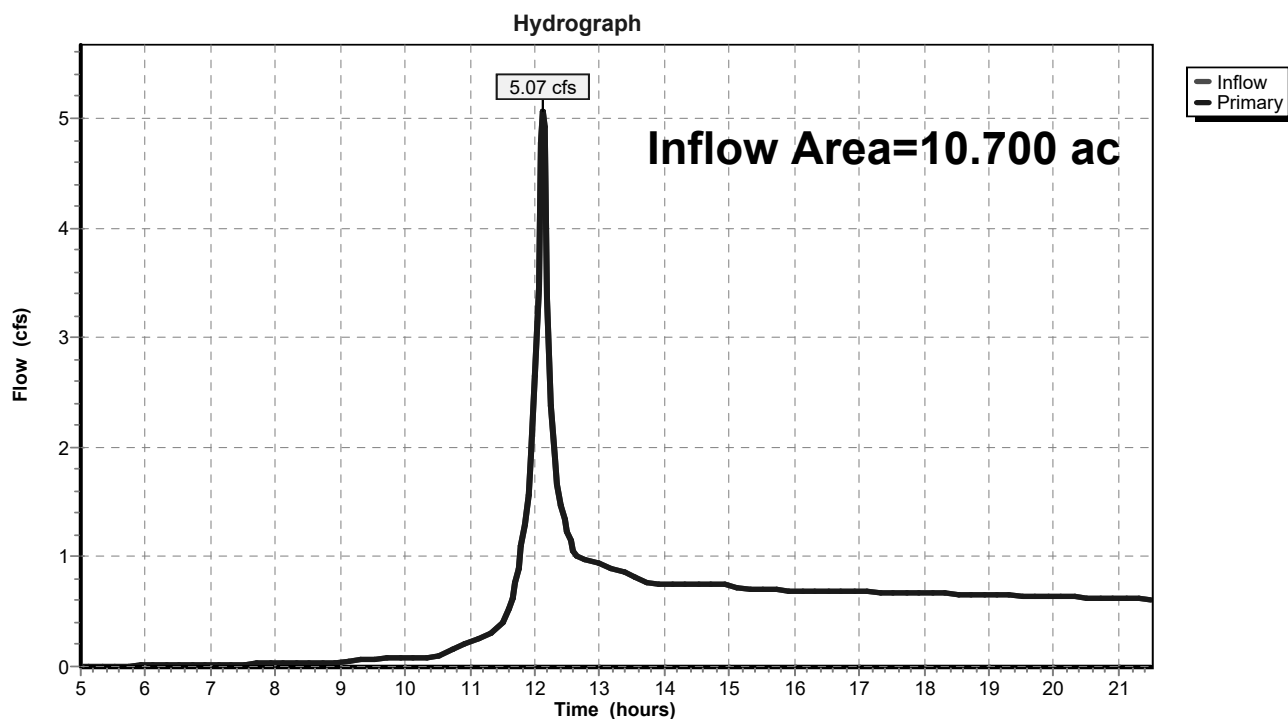
Link NCFCR: NEW ROOF COMBINED CF RELEASE



Summary for Link PSD: PROPOSED SOUTH DISCHARGE

Inflow Area = 10.700 ac, 77.57% Impervious, Inflow Depth > 0.81" for 2-YR event
Inflow = 5.07 cfs @ 12.13 hrs, Volume= 0.721 af
Primary = 5.07 cfs @ 12.13 hrs, Volume= 0.721 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs

Link PSD: PROPOSED SOUTH DISCHARGE

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MSE 24-hr 3 100-YR Rainfall=6.41"

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Time span=5.00-21.50 hrs, dt=0.05 hrs, 331 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentAWP: DIRECT AREA TO	Runoff Area=4.400 ac 47.73% Impervious Runoff Depth>4.72" Tc=6.0 min CN=86 Runoff=35.78 cfs 1.731 af
SubcatchmentLRA: 2020 ADDITION	Runoff Area=0.200 ac 100.00% Impervious Runoff Depth>6.00" Tc=6.0 min CN=98 Runoff=1.84 cfs 0.100 af
SubcatchmentNRA: NEW ADDITION	Runoff Area=1.450 ac 100.00% Impervious Runoff Depth>6.00" Tc=6.0 min CN=98 Runoff=13.37 cfs 0.724 af
SubcatchmentNRB: NEW ADDITION	Runoff Area=0.250 ac 100.00% Impervious Runoff Depth>6.00" Tc=6.0 min CN=98 Runoff=2.30 cfs 0.125 af
SubcatchmentNRC: NEW ADDITION	Runoff Area=0.400 ac 100.00% Impervious Runoff Depth>6.00" Tc=6.0 min CN=98 Runoff=3.69 cfs 0.200 af
SubcatchmentNRD: NEW ADDITION	Runoff Area=0.100 ac 100.00% Impervious Runoff Depth>6.00" Tc=6.0 min CN=98 Runoff=0.92 cfs 0.050 af
SubcatchmentUPA: 2020 ADDITION	Runoff Area=2.600 ac 100.00% Impervious Runoff Depth>6.00" Tc=6.0 min CN=98 Runoff=23.97 cfs 1.299 af
SubcatchmentUS: UNDETAINEDSOUTH	Runoff Area=1.300 ac 92.31% Impervious Runoff Depth>5.81" Tc=6.0 min CN=96 Runoff=11.87 cfs 0.630 af
Pond LCFR: LOWER CONTROLLED FLOW	Peak Elev=1,000.21' Storage=373 cf Inflow=1.84 cfs 0.100 af Outflow=1.36 cfs 0.100 af
Pond NCFRA: NEW CONTROLLED FLOW	Peak Elev=1,000.67' Storage=6,262 cf Inflow=13.37 cfs 0.724 af Outflow=6.96 cfs 0.724 af
Pond NCFRB: NEW CONTROLLED FLOW	Peak Elev=1,000.54' Storage=999 cf Inflow=2.30 cfs 0.125 af Outflow=1.29 cfs 0.125 af
Pond NCFRC: NEW CONTROLLED FLOW	Peak Elev=1,000.43' Storage=974 cf Inflow=3.69 cfs 0.200 af Outflow=2.75 cfs 0.200 af
Pond NCFRD: NEW CONTROLLED FLOW	Peak Elev=1,000.40' Storage=152 cf Inflow=0.92 cfs 0.050 af Outflow=0.79 cfs 0.050 af
Pond PC: SOUTH POND	Peak Elev=904.01' Storage=125,100 cf Inflow=53.82 cfs 4.228 af Outflow=4.30 cfs 2.778 af
Pond UCFR: UPPER CONTROLLED	Peak Elev=1,000.46' Storage=16,657 cf Inflow=23.97 cfs 1.299 af Outflow=8.21 cfs 1.299 af
Link NCFRC: NEW ROOF COMBINED CF RELEASE	Inflow=11.66 cfs 1.099 af Primary=11.66 cfs 1.099 af

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Link PSD: PROPOSED SOUTH DISCHARGE

Inflow=13.57 cfs 3.407 af

Primary=13.57 cfs 3.407 af

Total Runoff Area = 10.700 ac Runoff Volume = 4.858 af Average Runoff Depth = 5.45"
22.43% Pervious = 2.400 ac 77.57% Impervious = 8.300 ac

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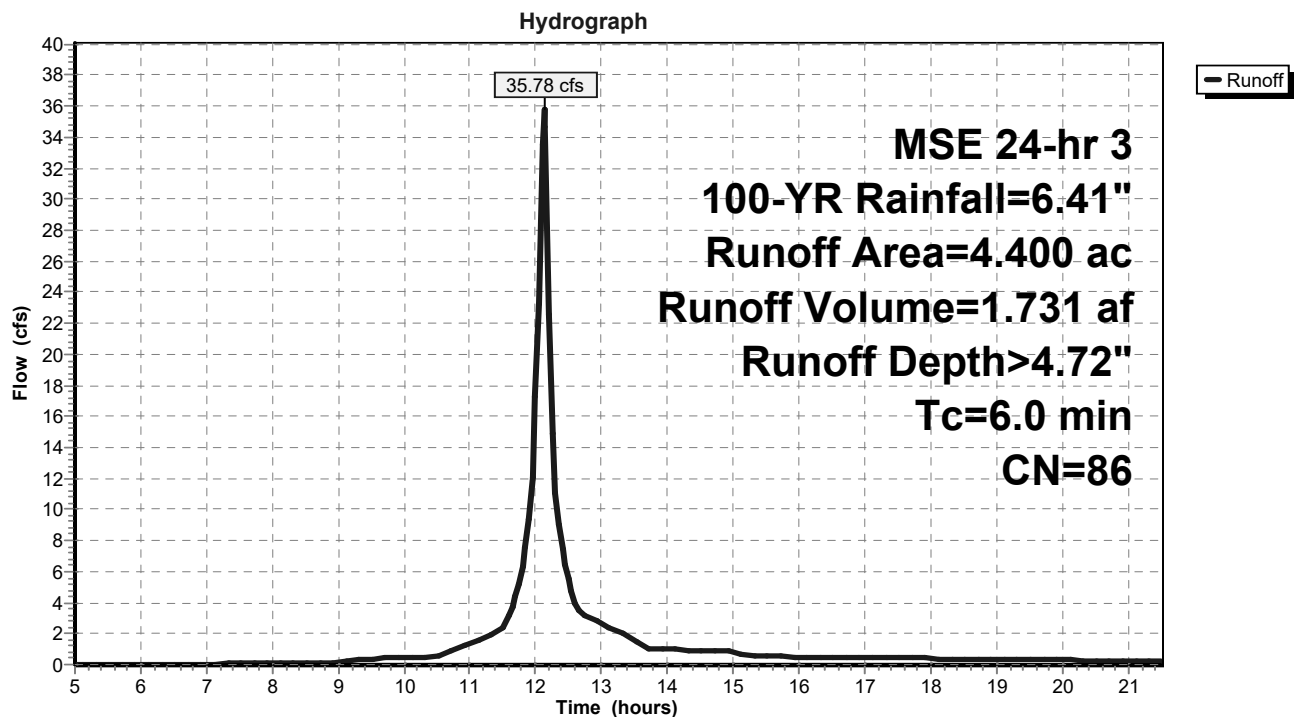
Summary for Subcatchment AWP: DIRECT AREA TO WET POND

Runoff = 35.78 cfs @ 12.13 hrs, Volume= 1.731 af, Depth> 4.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-YR Rainfall=6.41"

Area (ac)	CN	Description
* 1.700	98	PAVEMENT
* 2.300	74	GRASS
* 0.400	99	WATER SURFACE
4.400	86	Weighted Average
2.300		52.27% Pervious Area
2.100		47.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, MIN PER TR55

Subcatchment AWP: DIRECT AREA TO WET POND

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MSE 24-hr 3 100-YR Rainfall=6.41"

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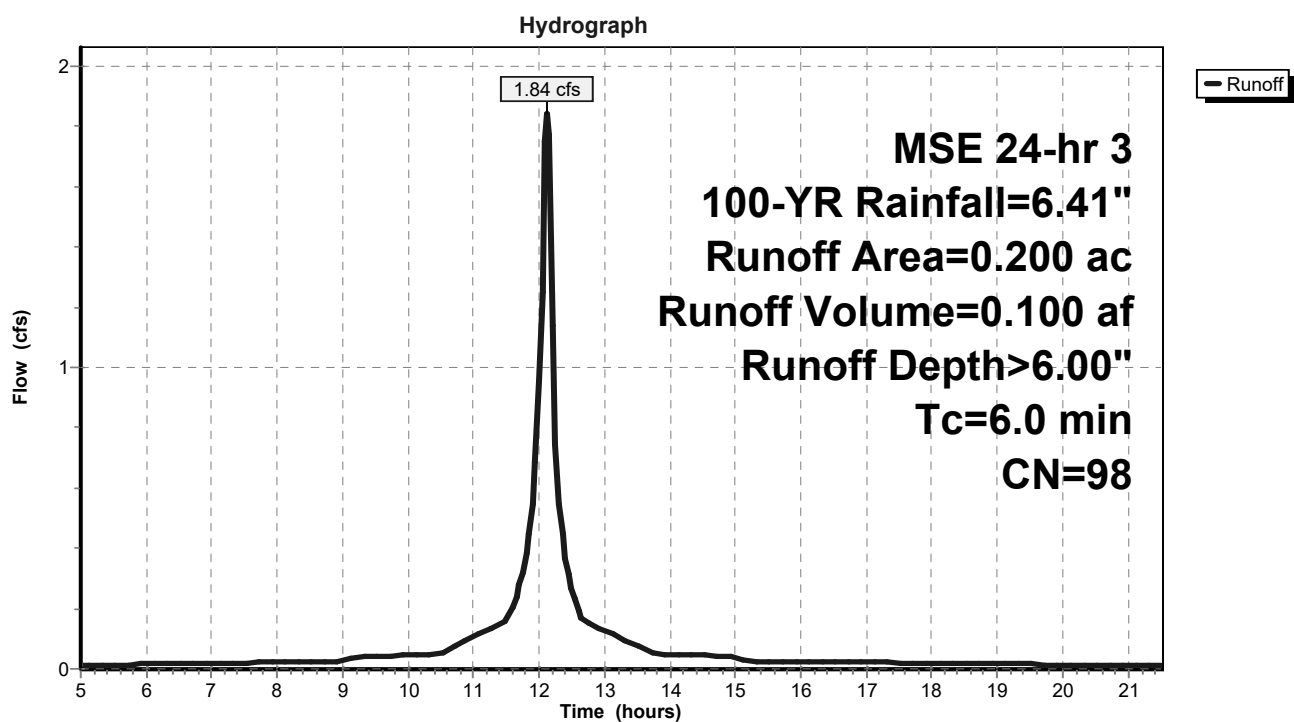
Summary for Subcatchment LRA: 2020 ADDITION LOWER ROOF AREA

Runoff = 1.84 cfs @ 12.13 hrs, Volume= 0.100 af, Depth> 6.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-YR Rainfall=6.41"

Area (ac)	CN	Description
* 0.200	98	ROOF
0.200		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, MIN PER TR55

Subcatchment LRA: 2020 ADDITION LOWER ROOF AREA

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MSE 24-hr 3 100-YR Rainfall=6.41"

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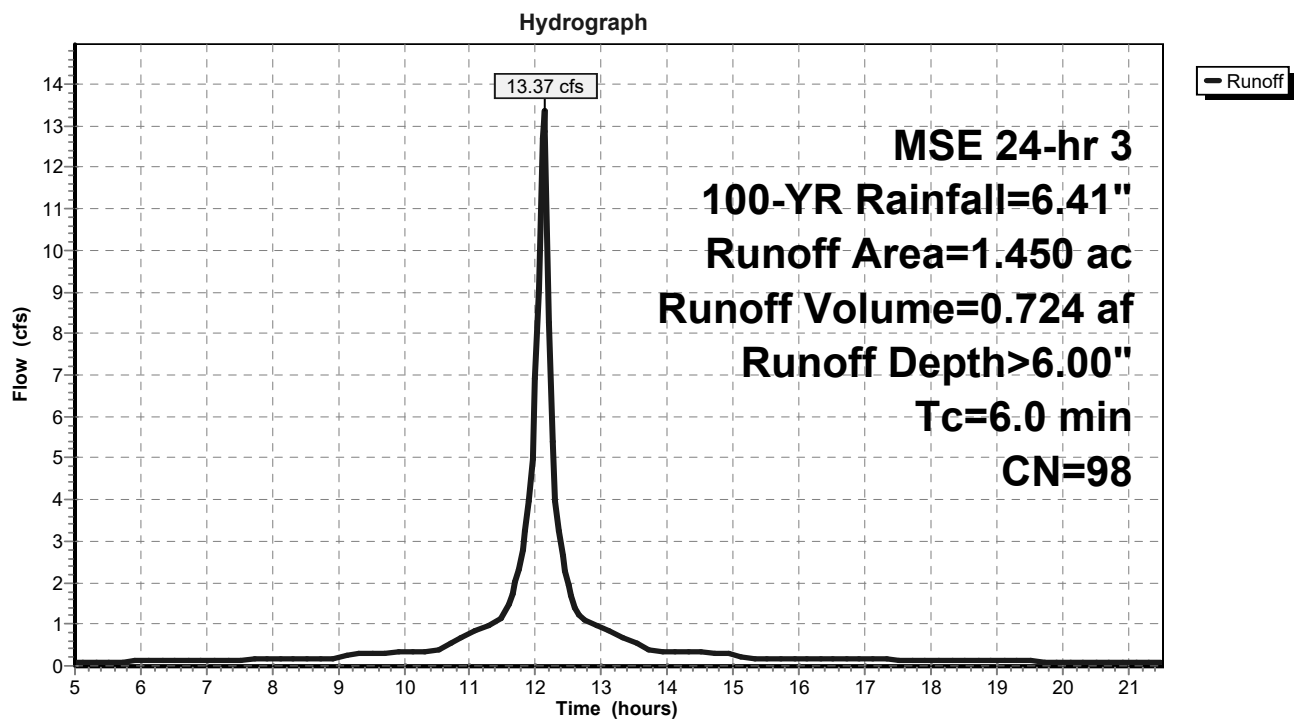
Summary for Subcatchment NRA: NEW ADDITION ROOF AREA A

Runoff = 13.37 cfs @ 12.13 hrs, Volume= 0.724 af, Depth> 6.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-YR Rainfall=6.41"

Area (ac)	CN	Description
* 1.450	98	ROOF
1.450		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, MIN PER TR55

Subcatchment NRA: NEW ADDITION ROOF AREA A

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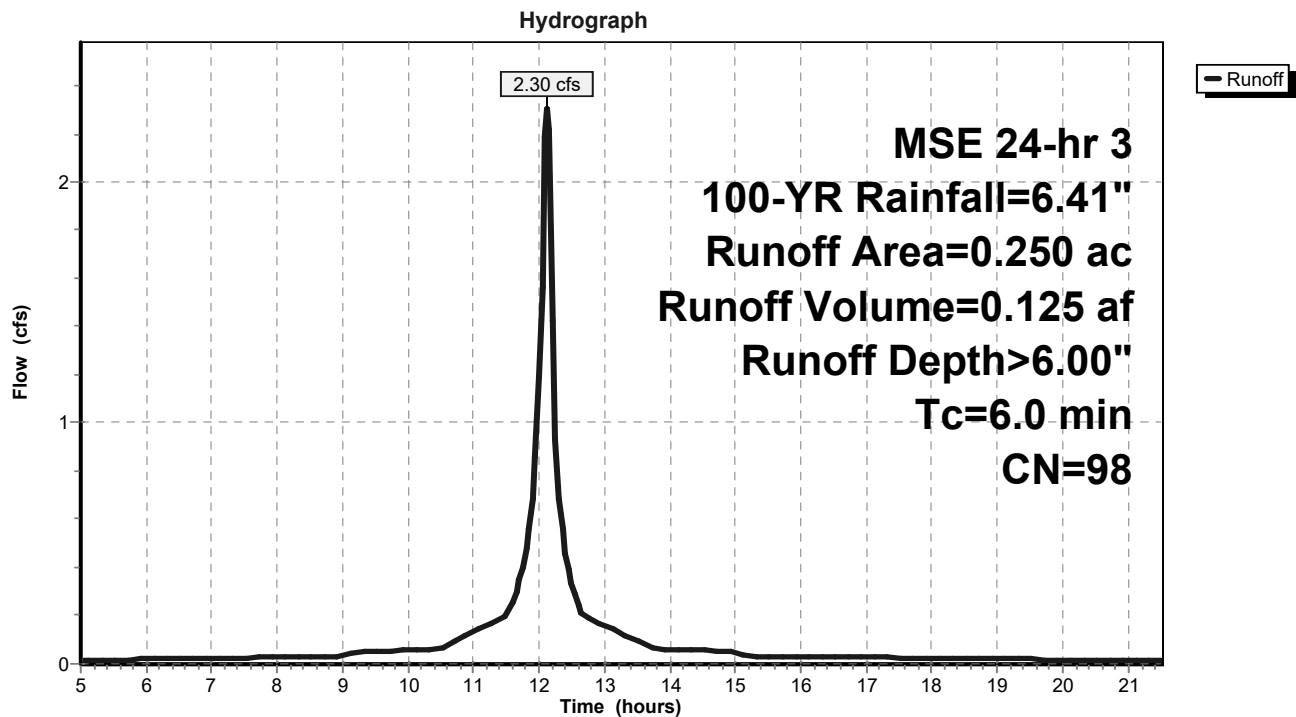
Summary for Subcatchment NRB: NEW ADDITION ROOF AREA B

Runoff = 2.30 cfs @ 12.13 hrs, Volume= 0.125 af, Depth> 6.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-YR Rainfall=6.41"

Area (ac)	CN	Description
* 0.250	98	ROOF
0.250		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, MIN PER TR55

Subcatchment NRB: NEW ADDITION ROOF AREA B

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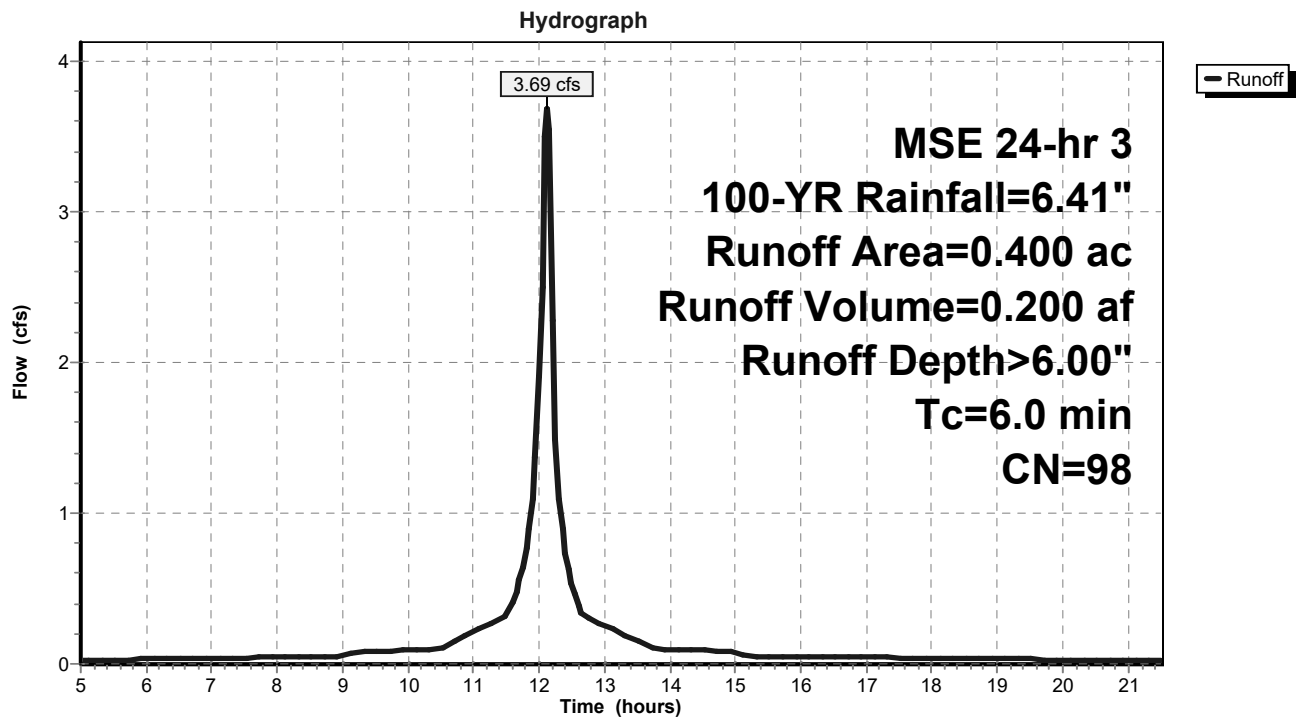
Summary for Subcatchment NRC: NEW ADDITION ROOF AREA C

Runoff = 3.69 cfs @ 12.13 hrs, Volume= 0.200 af, Depth> 6.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-YR Rainfall=6.41"

Area (ac)	CN	Description
* 0.400	98	ROOF
0.400		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, MIN PER TR55

Subcatchment NRC: NEW ADDITION ROOF AREA C

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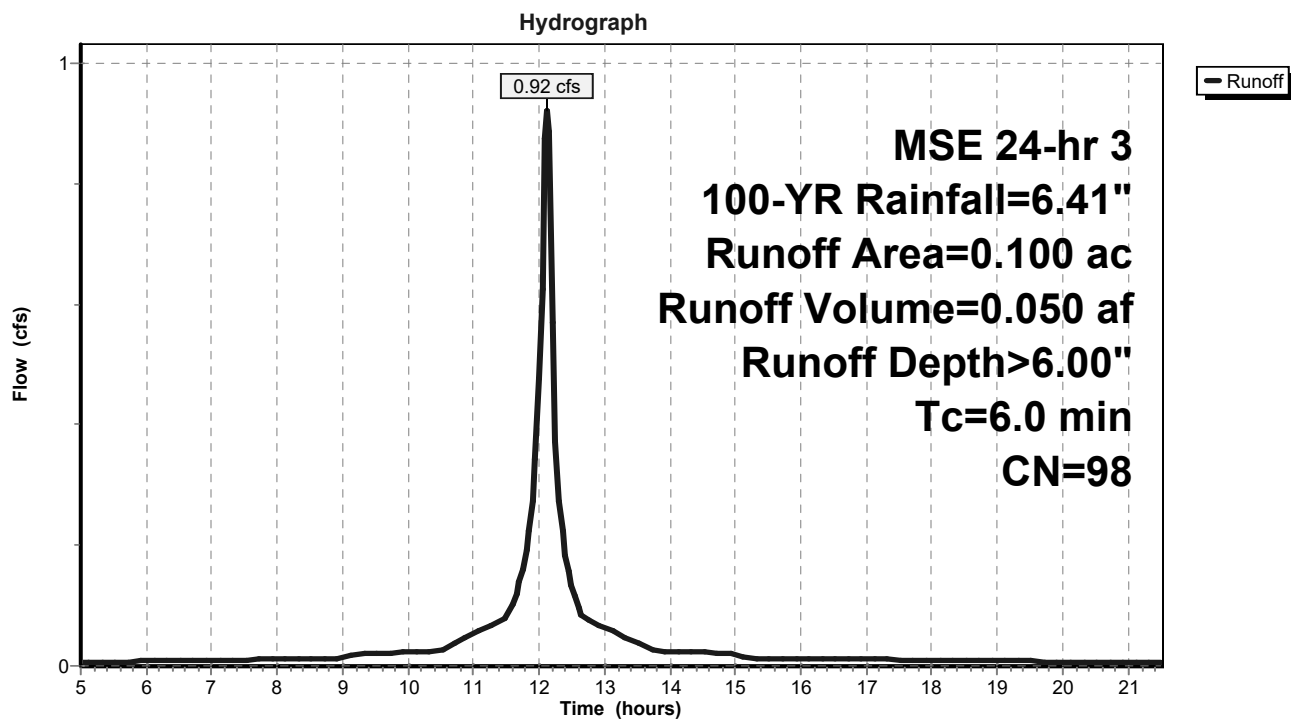
Summary for Subcatchment NRD: NEW ADDITION ROOF AREA B

Runoff = 0.92 cfs @ 12.13 hrs, Volume= 0.050 af, Depth> 6.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-YR Rainfall=6.41"

Area (ac)	CN	Description
* 0.100	98	ROOF
0.100		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, MIN PER TR55

Subcatchment NRD: NEW ADDITION ROOF AREA B

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Summary for Subcatchment UPA: 2020 ADDITION UPPER ROOF AREA

Runoff = 23.97 cfs @ 12.13 hrs, Volume= 1.299 af, Depth> 6.00"

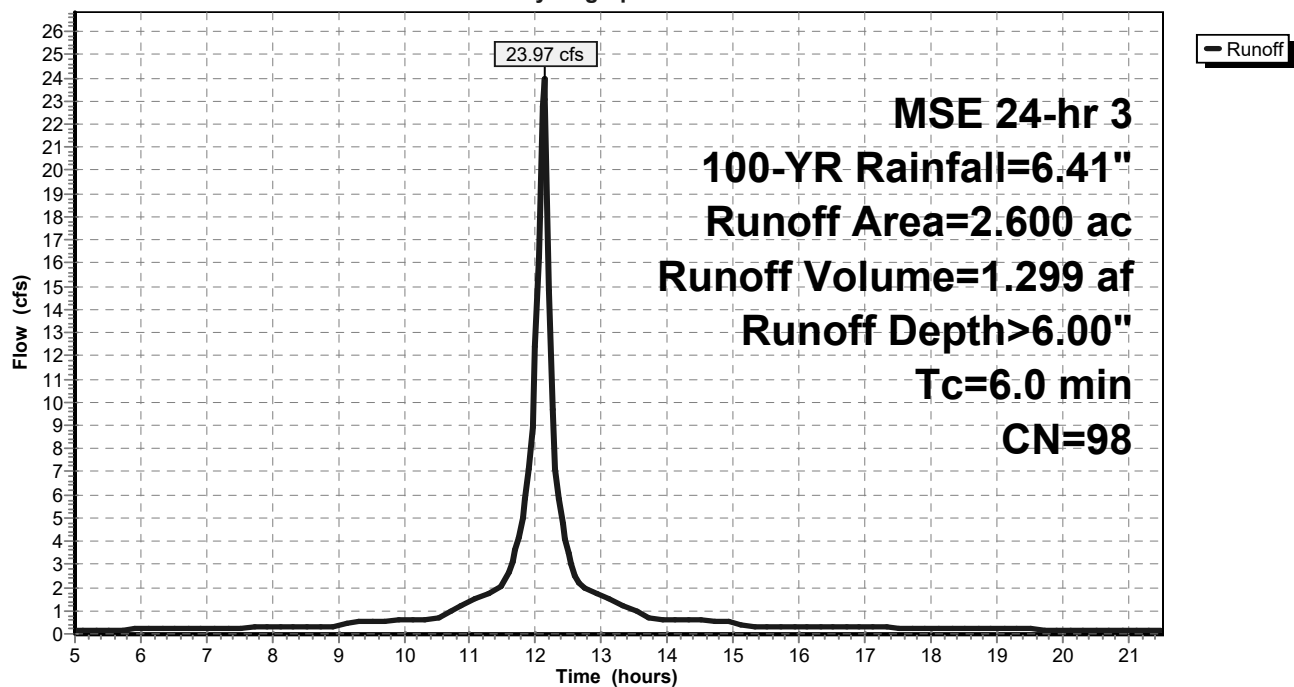
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-YR Rainfall=6.41"

Area (ac)	CN	Description
* 2.600	98	ROOF
2.600		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, MIN PER TR55

Subcatchment UPA: 2020 ADDITION UPPER ROOF AREA

Hydrograph



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MSE 24-hr 3 100-YR Rainfall=6.41"

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Summary for Subcatchment US: UNDETAINED SOUTH AREAS

Runoff = 11.87 cfs @ 12.13 hrs, Volume= 0.630 af, Depth> 5.81"

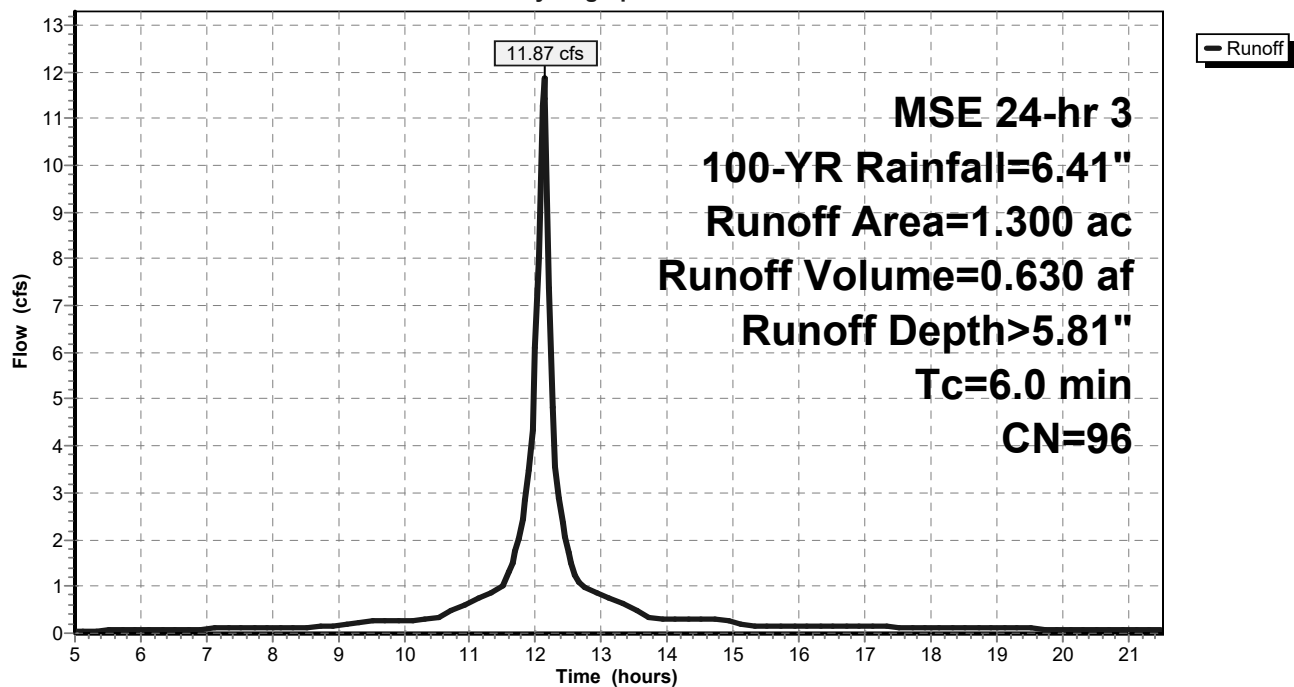
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-YR Rainfall=6.41"

Area (ac)	CN	Description
* 1.200	98	PAVEMENT
* 0.100	74	GRASS
1.300	96	Weighted Average
0.100		7.69% Pervious Area
1.200		92.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, MINE PER TR55

Subcatchment US: UNDETAINED SOUTH AREAS

Hydrograph



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MSE 24-hr 3 100-YR Rainfall=6.41"

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Summary for Pond LCFR: LOWER CONTROLLED FLOW ROOF STORAGE

Inflow Area = 0.200 ac, 100.00% Impervious, Inflow Depth > 6.00" for 100-YR event
 Inflow = 1.84 cfs @ 12.13 hrs, Volume= 0.100 af
 Outflow = 1.36 cfs @ 12.19 hrs, Volume= 0.100 af, Atten= 26%, Lag= 3.7 min
 Primary = 1.36 cfs @ 12.19 hrs, Volume= 0.100 af

Routing by Stor-Ind method, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
 Peak Elev= 1,000.21' @ 12.19 hrs Surf.Area= 3,519 sf Storage= 373 cf

Plug-Flow detention time= 1.7 min calculated for 0.100 af (100% of inflow)
 Center-of-Mass det. time= 1.7 min (742.9 - 741.3)

Volume	Invert	Avail.Storage	Storage Description
#1	1,000.00'	3,727 cf	Custom Stage Data (Prismatic) Listed below (Recalc) x 4

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,000.00	1	0	0
1,000.67	2,780	932	932

Device	Routing	Invert	Outlet Devices
#1	Primary	1,000.00'	6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH X 4.00 Head (feet) 0.00 0.50 Disch. (cfs) 0.000 0.800
#2	Primary	1,000.31'	6.0" Horiz. 6" DIA WEIR WITHIN FIXTURE X 4.00 C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.34 cfs @ 12.19 hrs HW=1,000.21' (Free Discharge)
 1=6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH (Custom Controls 1.34 cfs)
 2=6" DIA WEIR WITHIN FIXTURE (Controls 0.00 cfs)

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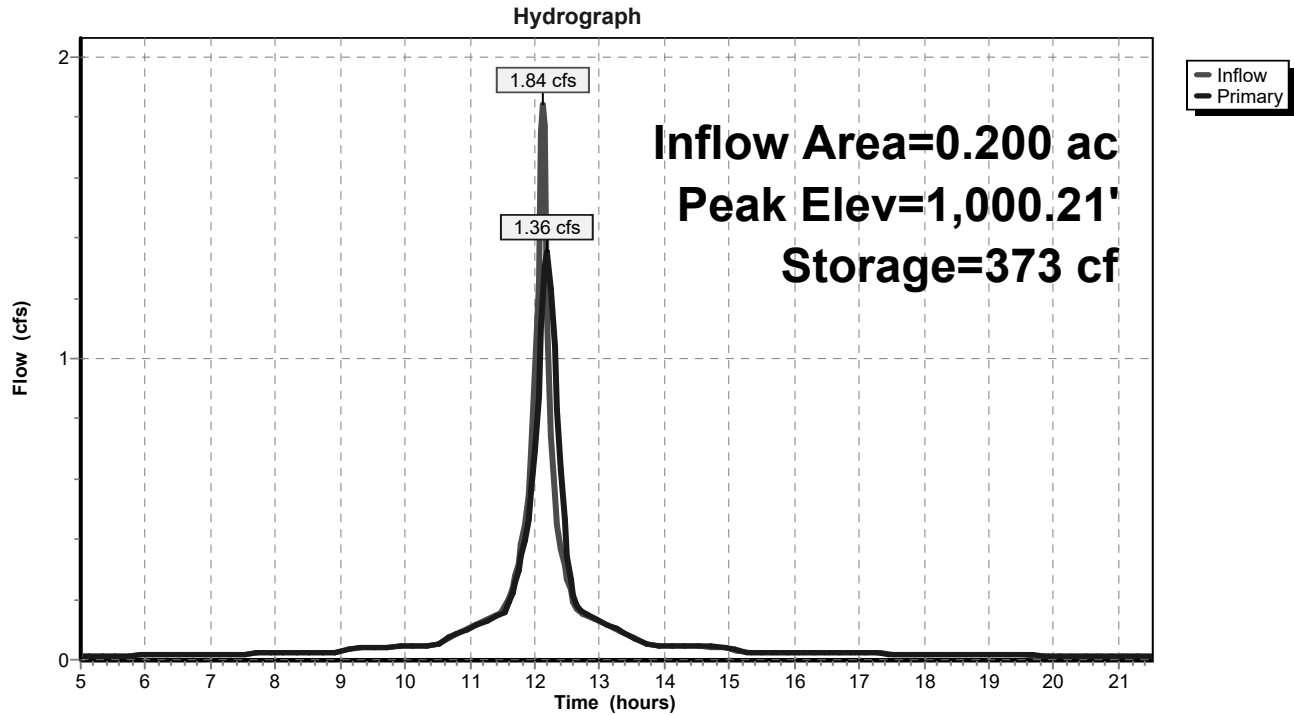
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MSE 24-hr 3 100-YR Rainfall=6.41"

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Pond LCFR: LOWER CONTROLLED FLOW ROOF STORAGE



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MSE 24-hr 3 100-YR Rainfall=6.41"

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Summary for Pond NCFRA: NEW CONTROLLED FLOW ROOF STORAGE A

Inflow Area = 1.450 ac, 100.00% Impervious, Inflow Depth > 6.00" for 100-YR event
 Inflow = 13.37 cfs @ 12.13 hrs, Volume= 0.724 af
 Outflow = 6.96 cfs @ 12.22 hrs, Volume= 0.724 af, Atten= 48%, Lag= 5.9 min
 Primary = 6.96 cfs @ 12.22 hrs, Volume= 0.724 af

Routing by Stor-Ind method, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
 Peak Elev= 1,000.67' @ 12.22 hrs Surf.Area= 18,600 sf Storage= 6,262 cf

Plug-Flow detention time= 8.5 min calculated for 0.724 af (100% of inflow)
 Center-of-Mass det. time= 8.4 min (749.6 - 741.3)

Volume	Invert	Avail.Storage	Storage Description
#1	1,000.00'	7,770 cf	Custom Stage Data (Prismatic) Listed below (Recalc) x 4

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,000.00	0	0	0
1,000.75	5,180	1,943	1,943

Device	Routing	Invert	Outlet Devices
#1	Primary	1,000.00'	6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH X 4.00 Head (feet) 0.00 0.50 Disch. (cfs) 0.000 0.800
#2	Primary	1,000.31'	6.0" Horiz. 6" DIA WEIR WITHIN FIXTURE X 4.00 C= 0.600 Limited to weir flow at low heads
#3	Primary	1,000.50'	6.0" Horiz. OVERFLOW X 4.00 C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=6.88 cfs @ 12.22 hrs HW=1,000.67' (Free Discharge)
 1=6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH (Custom Controls 3.20 cfs)
 2=6" DIA WEIR WITHIN FIXTURE (Orifice Controls 2.26 cfs @ 2.88 fps)
 3=OVERFLOW (Weir Controls 1.42 cfs @ 1.34 fps)

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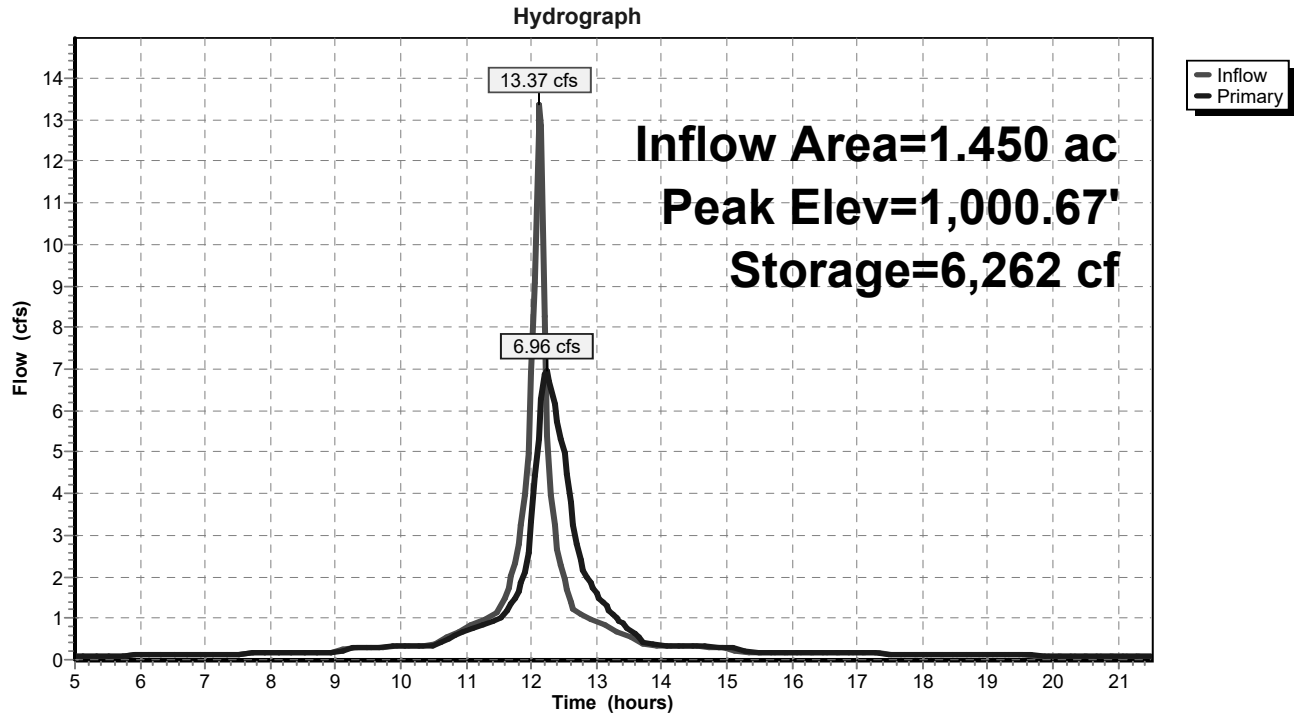
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MSE 24-hr 3 100-YR Rainfall=6.41"

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Pond NCFRA: NEW CONTROLLED FLOW ROOF STORAGE A



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Summary for Pond NCFRB: NEW CONTROLLED FLOW ROOF STORAGE B

Inflow Area = 0.250 ac, 100.00% Impervious, Inflow Depth > 6.00" for 100-YR event
 Inflow = 2.30 cfs @ 12.13 hrs, Volume= 0.125 af
 Outflow = 1.29 cfs @ 12.22 hrs, Volume= 0.125 af, Atten= 44%, Lag= 5.4 min
 Primary = 1.29 cfs @ 12.22 hrs, Volume= 0.125 af

Routing by Stor-Ind method, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
 Peak Elev= 1,000.54' @ 12.22 hrs Surf.Area= 3,715 sf Storage= 999 cf

Plug-Flow detention time= 7.1 min calculated for 0.125 af (100% of inflow)
 Center-of-Mass det. time= 7.0 min (748.3 - 741.3)

Volume	Invert	Avail.Storage	Storage Description
#1	1,000.00'	1,943 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,000.00	0	0	0
1,000.75	5,180	1,943	1,943

Device	Routing	Invert	Outlet Devices
#1	Primary	1,000.00'	6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH Head (feet) 0.00 0.50 Disch. (cfs) 0.000 0.800
#2	Primary	1,000.31'	6.0" Horiz. 6" DIA WEIR WITHIN FIXTURE C= 0.600 Limited to weir flow at low heads
#3	Primary	1,000.50'	6.0" Horiz. OVERFLOW C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.28 cfs @ 12.22 hrs HW=1,000.53' (Free Discharge)

1=6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH (Custom Controls 0.80 cfs)

2=6" DIA WEIR WITHIN FIXTURE (Orifice Controls 0.45 cfs @ 2.28 fps)

3=OVERFLOW (Weir Controls 0.03 cfs @ 0.60 fps)

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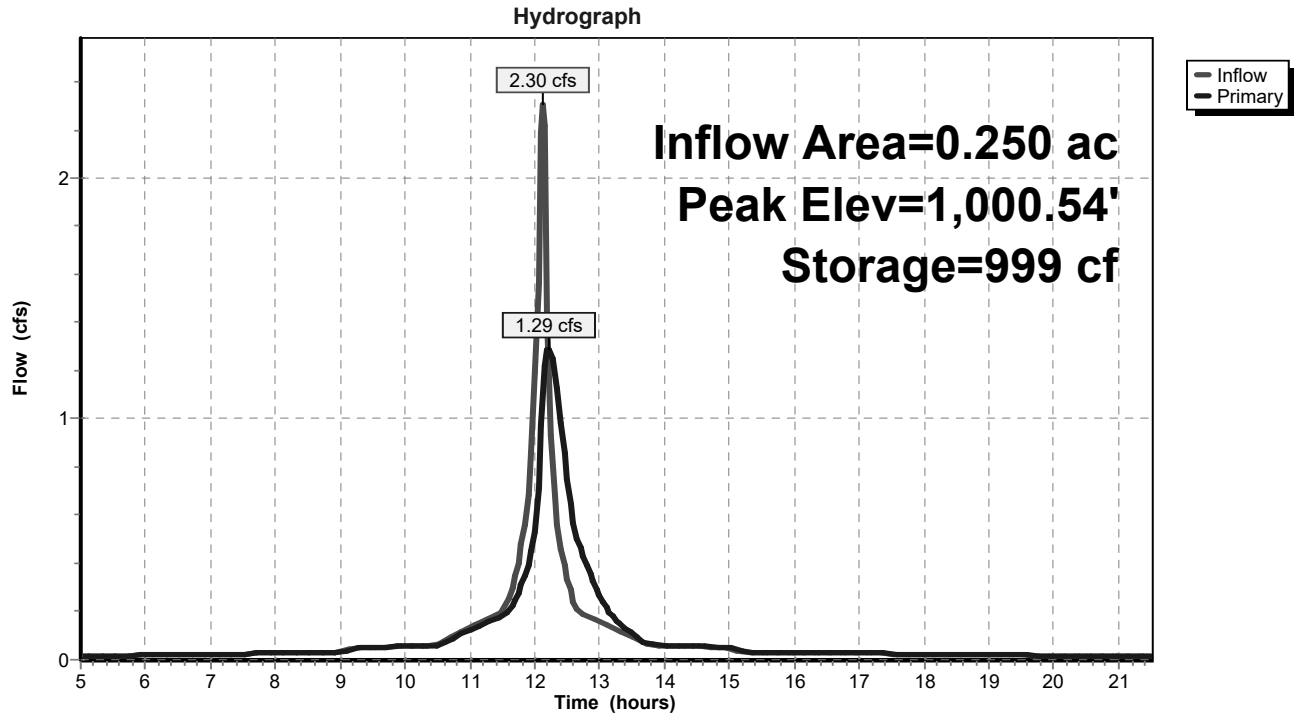
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MSE 24-hr 3 100-YR Rainfall=6.41"

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Pond NCFRB: NEW CONTROLLED FLOW ROOF STORAGE B



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MSE 24-hr 3 100-YR Rainfall=6.41"

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Summary for Pond NCFRC: NEW CONTROLLED FLOW ROOF STORAGE C

Inflow Area = 0.400 ac, 100.00% Impervious, Inflow Depth > 6.00" for 100-YR event
 Inflow = 3.69 cfs @ 12.13 hrs, Volume= 0.200 af
 Outflow = 2.75 cfs @ 12.19 hrs, Volume= 0.200 af, Atten= 25%, Lag= 3.7 min
 Primary = 2.75 cfs @ 12.19 hrs, Volume= 0.200 af

Routing by Stor-Ind method, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
 Peak Elev= 1,000.43' @ 12.19 hrs Surf.Area= 4,492 sf Storage= 974 cf

Plug-Flow detention time= 2.9 min calculated for 0.200 af (100% of inflow)
 Center-of-Mass det. time= 2.8 min (744.1 - 741.3)

Volume	Invert	Avail.Storage	Storage Description
#1	1,000.00'	2,914 cf	Custom Stage Data (Prismatic) Listed below (Recalc) x 3

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,000.00	0	0	0
1,000.75	2,590	971	971

Device	Routing	Invert	Outlet Devices
#1	Primary	1,000.00'	6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH X 3.00 Head (feet) 0.00 0.50 Disch. (cfs) 0.000 0.800
#2	Primary	1,000.31'	6.0" Horiz. 6" DIA WEIR WITHIN FIXTURE X 3.00 C= 0.600 Limited to weir flow at low heads
#3	Primary	1,000.50'	6.0" Horiz. OVERFLOW X 3.00 C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.71 cfs @ 12.19 hrs HW=1,000.43' (Free Discharge)
 1=6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH (Custom Controls 2.06 cfs)
 2=6" DIA WEIR WITHIN FIXTURE (Weir Controls 0.64 cfs @ 1.13 fps)
 3=OVERFLOW (Controls 0.00 cfs)

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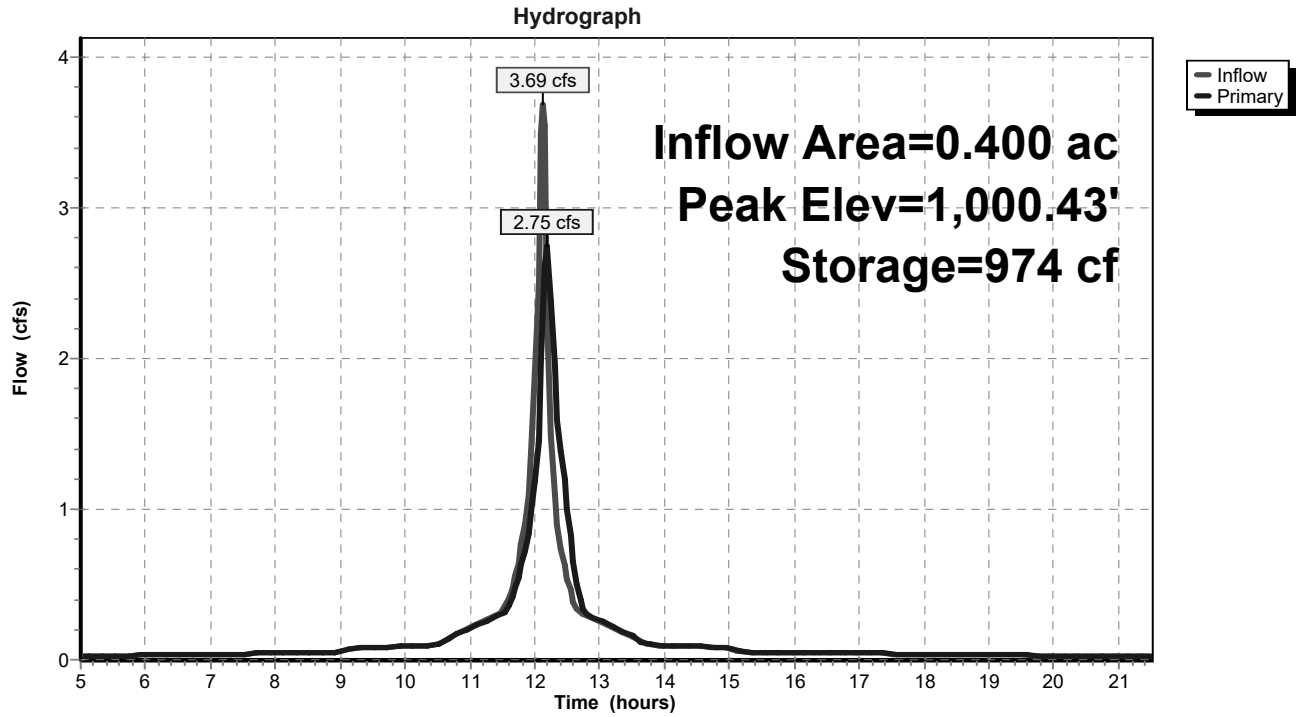
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MSE 24-hr 3 100-YR Rainfall=6.41"

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Pond NCFRC: NEW CONTROLLED FLOW ROOF STORAGE C



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Summary for Pond NCFRD: NEW CONTROLLED FLOW ROOF STORAGE D

Inflow Area = 0.100 ac, 100.00% Impervious, Inflow Depth > 6.00" for 100-YR event
 Inflow = 0.92 cfs @ 12.13 hrs, Volume= 0.050 af
 Outflow = 0.79 cfs @ 12.17 hrs, Volume= 0.050 af, Atten= 14%, Lag= 2.5 min
 Primary = 0.79 cfs @ 12.17 hrs, Volume= 0.050 af

Routing by Stor-Ind method, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
 Peak Elev= 1,000.40' @ 12.17 hrs Surf.Area= 752 sf Storage= 152 cf

Plug-Flow detention time= 1.4 min calculated for 0.050 af (100% of inflow)
 Center-of-Mass det. time= 1.4 min (742.6 - 741.3)

Volume	Invert	Avail.Storage	Storage Description
#1	1,000.00'	525 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,000.00	0	0	0
1,000.75	1,400	525	525

Device	Routing	Invert	Outlet Devices
#1	Primary	1,000.00'	6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH Head (feet) 0.00 0.50 Disch. (cfs) 0.000 0.800
#2	Primary	1,000.31'	6.0" Horiz. 6" DIA WEIR WITHIN FIXTURE C= 0.600 Limited to weir flow at low heads
#3	Primary	1,000.50'	6.0" Horiz. OVERFLOW C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.76 cfs @ 12.17 hrs HW=1,000.40' (Free Discharge)

1=6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH (Custom Controls 0.63 cfs)
 2=6" DIA WEIR WITHIN FIXTURE (Weir Controls 0.13 cfs @ 0.96 fps)
 3=OVERFLOW (Controls 0.00 cfs)

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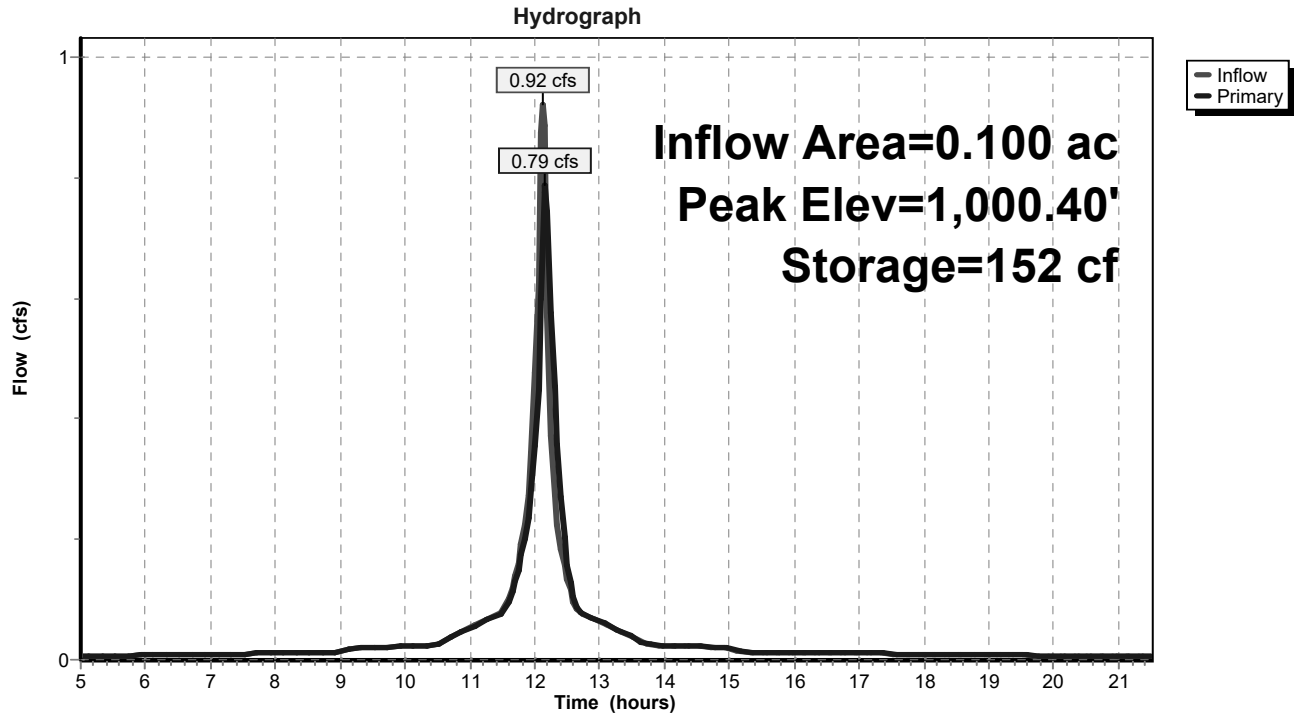
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MSE 24-hr 3 100-YR Rainfall=6.41"

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Pond NCFRD: NEW CONTROLLED FLOW ROOF STORAGE D



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MSE 24-hr 3 100-YR Rainfall=6.41"

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Summary for Pond PC: SOUTH POND

Inflow Area = 9.400 ac, 75.53% Impervious, Inflow Depth > 5.40" for 100-YR event
 Inflow = 53.82 cfs @ 12.14 hrs, Volume= 4.228 af
 Outflow = 4.30 cfs @ 13.69 hrs, Volume= 2.778 af, Atten= 92%, Lag= 92.9 min
 Primary = 4.30 cfs @ 13.69 hrs, Volume= 2.778 af

Routing by Stor-Ind method, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
 Peak Elev= 904.01' @ 13.69 hrs Surf.Area= 31,510 sf Storage= 125,100 cf

Plug-Flow detention time= 267.9 min calculated for 2.777 af (66% of inflow)
 Center-of-Mass det. time= 202.2 min (964.0 - 761.8)

Volume	Invert	Avail.Storage	Storage Description
#1	898.50'	144,070 cf	MODIFIED WET POND (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
898.50	15,500	0	0
899.00	16,900	8,100	8,100
900.00	19,400	18,150	26,250
901.00	21,800	20,600	46,850
902.00	24,400	23,100	69,950
903.00	27,000	25,700	95,650
904.00	31,500	29,250	124,900
904.60	32,400	19,170	144,070

Device	Routing	Invert	Outlet Devices
#1	Primary	898.87'	12.0" Round Culvert L= 344.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 898.87' / 898.02' S= 0.0025 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	898.50'	4.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	901.50'	36.0" Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=4.30 cfs @ 13.69 hrs HW=904.01' (Free Discharge)

1=Culvert (Barrel Controls 4.30 cfs @ 5.48 fps)
 2=Orifice/Grate (Passes < 0.95 cfs potential flow)
 3=Orifice/Grate (Passes < 34.00 cfs potential flow)

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MSE 24-hr 3 100-YR Rainfall=6.41"

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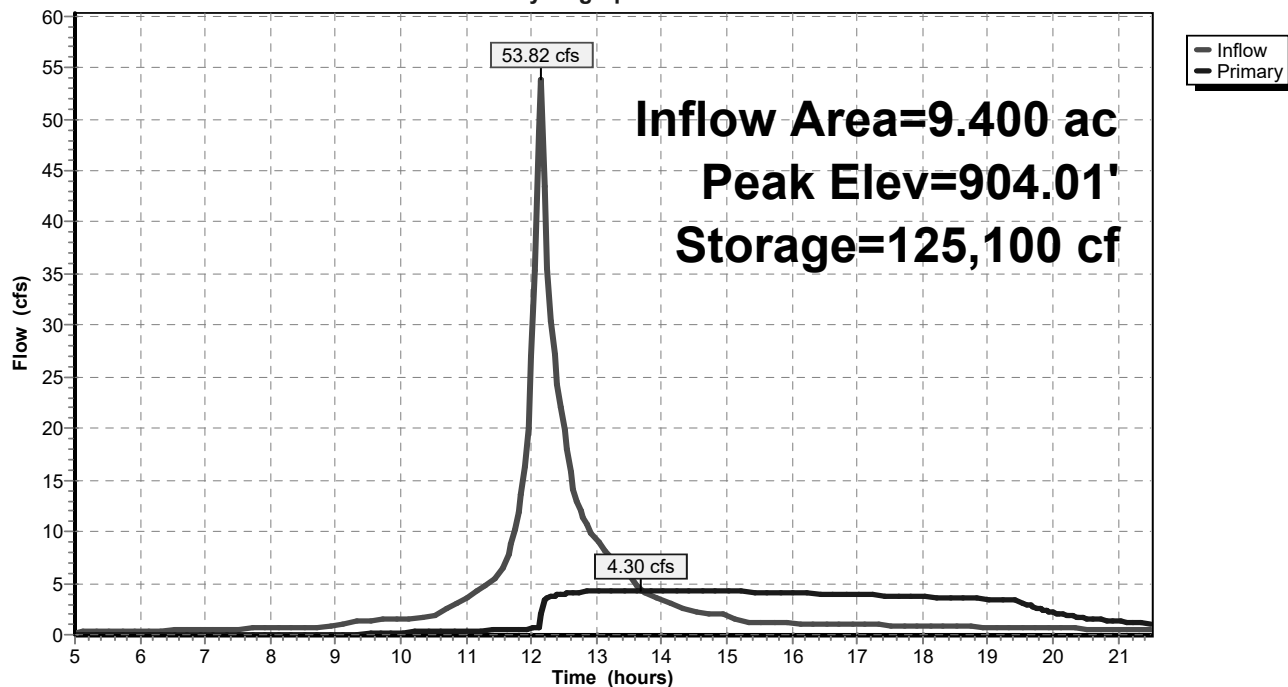
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Pond PC: SOUTH POND

Hydrograph



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MSE 24-hr 3 100-YR Rainfall=6.41"

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Summary for Pond UCFR: UPPER CONTROLLED FLOW ROOF STORAGE

Inflow Area = 2.600 ac, 100.00% Impervious, Inflow Depth > 6.00" for 100-YR event
 Inflow = 23.97 cfs @ 12.13 hrs, Volume= 1.299 af
 Outflow = 8.21 cfs @ 12.28 hrs, Volume= 1.299 af, Atten= 66%, Lag= 9.3 min
 Primary = 8.21 cfs @ 12.28 hrs, Volume= 1.299 af

Routing by Stor-Ind method, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs
 Peak Elev= 1,000.46' @ 12.28 hrs Surf.Area= 72,711 sf Storage= 16,657 cf

Plug-Flow detention time= 21.5 min calculated for 1.299 af (100% of inflow)
 Center-of-Mass det. time= 21.3 min (762.5 - 741.3)

Volume	Invert	Avail.Storage	Storage Description
#1	1,000.00'	35,625 cf	Custom Stage Data (Prismatic) Listed below (Recalc) x 8

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,000.00	1	0	0
1,000.67	13,292	4,453	4,453

Device	Routing	Invert	Outlet Devices
#1	Primary	1,000.00'	6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH X 8.00 Head (feet) 0.00 0.50 Disch. (cfs) 0.000 0.800
#2	Primary	1,000.31'	6.0" Horiz. 6" DIA WEIR WITHIN FIXTURE X 8.00 C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=8.19 cfs @ 12.28 hrs HW=1,000.46' (Free Discharge)

1=6 NOTCH WEIR w/ 10 GPM PER INCH PER NOTCH (Custom Controls 5.86 cfs)

2=6" DIA WEIR WITHIN FIXTURE (Weir Controls 2.33 cfs @ 1.26 fps)

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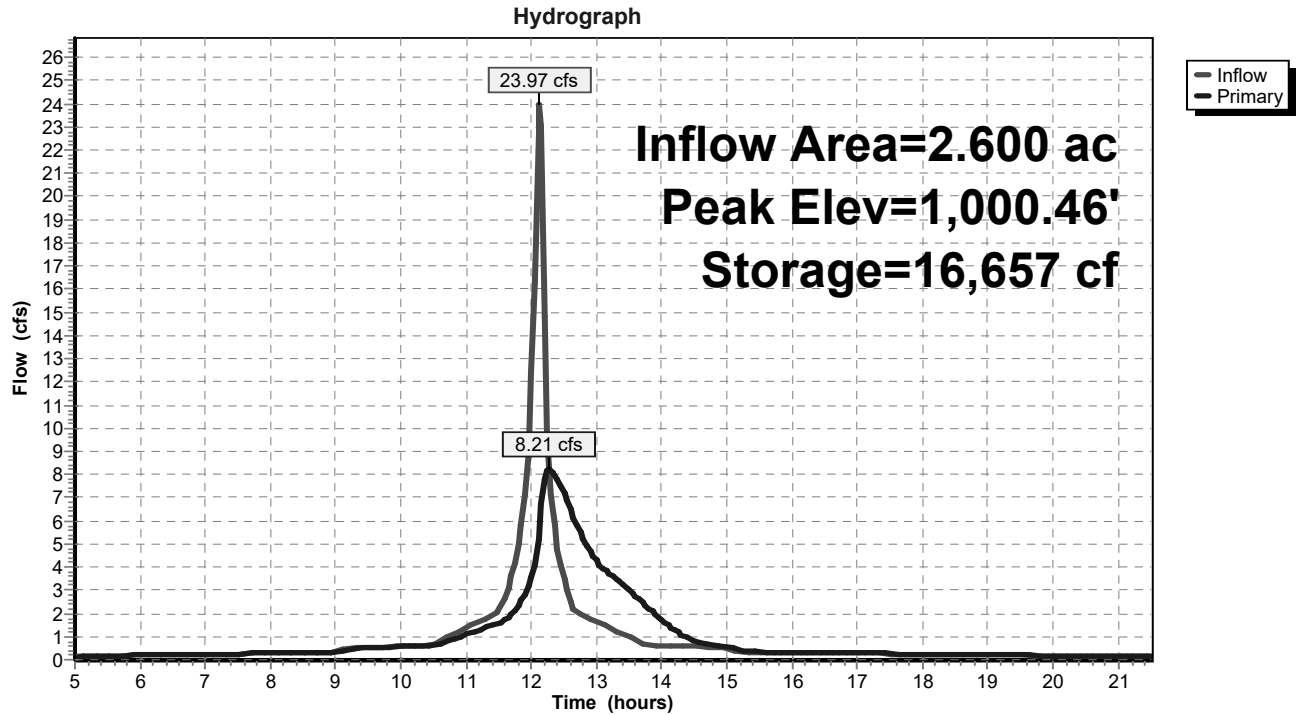
PROPOSED

MSE 24-hr 3 100-YR Rainfall=6.41"

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Pond UCFR: UPPER CONTROLLED FLOW ROOF STORAGE



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MSE 24-hr 3 100-YR Rainfall=6.41"

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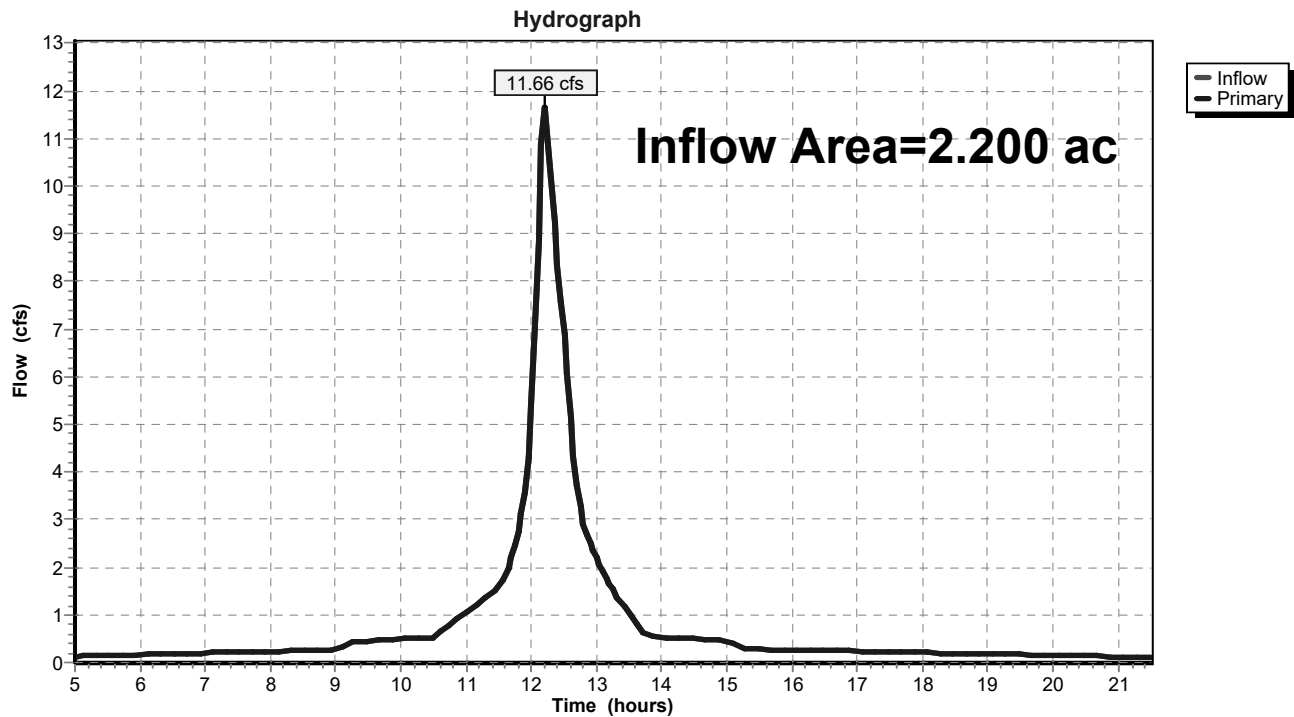
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Summary for Link NCFCR: NEW ROOF COMBINED CF RELEASE

Inflow Area = 2.200 ac, 100.00% Impervious, Inflow Depth > 6.00" for 100-YR event
Inflow = 11.66 cfs @ 12.20 hrs, Volume= 1.099 af
Primary = 11.66 cfs @ 12.20 hrs, Volume= 1.099 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs

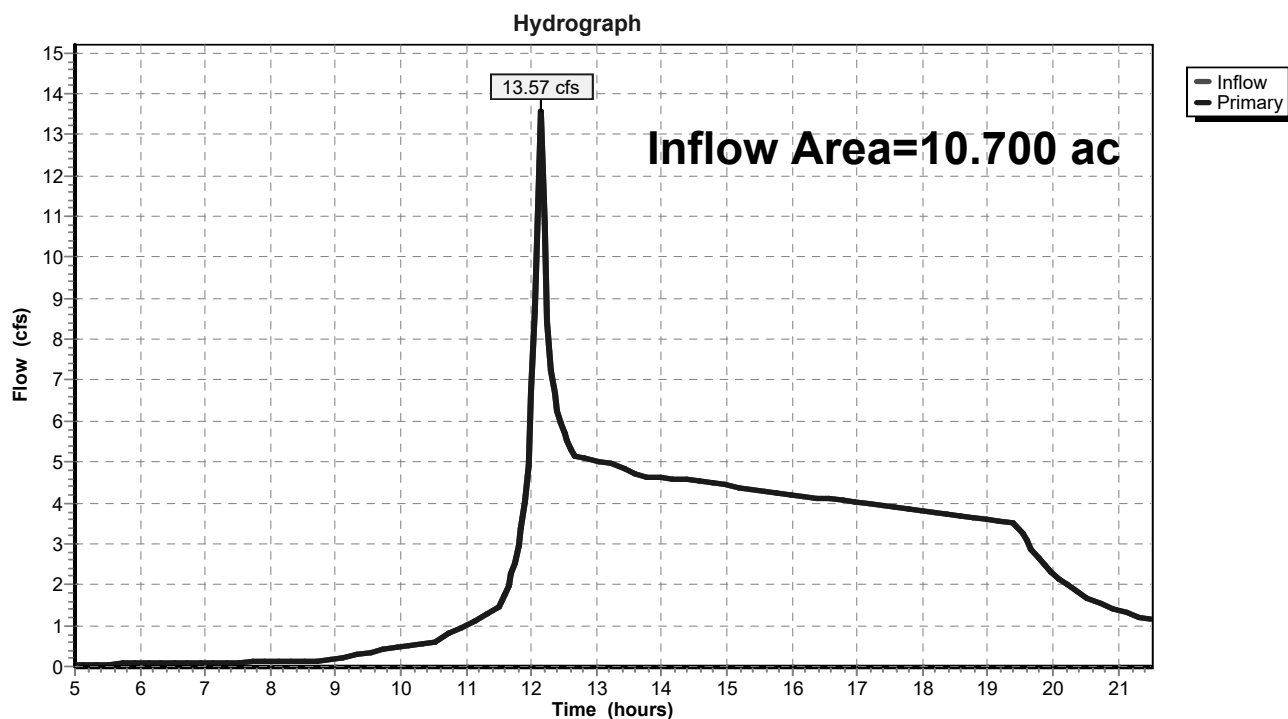
Link NCFCR: NEW ROOF COMBINED CF RELEASE



Summary for Link PSD: PROPOSED SOUTH DISCHARGE

Inflow Area = 10.700 ac, 77.57% Impervious, Inflow Depth > 3.82" for 100-YR event
Inflow = 13.57 cfs @ 12.14 hrs, Volume= 3.407 af
Primary = 13.57 cfs @ 12.14 hrs, Volume= 3.407 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-21.50 hrs, dt= 0.05 hrs

Link PSD: PROPOSED SOUTH DISCHARGE

PROPOSED CONDITIONS CRITICAL TIME PERIOD VOLUMES						
Time (hours)	2-year			100-year		
	Incremental		Total	Incremental		Total
	Outflow (cfs)	Volume (Ac-ft)	Volume (Ac-ft)	Outflow (cfs)	Volume (Ac-ft)	Volume (Ac-ft)
12.00	2.65	X	X	6.73	X	X
12.05	3.45	0.014	0.014	8.68	0.036	0.036
12.10	4.79	0.020	0.034	11.97	0.049	0.085
12.15	4.92	0.020	0.054	13.53	0.056	0.141
12.20	3.37	0.014	0.068	10.84	0.045	0.186
12.25	2.39	0.010	0.078	8.42	0.035	0.221
12.30	1.9	0.008	0.086	7.25	0.030	0.251
12.35	1.67	0.007	0.093	6.69	0.028	0.278
12.40	1.47	0.006	0.099	6.23	0.026	0.304
12.45	1.35	0.006	0.105	5.97	0.025	0.329
12.50	1.24	0.005	0.110	5.71	0.024	0.352
12.55	1.16	0.005	0.115	5.53	0.023	0.375
12.60	1.06	0.004	0.119	5.29	0.022	0.397
12.65	1.01	0.004	0.123	5.18	0.021	0.418
12.70	0.98	0.004	0.127	5.13	0.021	0.440
12.75	0.98	0.004	0.131	5.12	0.021	0.461
12.80	0.97	0.004	0.135	5.1	0.021	0.482
12.85	0.96	0.004	0.139	5.09	0.021	0.503
12.90	0.95	0.004	0.143	5.07	0.021	0.524
12.95	0.94	0.004	0.147	5.06	0.021	0.545
13.00	0.93	0.004	0.151	5.04	0.021	0.566
13.05	0.93	0.004	0.155	5.02	0.021	0.586
13.10	0.91	0.004	0.158	5	0.021	0.607
13.15	0.91	0.004	0.162	4.98	0.021	0.628
13.20	0.89	0.004	0.166	4.95	0.020	0.648
13.25	0.89	0.004	0.170	4.94	0.020	0.668
13.30	0.87	0.004	0.173	4.91	0.020	0.689
13.35	0.86	0.004	0.177	4.89	0.020	0.709
13.40	0.85	0.004	0.180	4.86	0.020	0.729
13.45	0.84	0.003	0.184	4.83	0.020	0.749
13.50	0.83	0.003	0.187	4.8	0.020	0.769
13.55	0.81	0.003	0.190	4.76	0.020	0.788
13.60	0.78	0.003	0.194	4.69	0.019	0.808
13.65	0.77	0.003	0.197	4.64	0.019	0.827
13.70	0.76	0.003	0.200	4.63	0.019	0.846
13.75	0.76	0.003	0.203	4.62	0.019	0.865
13.80	0.76	0.003	0.206	4.62	0.019	0.884
13.85	0.76	0.003	0.209	4.62	0.019	0.903
13.90	0.76	0.003	0.213	4.61	0.019	0.922
13.95	0.76	0.003	0.216	4.61	0.019	0.941
14.00	0.76	0.003	0.219	4.6	0.019	0.960
14.05	0.76	0.003	0.222	4.6	0.019	0.979
14.10	0.75	0.003	0.225	4.59	0.019	0.998
14.15	0.75	0.003	0.228	4.59	0.019	1.017
14.20	0.75	0.003	0.231	4.58	0.019	1.036
14.25	0.75	0.003	0.234	4.58	0.019	1.055
14.30	0.75	0.003	0.237	4.57	0.019	1.074
14.35	0.75	0.003	0.241	4.57	0.019	1.093
14.40	0.75	0.003	0.244	4.56	0.019	1.112
14.45	0.75	0.003	0.247	4.55	0.019	1.131
14.50	0.75	0.003	0.250	4.55	0.019	1.149
14.55	0.75	0.003	0.253	4.54	0.019	1.168
14.60	0.75	0.003	0.256	4.53	0.019	1.187
14.65	0.75	0.003	0.259	4.52	0.019	1.205
14.70	0.75	0.003	0.262	4.52	0.019	1.224
14.75	0.75	0.003	0.265	4.51	0.019	1.243
14.80	0.75	0.003	0.268	4.5	0.019	1.261
14.85	0.75	0.003	0.272	4.5	0.019	1.280
14.90	0.75	0.003	0.275	4.49	0.019	1.299
14.95	0.75	0.003	0.278	4.48	0.019	1.317
15.00	0.74	0.003	0.281	4.47	0.018	1.335
15.05	0.74	0.003	0.284	4.45	0.018	1.354
15.10	0.72	0.003	0.287	4.39	0.018	1.372
15.15	0.71	0.003	0.290	4.36	0.018	1.390
15.20	0.7	0.003	0.293	4.34	0.018	1.408
15.25	0.7	0.003	0.296	4.33	0.018	1.426

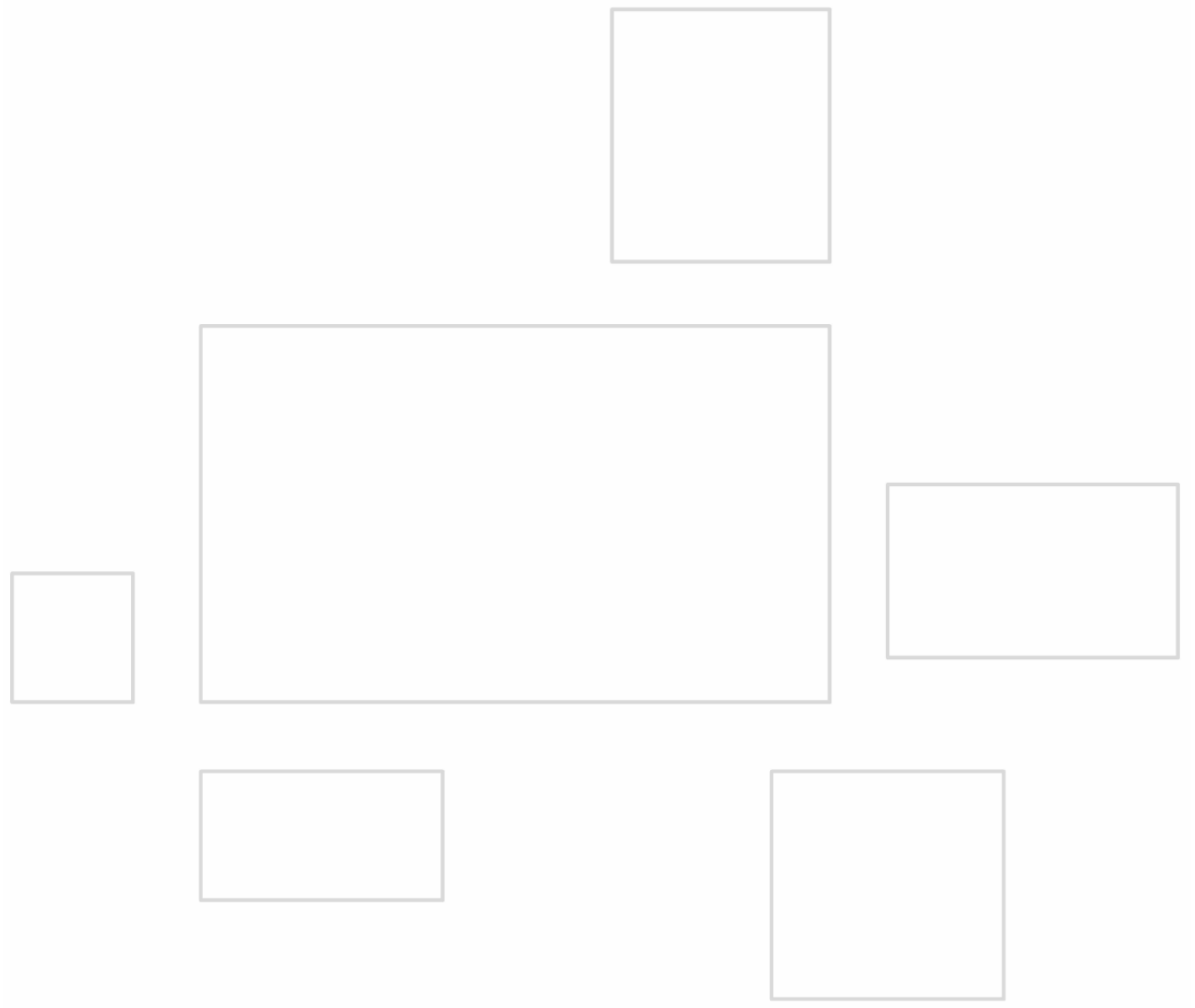
PROPOSED CONDITIONS CRITICAL TIME PERIOD VOLUMES						
Time (hours)	2-year			100-year		
	Incremental		Total	Incremental		Total
	Outflow (cfs)	Volume (Ac-ft)	Volume (Ac-ft)	Outflow (cfs)	Volume (Ac-ft)	Volume (Ac-ft)
15.30	0.7	0.003	0.298	4.32	0.018	1.444
15.35	0.7	0.003	0.301	4.32	0.018	1.462
15.40	0.7	0.003	0.304	4.31	0.018	1.479
15.45	0.7	0.003	0.307	4.3	0.018	1.497
15.50	0.7	0.003	0.310	4.29	0.018	1.515
15.55	0.7	0.003	0.313	4.28	0.018	1.532
15.60	0.7	0.003	0.316	4.27	0.018	1.550
15.65	0.7	0.003	0.319	4.26	0.018	1.568
15.70	0.7	0.003	0.322	4.25	0.018	1.585
15.75	0.7	0.003	0.324	4.24	0.018	1.603
15.80	0.7	0.003	0.327	4.24	0.018	1.620
15.85	0.7	0.003	0.330	4.23	0.017	1.638
15.90	0.69	0.003	0.333	4.22	0.017	1.655
15.95	0.69	0.003	0.336	4.21	0.017	1.673
16.00	0.69	0.003	0.339	4.2	0.017	1.690
16.05	0.69	0.003	0.342	4.19	0.017	1.707
16.10	0.69	0.003	0.345	4.18	0.017	1.725
16.15	0.69	0.003	0.347	4.17	0.017	1.742
16.20	0.69	0.003	0.350	4.16	0.017	1.759
16.25	0.69	0.003	0.353	4.15	0.017	1.776
16.30	0.69	0.003	0.356	4.14	0.017	1.793
16.35	0.69	0.003	0.359	4.13	0.017	1.810
16.40	0.69	0.003	0.362	4.12	0.017	1.827
16.45	0.69	0.003	0.364	4.11	0.017	1.844
16.50	0.69	0.003	0.367	4.1	0.017	1.861
16.55	0.69	0.003	0.370	4.1	0.017	1.878
16.60	0.69	0.003	0.373	4.08	0.017	1.895
16.65	0.69	0.003	0.376	4.08	0.017	1.912
16.70	0.69	0.003	0.379	4.07	0.017	1.929
16.75	0.68	0.003	0.382	4.06	0.017	1.945
16.80	0.68	0.003	0.384	4.05	0.017	1.962
16.85	0.68	0.003	0.387	4.04	0.017	1.979
16.90	0.68	0.003	0.390	4.03	0.017	1.995
16.95	0.68	0.003	0.393	4.02	0.017	2.012
17.00	0.68	0.003	0.396	4.01	0.017	2.029
17.05	0.68	0.003	0.398	4	0.017	2.045
17.10	0.68	0.003	0.401	3.99	0.016	2.062
17.15	0.68	0.003	0.404	3.98	0.016	2.078
17.20	0.68	0.003	0.407	3.97	0.016	2.095
17.25	0.68	0.003	0.410	3.96	0.016	2.111
17.30	0.68	0.003	0.412	3.95	0.016	2.127
17.35	0.68	0.003	0.415	3.94	0.016	2.143
17.40	0.68	0.003	0.418	3.93	0.016	2.160
17.45	0.68	0.003	0.421	3.92	0.016	2.176
17.50	0.68	0.003	0.424	3.91	0.016	2.192
17.55	0.67	0.003	0.426	3.9	0.016	2.208
17.60	0.67	0.003	0.429	3.88	0.016	2.224
17.65	0.67	0.003	0.432	3.87	0.016	2.240
17.70	0.67	0.003	0.435	3.86	0.016	2.256
17.75	0.67	0.003	0.438	3.85	0.016	2.272
17.80	0.67	0.003	0.440	3.84	0.016	2.288
17.85	0.67	0.003	0.443	3.83	0.016	2.304
17.90	0.67	0.003	0.446	3.82	0.016	2.319
17.95	0.67	0.003	0.449	3.81	0.016	2.335
18.00	0.67	0.003	0.451	3.8	0.016	2.351
18.05	0.67	0.003	0.454	3.79	0.016	2.367
18.10	0.67	0.003	0.457	3.78	0.016	2.382
18.15	0.67	0.003	0.460	3.77	0.016	2.398
18.20	0.67	0.003	0.462	3.76	0.016	2.413
18.25	0.67	0.003	0.465	3.75	0.015	2.429
18.30	0.66	0.003	0.468	3.74	0.015	2.444
18.35	0.66	0.003	0.471	3.73	0.015	2.460
18.40	0.66	0.003	0.473	3.72	0.015	2.475
18.45	0.66	0.003	0.476	3.7	0.015	2.490
18.50	0.66	0.003	0.479	3.69	0.015	2.506
18.55	0.66	0.003	0.482	3.68	0.015	2.521

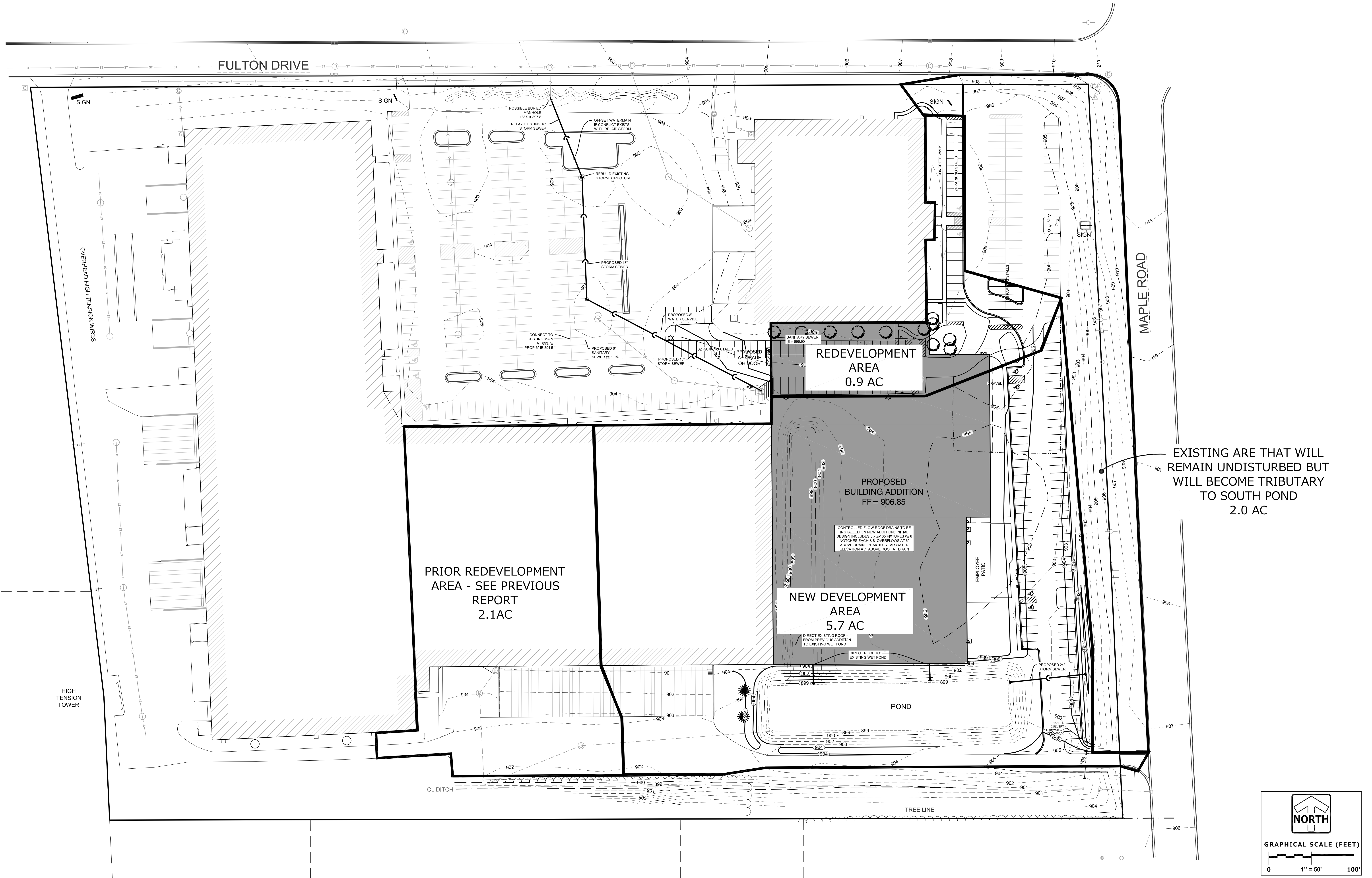
PROPOSED CONDITIONS CRITICAL TIME PERIOD VOLUMES						
Time (hours)	2-year			100-year		
	Incremental		Total	Incremental		Total
	Outflow (cfs)	Volume (Ac-ft)	Volume (Ac-ft)	Outflow (cfs)	Volume (Ac-ft)	Volume (Ac-ft)
18.60	0.66	0.003	0.484	3.67	0.015	2.536
18.65	0.66	0.003	0.487	3.66	0.015	2.551
18.70	0.66	0.003	0.490	3.65	0.015	2.566
18.75	0.66	0.003	0.492	3.64	0.015	2.581
18.80	0.66	0.003	0.495	3.63	0.015	2.596
18.85	0.66	0.003	0.498	3.62	0.015	2.611
18.90	0.66	0.003	0.501	3.61	0.015	2.626
18.95	0.66	0.003	0.503	3.59	0.015	2.641
19.00	0.65	0.003	0.506	3.58	0.015	2.656
19.05	0.65	0.003	0.509	3.57	0.015	2.670
19.10	0.65	0.003	0.511	3.56	0.015	2.685
19.15	0.65	0.003	0.514	3.55	0.015	2.700
19.20	0.65	0.003	0.517	3.54	0.015	2.714
19.25	0.65	0.003	0.520	3.53	0.015	2.729
19.30	0.65	0.003	0.522	3.51	0.014	2.743
19.35	0.65	0.003	0.525	3.5	0.014	2.758
19.40	0.65	0.003	0.528	3.49	0.014	2.772
19.45	0.65	0.003	0.530	3.48	0.014	2.787
19.50	0.65	0.003	0.533	3.35	0.014	2.801
19.55	0.65	0.003	0.536	3.2	0.013	2.814
19.60	0.65	0.003	0.538	3.06	0.013	2.826
19.65	0.65	0.003	0.541	2.94	0.012	2.839
19.70	0.64	0.003	0.544	2.82	0.012	2.850
19.75	0.64	0.003	0.546	2.7	0.011	2.861
19.80	0.64	0.003	0.549	2.6	0.011	2.872
19.85	0.64	0.003	0.552	2.51	0.010	2.882
19.90	0.64	0.003	0.554	2.42	0.010	2.892
19.95	0.64	0.003	0.557	2.34	0.010	2.902
20.00	0.64	0.003	0.560	2.26	0.009	2.911
20.05	0.64	0.003	0.562	2.19	0.009	2.921
20.10	0.64	0.003	0.565	2.12	0.009	2.929
20.15	0.64	0.003	0.567	2.05	0.008	2.938
20.20	0.64	0.003	0.570	2	0.008	2.946
20.25	0.64	0.003	0.573	1.94	0.008	2.954
20.30	0.64	0.003	0.575	1.89	0.008	2.962
20.35	0.63	0.003	0.578	1.83	0.008	2.969
20.40	0.63	0.003	0.581	1.78	0.007	2.977
20.45	0.63	0.003	0.583	1.74	0.007	2.984
20.50	0.63	0.003	0.586	1.7	0.007	2.991
20.55	0.63	0.003	0.588	1.66	0.007	2.998
20.60	0.63	0.003	0.591	1.62	0.007	3.004
20.65	0.63	0.003	0.594	1.58	0.007	3.011
20.70	0.63	0.003	0.596	1.55	0.006	3.017
20.75	0.63	0.003	0.599	1.51	0.006	3.024
20.80	0.63	0.003	0.601	1.48	0.006	3.030
20.85	0.63	0.003	0.604	1.45	0.006	3.036
20.90	0.63	0.003	0.607	1.42	0.006	3.042
20.95	0.63	0.003	0.609	1.4	0.006	3.047
21.00	0.62	0.003	0.612	1.37	0.006	3.053
21.05	0.62	0.003	0.614	1.35	0.006	3.059
21.10	0.62	0.003	0.617	1.32	0.005	3.064
21.15	0.62	0.003	0.619	1.3	0.005	3.069
21.20	0.62	0.003	0.622	1.28	0.005	3.075
21.25	0.62	0.003	0.625	1.25	0.005	3.080
21.30	0.62	0.003	0.627	1.23	0.005	3.085
21.35	0.62	0.003	0.630	1.21	0.005	3.090
21.40	0.62	0.003	0.632	1.19	0.005	3.095
21.45	0.62	0.003	0.635	1.17	0.005	3.100
21.50	0.62	0.003	0.637	1.16	0.005	3.105

APPENDIX 4

POST DEVELOPMENT CONDITIONS

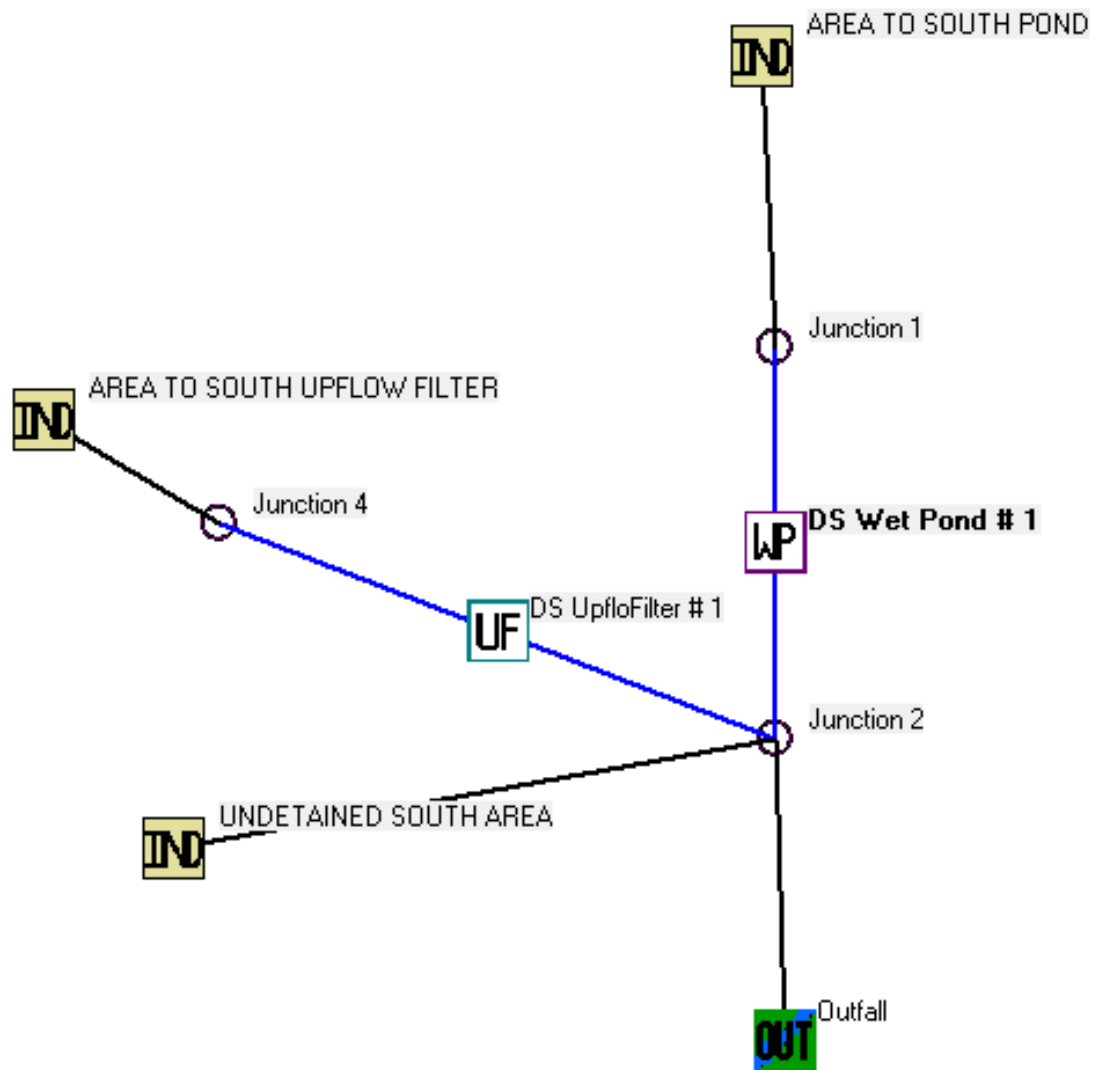
WATER QUALITY





EXISTING ARE THAT WILL REMAIN UNDISTURBED BUT WILL BECOME TRIBUTARY TO SOUTH POND 2.0 AC

SLAMM ROUTING DIAGRAM



SLAMM DATA

File Name:

Z:\Projects\2022\3048.00-WI\DESIGN\SWMP\SLAMM\PRELIM.mdb

Outfall Output Summary

	Runoff Volume (cu. ft.)	Percent Runoff Reduction	Runoff Coefficient (Rv)	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Total of All Land Uses without Controls	690227		0.54	104.3	4496	
Outfall Total with Controls	690883	-0.10 %	0.54	35.81	1545	65.64 %
Current File Output: Annualized Total After Outfall Controls	700478		Years in Model Run: 0.99		1566	

Print Output Summary to .csv File

Print Output Summary to Text File

Print Output Summary to Printer

Total Area Modeled (ac)

10.700

Total Control Practice Costs

Capital Cost	N/A
Land Cost	N/A
Annual Maintenance Cost	N/A
Present Value of All Costs	N/A
Annualized Value of All Costs	N/A

Perform Outfall
Flow Duration
Curve Calculations

Receiving Water Impacts Due To Stormwater Runoff

(CWP Impervious Cover Model)

	Calculated Rv	Approximate Urban Stream Classification
Without Controls	0.54	Poor
With Controls	0.54	Poor

Data File:	Z:\Projects\2022\3048.00-WI\DESIGN\SWMP\SLAMM\PRELIM.mdb						
Rain File:	WI Milwaukee 69.RAN						
Date:	03-10-23	Time:	10:48:39 AM				
Site Description:	MGS						
Col. #:	2	4	5	6	7	8	9
Control Practice No.	Control Practice Type	Total Inflow Volume (cf)	Total Outflow Volume (cf)	Percent Volume Reduction	Total Influent Load (lbs)	Total Effluent Load (lbs)	Percent Load Reduction
1	Wet Detention Pond	597283	598005	-0.121	3046	442.3	85.48
2	Upflo Filter	26889	26918	-0.108	419.7	72.44	82.74

Industrial: UNDETAINED SOUTH AREA Areas - Particulate Solids Yield (lbs)					
Start Date	Rain Total (in.)	Land Use Totals	Paved Parking 1	Small Landscaped Areas 1	
Minimum:	0.00	0.00	0	0	
Maximum:	1.96	85.94	83.94	1.999	
Flow Wt Avg	N/A	42.32	41.56	0.9177	
Total:	29.02	1029.82	1019	10.67	

Data file name: Z:\Projects\2022\3048.00-WI\DESIGN\SWMP\SLAMM\PRELIM.mdb
WinSLAMM Version 10.4.1
Rain file name: C:\WinSLAMM Files\Rain Files\WI Milwaukee 69.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdxd
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
If Other Device Pollutant Load Reduction Values = 1, Off-site Pollutant Loads are Removed from Pollutant Load % Reduction calculations
Seed for random number generator: -42
Study period starting date: 01/05/69 Study period ending date: 12/31/69
Start of Winter Season: 12/06 End of Winter Season: 03/28
Date: 03-10-2023 Time: 12:03:47
Site information:
MGS
LU# 1 - Industrial: AREA TO SOUTH POND Total area (ac): 9.400
1 - Roofs 1: 5.000 ac. Flat Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
13 - Paved Parking 1: 1.700 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
51 - Small Landscaped Areas 1: 2.300 ac. Normal Clayey Low Density Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 0.400 ac. Source Area PSD File:
LU# 2 - Industrial: UNDETAINED SOUTH AREA Total area (ac): 0.950
13 - Paved Parking 1: 0.850 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
51 - Small Landscaped Areas 1: 0.100 ac. Normal Clayey Low Density Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 3 - Industrial: AREA TO SOUTH UPFLOW FILTER Total area (ac): 0.350
13 - Paved Parking 1: 0.350 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
Control Practice 1: Wet Detention Pond CP# 1 (DS) - DS Wet Pond # 1
Particle Size Distribution file name: Not needed - calculated by program
Initial stage elevation (ft): 5
Peak to Average Flow Ratio: 3.8
Maximum flow allowed into pond (cfs): No maximum value entered
Outlet Characteristics:
Outlet type: Orifice 1
1. Orifice diameter (ft): 0.33
2. Number of orifices: 1

3. Invert elevation above datum (ft): 5

Outlet type: Broad Crested Weir

1. Weir crest length (ft): 10

2. Weir crest width (ft): 10

3. Height from datum to bottom of weir opening: 9.49

Outlet type: Vertical Stand Pipe

1. Stand pipe diameter (ft): 3

2. Stand pipe height above datum (ft): 8

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.0800	0.00	0.00
2	1.00	0.1100	0.00	0.00
3	4.00	0.2600	0.00	0.00
4	5.00	0.4400	0.00	0.00
5	9.50	0.6700	0.00	0.00

Control Practice 2: Upflo Filter CP# 1 (DS) - DS UpfloFilter # 1

Media Type: CPZ

Fraction of Area Served by Upflo Filters (0-1): 1.0

Height from Outlet Invert to Structure Top (ft): 4.0

Sump Depth (ft): 3.00

The program will determine the Sump Cleaning/Filter Replacement Frequency

Solve for Given Conditions

Number of filters: 5

SLAMM for Windows Version 10.4.1

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Data file name: Z:\Projects\2022\3048.00-WI\DESIGN\SWMP\SLAMM\PRELIM.mdb

Data file description: MGS

Rain file name: C:\WinSLAMM Files\Rain Files\WI Milwaukee 69.RAN

Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx

Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx

Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdX

Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std

Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std

Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std

Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std

Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std

Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std

Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False

Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv

Cost Data file name:

If Other Device Pollutant Load Reduction Values = 1, Off-site Pollutant Loads are Removed from Pollutant Load % Reduction calculations

Seed for random number generator: -42

Start of Winter Season: 12/06 End of Winter Season: 03/28

Model Run Start Date: 01/05/69 Model Run End Date: 12/31/69

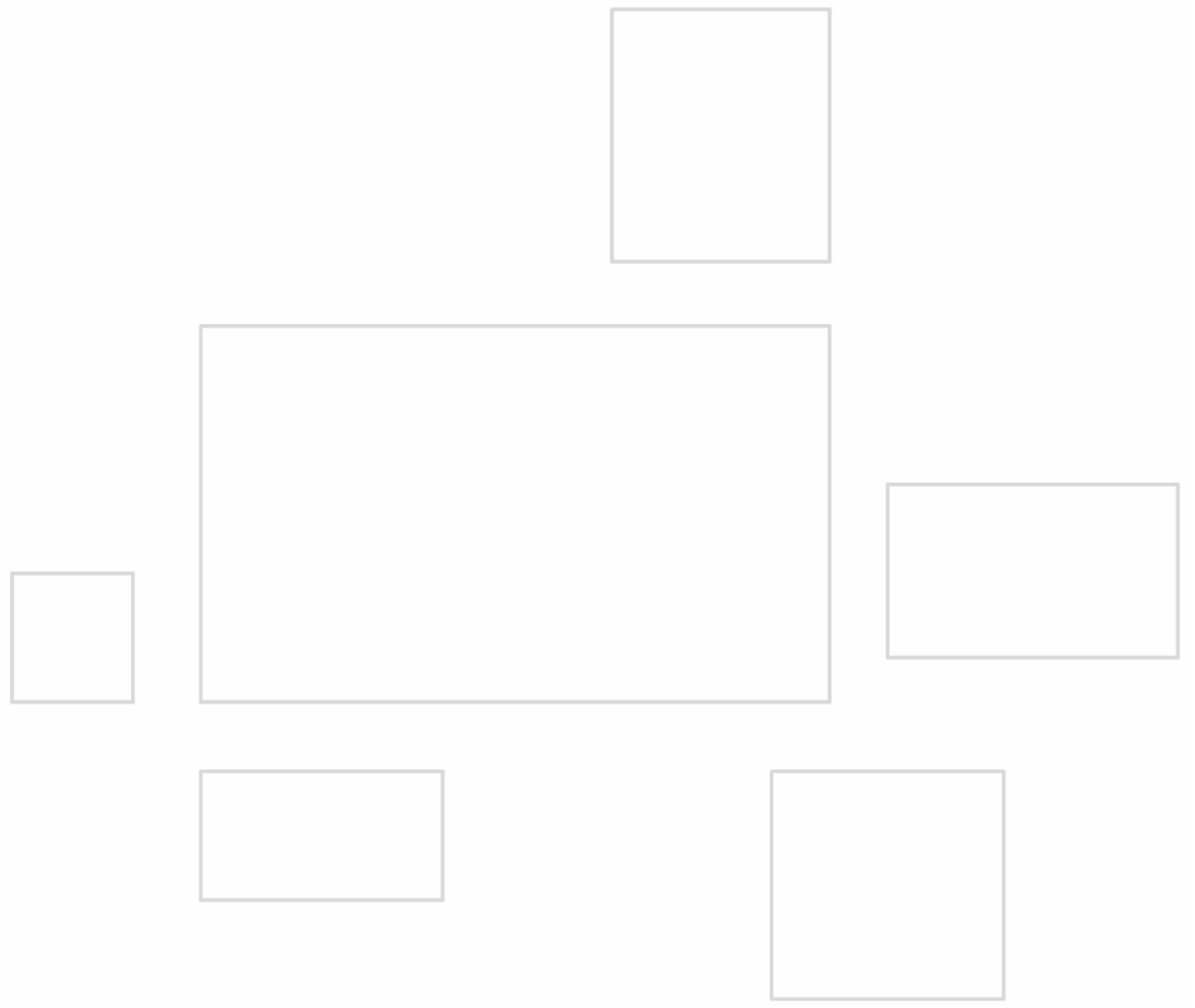
Date of run: 03-10-2023 Time of run: 12:03:25

Total Area Modeled (acres): 10.700

Years in Model Run: 0.99

	Runoff Volume (cu ft)	Percent Runoff Volume Reduction	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Total of all Land Uses without Controls:	690227	-	104.3	4496	-
Outfall Total with Controls:	690883	-0.10%	35.81	1545	65.64%
Annualized Total After Outfall Controls:	700478			1566	

APPENDIX 5 EXCERPT FROM GEOTECHNICAL REPORT



BUSINESS OF THE PLAN COMMISSION

MEETING DATE: May 8, 2023

PLACEMENT: Action Item

ITEM TITLE: Lemberg Electric , Agent for St. John United Church of Christ,
Property Owner, N104 W14181 Donges Bay Road; Sign Review
(ACTION)

SUBMITTED BY:

SUMMARY EXPLANATION:

ATTACHMENT:

1. 1-FINAL PDF-St Johns-Sign Review

RECOMMENDATION:

ACTION BY Committee:

SIGN REVIEW
5/8/23 Plan Commission Meeting

St. John United Church of Christ

Planning & Zoning Report

Germantown, Wisconsin

Summary

Lemberg Electric, agent for St. Johns Church, property owner, is requesting approval of a new ground sign for St. John United Church of Christ located at N104 W14181 Donges Bay Road.

Location: N104 W14181 Donges Bay Road

Agent/

Property Owners: Lemberg Electric
4085 N 128th St
Brookfield, WI

St John United Church of Christ
N104 W14181 Donges Bay Rd
Germantown, WI

Zoning: I: Institutional

Adjacent Land Uses		Zoning
North	Residential	Rs-4 & 6
South	Residential	Rs-6
East	Residential	Rs-6
West	Residential	Rs-4



Background/Proposal

Lemberg Electric, agent for St. Johns Church, property owner, is requesting approval of a new ground sign for St. John United Church of Christ located at N104 W14181 Donges Bay Road.

Ground Sign

- 7'9" x 7'3" (56.2 sqft) 10' tall, single-sided aluminum cabinet w/ routed aluminum faces, internal LED lighting and an electronic message center (EMC) mounted on a masonry base.

Staff Comments

The installation and operation of an electronic message center (EMCs) is subject to a series of eight (8) specific requirements under Section 17.46(7)(h) of the Zoning Code (copy attached).

One of those requirements requires a minimum 15' setback from the nearest residential zoning district boundary. In September, 2022, the Church filed a variance appeal seeking to reduce the 150' setback to 120' to allow the monument sign and EMC to be located closer to the road and setback 5' from the Donges Bay Road property line. The variance appeal was denied by the Board of Zoning Appeals (BOZA) and the Church has since revised the proposed sign location 30 feet into the property to meet the 150' setback (see photo simulation in application).

Additional information is also required from the manufacturer regarding the lighting levels and automatic adjustment features of the message board to prove compliance with requirements 6. and 7. under 17.46(7)(h).

Village Staff Recommendation

APPROVE the proposed monument sign and electronic message center (EMC) for St. John United Church of Christ located at N104 W14181 Donges Bay Road subject to the following conditions:

1. Electrical permits shall be obtained from Inspection Services prior to installation of any/all electrical components.
2. The owner/operator shall provide an "electronic message board use & maintenance agreement" to the Village Planner prior to issuance of an electrical permit as required under 17.46(7)(h) of the Zoning Code.
3. The owner/operator shall provide written evidence to the Zoning Administrator from the sign manufacturer and/or installer that the electronic message board complies with the automatic light level adjustment and other operational requirements prior to issuance of an electrical permit as required under 17.46(7)(h) 6. and (h) 7. of the Zoning Code.
4. The owner/operator shall operate and maintain the electronic message board in compliance with the message display appearance, duration/timing and all other requirements under 17.46(7)(h) at all times.



Village of



Germantown

Willkommen

Fee must accompany application

\$275 Sign Review Fee

\$ 75 Sign Face Replacement

Paid _____ Date _____

SIGN REVIEW APPLICATION

Pursuant to Section 17.46 of the Municipal Code

Please read and complete this application carefully. **All applications must be signed and dated.**

1	APPLICANT OR AGENT <u>Lemberg Electric</u> <u>Zane Nichols</u> <u>Phone (414) 254-1033</u> <u>Fax ()</u> <u>E-Mail znichols@lembergelectric.com</u>	PROPERTY OWNER <u>St John's Church</u> <u>Tax/Parcel ID: 351967</u> <u>Phone (414) 254-1033</u>				
2	PROPERTY ADDRESS OR GENERAL LOCATION <u>N104 W14181 Dorges Bay Road, Germantown WI 53022</u>					
3	SIGN INFORMATION Sign Dimensions <u>10'</u> height x <u>7-3"</u> width ☒ Single / ☐ Multi Tenant (circle one) Number of Sides <u>1</u> Total Square Footage of Sign (include all sides) <u>72.5 sqft</u> Total height of the Sign <u>10'</u> Is the Sign to be illuminated <u>X</u> yes ☐ no Type of Sign Construction Materials <u>Aluminum, Acrylic, Steel, Brick</u> Distance to Closest Property Line <u>150'</u>					
	Are there any existing signs on the property <u>1</u> If yes, what is the total Square Footage of existing signs <u>12'</u> What are the intentions for the existing signs: Take down _____ Remain <u>X</u> if possible					
4	SIGNATURES -- ALL APPLICATIONS MUST BE SIGNED BY OWNER! <table border="0" style="width: 100%;"><tr><td style="text-align: center;"><u>Zane Nichols</u> Applicant</td><td style="text-align: center;"><u>4/13/23</u> Date</td><td style="text-align: center;"> Owner</td><td style="text-align: center;"><u>4/13/23</u> Date</td></tr></table>		<u>Zane Nichols</u> Applicant	<u>4/13/23</u> Date	 Owner	<u>4/13/23</u> Date
<u>Zane Nichols</u> Applicant	<u>4/13/23</u> Date	 Owner	<u>4/13/23</u> Date			



ST. JOHN

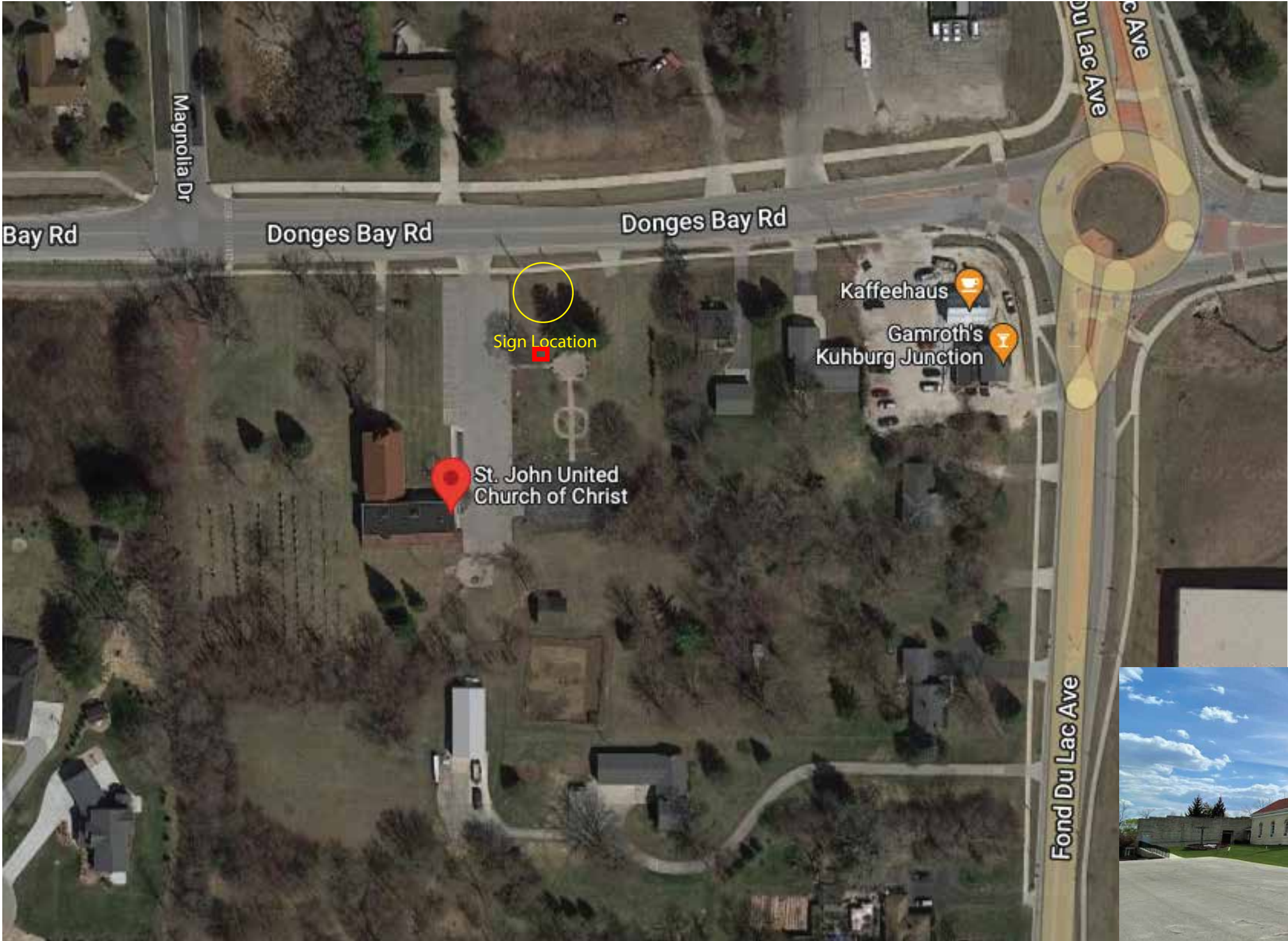
UNITED CHURCH OF CHRIST

Saint John United Church of Christ
N104 W14181 Donges Bay Road - Germantown, Wisconsin 53022
Drawing Package Title: St_John_Church_of_Christ_1_(5).pdf
Date: 09-19-22



SIGNS

4085 North 128th Street
Brookfield, WI 53005
p. 262-781-1500
www.LembergElectric.com



SIGNS

4085 North 128th Street
Brookfield, WI 53005
p. 262-781-1500
www.LembergElectric.com

Client: St. John United Church of Christ
Address: N104 W14181 Dongs Bay Road
Location: Germantown, Wisconsin 53022

Sales Representative: Skip DeBack
Project Manager: T.B.D.
Designer: Mark Mayzik

Scale: N/A
Paper Size: 11x17
Signature / Date:

Client / Location or Project / Sign Classification / Version# or Sheet / Revision# / Drawing Status
St_John_United_SITE_MAP_r00_D

Date:
05-16-22

These designs are the exclusive property of Lemberg Electric Inc. Use or duplication without expressed written permission of Lemberg Electric Inc. Is prohibited. Drawings are for conceptual use only. The document represents an approximation of materials & colors. Actual product colors may vary.

Monument Sign with EMC Specifications

One (1) Monument Sign with a Full Color Electronic Message Center (EMC) - Single Sided
Illuminated with Internal White LED

Size: 7'-9" H x 7'-3" W (EMC: 3' x 7')
Sign Cabinet to have Photo Cell

(A) Sign Cabinet:
Fabricated aluminum sign body 24" deep.
Routed 1/8" aluminum faces (no exposed fasteners).

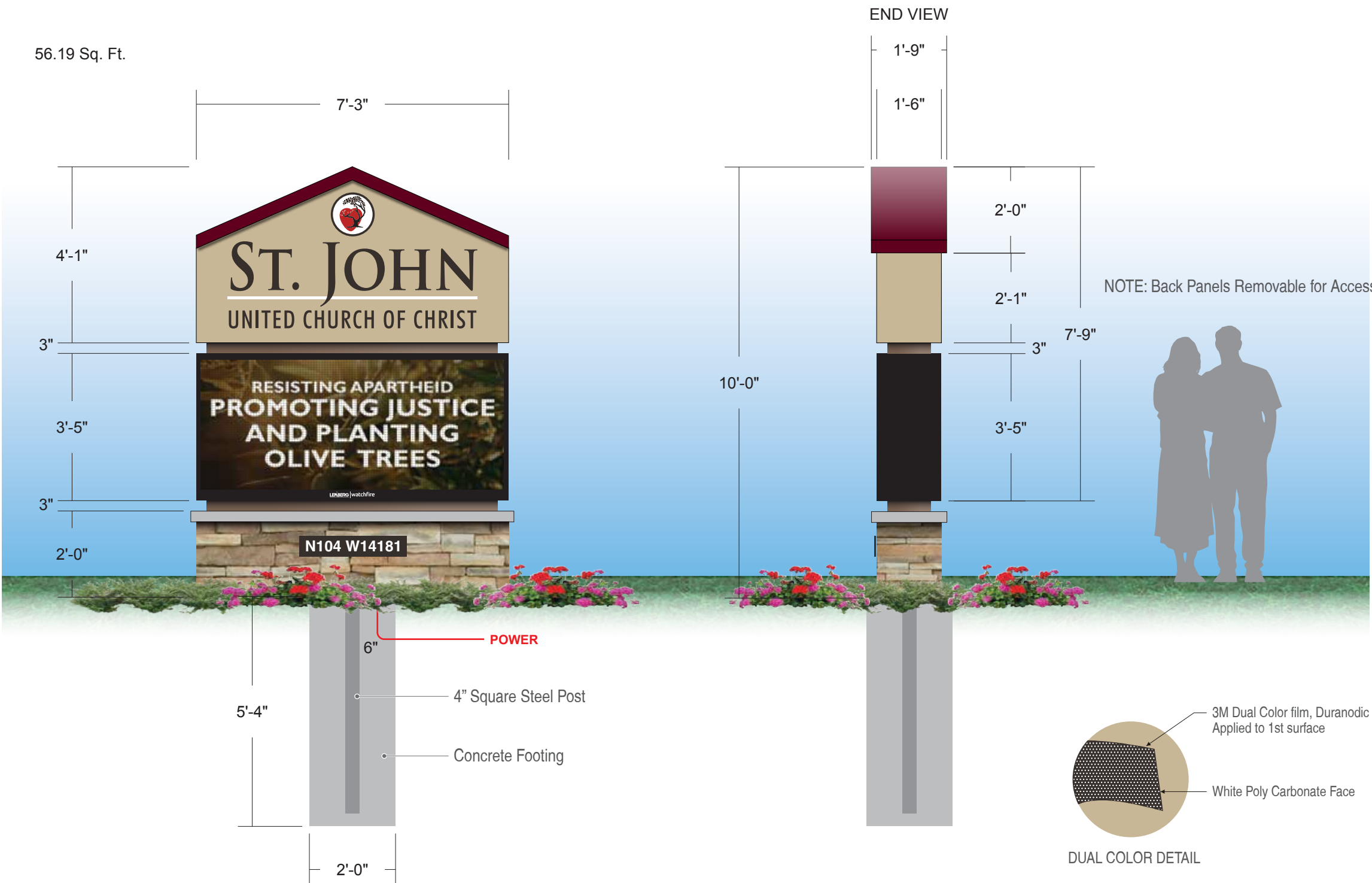
(B) Graphics:
Routed and backed with white acrylic. 3M translucent film on 1st surface of acrylic.

(C) Full Color EMC:
10mm Watchfire, software, wireless communication and web based training included.

(D) Masonry Base:
Fabricated steel angle frame with diagonal bracing to prevent sag. Clad with thin stone veneer. Aluminum address panel.

Installation Method:
4" x 4" (1/4" wall) square steel center post.
Sign & EMC to saddle mount center post. Center post set in concrete footing. 2 separate electrical circuits required.

- Colors:
- 1) "Beige" paint, T.B.D. (satin finish)
 - 2) Burgundy paint, T.B.D. (satin finish)
 - 3) Black paint, (satin finish)
 - 4) 3M translucent Digital Print
 - 5) 3M dual color film, Duranodic 3630-69



SIGNS

4085 North 128th Street
Brookfield, WI 53005
p. 262-781-1500
www.LembergElectric.com

Client: St. John United Church of Christ
Address: N104 W14181 Donges Bay Road
Location: Germantown, Wisconsin 53022

Sales Representative: Skip DeBack
Project Manager: T.B.D.
Designer: Mark Mayzik

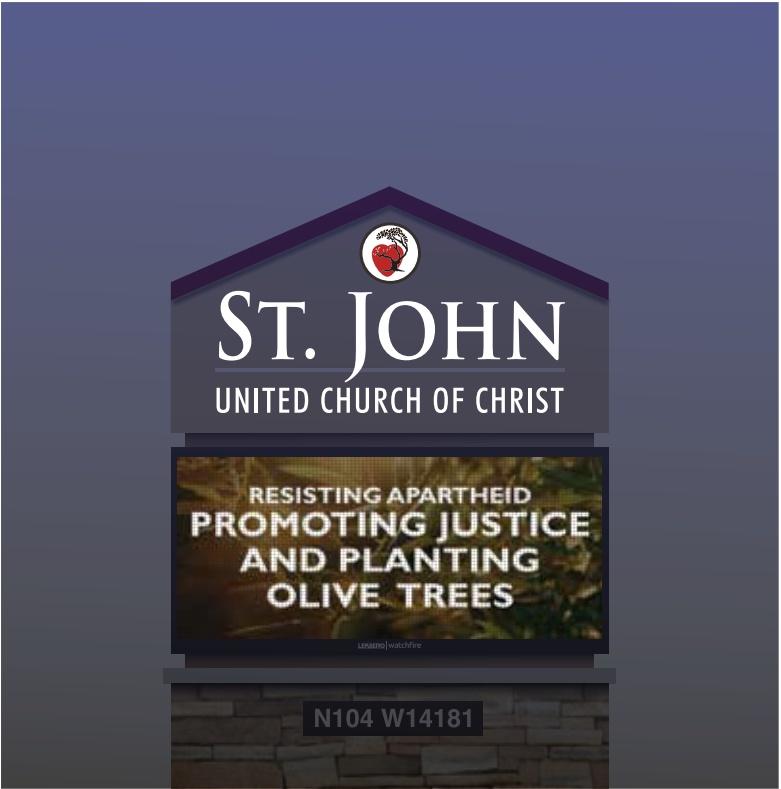
Scale: 3/8"=1'-0"
Paper Size: 11x17
Signature / Date:

Client / Location or Project / Sign Classification / Version# or Sheet / Revision# / Drawing Status
St_John_United_MON_v01_r05_D

Date:
09-19-22



Illuminated Effect



SIGNS

4085 North 128th Street
Brookfield, WI 53005
p. 262-781-1500
www.LembergElectric.com

Client: St. John United Church of Christ

Address: N104 W14181 Donges Bay Road

Location: Germantown, Wisconsin 53022

Sales Representative: Skip DeBack

Project Manager: T.B.D.

Designer: Mark Mayzik

Scale: N/A

Paper Size: 11x17

Signature / Date:

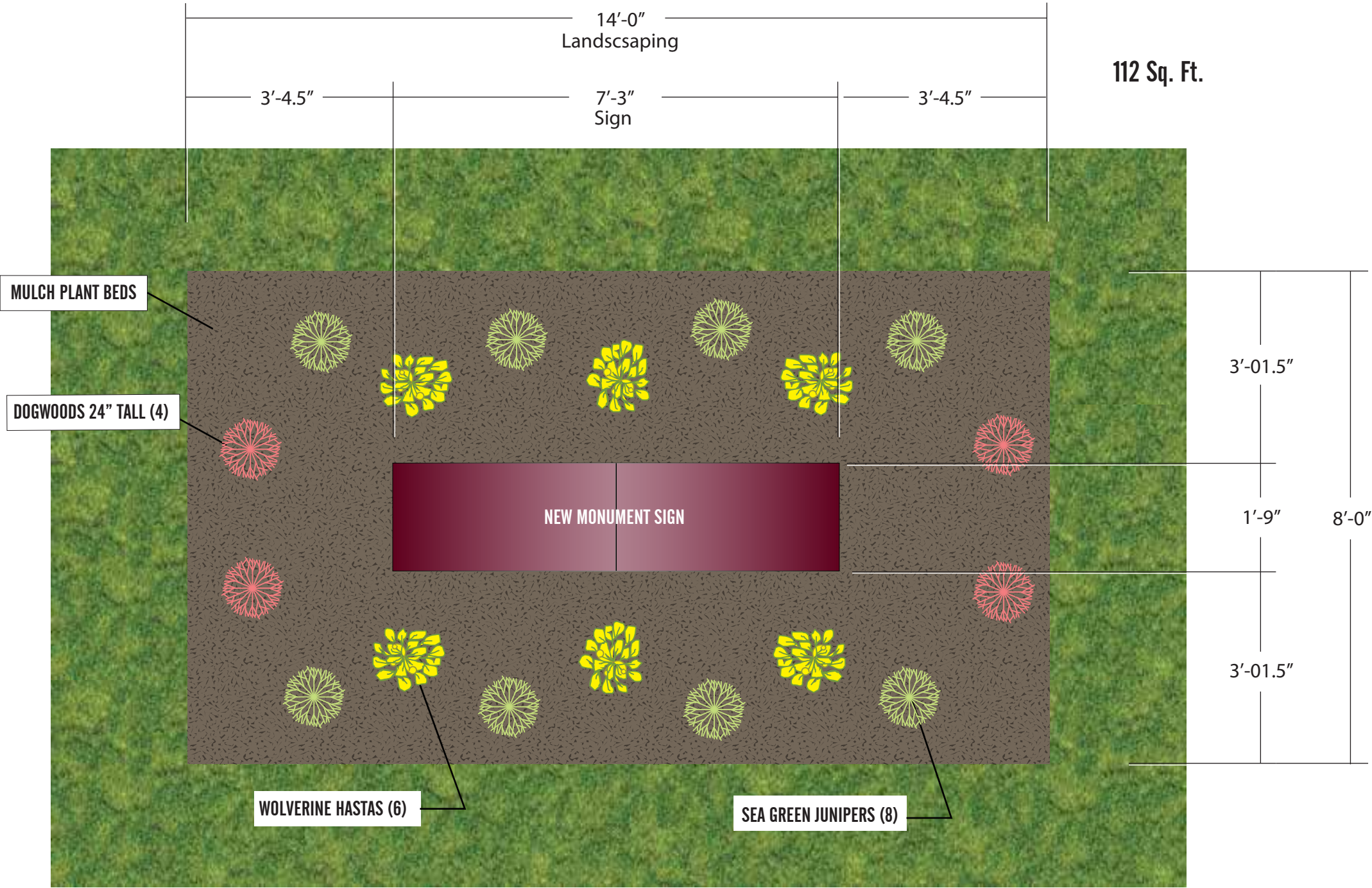
Client / Location or Project / Sign Classification / Version# or Sheet / Revision# / Drawing Status

St_John_United_OVERVIEW_r04_D

Date:

09-19-22

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LANDSCAPE PLAN SCALE: 1/2"=1'



SIGNS

4085 North 128th Street
Brookfield, WI 53005
p. 262-781-1500
www.LembergElectric.com

Client: St. John United Church of Christ

Address: N104 W14181 Donges Bay Road

Location: Germantown, Wisconsin 53022

Sales Representative: Skip DeBack

Project Manager: T.B.D.

Designer: Mark Mayzik

Scale: As Noted

Paper Size: 11x17

Signature / Date:

Client / Location or Project / Sign Classification / Version# or Sheet / Revision# / Drawing Status Date:
St_John_United_LS_r01_D 09-19-22

		CONCEPTUAL DRAWING
05-16-2022 / Sign Class: Monument with EMC / File Name: St_John_United_Church_of_Christ_1_(0).pdf Initial drawings completed. - MCM	-	✓ Notes & Revisions Check List & Flagged Items • Colors properly specified. (N) • Colors picked by design, client to approve. (N) • Elevation details called out. (N) • EMC call outs and electrical drawings. (N) • LED color temp. (Y) • Logo/Art do we have clean vector art. (N) • Photo eye placement. (N) • PMS Colors. (N) • Sample colors being provided to client. (N) • Tech audit info- Electrical Placement. (N) • Tech audit info- Footer Details on Drawings. (Y)
05-20-2022 / Sign Class: Monument with EMC / File Name: St_John_United_Church_of_Christ_1_(1).pdf Changed monument roof color. Added sign placement photo rendering. (SD) - MCM	-	
06-20-2022 / Sign Class: Monument with EMC / File Name: St_John_United_Church_of_Christ_1_(2).pdf Changed color combinations, letters to be dual color film. (SD) - MCM	-	
06-27-2022 / Sign Class: Monument with EMC / File Name: St_John_United_Church_of_Christ_1_(3).pdf Added clean logo artwork to drawing. (SD) - MCM	-	🚩 05-16-2022 Production ready logo art work required. - MCM
07-14-2022 / Sign Class: Monument with EMC / File Name: St_John_United_Church_of_Christ_1_(4).pdf Reducd overall height to 10 feet. (SD) - MCM	-	🚩 05-16-2022 Colors to be determined and approved. - MCM
09-19-2022 / Sign Class: Monument with EMC / File Name: St_John_United_Church_of_Christ_1_(5).pdf Changed to single sided. (SD) - MCM	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-

Job File Location Sales: Customer Folders / St. John United - Germantown / Art Work | Job File Location Design: Sign Vault_20 / S / St John United Church of Christ

  SIGNS 4085 North 128th Street Brookfield, WI 53005 p. 262-781-1500 www.LembergElectric.com	Client: St. John United Church of Christ	Sales Representative: Skip DeBack	Scale: N/A	Client / Location or Project / Sign Classification / Version# or Sheet / Revision# / Drawing Status St_John_United_NOTES_r04_D	Date: 09-19-22
	Address: N104 W14181 Donges Bay Road	Project Manager: T.B.D.	Paper Size: 11x17		
	Location: Germantown, Wisconsin 53022	Designer: Mark Mayzik	Signature / Date:	6 of 6	
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**VILLAGE OF GERMANTOWN
BOARD OF ZONING APPEALS
NOTICE OF APPEAL OR APPLICATION**

Case No.	
Filing Date	
Fee Paid	\$ 570.00
Hearing Date	9-14-2022
Notice Mailed	8/29/2022
Notices Published	8/24 8/31

To: Board of Zoning Appeals
Village of Germantown, Wisconsin

NOTICE IS HEREBY GIVEN that the undersigned hereby (appeals for relief from a decision of an administrative official) (applies for the following described right or privilege):

Appellant's or Applicant's Name: Zane Nichols	
Address: 4085 N 128th St, Brookfield, WI 53005	
Phone Number: 414-254-1033	
Appellant's or applicants' interest in property: Contracted by owner to perform proposed work	
Owner ☒	Tenant ☐ Mortgagee ☐ Agent ☐
Property Owner's Name: St. Johns Church	
Address: N104 W14181 Donges Bay Road, Germantown, WI 53022	
Phone Number: 414-254-1033	
Address of Property: N104 W14181 Donges Bay Road	
Lot:	Block:
Tax Parcel No. GTNV 351967	Zoning District: I-Institutional
Present use of the Property: Church	
Proposed use of the Property: No change	
Previous Appeal or Application (if any)?	Yes ☐ No ☒
If YES, list date of hearing: N/A	
Decision of Previous Hearing: N/A	

Identify the PURPOSE for this appeal or application. Please mark the appropriate item below and provide the requested information. Attach a separate sheet if necessary.	
A ☐	Appeal of decision or order of Administrative Official and Request for Interpretation of Zoning/Building Code.
Date of Decision or Order:	
Description of Decision or Order:	
Decision or order is erroneous because:	
B ☒	Request for Variance of Zoning/Building Code
Describe the requested variance and dimension of variance: Requesting a variance to be within the 150' setback from a residential district.	
Explain how the variance, IF granted, is consistent with the spirit, purpose and intent of the Code: The proposed sign is in compliance with all other city signage regulations, and meets the signage goals of communicating clear information while being unobtrusive, by correctly using sign placement and dimming features to minimize impact on the surrounding environment.	
Describe the exceptional, extraordinary, or unusual conditions or circumstances that apply specifically to this lot/parcel, use, structure, or intended use that DO NOT apply generally to other properties or uses in the SAME district: The current use of this property closely aligns with the land use plan for the city. Since the church is located in a institutional district there is not many locations for the church to advertise off site. Which makes it imperative that the church be allowed a safe and effective way of communicating to the community at large. This proposed sign will help them meet their current objective of adding value to the community. Setting the sign back the 150' proposed feet will deem the sign ineffective being seen from the road.	
Explain how this variance, IF granted, WILL NOT create substantial detriment to adjacent property, WILL NOT be contrary to the public interest and WILL NOT endanger public safety and interest: The message center has automatic dimming capabilities via a photocell as well as specific scheduling to make the sign go dark during agreed upon times set between the Village of Germantown and the church. When used correctly these features will minimize intrusion on neighboring properties and communicate the message clearly to the public at the same time.	

G:\Clerk\Board of Zoning Appeal\BOZA Form Revised

Revised 2/15/96; 06/11/96: 01/30-98; 04/25/00, 11/15/05; 1/17/08, 4/6/2017, 8/2/2021

E ☐	A determination that an unspecified or unclassified use is permitted in a Zoning District
Describe use requested:	
Attach copy of recommendation of Village Plan Commission	
F ☐	Permission to substitute a MORE restrictive non-conforming use for an existing non-conforming use.
Attach copy of recommendation of Village Plan Commission.	
Attach copy of certification of Zoning Administrator to legality of present non-conforming use.	
Date of commencement of present use:	
Value of improvement on date use became non-conforming (attach documentation supporting value): \$	
Present value of all existing improvements, additions and alterations since date use became non-conforming (attach documentation): \$	

REQUIRED DOCUMENTATION

Each appeal or application must be accompanied by:

- A. Current plat or survey of the lot/parcel, with complete details of the site, dimensioned, elevation data, easements, existing and proposed physical features, yards, and setbacks, etc.
- B. Attachments as outlined above.
- C. Filing fee(s)
- D. Copy of decision or order which is the basis of this appeal/application.
- E. Name and Address of counsel IF appellant/applicant elects to be represented by counsel.
- F. Any additional fee of \$_____ to cover the administrative costs if a contested case is requested.

I hereby certify that the above application and/or appeal and all attachments hereto are true, correct, and complete to the best of my knowledge and belief.

Dated: August 1st _____ 20 22

Zane Nichols

Digitally signed by Zane Nichols
Date: 2022.08.01 14:04:10 -0500

Signature of applicant or appellant

**VILLAGE OF GERMANTOWN
N112 W17001 MEQUON ROAD
GERMANTOWN, WI
September 14, 2022**

CALL TO ORDER: This meeting was called to order at 5:31 p.m. by Chairman White.

ROLL CALL: Chairman White, Members Knop, Huber, Edwards, Planning/Zoning Administrator Retzlaff, Associate Planner/Zoning Administrator Zandt and Deputy Clerk/Deputy Treasurer Rettler, and Clerk / Treasurer Braunschweig.

APPROVAL OF MINUTES: June 8, 2022

Motion to approve (Huber/Edwards)

Motion Carried unanimously.

PUBLIC HEARING

Chairman White read the public hearing notice. Hearing is to hear any and all parties, their attorneys or agents, for or against the VARIANCE APPEAL filed by Joseph Schuster, property owner of W156N10081 Pilgrim Road, Germantown, who is requesting a variance from Section 17.48 (3)(c) Restoration of Certain Nonconforming Structures of the Village's Zoning Code to allow the replacement of a previously existing 24' x 24' (576 sq ft) nonconforming accessory building (detached garage) with a 24' x 36' (864 sq ft) accessory building (detached garage).

Chairman White described the meeting order and that normally the Village's information is given first then the review of the Variance is given then the applicant may give sworn information.

Chairman White swore in Planning/Zoning Administrator Retzlaff.

Retzlaff gave history and background information of the variance appeal. He explained that the structure in question for rebuild may only be rebuilt in the same size, location, and for the same purpose per municipal code Section 17.48 (3)(c).

Chairman White swore in Joseph Schuster, of W156 N10081 Pilgrim Road, Germantown. Mr. Schuster explained his need to extend the size of the garage that was damaged by storms in August and needs to extend beyond the limits of the current zoning code Section 17.48 (3)(c). He would like to build back at 24' x 36' allowing for additional parking.

Chair White questioned other option such as removing another shed on the property or changing the footprint in order to extend longer and cut sides shorter in order to fit a long vehicle.

Mr. Schuster explained his need for having both out building on the property. Other options were discussed as to possible solutions. Discussion ensued with Director Retzlaff pertaining to what qualifies as an attached garage and interpreting the code of changing the footprint.

Public hearing opened at 6:57 p.m.

Bruce Hawley Sr. W156 N111 Pilgrim Rd, neighbor directly across the street from Mr. Schuster, explained his approval of Mr. Schuster's request. He explained Mr. Schuster's property is well-manicured and clean and a respectful neighbor.

Chair White read a letter signed by Stephen Rueven in favor of Mr. Schuster's variance.

Chair White read a letter signed by Doris Osterhaus, Office Manager of Crossway Church, in favor of Mr. Schuster's variance.

Page 2

Chair White read a letter signed by Joseph B. Sonnemann, W156N10093 Pilgrim Rd, in favor of Mr. Schuster's variance.

Chair White read a letter signed by Steve and Karen Thoms, W156N10098 Pilgrim Rd, in favor of Mr. Schuster's variance.

Chair White read a letter signed by Bruce and Doreen Hawley, W156N10092 Pilgrim Rd, in favor of Mr. Schuster's variance.

Chair White read a letter signed by Billy Bruggink, W156N10024 Pilgrim Rd, in favor of Mr. Schuster's variance.

Chair White read a letter signed by Brian C. of W156N10004 Pilgrim Rd, in favor of Mr. Schuster's variance.

Chair White read a letter signed by Dale and Laurel Poppy, W156N9999 Pilgrim Rd, in favor of Mr. Schuster's variance.

Additional questions were asked for clarification from Mr. Retzlaff. Mr. Schuster ended the public hearing by stating his reasons for the variance to the board.

Chair White closed the hearing at 6:13 p.m.

Chair White explained that the Board will deliberate the findings. The discussion included whether the size increase is for exceptional or extraordinary circumstances.

Motion (White/Huber) to grant the variance. Motion failed. Roll call vote: Jeffrey Knop- nay, Kristine Huber- yay, Tim Edwards- nay, Barry White- nay.

Chairman White read the public hearing notice. Hearing is to hear any and all parties, their attorneys or agents, for or against the VARIANCE APPEAL filed by Zane Nichols, agent for St. John's Church, property owner of N104W14181 Donges Bay Road, Germantown, who is requesting a variance from Section 17.46 (7)(h)(2) to reduce the minimum setback of an electronic message board from a residential district from 150' to 120'.

Chairman White described the meeting order and that normally the Village's information is given first and review of the Variance is given first and then the applicant may give sworn information.

Chairman White swore in Emily Zandt.

Emily Zandt gave history and background of the Variance appeal.

Chairman White swore in Zane Nichols, applicant/agent for St. John United Church of Christ (UCC) Mr. Nichols explained his need for requesting a variance. He is seeking a variance from Section 17.46 (7)(h)(2) of the Zoning Code to reduce the minimum required setback from a residential district from 150 to 120 feet.

Chairman White swore in a church representative Mary Johnson, N108W16429 Scarlett Drive, Germantown. She did not have any input on any neighbor's opinion on the variance.

Page 2

Chairman White swore in Zach Wanger, 4085 N 128th Street, Brookfield discussed the direct effect this would have on the neighboring addresses.

Mrs. Zandt explained the process.

Discussion ensued on previous, similar situations 08/11/2021 and how the board ruled then.

Public Hearing opened at 6:50 p.m.

Public Hearing Closed at 6:52 p.m.

Motion (White/Knop) to grant the variance. Motion failed. Roll call vote: Jeffrey Knop- yay, Kristine Huber- nay, Tim Edwards- nay, Barry White- nay.

NEXT MEETING DATE AND TIME IF NEEDED:

Second Wednesdays of the month at 5:30 p.m.

ADJOURNMENT

Motion (Huber/White) to adjourn at 7:10 p.m.

Motion Carried unanimously.

REASONABLE NOTICE, efforts will be made to accommodate the needs of disabled individuals through appropriate aids and services. For additional information or to request this service please contact the Village Clerk at (262)250-4740 at least 2 days prior to the meeting.

Notice is given that a majority of the Village Board may attend this meeting to gather information about an agenda item over which they have decision making responsibility. This may constitute a meeting of the Village Board per State ex rel. Badke v. Greendale Village Board, even though the Village Board will not take formal action at this meeting.

**VILLAGE OF GERMANTOWN
N112 W17001 MEQUON ROAD
GERMANTOWN, WI**

MEETING: BOARD OF ZONING APPEALS

DATE AND TIME: WEDNESDAY, SEPTEMBER 14, 2022 5:30 p.m.

**LOCATION: Germantown Village Hall Board Room
N112 W17001 Mequon Road**

NOTICE: Pursuant to the recommendations of the Centers for Disease Control and Prevention concerning the prevention of COVID-19 infections, any member of the body and/or citizen may also attend the meeting virtually through the WebEx platform, Meeting #:2550 423 3896 Password: sMWRfPpM737 which can be accessed by phone at 408-418-9388 or by logging on at

<https://villageofgermantown.my.webex.com/villageofgermantown.my/j.php?MTID=m1c393af939fbdf93668fd4fc390239c>

Citizens not wishing to attend the meeting personally or virtually may submit any public comments by sending an email to comments@germantownwi.gov by 4 p.m. on the day of the meeting so that it can be provided to the members of the body for their consideration.

- I. **CALL TO ORDER:** This meeting has been given public notice in accordance with Section 19.83 and 19.84, Wis. Stats, in such form that will apprise the general public and news media of subject matter that is intended for consideration and action.
- II. **ROLL CALL:**
- III. **APPROVAL OF MINUTES:** June 8, 2022
- IV. **PUBLIC HEARING, DELIBERATION AND ACTION:**
 - A. THE PURPOSE of said hearing will be to hear any and all parties, their attorneys or agents, for or against a **VARIANCE APPEAL** filed by Joseph Schuster, property owner of W156N10081 Pilgrim Road, Germantown, who is requesting a variance from Section 17.48 (3)(c) Restoration of Certain Nonconforming Structures of the Village's Zoning Code to allow the replacement of a previously existing 24' x 24' (576 sqft) nonconforming accessory building (detached garage) with a 24' x 36' (864 sqft) accessory building (detached garage).
 - B. THE PURPOSE of said hearing will be to hear any and all parties, their attorneys or agents, for or against a **VARIANCE APPEAL** filed by Zane Nichols, agent for St. John's Church, property owner of N104W14181 Donges Bay Road, Germantown, who is requesting a variance from Section 17.46 (7)(h)(2) to reduce the minimum setback of an electronic message board from a residential district from 150' to 120'.
- V. **NEXT MEETING DATE AND TIME IF NEEDED:**
Second Wednesday's of the month at 5:30 p.m.
- VI. **ADJOURNMENT**

UPON REASONABLE NOTICE, efforts will be made to accommodate the needs of disabled individuals through appropriate aids and services. For additional information or to request this service please contact the Village Clerk at (262)250-4740 at least 2 days prior to the meeting.

Notice is given that a majority of the Village Board may attend this meeting to gather information about an agenda item over which they have decision making responsibility. This may constitute a meeting of the Village Board per State ex rel. Badke v. Greendale Village Board, even though the Village Board will not take formal action at this meeting.

signage;

5. The sign area used for the off-premises sign shall not exceed 50 percent of the total sign area.

(h) **ELECTRONIC MESSAGE BOARDS.** (Cr. Ord. #28-14) Electronic message boards may be permitted by the Plan Commission but only as an integral and subordinate portion of a freestanding monument or ground sign (and not a wall, projecting, window or any other sign) provided said monument sign complies with the provisions set forth in section 17.46(7)(c) above. Electronic message boards may be allowed with approval by the Plan Commission and shall meet all of the following requirements:

1. Electronic message boards may be allowed for permitted and conditional uses located within the B-1, B-2, B-3, B-4, B-5, I, M-1 and M-2 zoning districts, except on those lots within the boundaries of the Germantown Business Park and Willow Creek Business Park of Germantown;
2. Electronic message boards shall not be located within 150 feet of a residential zoning district boundary, or, be located, designed or operated in such a manner as to create in the opinion of the Plan Commission at the time of sign approval a negative visual impact on property used for existing residential uses;
3. Electronic message boards may be installed as part of an existing monument or ground sign which is in compliance with all applicable requirements of this chapter and other applicable requirements of law. No electronic message board may be installed on or otherwise be made part of a nonconforming sign;
4. Electronic message boards shall only display static messages. Messages shall not contain animation, effects simulating animation, or video. Messages shall not contain text or images that dissolve, fade, scroll, travel, flash, spin, revolve, shake or include any other type of movement or motion during the message interval. The message interval, i.e. the minimum amount of time a message is required to be displayed, shall not be less than 7 seconds. The transition interval, i.e. the maximum amount of time allowed to transition from one message to the next message, may include fading, dissolving or traveling but shall not exceed 3 seconds;
5. The sign area or display face of the message board shall be included in the calculation of sign area for the monument or ground sign to which it is attached, and, shall not exceed 40 percent of the total sign area allowed for the monument or ground sign to which it is attached;
6. Electronic message boards shall be equipped with a sensor or other device that is programmed to automatically determine the ambient light level and adjust or dim the message board light level to not exceed a maximum brightness level of 0.3 foot-candles above ambient light conditions during both daylight hours (i.e. sunrise to sunset) and night time hours (i.e. sunset to sunrise);
7. The electronic message board shall be programmed or set in such a manner that the display face will turn dark and emit no light in case of a malfunction;
8. The owner of the property upon which a ground sign containing off-premises signage is located is responsible for preparing and keeping up-to-date information in an electronic message board use and maintenance agreement that identifies the name and contact

information for the person(s) responsible for maintaining the message board and ensuring that the use and content of the message board complies with the provisions set forth herein on a continual basis.

- (8) **ELECTION CAMPAIGN SIGNS.** See section 9.19 of this Code.
- (9) **FACING OF SIGNS.** No sign which is within 100 feet of a residential district shall be permitted to face the residential district unless it is a sign permitted by subsections (3), (4) and (6) above, or unless it is permitted by the Plan Commission.
- (10) **LIGHTING, COLOR AND PLACEMENT.** (Am. Ord. #28-14) Signs shall not resemble, imitate or approximate the shape, size, form or color of railroad or traffic signs, signals or devices. Signs shall not obstruct or interfere with the effectiveness of railroad or traffic signs, signals or devices. Signs shall not be placed so as to obstruct or interfere with traffic visibility, nor be lighted in such a way as to cause glare or impair driver visibility upon public ways. Except for electronic message boards approved under section 17.46(7)(h) herein, signs may be illuminated, but nonflashing. The background panel and/or other non-message components of internally-illuminated signs shall be opaque or a dark color to prevent glare.
- (11) **RESERVED.** (Rep. Ord. #21-09)
- (12) **CONSTRUCTION AND MAINTENANCE STANDARDS.**
- (a) Wind Pressure and Dead Load Requirements. All signs and other advertising structures shall be designed and constructed to withstand wind pressure of not less than 40 pounds per square foot of area and shall be constructed to receive dead loads as required in the Building Code or other ordinance.
- (b) Protection of the Public. The temporary occupancy of a sidewalk or street or other public property during construction is permitted, provided the space occupied is roped off, fenced off or otherwise isolated to prevent hazard to pedestrians and property.
- (c) Maintenance. The owner of any sign shall keep it in good maintenance and repair which includes restoration, repainting or replacement of a worn or damaged sign to its original condition, and shall maintain the premises on which the sign is erected in a clean, sanitary and inoffensive condition, free and clear of all obnoxious substances, rubbish, weeds and grass.
- (d) Sign Supports. Supporting members or braces of all signs shall be constructed of galvanized iron, properly treated wood, steel, copper, brass or other non-corrosive incombustible material. All projecting signs, if placed at an angle to the wall or roof of any building, shall be attached by such non-corrosive metal bolts, anchors, cable or other metal attachments as shall ensure permanent and safe construction and shall be maintained free from rust or other defects. Every means or device used for attaching any sign shall extend through a wall or roof of the building should the Building Inspector determine that the safe and permanent support of such sign so requires, and shall be securely anchored by wall plates and nuts to the inside of the wall or to bearings on the underside of 2 or more roof or ceiling joists in accordance with instructions given by the Building Inspector. Small flat signs containing less than 10 feet of area may be attached to a building by the use of lag bolts or other means to the satisfaction of the Building Inspector.
- (e) Fire Protection Consideration. No sign or any part thereof or sign anchors, braces or guide rods shall be attached, fastened or anchored to any fire escape, fire ladder or standpipe, and no such sign or any part of such sign or any anchor, brace or guide rod shall be erected, put up or

BUSINESS OF THE PLAN COMMISSION

MEETING DATE: May 8, 2023

PLACEMENT: Action Item

ITEM TITLE: Troy Wetterau, Agent for Homestead Transfer & Storage LLC,
Property Owner of N128 W20563 Holy Hill Road. Site Plan Review
for a 7,200 sqft accessory building. **(ACTION)**

SUBMITTED BY:

SUMMARY EXPLANATION:

ATTACHMENT:

1. 1-FINAL PDF Wetterau Homestead Site Plan Review 5-8-23

RECOMMENDATION:

ACTION BY Committee:

SITE PLAN APPLICATION

5/8/23 Plan Commission Meeting

Homestead Transfer & Storage LLC

Village Planner Report

Germantown, Wisconsin

Summary

Troy Wetterau, agent for Homestead Transfer & Storage LLC, property owner, and Wetterau Homestead Inc., is seeking approval of site development and building plans to construct a 60' x 120' (7,200 sqft) storage building on the 5.9-acre property located at N128 W20563 Holy Hill Road.

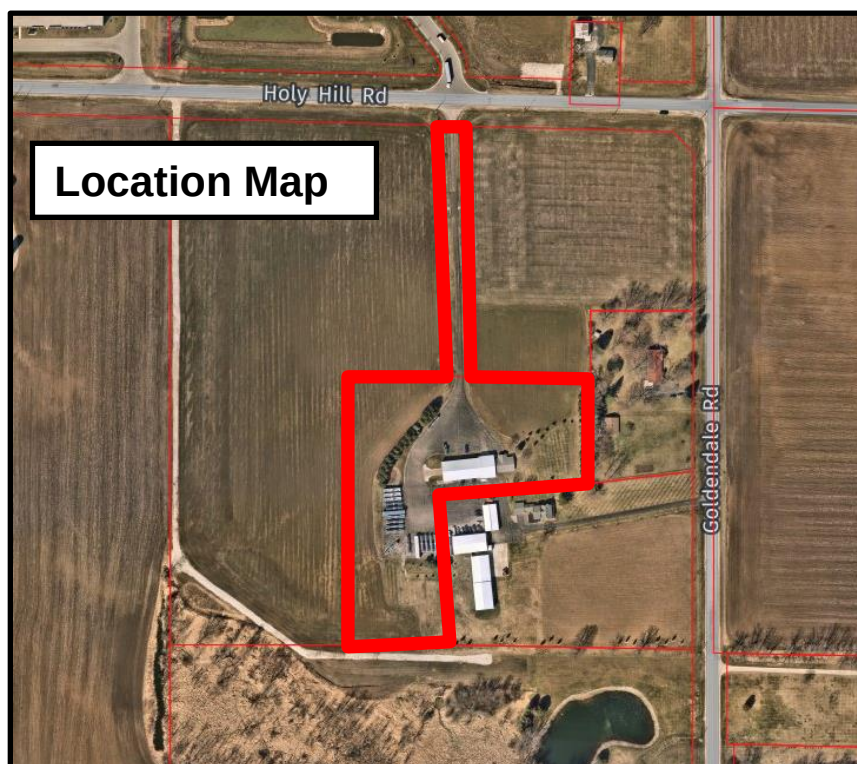
Property Location: N128 W20563 Holy Hill Road

**Property Owners/
Agent:**

Troy Wetterau
Homestead Transfer & Storage LLC
N128 W20563 Holy Hill Road
Germantown, WI

Current Zoning: M-1: Limited Industrial

Adjacent Land Uses		Zoning
North	Industrial	M-1
South	Residential	Rs-1
East	Agricultural	A-1
West	Industrial	M-1



Proposal

Troy Wetterau, agent for Homestead Transfer & Storage LLC, property owner, and Wetterau Homestead Inc., is seeking approval of site development and building plans to construct a 60' x 120' (7,200 sqft) storage building on the 5.9-acre property located at N128 W20563 Holy Hill Road.

The proposed building is intended for “cold” storage of trailers only; no goods, products, or materials. No employees will be in or operating from the building. The building will be located at the minimum setback lines in the northeast corner of the site. A paved asphalt driveway will be extended from the west side of the building to the existing pavement for access. Decorative lighting will be installed on the north elevation of the building to match the lighting on the main office building. The proposed red color will also match the existing buildings. Minimal grading will be required to convey run-off from the building site to the west across the paved driveway to an existing storm water pond located on the west side of the driveway.

Staff CommentsPlanning & Zoning

The proposed building meets the M-1 Zoning District regulations including required setbacks, impervious area, and other restrictions.

Wetterau Homestead Inc., a trucking transportation company, has operated from the property since 1982. The property was rezoned into an M-1: Limited Industrial District back in 1998 and was the first “industrial” business in what is now called the “Holy Hill Gateway District”. Despite the changing landscape with other industrial, warehouse and light manufacturing buildings that have developed in the area all with tilt-up concrete wall panels, the proposed building is intended to match the existing metal buildings in both materials and color consistent with the existing low profile and agricultural appearance.

Despite the relatively small size (7,200 sqft), the amount of impervious area exceeds a 5,000 sqft impervious area threshold that triggers the need for a “green infrastructure” (GI) storm water management plan. Typically, small-scale projects like this result in the need for minimal grading to convey run-off into swales, rain gardens or small storm water ponds. In this case, it is expected that the existing storm water pond will be sufficient to satisfy the Village’s GI requirements. The property owner is working with the Village engineer and grading contractor to provide a detailed grading plan to meet the GI requirements.

Ordinarily, Staff would recommend postponing action given the outstanding storm water plans. However, given the size and purpose for this building project Staff is recommending conditional approval in anticipation that the storm water plan requirement is minimal and is likely to be completed and approved in the next 1-2 weeks. A recommended condition of approval is for that plan to be submitted and approved by the Village engineer prior to issuing building permits.

Public Works/Engineering

The need for additional information and a green infrastructure plan is identified in the April 4, 2023 review letter from Larry Ratayczak, Public Works Director (copy attached).

Building Inspection Services

The Building Inspector has indicated that the submission of state-approved building plans for the new building will be required prior to issuing a building permit. Plan review will be conducted in-house as part of the permitting process by SAFEbuilt staff.

Village Staff Recommendation

APPROVE the site development and building plan application for the proposed 60' x 120' (7,200 sqft) storage building on the 5.9-acre property Wetterau Homestead Transfer property located at N128 W20563 Holy Hill Road subject to the following conditions:

1. All outstanding items identified in the Public Works Director April 4, 2023 review memo shall be addressed and provided in additional information and/or revised plans submitted to the Village Engineer for review and approval prior to issuing building permits (excluding "early start" site clearing and footing/foundation work approved by the Village and/or WI DSPS):
 - a. April 4, 2023, memo from Larry Ratayczak, Public Works Director
2. State agency (DSPS) commercial approved plans and a \$5,000 occupancy bond are required by Inspection Services at the time of building permit application. The Village of Germantown is an authorized delegated agent of DSPS to provide all commercial plan review and inspection services through SAFEBuilt of WI and the Village of Germantown.



Village of



Germantown

Willkommen

Fee must accompany application

- ☐ \$700 Minor Addition
- ☒ \$1,240 Construction <10,000 SF
- ☐ \$2,095 Construction 10,000 SF to 50,000
- ☐ \$3,460 Industrial Construction >50,000 SF
- ☐ \$3,460 Commercial Construction >50,000
- ☐ \$200 Plan Commission Consultation
- ☐ \$125 Fire Department Plan Review

PAID

DATE

3/10/22

SITE PLAN REVIEW APPLICATION

Pursuant to Section 17.43 of the Municipal Code

Please read and complete this application carefully. All applications must be signed and dated.

1 APPLICANT OR AGENT

Homestead Transfer & Storage
N128 W20563 Holy Hill Rd
Richfield, WI 53076

Phone (414) 491-3170 Troy Wetterau
E-Mail wetterau@icloud.com

PROPERTY OWNER

Homestead Transfer & Storage
N128 W20563 Holy Hill Rd
Richfield, WI 53076

Phone (414) 491-3170 Troy Wetterau
E-Mail wetterau@icloud.com

2 PROPERTY ADDRESS

N128 W20563 Holy Hill Rd
Richfield, WI 53076

3 NEIGHBORING USES — Specify name and type of use, e.g. Enviro Tech — Industrial, Smith — Residential, etc.

North	South	East	West
<u>Residential / Industrial</u>	<u>Residential / farm</u>	<u>Residential / farm</u>	<u>farm / Industrial</u>

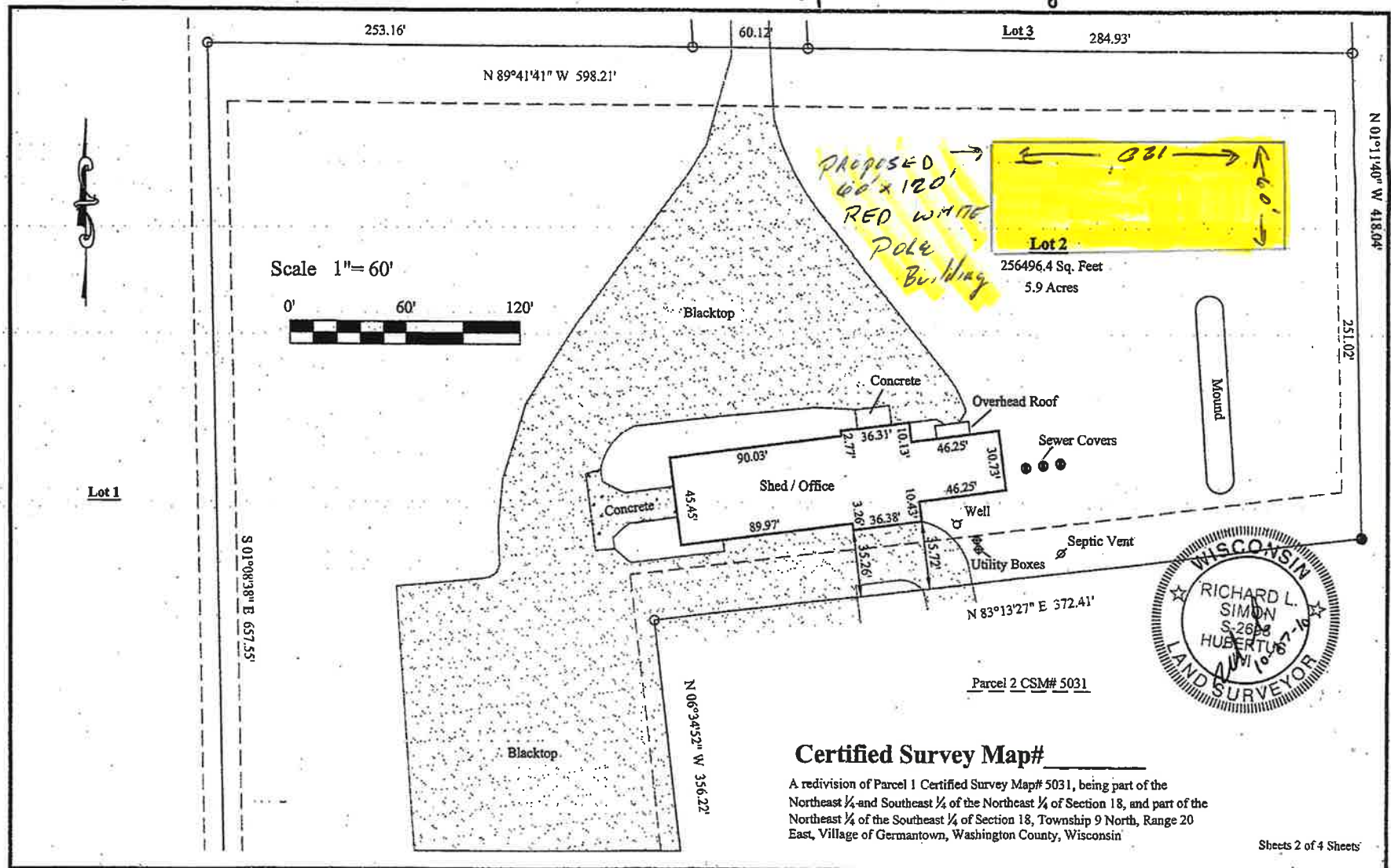
4 READ AND INITIAL THE FOLLOWING:

- ☒ I am aware of the Village of Germantown ordinance requiring fire sprinklers in most new construction.
- ☒ I understand that all new development is subject to Impact and/or Connection Fees that must be paid before building permits will be issued.
- ☒ I understand that an incomplete application will be withdrawn from the Plan Commission agenda and that all resubmissions to the Plan Commission are subject to a new application fee.

5 SIGNATURES — ALL APPLICATION MUST BE SIGNED BY OWNER!

[Signature] 03/10/2023
Applicant Date

[Signature] 03/10/2023
Owner Date



306 60'x18'x120' West and South Walls





Owner's Initials



306 60'x18'x120' East and North Walls

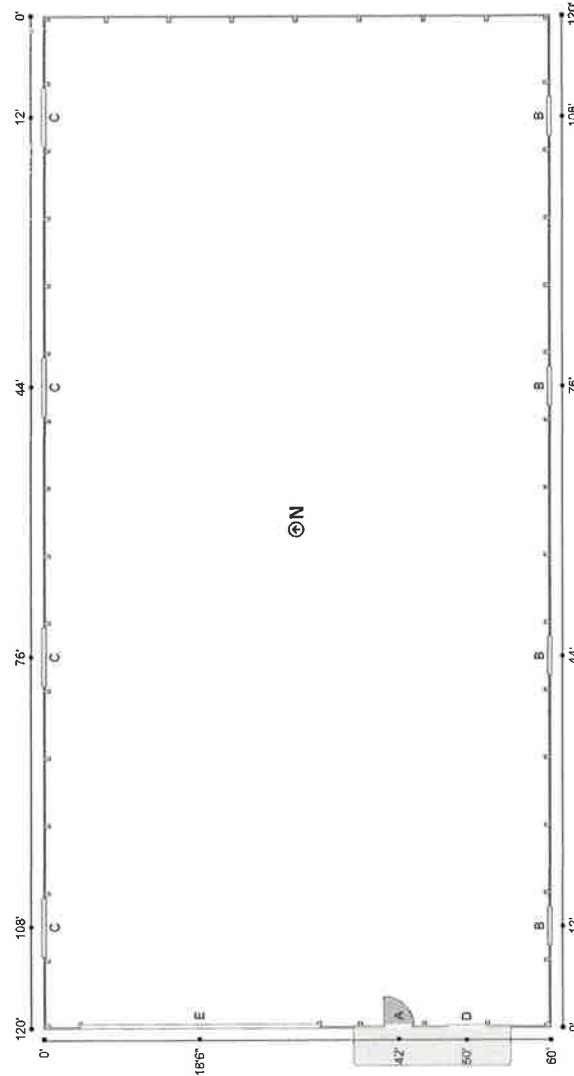


A handwritten signature in black ink, appearing to be 'Dye', written over a horizontal line.

Owner's Initials



306 60'x18'x120' (#1) Column Plan



Owner's Initials

BUSINESS OF THE PLAN COMMISSION

MEETING DATE: May 8, 2023

PLACEMENT: Presentation

ITEM TITLE: AVN Group 109 LLC, Agent for Everett Frenz and the Anton & Bertram Frenz Trust, Property Owners of 62.5 acres on Fond du Lac Avenue North of Donges Bay Road. Planned Development District (PDD) and Site Plan Consultation for a Proposed Mixed-Use Residential & Commercial Development. **(DISCUSSION)**

SUBMITTED BY:

SUMMARY EXPLANATION:

ATTACHMENT:

1. 1-FINAL PDF Frenz Consultation 5-8-23

RECOMMENDATION:

ACTION BY Committee:

PLANNED DEVELOPMENT DISTRICT (PDD) & SITE PLAN CONSULTATION

5/8/23 Plan Commission Meeting

Arbor Village

Staff Report & Recommendation

Germantown, Wisconsin

Summary

Everett Frenz, AVN Group 108 LLC, agent for Anton Frenz Trust, Bertram Frenz Trust, SA Technologies LLC, property owners, is seeking feedback on a development proposal for 65 acres located at W218 W11546 Appleton Avenue.

Property Location: Fond du Lac Avenue @ Donges Bay Road

Agent/

Property Owner: Jeff Groenier Concepts in Architecture W125 Amidon Road Brooklyn, WI	Byron Frenz Frenz Trusts FMC Group LLC & SA Technologies LLC Madison, WI
--	---

Current Zoning: M-1: Limited Industrial

Adjacent Land Uses		Zoning
North	Residential	Rs-3
South	Institutional/Industrial	I/M-1
East	Industrial	M-1
West	Residential/Commercial	Rs-3/Rs-5/B-3

Location Map



Proposal/Background

Everett Frenz, AVN Group 108 LLC, agent for Anton Frenz Trust, Bertram Frenz Trust, SA Technologies LLC, property owners, is seeking feedback on a development proposal for 65 acres located at W218 W11546 Appleton Avenue.

As shown in the Site Plan, 594 total dwelling units comprised of a mixture of market rate apartments, condominiums and senior housing is proposed through the site with approximately 50,000 sqft of commercial building area located closer to the Donges Bay Road intersection. Main access to the development would be from Fond du Lac Avenue with secondary access to Fond du Lac Ave (north) and to Donges Bay Road (south) through a future connection to/through the Germantown School District property.

A similar proposal and concept plan were presented to Plan Commission back in November, 2021, during a general 2050 Plan discussion regarding suitable land use within the “Victory Center Corridor” (the area abutting both sides of Fond du Lac Ave from Country Aire Drive to County Line Road and including the Donges Bay Road @ Fond du Lac Ave intersection).

Staff Comment

Current zoning of the 65-acre property is M-1: Limited Industrial. Rezoning of the property would be required for the proposed development. Given the mix of proposed uses, residential development density, and phasing plan, creation of a planned development district (PDD) is recommended at this point. A PDD would enable the Village and property owner to create a unique set of zoning restrictions that meet the land use, density and open space requirements set out in the 2050 Plan for the “Meeker Hill Neighborhood” and accommodate the special circumstances of this property.

This property is in the “Victory Center Corridor” under the Village’s 2050 Comprehensive Plan (see attached). The amount and type of residential development that is proposed is consistent with the type and density of single-family development allowed in the Meeker Hill Neighborhood. Although the “preferred” land use in the corridor is commercial, “acceptable” uses include all the residential uses in the proposal.

This rendition of the Arbor Village proposal is similar to a previous development proposal that had achieved some level of preliminary approval from the Village back in 2001-02 but was never developed.

Discussion Issues

Items & issues that Staff has identified that the Plan Commission and property owner should probably discuss and eventually agree on include:

1. Specific Development & Ownership Proposed
 - a. Type of Land use(s), e.g. single-family residential (vs. 2-4 family, multi-family residential, commercial, recreational, short-term rental)
 - b. Type of ownership, e.g. fee-simple (lots), condominium

-
- c. Density & lot size (if subdividing)
-
- 2. Planned Development District (PDD)
 - a. General Development Plan
 - b. Timing & Phasing
 - c. Features/Amenities
 - d. Level of detail required
 - e. Any items that will require extraordinary attention (e.g. use of common open space areas, private recreation uses that have potential nuisance impacts, short-term rental opportunities)
 - 3. Public vs. Private Development Features
 - a. Access roads
 - b. Recreational trail along the railroad
 - 4. Utility Services (public water & sewer)

Next Steps

The following permits/approvals by the Village will be required:

- a. Rezoning (includes creation of PDD & General Development Plan)
- b. Certified Survey Map (CSM) or Subdivision Plat (if necessary)
- c. Road construction & related engineering plans (requirements & detail will vary if public vs. private roads)
- d. Site Plan approval (site development & building plans are a PDD requirement)
- e. Building permits for residential & commercial buildings

While no formal action is required, the property owner and Staff are looking for feedback on any/all aspects of the proposed development.



Village of



Fee must accompany application

- ☐ \$700 Minor Addition
- ☐ \$1,240 Construction <10,000 SF
- ☐ \$2,095 Construction 10,000 SF to 50,000
- ☐ \$3,460 Industrial Construction >50,000 SF
- ☐ \$3,460 Commercial Construction >50,000
- ☐ \$200 Plan Commission Consultation
- ☐ \$125 Fire Department Plan Review

PAID 9

DATE 3/24/23

SITE PLAN REVIEW APPLICATION

Pursuant to Section 17.43 of the Municipal Code

Please read and complete this application carefully. All applications must be signed and dated.

1 APPLICANT OR AGENT

AVN GROUP 109 LLC
By: EVERETT FRENZ, PRESIDENT
Phone: 414-550-8014
Email: EJFRENZ@GMAIL.COM

PROPERTY OWNER

ANTON FRENZ TRUST
FMC GROUP LLC
S.A. TECHNOLOGIES LLC By:
BYRON L. FRENZ, President
Phone: 608-251-8400
Email: BLFRENZ@GMAIL.COM

2

PROPERTY ADDRESS

SW 1/4 OF SECTION 25

3

NEIGHBORING USES – Specify name and type of use, e.g. Enviro Tech – Industrial, Smith – Residential, etc.

North RESIDENTIAL	South RESIDENTIAL	East RAIROAD	West RESIDENTIAL
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4

READ AND INITIAL THE FOLLOWING:

OK I am aware of the Village of Germantown ordinance requiring fire sprinklers in most new construction.

OK I understand that all new development is subject to Impact and/or Connection Fees that must be paid before building permits will be issued.

OK I understand that an incomplete application will be withdrawn from the Plan Commission agenda and that all resubmissions to the Plan Commission are subject to a new application fee.

5

SIGNATURES – ALL APPLICATION MUST BE SIGNED BY OWNER!

AVN Group 3/22/23

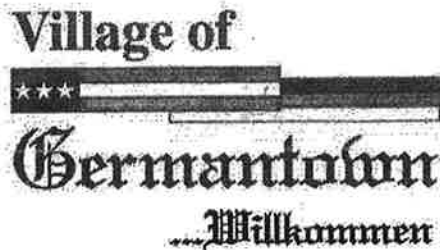
Applicant

Date

Byron L. Frenz 3-22-23

Owner

Date

**FEES MUST BE PAID AT TIME OF APPLICATION**

\$200 Plan Commission Consultation

\$1,085 Rezoning

\$1,240 PDD < 5 acres

\$2,095 PDD 5-20 acre site

\$3,460 PDD > 20 acre site

Date Paid: _____ Received by: _____

REZONING & PDD APPLICATION

Pursuant to Section 17.51 of the Municipal Code

Please read and complete this application carefully. **All applications must be signed and dated.****1****APPLICANT OR AGENT**AVN GROUP 109 LLCBy: EVERETT FRENZ, PresidentPhone 414-550-8014Email: EJFRENZ@GMAIL.COM**PROPERTY OWNER**ANTON FRENZ TRUSTFMC GROUP LLCS.A. TECHNOLOGIES LLCBy: Byron L. Frenz, PresidentPhone 608 251-8400Email BLFRENZ@GMAIL.COM**2****PROPERTY ADDRESS OR GENERAL LOCATION****SW 1/4 OF SECTION 25****TAX KEY NUMBER****SEE ATTACHED****3****REZONING REQUEST**FROM EH,
B-1 & RS2

TO PDD

4**METES AND BOUNDS LEGAL DESCRIPTION OF PROPERTY – REQUIRED**

Attach pages as necessary

SEE ATTACHED

5

PURPOSE OF REZONING REQUEST

Briefly describe why the applicant is rezoning the property. Include a description of the proposed use, including any new construction and number of employees, if applicable. **SEE ATTACHED**

6

SUPPORTING DOCUMENTATION:

- ☒ Plat of Survey (1:100)
- ☒ Site Plan and elevations for new construction (can be conceptual)

7

READ AND INITIAL THE FOLLOWING:

BT I understand that the Village is under no obligation to rezone property and that density and lot coverages provided in the Zoning Code are maximums. Actual build out will depend on myriad factors including topography and other natural conditions, surrounding neighborhood context and the detailed design of a project.

BT I understand that Village Staff, Plan Commission and/or Village Board may request additional information to properly evaluate this request and failure to provide such information may in itself be sufficient cause to deny the petition.

BT I am aware that this rezoning shall go into effect immediately upon the final approval of the Village Board and its execution of the rezoning ordinance

BT I understand that Village Staff is required to post one or more signs along the street frontage of and/or on the property subject of this application that indicate to nearby property owners and the general public that a public hearing of my application will be held before the Village Plan Commission and/or Village Board prior to action taken on this application; I hereby grant Village Staff permission to enter onto the property for the expressed purpose of installing said sign(s) provided Village Staff is responsible for installing, maintaining and removing said signs in a reasonable manner and time frame.

8

SIGNATURES – ALL APPLICATIONS MUST BE SIGNED BY OWNER!

Arj Ay 3/22/23
Applicant Date

Byron L. Freng PRES. 3-22-23
Owner Date

APPLICANT RESPONSES TO VILLAGE STAFF QUESTIONS (5-4-2023):

1. What are the changes from the last plan to this plan? Can you highlight the areas on the plan and/or discuss the differences/changes in a narrative?

The new plan has smaller townhouse units on the north end. The south end has a commercial lot and mixed-use buildings on Fond Du Lac Avenue. The central area is set up for senior housing.

2. We need some sort of development and site statistics beyond just the number of units; what type of units, type of ownership, density, sqft, FAR/lot coverage, building height, etc. The level of detail and presentation that is going to be needed (eventually) in order to qualify as the General Development Plan (GDP) for the PDD is significant.

The units would be a combination of condominiums, market rate rentals, senior housing and commercial.

3. In light of the above, please confirm that you want the Village to keep and deposit the rezoning application fee (check for \$3460) less the \$200 consultation fee.

Yes, we would like to work with the Village to rezone the parcels to PDD. Our timeline would be to begin construction of the model 6-unit building in late 2023 on the north end. We would continue with the next buildings as condominiums are sold.

4. Please explain the relationship with the school district property and why it is included in this development plan.

The relationship with the Germantown School District began in 1916 and has always been friendly and neighborly. The new layout was designed after some preliminary discussions with the School District.

5. Please explain the relationship with the Village-owned property near the intersection and why it is also included in the development plan.

After discussions with members of the Village Board they requested more commercial development. We incorporated some of the village land and our land to create a corner lot for development.

6. Please explain and be prepared to discuss what, if any, financial assistance the developer may be requesting or expecting from the Village.

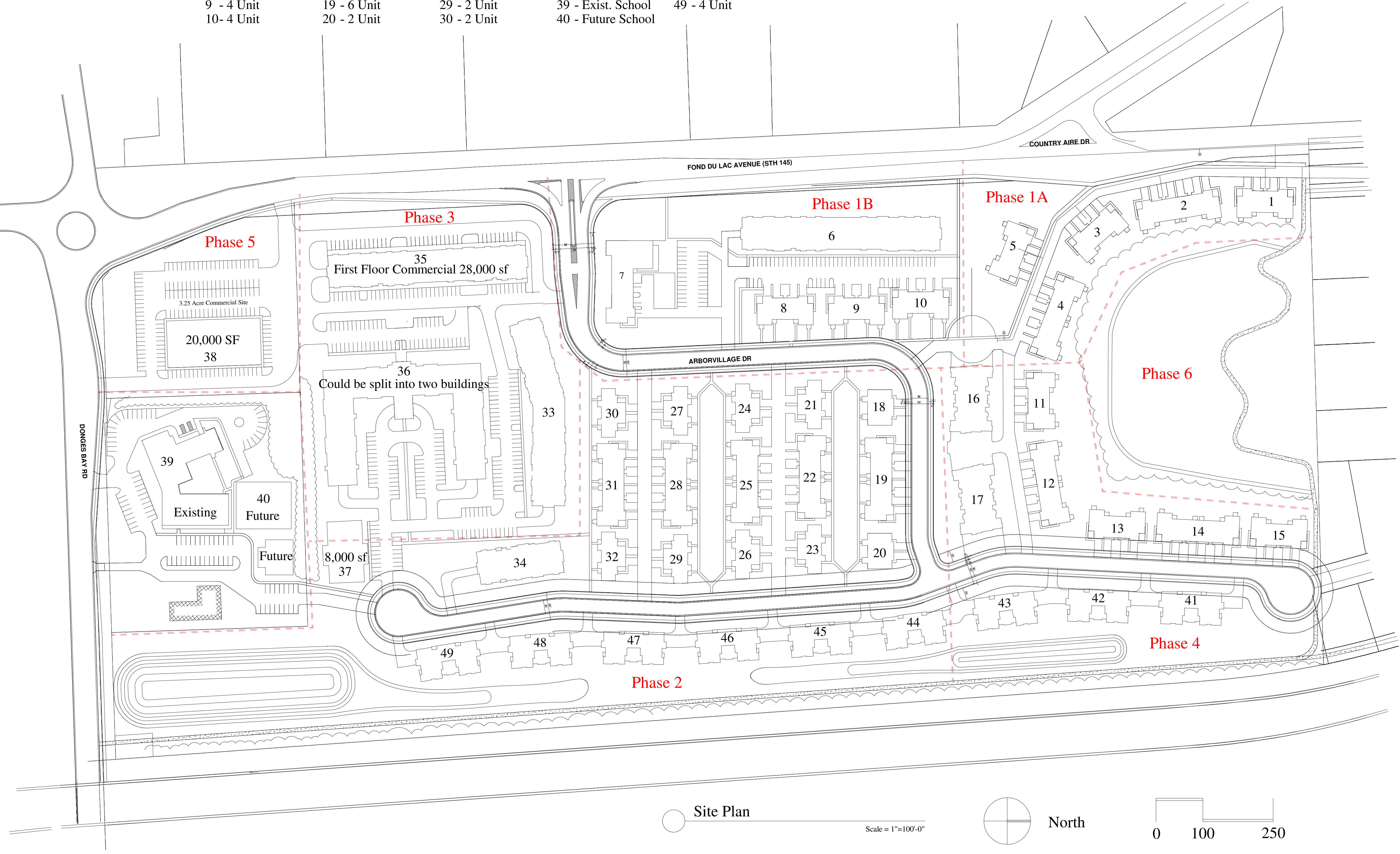
Depending on what the Village would like to see for future infrastructure we might be asking for assistance.

7. Has there been any sort of a market study to support the type and number of residential units proposed?

Yes.

Building Brakedown

1 - 4 Unit	11 - 4 Unit	21 - 2 Unit	31 - 6 Unit	41 - 4 Unit
2 - 6 Unit	12 - 6 Unit	22 - 6 Unit	32 - 2 Unit	42 - 4 Unit
3 - 4 Unit	13 - 4 Unit	23 - 2 Unit	33 - 72 Unit	43 - 4 Unit
4 - 6 Unit	14 - 6 Unit	24 - 2 Unit	34 - 24 Unit	44 - 4 Unit
5 - 4 Unit	15 - 4 Unit	25 - 6 Unit	35 - 60 Unit	45 - 4 Unit
6 - 72 Unit	16 - 8 Unit	26 - 2 Unit	36 - 192 Unit	46 - 4 Unit
7 - Club House	17 - 8 Unit	27 - 2 Unit	37 - 12 Unit	47 - 4 Unit
8 - 4 Unit	18 - 2 Unit	28 - 6 Unit	38 - Commercial	48 - 4 Unit
9 - 4 Unit	19 - 6 Unit	29 - 2 Unit	39 - Exist. School	49 - 4 Unit
10- 4 Unit	20 - 2 Unit	30 - 2 Unit	40 - Future School	



Jeffery Groentier, Architect
W125 Amidon Road
Brooklyn, WI 53521
608-698-3186 ciallc@hotmail.com
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Concepts
in
Architecture, LLC

Wisconsin Builders, Inc
Everett Frenz, President
6115 N Lydell Avenue
Whitefish Bay, WI 53217
414-550-8014 ejfrenz@gmail.com

Proposed for:
Address:

Project: Arbor Village
Address: Germantown, WI
Sheet Title: Site Plan

Date: 03-23-2023

Scale: As Noted

Job #: 06-01

SHEET
C1

PLAN COMMISSION MINUTES
November 29, 2021

CALL TO ORDER: Planning Assistant Lori Johnson called the meeting to order at 6:30 pm.

ROLL CALL: Trustee Representative David Baum, Commissioners Tony Laszewski, Matt Kimmler, Peter Nilles, Bob Williams and Bill Shadid were in attendance. Chairman Dean Wolter was absent and excused. Also present were Community Development Director Jeff Retzlaff, Associate Planner Emily Zandt and Planning Assistant Lori Johnson.

Community Development Department - 2050 Land Use Plan Update and Discussion - Director Retzlaff explained that tonight's meeting is a continuing Plan Commission workshop to discuss specific components, currently the Neighborhood, District and Corridor component of the overall 2050 Plan.

He stated at the last meeting on October 25th he talked about some assembly housing related bills under consideration adding that the status has not changed at this point. He indicated PC talked about the CORP Plan and reviewed several neighborhoods and districts in the 2050 Plan. Discussion followed on the following Corridors:

- Victory Center Corridor: Director Retzlaff reviewed the 2050 Plan for this area. Everett Frenz, property owner of land in this corridor presented a plan for future development for this area. He said the development would include a K-4 school, community center building, fieldhouse. The plan includes townhomes, family apartment buildings, 4 family ranch homes, 8 family buildings and senior housing. The development will have bike and walking paths. Trustee Baum asked if this was the best use for the area. Commissioner Laszewski said he could see this area as industrial use, but not commercial and that residential use makes sense, but the density seems like a lot of buildings.

Discussion continued. Trustee Baum said he sees this area as transitioning from residential to industrial and was not in favor of what was presented. He added the location is distant to the central business area and that residential use would be more of a challenge for the area. Commissioner Shadid stated he didn't know if the development would fit the area but would like to see more on the plan. Discussion ensued on industrial use versus residential along the Hwy. 145 area. Trustee Baum commented if the right plan with the right components came forward it could work, but feels a residential type use would be a challenge. Director Retzlaff explained this district is very flexible for development and shows a matrix of uses. He asked if a statement should be included in the 2050 Plan pertaining to development on one side of the road or another. Trustee Baum said he would support adding something in the 2050 Plan that would support residential development west of Hwy. 145 and commercial to the east. He sees smaller industrial type buildings with light industrial would flourish over residential use. Commissioner Kimmler added that the area is diverse and if a good plan comes forward we should review it. He could also see a single-family housing subdivision in the area and did not feel a dividing line was needed. Discussion continued.

- Omega Hills District: Most suitable for industrial with no residential.
- Lannon-Mequon Road Corridor: Mixed use area with possible high density east of Virginia Highlands.
- County Line Road District: Possible park at former Riversbend golf course; add desirable parkland to Plan.
- Willow Creek Business Park District: Add parcel on Appleton Avenue as industrial or commercial use. Take residential lots along Lannon Road out of district and add to Willow Creek-Weidenbach or Amy Belle neighborhood. Readjust Lannon Mequon Road Corridor. OK with residential or higher density residential along County Line west of Electric Company

- Germantown Business Park District: No changes
- Germantown Industrial Park District: No change to boundary or uses.

Director Retzlaff explained he will make changes to the NDC maps as discussed and will bring back a final draft as part of the next community meeting.

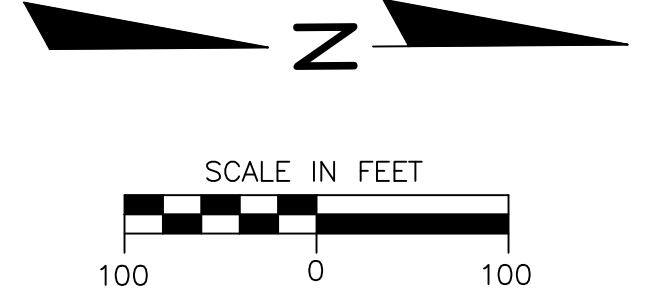
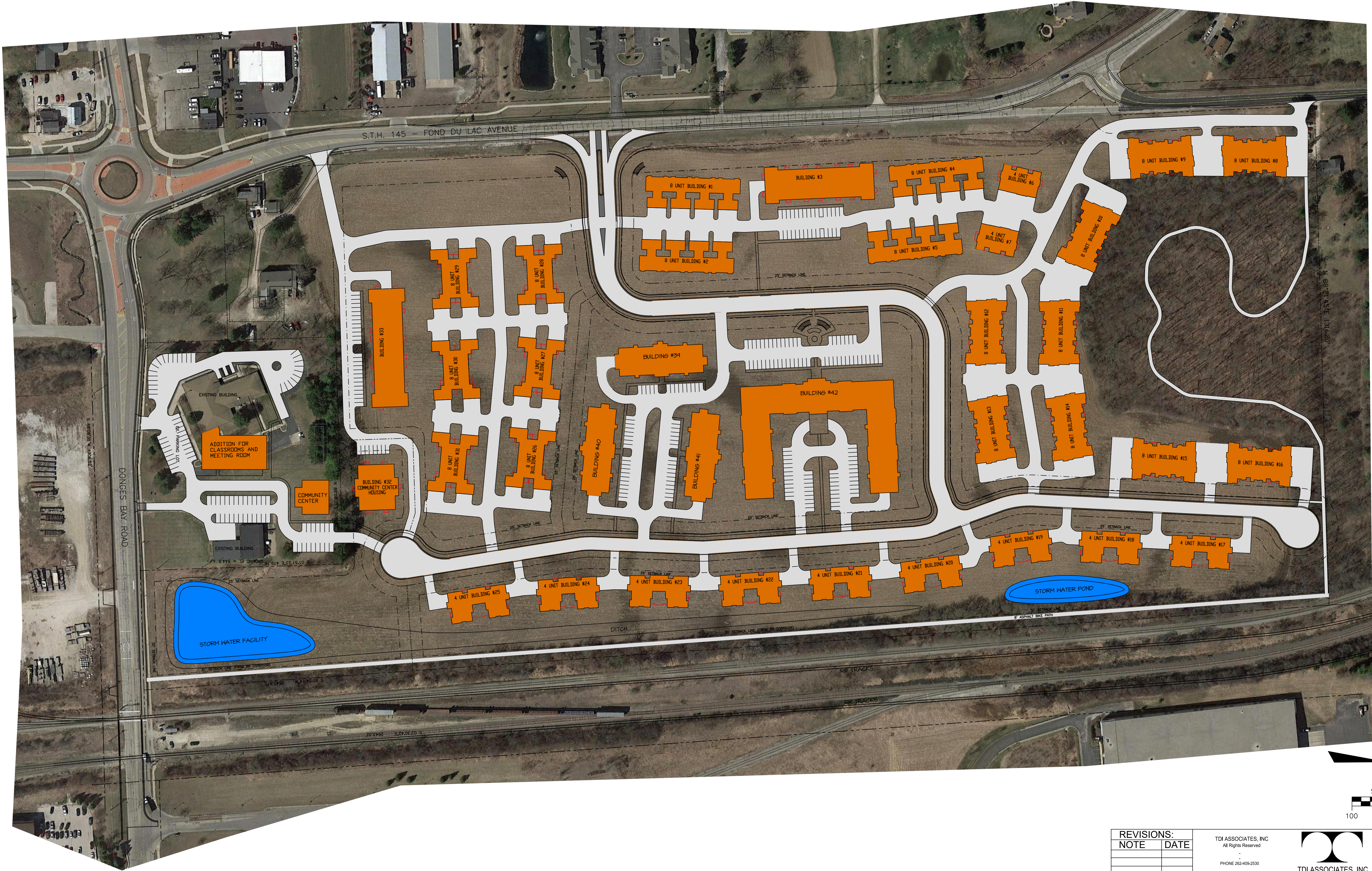
This meeting was for discussion only. No action was taken.

ANNOUNCEMENTS None

ADJOURNMENT: There being no further business, the meeting was adjourned at 10:03 pm.

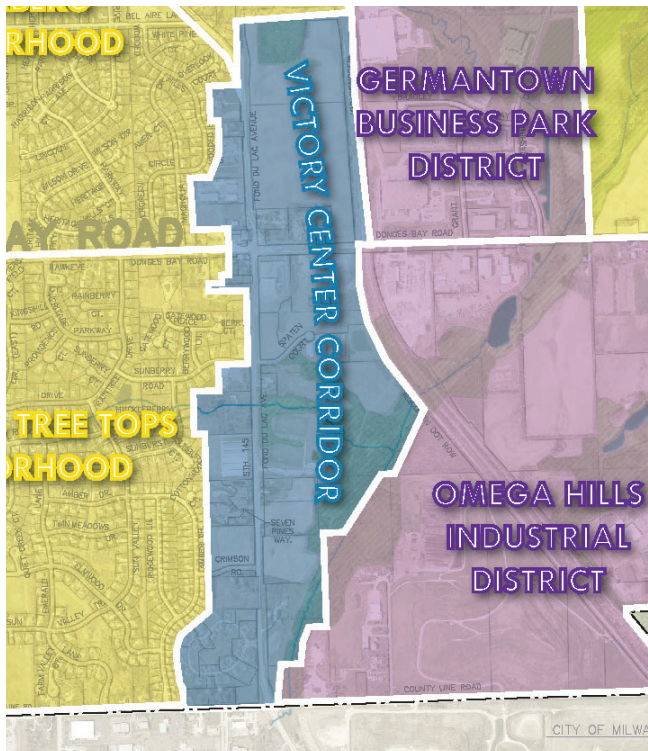
Respectfully submitted,

Lori Johnson, Planning Assistant



REVISIONS:		TDI ASSOCIATES, INC All Rights Reserved PHONE 262-409-2530  OWNERSHIP OF DOCUMENTS This document, and the ideas and design incorporated herein, as an instrument of professional service, is the sole property of TDI Associates, Inc., and is not to be used in whole or in part for any other project or purpose without the expressed written authorization of TDI Associates, Inc. VILLAGE OF GERMANTOWN, WI ARBORVILLAGE OVERALL SITE CONCEPT PLAN	
NOTE	DATE		
SCALE: 1"= 100'-0"		JOB NO: 20164.000	DATE: 11-18-21
DESIGNED BY: ROB		DRAWN BY: ROB	CHECKED BY:
APPROVED BY:		ENGINEER	DATE
		SHEET	C-2.0

Victory Center CORRIDOR



SPECIAL FEATURES

Transportation The Victory Center corridor includes land abutting a portion of Fond Du Lac Avenue (STH 145) from the Country Aire Drive intersection south to County Line Road. The corridor is bounded on the east by the WSOR railroad, Nor-X-Way Channel and Omega Hills landfill.

Environmental, Natural & Agricultural The Nor-X-Way Channel and associated secondary environmental corridor is located along the eastern edge of the corridor.

Public Park, Education, Safety & Utility The Germantown School District office is in the corridor. The FC Wisconsin soccer organization has play and practice fields at their facility on the east side of Fond du Lac Ave. The corridor is served by Village sewer and water.

GENERAL CHARACTER

The Victory Center Corridor is predominantly a mixed-use commercial corridor with service-oriented uses, including auto and truck repair services, personal storage uses, a local bar, and a coffee shop. Sports Specialists, a wholesaler of fishing equipment, has a large warehouse near the Dinges Bay @ Fond du Lac Ave intersection.

A portion of the corridor is in Tax Incremental district (TID) No. 4, including approximately 60 acres of vacant land east of Fond du Lac Ave.

Historical & Cultural The Victory Center, also known as "Kuhberg", was one of seven unincorporated hamlets within what is now the Village of Germantown.

PREFERRED FUTURE LAND USE

Victory Center Corridor

Preferred Future Land Uses												Enviro Corr.	SSA	Preferred Site Design			Maximum Density (residential uses)
Existing Uses (+ existing non-conforming zoning) See NOTE 5 for details	Residential: Single Family	Residential: Two to Four Family	Residential: Multi-family / Senior	Mixed-Use: Commercial / Residential	Mixed-Use: Commercial / Industrial	Commercial (includes "Activity Centers")	Institutional	Open Space & Recreational	Mineral Extraction	Industrial	Agricultural / Hobby Farming / Agribusiness	Contains an Environmental Corridor?	Sewered? (Y/N/Partial)	Traditional Neighborhood	Suburban Subdivision	Conservation Subdivision**	Dwelling Units / Acre See NOTE 4 for details
A	A	A	A	A	A	D	A	A	u	A	u	Yes	Yes	D	U	U	SF: 2.9 units/ac 2-4F: 6 units/ac MF: 10 units/ac

The Victory Center corridor is intended to further develop as a mixed-use area with commercial, mixed-use commercial, institutional, and residential development in a traditional or conservation design pattern with average single-family densities of 2.2 to 2.9 DU's/acre on 15-20,000 sqft lots, two- to four-family densities up to 6 DU's/acre, and multi-family densities up to 10.0 DU's/acre.

Future commercial uses are desirable including retail, office and other service-oriented uses. Industrial uses are also acceptable in those areas currently zoned M-1 and/or located within the TID No. 4 boundary.

D =	Desirable – These uses should be encouraged because they are consistent with, support, and enhance the desired character of the area.
A =	Allowable – These uses are generally considered appropriate for the area, but may require additional consideration and/or specific modification or developed features to be compatible with other uses in the area.
u =	Undesirable – These uses should not be encouraged but may still be acceptable for the area under special circumstances.

See all notes on page 42.

BUSINESS OF THE PLAN COMMISSION

MEETING DATE: May 8, 2023

PLACEMENT: Action Item

ITEM TITLE: Village of Germantown - 2050 Comprehensive Plan;
Implementation & Action Steps (**DISCUSSION**)

SUBMITTED BY:

SUMMARY EXPLANATION:

ATTACHMENT:

RECOMMENDATION:

ACTION BY Committee: