CITY OF GLENDALE

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AGENDA -- PLAN COMMISSION
Tuesday, November 10, 2020
6:00 P.M.

1. Roll Call and Pledge of Allegiance.

2. Adoption of Minutes of the Meeting of October 6, 2020.

3. a. Specific Implementation Plan (SIP): Jilly's Car Wash, 5100 North Port Washington Road. Review and approve Specific Implementation Plan for Jilly's Car Wash.
Jon Zimmerman

   b. Plan Commission Use and Occupancy Review, Whitefish Bay Jr. Dukes Basketball, Incorporated, 6619 North Sidney Place (6619-6637 Multi-Tenant Warehouse Facility). Review and approve youth basketball organization proposed basketball practice facility indoor recreation use and occupancy.
John Burkemper

   c. Bicycle and Pedestrian Plan Update.

4. Adjournment.

NOTICE: The Regular Plan Commission Meeting is NOT a meeting of the Glendale Common Council. Although a majority of Council Members may be present, Council action will not take place.
-Upon reasonable notice, efforts will be made to accommodate the needs of persons with disabilities.-

CITY OF GLENDALE — PLAN COMMISSION
October 6, 2020

Regular meeting of the City of Glendale Plan Commission convened via Zoom.

The meeting was called to order by Mayor Kennedy at 6:00 p.m.

Roll Call: Present: Mayor Bryan Kennedy, Commissioners Kyle Mack, Fred Cohn, Karn Cronwell, Phillip Bailey, Amanda Seligman, Josh Wadzinski. Absent: None.
Other Officials Present: Rachel Safstrom, City Administrator; Todd M. Stuebe, Director of Community Development; Megan Humitz, City Clerk.

In accordance with the Open Meeting Law, the North Shore NOW, the City's official newspaper, was advised on Thursday, September 29, 2020, of the date and time of this meeting, the agenda was posted to the official bulletin board of City Hall, the Glendale Police Department, and the North Shore Library; that copies of the agenda were made available to the general public in the Municipal Building and the Police Department, and those persons who requested were sent copies of the agenda.

PLEDGE OF ALLEGIANCE.
The Members of the Plan Commission, City staff, and all those present pledged allegiance to the flag of the United States of America.

MATTERS TO BE CONSIDERED.

Adoption of Minutes of the September 8, 2020 Plan Commission Meeting.

Motion was made by Commissioner Cohn, seconded by Commissioner Cronwell, to adopt minutes from the September 8, 2020 Plan Commission meeting. Motion carried unanimously.

Plan Commission Conditional Use Permit Review, North Shore Pet Connection, 1980 West Florist Avenue. Review and approve proposed architecture, site, landscaping, signage, and lighting, stormwater drainage/management, as well as use and occupancy.

Mr. Stuebe gave a brief review of Diane Bernhagen's request for a Conditional Use Permit approval to add to the North Shore Doggy Daycare building and the existing detached garage to provide for the North Shore Pet Connection as a second business use and occupy at the 1980 West Florist Avenue property. The North Shore Doggy Daycare improvements, use and occupancy, were initially approved as a Conditional Use Permit on May 1, 2007, and alterations to the existing Conditional Use Permit require the approval of the Plan Commission. The 1980 West Florist Avenue parcel is zoned B-4 Office-Research-Service Business District. Initial improvements will begin in 2020 and be completed in Spring 2021

Ms. Diane Bernhagen, owner of North Shore Doggy Daycare and Pet Connection, stated North Shore Pet Connection has been located at 5810 North Green Bay Avenue for 30 years. The primary services of the facility are to offer special needs pet care for all ages and small animal types. The special needs care includes chronic, acute, and hospice care. Ms. Bernhagen has experience as a veterinary technician and is connected to several veterinarians in the area. The proposed addition to the location at 1980 West Florist Avenue will allow Ms. Bernhagen to move all business operations to one site, and the location at 5810 North Green Bay Avenue will no longer be in operation. The needs of the facility have outgrown the location on Green Bay Avenue, and the new facility will not have stairs and allow for ease of access.

Commissioner Mack raised the question of the intended future use of the location at 5810 North Green Bay Avenue. Ms. Bernhagen stated she is the current owner of the property and is unsure of her future plans for that property.

Motion was made by Commissioner Cohn, seconded by Commissioner Bailey to approve the altered Conditional Use Permit for Diane Bernhagen submit for City of Glendale Building Permits and related permits related to City of Glendale facilities, to include the proposed architecture artistic image, building elevations, site, landscaping, lighting, signage, site civil design and stormwater drainage/management plan, allowing the project to obtain City of Glendale Building Permits to construct the proposed improvements, to use and occupy the buildings to operate the North Shore Pet Connection, a special needs pet convalescent services and care center, and continue to operate North Shore Doggie Day Care, LLC, a dog day care facility that includes ancillary veterinary, grooming and bathing, training, shuttle service, and limited retail sales service, in the enlarge facility at 1980 West Florist Avenue, as reviewed and approved by the Plan Commission, with the following requirements: 1) Retail sales are restricted to the sale of ancillary products within approved designated space(s) inside the building; 2) Signs require a Signage Permit(s); 3) Landscape features being maintained and/or replaced/replenished whenever necessary; 4) Dumpster enclosure per Glendale Code of Ordinances, to be emptied on a regular basis so as not to create a health/sanitation or odor problem; 5) All modifications within the public street right-of-way subject to submittal of site civil design plans and obtaining required permits per the requirements of the City of Glendale Department of Public Works and City Engineer; 6) Stormwater drainage/management plan and permit required per Public Works 6-5 and Milwaukee Metropolitan Sewerage District requirements; 7) All City of Glendale building, fire, and public health codes being carried out to the satisfaction of the Building Inspector, the North Shore Fire Department, and the North Shore Health Consortium; and 8) Compliance with State of Wisconsin requirements for ADA parking. Motion carried unanimously.

Planned Sign Program Amendment, Barnabas Business Center, 4650 North Port Washington Road. Consider revised signage image pertaining to amendment to Planned Sign Program approved August 6, 2019, to add a monument sign for three occupants.

Mr. Stuebe gave a brief review that on August 6, 2019, the Plan Commission approved an amendment to the Planned Sign Program for the Barnabas Business Center that included an image of a sign comprised of two brick column supports with tenant sign faces cantilevered per the image. It was understood there would be three tenants included within the signage. The narrative, however, was not completely consistent with the image of the signage. Subsequently, revised sign imagery was submitted that visually expresses the intent of the property owner, and Staff would like the Plan Commission to consider and affirm that the proposed sign is acceptable.

Commissioner Wadzinski expressed concern that the bottom of the signage has no reticulation, and the style is bland in comparison to the building.

Mayor Kennedy questioned if the materials and design have been discussed, or if this item is only a request to change from 8 to 3 occupant names on the signage itself. Mr. Stuebe

clarified the request is for the material of the signage itself as well. The initial images provided of the proposed sign included two brick columns supporting the sign faces, however there was a contradiction between the text and imagery as the text did not include the brick component. When Cardinal Capital Management presented the revised plan, it included the black box the sign rests upon.

Mayor Kennedy indicated the signage should match the building. The Barnabus Business Center is a brick building with a historic appearance, and the proposed sign does not match the façade. Commissioner Cronwell echoed this and stated there is a disconnect between the sign and the elegance of the building. It was added that stipulating the material to be used may not be practical but dictating the design would be. Mr. Stuebe will take this recommendation back to Cardinal Capital Management for changes.

Commissioner Cohn indicated the signage should incorporate the address of the building, as well as the names of the tenants.

> Motion was made by Commissioner Cohn, seconded by Commissioner Wadzniski, to allow Staff to work with Cardinal Capital Management, owners of the Barnabus Business Center, to create a plan that is in line with and complements the design of the brick building. Motion carried unanimously.

Planned Sign Program Amendment, Umansky Motor Cars (Mercedes Benz), 1400 West Silver Spring Drive. Consider amendment to Planned Sign Program to add monument sign for Mercedes Benz.

Mr. Stuebe gave a brief review of the request by Mercedes Benz of Milwaukee North's request for review and approval to make a change to the Planned Sign Program for 1400 West Silver Spring Drive. The proposed change is to add a monument sign for Mercedes Benz, conceptually similar to Umansky Porsche repurposing of the former 25' multi-brand tower sign for the exclusive use of Porsche. The proposed monument sign is 12' in height, and the Glendale Sign Code restricts monument sign height to ten feet. Mercedes Benz seeks a monument sign that will be similar in height to Porsche, at 11'-10 ½". The proposed sign will be placed in the fourth parking space east of the intersection of West Silver Spring Drive and North Bridgewood Lane. The existing "Pre-Owned" sign and the multi-brand sign will be removed.

Commissioner Cohn expressed concern that the proposed sign is beyond the scope of the Sign Code and the plan for uniformity. Mr. Stuebe clarified the signs have been a negotiation process, as each brand would like their sign the same size as the other brands. The commission has the option to balance out the signs or require a maximum 10' height, should they so choose.

Commissioner Wadzinski stated the chosen height was most likely due to cars being parked in close proximity to the sign, which would prohibit adequate view unless the sign was slightly taller.

Mayor Kennedy stated the signage has been reduced from a massive sign with multiple brands, to smaller, more specific signs which are more visually appealing and keep with the character of the road.

Commissioner Seligman raised the question of the nature of the 10' sign limit. Mr. Stuebe clarified the Glendale Sign Code sets the monument height and a city "standard" for signage, however it does allow for some flexibility.

Motion was made by Commissioner Seligman, seconded by Commissioner Mack, to approve the proposed Amendment to the Planned Sign Program to permit the Umansky Mercedes Benz monument sign and the Umansky Porsche monument sign with the requirement that the "Pre-Owned Cars" sign and multi-brand tower sign will now be removed, and with the requirement of remittal of the $50 fee to modify a Planned Sign Program. Ayes: Commissioners Mack, Cronwell, Bailey, Seligman, and Wadzinski. Noes: Commissioner Cohn. Absent: None. Abstain: None. Motion carried.

Sign Appeal, Landmark Credit Union, 6300 North Port Washington Road. Consider Variance to include monument sign with electronic messaging.

Mr. Stuebe gave a brief review of Landmark Credit Union's request to seek review and approval of the Sign Variance to permit the monument sign with electronic message center. Under the Glendale Sign Code either a wall sign or a monument sign are permitted, and the monument sign with electronic message center requires Plan Commission grant of a Sign Appeal Variance. The monument sign is proposed at the northwest corner of the site immediately south of the Landmark Credit Union North Port Washington Road ingress-egress, to include the text "Landmark Credit Union" and the lighthouse image logo, the text "ATM," the street address number (6300), as well as the electronica message center. The electronic message center is proposed to have static messages that include the interest rate and change, open and closed, not more frequently than at six second intervals.

Mr. Michael Dlugi, sign representative for Landmark Credit Union, was present to answer the questions of the Council. Mr. Dlugi stated the software for the message center has a lockout system and all signage is controlled through the Landmark Credit Union headquarters. The specifications for individual municipalities are programmed into the system and cannot be adjusted by branch locations.

Mayor Kennedy raised the question regarding how far back from Port Washington Road the signage will be placed. Mr. Dlugi stated it will be farther back than the City required setback, as there is a need to accommodate the WDOT easement due to construction.

Administrator Safstrom stated the message board sign at Elite was required to have a 10-second interval time for each message and raised the question of consistency, particularly on a major thoroughfare. Mr. Dlugi stated the 6-second minimum is based on the WDOT, however they would be happy to comply with the municipal requirement of 10 seconds. Commissioner Seligman questioned if there is a City standard for interval timing. Mr. Stuebe stated there is not a standard at this time, however it can be added to the Sign Code. Mayor Kennedy added the City has shied away from marquis-style signage, avoided animation, and required static information and currently only allow three locations, four including Landmark Credit Union, to do use this signage. Mr. Dlugi indicated his company has previously partnered with municipalities to help create signage ordinances in compliance with the WDOT.

Commissioner Cohn asked for clarification on the standard set for the Bavarian Bierhaus signage. Administrator Safstrom indicated that was determined in 2016 or 2017, and she could not recall the specifics without researching the information.

Motion was made by Commissioner Bailey, seconded by Commissioner Wadzinski, to grant the proposed Sign Appeal Variance to permit the Landmark Credit Union monument sign with electronic message center signage element with ten second minimum static intervals, with the requirement of remittal of the $300 fee for a Sign Appeal Variance. Motion carried unanimously.

Sign Appeal, Medical Psychology Associates, 6110 North Port Washington Road. Consider Variance to permit zero right-of-way (front property line) setback and less than 60-foot monument sign spacing requirement.

Mr. Stuebe gave a brief review of Medical Psychology Associates' request to remove the existing "The Cambridge Group" sign and seeks a Sign Appeal Variance to install a monument sign for Medical Psychology Associates (Add 6110 street address number). The Sign Variance is required in order to have a zero right-of-way line (front property line) setback, to have a new monument sign with metal/composite base, and that the proposed monument sign is not at least 60-feet from other monument signs.

Mr. Paul Smerz, co-owner of Medical Psychology Associates, was present and stated he purchased the building in 1991 and at that time did a remodel and renovation to include adding a second floor. At the time, he co-owned the building with two others and over time he bought out the building and has been the owner of the building with his wife since 2005. The practice was converted to Medical Psychology Associates and is no longer affiliated with Cambridge Group. Additionally, the current sign is tall and set close to the building. The proposed signage would be at the landscape peninsula, lower in height, and more visible to traffic. There has been a significant amount of recent landscaping done, as well as a residing and painting of the building.

Mayor Kennedy stated that while the sign is less than 50-feet from another monument sign, the variance should be granted as that signage belongs to a business on another parcel and there are a large number of businesses in that area.

Commissioner Cohn raised the question regarding if the sign will be at sidewalk level. Mr. Stuebe clarified the sign will be at the front property line and will not interfere with road visuals.

Commissioners Wadzinski, Mack, and Cronwell all shared concern regarding the departure of the signage from the exterior of the building, and the comparison to other signs in the same area. The Commissioners stated in keeping consistent with the other signage requests, it should be done in the same style of the building. Mayor Kennedy questioned what the material used on the building façade. Mr. Stuebe clarified it is a residential siding type of material, in a light blueish gray color.

Commissioner Seligman stated the proposed signage is more distinctive than the building and would definitely serve to enhance the building and wayfinding.

Beth Daniel, sign representative from Innovative Signs, stated the sign design is based on the peak of the building, and is therefore representative of the architecture. Efforts were also made to blend the colors to complement the coloring of the building. Mr. Smerz expressed his desire to keep the current style of the base.

Administrator Safstrom questioned if there will be landscaping done around the new sign. Mr. Smerz confirmed there will new plantings done around the base of the signage and at the front of the building.

Mayor Kennedy and Commissioner Bailey expressed their appreciation of the detail of the signage to match the design and style of the building and indicated a color match of the base would create a degree of conformity.

Commissioner Wadzniski recommended approving the request, with the change of color of the base to match that of the building. Ms. Daniel and Mr. Smerz were in agreement to this recommendation.

Motion was made by Commissioner Seligman, seconded by Commissioner Bailey, to grant the proposed Sign Appeal Variance to permit the Medical Psychology Associates monument sign with zero public right-of-way line (front property line) setback, less than 60 monument sign spacing (about 34.5 feet), with a metal/composite base to match the existing building, with the requirement of remittal of the $300 fee for a Sign Appeal Variance. Motion carried unanimously.

Bicycle and Pedestrian Plan Update.

Ms. Safstrom gave a brief update on the Bicycle and Pedestrian Plan. Vandewalle and Associates Staff have been working to develop the draft plan and have provided the first draft to the Plan Commission. Excellent feedback has been provided from residents during the process. A second draft of the plan will be presented at the November meeting, and an open house on the draft will be scheduled after that.

Commissioner Cohn requested clarification on what the Bicycle and Pedestrian Plan is and why the Plan Commission is conducting a review. Administrator Safstrom clarified the process started in February 2019, and the intention is to make connections between current pedestrian and bicycle paths in the City.

Mayor Kennedy stated it would be acceptable for the process to continue into January or February for an open house and review of the second draft. No construction will begin until after winter, and it should be considered in the long-range plans for capital improvement.

This item was for informational purposes only. No action was taken.

Reschedule Regular Tuesday, November 3, 2020, Plan Commission meeting to 6:00 p.m., Tuesday, November 10, 2020, due to the Tuesday, November 3, 2020 Election.

Motion was made by Commissioner Seligman, seconded by Commissioner Cohn, to reschedule the regular November Plan Commission meeting to 6:00 p.m. Tuesday, November 10, 2020. Motion carried unanimously.

ADJOURNMENT.

There being no further business, motion was made by Commissioner Bailey, seconded by Commissioner Seligman, to adjourn the meeting. Motion carried and adjournment of the Plan Commission was ordered at 7:06 p.m., until Tuesday, November 10, 2020 at 6:00 p.m.

Megan Humitz, City Clerk

Recorded: October 7, 2020

Meeting is 6:00 PM Tuesday

PLEASE OBSERVE THAT THE REGULAR PLAN COMMISSION MEETING WILL BE HELD AS A ZOOM VIRTUAL MEETING

Join Zoom Meeting
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Meeting ID: 834 3163 6369

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City of Glendale Plan Commission

6:00 P.M., Tuesday, November 10, 2020

- Plan Commission Report -

Glendale
RICH PAST.
BRIGHT FUTURE.

3a. **<u>Specific Implementation Plan (SIP): Jilly's Car Wash, 5100 North Port Washington Road</u>**. Review and approve Specific Implementation Plan for Jilly's Car Wash.

Jon Zimmerman seeks Plan Commission review and approval of the Specific Implementation Plan (SIP) for the Jilly's Car Wash Planned Unit Development District project that will be built at 5100 North Port Washington Road in the City of Glendale. The site zoning and general development plan for the project have already been approved by the City. Jon Zimmerman and his project design team will present the Specific Implementation Plan to the Plan Commission. As the name implies, the Specific Implementation Plan is a precise plan of development and it includes the final project design plans and any remaining project design and management specifics, proof of financing capability and the project schedule and, upon review, will include any further City requirements.

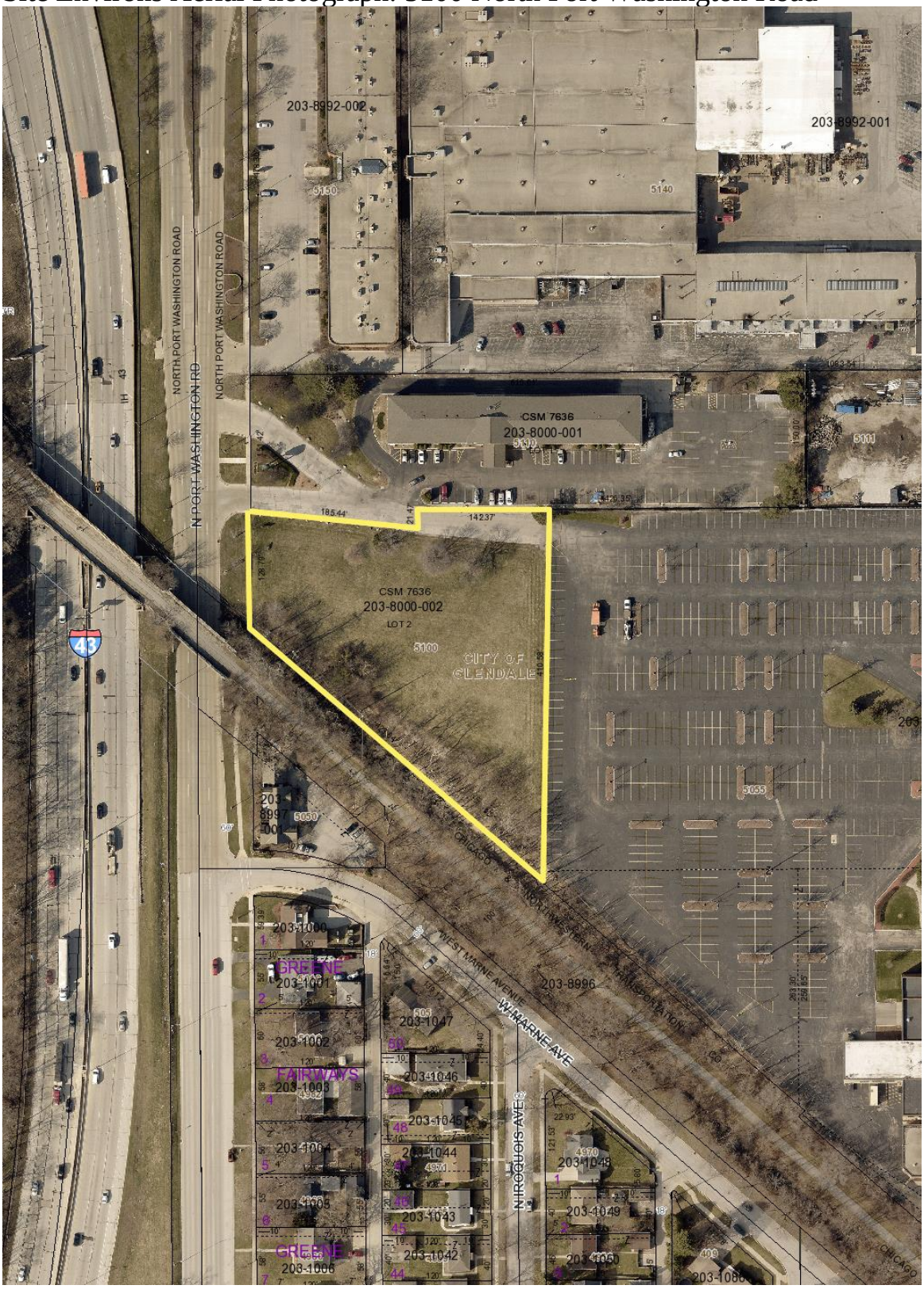
The proposed Planned Unit Development (PUD) District project includes constructing an express car wash facility within the 85,639 square-foot (1.966 acre) property (Refer to Site environs exhibits). Ingress-egress for the LaQuinta, Sunbeam-Oster, and the car wash property are all provided via an Ingress and Egress Easement across both the LaQuinta and the car wash site connecting to the former Sunbeam-Oster site.

Proposed Project Artistic Image

Proposed Project Artistic Image

Site Environs Aerial Photograph: 5100 North Port Washington Road

Site Environs Aerial Photograph: 5100 North Port Washington Road



Proposed Site Plan and Architecture

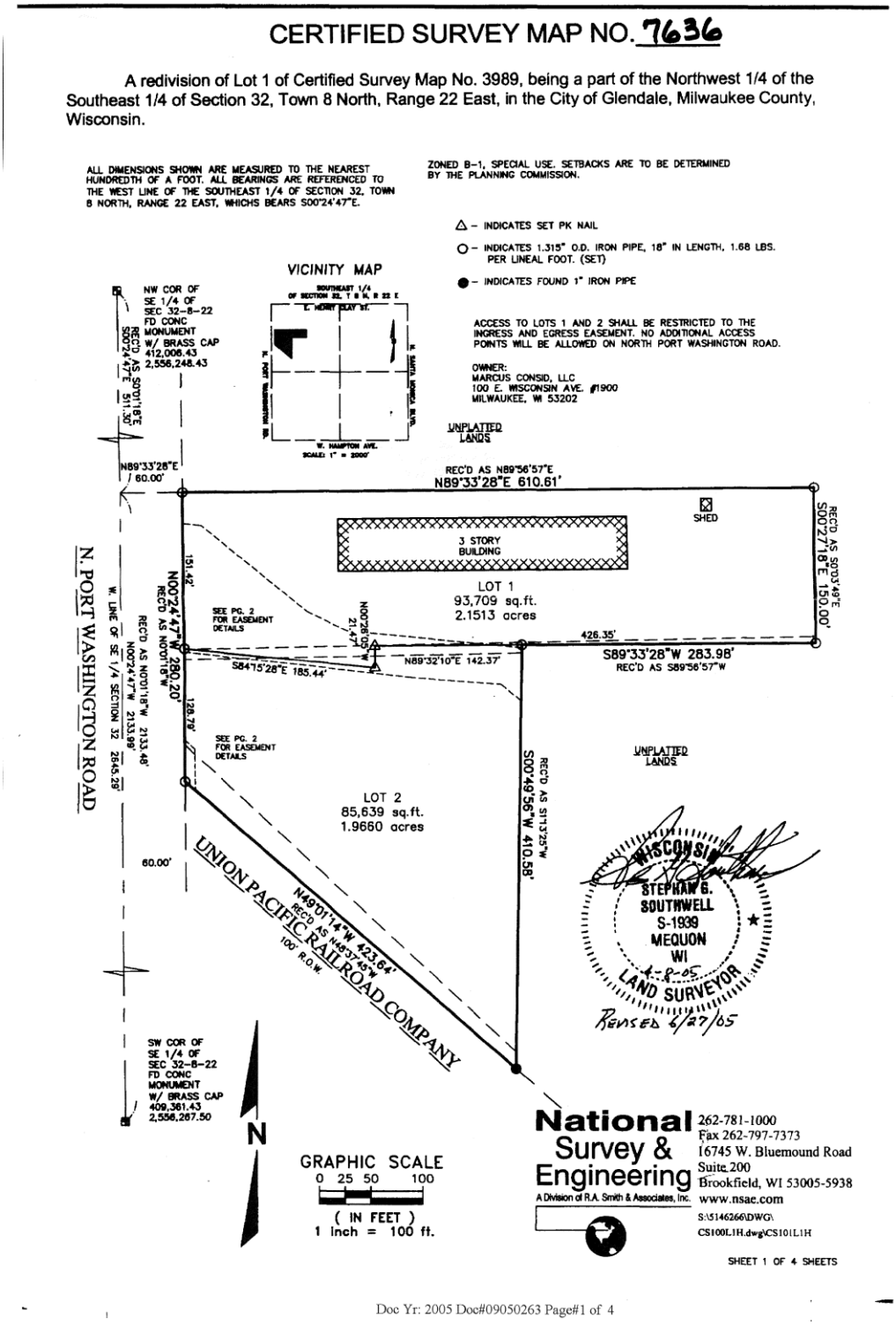
The Specific Implementation Plan drawings and documents are included in the Plan Commission materials and may be accessed at the Agenda Center at the City of Glendale Web Link at www.GlendaleWI.gov . The architecture is modern with classic materials such as brick veneer and vision glass. The proposed design concept includes a 5,100 square-foot car wash building, parking, a central vacuum corral, and two bio-retention basins.

Site ingress-egress is via the private road located within the Ingress and Egress Easement that provides access to the LaQuinta property (Refer to Image from CSM 7636), the car wash property, and the former Sunbeam-Oster site. Site traffic flow to access the express car wash functions in a counter-clockwise fashion, there is a seven (7) stall interior parking lot located immediately north of the proposed car wash building, after proceeding through the car wash there are twenty vacuum stalls (two rows of ten vacuum stalls). The site may be exited via the left turn out only that is most proximate to the vacuum stalls or via the primary ingress-egress. There are seven (7) parking spaces with a single ADA parking space proximate to the main entrance. There are two bio-retention basin areas, the first located in the middle of the site between the parking lot and the vacuum stalls, and the second located along the east side of the property.

A monument sign is proposed at the northwest corner of the property, and a wall sign is indicated on the car wash building toward North Port Washington Road.

Image from CSM 7636 Indicating Ingress and Egress Easement

A



Business Hours and Employment

Proposed business operating hours are 7:00 a.m. to 8:30 p.m. Monday to Saturday and 8:00 a.m. to 7:00 p.m. Sundays. Jilly's Car Wash expects to employ 15 at the 5100 North Port Washington Road location in the City of Glendale.

Project Value

The project has previously been represented as having an estimated project cost of about $1.8 million for the building, site, and landscape improvements. Improvements are not indicated at this time to the private roadway that provides ingress-egress to the three properties.

Project Schedule

Jilly's Car Wash schedule indicates that construction will commence in late February of 2021 and will be complete in late July of 2021.

Necessary Action

The necessary action is for the Plan Commission to approve the Specific Implementation Plan for Jilly's Car Wash to be constructed at 5100 North Port Washington Road in the City of Glendale per the following requirements:

1) A Development Agreement to complete the car wash facility improvements and to maintain the property per the requirements of Zoning Code 13.1.55(c) to be reviewed and approved by the Common Council;
2) All modifications within Right-of-Ways or Utility Easements, any disconnections or connections to City infrastructure systems (driveways, sanitary sewer, watermains, storm sewers, etc.), require prior review and approval by the City engineer, Director of Public Works, and Building Inspector, as well as required City of Glendale permits;
3) All costs associated with modifications within Right-of-Ways or Utility Easements, connections or disconnections with City infrastructure systems are the sole responsibility of the developer;

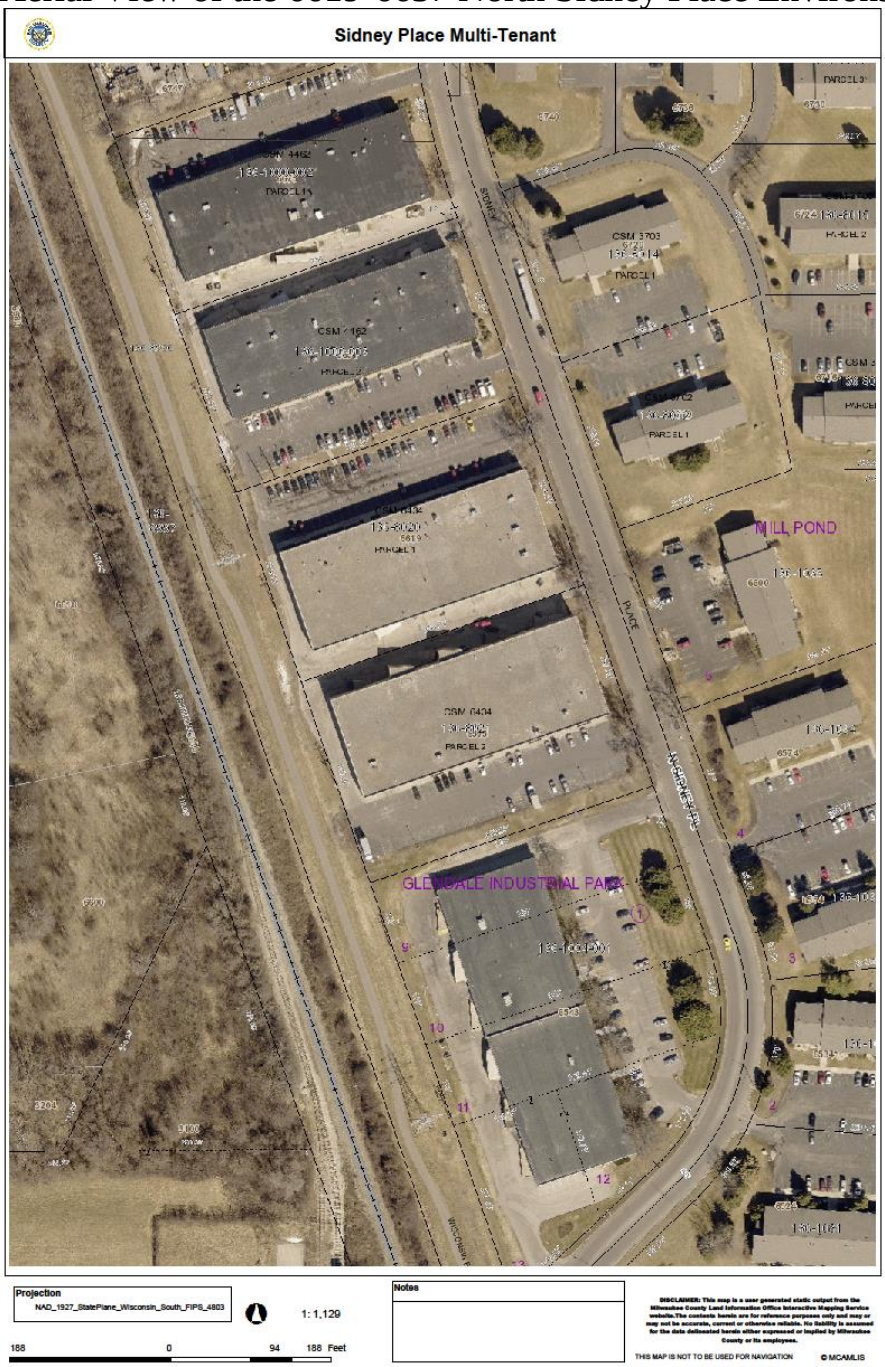
4) Obtain a stormwater management permit per Glendale Code of Ordinances 6-5, and Milwaukee Metropolitan Sewerage District approval, if required;
5) Lights are limited to 15 feet in height;
6) Signage requires a Sign Permit(s) per the Glendale Sign Code;
7) All landscaping and lighting features being maintained and replaced and/or replenished whenever necessary;
8) Dumpster enclosure per Zoning Code 13.1.144;
9) City of Glendale building, fire, and health codes per the Building Inspector, the North Shore Fire Department, and the North Shore Health Consortium;
10) Compliance with State of Wisconsin ADA parking requirements.

3b. **Plan Commission Use and Occupancy Review, Jr. Dukes Basketball, Incorporated, 6619 North Sidney Place (6619-6637 Multi-Tenant Warehouse Facility)**. Review and approve youth basketball organization proposed basketball practice facility indoor recreation use and occupancy.

Jr. Dukes Basketball, Incorporated, seeks Plan Commission approval to have an indoor youth basketball practice and training recreation use and occupancy located in the 6619 North Sidney Place tenant space within the 6619-6637 multi-tenant facility. The parcel is zoned M-1 Warehouse, Light Manufacturing, Office, and Service District, and the proposed indoor recreation use and occupancy is permitted with review and approval of the Plan Commission.

An aerial view of the 6619-6637 North Sidney Place premises is found below. The submittal materials indicate that the 6619 North Sidney Place tenant space is stated to measure 95 feet by 110 feet, giving a stated total of about 10,800 square feet. The 6619 North Sidney Place tenant space is located toward the east side of the building closest to North Sidney Place.

Aerial View of the 6619-6637 North Sidney Place Environs



The proposed use and occupancy is limited to youth basketball practice and training for teams of the Jr. Dukes Basketball, Incorporated, organization. Chris Miskel is president of the Jr. Dukes Basketball, Incorporated. The organization has a volunteer Board of Directors and coaches, and basketball player members, and does not have any employees.

In the submittal materials it is stated that there will be rules put in place for safety as well as Covid19 precautions, and that the space will be cleaned up to two times per week and monitored continuously by supervising coaches and adults.

It is also stated that that there will be as many as thirty (30) persons present, and that there will not be any typical hours other than weekday afternoons and evenings and weekends throughout the day. There is not any mention of special events where there may be more persons present at the facility.

Improvements are not proposed to either the exterior or interior of the facility. Signage is not proposed. The submittal says that they will have a Ring security system to monitor activity in and around the space.

The submittal does not identify existing fire protection systems other than that they will have fire extinguishers on site for emergency use.

Site and Neighborhood Area.
The Aerial View Exhibit above shows the multi-tenant building and grounds, as well as the surrounding neighborhood environs, which includes the Glen Hills Apartment buildings and grounds located to the east of the facility, the neighboring multi-tenant buildings to the north and south, and the Kenco Label and Tag facility further to the south.

Proposed Facility Hours
The Jr. Dukes Basketball organization proposes to operate the facility weekdays and weekends, typically weekday afternoon and evenings and weekends throughout the day. An opening and closing time for the facility have not been established.

Parking, Neighborhood Traffic, and Noise Concerns.
The submittal indicates that there are thirty (30) parking spaces available to tenancy. The neighborhood exhibit map indicates that the two primary ways to access the facility are via West Mill Road and North Sidney Place, and West Green Tree Road and North Sidney Place. The neighboring Glen Hills Apartments would be the immediate residential area most vulnerable to any traffic and/or noise.

Food Service
Food service is not proposed.

Staff recommends that the Plan Commission grant use and occupancy approval for the Jr. Dukes Basketball, Incorporated, a youth basketball organization, as an indoor youth basketball practice facility, in the approximately 10,800 square-foot tenant space located at 6619 North Sidney Place, with the following requirements:

1) Opening Time: 5:00 a.m., Closing time 9:00 p.m.;
2) All parking related to the facility to be accommodated within the 6619-6637 North Sidney Place premises;
3) Jr. Dukes Basketball, Incorporated, should encourage members and others that access the facility to utilize non-residential streets via a connected route from West Mill Road to North Sydney Place rather than via West Green Tree Road;
4) Signage requires a Sign Permit(s) per the Glendale Sign Code;
5) Dumpster enclosure per Zoning Code 13.1.144;
6) All building, fire, and health codes being carried out to the satisfaction of the Building Inspector, the North Shore Fire Department, and the North Shore Health Consortium.
7) Compliance with State of Wisconsin ADA parking requirements.

3c. <u>Bicycle and Pedestrian Plan Update</u>.

NORTH SHORE BANK

October 7, 2020

Jonathan Zimmerman
Jill Zimmerman
Jilly's Corporation
4619 N. Cramer Street
Whitefish Bay, WI 53217

RE: Purchase and Construction -
5100 North Port Washington Road, Glendale, WI

Dear Jon and Jill,

This letter is to confirm that you have been approved for financing for the purchase and construction of a new car wash located at the following address:

- 5100 North Port Washington Road, Glendale, WI 53217

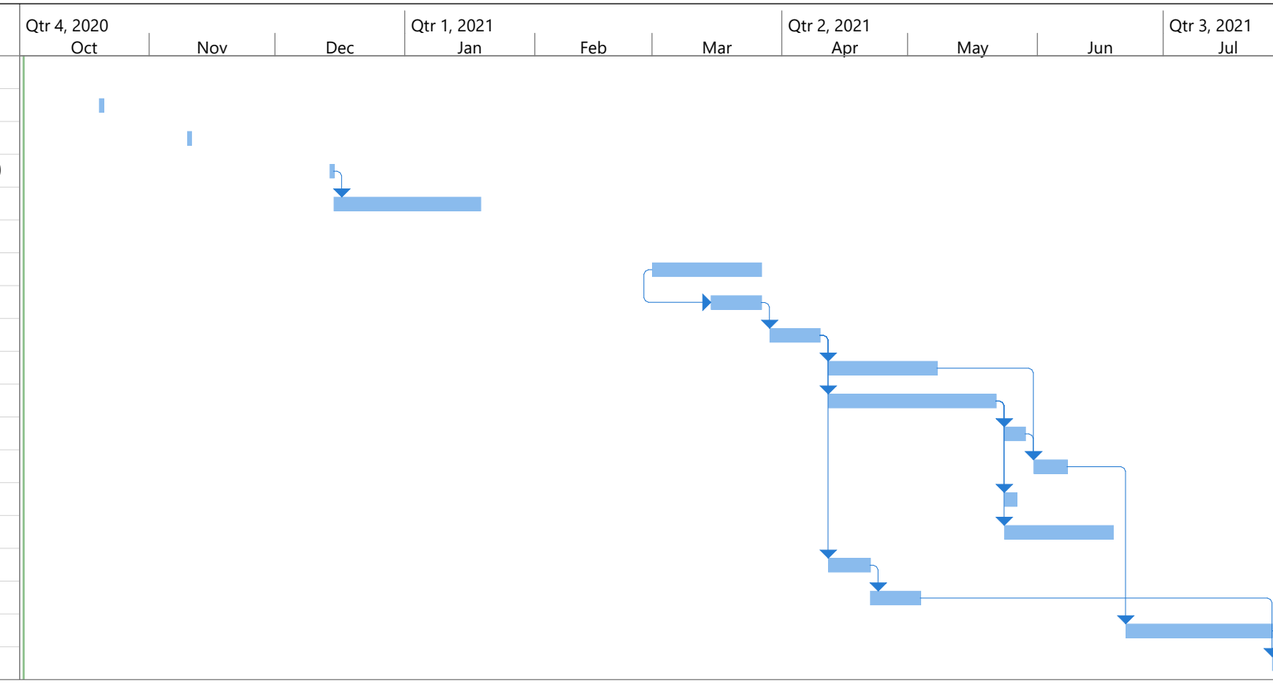
Closing and funding of this financing is subject to receipt of all governmental approvals and permits deemed necessary by North Shore Bank, FSB ("Lender"), satisfaction of bank closing conditions, execution and delivery by the parties of definitive loan documentation acceptable to Lender in its sole discretion and there being no material disruption of the banking and capital markets which in Lender's opinion adversely impacts in any material respect the availability of credit.

Sincerely,

Margaret A. Capper
Senior Vice President
Commercial Banking Manager

Jilly's Glendale
Project Schedule
Briohn Building Corp

ID	Task Name	Duration	Start	Finish
1	**Municipal Approvals**			
2	Submit to Plan Commission - Specific Implementation Plan	1 day	Tue 10/20/20	Tue 10/20/20
3	Plan Commission Meeting	1 day	Tue 11/10/20	Tue 11/10/20
4	Development Agreement - Glendale Approval	1 day	Mon 12/14/20	Mon 12/14/20
5	Building Permit - Submittal and Review	25 days	Tue 12/15/20	Mon 1/18/21
6	**Construction**			
7	Site Clearing / Grading (Limited Winter Conditions)	20 days	Mon 3/1/21	Fri 3/26/21
8	Foundation System	10 days	Mon 3/15/21	Fri 3/26/21
9	Concrete Building Foundation	10 days	Mon 3/29/21	Fri 4/9/21
10	Undergound MEP	20 days	Mon 4/12/21	Fri 5/7/21
11	Masonry	30 days	Mon 4/12/21	Fri 5/21/21
12	Roof Trusses / Sheeting / Shingles	5 days	Mon 5/24/21	Fri 5/28/21
13	Interior Tunnel Concrete / Slab on Grade	6 days	Mon 5/31/21	Mon 6/7/21
14	Windows	3 days	Mon 5/24/21	Wed 5/26/21
15	Office Build-Out	20 days	Mon 5/24/21	Fri 6/18/21
16	Underground to Vacs	8 days	Mon 4/12/21	Wed 4/21/21
17	Asphalt / Concrete Paving	8 days	Thu 4/22/21	Mon 5/3/21
18	Equipment Installation	25 days	Tue 6/22/21	Mon 7/26/21
19	Substantial Completion	1 day?	Tue 7/27/21	Tue 7/27/21



10-2-2020

Task	Project Summary	Manual Task	Start-only	Deadline
Split	Inactive Task	Duration-only	Finish-only	Progress
Milestone	Inactive Milestone	Manual Summary Rollup	External Tasks	Manual Progress
Summary	Inactive Summary	Manual Summary	External Milestone	

BRIOHN
DESIGN GROUP
3880 N BROOKFIELD ROAD, SUITE 200
BROOKFIELD WISCONSIN 53045-1950
(262) 790-0500 PHONE
(262) 790-0505 FAX

SHEET TITLE
AERIAL PERSPECTIVE
LOOKING SOUTHEAST

PROPOSED CAR WASH
5100 N. PORT WASHINGTON
ROAD
CITY OF GLENDALE, WI

JOB:	3230
DRAWN:	CW
CHECKED:	CW
DATE:	10-20-20

SHEET:
A0.2

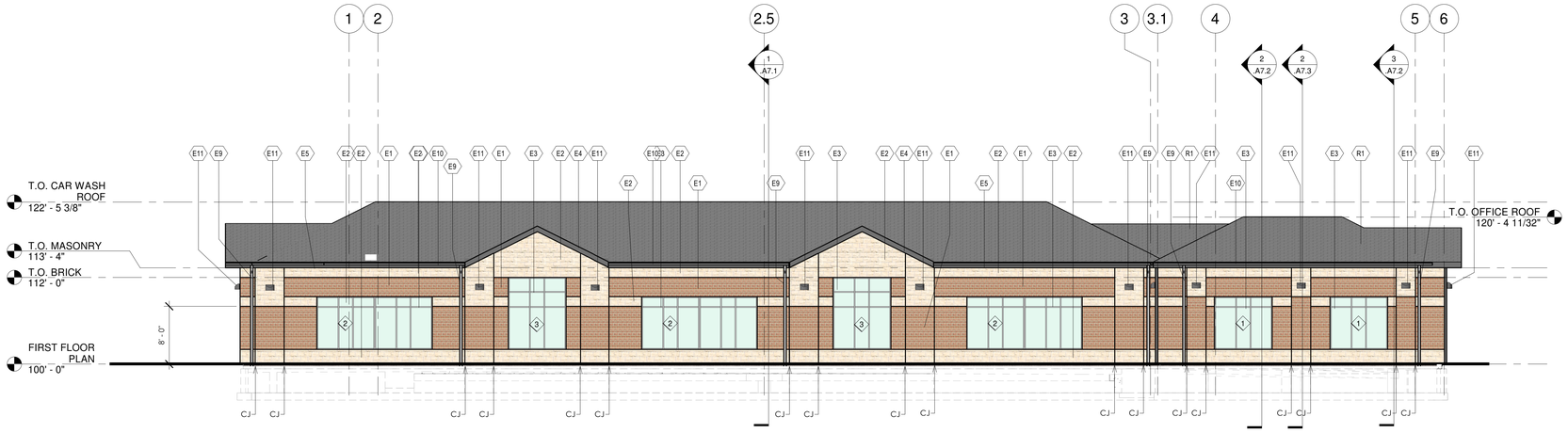
BRIOHN
DESIGN GROUP
3880 N BROOKFIELD ROAD, SUITE 200
BROOKFIELD WISCONSIN 53045-1950
(262) 790-0500 PHONE
(262) 790-0505 FAX

SHEET TITLE
EXTERIOR PERSPECTIVE
LOOKING SOUTHEAST

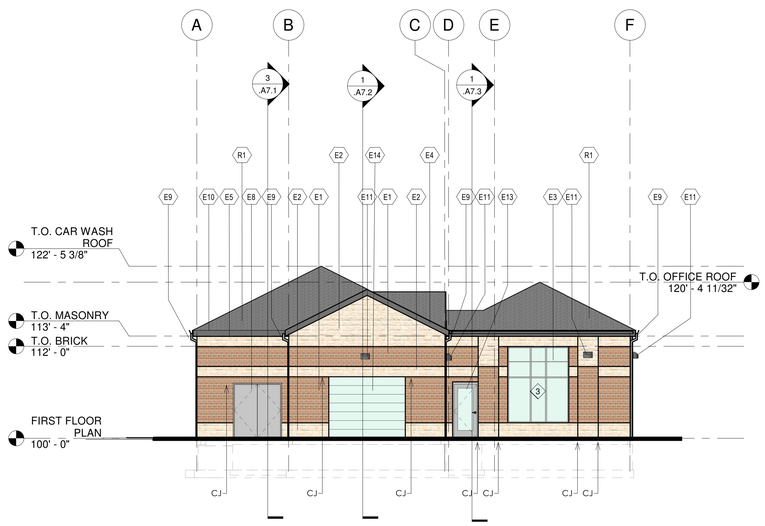
PROPOSED CAR WASH
5100 N. PORT WASHINGTON ROAD
CITY OF GLENDALE, WI

JOB:	3230
DRAWN:	CW
CHECKED:	CW
DATE:	10-20-20

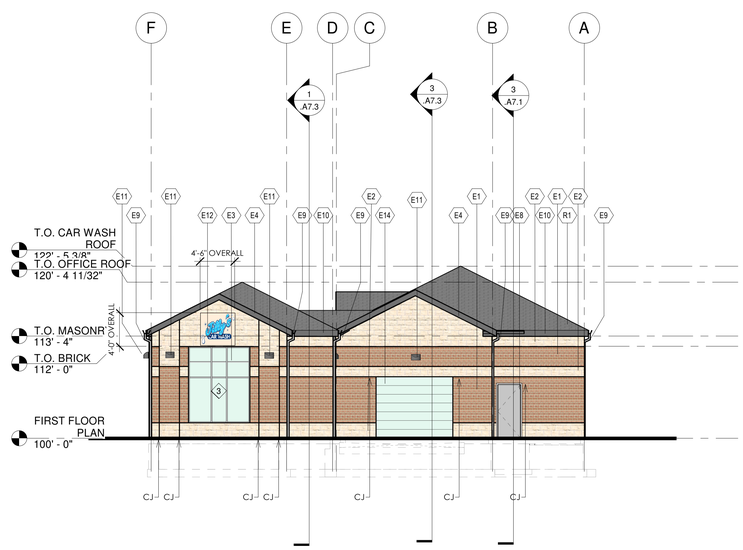
SHEET:
A0.3



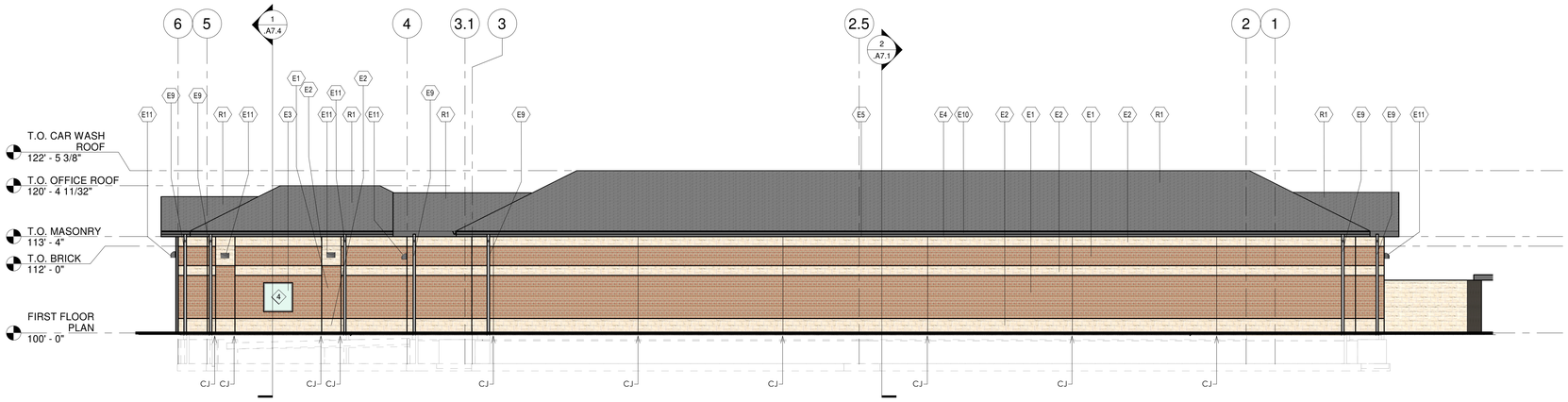
2 NORTH ELEVATION.
1/8" = 1'-0"



3 EAST ELEVATION..
1/8" = 1'-0"



4 WEST ELEVATION..
1/8" = 1'-0"



5 SOUTH ELEVATION.
1/8" = 1'-0"

KEYNOTE LEGEND	
VALUE	FLOOR PLAN CODED NOTES
E1	CONCRETE BRICK - HERITAGE COLLECTION PRE-COLORED - UTILITY SIZE (11 5/8" x 3 5/8" x 3 5/8")
E2	CONCRETE BLOCK - HERITAGE COLLECTION PRE-COLORED - 15 5/8" x 7 5/8" x 3 5/8"
E3	CLEAR ANODIZED STOREFRONT WINDOW WITH THERMALLY BROKEN CLEAR ANODIZED FRAME AND 1" LOW-E INSULATED CLEAR GLAZING. SEE SHEETS A9.1 & A9.2 FOR ARCHITECTURAL WINDOW DETAILS.
E4	FASCIA - PRE FINISHED METAL - REFER TO REFERENCED SECTIONS.
E5	SOFFIT - PRE FINISHED ALUMINUM SOFFIT PANELS WITH CONTINUOUS VENTS. COLOR TO MATCH FASCIA - REFER TO REFERENCED SECTIONS.
E8	PAINTED HOLLOW METAL SERVICE DOOR AND FRAME WITH EMERGENCY EGRESS CODE REQUIRED LIGHTING (COLOR TO MATCH ADJACENT MASONRY).
E9	PREFINISHED METAL DOWNSPOUT
E10	PREFINISHED METAL GUTTER SYSTEM WITH BALLAST DAM EDGE FLASHING
E11	EXTERIOR MOUNTED WALL SCONCE - SEE ELECTRICAL DRAWINGS
E12	APPROVED SIGNAGE LOCATION. SIGNAGE BY OWNER
E13	CLEAR ANODIZED ALUMINUM / GLASS STOREFRONT ENTRY DOOR
E14	GLASS O.H. DOOR - BY OWNER
R1	GAF TIMBERLINE MISSION BROWN ARCHITECTURAL ASPHALT SHINGELS ON 30# FELT PAPER ON (3) OVERLAPPED LAYERS ICE & WATER SHIELD (6' UP ROOF) ON ALL SIDES AND EAVES AND ALL VALLEYS ON 5/8" PLYWOOD SHEATHING ON WOOD TRUSSES. SEE ARCHITECTURAL SECTIONS.

SEE PAGE A5.2 FOR ADDITIONAL MATERIAL INFORMATION AND IMAGES

BRIOHN DESIGN GROUP
3880 N BROOKFIELD ROAD, SUITE 200
BROOKFIELD WISCONSIN 53045-1950
(262) 790-0500 PHONE
(262) 790-0505 FAX

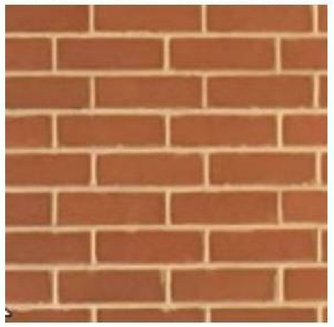
SHEET TITLE
PROPOSED EXTERIOR ELEVATIONS

PROPOSED CAR WASH
5100 N. PORT WASHINGTON ROAD
CITY OF GLENDALE, WI

JOB:	3230
DRAWN:	CW
CHECKED:	MM
DATE:	10-20-20

SHEET:
A5.1

CONCRETE BRICK - HERITAGE COLLECTION PRE-COLORED - UTILITY SIZE (11 5/8" x 3 5/8" x 3 5/8")



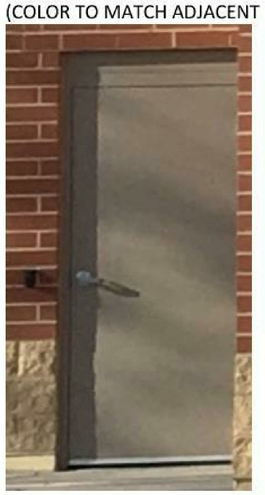
CONCRETE BLOCK - HERITAGE COLLECTION PRE-COLORED - 15 5/8" x 7 5/8" x 3 5/8"

CLEAR ANODIZED STOREFRONT WINDOW WITH THERMALLY BROKEN CLEAR ANODIZED FRAME AND 1" CLEAR AGC LOW E #3 GLASS (TEMPERED WHERE REQUIRED PER CODE)

E4 FASCIA - PRE FINISHED METAL

SOFFIT - PRE FINISHED ALUMINUM SOFFIT PANELS WITH CONTINUOUS VENTS, (COLOR TO MATCH FASCIA)

PAINTED HOLLOW METAL SERVICE DOOR AND FRAME (COLOR TO MATCH ADJACENT MASONRY).



PREFINISHED METAL DOWNSPOUT AND GUTTER SYSTEM

EXTERIOR MOUNTED WALL SCONCE

GAF TIMBERLINE GAF TIMBERLINE NATURAL SHADOW ARCHITECTURAL ASPHALT SHINGLES

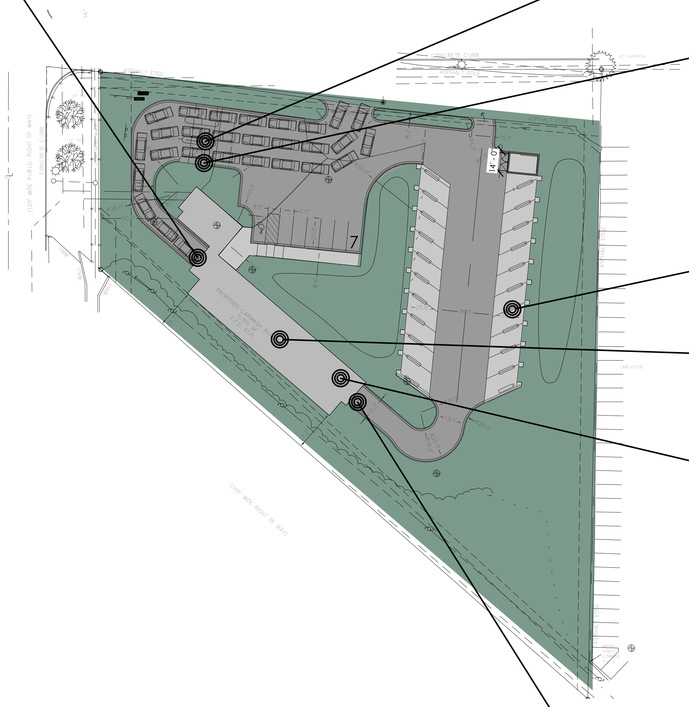
BRIOHN
DESIGN GROUP
3885 N BROOKFIELD ROAD, SUITE 200
BROOKFIELD WISCONSIN 53045-1950
(262) 790-0500 PHONE
(262) 790-0505 FAX

SHEET TITLE
EXTERIOR MATERIALS

PROPOSED CAR WASH
5100 N. PORT WASHINGTON ROAD
CITY OF GLENDALE, WI

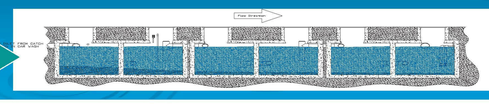
JOB:	3230
DRAWN:	CW
CHECKED:	CW
DATE:	10-20-20

SHEET:
A5.2



Proper Tank Design for Underground Water Storage is Critical in the Reclamation Process

- A series of water storage tanks are installed underground to capture the reclaimed water.
- The water contains "solids" up to 150 microns
- Optimum wash quality water post water reclamation filtration is 5 microns.
- A poorly designed tanking system can potentially mean disaster for the carwash operator.



AIRLIFT DOORS, INC.

Door Packages

XRS
Extreme Roll Up Series

All *XRS* Extreme Roll Up Door Packages include these standard features:

Breakaway design with automatic reset

Fiber reinforced pultruded plastic track

Complete weather seal including:
- Heavy duty top rubber seal
-Dual side brush seals

3 full vision panels standard, option for additional

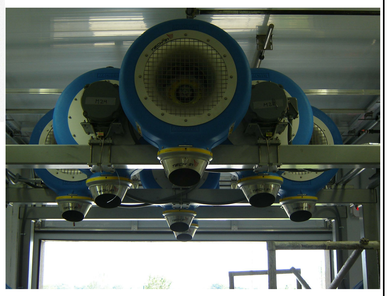
Individually replaceable sections

Protective covers included

Inside or Outside Mount

All stainless steel hardware

Door sizes available up to 14' x 14'
for custom door sizes consult factory.



PLAN NORTH
TRUE NORTH

0 16 32 48 64

BRIOHN DESIGN GROUP
3880 N BROOKFIELD ROAD, SUITE 200
BROOKFIELD WISCONSIN 53045-1950
(262) 790-0500 PHONE
(262) 790-0505 FAX

SHEET TITLE
CAR WASH EQUIPMENT

PROPOSED CAR WASH
5100 N. PORT WASHINGTON ROAD
CITY OF GLENDALE, WI

JOB:	3230
DRAWN:	CW
CHECKED:	MM
DATE:	10-20-20

SHEET:
A1.2

DUMPSTER ENCLOSURE CODED NOTES:

D1 6" THICK CONCRETE REINFORCED FLOOR SLAB ON COMPACTED GRAVEL BASE

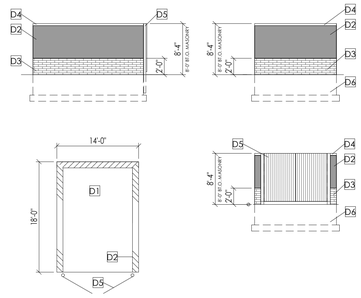
D2 ARCHITECTURAL CONCRETE BRICK, HERITAGE COLLECTION, 8" HIGH X 16" WIDE, SMOOTH. COLOR : T.B.D.

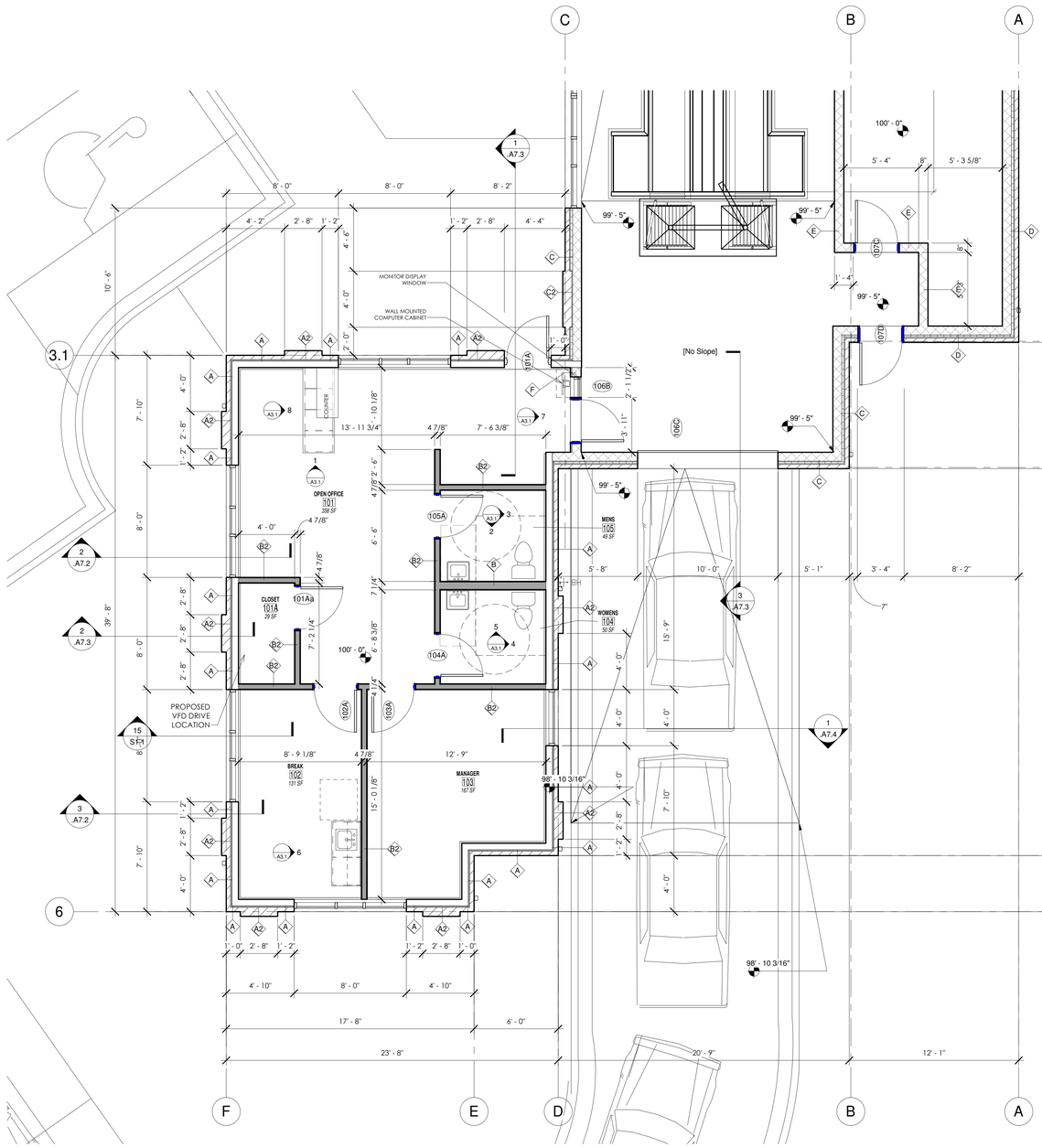
D3 ARCHITECTURAL CONCRETE BRICK, HERITAGE COLLECTION, 8" HIGH X 16" WIDE, SMOOTH. COLOR: T.B.D.

D4 PREFINISHED METAL COPING. [24 GA.) COLOR: TO MATCH WALL COLOR

D5 WOOD SLATS IN GALVANIZED CHAINLINK FENCE. PROVIDE GALVANIZED SUPPORT POSTS.

D6 REINFORCED POURED CONCRETE RETAINING/FOUNDATION WALL. REINFORCE BLOCK WALL W/ #5 BARS @ 48" O.C. FROM FOOTING TO TOP OF WALL IN FULLY GROUTED CELL. FOOTING TO BE 12"X36" POURED CONCRETE FOOTING REINFORCED W/ (2) #5 BARS CONT. TOP & BOTTOM AND #5 CROSS BARS AT 24" O.C. TOP & BOTTOM.

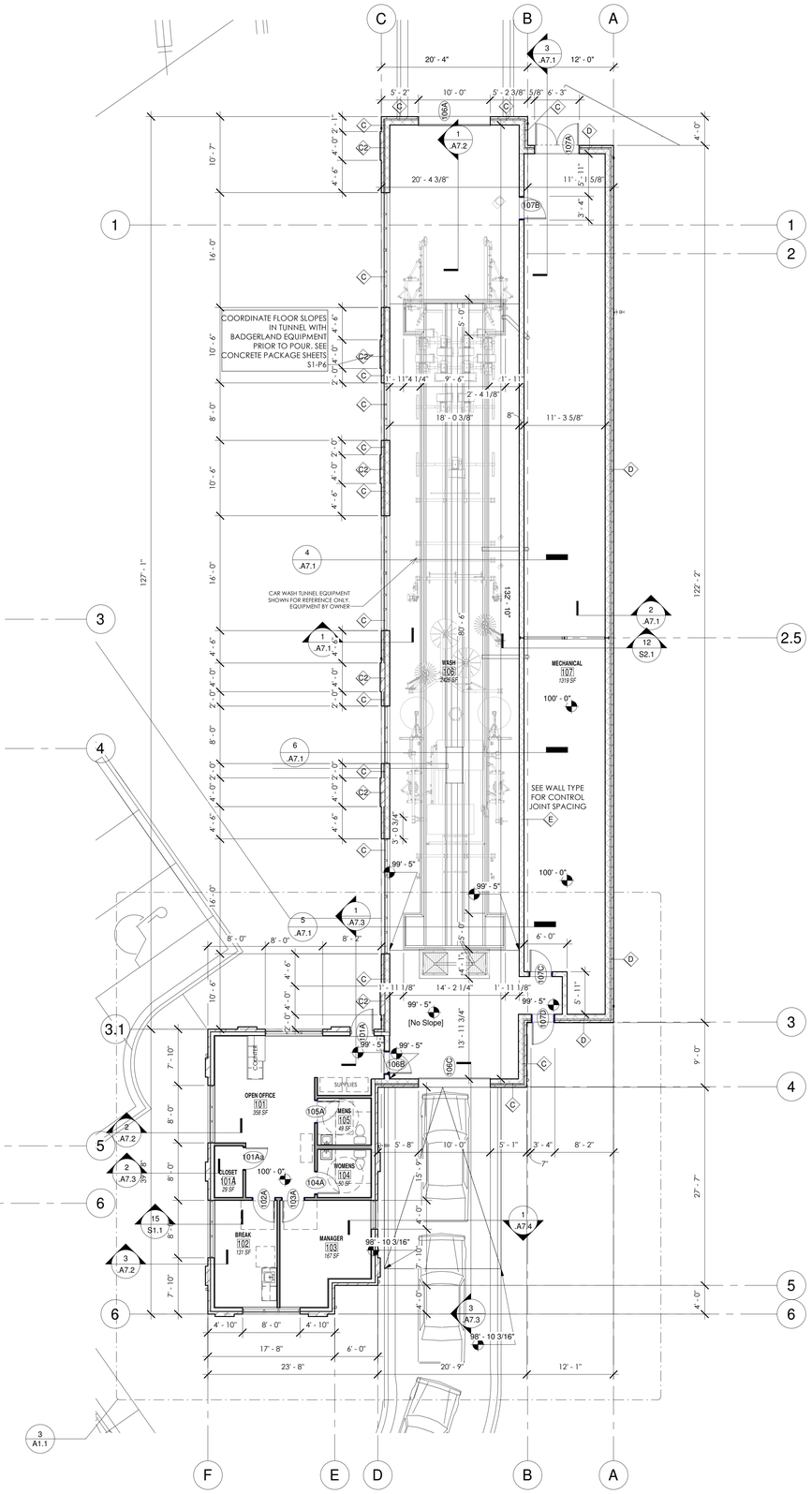




3 ENLARGED OFFICE PLAN
1/4" = 1'-0"

PLAN NORTH TRUE NORTH

0 4 8 12 16



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

PLAN NORTH TRUE NORTH

0 20 40 60 80

BRIOHN DESIGN GROUP
3880 N BROOKFIELD ROAD, SUITE 200
BROOKFIELD WISCONSIN 53045-1950
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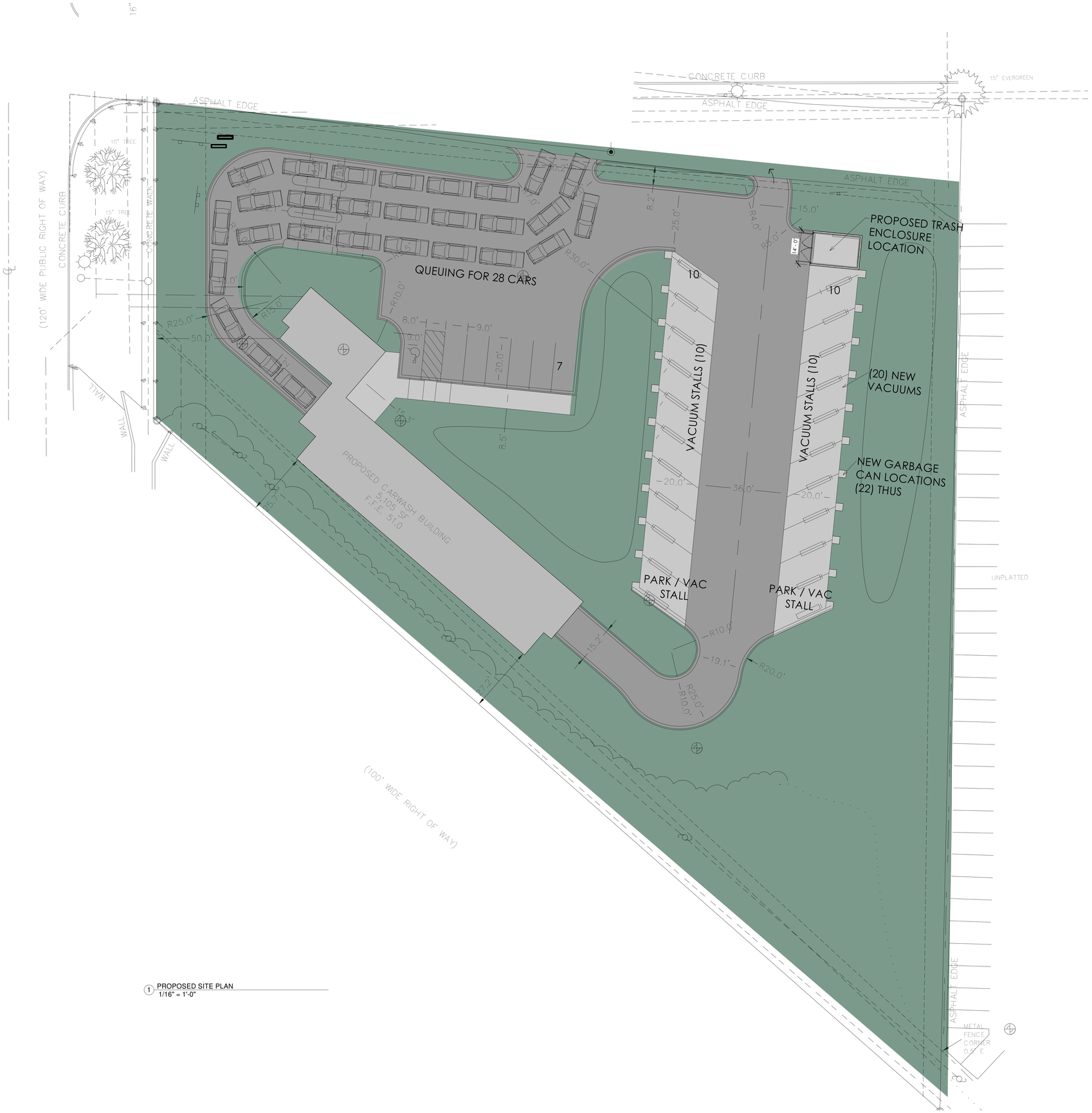
SHEET TITLE
PROPOSED FLOOR PLANS

PROPOSED CAR WASH
5100 N. PORT WASHINGTON ROAD
CITY OF GLENDALE, WI

JOB:	3230
DRAWN:	CW
CHECKED:	MM
DATE:	10-20-20
SHEET:	A1.1



1 PROPOSED SITE PLAN
1/16" = 1'-0"

BRIOHN DESIGN GROUP
3880 N BROOKFIELD ROAD, SUITE 200
BROOKFIELD WISCONSIN 53045-1950
(262) 790-0500 PHONE
(262) 790-0505 FAX

SHEET TITLE
SITE PLAN

PROPOSED CAR WASH
5100 N. PORT WASHINGTON ROAD
CITY OF GLENDALE, WI

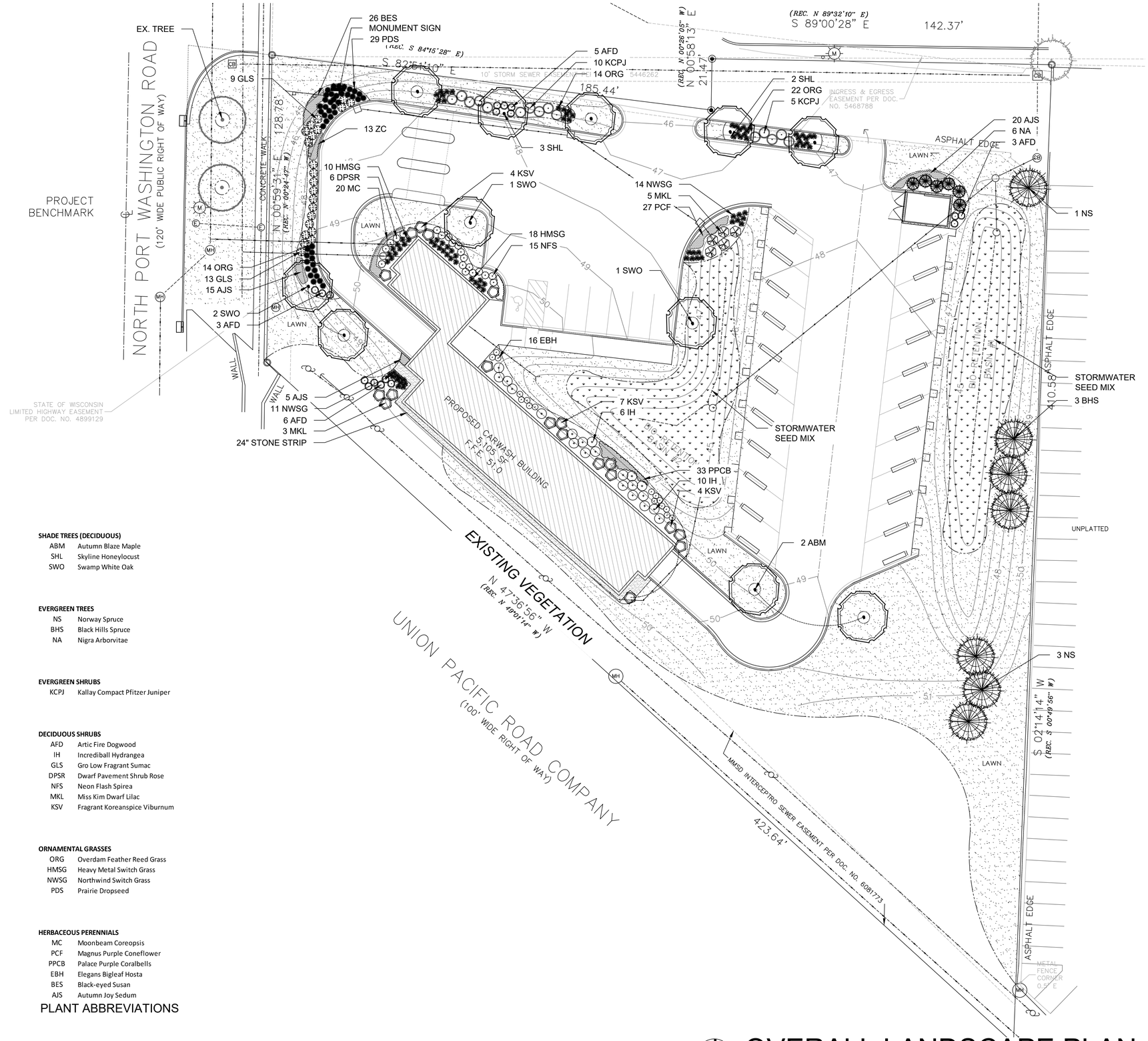
JOB:	3230
DRAWN:	CW
CHECKED:	MM
DATE:	10-20-20

SHEET:
A0.1

TO OBTAIN LOCATIONS OF PARTICIPANTS' UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN

DIGGERS HOTLINE

CALL DIGGERS HOTLINE
811 or 1-800-242-8511
WWW.DIGGERSHOTLINE.COM
WIS. STATUTE 182.0175(1974)
REQUIRES MIN. 3 WORKING DAYS NOTICE BEFORE YOU EXCAVATE



SHADE TREES (DECIDUOUS)

ABM	Autumn Blaze Maple
SHL	Skyline Honeylocust
SWO	Swamp White Oak

EVERGREEN TREES

NS	Norway Spruce
BHS	Black Hills Spruce
NA	Nigra Arborvitae

EVERGREEN SHRUBS

KCPJ	Kallay Compact Pfitzer Juniper

DECIDUOUS SHRUBS

AFD	Artic Fire Dogwood
IH	Incrediball Hydrangea
GLS	Gro Low Fragrant Sumac
DPSR	Dwarf Pavement Shrub Rose
NFS	Neon Flash Spirea
MKL	Miss Kim Dwarf Lilac
KSV	Fragrant Koreanspice Viburnum

ORNAMENTAL GRASSES

ORG	Overdam Feather Reed Grass
HMSG	Heavy Metal Switch Grass
NWSG	Northwind Switch Grass
PDS	Prairie Dropseed

HERBACEOUS PERENNIALS

MC	Moonbeam Coreopsis
PCF	Magnus Purple Coneflower
PPCB	Palace Purple Coralbells
EBH	Elegans Bigleaf Hosta
BES	Black-eyed Susan
AJS	Autumn Joy Sedum

PLANT ABBREVIATIONS

HELLER & ASSOCIATES, LLC
LANDSCAPE ARCHITECTURE

P.O. Box 1359
Lake Geneva, Wisconsin 53147-1359
ph 262.639.9733
david@wdavidheller.com
www.wdavidheller.com

NORTH

OVERALL LANDSCAPE PLAN

Scale: 1" = 20'0"

APPLICABLE TO ALL PLAN VIEWS

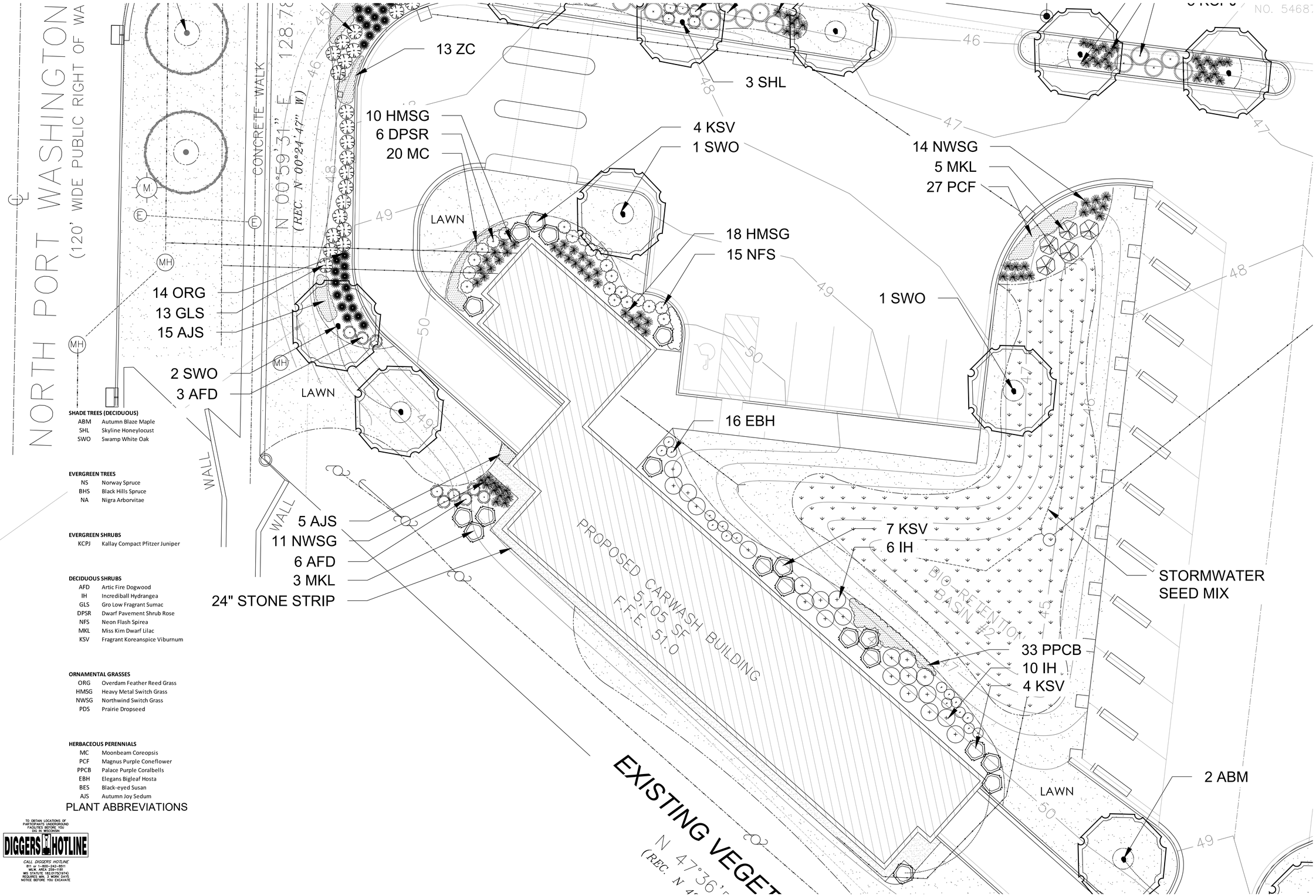
BRIOHN DESIGN GROUP
3880 N BROOKFIELD ROAD, SUITE 200
BROOKFIELD WISCONSIN 53045-1950
(262) 790-0500 PHONE
(262) 790-0505 FAX

SHEET TITLE
OVERALL LANDSCAPE PLAN

PROPOSED NEW BUILDING:
JILLY'S CARWASH
GLENDALE, WISCONSIN

PROGRESS SET
NOT FOR CONSTRUCTION

JOB:	
DRAWN:	JPF
CHECKED:	WDH
DATE:	10-15-2020
SHEET:	L 1.0



SHADE TREES (DECIDUOUS)

ABM	Autumn Blaze Maple
SHL	Skyline Honeylocust
SWO	Swamp White Oak

EVERGREEN TREES

NS	Norway Spruce
BHS	Black Hills Spruce
NA	Nigra Arborvitae

EVERGREEN SHRUBS

KCPJ	Kallay Compact Pfitzer Juniper

DECIDUOUS SHRUBS

AFD	Artic Fire Dogwood
IH	Incrediball Hydrangea
GLS	Gro Low Fragrant Sumac
DPSR	Dwarf Pavement Shrub Rose
NFS	Neon Flash Spirea
MKL	Miss Kim Dwarf Lilac
KSV	Fragrant Koreanspice Viburnum

ORNAMENTAL GRASSES

ORG	Overdam Feather Reed Grass
HMSG	Heavy Metal Switch Grass
NWSG	Northwind Switch Grass
PDS	Prairie Dropseed

HERBACEOUS PERENNIALS

MC	Moonbeam Coreopsis
PCF	Magnus Purple Coneflower
PPCB	Palace Purple Coralbells
EBH	Elegans Bigleaf Hosta
BES	Black-eyed Susan
AJS	Autumn Joy Sedum

PLANT ABBREVIATIONS

TO OBTAIN LOCATIONS OF PARTICIPANTS' UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN

DIGGERS HOTLINE

CALL DIGGERS HOTLINE
811 or 1-800-242-8511
MILW. AREA 259-1181
WIS STATUTE 182.0175(1974)
REQUIRES MIN. 3 WORK DAYS
NOTICE BEFORE YOU EXCAVATE

HELLER & ASSOCIATES, LLC
LANDSCAPE ARCHITECTURE

P.O. Box 1359
Lake Geneva, Wisconsin 53147-1359
ph 262.639.9733
david@wdavidheller.com
www.wdavidheller.com

NORTH

ENLARGED LANDSCAPE PLAN

Scale: 1" = 10'0"

APPLICABLE TO ALL PLAN VIEWS

BRIOHN DESIGN GROUP
3880 N BROOKFIELD ROAD, SUITE 200
BROOKFIELD WISCONSIN 53045-1950
(262) 790-0500 PHONE
(262) 790-0505 FAX

SHEET TITLE
ENLARGED LANDSCAPE PLAN

PROPOSED NEW BUILDING:
JILLY'S CARWASH
GLENDALE, WISCONSIN

PROGRESS SET
NOT FOR CONSTRUCTION

JOB:	
DRAWN:	JPF
CHECKED:	WDH
DATE:	10-16-2020
SHEET:	L 1.1

TO OBTAIN LOCATIONS OF PARTICIPANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN

DIGGERS HOTLINE

CALL DIGGERS HOTLINE
811 or 1-800-242-8511
MILW. AREA 259-1181
WIS STATUTE 182.0175(1974)
REQUIRES MIN. 3 WORK DAYS
NOTICE BEFORE YOU EXCAVATE

1. Contractor responsible for contacting Diggers Hotline (811 or 800-242-8511) to have site marked prior to excavation or planting.

2. Contractor to verify all plant quantities shown on Plant & Material List and landscape planting symbols and report any discrepancies to Landscape Architect or General Contractor.

3. All plantings shall comply with standards as described in American Standard of Nursery Stock - Z60.1 ANSI (latest version). Landscape Architect reserves the right to inspect, and potentially reject any plants that are inferior, compromised, undersized, diseased, improperly transported, installed incorrectly or damaged. No sub-standard "B Grade" or "Park Grade" plant material shall be accepted. Plant material shall originate from nursery(ies) with a similar climate as the planting site.

4. Any potential plant substitutions must be approved by Landscape Architect or Owner. All plants must be installed as per sizes indicated on Plant & Material Schedule, unless approved by Landscape Architect. Any changes to sizes shown on plan must be submitted in writing to the Landscape Architect prior to installation.

5. Topspoil in Parking Lot Islands (if applicable): All parking lot islands to be backfilled with topsoil to a minimum depth of 18" to insure long-term plant health. Topsoil should be placed within 3" of finish grade by General Contractor / Excavation Contractor during rough grading operations/activity. The landscape contractor shall be responsible for the fine grading of all disturbed areas, planting bed areas, and lawn areas. Crown all parking lot islands a minimum of 6" to provide proper drainage, unless otherwise specified.

6. Tree Planting: Plant all trees slightly higher than finished grade at the root flare. Remove excess soil from the top of the root ball, if needed. Remove and discard non-biodegradable ball wrapping and support wire. Removed biodegradable burlap and wire cage (if present) from the top 1/3 of the rootball and carefully bend remaining wire down to the bottom of the hole. Once the tree has been placed into the hole and will no longer be moved, score the remaining 2/3 of the burlap and remove the twine. Provide three slow release fertilizer for each tree planted.

7. Tree Planting: Backfill tree planting holes 80% existing soils removed from excavation and 20% plant starter mix. Avoid air pockets and do not tamp soil down. Discard any gravel, rocks, heavy clay, or concrete pieces. When hole is 2/3 full, trees shall be watered thoroughly, and water left to soak in before proceeding to fill the remainder of the hole. Water again to full soak in the new planting. Each tree shall receive a 3" deep, 4-5' diameter (see planting details or planting plan) shredded hardwood bark mulch ring around all trees planted in lawn areas. Do not build up any mulch onto the trunk of any tree. Trees that are installed incorrectly will be replaced at the time and expense of the Landscape Contractor.

8. Shrub Planting: All shrubs to be planted in groupings as indicated on the Landscape Plan. Install with the planting of shrubs a 50/50 mix of plant starter with topsoil. Install topsoil into all plant beds as needed to achieve proper grade and displace undesirable soil (see planting detail). Remove all excessive gravel, clay and stones from plant beds prior to planting. When hole(s) are 2/3 full, shrubs shall be watered thoroughly, and water left to soak in before proceeding. Provide slow-release fertilizer packets at the rater of 1 per 24" height/diamter of shrub at planting.

9. Mulching: All tree and shrub planting beds to receive a 3" deep layer of high quality shredded hardwood bark mulch (not pigment dyed or enviro-mulch). All perennial planting areas (groupings) shall receive a 2" layer of shredded hardwood bark mulch, and groundcover areas a 1-2" layer of the same mulch. Do not mulch annual flower beds (if applicable). Do not allow mulch to contact plant stems and tree trunks.

10. Edging: All planting beds shall be edged with a 4" deep spade edge using a flat landscape spade or a mechanical edger. Bedlines are to be cut crisp, smooth as per plan. A clean definition between landscape beds and lawn is required. Pack mulch against lawn edge to hold in place.

11. Plant bed preparation/Soil Amendment composition: All perennial, groundcover and annual areas (if applicable) are required to receive a blend of organic soil (Soil Amendments) amendments prior to installation. Roto-till the following materials at the following ratio, into existing soil beds or installed topsoil beds to a depth of approximately 8"-10". Containerized and balled & burlapped plant material should be back-filled with amended soil:

Per 100 SF of bed area (Soil Amendment composition):
3/4 CY Peat Moss or Mushroom Compost
3/4 CY blended/pulverized Topsoil
1/4 CY composted manure

In roto-tilled beds only, also include in above mixture:
2 lbs Starter Fertilizer

12. Lawn Installation for all sodded turfgrass areas: Contractor to furnish and prepare blended topsoil (2" minimum) and sod bed, removing all debris and stones 1/2" and larger. Apply a 10-10-10 starter lawn fertilizer uniformly throughout areas prior to laying sod. Use only premium sod blend according to TPI (revised 1995) and ASPA Standards. Install sod uniformly with staggered joints, laid tightly end to end and side to side. Roll sod with a walk behind roller and water immediately upon installation to a 3" depth. Stake any sod installed on slopes steeper than 1:3, and in all swale applications. Contractor is responsible to provide a smooth, uniform, healthy turf, and is responsible for the first two mowings of the newly installed turf, and is also responsible for watering during this period.

13. Installation preparation for all seeded areas: remove/kill off any existing unwanted vegetation prior to seeding. Prepare the topsoil (if adequate or provide as in item #6 above) and seed bed by removing all surface stones 1" or larger. Apply a starter fertilizer and specified seed uniformly at the specified rate, and provide mulch covering suitable to germinate and establish turf. Provide seed and fertilizer specifications to Landscape Architect and Owner prior to installation. Erosion control measures are to be used in swales and on slopes in excess of 1:3 and where applicable (see Civil Engineering Drawings). Methods of installation may vary are the discretion of the Landscape Contractor on his/her responsibility to establish and guarantee a smooth, uniform, quality turf. A minimum of 2" of blended, prepared and non-compacted topsoil is required for all lawn areas. If straw mulch is used as a mulch covering, a tackifier may be necessary to avoid wind dispersal of mulch covering. Marsh hay containing reed canary grass is NOT acceptable as a mulch covering.

An acceptable quality seed installation is defined as having:
No bare spots larger than one (1) square foot
No more than 10% of the total area with bare areas larger than one (1) square foot
A uniform coverage through all turf areas

14. No-Mow seed areas: "No-Mow" fine fescue seed mix with annual rye nurse crop (available at Cedar Creek Seed Farm 888-313-6807; or Prairie Nursery 608-296-3679) or approved equivalent mix from a reputable seed mix provider. Apply at 220 lbs per acre or at rate recommended by supplier. Prepare seed bed and soil as specified in item #13 above.

15. Native Prairie Seed Mix / Stormwater Seed Mix: Native seed mixes as listed on the Plant and Material List or other seeding schedules outlined on the landscape plan set. Seed mixes available from Prairie Nursery 608-296-3679 or JF New 608-848-1789 or approved equivalent mix from a reputable seed mix provider. Apply at rates specified herein, or per supplier recommendation. Prepare soil and seed bed as in item #13 above.

16. Warranty and Replacements: All plantings are to be watered thoroughly at the time of planting, through construction and upon completion of project as required. Trees, Evergreens, and Shrubs (deciduous and evergreen) shall be guaranteed (100% replacement) for a minimum of one (1) year from the date of project completion. Perennials, groundcovers, and ornamental grasses shall be guaranteed for a minimum of one (1) growing season. Perennials, groundcovers, and ornamental grasses planted after September 15th shall be guaranteed through May 31st of the following year. Only one replacement per plant will be required during the warranty period, except for losses or replacements due to failure to comply with specified requirements. Watering and general ongoing maintenance instructions are to be supplied by the Landscape Contractor to the Owner upon completion of the project.

17. The Landscape Contractor is responsible for the watering and maintenance of all landscape areas for a period of 45 days after the substantial completion of the landscape installation. This shall include all trees, shrubs, evergreens, perennials, ornamental grasses, turf grass, no-mow grass, and native prairie seed mix / stormwater seed mix. Work also includes weeding, edging, mulching (only if required), fertilizing, trimming, sweeping up grass clippings, pruning and deadheading.

18. Project Completion: Landscape Contractor is responsible to conduct a final review of the project, upon completion, with the Landscape Architect, Client or Owner / Client Representative, and the General Contractor to answer questions, provide written care instructions for new plantings and turf, and insure that all specifications have been met.

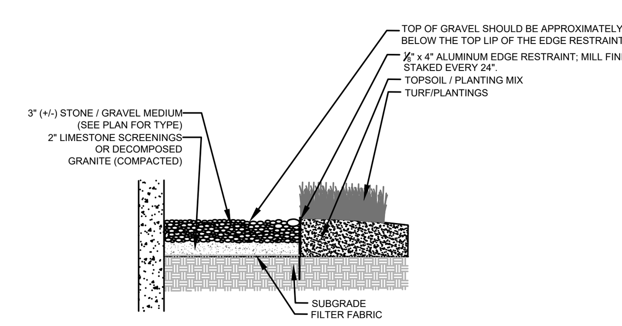
LANDSCAPE GENERAL NOTES

PLANT KEY	QUANTITY	PLANT MATERIAL PROPOSED: BOTANICAL NAME	COMMON NAME	CALIPER or HEIGHT	ROOT	SPECIFICATION / NOTES	PLANT SPACING
Proposed Landscape Materials							
SHADE TREES (DECIDUOUS)							
ABM	2	Acer xfreemanii 'Autumn Blaze'	Autumn Blaze Maple	2.5"	B&B	Straight central leader, full and even crown. Prune only after planting	
SHL	5	Gleditsia triacanthos 'Skyline'	Skyline Honeylocust	2.5"	B&B	Straight central leader, full and even crown. Prune only after planting	
SWO	4	Quercus bicolor	Swamp White Oak	2.5"	B&B	Straight central leader, full and even crown. Prune only after planting	
PLANT KEY	**QUANTITY**	**BOTANICAL NAME**	**COMMON NAME**	**HEIGHT SIZE**	**ROOT**	**SPECIFICATION / NOTES**	**PLANT SPACING**
EVERGREEN TREES							
NS	4	Picea abies	Norway Spruce	8' H	B&B	Evenly shaped tree with branching to the ground	17'
BHS	3	Picea glauca 'densata'	Black Hills Spruce	8' H	B&B	Evenly shaped tree with branching to the ground	15'
NA	6	Thuja occidentalis 'Nigra'	Nigra Arborvitae	72" H	B&B	Evenly shaped tree with branching to the ground	60"
PLANT KEY	**QUANTITY**	**BOTANICAL NAME**	**COMMON NAME**	**SHRUB SIZE (HEIGHT)**	**ROOT/ CONT.**	**SPECIFICATION / NOTES**	**PLANT SPACING**
EVERGREEN SHRUBS							
KCPJ	15	Juniperus chinensis 'Kallay'	Kallay Compact Pfitzer Juniper	24"w	Cont.	Full rounded well branched shrub	48"
PLANT KEY	**QUANTITY**	**BOTANICAL NAME**	**COMMON NAME**	**SHRUB SIZE (HEIGHT)**	**ROOT/ CONT.**	**SPECIFICATION / NOTES**	**PLANT SPACING**
DECIDUOUS SHRUBS							
AFD	17	Cornus sericea 'Farrow'	Artic Fire Dogwood	42"	Cont.	Full, well rooted plant, evenly shaped	48"
IH	16	Hydrangea arborescens 'Abetwo'	Incrediball Hydrangea	#5	Cont.	Full, well rooted plant, evenly shaped	48"
GLS	22	Rhus aromatica 'Gro-Low'	Gro Low Fragrant Sumac	18-24"	Cont.	Full, well rooted plant, evenly shaped	42"
DPSR	6	Rosa rugosa 'Dwarf Pavement'	Dwarf Pavement Shrub Rose	18"	Cont.	Full, well rooted plant, evenly shaped	42"
NFS	15	Spirea xbumalda 'Neon Flash'	Neon Flash Spirea	24"	Cont.	Full, well rooted plant, evenly shaped	60"
MKL	8	Syringa patula 'Miss Kim'	Miss Kim Dwarf Lilac	36"	Cont.	Full, well rooted plant, evenly shaped	60"
KSV	16	Viburnum carlesii	Fragrant Koreanspice Viburnum	36"	Cont.	Full, well rooted plant, evenly shaped	60"
PLANT KEY	**QUANTITY**	**BOTANICAL NAME**	**COMMON NAME**	**CONTAINER SIZE**		**SPECIFICATION / NOTES**	**PLANT SPACING**
ORNAMENTAL GRASSES							
ORG	46	Calamagrostis acutiflora 'Overdam'	Overdam Feather Reed Grass	#1	Cont.	Full, well rooted plant	15"
HMSG	28	Panicum virgatum 'Heavy Metal'	Heavy Metal Switch Grass	#1	Cont.	Full, well rooted plant	18"
NWSG	25	Panicum virgatum 'Northwind'	Northwind Switch Grass	#1	Cont.	Full, well rooted plant	18"
PDS	29	Sporobolus heterolepis	Prairie Dropseed	#1	Cont.	Full, well rooted plant	18"
PLANT KEY	**QUANTITY**	**BOTANICAL NAME**	**COMMON NAME**	**CONTAINER SIZE**		**SPECIFICATION / NOTES**	**PLANT SPACING**
HERBACEOUS PERENNIALS							
MC	20	Coreopsis verticillata 'Moonbeam'	Moonbeam Coreopsis	#1	Cont.	Full, well rooted plant, evenly shaped	18"
PCF	27	Echinacea purpurea 'Magnus'	Magnus Purple Coneflower	#1	Cont.	Full, well rooted plant, evenly shaped	18"
PPCB	33	Heuchera micrantha 'Palace Purple'	Palace Purple Coralbells	#1	Cont.	Full, well rooted plant, evenly shaped	18"
EBH	16	Hosta sieboldiana 'Elegans'	Elegans Bigleaf Hosta	#2	Cont.	Full, well rooted plant, evenly shaped	30"
BES	26	Rudbeckia fulgida 'Goldsturm'	Black-eyed Susan	#1	Cont.	Full, well rooted plant, evenly shaped	18"
AJS	40	Sedum spectable 'Autumn Joy'	Autumn Joy Sedum	#1	Cont.	Full, well rooted plant, evenly shaped	18"
PLAN KEY	**QUANTITY**	**SPECIFIED SEED MIX / SOD**		**CONTAINER SIZE**		**SPECIFICATION / NOTES**	**PLANT SPACING**
LAWN	23355	Lawn Establishment Area / Grading Area			SF	Reinder's Deluxe 50 Seed Mix (800-785-3301)	
SWSM	6520	Stormwater Seed Mix	*see plan for area delineation*		SF	Cardno Native Plant Nursery (574-586-2412)	
	29875	Erosion Matting for sloped seeded areas	*see plan for area delineation*		SF	EroTex DS75 Erosion Control Blanket (or approved equal)	
Hardscape Materials							
	4	Heritage River Gravel Mulch (1.0-1.5" pieces)	*Area: 370 SF*		TN	*2" depth*	
	180	Aluminum Edge Restraint (gravel areas)	Permaloc ProSlide 3/16"x5.5" Black Duraflex Finish		LF		
	370	Landscape Fabric			SF		
	52	Shredded Hardwood Mulch (3" depth)	*Area: 5,600 SF*		CY	Bark Mulch; apply Preemergent after installation of mulch	
	35	Soil Amendments (2" depth)	*Area: 5,600 SF*		CY		
	92	Pulverized Topsoil (Lawn Area)	*Area: 29,875 SF*		CY		
	35	Pulverized Topsoil (2" over bed areas)	*Area: 5,600 SF*		CY		

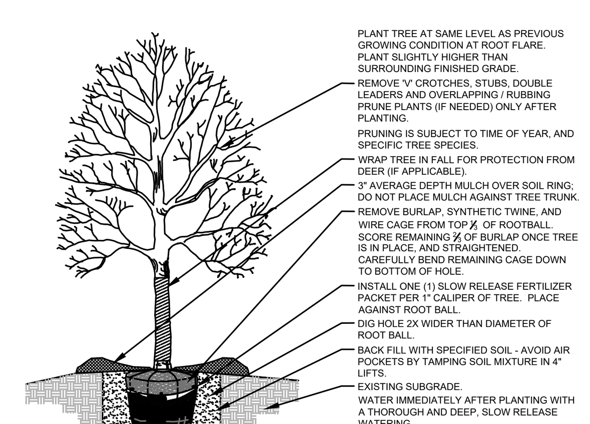
*Landscape counts & quantities are provided as a service to the Landscape Contractor; Landscape Contractor is responsible for verifying these counts and quantities in order to provide a complete landscape installation as outlined on this Landscape Master Plan. In the event that a discrepancy occurs between this schedule and the Landscape Master Plan, the Landscape Master Plan- including the graphics and notations depicted therein- shall govern.

Seed Compositions:
Reinder's Deluxe 50 Seed Mix (800-785-3301): Seed at rate of 150-200# per acre
20% Kentucky Bluegrass (Sod Quality)
15% Newport Kentucky Bluegrass
15% Ken Blue Kentucky Bluegrass
25% Creeping Red Fescue
15% Quebec Perennial Ryegrass
10% Fiesta III Perennial Ryegrass

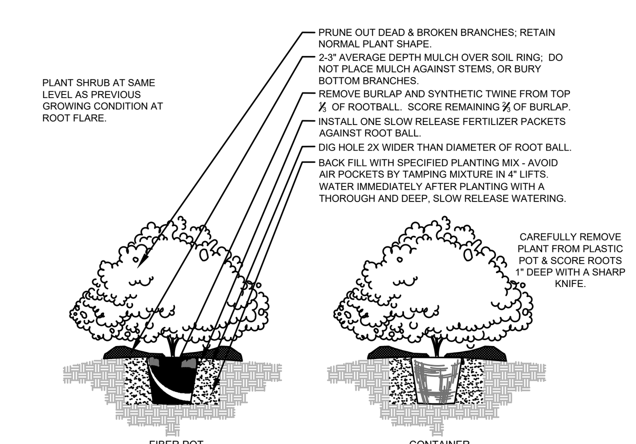
PLANT & MATERIAL SCHEDULE



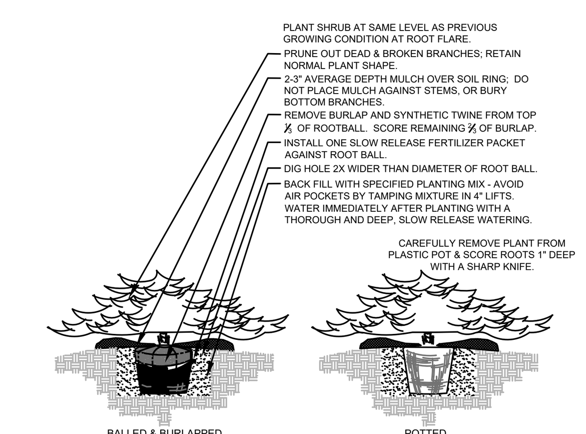
1 DETAIL STONE MAINTENANCE DRIP EDGE DETAIL
N.T.S. SECTION



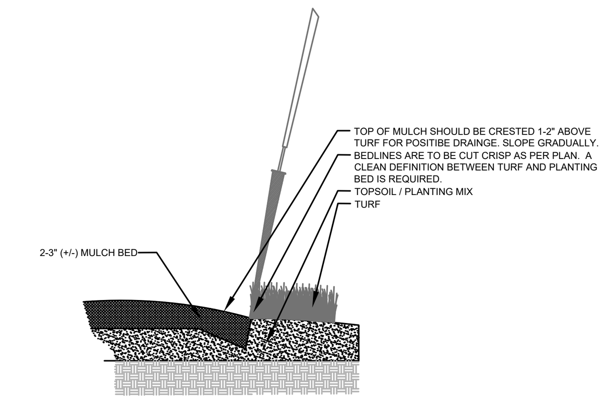
2 DETAIL SHADE TREE PLANTING
N.T.S. SECTION



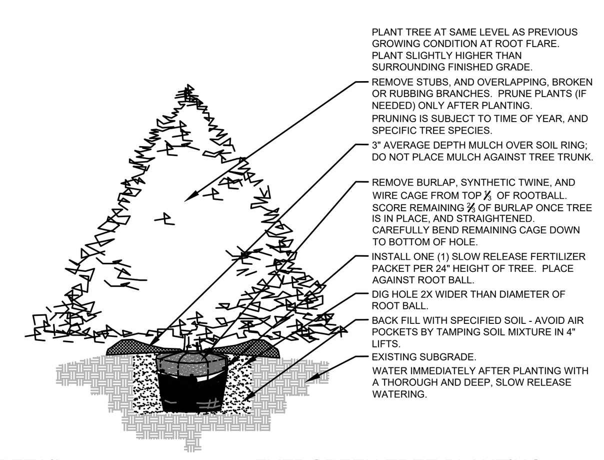
3 DETAIL DECIDUOUS SHRUB PLANTING (POTTED)
N.T.S. SECTION



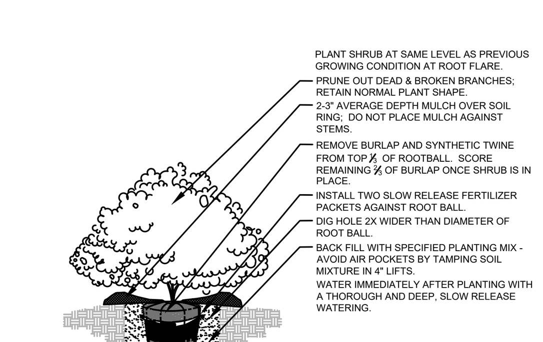
4 DETAIL EVERGREEN SHRUB PLANTING
N.T.S. SECTION



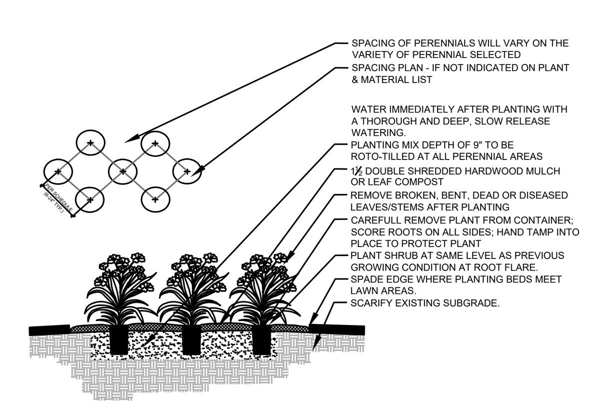
5 DETAIL SPADE EDGE PLANT BED EDGE DETAIL
N.T.S. SECTION



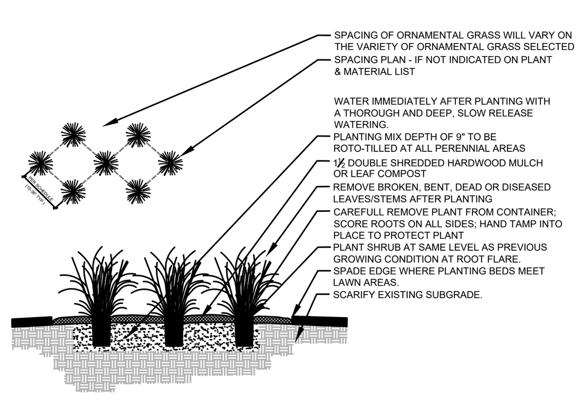
6 DETAIL EVERGREEN TREE PLANTING
N.T.S. SECTION



7 DETAIL DECIDUOUS SHRUB PLANTING (B&B)
N.T.S. SECTION



8 DETAIL GROUNDCOVER / PERENNIAL PLANTING
N.T.S. SECTION



9 DETAIL ORNAMENTAL GRASS PLANTING
N.T.S. SECTION

PLANTING & HARDSCAPE DETAILS

APPLICABLE TO ALL PLAN VIEWS

HELLER & ASSOCIATES, LLC
LANDSCAPE ARCHITECTURE
P.O. Box 1359
Lake Geneva, Wisconsin 53147-1359
ph 262.639.9733
david@wdavidheller.com
www.wdavidheller.com

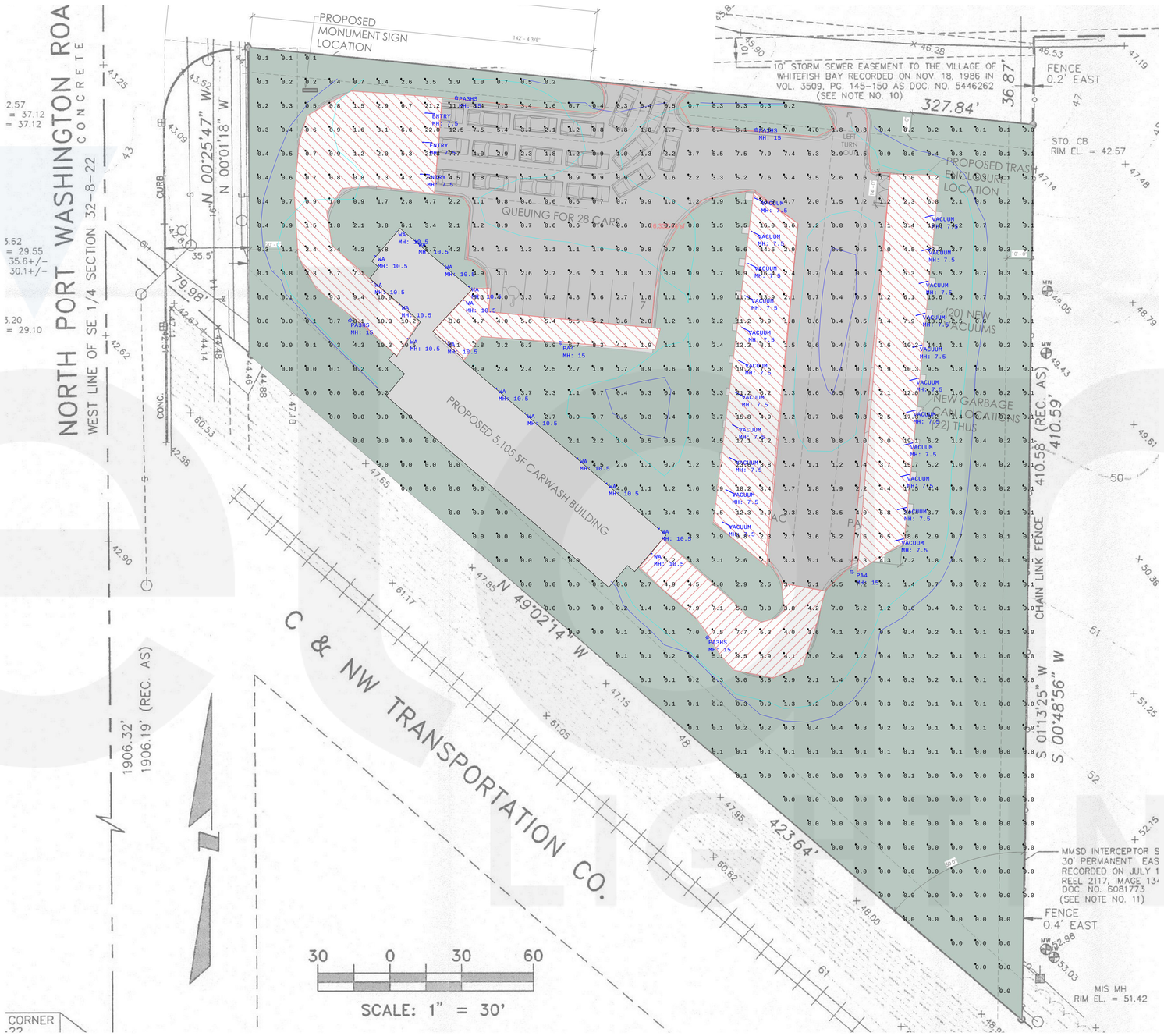
BRIOHN
DESIGN GROUP
3885 N BROOKFIELD ROAD, SUITE 200
BROOKFIELD WISCONSIN 53045-1950
(262) 790-0500 PHONE
(262) 790-0505 FAX

SHEET TITLE
LANDSCAPE DETAILS, NOTES, & SCHEDULES

PROPOSED NEW BUILDING:
JILLY'S CARWASH
GLENDALE, WISCONSIN

PROGRESS SET
NOT FOR CONSTRUCTION

JOB:
DRAWN: JPF
CHECKED: WDH
DATE: 10-16-2020
SHEET:
L 1.2



Scale: 1 inch= 20 Ft.

Luminaire Schedule

Symbol	Label	Quantity	Manufacturer	Catalog Number	Lumens	LLF	Watts
	ENTRY	3		PAY STATION CANOPY			
	PA3HS	4	COOPER LIGHTING SOLUTIONS - LUMARK (FORMERLY EATON)	PFPRV-1-C40-T3-20-HSS	15573	0.900	131
	PA4	2	COOPER LIGHTING SOLUTIONS - LUMARK (FORMERLY EATON)	PFPRV-1-C40-T4-20	17087	0.900	131
	VACUUM	22		VACUUM LIGHT			
	WA	16	COOPER LIGHTING SOLUTIONS - LUMARK (FORMERLY EATON)	XTOR1B	1418	0.900	12.2

Calculation Summary

Label	Avg	Max	Min	Avg/Min	Max/Min	Units
SITE	2.52	24.4	0.0	N.A.	N.A.	Fc
PARKING-DRIVE	4.67	24.4	0.4	11.68	61.00	Fc

Miller Electrical Enterprises, Inc
State Licensed Electrical • Contractor & Designer • Free Estimates • Fully Bonded & Insured
262-662-1900

elan LIGHTING SYSTEMS
Milwaukee Main Office
16350 W. Glendale Dr.
New Berlin, WI 53151
Phone: 262-785-0144
layouts@elanlighting.com

THESE CALCULATIONS ARE ESTIMATES BASED ON INFORMATION AVAILABLE AT TIME OF LAYOUT REQUEST AND DO NOT REPRESENT ON-SITE CONDITIONS WITH 100% ACCURACY.

Date:10/5/2020

Paper Size: ARCH E1 - 30x42

JILLYS CARWASH GLENDALE SITE

elan LIGHTING SYSTEMS
16350 W. Glendale Dr.
New Berlin, WI 53151
262-785-0144
www.elanlighting.com

Miller Electrical Enterprises, Inc
State Licensed Electrical • Contractor & Designer • Free Estimates • Fully Bonded & Insured
262-662-1900

Submittal

Original Submittal for Prior Approval

Project:

JILLYS CARWASH GLENDALE

Date: 10/6/2020

1 Copy of Submittals is Attached

To:

Submittal

Source Quote: EQ03560V1
Entry Date: 10/6/2020
Project: JILLYS CARWASH GLENDALE

Qty	Type	Mfg	Description
4	PA3HS	LUMOUTDOOR	PFPRV-1-C40-T3-20-HSS
2	PA4	LUMOUTDOOR	PFPRV-1-C40-T4-20
16	WA	LUMOUTDOOR	XTOR1B

élan LIGHTING SYSTEMS	Project EQ03560V1S Date 10/6/2020 **JILLYS CARWASH GLENDALE** **Submitted By** **ELAN LIGHTING SYSTEMS**	**Catalog Number** **PFPRV-1-C40-T3-20-HSS** **Notes**	TYPE: **PA3HS**

Lumark

		Type
Catalog #		
Project		
Comments		Date
Prepared by		

DESCRIPTION

The Prevail™ LED pole and fixture combination makes selection and installation of poles and fixtures simple. Included is the die-cast Prevail area, site and roadway luminaire with standard mounting arm, square straight steel pole, anchor bolts, base cover, template and hardware. Stock configurations are available in single and dual fixture combinations. The Prevail luminaire delivers a new level of versatility and value in patent pending, architectural design that delivers energy savings greater than 85% and replaces 150-450W metal halide fixtures. The Prevail fixture and pole combo is ideal for general area/site lighting applications.

SPECIFICATION FEATURES

Construction
Construction is comprised of a heavy-duty, single-piece die-cast aluminum housing in dark bronze polyester powder paint. The die-cast aluminum door is tethered to provide easy access to the driver if replacement is required. The optics is mounted on a versatile, aluminum plate that dissipates heat from the LEDs resulting in longer life of the fixture. The fixture is IP66 and 3G vibration rated (ANSI C136.31).

Optics
Available in Type III and IV distributions with lumen packages ranging from 7,000 to 20,000 nominal lumens. Light engine configurations consist of 1 or 2 high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L91/50,000 hours at 25°C) per IESNA TM-21. For the ultimate level of spill light control, an optional house side shield accessory can be field or factory installed.

Electrical
Available in 120-277V 50/60Hz. 10kV/10kA surge protection standard. 0-10V dimming driver is standard with leads external to the fixture to accommodate controls capability such as dimming and occupancy. Suitable for ambient temperatures from -40°C to 40°C.

Mounting
The versatile, patent pending, standard mount arm accommodates multiple drill patterns ranging from 1-1/2″ to 4-7/8″. Removal of the door on the standard mounting arm enables wiring of the fixture without having to access the driver compartment. A knock-out on the standard mounting arm enables round pole mounting.

Pole
Shaft is one-piece construction ASTM A500 grade "B" steel, shot blasted and finished in dark bronze polyester powder coat. Anchor base is fabricated from ASTM grade steel. ASTM A366 steel full base cover is provided to enclose base plate and anchor bolts. Anchor bolts are per ASTM A576 with two nuts, two flat washers, and one lock washer. Hardware and threaded portion of bolt are hot dip galvanized. 3″ hook for 3/4″ bolt. 4″ hook for 1″ bolt.

Finish
Housing and cast parts finished in five-stage super TGIC polyester bronze powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear.

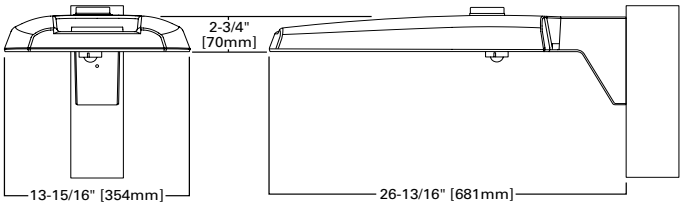
Warranty
Five-year warranty.

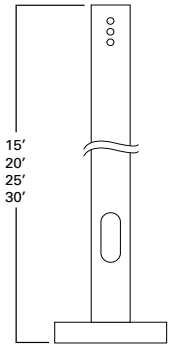
PFPRV PREVAIL POLE AND FIXTURE COMBO

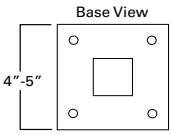
LED

POLE AND FIXTURE COMBO

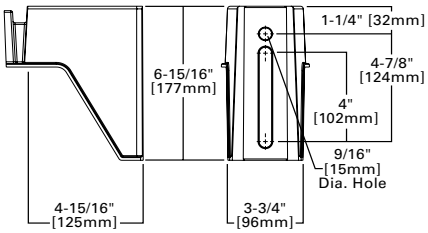
DIMENSIONS







POLE MOUNT ARM



CERTIFICATION DATA

UL and cUL Wet Location Listed
IP66-Rated
3G Vibration Rated
ISO 9001

ENERGY DATA

Electronic LED Driver
0.9 Power Factor
<20% Total Harmonic Distortion
120-277V/50 and 60Hz,
347V/60Hz, 480V/60Hz
-40°C Minimum Temperature Rating
+40°C Ambient Temperature Rating

EPA

Effective Projected Area (Sq. Ft.): 0.75
(1 fixture)

SHIPPING DATA

Approximate Net Weight:
20lbs. [9.09 kgs.] **(1 fixture)**

CONTROL OPTIONS

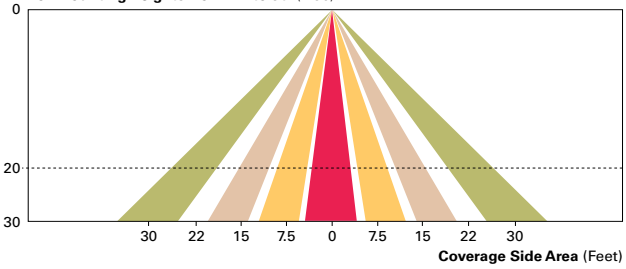
0-10V (D)
This fixture is offered standard with 0-10V dimming wire leads for use with a lighting control panel or other control method.

Photocontrol (PER and PER7)
Photocontrol receptacles provide a flexible solution to enable "dusk-to-dawn" lighting by sensing light levels. Advanced control systems compatible with NEMA 7-pin standards can be utilized with the PER7 receptacle.

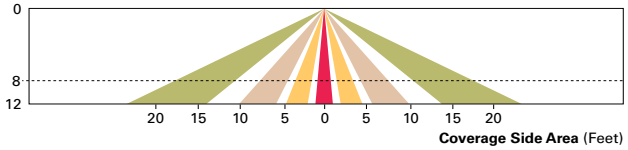
Dimming Occupancy Sensor (MSP/DIM-LXX)
These sensors are factory installed in the luminaire housing. When a sensor for dimming operation (/DIM) is selected, the luminaire will dim down to approximately 50 percent power after five minutes of no activity detected. When activity is detected, the luminaire returns to full light output.

These occupancy sensors include an integral photocell that can be activated or inactivated with the programming remote / configuration tool for "dusk-to-dawn" control or "daylight harvesting". Note: For MSP sensors, the factory preset is ON (Enabled). The programming remote / tool is a wireless tool that can be utilized to change the dimming level, time delay, sensitivity and other parameters. A variety of sensor lenses are available to optimized the coverage pattern for mounting heights from 8'-30'.

For mounting heights from 12' to 30' (-L30)



For mounting heights from 8' to 12' (-L12)



POWER AND LUMENS

Light Engine		C15	C25	C40	C60
Nominal Power (Watts)		57W	87W	143W	163W
Input Current @ 120V (A)		0.43	0.80	1.09	1.32
Input Current @ 277V (A)		0.19	0.35	0.48	0.57
Type III	Lumens	7,111	13,183	17,144	20,050
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4
Type IV	Lumens	7,088	13,140	17,087	19,984
	BUG Rating	B1-U0-G3	B2-U0-G4	B2-U0-G4	B3-U0-G5

LUMEN MAINTENANCE

Ambient Temperature	TM-21 Lumen Maintenance (50,000 Hours)	Theoretical L70 (Hours)
25°C	> 91.30%	> 194,000
40°C	> 87.59%	> 134,000

LUMEN MULTIPLIER

Ambient Temperature	Lumen Multiplier
10°C	1.02
15°C	1.01
25°C	1.00
40°C	0.99

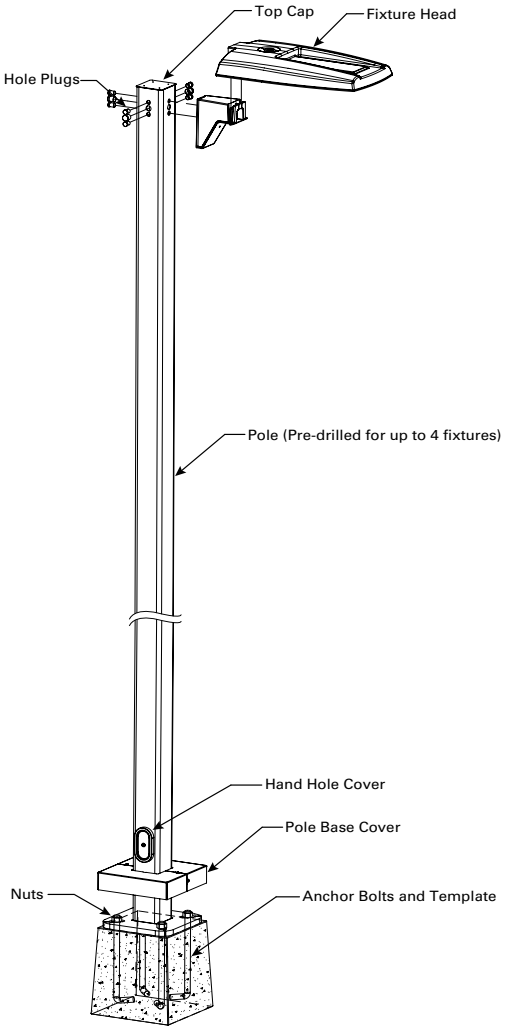
ORDERING INFORMATION

Sample Number: PFPRV-1-C25-T3-15-N/AB

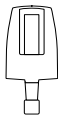
Series [1,2]	Number of Fixtures	Light Engine	Distribution	Pole Height	Maximum Wind Zone (MPH)	Options (Add as Suffix)	Accessories (Order Separately)
PFPRV=Prevail Pole and Fixture Combo	**1**=1 **2**=2 **3**=3 **4**=4	**C15**=(1 LED) 7,100 Nominal Lumens **C25**=(2 LED) 13,100 Nominal Lumens **C40**=(2 LED) 17,100 Nominal Lumens **C60**=(2 LED) 20,000 Nominal Lumens	**T3**=Type III **T4**=Type IV	**15**=15' **20**=20' **25**=25' **30**=30'	**Blank**=80 **9**=90 **0**=100	**N/AB**=No Anchor Bolts (Used when ordered separately) **HSS**=House Side Shield [3] **MSP/DIM-L12**=Integrated Sensor for Dimming Operation, 8' - 12' Mounting Height **MSP/DIM-L30**=Integrated Sensor for Dimming Operation, 12' - 30' Mounting Height **PER**=NEMA 3PIN Twistlock Photocontrol Receptacle [4] **PER7**=NEMA 7PIN Twistlock Photocontrol Receptacle [4]	**HS/VERD**=House Side Shield [3]

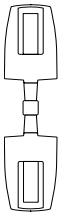
NOTES: 1 4000K CCT, standard bronze, 120-277V, 0-10V dimming. **2** Standard mount arm included with fixture. Supplied with straight steel shaft, anchor bolts, template, base cover and hardware. **3** HSS not available with C60 lumen package. Ordered as an option, it will come factory-installed. Ordered as a field-installable accessory, must order quantity one per optic/LED. **4** Not available with MSP options.

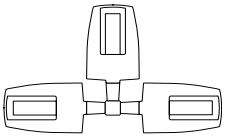
PREVAIL POLE AND FIXTURE COMBO

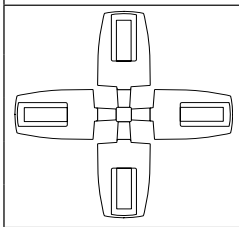


INCLUDED POLE REFERENCE TABLES

1 Fixture (EPA= 0.75)		**Wind Zone (MPH)**		
	**Pole Height** (Feet)	**80**	**90**	**100**
	15	SSS4A15SFM4[1]		
	20	SSS4A20SFM4[1]		
	25	SSS4A25SFM4[1]		SSS5A25SFM4[2]
	30	SSS5A30SFM4[2]		SSS5M30SFM4[2]

2 Fixtures (EPA= 1.50)		**Wind Zone (MPH)**		
	**Pole Height** (Feet)	**80**	**90**	**100**
	15	SSS4A15SFM4[1]		
	20	SSS4A20SFM4[1]		
	25	SSS4A25SFM4[1]		SSS5A25SFM4[2]
	30	SSS5A30SFM4[2]		SSS5M30SFM4[2]

3 Fixtures (EPA= 2.25)		**Wind Zone (MPH)**		
	**Pole Height** (Feet)	**80**	**90**	**100**
	15	SSS4A15SFM4[1]		
	20	SSS4A20SFM4[1]		
	25	SSS4A25SFM4[1]		SSS5A25SFM4[2]
	30	SSS5A30SFM4[2]		SSS5M30SFM4[2]

4 Fixtures (EPA= 3.00)		**Wind Zone (MPH)**		
	**Pole Height** (Feet)	**80**	**90**	**100**
	15	SSS4A15SFM4[1]		
	20	SSS4A20SFM4[1]		
	25	SSS4A25SFM4[1]		SSS5A25SFM4[2]
	30	SSS5A30SFM4[2]		SSS5M30SFM4[2]

NOTES:
1. Uses hardware kit POLSSHDWC4FCHHP.
2. Uses hardware kit POLSSHDWC5FCHHP.

élan LIGHTING SYSTEMS	Project EQ03560V1S Date 10/6/2020 **JILLYS CARWASH GLENDALE** **Submitted By** **ELAN LIGHTING SYSTEMS**	**Catalog Number** **PFPRV-1-C40-T4-20** **Notes**	TYPE: **PA4**

Lumark

		Type
Catalog #		
Project		
Comments		Date
Prepared by		

DESCRIPTION

The Prevail™ LED pole and fixture combination makes selection and installation of poles and fixtures simple. Included is the die-cast Prevail area, site and roadway luminaire with standard mounting arm, square straight steel pole, anchor bolts, base cover, template and hardware. Stock configurations are available in single and dual fixture combinations. The Prevail luminaire delivers a new level of versatility and value in patent pending, architectural design that delivers energy savings greater than 85% and replaces 150-450W metal halide fixtures. The Prevail fixture and pole combo is ideal for general area/site lighting applications.

SPECIFICATION FEATURES

Construction
Construction is comprised of a heavy-duty, single-piece die-cast aluminum housing in dark bronze polyester powder paint. The die-cast aluminum door is tethered to provide easy access to the driver if replacement is required. The optics is mounted on a versatile, aluminum plate that dissipates heat from the LEDs resulting in longer life of the fixture. The fixture is IP66 and 3G vibration rated (ANSI C136.31).

Optics
Available in Type III and IV distributions with lumen packages ranging from 7,000 to 20,000 nominal lumens. Light engine configurations consist of 1 or 2 high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L91/50,000 hours at 25°C) per IESNA TM-21. For the ultimate level of spill light control, an optional house side shield accessory can be field or factory installed.

Electrical
Available in 120-277V 50/60Hz. 10kV/10kA surge protection standard. 0-10V dimming driver is standard with leads external to the fixture to accommodate controls capability such as dimming and occupancy. Suitable for ambient temperatures from -40°C to 40°C.

Mounting
The versatile, patent pending, standard mount arm accommodates multiple drill patterns ranging from 1-1/2″ to 4-7/8″. Removal of the door on the standard mounting arm enables wiring of the fixture without having to access the driver compartment. A knock-out on the standard mounting arm enables round pole mounting.

Pole
Shaft is one-piece construction ASTM A500 grade "B" steel, shot blasted and finished in dark bronze polyester powder coat. Anchor base is fabricated from ASTM grade steel. ASTM A366 steel full base cover is provided to enclose base plate and anchor bolts. Anchor bolts are per ASTM A576 with two nuts, two flat washers, and one lock washer. Hardware and threaded portion of bolt are hot dip galvanized. 3″ hook for 3/4″ bolt. 4″ hook for 1″ bolt.

Finish
Housing and cast parts finished in five-stage super TGIC polyester bronze powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear.

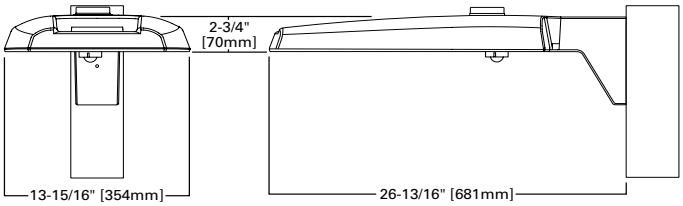
Warranty
Five-year warranty.

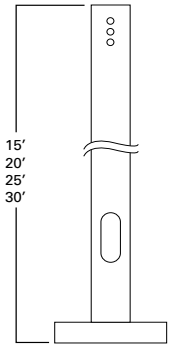
PFPRV PREVAIL POLE AND FIXTURE COMBO

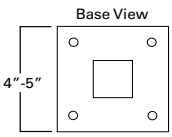
LED

POLE AND FIXTURE COMBO

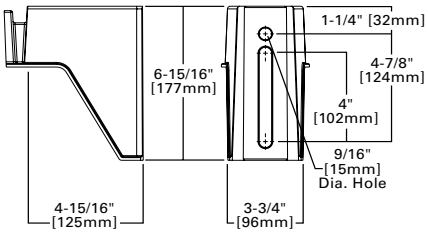
DIMENSIONS







POLE MOUNT ARM



CERTIFICATION DATA

UL and cUL Wet Location Listed
IP66-Rated
3G Vibration Rated
ISO 9001

ENERGY DATA

Electronic LED Driver
0.9 Power Factor
<20% Total Harmonic Distortion
120-277V/50 and 60Hz,
347V/60Hz, 480V/60Hz
-40°C Minimum Temperature Rating
+40°C Ambient Temperature Rating

EPA

Effective Projected Area (Sq. Ft.): 0.75
(1 fixture)

SHIPPING DATA

Approximate Net Weight:
20lbs. [9.09 kgs.] **(1 fixture)**

CONTROL OPTIONS

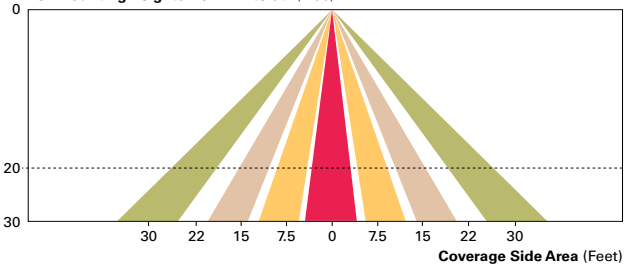
0-10V (D)
This fixture is offered standard with 0-10V dimming wire leads for use with a lighting control panel or other control method.

Photocontrol (PER and PER7)
Photocontrol receptacles provide a flexible solution to enable "dusk-to-dawn" lighting by sensing light levels. Advanced control systems compatible with NEMA 7-pin standards can be utilized with the PER7 receptacle.

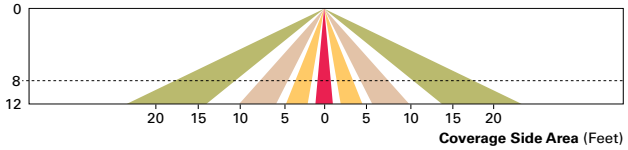
Dimming Occupancy Sensor (MSP/DIM-LXX)
These sensors are factory installed in the luminaire housing. When a sensor for dimming operation (/DIM) is selected, the luminaire will dim down to approximately 50 percent power after five minutes of no activity detected. When activity is detected, the luminaire returns to full light output.

These occupancy sensors include an integral photocell that can be activated or inactivated with the programming remote / configuration tool for "dusk-to-dawn" control or "daylight harvesting". Note: For MSP sensors, the factory preset is ON (Enabled). The programming remote / tool is a wireless tool that can be utilized to change the dimming level, time delay, sensitivity and other parameters. A variety of sensor lenses are available to optimized the coverage pattern for mounting heights from 8'-30'.

For mounting heights from 12' to 30' (-L30)



For mounting heights from 8' to 12' (-L12)



POWER AND LUMENS

Light Engine		C15	C25	C40	C60
Nominal Power (Watts)		57W	87W	143W	163W
Input Current @ 120V (A)		0.43	0.80	1.09	1.32
Input Current @ 277V (A)		0.19	0.35	0.48	0.57
Type III	Lumens	7,111	13,183	17,144	20,050
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4
Type IV	Lumens	7,088	13,140	17,087	19,984
	BUG Rating	B1-U0-G3	B2-U0-G4	B2-U0-G4	B3-U0-G5

LUMEN MAINTENANCE

Ambient Temperature	TM-21 Lumen Maintenance (50,000 Hours)	Theoretical L70 (Hours)
25°C	> 91.30%	> 194,000
40°C	> 87.59%	> 134,000

LUMEN MULTIPLIER

Ambient Temperature	Lumen Multiplier
10°C	1.02
15°C	1.01
25°C	1.00
40°C	0.99

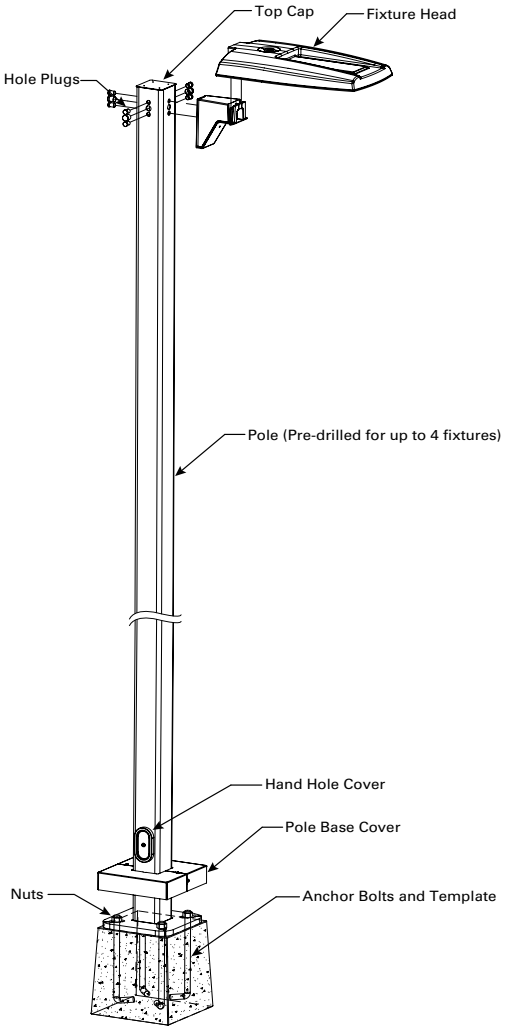
ORDERING INFORMATION

Sample Number: PFPRV-1-C25-T3-15-N/AB

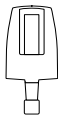
Series [1,2]	Number of Fixtures	Light Engine	Distribution	Pole Height	Maximum Wind Zone (MPH)	Options (Add as Suffix)	Accessories (Order Separately)
PFPRV=Prevail Pole and Fixture Combo	**1**=1 **2**=2 **3**=3 **4**=4	**C15**=(1 LED) 7,100 Nominal Lumens **C25**=(2 LED) 13,100 Nominal Lumens **C40**=(2 LED) 17,100 Nominal Lumens **C60**=(2 LED) 20,000 Nominal Lumens	**T3**=Type III **T4**=Type IV	**15**=15' **20**=20' **25**=25' **30**=30'	**Blank**=80 **9**=90 **0**=100	**N/AB**=No Anchor Bolts (Used when ordered separately) **HSS**=House Side Shield [3] **MSP/DIM-L12**=Integrated Sensor for Dimming Operation, 8' - 12' Mounting Height **MSP/DIM-L30**=Integrated Sensor for Dimming Operation, 12' - 30' Mounting Height **PER**=NEMA 3PIN Twistlock Photocontrol Receptacle [4] **PER7**=NEMA 7PIN Twistlock Photocontrol Receptacle [4]	**HS/VERD**=House Side Shield [3]

NOTES: 1 4000K CCT, standard bronze, 120-277V, 0-10V dimming. **2** Standard mount arm included with fixture. Supplied with straight steel shaft, anchor bolts, template, base cover and hardware. **3** HSS not available with C60 lumen package. Ordered as an option, it will come factory-installed. Ordered as a field-installable accessory, must order quantity one per optic/LED. **4** Not available with MSP options.

PREVAIL POLE AND FIXTURE COMBO



INCLUDED POLE REFERENCE TABLES

1 Fixture (EPA= 0.75)		**Wind Zone (MPH)**		
	**Pole Height** (Feet)	**80**	**90**	**100**
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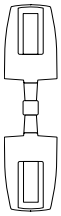
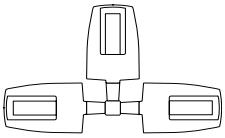
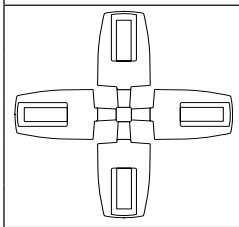
	20	SSS4A20SFM4[1]		
	25	SSS4A25SFM4[1]		SSS5A25SFM4[2]
	30	SSS5A30SFM4[2]		SSS5M30SFM4[2]

2 Fixtures (EPA= 1.50)		**Wind Zone (MPH)**		
	**Pole Height** (Feet)	**80**	**90**	**100**
	15	SSS4A15SFM4[1]		
	20	SSS4A20SFM4[1]		
	25	SSS4A25SFM4[1]		SSS5A25SFM4[2]
	30	SSS5A30SFM4[2]		SSS5M30SFM4[2]

3 Fixtures (EPA= 2.25)		**Wind Zone (MPH)**		
	**Pole Height** (Feet)	**80**	**90**	**100**
	15	SSS4A15SFM4[1]		
	20	SSS4A20SFM4[1]		
	25	SSS4A25SFM4[1]		SSS5A25SFM4[2]
	30	SSS5A30SFM4[2]		SSS5M30SFM4[2]

4 Fixtures (EPA= 3.00)		**Wind Zone (MPH)**		
	**Pole Height** (Feet)	**80**	**90**	**100**
	15	SSS4A15SFM4[1]		
	20	SSS4A20SFM4[1]		
	25	SSS4A25SFM4[1]		SSS5A25SFM4[2]
	30	SSS5A30SFM4[2]		SSS5M30SFM4[2]

NOTES:
1. Uses hardware kit POLSSHDWC4FCHHP.
2. Uses hardware kit POLSSHDWC5FCHHP.

élan LIGHTING SYSTEMS	Project EQ03560V1S Date 10/6/2020 **JILLYS CARWASH GLENDALE** **Submitted By** **ELAN LIGHTING SYSTEMS**	**Catalog Number** **XTOR1B** **Notes**	TYPE: **WA**

Lumark

Catalog #		**Type**
Project		
Comments		**Date**
Prepared by		

DESCRIPTION

The patented Lumark Crosstour™ LED Wall Pack Series of luminaries provides an architectural style with super bright, energy efficient LEDs. The low-profile, rugged die-cast aluminum construction, universal back box, stainless steel hardware along with a sealed and gasketed optical compartment make the Crosstour impervious to contaminants. The Crosstour wall luminaire is ideal for wall/surface, inverted mount for façade/canopy illumination, post/bollard, site lighting, floodlight and low level pathway illumination including stairs. Typical applications include building entrances, multi-use facilities, apartment buildings, institutions, schools, stairways and loading docks test.

SPECIFICATION FEATURES

Construction
Slim, low-profile LED design with rugged one-piece, die-cast aluminum hinged removable door and back box. Matching housing styles incorporate both a small and medium design. The small housing is available in 12W, 18W and 26W. The medium housing is available in the 38W model. Patented secure lock hinge feature allows for safe and easy tool-less electrical connections with the supplied push-in connectors. Back box includes three half-inch, NPT threaded conduit entry points. The universal back box supports both the small and medium forms and mounts to standard 3-1/2" to 4" round and octagonal, 4" square, single gang and masonry junction boxes. Key hole gasket allows for adaptation to junction box or wall. External fin design extracts heat from the fixture surface. One-piece silicone gasket seals door and back box. Minimum 5" wide pole for site lighting application. Not recommended for car wash applications.

Optical
Silicone sealed optical LED chamber incorporates a custom engineered mirrored anodized reflector providing high-efficiency illumination. Optical assembly includes impact-resistant tempered glass and meets IESNA requirements for full cutoff compliance. Available in seven lumen packages; 5000K, 4000K and 3000K CCT.

Electrical
LED driver is mounted to the die-cast housing for optimal heat sinking. LED thermal management system incorporates both conduction and natural convection to transfer heat rapidly away from the LED source. 12W, 18W, 26W and 38W series operate in -40°C to 40°C [-40°F to 104°F]. High ambient 50°C models available. Crosstour luminaires maintain greater than 89% of initial light output after 72,000 hours of operation. Three half-inch NPT threaded conduit entry points allow for thru-branch wiring. Back box is an authorized electrical wiring compartment. Integral LED electronic driver incorporates surge protection. 120-277V 50/60Hz or 347V 60Hz models.

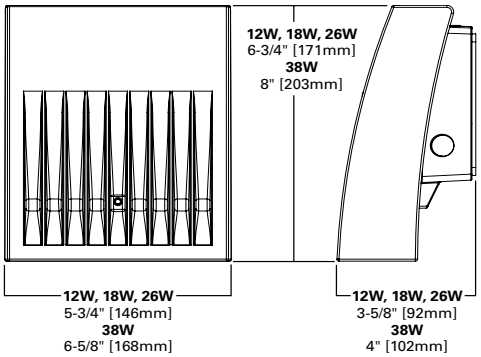
Finish
Crosstour is protected with a Super durable TGIC carbon bronze or summit white polyester powder coat paint. Super durable TGIC powder coat paint finishes withstand extreme climate conditions while providing optimal color and gloss retention of the installed life.

Warranty
Five-year warranty.

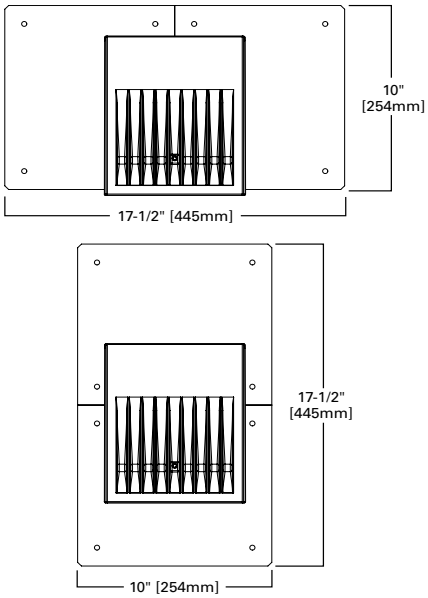
XTOR
CROSSTOUR LED

APPLICATIONS:
WALL / SURFACE
POST / BOLLARD
LOW LEVEL
FLOODLIGHT
INVERTED
SITE LIGHTING

DIMENSIONS



ESCUTCHEON PLATES



CERTIFICATION DATA

UL/cUL Wet Location Listed
LM79 / LM80 Compliant
ROHS Compliant
ADA Compliant
NOM Compliant Models
IP66 Ingressed Protection Rated
Title 24 Compliant
DesignLights Consortium® Qualified*

TECHNICAL DATA

40°C Maximum Ambient Temperature
External Supply Wiring 90°C Minimum

EPA

Effective Projected Area (Sq. Ft.):
XTOR1B, XT0R2B, XT0R3B=0.34
XTOR4B=0.45

SHIPPING DATA:

Approximate Net Weight:
3.7 – 5.25 lbs. [1.7 – 2.4 kgs.]

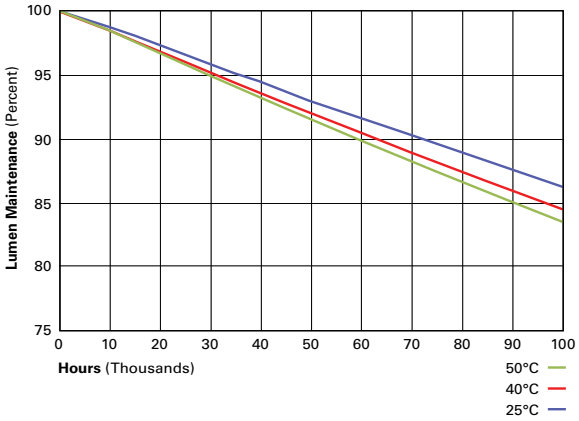
POWER AND LUMENS BY FIXTURE MODEL

LED Information	XTOR1B	XTOR1B-W	XTOR1B-Y	XTOR2B	XTOR2B-W	XTOR2B-Y	XTOR3B	XTOR3B-W	XTOR3B-Y	XTOR4B	XTOR4B-W	XTOR4B-Y
Delivered Lumens (Wall Mount)	1,418	1,396	1,327	2,135	2,103	1,997	2,751	2,710	2,575	4,269	4,205	3,995
Delivered Lumens (With Flood Accessory Kit) [1]	1,005	990	940	1,495	1,472	1,399	2,099	2,068	1,965	3,168	3,121	2,965
B.U.G. Rating [2]	B1-U0-G0	B1-U0-G0	B1-U0-G0	B1-U0-G0	B1-U0-G0	B1-U0-G0	B1-U0-G0	B1-U0-G0	B1-U0-G0	B2-U0-G0	B2-U0-G0	B2-U0-G0
CCT (Kelvin)	5,000	4,000	3,000	5,000	4,000	3,000	5,000	4,000	3,000	5,000	4,000	3,000
CRI (Color Rendering Index)	70	70	70	70	70	70	70	70	70	70	70	70
Power Consumption (Watts)	12W	12W	12W	18W	18W	18W	26W	26W	26W	38W	38W	38W

NOTES: 1 Includes shield and visor. **2** B.U.G. Rating does not apply to floodlighting.

LUMEN MAINTENANCE

Ambient Temperature	TM-21 Lumen Maintenance (72,000 Hours)	Theoretical L70 (Hours)
XTOR1B Model		
25°C	> 90%	255,000
40°C	> 89%	234,000
50°C	> 88%	215,000
XTOR2B Model		
25°C	> 89%	240,000
40°C	> 88%	212,000
50°C	> 87%	196,000
XTOR3B Model		
25°C	> 89%	240,000
40°C	> 88%	212,000
50°C	> 87%	196,000
XTOR4B Model		
25°C	> 89%	222,000
40°C	> 87%	198,000
50°C	> 87%	184,000



CURRENT DRAW

Voltage	Model Series			
	XTOR1B	XTOR2B	XTOR3B	XTOR4B
120V	0.103A	0.15A	0.22A	0.34A
208V	0.060A	0.09A	0.13A	0.17A
240V	0.053A	0.08A	0.11A	0.17A
277V	0.048A	0.07A	0.10A	0.15A
347V	0.039A	0.06A	0.082A	0.12A

ORDERING INFORMATION

Sample Number: XTOR2B-W-WT-PC1

Series [1]	**LED Kelvin Color**	**Housing Color**	**Options** (Add as Suffix)	**Accessories** (Order Separately)
XTOR1B=Small Door, 12W **XTOR2B**=Small Door, 18W **XTOR3B**=Small Door, 26W **XTOR4B**=Medium Door, 38W	**[Blank]**=Bright White (Standard), 5000K **W**=Neutral White, 4000K **Y**=Warm White, 3000K	**[Blank]**=Carbon Bronze (Standard) **WT**=Summit White **BK**=Black **BZ**=Bronze **AP**=Grey **GM**=Graphite Metallic **DP**=Dark Platinum	**PC1**=Photocontrol 120V [2] **PC2**=Photocontrol 208-277V [2, 3] **347V**=347V [4] **HA**=50°C High Ambient [4]	**WG/XTOR**=Wire Guard [5] **XTORFLD-KNC**=Knuckle Floodlight Kit [6] **XTORFLD-TRN**=Trunnion Floodlight Kit [6] **XTORFLD-KNC-WT**=Knuckle Floodlight Kit, Summit White [6] **XTORFLD-TRN-WT**=Trunnion Floodlight Kit, Summit White [6] **EWP/XTOR**=Escutcheon Wall Plate, Carbon Bronze **EWP/XTOR-WT**=Escutcheon Wall Plate, Summit White

NOTES:
1. DesignLights Consortium® Qualified and classified for both DLC Standard and DLC Premium, refer to www.designlights.org for details.
2. Photocontrols are factory installed.
3. Order PC2 for 347V models.
4. Thru-branch wiring not available with HA option or with 347V. XTOR3B not available with HA and 347V or 120V combination.
5. Wire guard for wall/surface mount. Not for use with floodlight kit accessory.
6. Floodlight kit accessory supplied with knuckle (KNC) or trunnion (TRN) base, small and large top visors and small and large impact shields.

STOCK ORDERING INFORMATION

12W Series	**18W Series**	**26W Series**	**38W Series**
XTOR1B=12W, 5000K, Carbon Bronze	**XTOR2B**=18W, 5000K, Carbon Bronze	**XTOR3B**=26W, 5000K, Carbon Bronze	**XTOR4B**=38W, 5000K, Carbon Bronze
XTOR1B-WT=12W, 5000K, Summit White	**XTOR2B-W**=18W, 4000K, Carbon Bronze	**XTOR3B-W**=26W, 4000K, Carbon Bronze	**XTOR4B-W**=38W, 4000K, Carbon Bronze
XTOR1B-PC1=12W, 5000K, 120V PC, Carbon Bronze	**XTOR2B-WT**=18W, 5000K, Summit White	**XTOR3B-WT**=26W, 5000K, Summit White	**XTOR4B-WT**=38W, 5000K, Summit White
XTOR1B-W=12W, 4000K, Carbon Bronze	**XTOR2B-PC1**=18W, 5000K, 120V PC, Carbon Bronze	**XTOR3B-PC1**=26W, 5000K, 120V PC, Carbon Bronze	**XTOR4B-PC1**=38W, 5000K, 120V PC, Carbon Bronze
	XTOR2B-W-PC1=18W, 4000K, 120V PC, Carbon Bronze	**XTOR3B-W-PC1**=26W, 4000K, 120V PC, Carbon Bronze	**XTOR4B-W-PC1**=38W, 4000K, 120V PC, Carbon Bronze
	XTOR2B-347V=18W, 5000K, Carbon Bronze, 347V	**XTOR3B-347V**=26W, 5000K, Carbon Bronze, 347V	**XTOR4B-347V**=38W, 5000K, Carbon Bronze, 347V
	XTOR2B-WT-PC1=18W, 5000K, 120V PC, Summit White	**XTOR3B-PC2**=26W, 5000K, 208-277V PC, Carbon Bronze	

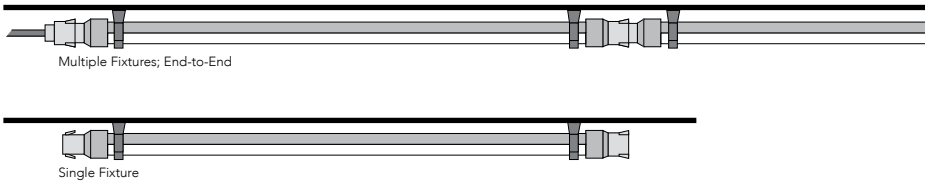
special environments
T 800.285.6780 F 800.285.6780
www.ggled.net

Date

Project

DIRECT AC DRIVERLESS

GPX DRIVERLESS LINEAR



DRIVERLESS AC LED LUMINAIRE

Product Features

Maintenance-Free Driverless Design

Connects directly to AC line voltage without an LED driver or electrolytic capacitors, for extreme reliability and lifetime. Requires zero maintenance.

Easy to Install Quick-Connect Cabling

Convenient push-and-click connectors and cabling make GPX Series fixtures easy to install and daisy chain.

Coextruded Copolyester/Aluminum Housing

Our patented process combines copolyester and aluminum together, with no seals or gaskets. The result is a single piece enclosure with excellent heatsinking characteristics for long lifetime.

Superior Chemical & UV Resistance

Seamless polymeric outer shell provides IP67 ingress protection and is specialized for superior chemical resistance. An additional protective coating is available which integrates a UV inhibitor and UV blocker for outdoor applications.

Performance Summary

Delivered Light Output: Up to 4,800 Lumens

Efficacy: 105 LPW Minimum

CRI: Typical 85 CRI

CCT: 5000K & 4000K

Lifetime: Designed to last 75,000 Hours at 25°C

Warranty: 5 Years (See ggled.net for Terms)

Mounting: Ceiling or Wall

Dimensions: Length Varies, Width 1.25" x Height 1.75"

Protection Class: IP67

Dimming: Yes, TRIAC Dimmable

Voltage: 120 VAC Input Only

Maximum Run Length: 180' (Standard Output) / 120' (High Output)

Ordering Information

Product	Length		Lumen Output	Color Temp.	Lens Diffusion	UV Protection	Voltage
GPX							120V
	8 8-Foot	**6** 6-Foot	**SO** (standard) Standard Output (400 Lumens/Ft)	**50K** (standard) 5000 Kelvin	**Blank** (standard) Chemical Resistant Clear Lens	**Blank** (standard) No Coating, Rated for Indoor Use	**120V** 120 VAC Input
	4 4-Foot	**2** 2-Foot	**HO** High Output (600 Lumens/Ft)	**40K** 4000 Kelvin	**GC** (glare control) Chemical Resistant Lens with Added Diffusion Sheet	**UVO** Outdoor-Rated with UV-Blocking Coating	

Power & Connection Accessories

Cable	Type	Length	Wire
*No Jumper Cable Required on End-to-End Connection			
GPX-JMP-1	Jumper	1ft	18 AWG SJTW
GPX-JMP-2	Jumper	2ft	18 AWG SJTW
GPX-JMP-4	Jumper	4ft	18 AWG SJTW
GPX-JMP-8	Jumper	8ft	18 AWG SJTW
GPX-LDR-10	Leader Cable	10ft	18 AWG SJTW
GPX-LDR-25	Leader Cable	25ft	18 AWG SJTW

Mounting Hardware	Description
MNT-NM	Non-Metalic Quick Latch
MNT-SS	Stainless Steel Bolt Latch

*For serviceability and expansion/contraction considerations G&G limits the number of luminaires connected end-to-end (without a jumper cable) to a maximum of 4.

Rev Date 18 0125

special environments
T 800.285.6780 F 800.285.6780
www.ggled.net

G&G FULLY INTEGRATED GUARANTEE
OUR PRODUCTS ARE
ENGINEERED
TESTED
MANUFACTURED
ASSEMBLED
& SHIPPED
FROM ONE FACILITY

GPX CONNECTORIZED LED

Product Specifications

Construction & Materials

Convenient push-and-click connectors let you easily and rapidly install Leader Cables and Jumper Cables. Multiple cable lengths support a variety of layouts.

Integrated aluminum heat spreader.

Seamless polymeric outer shell provides IP67 ingress protection and is specialized for superior chemical resistance. An additional protective coating is available which integrates a UV inhibitor and UV blocker for outdoor applications.

All G&G luminaires and components (with the exception of our LED boards and drivers) are proudly manufactured and assembled in the USA.

Electrical System

Power Factor: 0.9 nominal.

Input Power: Stays consistent over life.

Temperature Rating: Designed to operate in temperatures -40°C to 45°C.

Total Harmonic Distortion: < 20%

Regulatory Qualifications

cULus Listed

UL Listed for Wet Locations

DLC pending

c UL us LISTED

DIRECT AC DRIVERLESS

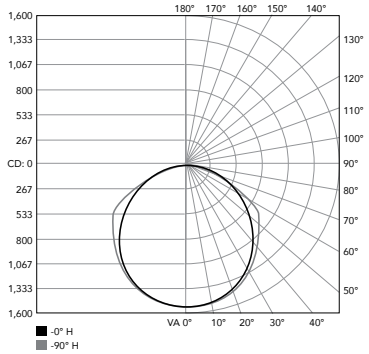
Photometry

GPX Series

Based on DTC Report Test #: 14404-T

Fixture photometry has been conducted by a NVLAP accredited testing laboratory in accordance with IESNA LM-79-08. IESNA LM-79-08 specifies the entire luminaire as the source resulting in a fixture efficiency of 100%.

Polar Candela Distribution



Zonal Lumen Summary

Zone	Luminaire
0-30	26.2%
0-40	43.2%
0-60	77.4%
0-90	98.5%
0-180	100%

Jilly’s Car Wash - Glendale

5100 N. Port Washington Rd. / Glendale, WI 53217

Drawing Package Title: Jilly’s Glendale Exterior Signage 1 (1)

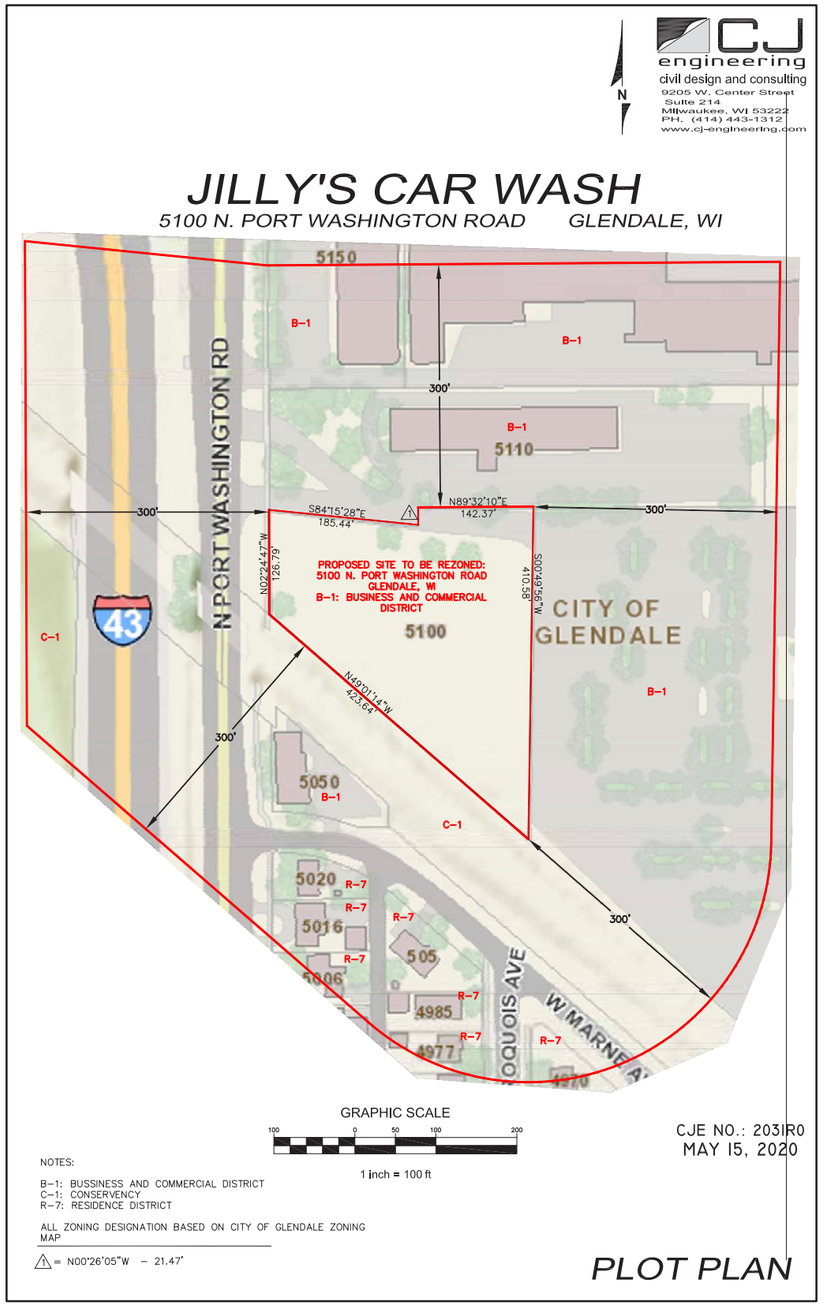
Date: 10-13-20

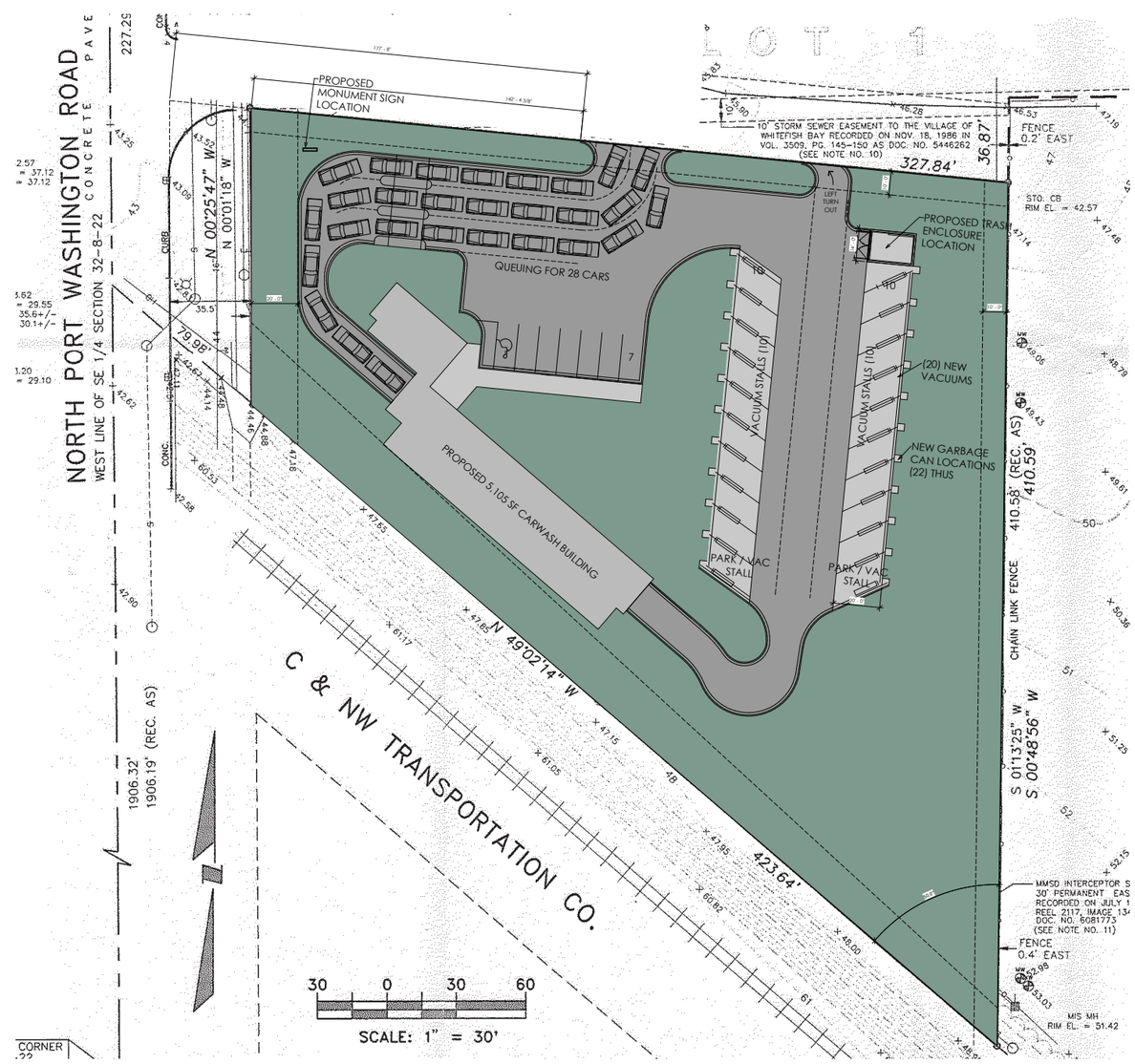
CONCEPTUAL DRAWING

LEMBERG SIGNS

4085 North 128th Street
Brookfield, WI 53005

p. 262-781-1500
www.LembergElectric.com





BRIOHN DESIGN GROUP

SITE PLAN

PROPOSED CAR WASH
5100 N. PORT WASHINGTON ROAD
CITY OF GLENDALE, WI

JOB: 3220
DRAWN: CW
CHECKED: MM
DATE: 05-12-20
SHEET: A0.1

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CONCEPTUAL DRAWING

Perspective Plans

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

Client: Jilly's Car Wash - Glendale
Location: 5100 N. Port Washington Rd.
City: Glendale, WI 53217

Sales Representative: Brian Pritzkow
Project Manager: TBD
Designer: Eric Bailey

Scale: NTS
Paper Size: 11x17
Signature / Date:

Client / Location or Project / Sign Classification / Version# or Sheet / Revision# / Drawing Status: Jillys_GLN_PLA(2)_v01_r00_D

Date: 9-30-20

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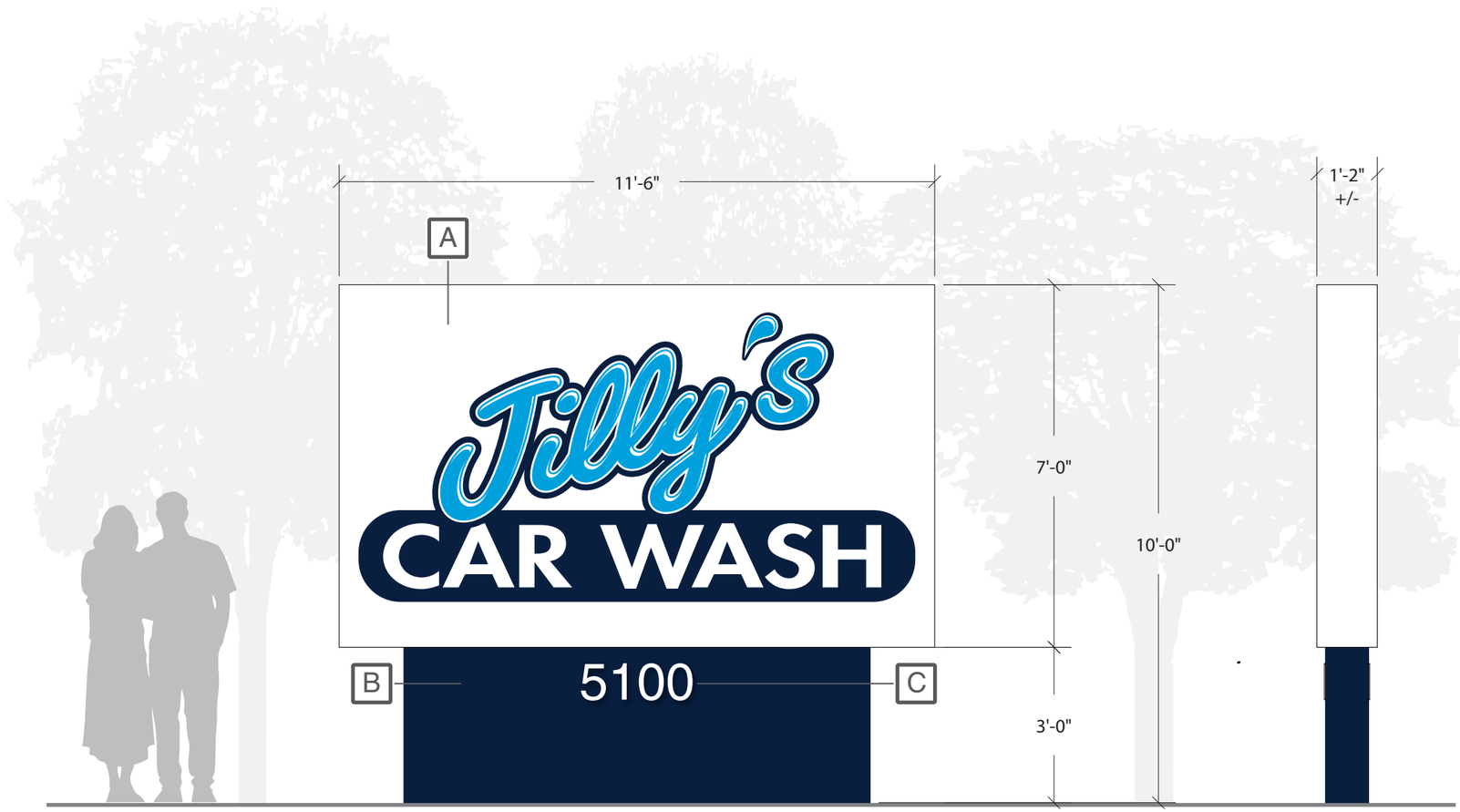
CONCEPTUAL DRAWING



Monument Sign Specifications

One (1) Monument Sign.

Illuminated

Double Sided

Photocell for Automatic On & Off Lighting Control

80.5 Sq'

(A) Sign Cabinet

14" deep +/- fabricated aluminum sign cabinet with routed 1/8" aluminum faces. Internal white LED illumination (Color Temp TBD).

(B) Base

Fabricated aluminum base, 12" deep +/-.

(C) Flat Cut Numerals

1/4" thick flat cut address numerals stud mounted flush to base.

Footing & Poles

Estimated two (2) 4" x 4" sq steel poles in 24" dia. x 4' deep typical concrete footings. Sign to saddle mount center pole.

Note: For bid purposes only, specifications to be reviewed / engineering when applicable.

Colors:

- (1) PMS 282 (Vinyl Match Needed)
- (2) PMS 299 (Vinyl Match Needed)
- (3) White Painted Finish / Polycarbonate / Flex Face(Standard)

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

Client: Jilly's Car Wash - Glendale
Location: 5100 N. Port Washington Rd.
City: Glendale, WI 53217

Sales Representative: Brian Pritzkow
Project Manager: TBD
Designer: Eric Bailey

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

Client / Location or Project / Sign Classification / Version# or Sheet / Revision# / Drawing Status: Jillys_GLN_MON_v01_r01_D

Date: 10-13-20

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Illuminated Renderings - Monument Sign

Illuminated Rendering

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www.LembergElectric.com

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Date: 10-13-20

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CONCEPTUAL DRAWING

Isometric Detail

Night Rendering

Illuminated Wall Sign Specifications

Two (2) Wall Mounted Signs.

Illuminated

Single Sided

Photocell for Automatic On & Off Lighting Control

49 Sq'

(A) Sign Cabinet

8" deep +/- fabricated aluminum sign cabinet with routed 1/8" aluminum faces & 3/4" thick clear acrylic push through. Shoe box style fabrication or service & installation. Internal white LED illumination (Color Temp TBD).

Mounting

Mounts flush to fascia with remote located power supplies (verify).

Note: For bid purposes only, specifications to be reviewed / engineering when applicable.

Colors:

- (1) PMS 282 (Vinyl Match Needed)
- (2) PMS 299 (Vinyl Match Needed)
- (3) White Polycarbonate (Standard)

LEMBERG SIGNS
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Brookfield, WI 53005
p. 262-781-1500
www.LembergElectric.com

Client: Jilly's Car Wash - Glendale
Location: 5100 N. Port Washington Rd.
City: Glendale, WI 53217

Sales Representative: Brian Pritzkow
Project Manager: TBD
Designer: Eric Bailey

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

Client / Location or Project / Sign Classification / Version# or Sheet / Revision# / Drawing Status: Jillys_GLN_MON_v01_r01_D
Date: 10-13-20

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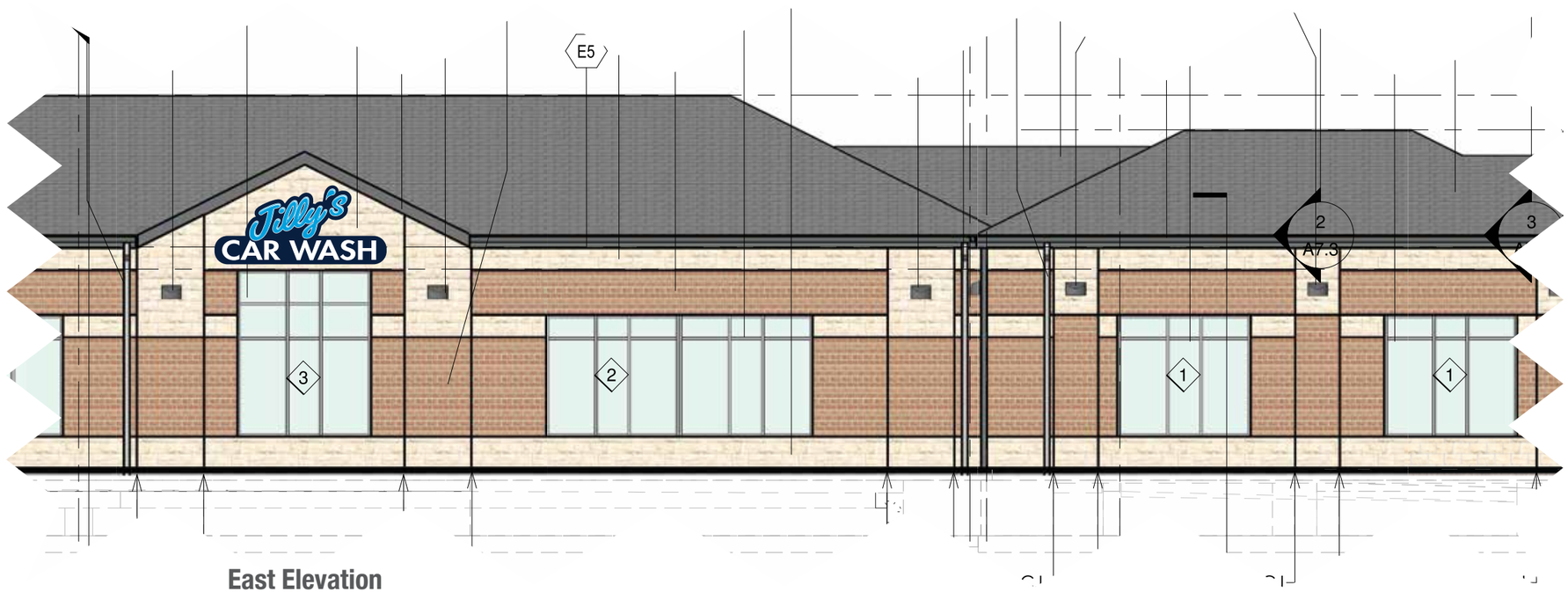
CONCEPTUAL DRAWING

Wall Sign Elevations

South Elevation



East Elevation

LEMBERG SIGNS

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Brookfield, WI 53005
p. 262-781-1500
www.LembergElectric.com

Client: Jilly's Car Wash - Glendale
Location: 5100 N. Port Washington Rd.
City: Glendale, WI 53217

Sales Representative: Brian Pritzkow
Project Manager: TBD
Designer: Eric Bailey

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

Client / Location or Project / Sign Classification / Version# or Sheet / Revision# / Drawing Status: Jillys_GLN_IWS(ELE)_v01_r00_D

Date: 9-30-20

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CONCEPTUAL DRAWING

Notes & Revisions | Check List & Flagged Items

9-30-20
Initial exterior design concepts.
EB

10-13-20
Change monument sign base to PMS 282 with white address numbers / mad car wash bigger &removed the flex face option. Removed the cloud sign option 2, for the wall signs.
EB

- 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. (N)
- 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. (N)

Job File Location Sales: Customer Folders\Jilly's Car Wash- Glendale | **Job File Location Design:** Sign Vault_20/J/Jillys Car Wash Glendale

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Brookfield, WI 53005
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www.LembergElectric.com

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City: Glendale, WI 53217

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Paper Size: 11x17
Signature / Date:

Client / Location or Project / Sign Classification / Version# or Sheet / Revision# / Drawing Status: Jillys_GLN_PLA(2)_v01_r01_D
Date: 10-13-20

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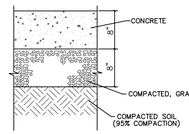
CJ engineering
civil design and consulting
9205 W. Center Street
Suite 214
Milwaukee, WI 53222
PH. (414) 443-1312
www.cj-engineering.com

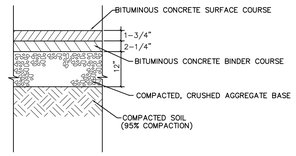
JILLY'S CAR WASH

5100 N. PORT WASHINGTON ROAD GLENDALE, WI



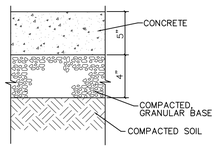
CONCRETE PAVEMENT (APPRONS)

NOT TO SCALE



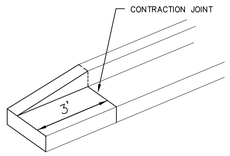
STANDARD DUTY ASPHALT PAVEMENT (PARKING AREA)

NOT TO SCALE



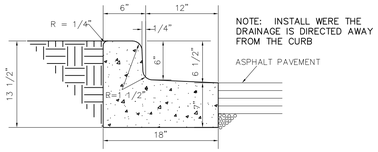
CONCRETE SIDEWALK

NOT TO SCALE



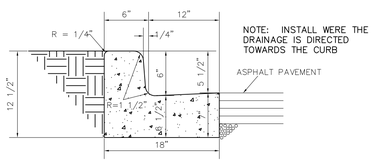
END SECTION CURB TAPER

NOT TO SCALE



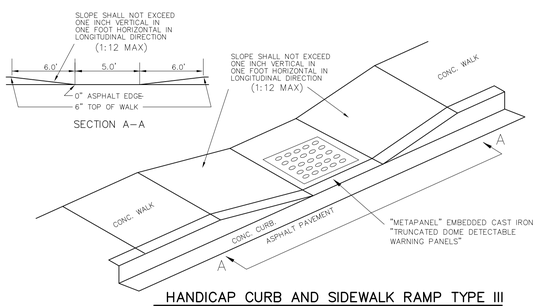
HIGH SIDE CONCRETE CURB (H.S. C&G) DETAIL

NOT TO SCALE



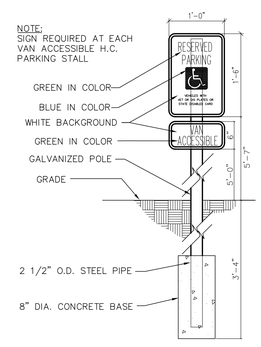
LOW SIDE CONCRETE CURB (L.S. C&G) DETAIL

NOT TO SCALE



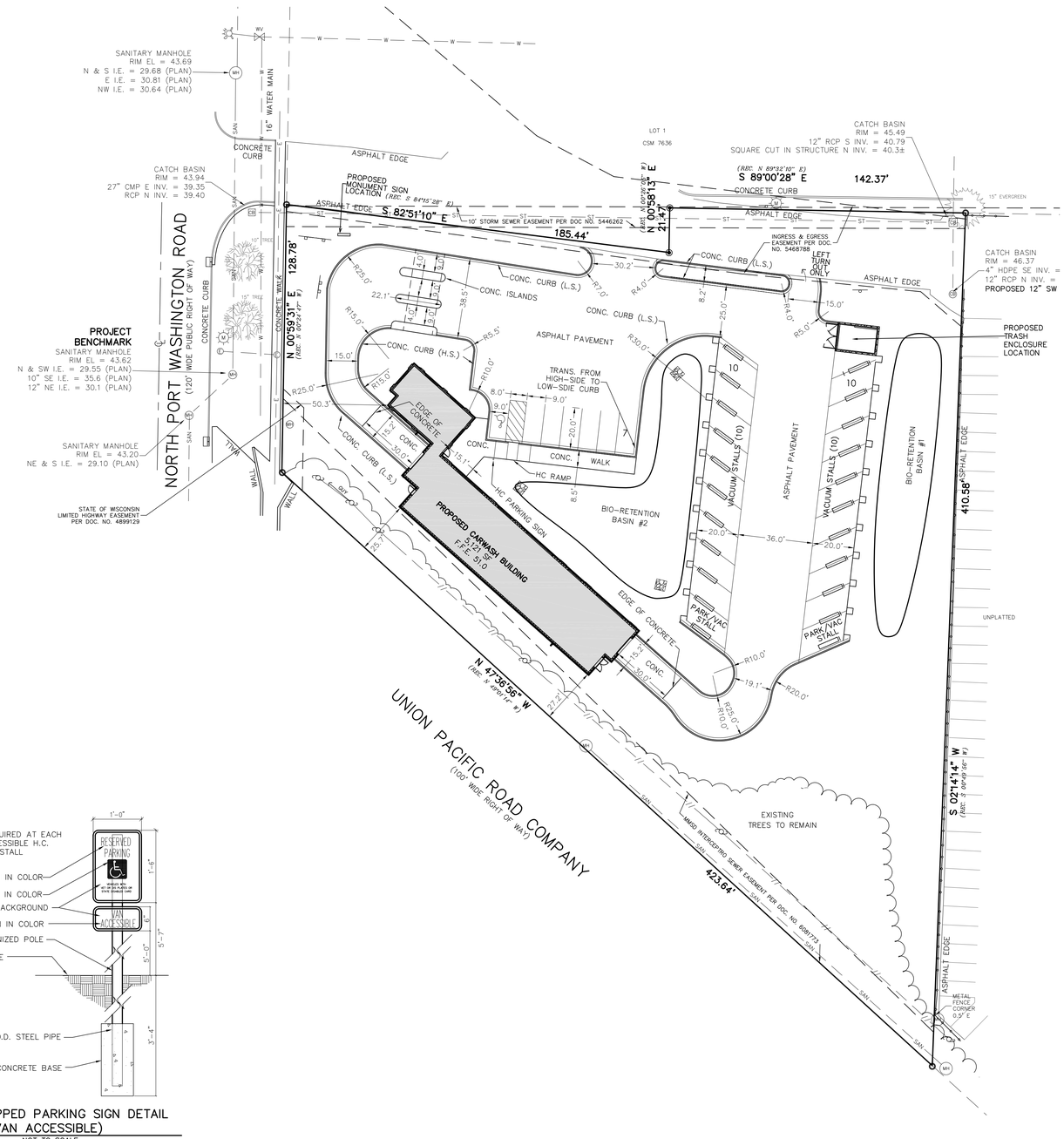
HANDICAP CURB AND SIDEWALK RAMP TYPE III

NOT TO SCALE



HANDICAPPED PARKING SIGN DETAIL (VAN ACCESSIBLE)

NOT TO SCALE



CJE NO.: 203IR4
OCTOBER 15, 2020

www.DiggersHotline.com
DIGGERS HOTLINE
DIAL 811 OR (800) 242-8511

NOTES:

SITE AREAS:

TOTAL SITE AREA: 85,650 S.F. (1.966 ACRES)
EXISTING IMPERVIOUS AREA: 5,047 S.F (0.166 ACRES)
PROPOSED IMPERVIOUS AREA: 38,550 S.F. (0.885 ACRES)

NET INCREASE IN IMPERVIOUS AREA: 33,508 S.F. (0.769 ACRES)

PROPOSED OPEN SPACE: 47,095 S.F. (1.081 ACRES) 55%

DISTURBED AREA: 62,735 S.F. (1.440 ACRES)

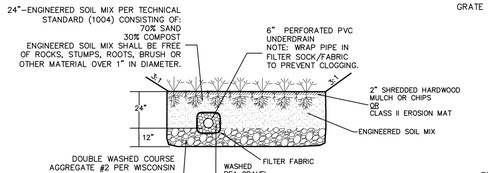
GRAPHIC SCALE

30 0 15 30 60

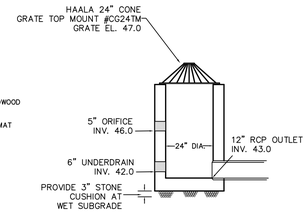
1 inch = 30 ft

SITE PLAN C1.0

CJ engineering
civil design and consulting
9205 W. Center Street
Suite 214
Milwaukee, WI 53222
PH. (414) 443-1312
www.cj-engineering.com

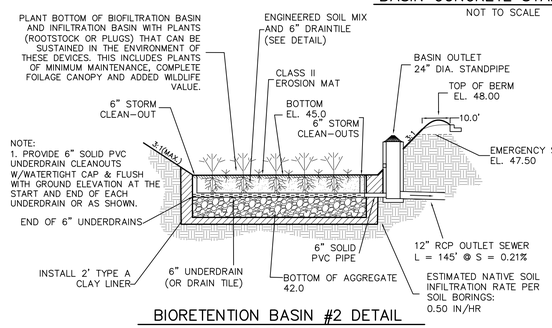


CROSS SECTION OF PERFORATED PORTION OF UNDERDRAIN



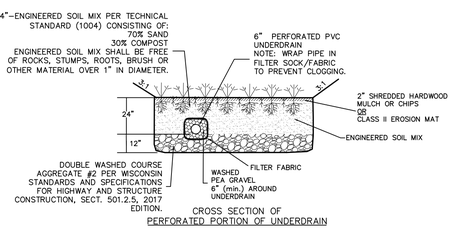
24" PRECAST BASIN CONCRETE STANDPIPE

NOT TO SCALE

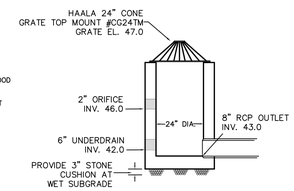


BIORETENTION BASIN #2 DETAIL

NOT TO SCALE

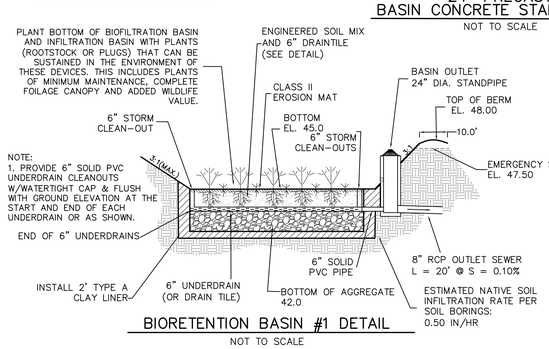


CROSS SECTION OF PERFORATED PORTION OF UNDERDRAIN



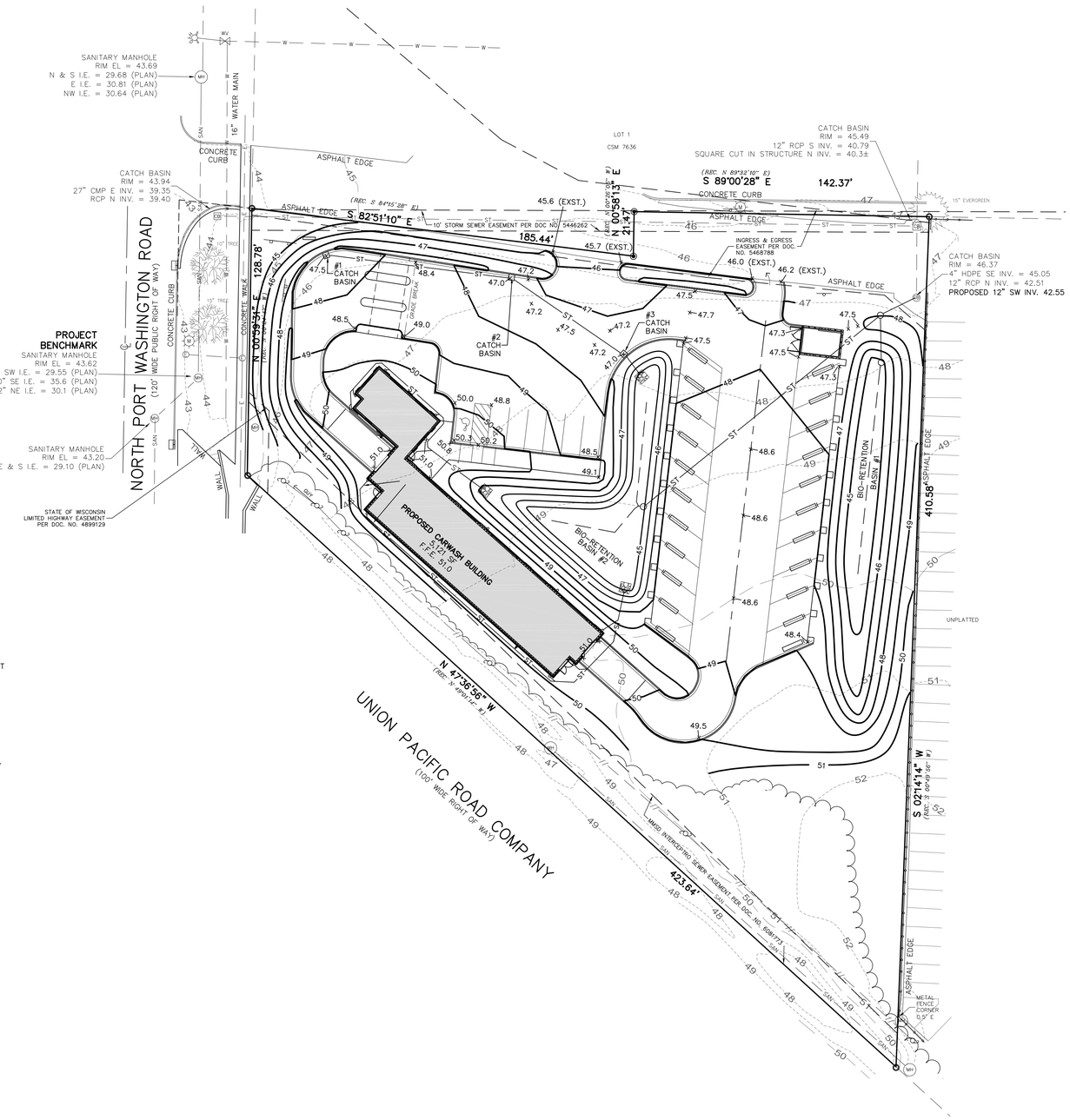
24" PRECAST BASIN CONCRETE STANDPIPE

NOT TO SCALE



BIORETENTION BASIN #1 DETAIL

NOT TO SCALE



JILLY'S CAR WASH

5100 N. PORT WASHINGTON ROAD GLENDALE, WI

CJE NO.: 2031R4
OCTOBER 15, 2020

LEGEND

48	EXISTING CONTOUR
48	PROPOSED CONTOUR
x 48.0	PROPOSED ELEVATION
ST	EXISTING STORM SEWER
ST	PROPOSED STORM SEWER
SAN	EXISTING SANITARY SEWER
SAN	PROPOSED SANITARY SEWER
W	EXISTING WATER MAIN
W	PROPOSED WATER MAIN
G	BURIED GAS MAIN
//	OVER HEAD WIRE
E	BURIED ELECTRIC

www.DiggersHotline.com
DIGGERS HOTLINE
DIAL 811 OR (800) 242-8511

NOTES:

1. ALL SPOT GRADES ARE LOCATED AT THE FLANGE LINE OF THE PROPOSED CURB UNLESS OTHERWISE NOTED.

2. DISTURBED AREA: 62,735 S.F. (1.440 ACRES)

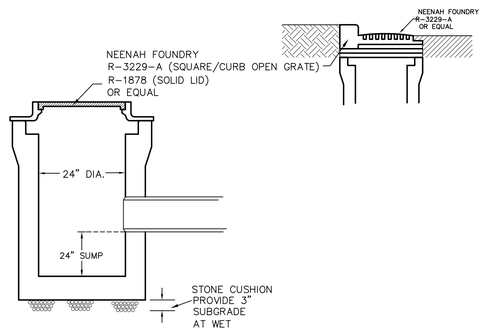
GRAPHIC SCALE

30 0 15 30 60

1 inch = 30 ft

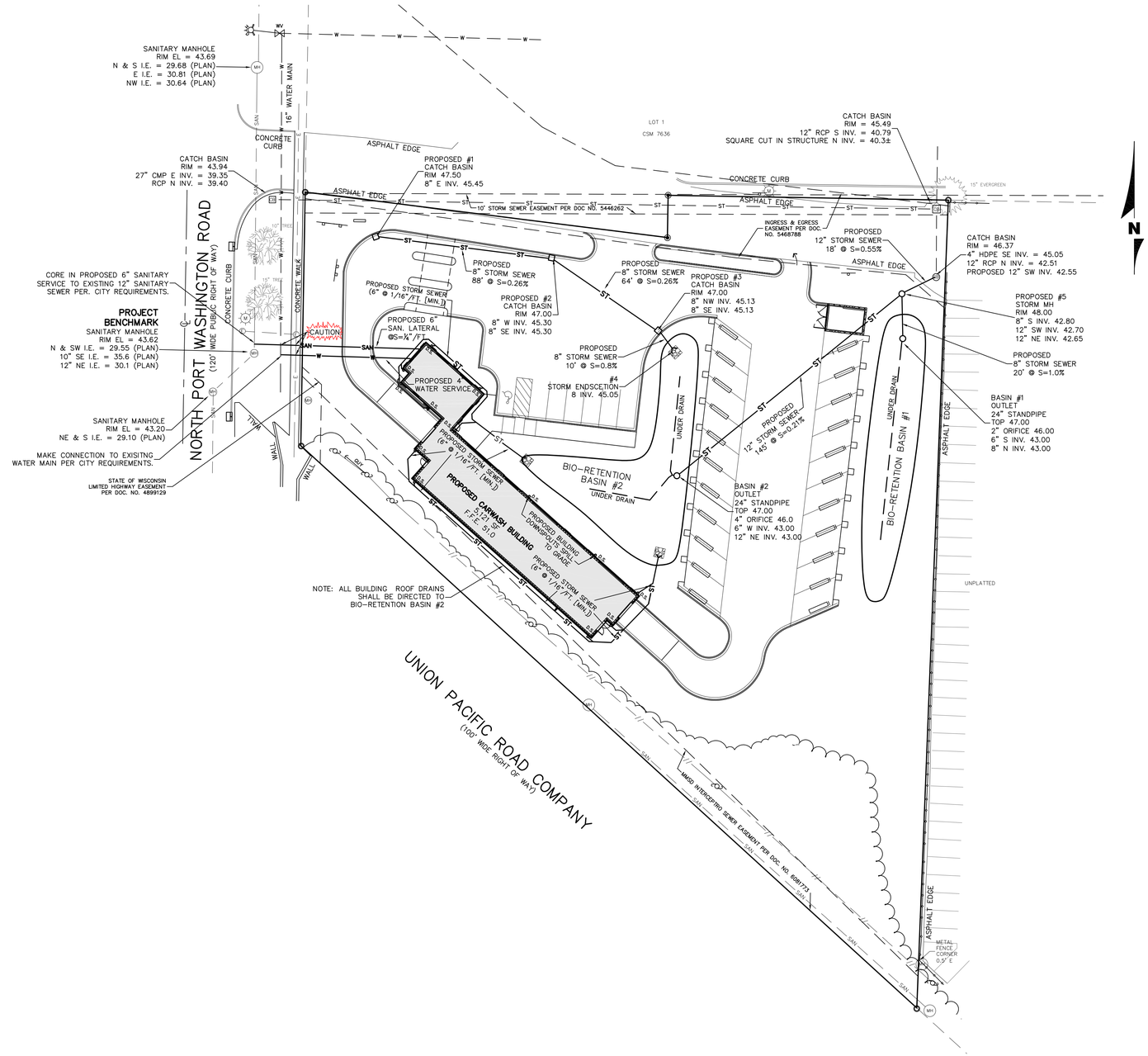
SITE GRADING PLAN C1.0

CJ engineering
civil design and consulting
9205 W. Center Street
Suite 214
Milwaukee, WI 53222
PH. (414) 443-1312
www.cj-engineering.com



PRECAST 24" DIA. STORM INLET

NOT TO SCALE



NOTES:

1. STORM WATER MANAGEMENT MEETING THE REQUIREMENTS OF THE CITY, MMSD AND WI DNR WILL BE PROVIDE BY THE BIO-RETENTION BASINS.

2. EXACT LOCATION OF SANITARY AND WATER SERVICES TO BE VERIFIED BY THE PLUMBING CONSULTANT.

3. ALL NEW UTILITIES CONNECTIONS PER CITY REQUIREMENTS.

4. ALL BUILDING ROOF DRAINS SHALL BE DIRECTED TO BIO RETENTION BASIN #2. BUILDING DOWNSPOUT STORM SEWER TO BE 6" @S=$\frac{1}{16}$"/FT (MIN.) UNLESS OTHERWISE NOTED

5. ALL STORM SEWER, SANITARY SEWER, AND WATER MAIN MATERIALS AND INSTALLATION PER APPLICABLE SECTIONS OF THE LATEST EDITIONS OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN (STANDARD SPECIFICATIONS), WISCONSIN ADMINISTRATIVE PLUMBING CODE AND THE CITY OF GLENDALE REQUIREMENTS.

6. UTILITY SPECIFICATIONS:
SANITARY SEWER: PVC, ASTM D3034 SDR 35
WATER SERVICE: PVC, AWWA C900, SDR 18
STORM SEWER: PVC, ASTM D3034

LEGEND

48	EXISTING CONTOUR
48	PROPOSED CONTOUR
x 48.0	PROPOSED ELEVATION
ST	EXISTING STORM SEWER
ST	PROPOSED STORM SEWER
SAN	EXISTING SANITARY SEWER
SAN	PROPOSED SANITARY SEWER
W	EXISTING WATER MAIN
W	PROPOSED WATER MAIN
G	BURIED GAS MAIN
//	OVER HEAD WIRE
E	BURIED ELECTRIC

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DIGGERS HOTLINE
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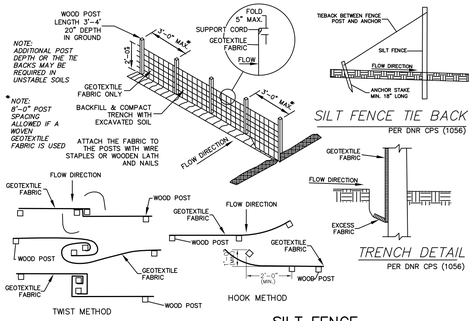
GRAPHIC SCALE
30 0 15 30 60
1 inch = 30 ft

JILLY'S CAR WASH

5100 N. PORT WASHINGTON ROAD GLENDALE, WI

CJE NO.: 203IR4
OCTOBER 15, 2020

SITE UTILITY PLAN C3.0

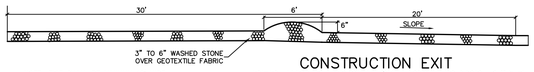


SILT FENCE
PER WDNR TECHNICAL STANDARD 1056 — 1

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS
PER DNR CPS (1056)

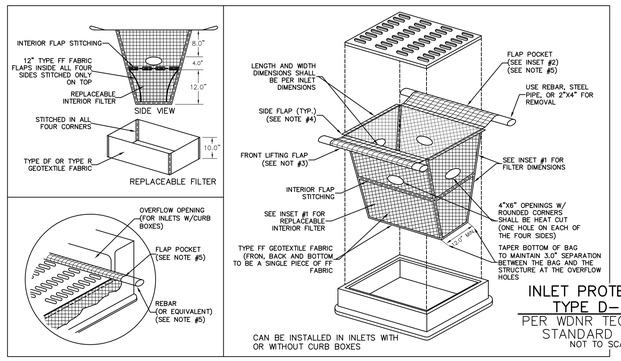
1. CONSTRUCTION SILT FENCE AROUND THE DISTURBED AREAS AS SHOWN ON EROSION CONTROL PLAN, TO PREVENT SEDIMENT FROM BEING WASHED INTO THE DRAINAGE SYSTEM
2. LOCATE POSTS PER DNR CPS (1056)
3. WHEN JOINTS ARE NECESSARY REFER, TO DNR CPS (1056)
4. FILTER FABRIC TO BE OF NYLON, POLYESTER, PROPYLENE OR ETHYLENE YARN WITH EXTRA STRENGTH – 50 LB/LIN. IN. (MIN.) – AND WITH A FLOW RATE OF AT LEAST 0.3 GAL./SQ. FT./MIN. FABRIC SHOULD CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS.
5. THE FILTER FABRIC SHALL BE ANCHORED BY SPREADING AT LEAST 8 INCHES OF FABRIC IN A 4" X 6" TRENCH
6. THE FILTER FABRIC SHALL BE STAPLED AND/OR NAILED TO THE UPSLOPE SIDE OF THE POSTS.
7. POST TO BE 1 1/8" X 1 1/8" HICKORY OR OAK, 3 FEET LONG, SPACED A MAXIMUM OF 3 FEET APART.
8. USE WIRE REINFORCEMENT IN UNSTABLIZED MINOR SWALES, DITCHES AND DIVERSIONS.
9. USE WSDOT APPROVED SILT FENCE



NOTE: EXIT SHALL BE MINIMUM 18' WIDE

CONSTRUCTION EXIT
PER WDNR TECHNICAL STANDARD 1057 — 2

NOT TO SCALE

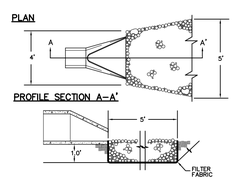


INLET PROTECTION TYPE D–M
PER WDNR TECHNICAL STANDARD 1060 — 3

NOT TO SCALE

NOTES:
1. TAPER BOTTOM OF BAG TO MAINTAIN THREE INCHES OF CLEARANCE BETWEEN THE BAG AND THE STRUCTURE, MEASURED FROM THE BOTTOM OF THE OVERFLOW OPENINGS TO GHT STRUCTURE WALL.
2. GEOTEXTILE FABRIC TYPE FF FOR FLAPS, TOP AND BOTTOM OF OUTSIDE OF FILTER BAG. FRONT, BACK AND BOTTOM OF FILTER BAG BEING ONE PIECE.
3. FRONT LIFTING FLAP IS TO BE USED WEN REMOVING AND MAINTAINING FILTER BAG.
4. SIDE FLAPS SHALL BE A MAXIMUM OF TWO INCHES LONG. FOLD THE FABRIC OVER AND REINFORCE WITH MULTIPLE STITCHES.
5. FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2"X4". THE REBAR, STEEL PIPE, OR WOOD SHALL BE INSTALLED IN THE REAR FLAP AND SHALL NOT BLOCK THE TOP HALF OF THE CURB FACE OPENING.

MAINTENANCE NOTES:
1. WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED IN THE FABRIC DOES NOT FALL INTO THE STRUCTURE. MATERIAL THAT HAS FALLEN INTO THE INLET SHALL BE IMMEDIATELY REMOVED.



CONSTRUCTION SPECIFICATIONS

1. EXCAVATE BELOW CHANNEL OUTLET AND WIDEN CHANNEL TO THE REQUIRED RIP RAP THICKNESS FOR EACH APRON. FOUNDATION TO BE CUT TO ZERO GRADE AND SMOOTHED.
2. PLACE FILTER CLOTH ON BOTTOM AND SIDES OF PREPARED FOUNDATION. ALL JOINTS TO OVERLAP A MINIMUM OF 1.0'.
3. EXERCISE CARE IN RIP RAP PLACEMENT TO AVOID DAMAGE TO FILTER FABRIC.
4. PLACE RIP RAP ON ZERO GRADE – TOP OF RIP RAP TO BE LEVEL WITH EXISTING OUTLET – NO OVERFALL AT ENDS.
5. RIP RAP TO BE HARD, ANGULAR, WELL GRADE STONE OF 5" TO 8" DIA.
6. IMMEDIATELY AFTER CONSTRUCTION, STABILIZE ALL DISTURBED AREAS WITH VEGETATION.

OUTLET PROTECTION FOR ENDSECTION — 4

NOT TO SCALE

CONSTRUCTION SCHEDULE

1. OBTAIN PLAN APPROVAL AND OTHER APPLICABLE PERMITS.
2. INSTALL CONSTRUCTION EXIT.
3. INSTALL SILT FENCE.
4. STRIP TOPSOIL AND STOCKPILE AT LOCATION SHOWN.
5. INSTALL SEDIMENT BASIN (FUTURE BIORETENTION BASIN):
   A. THE AREA OF THE BIO–RETENTION BASIN WILL BE USED AS A SEDIMENTATION BASIN DURING CONSTRUCTION. DO NOT INSTALL DRAINTILE, AGGREGATE OR ENGINEERED SOIL AT THIS STAGE.
   B. ROUGH GRADE BASIN AND INSTALL BASIN STANDPIPE AND 12" OUTLET PIPE AND RIP RAP ON FABRIC. PROVIDE TEMPORARY STABILIZATION.
6. STRIP TOPSOIL FROM BUILDING SITE AND STOCKPILE.
7. ROUGH GRADE BUILDING AREA.
8. BEGIN BUILDING CONSTRUCTION.
9. INSTALL PROPOSED UTILITIES.
10. INSTALL BASE COURSE OF PAVEMENT.
11. INSTALL BIORETENTION BASIN: INSTALL AGGREGATE, 6" DRAIN TILE, ENGINEERED SOIL AND PLANTINGS. PROVIDE FINAL STABILIZATION OF BASIN SIDE SLOPES THAT INCLUDE SEEDING AND MATTING.
12. FINAL GRADING OF SLOPES, TOPSOIL, CRITICAL SLOPES (ALL SLOPES 4:1 OR GREATER): VEGETATE AND MULCH/MAT ALL DISTURBED AREAS.
13. ALL EROSION CONTROL PRACTICES WILL BE INSPECTED WEEKLY AND AFTER RAINFALL. NEEDED REPAIRS WILL BE PERFORMED IMMEDIATELY.
14. AFTER SITE IS STABILIZED, REMOVE ALL TEMPORARY MEASURES AND VEGETATE THE DISTURBED AREAS.
15. ESTIMATED TIME BEFORE FINAL STABILIZATION – 3 MONTHS.

LEGEND

48	EXISTING CONTOUR
48	PROPOSED CONTOUR
x 48.0	PROPOSED ELEVATION
ST	PROPOSED STORM SEWER
	PROPOSED SILT FENCE

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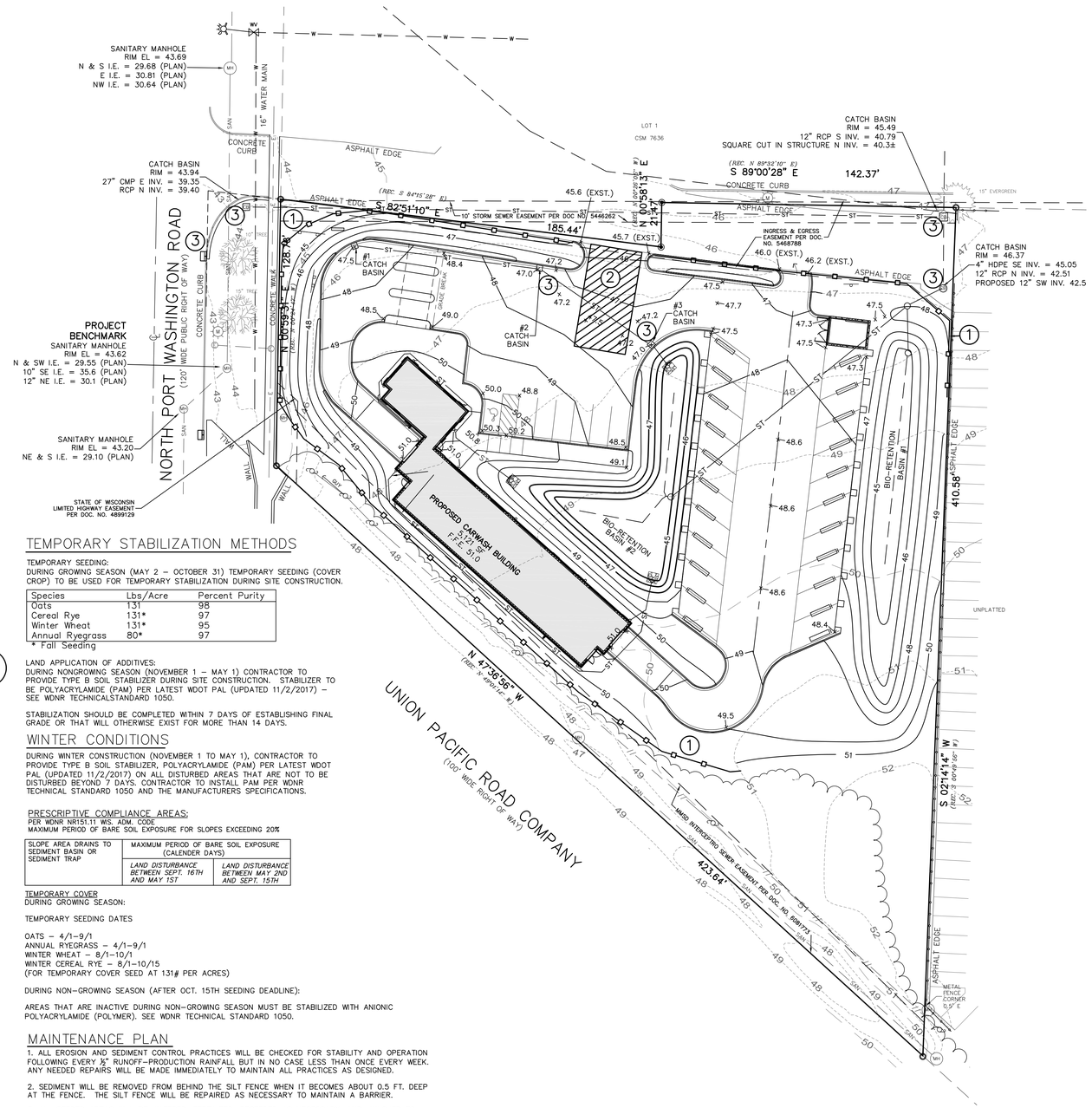

TEMPORARY STABILIZATION METHODS

TEMPORARY SEEDING:
DURING GROWING SEASON (MAY 2 – OCTOBER 31) TEMPORARY SEEDING (COVER CROP) TO BE USED FOR TEMPORARY STABILIZATION DURING SITE CONSTRUCTION.

Species	Lbs/Acre	Percent Purity
Oats	131	98
Cereal Rye	131*	97
Winter Wheat	131*	95
Annual Ryegrass	80*	97

* Fall Seeding

LAND APPLICATION OF ADDITIVES:
DURING NONGROWING SEASON (NOVEMBER 1 – MAY 1) CONTRACTOR TO PROVIDE TYPE B SOIL STABILIZER DURING SITE CONSTRUCTION. STABILIZER TO BE POLYACRYLAMIDE (PAM) PER LATEST WDOT PAL (UPDATED 11/2/2017) – SEE WDNR TECHNICALSTANDARD 1050.

STABILIZATION SHOULD BE COMPLETED WITHIN 7 DAYS OF ESTABLISHING FINAL GRADE OR THAT WILL OTHERWISE EXIST FOR MORE THAN 14 DAYS.

WINTER CONDITIONS

DURING WINTER CONSTRUCTION (NOVEMBER 1 TO MAY 1), CONTRACTOR TO PROVIDE TYPE B SOIL STABILIZER, POLYACRYLAMIDE (PAM) PER LATEST WDOT PAL (UPDATED 11/2/2017) ON ALL DISTURBED AREAS THAT ARE NOT TO BE DISTURBED BEYOND 7 DAYS. CONTRACTOR TO INSTALL PAM PER WDNR TECHNICAL STANDARD 1050 AND THE MANUFACTURERS SPECIFICATIONS.

PRESCRIPTIVE COMPLIANCE AREAS:
PER WDNR NR151.11 WS. ADM. CODE
MAXIMUM PERIOD OF BARE SOIL EXPOSURE FOR SLOPES EXCEEDING 20%

SLOPE AREA DRAINS TO SEDIMENT BASIN OR SEDIMENT TRAP	MAXIMUM PERIOD OF BARE SOIL EXPOSURE (CALENDER DAYS)	
	LAND DISTURBANCE BETWEEN SEPT. 16TH AND MAY 1ST	*LAND DISTURBANCE BETWEEN MAY 2ND AND SEPT. 15TH*

TEMPORARY COVER
DURING GROWING SEASON:

TEMPORARY SEEDING DATES

OATS – 4/1–9/1
ANNUAL RYEGRASS – 4/1–9/1
WINTER WHEAT – 8/1–10/1
WINTER CEREAL RYE – 8/1–10/15
(FOR TEMPORARY COVER SEED AT 131# PER ACRES)

DURING NON–GROWING SEASON (AFTER OCT. 15TH SEEDING DEADLINE):

AREAS THAT ARE INACTIVE DURING NON–GROWING SEASON MUST BE STABILIZED WITH ANIONIC POLYACRYLAMIDE (POLYMER). SEE WDNR TECHNICAL STANDARD 1050.

MAINTENANCE PLAN

1. ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY ½" RUNOFF–PRODUCTION RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS WILL BE MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED.

2. SEDIMENT WILL BE REMOVED FROM BEHIND THE SILT FENCE WHEN IT BECOMES ABOUT 0.5 FT. DEEP AT THE FENCE. THE SILT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER.

3. ALL SEEDED AREAS WILL BE WATERED, FERTILIZED, RESEEDED AS NECESSARY, AND MULCHED TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER.

4. ANY SEDIMENT REACHING A PUBLIC OR PRIVATE ROAD SHALL BE REMOVED BY STREET CLEANING BEFORE THE END OF EACH DAY.

NOTES:

1. ALL EROSION CONTROL METHODS SHALL BE IN ACCORDANCE WITH THE CITY OF GLENDALE STANDARDS AND WDNR CPS TECHNICAL STANDARDS.

2. ALL EXPOSED SOIL AREAS NOT DISTURBED WITHIN SEVEN (7) DAYS SHALL BE IMMEDIATELY RESTORED WITH SEED AND MULCH OR POLYMER.

SEE WDNR TECHNICAL STANDARD 1059 FOR SEEDING

DURING GROWING SEASON (SOIL TEMPERATURES REMAIN CONSISTENTLY ABOVE 53°):

3. DISTURBED AREA: 62,735 S.F. (1.440 ACRES)

EROSION CONTROL

1. SILT FENCE
2. CONSTRUCTION EXIT
3. INLET PROTECTION
4. OUTLET PROTECTION
5. EROSION MATTING

FOR FINAL STABILIZATION, PROVIDE CLASS I, TYPE B EROSION MAT PER WISDOT EROSION CONTROL PAL (OR EQUAL) IN ALL ROADSIDE DITCHES, DEFINED SWALES, SIDE SLOPES, OUTLOT BERMS AND ALL OTHER SLOPES 4:1 OR GREATER. INSTALL PER MANUFACTURERS SPECIFICATIONS.

GRAPHIC SCALE

1 inch = 30 ft

CJ engineering
civil design and consulting
9205 W. Center Street
Suite 214
Milwaukee, WI 53222
PH. (414) 443-1312
www.cj-engineering.com

JILLY'S CAR WASH

5100 N. PORT WASHINGTON ROAD GLENDALE, WI

CJE NO.: 203IR4
OCTOBER 15, 2020

EROSION CONTROL PLAN C4.0

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BROOKFIELD, WI 53045
PH: (262) 786-6600
FAX: (414) 786-6608
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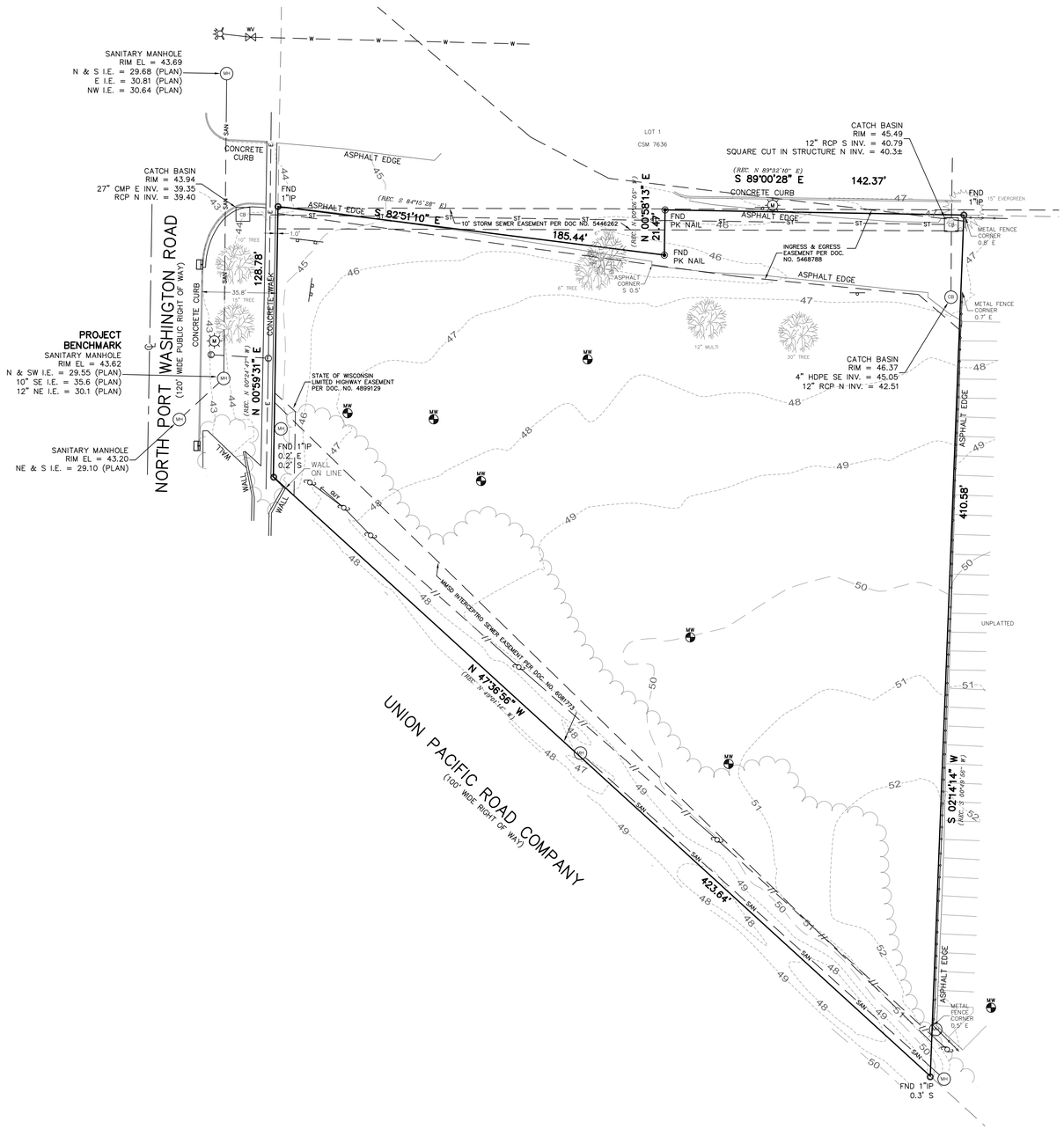

LEGAL DESCRIPTION:

A REDIVISION OF LOT 2 OF CERTIFIED SURVEY MAP NO. 3989, BEING A PART OF THE NORTHWEST 1/4 OF THE SOUTHEAST 1/4 SECTION 32, TOWN 8 NORTH, RANGE 22 EAST, IN THE CITY OF GLENDALE, MILWAUKEE COUNTY, WISCONSIN.

CONTAINING: 85,650 SQUARE FEET OR 1.9662 ACRES.

NOTES

1. LEGAL DESCRIPTION BASED ON INFORMATION FROM CLIENT

2. THE UNDERGROUND UTILITY INFORMATION AS SHOWN HEREON IS BASED, IN PART, ON INFORMATION FURNISHED BY THE UTILITY COMPANIES, DIGGERS HOTLINE AND THE LOCAL MUNICIPALITY. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, ITS ACCURACY AND COMPLETENESS CANNOT BE GUARANTEED NOR CERTIFIED TO.

3. SUBJECT PROPERTY IS LOCATED WITHIN AN AREA HAVING A ZONE DESIGNATION X: AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN PER INFORMATION FROM THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), ON FLOOD INSURANCE RATE MAP NO. 55079C0081E, WITH A DATE OF IDENTIFICATION OF 9/26/2008, IN COMMUNITY NO. CITY OF GLENDALE, 550275, WHICH IS THE COMMUNITY IN WHICH THE SUBJECT PROPERTY IS SITUATED.

4. PROJECT/SITE BENCHMARK – NORTH MANHOLE RIM OF SANITARY MANHOLE AS SHOWN HEREON, EL = 43.62

5. ELEVATIONS BASED ON INFORMATION FROM HNTB SURVEY DATED MARCH 19, 1996 AVAILABLE ON RECORD FROM THE COUNTY OF MILWAUKEE AND ARE AT CITY OF GLENDALE DATUM.

6. SURVEY DATUM:
COORDINATES ARE BASED ON THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), MILWAUKEE COUNTY. NORTH AMERICAN DATUM OF 1983, 2011 ADJUSTMENT (NAD83(2011)).

LEGEND

SAN	SANITARY SEWER		ELECTRIC TRANSFORMER		HYDRANT
ST	STORM SEWER	EM	ELECTRIC METER		WATER VALVE
W	WATER MAIN	EP	ELECTRIC PEDESTAL		GAS VALVE
G	BURIED GAS LINE	EB	ELECTRIC BOX AT GRADE		MANHOLE
TEL	BURIED TELEPHONE LINE	TB	TELEPHONE BOX AT GRADE		STORM MANHOLE
E	BURIED ELECTRIC LINE	TP	TELEPHONE PEDESTAL		CATCH BASIN
FO	BURIED FIBER OPTIC LINE	TV	TV PEDESTAL		CURB INLET
//	OVERHEAD UTILITY LINES	GM	GAS METER		METAL LIGHT POLE
CATV	BURIED CABLE TELEVISION LINES		AIR CONDITIONER		CONCRETE LIGHT POLE
COMB	COMBINATION SEWER		UTILITY POLE		WOOD LIGHT POLE
	WOOD FENCE		WOOD SIGN		MAIL BOX
	METAL FENCE		METAL SIGN		FIBER OPTIC MARKER
	EDGE OF TREES AND BRUSH	P	FLAG POLE		GUY WIRE
	FIRE DEPARTMENT CONNECTION		BOLLARD		
			BOLLARD LIGHT		
			YARD LIGHT		

PLAT OF SURVEY WITH TOPOGRAPHY

FOR

JILLY'S CAR WASH

5100 N PORT WASHINGTON ROAD
GLENDALE, WI

DRAWN BY:	ES	DATE:	MAY 28, 2020
CHECKED BY:	MJB	DRAWING NO.	P - 20
CSE JOB NO.:	20 - 043	SHEET	1 OF 1

I CERTIFY THAT I HAVE SURVEYED THE ABOVE DESCRIBED PROPERTY, AND THE ABOVE MAP IS A TRUE REPRESENTATION THEREOF AND SHOWS THE SIZE AND LOCATION OF THE PROPERTY, ITS EXTERIOR BOUNDARIES, THE LOCATION AND DIMENSIONS OF ALL VISIBLE STRUCTURES THEREON, BOUNDARY FENCES, APPARENT EASEMENTS AND ROADWAYS AND VISIBLE ENCROACHMENTS, IF ANY.
THIS SURVEY IS MADE FOR THE EXCLUSIVE USE OF THE PRESENT PROPERTY, AND ALSO THOSE WHO PURCHASE, MORTGAGE, OR GUARANTEE THE TITLE THERETO, WITHIN ONE (1) YEAR FROM DATE THEREOF.

MAY 28, 2020
DATE

MICHAEL J. BERRY, R.L.S.
REGISTERED LAND SURVEYOR S-2545

WISCONSIN
MICHAEL J. BERRY
S-2545
BROOKFIELD, WI
LAND SURVEYOR

GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 INCH = 30 FT.

PRELIMINARY

CGC Inc.

LOG OF TEST BORING

Project: Jilly's Car Wash
5100 N. Port Washington Road
Location: Glendale, Wisconsin

Boring No. 1
Surface Elevation (ft) 46.3
Job No. CM20179
Sheet 1 of 1

336 S. Curtis Rd, West Allis, WI 53214 (414) 443-2000, FAX (414) 443-2099

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	LOI
						FILL: 10" Dark Brown Clayey Topsoil					
1		18	M	5		FILL: Brown to Gray Silt/Fine Silty Sand, Little Rubble (Cinders, Brick Pieces, Crushed Stone, Glass)					
2		10	M	10	5	FILL: Rubble - Mixture of Crushed Stone, Limestone Slab, Gravel and Silty Sand					
3		6	M	10							
4		7	W	23	10						
5A/B		18	M	5		Dark Brown to Black Fibrous PEAT (PT)					
						Loose, Greenish Gray Organic SILT; Some Shell Fragments (OL)					
6		18	M	12	15	Stiff, Brown Lean CLAY; Trace Sand and Gravel (CL)	(1.5)				
7		18	M	10	20		(1.25-1.75)				
						Dense, Gray Clayey SILT; Little Fine Sand (CL-ML)					
8		18	M	43	25						
						End of Boring at 25 ft Backfilled with Bentonite Chips					
					30						
					35						

WATER LEVEL OBSERVATIONS

While Drilling ▽ 8.5' ± Upon Completion of Drilling -
Time After Drilling
Depth to Water ▼
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 8/25/20 End 8/26/20
Driller J&J Chief JP Rig CME-45
Logger JP Editor JPS
Drill Method 2.25" HSA

PRELIMINARY

CGC Inc.

LOG OF TEST BORING

Project: Jilly's Car Wash
5100 N. Port Washington Road
Location: Glendale, Wisconsin

Boring No. 2
Surface Elevation (ft) 47.5
Job No. CM20179
Sheet 1 of 1

336 S. Curtis Rd, West Allis, WI 53214 (414) 443-2000, FAX (414) 443-2099

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	LOI
						FILL: 4" Dark Brown Clayey Topsoil					
1		6	M	24		FILL: Rubble - Mixture of Crushed Stone, Concrete and Brick Fragments, Glass and Silty Sand					
2		6	M	8	5						
3		3	M	11							
4		18	M	4	10	Dark Brown to Black Fibrous PEAT; Few Thin Fine Sand Lenses (PT)					
						Loose, Gray Fine to Coarse SAND; Trace Silt (SP)					
5A/B		18	W/M	10		Stiff to Very Stiff, Brown Lean CLAY; Trace Sand and Gravel (CL)	(1.75-2.25)				
6		18	M	19	15		(2.75-3.0)				
7		18	M	12	20		(1.5-1.75)				
8		18	M	48		Dense, Gray Clayey SILT; Little Fine Sand (CL-ML)					
					25	End of Boring at 25 ft Backfilled with Bentonite Chips					
					30						
					35						

WATER LEVEL OBSERVATIONS

While Drilling ▽ 9.5' ± Upon Completion of Drilling 9.0'
Time After Drilling
Depth to Water ▼
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 8/25/20 End 8/25/20
Driller J&J Chief JP Rig CME-45
Logger JP Editor JPS
Drill Method 2.25" HSA

PRELIMINARY

CGC Inc.

LOG OF TEST BORING

Project: Jilly's Car Wash
5100 N. Port Washington Road
Location: Glendale, Wisconsin

Boring No. 3
Surface Elevation (ft) 49.2
Job No. CM20179
Sheet 1 of 1

336 S. Curtis Rd, West Allis, WI 53214 (414) 443-2000, FAX (414) 443-2099

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	LOI
						FILL: 7" Dark Brown Clayey Topsoil					
1		18	M	4		FILL: Dark Brown to Gray Fine Silty Sand, Trace Gravel					
2		6	M	7							
					5	FILL: Black Organic Clay					
3		18	M	5		Loose, Brown Fine to Medium SAND; Trace Silt (SP) (POSSIBLE FILL)					
4		18	W	3	10	Very Loose, Brown Fine to Coarse SAND; Little Silt (SP-SM) (POSSIBLE FILL)					
5		18	W	18		Medium Dense, Gray Fine to Coarse SAND; Trace Silt and Gravel (SP)					
6		18	M	10	15	Stiff to Very Stiff, Brown Lean CLAY; Trace Sand and Gravel (CL)	(1.5-2.0)				
7		18	M	15	20		(2.25-2.75)				
8		18	M	13	25		(1.5-2.0)				
9		18	M	68	30	Very Dense, Gray Clayey SILT; Little Fine Sand (CL-ML)					
					35	End of Boring at 30 ft Backfilled with Bentonite Chips					

WATER LEVEL OBSERVATIONS

While Drilling ▽ 9.0' Upon Completion of Drilling 10.0'
Time After Drilling
Depth to Water ▼
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 8/25/20 End 8/25/20
Driller J&J Chief JP Rig CME-45
Logger JP Editor JPS
Drill Method 2.25" HSA

PRELIMINARY

CGC Inc.

LOG OF TEST BORING

Project: Jilly's Car Wash
5100 N. Port Washington Road
Location: Glendale, Wisconsin

Boring No. 4
Surface Elevation (ft) 46.8
Job No. CM20179
Sheet 1 of 1

336 S. Curtis Rd, West Allis, WI 53214 (414) 443-2000, FAX (414) 443-2099

SAMPLE No.	Type	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	LOI
						FILL: 9" Dark Brown Clayey Topsoil					
1	■	10	M	6		FILL: Dark Brown to Gray Fine Silty Sand, Trace Cinders					
						FILL: Rubble - Crushed Stone, Gravel and Silty Sand					
2	■	10	M	23	5						
3	■	1	M	5							
4	■	6	M/W	17	10						
						End of Boring at 10 ft Backfilled with Bentonite Chips					
					15						
					20						
					25						
					30						
					35						

WATER LEVEL OBSERVATIONS

While Drilling ▽ 9.0' Upon Completion of Drilling -
Time After Drilling
Depth to Water ▼
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 8/26/20 End 8/26/20
Driller J&J Chief JP Rig CME-45
Logger JP Editor JPS
Drill Method 2.25" HSA

PRELIMINARY

CGC Inc.

LOG OF TEST BORING

Project: Jilly's Car Wash
5100 N. Port Washington Road
Location: Glendale, Wisconsin

Boring No. 5
Surface Elevation (ft) 48.3
Job No. CM20179
Sheet 1 of 1

336 S. Curtis Rd, West Allis, WI 53214 (414) 443-2000, FAX (414) 443-2099

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	LOI
						FILL: 8" Dark Brown Clayey Topsoil					
1		15	M	8		FILL: Dark Brown to Gray Fine Silty Sand, Trace Gravel and Slag					
2		18	M	10	5	Loose, Brown Fine to Medium SAND; Trace to Little Silt (SP/SP-SM) (POSSIBLE FILL)					
3A/B		18	M/W	6		Loose to Medium Dense, Brown Fine to Coarse SAND; Trace Silt and Gravel (SP)					
4		9	W	10	10						
5A/B		18	W/M	12		Stiff to Very Stiff, Brown Lean CLAY; Trace Sand and Gravel (CL)	~~(1.75-2.25)~~				
6		18	M	17	15		(2.75-3.25)				
						End of Boring at 15 ft Backfilled with Bentonite Chips					
					20						
					25						
					30						
					35						

WATER LEVEL OBSERVATIONS

While Drilling ▽ 9.0' ± Upon Completion of Drilling 9.0'
Time After Drilling
Depth to Water ▼
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 8/26/20 End 8/26/20
Driller J&J Chief JP Rig CME-45
Logger JP Editor JPS
Drill Method 2.25" HSA

PRELIMINARY

CGC Inc.

LOG OF TEST BORING

Project: Jilly's Car Wash
5100 N. Port Washington Road
Location: Glendale, Wisconsin

Boring No. 6
Surface Elevation (ft) 48.9
Job No. CM20179
Sheet 1 of 1

336 S. Curtis Rd, West Allis, WI 53214 (414) 443-2000, FAX (414) 443-2099

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	qu (qa) (tsf)	W	LL	PL	LOI
						FILL: 6" Dark Brown Clayey Topsoil					
1		18	M	20		FILL: Dark Brown to Gray Fine Silty Sand, Little Crushed Stone and Gravel, Few Pieces of Slag and Glass					
2		1	M	23	5	FILL: Black Organic Clay					
3		18	M	6		FILL: Brown Fine to Medium Sand and Silty Clay, Little Silt					
4		18	W	9		Loose, Gray Fine SAND; Trace Silt (SP)					
					10	Loose to Medium Dense, Brown to Gray Fine to Coarse SAND; Trace Gravel and Silt (SP)					
5		18	W	12							
6		10	W	8							
					15	Stiff to Very Stiff, Brown Lean CLAY; Trace Sand and Gravel (CL)					
7		18	M	14			(1.5-2.25)				
						End of Boring at 17.5 ft Backfilled with Bentonite Chips					
					20						
					25						
					30						
					35						

WATER LEVEL OBSERVATIONS

While Drilling ▽ 8.5' Upon Completion of Drilling 9.0'
Time After Drilling
Depth to Water ▼
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 8/26/20 End 8/26/20
Driller J&J Chief JP Rig CME-45
Logger JP Editor JPS
Drill Method 2.25" HSA

CGC, Inc.

LOG OF TEST BORING

General Notes

Descriptive Soil Classification

GRAIN SIZE TERMINOLOGY

Soil Fraction	Particle Size	U.S. Standard Sieve Size
Boulders	Larger than 12"	Larger than 12"
Cobbles	3" to 12"	3" to 12"
Gravel: Coarse	3/4" to 3"	3/4" to 3"
Fine	4.76 mm to 3/4"	#4 to 3/4"
Sand: Coarse	2.00 mm to 4.76 mm	#10 to #4
Medium	0.42 to mm to 2.00 mm	#40 to #10
Fine	0.074 mm to 0.42 mm	#200 to #40
Silt	0.005 mm to 0.074 mm	Smaller than #200
Clay	Smaller than 0.005 mm	Smaller than #200

Plasticity characteristics differentiate between silt and clay.

GENERAL TERMINOLOGY

Physical Characteristics
Color, moisture, grain shape, fineness, etc.
Major Constituents
Clay, silt, sand, gravel
Structure
Laminated, varved, fibrous, stratified, cemented, fissured, etc.
Geologic Origin
Glacial, alluvial, eolian, residual, etc.

RELATIVE DENSITY

Term	"N" Value
Very Loose	0-4
Loose	4-10
Medium Dense	10-30
Dense	30-50
Very Dense	Over 50

RELATIVE PROPORTIONS OF OF COHESIONLESS SOILS

Proportional Term	Defining Range by Percentage of Weight
Trace	0%-5%
Little	5%-12%
Some	12%-35%
And	35%-50%

CONSISTENCY

Term	q_u-tons/sq. ft.
Very Soft	0.0 to 0.25
Soft	0.25 to 0.50
Medium	0.50 to 1.0
Stiff	1.0 to 2.0
Very Stiff	2.0 to 4.0
Hard	Over 4.0

ORGANIC CONTENT BY COMBUSTION METHOD

Soil Description	Loss on Ignition
Non Organic	Less than 4%
Organic Silt/Clay	4-12%
Sedimentary Peat	12-50%
Fibrous and Woody Peat	More than 50%

PLASTICITY

Term	Plastic Index
None to Slight	0-4
Slight	5-7
Medium	8-22
High to Very High	Over 22

The penetration resistance, N, is the summation of the number of blows required to effect two successive 6" penetrations of the 2" split-barrel sampler. The sampler is driven with a 140 lb. weight falling 30" and is seated to a depth of 6" before commencing the standard penetration test.

SYMBOLS

DRILLING AND SAMPLING

CS--Continuous Sampling
RC--Rock Coring: Size AW, BW, NW, 2"W
RQD--Rock Quality Designator
RB--Rock Bit
FT--Fish Tail
DC--Drove Casing
C--Casing: Size 2 1/2", NW, 4", HW
CW--Clear Water
DM--Drilling Mud
HSA--Hollow Stem Auger
FA--Flight Auger
HA--Hand Auger
COA--Clean-Out Auger
SS--2" Diameter Split-Barrel Sample
2ST--2" Diameter Thin-Walled Tube Sample
3ST--3" Diameter Thin-Walled Tube Sample
PT--3" Diameter Piston Tube Sample
AS--Auger Sample
WS--Wash Sample
PTS--Peat Sample
PS--Pitcher Sample
NR--No Recovery
S--Sounding
PMT--Borehole Pressuremeter Test
VS--Vane Shear Test
WPT--Water Pressure Test

LABORATORY TESTS

q_a--Penetrometer Reading, tons/sq. ft.
q_u--Unconfined Strength, tons/sq. ft.
W--Moisture Content, %
LL--Liquid Limit, %
PL--Plastic Limit, %
SL--Shrinkage Limit, %
LI--Loss on Ignition, %
D--Dry Unit Weight, lbs/cu. ft.
pH--Measure of Soil Alkalinity or Acidity
FS--Free Swell, %

WATER LEVEL MEASUREMENT

∇ --Water Level at time shown
NW--No Water Encountered
WD--While Drilling
BCR--Before Casing Removal
ACR--After Casing Removal
CW--Caved and Wet
CM--Caved and Moist

Note: Water level measurements shown on the boring logs represent conditions at the time indicated and may not reflect static levels, especially in cohesive soils.

CGC, Inc.

Madison - Milwaukee

UNIFIED SOIL CLASSIFICATION SYSTEM

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

COARSE-GRAINED SOILS (more than 50% of material is larger than No. 200 sieve size.)			
GRAVELS More than 50% of coarse fraction larger than No. 4 sieve size	Clean Gravels (Less than 5% fines)		
		GW	Well-graded gravels, gravel-sand mixtures, little or no fines
		GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
	Gravels with fines (More than 12% fines)		
		GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
SANDS 50% or more of coarse fraction smaller than No. 4 sieve size	Clean Sands (Less than 5% fines)		
		SW	Well-graded sands, gravelly sands, little or no fines
		SP	Poorly graded sands, gravelly sands, little or no fines
	Sands with fines (More than 12% fines)		
		SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (50% or more of material is smaller than No. 200 sieve size.)			
SILTS AND CLAYS Liquid limit less than 50%		ML	Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		OL	Organic silts and organic silty clays of low plasticity
SILTS AND CLAYS Liquid limit 50% or greater		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS		PT	Peat and other highly organic soils

LABORATORY CLASSIFICATION CRITERIA

GW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3	
GP	Not meeting all gradation requirements for GW	
GM	Atterberg limits below "A" line or P.I. less than 4	Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols
GC	Atterberg limits above "A" line with P.I. greater than 7	
SW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3	
SP	Not meeting all gradation requirements for GW	
SM	Atterberg limits below "A" line or P.I. less than 4	Limits plotting in shaded zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols.
SC	Atterberg limits above "A" line with P.I. greater than 7	

Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows:

Less than 5 percent ..... GW, GP, SW, SP
More than 12 percent ..... GM, GC, SM, SC
5 to 12 percent ..... Borderline cases requiring dual symbols

PLASTICITY CHART

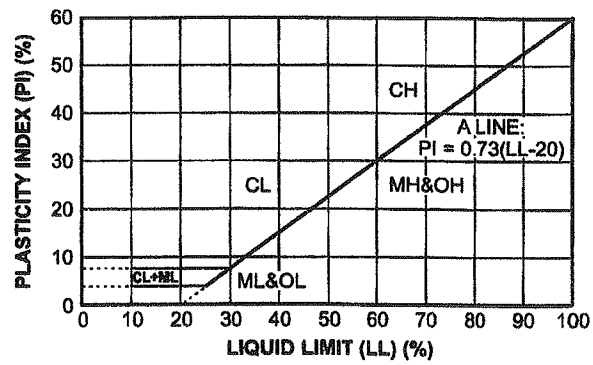

Table 1 - Soil Analytical Summary
5100 N. Port Washington Road, Glendale, WI
BRRTS #02-41-183154

						Proposed Site Development Locations															
						Car Wash - Northeast			*Office - Northeast*			*Car Wash - Southwest*			*Pavement - North*		*Retention Pond - Center*			*Retention Pond - East*	
Soil Sample Location						**B2**			**B1**			**B3**			**B4**		**B5**			**B6**	
Sample Depth (feet bgs)		**Groundwater Pathway RCL**	**Industrial Direct Contact RCL**	**Non-Industrial Direct Contact RCL**	**Background Threshold Value**	2-4	4-6	6-8	2-4	4-6	6-8	2-4	4-6	6-8	2-4	4-6	2-4	4-6	6-8	2-4	6-8
Sample Collection Date						8/25/2020	8/25/2020	8/25/2020	8/25/2020	8/25/2020	8/25/2020	8/25/2020	8/25/2020	8/25/2020	8/26/2020	8/26/2020	8/26/2020	8/26/2020	8/26/2020	8/26/2020	8/26/2020
		Exceeds Industrial DC RCL				X			X								X			X	
Analyte	*Units*	**Exceeds Non-Industrial DC RCL**				X	X		X	X		X					X			X	
		Exceeds Groundwater Pathway RCL				X	X		X	X		X	X	X			X			X	
RCRA Metals																					
Arsenic	mg/kg	0.584	3	0.677	8	***14.6***	-	-	***10.7***	-	-	<1.7	-	-	3.8J	-	***68.0***	-	-	3.4J	-
Barium	mg/kg	164.8	100,000	15,300	364	83.8	-	-	*380*	-	-	69.8	-	-	53.3	-	57.4	-	-	58.6	-
Cadmium	mg/kg	0.752	985	71	1	0.59	-	-	1.5	-	-	0.25J	-	-	0.30J	-	0.47J	-	-	0.31J	-
Chromium	mg/kg	360000	100,000	100,000	44	13.3	-	-	26.6	-	-	11.5	-	-	12.5	-	11.5	-	-	11.8	-
Lead	mg/kg	27	800	400	52	*103*	-	-	***687***	-	-	18.8	-	-	27.7	-	37.6	-	-	38.7	-
Selenium	mg/kg	0.52	5,840	391	---	<1.4	-	-	<1.5	-	-	<1.5	-	-	<1.4	-	<1.4	-	-	<1.4	-
Silver	mg/kg	0.849	5,840	391	---	<0.33	-	-	0.43J	-	-	<0.36	-	-	<0.34	-	<0.32	-	-	<0.32	-
Mercury	mg/kg	0.208	3.13	3.13	---	*0.23*	-	-	0.12	-	-	0.018J	-	-	0.029J	-	0.039	-	-	0.042	-
Volatile Organic Compounds (VOCs)																					
Benzene	µg/kg	5.12	7,070	1,600	---	<25.0	<25.0	<28.4	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
Chloroethane	µg/kg	226.6	2,120,000	2,120,000	---	<46.5	<46.4	<52.7	<46.4	<46.4	<46.4	<46.4	<46.4	<46.4	<46.4	<46.4	<46.4	<46.4	<46.4	<46.4	<46.4
Chloroform	µg/kg	3.33	1,980	454	---	<47.5	<47.5	<54.0	<47.5	<47.5	<47.5	<47.5	<47.5	<47.5	<47.5	<47.5	<47.5	<47.5	<47.5	<47.5	<47.5
Chloromethane	µg/kg	15.5	669,000	159,000	---	<25.0	<25.0	<28.4	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
Dibromochloromethane	µg/kg	31.95	38,900	8,280	---	<229	<229	<260	<229	<229	<229	<229	<229	<229	<229	<229	<229	<229	<229	<229	<229
1,1-Dichloroethane	µg/kg	483	22,200	5,060	---	<25.0	<25.0	<28.4	<25.0	<25.0	<25.0	<25.0	<25.0	54.7J	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
1,2-Dichloroethane	µg/kg	2.84	2,870	652	---	<25.0	<25.0	<28.4	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
1,1-Dichloroethene	µg/kg	5.02	1,190,000	320,000	---	<25.0	<25.0	<28.4	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
cis-1,2-Dichloroethene (cis-1,2-DCE)	µg/kg	41.2	2,340,000	156,000	---	<25.0	<25.0	<28.4	<25.0	<25.0	<25.0	<25.0	<25.0	*105*	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
trans-1,2-Dichloroethene (trans-1,2-DCE)	µg/kg	62.6	1,850,000	1,560,000	---	<25.0	<25.0	<28.4	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
Ethylbenzene	µg/kg	1,570	35,400	8,020	---	<25.0	<25.0	<28.4	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
Methylene Chloride	µg/kg	27	282,000	63,800	---	<26.3	<26.3	<28.4	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3
Naphthalene	µg/kg	658	24,100	5,520	---	<27.3	<27.3	<31.0	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3	<27.3
Tetrachloroethene (PCE)	µg/kg	4.54	145,000	33,000	---	<38.7	<38.7	<44.0	<38.7	<38.7	<38.7	<38.7	<38.7	<38.7	<38.7	<38.7	<38.7	<38.7	<38.7	<38.7	<38.7
Toluene	µg/kg	1,107	818,000	818,000	---	<25.0	<25.0	<28.4	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
1,1,1-Trichloroethane	µg/kg	140.2	640,000	640,000	---	<25.0	<25.0	<28.4	<25.0	<25.0	<25.0	<25.0	<25.0	73.6	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
1,1,2-Trichloroethane	µg/kg	3.24	7,010	1,590	---	<25.0	<25.0	<28.4	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
Trichloroethene (TCE)	µg/kg	3.58	8,410	1,300	---	*28.0J*	<25.0	<28.4	<25.0	<25.0	<25.0	*34.9J*	*37.6J*	*1060*	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
1,2,4-Trimethylbenzene (1,2,4-TMB)	µg/kg	1,382	219,000	219,000	---	<25.0	<25.0	<28.4	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
1,3,5-Trimethylbenzene (1,3,5-TMB)	µg/kg		182,000	182,000	---	<25.0	<25.0	<28.4	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
Vinyl chloride (VC)	µg/kg	0.138	2,080	67	---	<25.0	<25.0	<28.4	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
Xylene (total)	µg/kg	3,960	260,000	260,000	---	<50.0	<50.0	<56.8	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Polycyclic Aromatic Hydrocarbons (PAHs)																					
Acenaphthene	µg/kg	---	45,200,000	3,590,000	---	57.7J	45.5J	-	20.8J	12.4J	-	7.4J	-	-	<24.4	-	32.6	-	-	73.5J	-
Acenaphthylene	µg/kg	---	---	---	---	53.1J	41.3J	-	22.8J	11.2J	-	5.3J	-	-	284	-	24.2J	-	-	64.8J	-
Anthracene	µg/kg	196,949	100,000,000	17,900,000	---	372	291	-	121	57.3	-	45.9	-	-	183J	-	118	-	-	331	-
Benzo(a)anthracene	µg/kg	---	20,800	1,140	---	1090	558	-	521	245	-	199	-	-	743	-	417	-	-	516	-
Benzo(a)pyrene	µg/kg	470	2,110	115	---	***1120***	**450**	-	***598***	**287**	-	**241**	-	-	***1010***	-	***468***	-	-	***439***	-
Benzo(b)fluoranthene	µg/kg	479	21,100	1,150	---	***1600***	*558*	-	*854*	407	-	338	-	-	***1360***	-	*639*	-	-	544	-
Benzo(g,h,i)perylene	µg/kg	---	---	---	---	762	211	-	320	151	-	157	-	-	598.0	-	337	-	-	206	-
Benzo(k)fluoranthene	µg/kg	---	211,000	11,500	---	673	265	-	345	173	-	136	-	-	484	-	259	-	-	235	-
Chrysene	µg/kg	144.6	2,110,000	115,000	---	*1340*	*512*	-	*661*	*315*	-	*254*	-	-	*822*	-	*511*	-	-	*478*	-
Dibenz(a,h)anthracene	µg/kg	---	2,110	115	---	**217J**	78.7J	-	105	49.7	-	44.6	-	-	**174J**	-	82.8J	-	-	63.3J	-
Fluoranthene	µg/kg	88,878	30,100,000	2,390,000	---	2770	1150	-	1320	612	-	506	-	-	646	-	1190	-	-	1190	-
Fluorene	µg/kg	14,830	30,100,000	2,390,000	---	74.3J	78.7J	-	28.6J	14.2J	-	10.6J	-	-	25.0J	-	43.7J	-	-	120	-
Indeno(1,2,3-cd)pyrene	µg/kg	---	21,100	1,150	---	678	208	-	294	147	-	143	-	-	567	-	291	-	-	205	-
1-Methylnaphthalene	µg/kg	---	72,700	17,600	---	<53.0	21.0J	-	29.5J	12.2J	-	<5.8	-	-	<27.2	-	20.8J	-	-	25.7J	-
2-Methylnaphthalene	µg/kg	---	3,010,000	239,000	---	<53.0	23.1J	-	36.9J	15.4J	-	<5.8	-	-	29.2J	-	23.2J	-	-	28.2J	-
Naphthalene	µg/kg	658	24,100	5,520	---	<35.3	28.8J	-	37.2J	15.6J	-	8.9J	-	-	49.3J	-	24.8J	-	-	39.2J	-
Phenanthrene	µg/kg	---	---	---	---	1100	777	-	522	227	-	169	-	-	241	-	634	-	-	1020	-
Pyrene	µg/kg	54,545	22,600,000	1,790,000	---	1830	843	-	877	427	-	333	-	-	561	-	951	-	-	868	-

NOTES

Bold and boxed font indicates result exceeds Industrial Direct Contact RCL

Bold font indicates result exceeds Non-Industrial Direct Contact RCL

Italics and underline font indicates result exceeds Groundwater RCL

Residual Contaminant Levels (RCLs) December 2018

- : Not Analyzed ---: No Standard

Not All Analytes are Shown for Ease of Review

J: Qualified results indicating value detected between limit of detection and limit of quantitation

Table 2 - Groundwater Elevations
5100 N. Port Washington Road, Glendale, WI
BRRTS #02-41-183154

						2/10/2000		3/8/2000		8/27/20200	
Monitoring Well Number	Top of PVC	Elevation: Ground Surface	Well Depth from Top of PVC	Bottom of Well Screen Elevation	Top of Well Screen Elevation*	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation
MW-A	630.24	627.65		Well Not Located		10.58	619.66	10.17	620.07	Well Not Located	
MW-B	631.41	628.28	17.60	613.81	623.81	11.71	619.70	11.33	620.08	11.50	619.91
MW-C	631.5	628.78	17.65	613.85	623.85	11.83	619.67	11.44	620.06	12.00	619.50
MW-16	633.63	630.75	17.50	616.13	621.13	13.51	620.12	12.70	620.93	12.30	621.33
MW-17	631.86	629.16	17.50	614.36	619.36	12.18	619.68	11.80	620.06	9.50	622.36
GMMW-1	634.48	631.36	18.10	616.38	626.38	14.39	620.09	13.54	620.94	13.00	621.48

Elevations in feet above mean sea level.
Depth to water measured from top of PVC casing in feet.
* MW-16 and MW-17 constructed with 5-foot screens per well constuction forms (Dames & Moore, 1990);
GMMW-1 constructed with a 10-foot screen per well construction form (Arcadis, 2001); MW-B and MW-C well construction forms not located - assume 10-foot screens

Table 3 Groundwater Analytical Results 5100 N. Port Washington Road Glendale, WI BRRTS #02-41-183154		*Monitoring Well Number*	GMMW-1	MW-B	MW-C	MW-D	MW-16	MW-17
		Sample Date	8/28/2020	8/28/2020	8/28/2020	Damaged	8/28/2020	8/28/2020
ANALYTE	**ES**	*PAL*	**Results shown as micrograms per liter**					
Volatile Organic Compounds (VOCs)								
1,1,1,2-Tetrachloroethane	**70**	*7*	<0.27	<0.27	<0.27	-	<0.27	<0.27
1,1,1-Trichloroethane	**200**	*40*	24.3	<0.24	<0.24	-	0.27J	<0.24
1,1,2,2-Tetrachloroethane	**0.2**	*0.02*	<0.28	<0.28	<0.28	-	<0.28	<0.28
1,1,2-Trichloroethane	**5**	*0.5*	<0.55	<0.55	<0.55	-	<0.55	<0.55
1,1-Dichloroethane	**850**	*85*	9.8	<0.27	<0.27	-	<0.27	<0.27
1,1-Dichloroethene	**7**	*0.7*	<0.24	<0.24	<0.24	-	<0.24	<0.24
1,1-Dichloropropene	**--**	--	<0.54	<0.54	<0.54	-	<0.54	<0.54
1,2,3-Trichlorobenzene	**--**	--	<2.2	<2.2	<2.2	-	<2.2	<2.2
1,2,3-Trichloropropane	**60**	*12*	<0.59	<0.59	<0.59	-	<0.59	<0.59
1,2,4-Trichlorobenzene	**70**	*14*	<0.95	<0.95	<0.95	-	<0.95	<0.95
1,2,4-Trimethylbenzene	**480**	*96*	<0.84	<0.84	<0.84	-	<0.84	<0.84
1,2-Dibromo-3-chloropropane	**0.2**	*0.02*	<1.8	<1.8	<1.8	-	<1.8	<1.8
1,2-Dibromoethane (EDB)	**0.05**	*0.005*	<0.83	<0.83	<0.83	-	<0.83	<0.83
1,2-Dichlorobenzene	**600**	*60*	<0.71	<0.71	<0.71	-	<0.71	<0.71
1,2-Dichloroethane	**5**	*0.5*	<0.28	<0.28	<0.28	-	<0.28	<0.28
1,2-Dichloropropane	**5**	*0.5*	<0.28	<0.28	<0.28	-	<0.28	<0.28
1,3,5-Trimethylbenzene	**480**	*96*	<0.87	<0.87	<0.87	-	<0.87	<0.87
1,3-Dichlorobenzene	**600**	*120*	<0.63	<0.63	<0.63	-	<0.63	<0.63
1,3-Dichloropropane	**--**	--	<0.83	<0.83	<0.83	-	<0.83	<0.83
1,4-Dichlorobenzene	**75**	*15*	<0.94	<0.94	<0.94	-	<0.94	<0.94
2,2-Dichloropropane	**--**	--	<2.3	<2.3	<2.3	-	<2.3	<2.3
2-Chlorotoluene	NS	NS	<0.93	<0.93	<0.93	-	<0.93	<0.93
Benzene	**5**	*0.5*	<0.25	<0.25	<0.25	-	<0.25	<0.25
Bromobenzene	**--**	--	<0.24	<0.24	<0.24	-	<0.24	<0.24
Bromochloromethane			<0.36	<0.36	<0.36	-	<0.36	<0.36
Bromodichloromethane	**0.6**	*0.06*	<0.36	<0.36	<0.36	-	<0.36	<0.36
Bromoform	**4.4**	*0.44*	< 4.0	< 4.0	< 4.0	-	< 4.0	< 4.0
Bromomethane	**10**	*1*	<0.97	<0.97	<0.97	-	<0.97	<0.97
Carbon tetrachloride	**5**	*0.5*	<1.1	<1.1	<1.1	-	<1.1	<1.1
Chlorobenzene	**100**	*20*	<0.71	<0.71	<0.71	-	<0.71	<0.71
Chloroethane	**400**	*80*	<1.3	<1.3	<1.3	-	<1.3	<1.3
Chloroform	**6**	*0.6*	3.2J	<1.3	<1.3	-	<1.3	<1.3
Chloromethane	**30**	*3*	<2.2	<2.2	<2.2	-	<2.2	<2.2
Dibromochloromethane	**60**	*6*	<2.6	<2.6	<2.6	-	<2.6	<2.6
Dibromomethane	**--**	--	<0.94	<0.94	<0.94	-	<0.94	<0.94
Dichlorodifluoromethane	**1000**	*200*	<0.50	<0.50	<0.50	-	<0.50	<0.50
Diisopropyl ether	NS	NS	<1.9	<1.9	<1.9	-	<1.9	<1.9
Ethylbenzene	**700**	*140*	<0.32	<0.32	<0.32	-	<0.32	<0.32
Hexachloro-1,3-butadiene	**--**	--	<1.5	<1.5	<1.5	-	<1.5	<1.5
Isopropylbenzene (Cumene)	NS	NS	<1.7	<1.7	<1.7	-	<1.7	<1.7
Methyl-tert-butyl ether	**60**	*12*	<1.2	<1.2	<1.2	-	<1.2	<1.2
Methylene Chloride	**5**	*0.5*	0.58	0.58	0.58	-	0.58	0.58
Naphthalene	**100**	*10*	<1.2	<1.2	<1.2	-	<1.2	<1.2
Styrene	**100**	*10*	<3.0	<3.0	<3.0	-	<3.0	<3.0
Tetrachloroethene	**5**	*0.5*	*2.1*	<0.33	<0.33	-	<0.33	<0.33
Toluene	**800**	*160*	<0.27	<0.27	<0.27	-	<0.27	<0.27
Trichloroethene	**5**	*0.5*	**63.0**	<0.26	<0.26	-	*4.3*	0.36J
Trichlorofluoromethane	**--**	--	<0.21	<0.21	<0.21	-	<0.21	<0.21
Vinyl Chloride	**0.2**	*0.02*	0.38J	<0.17	<0.17	-	<0.17	0.28J
cis-1,2-Dichloroethene	**70**	*7*	3.8	<0.27	<0.27	-	0.28J	<0.70J
cis-1,3-Dichloropropene	**0.4**	*0.04*	<3.6	<3.6	<3.6	-	<3.6	<3.6
m&p-Xylene	**2000**	*400*	<0.47	<0.47	<0.47	-	<0.47	<0.47
n-Butylbenzene	NS	NS	<0.71	<0.71	<0.71	-	<0.71	<0.71
n-Propylbenzene	NS	NS	<0.81	<0.81	<0.81	-	<0.81	<0.81
o-Xylene	**2000**	*400*	<0.26	<0.26	<0.26	-	<0.26	<0.26
p-Isopropyltoluene	NS	NS	<0.80	<0.80	<0.80	-	<0.80	<0.80
sec-Butylbenzene	NS	NS	<0.85	<0.85	<0.85	-	<0.85	<0.85
tert-Butylbenzene	NS	NS	<0.30	<0.30	<0.30	-	<0.30	<0.30
trans-1,2-Dichloroethene	**100**	*20*	<0.46	<0.46	<0.46	-	<0.46	<0.46
trans-1,3-Dichloropropene	**0.4**	*0.04*	<4.4	<4.4	<4.4	-	<4.4	<4.4
Xylenes - total	**2000**	*400*	<0.47	<0.47	<0.47	-	<0.47	<0.47

Notes:

ES: NR 140 Enforcement Standard; exceedances shown in Bold Font

PAL: NR 140 Preventive Action Limit; exceedances shown in Italics Font

- : Not Analyzed 'NS: No Standard Established

Not all analytes are shown for ease of review; compounds not detected are excluded from this summary

J: Qualified results indicating value detected between limit of detection and limit of quantitation

9205 W. Center Street, Suite 214
Milwaukee, WI 53222
Ph: (414)443-1312

STORM WATER MANAGEMENT PLAN

FOR

Jilly's Car Wash

5100 N Port Washington Road
Glendale, Wisconsin

October 15, 2020

PREPARED BY:
Christopher Jackson, PE
CJ Engineering
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Milwaukee, WI 53222
Ph. 414-443-1312 x222
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CJE Job No.: 2031R0-SWMP

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A. Existing Conditions

i. Existing Soil Investigation – CGC, Inc.

ii. HydroCAD / TR-55 calculations – Existing Conditions

iii. SWMP – Existing Conditions plan

B. Proposed Conditions

i. SWMP – Proposed Conditions Plan

ii. HydroCAD / TR-55 calculations – Proposed Conditions

iii. WinSLAMM for Windows version 10.2.0 Water Quality

iv. Volumetric Procedure Exhibit & Calculations

Introduction:

The proposed development will consist of a new car wash building with surface car wash entrance drive on the northwest side, a centrally located parking area and a paved drive with vacuum stalls on the northeast side of the building. The northwest paved areas will drain to a series of storm inlets which will convey the captured runoff to one of two proposed bio-retention basins. The runoff from the proposed building will be collected in building downspout which will either spill to grade directly to the above mentioned bio-retention basin or be conveyed through the building downspout storm sewer to the bio-retention basin. The west paved drive and vacuum area will have a crest along the centerline allowing this area to sheet drain to a bio retention basin to the west as well as to the east where a second bio retention basin is proposed. The two bio retention basins will discharge to an existing catch basin located on the northeast side of the property. The bio-retention basins will reduce the peak runoff to below the runoff limit requirements of the City of Glendale and MMSD. The bio retention basins will also provide water quality exceeding the requirements of the City of Glendale and the WI DNR. The bio –retention basins will also provide green infrastructure. Based on the existing soils, this development is exempt from having to provide storm water infiltration.

As the enclosed plans and calculations show, the proposed development meets and exceeds the storm water management requirements of NR 151, MMSD and the City of Glendale.

Existing Site: (See the Existing Conditions Plan).

Cover & CN:	CN 74, >75% Grass Cover, Good, HSG C CN 98, Pavement & Roofs.
Area:	Total property area: 1.966 acres Analyzed area: 1.440 acres (disturbed area)

Developed Site: (See the Proposed Conditions Plan).

Cover & CN:	CN 74, >75% Grass Cover, Good, HSG C CN 98, Pavement & Roofs.
Area Analyzed:	1.440 acres (disturbed area)

24-Hour Rainfall Values:

2-Year: 2.64”
10-Year: 3.73”
100-Year: 6.06”

All rainfall data is for 24-hour duration per the NOAA Atlas 14 rainfall values and the MSE3 distribution as recommended by WI DNR and SEWRPC

Method of Analysis:

The storm water runoff quantity was calculated using the methods outlines in TR-55 ("Urban Hydrology for Small Watersheds" by the U.S. Department of Agriculture's Soil Conservation Services). Calculations were performed with the "HydroCAD 10.0" computer software. Water quality calculations were done using WinSLAMM for Windows version 10.2.0.

MMSD and City of Glendale runoff control requirements:

The required storm water runoff quantity control per section 13.302 of MMSD Rules and Regulations are as follows: Allowable Runoff Volume -

"Allowable runoff volume" means a post-development runoff volume that is no greater than the pre-development volume for both the 1% probability (100-year) and 50% probability (2-year) storm events during the critical time.

City of Glendale requirement per Code of Ordinance: Title 6.5.7(c)(1) are as follows: Discharge Quantity Management requirements shall be those listed in the current publication of Chapter 13 (Surface Water and Stormwater) of the Milwaukee Metropolitan Sewerage District Rules

Watershed: Milwaukee River
Watershed Critical Time Period: 11:75-23.75
Total Analyzed Area = 1.440 Acres

Volumetric Design Summary: (See Summary of Calculations in Appendix)

	CRITCAL TIME VOLUMETRIC DATA (11:75-23:75)	
	Total Volume (cubic feet)	Total Volume (acre feet)
2 YR- Existing	3735.0	0.085744
100 YR -Existing	16668.0	0.382645
2 YR - Proposed	2561.4	0.058802
100 YR -Proposed	15683.4	0.360041

Water Quality:

Based on the proposed construction of the new storm water bio-retention basins, the site exceeds the City of Glendale and N.R. 151 requirements for water quality for new development by removing over 80% of the total suspended solids (TSS) prior to discharge off site, as quantified using WinSLAMM for Windows version 10.2.0 (See appendix B for calculation results). The TSS out of total site analysis, including both detained and un-detained areas is as summarized below:

	Before Drainage System	After Controls	% Reduction
Total site	388.0 lbs.	52.57 lbs.	86.45 %

Infiltration:

Based on soil borings by CGC,Inc., the existing soils display an infiltration rate of 0.50 inches/hour. The soils on this property are considered not suitable for infiltration. Based on NR 151.124(4)(c)1, therefore the site is exempt from storm water infiltration requirements.

Conclusion:

The proposed storm water control features of the storm water bio-retention basins allow the post development site to meet and exceed the design requirements for storm water runoff per City of Glendale, MMSD and WDNR regulations. The storm water basins will remove over 80% of TSS from the runoff after development. Therefore, the proposed development meets and exceeds the storm water management water quantity and water quality requirements for the City of Glendale Title 6: Storm Water Ordinance 2558, MMSD Chapter 13 and WDNR 151.

APPENDIX A

CGC, Inc.

Construction • Geotechnical
Consulting Engineering/Testing

September 21, 2020
CM20179

Mr. Jon Zimmerman
Jilly's Corporation
4619 Cramer Street
Milwaukee, WI 53211

Re: Geotechnical Exploration Report
Proposed Jilly's Car Wash
5100 N. Port Washington Road
Glendale, Wisconsin

Dear Mr. Zimmerman:

Construction • Geotechnical Consultants, Inc. (CGC) has completed the subsurface exploration for the proposed Jilly's Car Wash development at the above referenced project site in Glendale, Wisconsin. The purpose of this exploration was to evaluate the subsurface conditions across the site and to provide geotechnical-related recommendations regarding general site development, foundation, floor slab, and parking lot/drive lane design/construction. In addition, a preliminary evaluation of the infiltration properties of the site soils was performed. An evaluation of environmental conditions on the site was not included in our authorized scope of services. It is understood that the environmental component of the proposed development is being handled by the client's environmental consultant, LF Green Development, LLC. An electronic copy of this report is provided for your use. Additional copies have been forwarded electronically to Mr. Mike Miksich of Briohn Building Corporation and Ms. Kate Juno of LF Green Development, LLC.

PROJECT DESCRIPTION

A Jilly's Car Wash development is proposed at 5100 N. Port Washington Road in Glendale, Wisconsin. The development will consist of the construction of a 5,105 square foot, single story car wash building. No basement or other below grade components are planned for the structure.

The building will be located on the southwest side of the site and will have a finished floor elevation (FFE) of EL 51.0 ft. Structural loads are generally expected to be relatively light in magnitude. In addition to the building, three (3) drive-through payment booth islands will be situated north of the proposed building.

The facility will include surrounding asphalt or concrete paving to the northwest, southeast and northeast of the building for parking stalls, drive lanes, and vacuum stalls. The entrance to the site will be located along the north property line.

336 S. Curtis Road
West Allis, WI 53214
Telephone: 414/443-2000
FAX: 414/443-2099

Stormwater runoff from the site will be directed to two (2) bio-retention basins in the center and east side of the site. It is understood that these basins will be clay lined as infiltration will not be permitted on this site due to the known presence of miscellaneous fill materials on the property. The bottom elevation of these basins was not yet determined at the time of this evaluation.

The site is relatively flat with elevations ranging between about EL 45 at the northwest corner of the site to EL 52 at the southeast corner of the site. Based on the existing site grades, we anticipate that about 1 to 4 ft of fill will be required to establish the anticipated floor slab subgrade elevation. Similar grading is anticipated in the surrounding pavement areas of the site.

The conclusions and recommendations provided in this report are based on the above described information. If our understanding and assumptions of the proposed construction are inaccurate or when the final site grades and project details are established, we ask that we be notified for review and possible modification of the recommendations provided.

EXPLORATION PROGRAM

Six (6) Standard Penetration Test (SPT) soil borings (Borings 1 through 6) were drilled for this exploration. Borings 1 through 3 were drilled within the planned car wash building footprint and were extended to depths of 25 to 30 ft, as planned. Boring 4 was drilled in pavement area north of the proposed building to a depth of 10 ft, as planned. Borings 5 and 6 were drilled within the planned bio-retention basins to depths of 15 and 17.5 ft, respectively. The borings were drilled on August 25 and 26, 2020 by J&J Soil Testing Ltd. (under subcontract to CGC) using a truck-mounted drill rig equipped with hollow-stem augers and a manually actuated rope and pulley system (cathead) SPT hammer. The borings locations were staked in the field by the drilling contractor. The ground surface elevations at the test boring locations were determined by the drilling contractor utilizing conventional leveling techniques referencing the rim of the catch basin at the northeast corner of the site as a benchmark, with a known elevation of EL 45.49. The elevations are considered accurate to within 1± ft. Specific procedures used for drilling and sampling during the field exploration are described in Appendix A. The approximate boring locations are shown in plan on the Soil Boring Location Exhibit presented in Appendix B.

Representative samples of the subsoils were collected during the field explorations for classification and laboratory testing. The soils were classified by a geotechnical engineer using the Unified Soil Classification System (USCS) and, where applicable for infiltration analysis, in accordance with the descriptive procedures, terminology and interpretations presented by the USDA – NRCS Field Book for Describing and Sampling Soils (version 2.0, dated September 2002. Pocket penetrometer readings were obtained on intact cohesive samples recovered during the exploration, where appropriate, to aid in the evaluation of their shear strength properties. Natural moisture content determination testing was completed on representative samples of the

clayey soils. In addition, one (1) Loss-On-Ignition (LOI) test was performed on a representative sample of the peat soil from Boring 1 (10.5 to 12 ft) to determine the organic content of the soil. Laboratory test results are presented on the individual logs in Appendix B. The final logs and Site and Soil Evaluation – Storm form prepared by the engineer per the USCS and USDA procedures are presented in Appendices B and E, respectively.

SITE CONDITIONS

A. Surface Conditions

The site consists of a vacant, grass covered, trapezoid shaped parcel of land about 2.2 acres in size. A tree line and MMSD sewer easement exist along the south property line. A few trees also exist on the north side of the site. During the site exploration activities, it was noted that six (6) monitoring wells with above ground well casing covers were present. It is understood that these wells were previously installed by others as part of an ongoing environmental investigation of the site. The site is relatively flat and gently sloping with elevations ranging from about EL 45 at the northwest corner of the site, up to EL 52 at the southeast corner of the site.

Based upon information provided by the project environmental consultant (LF Green Development, LLC), and information presented within a Preliminary Site Assessment Report (dated 1/23/20) produced by Konicek Environmental Consulting, LLC, it is understood that the site may be considered a historical fill site and may have been previously used, at least in part, for disposal of construction and demolition (C&D) debris. Based upon this report it is understood that the site has soil and groundwater contamination. Soil and groundwater analytical testing indicated areas of chlorine, soluble iron, VOCs, PAHs, trichloroethene and vinyl chloride. It is further understood that elevated methane gas levels have been documented on the property. It is understood that development on the site will require a cap/barrier and that buildings and paved areas are considered suitable caps for the site. Additionally, it is understood that a passive methane ventilation system will be incorporated into the building design for this development. It is further understood that due to the documented contamination on the site, infiltration of stormwater runoff will not be allowed.

To assist in determining the past use of the site, historical aerial photographs were reviewed on the Milwaukee County GIS Mapping system website. Based upon review of this information, it appears that the site has been undeveloped since at least 1928, the earliest available aerial photograph on the website. Some site disturbance appears to be evident on the 1937 and 1951 aerial photographs. The 1967 aerial photograph generally indicates the site to be similar to current conditions, with the exception of some apparent surface disturbance on the east side of the site. The 1990 aerial photograph indicates some apparent surface disturbance along the south

and east boundaries of the site. However, after the 1990 photo the site appeared to be largely in the same condition as present day.

B. Subsurface Conditions

The borings indicate a generally consistent soil profile. A summary of the conditions encountered at the borings is included as follows (in descending order):

- Surface materials consist of about 4 to 10 in. of ***topsoil fill***;
- About 5.8 to 10 feet of ***fill and possible fill*** consisting of mixed brown, dark brown, and gray ***silt, sand, silty sand, crushed stone, gravel and silty clay*** with intermixed cinders, brick, concrete, glass, and slag generally extending to depths ranging from about 6.5 to 10.5 ft below existing grade. These fill/possible fill materials were underlain by,
- About 3 ft of black and dark brown ***peat*** and greenish gray ***organic silt*** at Borings 1 and 2; underlain by,
- About 1 to 7 ft of loose to medium dense ***native brown to gray sand***; underlain by,
- About 2.5 to 13 ft of stiff to very stiff ***native brown lean clay***. This lean clay extended to the maximum depth drilled in Borings 5 and 6. At Borings 1, 2 and 3, the lean clay was underlain by,
- Dense to very dense ***native gray clayey silt***, with varying sand and gravel content extending to the maximum depths explored, 25 to 30 ft.

Exceptions to the above-described conditions were noted as follows:

- The fill encountered at Boring 1 from about 3 to 10.5 ft, Boring 2 from about 0.5 to 7.5 ft, and Boring 4 from about 2.5 to 10 ft (the maximum depth of the boring), was classified as ***rubble fill*** due to its highly variable nature consisting of crushed stone and gravel with intermixed debris. Within the rubble fill at Boring 1 a ***limestone slab*** was noted to possibly be present.
- An approximate 1 to 1.5 ft thick layer of black ***organic clay*** was encountered within the fill at Borings 3 and 6 from about 4.5 to 6 ft.
- The ***possible fill*** at Boring 3 (6 to 10.5 ft) and Boring 5 (4 to 6.5 ft) was noted to be in a ***loose to very loose condition***.

The peat sample tested had a moisture content of 346.4 percent. The LOI test on this material indicated an organic content of 66.5%, indicating high organic content and a classification of "fibrous" peat.

The native clay soils encountered generally exhibited unconfined compressive strengths of 1.25 to 3.25 tsf, which corresponds to a stiff to very stiff consistency. Moisture testing performed on

representative samples of the native lean clay soils indicated natural moisture contents ranging between 24.4 to 27.7 percent, indicating a relatively high moisture content.

Standard Penetration Testing (N-values) on the native granular soils encountered above the lean clay layer ranged from 6 to 18 blows per foot indicating loose to medium dense conditions. The N-values on the clayey silt soils below the lean clay ranged from 43 to 68 blows per foot indicating a dense to very dense condition. N-values within the fill/possible fill soils were highly variable, ranging from 3 to 24 blows per foot.

C. Groundwater Conditions

Groundwater was encountered within all of the borings at depths ranging from about 8.5 to 9.5 ft below grade during drilling. Upon completion of drilling, water was present in 4 of the 6 borings (Borings 2, 3, 6 and 7) at depths ranging from about 9 to 10 ft. Based on the foregoing, we anticipate the water levels encountered are indicative of the long-term water table, corresponding to between about EL 37.8 to 40.4 ft. Groundwater levels can be expected to fluctuate based on seasonal variations in precipitation, infiltration, evapotranspiration, and other factors.

More detailed information regarding the subsurface and groundwater conditions is presented on the boring logs attached in Appendix B.

DISCUSSION AND RECOMMENDATIONS

Subject to the limitations discussed below and based on the subsurface exploration, it is our opinion that the site is generally considered suitable for the proposed construction, with proper site preparations and design considerations. *Foundation design for the proposed building, and possibly the drive-through payment booth structures as well, will be controlled by the existing fill and organic soils.* The fill soils are variable in strength and composition, contain intermixed debris and rubble (along with occasional organic soil zones), and are underlain by a highly organic and compressible peat layer in 2 of the 3 building borings. *These soils are therefore not considered suitable for foundation or floor slab support due to the potential for excessive total and differential settlement to occur under the newly imposed loads.*

Traditional over-excavation/undercutting (removal and replacement) of the fill and peat soils below proposed foundations will likely be infeasible for this structure based upon the potential for severe sidewall caving and groundwater related difficulties. Additionally, due to the contaminated nature of the site, generating large volumes of excavation spoils is undesirable, and could result in potentially significant additional trucking and landfill expenses for the project. *As such, it is understood that a helical pier alternative for support of the car wash building (and*

possibly the drive through payment booths) is being considered and is discussed later in this report.

Additionally, the long-term performance of the pavements for this development will be affected by the presence of the existing variable fill and underlying organic soils. In general, reduced overall pavement performance should be expected as a result. It is recommended that careful subgrade preparation (rigorous proof-compaction along with remediation of unstable zones) and the implementation of a generally thicker pavement section be provided to maximize pavement performance. This is further discussed in the Site Preparation and Pavement Design sections of this report.

Our recommendations for site preparation, foundation, floor slab, pavement design/construction, along with our assessment of the site class for seismic design and a discussion of stormwater management considerations, are presented in the following subsections. Additional information regarding the conclusions and recommendations presented in this report is discussed in Appendix C.

The presence of cinders and foundry slag (observed within the fill in some of the borings) should be brought to the attention of the environmental consultant for the project. Specific recommendations with regard to these materials were not requested to be addressed and are not included herein. However, it is recommended that the environmental consultant for the project be provided with a copy of this report, to assist with remedial planning, especially with regard to the proper placement and compaction of any backfill (in order to develop proper subgrade support of overlying structures) during any required remediation, or the removal of other below grade items on the site. Proper handling and disposal will be required for any contaminated soils and/or groundwater. Any impacted soils and/or groundwater that are removed from the site will require special disposal methods, which can be costly and result in construction delays.

A. Site Preparation

The six existing monitoring wells on the site appear to fall within or near the proposed building and pavement areas for the development. To make way for the planned development, it is recommended that these wells be properly abandoned as required by the WDNR and any other applicable regulatory agencies.

We recommend that topsoil, vegetation and trees (along with associated rootballs) be stripped from the surface of the site and to at least 10 ft beyond the proposed construction area, including areas requiring fill beyond the building footprint and pavement limits (plus appropriate lateral extents). As mentioned earlier, topsoil was observed to be about 4 to 10 in. thick in the soil borings, but differing topsoil thicknesses may be encountered between and beyond boring locations due to previous site grading activities. Topsoil can be stockpiled on-site and later re-used as fill in landscaped areas.

As noted previously, it must be recognized that when utilizing the existing variable fill for support of pavement areas, there is a risk that reduced pavement performance and service life may occur. The following procedures/recommendations assume that the owner is aware of and in acceptance of this risk.

After the above described stripping operations are complete, and after cutting any high areas of the site to grade, the exposed soils are generally expected to consist of variable composition silty sand fill and rubble fill. The fill soils are generally higher in moisture and will be extremely sensitive to disturbance. In areas remaining at-grade or requiring fill, we recommend that the exposed soils be rigorously recompacted/proofcompacted with multiple overlapping passes in multiple directions with a large vibratory drum roller (minimum 10-ton gross weight). However, vibratory recompaction should not be used in areas where the soils are in a very moist to wet condition, as this can cause otherwise stable soils to become unstable. The areas should then be subsequently thoroughly proof-rolled with a piece of heavy rubber-tire construction equipment, such as a loaded tri-axle dump truck, to check for soft/yielding areas. Soft, yielding or unstable areas should be expected on this site, and may be widespread. Where encountered, an initial attempt should be made to aerate and densify the subgrade by recompaction where natural moisture contents are at appropriate levels (i.e., on the dry side of optimum moisture content). If this procedure is ineffective, these soils should be undercut and replaced with granular backfill compacted to at least 95% compaction based on modified Proctor methods (ASTM D1557) in accordance with our Recommended Compacted Fill Specifications presented in Appendix D. Alternatively, 3-in. dense graded base (DGB) that is placed in loose 10-in. lifts and compacted until deflection ceases can also be used to restore grades in undercut areas. In some cases, it may be necessary to perform limited undercutting (on the order of 1.5 to 2± ft) and compact a layer of coarse crushed aggregate stabilizing material, such as an imported 3-in. breaker rock, into the subgrade to create stability.

Areas subsequently receiving fill should be checked for their pavement and structure support suitability prior to fill placement. A relatively firm, non-yielding subgrade should be established prior to proceeding with fill placement. Incorporation of a woven geotextile fabric (e.g., Mirafi 600X or equivalent) and/or appropriately specified biaxial geogrids may need to be incorporated over undercut and/or disturbed subgrades, prior to stone placement, should instability concerns arise. *We recommend that the project budget include a generous contingency and schedule for improving, stabilizing or undercutting/replacing unstable soils.* The actual type of geogrid to incorporate can best be determined following compaction/proof-rolling of the exposed subgrades at the time of construction.

After the subgrade is prepared as described above, we recommend that fill placement proceed as necessary to establish planned subgrade elevations. Selection, placement and compaction of engineered fill should be in accordance with our Recommended Compacted Fill Specifications in Appendix D. It is our opinion that non-organic existing fill soils on the site may be reused to develop the building pads and pavement subgrades. *However, significant sorting of*

miscellaneous debris, rubble, and/or organic materials from within these soils is expected to be necessary. Additionally, the reuse of the existing fill soils in structural areas will require close observation on a regular basis during fill placement including the monitoring of moisture contents, compaction levels, and the overall stability of the prepared fill subgrade. Based on moisture levels observed, some moisture conditioning of silty or clayey soils will be required to aid in compactive efforts. In general, we recommend that fills placed in developing building pads and pavement areas be placed and compacted to a minimum of 95 percent of modified Proctor density.

Excavation sidewalls should be braced or sloped back according to OSHA requirements. The predominantly granular silty sand fill soils encountered, typically classified as OSHA "Type B" soils, are anticipated to control excavation slopes in most cases, and slopes of 1.0H:1.0V are expected to be at least temporarily stable. Note that flatter side slopes may be required where highly variable rubble fill soils are encountered, where perched or seeping water is present that destabilizes the side slopes, or where layers of cleaner sand and/or gravel are encountered. *The appropriate excavation side slopes should be determined by a competent person completing the earthwork in accordance with OSHA slope guidelines. Since the proposed building footprint (southwest wall line) comes in close proximity to the existing MMSD sewer easement, careful consideration should be given to excavations required for the building construction as they relate to maintaining the existing sewer line in an undisturbed state. Depending on the depth and proximity of proposed excavations in relation to the existing sewer, an appropriately designed excavation retention system may be necessary.*

B. Foundation Design

We understand that the ground floor elevation for the car wash building is planned to be established at EL 51 ft. Footings are generally expected to extend on the order of 2 to 4 ft below these elevations, and we anticipate relatively light foundation loads based on the proposed construction. Foundations for the drive-through payment booth structures are expected to extend 4 ft below the planned site grade. Foundation subgrades are generally expected to consist of the existing variable strength and composition fill (with areas of rubble fill) and underlying highly organic and compressible organic soils, which are not considered suitable for foundation support.

Traditional over-excavation/undercutting (removal and replacement) of the fill and peat soils below proposed foundations will likely be infeasible for the structures based upon the potential for severe sidewall caving and groundwater related difficulties. Additionally, due to the contaminated nature of the site, generating large volumes of excavation spoils and pumped groundwater is undesirable, and could result in potentially significant additional trucking and landfill expenses for the project. *As such, it is understood that a helical pier alternative for support of the car wash building (and the drive through payment booths assuming these*

structures will also have a low tolerance for settlement) is being considered and is discussed below.

As previously indicated, the fill encountered appears to contain significant quantities of rubble in areas. The presence of rubble can cause substantial installation difficulties, possible obstructions and damage to helical piers. If feasible, over-excavation of rubble or other obstructions may be necessary in order to successfully advance helical piers in areas and to avoid damage. It is therefore strongly recommended that prior to choosing this foundation support method, a series of test pits be performed within the building area (in the presence of prospective helical pier installation contractors) to ascertain the relative quantity, type and concentration of rubble within the fill so that the installation feasibility of a helical pier alternative can be verified. If helical piers are deemed to be infeasible, other foundation support options such as aggregate piers/stone columns or micropiles could be considered. CGC can provide additional guidance on these systems if desired.

Helical Piers

Helical piers are a proprietary product that involves the design and installation of a system which transfers the load through the upper fill and organic soils to bear within a more suitable bearing native soil stratum. Regularly spaced helical piers would be designed and installed to extend through the fill and organic soils to bear within the underlying natural soils. The cast-in-place concrete foundation would then need to be designed sufficiently strong and stiff enough to span between helical pier locations, such as with a grade beam. Helical piers can often be installed using lightweight, mobile equipment (e.g., skid steer or mini-excavator with special attachments) and in applications where space is limited. Costs associated with undercutting/replacement at greater depths would largely be eliminated. In addition, excavation spoils are typically not generated during helical pier installation.

Helical pier capacity will vary depending on the number and size of helices, depth of installation and bearing stratum, with the final depths and capacities determined by the design/build contractor. For preliminary budgeting considerations, it is estimated that a helical pier with a typical 12"-10"-8" helix array will develop an allowable capacity of about 10 kips per pier (utilizing a factor of safety of 3) when installed to bear within the native lean clay beginning at about 11.5 to 13.5 ft below the existing ground surface. The same helical pier extended to bear completely within the underlying dense to very dense clayey silt may be able to develop an allowable capacity of about 30 kips per pier, or possibly greater. However, since the building will be raised with up to 4 ft of new fill, some compression of the peat layer will likely occur. This may induce negative skin friction on the helical pier shafts. Negative skin friction that develops will effectively

reduce the allowable design capacity of the piers and must be considered in design. It should be noted that in some instances, additional exploration may be required by the designer depending upon required capacities. Additional exploration would also be recommended for verifying capacities within the underlying dense to very dense clayey silt, since these soils were only encountered within the bottom several feet of the building borings. Additionally, helical pier installers should be consulted to verify feasibility of advancing helical piers into the dense/very dense clayey silt soils.

Provided the foundation design/construction recommendations discussed above are followed, we estimate that total and differential settlements should not exceed 1.0 and 0.5 in., respectively.

C. Seismic Design Category

In our opinion, the average soil/rock properties in the upper 100 ft of the site (based on the borings performed) may be characterized as a stiff soil profile. This characterization would place the site in *Site Class D* for seismic design according to the International Building Code (see Table 1613.5.2).

D. Floor Slabs

The soils on this site predominantly consist of fill/possible fill soils extending to depths of about 6.5 to 10.5 ft below ground surface. The fill soils are variable in strength and composition, contain intermixed rubble and organic soil zones, and are underlain by an organic soil layer in 2 of the 3 building borings. In addition, the building pad will require up to about 4 ft of new fill to establish the planned building pad grade. Considering the weight of the new fill coupled with the new floor slab loading, it is our opinion that there is a considerable risk of unacceptable floor slab performance, including slab settlement and/or cracking, as well as the potential need for slab jacking. Therefore, the fill and organic soils are considered unsuitable for direct slab support. Based on the foregoing, it is recommended that the floor slab be designed and constructed as a structural floor slab which would be supported by helical piers – similar to the approach recommended for support of the building's foundation. *Utilities and plumbing for the building are recommended to be hung from the bottom side of the floor slab to prevent excessive settlement of these components. Flexible joints should also be provided where utilities enter the building so that some differential movement can occur without causing damage.*

Prior to fill placement, subgrade soils should be recompacted/proof-rolled, as described in the Site Preparation section, to check for soft/yielding areas that require undercutting/replacement or stabilization. Any concentrated areas of intermixed organic soils within the fill should be undercut below the floor slabs, and the subgrades should be prepared as described in the Site Preparation section.

To serve as a capillary break below floor slabs, the final 4 to 6 in. of soil placed below the slabs should consist of well-graded sand or gravel with no more than 5% by weight passing a No. 200 U.S. standard sieve. To further minimize the potential for moisture migration, a plastic vapor barrier can be also be utilized below the slab. The designer of the helical pier foundations can provide additional details on floor slab support.

E. Pavement Design

Based on review of the existing site grades in comparison to the anticipated pavement grades, we anticipate the subgrade soils within the surface parking lot, drives and vacuum stalls will consist of a combination of the existing fill soils and newly-placed engineered fill soils. The fill soils are variable in strength and composition, contain intermixed rubble and organic soil zones, and are underlain by an organic soil layer in several of the borings. The following pavement recommendations are provided based on the variable fill and organic soils, and assume that the owner is aware of and in acceptance of the risk that *reduced pavement performance and service life may occur*.

The subgrades should be thoroughly proof-compacted/proof-rolled, as discussed in the Site Preparation section of this report, to densify the existing near surface fills as much as possible and to check for soft/loose areas. If soft/loose areas are detected, these areas should be undercut/stabilized as discussed in the Site Preparation section of this report. We recommend that a Tensar BX1200, TX140 or equivalent be installed below the planned pavement section (prior to the planned aggregate base layer) to provide an improved subgrade support condition. T*o further increase the support characteristics below the pavement, it is recommended that the thickness of the dense graded base materials over the geogrid be increased to a minimum thickness of 12 in.*

We assume that the drive lanes/access drives and parking lot pavements will be predominantly subjected to automobile traffic (i.e., Traffic Class II), with limited truck traffic (i.e., less than five design daily equivalent 18-kip single axle loads – ESALs) from garbage and delivery trucks. Accordingly, the pavement section tabulated below was selected based on a CBR value of 3 (for a firm or stabilized existing fill subgrade which is considered to control pavement design), WAPA design guidelines, and a design life of 15-20 years.

Table 1
Recommended Pavement Section

Material	Thickness (in.)	WisDOT Specification[2]
Bituminous upper layer	1.75	Section 460, Table 460-1, 9.5 mm and 12.5 mm
Bituminous lower layer	2.25	Section 460, Table 460-1, 19.0 mm
Dense graded base (fully-fractured crushed stone)	12.0	Sections 301 and 305, 31.5 mm and 75 mm
Geogrid	Continuous	Tensar BX 1200, TX140 or similar
Total Thickness	**16.0**	

Notes:

1. Wisconsin DOT *Standard Specifications for Highway and Structure Construction*, latest edition, including supplemental specifications, but excluding Section 460.3.2 relating layer thickness to aggregate size.

2. Compaction requirements:
   -- Bituminous concrete: Refer to Section 460.3.
   -- Base course: 95% modified Proctor (ASTM D1557); also refer to Section 301.3.4.2, Standard Compaction.

3. Type LT (i.e., SuperPave Type E-0.3) or equivalent asphaltic pavement is recommended. Refer to Section 460, Table 460-2 of the *Standard Specifications*.

4. The need for subgrade stabilization measures in pavement areas should be determined in the field, depending on observations made during proof-rolling operations.

The pavement design assumes a stable/non-yielding subgrade and a regular program of preventative maintenance. *Due to the variable fill soils across the site, an increased risk of pavement settlement, premature failure of the pavement section and the need for an increased pavement maintenance program must be accepted.* Alternative pavement designs may prove applicable and should be reviewed by CGC. If there is a delay between subgrade preparation and placing the base course, the subgrade should be recompacted prior to geogrid and base course placement.

Pavement areas subjected to concentrated wheel loads, such as near garbage dumpster pads and site entrances and exits, at the building drive through lane order and pick-up areas and within the car wash entrance lane, should be constructed of Portland cement concrete. The slabs should be at least 6 in. thick in light-duty traffic areas and at least 8 in. thick in heavy-duty traffic areas, contain mesh reinforcement for crack control, and be underlain by at least 6 in. of well-graded granular soils. As with the asphalt pavement section, we recommend that a BX1200 or similar geogrid be installed below the planned concrete pavement section for stabilization purposes and to provide a more uniform support condition. A subgrade modulus of 100 pci can be used for the design of concrete pavements on the properly prepared existing fill subgrade.

Maintenance and repair of the pavement areas, as needed, should be performed on a regular basis to keep pavements in a serviceable condition. The maintenance program is recommended to be implemented early in the pavement life to be effective. Failure to perform regular maintenance could reduce the service life of the pavement.

F. Preliminary Stormwater Design Considerations

Based on the contaminated soil and groundwater conditions known to exist on this site, it is understood that infiltration of stormwater through the use of infiltration devices will not be allowed. It is understood, however, that two (2) bio-retention basins are proposed for stormwater management on the site. It is further understood that these devices will be clay lined and may include a granular storage layer with underdrains that lead to the storm sewer. The depth of the bottom of the basins has not yet been determined.

Groundwater was encountered at depths of about 9 ft and 8.5 ft in Borings 5 and 6, corresponding to about EL 39.3 and 40.4 ft, respectively. It is recommended that the bottom-of-clay-liner elevations be designed to remain sufficiently (at least 2 ft) above the level of groundwater encountered in the borings, so that groundwater related construction difficulties are minimized.

Based on the borings performed, we anticipate that importing of suitable clay liner materials will be required to construct the clay liners. Clay liner materials should be compacted to a minimum of 90 percent of the maximum dry density as determined by modified Proctor (ASTM D1557). Testing of proposed clay liner import materials would be necessary to confirm their suitability. The moisture content of cohesive clay liner soils at the time of compaction within the basins should be within about 3 percent above the optimum moisture content. In general, fill placement/compaction should proceed in general accordance with our Recommended Compacted Fill Specifications presented in Appendix D.

During construction of the proposed building and related site work, appropriate erosion control measures should be provided to prevent eroded soil from contaminating stormwater management areas. Where appropriate, basin design should include pretreatment to remove fine-grained soils (silt/clay) from stormwater prior to entering storm sewers. Additionally, a regular maintenance plan should be developed to remove silt/clay soils that may accumulate in the bottom of the basins over time. Failure to adequately control fine-grained soils from entering the stormwater management area(s) or failure to regularly remove fine-grained soils that accumulate at the base of the basins will likely cause the basin to fail. Refer to WDNR Conservation Practice Standard 1002 and NR 151 for additional information.

The Soil and Site Evaluation – Storm form prepared by the Certified Soil Tester per USDA procedures is presented in Appendix E.

CONSTRUCTION CONSIDERATIONS

Due to variations in weather, construction methods and other factors, specific construction problems are difficult to predict. Soil related difficulties which could be encountered on the site are discussed below:

- Due to the sensitive nature of the on-site soils, we recommend that site grading activities be completed during dry weather, if possible. Construction traffic should be avoided on prepared subgrades to minimize potential disturbance.

- Contingencies in the project budget for subgrade stabilization with coarse aggregate in pavement and floor slab areas should be increased if the project schedule requires that work proceed during adverse weather conditions.

- Earthwork construction during the late fall through early spring could be complicated as a result of wet weather and freezing temperatures. During cold weather, exposed subgrades should be protected from freezing before and after footing construction. Fill should never be placed while frozen or on frozen ground.

- Excavations extending greater than 4 ft in depth below the existing ground surface should be sloped or braced in accordance with current OSHA standards. Temporary excavation retention systems may be necessary in areas on this site.

- Based on observations made during the field exploration, groundwater infiltration into footing excavations is not generally expected to be a problem. However, deeper excavations such as for possible deeper utilities may encounter groundwater. We anticipate that water accumulating at the base of excavations as a result of

precipitation or seepage could be controlled using pumps operating from filtered sump pits. However, for excavations that will need to extend below the groundwater, more specialized and comprehensive dewatering techniques will be required. The means and methods of suitable dewatering will be the responsibility of the contractor and may require the use of a dewatering specialty contractor. Collection of water from dewatering operations and specialized treatment or disposal may be necessary due to environmental concerns.

RECOMMENDED CONSTRUCTION MONITORING

The quality of the foundation, slab and pavement subgrades will be largely determined by the level of care exercised during site development. To check that earthwork and foundation construction proceeds in accordance with our recommendations, the following operations should be monitored by CGC:

1. Subgrade proof-compacting and proof-rolling;

2. Fill placement and compaction;

3. Helical pier installation; and

4. Concrete placement.

* * * * *

It has been a pleasure to serve you on this project. If you have any questions or require further consultation, please contact us.

Sincerely,

CGC, INC.

Jeff P. Simkowski, P.E.
Senior Consulting Professional

Encl: Appendix A - Field Exploration
Appendix B - Soil Boring Location Exhibit
Logs of Test Borings (6)
Log of Test Boring - General Notes
Unified Soil Classification System
Appendix C - Document Qualifications
Appendix D - Recommended Compacted Fill Specifications
Appendix E - WDSPS Soil and Site Evaluation – Storm Form

cc (via email): Mr. Mike Miksich / Briohn Building Corporation
Ms. Kate Juno / LF Green Development, LLC

APPENDIX A

FIELD EXPLORATION

APPENDIX A

FIELD EXPLORATION

Six (6) Standard Penetration Test (SPT) soil borings (Borings 1 through 6) were drilled for this exploration. Borings 1 through 3 were drilled within the planned car wash building footprint and were extended to depths of 25 to 30 ft, as planned. Boring 4 was drilled in pavement area north of the proposed building to a depth of 10 ft, as planned. Borings 5 and 6 were drilled within the planned bio-retention basins to depths of 15 and 17.5 ft, respectively. The borings were drilled on August 25 and 26, 2020 by J&J Soil Testing Ltd. (under subcontract to CGC) using a truck-mounted drill rig equipped with hollow-stem augers and a manually actuated rope and pulley system (cathead) SPT hammer. The borings locations were staked in the field by the drilling contractor. The ground surface elevations at the test boring locations were determined by the drilling contractor utilizing conventional leveling techniques referencing the rim of the catch basin at the northeast corner of the site as a benchmark, with a known elevation of EL 45.49. The elevations are considered accurate to within 1± ft. The approximate boring locations are shown in plan on the Soil Boring Location Exhibit presented in Appendix B.

Soil samples were obtained at 2.5-foot intervals to depths of about 15 to 17.5 ft and at 5 ft intervals thereafter to the boring termination depths. The soil samples were obtained in general accordance with specifications for standard penetration testing, ASTM D 1586. The specific procedures used for SPT drilling and sampling are described below.

1. Boring Procedures between Samples

   The boring is extended downward, between samples, by a hollow-stem auger.

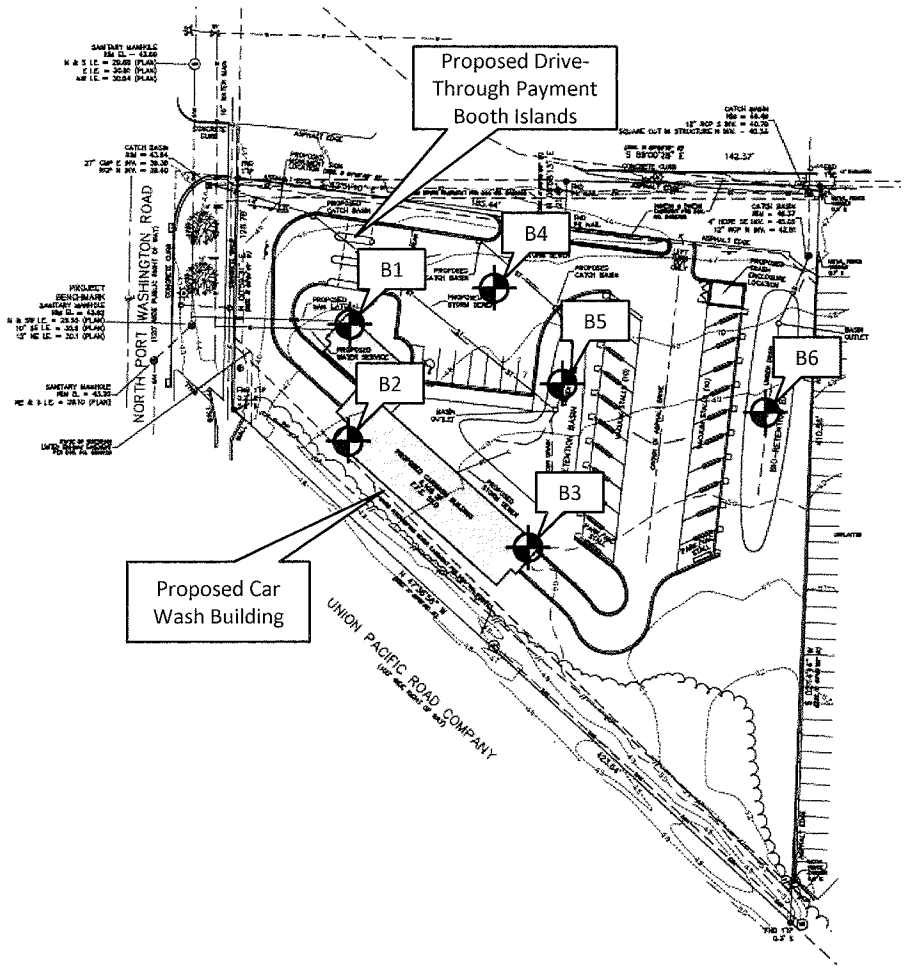
2. Standard Penetration Test and Split-Barrel Sampling of Soils
   (ASTM Designation: D 1586)

   This method consists of driving a 2-inch outside diameter split-barrel sampler using a 140-pound weight falling freely through a distance of 30 inches. The sampler is first seated 6 inches into the material to be sampled and then driven 12 inches. The number of blows required to drive the sampler the final 12 inches is recorded on the log of borings and is known as the Standard Penetration Resistance.

During the field exploration, the driller visually classified the soil and prepared a field log. *Field screening of the soil samples for possible environmental contaminants was not conducted by the drillers as environmental site assessment activities were not part of CGC's work scope.* Water level observations were made in each boring during and after drilling and are shown at the bottom of each boring log. Upon completion of drilling, the borings were backfilled with bentonite (where required) to satisfy WDNR regulations. The soil samples were delivered to our laboratory for visual classification and laboratory testing. The soil samples were visually classified by a geotechnical engineer using the Unified Soil Classification System (USCS). In addition, the soil samples obtained from the stormwater basin borings were classified by a Certified Soil Tester (CST) using the USDA Textural Soil Classification System. The final logs prepared by the engineer and a description of the Unified Soil Classification System are presented in Appendix B. The completed Soil and Site Evaluation – Storm form is attached in Appendix E.

APPENDIX B

SOIL BORING LOCATION EXHIBIT
LOGS OF TEST BORINGS (6)
LOG OF TEST BORING - GENERAL NOTES
UNIFIED SOIL CLASSIFICATION SYSTEM



JILLY'S CAR WASH
5100 N PORT WASHINGTON ROAD GLENDALE, WI

CJE NO.: 203IRC
JUNE 04, 2020

NOTES:

1. STORM WATER MANAGEMENT MEETING THE REQUIREMENTS OF THE CITY, MMSD AND WI DNR WILL BE PROVIDE BY THE BIO-RETENTION BASINS.
2. EXACT LOCATION OF SANITARY AND WATER SERVICES TO BE VERIFIED BY THE PLUMBING CONSULTANT.
3. ALL NEW UTILITIES CONNECTIONS PER CITY REQUIREMENTS.

LEGEND

	EXISTING CONTOUR
	PROPOSED CONTOUR
0.43.2	PROPOSED ELEVATION
	EXISTING STORM SEWER
	PROPOSED STORM SEWER
	EXISTING SANITARY SEWER
	PROPOSED SANITARY SEWER
	EXISTING WATER MAIN
	PROPOSED WATER MAIN
	BURIED GAS MAIN
	OVER HEAD WIRE
	BURIED ELECTRIC

GRAPHIC SCALE
1 inch = 30 ft

PRELIMINARY
SITE STORM WATER
AND UTILITY PLAN

C1.0

DIGGERS HOTLINE
DIAL 811 OR (800) 242-8511

Legend

Bx

Denotes Boring Location and Number

Notes

1. Soil borings performed by J&J Soil Testing, Ltd. on August 25 and 26, 2020.
2. Base map provided by client.
3. Boring locations are approximate. Offsets from locations shown (if any) are described on the individual boring logs.

Date: 9-16-2020	CGC, Inc.	SOIL BORING LOCATION EXHIBIT Proposed Jilly's Car Wash Development 5100 N. Port Washington Road Glendale, Wisconsin
Job No. CM20179		

LOG OF TEST BORING

CGC Inc.

Project: Jilly's Car Wash
5100 N. Port Washington Road
Location: Glendale, Wisconsin

Boring No. 1
Surface Elevation (ft) 46.3
Job No. CM20179
Sheet 1 of 1

336 S. Curtis Rd, West Allis, WI 53214 (414) 443-2000, FAX (414) 443-2099

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	LOI
						FILL: 10" Dark Brown Clayey Topsoil					
1		18	M	5		FILL: Brown to Gray Silt/Fine Silty Sand, Little Rubble (Cinders, Brick Pieces, Crushed Stone, Glass)					
2		10	M	10	5	FILL: Rubble - Mixture of Crushed Stone, Limestone Slab, Gravel and Silty Sand					
3		6	M	10							
4		7	W	23	10						
5A/B		18	M	5		Dark Brown to Black Fibrous PEAT (PT)		346.4			66.5
						Loose, Greenish Gray Organic SILT; Some Shell Fragments (OL)					
6		18	VM	12	15	Stiff, Brown Lean CLAY; Trace Sand and Gravel (CL)	(1.5)				
7		18	VM	10	20		(1.25-1.75)	27.4			
						Dense, Gray Clayey SILT; Little Fine Sand (CL-ML)					
8		18	M	43	25						
						End of Boring at 25 ft Backfilled with Bentonite Chips					
					30						
					35						

WATER LEVEL OBSERVATIONS

While Drilling	▽ 8.5' ±	Upon Completion of Drilling	-
Time After Drilling			
Depth to Water			▼
Depth to Cave in			

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 8/25/20 End 8/26/20
Driller J&J Chief JP Rig CME-45
Logger JP Editor JPS
Drill Method 2.25" HSA

LOG OF TEST BORING

CGC Inc.

Project: Jilly's Car Wash
5100 N. Port Washington Road
Location: Glendale, Wisconsin

Boring No. 2
Surface Elevation (ft) 47.5
Job No. CM20179
Sheet 1 of 1

336 S. Curtis Rd, West Allis, WI 53214 (414) 443-2000, FAX (414) 443-2099

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	qu (qa) (tsf)	W	LL	PL	LOI
						FILL: 4" Dark Brown Clayey Topsoil					
1	■	6	M	24		FILL: Rubble - Mixture of Crushed Stone, Concrete and Brick Fragments, Glass and Silty Sand					
2	■	6	M	8	5						
3	■	3	M	11							
4	■	18	M	4	10	Dark Brown to Black Fibrous PEAT; Few Thin Fine Sand Lenses (PT)					
						Loose, Gray Fine to Coarse SAND; Trace Silt (SP)					
5A/B	■	18	W/M	10		Stiff to Very Stiff, Brown Lean CLAY; Trace Sand and Gravel (CL)	(1.75-2.25)				
6	■	18	VM	19	15		(2.75-3.0)	24.4			
7	■	18	VM	12	20		(1.5-1.75)				
8	■	18	M	48		Dense, Gray Clayey SILT; Little Fine Sand (CL-ML)					
					25	End of Boring at 25 ft Backfilled with Bentonite Chips					
					30						
					35						

WATER LEVEL OBSERVATIONS

While Drilling ▽ 9.5' ± Upon Completion of Drilling 9.0'
Time After Drilling
Depth to Water ▼
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 8/25/20 End 8/25/20
Driller J&J Chief JP Rig CME-45
Logger JP Editor JPS
Drill Method 2.25" HSA

LOG OF TEST BORING

CGC Inc.

Project: Jilly's Car Wash
5100 N. Port Washington Road
Location: Glendale, Wisconsin

Boring No. 3
Surface Elevation (ft) 49.2
Job No. CM20179
Sheet 1 of 1

336 S. Curtis Rd, West Allis, WI 53214 (414) 443-2000, FAX (414) 443-2099

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	LOI
						FILL: 7" Dark Brown Clayey Topsoil					
1		18	M	4		FILL: Dark Brown to Gray Fine Silty Sand, Trace Gravel					
2		6	M	7							
					5	FILL: Black Organic Clay					
3		18	M	5		Loose, Brown Fine to Medium SAND; Trace Silt (SP) (POSSIBLE FILL)					
4		18	W	3							
					10	Very Loose, Brown Fine to Coarse SAND; Little Silt (SP-SM) (POSSIBLE FILL)					
5		18	W	18		Medium Dense, Gray Fine to Coarse SAND; Trace Silt and Gravel (SP)					
6		18	VM	10		Stiff to Very Stiff, Brown Lean CLAY; Trace Sand and Gravel (CL)	(1.5-2.0)	27.7			
					15						
7		18	VM	15			(2.25-2.75)				
					20						
8		18	VM	13			(1.5-2.0)				
					25						
						Very Dense, Gray Clayey SILT; Little Fine Sand (CL-ML)					
9		18	M	68							
					30	End of Boring at 30 ft Backfilled with Bentonite Chips					
					35						

WATER LEVEL OBSERVATIONS

While Drilling ▽ 9.0' Upon Completion of Drilling 10.0'
Time After Drilling
Depth to Water ▼
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 8/25/20 End 8/25/20
Driller J&J Chief JP Rig CME-45
Logger JP Editor JPS
Drill Method 2.25" HSA

LOG OF TEST BORING

CGC Inc.

Project: Jilly's Car Wash
5100 N. Port Washington Road
Location: Glendale, Wisconsin

Boring No. 4
Surface Elevation (ft) 46.8
Job No. CM20179
Sheet 1 of 1

336 S. Curtis Rd, West Allis, WI 53214 (414) 443-2000, FAX (414) 443-2099

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	qu (qa) (tsf)	W	LL	PL	LOI
						FILL: 9" Dark Brown Clayey Topsoil					
1		10	M	6		FILL: Dark Brown to Gray Fine Silty Sand, Trace Cinders					
						FILL: Rubble - Crushed Stone, Gravel and Silty Sand					
2		10	M	23	5						
3		1	M	5							
4		6	M/W	17	10						
						End of Boring at 10 ft Backfilled with Bentonite Chips					
					15						
					20						
					25						
					30						
					35						

WATER LEVEL OBSERVATIONS

While Drilling ▽ 9.0' Upon Completion of Drilling -
Time After Drilling
Depth to Water ▼
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 8/26/20 End 8/26/20
Driller J&J Chief JP Rig CME-45
Logger JP Editor JPS
Drill Method 2.25" HSA

LOG OF TEST BORING

CGC Inc.

Project: Jilly's Car Wash
5100 N. Port Washington Road
Location: Glendale, Wisconsin

Boring No. 5
Surface Elevation (ft) 48.3
Job No. CM20179
Sheet 1 of 1

336 S. Curtis Rd, West Allis, WI 53214 (414) 443-2000, FAX (414) 443-2099

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	qu (qa) (tsf)	W	LL	PL	LOI
						FILL: 8" Dark Brown Clayey Topsoil					
1		15	M	8		FILL: Dark Brown to Gray Fine Silty Sand, Trace Gravel and Slag					
2		18	M	10	5	Loose, Brown Fine to Medium SAND; Trace to Little Silt (SP/SP-SM) (POSSIBLE FILL)					
3A/B		18	M/W	6		Loose to Medium Dense, Brown Fine to Coarse SAND; Trace Silt and Gravel (SP)					
4		9	W	10	10						
5A/B		18	W/M	12		Stiff to Very Stiff, Brown Lean CLAY; Trace Sand and Gravel (CL)	~~(1.75-2.25)~~				
6		18	M	17	15		(2.75-3.25)				
						End of Boring at 15 ft Backfilled with Bentonite Chips					
					20						
					25						
					30						
					35						

WATER LEVEL OBSERVATIONS

While Drilling ▽ 9.0' ± Upon Completion of Drilling 9.0'
Time After Drilling
Depth to Water ▼
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 8/26/20 End 8/26/20
Driller J&J Chief JP Rig CME-45
Logger JP Editor JPS
Drill Method 2.25" HSA

CGC Inc.

LOG OF TEST BORING

Project: Jilly's Car Wash
5100 N. Port Washington Road
Location: Glendale, Wisconsin

Boring No. 6
Surface Elevation (ft) 48.9
Job No. CM20179
Sheet 1 of 1

336 S. Curtis Rd, West Allis, WI 53214 (414) 443-2000, FAX (414) 443-2099

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	qu (qa) (tsf)	W	LL	PL	LOI
						FILL: 6" Dark Brown Clayey Topsoil					
1	■	18	M	20		FILL: Dark Brown to Gray Fine Silty Sand, Little Crushed Stone and Gravel, Few Pieces of Slag and Glass					
2	■	1	M	23	5						
						FILL: Black Organic Clay					
3	■	18	M	6		FILL: Brown Fine to Medium Sand and Silty Clay, Little Silt					
						Loose, Gray Fine SAND; Trace Silt (SP)					
4	■	18	W	9	10	Loose to Medium Dense, Brown to Gray Fine to Coarse SAND; Trace Gravel and Silt (SP)					
5	■	18	W	12							
6	■	10	W	8	15						
7	■	18	M	14		Stiff to Very Stiff, Brown Lean CLAY; Trace Sand and Gravel (CL)	(1.5-2.25)				
					20	End of Boring at 17.5 ft Backfilled with Bentonite Chips					
					25						
					30						
					35						

WATER LEVEL OBSERVATIONS

While Drilling ▽ 8.5' Upon Completion of Drilling 9.0'
Time After Drilling
Depth to Water ▼
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 8/26/20 End 8/26/20
Driller J&J Chief JP Rig CME-45
Logger JP Editor JPS
Drill Method 2.25" HSA

CGC, Inc.

LOG OF TEST BORING

General Notes

DESCRIPTIVE SOIL CLASSIFICATION

Grain Size Terminology

Soil Fraction	Particle Size	U.S. Standard Sieve Size
Boulders	Larger than 12"	Larger than 12"
Cobbles	3" to 12"	3" to 12"
Gravel: Coarse	¾" to 3"	¾" to 3"
Fine	4.76 mm to ¾"	#4 to ¾"
Sand: Coarse	2.00 mm to 4.76 mm	#10 to #4
Medium	0.42 to mm to 2.00 mm	#40 to #10
Fine	0.074 mm to 0.42 mm	#200 to #40
Silt	0.005 mm to 0.074 mm	Smaller than #200
Clay	Smaller than 0.005 mm	Smaller than #200

Plasticity characteristics differentiate between silt and clay.

General Terminology

Physical Characteristics
Color, moisture, grain shape, fineness, etc.
Major Constituents
Clay, silt, sand, gravel
Structure
Laminated, varved, fibrous, stratified, cemented, fissured, etc.
Geologic Origin
Glacial, alluvial, eolian, residual, etc.

Relative Density

Term	"N" Value
Very Loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	Over 50

Relative Proportions Of Cohesionless Soils

Proportional Term	Defining Range by Percentage of Weight
Trace	0% - 5%
Little	5% - 12%
Some	12% - 35%
And	35% - 50%

Consistency

Term	q_u-tons/sq. ft
Very Soft	0.0 to 0.25
Soft	0.25 to 0.50
Medium	0.50 to 1.0
Stiff	1.0 to 2.0
Very Stiff	2.0 to 4.0
Hard	Over 4.0

Organic Content by Combustion Method

Soil Description	Loss on Ignition
Non Organic	Less than 4%
Organic Silt/Clay	4 – 12%
Sedimentary Peat	12% - 50%
Fibrous and Woody Peat	More than 50%

Plasticity

Term	Plastic Index
None to Slight	0 - 4
Slight	5 - 7
Medium	8 - 22
High to Very High	Over 22

The penetration resistance, N, is the summation of the number of blows required to effect two successive 6" penetrations of the 2" split-barrel sampler. The sampler is driven with a 140 lb. weight falling 30" and is seated to a depth of 6" before commencing the standard penetration test.

SYMBOLS

Drilling and Sampling

CS – Continuous Sampling
RC – Rock Coring: Size AW, BW, NW, 2"W
RQD – Rock Quality Designation
RB – Rock Bit/Roller Bit
FT – Fish Tail
DC – Drove Casing
C – Casing: Size 2 ½", NW, 4", HW
CW – Clear Water
DM – Drilling Mud
HSA – Hollow Stem Auger
FA – Flight Auger
HA – Hand Auger
COA – Clean-Out Auger
SS - 2" Dia. Split-Barrel Sample
2ST – 2" Dia. Thin-Walled Tube Sample
3ST – 3" Dia. Thin-Walled Tube Sample
PT – 3" Dia. Piston Tube Sample
AS – Auger Sample
WS – Wash Sample
PTS – Peat Sample
PS – Pitcher Sample
NR – No Recovery
S – Sounding
PMT – Borehole Pressuremeter Test
VS – Vane Shear Test
WPT – Water Pressure Test

Laboratory Tests

q_a – Penetrometer Reading, tons/sq ft
q_a – Unconfined Strength, tons/sq ft
W – Moisture Content, %
LL – Liquid Limit, %
PL – Plastic Limit, %
SL – Shrinkage Limit, %
LI – Loss on Ignition
D – Dry Unit Weight, lbs/cu ft
pH – Measure of Soil Alkalinity or Acidity
FS – Free Swell, %

Water Level Measurement

▽ - Water Level at Time Shown
NW – No Water Encountered
WD – While Drilling
BCR – Before Casing Removal
ACR – After Casing Removal
CW – Cave and Wet
CM – Caved and Moist

Note: Water level measurements shown on the boring logs represent conditions at the time indicated and may not reflect static levels, especially in cohesive soils.

CGC, Inc.

Madison - Milwaukee

UNIFIED SOIL CLASSIFICATION SYSTEM

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

COARSE-GRAINED SOILS (more than 50% of material is larger than No. 200 sieve size.)		
GRAVELS More than 50% of coarse fraction larger than No. 4 sieve size	Clean Gravels (Less than 5% fines)	
	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
	GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
	Gravels with fines (More than 12% fines)	
	GM	Silty gravels, gravel-sand-silt mixtures
	GC	Clayey gravels, gravel-sand-clay mixtures
SANDS 50% or more of coarse fraction smaller than No. 4 sieve size	Clean Sands (Less than 5% fines)	
	SW	Well-graded sands, gravelly sands, little or no fines
	SP	Poorly graded sands, gravelly sands, little or no fines
	Sands with fines (More than 12% fines)	
	SM	Silty sands, sand-silt mixtures
	SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (50% or more of material is smaller than No. 200 sieve size.)		
SILTS AND CLAYS Liquid limit less than 50%	ML	Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity
	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
	OL	Organic silts and organic silty clays of low plasticity
SILTS AND CLAYS Liquid limit 50% or greater	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
	CH	Inorganic clays of high plasticity, fat clays
	OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS	PT	Peat and other highly organic soils

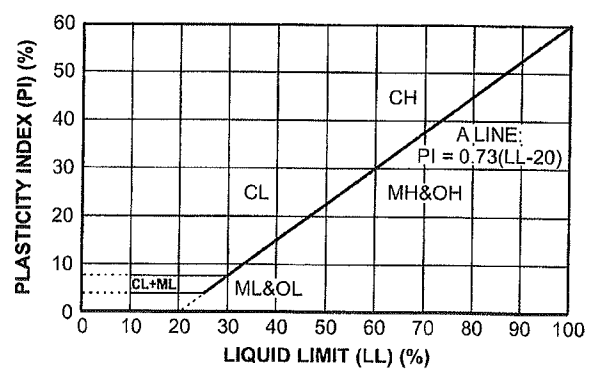
LABORATORY CLASSIFICATION CRITERIA

GW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3	
GP	Not meeting all gradation requirements for GW	
GM	Atterberg limits below "A" line or P.I. less than 4	Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols
GC	Atterberg limits above "A" line with P.I. greater than 7	
SW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3	
SP	Not meeting all gradation requirements for GW	
SM	Atterberg limits below "A" line or P.I. less than 4	Limits plotting in shaded zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols.
SC	Atterberg limits above "A" line with P.I. greater than 7	

Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows:

Less than 5 percent ..... GW, GP, SW, SP
More than 12 percent ..... GM, GC, SM, SC
5 to 12 percent ..... Borderline cases requiring dual symbols

PLASTICITY CHART



APPENDIX C

DOCUMENT QUALIFICATIONS

APPENDIX C
DOCUMENT QUALIFICATIONS

I. GENERAL RECOMMENDATIONS/LIMITATIONS

CGC, Inc. should be provided the opportunity for a general review of the final design and specifications to confirm that earthwork and foundation requirements have been properly interpreted in the design and specifications. CGC should be retained to provide soil engineering services during excavation and subgrade preparation. This will allow us to observe that construction proceeds in compliance with the design concepts, specifications and recommendations, and also will allow design changes to be made in the event that subsurface conditions differ from those anticipated prior to the start of construction. CGC does not assume responsibility for compliance with the recommendations in this report unless we are retained to provide construction testing and observation services.

This report has been prepared in accordance with generally accepted soil and foundation engineering practices and no other warranties are expressed or implied. The opinions and recommendations submitted in this report are based on interpretation of the subsurface information revealed by the test borings indicated on the location plan. The report does not reflect potential variations in subsurface conditions between or beyond these borings. Therefore, variations in soil conditions can be expected between the boring locations and fluctuations of groundwater levels may occur with time. The nature and extent of the variations may not become evident until construction.

II. IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL ENGINEERING REPORT

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes. While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. *No one except you* should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one - not even you* - should apply the report for any purpose or project except the one originally contemplated.

READ THE FULL REPORT

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

A GEOTECHNICAL ENGINEERING REPORT IS BASED ON A UNIQUE SET OF PROJECT-SPECIFIC FACTORS

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, *do not rely on a geotechnical engineering report* that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,
- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes - even minor ones - and request an assessment of their impact. *CGC cannot accept responsibility or liability for problems that occur because our reports do not consider developments of which we were not informed.*

SUBSURFACE CONDITIONS CAN CHANGE

A geotechnical engineering report is based on conditions that existed at the time the geotechnical engineer performed the study. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

MOST GEOTECHNICAL FINDINGS ARE PROFESSIONAL OPINION

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgement to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ - sometimes significantly - from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most

effective method of managing the risks associated with unanticipated conditions.

A REPORT'S RECOMMENDATIONS ARE NOT FINAL

Do not over-rely on the confirmation-dependent recommendations included in your report. *Those confirmation-dependent recommendations are not final*, because geotechnical engineers develop them principally from judgement and opinion. Geotechnical engineers can finalize their recommendations *only* by observing actual subsurface conditions revealed during construction. *CGC cannot assume responsibility or liability for the report's confirmation-dependent recommendations if we do not perform the geotechnical-construction observation required to confirm the recommendations' applicability.*

A GEOTECHNICAL ENGINEERING REPORT IS SUBJECT TO MISINTERPRETATION

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Constructors can also misinterpret a geotechnical engineering report. Confront that risk by having CGC participate in prebid and preconstruction conferences, and by providing geotechnical construction observation.

DO NOT REDRAW THE ENGINEER'S LOGS

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

GIVE CONSTRUCTORS A COMPLETE REPORT AND GUIDANCE

Some owners and design professionals mistakenly believe they can make constructors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give constructors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise constructors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure constructors have sufficient time* to perform additional study. Only then might you be in a position to give constructors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

READ RESPONSIBILITY PROVISIONS CLOSELY

Some clients, design professionals, and constructors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineer's responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

ENVIRONMENTAL CONCERNS ARE NOT COVERED

The equipment, techniques, and personnel used to perform an *environmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

OBTAIN PROFESSIONAL ASSISTANCE TO DEAL WITH MOLD

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, many mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; ***none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.***

RELY ON YOUR GEOTECHNICAL ENGINEER FOR ADDITIONAL ASSISTANCE

Membership in the Geotechnical Business Council (GBC) of Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk confrontation techniques that can be of genuine benefit for everyone involved with a construction project. Confer with CGC, a member of GBC, for more information.

Modified and reprinted with permission from:

Geotechnical Business Council
of the Geoprofessional Business Association
8811 Colesville Road, Suite G 106
Silver Spring, MD 20910

APPENDIX D

RECOMMENDED COMPACTED FILL SPECIFICATIONS

APPENDIX D

CGC, INC.

RECOMMENDED COMPACTED FILL SPECIFICATIONS

General Fill Materials

Proposed fill shall contain no vegetation, roots, topsoil, peat, ash, wood or any other non-soil material which by decomposition might cause settlement. Also, fill shall never be placed while frozen or on frozen surfaces. Rock, stone or broken concrete greater than 6 in. in the largest dimension shall not be placed within 10 ft of the building area. Fill used greater than 10 ft beyond the building limits shall not contain rock, boulders or concrete pieces greater than a 2 sq ft area and shall not be placed within the final 2 ft of finish subgrade or in designated utility construction areas. Fill containing rock, boulders or concrete pieces should include sufficient finer material to fill voids among the larger fragments.

Special Fill Materials

In certain cases, special fill materials may be required for specific purposes, such as stabilizing subgrades, backfilling undercut excavations or filling behind retaining walls. For reference, WisDOT gradation specifications for various types of granular fill are attached in Table 1.

Placement Method

The approved fill shall be placed, spread and leveled in layers generally not exceeding 10 in. in thickness before compaction. The fill shall be placed at a moisture content capable of achieving the desired compaction level. For clay soils or granular soils containing an appreciable amount of cohesive fines, moisture conditioning will likely be required.

It is the Contractor's responsibility to provide all necessary compaction equipment and other grading equipment that may be required to attain the specified compaction. Hand-guided vibratory or tamping compactors will be required whenever fill is placed adjacent to walls, footings, columns or in confined areas.

Compaction Specifications

Maximum dry density and optimum moisture content of the fill soil shall be determined in accordance with modified Proctor methods (ASTM D1557). The recommended field compaction as a percentage of the maximum dry density is shown in Table 2. Note that these compaction guidelines would generally not apply to coarse gravel/stone fill. Instead, a method specification would apply (e.g., compact in thin lifts with a vibratory compactor until no further consolidation is evident).

Testing Procedures

Representative samples of proposed fill shall be submitted to CGC, Inc. for optimum moisture-maximum density determination (ASTM D1557) prior to the start of fill placement. The sample size should be approximately 50 lb.

CGC, Inc. shall be retained to perform field density tests to determine the level of compaction being achieved in the fill. The tests shall generally be conducted on each lift at the beginning of fill placement and at a frequency mutually agreed upon by the project team for the remainder of the project.

Table 1
Gradation of Special Fill Materials

Material	WisDOT Section 311	WisDOT Section 312	WisDOT Section 305			WisDOT Section 209		WisDOT Section 210
	Breaker Run	Select Crushed Material	3-in. Dense Graded Base	1 1/4-in. Dense Graded Base	3/4-in. Dense Graded Base	Grade 1 Granular Backfill	Grade 2 Granular Backfill	Structure Backfill
Sieve Size	Percent Passing by Weight							
6 in.	100							
5 in.		90-100						
3 in.			90-100					100
1 1/2 in.		20-50	60-85					
1 1/4 in.				95-100				
1 in.					100			
3/4 in.			40-65	70-93	95-100			
3/8 in.				42-80	50-90			
No. 4			15-40	25-63	35-70	100 (2)	100 (2)	25-100
No. 10		0-10	10-30	16-48	15-55			
No. 40			5-20	8-28	10-35	75 (2)		
No. 100						15 (2)	30 (2)	
No. 200			2-12	2-12	5-15	8 (2)	15 (2)	15 (2)

Notes:

1. Reference: Wisconsin Department of Transportation *Standard Specifications for Highway and Structure Construction.*
2. Percentage applies to the material passing the No. 4 sieve, not the entire sample.
3. Per WisDOT specifications, both breaker run and select crushed material can include concrete that is 'substantially free of steel, building materials and other deleterious material'.

Table 2
Compaction Guidelines

Area	Percent Compaction (1)	
	Clay/Silt	Sand/Gravel
Within 10 ft of building lines		
Footing bearing soils	93 - 95	95
Under floors, steps and walks		
- Lightly loaded floor slab	90	90
- Heavily loaded floor slab and thicker fill zones	92	95
Beyond 10 ft of building lines		
Under walks and pavements		
- Less than 2 ft below subgrade	92	95
- Greater than 2 ft below subgrade	90	90
Landscaping	85	90

Notes:

1. Based on Modified Proctor Dry Density (ASTM D 1557)

APPENDIX E

WDSPS SOIL AND SITE EVALUATION – STORM FORM

Wisconsin Department of Commerce
Division of Safety and Buildings

SOIL AND SITE EVALUATION - STORM

In accordance with SPS 382.365, 385, Wis. Adm. Code, and WDNR Standard 1002

Attach complete site plan on paper not less than 8 1/2 x 11 inches in size. Plan must include, but not limited to: vertical and horizontal reference point (BM), direction and percent slope, scale or dimensions, north arrow, and BM referenced to nearest road.

Please print all information.

Personal information you provide may be used for secondary purposes (Privacy Law, s.15.04 (1) (m)).

County	Milwaukee
Parcel I.D.	2038000002
Review by	**Date**

Property Owner	**Property Location**
Marcus Consid, LLC	**Govt. Lot** 1/4 SE 1/4 S 32 T 8 N R 22 E

Property Owner's Mailing Address	**Lot #**	**Block #**	**CSM#**
100 E. Washington Street, Suite 1900	2		7636

City	**State**	**Zip Code**	**Phone Number**	[X] City	[ ] Village	[ ] Town	**Nearest Road**
Milwaukee	WI	53217		Glendale			N. Port Washington Road

Drainage area: _____ [ ] sq. ft. [ ] acres

Test Site Suitable for (check all that apply) [ ] Site not suitable

[ ] Bioretention [ ] Subsurface Dispersal System

[ ] Reuse [ ] Irrigation [ ] Other _____

Hydraulic Application Test Method

[X] Morphological Evaluation

[ ] Double-Ring Infiltrometer

[ ] Other (Specify)_____

Soil Moisture

Date of soil borings: 8/26/20

USDA-NRCS WETS Value:

[ ] Dry = 1

[ ] Normal = 2

[X] Wet = 3

5 **Obs. #** [X] Boring [ ] Pit **Ground Surface Elev.** 48.3 ft **Elevation of limiting factor** 39.3 ft

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	% Fines	Hydraulic App. Rate Inches/Hr
1	0-8	10YR3/3	None	FILL: SICL	1fsbk	mfr	as	<10	>50	0.04
2	8-48	10YR4/4	None	FILL: FSL	0sg	mlo	cw	<10	<30	0.50
3	48-78	10YR4/6	None	FS	0sg	mlo	cw	<10	<10	0.50
4	78-144	10YR6/3	None	S	0sg	mlo	cw	<10	<10	3.60
5	144-180	7.5YR5/3	None	SIC	2fs	mvfi	-	<10	>70	0.07

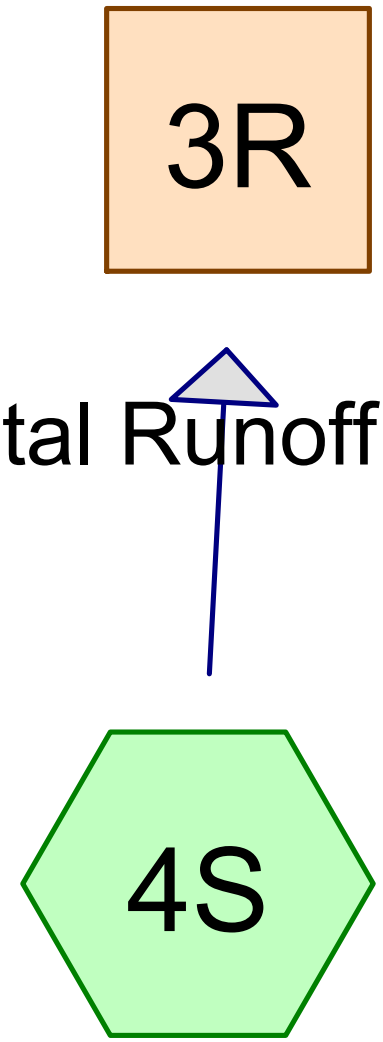
Comments: Groundwater encounteed at 9 ft (EL 39.3 ft) during drilling.

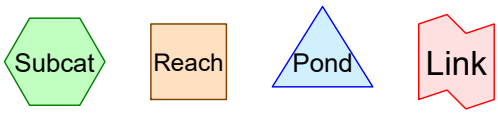
6 **Obs. #** [X] Boring [ ] Pit **Ground Surface Elev.** 48.9 ft **Elevation of limiting factor** 40.4 ft

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	% Fines	Hydraulic App. Rate Inches/Hr
1	0-6	10YR3/3	None	FILL: SICL	1fsbk	mfr	as	<10	>50	0.04
2	6-60	10YR3/3	None	FILL: FSL	0sg	mlo	cw	<10	<30	0.50
3	60-72	10YR2/2	None	FILL: SIC	1fsbk	mvfi	cw	<10	>50	0.07
4	72-84	10YR4/4	None	FILL: SC	0sg	mlo	cw	<10	>50	0.04
5	84-96	10YR6/3	None	FS	0sg	mlo	cw	<10	<10	0.50
6	96-180	10YR5/3	None	S	0sg	mlo	cw	<10	<10	3.60
7	180-210	7.5YR5/3	None	SIC	2fsbk	mefi	-	<10	>70	0.07

Comments: Groundwater encountered at 8.5 ft (EL 40.4 ft) during drilling.

CST/PSS Name (Please Print)	**Signature**	**CST Number**
Nathan I. Springstead, CST	Nathan Springstead	SP-040900024
Address	**Date Evaluation Conducted**	**Telephone Number**
336 S. Curtis Road, West Allis, WI 53214	9/2/20	(414) 443-2000





Routing Diagram for CJE2031R0-PC
Prepared by {enter your company name here}, Printed 10/13/2020
HydroCAD® 10.00-16 s/n 03450 © 2015 HydroCAD Software Solutions LLC

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.501	74	>75% Grass cover, Good, HSG C (4S)
1.501	**74**	**TOTAL AREA**

Time span=0.00-23.75 hrs, dt=0.05 hrs, 476 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 4S: Existing Runoff Area=65,380 sf 0.00% Impervious Runoff Depth>0.69"
Flow Length=255' Tc=11.8 min CN=74 Runoff=1.37 cfs 0.086 af

Reach 3R: Total Runoff - EC Inflow=1.37 cfs 0.086 af
Outflow=1.37 cfs 0.086 af

Total Runoff Area = 1.501 ac Runoff Volume = 0.086 af Average Runoff Depth = 0.69"
100.00% Pervious = 1.501 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 4S: Existing site-subcatchment 1

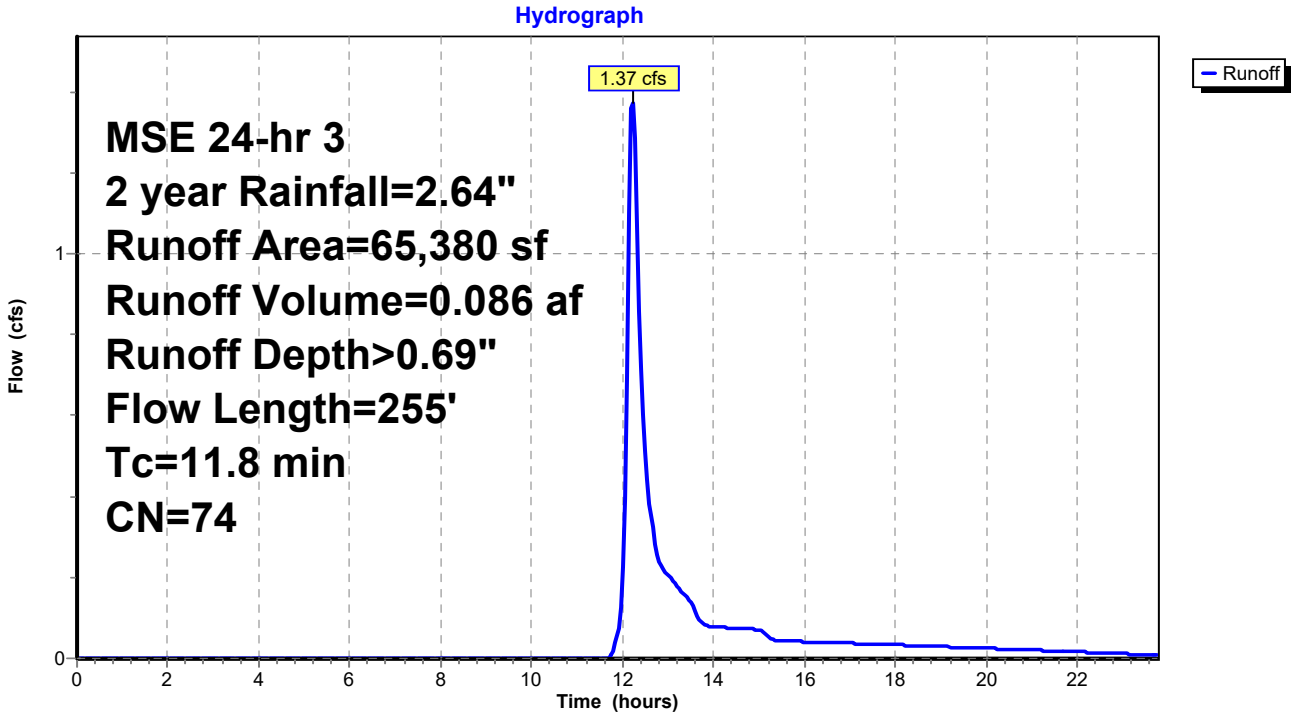
Runoff = 1.37 cfs @ 12.21 hrs, Volume= 0.086 af, Depth> 0.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-23.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 2 year Rainfall=2.64"

Area (sf)	CN	Description
65,380	74	>75% Grass cover, Good, HSG C
65,380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.0200	0.15		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 2.64"
1.0	155	0.0240	2.49		**Shallow Concentrated Flow, B-C** Unpaved Kv= 16.1 fps
11.8	255	Total			

Subcatchment 4S: Existing site-subcatchment 1

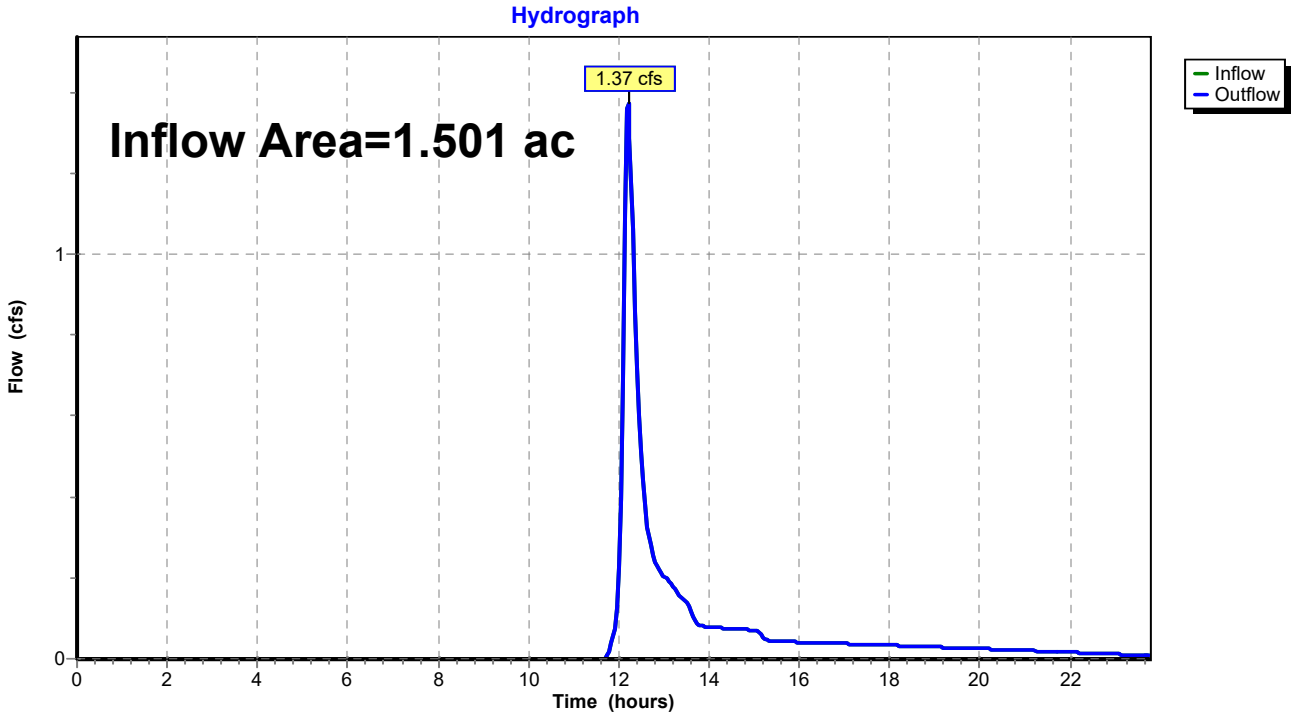


Summary for Reach 3R: Total Runoff - EC

Inflow Area = 1.501 ac, 0.00% Impervious, Inflow Depth > 0.69" for 2 year event
Inflow = 1.37 cfs @ 12.21 hrs, Volume= 0.086 af
Outflow = 1.37 cfs @ 12.21 hrs, Volume= 0.086 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-23.75 hrs, dt= 0.05 hrs

Reach 3R: Total Runoff - EC



Time span=0.00-23.75 hrs, dt=0.05 hrs, 476 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 4S: Existing Runoff Area=65,380 sf 0.00% Impervious Runoff Depth>1.40"
Flow Length=255' Tc=11.8 min CN=74 Runoff=2.97 cfs 0.175 af

Reach 3R: Total Runoff - EC Inflow=2.97 cfs 0.175 af
Outflow=2.97 cfs 0.175 af

Total Runoff Area = 1.501 ac Runoff Volume = 0.175 af Average Runoff Depth = 1.40"
100.00% Pervious = 1.501 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 4S: Existing site-subcatchment 1

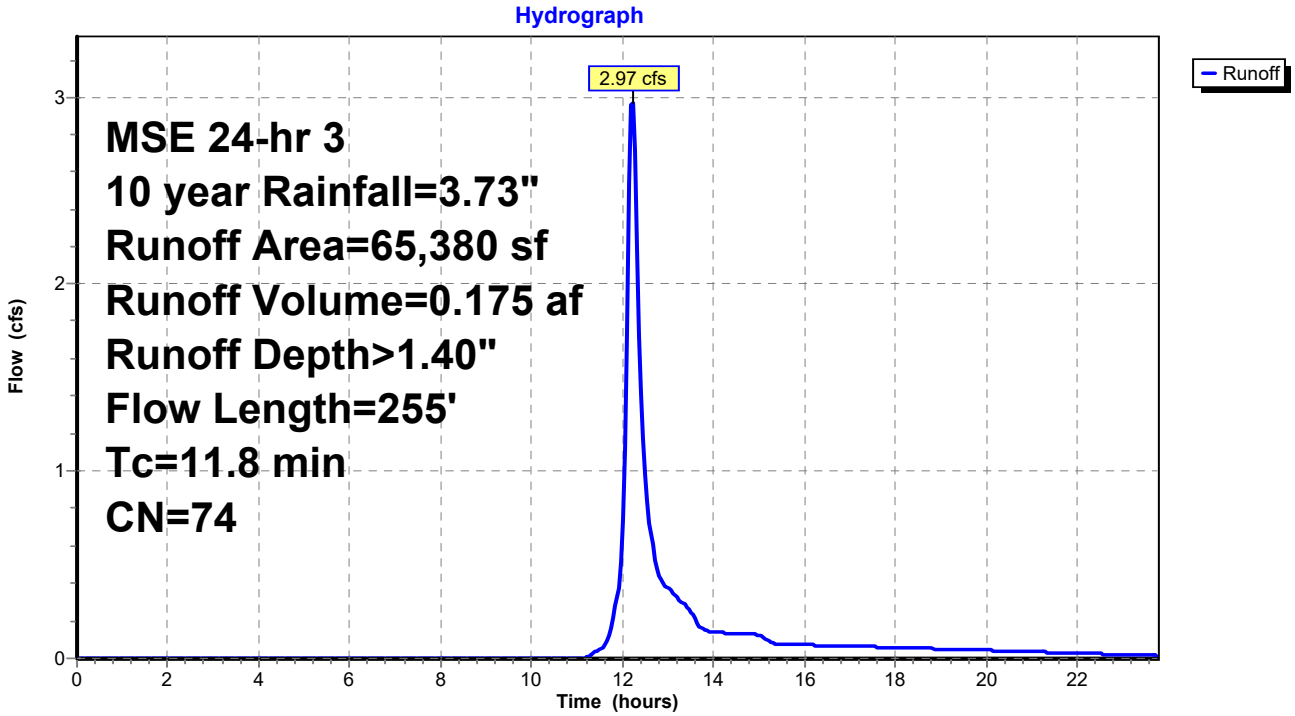
Runoff = 2.97 cfs @ 12.21 hrs, Volume= 0.175 af, Depth> 1.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-23.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 10 year Rainfall=3.73"

Area (sf)	CN	Description
65,380	74	>75% Grass cover, Good, HSG C
65,380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.0200	0.15		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 2.64"
1.0	155	0.0240	2.49		**Shallow Concentrated Flow, B-C** Unpaved Kv= 16.1 fps
11.8	255	Total			

Subcatchment 4S: Existing site-subcatchment 1

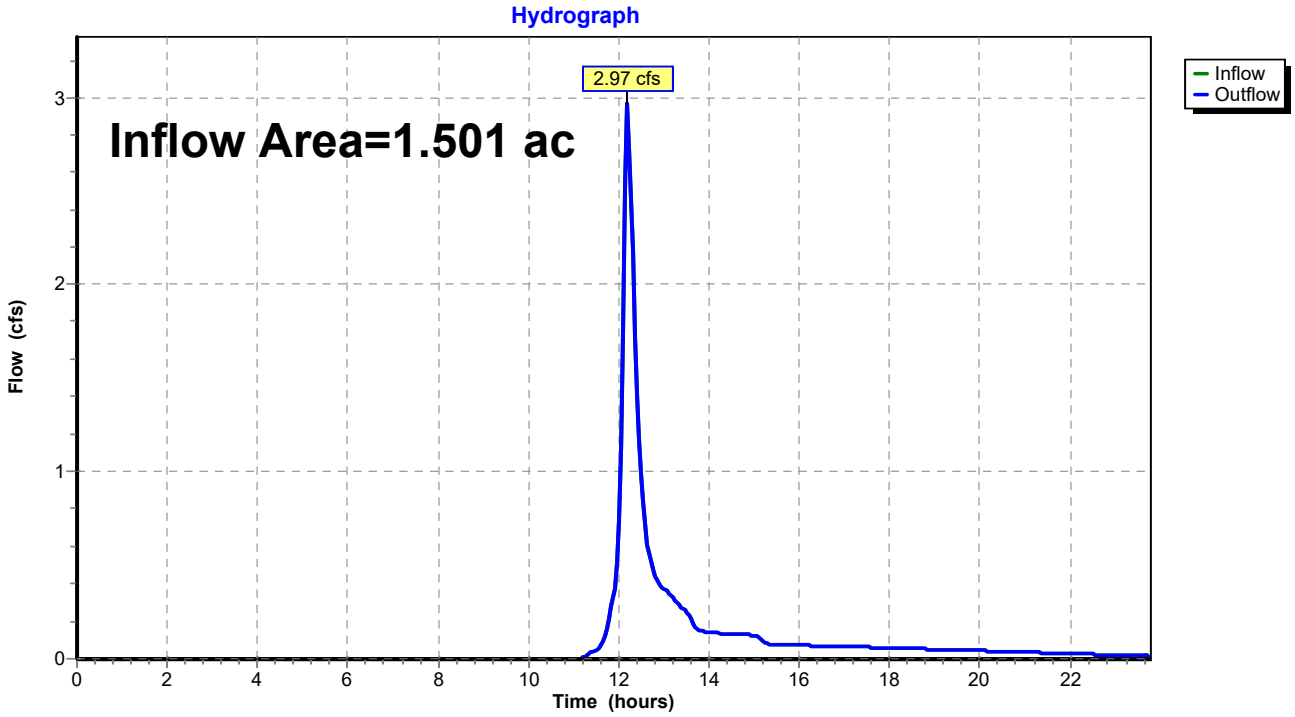


Summary for Reach 3R: Total Runoff - EC

Inflow Area = 1.501 ac, 0.00% Impervious, Inflow Depth > 1.40" for 10 year event
Inflow = 2.97 cfs @ 12.21 hrs, Volume= 0.175 af
Outflow = 2.97 cfs @ 12.21 hrs, Volume= 0.175 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-23.75 hrs, dt= 0.05 hrs

Reach 3R: Total Runoff - EC



Time span=0.00-23.75 hrs, dt=0.05 hrs, 476 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 4S: Existing Runoff Area=65,380 sf 0.00% Impervious Runoff Depth>3.23"
Flow Length=255' Tc=11.8 min CN=74 Runoff=6.95 cfs 0.404 af

Reach 3R: Total Runoff - EC Inflow=6.95 cfs 0.404 af
Outflow=6.95 cfs 0.404 af

Total Runoff Area = 1.501 ac Runoff Volume = 0.404 af Average Runoff Depth = 3.23"
100.00% Pervious = 1.501 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 4S: Existing site-subcatchment 1

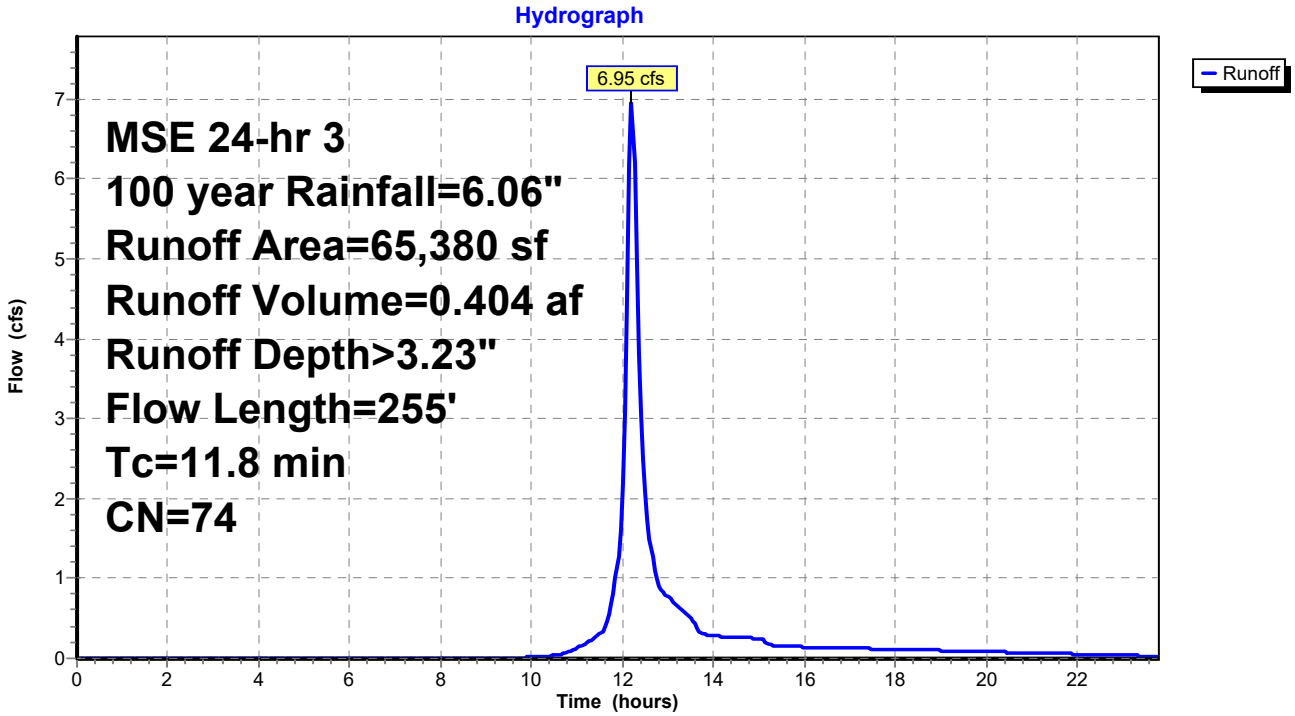
Runoff = 6.95 cfs @ 12.20 hrs, Volume= 0.404 af, Depth> 3.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-23.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 year Rainfall=6.06"

Area (sf)	CN	Description
65,380	74	>75% Grass cover, Good, HSG C
65,380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.0200	0.15		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 2.64"
1.0	155	0.0240	2.49		**Shallow Concentrated Flow, B-C** Unpaved Kv= 16.1 fps
11.8	255	Total			

Subcatchment 4S: Existing site-subcatchment 1

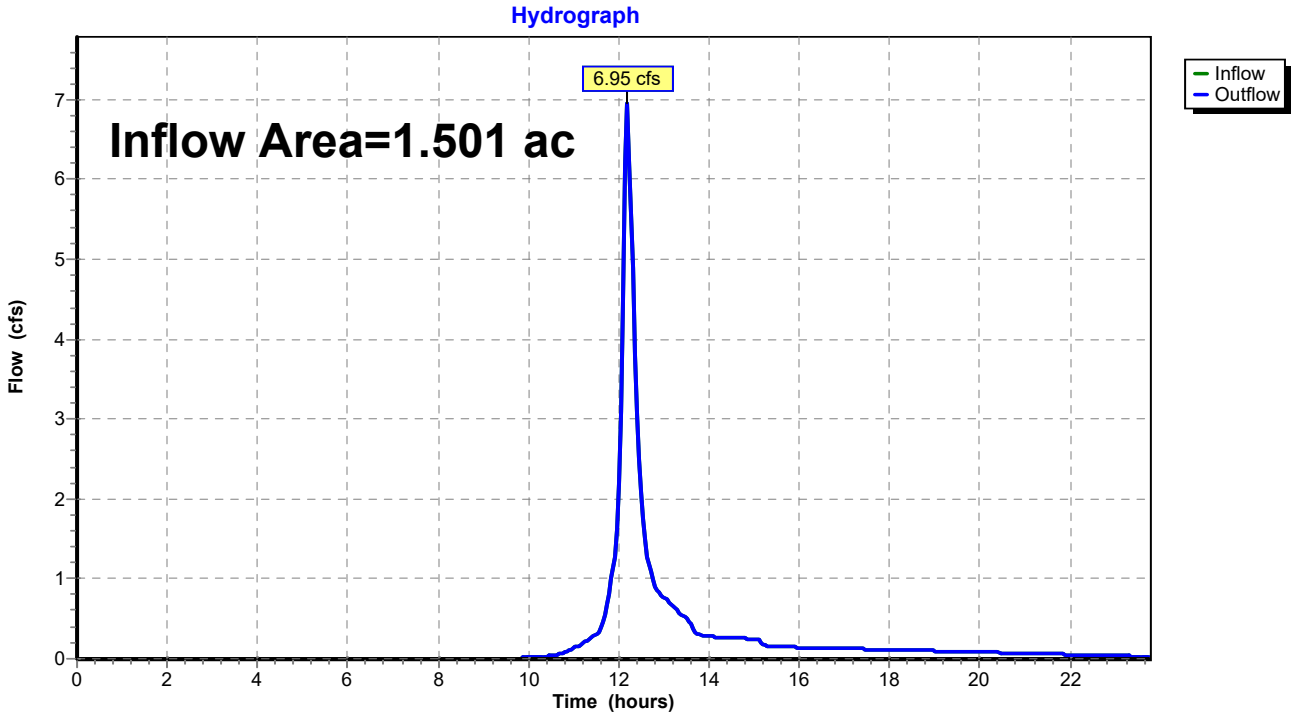


Summary for Reach 3R: Total Runoff - EC

Inflow Area = 1.501 ac, 0.00% Impervious, Inflow Depth > 3.23" for 100 year event
Inflow = 6.95 cfs @ 12.20 hrs, Volume= 0.404 af
Outflow = 6.95 cfs @ 12.20 hrs, Volume= 0.404 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-23.75 hrs, dt= 0.05 hrs

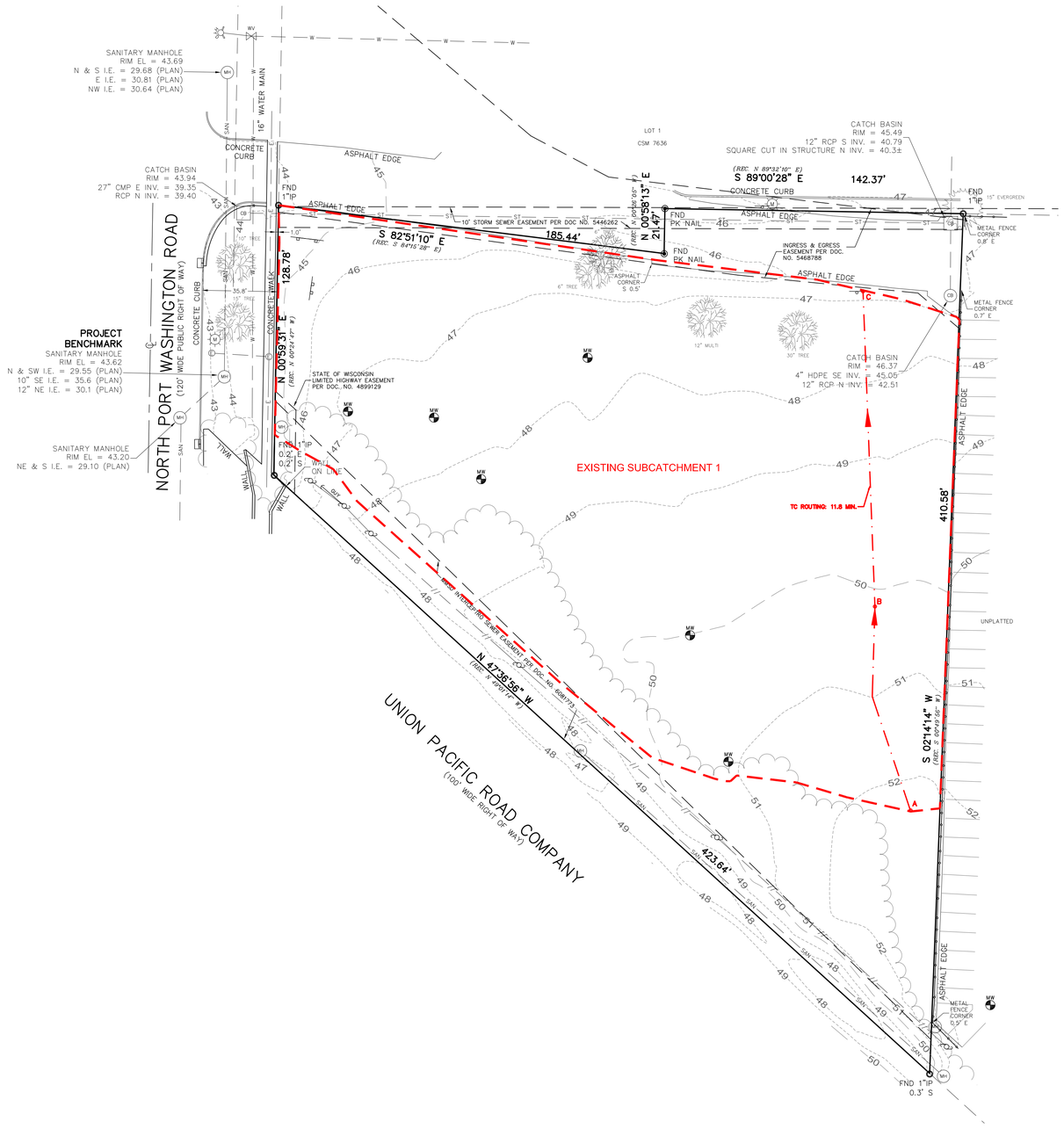
Reach 3R: Total Runoff - EC



CJ engineering
civil design and consulting
9205 W. Center Street
Suite 214
Milwaukee, WI 53222
PH. (414) 443-1312
www.cj-engineering.com

JILLY'S CAR WASH

5100 N. PORT WASHINGTON ROAD GLENDALE, WI



LEGEND

48	EXISTING CONTOUR
48	PROPOSED CONTOUR
x 48.0	PROPOSED ELEVATION
ST	EXISTING STORM SEWER
ST	PROPOSED STORM SEWER
SAN	EXISTING SANITARY SEWER
SAN	PROPOSED SANITARY SEWER
W	EXISTING WATER MAIN
W	PROPOSED WATER MAIN
G	BURIED GAS MAIN
//	OVER HEAD WIRE
E	BURIED ELECTRIC

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GRAPHIC SCALE
30 0 15 30 60
1 inch = 30 ft

CJE NO.: 203IR4
OCTOBER 15, 2020

SWMP-EC

APPENDIX B

CJ engineering
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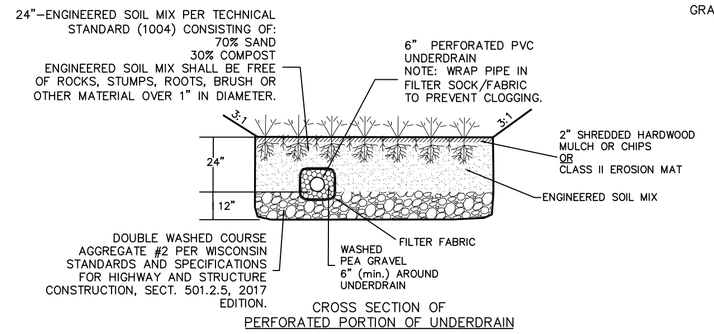
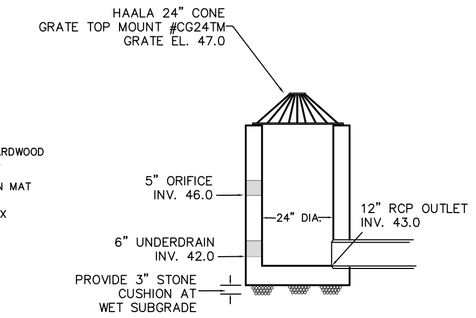
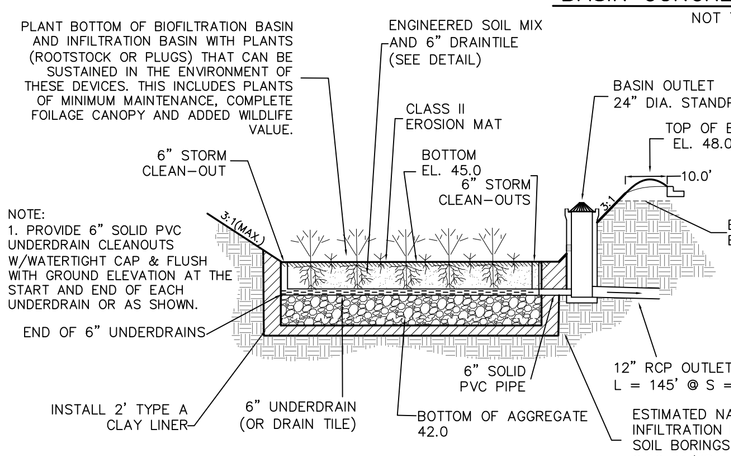


CROSS SECTION OF PERFORATED PORTION OF UNDERDRAIN



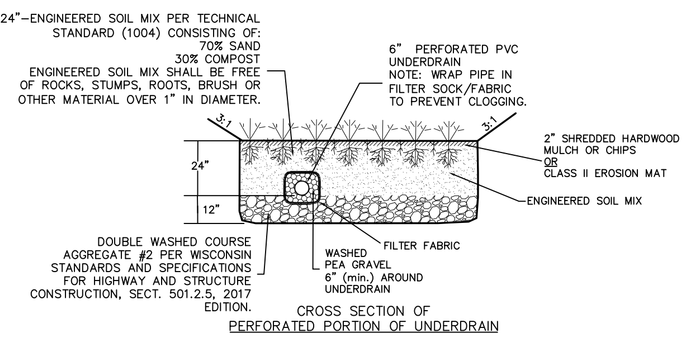
24" PRECAST BASIN CONCRETE STANDPIPE

NOT TO SCALE

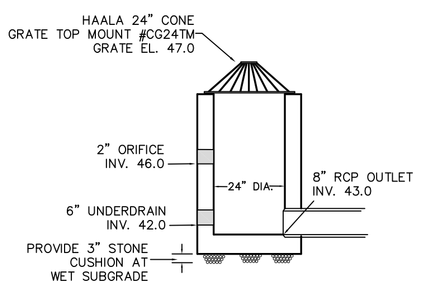


BIORETENTION BASIN #2 DETAIL

NOT TO SCALE

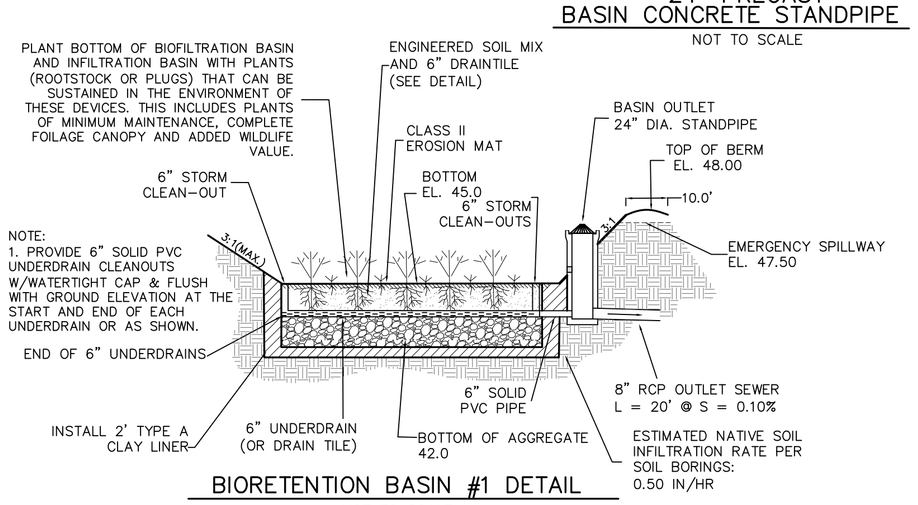


CROSS SECTION OF PERFORATED PORTION OF UNDERDRAIN



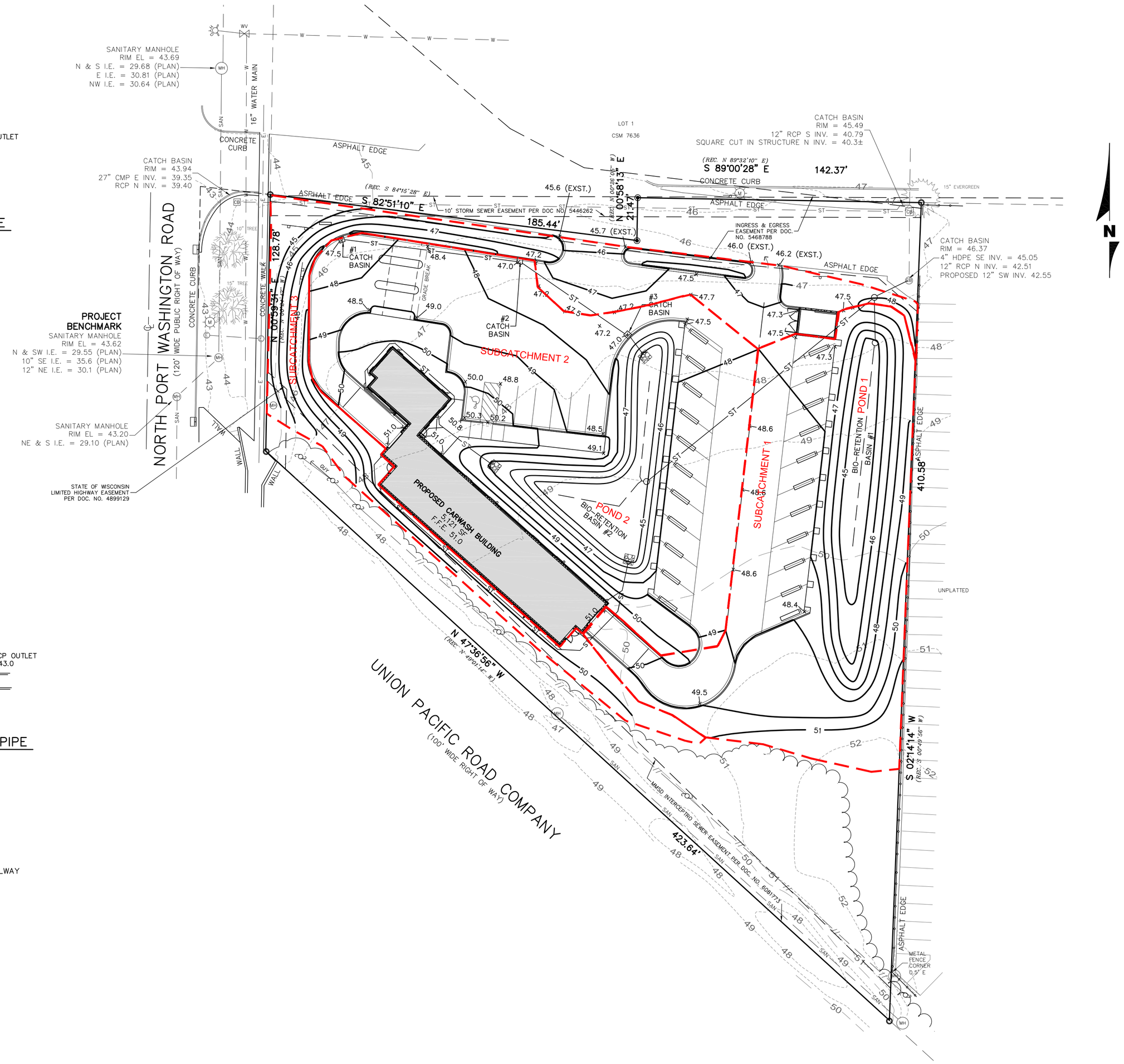
24" PRECAST BASIN CONCRETE STANDPIPE

NOT TO SCALE



BIORETENTION BASIN #1 DETAIL

NOT TO SCALE



JILLY'S CAR WASH

5100 N. PORT WASHINGTON ROAD GLENDALE, WI

LEGEND

48	EXISTING CONTOUR
48	PROPOSED CONTOUR
x 48.0	PROPOSED ELEVATION
ST	EXISTING STORM SEWER
ST	PROPOSED STORM SEWER
SAN	EXISTING SANITARY SEWER
SAN	PROPOSED SANITARY SEWER
W	EXISTING WATER MAIN
W	PROPOSED WATER MAIN
G	BURIED GAS MAIN
//	OVER HEAD WIRE
E	BURIED ELECTRIC

NOTES:

1. TC ROUTING FOR EACH SUBCATCHMENT HAS BEEN SET TO THE MINIMUM ALLOWABLE 6.0 MIN. DUE TO EACH SUBCATCHMENTS TC ROUTING VALUE EQUALING LESS THAN 6.0 MIN.

www.DiggersHotline.com

DIGGERS HOTLINE

DIAL 811 OR (800) 242-8511

GRAPHIC SCALE

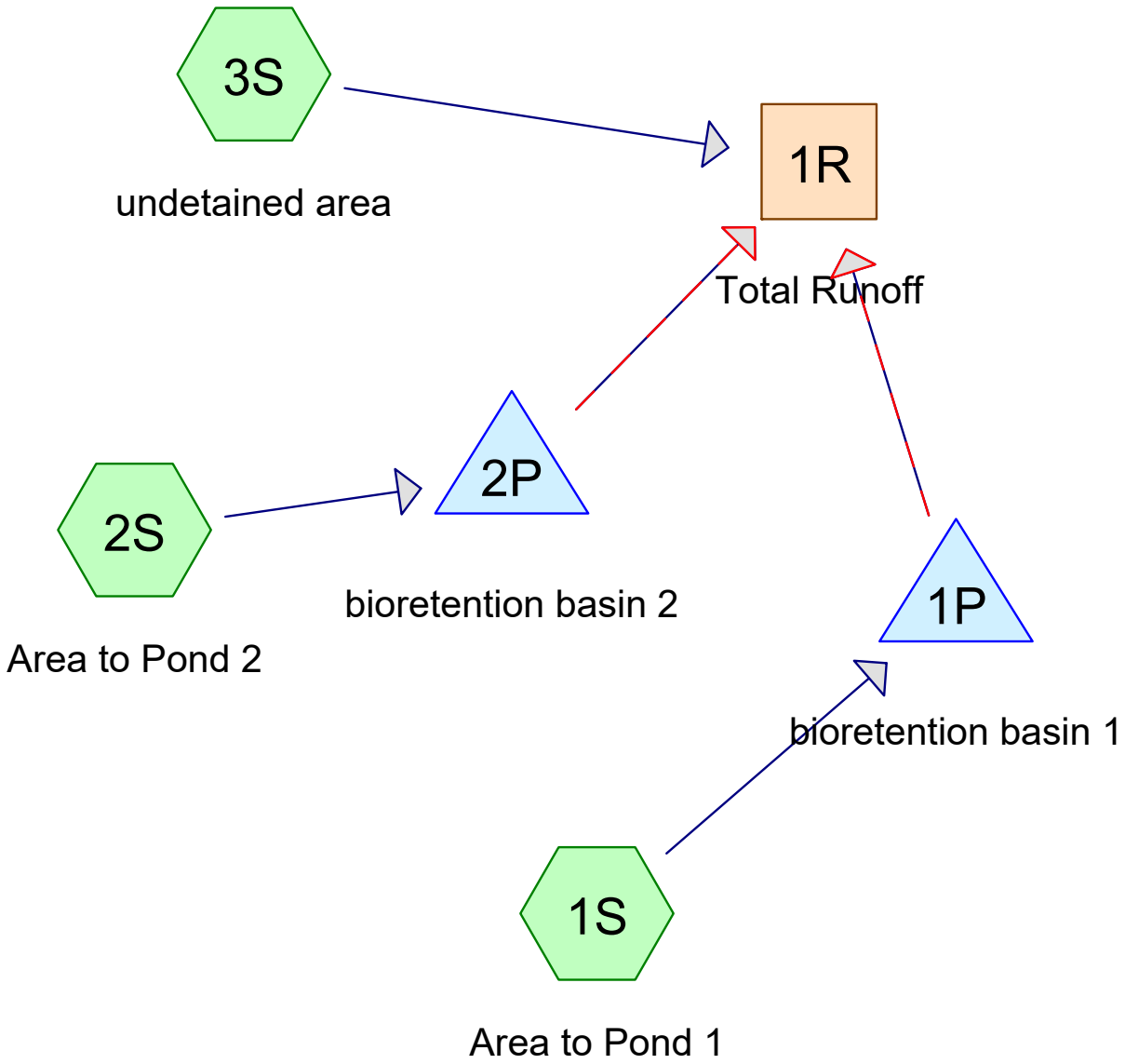
30 0 15 30 60

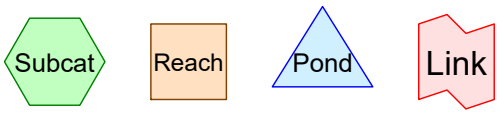
1 inch = 30 ft

CJE NO.: 203IR4

OCTOBER 15, 2020

SWMP-PC





Routing Diagram for CJE2031R0-PC
Prepared by {enter your company name here}, Printed 10/13/2020
HydroCAD® 10.00-16 s/n 03450 © 2015 HydroCAD Software Solutions LLC

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.744	74	>75% Grass cover, Good, HSG C (1S, 2S, 3S)
0.578	98	Paved parking, HSG C (1S, 2S, 3S)
0.118	98	Roofs, HSG C (2S)
1.440	**86**	**TOTAL AREA**

Time span=0.00-23.75 hrs, dt=0.05 hrs, 476 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Area to Pond 1 Runoff Area=20,800 sf 35.38% Impervious Runoff Depth>1.10"
Tc=6.0 min CN=82 Runoff=0.95 cfs 0.044 af

Subcatchment 2S: Area to Pond 2 Runoff Area=29,445 sf 67.04% Impervious Runoff Depth>1.65"
Tc=6.0 min CN=90 Runoff=1.97 cfs 0.093 af

Subcatchment 3S: undetained area Runoff Area=12,480 sf 25.64% Impervious Runoff Depth>0.99"
Tc=6.0 min CN=80 Runoff=0.51 cfs 0.024 af

Reach 1R: Total Runoff Inflow=0.51 cfs 0.059 af
Outflow=0.51 cfs 0.059 af

Pond 1P: bioretention basin 1 Peak Elev=45.26' Storage=1,519 cf Inflow=0.95 cfs 0.044 af
Primary=0.01 cfs 0.011 af Secondary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.011 af

Pond 2P: bioretention basin 2 Peak Elev=45.78' Storage=3,240 cf Inflow=1.97 cfs 0.093 af
Primary=0.03 cfs 0.025 af Secondary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.025 af

Total Runoff Area = 1.440 ac Runoff Volume = 0.160 af Average Runoff Depth = 1.34"
51.69% Pervious = 0.744 ac 48.31% Impervious = 0.696 ac

Summary for Subcatchment 1S: Area to Pond 1

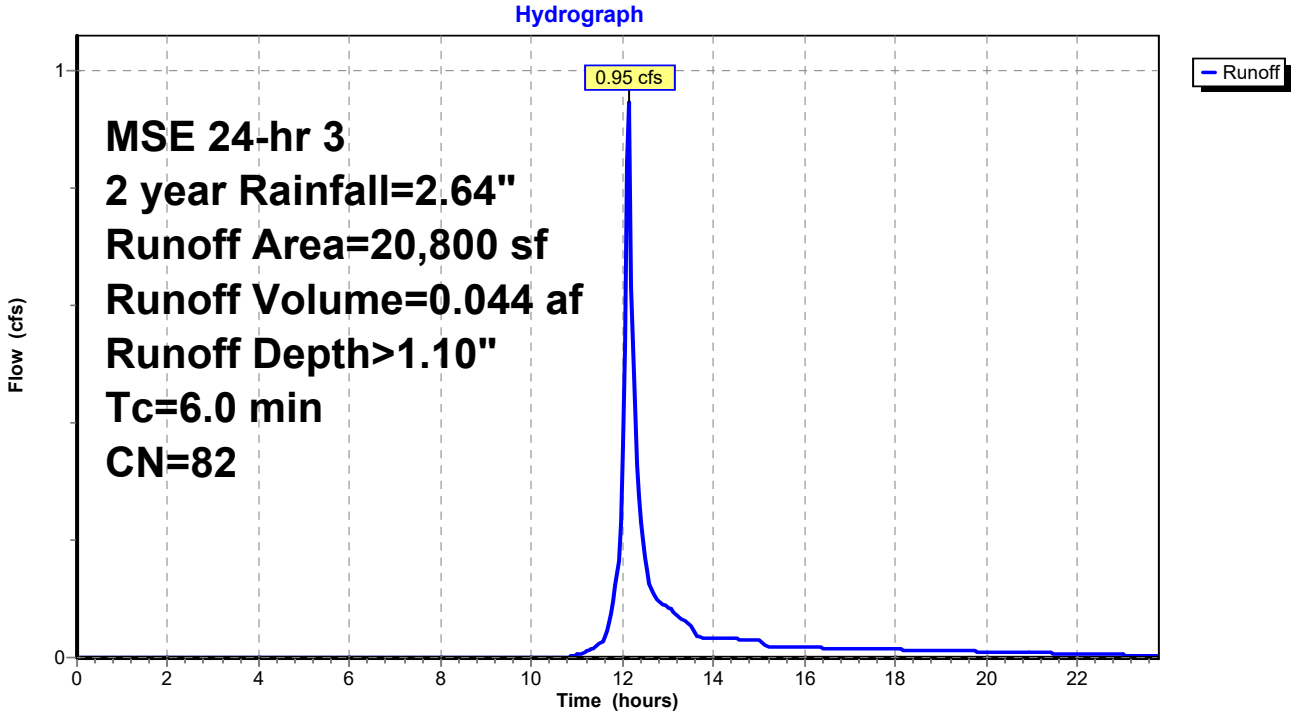
Runoff = 0.95 cfs @ 12.14 hrs, Volume= 0.044 af, Depth> 1.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-23.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 2 year Rainfall=2.64"

	Area (sf)	CN	Description
*	7,360	98	Paved parking, HSG C
	13,440	74	>75% Grass cover, Good, HSG C
	20,800	82	Weighted Average
	13,440		64.62% Pervious Area
	7,360		35.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min. Tc**

Subcatchment 1S: Area to Pond 1



Summary for Subcatchment 2S: Area to Pond 2

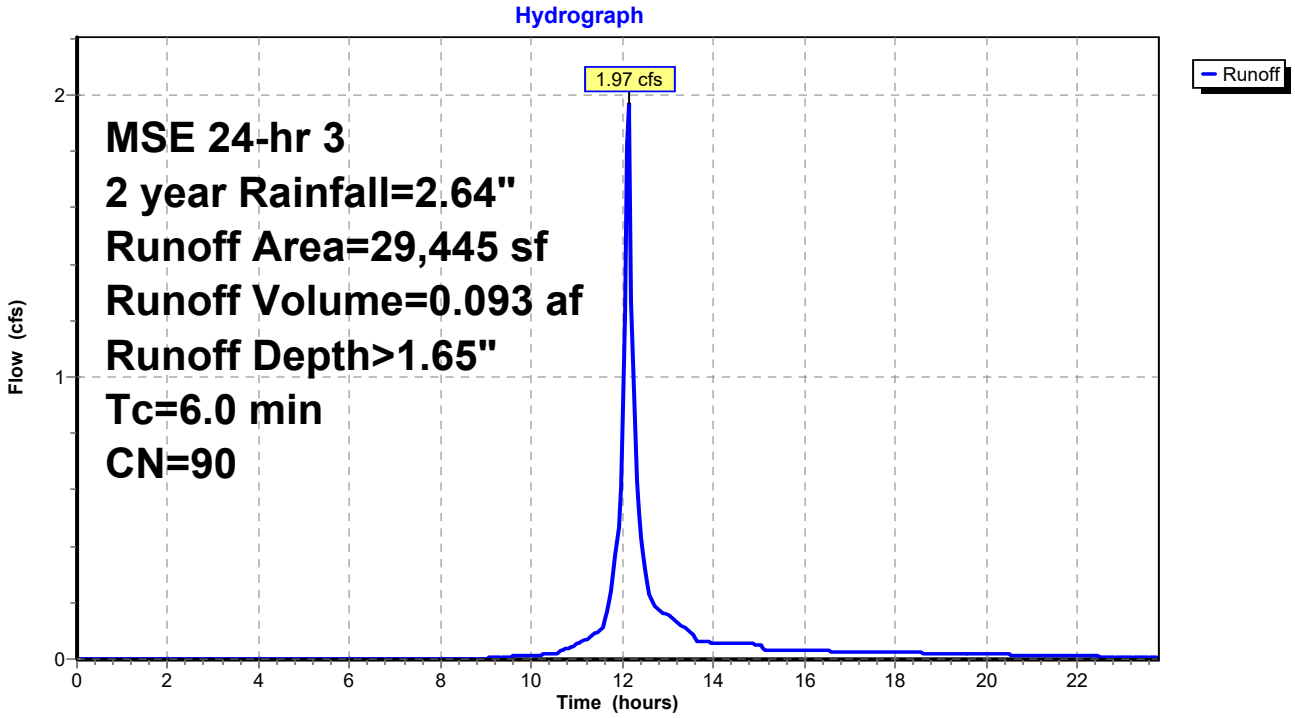
Runoff = 1.97 cfs @ 12.13 hrs, Volume= 0.093 af, Depth> 1.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-23.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 2 year Rainfall=2.64"

	Area (sf)	CN	Description
	5,121	98	Roofs, HSG C
*	14,620	98	Paved parking, HSG C
	9,704	74	>75% Grass cover, Good, HSG C
	29,445	90	Weighted Average
	9,704		32.96% Pervious Area
	19,741		67.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min. Tc**

Subcatchment 2S: Area to Pond 2



Summary for Subcatchment 3S: undetained area

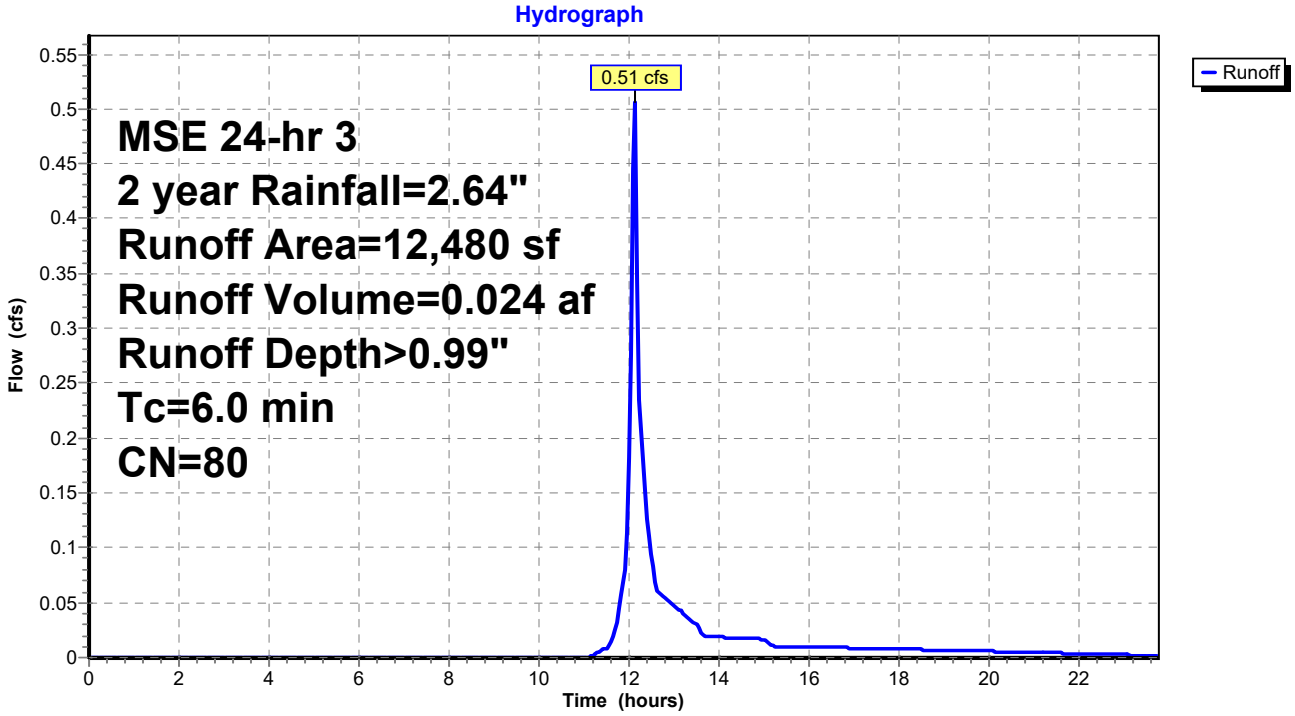
Runoff = 0.51 cfs @ 12.14 hrs, Volume= 0.024 af, Depth> 0.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-23.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 2 year Rainfall=2.64"

	Area (sf)	CN	Description
*	3,200	98	Paved parking, HSG C
	9,280	74	>75% Grass cover, Good, HSG C
	12,480	80	Weighted Average
	9,280		74.36% Pervious Area
	3,200		25.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min. Tc**

Subcatchment 3S: undetained area

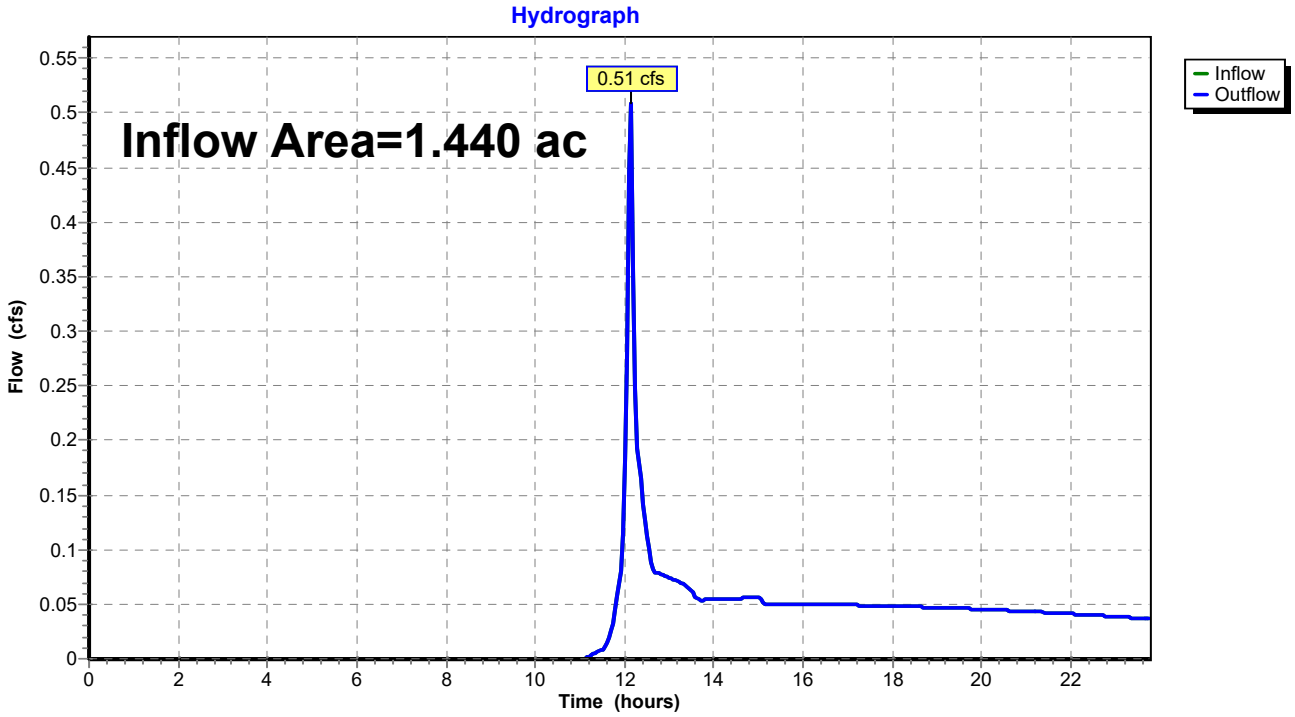


Summary for Reach 1R: Total Runoff

Inflow Area = 1.440 ac, 48.31% Impervious, Inflow Depth > 0.49" for 2 year event
Inflow = 0.51 cfs @ 12.14 hrs, Volume= 0.059 af
Outflow = 0.51 cfs @ 12.14 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-23.75 hrs, dt= 0.05 hrs

Reach 1R: Total Runoff



Summary for Pond 1P: bioretention basin 1

Inflow Area = 0.478 ac, 35.38% Impervious, Inflow Depth > 1.10" for 2 year event
Inflow = 0.95 cfs @ 12.14 hrs, Volume= 0.044 af
Outflow = 0.01 cfs @ 18.18 hrs, Volume= 0.011 af, Atten= 99%, Lag= 362.8 min
Primary = 0.01 cfs @ 18.18 hrs, Volume= 0.011 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-23.75 hrs, dt= 0.05 hrs
Peak Elev= 45.26' @ 18.18 hrs Surf.Area= 1,887 sf Storage= 1,519 cf

Plug-Flow detention time= 392.0 min calculated for 0.011 af (25% of inflow)
Center-of-Mass det. time= 293.0 min (1,108.6 - 815.6)

Volume	Invert	Avail.Storage	Storage Description
#1	42.50'	12,810 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

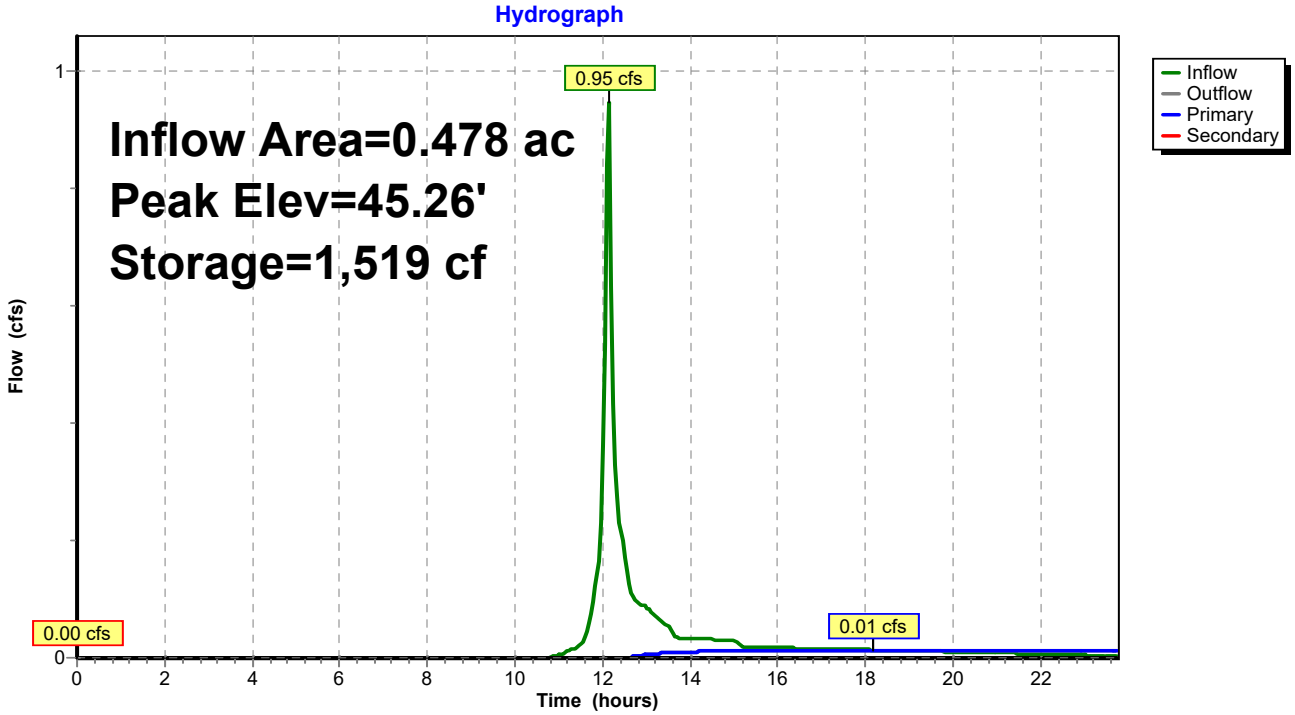
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.50	1,535	0.0	0	0
42.51	1,535	33.0	5	5
43.00	1,535	33.0	248	253
43.01	1,535	27.0	4	257
45.00	1,535	27.0	825	1,082
45.01	1,535	100.0	15	1,098
46.00	2,950	100.0	2,220	3,318
47.00	4,430	100.0	3,690	7,008
48.00	7,175	100.0	5,803	12,810

Device	Routing	Invert	Outlet Devices
#1	Primary	43.00'	**8.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.00' / 42.80' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.35 sf
#2	Device 1	43.20'	**6.0" Round Culvert** L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.20' / 43.00' S= 0.0040 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#3	Device 2	45.00'	**1.630 in/hr Exfiltration over Surface area above 45.00'** Excluded Surface area = 1,535 sf
#4	Device 1	46.00'	**2.0" Vert. Orifice/Grate** C= 0.600
#5	Device 1	47.00'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#6	Secondary	47.50'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.01 cfs @ 18.18 hrs HW=45.26' (Free Discharge)
- **1=Culvert** (Passes 0.01 cfs of 2.33 cfs potential flow)
  - **2=Culvert** (Passes 0.01 cfs of 1.00 cfs potential flow)
    - **3=Exfiltration** (Exfiltration Controls 0.01 cfs)
  - **4=Orifice/Grate** (Controls 0.00 cfs)
  - **5=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=42.50' (Free Discharge)
- **6=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: bioretention basin 1



Summary for Pond 2P: bioretention basin 2

Inflow Area = 0.676 ac, 67.04% Impervious, Inflow Depth > 1.65" for 2 year event
Inflow = 1.97 cfs @ 12.13 hrs, Volume= 0.093 af
Outflow = 0.03 cfs @ 16.76 hrs, Volume= 0.025 af, Atten= 99%, Lag= 278.0 min
Primary = 0.03 cfs @ 16.76 hrs, Volume= 0.025 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-23.75 hrs, dt= 0.05 hrs
Peak Elev= 45.78' @ 16.76 hrs Surf.Area= 2,723 sf Storage= 3,240 cf

Plug-Flow detention time= 386.1 min calculated for 0.025 af (26% of inflow)
Center-of-Mass det. time= 290.6 min (1,084.2 - 793.6)

Volume	Invert	Avail.Storage	Storage Description
#1	42.50'	12,115 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

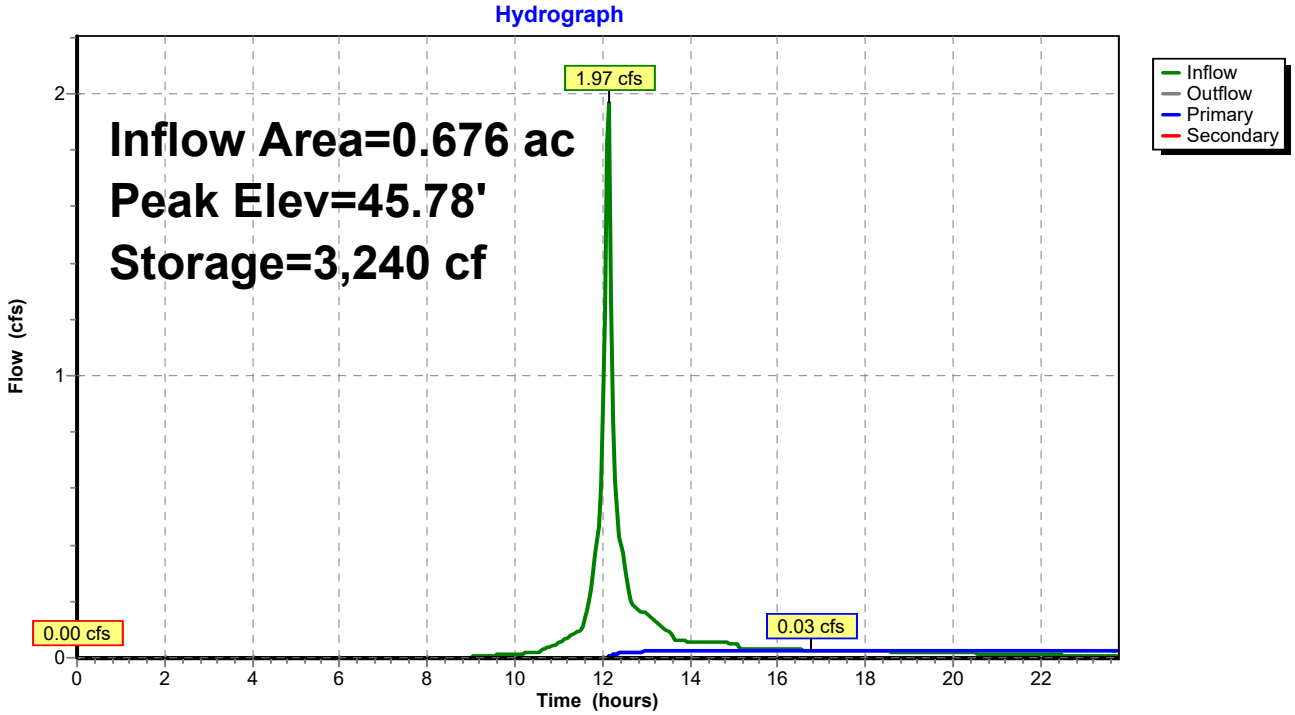
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.50	2,000	0.0	0	0
42.51	2,000	33.0	7	7
43.00	2,000	33.0	323	330
43.01	2,000	27.0	5	335
45.00	2,000	27.0	1,075	1,410
45.01	2,000	100.0	20	1,430
46.00	2,934	100.0	2,442	3,872
47.00	3,926	100.0	3,430	7,302
48.00	5,700	100.0	4,813	12,115

Device	Routing	Invert	Outlet Devices
#1	Primary	43.00'	**12.0" Round Culvert** L= 145.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.00' / 42.70' S= 0.0021 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#2	Device 1	43.20'	**6.0" Round Culvert** L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.20' / 43.00' S= 0.0040 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#3	Device 2	45.00'	**1.630 in/hr Exfiltration over Surface area above 45.00'** Excluded Surface area = 2,000 sf
#4	Device 1	46.00'	**5.0" Vert. Orifice/Grate** C= 0.600
#5	Device 1	47.00'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#6	Secondary	47.50'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.03 cfs @ 16.76 hrs HW=45.78' (Free Discharge)
- **1=Culvert** (Passes 0.03 cfs of 4.16 cfs potential flow)
  - **2=Culvert** (Passes 0.03 cfs of 1.14 cfs potential flow)
    - **3=Exfiltration** (Exfiltration Controls 0.03 cfs)
  - **4=Orifice/Grate** (Controls 0.00 cfs)
  - **5=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=42.50' (Free Discharge)
- **6=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: bioretention basin 2



Time span=0.00-23.75 hrs, dt=0.05 hrs, 476 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Area to Pond 1 Runoff Area=20,800 sf 35.38% Impervious Runoff Depth>1.97"
Tc=6.0 min CN=82 Runoff=1.69 cfs 0.078 af

Subcatchment 2S: Area to Pond 2 Runoff Area=29,445 sf 67.04% Impervious Runoff Depth>2.66"
Tc=6.0 min CN=90 Runoff=3.09 cfs 0.150 af

Subcatchment 3S: undetained area Runoff Area=12,480 sf 25.64% Impervious Runoff Depth>1.82"
Tc=6.0 min CN=80 Runoff=0.94 cfs 0.043 af

Reach 1R: Total Runoff Inflow=0.96 cfs 0.140 af
Outflow=0.96 cfs 0.140 af

Pond 1P: bioretention basin 1 Peak Elev=45.71' Storage=2,518 cf Inflow=1.69 cfs 0.078 af
Primary=0.04 cfs 0.032 af Secondary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.032 af

Pond 2P: bioretention basin 2 Peak Elev=46.23' Storage=4,574 cf Inflow=3.09 cfs 0.150 af
Primary=0.17 cfs 0.065 af Secondary=0.00 cfs 0.000 af Outflow=0.17 cfs 0.065 af

Total Runoff Area = 1.440 ac Runoff Volume = 0.272 af Average Runoff Depth = 2.26"
51.69% Pervious = 0.744 ac 48.31% Impervious = 0.696 ac

Summary for Subcatchment 1S: Area to Pond 1

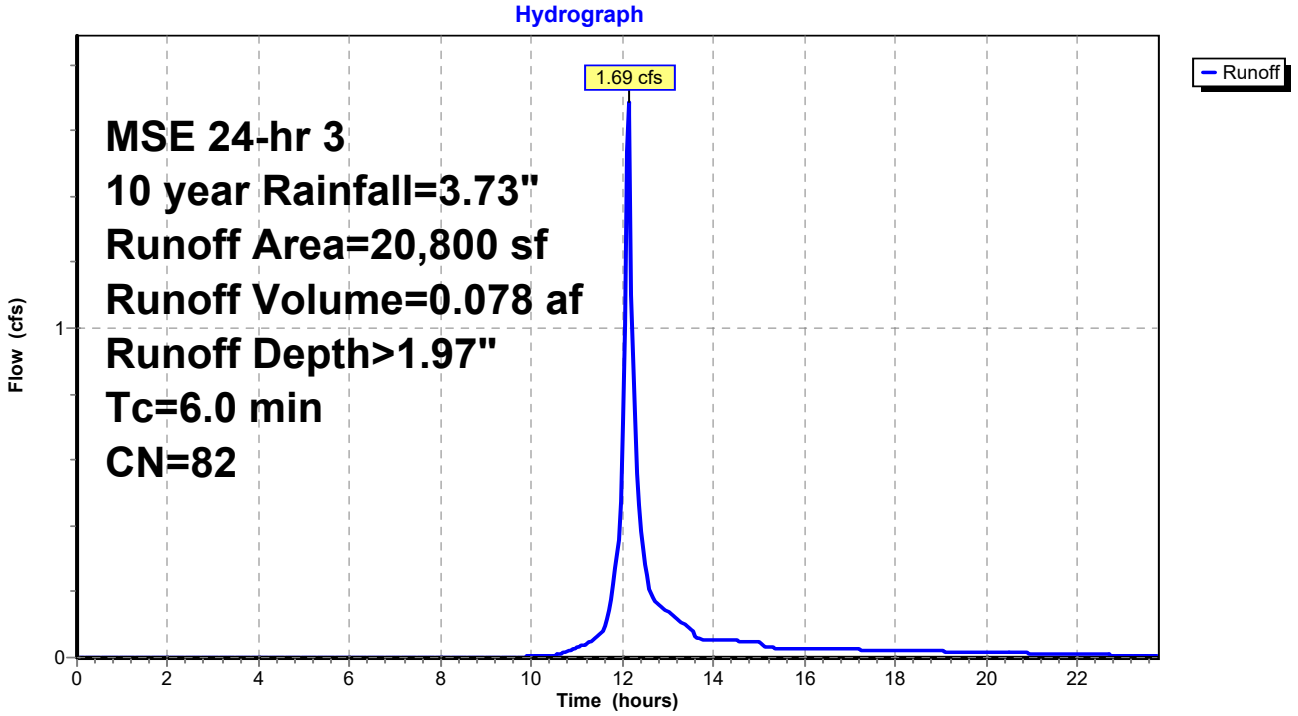
Runoff = 1.69 cfs @ 12.13 hrs, Volume= 0.078 af, Depth> 1.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-23.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 10 year Rainfall=3.73"

	Area (sf)	CN	Description
*	7,360	98	Paved parking, HSG C
	13,440	74	>75% Grass cover, Good, HSG C
	20,800	82	Weighted Average
	13,440		64.62% Pervious Area
	7,360		35.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min. Tc**

Subcatchment 1S: Area to Pond 1



Summary for Subcatchment 2S: Area to Pond 2

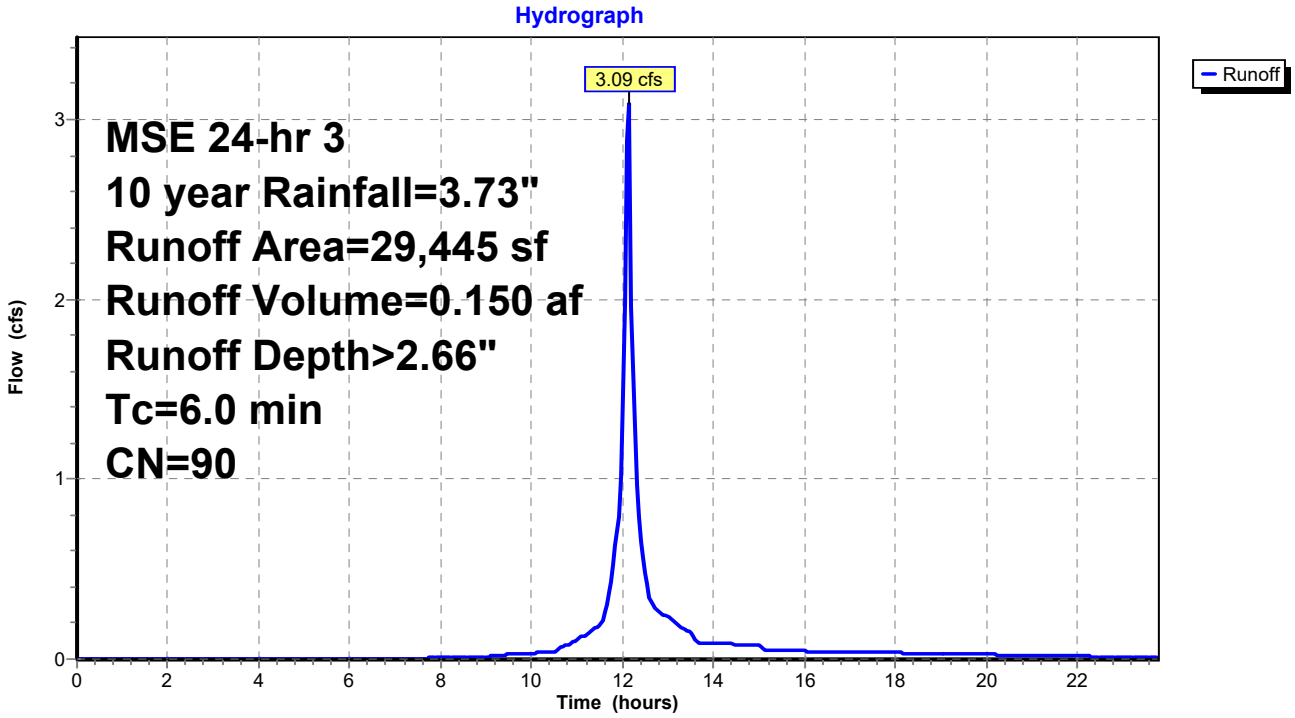
Runoff = 3.09 cfs @ 12.13 hrs, Volume= 0.150 af, Depth> 2.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-23.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 10 year Rainfall=3.73"

	Area (sf)	CN	Description
	5,121	98	Roofs, HSG C
*	14,620	98	Paved parking, HSG C
	9,704	74	>75% Grass cover, Good, HSG C
	29,445	90	Weighted Average
	9,704		32.96% Pervious Area
	19,741		67.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min. Tc**

Subcatchment 2S: Area to Pond 2



Summary for Subcatchment 3S: undetained area

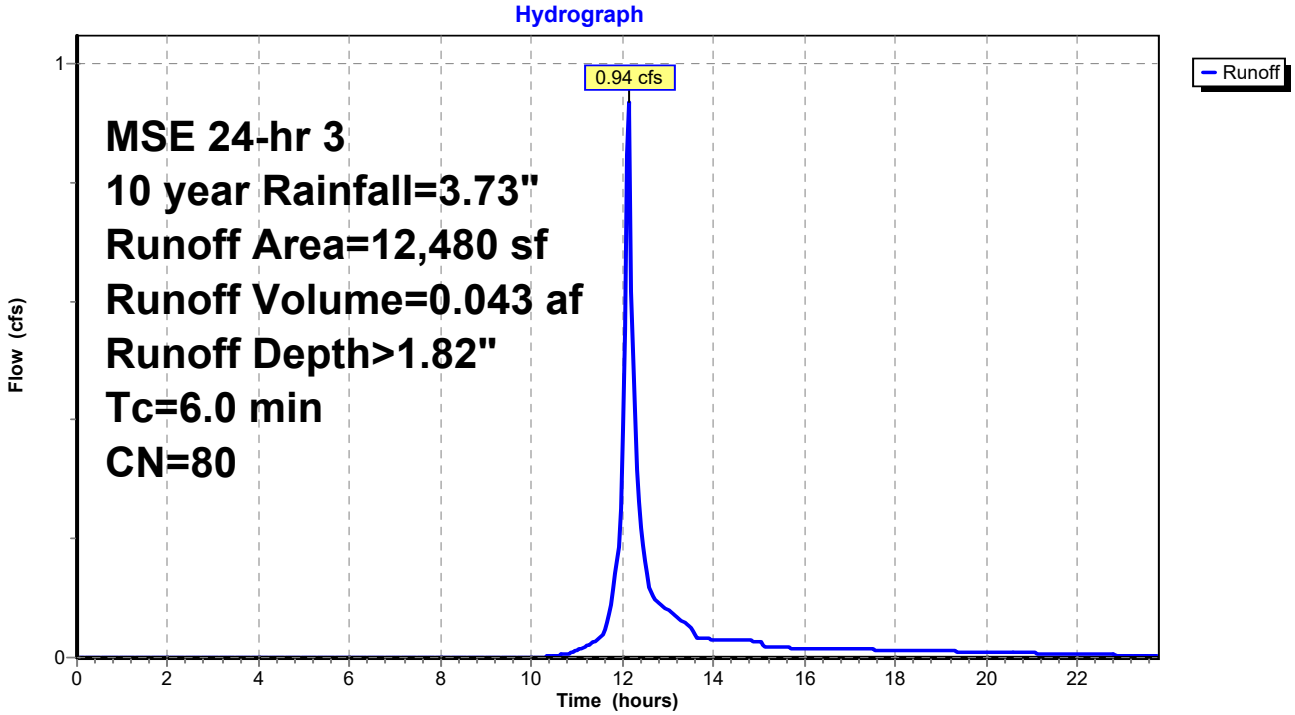
Runoff = 0.94 cfs @ 12.13 hrs, Volume= 0.043 af, Depth> 1.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-23.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 10 year Rainfall=3.73"

	Area (sf)	CN	Description
*	3,200	98	Paved parking, HSG C
	9,280	74	>75% Grass cover, Good, HSG C
	12,480	80	Weighted Average
	9,280		74.36% Pervious Area
	3,200		25.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min. Tc**

Subcatchment 3S: undetained area

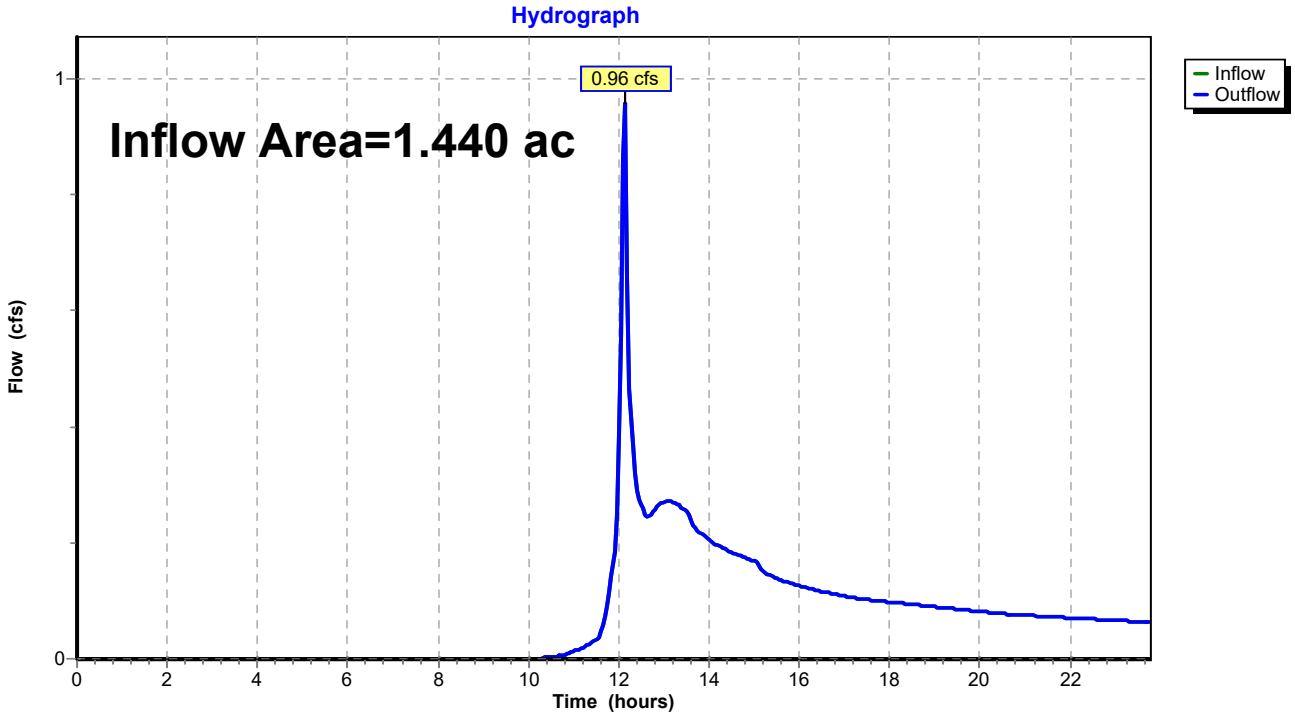


Summary for Reach 1R: Total Runoff

Inflow Area = 1.440 ac, 48.31% Impervious, Inflow Depth > 1.17" for 10 year event
Inflow = 0.96 cfs @ 12.14 hrs, Volume= 0.140 af
Outflow = 0.96 cfs @ 12.14 hrs, Volume= 0.140 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-23.75 hrs, dt= 0.05 hrs

Reach 1R: Total Runoff



Summary for Pond 1P: bioretention basin 1

Inflow Area = 0.478 ac, 35.38% Impervious, Inflow Depth > 1.97" for 10 year event
Inflow = 1.69 cfs @ 12.13 hrs, Volume= 0.078 af
Outflow = 0.04 cfs @ 15.10 hrs, Volume= 0.032 af, Atten= 98%, Lag= 177.7 min
Primary = 0.04 cfs @ 15.10 hrs, Volume= 0.032 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-23.75 hrs, dt= 0.05 hrs
Peak Elev= 45.71' @ 15.10 hrs Surf.Area= 2,533 sf Storage= 2,518 cf

Plug-Flow detention time= 353.1 min calculated for 0.032 af (41% of inflow)
Center-of-Mass det. time= 265.1 min (1,068.8 - 803.7)

Volume	Invert	Avail.Storage	Storage Description
#1	42.50'	12,810 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

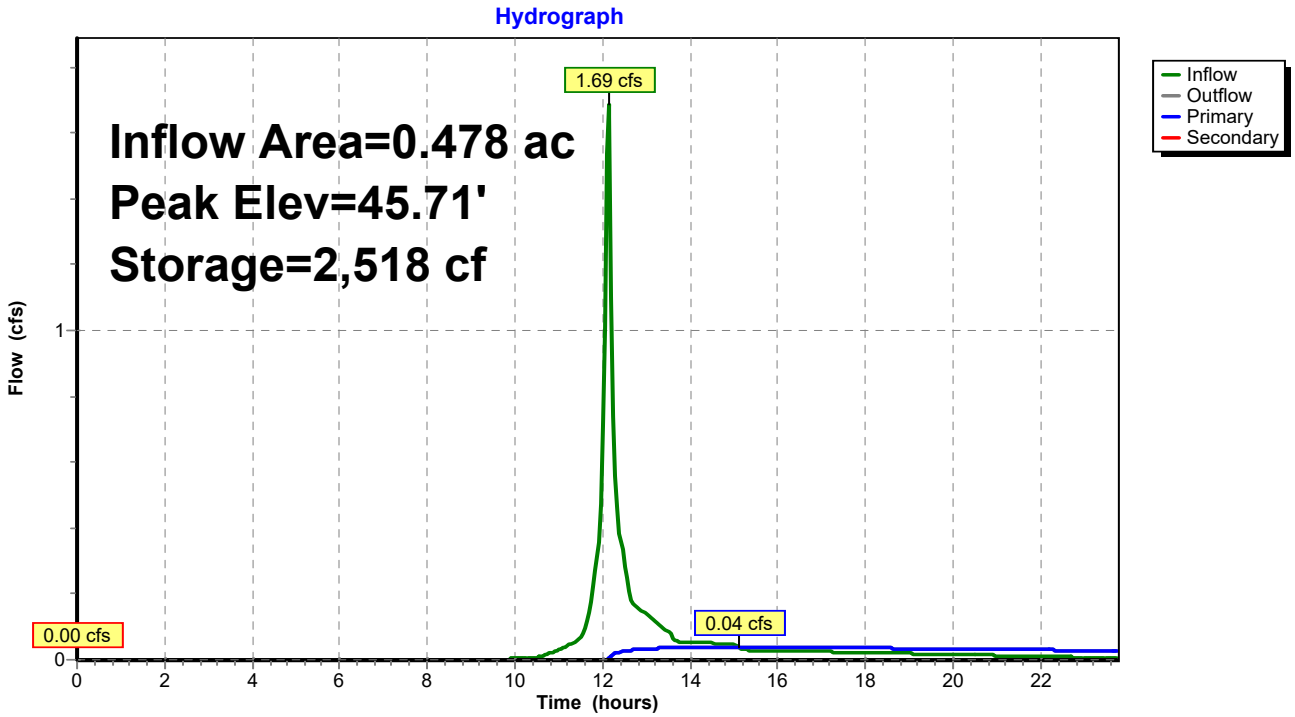
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.50	1,535	0.0	0	0
42.51	1,535	33.0	5	5
43.00	1,535	33.0	248	253
43.01	1,535	27.0	4	257
45.00	1,535	27.0	825	1,082
45.01	1,535	100.0	15	1,098
46.00	2,950	100.0	2,220	3,318
47.00	4,430	100.0	3,690	7,008
48.00	7,175	100.0	5,803	12,810

Device	Routing	Invert	Outlet Devices
#1	Primary	43.00'	**8.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.00' / 42.80' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.35 sf
#2	Device 1	43.20'	**6.0" Round Culvert** L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.20' / 43.00' S= 0.0040 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#3	Device 2	45.00'	**1.630 in/hr Exfiltration over Surface area above 45.00'** Excluded Surface area = 1,535 sf
#4	Device 1	46.00'	**2.0" Vert. Orifice/Grate** C= 0.600
#5	Device 1	47.00'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#6	Secondary	47.50'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.04 cfs @ 15.10 hrs HW=45.71' (Free Discharge)
- **1=Culvert** (Passes 0.04 cfs of 2.59 cfs potential flow)
  - **2=Culvert** (Passes 0.04 cfs of 1.13 cfs potential flow)
    - **3=Exfiltration** (Exfiltration Controls 0.04 cfs)
  - **4=Orifice/Grate** (Controls 0.00 cfs)
  - **5=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=42.50' (Free Discharge)
- **6=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: bioretention basin 1



Summary for Pond 2P: bioretention basin 2

Inflow Area = 0.676 ac, 67.04% Impervious, Inflow Depth > 2.66" for 10 year event
Inflow = 3.09 cfs @ 12.13 hrs, Volume= 0.150 af
Outflow = 0.17 cfs @ 13.34 hrs, Volume= 0.065 af, Atten= 94%, Lag= 72.8 min
Primary = 0.17 cfs @ 13.34 hrs, Volume= 0.065 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-23.75 hrs, dt= 0.05 hrs
Peak Elev= 46.23' @ 13.34 hrs Surf.Area= 3,162 sf Storage= 4,574 cf

Plug-Flow detention time= 279.1 min calculated for 0.065 af (43% of inflow)
Center-of-Mass det. time= 195.7 min (979.8 - 784.2)

Volume	Invert	Avail.Storage	Storage Description
#1	42.50'	12,115 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

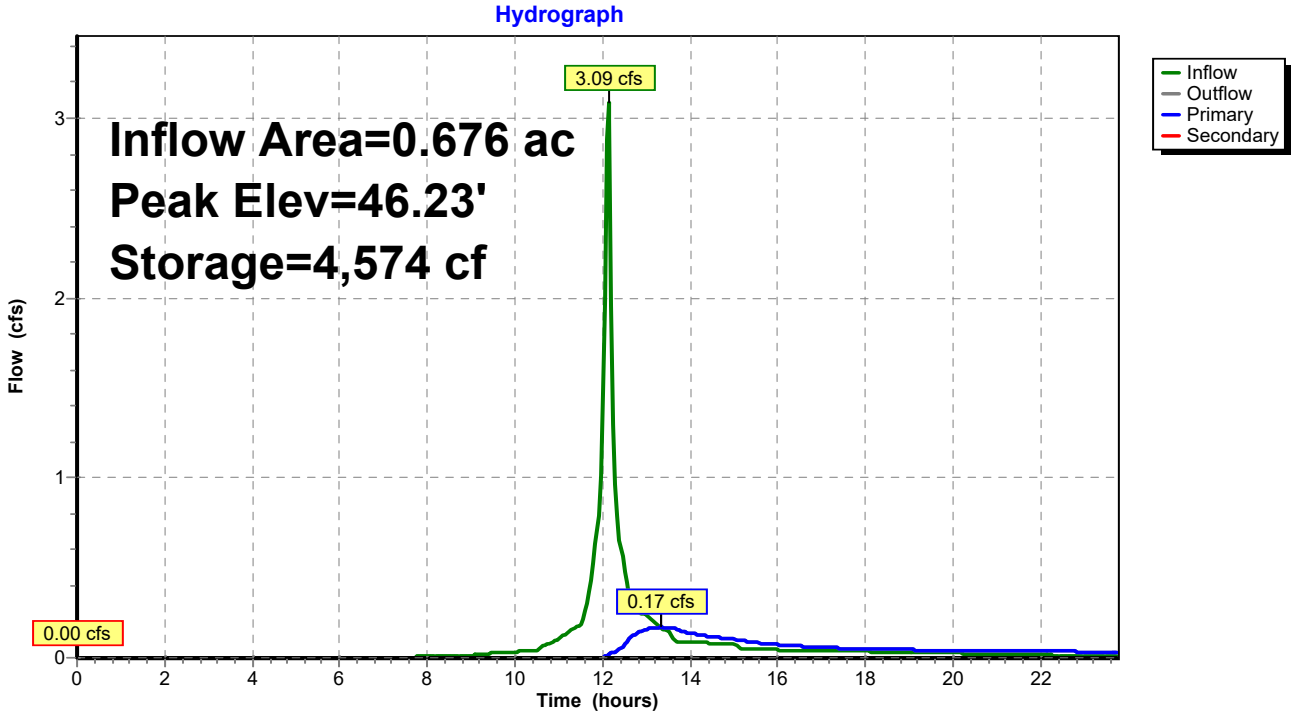
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.50	2,000	0.0	0	0
42.51	2,000	33.0	7	7
43.00	2,000	33.0	323	330
43.01	2,000	27.0	5	335
45.00	2,000	27.0	1,075	1,410
45.01	2,000	100.0	20	1,430
46.00	2,934	100.0	2,442	3,872
47.00	3,926	100.0	3,430	7,302
48.00	5,700	100.0	4,813	12,115

Device	Routing	Invert	Outlet Devices
#1	Primary	43.00'	**12.0" Round Culvert** L= 145.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.00' / 42.70' S= 0.0021 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#2	Device 1	43.20'	**6.0" Round Culvert** L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.20' / 43.00' S= 0.0040 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#3	Device 2	45.00'	**1.630 in/hr Exfiltration over Surface area above 45.00'** Excluded Surface area = 2,000 sf
#4	Device 1	46.00'	**5.0" Vert. Orifice/Grate** C= 0.600
#5	Device 1	47.00'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#6	Secondary	47.50'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.17 cfs @ 13.34 hrs HW=46.23' (Free Discharge)
- **1=Culvert** (Passes 0.17 cfs of 4.60 cfs potential flow)
  - **2=Culvert** (Passes 0.04 cfs of 1.25 cfs potential flow)
    - **3=Exfiltration** (Exfiltration Controls 0.04 cfs)
  - **4=Orifice/Grate** (Orifice Controls 0.13 cfs @ 1.63 fps)
  - **5=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=42.50' (Free Discharge)
- **6=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: bioretention basin 2



Time span=0.00-23.75 hrs, dt=0.05 hrs, 476 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Area to Pond 1 Runoff Area=20,800 sf 35.38% Impervious Runoff Depth>4.04"
Tc=6.0 min CN=82 Runoff=3.36 cfs 0.161 af

Subcatchment 2S: Area to Pond 2 Runoff Area=29,445 sf 67.04% Impervious Runoff Depth>4.90"
Tc=6.0 min CN=90 Runoff=5.47 cfs 0.276 af

Subcatchment 3S: undetained area Runoff Area=12,480 sf 25.64% Impervious Runoff Depth>3.83"
Tc=6.0 min CN=80 Runoff=1.93 cfs 0.091 af

Reach 1R: Total Runoff Inflow=2.36 cfs 0.369 af
Outflow=2.36 cfs 0.369 af

Pond 1P: bioretention basin 1 Peak Elev=46.46' Storage=4,831 cf Inflow=3.36 cfs 0.161 af
Primary=0.14 cfs 0.091 af Secondary=0.00 cfs 0.000 af Outflow=0.14 cfs 0.091 af

Pond 2P: bioretention basin 2 Peak Elev=47.01' Storage=7,350 cf Inflow=5.47 cfs 0.276 af
Primary=0.69 cfs 0.187 af Secondary=0.00 cfs 0.000 af Outflow=0.69 cfs 0.187 af

Total Runoff Area = 1.440 ac Runoff Volume = 0.528 af Average Runoff Depth = 4.40"
51.69% Pervious = 0.744 ac 48.31% Impervious = 0.696 ac

Summary for Subcatchment 1S: Area to Pond 1

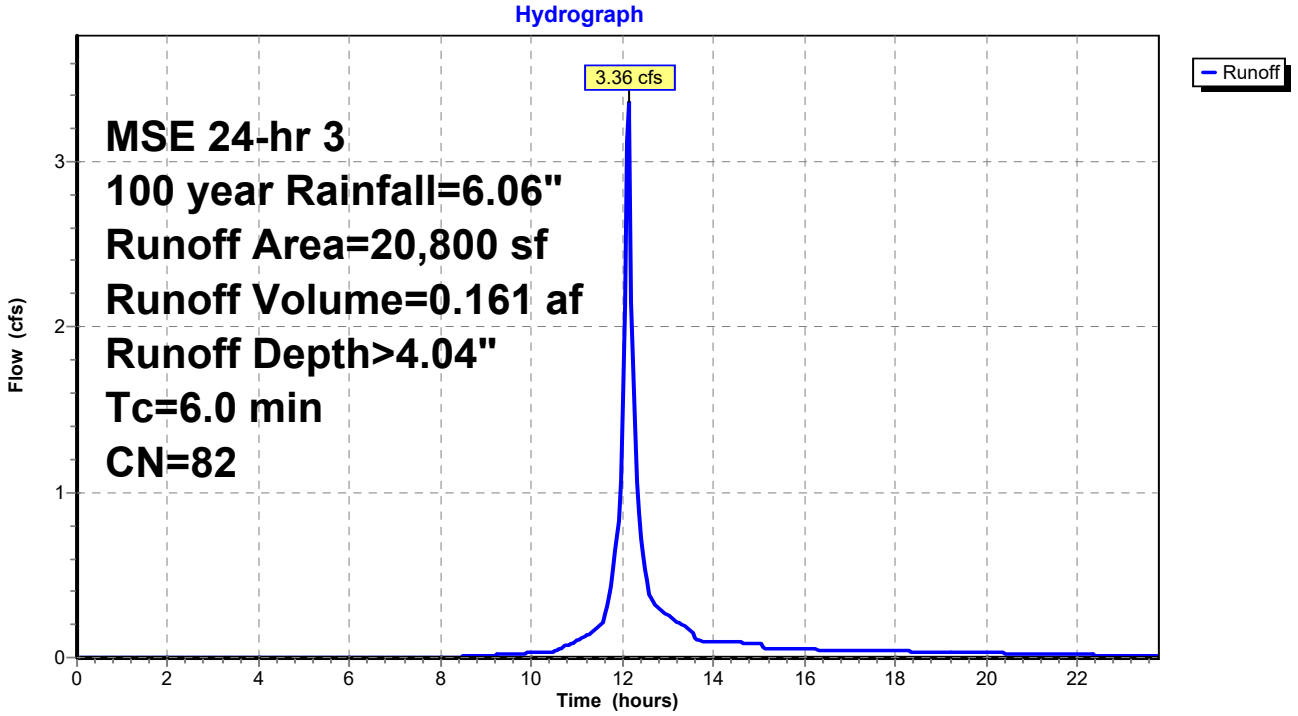
Runoff = 3.36 cfs @ 12.13 hrs, Volume= 0.161 af, Depth> 4.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-23.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 year Rainfall=6.06"

	Area (sf)	CN	Description
*	7,360	98	Paved parking, HSG C
	13,440	74	>75% Grass cover, Good, HSG C
	20,800	82	Weighted Average
	13,440		64.62% Pervious Area
	7,360		35.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min. Tc**

Subcatchment 1S: Area to Pond 1



Summary for Subcatchment 2S: Area to Pond 2

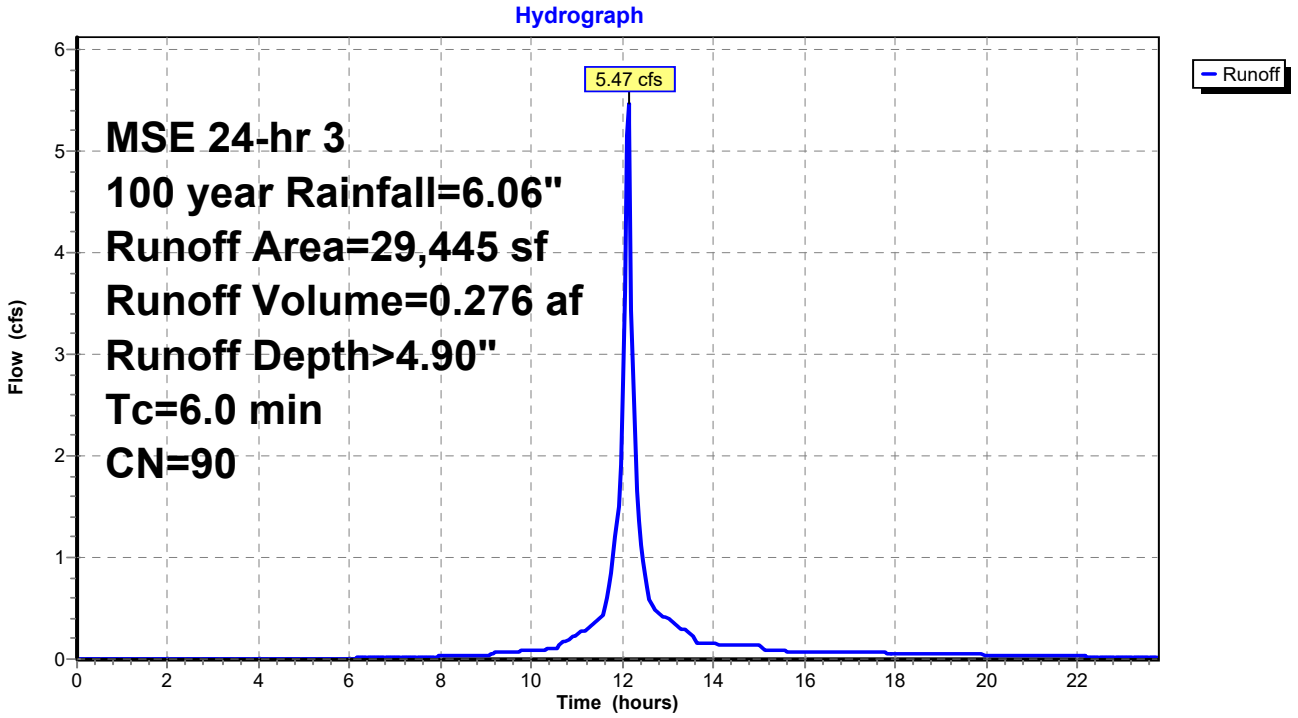
Runoff = 5.47 cfs @ 12.13 hrs, Volume= 0.276 af, Depth> 4.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-23.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 year Rainfall=6.06"

	Area (sf)	CN	Description
	5,121	98	Roofs, HSG C
*	14,620	98	Paved parking, HSG C
	9,704	74	>75% Grass cover, Good, HSG C
	29,445	90	Weighted Average
	9,704		32.96% Pervious Area
	19,741		67.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min. Tc**

Subcatchment 2S: Area to Pond 2



Summary for Subcatchment 3S: undetained area

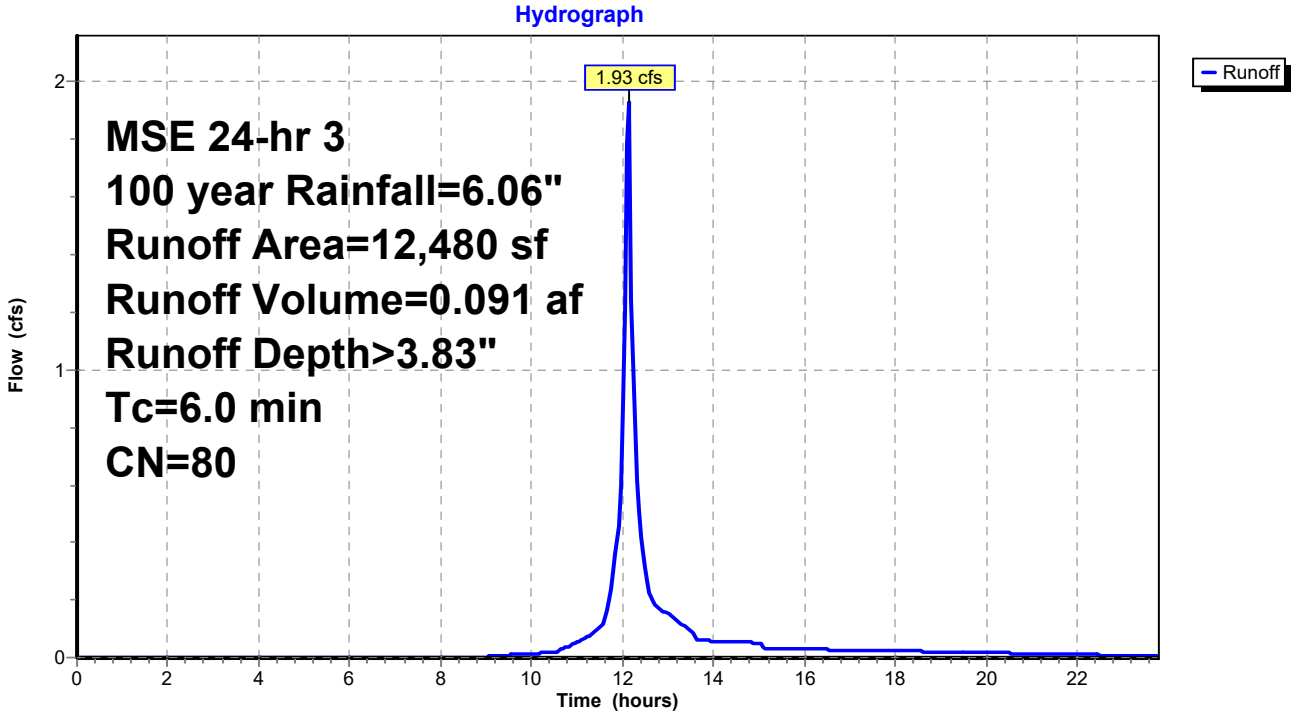
Runoff = 1.93 cfs @ 12.13 hrs, Volume= 0.091 af, Depth> 3.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-23.75 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 year Rainfall=6.06"

	Area (sf)	CN	Description
*	3,200	98	Paved parking, HSG C
	9,280	74	>75% Grass cover, Good, HSG C
	12,480	80	Weighted Average
	9,280		74.36% Pervious Area
	3,200		25.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min. Tc**

Subcatchment 3S: undetained area

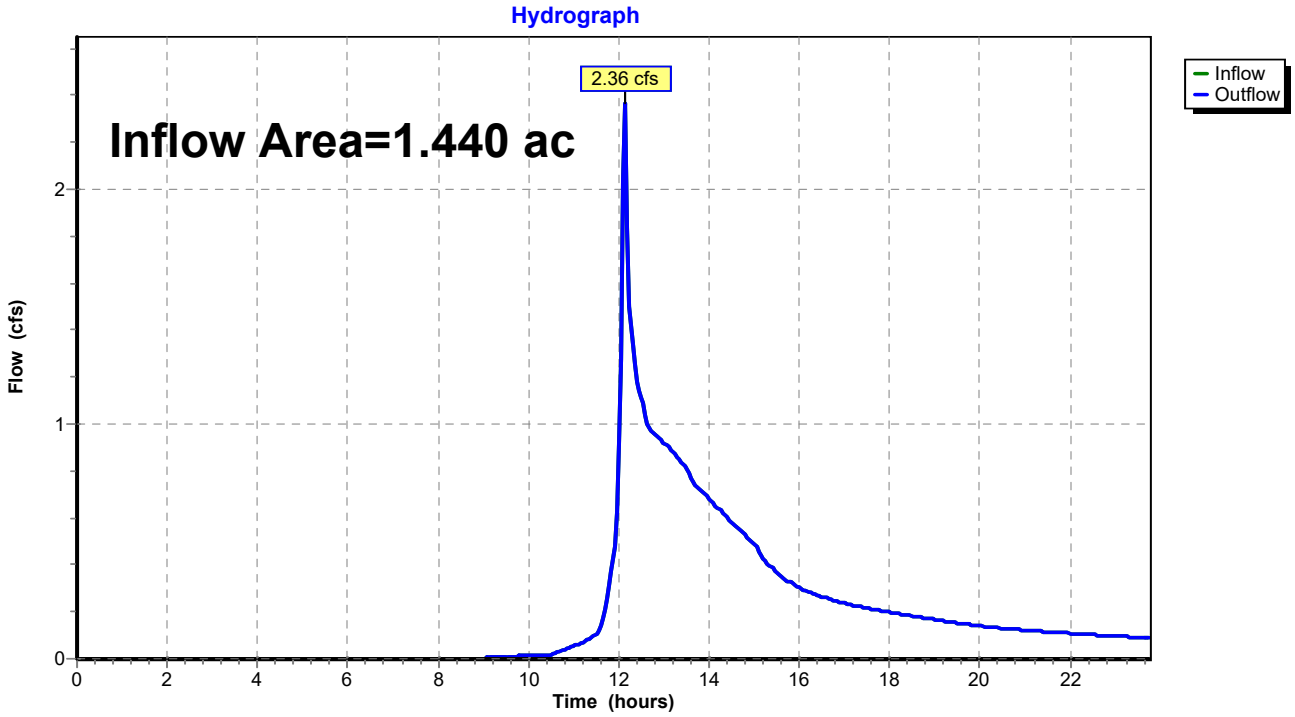


Summary for Reach 1R: Total Runoff

Inflow Area = 1.440 ac, 48.31% Impervious, Inflow Depth > 3.08" for 100 year event
Inflow = 2.36 cfs @ 12.14 hrs, Volume= 0.369 af
Outflow = 2.36 cfs @ 12.14 hrs, Volume= 0.369 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-23.75 hrs, dt= 0.05 hrs

Reach 1R: Total Runoff



Summary for Pond 1P: bioretention basin 1

Inflow Area = 0.478 ac, 35.38% Impervious, Inflow Depth > 4.04" for 100 year event
Inflow = 3.36 cfs @ 12.13 hrs, Volume= 0.161 af
Outflow = 0.14 cfs @ 13.55 hrs, Volume= 0.091 af, Atten= 96%, Lag= 85.0 min
Primary = 0.14 cfs @ 13.55 hrs, Volume= 0.091 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-23.75 hrs, dt= 0.05 hrs
Peak Elev= 46.46' @ 13.55 hrs Surf.Area= 3,631 sf Storage= 4,831 cf

Plug-Flow detention time= 296.4 min calculated for 0.091 af (56% of inflow)
Center-of-Mass det. time= 219.3 min (1,008.7 - 789.4)

Volume	Invert	Avail.Storage	Storage Description
#1	42.50'	12,810 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

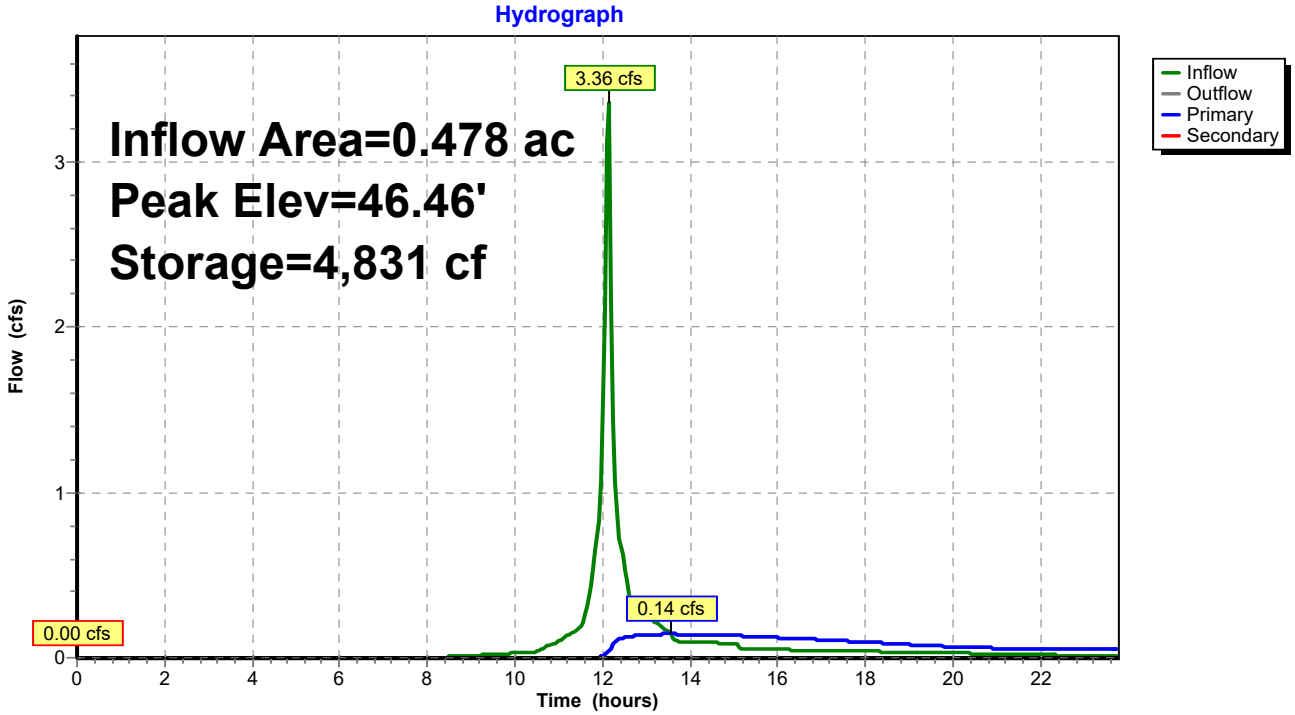
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.50	1,535	0.0	0	0
42.51	1,535	33.0	5	5
43.00	1,535	33.0	248	253
43.01	1,535	27.0	4	257
45.00	1,535	27.0	825	1,082
45.01	1,535	100.0	15	1,098
46.00	2,950	100.0	2,220	3,318
47.00	4,430	100.0	3,690	7,008
48.00	7,175	100.0	5,803	12,810

Device	Routing	Invert	Outlet Devices
#1	Primary	43.00'	**8.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.00' / 42.80' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.35 sf
#2	Device 1	43.20'	**6.0" Round Culvert** L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.20' / 43.00' S= 0.0040 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#3	Device 2	45.00'	**1.630 in/hr Exfiltration over Surface area above 45.00'** Excluded Surface area = 1,535 sf
#4	Device 1	46.00'	**2.0" Vert. Orifice/Grate** C= 0.600
#5	Device 1	47.00'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#6	Secondary	47.50'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.14 cfs @ 13.55 hrs HW=46.46' (Free Discharge)
- **1=Culvert** (Passes 0.14 cfs of 2.97 cfs potential flow)
  - **2=Culvert** (Passes 0.08 cfs of 1.30 cfs potential flow)
    - **3=Exfiltration** (Exfiltration Controls 0.08 cfs)
  - **4=Orifice/Grate** (Orifice Controls 0.06 cfs @ 2.96 fps)
  - **5=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=42.50' (Free Discharge)
- **6=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: bioretention basin 1



Summary for Pond 2P: bioretention basin 2

Inflow Area = 0.676 ac, 67.04% Impervious, Inflow Depth > 4.90" for 100 year event
Inflow = 5.47 cfs @ 12.13 hrs, Volume= 0.276 af
Outflow = 0.69 cfs @ 12.56 hrs, Volume= 0.187 af, Atten= 87%, Lag= 25.7 min
Primary = 0.69 cfs @ 12.56 hrs, Volume= 0.187 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-23.75 hrs, dt= 0.05 hrs
Peak Elev= 47.01' @ 12.56 hrs Surf.Area= 3,947 sf Storage= 7,350 cf

Plug-Flow detention time= 187.2 min calculated for 0.186 af (68% of inflow)
Center-of-Mass det. time= 119.7 min (892.0 - 772.2)

Volume	Invert	Avail.Storage	Storage Description
#1	42.50'	12,115 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

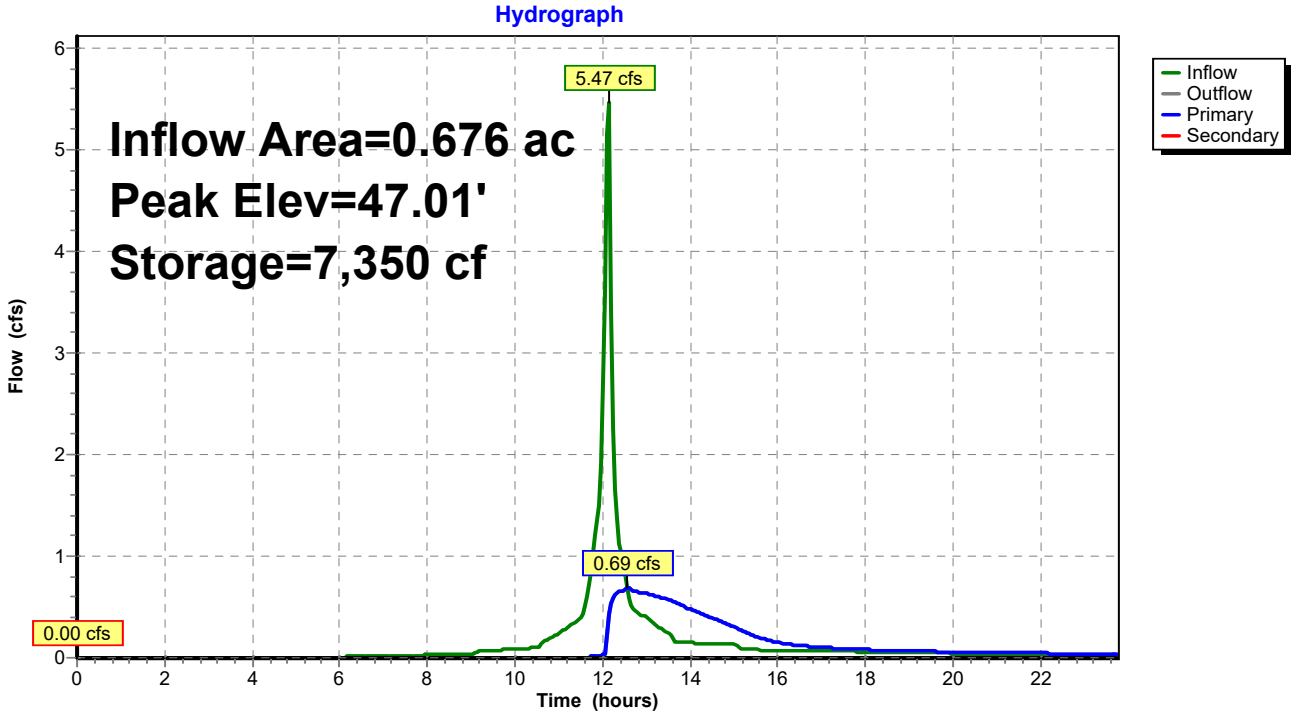
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.50	2,000	0.0	0	0
42.51	2,000	33.0	7	7
43.00	2,000	33.0	323	330
43.01	2,000	27.0	5	335
45.00	2,000	27.0	1,075	1,410
45.01	2,000	100.0	20	1,430
46.00	2,934	100.0	2,442	3,872
47.00	3,926	100.0	3,430	7,302
48.00	5,700	100.0	4,813	12,115

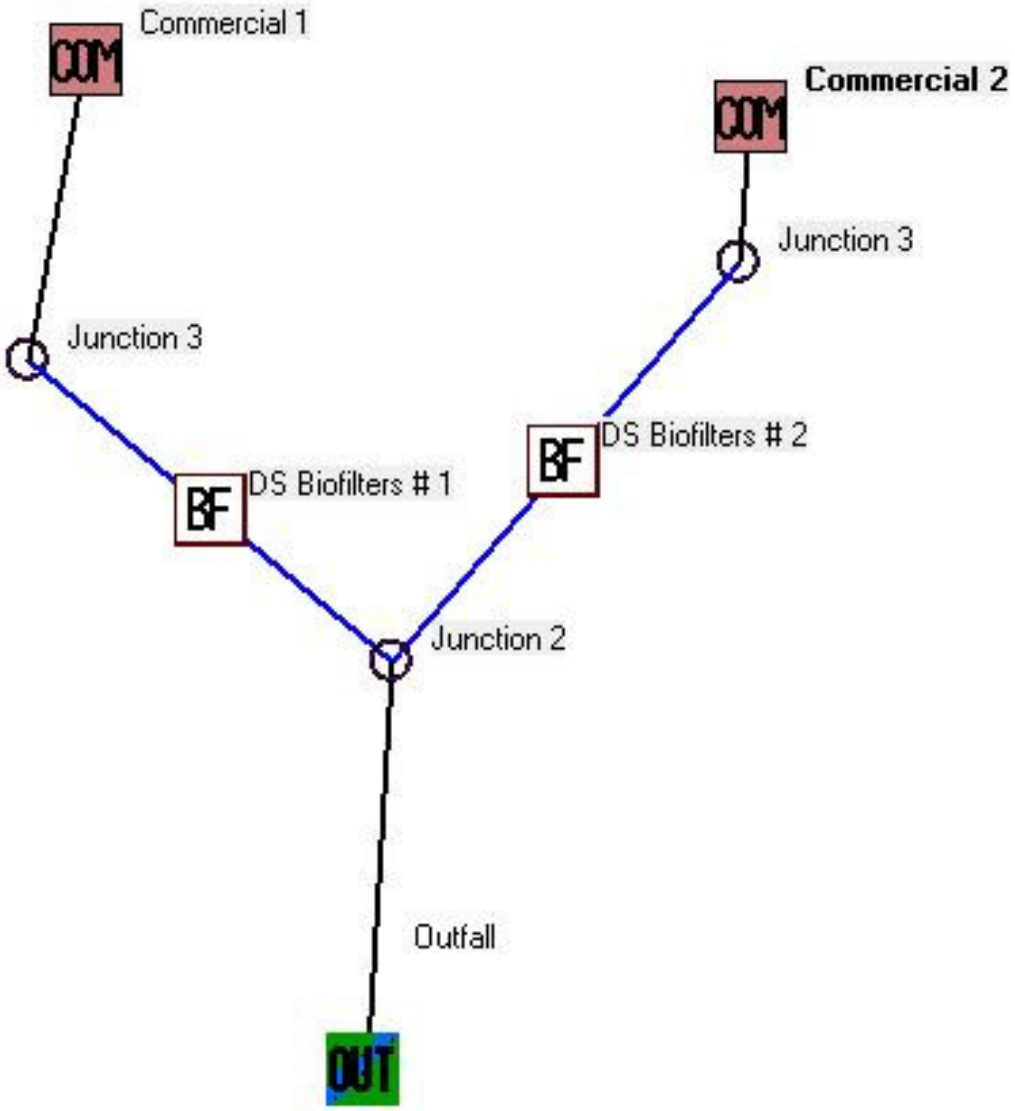
Device	Routing	Invert	Outlet Devices
#1	Primary	43.00'	**12.0" Round Culvert** L= 145.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.00' / 42.70' S= 0.0021 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#2	Device 1	43.20'	**6.0" Round Culvert** L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.20' / 43.00' S= 0.0040 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#3	Device 2	45.00'	**1.630 in/hr Exfiltration over Surface area above 45.00'** Excluded Surface area = 2,000 sf
#4	Device 1	46.00'	**5.0" Vert. Orifice/Grate** C= 0.600
#5	Device 1	47.00'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#6	Secondary	47.50'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.69 cfs @ 12.56 hrs HW=47.01' (Free Discharge)
- **1=Culvert** (Passes 0.69 cfs of 5.26 cfs potential flow)
  - **2=Culvert** (Passes 0.07 cfs of 1.42 cfs potential flow)
    - **3=Exfiltration** (Exfiltration Controls 0.07 cfs)
  - **4=Orifice/Grate** (Orifice Controls 0.59 cfs @ 4.32 fps)
  - **5=Orifice/Grate** (Weir Controls 0.03 cfs @ 0.35 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=42.50' (Free Discharge)
- **6=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: bioretention basin 2




Commercial 1
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Commercial 2
COM
Junction 3
Junction 3
BF
DS Biofilters # 2
BF
DS Biofilters # 1
Junction 2
Outfall
OUT

Data file name: Z:\WinSLAMM\CJE2031R1 proposed.mdb
WinSLAMM Version 10.2.0
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.ppdx
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
Seed for random number generator: -42
Study period starting date: 01/05/69 Study period ending date: 12/31/69
Start of Winter Season: 12/02 End of Winter Season: 03/12
Date: 10-13-2020 Time: 15:15:20
Site information:

LU# 1 - Commercial: Commercial 1 Total area (ac): 0.477
13 - Paved Parking 1: 0.169 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 0.308 ac. Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 2 - Commercial: Commercial 2 Total area (ac): 0.677
1 - Roofs 1: 0.118 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
13 - Paved Parking 1: 0.336 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 0.223 ac. Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

Control Practice 1: Biofilter CP# 1 (DS) - DS Biofilters # 1

1. Top area (square feet) = 7175
2. Bottom aea (square feet) = 1535
3. Depth (ft): 5.5
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.02
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 1
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 0.5
10. Porosity of rock filled volume = 0.33
11. Engineered soil infiltration rate: 1.62
12. Engineered soil depth (ft) = 2
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 80
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

Soil Data Soil Type Fraction in Eng. Soil
User-Defined Soil Type 1.000
Biofilter Outlet/Discharge Characteristics:
Outlet type: Broad Crested Weir
1. Weir crest length (ft): 10
2. Weir crest width (ft): 10
3. Height of datum to bottom of weir opening: 5
Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 2
2. Stand pipe height above datum (ft): 4.5
Outlet type: Surface Discharge Pipe
1. Surface discharge pipe outlet diameter (ft): 0.17
2. Pipe invert elevation above datum (ft): 3.5
3. Number of surface pipe outlets: 1
Outlet type: Drain Tile/Underdrain
1. Underdrain outlet diameter (ft): 0.5
2. Invert elevation above datum (ft): 0.5
3. Number of underdrain outlets: 1

Control Practice 2: Biofilter CP# 2 (DS) - DS Biofilters # 2
1. Top area (square feet) = 5700
2. Bottom aea (square feet) = 2000
3. Depth (ft): 5.5
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.02
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 1
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 0.5
10. Porosity of rock filled volume = 0.33
11. Engineered soil infiltration rate: 1.62
12. Engineered soil depth (ft) = 2
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 80
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0
Soil Data Soil Type Fraction in Eng. Soil
User-Defined Soil Type 1.000
Biofilter Outlet/Discharge Characteristics:
Outlet type: Broad Crested Weir
1. Weir crest length (ft): 10
2. Weir crest width (ft): 40
3. Height of datum to bottom of weir opening: 5
Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 2
2. Stand pipe height above datum (ft): 4.5
Outlet type: Surface Discharge Pipe
1. Surface discharge pipe outlet diameter (ft): 0.42
2. Pipe invert elevation above datum (ft): 3.5
3. Number of surface pipe outlets: 1
Outlet type: Drain Tile/Underdrain

1. Underdrain outlet diameter (ft): 0.5
2. Invert elevation above datum (ft): 0.5
3. Number of underdrain outlets: 1

SLAMM for Windows Version 10.2.0
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Data file name: Z:\WinSLAMM\CJE2031R1 proposed.mdb
Data file description:
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
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Start of Winter Season: 12/02 End of Winter Season: 03/12
Model Run Start Date: 01/05/69 Model Run End Date: 12/31/69
Date of run: 10-13-2020 Time of run: 15:14:38
Total Area Modeled (acres): 1.154
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:	54497	-	114.1	388.0	-
Outfall Total with Controls:	37023	32.06%	22.75	52.57	86.45%
Annualized Total After Outfall Controls:	37537			53.30	

PROJECT NAME	Jilly's Car Wash
PROJECT NUMBER	CJE2031R0
DATE	10/13/2020
WATERSHED	Milwaukee River

	CRITCAL TIME VOLUMETRIC DATA (11:75-23:75)	
	Total Volume (cubic feet)	Total Volume (acre feet)
2 YR EC	3735.0	0.085744
100 YR EC	16668.0	0.382645
2 YR PC	2561.4	0.058802
100 YR PC	15683.4	0.360041

2 YR CHECK	GOOD	GOOD
100 YR CHECK	GOOD	GOOD

Jilly's Car Wash (CJE2031R0) 2-year Existing Volume							
Time (hours)	Runoff (cfs)	Elevation	Runoff Volume (cubic feet)	Runoff Volume (cubic feet)	Time Span	Total Volume (cubic feet)	Total Volume (acre feet)
0	0		0	0	11:75-23:75	**3735**	**0.085744**
0.05	0		0	0	0-24.00	**3735**	**0.085744**
0.1	0		0	0			
0.15	0		0	0			
0.2	0		0	0	*Outflow column calculation shown		
0.25	0		0	0	as average over 3 minute time span (0.05 hours)		
0.3	0		0	0			
0.35	0		0	0			
0.4	0		0	0			
0.45	0		0	0			
0.5	0		0	0			
0.55	0		0	0			
0.6	0		0	0			
0.65	0		0	0			
0.7	0		0	0			
0.75	0		0	0			
0.8	0		0	0			
0.85	0		0	0			
0.9	0		0	0			
0.95	0		0	0			
1	0		0	0			
1.05	0		0	0			
1.1	0		0	0			
1.15	0		0	0			
1.2	0		0	0			
1.25	0		0	0			
1.3	0		0	0			
1.35	0		0	0			
1.4	0		0	0			
1.45	0		0	0			
1.5	0		0	0			
1.55	0		0	0			
1.6	0		0	0			
1.65	0		0	0			
1.7	0		0	0			
1.75	0		0	0			
1.8	0		0	0			
1.85	0		0	0			
1.9	0		0	0			
1.95	0		0	0			
2	0		0	0			
2.05	0		0	0			
2.1	0		0	0			
2.15	0		0	0			
2.2	0		0	0			
2.25	0		0	0			
2.3	0		0	0			
2.35	0		0	0			
2.4	0		0	0			
2.45	0		0	0			
2.5	0		0	0			
2.55	0		0	0			
2.6	0		0	0			
2.65	0		0	0			
2.7	0		0	0			
2.75	0		0	0			
2.8	0		0	0			
2.85	0		0	0			

2.9	0		0	0			
2.95	0		0	0			
3	0		0	0			
3.05	0		0	0			
3.1	0		0	0			
3.15	0		0	0			
3.2	0		0	0			
3.25	0		0	0			
3.3	0		0	0			
3.35	0		0	0			
3.4	0		0	0			
3.45	0		0	0			
3.5	0		0	0			
3.55	0		0	0			
3.6	0		0	0			
3.65	0		0	0			
3.7	0		0	0			
3.75	0		0	0			
3.8	0		0	0			
3.85	0		0	0			
3.9	0		0	0			
3.95	0		0	0			
4	0		0	0			
4.05	0		0	0			
4.1	0		0	0			
4.15	0		0	0			
4.2	0		0	0			
4.25	0		0	0			
4.3	0		0	0			
4.35	0		0	0			
4.4	0		0	0			
4.45	0		0	0			
4.5	0		0	0			
4.55	0		0	0			
4.6	0		0	0			
4.65	0		0	0			
4.7	0		0	0			
4.75	0		0	0			
4.8	0		0	0			
4.85	0		0	0			
4.9	0		0	0			
4.95	0		0	0			
5	0		0	0			
5.05	0		0	0			
5.1	0		0	0			
5.15	0		0	0			
5.2	0		0	0			
5.25	0		0	0			
5.3	0		0	0			
5.35	0		0	0			
5.4	0		0	0			
5.45	0		0	0			
5.5	0		0	0			
5.55	0		0	0			
5.6	0		0	0			
5.65	0		0	0			
5.7	0		0	0			
5.75	0		0	0			
5.8	0		0	0			
5.85	0		0	0			
5.9	0		0	0			
5.95	0		0	0			

6	0		0	0			
6.05	0		0	0			
6.1	0		0	0			
6.15	0		0	0			
6.2	0		0	0			
6.25	0		0	0			
6.3	0		0	0			
6.35	0		0	0			
6.4	0		0	0			
6.45	0		0	0			
6.5	0		0	0			
6.55	0		0	0			
6.6	0		0	0			
6.65	0		0	0			
6.7	0		0	0			
6.75	0		0	0			
6.8	0		0	0			
6.85	0		0	0			
6.9	0		0	0			
6.95	0		0	0			
7	0		0	0			
7.05	0		0	0			
7.1	0		0	0			
7.15	0		0	0			
7.2	0		0	0			
7.25	0		0	0			
7.3	0		0	0			
7.35	0		0	0			
7.4	0		0	0			
7.45	0		0	0			
7.5	0		0	0			
7.55	0		0	0			
7.6	0		0	0			
7.65	0		0	0			
7.7	0		0	0			
7.75	0		0	0			
7.8	0		0	0			
7.85	0		0	0			
7.9	0		0	0			
7.95	0		0	0			
8	0		0	0			
8.05	0		0	0			
8.1	0		0	0			
8.15	0		0	0			
8.2	0		0	0			
8.25	0		0	0			
8.3	0		0	0			
8.35	0		0	0			
8.4	0		0	0			
8.45	0		0	0			
8.5	0		0	0			
8.55	0		0	0			
8.6	0		0	0			
8.65	0		0	0			
8.7	0		0	0			
8.75	0		0	0			
8.8	0		0	0			
8.85	0		0	0			
8.9	0		0	0			
8.95	0		0	0			
9	0		0	0			
9.05	0		0	0			

9.1	0		0	0			
9.15	0		0	0			
9.2	0		0	0			
9.25	0		0	0			
9.3	0		0	0			
9.35	0		0	0			
9.4	0		0	0			
9.45	0		0	0			
9.5	0		0	0			
9.55	0		0	0			
9.6	0		0	0			
9.65	0		0	0			
9.7	0		0	0			
9.75	0		0	0			
9.8	0		0	0			
9.85	0		0	0			
9.9	0		0	0			
9.95	0		0	0			
10	0		0	0			
10.05	0		0	0			
10.1	0		0	0			
10.15	0		0	0			
10.2	0		0	0			
10.25	0		0	0			
10.3	0		0	0			
10.35	0		0	0			
10.4	0		0	0			
10.45	0		0	0			
10.5	0		0	0			
10.55	0		0	0			
10.6	0		0	0			
10.65	0		0	0			
10.7	0		0	0			
10.75	0		0	0			
10.8	0		0	0			
10.85	0		0	0			
10.9	0		0	0			
10.95	0		0	0			
11	0		0	0			
11.05	0		0	0			
11.1	0		0	0			
11.15	0		0	0			
11.2	0		0	0			
11.25	0		0	0			
11.3	0		0	0			
11.35	0		0	0			
11.4	0		0	0			
11.45	0		0	0			
11.5	0		0	0			
11.55	0		0	0			
11.6	0		0	0			
11.65	0		0	0			
11.7	0		0	0			
11.75	0.01		0.01	1.8			
11.8	0.02		0.02	3.6			
11.85	0.04		0.04	7.2			
11.9	0.07		0.07	12.6			
11.95	0.13		0.13	23.4			
12	0.22		0.22	39.6			
12.05	0.4		0.4	72			
12.1	0.69		0.69	124.2			
12.15	1.11		1.11	199.8			

12.2	1.36		1.36	244.8			
12.25	1.29		1.29	232.2			
12.3	1.06		1.06	190.8			
12.35	0.86		0.86	154.8			
12.4	0.71		0.71	127.8			
12.45	0.6		0.6	108			
12.5	0.51		0.51	91.8			
12.55	0.44		0.44	79.2			
12.6	0.38		0.38	68.4			
12.65	0.33		0.33	59.4			
12.7	0.28		0.28	50.4			
12.75	0.26		0.26	46.8			
12.8	0.24		0.24	43.2			
12.85	0.23		0.23	41.4			
12.9	0.22		0.22	39.6			
12.95	0.21		0.21	37.8			
13	0.2		0.2	36			
13.05	0.2		0.2	36			
13.1	0.19		0.19	34.2			
13.15	0.18		0.18	32.4			
13.2	0.18		0.18	32.4			
13.25	0.17		0.17	30.6			
13.3	0.17		0.17	30.6			
13.35	0.16		0.16	28.8			
13.4	0.15		0.15	27			
13.45	0.14		0.14	25.2			
13.5	0.14		0.14	25.2			
13.55	0.13		0.13	23.4			
13.6	0.12		0.12	21.6			
13.65	0.11		0.11	19.8			
13.7	0.09		0.09	16.2			
13.75	0.09		0.09	16.2			
13.8	0.08		0.08	14.4			
13.85	0.08		0.08	14.4			
13.9	0.08		0.08	14.4			
13.95	0.08		0.08	14.4			
14	0.08		0.08	14.4			
14.05	0.08		0.08	14.4			
14.1	0.08		0.08	14.4			
14.15	0.08		0.08	14.4			
14.2	0.08		0.08	14.4			
14.25	0.08		0.08	14.4			
14.3	0.08		0.08	14.4			
14.35	0.08		0.08	14.4			
14.4	0.08		0.08	14.4			
14.45	0.07		0.07	12.6			
14.5	0.07		0.07	12.6			
14.55	0.07		0.07	12.6			
14.6	0.07		0.07	12.6			
14.65	0.07		0.07	12.6			
14.7	0.07		0.07	12.6			
14.75	0.07		0.07	12.6			
14.8	0.07		0.07	12.6			
14.85	0.07		0.07	12.6			
14.9	0.07		0.07	12.6			
14.95	0.07		0.07	12.6			
15	0.07		0.07	12.6			
15.05	0.07		0.07	12.6			
15.1	0.07		0.07	12.6			
15.15	0.06		0.06	10.8			
15.2	0.05		0.05	9			
15.25	0.05		0.05	9			

15.3	0.05		0.05	9			
15.35	0.04		0.04	7.2			
15.4	0.04		0.04	7.2			
15.45	0.04		0.04	7.2			
15.5	0.04		0.04	7.2			
15.55	0.04		0.04	7.2			
15.6	0.04		0.04	7.2			
15.65	0.04		0.04	7.2			
15.7	0.04		0.04	7.2			
15.75	0.04		0.04	7.2			
15.8	0.04		0.04	7.2			
15.85	0.04		0.04	7.2			
15.9	0.04		0.04	7.2			
15.95	0.04		0.04	7.2			
16	0.04		0.04	7.2			
16.05	0.04		0.04	7.2			
16.1	0.04		0.04	7.2			
16.15	0.04		0.04	7.2			
16.2	0.04		0.04	7.2			
16.25	0.04		0.04	7.2			
16.3	0.04		0.04	7.2			
16.35	0.04		0.04	7.2			
16.4	0.04		0.04	7.2			
16.45	0.04		0.04	7.2			
16.5	0.04		0.04	7.2			
16.55	0.04		0.04	7.2			
16.6	0.04		0.04	7.2			
16.65	0.04		0.04	7.2			
16.7	0.04		0.04	7.2			
16.75	0.04		0.04	7.2			
16.8	0.04		0.04	7.2			
16.85	0.04		0.04	7.2			
16.9	0.04		0.04	7.2			
16.95	0.04		0.04	7.2			
17	0.04		0.04	7.2			
17.05	0.04		0.04	7.2			
17.1	0.04		0.04	7.2			
17.15	0.04		0.04	7.2			
17.2	0.04		0.04	7.2			
17.25	0.04		0.04	7.2			
17.3	0.04		0.04	7.2			
17.35	0.04		0.04	7.2			
17.4	0.04		0.04	7.2			
17.45	0.04		0.04	7.2			
17.5	0.04		0.04	7.2			
17.55	0.03		0.03	5.4			
17.6	0.03		0.03	5.4			
17.65	0.03		0.03	5.4			
17.7	0.03		0.03	5.4			
17.75	0.03		0.03	5.4			
17.8	0.03		0.03	5.4			
17.85	0.03		0.03	5.4			
17.9	0.03		0.03	5.4			
17.95	0.03		0.03	5.4			
18	0.03		0.03	5.4			
18.05	0.03		0.03	5.4			
18.1	0.03		0.03	5.4			
18.15	0.03		0.03	5.4			
18.2	0.03		0.03	5.4			
18.25	0.03		0.03	5.4			
18.3	0.03		0.03	5.4			
18.35	0.03		0.03	5.4			

18.4	0.03		0.03	5.4			
18.45	0.03		0.03	5.4			
18.5	0.03		0.03	5.4			
18.55	0.03		0.03	5.4			
18.6	0.03		0.03	5.4			
18.65	0.03		0.03	5.4			
18.7	0.03		0.03	5.4			
18.75	0.03		0.03	5.4			
18.8	0.03		0.03	5.4			
18.85	0.03		0.03	5.4			
18.9	0.03		0.03	5.4			
18.95	0.03		0.03	5.4			
19	0.03		0.03	5.4			
19.05	0.03		0.03	5.4			
19.1	0.03		0.03	5.4			
19.15	0.03		0.03	5.4			
19.2	0.03		0.03	5.4			
19.25	0.03		0.03	5.4			
19.3	0.03		0.03	5.4			
19.35	0.03		0.03	5.4			
19.4	0.03		0.03	5.4			
19.45	0.03		0.03	5.4			
19.5	0.03		0.03	5.4			
19.55	0.03		0.03	5.4			
19.6	0.03		0.03	5.4			
19.65	0.03		0.03	5.4			
19.7	0.03		0.03	5.4			
19.75	0.03		0.03	5.4			
19.8	0.03		0.03	5.4			
19.85	0.03		0.03	5.4			
19.9	0.03		0.03	5.4			
19.95	0.02		0.02	3.6			
20	0.02		0.02	3.6			
20.05	0.02		0.02	3.6			
20.1	0.02		0.02	3.6			
20.15	0.02		0.02	3.6			
20.2	0.02		0.02	3.6			
20.25	0.02		0.02	3.6			
20.3	0.02		0.02	3.6			
20.35	0.02		0.02	3.6			
20.4	0.02		0.02	3.6			
20.45	0.02		0.02	3.6			
20.5	0.02		0.02	3.6			
20.55	0.02		0.02	3.6			
20.6	0.02		0.02	3.6			
20.65	0.02		0.02	3.6			
20.7	0.02		0.02	3.6			
20.75	0.02		0.02	3.6			
20.8	0.02		0.02	3.6			
20.85	0.02		0.02	3.6			
20.9	0.02		0.02	3.6			
20.95	0.02		0.02	3.6			
21	0.02		0.02	3.6			
21.05	0.02		0.02	3.6			
21.1	0.02		0.02	3.6			
21.15	0.02		0.02	3.6			
21.2	0.02		0.02	3.6			
21.25	0.02		0.02	3.6			
21.3	0.02		0.02	3.6			
21.35	0.02		0.02	3.6			
21.4	0.02		0.02	3.6			
21.45	0.02		0.02	3.6			

21.5	0.02		0.02	3.6			
21.55	0.02		0.02	3.6			
21.6	0.02		0.02	3.6			
21.65	0.02		0.02	3.6			
21.7	0.02		0.02	3.6			
21.75	0.02		0.02	3.6			
21.8	0.02		0.02	3.6			
21.85	0.02		0.02	3.6			
21.9	0.02		0.02	3.6			
21.95	0.02		0.02	3.6			
22	0.02		0.02	3.6			
22.05	0.02		0.02	3.6			
22.1	0.02		0.02	3.6			
22.15	0.02		0.02	3.6			
22.2	0.02		0.02	3.6			
22.25	0.01		0.01	1.8			
22.3	0.01		0.01	1.8			
22.35	0.01		0.01	1.8			
22.4	0.01		0.01	1.8			
22.45	0.01		0.01	1.8			
22.5	0.01		0.01	1.8			
22.55	0.01		0.01	1.8			
22.6	0.01		0.01	1.8			
22.65	0.01		0.01	1.8			
22.7	0.01		0.01	1.8			
22.75	0.01		0.01	1.8			
22.8	0.01		0.01	1.8			
22.85	0.01		0.01	1.8			
22.9	0.01		0.01	1.8			
22.95	0.01		0.01	1.8			
23	0.01		0.01	1.8			
23.05	0.01		0.01	1.8			
23.1	0.01		0.01	1.8			
23.15	0.01		0.01	1.8			
23.2	0.01		0.01	1.8			
23.25	0.01		0.01	1.8			
23.3	0.01		0.01	1.8			
23.35	0.01		0.01	1.8			
23.4	0.01		0.01	1.8			
23.45	0.01		0.01	1.8			
23.5	0.01		0.01	1.8			
23.55	0.01		0.01	1.8			
23.6	0.01		0.01	1.8			
23.65	0.01		0.01	1.8			
23.7	0.01		0.01	1.8			
23.75	0.01		0.01	1.8			

Jilly's Car Wash (CJE2031R0) 100-year Existing Volume							
Time (hours)	Runoff (cfs)	Elevation	Runoff Volume (cubic feet)	Runoff Volume (cubic feet)	Time Span	Total Volume (cubic feet)	Total Volume (acre feet)
0	0		0	0	11:75-23:75	**16668**	**0.382645**
0.05	0		0	0	0-24.00	**17586**	**0.403719**
0.1	0		0	0			
0.15	0		0	0			
0.2	0		0	0	*Outflow column calculation shown		
0.25	0		0	0	as average over 3 minute time span (0.05 hours)		
0.3	0		0	0			
0.35	0		0	0			
0.4	0		0	0			
0.45	0		0	0			
0.5	0		0	0			
0.55	0		0	0			
0.6	0		0	0			
0.65	0		0	0			
0.7	0		0	0			
0.75	0		0	0			
0.8	0		0	0			
0.85	0		0	0			
0.9	0		0	0			
0.95	0		0	0			
1	0		0	0			
1.05	0		0	0			
1.1	0		0	0			
1.15	0		0	0			
1.2	0		0	0			
1.25	0		0	0			
1.3	0		0	0			
1.35	0		0	0			
1.4	0		0	0			
1.45	0		0	0			
1.5	0		0	0			
1.55	0		0	0			
1.6	0		0	0			
1.65	0		0	0			
1.7	0		0	0			
1.75	0		0	0			
1.8	0		0	0			
1.85	0		0	0			
1.9	0		0	0			
1.95	0		0	0			
2	0		0	0			
2.05	0		0	0			
2.1	0		0	0			
2.15	0		0	0			
2.2	0		0	0			
2.25	0		0	0			
2.3	0		0	0			
2.35	0		0	0			
2.4	0		0	0			
2.45	0		0	0			
2.5	0		0	0			
2.55	0		0	0			
2.6	0		0	0			
2.65	0		0	0			
2.7	0		0	0			
2.75	0		0	0			
2.8	0		0	0			
2.85	0		0	0			

2.9	0		0	0			
2.95	0		0	0			
3	0		0	0			
3.05	0		0	0			
3.1	0		0	0			
3.15	0		0	0			
3.2	0		0	0			
3.25	0		0	0			
3.3	0		0	0			
3.35	0		0	0			
3.4	0		0	0			
3.45	0		0	0			
3.5	0		0	0			
3.55	0		0	0			
3.6	0		0	0			
3.65	0		0	0			
3.7	0		0	0			
3.75	0		0	0			
3.8	0		0	0			
3.85	0		0	0			
3.9	0		0	0			
3.95	0		0	0			
4	0		0	0			
4.05	0		0	0			
4.1	0		0	0			
4.15	0		0	0			
4.2	0		0	0			
4.25	0		0	0			
4.3	0		0	0			
4.35	0		0	0			
4.4	0		0	0			
4.45	0		0	0			
4.5	0		0	0			
4.55	0		0	0			
4.6	0		0	0			
4.65	0		0	0			
4.7	0		0	0			
4.75	0		0	0			
4.8	0		0	0			
4.85	0		0	0			
4.9	0		0	0			
4.95	0		0	0			
5	0		0	0			
5.05	0		0	0			
5.1	0		0	0			
5.15	0		0	0			
5.2	0		0	0			
5.25	0		0	0			
5.3	0		0	0			
5.35	0		0	0			
5.4	0		0	0			
5.45	0		0	0			
5.5	0		0	0			
5.55	0		0	0			
5.6	0		0	0			
5.65	0		0	0			
5.7	0		0	0			
5.75	0		0	0			
5.8	0		0	0			
5.85	0		0	0			
5.9	0		0	0			
5.95	0		0	0			

6	0		0	0			
6.05	0		0	0			
6.1	0		0	0			
6.15	0		0	0			
6.2	0		0	0			
6.25	0		0	0			
6.3	0		0	0			
6.35	0		0	0			
6.4	0		0	0			
6.45	0		0	0			
6.5	0		0	0			
6.55	0		0	0			
6.6	0		0	0			
6.65	0		0	0			
6.7	0		0	0			
6.75	0		0	0			
6.8	0		0	0			
6.85	0		0	0			
6.9	0		0	0			
6.95	0		0	0			
7	0		0	0			
7.05	0		0	0			
7.1	0		0	0			
7.15	0		0	0			
7.2	0		0	0			
7.25	0		0	0			
7.3	0		0	0			
7.35	0		0	0			
7.4	0		0	0			
7.45	0		0	0			
7.5	0		0	0			
7.55	0		0	0			
7.6	0		0	0			
7.65	0		0	0			
7.7	0		0	0			
7.75	0		0	0			
7.8	0		0	0			
7.85	0		0	0			
7.9	0		0	0			
7.95	0		0	0			
8	0		0	0			
8.05	0		0	0			
8.1	0		0	0			
8.15	0		0	0			
8.2	0		0	0			
8.25	0		0	0			
8.3	0		0	0			
8.35	0		0	0			
8.4	0		0	0			
8.45	0		0	0			
8.5	0		0	0			
8.55	0		0	0			
8.6	0		0	0			
8.65	0		0	0			
8.7	0		0	0			
8.75	0		0	0			
8.8	0		0	0			
8.85	0		0	0			
8.9	0		0	0			
8.95	0		0	0			
9	0		0	0			
9.05	0		0	0			

9.1	0		0	0			
9.15	0		0	0			
9.2	0		0	0			
9.25	0		0	0			
9.3	0		0	0			
9.35	0		0	0			
9.4	0		0	0			
9.45	0		0	0			
9.5	0		0	0			
9.55	0		0	0			
9.6	0		0	0			
9.65	0		0	0			
9.7	0		0	0			
9.75	0.01		0.01	1.8			
9.8	0.01		0.01	1.8			
9.85	0.01		0.01	1.8			
9.9	0.01		0.01	1.8			
9.95	0.01		0.01	1.8			
10	0.02		0.02	3.6			
10.05	0.02		0.02	3.6			
10.1	0.02		0.02	3.6			
10.15	0.02		0.02	3.6			
10.2	0.02		0.02	3.6			
10.25	0.03		0.03	5.4			
10.3	0.03		0.03	5.4			
10.35	0.03		0.03	5.4			
10.4	0.03		0.03	5.4			
10.45	0.03		0.03	5.4			
10.5	0.04		0.04	7.2			
10.55	0.04		0.04	7.2			
10.6	0.04		0.04	7.2			
10.65	0.05		0.05	9			
10.7	0.06		0.06	10.8			
10.75	0.07		0.07	12.6			
10.8	0.08		0.08	14.4			
10.85	0.09		0.09	16.2			
10.9	0.11		0.11	19.8			
10.95	0.12		0.12	21.6			
11	0.13		0.13	23.4			
11.05	0.15		0.15	27			
11.1	0.16		0.16	28.8			
11.15	0.18		0.18	32.4			
11.2	0.19		0.19	34.2			
11.25	0.21		0.21	37.8			
11.3	0.23		0.23	41.4			
11.35	0.25		0.25	45			
11.4	0.27		0.27	48.6			
11.45	0.29		0.29	52.2			
11.5	0.31		0.31	55.8			
11.55	0.34		0.34	61.2			
11.6	0.38		0.38	68.4			
11.65	0.46		0.46	82.8			
11.7	0.55		0.55	99			
11.75	0.67		0.67	120.6			
11.8	0.82		0.82	147.6			
11.85	1.01		1.01	181.8			
11.9	1.26		1.26	226.8			
11.95	1.61		1.61	289.8			
12	2.18		2.18	392.4			
12.05	3.1		3.1	558			
12.1	4.49		4.49	808.2			
12.15	6.19		6.19	1114.2			

12.2	6.95		6.95	1251			
12.25	6.21		6.21	1117.8			
12.3	4.88		4.88	878.4			
12.35	3.8		3.8	684			
12.4	3.05		3.05	549			
12.45	2.5		2.5	450			
12.5	2.09		2.09	376.2			
12.55	1.76		1.76	316.8			
12.6	1.5		1.5	270			
12.65	1.27		1.27	228.6			
12.7	1.09		1.09	196.2			
12.75	0.98		0.98	176.4			
12.8	0.91		0.91	163.8			
12.85	0.86		0.86	154.8			
12.9	0.82		0.82	147.6			
12.95	0.79		0.79	142.2			
13	0.76		0.76	136.8			
13.05	0.74		0.74	133.2			
13.1	0.71		0.71	127.8			
13.15	0.68		0.68	122.4			
13.2	0.66		0.66	118.8			
13.25	0.63		0.63	113.4			
13.3	0.6		0.6	108			
13.35	0.58		0.58	104.4			
13.4	0.55		0.55	99			
13.45	0.52		0.52	93.6			
13.5	0.5		0.5	90			
13.55	0.47		0.47	84.6			
13.6	0.43		0.43	77.4			
13.65	0.38		0.38	68.4			
13.7	0.34		0.34	61.2			
13.75	0.31		0.31	55.8			
13.8	0.3		0.3	54			
13.85	0.29		0.29	52.2			
13.9	0.28		0.28	50.4			
13.95	0.28		0.28	50.4			
14	0.28		0.28	50.4			
14.05	0.28		0.28	50.4			
14.1	0.27		0.27	48.6			
14.15	0.27		0.27	48.6			
14.2	0.27		0.27	48.6			
14.25	0.27		0.27	48.6			
14.3	0.27		0.27	48.6			
14.35	0.27		0.27	48.6			
14.4	0.27		0.27	48.6			
14.45	0.26		0.26	46.8			
14.5	0.26		0.26	46.8			
14.55	0.26		0.26	46.8			
14.6	0.26		0.26	46.8			
14.65	0.26		0.26	46.8			
14.7	0.26		0.26	46.8			
14.75	0.25		0.25	45			
14.8	0.25		0.25	45			
14.85	0.25		0.25	45			
14.9	0.25		0.25	45			
14.95	0.25		0.25	45			
15	0.25		0.25	45			
15.05	0.24		0.24	43.2			
15.1	0.23		0.23	41.4			
15.15	0.21		0.21	37.8			
15.2	0.18		0.18	32.4			
15.25	0.17		0.17	30.6			

15.3	0.16		0.16	28.8			
15.35	0.15		0.15	27			
15.4	0.15		0.15	27			
15.45	0.15		0.15	27			
15.5	0.15		0.15	27			
15.55	0.15		0.15	27			
15.6	0.15		0.15	27			
15.65	0.15		0.15	27			
15.7	0.15		0.15	27			
15.75	0.14		0.14	25.2			
15.8	0.14		0.14	25.2			
15.85	0.14		0.14	25.2			
15.9	0.14		0.14	25.2			
15.95	0.14		0.14	25.2			
16	0.14		0.14	25.2			
16.05	0.14		0.14	25.2			
16.1	0.14		0.14	25.2			
16.15	0.14		0.14	25.2			
16.2	0.14		0.14	25.2			
16.25	0.14		0.14	25.2			
16.3	0.14		0.14	25.2			
16.35	0.14		0.14	25.2			
16.4	0.14		0.14	25.2			
16.45	0.13		0.13	23.4			
16.5	0.13		0.13	23.4			
16.55	0.13		0.13	23.4			
16.6	0.13		0.13	23.4			
16.65	0.13		0.13	23.4			
16.7	0.13		0.13	23.4			
16.75	0.13		0.13	23.4			
16.8	0.13		0.13	23.4			
16.85	0.13		0.13	23.4			
16.9	0.13		0.13	23.4			
16.95	0.13		0.13	23.4			
17	0.13		0.13	23.4			
17.05	0.13		0.13	23.4			
17.1	0.13		0.13	23.4			
17.15	0.12		0.12	21.6			
17.2	0.12		0.12	21.6			
17.25	0.12		0.12	21.6			
17.3	0.12		0.12	21.6			
17.35	0.12		0.12	21.6			
17.4	0.12		0.12	21.6			
17.45	0.12		0.12	21.6			
17.5	0.12		0.12	21.6			
17.55	0.12		0.12	21.6			
17.6	0.12		0.12	21.6			
17.65	0.12		0.12	21.6			
17.7	0.12		0.12	21.6			
17.75	0.12		0.12	21.6			
17.8	0.12		0.12	21.6			
17.85	0.11		0.11	19.8			
17.9	0.11		0.11	19.8			
17.95	0.11		0.11	19.8			
18	0.11		0.11	19.8			
18.05	0.11		0.11	19.8			
18.1	0.11		0.11	19.8			
18.15	0.11		0.11	19.8			
18.2	0.11		0.11	19.8			
18.25	0.11		0.11	19.8			
18.3	0.11		0.11	19.8			
18.35	0.11		0.11	19.8			

18.4	0.11		0.11	19.8			
18.45	0.11		0.11	19.8			
18.5	0.11		0.11	19.8			
18.55	0.1		0.1	18			
18.6	0.1		0.1	18			
18.65	0.1		0.1	18			
18.7	0.1		0.1	18			
18.75	0.1		0.1	18			
18.8	0.1		0.1	18			
18.85	0.1		0.1	18			
18.9	0.1		0.1	18			
18.95	0.1		0.1	18			
19	0.1		0.1	18			
19.05	0.1		0.1	18			
19.1	0.1		0.1	18			
19.15	0.1		0.1	18			
19.2	0.09		0.09	16.2			
19.25	0.09		0.09	16.2			
19.3	0.09		0.09	16.2			
19.35	0.09		0.09	16.2			
19.4	0.09		0.09	16.2			
19.45	0.09		0.09	16.2			
19.5	0.09		0.09	16.2			
19.55	0.09		0.09	16.2			
19.6	0.09		0.09	16.2			
19.65	0.09		0.09	16.2			
19.7	0.09		0.09	16.2			
19.75	0.09		0.09	16.2			
19.8	0.09		0.09	16.2			
19.85	0.09		0.09	16.2			
19.9	0.08		0.08	14.4			
19.95	0.08		0.08	14.4			
20	0.08		0.08	14.4			
20.05	0.08		0.08	14.4			
20.1	0.08		0.08	14.4			
20.15	0.08		0.08	14.4			
20.2	0.08		0.08	14.4			
20.25	0.08		0.08	14.4			
20.3	0.08		0.08	14.4			
20.35	0.08		0.08	14.4			
20.4	0.08		0.08	14.4			
20.45	0.08		0.08	14.4			
20.5	0.08		0.08	14.4			
20.55	0.08		0.08	14.4			
20.6	0.07		0.07	12.6			
20.65	0.07		0.07	12.6			
20.7	0.07		0.07	12.6			
20.75	0.07		0.07	12.6			
20.8	0.07		0.07	12.6			
20.85	0.07		0.07	12.6			
20.9	0.07		0.07	12.6			
20.95	0.07		0.07	12.6			
21	0.07		0.07	12.6			
21.05	0.07		0.07	12.6			
21.1	0.07		0.07	12.6			
21.15	0.07		0.07	12.6			
21.2	0.07		0.07	12.6			
21.25	0.06		0.06	10.8			
21.3	0.06		0.06	10.8			
21.35	0.06		0.06	10.8			
21.4	0.06		0.06	10.8			
21.45	0.06		0.06	10.8			

21.5	0.06		0.06	10.8			
21.55	0.06		0.06	10.8			
21.6	0.06		0.06	10.8			
21.65	0.06		0.06	10.8			
21.7	0.06		0.06	10.8			
21.75	0.06		0.06	10.8			
21.8	0.06		0.06	10.8			
21.85	0.06		0.06	10.8			
21.9	0.05		0.05	9			
21.95	0.05		0.05	9			
22	0.05		0.05	9			
22.05	0.05		0.05	9			
22.1	0.05		0.05	9			
22.15	0.05		0.05	9			
22.2	0.05		0.05	9			
22.25	0.05		0.05	9			
22.3	0.05		0.05	9			
22.35	0.05		0.05	9			
22.4	0.05		0.05	9			
22.45	0.05		0.05	9			
22.5	0.05		0.05	9			
22.55	0.04		0.04	7.2			
22.6	0.04		0.04	7.2			
22.65	0.04		0.04	7.2			
22.7	0.04		0.04	7.2			
22.75	0.04		0.04	7.2			
22.8	0.04		0.04	7.2			
22.85	0.04		0.04	7.2			
22.9	0.04		0.04	7.2			
22.95	0.04		0.04	7.2			
23	0.04		0.04	7.2			
23.05	0.04		0.04	7.2			
23.1	0.04		0.04	7.2			
23.15	0.04		0.04	7.2			
23.2	0.03		0.03	5.4			
23.25	0.03		0.03	5.4			
23.3	0.03		0.03	5.4			
23.35	0.03		0.03	5.4			
23.4	0.03		0.03	5.4			
23.45	0.03		0.03	5.4			
23.5	0.03		0.03	5.4			
23.55	0.03		0.03	5.4			
23.6	0.03		0.03	5.4			
23.65	0.03		0.03	5.4			
23.7	0.03		0.03	5.4			
23.75	0.03		0.03	5.4			

Jilly's Car Wash (CJE2031R0) 2-year Proposed Volume							
Time (hours)	Runoff (cfs)	Elevation	Runoff Volume (cubic feet)	Runoff Volume (cubic feet)	Time Span	Total Volume (cubic feet)	Total Volume (acre feet)
0	0		0	0	11:75-23:75	**2561.4**	**0.058802**
0.05	0		0	0	0-24.00	**2581.2**	**0.059256**
0.1	0		0	0			
0.15	0		0	0			
0.2	0		0	0	*Outflow column calculation shown		
0.25	0		0	0	as average over 3 minute time span (0.05 hours)		
0.3	0		0	0			
0.35	0		0	0			
0.4	0		0	0			
0.45	0		0	0			
0.5	0		0	0			
0.55	0		0	0			
0.6	0		0	0			
0.65	0		0	0			
0.7	0		0	0			
0.75	0		0	0			
0.8	0		0	0			
0.85	0		0	0			
0.9	0		0	0			
0.95	0		0	0			
1	0		0	0			
1.05	0		0	0			
1.1	0		0	0			
1.15	0		0	0			
1.2	0		0	0			
1.25	0		0	0			
1.3	0		0	0			
1.35	0		0	0			
1.4	0		0	0			
1.45	0		0	0			
1.5	0		0	0			
1.55	0		0	0			
1.6	0		0	0			
1.65	0		0	0			
1.7	0		0	0			
1.75	0		0	0			
1.8	0		0	0			
1.85	0		0	0			
1.9	0		0	0			
1.95	0		0	0			
2	0		0	0			
2.05	0		0	0			
2.1	0		0	0			
2.15	0		0	0			
2.2	0		0	0			
2.25	0		0	0			
2.3	0		0	0			
2.35	0		0	0			
2.4	0		0	0			
2.45	0		0	0			
2.5	0		0	0			
2.55	0		0	0			
2.6	0		0	0			
2.65	0		0	0			
2.7	0		0	0			
2.75	0		0	0			
2.8	0		0	0			
2.85	0		0	0			

2.9	0		0	0			
2.95	0		0	0			
3	0		0	0			
3.05	0		0	0			
3.1	0		0	0			
3.15	0		0	0			
3.2	0		0	0			
3.25	0		0	0			
3.3	0		0	0			
3.35	0		0	0			
3.4	0		0	0			
3.45	0		0	0			
3.5	0		0	0			
3.55	0		0	0			
3.6	0		0	0			
3.65	0		0	0			
3.7	0		0	0			
3.75	0		0	0			
3.8	0		0	0			
3.85	0		0	0			
3.9	0		0	0			
3.95	0		0	0			
4	0		0	0			
4.05	0		0	0			
4.1	0		0	0			
4.15	0		0	0			
4.2	0		0	0			
4.25	0		0	0			
4.3	0		0	0			
4.35	0		0	0			
4.4	0		0	0			
4.45	0		0	0			
4.5	0		0	0			
4.55	0		0	0			
4.6	0		0	0			
4.65	0		0	0			
4.7	0		0	0			
4.75	0		0	0			
4.8	0		0	0			
4.85	0		0	0			
4.9	0		0	0			
4.95	0		0	0			
5	0		0	0			
5.05	0		0	0			
5.1	0		0	0			
5.15	0		0	0			
5.2	0		0	0			
5.25	0		0	0			
5.3	0		0	0			
5.35	0		0	0			
5.4	0		0	0			
5.45	0		0	0			
5.5	0		0	0			
5.55	0		0	0			
5.6	0		0	0			
5.65	0		0	0			
5.7	0		0	0			
5.75	0		0	0			
5.8	0		0	0			
5.85	0		0	0			
5.9	0		0	0			
5.95	0		0	0			

6	0		0	0			
6.05	0		0	0			
6.1	0		0	0			
6.15	0		0	0			
6.2	0		0	0			
6.25	0		0	0			
6.3	0		0	0			
6.35	0		0	0			
6.4	0		0	0			
6.45	0		0	0			
6.5	0		0	0			
6.55	0		0	0			
6.6	0		0	0			
6.65	0		0	0			
6.7	0		0	0			
6.75	0		0	0			
6.8	0		0	0			
6.85	0		0	0			
6.9	0		0	0			
6.95	0		0	0			
7	0		0	0			
7.05	0		0	0			
7.1	0		0	0			
7.15	0		0	0			
7.2	0		0	0			
7.25	0		0	0			
7.3	0		0	0			
7.35	0		0	0			
7.4	0		0	0			
7.45	0		0	0			
7.5	0		0	0			
7.55	0		0	0			
7.6	0		0	0			
7.65	0		0	0			
7.7	0		0	0			
7.75	0		0	0			
7.8	0		0	0			
7.85	0		0	0			
7.9	0		0	0			
7.95	0		0	0			
8	0		0	0			
8.05	0		0	0			
8.1	0		0	0			
8.15	0		0	0			
8.2	0		0	0			
8.25	0		0	0			
8.3	0		0	0			
8.35	0		0	0			
8.4	0		0	0			
8.45	0		0	0			
8.5	0		0	0			
8.55	0		0	0			
8.6	0		0	0			
8.65	0		0	0			
8.7	0		0	0			
8.75	0		0	0			
8.8	0		0	0			
8.85	0		0	0			
8.9	0		0	0			
8.95	0		0	0			
9	0		0	0			
9.05	0		0	0			

9.1	0		0	0			
9.15	0		0	0			
9.2	0		0	0			
9.25	0		0	0			
9.3	0		0	0			
9.35	0		0	0			
9.4	0		0	0			
9.45	0		0	0			
9.5	0		0	0			
9.55	0		0	0			
9.6	0		0	0			
9.65	0		0	0			
9.7	0		0	0			
9.75	0		0	0			
9.8	0		0	0			
9.85	0		0	0			
9.9	0		0	0			
9.95	0		0	0			
10	0		0	0			
10.05	0		0	0			
10.1	0		0	0			
10.15	0		0	0			
10.2	0		0	0			
10.25	0		0	0			
10.3	0		0	0			
10.35	0		0	0			
10.4	0		0	0			
10.45	0		0	0			
10.5	0		0	0			
10.55	0		0	0			
10.6	0		0	0			
10.65	0		0	0			
10.7	0		0	0			
10.75	0		0	0			
10.8	0		0	0			
10.85	0		0	0			
10.9	0		0	0			
10.95	0		0	0			
11	0		0	0			
11.05	0		0	0			
11.1	0		0	0			
11.15	0		0	0			
11.2	0		0	0			
11.25	0		0	0			
11.3	0		0	0			
11.35	0.01		0.01	1.8			
11.4	0.01		0.01	1.8			
11.45	0.01		0.01	1.8			
11.5	0.01		0.01	1.8			
11.55	0.01		0.01	1.8			
11.6	0.01		0.01	1.8			
11.65	0.02		0.02	3.6			
11.7	0.03		0.03	5.4			
11.75	0.03		0.03	5.4			
11.8	0.04		0.04	7.2			
11.85	0.06		0.06	10.8			
11.9	0.08		0.08	14.4			
11.95	0.11		0.11	19.8			
12	0.18		0.18	32.4			
12.05	0.28		0.28	50.4			
12.1	0.45		0.45	81			
12.15	0.5		0.5	90			

12.2	0.35		0.35	63			
12.25	0.25		0.25	45			
12.3	0.19		0.19	34.2			
12.35	0.17		0.17	30.6			
12.4	0.14		0.14	25.2			
12.45	0.13		0.13	23.4			
12.5	0.11		0.11	19.8			
12.55	0.1		0.1	18			
12.6	0.09		0.09	16.2			
12.65	0.08		0.08	14.4			
12.7	0.08		0.08	14.4			
12.75	0.08		0.08	14.4			
12.8	0.08		0.08	14.4			
12.85	0.08		0.08	14.4			
12.9	0.08		0.08	14.4			
12.95	0.08		0.08	14.4			
13	0.07		0.07	12.6			
13.05	0.07		0.07	12.6			
13.1	0.07		0.07	12.6			
13.15	0.07		0.07	12.6			
13.2	0.07		0.07	12.6			
13.25	0.07		0.07	12.6			
13.3	0.07		0.07	12.6			
13.35	0.07		0.07	12.6			
13.4	0.07		0.07	12.6			
13.45	0.06		0.06	10.8			
13.5	0.06		0.06	10.8			
13.55	0.06		0.06	10.8			
13.6	0.06		0.06	10.8			
13.65	0.05		0.05	9			
13.7	0.05		0.05	9			
13.75	0.05		0.05	9			
13.8	0.05		0.05	9			
13.85	0.05		0.05	9			
13.9	0.05		0.05	9			
13.95	0.05		0.05	9			
14	0.05		0.05	9			
14.05	0.05		0.05	9			
14.1	0.05		0.05	9			
14.15	0.05		0.05	9			
14.2	0.05		0.05	9			
14.25	0.05		0.05	9			
14.3	0.05		0.05	9			
14.35	0.05		0.05	9			
14.4	0.05		0.05	9			
14.45	0.06		0.06	10.8			
14.5	0.06		0.06	10.8			
14.55	0.06		0.06	10.8			
14.6	0.06		0.06	10.8			
14.65	0.06		0.06	10.8			
14.7	0.06		0.06	10.8			
14.75	0.06		0.06	10.8			
14.8	0.06		0.06	10.8			
14.85	0.06		0.06	10.8			
14.9	0.06		0.06	10.8			
14.95	0.06		0.06	10.8			
15	0.06		0.06	10.8			
15.05	0.05		0.05	9			
15.1	0.05		0.05	9			
15.15	0.05		0.05	9			
15.2	0.05		0.05	9			
15.25	0.05		0.05	9			

15.3	0.05		0.05	9			
15.35	0.05		0.05	9			
15.4	0.05		0.05	9			
15.45	0.05		0.05	9			
15.5	0.05		0.05	9			
15.55	0.05		0.05	9			
15.6	0.05		0.05	9			
15.65	0.05		0.05	9			
15.7	0.05		0.05	9			
15.75	0.05		0.05	9			
15.8	0.05		0.05	9			
15.85	0.05		0.05	9			
15.9	0.05		0.05	9			
15.95	0.05		0.05	9			
16	0.05		0.05	9			
16.05	0.05		0.05	9			
16.1	0.05		0.05	9			
16.15	0.05		0.05	9			
16.2	0.05		0.05	9			
16.25	0.05		0.05	9			
16.3	0.05		0.05	9			
16.35	0.05		0.05	9			
16.4	0.05		0.05	9			
16.45	0.05		0.05	9			
16.5	0.05		0.05	9			
16.55	0.05		0.05	9			
16.6	0.05		0.05	9			
16.65	0.05		0.05	9			
16.7	0.05		0.05	9			
16.75	0.05		0.05	9			
16.8	0.05		0.05	9			
16.85	0.05		0.05	9			
16.9	0.05		0.05	9			
16.95	0.05		0.05	9			
17	0.05		0.05	9			
17.05	0.05		0.05	9			
17.1	0.05		0.05	9			
17.15	0.05		0.05	9			
17.2	0.05		0.05	9			
17.25	0.05		0.05	9			
17.3	0.05		0.05	9			
17.35	0.05		0.05	9			
17.4	0.05		0.05	9			
17.45	0.05		0.05	9			
17.5	0.05		0.05	9			
17.55	0.05		0.05	9			
17.6	0.05		0.05	9			
17.65	0.05		0.05	9			
17.7	0.05		0.05	9			
17.75	0.05		0.05	9			
17.8	0.05		0.05	9			
17.85	0.05		0.05	9			
17.9	0.05		0.05	9			
17.95	0.05		0.05	9			
18	0.05		0.05	9			
18.05	0.05		0.05	9			
18.1	0.05		0.05	9			
18.15	0.05		0.05	9			
18.2	0.05		0.05	9			
18.25	0.05		0.05	9			
18.3	0.05		0.05	9			
18.35	0.05		0.05	9			

18.4	0.05		0.05	9			
18.45	0.05		0.05	9			
18.5	0.05		0.05	9			
18.55	0.05		0.05	9			
18.6	0.05		0.05	9			
18.65	0.05		0.05	9			
18.7	0.05		0.05	9			
18.75	0.05		0.05	9			
18.8	0.05		0.05	9			
18.85	0.05		0.05	9			
18.9	0.05		0.05	9			
18.95	0.05		0.05	9			
19	0.05		0.05	9			
19.05	0.05		0.05	9			
19.1	0.05		0.05	9			
19.15	0.05		0.05	9			
19.2	0.05		0.05	9			
19.25	0.05		0.05	9			
19.3	0.05		0.05	9			
19.35	0.05		0.05	9			
19.4	0.05		0.05	9			
19.45	0.05		0.05	9			
19.5	0.05		0.05	9			
19.55	0.05		0.05	9			
19.6	0.05		0.05	9			
19.65	0.05		0.05	9			
19.7	0.05		0.05	9			
19.75	0.05		0.05	9			
19.8	0.05		0.05	9			
19.85	0.05		0.05	9			
19.9	0.05		0.05	9			
19.95	0.05		0.05	9			
20	0.05		0.05	9			
20.05	0.05		0.05	9			
20.1	0.05		0.05	9			
20.15	0.04		0.04	7.2			
20.2	0.04		0.04	7.2			
20.25	0.04		0.04	7.2			
20.3	0.04		0.04	7.2			
20.35	0.04		0.04	7.2			
20.4	0.04		0.04	7.2			
20.45	0.04		0.04	7.2			
20.5	0.04		0.04	7.2			
20.55	0.04		0.04	7.2			
20.6	0.04		0.04	7.2			
20.65	0.04		0.04	7.2			
20.7	0.04		0.04	7.2			
20.75	0.04		0.04	7.2			
20.8	0.04		0.04	7.2			
20.85	0.04		0.04	7.2			
20.9	0.04		0.04	7.2			
20.95	0.04		0.04	7.2			
21	0.04		0.04	7.2			
21.05	0.04		0.04	7.2			
21.1	0.04		0.04	7.2			
21.15	0.04		0.04	7.2			
21.2	0.04		0.04	7.2			
21.25	0.04		0.04	7.2			
21.3	0.04		0.04	7.2			
21.35	0.04		0.04	7.2			
21.4	0.04		0.04	7.2			
21.45	0.04		0.04	7.2			

21.5	0.04		0.04	7.2			
21.55	0.04		0.04	7.2			
21.6	0.04		0.04	7.2			
21.65	0.04		0.04	7.2			
21.7	0.04		0.04	7.2			
21.75	0.04		0.04	7.2			
21.8	0.04		0.04	7.2			
21.85	0.04		0.04	7.2			
21.9	0.04		0.04	7.2			
21.95	0.04		0.04	7.2			
22	0.04		0.04	7.2			
22.05	0.04		0.04	7.2			
22.1	0.04		0.04	7.2			
22.15	0.04		0.04	7.2			
22.2	0.04		0.04	7.2			
22.25	0.04		0.04	7.2			
22.3	0.04		0.04	7.2			
22.35	0.04		0.04	7.2			
22.4	0.04		0.04	7.2			
22.45	0.04		0.04	7.2			
22.5	0.04		0.04	7.2			
22.55	0.04		0.04	7.2			
22.6	0.04		0.04	7.2			
22.65	0.04		0.04	7.2			
22.7	0.04		0.04	7.2			
22.75	0.04		0.04	7.2			
22.8	0.04		0.04	7.2			
22.85	0.04		0.04	7.2			
22.9	0.04		0.04	7.2			
22.95	0.04		0.04	7.2			
23	0.04		0.04	7.2			
23.05	0.04		0.04	7.2			
23.1	0.04		0.04	7.2			
23.15	0.04		0.04	7.2			
23.2	0.04		0.04	7.2			
23.25	0.04		0.04	7.2			
23.3	0.04		0.04	7.2			
23.35	0.04		0.04	7.2			
23.4	0.04		0.04	7.2			
23.45	0.04		0.04	7.2			
23.5	0.04		0.04	7.2			
23.55	0.04		0.04	7.2			
23.6	0.04		0.04	7.2			
23.65	0.04		0.04	7.2			
23.7	0.04		0.04	7.2			
23.75	0.04		0.04	7.2			

Jilly's Car Wash (CJE2031R0)) 100-year Proposed Volume							
Time (hours)	Runoff (cfs)	Elevation	Runoff Volume (cubic feet)	Runoff Volume (cubic feet)	Time Span	Total Volume (cubic feet)	Total Volume (acre feet)
0	0		0	0	11:75-23:75	**15683.4**	**0.360041**
0.05	0		0	0	0-24.00	**16072.2**	**0.368967**
0.1	0		0	0			
0.15	0		0	0			
0.2	0		0	0	*Outflow column calculation shown		
0.25	0		0	0	as average over 3 minute time span (0.05 hours)		
0.3	0		0	0			
0.35	0		0	0			
0.4	0		0	0			
0.45	0		0	0			
0.5	0		0	0			
0.55	0		0	0			
0.6	0		0	0			
0.65	0		0	0			
0.7	0		0	0			
0.75	0		0	0			
0.8	0		0	0			
0.85	0		0	0			
0.9	0		0	0			
0.95	0		0	0			
1	0		0	0			
1.05	0		0	0			
1.1	0		0	0			
1.15	0		0	0			
1.2	0		0	0			
1.25	0		0	0			
1.3	0		0	0			
1.35	0		0	0			
1.4	0		0	0			
1.45	0		0	0			
1.5	0		0	0			
1.55	0		0	0			
1.6	0		0	0			
1.65	0		0	0			
1.7	0		0	0			
1.75	0		0	0			
1.8	0		0	0			
1.85	0		0	0			
1.9	0		0	0			
1.95	0		0	0			
2	0		0	0			
2.05	0		0	0			
2.1	0		0	0			
2.15	0		0	0			
2.2	0		0	0			
2.25	0		0	0			
2.3	0		0	0			
2.35	0		0	0			
2.4	0		0	0			
2.45	0		0	0			
2.5	0		0	0			
2.55	0		0	0			
2.6	0		0	0			
2.65	0		0	0			
2.7	0		0	0			
2.75	0		0	0			
2.8	0		0	0			
2.85	0		0	0			

2.9	0		0	0			
2.95	0		0	0			
3	0		0	0			
3.05	0		0	0			
3.1	0		0	0			
3.15	0		0	0			
3.2	0		0	0			
3.25	0		0	0			
3.3	0		0	0			
3.35	0		0	0			
3.4	0		0	0			
3.45	0		0	0			
3.5	0		0	0			
3.55	0		0	0			
3.6	0		0	0			
3.65	0		0	0			
3.7	0		0	0			
3.75	0		0	0			
3.8	0		0	0			
3.85	0		0	0			
3.9	0		0	0			
3.95	0		0	0			
4	0		0	0			
4.05	0		0	0			
4.1	0		0	0			
4.15	0		0	0			
4.2	0		0	0			
4.25	0		0	0			
4.3	0		0	0			
4.35	0		0	0			
4.4	0		0	0			
4.45	0		0	0			
4.5	0		0	0			
4.55	0		0	0			
4.6	0		0	0			
4.65	0		0	0			
4.7	0		0	0			
4.75	0		0	0			
4.8	0		0	0			
4.85	0		0	0			
4.9	0		0	0			
4.95	0		0	0			
5	0		0	0			
5.05	0		0	0			
5.1	0		0	0			
5.15	0		0	0			
5.2	0		0	0			
5.25	0		0	0			
5.3	0		0	0			
5.35	0		0	0			
5.4	0		0	0			
5.45	0		0	0			
5.5	0		0	0			
5.55	0		0	0			
5.6	0		0	0			
5.65	0		0	0			
5.7	0		0	0			
5.75	0		0	0			
5.8	0		0	0			
5.85	0		0	0			
5.9	0		0	0			
5.95	0		0	0			

6	0		0	0			
6.05	0		0	0			
6.1	0		0	0			
6.15	0		0	0			
6.2	0		0	0			
6.25	0		0	0			
6.3	0		0	0			
6.35	0		0	0			
6.4	0		0	0			
6.45	0		0	0			
6.5	0		0	0			
6.55	0		0	0			
6.6	0		0	0			
6.65	0		0	0			
6.7	0		0	0			
6.75	0		0	0			
6.8	0		0	0			
6.85	0		0	0			
6.9	0		0	0			
6.95	0		0	0			
7	0		0	0			
7.05	0		0	0			
7.1	0		0	0			
7.15	0		0	0			
7.2	0		0	0			
7.25	0		0	0			
7.3	0		0	0			
7.35	0		0	0			
7.4	0		0	0			
7.45	0		0	0			
7.5	0		0	0			
7.55	0		0	0			
7.6	0		0	0			
7.65	0		0	0			
7.7	0		0	0			
7.75	0		0	0			
7.8	0		0	0			
7.85	0		0	0			
7.9	0		0	0			
7.95	0		0	0			
8	0		0	0			
8.05	0		0	0			
8.1	0		0	0			
8.15	0		0	0			
8.2	0		0	0			
8.25	0		0	0			
8.3	0		0	0			
8.35	0		0	0			
8.4	0		0	0			
8.45	0		0	0			
8.5	0		0	0			
8.55	0		0	0			
8.6	0		0	0			
8.65	0		0	0			
8.7	0		0	0			
8.75	0		0	0			
8.8	0		0	0			
8.85	0		0	0			
8.9	0		0	0			
8.95	0		0	0			
9	0		0	0			
9.05	0		0	0			

9.1	0		0	0			
9.15	0.01		0.01	1.8			
9.2	0.01		0.01	1.8			
9.25	0.01		0.01	1.8			
9.3	0.01		0.01	1.8			
9.35	0.01		0.01	1.8			
9.4	0.01		0.01	1.8			
9.45	0.01		0.01	1.8			
9.5	0.01		0.01	1.8			
9.55	0.01		0.01	1.8			
9.6	0.01		0.01	1.8			
9.65	0.01		0.01	1.8			
9.7	0.01		0.01	1.8			
9.75	0.01		0.01	1.8			
9.8	0.01		0.01	1.8			
9.85	0.01		0.01	1.8			
9.9	0.01		0.01	1.8			
9.95	0.01		0.01	1.8			
10	0.01		0.01	1.8			
10.05	0.01		0.01	1.8			
10.1	0.01		0.01	1.8			
10.15	0.01		0.01	1.8			
10.2	0.02		0.02	3.6			
10.25	0.02		0.02	3.6			
10.3	0.02		0.02	3.6			
10.35	0.02		0.02	3.6			
10.4	0.02		0.02	3.6			
10.45	0.02		0.02	3.6			
10.5	0.02		0.02	3.6			
10.55	0.02		0.02	3.6			
10.6	0.03		0.03	5.4			
10.65	0.03		0.03	5.4			
10.7	0.03		0.03	5.4			
10.75	0.04		0.04	7.2			
10.8	0.04		0.04	7.2			
10.85	0.04		0.04	7.2			
10.9	0.05		0.05	9			
10.95	0.05		0.05	9			
11	0.05		0.05	9			
11.05	0.06		0.06	10.8			
11.1	0.06		0.06	10.8			
11.15	0.07		0.07	12.6			
11.2	0.07		0.07	12.6			
11.25	0.07		0.07	12.6			
11.3	0.08		0.08	14.4			
11.35	0.08		0.08	14.4			
11.4	0.09		0.09	16.2			
11.45	0.1		0.1	18			
11.5	0.1		0.1	18			
11.55	0.12		0.12	21.6			
11.6	0.15		0.15	27			
11.65	0.17		0.17	30.6			
11.7	0.21		0.21	37.8			
11.75	0.25		0.25	45			
11.8	0.31		0.31	55.8			
11.85	0.38		0.38	68.4			
11.9	0.48		0.48	86.4			
11.95	0.63		0.63	113.4			
12	0.92		0.92	165.6			
12.05	1.27		1.27	228.6			
12.1	2.04		2.04	367.2			
12.15	2.36		2.36	424.8			

12.2	1.83		1.83	329.4			
12.25	1.5		1.5	270			
12.3	1.33		1.33	239.4			
12.35	1.25		1.25	225			
12.4	1.18		1.18	212.4			
12.45	1.14		1.14	205.2			
12.5	1.11		1.11	199.8			
12.55	1.09		1.09	196.2			
12.6	1.03		1.03	185.4			
12.65	1		1	180			
12.7	0.97		0.97	174.6			
12.75	0.96		0.96	172.8			
12.8	0.95		0.95	171			
12.85	0.95		0.95	171			
12.9	0.94		0.94	169.2			
12.95	0.93		0.93	167.4			
13	0.92		0.92	165.6			
13.05	0.91		0.91	163.8			
13.1	0.9		0.9	162			
13.15	0.89		0.89	160.2			
13.2	0.88		0.88	158.4			
13.25	0.87		0.87	156.6			
13.3	0.86		0.86	154.8			
13.35	0.85		0.85	153			
13.4	0.83		0.83	149.4			
13.45	0.82		0.82	147.6			
13.5	0.81		0.81	145.8			
13.55	0.79		0.79	142.2			
13.6	0.77		0.77	138.6			
13.65	0.75		0.75	135			
13.7	0.74		0.74	133.2			
13.75	0.73		0.73	131.4			
13.8	0.72		0.72	129.6			
13.85	0.71		0.71	127.8			
13.9	0.7		0.7	126			
13.95	0.69		0.69	124.2			
14	0.68		0.68	122.4			
14.05	0.67		0.67	120.6			
14.1	0.66		0.66	118.8			
14.15	0.65		0.65	117			
14.2	0.64		0.64	115.2			
14.25	0.63		0.63	113.4			
14.3	0.62		0.62	111.6			
14.35	0.61		0.61	109.8			
14.4	0.6		0.6	108			
14.45	0.59		0.59	106.2			
14.5	0.58		0.58	104.4			
14.55	0.57		0.57	102.6			
14.6	0.56		0.56	100.8			
14.65	0.55		0.55	99			
14.7	0.55		0.55	99			
14.75	0.54		0.54	97.2			
14.8	0.53		0.53	95.4			
14.85	0.52		0.52	93.6			
14.9	0.51		0.51	91.8			
14.95	0.5		0.5	90			
15	0.49		0.49	88.2			
15.05	0.48		0.48	86.4			
15.1	0.46		0.46	82.8			
15.15	0.44		0.44	79.2			
15.2	0.43		0.43	77.4			
15.25	0.42		0.42	75.6			

15.3	0.41		0.41	73.8			
15.35	0.4		0.4	72			
15.4	0.39		0.39	70.2			
15.45	0.38		0.38	68.4			
15.5	0.37		0.37	66.6			
15.55	0.36		0.36	64.8			
15.6	0.35		0.35	63			
15.65	0.34		0.34	61.2			
15.7	0.34		0.34	61.2			
15.75	0.33		0.33	59.4			
15.8	0.32		0.32	57.6			
15.85	0.32		0.32	57.6			
15.9	0.31		0.31	55.8			
15.95	0.31		0.31	55.8			
16	0.3		0.3	54			
16.05	0.3		0.3	54			
16.1	0.29		0.29	52.2			
16.15	0.29		0.29	52.2			
16.2	0.28		0.28	50.4			
16.25	0.28		0.28	50.4			
16.3	0.28		0.28	50.4			
16.35	0.27		0.27	48.6			
16.4	0.27		0.27	48.6			
16.45	0.27		0.27	48.6			
16.5	0.26		0.26	46.8			
16.55	0.26		0.26	46.8			
16.6	0.26		0.26	46.8			
16.65	0.25		0.25	45			
16.7	0.25		0.25	45			
16.75	0.25		0.25	45			
16.8	0.25		0.25	45			
16.85	0.24		0.24	43.2			
16.9	0.24		0.24	43.2			
16.95	0.24		0.24	43.2			
17	0.24		0.24	43.2			
17.05	0.23		0.23	41.4			
17.1	0.23		0.23	41.4			
17.15	0.23		0.23	41.4			
17.2	0.23		0.23	41.4			
17.25	0.22		0.22	39.6			
17.3	0.22		0.22	39.6			
17.35	0.22		0.22	39.6			
17.4	0.22		0.22	39.6			
17.45	0.22		0.22	39.6			
17.5	0.21		0.21	37.8			
17.55	0.21		0.21	37.8			
17.6	0.21		0.21	37.8			
17.65	0.21		0.21	37.8			
17.7	0.21		0.21	37.8			
17.75	0.21		0.21	37.8			
17.8	0.2		0.2	36			
17.85	0.2		0.2	36			
17.9	0.2		0.2	36			
17.95	0.2		0.2	36			
18	0.2		0.2	36			
18.05	0.2		0.2	36			
18.1	0.19		0.19	34.2			
18.15	0.19		0.19	34.2			
18.2	0.19		0.19	34.2			
18.25	0.19		0.19	34.2			
18.3	0.19		0.19	34.2			
18.35	0.19		0.19	34.2			

18.4	0.18		0.18	32.4			
18.45	0.18		0.18	32.4			
18.5	0.18		0.18	32.4			
18.55	0.18		0.18	32.4			
18.6	0.18		0.18	32.4			
18.65	0.18		0.18	32.4			
18.7	0.18		0.18	32.4			
18.75	0.17		0.17	30.6			
18.8	0.17		0.17	30.6			
18.85	0.17		0.17	30.6			
18.9	0.17		0.17	30.6			
18.95	0.17		0.17	30.6			
19	0.17		0.17	30.6			
19.05	0.17		0.17	30.6			
19.1	0.16		0.16	28.8			
19.15	0.16		0.16	28.8			
19.2	0.16		0.16	28.8			
19.25	0.16		0.16	28.8			
19.3	0.16		0.16	28.8			
19.35	0.16		0.16	28.8			
19.4	0.16		0.16	28.8			
19.45	0.15		0.15	27			
19.5	0.15		0.15	27			
19.55	0.15		0.15	27			
19.6	0.15		0.15	27			
19.65	0.15		0.15	27			
19.7	0.15		0.15	27			
19.75	0.15		0.15	27			
19.8	0.14		0.14	25.2			
19.85	0.14		0.14	25.2			
19.9	0.14		0.14	25.2			
19.95	0.14		0.14	25.2			
20	0.14		0.14	25.2			
20.05	0.14		0.14	25.2			
20.1	0.14		0.14	25.2			
20.15	0.14		0.14	25.2			
20.2	0.14		0.14	25.2			
20.25	0.13		0.13	23.4			
20.3	0.13		0.13	23.4			
20.35	0.13		0.13	23.4			
20.4	0.13		0.13	23.4			
20.45	0.13		0.13	23.4			
20.5	0.13		0.13	23.4			
20.55	0.13		0.13	23.4			
20.6	0.13		0.13	23.4			
20.65	0.13		0.13	23.4			
20.7	0.13		0.13	23.4			
20.75	0.13		0.13	23.4			
20.8	0.12		0.12	21.6			
20.85	0.12		0.12	21.6			
20.9	0.12		0.12	21.6			
20.95	0.12		0.12	21.6			
21	0.12		0.12	21.6			
21.05	0.12		0.12	21.6			
21.1	0.12		0.12	21.6			
21.15	0.12		0.12	21.6			
21.2	0.12		0.12	21.6			
21.25	0.12		0.12	21.6			
21.3	0.12		0.12	21.6			
21.35	0.12		0.12	21.6			
21.4	0.12		0.12	21.6			
21.45	0.11		0.11	19.8			

21.5	0.11		0.11	19.8			
21.55	0.11		0.11	19.8			
21.6	0.11		0.11	19.8			
21.65	0.11		0.11	19.8			
21.7	0.11		0.11	19.8			
21.75	0.11		0.11	19.8			
21.8	0.11		0.11	19.8			
21.85	0.11		0.11	19.8			
21.9	0.11		0.11	19.8			
21.95	0.11		0.11	19.8			
22	0.11		0.11	19.8			
22.05	0.11		0.11	19.8			
22.1	0.11		0.11	19.8			
22.15	0.11		0.11	19.8			
22.2	0.11		0.11	19.8			
22.25	0.1		0.1	18			
22.3	0.1		0.1	18			
22.35	0.1		0.1	18			
22.4	0.1		0.1	18			
22.45	0.1		0.1	18			
22.5	0.1		0.1	18			
22.55	0.1		0.1	18			
22.6	0.1		0.1	18			
22.65	0.1		0.1	18			
22.7	0.1		0.1	18			
22.75	0.1		0.1	18			
22.8	0.1		0.1	18			
22.85	0.1		0.1	18			
22.9	0.1		0.1	18			
22.95	0.1		0.1	18			
23	0.1		0.1	18			
23.05	0.1		0.1	18			
23.1	0.09		0.09	16.2			
23.15	0.09		0.09	16.2			
23.2	0.09		0.09	16.2			
23.25	0.09		0.09	16.2			
23.3	0.09		0.09	16.2			
23.35	0.09		0.09	16.2			
23.4	0.09		0.09	16.2			
23.45	0.09		0.09	16.2			
23.5	0.09		0.09	16.2			
23.55	0.09		0.09	16.2			
23.6	0.09		0.09	16.2			
23.65	0.09		0.09	16.2			
23.7	0.09		0.09	16.2			
23.75	0.09		0.09	16.2			

CITY OF GLENDALE
COMMUNITY DEVELOPMENT DEPARTMENT
5909 NORTH MILWAUKEE RIVER PARKWAY
GLENDALE, WISCONSIN 53209-3815
PHONE: (414) 228-1704 or (414) 228-1744
FAX: (414) 228-1725
WWW.GLENDALE-WI.ORG

Glendale
RICH PAST. BRIGHT FUTURE.

PLAN COMMISSION REVIEW APPLICATION

APPLICANT INFORMATION

Name of Applicant: John Burkemper

Legal Name of Business: JR. Dukes Basketball, Inc.

Name of Business Owner (if different from Applicant):

Applicant Address (City, State, and Zip Code): 5005 N. Palisades Road, Whitefish Bay WI 53217

Office Phone Number: Cell: 414-526-8265 Fax:

Applicant E-Mail: jburkemper@buildics.com

Applicant Signature: Date: 10/20/2020

PROPERTY INFORMATION

Property Address: 6619 N. Sidney Place Tax Key Number: Zoning District:

Property Owner (if different from Applicant): Hakaduli Properties LLC

Property Owner Address (City, State, and Zip Code): 13890 Bishops Drive, Suite 205 Brookfield, WI 53005

Property Owner Phone: 262-439-4207 Cell: Fax:

Property Owner E-Mail: bpichler@mghi.net

Property Owner Signature: Date:

PROPOSAL INFORMATION

Name of Business and Type of Business/Use (Please be specific): JR Dukes Basketball, Inc. Indoor basketball,

Total Building Area: 10,800 To Be Occupied Area: 10,800

Lot Size: Depth: Width: Area: 10,800 S.F.

Previous Occupant in To Be Occupied Space: Vacant

Other Uses of This Site:

Total Number of Parking Spaces: 30 Parking Spaces Available to Tenancy: 30

Business Hours (Days and Hours of Operation): No typical hours, typically 7 days a week, afternoon and evenings

Total Number of Employees: 0 Maximum Number of Employees at Site at One Time: 25 coaches and players

Primary Contact Person for This Project: John Burkemper

Primary Contact Phone: Cell: 414-526-8265 Fax:

Primary Contact E-Mail: jburkemper@buildics.com

CITY OF GLENDALE USE ONLY

Date of Application: _____ *Time:* _____ *Received by with date:* _____ *Tentative Hearing Date:* _____

G:\COMMON\Community Development Planning Department\Plan Commission Administration (2-4-4)\04 Conditional Uses\01 CU Procedures\CU Application.doc

Plan of Operation Outline

1.) Whitefish Bay Jr. Dukes Basketball, Inc.
5005 N Palisades Rd.
Whitefish Bay, WI 53217

2.) The basketball club is a 501 (c) (3) nonprofit organization, so there is no official owner. It is run by a board of which Chris Miskel is the president. His address is listed above.

3.) John Burkemper – Applicant

4.) I don't have the legal description of the property.

5.) I don't have the tax key of the property.

6.) Property is zoned M-1

7.) The space is roughly 95 by 110.

8.) This is a single story warehouse space that is roughly 95 feet wide by 110 feet deep.

9.) 10,800 SF

10.) We are not aware of the other tenants but our plan is to use our leased space for practicing basketball.

11.) We do not have employees, just coaches and players.

12.) The space will be used mainly in the afternoon and evenings on the weekdays and throughout the day on weekends.

13.)Same as above.

14.)None.

15.)None that we are aware of.

16.)None.

17.)We do not anticipate any issues with Noise, Odors, Glare, Potential Fire Hazards, or Smoke due to our use.

18.)No, we are not proposing any food service.

19.)No, we are not doing any improvements to the building that would necessitate state approval of plans.

20.) We will have fire extinguishers on site for emergency use.

21.) The program is governed by a board of directors. There will be rules put in place for safety as well as COVID 19 precautions. The space will be cleaned up to 2 times per week and monitored continuously by supervising adults and coaches.

22.) This is not applicable as we aren't doing any construction to the space. We will open the space when we are granted occupancy.

23.) Locks will be on the doors for security and we will also be installing the Ring security system to monitor activity in and around the space.

24.) Anticipated maximum number of occupants at one time should be 30 people.

25.)None at this time.

26.) We do not have a formal business plan.

27.)NA

28.)

John Burkemper

10/20/2020

6619 - 6637 N Sidney Pl

Projection

NAD_1983_2011_StatePlane_Wisconsin_South_FIPS_4803_Ft_US

1: 1,129

188 0 94 188 Feet

Notes

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