January 25, 2021

Mr. Christopher Carthy, Chairman
and Members of the Planning Board
Town of North Castle
17 Bedford Road
Armonk, NY 10504

RE: JMC Project 19124
#100-Building 2
100 Business Park Drive
Town of North Castle, NY

Response to Town Comments Submission

Dear Chairman Carthy and Members of the Planning Board:

On behalf of the owner and applicant, A & R Real Estate Holdings LLC, we are pleased to submit the following documents for your continued review of the Amended Site Plan Application of a new warehouse building at 100 Business Park Drive:

1. JMC Drawings:

Dwg. No.	Title	Rev. #	Date
C-000	"Cover Sheet"	1	01/25/2021
C-010	"Overall Existing Conditions Map"	1	01/25/2021
C-011	"Existing Conditions Map"	1	01/25/2021
C-020	"Site Demolition & Tree Removal Plan"	1	01/25/2021
C-100	"Site Layout Plan"	1	01/25/2021
C-200	"Site Grading Plan"	1	01/25/2021
C-300	"Site Utilities Plan"	1	01/25/2021
C-400	"Site Erosion & Sediment Control Plan"	1	01/25/2021
C-500	"Site Landscaping & Wetland Mitigation Plan"	2	01/25/2021
C-600	"Site Lighting Plan"	1	01/25/2021
C-700	"Existing Flood Storage Volume Analysis Plan"	1	01/25/2021
C-710	"Proposed Flood Storage Volume Analysis Plan"	1	01/25/2021
C-900	"Construction Details"	1	01/25/2021
C-901	"Construction Details"	1	01/25/2021
C-902	"Construction Details"	1	01/25/2021
C-903	"Construction Details"	1	01/25/2021
C-904	"Construction Details"		01/25/2021
C-905	"Construction Details"		01/25/2021

2. "Stormwater Pollution Prevention Plan," prepared by JMC, PLLC, revised 01/25/2021.

3. "Email Correspondence from NYSDEC regarding their jurisdictional review", dated 04/28/2020.

4. "No Permit Required Determination Letter", prepared by the U.S. Army Corps of Engineers, dated 08/10/2020.

5. "Hydrologic & Hydraulic Report", prepared by Leonard Jackson Associates, dated 10/12/2020.

6. "Email Correspondence from Town Clerk regarding Approval of Compensatory Floodplain Storage variance by Town Board", dated 12/10/2020.

7. Draft Stormwater Control Facility Maintenance Agreement, prepared by A&R Real Estate Holdings, dated 01/25/2021.

8. Draft New York State Department of Environmental Conservation Notice of Intent, prepared by JMC, dated 01/25/2021.

9. Draft WCDPW Stream Control Permit, prepared by JMC, dated 01/25/2021.

Since our last appearance before the Planning Board, we have been before the Conservation Board (on 05/19/2020 and 06/16/2020) for review of the project's proposed disturbance to the Town-regulated 100-foot wetland adjacent area (buffer). After revising our site plans to provide the minimum 2:1 mitigation ratio associated with the proposed 38,840 sf of disturbance to the wetland buffer the Conservation Board was satisfied and prepared a positive recommendation back to the Planning Board.

In addition to receiving a recommendation letter from the Conservation Board, the applicant processed a separate application with the Town Board requesting a variance from the compensatory floodplain storage requirement of the Town Code. The applicant retained a Floodplain Consultant to study the need for compensatory floodplain storage and concluded that constructing compensatory floodplain storage as previously designed yields no measurable benefit to the Byram River and adjacent properties. After appearing before the Town Board (on 11/18/2020 and 12/09/2020) and a completed technical review by the Town Consulting Engineer, the applicant obtained the requested variance.

The revisions depicted on the above noted plans reflect responses to comments from the Conservation Board, Town Board (for compensatory floodplain variance) and responses to comments outlined in the Town of North Castle Planning Department memorandum, dated April 10, 2020, and the Kellard Sessions Consulting, P.C. memorandum, dated April 9, 2020. For ease of review, we have repeated and enumerated the comments in italic print, followed by our responses:

<u>Town of North Castle Planning Department Memorandum, dated April 10, 2020</u>

<u>General Comments</u>

<u>Comment No. 1</u>

The proposed design of the warehouse building provides for loading at the front of the building. The site plan should be revised to depict how trucks would access the loading area without having to back up onto Business Park Drive. Additionally, as proposed, the loading in the front of the property is not permitted pursuant to Section 355-40.D(3) of the Town Code. It is strongly recommended that the loading area be relocated to the rear of the building in an effort to limit visual impacts of loading trucks fronting on Business Park Drive.

<u>Response No. 1</u>

The site plans have been revised to depict truck (WB-67) turning movements accessing the loading area without having to back up onto Business Park Drive. As discussed with the Planning Board, the proposed building has been designed to mirror the loading of the existing building to better sync daily operations of the facility. In an effort to address comments received from the Board and demonstrate compliance with Section 355-30.D(3), we have shifted the proposed loading entrance drive to the south approximately 30' to create an off-set with the loading dock to limit visual impacts.

<u>Comment No. 2</u>

The site plan depicts 250 feet of sight distance at the proposed loading dock curb cut; however, it appears that existing vegetation would need to be removed in order to achieve the depicted sight distance. The site plan should be revised to depict the removal of the vegetation.

<u>Response No. 2</u>

The site plans have been revised to depict the removal of two trees located in the Town right-of-way to provide an unobstructed 250 feet of sight distance from both proposed driveways.

<u>Comment No. 3</u>

The proposed warehouse building does not meet the 100 foot minimum front yard setback. The Applicant will need to secure a 43 foot front yard variance from the Zoning Board of Appeals.

<u>Response No. 3</u>

Comment is so noted. The applicant intends to request an area variance from the North Castle Zoning Board of Appeals (ZBA) for the proposed building's location within the required front yard. As discussed with the Planning Board, the applicant can only be referred to the ZBA after the Planning Board has completed SEQRA and issued their environmental determination.

<u>Comment No. 4</u>

The Zoning Conformance Table should be revised and updated to utilize net lot area when calculating development density pursuant to Section 355-30.H of the Town Code.

<u>Response No. 4</u>

The Zoning Conformance Table (Chart) has been revised to depict net lot area when calculating development density.

<u>Comment No. 5</u>

The off-street parking chart should be revised to identify the proposed 44 proposed land banked parking spaces. In addition, the Applicant will need to submit written guaranties, satisfactory to the Town Attorney, for the eventual improvement of any such spaces which may have been waived. Such spaces must be constructed within six months of the date of written notice to the property owner by the Planning Board that such spaces have been determined as necessary.

<u>Response No. 5</u>

The off-street parking summary has been revised to include the proposed land banked parking spaces. A note has been added to the plans indicating that '*In all cases, it shall be expressly demonstrated on the site plan that sufficient space remains for the provision of the total amount of off-street parking required, and the site plan shall bear such designation. All such undeveloped parking space shall be used and maintained as additional landscaped grounds until required for parking. In the event that construction of the land banked spaces is deemed necessary by the Town, the applicant shall guarantee the eventual improvement of any such spaces which may have been waived. Such spaces must be constructed within six months of the date of written notice to the property owner by the Planning Board that such spaces have been determined as necessary.*"

<u>Comment No. 6</u>

The Byram River is located at the rear of the property. The site plan should be revised to note that 34,270 square feet of Town-regulated wetland buffer disturbance is proposed. In addition, the Applicant should prepare a mitigation plan encompassing a minimum of 68,540 square feet.

<u>Response No. 6</u>

The site plans have been revised to depict the amount of wetland buffer disturbance and the proposed mitigation area. As a result of coordination between the Project Floodplain Consultant and Town Consulting Engineer, proposed disturbance within the regulated Floodway (for future potential floodplain compensatory storage basins) has been eliminated. Furthermore, the proposed wetland buffer disturbances have been summarized below as a result of receiving the variance to eliminate the compensatory floodplain storage:

1. The previous plan, which included compensatory storage basins and work within the regulated floodway proposed 38, 840 sf of Wetland buffer disturbance. The proposed

mitigation area was 78,354 sf which yields has been a 2:1 mitigation ratio. As previously discussed, this plan was reviewed and approved by the Conservation Board.

2. The current plan (without the future potential compensatory floodplain storage basins) reduces the wetland buffer disturbance to 5,000 sf. The proposed mitigation area is 36,570 sf which yields a 7.3:1 mitigation ratio.

3. Should the future potential compensatory floodplain storage basins be built, a wetland buffer disturbance of 27,000 sf would be required. The proposed mitigation area for the option including the compensatory storage basins is 62,893 sf which yields a 2.3:1 mitigation ratio.

Comment No. 7

The site plan depicts the removal of 259 Town-regulated trees.

Response No. 7

Comment is so noted. The site plans have been revised to depict the updated proposed amount of Town-regulated tree removal (235 trees).

Comment No. 8

The site plan should be revised to depict screening along the southern property line between the subject site and 130 Business Park Drive.

Response No. 8

The site plans have been revised to depict screening, in the form of evergreen tree plantings, between the subject property and the 130 Business Park Drive property.

Comment No. 9

Pursuant to Section 355-30.D(1) of the Town Code, a ten-foot-deep landscaped foundation planting shall be provided along all building walls, except at access points, in interior courts, or where waived by the Planning Board. A sidewalk not exceeding four feet in width may be located in such required foundation parking area.

Response No. 9

Comment is so noted.

Comment No. 10

Pursuant to Section 355-56.H(2) of the Town Code, the site plan should demonstrate that at least 10% of the interior of the parking area shall be curbed and landscaped with trees, shrubs and other plant material.

Response No. 10

The zoning compliance chart has been revised to depict the bulk requirement that demonstrates at least 10% of the interior of the parking area is curbed and landscaped with trees, shrubs and other plant material.

Comment No. 11

Pursuant to Section 355-58.C(3) of the Town Code, the site plan should be revised to depict one 40'x14' loading space for each establishment, and one additional space for each 10,000 square feet of gross floor area or major portion thereof in excess of 4,000 square feet of gross floor area.

Response No. 11

The site plans have been revised to depict the required number of off-street loading spaces. Sixteen total loading spaces are required for the 137,632 sf of building area (62,782 sf existing building and 74,850 sf proposed building).

Comment No. 12

Pursuant to Section 355-15.O of the Town Code, the site plan should be revised to provide adequate facilities for disposal of refuse. No incinerators shall be permitted. In multifamily and nonresidential districts, all refuse disposal units or locations for deposit must also be screened from view and designed in such fashion as to be fireproof and to prevent access by rodents and blowing away of refuse.

Response No. 12

The site plans have been revised to propose a masonry trash enclosure at the rear of the property which limits any visual impacts from Business Park Drive and adjacent properties.

Comment No. 13

The Applicant should confirm that the proposed new site plan for the property would supersede the previous outdoor storage site plan and that all outdoor storage on the site would be eliminated and transferred to the new warehouse.

Response No. 13

As discussed with the Planning Board, the majority of the existing outdoor storage would be relocated within the proposed building, however, there will still be the need to stage materials outside from deliveries. There is a precise system in place to make sure delivered materials for each project stay together. The extents of the proposed outdoor storage areas located at the rear and side of the existing building are depicted on the site plans which limit views from Business Park Drive.

Kellard Sessions Consulting, P.C. Memorandum, dated April 9, 2020

General Comments

Comment No. 1

As illustrated on the plan, the project site is located partially within the FEMA regulated floodway of the Byram River and the associated 100-year floodplain with a base flood elevation (BFE) of Elevation 370.0. Development is proposed within both the floodway and floodplain. As such, the applicant will be required to obtain a Floodplain Development Permit demonstrating compliance with Chapter 177 - Flood Damage Prevention of the Town Code. The Existing Condition Site Plan shall include references to the FEMA Effective FIRM Maps. The applicant has prepared a Flood Storage Volume Analysis Plan for review; however, the required no-risk analysis has not been provided and shall be prepared for consideration.

Response No. 1

Comment is so noted. A reference to the effective FEMA FIRM maps has been added to the Existing Conditions Map. The applicant has submitted a "Hydrologic & Hydraulic Report", prepared by Leonard Jackson Associates, which demonstrates compliance with FEMA regulations for floodplain development. This report was previously submitted for review by the Town Consulting Engineer and is provided herein for the Planning Board's reference.

Comment No. 2

The plan proposes earthwork at the rear of the property to construct basins for compensatory flood water storage, as required Section 177-14 B (3) of the Town Code. The applicant has prepared an Existing and Proposed Flood Storage Volume Analysis Plan to demonstrate that adequate compensatory storage has been provided by the development. In review of the plan, we offer the following comments for consideration:

- *After review of the Existing Condition Plan, it appears that the terrain model requires additional refinement and should include existing spot grades. As currently shown, areas of existing available storage within the site have not been accounted for and will be eliminated by the development, requiring additional storage to offset the loss. A copy of the TIN model should be provided.*

- *The Proposed Flood Storage Plan should be revised to discount the volume accounted for in the proposed stormwater management basin below Elevation 370.0. This volume must be reserved for stormwater mitigation for runoff from the building.*

- *In addition to the compensatory flood storage evaluation noted above and, as required by Section 177-14 B (2)(a) of the Town Code, on streams with a regulatory floodway, such as the Byram River, no new construction or development in the floodway shall be permitted unless a technical evaluation is prepared demonstrating that the development will not result in any increase in flood levels during the 100-year storm. The required study shall be prepared and submitted for review.*

Response No. 2

As noted above, the applicant has retained a floodplain consultant, Leonard Jackson Associates, to analyze the effect of the project on the Byram River. Leonard Jackson Associates has concluded that constructing compensatory floodplain storage as previously designed yields no measurable benefit to the Byram River and adjacent properties. A copy of this "Hydrologic & Hydraulic Report" is provided herein for the Planning Board's review. Furthermore, if we were to provide the compensatory storage an additional land disturbance of approximately 35,000 square feet within the 100' Town-regulated wetland buffer adjacent to the Byram River would be required. The Town Consulting Engineer has reviewed the report and in December 2020 the applicant obtained a variance from this requirement from the Town Board as permitted within Town Code Section 177-19. As additional floodplain mitigation, the applicant has agreed to develop restrictions on a property that they own upstream of the site, which is also along the Byram River.

Comment No. 3

The Byram River flows generally north to south along the eastern property boundary. This watercourse is a locally-regulated wetland, as well as a New York State Department of Environmental Conservation (NYSDEC) Class C(T) stream. The 100-foot regulated buffer and adjacent area extends onto the property and within the proposed development area. A local Wetland Permit will be required.

Response No. 3

Comment is so noted.

Comment No. 4

The applicant has prepared a Wetland Evaluation and Impact Report, which indicates that the NYSDEC and the US Army Corps of Engineers (US ACOE) will not require permitting for the proposed development. The property is located within the check-zone of two (2) adjacent NYSDEC Freshwater Wetlands, Wetlands No. G-1 and G-2. Written confirmation from these agencies, indicating that no permits are required, should be provided to the Town for their information.

Response No. 4

The applicant has filed a joint permit application with the NYSDEC and US Army Corps of Engineers and has subsequently received a No Permit Required determination. All received correspondence from the NYSDEC and US Army Corps of Engineers has been included in this submission.

Comment No. 5

The applicant shall confirm whether the wetland boundary illustrated on the plan has been established in the field with fluorescent, sequentially-numbered ribbons. Once confirmed, please notify this office for field verification of the boundary by the Town Wetland Consultant.

Response No. 5

The wetlands have been delineated in the field (with fluorescent, sequentially numbered ribbons) by the project Wetland Consultant (Ecological Solutions, LLC) on 10/17/2019 and we request the Town Wetland Consultant conduct a field verification of the boundary.

Comment No. 6

The Byram River is a Westchester County controlled stream and development is proposed within 100 feet of its banks. The applicant shall provide confirmation from the Westchester County Department of Public Works (WC DPW) whether a Stream Control Permit is required.

Response No. 6

Comment is so noted. We have confirmed with Jeffrey A. Dean, PE of the Westchester County Department of Public Works (WCDPW) that a Stream Control Permit is required for any work being proposed within 100' of the channel lines of the Byram River. A draft of this application is included herein and as noted on the application, a signature is required from the municipality prior to submission. Once we receive the signed application, the application and plans will be provided to the Westchester County Department of Public Works for their review.

Comment No. 7

As previously indicated, the plan proposes disturbances within the locally regulated 100-foot buffer of the Byram River and associated fringe wetland area. The applicant will be required to provide mitigation at a ratio of 2:1 for unavoidable disturbances within the wetland/wetland buffer, as required by Chapter 340, Wetlands and Watercourse Protection of the Town Code. We recommend that the Planning Board refer the plan to the Conservation Board for review and consideration.

Response No. 7

The site plans have been revised to depict the amount of wetland buffer disturbance and the proposed mitigation area which meets the required 2:1 ratio. We have been before the Conservation Board for two consecutive meetings (05/19/2020 & 06/16/2020) and have obtained a positive recommendation back to the Planning Board for the proposed wetland buffer disturbance and associated mitigation. Furthermore, as a result of the compensatory floodplain storage variance that was obtained from the Town Board and eliminating disturbance within the regulated floodway, the proposed disturbance within the 100-foot wetland buffer has been reduced. Furthermore, the disturbance associated with this construction is not required at this time. As additional floodplain mitigation, the applicant has agreed to develop restrictions on a property that they own upstream of the site, which is also along the Byram River. The proposed wetland buffer disturbances and provided mitigation have been depicted on the site plans and have been separately quantified in a summary table.

Comment No. 8

As required by Town Code, the applicant will be required to provide a long-term monitoring and *maintenance plan for the proposed wetland mitigation for a period of at least five (5) years. This office will provide standard conditions for this plan for inclusion on the Site Landscaping and Wetland Mitigation Plan.*

<u>Response No. 8</u>

A long-term monitoring and maintenance plan for the proposed wetland mitigation for a period of at least five (5) years has been prepared and approved by the Conservation Board.

<u>*Comment No. 9*</u>

The wetland mitigation plan shall include a summary table illustrating and quantifying the total area of disturbance for the project, the disturbance area within the wetland and wetland buffer, existing and proposed pervious and impervious surface areas, as well as the total area of wetland mitigation proposed.

<u>Response No. 9</u>

A summary table has been prepared that depicts and quantifies the total area of the site, total area of disturbance, total area of disturbance within the wetland and wetland buffer, existing and proposed coverage calculations (impervious/pervious) and total area of proposed wetland mitigation.

<u>*Comment No. 10*</u>

As indicated in the Wetland Evaluation and Impact Report, a total of approximately 34,270 s.f. of disturbance is proposed within the wetland buffer. This same area is proposed for wetland mitigation. As such, it appears that the 2:1 ratio of mitigation to disturbed areas has not been met by this plan. However, there seems to be other on-site areas which could be used for additional mitigation. We will defer further comment until the Conservation Board has had an opportunity to review the plan. We note that the plantings proposed for the stormwater infiltration basin are typically not credited towards wetland mitigation, as they are required for compliance with the NYSDEC Stormwater Management Design Manual (SMDM) for stormwater mitigation. Additionally, the application rate of the stormwater basin seeding should be confirmed by the applicant, as the 4 lbs./acre appears to be insufficient for adequate stabilization.

<u>Response No. 10</u>

The site plans have been revised to depict the amount of wetland buffer disturbance and the proposed mitigation area which meets the required 2:1 ratio. Furthermore, the application rate of the future potential compensatory flood storage basins, should they be constructed, has been increased to 20-40 lbs./acre or 1 lb. per 1,000 sf.

<u>*Comment No. 11*</u>

The Wetland Evaluation and Impact Report makes reference to debris removal along the Byram River and its banks. This work is not shown on the plans and may require permitting by the NYSDEC and/or Westchester County Department of Public Works. Please clarify this on the plans and provide confirmation from both agencies regarding the need for any permits.

Response No. 11

All proposed trash and debris removal along the Byram River corridor will be conducted on the 100 Business Park Drive property.

Comment No. 12

The plan proposes the removal of 259 Town-regulated trees, six (6) of which are Significant Trees, as defined by Town Code. The Planning Board should discuss whether the amount of proposed tree removal is appropriate for the development and if any tree preservation or replacement, in addition to what is shown on the proposed Site Landscaping and Wetland Mitigation Plan, is required.

Response No. 12

Comment is so noted. The site plans have been revised to depict the updated proposed amount of Town-regulated tree removal (235 trees).

Comment No. 13

The proposed southern driveway access is opposite an existing well potentially to be used as a public water supply for the Town. A portion of this driveway is located within 100 feet of the well and the access drive, a portion of the proposed land-banked parking spaces and stormwater infiltration basin lie within the 200 foot control radius. The applicant should communicate with the Town and Westchester County Department of Health (WCHD) regarding any restrictions that may result should this well be put into service. Specifically, Part 5, Appendix 5-D, Table 1 of the NYCRR, Public Water Systems, provides required minimum separation distances to public water supply wells. We note that the proposed stormwater infiltration basin is a potential contamination source and is located within the 200 foot control area. The basin may require relocation or be subject to monitoring.

Response No. 13

Based on the above comment and from additional coordination efforts with the Westchester County Department of Health (WCDH) and the Town Water Supply Consultant (WSP), the proposed stormwater basin(s) (for roof runoff only) have been relocated outside of the 200-foot control area from the future Town public water supply well.

Comment No. 14

The plan proposes to land-bank 44 of the 63 required off-street parking spaces at the south side of the property. The Planning Board should discuss whether this is appropriate for the project.

Response No. 14

Comment is so noted.

Comment No. 15

The plan proposes a circulation drive around the south and east perimeter of the proposed building to connect to the existing parking area and driveway access. We note that a significant portion of this proposed access drive and adjacent parking will be submerged by as much as three (3) feet of water during the 100 year storm event; presumably to help off-set the impacts to the flood plain area and lost compensatory storage volume. This office recommends that the plan be revised to eliminate this condition. The Planning Board should discuss whether this is appropriate and if any flooding of the driveway or associated parking should be permitted. At a minimum, we would recommend that the plan be referred to the Armonk Fire Department and emergency services for their review for adequate emergency access for both emergency and aerial apparatus. The applicant should provide the Board with copies of any communication from the Fire Department in this regard and modify the plan, as may be required.

Response No. 15

Following the approval of the compensatory floodplain storage variance from the Town Board, the site grading has been revised in order to improve this condition. The lowest point of the access drive now lies 1foot below the base flood elevation of the Byram River. The lowest point of the parking area lies approximately 8 inches below the base flood elevation, which was driven by providing an appropriate slope for drainage purposes.

The Armonk Fire Department had reviewed and accepted the previous proposed grading around the building, which depicted up to 4 feet of the driveway potentially being flooded during the 100-year flood event, as the configuration meets the fire code as well as the Fire Department's needs.

Comment No. 16

The applicant should illustrate turning movements for fire apparatus vehicles around the proposed building and exiting the site. We note that, as part of the prior approval for the existing facility, the Fire Department designated certain areas for fire access. These areas should be illustrated on the plan and reviewed with the Fire Department.

Response No. 16

The site plans have been revised to depict fire apparatus vehicle turning analyses around the proposed building and exiting the site. The plan has been reviewed and approved by the Armonk Fire Department.

Comment No. 17

The plan proposes a total of eight (8) loading docks at the front of the proposed warehouse building, four (4) of which are shown as tandem spaces. The applicant should provide vehicle turning movements for the size trailer anticipated to access the site to demonstrate adequate maneuverability into the site and accessing these loading areas.

Response No. 17

The site plans have been revised to depict delivery truck (WB-67) vehicle turning analyses demonstrating adequate maneuverability into the site and accessing the loading areas.

Comment No. 18

The site plan illustrates available sight line distances for vehicles exiting both proposed driveway locations. The plan should also include sight line profiles for these locations to demonstrate adequate visibility in both directions from both locations. The plan should identify whether any additional existing vegetation along the right-of-way of Business Park Drive will require removal to maintain adequate sight lines.

Response No. 18

The site plans have been revised to depict the removal of two trees located in the Town right-of-way to provide an unobstructed 250 feet of sight distance from both proposed driveways.

Comment No. 19

The plan proposes a reduction in the depth of the parking stalls to 16 feet, as permitted by Town Code Section 355-56 D. The plan should illustrate the area of the required two (2) foot bumper overhang to demonstrate that no conflicts with proposed site lighting, landscaping or otherwise will result.

Response No. 19

The proposed parking spaces has been revised to provide a depth of 18 feet within the primary parking stalls. The landbanked parking stalls propose a depth of 16 feet and provide an unobstructed depth of 18 feet when considering the 2 foot bumper overhang.

Comment No. 20

The plan proposes an accessible parking space in the front of the building, as required by Town Code. The plan should illustrate the required directional signage.

Response No. 20

The plans have been revised to identify the required signage for the accessible parking spaces.

Comment No. 21

We note that, as required by Section 177-17 of the Town Code, the proposed building floor elevation has been set two (2) feet above the Base Flood Elevation (Elevation 372.0). The plan should also illustrate the location of any electrical transformer or similar utility and note that it shall be set at an elevation no lower than the BFE (Elev. 370.0).

Response No. 21

The proposed transformer has been located on the site plan in an area that lies above the base flood elevation and a note has been added stating such.

Comment No. 22

The applicant has provided a Landscape Plan for consideration by the Planning Board. We note that the proposed off-street loading spaces in the front of the building are immediately opposite the entry drive. The Board should consider weather adequate screening of this loading area has been provided by the current plan.

Response No. 22

The proposed access drive in the front of the building has been shifted approximately 30 feet to the south to create an off-set with the loading dock to limit visual impacts.

Comment No. 23

The plan shall include proposed driveway profiles to demonstrate compliance with Section 355-59, Driveways of the Town Code.

Response No. 23

Profiles of the proposed driveways will be prepared and submitted under separate cover.

Comment No. 24

The plan proposes approximately 4.8 acres of disturbance, which will require the owner to obtain coverage under the NYSDEC General Permit (GP-0-20-001) for Stormwater Discharge from Construction Activities. The applicant has prepared a Stormwater Pollution Prevention Plan (SWPPP) and Erosion and Sediment Control Plan for review. We will defer a detailed review of the SWPPP until the plan is developed further. However, we offer the following preliminary comments for consideration:

a) The proposed Water Quality Unit, located in the front of the building, is partially within the limits of an existing drainage easement in favor of the Town. The structure should be shifted to the south beyond the limits of this easement area.

b) The plan proposes the removal and relocation of existing storm conveyances in the central portion of the site, with the exception of a final section of 24-inch corrugated metal pipe that ultimately discharges to the Byram River. The condition of this section of pipe should be inspected with this office and the Superintendent of Highways to determine whether this last section shall also be replaced.

c) The SWPPP should include pipe capacity calculations and storm drain profiles demonstrating adequate capacity for the increased flows.

d) The two (2) proposed compensatory storage areas are piped to permit flows to surcharge the basins during a flood event and then recede once the storm passes. It appears, however, that the bottom elevation of the northerly basin (Elevation 386) should be lowered to Elevation 384 to allow proper drainage based on the proposed pipe layout.

e) *The plan proposes a stormwater infiltration basin, water quality treatment unit and porous pavement as stormwater management practices. A Long-Term Maintenance Agreement will be required to be put in place by the owner. A draft agreement should be provided for review by the Town Attorney.*

f) *The SWPPP should include a draft copy of the Notice of Intent (NOI) for review.*

g) *The plans should include a detail of the infiltration basin providing elevations for the channel protection volume, and peak water surface elevations for the 10-year and 100-year storm events.*

h) *Provide confirmation as to whether the proposed stormwater basin is permitted to be located as proposed within 200 feet of the public water supply well.*

i) *This office witnessed deep and percolation soil testing at various locations throughout the site. Based on the soil testing and observed groundwater elevations (approximate Elevation 363.5), it appears that the minimum three (3) foot separation from the bottom of the practice to the ground water surface, as required by the NYS SMDM, has not been provided for either the stormwater infiltration basin or the porous pavement. The plan shall be revised, as required, to maintain this separation.*

j) *The drainage area Maps provided in the SWPPP should be supplemented with soil types and land cover areas to support the calculations in the hydrologic model.*

k) *The infiltration basin calculation should be reviewed for consistency with the plan and revised, as needed. The available depth of the basin appears to only be 2½ feet deep, as opposed to the 3½ feet used in the calculation.*

l) *The SWPPP shall clearly indicate the bypass rate provided by the water quality unit to ensure safe passage of the 100-year design flow.*

m) *The plans and SWPPP shall provide details and documentation to support design compliance with the minimum requirements of the NYS SMDM for infiltration basins (Practice I-2). Specifically, provisions for pre-treatment of the water quality volume shall be provided with a capacity based on the infiltration rate of the underlying soil.*

n) *The location of the temporary construction fence illustrated on the Erosion and Sediment Control Plan is within the boundaries of the FEMA floodway. The plan shall be revised to avoid this.*

o) *The plan shall illustrate the area of the stormwater infiltration basin to be cordoned-off during construction.*

p) *The sequence of construction on the plan and within the SWPPP shall be expanded to include the following, at a minimum:*

  - *Steps to construct the proposed stormwater infiltration basin and temporary measures to* *prevent flow into the basin until stabilized and timing as to when it should be put online;*

- *Construction of the compensatory storage basins and the associated interconnection to the existing storm system;*
- *Construction of the porous pavement system and means of protection during construction;*
- *Wetland mitigation, landscaping and site restoration.*

<u>Response No. 24</u>

a) The proposed water quality structure has been relocated so that it lies entirely out of the easement associated with the Town drainage line.

b) The comment is so noted. It should be noted, the pipe in question is a Town owned storm pipe that has an easement across the applicant's property and conveys drainage from Business Park Drive and a portion of the existing project site. We are not aware of any issues with the performance of this pipe, however, we are awaiting the results of the Town Consulting Engineer and the Superintendent of Highways inspection of the existing pipe to remain that extends into New York State Department of Transportation (NYSDOT) property and discharges into the Byram River.

c) Hydraulic capacity calculations will be prepared and submitted under separate cover.

d) This comment is no longer applicable as the compensatory storage basins are no longer required. Refer to Response No. 2 from Town Planner memorandum above.

e) A draft maintenance agreement has been prepared and included in this submission for review.

f) A draft Notice of Intent has been prepared and included in this submission for review.

g) Cross sections of the stormwater basins have been prepared and are provided on JMC Drawing C-904. These cross sections depict the infiltration basins and include the water surface elevations during the 1, 10, and 100 year storm events.

h) The infiltration basin has been redesigned and split into two separate basins. The two infiltration basins are now located outside of the 200' radius (well buffer) from the public water supply well.

i) The bottom elevations of the infiltration basins have been revised accordingly, and cross sections of the basins have been prepared. The cross sections graphically depict the groundwater elevations that were encountered in the test pits performed in each basin. In addition, a test pit summary table has been added to the Grading Plan describing the groundwater elevations encountered within each test pit.

j) The Drainage Area Maps have been revised to graphically depict soil type boundaries and coverage types to support the calculations in the hydrologic model.

k) The hydrologic model has been reviewed to ensure that the correct elevations and information have been input for the proposed infiltration basins. Please see the Hydrologic Calculations within the Stormwater Pollution Prevention Plan which contain elevation-area tables for the proposed basins.

l) The NYSDEC Sizing Calculations within the appendices of the Stormwater Pollution Prevention Plan have been revised to include the peak bypass rates for each separator. In addition, these bypass rates have been confirmed with Hydro International, the manufacturer of the First Defense units.

m) The plans and SWPPP have been revised to provide pre-treatment of the roof runoff through a First Defense hydrodynamic separator. Please see Appendix B within the SWPPP for the associated sizing calculations.

n) All work previously shown within the FEMA floodway has been removed including the previously proposed construction fencing.

o) The Erosion & Sediment Control Plan has been revised to show the infiltration basins being cordoned off during construction.

p) The sequence of construction on the Erosion & Sediment Control Plan and within the SWPPP has been revised to include the above requested details.

Comment No. 25

The site plan illustrates utility connections for domestic water and sanitary sewer services. The applicant should clarify whether a water service for Fire Protection is required and whether any fire hydrants are proposed or required by the Armonk Fire Department in the vicinity of the proposed building. Any alternative means of Fire Protection should be noted on the plan.

Response No. 25

Based on discussion with the Project Architect, we understand the proposed building does not require fire protection per the New York State Building Code. Existing Fire Hydrants are located and available for use by the Fire Department along Business Park Drive. One is located perpendicularly across Business Park Drive from the existing building and the another is located perpendicularly across Business Park Drive from proposed warehouse building (±140 linear feet from the face of the proposed building).

Comment No. 26

The applicant has provided a Site Lighting and Photometric Plan for consideration by the Planning Board.

Response No. 26

This comment is so noted.

Comment No. 27

The applicant should indicate what fuel source is proposed to heat the space. We note that in March 2019, ConEdison imposed a moratorium on new or expansions to existing gas services.

Response No. 27

According to the Project Architect, it is anticipated the proposed building will be heated with electric heating due to the natural gas moratorium by Con Edison.

Comment No. 28

The plan shall include details of the storm water basin and outlet structure.

Response No. 28

The site plan has been revised to provide details for the proposed stormwater basin and construction details for the proposed outlet control structures.

Comment No. 29

The plans include a detail for steel bollards. Please indicate their location on the site plan.

Response No. 29

The plans have been revised to provide a construction detail for the proposed steel bollards, which are depicted and labeled on the Site Layout Plan.

We trust the attached documents and above responses are sufficient for your review and look forward to being placed on the next available Planning Board agenda. Thank you for your consideration.

If you have any questions or require additional information, please do not hesitate to contact our office at (914) 273-5225.

Sincerely,

JMC Planning Engineering Landscape Architecture & Land Surveying, PLLC

Paul Sysak

Paul R. Sysak, RLA
Project Manager

Paul Dumont

Paul J. Dumont, PE
Senior Designer

cc: Mr. Robert Troccoli
Mr. Curt M. Johnson, R.A.

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SITE PLAN APPROVAL DRAWINGS

PROPOSED WAREHOUSE

TAX MAP SECTION 108.03 | BLOCK 1 | LOT 51
WESTCHESTER COUNTY
100 BUSINESS PARK DRIVE
TOWN OF NORTH CASTLE, NEW YORK

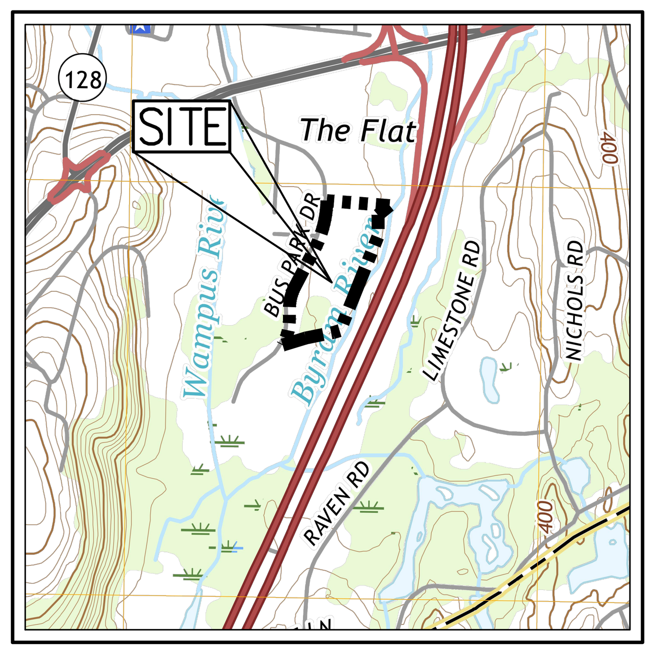
Applicant/Owner:
A & R REAL ESTATE HOLDINGS, LLC
100 BUSINESS PARK DRIVE
ARMONK, NY 10504
(718) 655-5450

Architect:
J GROUP DESIGNS, LLC
63 EAST MAIN STREET
PAWLING, NY 12564
(845) 493-0235

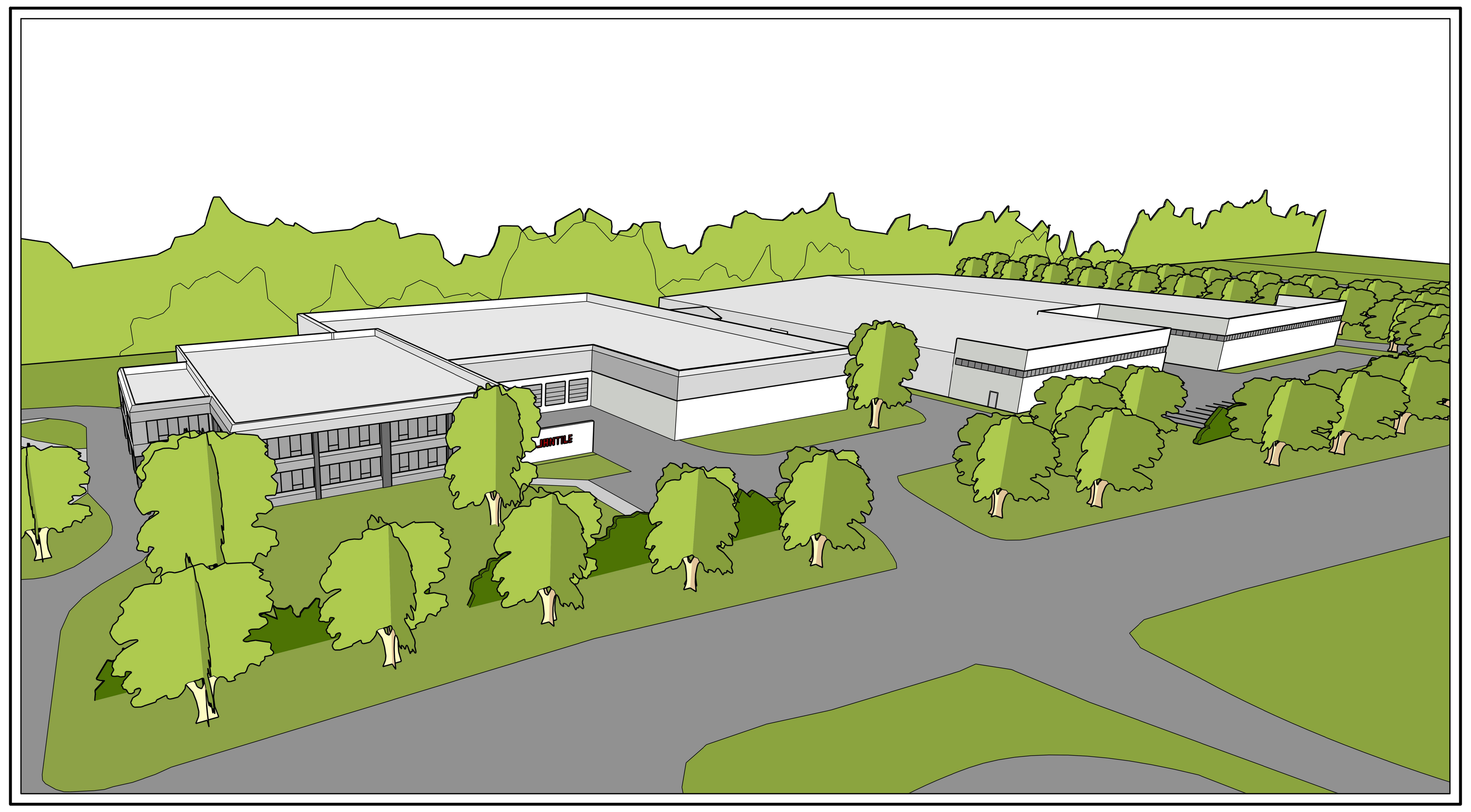
Wetland Consultant:
Ecological Solutions, LLC
1248 Southford Road
Southbury, CT 06488
(203) 910-4716

Site Planner, Civil & Traffic Engineer, Surveyor and Landscape Architect:
120 BEDFORD ROAD
ARMONK, NY 10504
(914) 273-5225

Attorney:
OCHS & GOLDBERG, LLP
60 EAST 42ND STREET, SUITE 4600
NEW YORK, NY 10165
(212) 983-1221



VICINITY MAP
SCALE: 1" = 1000'
SOURCE: USGS/2018


PERSPECTIVE RENDERING
SCALE: N.T.S.

JMC Drawing List:

J GROUP DESIGNS, LLC Drawing List:

ZONING COMPLIANCE CHART

TAX PARCEL: 108.03-1-51
ZONE DISTRICT: PLI - PLANNED LIGHT INDUSTRY
PROPOSED USE: WAREHOUSE

DESCRIPTION		REQUIREMENT	EXISTING	PROPOSED
MINIMUM LOT AREA	(ACRES)	4	11.26	11.26
NET LOT AREA	(ACRES)	–	10.80	10.80
MINIMUM LOT FRONTAGE	(FEET)	300	1,215	1,215
MINIMUM LOT DEPTH	(FEET)	300	409	409
MAXIMUM BUILDING HEIGHT	(STORIES/FEET)	3/35	2/–	1/25
MAXIMUM BUILDING COVERAGE	(%)	30	10.29	26.20
FLOOR AREA RATIO		0.30	0.10	0.26
MINIMUM INTERIOR LANDSCAPED AREA	(%)	10	14	11
MINIMUM BUILDING SETBACKS				
FRONT YARD	(FEET)	100	100.6	57(1)
SIDE YARD	(FEET)	50	305.3	63
REAR YARD	(FEET)	100	118	117
PARKING SPACES				
STANDARD PARKING SPACES	(SPACES)	(SEE TABLE)	46	212
ACCESSIBLE PARKING SPACES	(SPACES)	(SEE TABLE)	6	8
TOTAL PARKING SPACES	(SPACES)	(SEE TABLE)	152	220

NOTES:
1. VARIANCE REQUIRED.

PARKING CALCULATION SUMMARY

DESCRIPTION	AREA (SF)	REQUIREMENT	PARKING REQUIRED	PARKING PROVIDED
EXISTING OFFICE	14,555	1 SPACE / 250 SF	58	–
EXISTING WAREHOUSE PROPOSED WAREHOUSE	36,625 74,850	1 SPACE / 1,200 SF + 1 SPACE FOR EACH COMMERICAL VEHICLE PARKED ON THE SITE	31 63	–
EXISTING RECREATION CENTER AREA: -DANCE - RECREATION CENTER -WRESTLING - RECREATION CENTER	11,602	1 SPACE / 200 SF + 3 SPACES FOR THE DANCE STUDIO EMPLOYEES AT THE LARGEST SHIFT + 2 SPACES FOR THE WRESTLING STUDIO EMPLOYEES AT THE LARGEST SHIFT	63	–
TOTAL	137,632	–	215	220*

*INCLUDING 8 ADA ACCESSIBLE PARKING SPACES

GENERAL CONSTRUCTION NOTES APPLY TO ALL WORK HEREIN:

1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CALL 811 "DIG SAFELY" (1-800-962-7962) TO HAVE UNDERGROUND UTILITIES LOCATED INCLUDING ARRANGING FOR A PRIVATE MARKOUT ON-SITE WHERE APPLICABLE. EXPLORATORY EXCAVATIONS SHALL COMPLY WITH CODE 753 REQUIREMENTS. NO WORK SHALL COMMENCE UNTIL ALL THE OPERATORS HAVE NOTIFIED THE CONTRACTOR THAT THEIR UTILITIES HAVE BEEN LOCATED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PRESERVATION OF ALL PUBLIC AND PRIVATE UNDERGROUND AND SURFACE UTILITIES AND STRUCTURES AT OR ADJACENT TO THE SITE OF CONSTRUCTION, INSOFAR AS THEY MAY BE ENDANGERED BY THE CONTRACTOR'S OPERATIONS. THIS SHALL HOLD TRUE WHETHER OR NOT THEY ARE SHOWN ON THE CONTRACT DRAWINGS. IF THEY ARE SHOWN ON THE DRAWINGS, THEIR LOCATIONS ARE NOT GUARANTEED EVEN THOUGH THE INFORMATION WAS OBTAINED FROM THE BEST AVAILABLE SOURCES, AND IN ANY EVENT, OTHER UTILITIES ON THESE PLANS MAY BE ENCOUNTERED IN THE FIELD. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, IMMEDIATELY REPAIR OR REPLACE ANY STRUCTURES OR UTILITIES THAT HE DAMAGES, AND SHALL CONSTANTLY PROCEED WITH CAUTION TO PREVENT UNDUE INTERRUPTION OF UTILITY SERVICE.

2. CONTRACTOR SHALL HAND DIG TEST PITS TO VERIFY THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL VERIFY EXISTING UTILITIES DEPTHS AND ADVISE OF ANY CONFLICTS WITH PROPOSED UTILITIES. IF CONFLICTS ARE PRESENT. THE OWNER'S FIELD REPRESENTATIVE, JMC, PLLC AND THE APPLICABLE MUNICIPALITY OR AGENCY SHALL BE NOTIFIED IN WRITING. THE EXISTING/PROPOSED UTILITIES RELOCATION SHALL BE DESIGNED BY JMC, PLLC.

3. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY AND ALL LOCAL PERMITS REQUIRED.

4. ALL WORK SHALL BE DONE IN STRICT COMPLIANCE WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES, STANDARDS, ORDINANCES, RULES, AND REGULATIONS. ALL CONSTRUCTION WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL SAFETY CODES. APPLICABLE SAFETY CODES MEAN THE LATEST EDITION INCLUDING ANY AND ALL AMENDMENTS, REVISIONS, AND ADDITIONS THERETO, TO THE FEDERAL DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION'S OCCUPATIONAL SAFETY AND HEALTH STANDARDS (OSHA); AND APPLICABLE SAFETY, HEALTH REGULATIONS AND BUILDING CODES FOR CONSTRUCTION IN THE STATE OF NEW YORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR GUARDING AND PROTECTING ALL OPEN EXCAVATIONS IN ACCORDANCE WITH THE PROVISION OF SECTION 107-05 (SAFETY AND HEALTH REQUIREMENTS) OF THE NYSDOT STANDARD SPECIFICATIONS. IF THE CONTRACTOR PERFORMS ANY HAZARDOUS CONSTRUCTION PRACTICES, ALL OPERATIONS IN THE AFFECTED AREA SHALL BE DISCONTINUED AND IMMEDIATE ACTION SHALL BE TAKEN TO CORRECT THE SITUATION TO THE SATISFACTION OF THE APPROVAL AUTHORITY HAVING JURISDICTION.

5. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES AFFECTED BY THE SCOPE OF WORK SHOWN HEREON AT ALL TIMES TO THE SATISFACTION OF THE OWNERS REPRESENTATIVE. RAMPING CONSTRUCTION TO PROVIDE ACCESS MAY BE CONSTRUCTED WITH SUBBASE MATERIAL EXCEPT THAT TEMPORARY ASPHALT CONCRETE SHALL BE PLACED AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SAFE PEDESTRIAN ACCESS AT ALL TIMES.

6. CONTRACTOR SHALL MAINTAIN THE INTEGRITY OF EXISTING PAVEMENT TO REMAIN.

7. THE TOWN OF NORTH CASTLE IS PURSUING THE OWNERSHIP OF AN EXISTING WATER SUPPLY WELL LOCATED AT 125 BUSINESS PARK DRIVE IN THE EFFORT TO TRANSITION THE WELL TO SERVE THE PUBLIC WATER SUPPLY. WELLS SERVING PUBLIC WATER SYSTEMS SHALL BE LOCATED SUCH THAT THE OWNER OF THE WATER SYSTEM POSSESSES LEGAL TITLE TO LANDS WITHIN 100' OF THE WELL AND THE OWNER CONTROLS BY OWNERSHIP, LEASE, EASEMENT OR OTHER LEGALLY ENFORCEABLE ARRANGEMENT THE LAND USE ACTIVITIES WITHIN 200' OF THE WELL. HYDROGEOLOGIC EVALUATIONS AND SOURCE WATER ASSESSMENTS SHOULD BE USED TO DETERMINE APPROPRIATE SEPARATION FROM POTENTIAL CONTAMINANT SOURCES.

NOT FOR CONSTRUCTION

SUBSURFACE UTILITY LOCATIONS ARE BASED ON A COMPILATION OF FIELD EVIDENCE, AVAILABLE RECORD PLANS AND/OR UTILITY MARK-OUTS. THE LOCATION OR COMPLETENESS OF UNDERGROUND INFORMATION CANNOT BE GUARANTEED. VERIFY THE ACTUAL LOCATION OF ALL UTILITIES PRIOR TO EXCAVATION OR CONSTRUCTION.

811 Know what's below. Call before you dig.

No.	Revision	Date	By
1.	REVISED PER TOWN COMMENTS	01/25/2021	PD

Previous Editions Obsolete

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

STATE OF NEW YORK · DAVID P. LOMBARDI · 071001 · LICENSED PROFESSIONAL ENGINEER

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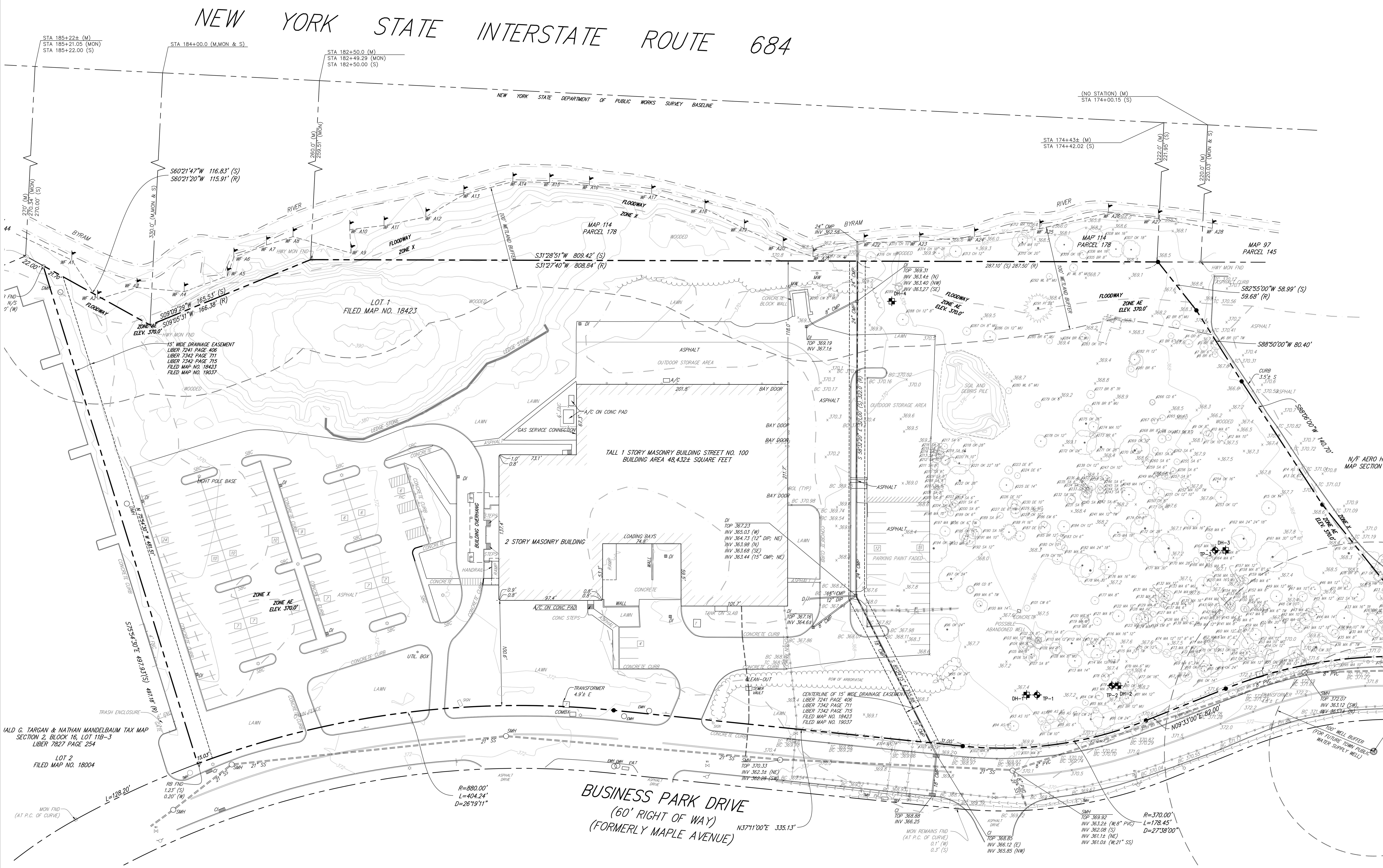
Scale:	NOT TO SCALE		
Date:	03/23/2020		
Project No:	19124		
19124-SITE	COVER	COVER.scr	
Drawing No:	C-000		

DEEP HOLE TEST SUMMARY TABLE

TEST LOCATION	EXISTING GROUND ELEVATION	DEPTH TO GROUNDWATER	GROUNDWATER ELEVATION
DH–1/TP–1	367.40	3.5'	363.90
DH–2/TP–2	367.35	3.5'	363.85
DH–3/TP–3	367.00	5.5'	361.50
DH–4	367.00	6.5'	360.50



LEGEND

- EXISTING PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING EASEMENT LINE
- EXISTING WETLAND LINE AND DELINEATION
- EXISTING BUILDING OVERHANG
- EXISTING BUILDING LINE
- EXISTING PAVEMENT EDGE
- EXISTING CURB LINE
- EXISTING CONTOUR
- EXISTING INDEX CONTOUR
- EXISTING STONE WALL
- EXISTING RETAINING WALL
- EXISTING GUIDE RAIL
- EXISTING FENCE
- EXISTING TREE AND DESIGNATION
- EXISTING TREE LINE
- EXISTING DIRECTIONAL ARROWS
- EXISTING PAINT
- EXISTING PARKING WITH NUMBER OF SPACES
- EXISTING ACCESSIBLE PARKING WITH NUMBER OF SPACES
- EXISTING PEDESTRIAN CROSSING
- EXISTING STORM DRAIN LINE AND SIZE
- EXISTING SANITARY LINE AND SIZE
- EXISTING WATER LINE
- EXISTING GAS LINE
- EXISTING OVERHEAD WIRES
- EXISTING DRAIN INLET
- EXISTING MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING GAS VALVE
- EXISTING WATER VALVE
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING SIGN
- DH–1 TP–2 DEEP HOLE AND TEST PIT LOCATION AND DESIGNATION

NOTES:

1. EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY TITLED, "TOPOGRAPHIC AND UTILITY SURVEY," PREPARED BY JMC, PLLC, DATED NOVEMBER 26, 2019.
2. GEOTECHNICAL BORING/TEST PIT LOCATIONS DEPICTED ON THIS PLAN WERE TAKEN FROM A FIELD INVESTIGATION CONDUCTED BY JMC, PLLC ON 11/15/2019.
3. THE WETLAND LIMITS DEPICTED ON THIS PLAN HAVE BEEN FIELD DELINEATED BY ECOLOGICAL SOLUTIONS, LLC ON 10/17/2019.
4. 100 YEAR FLOOD PLAIN ELEVATION 370 PER FEMA NATIONAL FLOOD HAZARD MAP, PANEL #36119C0277F EFFECTIVE 09/28/2007.

No.	Revision	Date	By
1.	REVISED PER TOWN COMMENTS	01/25/2021	PD

Previous Editions Obsolete

APPLICANT/OWNER:
A & R REAL ESTATE HOLDINGS, LLC
100 BUSINESS PARK DRIVE
ARMONK, NY 10504

ARCHITECT:
J GROUP DESIGNS, LLC
63 EAST MAIN STREET
PAWLING, NY 12564

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OVERALL SITE EXISTING CONDITIONS MAP

PROPOSED WAREHOUSE
100 BUSINESS PARK DRIVE
TOWN OF NORTH CASTLE, NEW YORK

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STATE OF NEW YORK · DAVID P. LOMBARDI · LICENSED PROFESSIONAL ENGINEER · 071001

Drawn: NC	Approved: DL	
Scale: 1" = 40'		
Date: 03/23/2020		
Project No: 19124		
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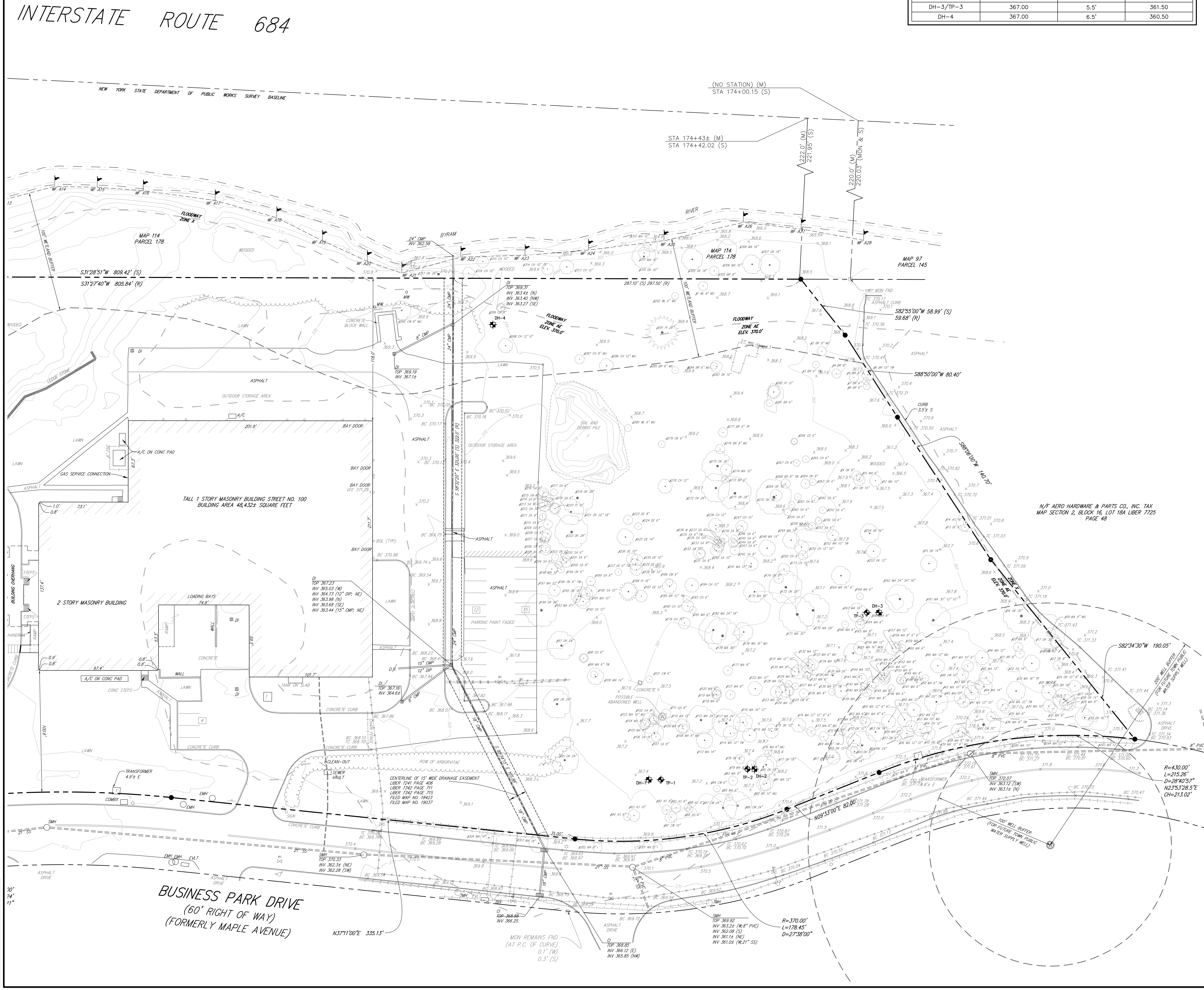
Drawing No: C–010		

NOT FOR CONSTRUCTION



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LEGEND

- EXISTING PROPERTY LINE
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- EXISTING BUILDING LINE
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- EXISTING INDEX CONTOUR
- EXISTING STONE WALL
- EXISTING RETAINING WALL
- EXISTING GUIDE RAIL
- EXISTING FENCE
- EXISTING TREE AND DESIGNATION
- EXISTING TREE LINE
- EXISTING DIRECTIONAL ARROWS
- EXISTING PAINT
- EXISTING PARKING WITH NUMBER OF SPACES
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- EXISTING PEDESTRIAN CROSSING
- EXISTING STORM DRAIN LINE AND SIZE
- EXISTING SANITARY LINE AND SIZE
- EXISTING WATER LINE
- EXISTING GAS LINE
- EXISTING OVERHEAD WIRES
- EXISTING DRAIN INLET
- EXISTING MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING GAS VALVE
- EXISTING WATER VALVE
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING SIGN
- DH-1 TP-2 DEEP HOLE AND TEST PIT LOCATION AND DESIGNATION

NOTES:

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No.	Revision	Date	By
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100 BUSINESS PARK DRIVE
ARMONK, NY 10504

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SITE EXISTING CONDITIONS MAP

PROPOSED WAREHOUSE
100 BUSINESS PARK DRIVE
TOWN OF NORTH CASTLE, NEW YORK

STATE OF NEW YORK · DAVID P. LOMBARDI · LICENSED PROFESSIONAL ENGINEER · 071001

Drawn: NC	Approved: DL
Scale: 1" = 30'	
Date: 03/23/2020	
Project No: 19124	
19124-SITE	EXIST	EXIST.scr

Drawing No: C-011

NOTES:

1. EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY TITLED, "TOPOGRAPHIC AND UTILITY SURVEY," PREPARED BY JMC, PLLC, DATED NOVEMBER 26, 2019.
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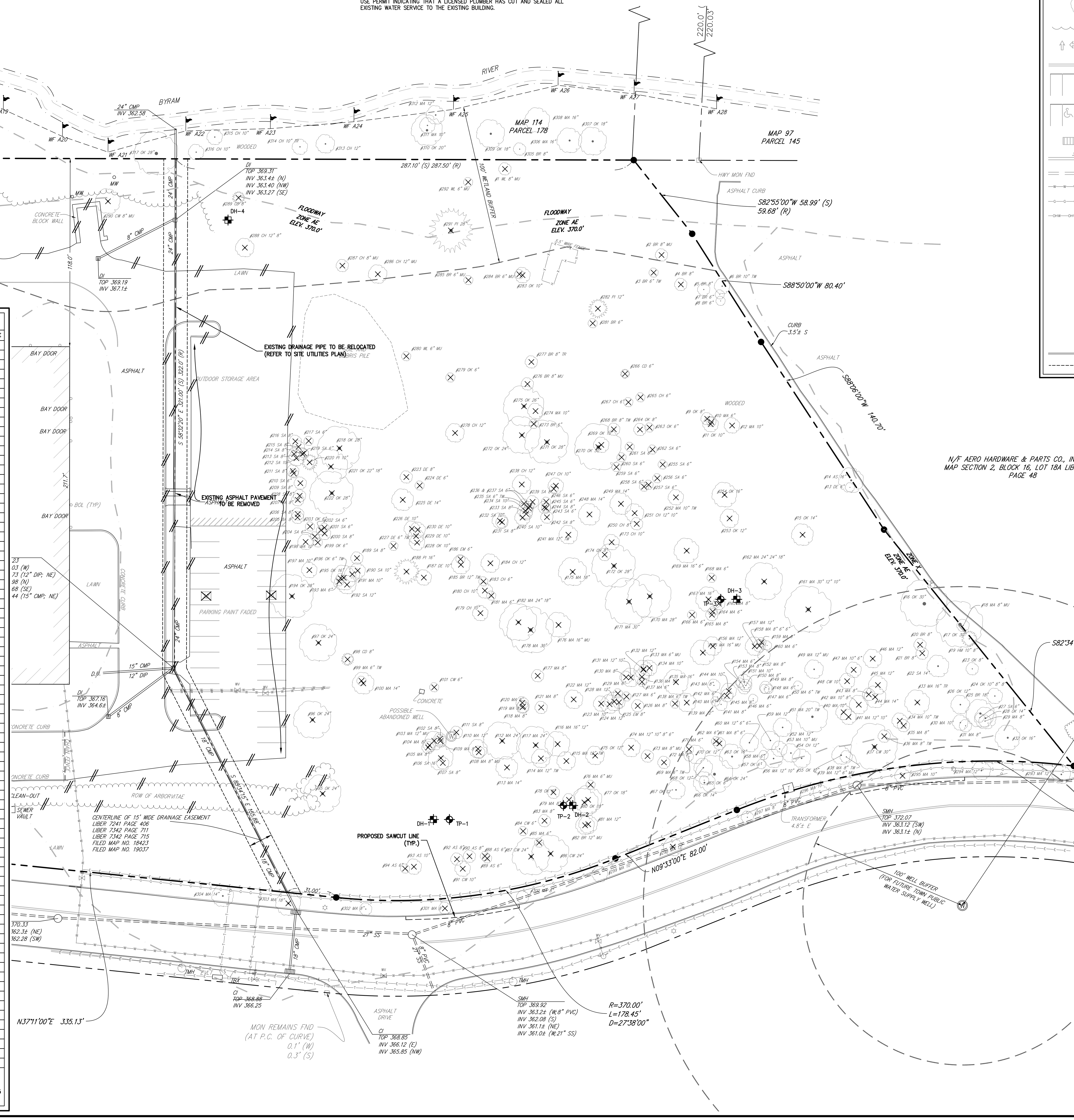
4. 100 YEAR FLOOD PLAIN ELEVATION 370 PER FEMA NATIONAL FLOOD HAZARD MAP, PANEL #36119C0277F EFFECTIVE 09/28/2007.
5. THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UTILITIES TO BE DEMOLISHED AND EXISTING UTILITIES TO BE PROTECTED. IF ANY DISCREPANCIES ARE FOUND, THE CONTRACTOR SHALL NOTIFY THE GENERAL CONTRACTOR AND JMC PRIOR TO THE START OF CONSTRUCTION.
6. PRIOR TO THE START OF ANY DEMOLITION THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND/OR APPROVALS FROM THE TOWN OF NORTH CASTLE AND ALL OTHER AUTHORITIES HAVING JURISDICTION. CONTRACTOR SHALL PAY ALL OUTSTANDING FEES, CHARGES, AND DEPOSITS TO ACQUIRE SAID PERMITS. NO DEMOLITION SHALL COMMENCE UNTIL A PERMIT HAS BEEN OBTAINED FROM THE TOWN.
7. THE CONTRACTOR SHALL COORDINATE THE DISCONNECTION OF ALL UTILITIES WITH THE UTILITY COMPANY HAVING JURISDICTION PRIOR TO THE START OF DEMOLITION. CONFIRMATION OF DISCONNECTED UTILITIES SHALL BE PROVIDED TO THE TOWN OF NORTH CASTLE BUILDING DEPARTMENT IN ACCORDANCE WITH THEIR REQUIREMENTS. LETTERS FROM THE APPROPRIATE UTILITIES STATING THAT GAS AND ELECTRIC HAVE BEEN CUT OFF SHALL BE PROVIDED TO THE TOWN.
8. IF APPLICABLE, THE CONTRACTOR SHALL OBTAIN, AND PROVIDE A COPY TO THE TOWN, A SEWER PLUG PERMIT INDICATING THAT A LICENSED PLUMBER HAS PLUGGED ALL EXISTING SEWER LINES TO THE EXISTING BUILDING. THE CONTRACTOR SHALL OBTAIN, AND PROVIDE A COPY TO THE TOWN, A WATER USE PERMIT INDICATING THAT A LICENSED PLUMBER HAS CUT AND SEALED ALL EXISTING WATER SERVICE TO THE EXISTING BUILDING.
9. ANY UNSUITABLE MATERIAL FOUND ON–SITE DURING CONSTRUCTION SHALL BE DISPOSED OF OFF–SITE IN A MANNER APPROVED BY ALL AUTHORITIES HAVING JURISDICTION AND REPLACED WITH SUITABLE MATERIAL AS REQUIRED. ALL REMOVAL AND REPLACEMENT OF UNSUITABLE MATERIAL SHALL BE COMPLETED UNDER THE DIRECT SUPERVISION OF A GEOTECHNICAL ENGINEER.
10. ALL DEMOLITION AND/OR CONSTRUCTION WITHIN THE RIGHT–OF–WAY, INCLUDING STREETS AND SIDEWALKS, SHALL BE PERFORMED IN ACCORDANCE WITH TOWN REQUIREMENTS.
11. ALL CONSTRUCTION/DEMOLITION DEBRIS NOT PROPOSED TO BE RECYCLED SHALL BE REMOVED AND LEGALLY DISPOSED OF OFF–SITE IN ACCORDANCE WITH THE REGULATIONS OF ALL LOCAL, STATE AND FEDERAL AGENCIES HAVING JURISDICTION.
12. EXISTING CONCRETE MAY BE STORED ON SITE, AND RECYCLED FOR USE AS COMPACTED FILL. ALL MATERIAL TO BE USED AS FILL SHALL BE APPROVED BY THE PROJECT GEOTECHNICAL ENGINEER.
13. PRIOR TO THE START OF SITE DEMOLITION, EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THESE PLANS, AS REQUIRED AND/OR DIRECTED BY THE TOWN OF NORTH CASTLE OR JMC.
14. EXISTING DRAINAGE PATTERNS ON SITE SHALL BE MAINTAINED TO THE MAXIMUM EXTENT PRACTICABLE.
15. ALL EXISTING UTILITY CASTINGS WHICH ARE TO REMAIN SHALL BE REMOVED AND RESET TO THE NEW PROPOSED GRADES IN ACCORDANCE WITH THE DIRECTIONS OF THE OWNER'S FIELD REPRESENTATIVE. EXISTING CASTINGS WHICH ARE DAMAGED OR UNFIT FOR INSTALLATION IN THE NEW CONSTRUCTION, AS DETERMINED BY THE OWNER'S FIELD REPRESENTATIVE, SHALL BE REPLACED.
16. ALL EXISTING SIDEWALKS, CURBS, PAVEMENT, ETC. TO REMAIN, WHICH ARE DISTURBED OR DAMAGED DUE TO THE NEW CONSTRUCTION, ARE TO BE REPLACED WITH MATERIALS CONSISTENT WITH EXISTING CONDITIONS.
17. THESE PLANS ARE TO BE PROVIDED TO BOTH THE DEMOLITION CONTRACTOR AND THE SITE CONTRACTOR FOR THEIR USE, INFORMATION AND COORDINATION. ANY QUESTIONS OF CONTRACTOR RESPONSIBILITY AND/OR SEPARATION OF WORK SHALL BE DIRECTED TO THE GENERAL CONTRACTOR IN WRITING PRIOR TO ISSUANCE OF BID.
18. IF APPLICABLE, THE OWNER SHALL RETAIN A LICENSED AND QUALIFIED PROFESSIONAL, CERTIFIED BY THE STATE, TO INSPECT FOR THE PRESENCE OF ASBESTOS AND/OR OTHER HAZARDOUS MATERIALS WITHIN DEMOLITION AREAS PRIOR TO THE COMMENCEMENT OF DEMOLITION. IF REMEDIATION IS REQUIRED, THE OWNER SHALL DO SO IN ACCORDANCE WITH THE NYS ASBESTOS RULES AND REGULATIONS AND/OR ANY AUTHORITIES HAVING JURISDICTION. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED DOCUMENTATION TO THE STATE PRIOR TO OBTAINING A DEMOLITION PERMIT.
19. THE CONTRACTOR SHALL EXTERMINATE RODENTS AS REQUIRED BY THE WESTCHESTER COUNTY DEPARTMENT OF HEALTH AND MENTAL HYGIENE. A LETTER FROM THE HEALTH DEPARTMENT CERTIFYING THAT A LICENSED EXTERMINATOR HAS TREATED THE EXITING BUILDING SHALL BE PROVIDED TO THE TOWN OF NORTH CASTLE BUILDING DEPARTMENT.
20. PRIOR TO COMMENCEMENT OF DEMOLITION, THE CONTRACTOR MUST PROVIDE 24–HOUR NOTIFICATION TO THE TOWN.

LEGEND

- EXISTING PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING EASEMENT LINE
- EXISTING WETLAND LINE AND DELINEATION (WF–A20, WF–A21, WF–A22)
- EXISTING BUILDING OVERHANG
- EXISTING BUILDING LINE
- EXISTING PAVEMENT EDGE
- EXISTING CURB LINE
- EXISTING CONTOUR (372)
- EXISTING INDEX CONTOUR (370)
- EXISTING STONE WALL
- EXISTING RETAINING WALL
- EXISTING GUIDE RAIL
- EXISTING FENCE
- EXISTING TREE AND DESIGNATION (T10 M)
- EXISTING TREE TO BE REMOVED (T10 M)
- EXISTING TREE LINE
- EXISTING DIRECTIONAL ARROWS
- EXISTING PAINT
- EXISTING PARKING WITH NUMBER OF SPACES (5)
- EXISTING ACCESSIBLE PARKING WITH NUMBER OF SPACES (2H)
- EXISTING PEDESTRIAN CROSSING
- EXISTING STORM DRAIN LINE AND SIZE (36" RCP)
- EXISTING SANITARY LINE AND SIZE (8" SAN)
- EXISTING WATER LINE (W)
- EXISTING GAS LINE (G)
- EXISTING OVERHEAD WIRES (OHW)
- EXISTING DRAIN INLET
- EXISTING MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING GAS VALVE (GV)
- EXISTING WATER VALVE (WV)
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING SIGN
- BORING LOCATION AND DESIGNATION (DP–2)
- EXISTING FEATURE TO BE REMOVED
- PROPOSED SAWCUT LINE



TREE REMOVAL SUMMARY

NUMBER	SPECIES	DIAMETER	REMAIN/REMOVE	NUMBER	SPECIES	DIAMETER	REMAIN/REMOVE	NUMBER	SPECIES	DIAMETER	REMAIN/REMOVE	NUMBER	SPECIES	DIAMETER	REMAIN/REMOVE
1	WILLOW	8" MULTIPLE	REMAIN	81	MAPLE	12"	REMOVE	161	MAPLE	30" 12" 10"	REMOVE	241	MAPLE	12" TWIN	REMOVE
2	BIRCH	8" MULTIPLE	REMOVE	82	BIRCH	12" MULTIPLE'	REMOVE	162	MAPLE	24" 24" 18"	REMOVE	242	SASSAFRAS	8"	REMOVE
3	BIRCH	6" TWIN	REMOVE	83	MAPLE	8"	REMOVE	163	MAPLE	8"	REMOVE	243	SASSAFRAS	6"	REMOVE
4	BIRCH	8"	REMOVE	84	COTTONWOOD	6"	REMOVE	164	MAPLE	6"	REMOVE	244	SASSAFRAS	8"	REMOVE
5	BIRCH	8"	REMAIN	85	MAPLE	6"	REMOVE	165	MAPLE	8"	REMOVE	245	SASSAFRAS	6"	REMOVE
6	BIRCH	10" TWIN	REMAIN	86	COTTONWOOD	24"	REMOVE	166	MAPLE	6"	REMOVE	246	SASSAFRAS	6"	REMOVE
7	BIRCH	6"	REMAIN	87	COTTONWOOD	24"	REMOVE	167	MAPLE	16"	REMOVE	247	CHERRY	10"	REMOVE
8	BIRCH	6"	REMAIN	88	ASH	6"	REMOVE	168	MAPLE	6"	REMOVE	248	MAPLE	14"	REMOVE
9	OAK	8"	REMOVE	89	ASH	6"	REMOVE	169	MAPLE	16" 6"	REMOVE	249	MAPLE	14"	REMOVE
10	MAPLE	6"	REMOVE	90	ASH	8"	REMOVE	170	MAPLE	28"	REMOVE	250	CHERRY	8"	REMOVE
11	OAK	10"	REMOVE	91	COTTONWOOD	10"	REMOVE	171	MAPLE	30"	REMOVE	251	CHERRY	12" 10"	REMOVE
12	MAPLE	10"	REMOVE	92	ASH	8"	REMOVE	172	OAK	28"	REMOVE	252	MAPLE	10" TWIN	REMOVE
13	DECIDUOUS	6"	REMAIN	93	ASH	10"	REMOVE	173	CHERRY	10"	REMOVE	253	OAK	12"	REMOVE
14	ASH	16"	REMAIN	94	ASH	6"	REMOVE	174	CHERRY	8"	REMOVE	254	OAK	16"	REMOVE
15	OAK	14"	REMOVE	95	OAK	24"	REMOVE	175	MAPLE	18"	REMOVE	255	SASSAFRAS	6"	REMOVE
16	OAK	30"	REMAIN	96	OAK	24"	REMOVE	176	MAPLE	16" MULTIPLE	REMOVE	256	SASSAFRAS	6"	REMOVE
17	OAK	30"	REMAIN	97	OAK	24"	REMOVE	177	MAPLE	8"	REMOVE	257	SASSAFRAS	6"	REMOVE
18	MAPLE	8" MULTIPLE	REMAIN	98	CEDAR	8"	REMOVE	178	MAPLE	30"	REMOVE	258	SASSAFRAS	6"	REMOVE
19	HEMLOCK	10" 8"	REMAIN	99	MAPLE	6" TWIN	REMOVE	179	CHERRY	10"	REMOVE	259	SASSAFRAS	6"	REMOVE
20	BIRCH	8"	REMOVE	100	MAPLE	14"	REMOVE	180	CHERRY	10"	REMOVE	260	SASSAFRAS	6"	REMOVE
21	BIRCH	8"	REMOVE	101	COTTONWOOD	6"	REMOVE	181	MAPLE	6"	REMOVE	261	SASSAFRAS	6"	REMOVE
22	SASSAFRAS	14"	REMAIN	102	SASSAFRAS	8"	REMOVE	182	MAPLE	24" 18"	REMOVE	262	SASSAFRAS	6"	REMOVE
23	OAK	8"	REMAIN	103	MAPLE	12" MULTIPLE	REMOVE	183	CHERRY	6"	REMOVE	263	OAK	6"	REMOVE
24	OAK	10" 8" 8"	REMAIN	104	MAPLE	8"	REMOVE	184	CHERRY	12"	REMOVE	264	OAK	8"	REMOVE
25	BIRCH	18"	REMAIN	105	MAPLE	8"	REMOVE	185	BIRCH	12" TWIN	REMOVE	265	CHERRY	6"	REMOVE
26	OAK	12"	REMAIN	106	SASSAFRAS	16"	REMOVE	186	ELM	6"	REMOVE	266	CEDAR	6"	REMOVE
27	SASSAFRAS	6"	REMAIN	107	SASSAFRAS	8"	REMOVE	187	DECIDUOUS	10"	REMOVE	267	CHERRY	6"	REMOVE
28	OAK	14"	REMAIN	108	MAPLE	8" MULTIPLE	REMOVE	188	PINE	16"	REMOVE	268	BIRCH	8" TWIN	REMOVE
29	MAPLE	8"	REMAIN	109	MAPLE	8"	REMOVE	189	SASSAFRAS	8"	REMOVE	269	OAK	10"	REMOVE
30	MAPLE	10"	REMAIN	110	MAPLE	12"	REMOVE	190	SASSAFRAS	10"	REMOVE	270	OAK	30"	REMOVE
31	MAPLE	8"	REMAIN	111	SASSAFRAS	8"	REMOVE	191	MAPLE	10"	REMOVE	271	OAK	28"	REMOVE
32	OAK	16"	REMAIN	112	MAPLE	24"	REMOVE	192	SASSAFRAS	12"	REMOVE	272	OAK	24"	REMOVE
33	MAPLE	16" TRIPLE	REMOVE	113	MAPLE	14"	REMOVE	193	MAPLE	6"	REMOVE	273	BIRCH	6"	REMOVE
34	MAPLE	10" TWIN	REMOVE	114	MAPLE	12" TWIN	REMOVE	194	OAK	28"	REMOVE	274	MAPLE	10"	REMOVE
35	MAPLE	8"	REMOVE	115	MAPLE	12" TWIN	REMOVE	195	OAK	16"	REMOVE	275	OAK	26"	REMOVE
36	MAPLE	8"	REMOVE	116	MAPLE	16" 12"	REMOVE	196	OAK	6" TWIN	REMOVE	276	BIRCH	8" MULTIPLE	REMOVE
37	COTTONWOOD	30"	REMOVE	117	MAPLE	24"	REMOVE	197	MAPLE	10"	REMOVE	277	BIRCH	8" TRIPLE	REMOVE
38	MAPLE	8" TWIN	REMAIN	118	MAPLE	8"	REMOVE	198	MAPLE	10"	REMOVE	278	CHERRY	12"	REMOVE
39	MAPLE	12" 6" MULTIPLE	REMAIN	119	MAPLE	8"	REMOVE	199	OAK	6"	REMOVE	279	OAK	6"	REMOVE
40	MAPLE	10"	REMOVE	120	MAPLE	8"	REMOVE	200	SASSAFRAS	8"	REMOVE	280	WILLOW	6" MULTIPLE	REMOVE
41	MAPLE	12" 10"	REMOVE	121	MAPLE	8"	REMOVE	201	SASSAFRAS	6"	REMOVE	281	BIRCH	6"	REMOVE
42	MAPLE	10" 8"	REMOVE	122	MAPLE	12"	REMOVE	202	SASSAFRAS	6"	REMOVE	282	PINE	12"	REMOVE
43	MAPLE	8"	REMOVE	123	MAPLE	10"	REMOVE	203	OAK	6"	REMOVE	283	OAK	10"	REMOVE
44	MAPLE	14"	REMOVE	124	MAPLE	12"	REMOVE	204	SASSAFRAS	6"	REMOVE	284	BIRCH	6" MULTIPLE	REMOVE
45	MAPLE	12"	REMOVE	125	ELM	8"	REMOVE	205	SASSAFRAS	8"	REMOVE	285	BIRCH	6" MULTIPLE	REMOVE
46	MAPLE	12"	REMOVE	126	MAPLE	8"	REMOVE	206	SASSAFRAS	8"	REMOVE	286	CHERRY	12" MULTIPLE	REMOVE
47	MAPLE	10" 6"	REMOVE	127	MAPLE	6"	REMOVE	207	SASSAFRAS	8"	REMOVE	287	CHERRY	8" MULTIPLE	REMOVE
48	COTTONWOOD	10"	REMOVE	128	MAPLE	12"	REMOVE	208	SASSAFRAS	8"	REMOVE	288	CHERRY	12" 8"	REMOVE
49	MAPLE	12" MULTIPLE	REMAIN	129	MAPLE	6"	REMOVE	209	SASSAFRAS	8"	REMOVE	289	CEDAR	8"	REMAIN
50	MAPLE	6" TWIN	REMAIN	130	MAPLE	8"	REMOVE	210	SASSAFRAS	6"	REMOVE	290	COTTONWOOD	8" MULTIPLE	REMOVE
51	MAPLE	20" TWIN	REMAIN	131	MAPLE	12" 10"	REMOVE	211	SASSAFRAS	8"	REMOVE	291	PINE	28"	REMAIN
52	MAPLE	12"	REMAIN	132	MAPLE	12"	REMOVE	212	SASSAFRAS	10"	REMOVE	292	WILLOW	6" MULTIPLE	REMAIN
53	MAPLE	10" MULTIPLE	REMAIN	133	MAPLE	6" MULTIPLE	REMOVE	213	SASSAFRAS	8"	REMOVE	293	MAPLE	12"	REMAIN
54	CHERRY	12"	REMAIN	134	MAPLE	10"	REMOVE	214	SASSAFRAS	8"	REMOVE	294	MAPLE	12"	REMAIN
55	OAK	12"	REMAIN	135	MAPLE	16"	REMOVE	215	SASSAFRAS	8"	REMOVE	295	MAPLE	10"	REMOVE
56	MAPLE	12" 10"	REMAIN	136	MAPLE	10"	REMOVE	216	SASSAFRAS	8"	REMOVE	296	MAPLE	10"	REMAIN
57	OAK	6"	REMAIN	137	MAPLE	6"	REMOVE	217	SASSAFRAS	6"	REMOVE	297	MAPLE	8"	REMAIN
58	MAPLE	6"	REMAIN	138	MAPLE	6" TWIN	REMOVE	218	OAK	28"	REMOVE	298	MAPLE	12"	REMOVE
59	MAPLE	12"	REMAIN	139	MAPLE	12"	REMOVE	219	SASSAFRAS	6"	REMOVE	299	MAPLE	10"	REMAIN
60	MAPLE	12" 6" 6"	REMAIN	140	MAPLE	6"	REMAIN	220	PINE	10"	REMOVE	300	MAPLE	8"	REMAIN
61	MAPLE	8" 6"	REMOVE	141	MAPLE	8"	REMAIN	221	OAK	22" 18"	REMOVE	301	MAPLE	8"	REMOVE
62	MAPLE	6"	REMOVE	142	MAPLE	6"	REMAIN	222	OAK	28"	REMOVE	302	MAPLE	8"	REMAIN
63	OAK	16"	REMAIN	143	MAPLE	8"	REMAIN	223	DECIDUOUS	8"	REMOVE	303	MAPLE	18"	REMOVE
64	OAK	24"	REMAIN	144	MAPLE	10"	REMOVE	224	DECIDUOUS	6"	REMOVE	304	MAPLE	14"	REMAIN
65	OAK	6"	REMAIN	145	MAPLE	8"	REMOVE	225	DECIDUOUS	14"	REMOVE	305	BIRCH	8"	REMAIN
66	OAK	14"	REMAIN	146	MAPLE	6"	REMAIN	226	DECIDUOUS	10"	REMOVE	306	MAPLE	16"	REMAIN
67	OAK	12"	REMAIN	147	MAPLE	6"	REMAIN	227	DECIDUOUS	6" TWIN	REMOVE	307	OAK	18"	REMAIN
68	OAK	12"	REMAIN	148	MAPLE	6"	REMAIN	228	OAK	10"	REMOVE	308	MAPLE	16"	REMAIN
69	MAPLE	6" TWIN	REMAIN	149	MAPLE	8"	REMAIN	229	DECIDUOUS	10"	REMOVE	309	OAK	18"	REMAIN
70	OAK	12"	REMAIN	150	MAPLE	8"	REMAIN	230	DECIDUOUS	10"	REMOVE	310	OAK	20"	REMAIN
71	MAPLE	6"	REMOVE	151	MAPLE	10"	REMAIN	231	SASSAFRAS	8"	REMOVE	311	MAPLE	10"	REMAIN
72	MAPLE	8"	REMOVE	152	MAPLE	8"	REMAIN	232	SASSAFRAS	10"	REMOVE	312	MAPLE	12"	REMAIN
73	MAPLE	8" MULTIPLE	REMOVE	153	MAPLE	8"	REMAIN	233	SASSAFRAS	8"	REMOVE	313	CHERRY	12"	REMAIN
74	MAPLE	12" 10" 8" 6"	REMOVE	154	MAPLE	6"	REMAIN	234	SASSAFRAS	10"	REMOVE	314	CHERRY	10" TRIPLE	REMAIN
75	OAK	12"	REMOVE	155	MAPLE	16"MULTIPLE	REMOVE	235	SASSAFRAS	6" TWIN	REMOVE	315	CHERRY	10"	REMAIN
76	MAPLE	6" MULTIPLE	REMOVE	156	MAPLE	12"	REMOVE	236	SASSAFRAS	6"	REMOVE	316	CHERRY	10"	REMAIN
77	OAK	18"	REMOVE	157	MAPLE	12"	REMOVE	237	SASSAFRAS	6"	REMOVE	317	OAK	28"	REMAIN
78	OAK	8"	REMOVE	158	MAPLE	8" 6" 6"	REMOVE	238	CHERRY	12"	REMOVE				
79	MAPLE	8"	REMOVE	159	MAPLE	6"	REMOVE	239	SASSAFRAS	8"	REMOVE				
80	OAK	18"	REMOVE	160	MAPLE	6"	REMAIN	240	SASSAFRAS	10"	REMOVE				

TOTAL NUMBER OF TREES TO BE REMOVED = 235

No.	Revision	Date	By
1.	REVISED PER TOWN COMMENTS	01/25/2021	PD

Previous Editions Obsolete

APPLICANT/OWNER:
A & R REAL ESTATE HOLDINGS, LLC
100 BUSINESS PARK DRIVE
ARMONK, NY 10504

ARCHITECT:
J GROUP DESIGNS, LLC
63 EAST MAIN STREET
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JMC

SITE DEMOLITION & TREE REMOVAL PLAN

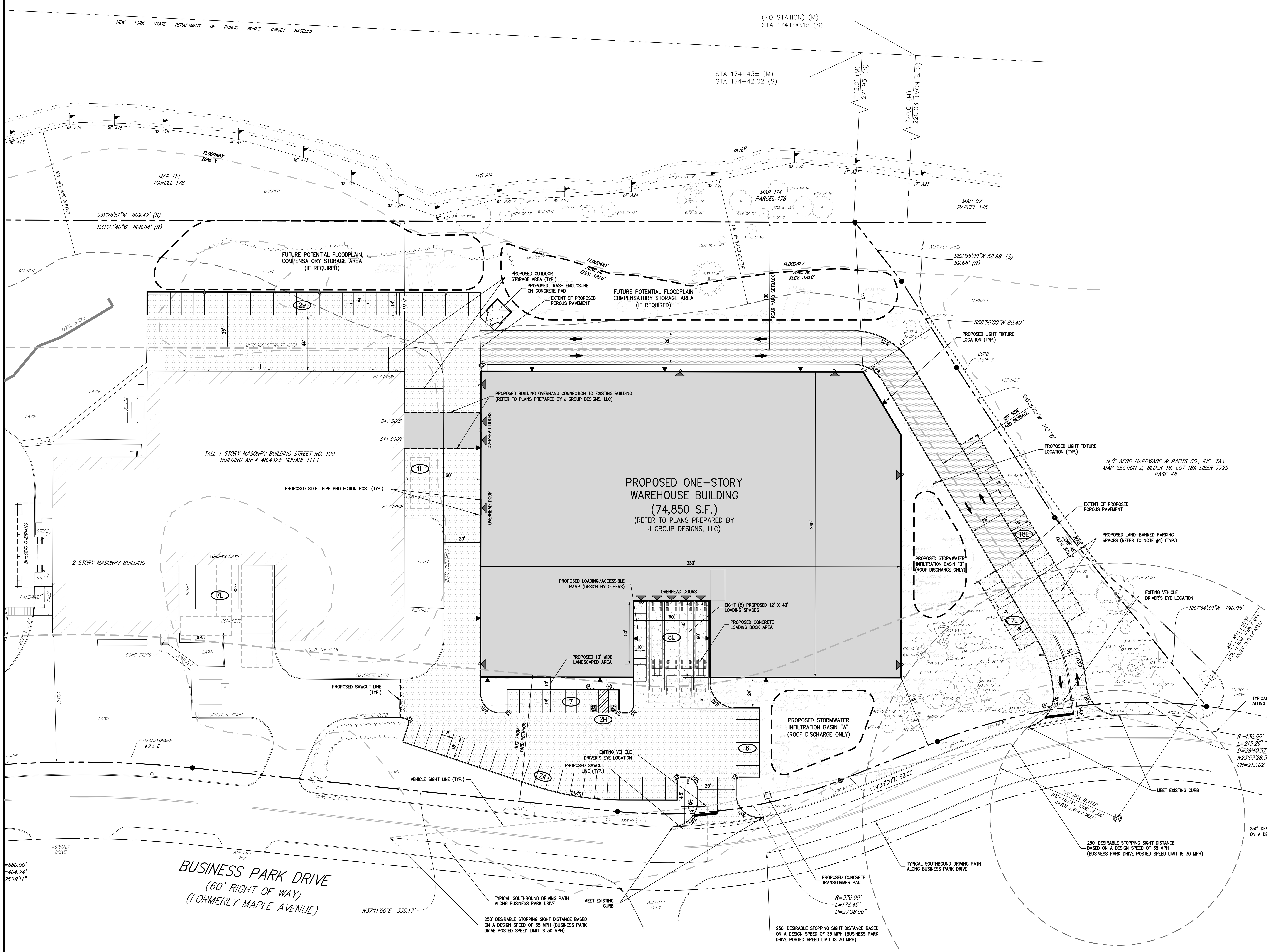
PROPOSED WAREHOUSE
100 BUSINESS PARK DRIVE
TOWN OF NORTH CASTLE, NEW YORK

STATE OF NEW YORK · DAVID P. LOMBARDI · 071001 · LICENSED PROFESSIONAL ENGINEER

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

Drawn:	NC	Approved:	DL
Scale:	1" = 30'		
Date:	03/23/2020		
Project No:	19124		
19124–SITE	DEMO	EXIST.scr	
Drawing No:	C–020		

INTERSTATE ROUTE 684



SIGN TABLE

DESIGNATION NUMBER	SIGN	SIZE	DESCRIPTION	MOUNTING TYPE	MOUNTING HEIGHT	REGULATORY	REFLECTORIZED
A	STOP	30"X30"	WHITE ON RED	STEEL CHANNEL	7'-0"	R1-1	X
B	RESERVED PARKING	12"X18"	GREEN & BLUE ON WHITE	STEEL CHANNEL	7'-0"	R7-8	X

LEGEND

- EXISTING PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING SETBACK LINE
- EXISTING EASEMENT LINE
- EXISTING WETLAND LINE AND DELINEATION
- EXISTING BUILDING OVERHANG
- EXISTING BUILDING LINE
- EXISTING PAVEMENT EDGE
- EXISTING CURB LINE
- EXISTING STONE WALL
- EXISTING RETAINING WALL
- EXISTING GUIDE RAIL
- EXISTING FENCE
- EXISTING TREE AND DESIGNATION
- EXISTING TREE LINE
- EXISTING DIRECTIONAL ARROWS
- EXISTING PAINT
- EXISTING PARKING WITH NUMBER OF SPACES
- EXISTING ACCESSIBLE PARKING WITH NUMBER OF SPACES
- EXISTING PEDESTRIAN CROSSING
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING SIGN
- PROPOSED BUILDING LINE
- PROPOSED BUILDING OVERHANG
- PROPOSED CONCRETE CURB
- PROPOSED PARKING SPACES WITH NUMBER OF SPACES INDICATED (REFER TO STRIPING DETAILS)
- PROPOSED ACCESSIBLE PARKING SPACES WITH NUMBER OF SPACES INDICATED (REFER TO STRIPING DETAILS)
- PROPOSED LAND-BANKED PARKING SPACES WITH NUMBER OF SPACES INDICATED (REFER TO STRIPING DETAILS)
- PROPOSED HEAVY DUTY PAVEMENT
- PROPOSED POROUS PAVEMENT
- PROPOSED CONCRETE
- PROPOSED SAWCUT LINE
- PROPOSED 12" WIDE WHITE STOP LINE
- TRAFFIC SIGN LOCATION & DESIGNATION
- STEEL PIPE PROTECTION POST
- PROPOSED ARROW MARKING ON PAVEMENT
- PROPOSED LIGHT FIXTURES
- PROPOSED DOOR LOCATION

NOTES:

1. EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY TITLED, "TOPOGRAPHIC AND UTILITY SURVEY," PREPARED BY JMC, PLLC, DATED NOVEMBER 26, 2019.
2. THE WETLAND LIMITS DEPICTED ON THIS PLAN HAVE BEEN FIELD DELINEATED BY ECOLOGICAL SOLUTIONS, LLC ON 10/17/2019.
3. 100 YEAR FLOOD PLAIN ELEVATION 370 PER FEMA NATIONAL FLOOD HAZARD MAP, PANEL #36119C0277F EFFECTIVE 09/28/2007.
4. IN ALL CASES, IT SHALL BE EXPRESSLY DEMONSTRATED ON THE SITE PLAN THAT SUFFICIENT SPACE REMAINS FOR THE PROVISION OF THE TOTAL AMOUNT OF OFF-STREET PARKING REQUIRED, AND THE SITE PLAN SHALL BEAR SUCH DESIGNATION. ALL SUCH UNDEVELOPED PARKING SPACE SHALL BE USED AND MAINTAINED AS ADDITIONAL LANDSCAPED GROUNDS UNTIL REQUIRED FOR PARKING. IN THE EVENT THAT CONSTRUCTION OF THE LAND BANKED SPACES IS DEEMED NECESSARY BY THE TOWN, THE APPLICANT SHALL GUARANTEE THE EVENTUAL IMPROVEMENT OF ANY SUCH SPACES WHICH MAY HAVE BEEN WAIVED. SUCH SPACES MUST BE CONSTRUCTED WITHIN SIX MONTHS OF THE DATE OF WRITTEN NOTICE TO THE PROPERTY OWNER BY THE PLANNING BOARD THAT SUCH SPACES HAVE BEEN DETERMINED AS NECESSARY.

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1.	REVISED PER TOWN COMMENTS	01/25/2021	PD

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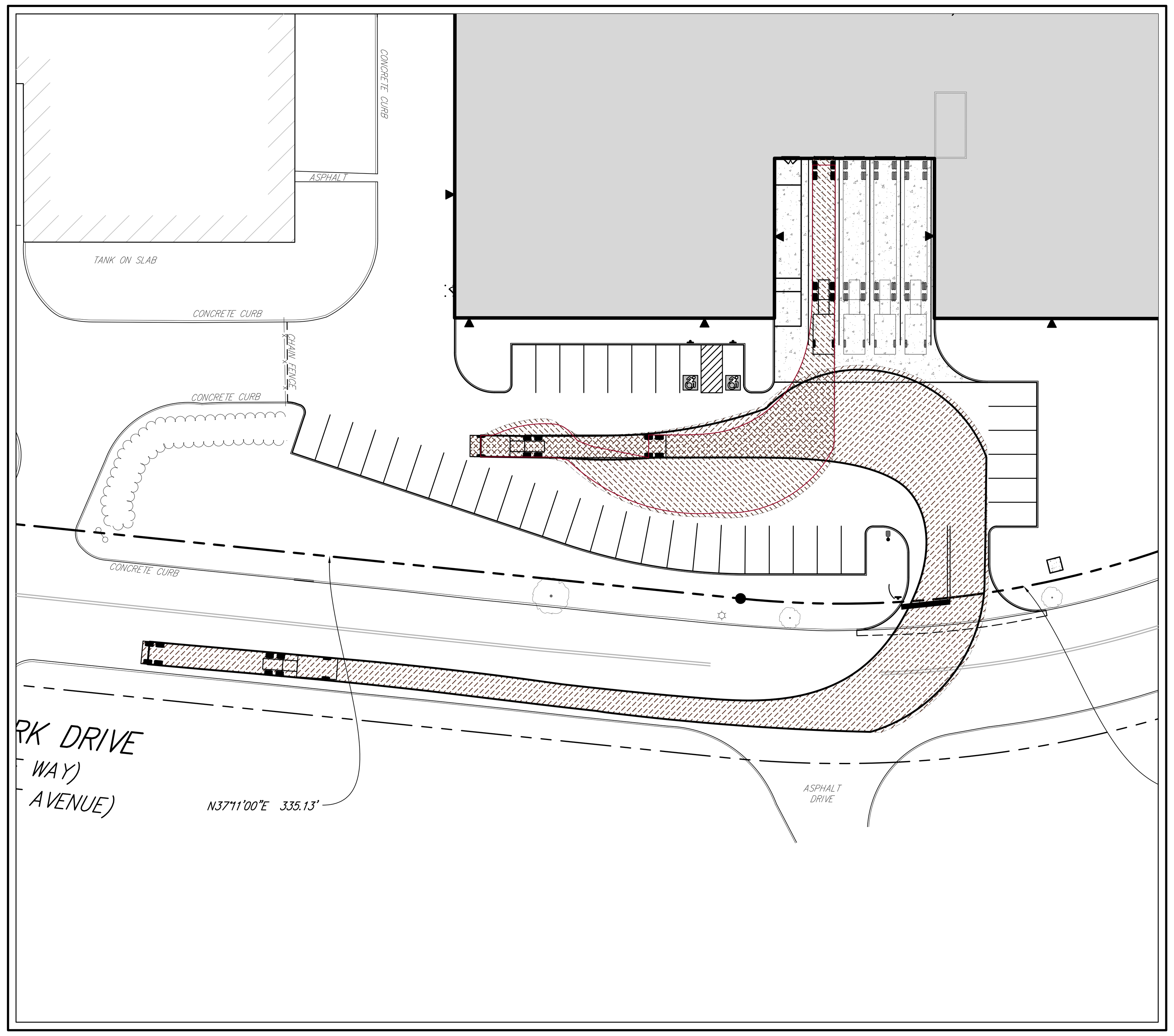
SITE LAYOUT PLAN

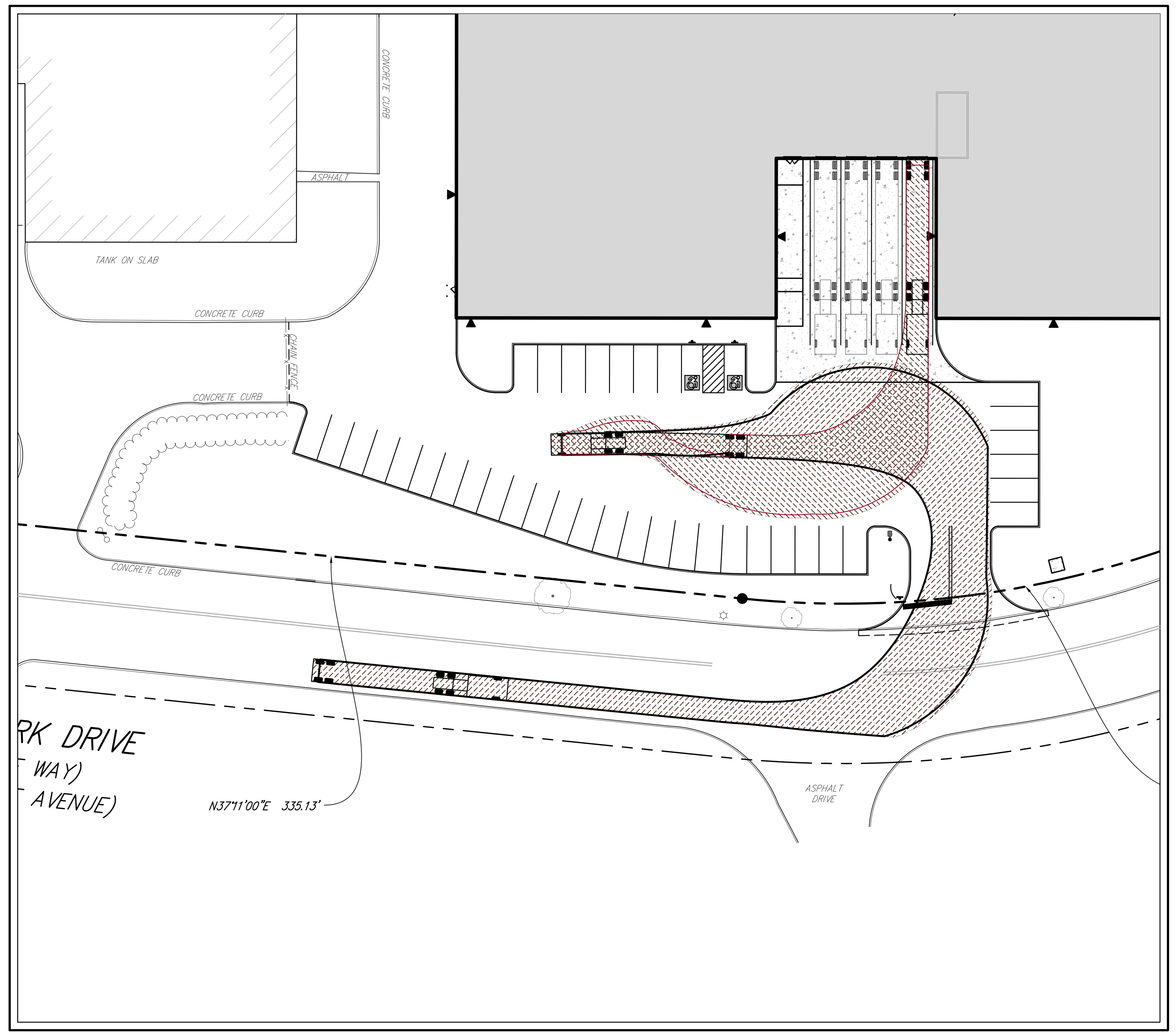
PROPOSED WAREHOUSE
100 BUSINESS PARK DRIVE
TOWN OF NORTH CASTLE, NEW YORK

STATE OF NEW YORK
DAVID P. LOMBARDI
071001
LICENSED PROFESSIONAL ENGINEER

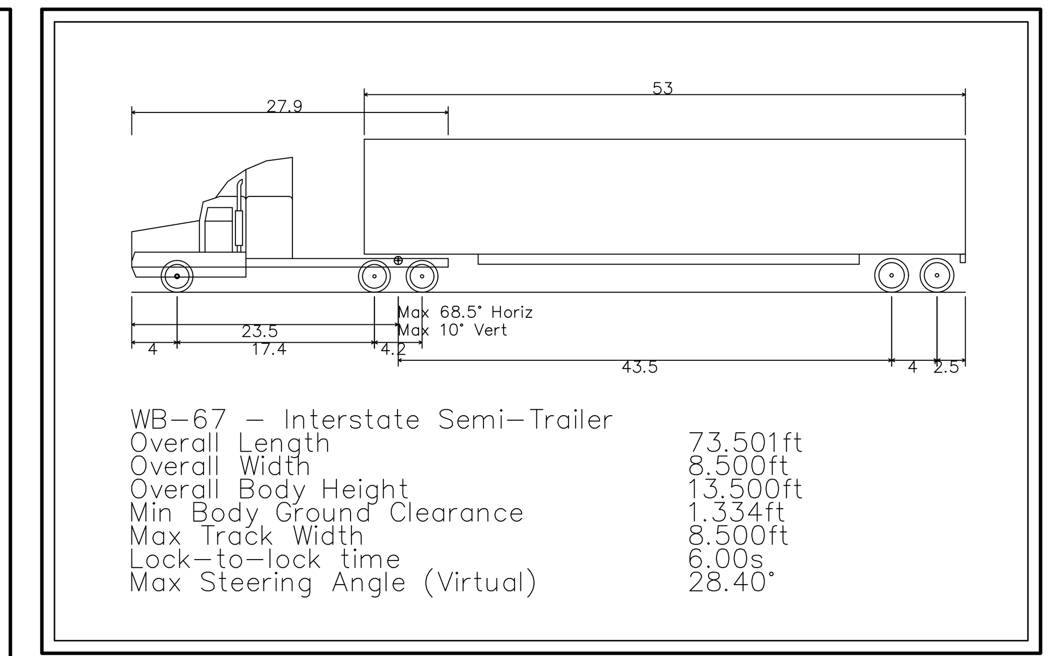
Drawn:	NC	Approved:	DL
Scale:	1" = 30'		
Date:	03/23/2020		
Project No:	19124		
19124-SITE	LAY	LAY.scr	
Drawing No:	C-100		



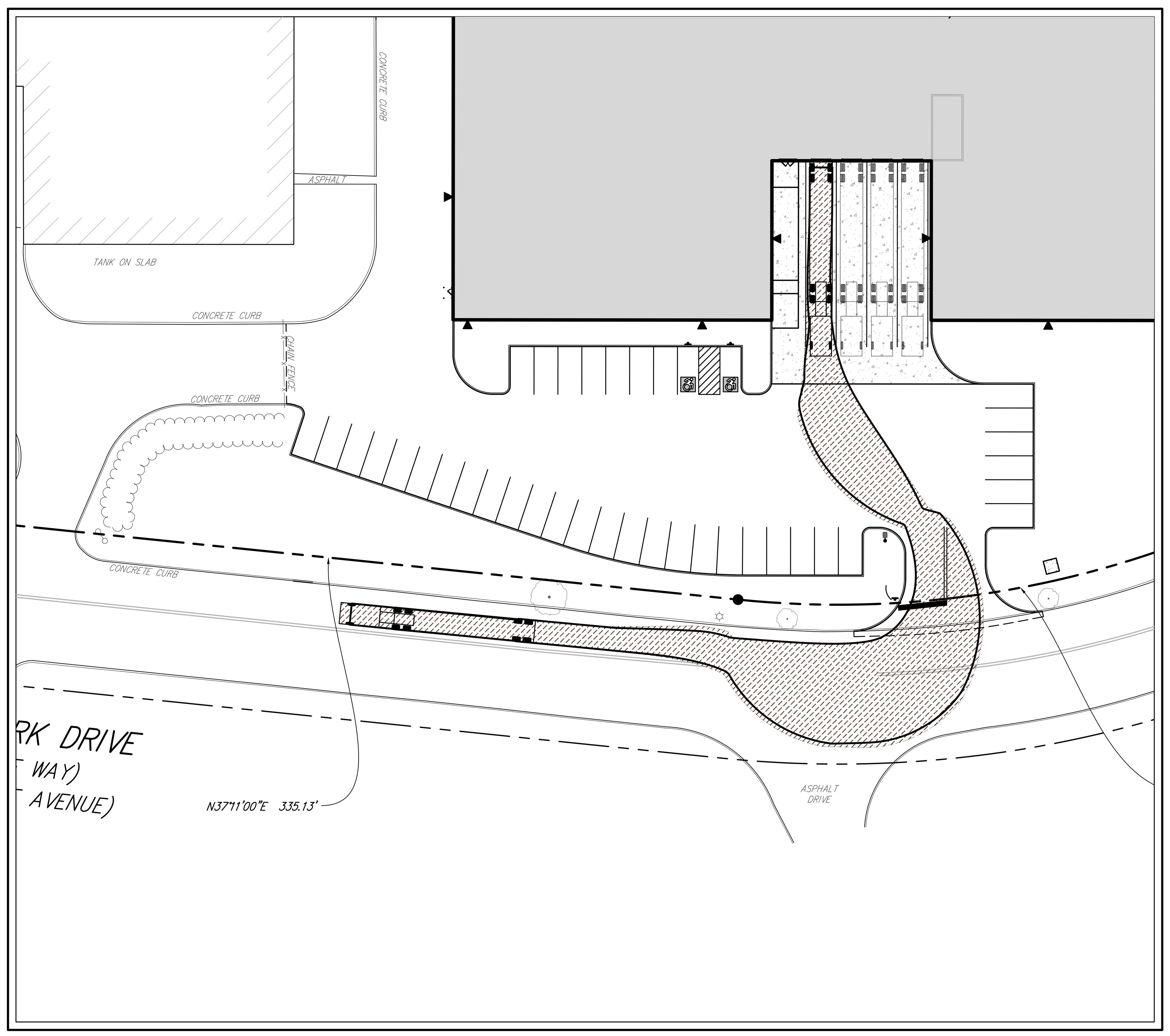
NORTHERNMOST LOADING DOCK
WB-67 ENTERING MOVEMENT



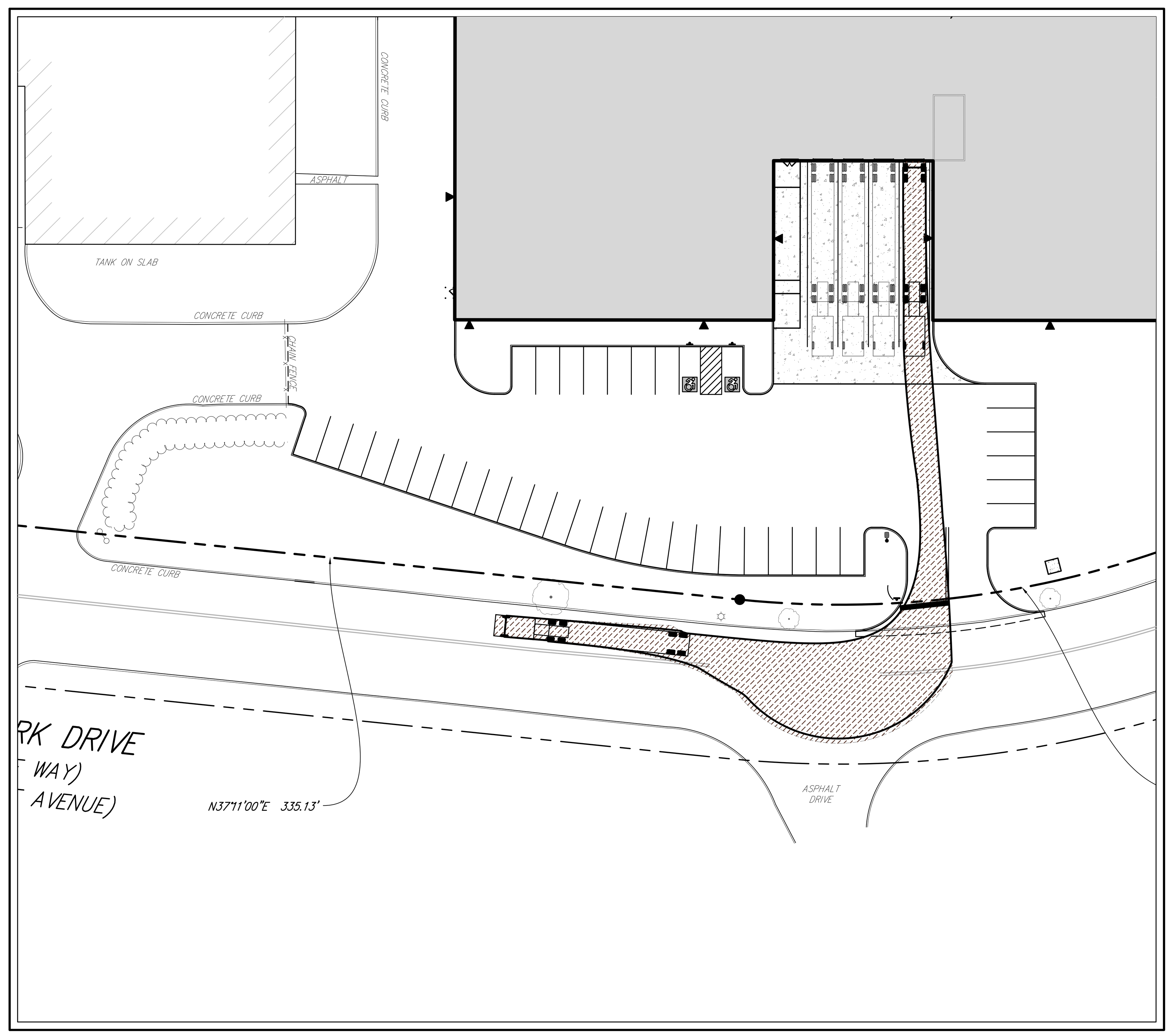
SOUTHERNMOST LOADING DOCK
WB-67 ENTERING MOVEMENT



WB-67 PROFILE
SCALE: N.T.S.



NORTHERNMOST LOADING DOCK
WB-67 EXITING MOVEMENT



SOUTHERNMOST LOADING DOCK
WB-67 EXITING MOVEMENT

No.	Revision	Date	By

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JMC

TRUCK TURNING ANALYSES

PROPOSED WAREHOUSE
100 BUSINESS PARK DRIVE
TOWN OF NORTH CASTLE, NEW YORK

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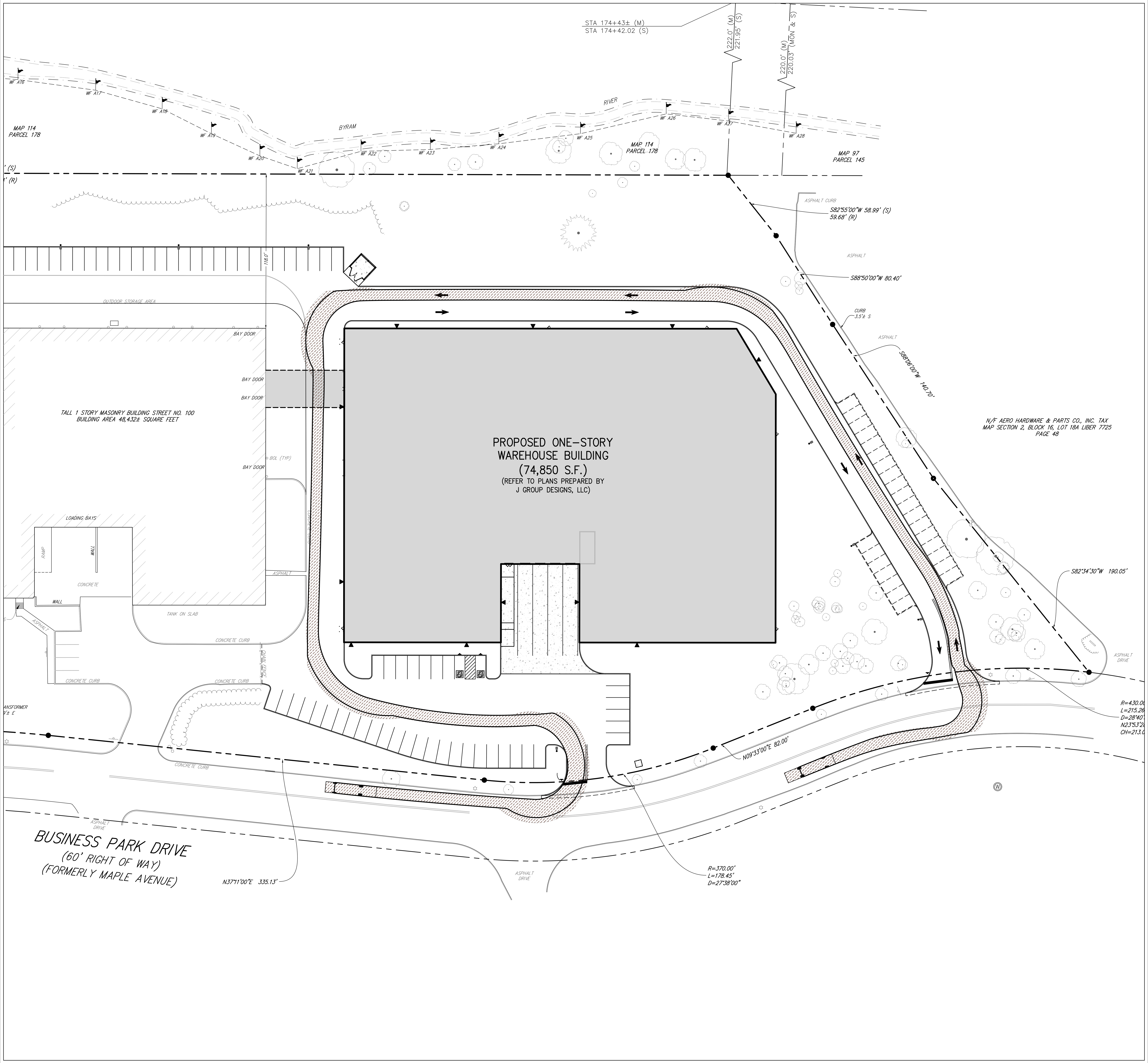
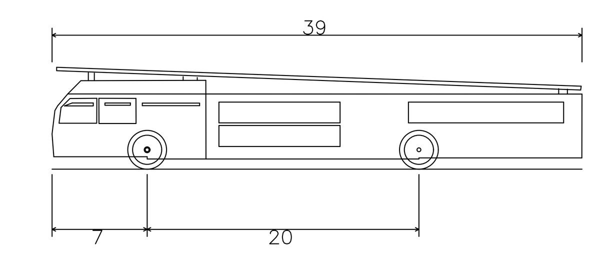
STATE OF NEW YORK
DAVID P. LOMBARDI
LICENSED PROFESSIONAL ENGINEER
071001

Drawn: NC	Approved: DL
Scale: 1" = 30'	
Date: 01/25/2021	
Project No: 19124	
19124-SITE	TRUCK	LAY.dwg
Drawing No:	C-110

NOT FOR CONSTRUCTION



FIRE APPARATUS CIRCULATING MOVEMENT



Aerial Fire Truck	
Overall Length	39.000ft
Overall Width	8.167ft
Overall Body Height	7.500ft
Min Body Ground Clearance	0.750ft
Track Width	8.167ft
Lock-to-lock time	5.00s
Max Wheel Angle	45.00°

FIRE APPARATUS PROFILE

SCALE: N.T.S.

No. | Revision | Date | By

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FIRE APPARATUS TURNING ANALYSIS

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100 BUSINESS PARK DRIVE
TOWN OF NORTH CASTLE, NEW YORK

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

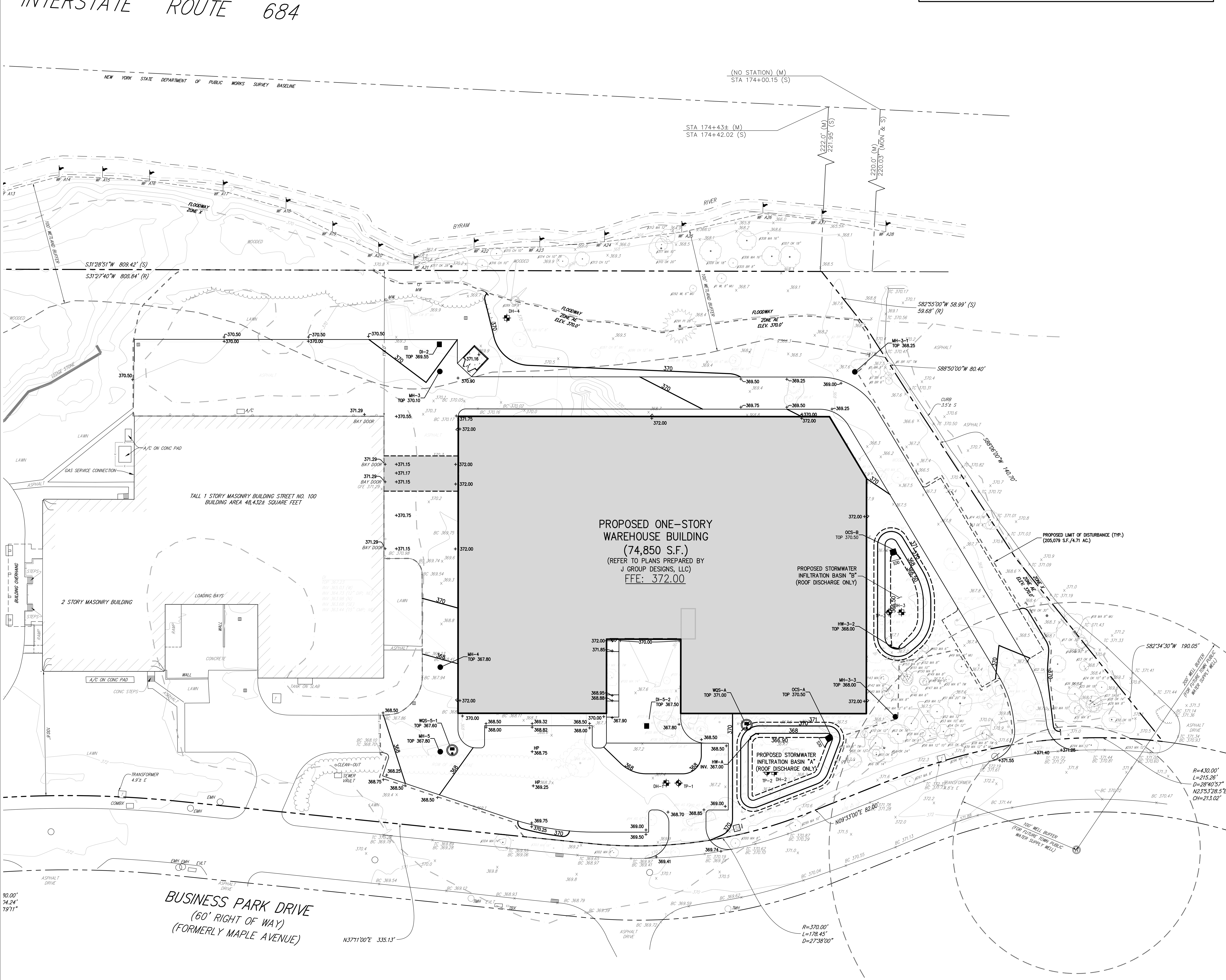
STATE OF NEW YORK
DAVID P. LOMBARDI
071001
LICENSED PROFESSIONAL ENGINEER

Drawn:	NC	Approved:	DL
Scale:	1" = 30'		
Date:	01/25/2021		
Project No:	19124		
19124-SITE	FIRE	LAY.scr	
Drawing No:	C-120		

NOT FOR CONSTRUCTION

DEEP HOLE TEST SUMMARY TABLE

TEST LOCATION	EXISTING GROUND ELEVATION	DEPTH TO GROUNDWATER	GROUNDWATER ELEVATION
DH-1/TP-1	367.40	3.5'	363.90
DH-2/TP-2	367.35	3.5'	363.85
DH-3/TP-3	367.00	5.5'	361.50
DH-4	367.00	6.5'	360.50



LEGEND

- EXISTING PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING EASEMENT LINE
- EXISTING WETLAND LINE AND DELINEATION
- EXISTING WETLAND BUFFER
- EXISTING BUILDING OVERHANG
- EXISTING BUILDING LINE
- EXISTING PAVEMENT EDGE
- EXISTING CURB LINE
- EXISTING CONTOUR
- EXISTING INDEX CONTOUR
- EXISTING SPOT GRADE
- EXISTING STONE WALL
- EXISTING RETAINING WALL
- EXISTING GUIDE RAIL
- EXISTING FENCE
- EXISTING DRAIN INLET
- EXISTING MANHOLE
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING SIGN
- PROPOSED BUILDING LINE
- PROPOSED CONCRETE CURB
- PROPOSED FINISHED GRADE
- PROPOSED SPOT GRADE
- MH PROPOSED STORM DRAIN MANHOLE
- DI PROPOSED TYPE DI DRAIN INLET
- DP-2 BORING LOCATION AND DESIGNATION
- PROPOSED LIMIT OF DISTURBANCE

NOTES:

1. EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY TITLED, "TOPOGRAPHIC AND UTILITY SURVEY," PREPARED BY JMC, PLLC, DATED NOVEMBER 26, 2019.
2. GEOTECHNICAL BORING/TEST PIT LOCATIONS DEPICTED ON THIS PLAN WERE TAKEN FROM A FIELD INVESTIGATION CONDUCTED BY JMC, PLLC ON 11/15/2019.
3. THE WETLAND LIMITS DEPICTED ON THIS PLAN HAVE BEEN FIELD DELINEATED BY ECOLOGICAL SOLUTIONS, LLC ON 10/17/2019.
4. 100 YEAR FLOOD PLAIN ELEVATION 370 PER FEMA NATIONAL FLOOD HAZARD MAP, PANEL #36119C0277F EFFECTIVE 09/28/2007.
5. ALL STORMWATER MANAGEMENT PRACTICES SHALL REMAIN UNDISTURBED AND BE PROTECTED FROM HEAVY MACHINERY TRAFFIC DURING CONSTRUCTION. HOWEVER DURING CONSTRUCTION OF THE PRACTICE THE CONTRACTOR SHALL MINIMIZE AND AVOID HEAVY MACHINERY TRAFFIC TO THE MAXIMUM EXTENT PRACTICABLE. THERE SHALL BE NO STORAGE OF MATERIALS WITHIN AREAS TO BE USED FOR STORMWATER MANAGEMENT PRACTICES. THE CONTRACTOR SHALL INSTALL CONSTRUCTION FENCE AROUND THE PRACTICE TO DISCOURAGE VEHICLE TRAFFIC.
6. ALL FILLS SHALL BE COMPACTED TO PROVIDE STABILITY OF MATERIAL AND TO PREVENT SETTLEMENT.
7. EXCAVATIONS AND FILLS SHALL NOT ENDANGER ADJOINING PROPERTIES, NOR DIVERT WATER ONTO THE PROPERTY OF OTHERS AT ANY TIME DURING THE COURSE OF CONSTRUCTION.
8. CONTRACTOR SHALL REFER TO EROSION AND SEDIMENT CONTROL PLAN FOR FURTHER DIRECTION REGARDING SITE STABILIZATION THROUGHOUT THE COURSE OF CONSTRUCTION.

LIMIT OF DISTURBANCE BREAKDOWN

TOTAL LOT AREA = 11.26 ACRES

PROPOSED DISTURBANCE AREA = 4.71 ACRES

PROPOSED DISTURBANCE AREA WITHIN TOWN-REGULATED 100' WETLAND BUFFER = 0.61 ACRES

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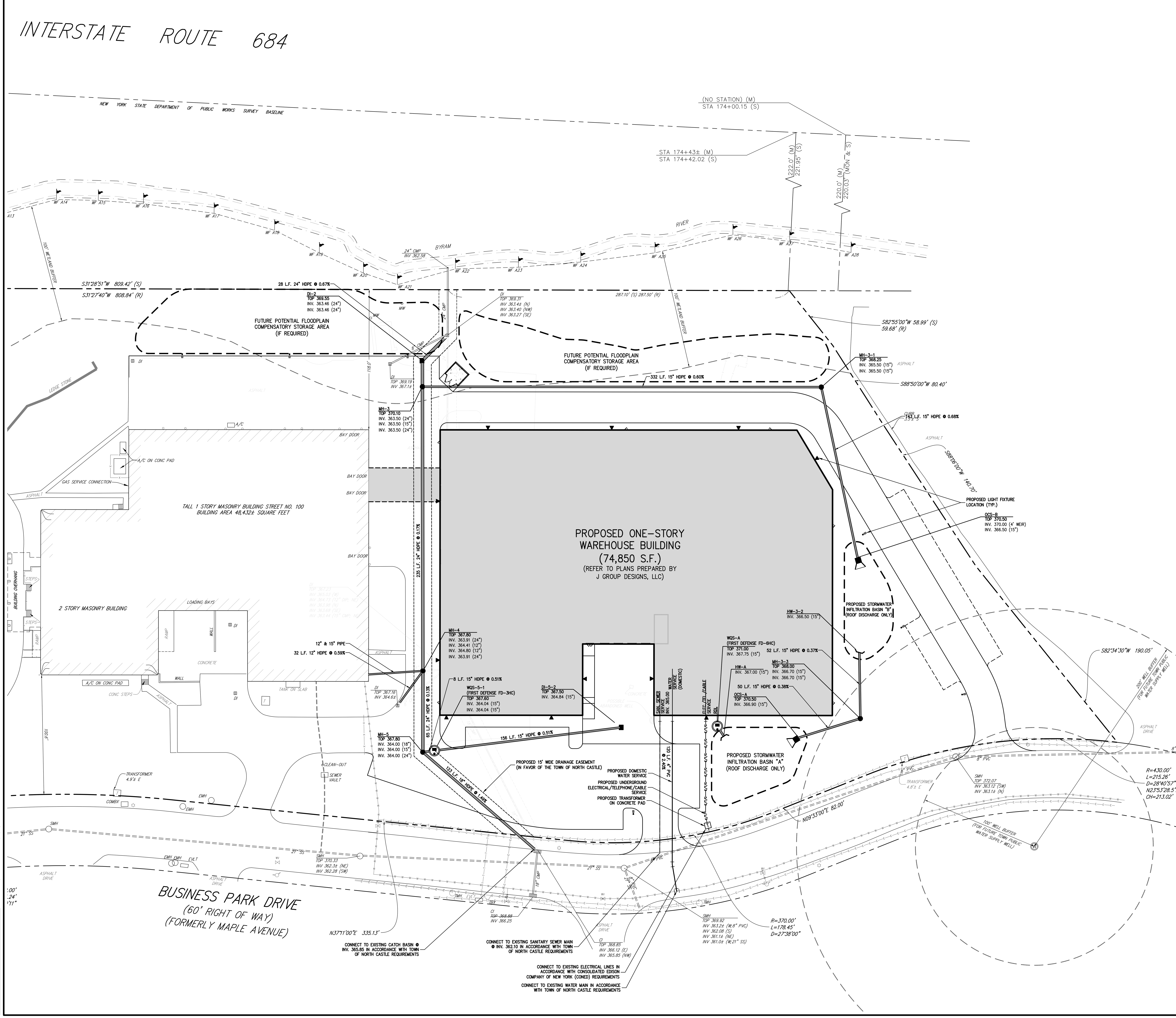
SITE GRADING PLAN

PROPOSED WAREHOUSE
100 BUSINESS PARK DRIVE
TOWN OF NORTH CASTLE, NEW YORK

STATE OF NEW YORK · DAVID P. LOMBARDI · 071001 · LICENSED PROFESSIONAL ENGINEER

Drawn: NC	Approved: DL
Scale: 1" = 30'	
Date: 03/23/2020	
Project No: 19124	
19124-SITE	GRAD / GRAD.scr
Drawing No: C-200	



LEGEND

— — — —	EXISTING PROPERTY LINE
— — — —	ADJACENT PROPERTY LINE
- - - - -	EXISTING EASEMENT LINE
	EXISTING WETLAND LINE AND DELINEATION
	EXISTING WETLAND BUFFER
	EXISTING BUILDING OVERHANG
	EXISTING BUILDING LINE
	EXISTING PAVEMENT EDGE
	EXISTING CURB LINE
	EXISTING STONE WALL
	EXISTING RETAINING WALL
	EXISTING GUIDE RAIL
—x—x—x—x—	EXISTING FENCE
36" RCP	EXISTING STORM DRAIN LINE AND SIZE
8" SAN	EXISTING SANITARY LINE AND SIZE
—W—W—W—W—	EXISTING WATER LINE
—G—G—G—G—	EXISTING GAS LINE
—OHW—OHW—OHW—	EXISTING OVERHEAD WIRES
	EXISTING DRAIN INLET
	EXISTING MANHOLE
	EXISTING FIRE HYDRANT
GV	EXISTING GAS VALVE
WV	EXISTING WATER VALVE
	EXISTING UTILITY POLE
	EXISTING LIGHT POLE
	EXISTING SIGN
	PROPOSED BUILDING LINE
	PROPOSED CONCRETE CURB
	PROPOSED EASEMENT
MH	PROPOSED STORM DRAIN MANHOLE
DI	PROPOSED TYPE DI DRAIN INLET
24" HDPE	PROPOSED STORM DRAIN LINE & SIZE
4" PVC	PROPOSED SANITARY SEWER LINE & SIZE
	PROPOSED WATER LINE & SIZE
—E/T/C—E/T/C—E/T/C—	PROPOSED ELECTRIC/TELEPHONE/CABLE LINE
	PROPOSED LIGHT FIXTURES

NOTES:

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2. THE WETLAND LIMITS DEPICTED ON THIS PLAN HAVE BEEN FIELD DELINEATED BY ECOLOGICAL SOLUTIONS, LLC ON 10/17/2019.
3. 100 YEAR FLOOD PLAIN ELEVATION 370 PER FEMA NATIONAL FLOOD HAZARD MAP, PANEL #36119C0277F EFFECTIVE 09/28/2007.
4. ALL STORMWATER MANAGEMENT PRACTICES SHALL REMAIN UNDISTURBED AND BE PROTECTED FROM HEAVY MACHINERY TRAFFIC DURING CONSTRUCTION. HOWEVER DURING CONSTRUCTION OF THE PRACTICE THE CONTRACTOR SHALL MINIMIZE AND AVOID HEAVY MACHINERY TRAFFIC TO THE MAXIMUM EXTENT PRACTICABLE. THERE SHALL BE NO STORAGE OF MATERIALS WITHIN AREAS TO BE USED FOR STORMWATER MANAGEMENT PRACTICES. THE CONTRACTOR SHALL INSTALL CONSTRUCTION FENCE AROUND THE PRACTICE TO DISCOURAGE VEHICLE TRAFFIC.
5. UNLESS OTHERWISE SPECIFIED, PIPE FOR STORM DRAINS SHALL BE HIGH DENSITY POLYETHYLENE PIPE (HDPE) WITH A SMOOTH INTERIOR AND ANNULAR EXTERIOR CORRUGATIONS IN ACCORDANCE WITH ASTM F-2648. JOINTS SHALL BE WATERTIGHT IN ACCORDANCE WITH ASTM D-3212.
6. UNLESS OTHERWISE SPECIFIED, PIPE FOR SANITARY SEWER GRAVITY LINES SHALL BE DUCTILE IRON PIPE (DIP), CLASS 52, WITH PUSH-ON JOINTS IN ACCORDANCE WITH AWWA C-150, C-151 AND C-111.
7. UNLESS OTHERWISE SPECIFIED, PIPE FOR WATER LINES SHALL BE K-TYPE COPPER.
8. ELECTRIC, TELEPHONE, FIRE ALARM AND CABLE TELEVISION LINES SHALL BE INSTALLED UNDERGROUND IN CONDUIT IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY COMPANY HAVING JURISDICTION.
9. WELLS SERVING PUBLIC WATER SYSTEMS SHALL BE LOCATED SUCH THAT THE OWNER OF THE WATER SYSTEM POSSESSES LEGAL TITLE TO LANDS WITHIN 100' OF THE WELL AND THE OWNER CONTROLS BY OWNERSHIP, LEASE, EASEMENT OR OTHER LEGALLY ENFORCEABLE ARRANGEMENT THE LAND USE ACTIVITIES WITHIN 200' OF THE WELL. HYDROGEOLOGIC EVALUATIONS AND SOURCE WATER ASSESSMENTS SHOULD BE USED TO DETERMINE APPROPRIATE SEPARATION FROM POTENTIAL CONTAMINANT SOURCES.

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SITE UTILITIES PLAN

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STATE OF NEW YORK · DAVID P. LOMBARDI · 071001 · LICENSED PROFESSIONAL ENGINEER

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Project No: 19124	
19124-SITE	UTIL	UTIL.dwg
Drawing No: C-300	

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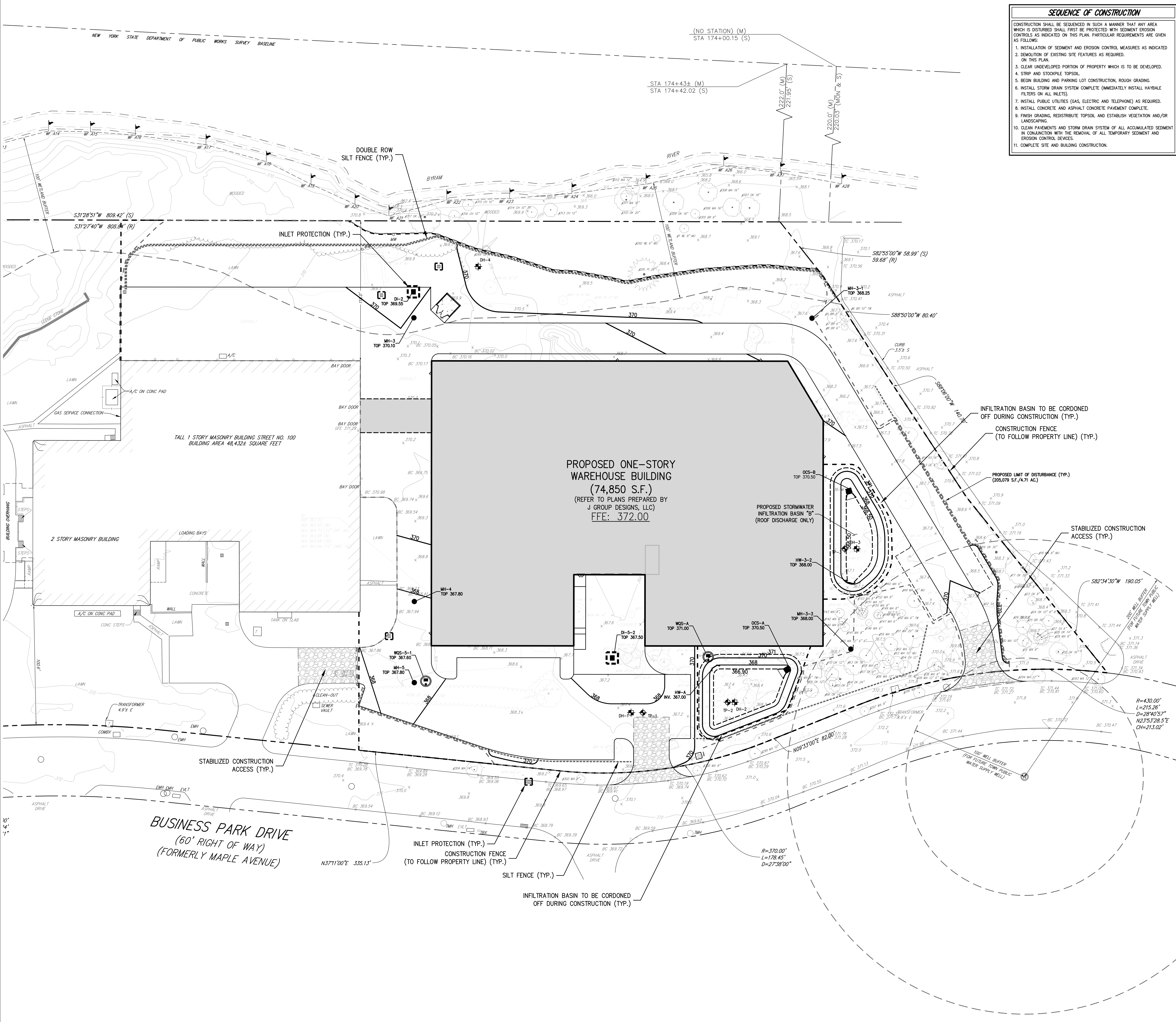

SEQUENCE OF CONSTRUCTION

CONSTRUCTION SHALL BE SEQUENCED IN SUCH A MANNER THAT ANY AREA WHICH IS DISTURBED SHALL FIRST BE PROTECTED WITH SEDIMENT EROSION CONTROLS AS INDICATED ON THIS PLAN. PARTICULAR REQUIREMENTS ARE GIVEN AS FOLLOWS:

1. INSTALLATION OF SEDIMENT AND EROSION CONTROL MEASURES AS INDICATED
2. DEMOLITION OF EXISTING SITE FEATURES AS REQUIRED. ON THIS PLAN.
3. CLEAR UNDEVELOPED PORTION OF PROPERTY WHICH IS TO BE DEVELOPED.
4. STRIP AND STOCKPILE TOPSOIL.
5. BEGIN BUILDING AND PARKING LOT CONSTRUCTION, ROUGH GRADING.
6. INSTALL STORM DRAIN SYSTEM COMPLETE (IMMEDIATELY INSTALL HAYBALE FILTERS ON ALL INLETS).
7. INSTALL PUBLIC UTILITIES (GAS, ELECTRIC AND TELEPHONE) AS REQUIRED.
8. INSTALL CONCRETE AND ASPHALT CONCRETE PAVEMENT COMPLETE.
9. FINISH GRADING, REDISTRIBUTE TOPSOIL AND ESTABLISH VEGETATION AND/OR LANDSCAPING.
10. CLEAN PAVEMENTS AND STORM DRAIN SYSTEM OF ALL ACCUMULATED SEDIMENT IN CONJUNCTION WITH THE REMOVAL OF ALL TEMPORARY SEDIMENT AND EROSION CONTROL DEVICES.
11. COMPLETE SITE AND BUILDING CONSTRUCTION.

LEGEND

PROPOSED INLET PROTECTION
PROPOSED CONSTRUCTION FENCE
PROPOSED SILT FENCE
PROPOSED BALE EROSION CHECKS
PROPOSED LIMIT OF DISTURBANCE
PROPOSED STABILIZED CONSTRUCTION ENTRANCE
PROPOSED STOCKPILE AREA

NOTES:

1. EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY TITLED, "TOPOGRAPHIC AND UTILITY SURVEY," PREPARED BY JMC, PLLC, DATED NOVEMBER 26, 2019.
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3. 100 YEAR FLOOD PLAIN ELEVATION 370 PER FEMA NATIONAL FLOOD HAZARD MAP, PANEL #36119C0277F EFFECTIVE 09/28/2007.
4. THIS PLAN IS FOR TEMPORARY EROSION AND SEDIMENT CONTROL INFORMATION ONLY.
5. PRIOR TO BEGINNING ANY CLEARING, GRUBBING OR EXCAVATION, ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH ALL THE PLANS AND SPECIFICATIONS. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED UNTIL THE SITE IS STABILIZED. FINAL STABILIZATION OF LANDSCAPED AREAS SHALL BE IN ACCORDANCE WITH THE LANDSCAPE PLAN.
6. THE CONTRACTOR SHALL INSPECT AND MAINTAIN ON-SITE EROSION AND SEDIMENT CONTROL MEASURES ON A DAILY BASIS. ALL COLLECTED SEDIMENT WITHIN SEDIMENT BARRIERS SHALL BE REMOVED PERIODICALLY AS REQUIRED TO MAINTAIN THE FUNCTION OF THE SEDIMENT BARRIERS. ALL SEDIMENT COLLECTED SHALL BE RESPREAD ON-SITE WITHIN STABILIZED AREAS AS DIRECTED BY THE OWNERS REPRESENTATIVE.
7. THE CONTRACTOR SHALL INSPECT DOWNSTREAM CONDITIONS FOR EVIDENCE OF SEDIMENTATION ON A WEEKLY BASIS, AFTER EACH RAINSTORM, AND AS MAY BE REQUIRED OR DIRECTED BY ALL APPLICABLE APPROVALS AND PERMITS. THE CONTRACTOR SHALL IMMEDIATELY PROVIDE A WRITTEN REPORT ON FINDINGS OF SEDIMENT IN DOWNSTREAM AREAS TO ALL AUTHORITIES HAVING JURISDICTION AND MAKE REPAIRS AS REQUIRED OR DIRECTED.
8. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED BY THE CONTRACTOR AS REQUIRED/WARRANTED BY FIELD CONDITIONS AND AS DIRECTED BY THE OWNERS REPRESENTATIVE, JMC, AND/OR ANY AUTHORITY HAVING JURISDICTION.
9. STOCKPILING OF CONSTRUCTION MATERIAL SHALL BE PLACED ON-SITE IN THE AREA DESIGNATED ON THIS PLAN OR AS APPROVED BY THE OWNERS REPRESENTATIVE. STOCKPILED EXCAVATED MATERIAL SHALL HAVE TWO ROWS OF SILT FENCE LOCATED AROUND ITS PERIMETER. ALL STOCKPILED MATERIAL SHALL BE MAINTAINED IN AN ORDERLY MANNER SO AS NOT TO IMPEDE ON PEDESTRIAN AND/OR VEHICULAR TRAFFIC CIRCULATION ROUTES.
7. DUST SHALL BE CONTROLLED BY SPRINKLING OR OTHER APPROVED METHODS AS NECESSARY, OR AS DIRECTED BY THE OWNERS REPRESENTATIVE.
8. ALL STORMWATER MANAGEMENT PRACTICES SHALL REMAIN UNDISTURBED AND BE PROTECTED FROM HEAVY MACHINERY TRAFFIC DURING CONSTRUCTION. HOWEVER DURING CONSTRUCTION OF THE PRACTICE THE CONTRACTOR SHALL MINIMIZE AND AVOID HEAVY MACHINERY TRAFFIC TO THE MAXIMUM EXTENT PRACTICABLE. THERE SHALL BE NO STORAGE OF MATERIALS WITHIN AREAS TO BE USED FOR STORMWATER MANAGEMENT PRACTICES. THE CONTRACTOR SHALL INSTALL CONSTRUCTION FENCE AROUND THE PRACTICE TO DISCOURAGE VEHICLE TRAFFIC.
9. ALL EXPOSED SLOPES AND GRADED/DISTURBED AREAS, THAT WILL NOT BE FURTHER DISTURBED WITHIN 14 CALENDAR DAYS (7 DAYS FOR CONSTRUCTION SITES THAT EITHER DIRECTLY DISCHARGE TO ONE OF THE 303(d) SEGMENTS LISTED IN APPENDIX E OF THE GENERAL PERMIT OR ARE LOCATED WITHIN ONE OF THE WATERSHEDS LISTED IN APPENDIX C OF THE GENERAL PERMIT), SHALL BE TEMPORARILY SEEDED WITHIN 24 HOURS OF DISTURBANCE, IN ACCORDANCE WITH THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) "EROSION AND SEDIMENT CONTROL GUIDELINES" AND THE ANSI A300 "BEST MANAGEMENT PRACTICES FOR TREE AND SHRUB PLANTING, TRANSPLANTING, MAINTENANCE AND CARE," PREPARED BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA), LATEST EDITIONS, AS FOLLOWS:
   A. SEED MIXTURE AND RATE OF APPLICATION:
      A.1. IN SPRING, SUMMER OR EARLY FALL, SEED THE AREA WITH RYEGRASS (ANNUAL OR PERENNIAL) AT 30 POUNDS PER ACRES (APPROXIMATELY 0.7 POUNDS/1000 SQUARE FEET OR USE 1 POUND/1000 SQUARE FEET).
      A.2. IN LATE FALL OR EARLY WINTER, SEED THE AREA WITH CERTIFIED 'AROOSTOOK' WINTER RYE (CEREAL RYE) AT 100 POUNDS PER ACRE (2.5 POUNDS/1000 SQUARE FEET).
   B. APPLICATION SHALL BE UNIFORM BY MECHANICAL OR HYDROSEED METHODS.
   C. MULCH ALL SEEDED AREAS WITH STRAW AT A RATE OF 2 TONS PER ACRE (90 POUNDS PER 1,000 SQUARE FEET) SUCH THAT THE MULCH FORMS A CONTINUOUS BLANKET.
3. ALL SEEDED AREAS SHALL BE FERTILIZED, RESEEDED, AND MULCHED AS NECESSARY TO MAINTAIN VIGOROUS, DENSE VEGETATIVE COVER.
4. TEMPORARY SEED MIXTURES SHALL NOT BE PLACED ON AREAS WHERE FINAL GRADE HAS BEEN ESTABLISHED AND TOPSOIL HAS BEEN PLACED UNLESS OTHERWISE DIRECTED BY THE PROJECT LANDSCAPE ARCHITECT.

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JMC

SITE EROSION & SEDIMENT CONTROL PLAN

PROPOSED WAREHOUSE
100 BUSINESS PARK DRIVE
TOWN OF NORTH CASTLE, NEW YORK

STATE OF NEW YORK
DAVID P. LOMBARDI
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LICENSED PROFESSIONAL ENGINEER

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19124-SITE	SE	SE.scr	

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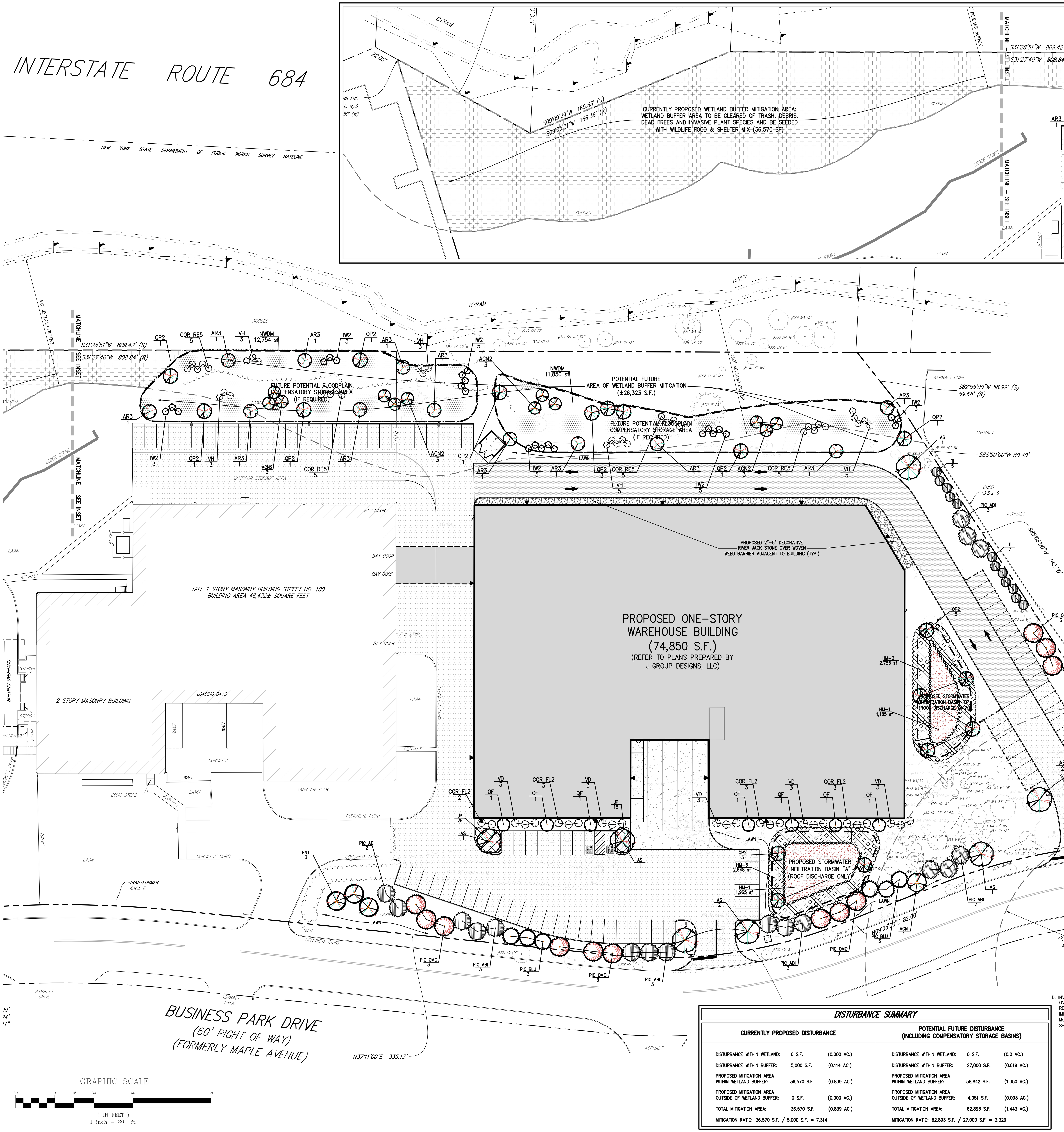
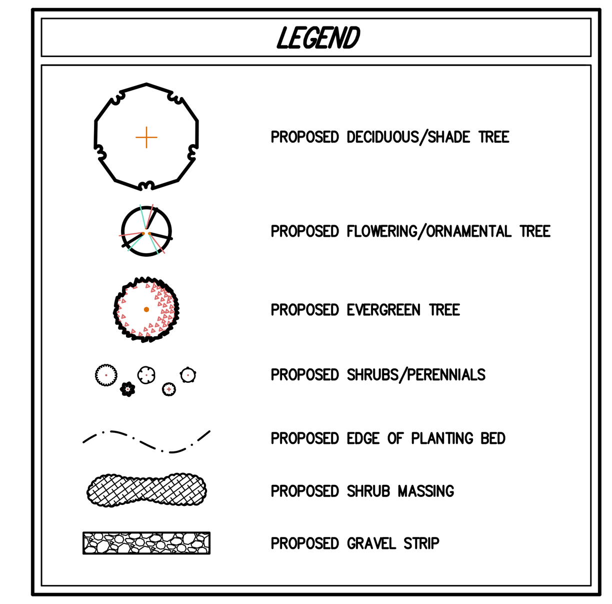


7. ALL PLANT MATERIAL STOCK SHALL BE WELL-BRANCHED AND WELL-FORMED, SOUND, VIGOROUS, HEALTHY, FREE FROM DISEASE, SUN-SCALE, WINDBURN, ABRASION, AND HARMFUL INSECTS OR INSECTS EGGS; AND SHALL HAVE HEALTHY, NORMAL UNBROKEN ROOT SYSTEMS. DECIDUOUS TREES AND SHRUBS SHALL BE SYMMETRICALLY DEVELOPED, OF UNIFORM HABIT OF GROWTH, WITH STRAIGHT TRUNKS OR STEMS, AND FREE FROM OBJECTIONABLE DISFIGUREMENTS. EVERGREEN TREES AND SHRUBS SHALL HAVE WELL-DEVELOPED SYMMETRICAL TOPS WITH TYPICAL SPREAD OF BRANCHES FOR EACH PARTICULAR SPECIES OR VARIETY. ONLY VINES AND GROUND COVER PLANTS WELL ESTABLISHED IN REMOVAL CONTAINERS, INTEGRAL CONTAINERS, OR FORMED HOMOGENEOUS SOIL SECTIONS SHALL BE USED.
8. PLANTS SHALL BE GROWN UNDER CLIMATIC CONDITIONS SIMILAR TO THOSE IN THE LOCALITY OF THE PROJECT. SOURCES OF ALL PLANT MATERIAL SHALL BE DISCLOSED TO PROJECT LANDSCAPE ARCHITECT AND OWNER PRIOR TO DELIVERY.
9. ALL PLANT MATERIAL SHALL BE BALLED AND BURLAPPED OR CONTAINER GROWN STOCK, AS SPECIFIED IN THE PLANT LIST. BAREROOT STOCK OF ANY KIND IS UNACCEPTABLE UNLESS SPECIFIED.
10. ALL LAWN AREAS (SOD OR SEED) SHALL RECEIVE A MINIMUM 6" THICK LAYER OF SCREENED TOPSOIL PRIOR TO INSTALLATION OF SOD OR SEED, UNLESS OTHERWISE SPECIFIED. TOPSOIL SHALL CONFORM TO THE PROJECT SPECIFICATIONS.
11. SOIL WITHIN ALL PLANTING BEDS SHALL BE PREPARED AS DIRECTED IN THE PLANTING DETAILS AND PROJECT SPECIFICATIONS PRIOR TO INSTALLATION OF PLANT MATERIALS.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL PLANT MATERIAL IN GOOD HEALTH UNTIL THE PROJECT LANDSCAPE ARCHITECT HAS PROVIDED WRITTEN ACCEPTANCE THAT THE PLANTINGS ARE COMPLETE AND IN CONFORMANCE WITH THE PLANS. THE CONTRACTOR SHALL GUARANTEE THE SURVIVAL OF THE PLANT MATERIAL FOR A PERIOD OF ONE YEAR AFTER ACCEPTANCE BY THE PROJECT LANDSCAPE ARCHITECT, UNLESS OTHERWISE AGREED TO WITH THE OWNER.
13. ALL AREAS DISTURBED OR DAMAGED DURING THE COURSE OF THE CONTRACTORS WORK SHALL BE REPAIRED OR RESTORED TO ORIGINAL OR CONSTRUCTED CONDITION AT NO ADDITIONAL COST TO OWNER.
14. FINAL LOCATION OF ALL PLANT MATERIALS SHALL BE SUBJECT TO APPROVAL BY PROJECT LANDSCAPE ARCHITECT. PROJECT LANDSCAPE ARCHITECT MAY ADJUST SPACING AND LOCATION IN FIELD PRIOR TO OR AFTER PLANTING.
15. CONTRACTOR SHALL IMMEDIATELY REPORT ANY UNSATISFACTORY SITE CONDITIONS TO THE OWNER IN WRITING. CONTRACTOR SHALL RECEIVE NO ADDITIONAL PAYMENT FOR ADDITIONAL WORK ASSOCIATED WITH THE UNSATISFACTORY CONDITIONS IF NOT PROPERLY REPORTED AND WITHOUT PRIOR WRITTEN APPROVAL OF THE OWNER.
16. ALL TREE AND SHRUB PLANTINGS INSTALLED ADJACENT TO PARKING AREAS SHALL BE SETBACK A MINIMUM OF 24" FROM EDGE OF THE PLANT TO EDGE OF PARKING AREA.
17. ALL PLANTINGS ADJACENT TO LAWN AREAS SHALL HAVE A 6" DEEP VERTICAL CUT EDGE ALONG THE OUTSIDE OF THE PLANTING BED.

LEGEND



NOTES:

1. ALL PLANT MATERIAL SPECIFIED ON THE DRAWINGS SHALL BE FIRST QUALITY NURSERY GROWN STOCK, CERTIFIED TRUE TO THEIR GENUS, SPECIES AND VARIETY, ALL OF WHICH SHALL CONFORM TO THE "AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY AMERICANHORTI (ANSI Z60.1)," LATEST EDITION.
2. ALL AREAS OF THE SITE NOT OCCUPIED BY BUILDING, PAVEMENT, OR OTHER IMPERVIOUS SURFACE, AND NOT SPECIFIED AS BEING PLANTED WITH TREES, SHRUBS OR GROUND COVER, SHALL BE LAWN.
3. ALL MULCH TO BE PLACED IN PLANTING BEDS SHALL BE CLEAN, NON-DYED, TOXIC FREE, ORGANIC MATERIAL, CONSISTING OF SHREDDED HARDWOOD, ROOT MULCH SHREDDED CEDAR, OR BARK CHIPS, AS APPROVED BY THE OWNERS FIELD REPRESENTATIVE OR PROJECT LANDSCAPE ARCHITECT. THE PLACEMENT THICKNESS OF THE MULCH SHALL BE 3" AND/OR AS DIRECTED IN THE PLANTING DETAILS.
4. PLANT MATERIAL SUBSTITUTIONS SHALL NOT BE PERMITTED WITHOUT THE PROJECT LANDSCAPE ARCHITECTS WRITTEN APPROVAL.
5. ALL LANDSCAPE PLANTINGS SHALL BE MAINTAINED IN A HEALTHY GROWING CONDITION THROUGHOUT THE DURATION OF THE PROJECT. ANY PLANTING NOT SO MAINTAINED SHALL BE REPLACED WITH NEW PLANT(S) AT THE BEGINNING OF THE NEXT, IMMEDIATELY FOLLOWING PLANTING SEASON.
6. ALL PLANT MATERIAL SHALL BE SUBJECT TO THE APPROVAL OF THE PROJECT LANDSCAPE ARCHITECT AND GOVERNMENTAL AUTHORITIES HAVING JURISDICTION.

PLANT SCHEDULE CURRENTLY PROPOSED LANDSCAPING

EVERGREEN TREES	QTY	BOTANICAL / COMMON NAME	SIZE	ROOT COND.	REMARKS
PIC ABI	17	Picea abies / Norway Spruce	8` - 10` HT.	B & B	
PIC OMO	12	Picea omorika / Serbian Spruce	8` - 10` HT.	B & B	
PIC BLU	6	Picea pungens glauca / Colorado Blue Spruce	8` - 10` HT.	B & B	
TI	16	Thuja x `Green Giant` / Green Giant Arborvitae	8` - 10` HT.	B & B	
DECIDUOUS TREES	QTY	BOTANICAL / COMMON NAME	SIZE	ROOT COND.	REMARKS
AS	8	Acer Saccharum `Green Mountain` / Sugar Maple	3" - 3 1/2" Cal.	B & B	
ACN	1	Amelanchier Canadensis / Shadblow Serviceberry	12` - 14` HT.	B & B	
BNT	3	Betula Nigra `Heritage` / Heritage River Birch	8` - 10` HT.	B & B	
QP2	9	Quercus Palustris / Pin Oak	3` - 4` HT.	#5 CONT.	
QF	7	Quercus robur fastigiata / Pyramidal English Oak	3" - 3 1/2" CAL.	B & B	
DECIDUOUS SHRUBS	QTY	BOTANICAL / COMMON NAME	SIZE	ROOT COND.	REMARKS
COR FL2	11	Cornus sericea `Flaviramea` / Yellow Twig Dogwood	3` - 4` HT.	B&B	
VD	15	Viburnum dentatum `Arrowwood` / Arrowwood Viburnum	4` - 5` HT.	B&B	
SHRUB AREAS	QTY	BOTANICAL / COMMON NAME	CONT	ROOT COND.	REMARKS
JP	41	Juniperus davurica `Parsonii` / Parson`s Juniper	24" - 30" SPR	Cont.	
GROUND COVERS	QTY	BOTANICAL / COMMON NAME	SIZE		REMARKS
HM-1	3,150 sf	NYSDEC Stormwater Basin Mix #1 / Lowest Zone	seed		
HM-3	5,403 sf	NYSDEC Stormwater Basin Mix #3 / Highest Zone	seed		

PLANT SCHEDULE POTENTIAL FUTURE WETLAND BUFFER MITIGATION

DECIDUOUS TREES	QTY	BOTANICAL / COMMON NAME	SIZE	ROOT COND.	REMARKS
AR3	12	Acer Rubrum `Red Sunset` / Red Maple	4`-5` HT.	#5 CONT.	
ACN2	12	Amelanchier Canadensis / Shadblow Serviceberry	3` - 4` HT.	#5 CONT.	
QP2	9	Quercus Palustris / Pin Oak	3` - 4` HT.	#5 CONT.	
DECIDUOUS SHRUBS	QTY	BOTANICAL / COMMON NAME	SIZE	ROOT COND.	REMARKS
COR RE5	20	Cornus sericea / Red Twig Dogwood	3` - 4` HT.	#5 Cont	
IW2	24	Ilex verticillata / Winterberry	3` - 4` HT.	#5 Cont	
VH	19	Vaccinium corymbosum / Highbush Blueberry	3` - 4` HT.	#5 Cont	
GROUND COVERS	QTY	BOTANICAL / COMMON NAME	SIZE		REMARKS
NWDM	24,604 sf	Northeast Wetland Diversity Mix / Restoration Mix	seed		

GENERAL MAINTENANCE SCHEDULE FOR PLANTING OF MITIGATION AREA:

1. PERIODICALLY INSPECT PLANTING AREAS TO SELECTIVELY REMOVE, BY HAND, UNWANTED INVASIVE PLANTS (WEEDS).
2. SELECTIVELY WEED-WACK REMAINING LAWN AREA WITHIN PLANTING MITIGATION AREA, AS NEEDED, SO AS TO REMOVE ANY UNWANTED WEED GROWTH (WEEDS) OVER PERIOD OF NEXT 2-3 YEARS. THIS SHOULD BE PERFORMED BIANNUALLY SO THAT LAWN DOES NOT GROW HIGHER THAN 10 INCHES.
3. REMOVAL OF LEAF LITTER SHOULD BE LIMITED TO HAND CLEARING OF SEEDED AND PLANTED AREAS.

PROPOSED MONITORING PROGRAM FOR PLANTING MITIGATION AREA:

1. PROPERTY OWNER WILL ENGAGE, AT THEIR EXPENSE, AN ENVIRONMENTAL CONSULTANT, APPROVED BY THE TOWN OF NORTH CASTLE AND THE PROPERTY OWNER, TO CONDUCT TWO (2) FIELD INSPECTIONS AND PREPARE AN ANNUAL MONITORING REPORT, WITH PHOTO-DOCUMENTATION, OF THE PLANTING MITIGATION AREA FOR A PERIOD OF 5 YEARS.
2. FURTHERMORE, AT THE FIVE YEAR PERIOD SHOULD LESS THAN 85% OF PLANTING INSTALLED REMAIN, THE PROPERTY OWNER IS TO REPLACE DEAD PLANTING IN KIND TO ACHIEVE A MINIMUM OF 85% PLANT STOCK.

PLANTING NOTES:

A. SEED MIXTURE: SUPPLEMENTAL WETLAND SEED MIX IS TO BE APPLIED TO THE FLOODPLAIN STORAGE BASINS AT 20-40 LBS/ACRE OR 1 LB PER 1,000 SF OF SEED PER ACRE AND CONSIST OF FOLLOWING:

NORTHEAST WETLAND DIVERSITY SEED MIX

% BY WT.	SPECIES	VARIETY
26.66%	EUPATORIUM PERFOLIATUM	BONESET
20.80%	VERBENA HASTATA	BLUE VERVAIN
19.75%	PANICUM DICHOTOMIFLORUM	SMOOTH PANIC-GRASS
8.89%	SOLIDAGO RUGOSA	WRINKLED GOLDENROD
8.74%	EUPATORIUM MACULATUM	JOE PYE WEED
6.65%	EUTHAMIA GRAMINIFOLIA	GRASS LEAF GOLDENROD
4.59%	POLYGONUM PENSYLVANICUM	PENNSYLVANIA SMARTWEED
2.80%	ASTER NOVAE-ANGLIAE	NEW ENGLAND ASTER
0.79%	BIDENS CERNUA	NODDING BEGGAR'S TICK
0.21%	ASCLEPIAS INCARNATA	SWAMP MILKWEED
0.12%	IRIS VERSICOLOR	BLUE FLAG

B. HM-1 NYSDEC STORMWATER BASIN MIX #1 [HERBACIOUS]
(20-40 LBS/ACRE OR 1 LB PER 1,000 SF)
ARROW ARUM (PELTANDRA VIRGINICA)
ARROWHEAD, DUCK POTATOE (SAGGITARIA LATIFOLIA)
BLUE FLAG IRIS (IRIS VERSICOLOR)
BUSHY BEARDGRASS (ANDROPOGON GLOMERATUS)
DUCKWEED (LEMMA SP.)
HARDSTEM BULRUSH (SCIRPUS ACUTUS)
GIANT BURREED (SPARGANIUM EURYCARPUM)
LIZARD'S TAIL (SAURURUS CERNUUS)
PICKERELWEED (PONTEDERIA CORDATA)
SOFT-STEM BULRUSH (SCIRPUS VALIDUS)
SMARTWEED (POLYGONUM SPP.)
SPATTER DOCK (NUPHAR LUTEUM)
WILD RICE (ZIZANIA AQUATICA)

C. HM-3 NYSDEC STORMWATER BASIN MIX #3 [HERBACEOUS]
(20-40 LBS/ACRE OR 1 LB PER 1,000 SF)
ELYMUS RIPARIUS (RIVERBANK WILD RYE)(20%)
ELYMUS VIRGINICUS (VIRGINIA WILD RYE)(20%)
POA PALUSTRIS (FOWL BLUEGRASS)(20%)
PANICUM CANDESTINUM (DEER TONGUE)(10%)
PANICUM VIRGATUM (SWITCHGRASS)(10%)
SENNA HEBECARPA (WILD SENNA)(10%)
ANDROPOGON GERARDI (BIG BLUESTEM)(2%)
DESCHAMPSIA CAESPITOSA (TUFTED HAIRGRASS)(2%)
GLYCERIA STRIATA (FOWL MANNAGRASS)(2%)
LOBELIA CARDINALIS (CARDINAL FLOWER)(2%)
JUNCUS EFFUSUS (SOFT RUSH)(1%)
POLYGONUM SPP. (SMARTWEED)(1%)

D. INVASIVE SPECIES INCLUDING BUT NOT LIMITED TO REED GRASS AND JAPANESE KNOTWEED, OVERGROWN VINES COVERING VEGETATION TO REMAIN, DEAD TREES, TRASH AND DEBRIS WILL BE REMOVED FROM WETLAND BUFFER AREAS AS INDICATED. REFER TO "WETLAND EVALUATION AND IMPACT REPORT", PREPARED BY ECOLOGICAL SOLUTIONS, LLC, LAST REVISED 05/29/2020 FOR MORE INFORMATION. ALL CLEARED AREAS WILL BE RE-SEEDED WITH "WFS-WILDLIFE FOOD & SHELTER SHRUB MIX" (ERNST CONSERVATION SEEDS) OR EQUIVALENT.

WFS WILDLIFE FOOD & SHELTER MIX (ERNMX-138)

SEEDING RATE: 20 LBS PER ACRE OR ½ LB PER 1,000 S.F.
MIX TYPE: WET MEADOW & WETLAND SITES

SPECIES LIST:
31% FOX SEDGE, (CAREX VULPINOIDEA) PA ECOTYPE
20% VIRGINIA WILDRYE, (ELYMUS VIRGINICUS) PA ECOTYPE
15% LURID (SHALLOW) SEDGE, (CAREX LURIDA) PA ECOTYPE
11% HOP SEDGE, (CAREX LUPULINA) PA ECOTYPE
6% BLACK CHOKEBERRY, (ARONIA MELANOCARPA (PYRUS .M)(SORBUS M.)(PHOTINIA M.)) OH ECOTYPE
6% ARROWWOOD, (VIBURNUM DENTATUM) PA ECOTYPE
4% BLUNT BROOM SEDGE, (CAREX SCORPARIA) PA ECOTYPE
4% BUTTONBUSH, (CEPHALANTHUS OCCIDENTALIS)
2% SWAMP ROSE, (ROSA PALUSTRIS) PA ECOTYPE
1% STEEPLEBUSH, (SPIREA TOMENTOSA), PA ECOTYPE

DISTURBANCE SUMMARY

CURRENTLY PROPOSED DISTURBANCE			POTENTIAL FUTURE DISTURBANCE (INCLUDING COMPENSATORY STORAGE BASINS)		
DISTURBANCE WITHIN WETLAND:	0 S.F.	(0.000 AC.)	DISTURBANCE WITHIN WETLAND:	0 S.F.	(0.0 AC.)
DISTURBANCE WITHIN BUFFER:	5,000 S.F.	(0.114 AC.)	DISTURBANCE WITHIN BUFFER:	27,000 S.F.	(0.619 AC.)
PROPOSED MITIGATION AREA WITHIN WETLAND BUFFER:	36,570 S.F.	(0.839 AC.)	PROPOSED MITIGATION AREA WITHIN WETLAND BUFFER:	58,842 S.F.	(1.350 AC.)
PROPOSED MITIGATION AREA OUTSIDE OF WETLAND BUFFER:	0 S.F.	(0.000 AC.)	PROPOSED MITIGATION AREA OUTSIDE OF WETLAND BUFFER:	4,051 S.F.	(0.093 AC.)
TOTAL MITIGATION AREA:	36,570 S.F.	(0.839 AC.)	TOTAL MITIGATION AREA:	62,893 S.F.	(1.443 AC.)
MITIGATION RATIO: 36,570 S.F. / 5,000 S.F. = 7.314			MITIGATION RATIO: 62,893 S.F. / 27,000 S.F. = 2.329		

No.	Revision	Date	By
1.	REVISED PER CONSERVATION BOARD COMMENTS	06/02/2020	PD
1.	REVISED PER TOWN COMMENTS	01/25/2021	PD

Previous Editions Obsolete

APPLICANT/OWNER:
A & R REAL ESTATE HOLDINGS, LLC
100 BUSINESS PARK DRIVE
ARMONK, NY 10504

ARCHITECT:
J GROUP DESIGNS, LLC
63 EAST MAIN STREET
PAWLING, NY 12564

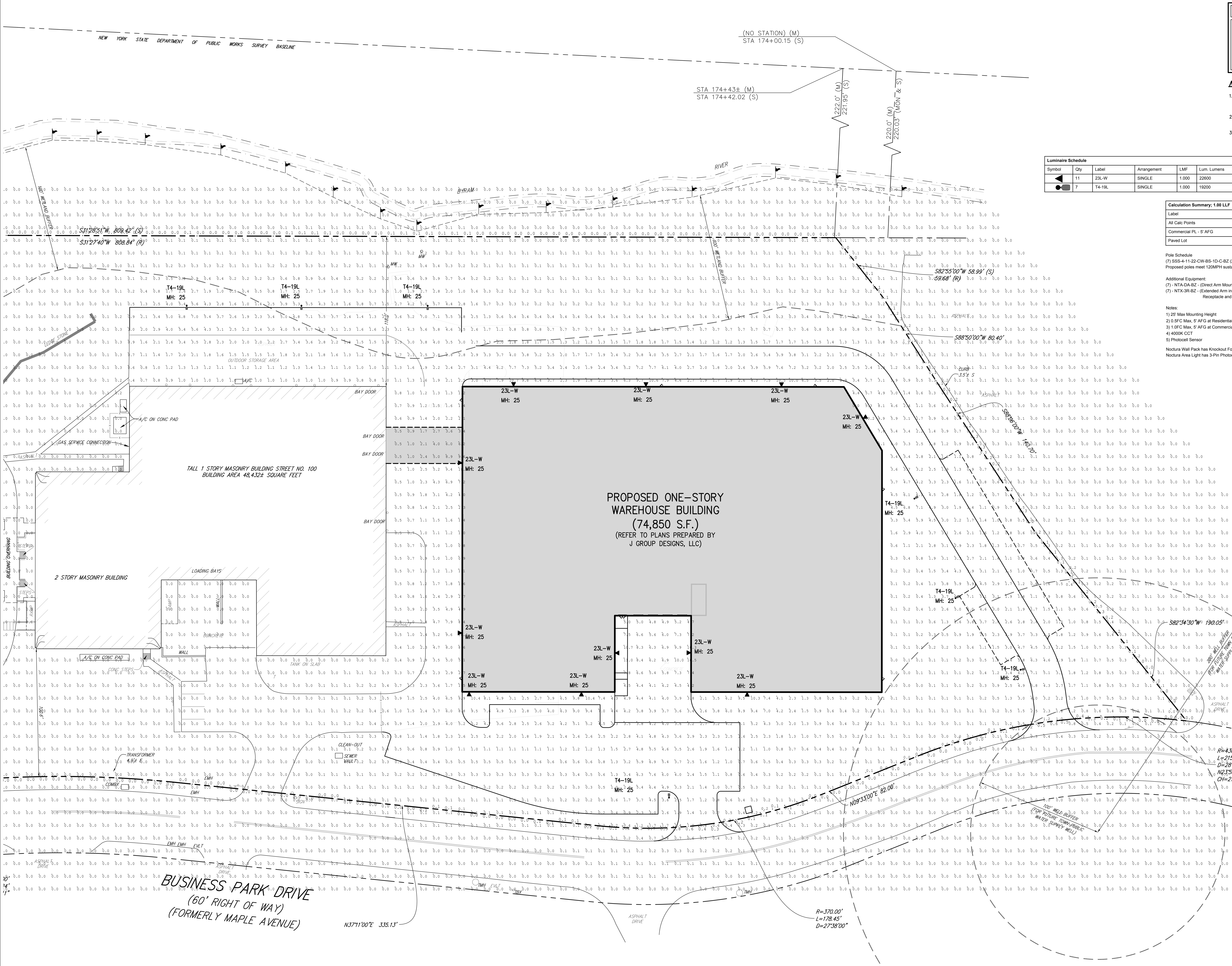
JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

SITE LANDSCAPING & WETLAND MITIGATION PLAN

PROPOSED WAREHOUSE
100 BUSINESS PARK DRIVE
TOWN OF NORTH CASTLE, NEW YORK

STATE OF NEW YORK · DAVID P. LOMBARDI · 071001 · LICENSED PROFESSIONAL ENGINEER

Drawn: NC	Approved: DL	
Scale: 1" = 30'		
Date: 03/23/2020		
Project No: 19124		
19124-SITE	LAND	LAY.scr
Drawing No: C-500		



LEGEND

	EXISTING UTILITY POLE
	EXISTING LIGHT POLE
	PROPOSED LIGHT FIXTURES
0.1	PROPOSED ILLUMINANCE IN FOOT-CANDLES

NOTES:

1. EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY TITLED, "TOPOGRAPHIC AND UTILITY SURVEY," PREPARED BY JMC, PLLC, DATED NOVEMBER 26, 2019.
2. LIGHTING LOCATIONS AND CALCULATIONS SHOWN HEREON PREPARED BY CREE LIGHTING, DATED 01/08/2020.
3. ALL CABLES AND WIRING SHALL BE INSTALLED UNDERGROUND IN CONDUIT. CONDUIT SHALL BE SCHEDULE 40 PVC CONDUIT INSTALLED WITH TWO (2) FEET OF COVER. MINIMUM SIZE OF CONDUIT SHALL BE TWO (2) INCH DIAMETER.

Luminaire Schedule

Symbol	Qty	Label	Arrangement	LMF	Lum. Lumens	Lum. Watts	Part Number
	11	23L-W	SINGLE	1.000	22600	148	NTW-A-WM-T3-23L-40K-UL-BZ
	7	T4-19L	SINGLE	1.000	19200	130	NTA-A-NM-T3-19L-40K-UL-BZ w/NTA-DA-BZ + NTX-3R-BZ

Calculation Summary; 1.00 LLF

Label	Units	Avg	Max	Min	Avg/Min	Max/Min
All Calc Points	Fc	0.74	11.0	0.0	N.A.	N.A.
Commercial PL - 5' AFG	Fc	0.08	0.9	0.0	N.A.	N.A.
Paved Lot	Fc	3.30	11.0	0.5	6.60	22.00

Pole Schedule
(7) SSS-4-11-22-CW-BS-1D-C-BZ (22' X 4" X 11ga STEEL SQUARE POLE, Single)
Proposed poles meet 120MPH sustained winds.

Additional Equipment:
(7) - NTA-DA-BZ - (Direct Arm Mount)
(7) - NTX-3R-BZ - (Extended Arm includes a NEMA® 3-Pin Photocell Receptacle and a knockout for an Occupancy Sensor)

Notes:
1) 25' Max Mounting Height
2) 0.5FC Max, 5' AFG at Residential PL
3) 1.0FC Max, 5' AFG at Commercial PL
4) 4000K CCT
5) Photocell Sensor

Noctura Wall Pack has Knockout For Button Photocell
Noctura Area Light has 3-Pin Photocell; as well as Knock Out for Occ Sensor

No.	Revision	Date	By
1.	REVISED PER TOWN COMMENTS	01/25/2021	PD

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SITE LIGHTING PLAN

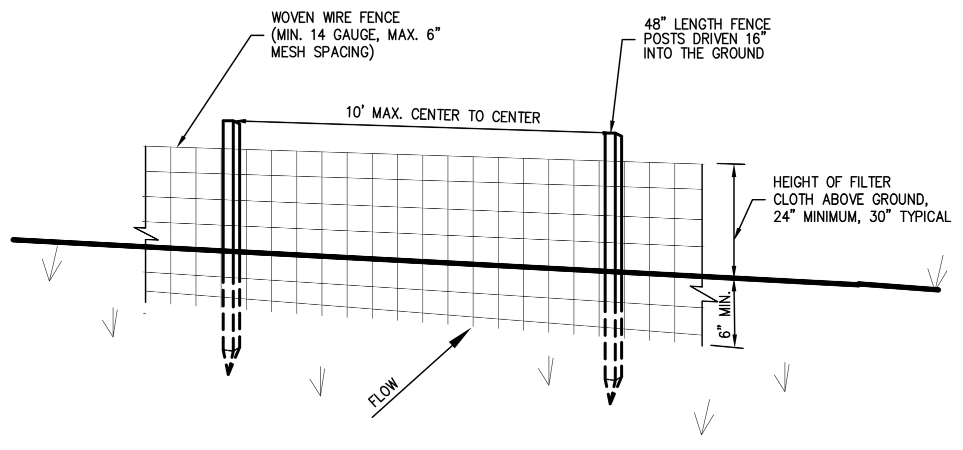
PROPOSED WAREHOUSE
100 BUSINESS PARK DRIVE
TOWN OF NORTH CASTLE, NEW YORK

STATE OF NEW YORK · DAVID P. LOMBARDI · 071001 · LICENSED PROFESSIONAL ENGINEER

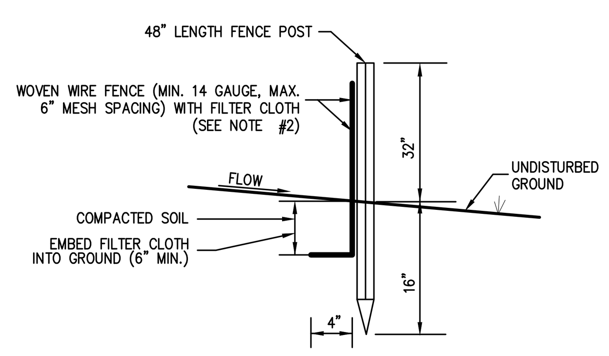
Drawn:	NC	Approved:	DL
Scale:	1" = 30'		
Date:	03/23/2020		
Project No:	19124		
19124-SITE	LIGHT	LIGHT.scr	

Drawing No:
C-600

NOT FOR CONSTRUCTION



PERSPECTIVE VIEW



SECTION

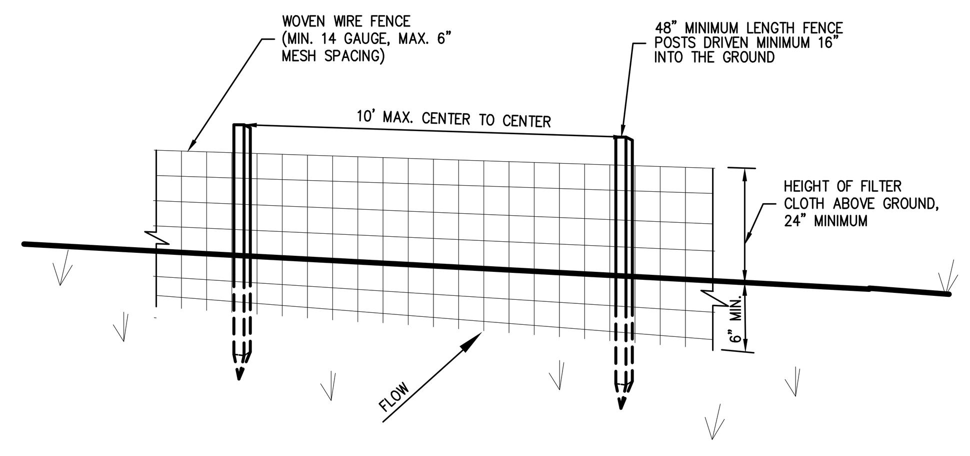
SLOPE	STEEPNESS	SLOPE LENGTH/FENCE LENGTH (FT.)
2–10%	50:1 TO 10:1	250/2000
10–20%	10:1 TO 5:1	150/1000
20–33%	5:1 TO 3:1	80/750
33–50%	3:1 TO 2:1	70/350
>50%	>2:1	30/175

*ALL SILT FENCES SHALL BE PLACED AS CLOSE TO THE DISTURBED AREA AS POSSIBLE, BUT AT LEAST 10 FEET FROM THE TOE OF A SLOPE STEEPER THAN 3H:1V, TO ALLOW FOR MAINTENANCE AND ROLL DOWN. THE AREA BEYOND THE FENCE MUST BE UNDISTURBED OR STABILIZED.

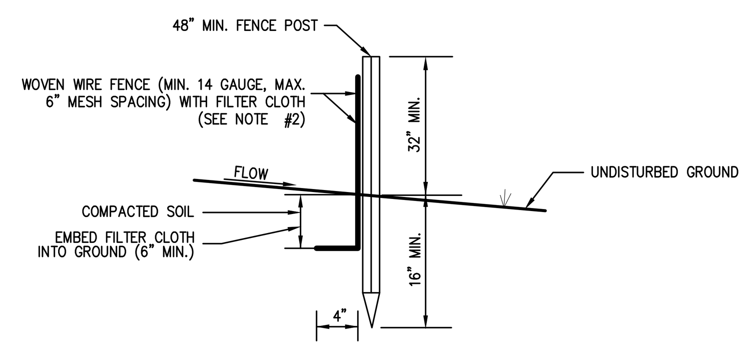
NOTES:

1. WOVEN WIRE FENCE SHALL BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL, EITHER T OR U TYPE OR HARDWOOD.
2. FILTER CLOTH SHALL BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 6" MAXIMUM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABLINKA T140N, OR APPROVED EQUAL.
4. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUAL.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED AND REPLACED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

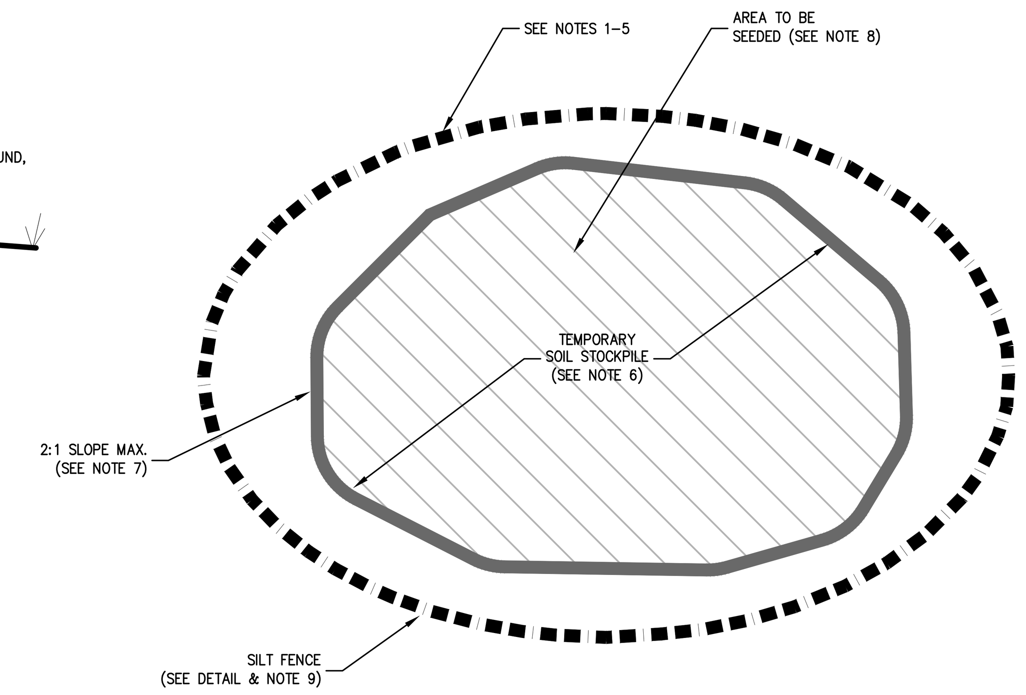
SILT FENCE 1



PERSPECTIVE VIEW



SECTION



PLAN VIEW

NOTES:

1. WOVEN WIRE FENCE SHALL BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL, EITHER T OR U TYPE OR HARDWOOD.
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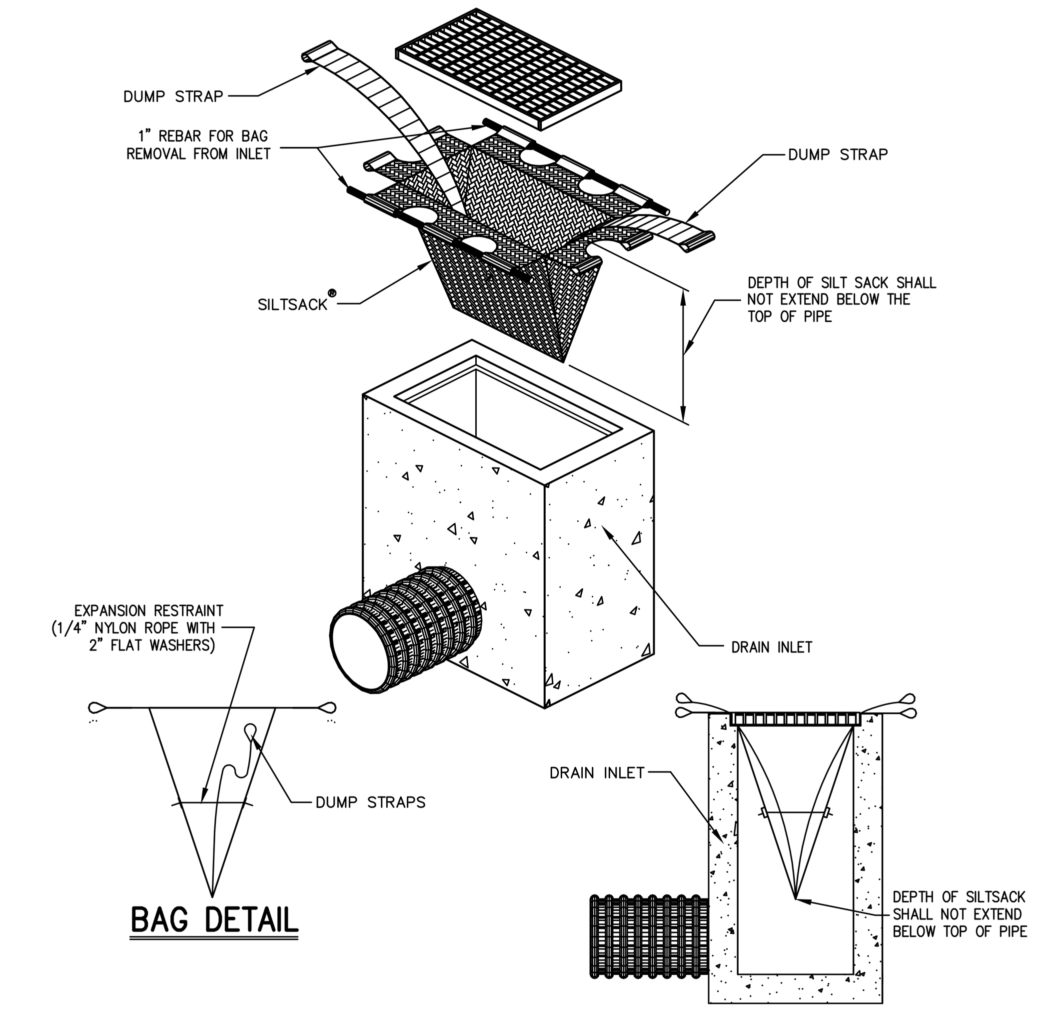
4. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUAL.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED AND REPLACED WHEN "BULGES" DEVELOP IN THE SILT FENCE.
6. THE AREA CHOSEN FOR ALL TEMPORARY SOIL STOCKPILES SHALL BE DRY AND STABLE.
7. ALL STOCKPILED SOIL SHALL NOT CONTAIN SLOPES GREATER THAN 2:1.
8. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SEEDED WITHIN 24 HOURS. PERENNIAL OR ANNUAL RYEGRASS SHALL BE PLANTED DURING SPRING, SUMMER OR EARLY FALL. WINTER RYE (CEREAL RYE) SHALL BE PLANTED DURING LATE FALL OR EARLY WINTER.
9. ALL STOCKPILES SHALL BE PROTECTED WITH SILT FENCING INSTALLED AROUND THE PERIMETER.

TEMPORARY SOIL STOCKPILE WITH SILT FENCE 2



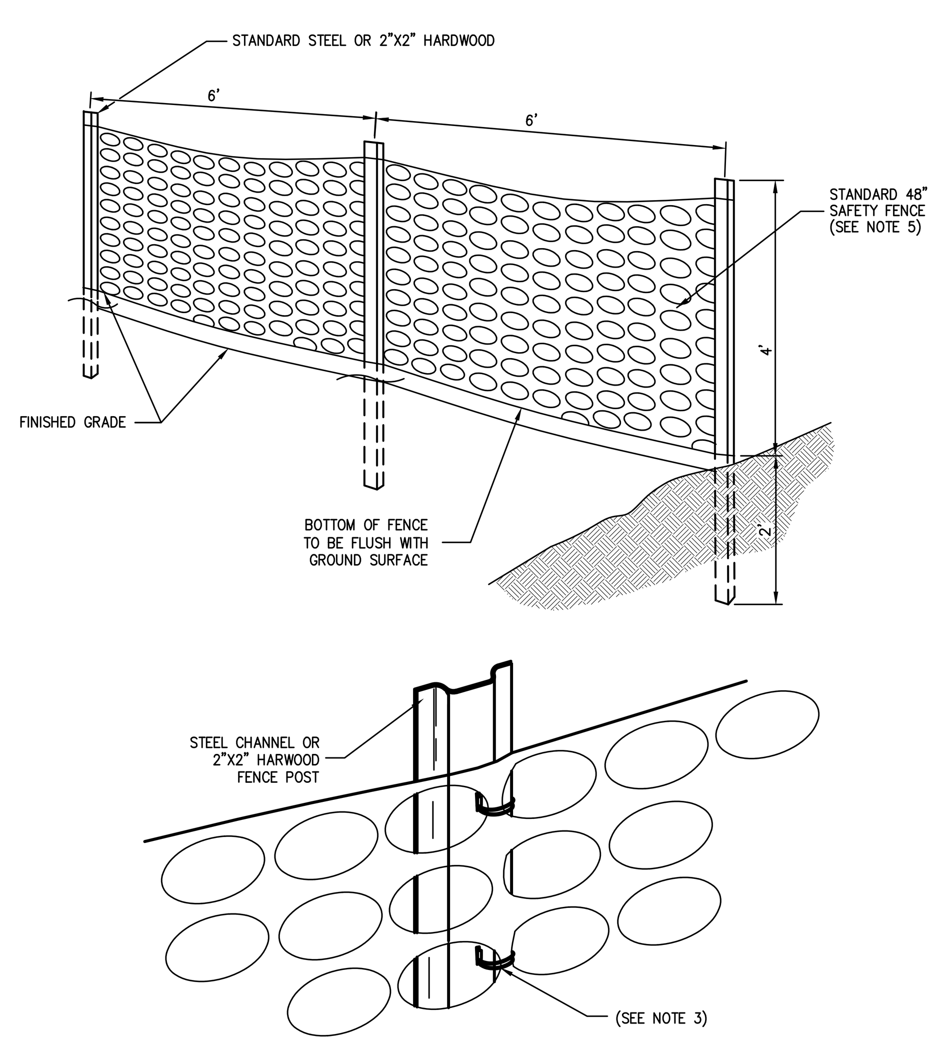
HI–FLOW SILT SACK AS MANUFACTURED BY ACF ENVIRONMENTAL OR APPROVED EQUAL®

(FOR AREAS OF MODERATE TO HEAVY PRECIPITATION AND RUN–OFF)

PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D–4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D–4632	20 %
PUNCTURE	ASTM D–4833	135 LBS
MULLEN BURST	ASTM D–3786	420 PSI
TRAPEZOID TEAR	ASTM D–4533	45 LBS
UV RESISTANCE	ASTM D–4355	90 %
APPARENT OPENING SIZE	ASTM D–4751	20 US SIEVE
FLOW RATE	ASTM D–4491	200 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D–4491	1.5 SEC –1

NOTE:
CURB INLETS SHALL BE TYPE B WITH CURB DEFLECTOR.

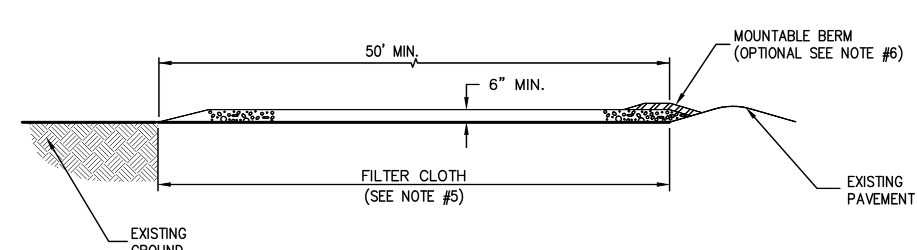
SILT SACK 3



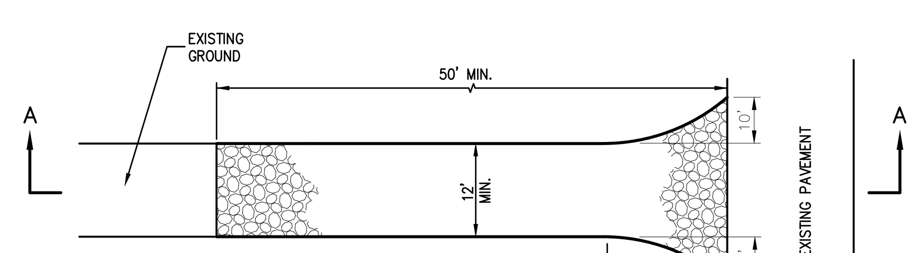
NOTES:

1. SPACE SUPPORT FENCE POSTS AT 6 FOOT INTERVALS.
2. DRIVE SUPPORT POSTS 2 FEET INTO GROUND.
3. FIRMLY FASTEN FENCE MATERIAL IN PLACE BY WIRING TO FENCE POST WHILE MAINTAINING TENSION ACROSS FULL HEIGHT OF FENCE. WIRING SHALL BE DONE IN A MANNER THAT WILL PREVENT SAGGING OF FENCE MATERIAL.
4. PROVIDE PERIODIC INSPECTION AND MAINTENANCE OF FENCE INCLUDING REPAIRS AS NECESSARY AND REQUIRED.
5. PLASTIC FENCE SHALL BE INTERNATIONAL ORANGE COLOR, AS MANUFACTURED BY ADPI ENTERPRISES, INC. OR APPROVED EQUAL.
6. REMOVE CONSTRUCTION FENCE AS DIRECTED BY THE OWNER'S FIELD REPRESENTATIVE.

CONSTRUCTION FENCE 4



SECTION A–A

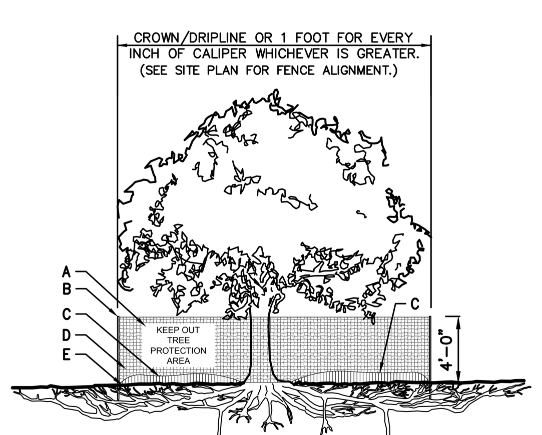


PLAN VIEW

NOTES

1. STONE SIZE – USE 1" TO 4" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH – AS REQUIRED, BUT NOT LESS THAN 50 FEET.
3. THICKNESS – NOT LESS THAN SIX (6) INCHES.
4. WIDTH – 12 FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. 24 FOOT MINIMUM IF SINGLE ENTRANCE TO SITE.
5. FILTER CLOTH TO BE PLACED OVER THE ENTIRE WIDTH AND LENGTH OF AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURE USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS–OF–WAY MUST BE REMOVED IMMEDIATELY.
8. WASHING – WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS–OF–WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

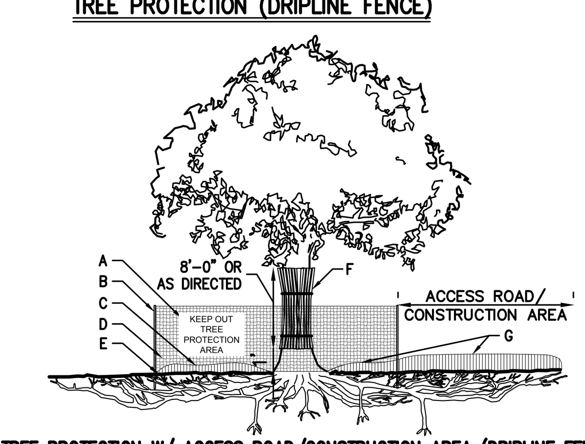
STABILIZED CONSTRUCTION ENTRANCE 5



TREE PROTECTION (DRIPLINE FENCE)

A	8.5"X11" SIGN LAMINATED IN PLASTIC SPACED EVERY 50' ALONG FENCE
B	2"X6' STEEL POSTS OR APPROVED EQUAL.
C	5" THICK LAYER OF MULCH.
D	TREE PROTECTION FENCE: HIGH DENSITY POLYETHYLENE FENCING WITH 3.5" X 1.5" OPENINGS; COLOR ORANGE. STEEL POSTS INSTALLED AT 8' O.C.
E	MAINTAIN EXISTING GRADE WITHIN THE TREE PROTECTION FENCE UNLESS OTHERWISE INDICATED ON THE PLANS.
F	INSTALL ROUGH SAWN WOOD WHERE AND AS DIRECTED BY PROJECT LANDSCAPE ARCHITECT OR PROFESSIONAL ARBORIST. SEE CHART FOR WOOD SIZE BOUND WITH 9 GAUGE WIRE.
G	8"–12" THICK LAYER OF MULCH ON MAINTENANCE ROAD. 5" THICK LAYER INSIDE TREE PROTECTION AREA.

TREE DIAMETER	ROUGH SAWN WOOD SIZE
<12"	2"X2"
13"–24"	2"X4"
>25"	2"X6"

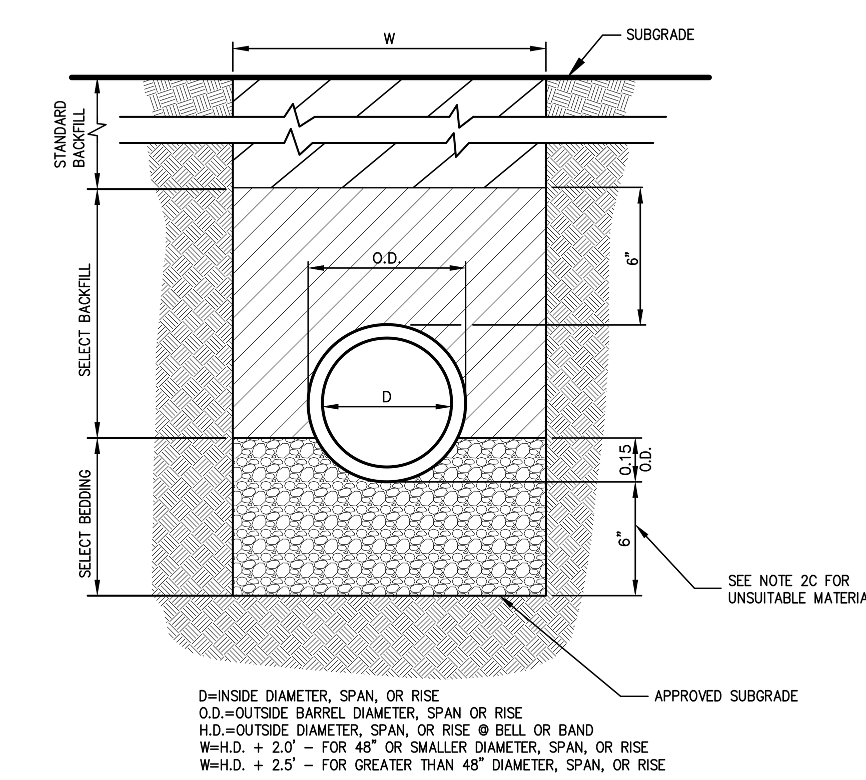


TREE PROTECTION W/ ACCESS ROAD/CONSTRUCTION AREA (DRIPLINE FENCE)

NOTES:

1. SEE SPECIFICATIONS FOR ADDITIONAL TREE PROTECTION REQUIREMENTS.
2. IF THERE IS NO EXISTING IRRIGATION, SEE SPECIFICATIONS FOR WATERING REQUIREMENTS.
3. NO PRUNING SHALL BE PERFORMED EXCEPT BY APPROVED ARBORIST.
4. NO EQUIPMENT SHALL OPERATE INSIDE THE PROTECTIVE FENCING INCLUDING DURING FENCE INSTALLATION AND REMOVAL.
5. SEE SITE PLANS FOR IDENTIFICATIONS/LOCATIONS OF INDIVIDUAL TREES TO BE PROTECTED.
6. ALL EXCAVATION WITHIN THE CROWN/DRIPLINE OF ANY TREE SHALL BE PERFORMED UNDER THE DIRECT SUPERVISION OF THE PROJECT LANDSCAPE ARCHITECT OR PROFESSIONAL ARBORIST. SPECIAL MEASURES, SUCH AS THE USE OF AN AIR SPADE MAY BE REQUIRED.
7. THE CONTRACTOR MAY PROPOSE THE USE OF ENGINEERED MATTING OR OTHER ENGINEERED PRODUCTS IN LIEU OF MULCH, WHICH SHALL BE SUBJECT TO THE REVIEW AND APPROVAL OF ALL AUTHORITIES HAVING JURISDICTION.

TREE PROTECTION 6



D=INSIDE DIAMETER, SPAN, OR RISE
O.D.=OUTSIDE BARREL DIAMETER, SPAN OR RISE
H.D.=OUTSIDE DIAMETER, SPAN, OR RISE @ BELL OR BAND
W=H.D. + 2.0' – FOR 48" OR SMALLER DIAMETER, SPAN, OR RISE
W=H.D. + 2.5' – FOR GREATER THAN 48" DIAMETER, SPAN, OR RISE

NOTES:

1. FOR TYPE II TRENCH, MATERIAL FOR SELECT BEDDING AND SELECT BACKFILL SHALL BE:
   A. EITHER SAND OR CRUSHED STONE IF NO WATER IS ENCOUNTERED IN TRENCH.
   B. 3/4"CRUSHED STONE IF WATER IS ENCOUNTERED IN TRENCH.
2. TYPE II TRENCH SHALL BE USED IN ALL OF THE FOLLOWING CASES:
   A. FOR ALL CORRUGATED POLYETHYLENE DRAIN PIPE (CPDP) AND PVC PIPE AND CONDUIT INSTALLATION.
   B. WHEN ROCK OR HARDPAN IS ENCOUNTERED IN BOTTOM OF TRENCH.
   C. WHEN UNSUITABLE MATERIAL IS ENCOUNTERED IN BOTTOM OF TRENCH. IN SUCH CASE DEPTH OF UNDERCUTTING SHALL BE AS DIRECTED BY THE ENGINEER WITH 6" MINIMUM.
3. FOR ALL TRENCH EXCAVATION IN FILL AREAS, ALL EMBANKMENTS SHALL BE CONSTRUCTED TO A MINIMUM OF 2 FEET ABOVE THE OUTSIDE TOP (AT THE BELL) OF THE PIPE PRIOR TO BEGINNING ANY TRENCH EXCAVATION.
4. BACKFILL FOR PIPE AND CONDUIT SHALL BE PLACED EVENLY AND CAREFULLY AROUND AND OVER THE PIPE OR CONDUIT IN SIX (6) INCH MAXIMUM LAYERS. EACH LAYER SHALL BE THOROUGHLY AND CAREFULLY COMPACTED UNTIL TWELVE (12) INCHES OF COVER EXISTS OVER THE PIPE OR CONDUIT. THE REMAINDER OF THE BACKFILL MAY THEN BE PLACED AND COMPACTED IN A MAXIMUM OF TWELVE (12) INCH LAYERS. EACH LAYER SHALL BE COMPACTED BY APPROVED MECHANICAL TAMPING MACHINES. UNLESS OTHERWISE SPECIFIED BACKFILL SHALL BE COMPACTED TO NOT LESS THAN $\boxed{92\%}$ MAXIMUM MODIFIED DENSITY IN ACCORDANCE WITH ASTM DESIGNATION D–1557 IN THE MANNER HEREIN DESCRIBED. BACKFILL SHALL PROCEED UP TO THE LINES AND GRADES AS SHOWN ON THE DRAWINGS.

TYPE II TRENCH 7

No.	Revision	Date	By
1.	REVISED PER TOWN COMMENTS	01/25/2021	PD

Previous Editions Obsolete

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JMC

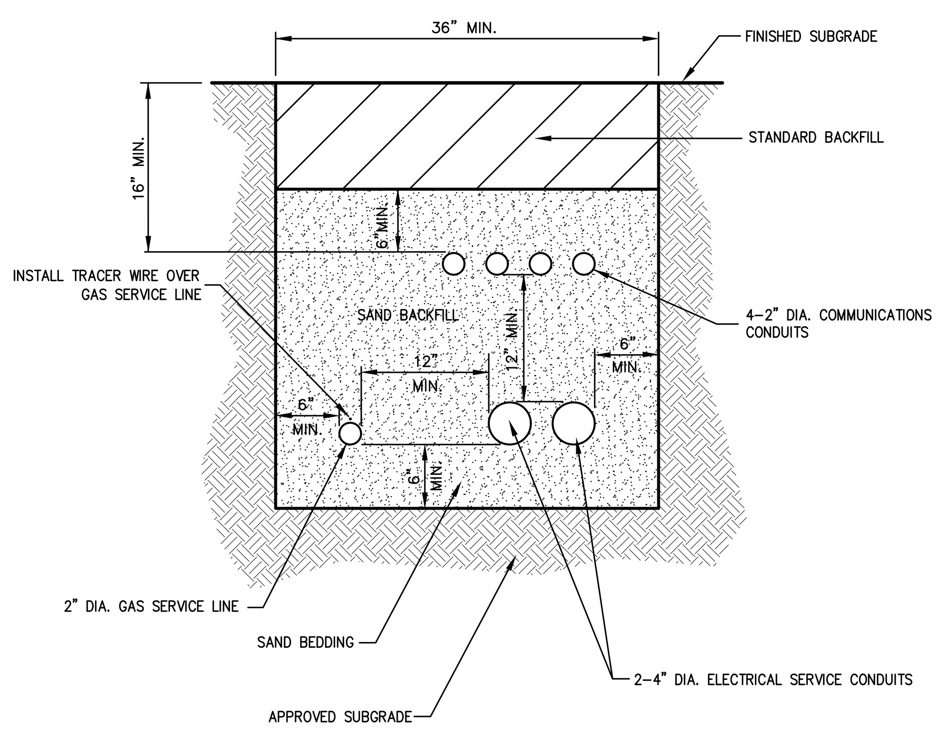
CONSTRUCTION DETAILS

PROPOSED WAREHOUSE
100 BUSINESS PARK DRIVE
TOWN OF NORTH CASTLE, NEW YORK

STATE OF NEW YORK · DAVID P. LOMBARDI · 071001 · LICENSED PROFESSIONAL ENGINEER

Drawn:	NC	Approved: DL
Scale:	NOT TO SCALE
Date:	03/23/2020
Project No:	19124
19124–DETAILS	DET–1
Drawing No:	C–900

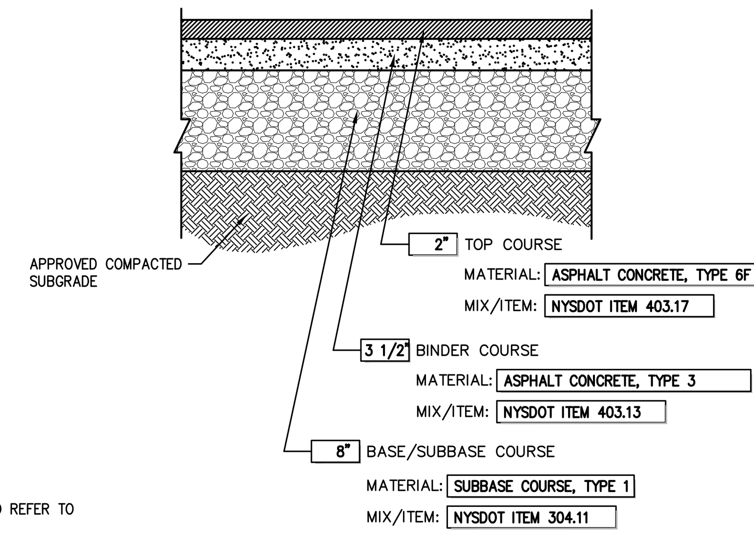
NOT FOR CONSTRUCTION



NOTES:

1. UTILITIES TO BE INSTALLED IN ACCORDANCE WITH THE REGULATIONS AND REQUIREMENTS OF THE UTILITY COMPANY HAVING JURISDICTION.
2. BACKFILL FOR PIPE AND CONDUIT SHALL BE PLACED EVENLY AND CAREFULLY AROUND AND OVER THE PIPE OR CONDUIT IN SIX (6) INCH MAXIMUM LAYERS. EACH LAYER SHALL BE THOROUGHLY AND CAREFULLY COMPACTED UNTIL TWELVE (12) INCHES OF COVER EXISTS OVER THE PIPE OR CONDUIT. THE REMAINDER OF THE BACKFILL MAY THEN BE PLACED AND COMPACTED IN A MAXIMUM OF TWELVE (12) INCH LAYERS. EACH LAYER SHALL BE COMPACTED BY APPROVED MECHANICAL TAMPING MACHINES. UNLESS OTHERWISE SPECIFIED BACKFILL SHALL BE COMPACTED TO NOT LESS THAN 92% MAXIMUM MODIFIED DENSITY IN ACCORDANCE WITH ASTM DESIGNATION D-1557 IN THE MANNER HEREIN DESCRIBED. BACKFILL SHALL PROCEED UP TO THE LINES AND GRADES AS SHOWN ON THE DRAWINGS.
3. CONTRACTOR SHALL STAKE THE PROPOSED SERVICE LINES AND CONDUITS PRIOR TO BACKFILLING TO ENSURE SERVICES DO NOT MOVE WITHIN TRENCH.

UTILITY TRENCH DETAIL — 8



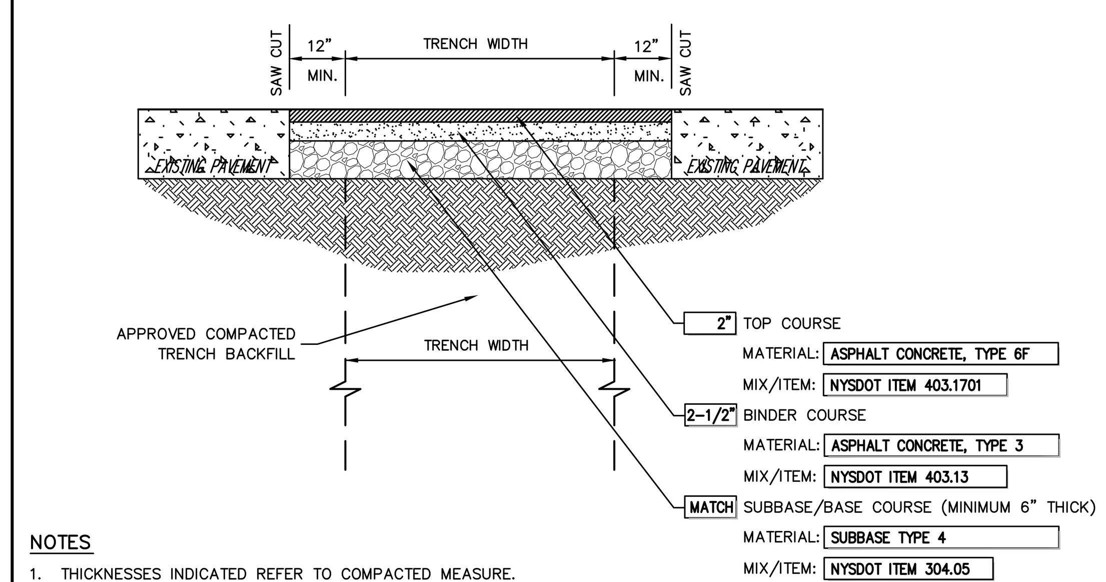
NOTES:

1. THICKNESSES INDICATED REFER TO COMPACTED MEASURE.
2. MATERIAL AND MIX/ITEM NUMBERS REFER TO:

NEW YORK STATE
DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS

SITE PAVEMENT — 9

(Heavy Duty)

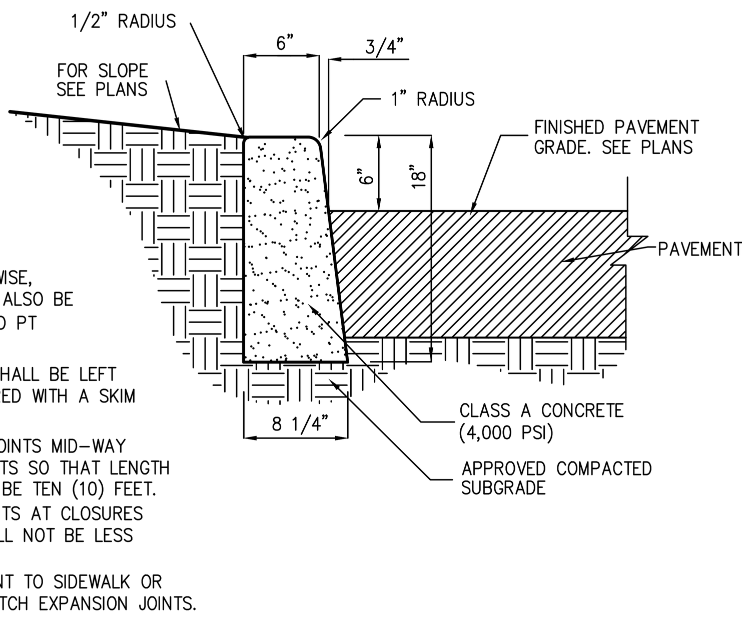


NOTES

1. THICKNESSES INDICATED REFER TO COMPACTED MEASURE.
2. ITEM NUMBERS REFER TO:

NEW YORK STATE
DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS

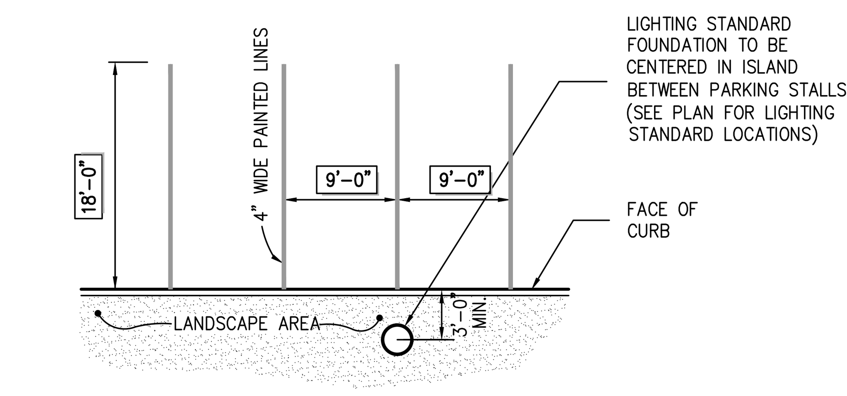
PAVEMENT REPLACEMENT OVER TRENCH — 10



NOTES:

1. INSTALL 1/2" PREMOLDED BITUMINOUS EXPANSION JOINT EVER 20 FEET.
2. UNLESS DIRECTED OTHERWISE, EXPANSION JOINTS SHALL ALSO BE INSTALLED AT THE PC AND PT OF ALL RADIUS CURB.
3. EACH EXPANSION JOINT SHALL BE LEFT EXPOSED AND NOT COVERED WITH A SKIM COAT OF CONCRETE.
4. INSTALL CONSTRUCTION JOINTS MID-WAY BETWEEN EXPANSION JOINTS SO THAT LENGTH OF CURB SEGMENTS WILL BE TEN (10) FEET.
5. LENGTH OF CURB SEGMENTS AT CLOSURES MAY BE VARIED BUT SHALL NOT BE LESS THAN FOUR (4) FEET.
6. WHEN INSTALLED ADJACENT TO SIDEWALK OR CONCRETE PAVEMENT, MATCH EXPANSION JOINTS.

CAST-IN-PLACE CONCRETE CURB — 11

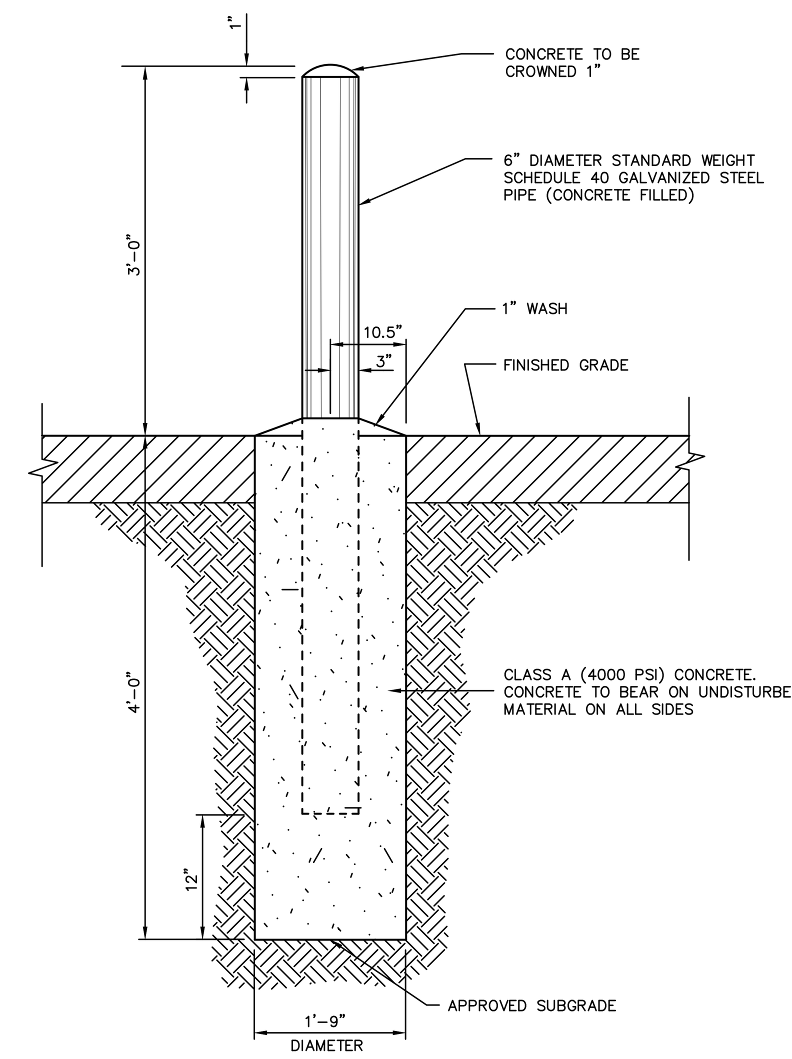


NOTE

1. COLOR OF PAINT SHALL BE WHITE

90° PARKING — 12

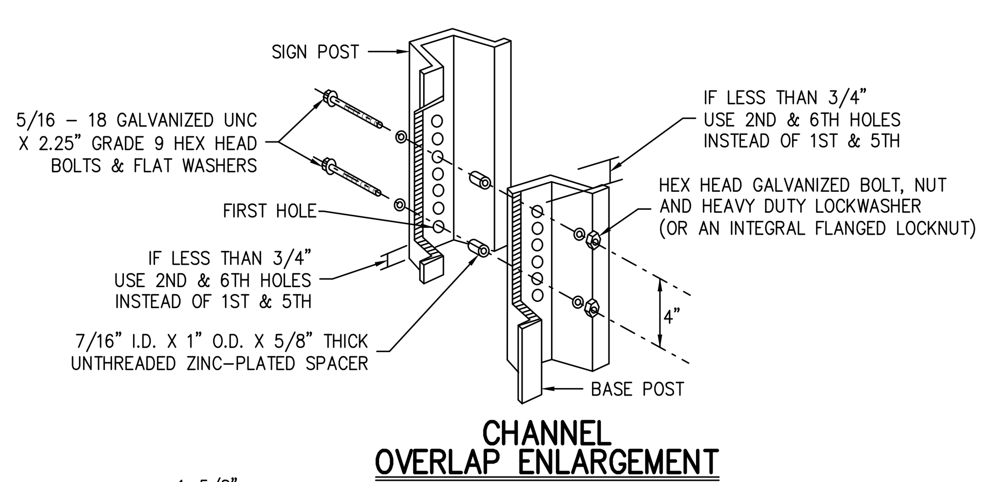
(SINGLE STRIPING – CURBED PERIMETER)



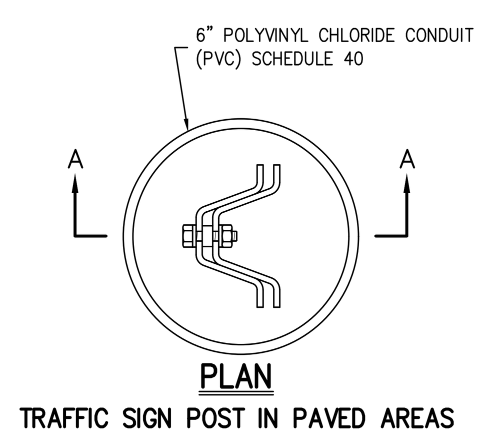
NOTES:

1. WHEN PROTECTION POSTS ARE TO BE USED FOR PROTECTION OF HANDICAP PARKING SIGNS OR OTHER TRAFFIC SIGNS, SIGN SUPPORTING POSTS SHALL BE IMBEDDED A MINIMUM OF THREE (3) FEET INTO THE CONCRETE.
2. POST FOR HANDICAP PARKING STALLS SHALL BE PAINTED BLUE AS FOLLOWS:
   A. SOLVENT CLEAN TO REMOVE OIL, GREASE AND OTHER CONTAMINANTS.
   B. APPLY METAL PRIMER FOR GALVANIZED SURFACES.
   C. APPLY TWO (2) FINISH COATS OF APPROVED EXTERIOR PAINT FOR METAL SURFACES.

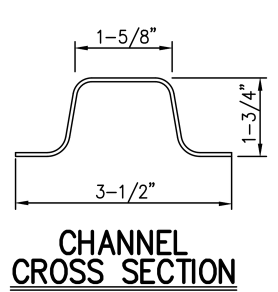
STEEL PIPE PROTECTION POST — 13



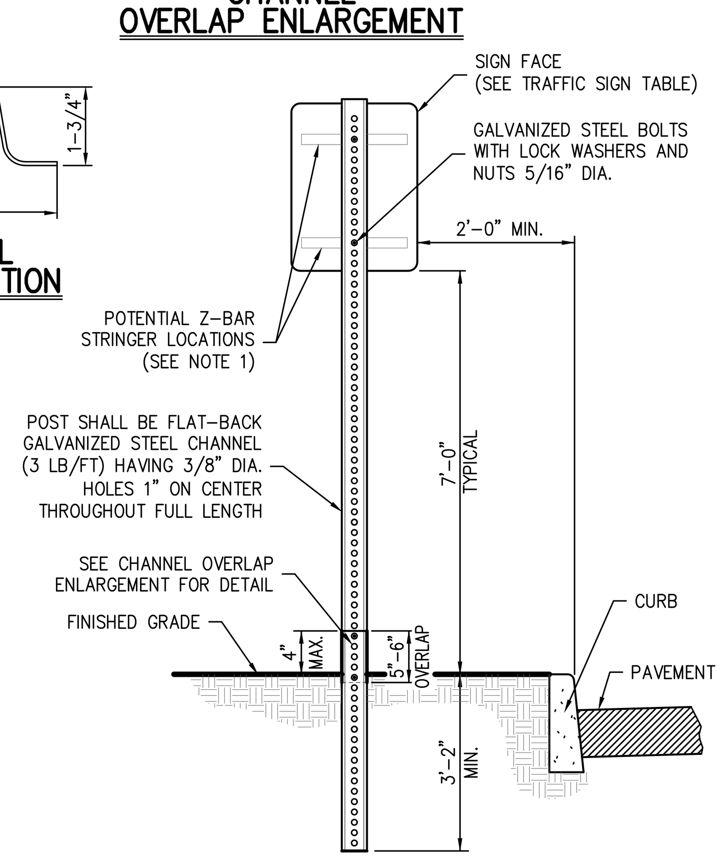
CHANNEL OVERLAP ENLARGEMENT

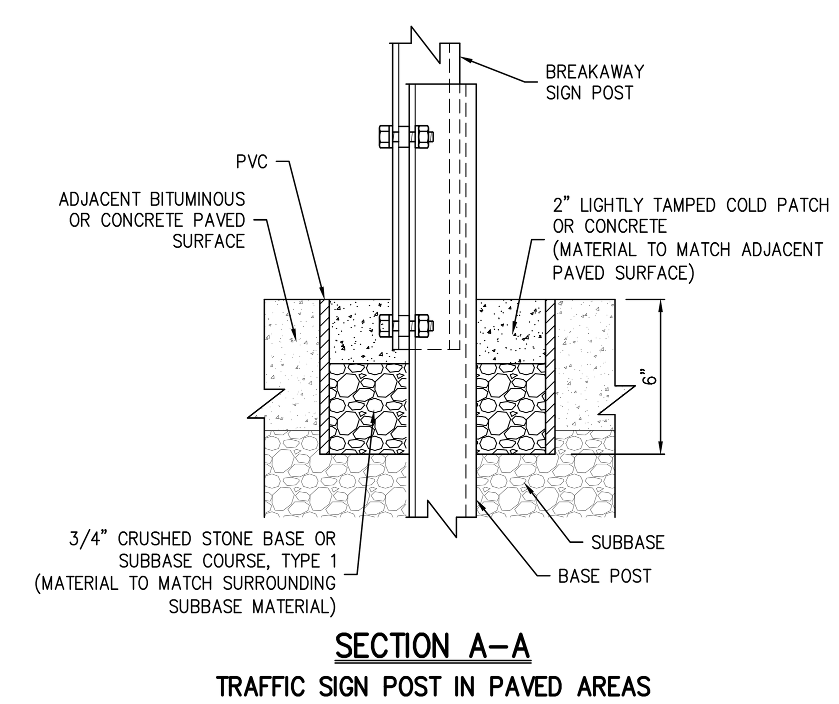


PLAN
TRAFFIC SIGN POST IN PAVED AREAS



CHANNEL CROSS SECTION





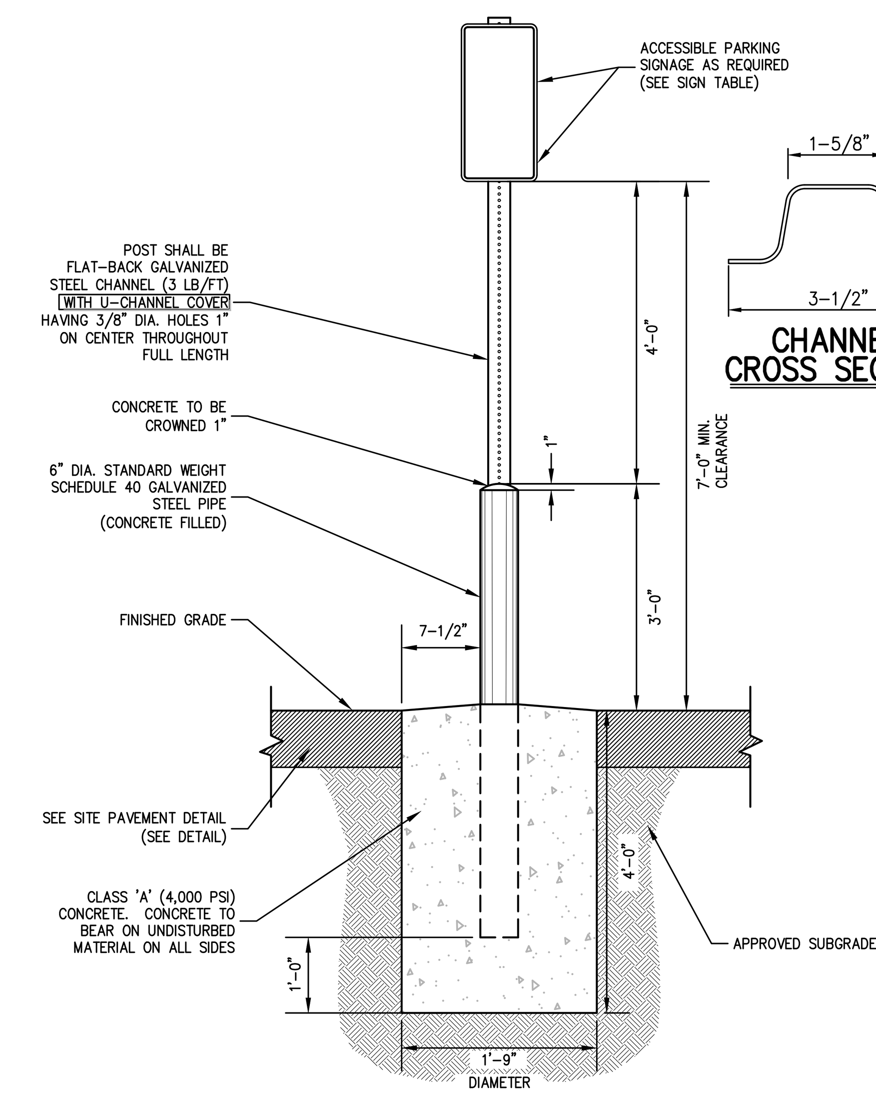
SECTION A-A
TRAFFIC SIGN POST IN PAVED AREAS

NOTE:

1. WHEN BACK TO BACK SIGNS ARE DESIGNATED TO SHARE ONE POST, SIGNS SHALL BE AFFIXED TO POST USING ALUMINUM OR STAINLESS STEEL Z-BAR STRINGER.

TRAFFIC SIGN POST — 14

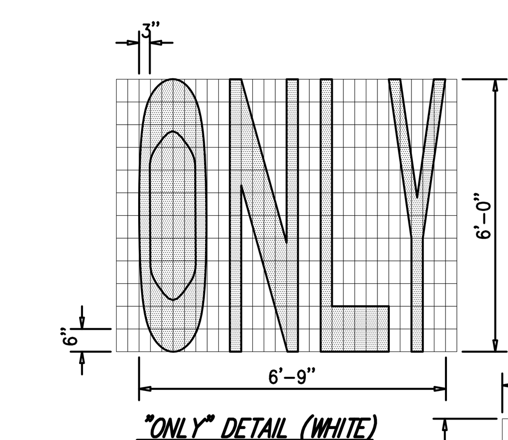
(BREAKAWAY STEEL CHANNEL)



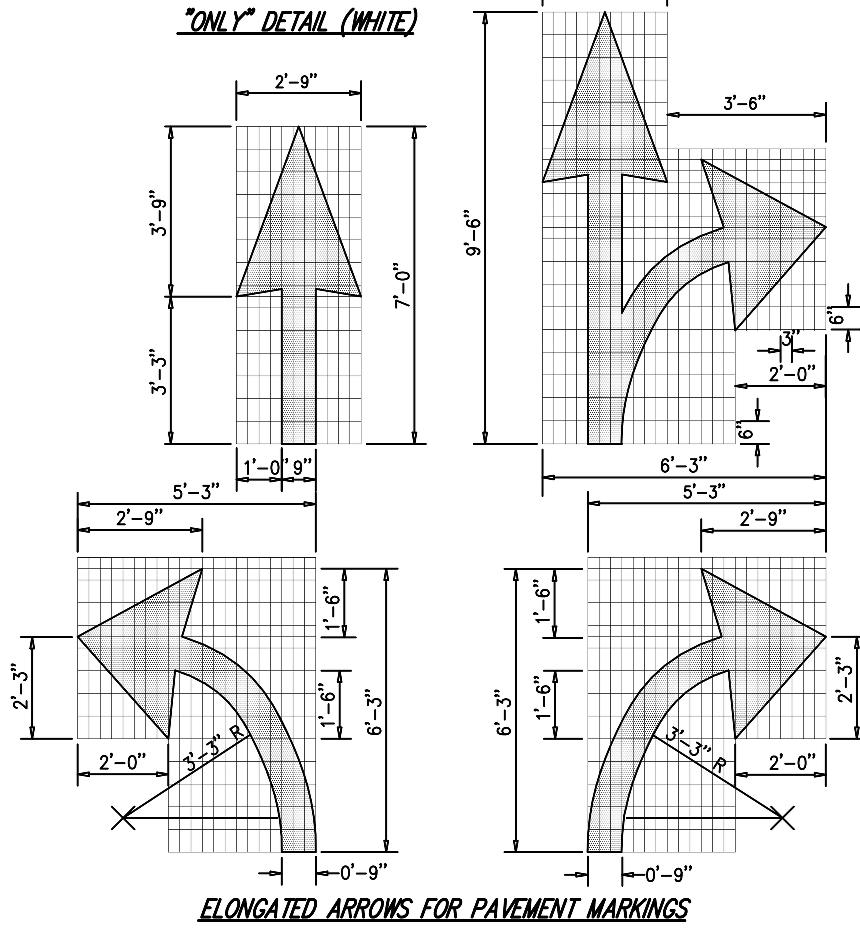
NOTES:

1. GALVANIZED STEEL CHANNEL SHALL BE EMBEDDED A MIN. OF 3 FT. INTO THE CONCRETE
2. POSTS FOR HANDICAP PARKING STALLS AND ACCESS AISLES SHALL BE PAINTED BLUE AS FOLLOWS:
   A. SOLVENT CLEAN TO REMOVE OIL, GREASE AND OTHER CONTAMINANTS.
   B. APPLY METAL PRIMER FOR GALVANIZED SURFACES.
   C. APPLY TWO (2) FINISH COATS OF APPROVED EXTERIOR PAINT FOR METAL SURFACES.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE INSTALLATION OF THE PARKING SIGNS, BOLLARDS AND FOUNDATIONS WITH THE DESIGN AND INSTALLATION OF THE SITE SIDEWALKS, CURBING, PAVEMENT AND ANY OTHER SITE FEATURES SHOWN ON THE PLANS.
4. FASTEN SIGN TO POSTS WITH GALVANIZED STEEL BOLTS, LOCK WASHERS, AND NUTS (5/16" DIA.)
5. U-CHANNEL COVERS FOR POSTS SHALL BE BLUE WITH WHITE STRIPE FOR HANDICAP PARKING STALLS AND HANDICAP ACCESS AISLES.

ACCESSIBLE PARKING SIGN DETAIL — 15



"ONLY" DETAIL (WHITE)



ELONGATED ARROWS FOR PAVEMENT MARKINGS

PAVEMENT TEXT & ARROWS — 16

(ON-SITE)

No.	Revision	Date	By
1.	REVISED PER TOWN COMMENTS	01/25/2021	PD

Previous Editions Obsolete

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CONSTRUCTION DETAILS

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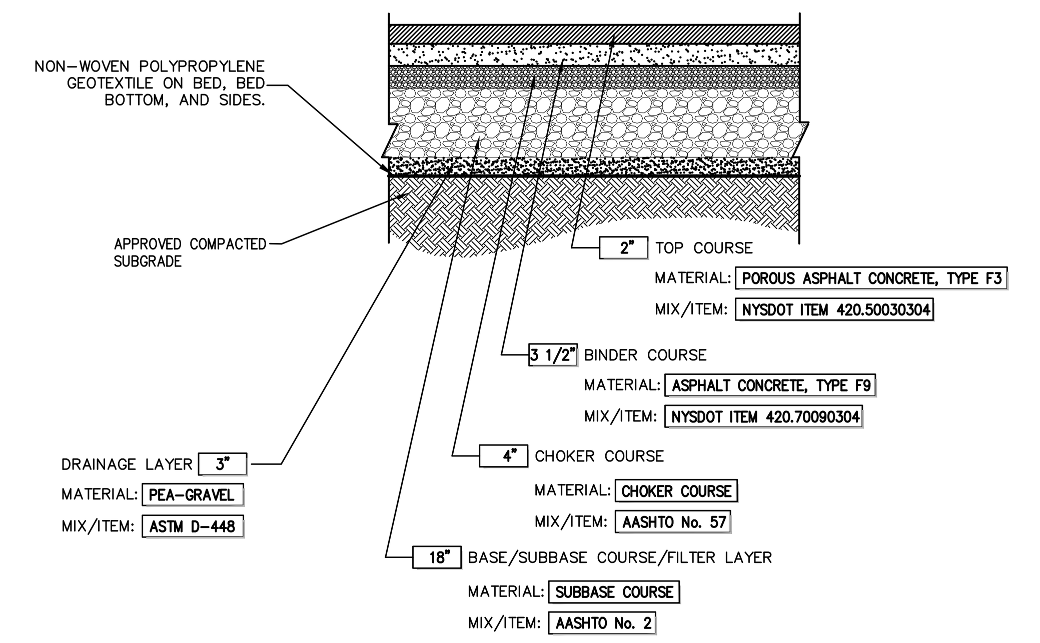
STATE OF NEW YORK
DAVID P. LOMBARDI
071001
LICENSED PROFESSIONAL ENGINEER

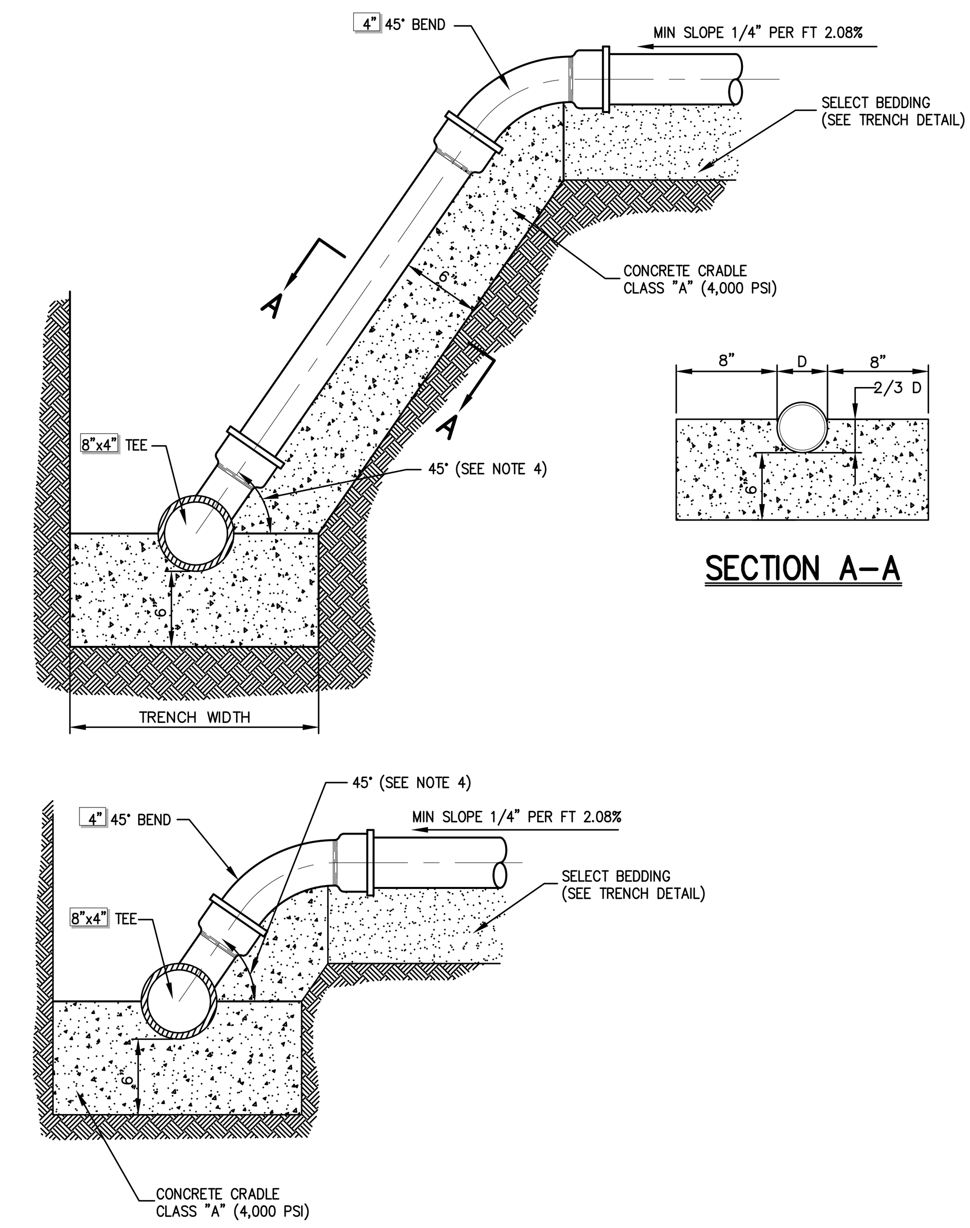
Drawn: NC Approved: DL
Scale: NOT TO SCALE
Date: 03/23/2020
Project No: 19124
19124-DETAILS DET-2 –
Drawing No: C-901



NOTES:

1. THICKNESSES INDICATED REFER TO COMPACTED MEASURE.
2. MATERIAL AND MIX/ITEM NUMBERS REFER TO NEW YORK STATE DEPARMENT OF TRANSPORTANTION SPECIFICATIONS, THE AMERICAN ASSOCIATION OF STATE HIGHWAT AND TRANSPORTATION OFFICIALS (AASHTO, AND AMERICAN SOCIATY FOR TESTING AND MATERIALS (ASTM)

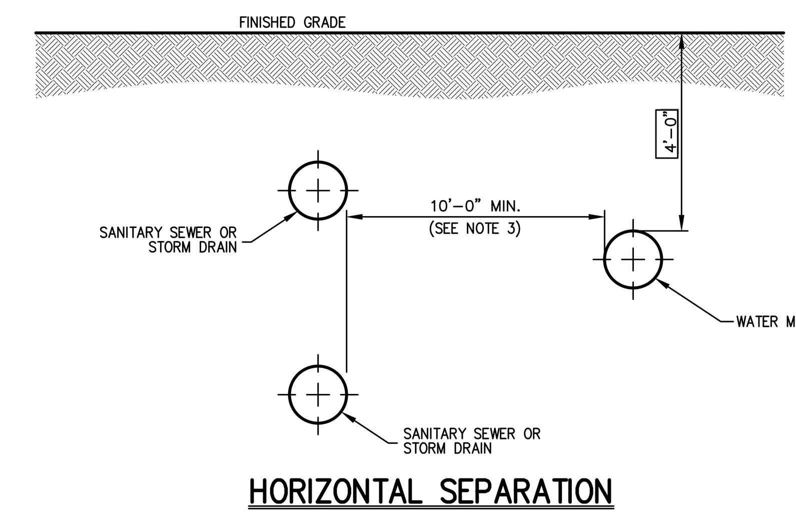
POROUS ASPHALT PAVEMENT 17

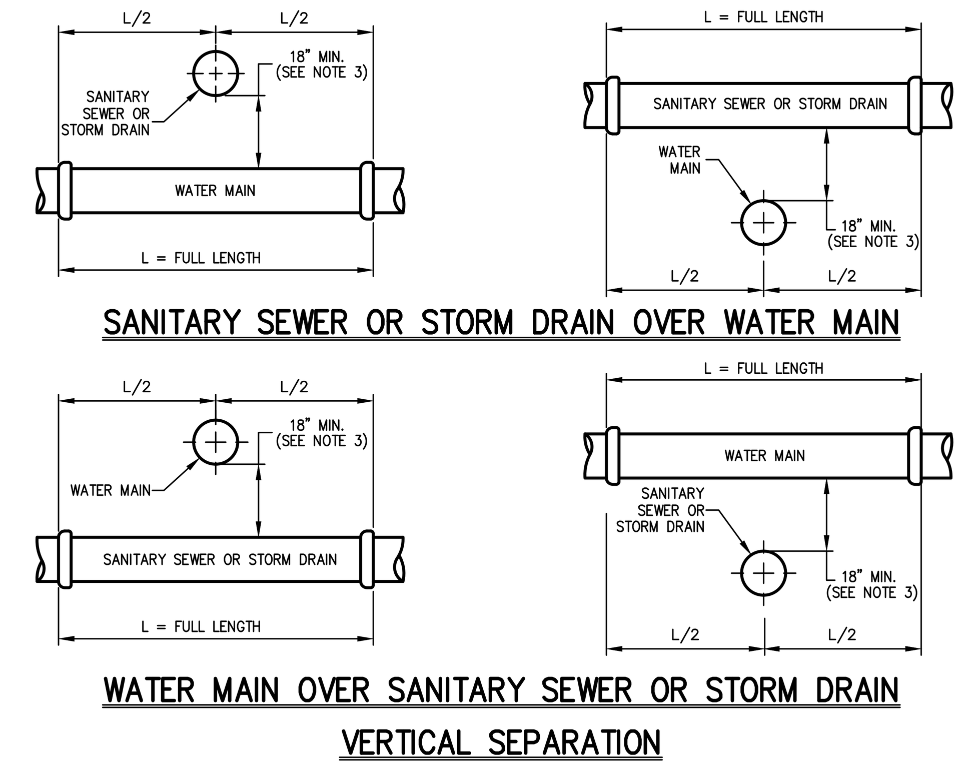


NOTES:

1. ALL SERVICE LINES SHALL HAVE A MINIMUM OF FOUR (4) FEET OF COVER.
2. SERVICE LINE LOCATION, GRADE AND ALIGNMENT SHALL BE AS SHOWN ON DRAWINGS OR AS DIRECTED BY THE OWNER'S FIELD REPRESENTATIVE.
3. WHERE SERVICE LINES ARE TO BE DEAD-ENDED, CONTRACTOR SHALL INSTALL APPROVED WATERTIGHT AND PRESSURE-TIGHT PLUGS.
4. IF MINIMUM COVER CANNOT BE ATTAINED WHILE MAINTAINING MINIMUM SLOPE, THE ANGLE OF CONNECTION MAY BE REDUCED TO 22.5°, IF APPROVED BY THE OWNER'S FIELD REPRESENTATIVE AND GOVERNING BODY WITH JURISDICTION.
5. SANITARY SEWER SERVICE LINE INCLUDING FITTINGS SHALL BE DIP, CLASS 52.

SANITARY SEWER SERVICE CONNECTION 18





NOTES:

1. NORMAL CONDITIONS:
   A. WHENEVER A WATER MAIN MUST CROSS OVER OR UNDER A SANITARY SEWER OR STORM DRAIN, THE PIPES SHALL BE LAID TO PROVIDE A VERTICAL SEPARATION BETWEEN THEM OF AT LEAST 18 INCHES, AS MEASURED FROM THE BOTTOM OF THE HIGHER PIPE TO THE CROWN OF THE LOWER PIPE.
   B. FULL LENGTH OF WATER PIPE MUST BE CENTERED AT THE POINT OF CROSSING; NO JOINTS WILL BE PERMITTED AT THE POINT OF CROSSING.
2. WATER MAIN CROSSING UNDER SANITARY SEWERS:
   A. VERTICAL SEPARATION OF 18 INCHES MUST BE PROVIDED.
   B. ADEQUATE STRUCTURAL SUPPORT MUST BE PROVIDED FOR THE SANITARY SEWER TO PREVENT EXCESSIVE DEFLECTION OF JOINTS AND SETTLING.
   C. FULL LENGTH OF WATER PIPE MUST BE CENTERED AT THE POINT OF CROSSING; NO JOINTS WILL BE PERMITTED AT THE POINT OF CROSSING.
3. IF DURING CONSTRUCTION IT IS FOUND THAT THE REQUIRED SEPARATION OF WATER MAINS, SANITARY SEWERS, STORM SEWERS AND BUILDING SANITARY SEWERS CANNOT BE MET, THE CONTRACTOR OR HIS AUTHORIZED REPRESENTATIVE SHALL IN WRITING ADVISE JOHN MEYER CONSULTING OF THE SPECIFIC CONDITIONS ENCOUNTERED. APPROVAL OF ALTERNATIVE SEPARATION CRITERIA SHALL BE OBTAINED FROM THE WESTCHESTER COUNTY DEPARTMENT OF HEALTH PRIOR TO INSTALLATION.

SEPARATION OF WATER AND SANITARY SEWER/STORM DRAIN LINES 19

NOTES PERTAINING TO DRAIN INLETS

A-1 STEPS WILL NOT BE REQUIRED IN INLETS LESS THAN FOUR (4) FEET IN DEPTH. STEPS WILL BE REQUIRED IN INLETS FOUR (4) FEET OR GREATER IN DEPTH. DEPTHS FOR DRAIN INLETS SHALL BE MEASURED FROM FINISHED GRADE TO INSIDE BOTTOM OF STRUCTURE (INCLUDING SUMP AS APPLICABLE).

A-2 WHEN STEPS ARE REQUIRED, STEPS SHALL COMPLY WITH THE SAME REQUIREMENTS OF ASTM STANDARD C-478, ARTICLE 13 ENTITLED "MANHOLE STEPS & LADDERS".

A-3 FOR MASONRY STRUCTURES, THE FIRST COURSE OF MASONRY SHALL BE SET IN THE CONCRETE FOUNDATION BEFORE THE CONCRETE HAS SET. CONCRETE FOUNDATION SHALL BE CLASS "A"(4000 psi) CONCRETE, TWELVE (12) INCHES THICK AND SHALL EXTEND SIX (6) INCHES BEYOND THE OUTSIDE FACE THE STRUCTURE.

A-4 IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FURNISH AND CONSTRUCT THE PROPER SIZE STRUCTURE INCLUDING THE NECESSARY OPENINGS TO ACCOMMODATE THE WORK AS SHOWN ON THE PLANS OR ORDERED BY THE ENGINEER, AT NO ADDITIONAL COST TO THE OWNER.

A-5 ALL NECESSARY PATCHING FOR DRAIN STRUCTURES SHALL BE ACCOMPLISHED WITH NON-SHRINKING CEMENT MORTAR GROUT, APPROVED EQUAL TO SIKA-SET AS MANUFACTURED BY THE SIKA CHEMICAL CORP.

A-6 FOUNDATIONS FOR PRECAST CONCRETE STRUCTURES SHALL BE SET ON A COMPACTED LAYER OF APPROVED CRUSHED STONE HAVING A MINIMUM COMPACTED THICKNESS OF EIGHT (8) INCHES.

A-7 ALL PIPES SHALL BE CUT FLUSH WITH THE INSIDE WALL OF THE STRUCTURE.

A-8 PROVIDE REINFORCED CONCRETE TOP SLAB FOR OVERSIZED DRAIN INLETS WITH PROPER SIZE OPENING TO ACCOMMODATE INSTALLATION OF FRAME & GRATE.

A-9 FOR MASONRY STRUCTURES GREATER THAN TEN (10) FEET IN DEPTH, THICKNESS OF MASONRY WALLS SHALL BE INCREASED TO TWELVE (12) INCHES.

A-10 FOR ALL STRUCTURES GREATER THAN 10 FEET IN DEPTH, STRUCTURES SHALL PROVIDE MINIMUM INSIDE DIMENSIONS OF 4 FEET X 4 FEET.

NOTES PERTAINING TO MANHOLES

B-1 PRECAST CONCRETE MANHOLES SHALL COMPLY WITH ASTM STANDARD C-478. MANHOLE JOINTS SHALL COMPLY WITH ASTM STANDARD C-443.

B-2 FOR PRECAST CONCRETE MANHOLES FIVE (5) FEET OR LESS IN HEIGHT, TOP CONE SECTION SHALL BE REPLACED WITH PRECAST REINFORCED CONCRETE SLAB (6" MIN. THICKNESS) WITH OPENING OF SUFFICIENT SIZE TO ACCOMMODATE MANHOLE CASTING.

B-3 FOR MANHOLES 10 FEET OR MORE IN DEPTH, MANHOLE DIAMETER SHALL BE FIVE (5) FEET.

B-4 TERMINAL MANHOLE FLOORS SHALL BE SLOPED TOWARD OUTFALL PIPE.

B-5 INVERT CHANNELS FOR PRECAST CONCRETE MANHOLES SHALL BE CONSTRUCTED OF CONCRETE.

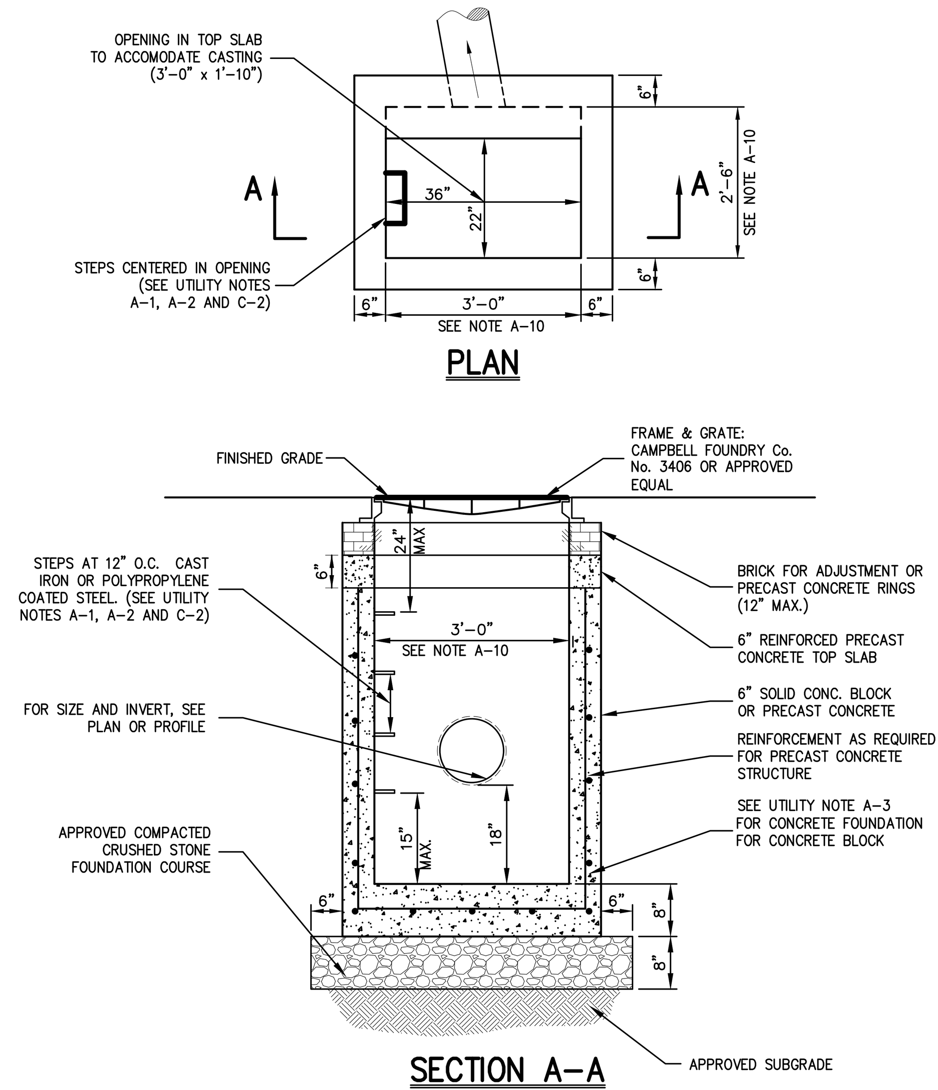
B-6 NOTES A-1, A-2, A-4, A-5, A-6 & A-7 UNDER "NOTES PERTAINING TO DRAIN INLETS" ABOVE SHALL APPLY TO MANHOLES.

NOTES PERTAINING TO PRECAST CONCRETE STRUCTURES FOR STORM DRAINS, SANITARY SEWERS AND WATER LINES

C-1 ALL PRECAST CONCRETE STRUCTURES SHALL BE DESIGNED TO ACCOMMODATE AN H-20 DESIGN LOAD.

C-2 STEPS SHALL BE LOCATED WITHIN STRUCTURE TO AVOID PLACEMENT OVER PIPES WHEN PRACTICABLE.

UTILITY NOTES 20

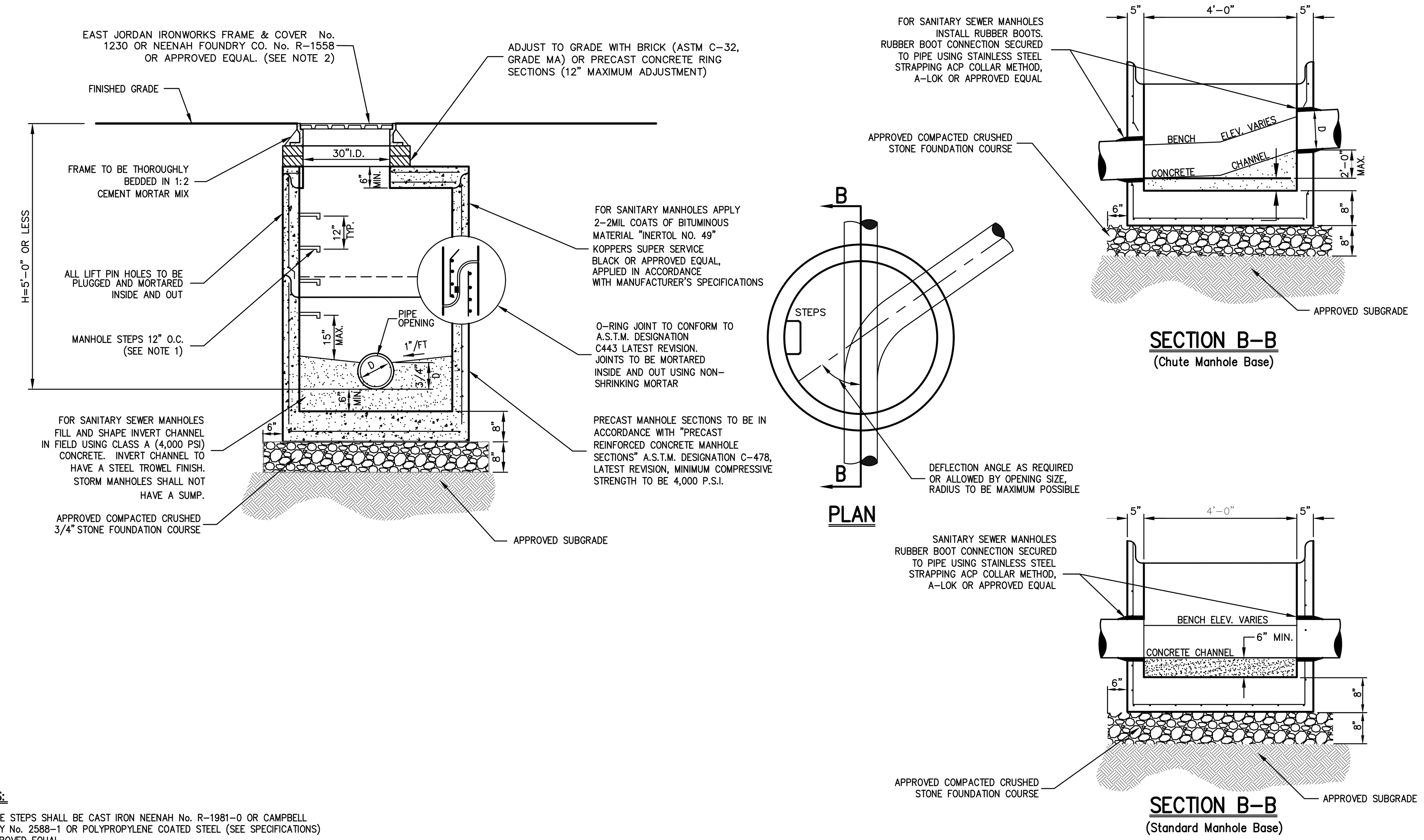


NOTE

1. REINFORCE PRECAST CONCRETE TOP SLAB AND REINFORCE PRECAST CONCRETE STRUCTURE SHALL BE DESIGNED TO ACCOMMODATE AN H-20 DESIGN LOAD.
2. SEE NOTES PERTAINING TO DRAIN INLETS UNDER UTILITY NOTES ON DRAWING C-902

DRAIN INLET (TYPE DI) 21

(with sump-w/o finger underdrains)



NOTES:

1. MANHOLE STEPS SHALL BE CAST IRON NEENAH No. R-1981-0 OR CAMPBELL FOUNDRY No. 2588-1 OR POLYPROPYLENE COATED STEEL (SEE SPECIFICATIONS) OR APPROVED EQUAL.
2. UNLESS OTHERWISE SPECIFIED, SANITARY SEWER MANHOLES SHALL HAVE LETTERS "SEWER" AND STORM DRAIN MANHOLES SHALL HAVE LETTERS "DRAIN" CAST ON COVER. THE COVERS SHALL HAVE VENT HOLES.
3. MANHOLES SHALL MEET OR EXCEED A.S.T.M. AND O.S.H.A. REQUIREMENTS.
4. SEE "NOTES PERTAINING TO MANHOLES" UNDER "UTILITY NOTES" ON DRAWING C-902

MANHOLE (TYPE A) 22

(H < 5'-0")

No.	Revision	Date	By
1.	REVISED PER TOWN COMMENTS	01/25/2021	PD

Previous Editions Obsolete

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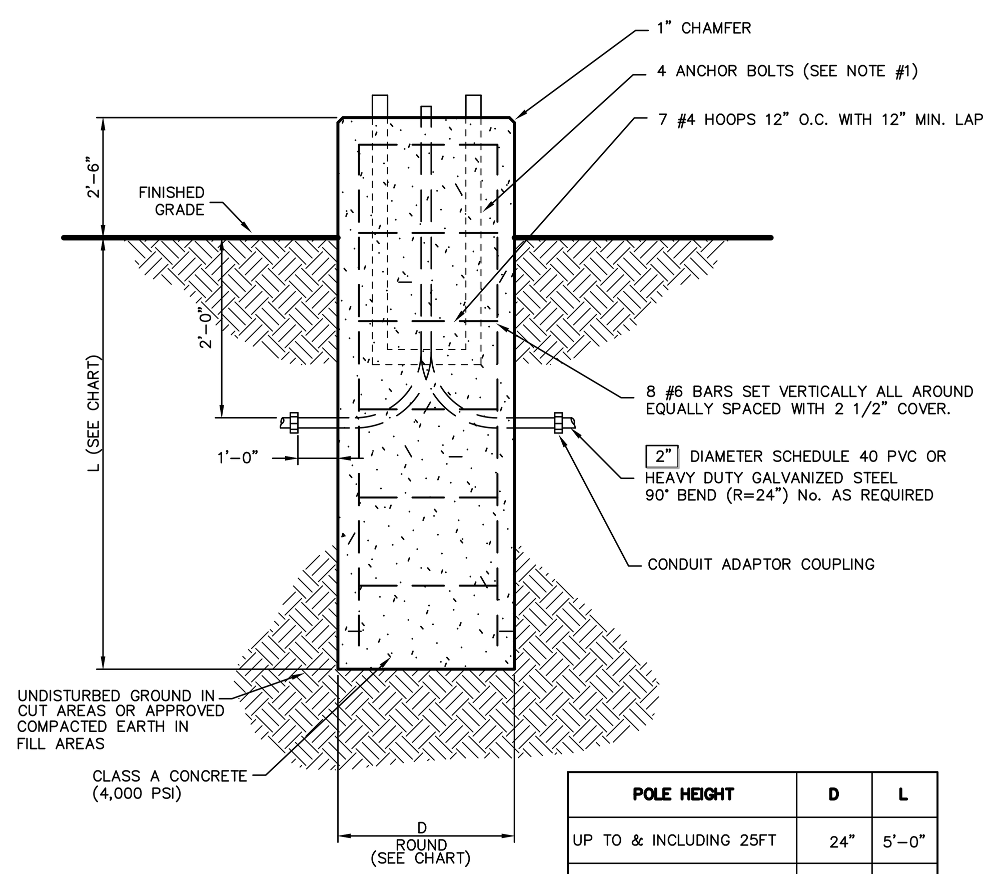
CONSTRUCTION DETAILS

PROPOSED WAREHOUSE
100 BUSINESS PARK DRIVE
TOWN OF NORTH CASTLE, NEW YORK

STATE OF NEW YORK · DAVID P. LOMBARDI · LICENSED PROFESSIONAL ENGINEER · 071001

Drawn: NC	Approved: DL
Scale:	NOT TO SCALE
Date:	03/23/2020
Project No:	19124
19124-DETAILS	DET-3
Drawing No:	C-902



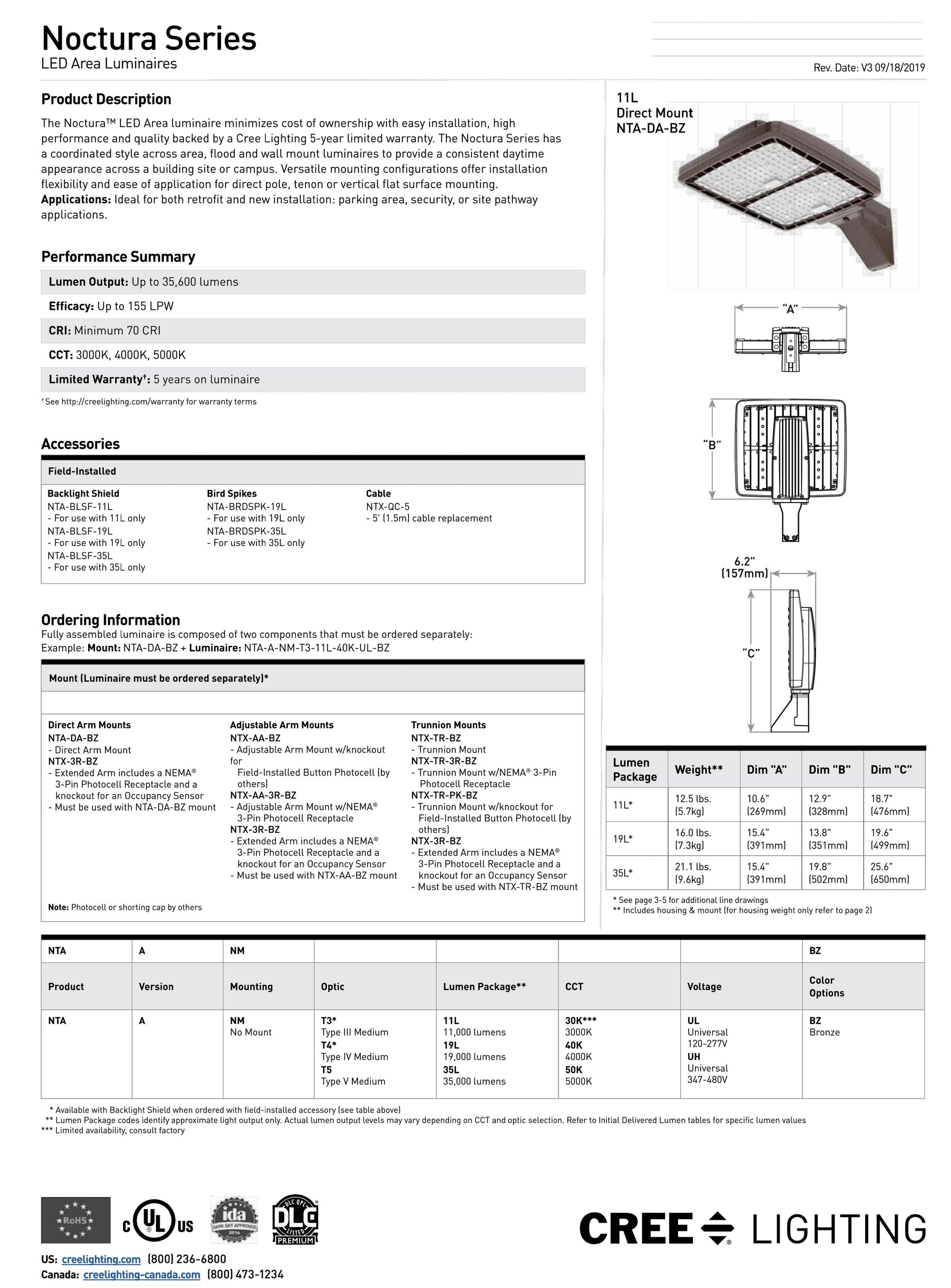
POLE HEIGHT	D	L
UP TO & INCLUDING 25FT	24"	5'–0"
25FT TO & INCLUDING 30FT	30"	5'–0"
30FT TO & INCLUDING 40FT	30"	6'–6"

NOTES:

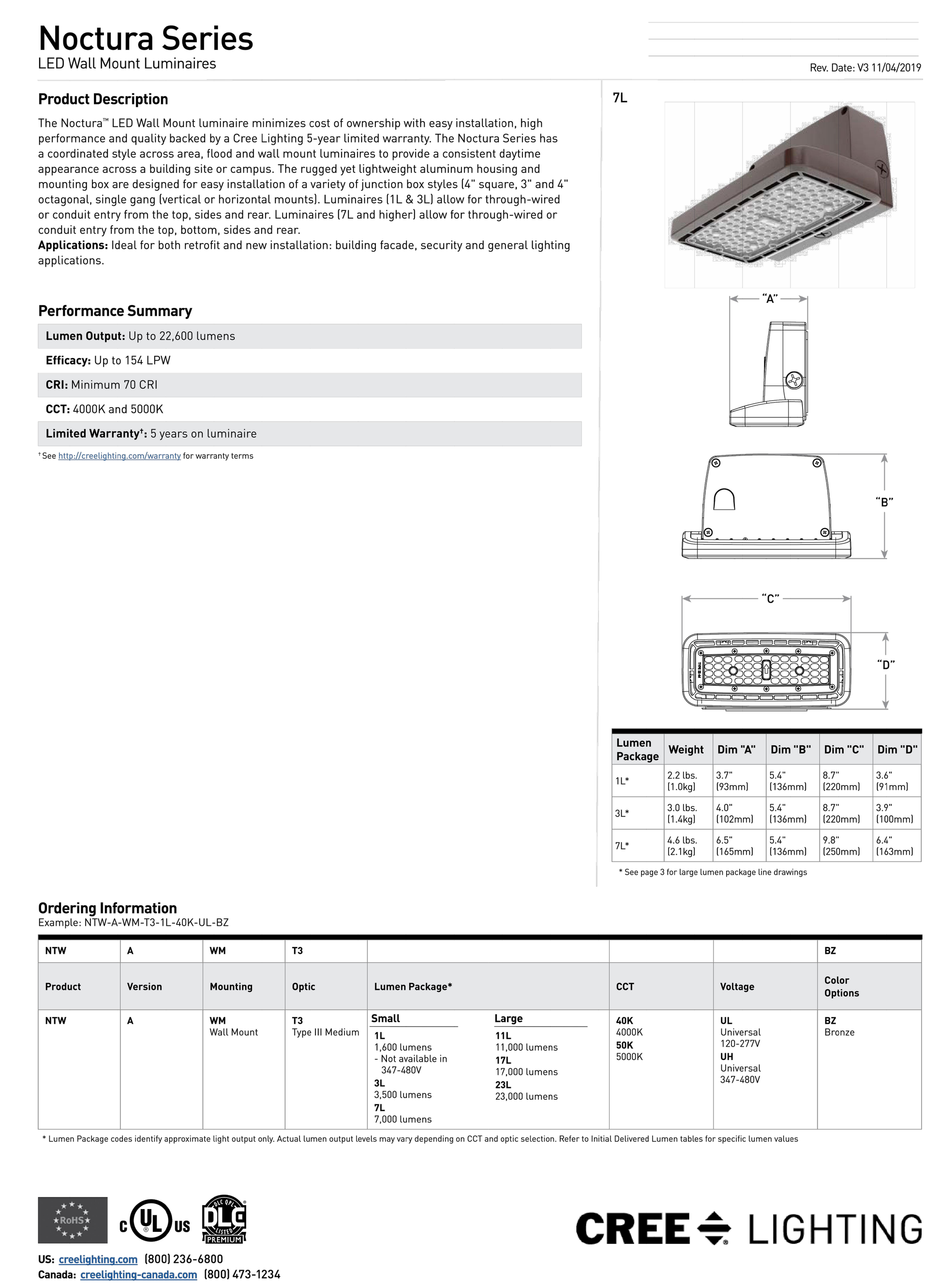
1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CHECK AND VERIFY ALL ANCHOR BOLT DIMENSIONS (SIZE, BOLT CIRCLE, ETC.) WITH THE CONTRACTOR WHO WILL BE INSTALLING THE LIGHTING STANDARD PRIOR TO INSTALLATION OF THE FOUNDATIONS.
2. CHAMFER EXPOSED EDGES OF ALL FOUNDATIONS.
3. PROVIDE INSULATED GROUNDING BUSHING ON EXPOSED ENDS (IN BASE OF POLE) OF ALL GALVANIZED STEEL BENDS.
4. POLES AND LUMINAIRES WILL BE FURNISHED AND INSTALLED BY OTHERS.

LIGHTING STANDARD FOUNDATION
(ROUND)

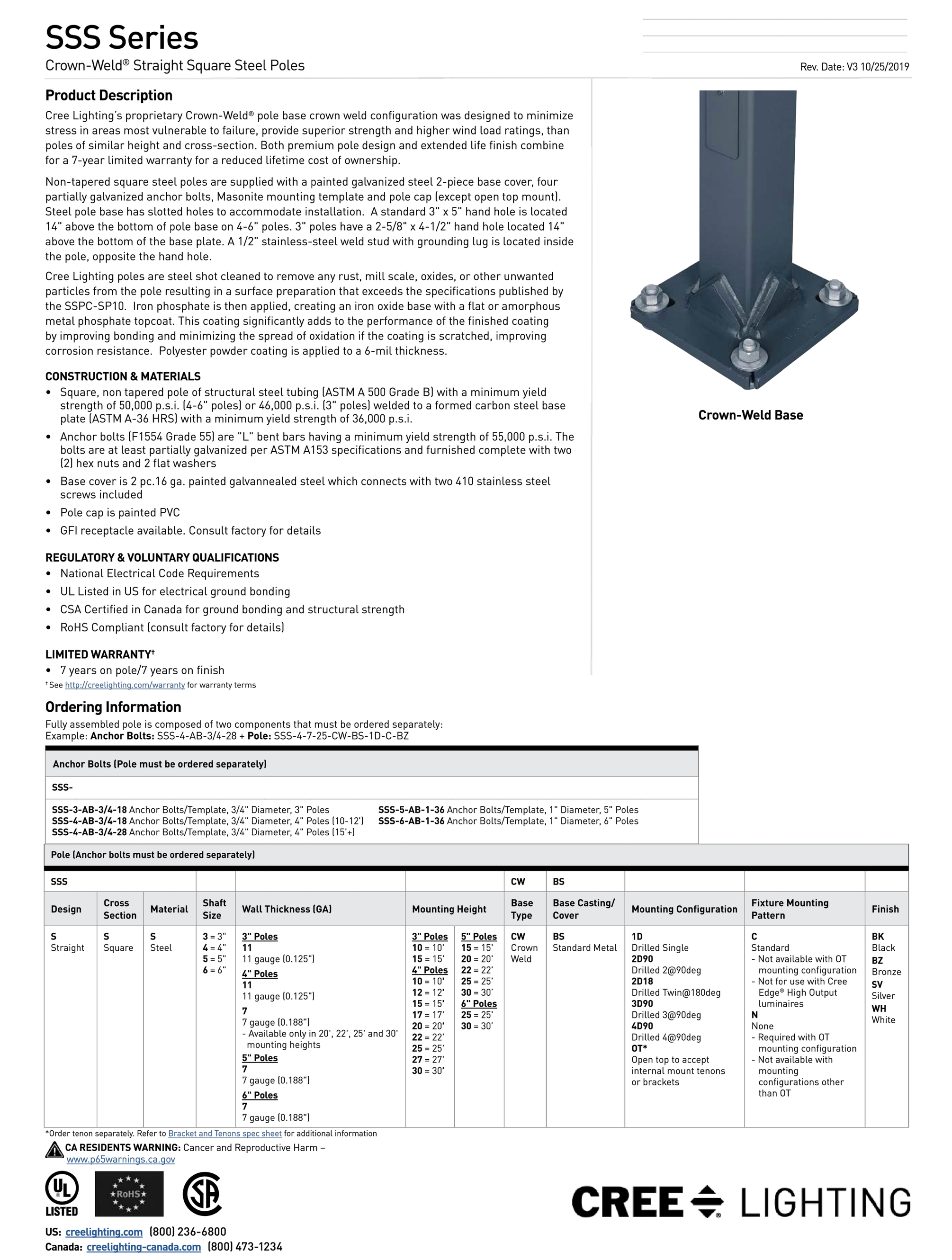
23



Noctura Series
LED Area Luminaires
Product Description
Performance Summary
Accessories
Ordering Information
CREE LIGHTING



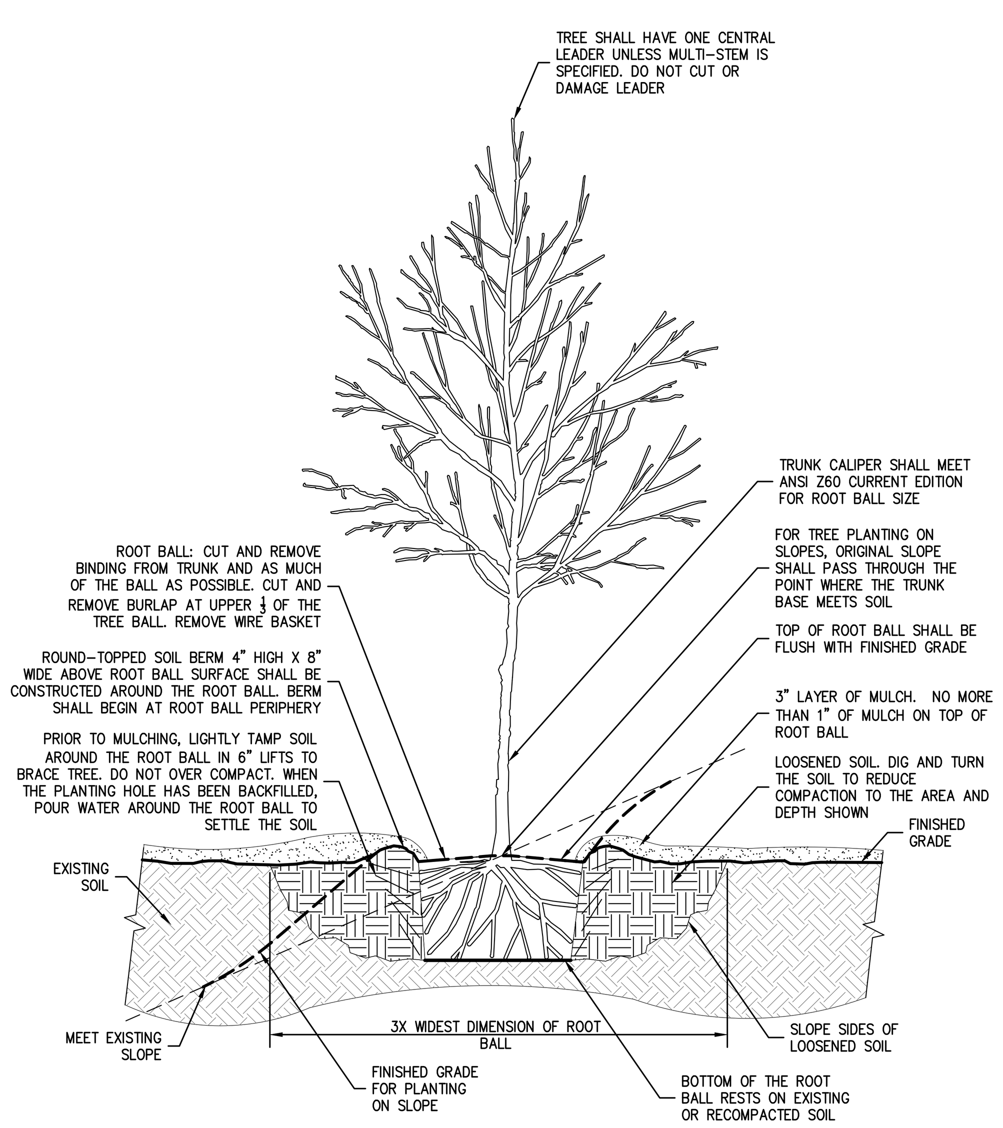
Noctura Series
LED Wall Mount Luminaires
Product Description
Performance Summary
Ordering Information
CREE LIGHTING



SSS Series
Crown-Weld® Straight Square Steel Poles
Product Description
Crown-Weld Base
Ordering Information
CREE LIGHTING

LIGHT FIXTURES AND POLES

24

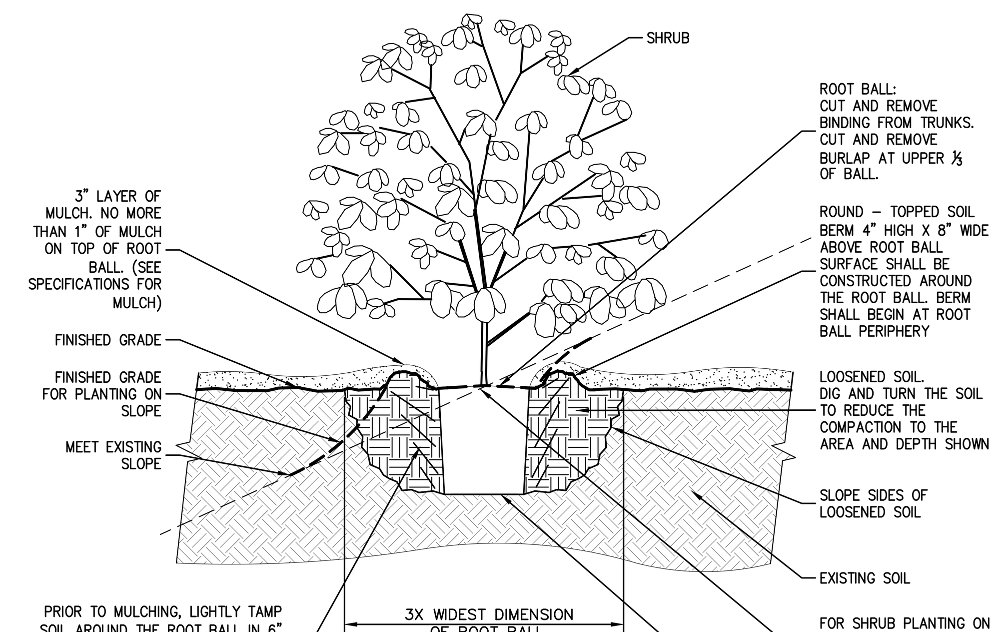


NOTES:

1. ALL PLANTING BEDS SHALL BE FREE OF WEEDS AND GRASS PRIOR TO AND FOLLOWING INSTALLATION OF PLANTS.
2. PLANTS IN CONTAINERS MUST HAVE THE FIBROUS ROOTS PULLED APART.
3. PROPOSED PLANT MATERIAL SHALL BEAR THE SAME RELATION TO FINISHED GRADE AS IT BORE TO PREVIOUS EXISTING GRADE.
4. SEE TREE STAKING DETAIL IF STAKING IS REQUIRED.

TREE PLANTING
(DECIDUOUS AND EVERGREEN)

25



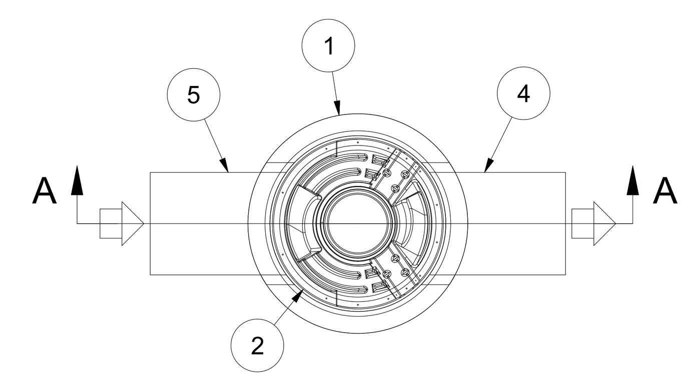
SECTION VIEW

NOTES:

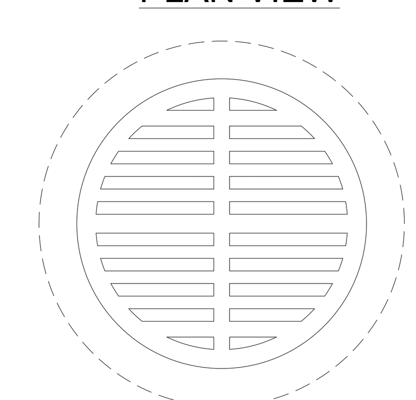
1. ALL PLANTING BEDS SHALL BE FREE OF WEEDS AND GRASS PRIOR TO AND FOLLOWING INSTALLATION OF PLANTS.
2. PLANTS IN CONTAINERS MUST HAVE THE FIBROUS ROOTS PULLED APART.
3. PROPOSED PLANT MATERIAL SHALL BEAR THE SAME RELATION TO FINISHED GRADE AS IT BORE TO PREVIOUS EXISTING GRADE.

SHRUB PLANTING

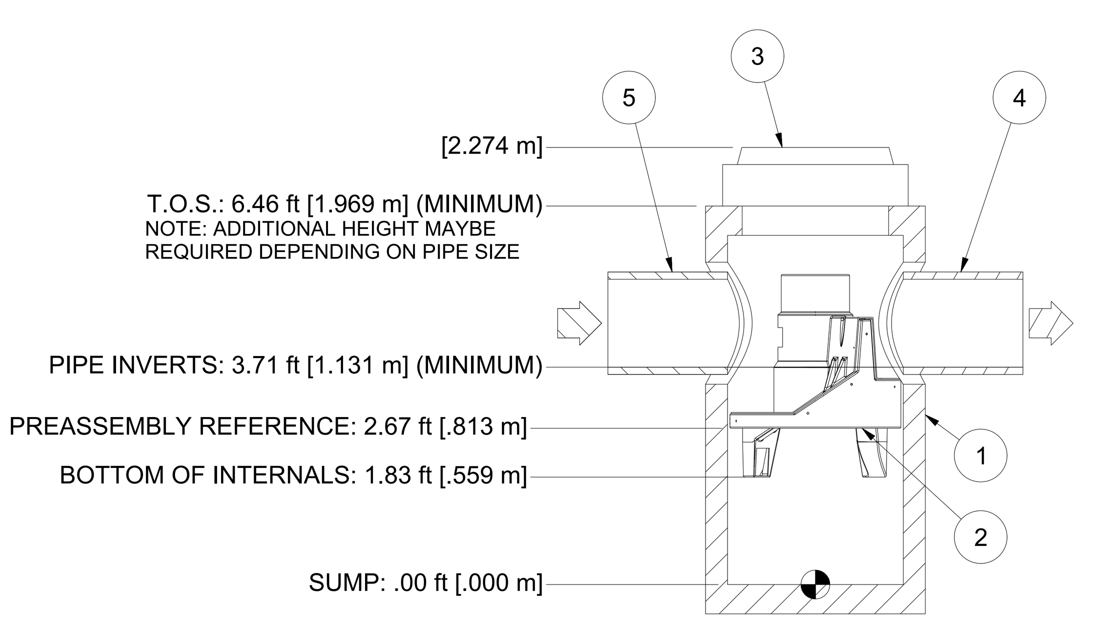
26



PLAN VIEW



SUBSTITUTE OPEN GRATE (NOT INCLUDED)
GRADE RINGS BY OTHERS AS REQUIRED



SECTION A-A

COMMENTS:
1. MANHOLE WALL AND SLAB THICKNESSES ARE NOT TO SCALE.
2. CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING FIRST DEFENSE MANHOLE.
3. CONTRACTOR TO CONFIRM RIM, PIPE INVERTS, PIPE DIA. AND PIPE ORIENTATION PRIOR TO RELEASE OF UNIT TO FABRICATION.

DATE: | SCALE:
DRAWN BY: | CHECKED BY: | APPROVED BY

PRODUCT SPECIFICATION:

1. PEAK HYDRAULIC FLOW: 15.0 cfs (424 l/s)
2. MIN SEDIMENT STORAGE CAPACITY: 0.4 cu. yd. (0.3 cu. m.)
3. OIL STORAGE CAPACITY: 125 gal. (473 liters)
4. MAXIMUM INLET/OUTLET PIPE DIAMETERS: 18 in. (450 mm)
5. THE TREATMENT SYSTEM SHALL USE AN INDUCED VORTEX TO SEPARATE POLLUTANTS FROM STORMWATER RUNOFF.
6. OK110 110 MICRON 80% TSS REMOVAL 0.84 cfs (23.7 l/s) (NJDEP TEST PROTOCOL)
7. NJDEP CERTIFIED 80% TSS REMOVAL AT 1.06 cfs (30.0 l/s)

GENERAL NOTES:
1. General Arrangement drawings only. Contact Hydro International for site specific drawings.
2. The diameter of the inlet and outlet pipes may be no more than 18".
3. Multiple inlet pipes possible (refer to project plan).
4. Inlet/outlet pipe angle can vary to align with drainage network (refer to project plan.s)
5. Peak flow rate and minimum height limited by available cover and pipe diameter.
6. Larger sediment storage capacity may be provided with a deeper sump depth.

PARTS LIST

ITEM	QTY	SIZE (in)	SIZE (mm)	DESCRIPTION
1	1	36	900	I.D. PRECAST MANHOLE
2	1			INTERNAL COMPONENTS (PRE-INSTALLED)
3	1	30	750	FRAME AND COVER (ROUND)
4	1	18 (MAX)	450 (MAX)	OUTLET PIPE (BY OTHERS)
5	1	18 (MAX)	450 (MAX)	INLET PIPE (BY OTHERS)

Hydro International®

DRAWING NO.:
SHEET SIZE: | SHEET: | Rev:

FIRST DEFENSE HYDRODYNAMIC SEPARATOR

27

No.	Revision	Date	By
1.	REVISED PER TOWN COMMENTS	01/25/2021	PD

Previous Editions Obsolete

APPLICANT/OWNER:
A & R REAL ESTATE HOLDINGS, LLC
100 BUSINESS PARK DRIVE
ARMONK, NY 10504

ARCHITECT:
J GROUP DESIGNS, LLC
63 EAST MAIN STREET
PAWLING, NY 12564

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

JMC

CONSTRUCTION DETAILS

PROPOSED WAREHOUSE
100 BUSINESS PARK DRIVE
TOWN OF NORTH CASTLE, NEW YORK

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

STATE OF NEW YORK
DAVID P. LOMBARDI
071001
LICENSED PROFESSIONAL ENGINEER

Drawn: NC	Approved: DL
Scale:	NOT TO SCALE
Date:	03/23/2020
Project No:	19124
19124-DETAILS	DET-4	–
Drawing No:	C–903

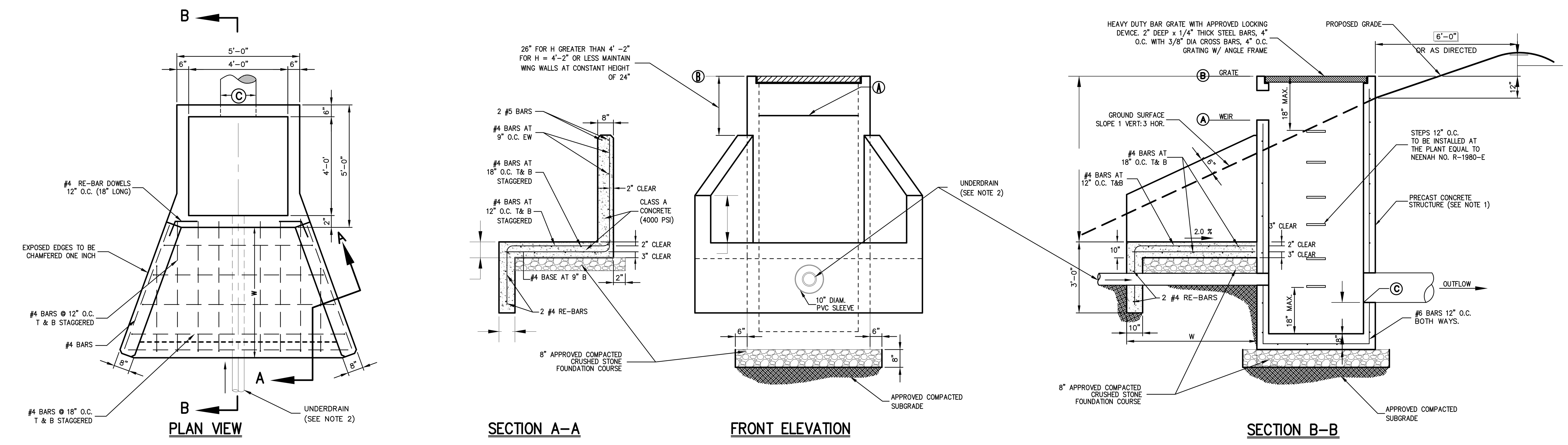
ABBREVIATIONS

OCS	OUTLET CONTROL STRUCTURE
ELEV.	ELEVATION
IF	INFLOW
OF	OUTFLOW
NA	NOT APPLICABLE
O.C.	ON CENTER
T&B	TOP AND BOTTOM
EW	EACH WAY

NOTES:
1. PRECAST CONCRETE STRUCTURE SHALL BE DESIGNED TO ACCOMMODATE AN H-20 DESIGN LOAD
2. UNDERDRAINS SHALL BE INSTALLED IN BASIN A AND B.
3. SEE UTILITY NOTES A-4 TO A-7

STRUCTURE CHART

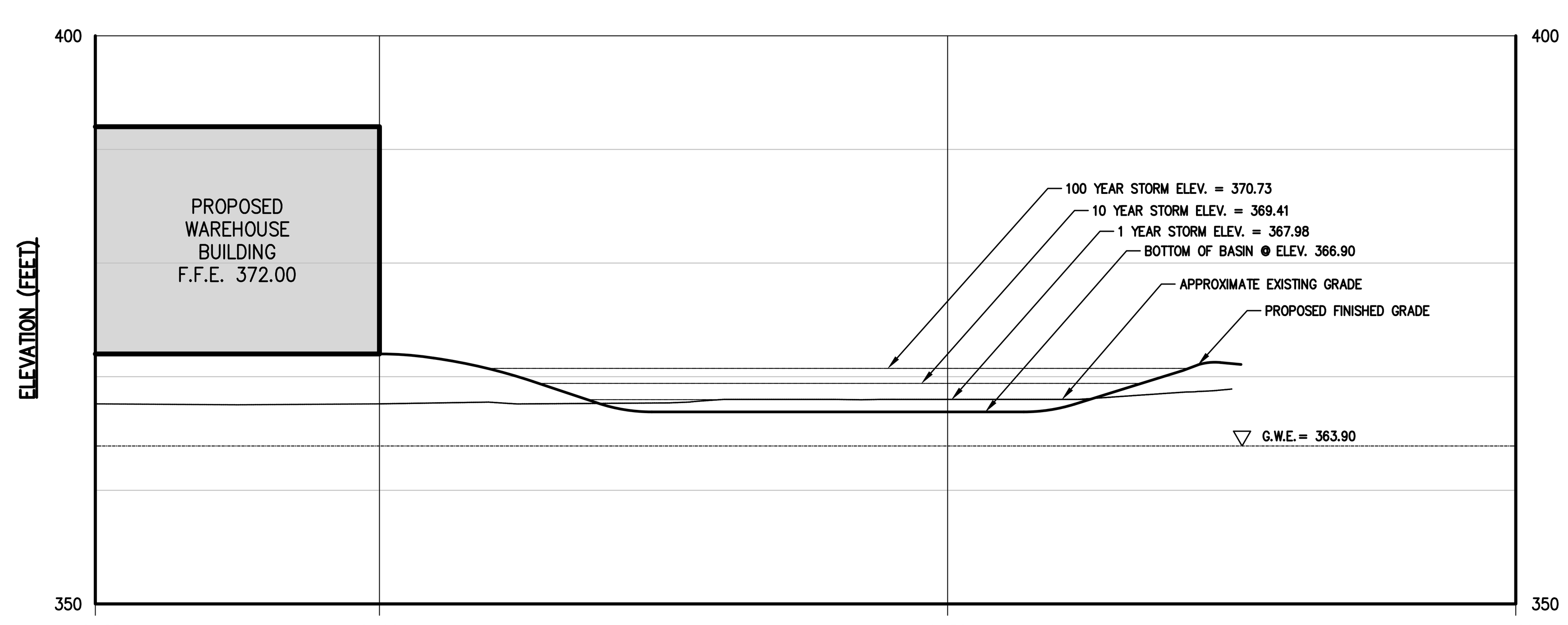
BASIN No.	STRUCTURE No.	PIPE/ORIFICE INVERT AND GRATE ELEVATIONS		
		WEIR (A)	GRATE (B)	PIPE OUT (C)
A	OCS-A	–	370.50	24" @ 366.90
B	OCS-B	4' @ 370.00	370.50	15" @ 365.00



OUTLET CONTROL STRUCTURE

28

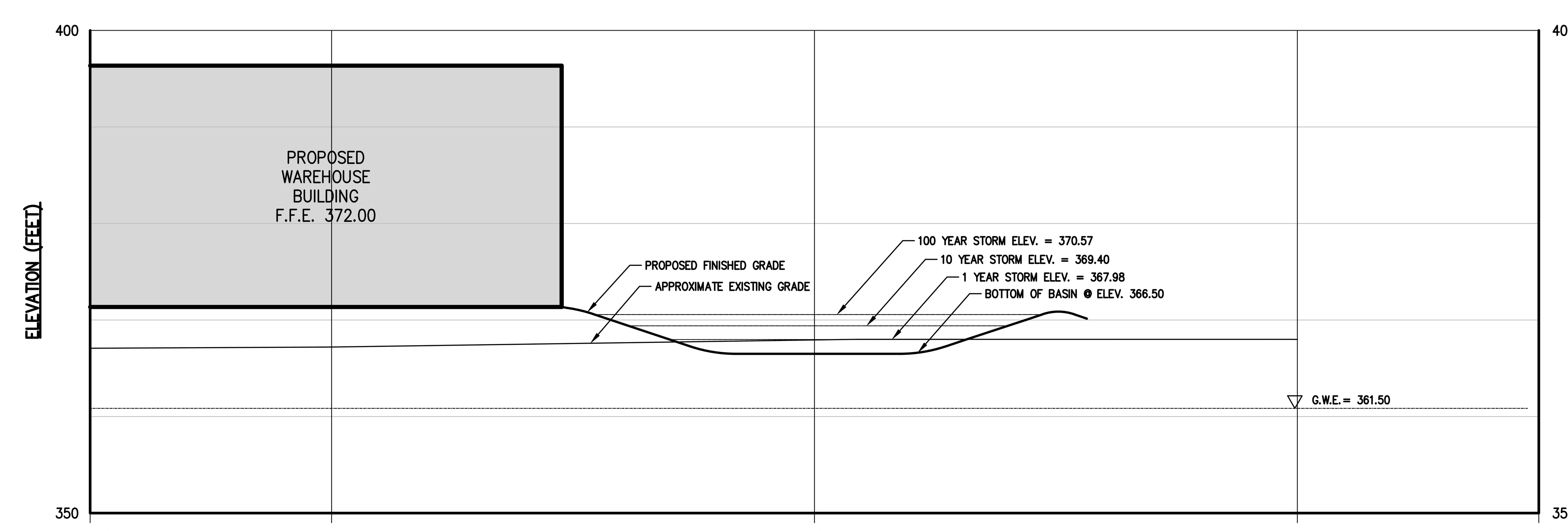
X



INFILTRATION BASIN 'A' CROSS SECTION
SCALE: 1" = 10' HORIZ. 1" = 10' VERT.

INFILTRATION BASIN 'A' CROSS SECTION

29



INFILTRATION BASIN 'B' CROSS SECTION
SCALE: 1" = 10' HORIZ. 1" = 10' VERT.

INFILTRATION BASIN 'B' CROSS SECTION

30

No. | Revision | Date | By

Previous Editions Obsolete

APPLICANT/OWNER:
A & R REAL ESTATE HOLDINGS, LLC
100 BUSINESS PARK DRIVE
ARMONK, NY 10504

ARCHITECT:
J GROUP DESIGNS, LLC
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JMC

CONSTRUCTION DETAILS

PROPOSED WAREHOUSE
100 BUSINESS PARK DRIVE
TOWN OF NORTH CASTLE, NEW YORK

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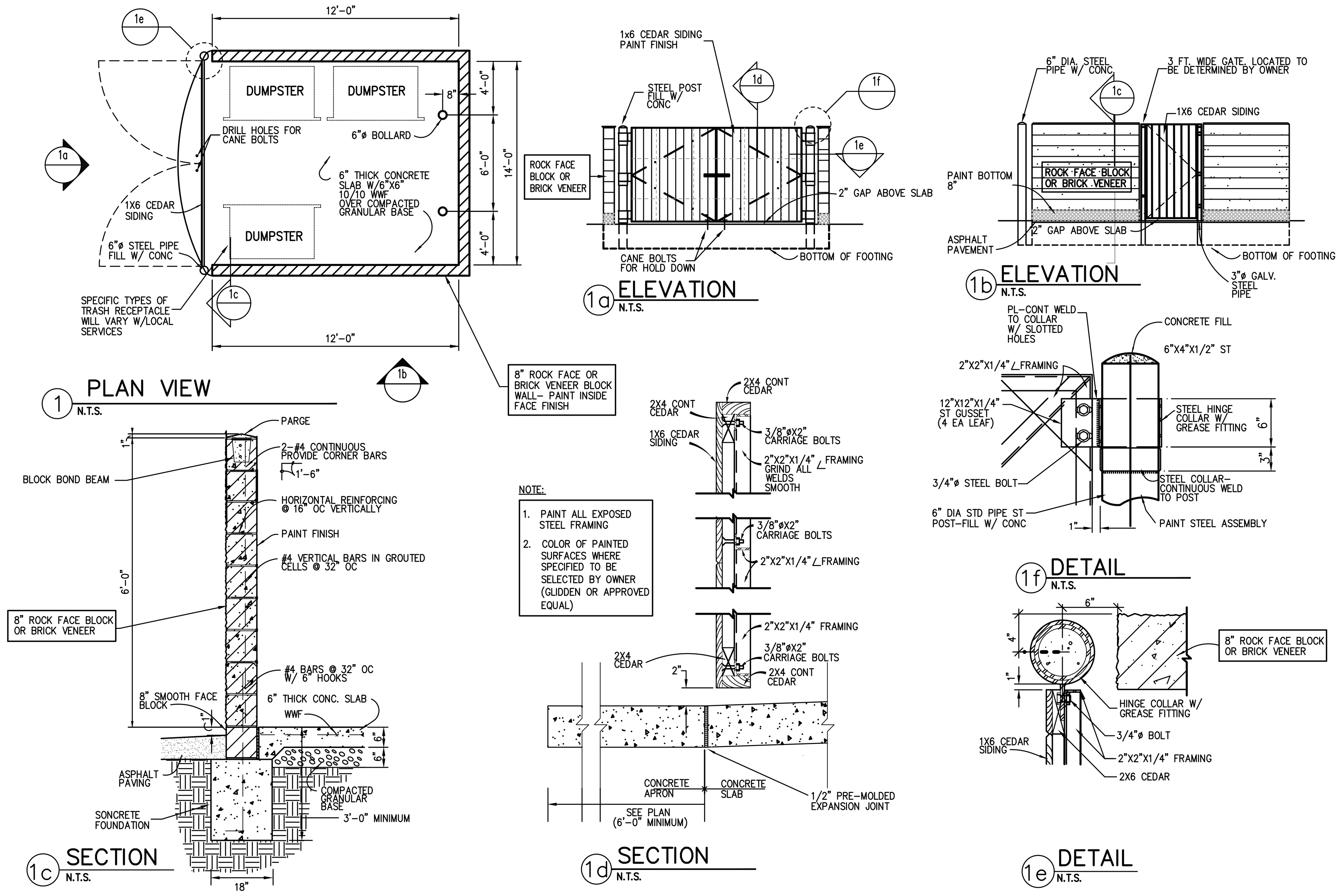
STATE OF NEW YORK · DAVID P. LOMBARDI · LICENSED PROFESSIONAL ENGINEER · 071001

Drawn: NC	Approved: DL
Scale:	NOT TO SCALE
Date:	01/25/2021
Project No:	19124
19124-DETAILS	DET-5
Drawing No:	C-904



TRASH ENCLOSURE ON CONCRETE PAD | 31

X

X

X | X | X | X

APPLICANT/OWNER:
A & R REAL ESTATE HOLDINGS, LLC
100 BUSINESS PARK DRIVE
ARMONK, NY 10504

ARCHITECT:
J GROUP DESIGNS, LLC
63 EAST MAIN STREET
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JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
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www.jmcpllc.com

CONSTRUCTION DETAILS

PROPOSED WAREHOUSE
100 BUSINESS PARK DRIVE
TOWN OF NORTH CASTLE, NEW YORK

STATE OF NEW YORK · DAVID P. LOMBARDI · 071001 · LICENSED PROFESSIONAL ENGINEER

No.	Revision	Date	By

Previous Editions Obsolete

Drawn: NC · Approved: DL
Scale: NOT TO SCALE
Date: 01/25/2021
Project No: 19124
19124-DETAILS · DET-6
Drawing No: C-905

STORMWATER POLLUTION PREVENTION PLAN

PROPOSED WAREHOUSE

100 BUSINESS PARK DRIVE
TOWN OF NORTH CASTLE, NEW YORK

Applicant/Owner: **A&R Real Estate Holdings, LLC**
100 Business Park Drive
Armonk, NY 10504
Contact: Mr. Robert Troccoli
Phone: (718) 655-5450

Prepared by: **JMC Planning Engineering Landscape Architecture & Land Surveying, PLLC**
120 Bedford Road
Armonk, NY 10504

JMC Project 19124

Dated: 03/23/2020
Revised: 01/25/2021

TABLE OF CONTENTS

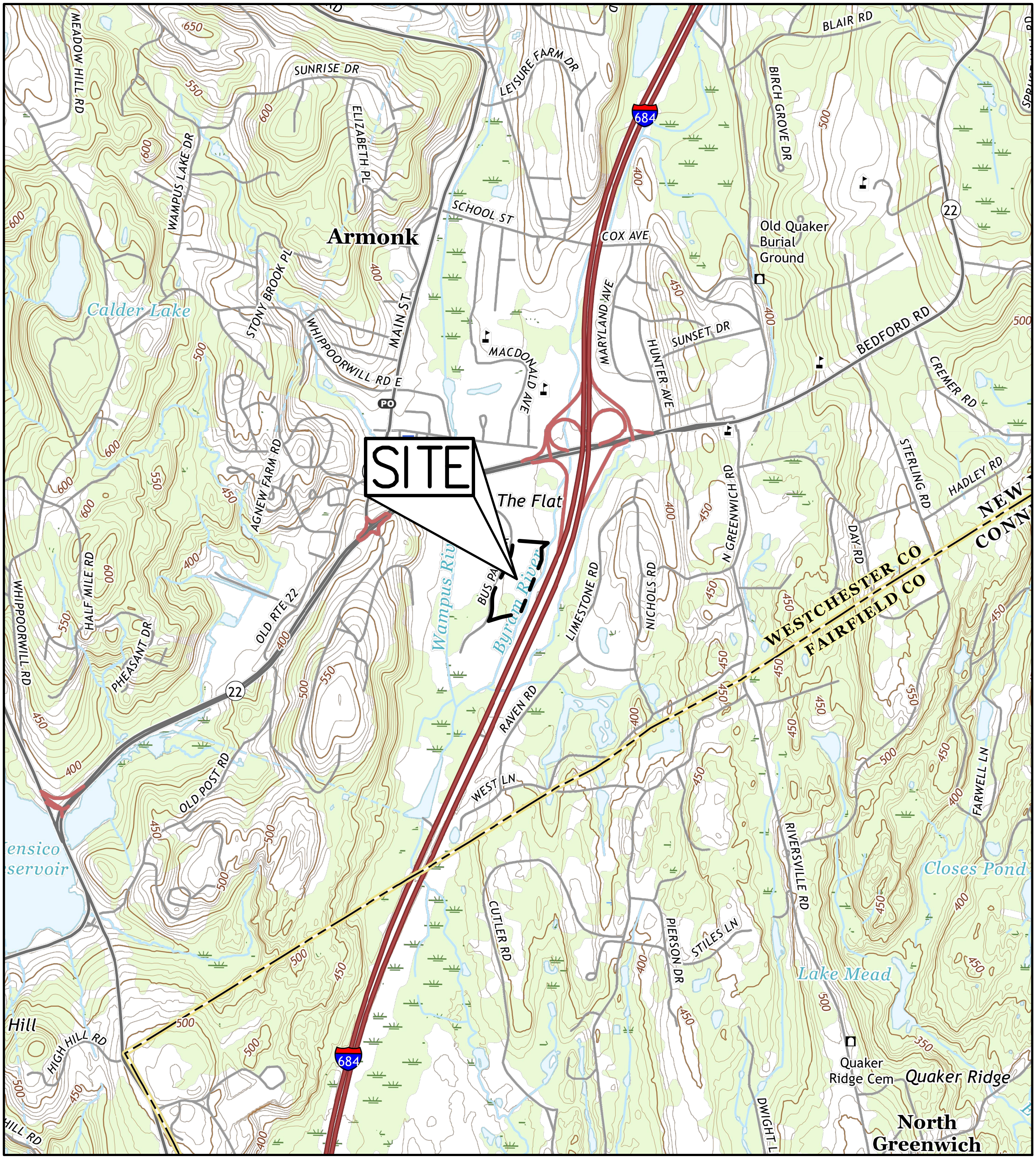
APPENDICES

*P:\2019\19124\ADMIN\SWPPP*_2021-01-11.doc

REFERENCED DRAWINGS FOR SWPPP DESIGN AND DETAILS

JMC SITE PLANS

Dwg. No.	Title	Rev. No./Date
C-000	"Cover Sheet"	1 01/25/2021
C-010	"Overall Existing Conditions Map"	1 01/25/2021
C-011	"Existing Conditions Map"	1 01/25/2021
C-020	"Site Demolition and Tree Removal Plan"	1 01/25/2021
C-100	"Site Layout Plan"	1 01/25/2021
C-200	"Site Grading Plan"	1 01/25/2021
C-300	"Site Utilities Plan"	1 01/25/2021
C-400	"Site Erosion & Sediment Control Plan"	1 01/25/2021
C-500	"Site Landscaping & Wetland Mitigation Plan"	2 01/25/2021
C-900	"Construction Details"	1 01/25/2021
C-901	"Construction Details"	1 01/25/2021
C-902	"Construction Details"	1 01/25/2021
C-903	"Construction Details"	1 01/25/2021



PROPOSED WAREHOUSE

100 BUSINESS PARK DRIVE — TOWN OF NORTH CASTLE, NEW YORK

SITE LOCATION MAP

DATE: 03/23/2020 — JMC PROJECT: 19124

FIGURE: 01 — SCALE: 1" = 2,000'

120 BEDFORD RD
ARMONK
NY 10504

(914) 273-5225
fax 273-2102

JMCPLLC.COM

19124-SITE.dwg; SLM.tab

I. INTRODUCTION

This Stormwater Pollution Prevention Plan has been prepared for the 11.26 acre site located at 100 Business Park Drive, in the Town of North Castle, Westchester County, New York (hereinafter referred to as the "Site"). The site is bordered by the La Quinta Hotel site to the north, the 130 Business Park Drive office building to the south, the Byram River and Interstate 684 to the east, and Business Park Drive to the west. The development has been designed in accordance with the following:

- Requirements of the New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit No. GP-0-20-001, effective January 29, 2020.
- Chapter 267 "Stormwater Management" of the Town of North Castle Code

The project consists of the construction of a 74,850 SF warehouse on the currently undeveloped portion of the site. Associated improvements are proposed consisting of off-street parking, access driveways, loading areas, floodplain compensatory storage, stormwater management facilities, landscaping, and wetland mitigation.

II. STORMWATER MANAGEMENT PLANNING

In order to be eligible for coverage under the NYSDEC SPDES General Permit No. GP-0-20-001 for Stormwater Discharges from Construction Activities, the Stormwater Pollution Prevention Plan (SWPPP) includes stormwater management practices (SMP's) from the publication "New York State Stormwater Management Design Manual," last revised January 2015.

A Stormwater Pollution Prevention Plan has been prepared for this project because it is a construction activity that involves:

- Soil disturbances of one (1) or more acres of land.

The proposed stormwater facilities have been designed such that the quantity and quality of stormwater runoff during and after construction are not adversely altered or are enhanced when compared to pre-development conditions.

<u>The Six Step Process for Stormwater Site Planning and Practice Selection</u>

Stormwater management using green infrastructure is summarized in the six step process described below. The six step process was adhered to when developing this SWPPP. Information is provided in this SWPPP which documents compliance with the required process as follows:

<u>Step 1: Site Planning</u>

Implement planning practices that protect natural resources and utilize the hydrology of the site. Strong consideration must be given to reducing impervious cover to aid in the preservation of natural resources including protecting natural areas, avoiding sensitive areas and minimizing grading and soil disturbance.

<u>Step 2: Determine Water Quality Treatment Volume (WQv)</u>

Determine the required WQv for the site based on the site layout, impervious areas and sub-catchments. This initial calculation of WQv will have to be revised after green infrastructure techniques are applied. The following method has been used to calculate the WQv.

- **<u>90% Rule</u> -** According to the New York State Stormwater Design Manual, Section 4.1, the water quality volume is determined from the 90% rule. The method is based on 90% of the average annual stormwater runoff volume which must be provided due to impervious surfaces. The Water Quality Volume (denoted as the WQv) is designed to improve water quality sizing to capture and treat 90% of the average annual stormwater runoff volume. The WQv is directly related to the amount of impervious cover created at a site. The average rainfall storm depth for 90% of storms in New

York State in one year is used to calculate a volume of runoff. The rainfall depth depends on the location of the site within the state. From this depth of rainfall, the required water quality volume is calculated.

Step 3: Runoff Reduction Volumes (RRv) by Applying Green Infrastructure Techniques and Standard SMP's

RRv is required for this project since it is a combination of both new development and redevelopment.

Green infrastructure techniques or standard SMP's with RRv capacity can potentially reduce the required WQv by incorporating combinations of green infrastructure techniques and standard SMP's within each drainage area on the site.

Green infrastructure techniques are grouped into two categories:

- Practices resulting in a reduction of contributing area such as preservation/restoration of conservation areas, vegetated channels, etc.
- Practices resulting in a reduction of contributing volume such as green roofs, stormwater planters, and rain gardens.

Apply a combination of green infrastructure techniques and standard SMPs with RRv capacity to provide 100% of the WQv calculated in Step 2. If the RRv calculated in this step is greater than or equal to the WQv in Step 2, the RRv requirement has been met and Step 4 can be skipped. If the RRv provided cannot meet or exceed 100% of the WQv, the project must, at a minimum, reduce a percentage of the runoff from impervious areas to be constructed on the site. The percent reduction is based on the Hydrologic Soil Group(s) (HSG) of the site and is defined as Specific Reduction Factor (S).

The following green infrastructure techniques and practices are provided in the Design Manual:

- **Conservation of Natural Areas**
  - The entire site is developed and has been for decades. There are no undisturbed areas that could be planned to be included within a conservation easement. Therefore, there is no area to be subtracted from the contributing area for the WQv calculation.
- **Sheet flow to Riparian Buffers or Filter Strips**
  - There are no well vegetated areas on-site with acceptable slopes that lend an opportunity as a buffer and still meet the minimum contributing length of flow. This practice is not practical for this project since these items are typically used in a residential application.
- **Vegetated Swales**
  - The use of sheet flow into vegetated swales is not practicable due to limited flow lengths, and a lack of sufficient head / elevation on the site.
- **Tree Planting / Tree Pits**
  - The project includes extensive tree planting around its perimeter as part of the proposed landscaping plan. However, the new trees are not credited towards area reduction for the water quality volume.
- **Disconnection of Rooftop Runoff**
  - This practice is not practical for this project since these items are typically used in a residential application for small rooftop areas.
- **Stream Daylighting**
  - This practice is not possible for this project since there are no existing streams on the property which are currently piped / covered.
- **Rain Gardens**
  - This practice is not practical for this project since a contributing drainage area is limited to 1,000 square feet of rooftop. This practice is typically used in a residential application.
- **Green Roofs**
  - This practice is not practicable due to the design and size of the proposed warehouse building.

- **Stormwater Planters**
  - Infiltration planters are typically proposed at various locations around proposed buildings to collect and infiltrate runoff from portions of the building rooftops. Small drainage areas, less than 15,000 square feet can be collected by roof drains and discharged into stormwater planters which infiltrate stormwater prior to entering the underground storm pipes. Stormwater planters are not practicable due to the number needed in addition to the site only having small landscaped areas around the building that would be impractical for stormwater planters.
- **Rain Barrels and Cisterns**
  - Underground storage tanks installed to collect stormwater runoff to be used for irrigation purposes are impractical since the project will not have an irrigation system for the limited landscaped areas.
- **Porous Paving**
  - This practice is being utilized within the new access driveway and associated parking areas. Porous pavement can be used to provide RRv because the soil on-site is classified as hydrologic soil group B. The other paved areas of the site are not acceptable for porous pavement because they will be high traffic areas, and separation to groundwater is not feasible.

- **Standard Practices with RRv Capacity**

  - **Biofilters and Bioretention Basins –** These practices cannot be proposed because the soil within the areas that have the ability to accommodate the practices has observed groundwater elevations that are too close to the surface which would not provide the required separation from the bottom of the practice to groundwater.

  - **Infiltration Practices –** Infiltration basins are proposed to treat and retain runoff from the proposed building, which comprises the majority of the new impervious area on-site.

The Minimum RRv capacity required must be provided by green infrastructure techniques to verify that the RRv requirement has been met. The RRv that is provided by the green infrastructure techniques can then be subtracted from the Total Required WQv that must be provided by the SMP's.

Step 4: Determine the minimum RRv Required

The minimum RRv is calculated similar to the WQV. However, it is determined using only the new impervious cover and accounts for the hydrologic soil group present. In no case shall the runoff reduction achieved from the newly constructed impervious area be less than the minimum runoff reduction volume (RRv_{min}).

Step 5: Apply Standard Stormwater Management Practices to Address Remaining Water Quality Volume

Apply the standard SMP's to meet additional water quality volume requirements that cannot be addressed by applying the green infrastructure techniques. The standard SMP's with RRv capacity must be implemented to verify that the RRv requirement has been met.

- **Infiltration Practices –** Infiltration basins are proposed to treat and retain runoff from the proposed building. This practice is located in an area where the groundwater elevation is acceptable to provide the required separation. According to Section 3.6 of the Design Manual, 90% of the WQv provided by an Infiltration Practice can be applied towards meeting the RRv criteria.

Step 6: Apply Volume and Peak Rate Control Practices to Meet Water Quantity Requirements
The Channel Protection Volume (CPv), Overbank Flood Control (Qp) and Extreme Flood Control (Qf) must be met for the plan to be completed. This is accomplished by using practices such as infiltration basins, dry detention basins, etc. to meet water quantity requirements. The following standards must be met:

1. Stream Channel Protection (CPv)

Stream Channel Protection Volume Requirements (CPv) are designed to protect stream channels from erosion. In New York State this goal is accomplished by providing 24-hour extended detention of the one-year, 24-hour storm event, remained from runoff reduction. Reduction of runoff for meeting stream channel protection objectives, where site conditions allow, is encouraged and the volume reduction achieved through green infrastructure can be deducted from CPv. Trout waters may be exempted from the 24-hour ED requirement, with only 12 hours of extended detention required to meet this criterion. Detention time may be calculated using either a center of mass method or plug flow calculation method.

2. Overbank Flood (Qp) which is the 10 year storm.

Overbank control requires storage to attenuate the post development 10-year, 24-hour peak discharge rate (Qp) to predevelopment rates.

The overbank flood control requirement (Qp) does not apply in certain conditions, including:

- The site discharges directly tidal waters or fifth order (fifth downstream) or larger streams.

- A downstream analysis reveals that overbank control is not needed.

3. Extreme Storm (Qf) which is the 100 year storm.

100 Year Control requires storage to attenuate the post development 100-year, 24-hour peak discharge rate (Qf) to predevelopment rates.

The 100-year storm control requirement can be waived if:

- The site discharges directly tidal waters or fifth order (fifth downstream) or larger streams.
- Development is prohibited within the ultimate 100-year floodplain
- A downstream analysis reveals that 100-year control is not needed.
- If redevelopment results in no increase in impervious area or changes to hydrology that increase the discharge rate from the site the hundred-year criteria does not apply.

Based on the foregoing, this project is eligible for coverage under NYSDEC SPDES General Permit No. GP-0-20-001.

III. STUDY METHODOLOGY

Runoff rates were calculated based upon the standards set forth by the United States Department of Agriculture Natural Resources Conservation Service Technical Release 55, Urban Hydrology for Small Watersheds (TR-55), dated June 1986. The methodology set forth in TR-55 considers a multitude of characteristics for watershed areas including soil types, soil permeability, vegetative cover, time of concentration, topography, rainfall intensity, ponding areas, etc.

The 1, 10, and 100 year storm recurrence intervals were reviewed in the design of the stormwater management facilities (see Appendix A for the supporting Hydrologic Calculations).

Anticipated drainage conditions were analyzed taking into account the rate of runoff which will result from the construction of buildings, parking areas and other impervious surfaces associated with the site development.

Base Data and Design Criteria

For the stormwater management analysis, the following base information and methodology were used:

1. The site drainage patterns and outfall facilities were reviewed by JMC personnel for the purpose of gathering background data and confirming existing mapping of the watershed areas.

2. An Existing Drainage Area Map was developed from the topographical survey. The drainage area map reflects the existing conditions within and around the project area.

3. A Proposed Drainage Area Map was developed from the proposed grading design superimposed over the topographical survey. The drainage area map reflects the proposed conditions within the project area and the existing conditions to remain in the surrounding area.

4. The United States Department of Agriculture (USDA) Web Soil Survey of the site available on its website at http://websoilsurvey.nrcd.usda.gov.

5. Soil Survey of Putnam and Westchester Counties, 1994.

6. The United States Department of Agriculture Natural Resources Conservation Service National Engineering Handbook, Section 4 - Hydrology", dated March 1985.

7. The United States Department of Agriculture Natural Resources Conservation Service Technical Report No. 55, Urban Hydrology for Small Watersheds (TR-55), dated June 1986.

8. United States Department of Commerce Weather Bureau Technical Release No. 40 Rainfall Frequency Atlas of the United States.

The time of concentration was calculated using the methods described in Chapter 3 of TR-55, Second Edition, June 1986. Manning's kinematics wave equation was used to determine the travel time of sheet flow. The 2-year 24 hour precipitation amount of 3.4 inches was used in the equation for all storm events. The travel time for shallow concentrated flow was computed using Figure 3-1 and Table 3-1 of TR-55. Manning's Equation was used to determine the travel time for channel reaches.

9. All hydrologic calculations were performed with the Bentley PondPack software package version 10.0.

10. The New York State Stormwater Management Design Manual, revised January 2015.

11. New York Standards and Specifications for Erosion and Sediment Control, November 2016.

12. The storm flows for the 1, 10, and 100 year recurrence interval storms were analyzed for the total watershed areas. The Type III distribution design storm for a 24 hour duration was used and the mass rainfall for each design storm was taken from the Extreme Precipitation in New York & New England developed by the Natural Resource Conservation Service (NRCS) and the Northeast Regional Climate Center (NRCC) as follows:

24 Hour Rainfall Amounts

Design Storm Recurrence Interval	Inches of Rainfall
1 Year	2.81
10 Year	5.12
100 Year	9.15

IV. EXISTING CONDITIONS

The project site is 11.26 acres, with the 7.75 acre northern portion of the site being developed and the 3.51 acre southern portion of the site being undeveloped. The currently developed portion of the site consists of a 62,782 square foot office/light industrial building with associated off-street parking and driveways. The undeveloped portion of the site consists of woods, grassed areas, and floodplain areas. After stormwater runoff exits the project site, it flows to the Byram River directly to the east of the site. The undeveloped portions of the property flow overland to the Byram River and the developed portions of the site drain to existing conveyance systems which pipe stormwater runoff to the Byram River.

The following natural features, conservation areas, resource areas and drainage patterns of the project site have been identified and utilized to develop Drawing DA-1 "Existing Drainage Area Map" which is included in Appendix G:

- Wetlands (jurisdictional, wetland of special concern)
- Waterways (major, perennial, intermittent, springs)
- Buffers (stream, wetland, forest, etc.)
- Floodplains
- Forest, vegetative cover
- Topography (contour lines, existing flow paths, steep slopes, etc.)
- Soil (hydrologic soil groups, highly erodible soils, etc.)

Based on the USDA Web soil survey, all on-site soils are moderately well drained / poorly drained and belong to hydrological groups B / D. The soil types, boundaries and drainage areas/designations are depicted on Drawing DA-1 within Appendix G.

One Design Line (analysis boundary) was identified for comparing peak rates of runoff in existing and proposed conditions. Similarly, two drainage areas were identified in existing conditions based on the existing drainage divides at the site.

The following is a description of each of the drainage areas analyzed in the existing conditions analysis:

Existing Drainage Area 1A (EDA-1A) is 4.96 acres in size and is located within the center of the site. This area consists of the existing building, southern parking / outdoor storage areas, existing loading area, and lawn / wooded areas in the rear of the property. This drainage area drains towards the existing conveyance system which pipes flows to the Byram River.

The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 88 and 10 minutes, respectively. Refer to Drawing DA-1 in Appendix G.

Existing Drainage Area 1B (EDA-1B) is 3.29 acres in size and is located on the southern undeveloped portion of the site. This area consists of existing lawn and wooded areas. This drainage area drains towards the existing southern parking area, where it then enters the existing conveyance system.

The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 56 and 31.8 minutes, respectively. Refer to Drawing DA-1 in Appendix G.

The peak rates of runoff to the design points from the drainage areas for each storm are shown in the table below:

Table 1
Summary of Peak Rates of Runoff in Existing Conditions
(Cubic Feet per Second)

Storm Recurrence Interval	DL-1
1 year	7.71
10 year	17.98
100 year	38.16

V. PROPOSED CONDITIONS

The project consists of the construction of a 74,850 SF warehouse on the 3.51 acre southern portion of the site that is currently undeveloped. Associated improvements are proposed consisting of off-street parking, access driveways, loading areas, floodplain compensatory storage, stormwater management facilities, landscaping, and wetland mitigation.

The proposed drainage improvements include a variety of stormwater practices, such as an infiltration basin, areas of porous pavement, and a hydrodynamic separator to treat areas of redevelopment. After treatment for water quality and peak rate attenuation, stormwater discharges from the practices will drain to the existing conveyance system, which pipes flows to the existing discharge point into the Byram River. The proposed practices provide multiple opportunities for water quality enhancement and infiltration in addition to the proposed stormwater management basins.

This section describes the design and analysis of the proposed conditions used to demonstrate that the SWPPP meets the requirements of the General Permit.

The Six Step Process For Stormwater Site Planning and Practice Selection

Step 1: Site Planning

The following practices and site features were incorporated in the site design:

- Preserving hydrology - Maintaining drainage divides
- Wetlands and buffers – The Byram River lies immediately to the east of the project site, and the site includes 1.73 acres of wetland buffer. The project requires the disturbance of 0.79 acres of wetland buffer.
- Floodplain considerations - The site lies within the 100 year flood zone according to the National Flood Insurance Program Flood Insurance Rate Map (FIRM) No. 36119C0277F, effective date 09/28/2007.

- Forest, vegetative cover – The maximum amount of forest and vegetative cover has been maintained and/or provided.
- Topography (contour lines, existing flow paths, steep slopes, etc.) has been maintained or disturbed to the minimum extent practicable.
- Soil (hydrologic soil groups, highly erodible soils, etc.)

<u>Step 2: Determine Water Quality Treatment Volume (WQv)</u>

The 90% rule was used to calculate the required Water Quality Volume. Please refer to Appendix 'B' for the required Water Quality Volume calculations.

<u>Step 3: Runoff Reduction Volumes (RRv) by Applying Green Infrastructure Techniques and Standard SMP's</u>

- Porous Paving
- Infiltration Basins

<u>Step 4: Determine the minimum RRv Required</u>

RRv_{min} calculations can be found in Appendix 'B'. RRv_{min} was met through the proposed infiltration basin and areas of porous pavement.

<u>Step 5: Apply Standard Stormwater Management Practices to Address Remaining Water Quality Volume</u>

- **<u>Infiltration Systems</u>**

  <u>Infiltration Basin (I-2)</u>

  <u>Description</u>

An infiltration practice that stores the water quality volume in a shallow depression, before it is infiltrated it into the ground.

- **Alternative SMP's for Redevelopment Portion of Project**

  Hydrodynamic Separator

  Description

  A hydrodynamic separator will be utilized to treat the impervious areas from the redeveloped portion of the site.

Step 6: Apply Volume and Peak Rate Control Practices to Meet Water Quantity Requirements

- **Infiltration Systems**

  Infiltration Basin (I-2)

  Description

  An infiltration practice that stores the water quality volume in a shallow depression, before it is infiltrated it into the ground.

All practices exceed the required elements of SMP criteria as outlined in Chapter 6 of the NYS Stormwater Management Design Manual. A summary of each category is provided below.

1. Feasibility – Stormwater practices are designed based upon unique physical environmental considerations noted in the NYS Stormwater Management Design Manual (NYSSMDM).
2. Conveyance – The design conveys runoff to the designed stormwater practice in a manner that is safe, minimizes erosion and disruption to natural drainage channel and promotes filtering and infiltration.

3. Pretreatment – All stormwater practices provide pretreatment as required in accordance with NYSSMDM design guidelines.

4. Treatment Geometry – The plan provides water quality treatment in accordance with NYSSMDM guidelines.

5. Environmental/Landscaping –Extensive landscaping has been provided for each proposed stormwater practice to enhance pollutant removal and provide aesthetic enhancement to the property.

6. Maintenance – Maintenance for the environment practices has been provided and is detain the SWPPP Report as required. Maintenance access is provided in the design plans.

In order to determine the post-development rates of runoff generated on-site, the following drainage areas were analyzed in the post-development conditions. These areas are graphically depicted on Drawing DA-2 "Proposed Drainage Area Map" located in Appendix G.

One Design Line (analysis boundary) was identified for comparing peak rates of runoff in existing and proposed conditions. Similarly, four separate drainage areas were identified in proposed conditions based on the proposed drainage divides at the site.

The following is a description of each of the drainage areas analyzed in the proposed conditions analysis:

<u>Proposed Drainage Area 1A (PDA-1A)</u> is 2.11 acres in size and is located on the southern portion of the site where development is proposed. This area consists of the proposed warehouse building, areas of lawn, and the proposed infiltration basins. This drainage area drains towards the proposed infiltration basins. Stormwater runoff that exits the proposed infiltration basins will be directed to a series of pipes that will convey the flows to the existing outfall to the Byram River.

The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 91 and 5.0 minutes, respectively.

Proposed Drainage Area 1B (PDA-1B) is 0.60 acres in size and is located on the southern portion of the site where development is proposed. This area consists of the proposed access driveway which runs along the southern and eastern sides of the proposed warehouse. This area is comprised of areas of asphalt pavement, lawn, and porous pavement. This drainage area will be collected and treated by porous asphalt pavement, where flows will then enter the existing conveyance system that connects to the Byram River.

The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 94 and 5.0 minutes, respectively.

Proposed Drainage Area 1C (PDA-1C) is 0.95 acres in size and is located on the western side of the proposed warehouse building. This area consists of the proposed loading area and areas of lawn in the front of the proposed building. This drainage area drains towards a proposed hydrodynamic separator which will treat the impervious areas within this drainage area. Flows will then be directed to the proposed conveyance system which leads to the existing outfall to the Byram River.

The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 80 and 5.0 minutes, respectively.

Proposed Drainage Area 1D (PDA-1D) is 4.55 acres in size and is located on the center of the site. This area consists of the existing building, southern parking area, existing loading area, and compensatory storage areas, and lawn / wooded areas in the rear of the property. This drainage area drains towards the existing conveyance system which pipes flows to the Byram River.

The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 86 and 10.9 minutes, respectively.

Refer to Drawing DA-2 in Appendix G.

The peak rates of runoff to the design point of each of the analyzed drainage areas for each storm are shown on the table below:

Table 3
Summary of Proposed Peak Rates of Runoff in Proposed Conditions
(Cubic Feet per Second)

Storm Recurrence Interval	DL-1
1 year	7.56
10 year	17.45
100 year	37.93

The reductions in peak rates of runoff from proposed to existing conditions are shown on the table below:

Table 4
Percent Reductions in Peak Rates of Runoff (Existing vs. Proposed Conditions)
(Cubic Feet per Second)

Design Line	Storm Recurrence Frequency (Years)	Existing Peak Runoff Rate (cfs)	Proposed Peak Runoff Rate (cfs)	Percent Reduction (%)
1	1 year	7.71	7.56	1.9
	10 year	17.98	17.45	2.9
	100 year	38.16	37.93	0.6

As demonstrated in Table 4, the proposed stormwater improvements will result in significant reductions of peak rates of runoff for all storms and design points analyzed.

VI. SOIL EROSION & SEDIMENT CONTROL

A potential impact of the proposed development on any soils or slopes will be that of erosion and transport of sediment during construction. An Erosion and Sediment Control Management Program will be established for the proposed development, beginning at the start of construction and continuing throughout its course, as outlined in the "New York State Standards and

Specifications for Erosion and Sediment Control," November 2016. A continuing maintenance program will be implemented for the control of sediment transport and erosion control after construction and throughout the useful life of the project.

The Operator shall have a qualified professional conduct an assessment of the site prior to the commencement of construction and certify that the appropriate erosion and sediment controls, as shown on the Sediment & Erosion Control Plans, have been adequately installed to ensure overall preparedness of the site for the commencement of construction. In addition, the Operator shall have a qualified professional conduct one site inspection at least every seven calendar days and at least two site inspections every seven calendar days when greater than five acres of soil is disturbed at any one time.

Prior to the commencement of construction activity, the owner or operator must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The owner or operator shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the trained contractor. The owner or operator shall ensure that at least one trained contractor is on site on a daily basis when soil disturbance activities are being performed.
The owner or operator shall have each of the contractors and subcontractors identified above sign a copy of the certification statement provided in Appendix F before they commence any construction activity.

<u>Soil Description</u>

As provided by the United States Department of Agriculture, Soil Conservation Service "Web Soil Survey," soil classifications which exist on the subject site are described below.

Soils are placed into four hydrologic groups: A, B, C, and D. In the definitions of the classes, infiltration rate is the rate at which water enters the soil at the surface and is controlled by the surface conditions. Transmission rate is the rate at which water moves in the soil and is controlled by soil properties. Definitions of the classes are as follows:

A. (Low runoff potential). The soils have a high infiltration rate even when thoroughly wetted. They chiefly consist of deep, well drained to excessively drained sands or gravels. They have a high rate of water transmission.

B. The soils have a moderate infiltration rate when thoroughly wetted. They chiefly are moderately deep to deep, moderately well drained to well drained soils that have moderately fine to moderately coarse textures. They have a moderate rate of water transmission.

C. The soils have a slow infiltration rate when thoroughly wetted. They chiefly have a layer that impedes downward movement of water or have moderately fine to fine texture. They have a slow rate of water transmission.

D. (High runoff potential). The soils have a very slow infiltration rate when thoroughly wetted. They chiefly consist of clay soils that have a high swelling potential, soils that have a permanent high water table, soils that have a claypan or clay layer at or near the surface, and shallow soils over nearly impervious material. They have a very slow rate of water transmission.

A soil's tendency to erode is also described in the USDA web soil survey. The ratings in this interpretation indicate the hazard of soil loss from unsurfaced areas. The ratings are based on soil erosion factor K, slope, and content of rock fragments. The hazard is described as "slight," "moderate," or "SEVERE." A rating of "slight" indicates that little or no erosion is likely; "moderate" indicates that some erosion is likely, that the temporarily unsurfaced / unstabilized during construction may require occasional maintenance, and that simple erosion-control measures are needed; and "SEVERE" indicates that significant erosion is expected, that the roads or trails require frequent maintenance, and that erosion-control measures are needed.

Per the Soil Survey, the following soils listed below are present at the site. Following this list is a detailed description of each soil type found on the property:

SYM.	H.S.G.	DESCRIPTION
Ff	D	Fluvaquents-Udifluvents complex, frequently flooded
Ub	B	Udorthents, smoothed
Uf	D	Urban land

Ff, Fluvaquents-Udifluvents Complex, Frequently Flooded

This soil is very deep, well drained to very poorly drained, nearly level soils that formed in recent alluvial deposits. The parent material consists of alluvium with highly variable texture. Depth to the top of a seasonal high water table is 1.5 to 3.0 feet below the surface from November through April. Available water capacity is moderate.

Hydrologic group: D
Erosion Hazard Rating: Slight

Ub, Udorthents, Smoothed

This soil is very deep, excessively drained to moderately well drained soils that have been altered by cutting and filling. It is mainly in and adjacent to urban areas, highways, and borrow areas. It is made up of soil material in alternating layers ranging from sand to silt loam Depth to the top of a seasonal high water table is approximately 1.5 to 4 feet. Available water capacity is moderate.

Hydrologic group: B
Erosion Hazard Rating: Not Rated

Uf, Urban Land

This soil consists of areas where at least 60 percent of the land surface is covered with buildings or other structures. The areas include parking lots, shopping centers, industrial parks, and institutional sites. Depth to the top of a seasonal high water table is greater than 6'. Available water capacity is moderate.

Hydrologic group: D
Erosion Hazard Rating: Not Rated

On-Site Pollution Prevention

There are temporary pollution prevention measures used to control litter and construction debris on site, such as:

- Silt Fence
- Inlet Protection
- Stabilized Construction Access

There will be inlet protection provided for all storm drains and inlets with the use of curb gutter inlet protection structures and stone & block drop inlet protection, which keep silt, sediment and construction litter and debris out of the on-site stormwater drainage system.

Temporary Control Measures

Temporary control measures and facilities will include silt fences, construction ditches, stabilized construction access, temporary seeding, mulching and sediment traps with temporary riser and anti-vortex devices.

Throughout the construction of the proposed development, temporary control facilities will be implemented to control on-site erosion and sediment transfer. Construction ditches, if required, will be used to direct stormwater runoff to temporary sediment traps for settlement. The sediment traps will be constructed as part of this project will serve as temporary sediment basins to remove sediment and pollutants from the stormwater runoff produced during construction. Descriptions of the temporary sediment & erosion controls that will be used during the development of the site including silt fence, stabilized construction access, seeding, mulching and inlet protection are as follows:

1. Silt Fence is constructed using a geotextile fabric. The fence will be either 18 inches or 30 inches high. The height of the fence can be increased in the event of placing these devices on uncompacted fills or extremely loose undisturbed soils. The fences will not be placed in areas which receive concentrated flows such as ditches, swales and channels nor will the filter fabric material be placed across the entrance to pipes, culverts, spillway structures, sediment traps or basins.

2. Stabilized Construction Access consists of AASHTO No. 1 rock. The rock entrance will be a minimum of 50 feet in length by 24 feet in width by 8 inches in depth.

3. Seeding will be used to create a vegetative surface to stabilize disturbed earth until at least 80% of the disturbed area has a perennial vegetative cover. This amount is required to adequately function as a sediment and erosion control facility. Grass lining will also be used to line temporary channels and the surrounding disturbed areas.

4. Mulching is used as an anchor for seeding and disturbed areas to reduce soil loss due to storm events. These areas will be mulched with straw at a rate of 3 tons per acre such that the mulch forms a continuous blanket. Mulch must be placed after seeding or within 48 hours after seeding is completed.

5. Inlet Protection will be provided for all stormwater basins and inlets with the use of curb & gutter inlet protection and stone & block inlet protection structures, which will keep silt, sediment and construction debris out of the storm system. Existing structures within existing paved areas will be protected using “Silt Sacks” inside the structures.

The contractor shall be responsible for maintaining the temporary sediment and erosion control measures throughout construction. This maintenance will include, but not be limited to, the following tasks:

1. For dust control purposes, moisten all exposed graded areas with water at least twice a day in those areas where soil is exposed and cannot be planted with a temporary cover due to construction operations or the season (December through March).

2. Inspection of erosion and sediment control measures shall be performed at the end of each construction day and immediately following each rainfall event. All required repairs shall be immediately executed by the contractor.

3. Sediment deposits shall be removed when they reach approximately ⅓ the height of the silt fence. All such sediment shall be properly disposed of in fill areas on the site, as directed by the Owner's Field Representative. Fill shall be protected following disposal with mulch, temporary and/or permanent vegetation and be completely circumscribed on the downhill side by silt fence.

4. Rake all exposed areas parallel to the slope during earthwork operations.

5. Following final grading, the disturbed area shall be stabilized with a permanent surface treatment (i.e. turf grass, pavement or sidewalk). During rough grading, areas which are not to be disturbed for fourteen or more days shall be stabilized with the temporary seed mixture, as defined on the plans. Seed all piles of dirt in exposed soil areas that will not receive a permanent surface treatment.

Concrete Material and Equipment Management

Concrete washouts shall be used to contain concrete and liquids when the chutes of concrete mixers and hoppers of concrete pumps are rinsed out after delivery. The washout facilities consolidate solid for easier disposal and prevent runoff of liquids. The wash water is alkaline and contains high levels of chromium, which can leach into the ground and contaminate groundwater. It can also migrate to a storm drain, which can increase the pH of area waters and harm aquatic life. Solids that are improperly disposed of can clog storm drain pipes and cause flooding. Installing concrete washout facilities not only prevents pollution but also is a matter of good housekeeping at your construction site.

Prefabricated concrete washout containers can be delivered to the site to provide maintenance and disposal of materials. Regular pick-ups of solid and liquid waste materials will be necessary. To prevent leaks on the job site, ensure that prefabricated washout containers are watertight. A self installed concrete washout facility can be utilized although they are much less reliable than prefabricated containers and are prone to leaks. There are many design options for the washout, but they are preferably built below-grade to prevent breaches and reduce the likelihood of runoff. Above-grade structures can also be used if they are sized and constructed correctly and are diligently maintained. One of the most common problems with self-installed concrete washout facilities is that they can leak or be breached as a result of constant use, therefore the contractor shall be sure to use quality materials and inspect the facilities on a daily basis.

Washouts must be sized to handle solids, wash water, and rainfall to prevent overflow. Concrete Washout Systems, Inc. estimates that 7 gallons of wash water are used to wash one truck chute and 50 gallons are used to wash out the hopper of a concrete pump truck.

For larger sites, a below-grade washout should be at least 10 feet wide and sized to contain all liquid and solid waste expected to be generated in between cleanout periods. A minimum of 12-inches of freeboard must be provided. The pit must be lined with plastic sheeting of at least 10-mil thickness without holes or tears to prevent leaching of liquids into the ground. Concrete wash water should never be placed in a pit that is connected to the storm drain system or that drains to nearby waterways.

An above-grade washout can be constructed at least 10 feet wide by 10 feet long and sized to contain all liquid and solid waste expected to be generated in between cleanout periods. A minimum of 4-inches of freeboard must be provided. The washout structures can be constructed with staked straw bales or sandbags double-or triple lined with plastic sheeting of at least 10-mil thickness without holes or tears.

Concrete washout facilities shall not be located within 50 feet of storm drains, open ditches, or water bodies and should be placed in locations that allow for convenient access for concrete trucks. The contractor shall check all concrete washout facilities daily to determine if they have been filled to 75 percent capacity, which is when materials need to be removed. Both above-and below-ground self-installed washouts should be inspected daily to ensure that plastic linings are intact and sidewalls have not been damaged by construction activities. Prefabricated washout containers should be inspected daily as well as to ensure the container is not leaking or nearing 75 percent capacity. Inspectors should also note whether the facilities are being used regularly. Additional signage for washouts may be needed in more convenient locations if concrete truck operators are not utilizing them.

The washout structures must be drained or covered prior to predicted rainstorms to prevent overflows. Hardened solids either whole or broken must be removed and then they may be reused onsite or hauled away for recycling.

Once materials are removed from the concrete washout, a new structure must be built or excavated, or if the previous structure is still intact, inspect it for signs of weakening or damage and make any necessary repairs. Line the structure with new plastic that is free of holes or tears and replace signage if necessary. It is very important that new plastic be used after every cleaning because pumps and concrete removal equipment can damage the existing liner.

Construction Site Chemical Control

The purpose of this management measure is to prevent the generation of nonpoint source pollution from construction sites due to improper handling and usage of nutrients and toxic substances, and to prevent the movement of toxic substances from the construction site.

Many potential pollutants other than sediment are associated with construction activities. These pollutants include pesticides; fertilizers used for vegetative stabilization; petrochemicals; construction chemicals such as concrete products, sealers, and paints; wash water associated with these products; paper; wood; garbage; and sanitary waste.

Disposal of excess pesticides and pesticide-related wastes should conform to registered label directions for the disposal and storage of pesticides and pesticide containers set forth in applicable Federal, State and local regulations that govern their usage, handling, storage, and disposal.

Pesticides should be disposed of through either a licensed waste management firm or a treatment, storage and disposal (TSD) facility. Containers should be triple-rinsed before disposal, and rinse waters should be reused as product.
Other practices include setting aside a locked storage area, tightly closing lids, storing in a cool, dry place, checking containers periodically for leaks or deterioration, maintaining a list of products in storage, using plastic sheeting to line the storage areas, and notifying neighboring property owners prior to spraying.

When storing petroleum products, follow these guidelines:

- Create a shelter around the area with cover and wind protection;
- Line the storage area with a double layer of plastic sheeting or similar material;
- Create an impervious berm around the perimeter with a capacity of 110 percent greater than that of the largest container;
- Clearly label all products;

- Keep tanks off the ground; and
- Keep lids securely fastened.

Post spill procedure information and have persons trained in spill handling on site or on call at all times. Materials for cleaning up spills should be kept on site and easily available. Spills should be cleaned up immediately and the contaminated material properly disposed of. Maintain and wash equipment and machinery in confined areas specifically designed to control runoff.

Thinners or solvents should not be discharged into sanitary or storm systems when cleaning machinery. Use alternative methods for cleaning larger equipment parts, such as high-pressure, high-temperature water washes, or steam cleaning. Equipment-washing detergents can be used, and wash water may be discharged into sanitary sewers if solids are removed from the solution first. (This practice should be verified with the local sewer authority.) Small parts can be cleaned with degreasing solvents, which can then be reused or recycled.

<u>Solid Waste Management and Portable Sanitary Management</u>

The purpose of this management measure is to prevent the potential for solid waste such as construction debris, trash, etc. from construction sites due to improper handling and storage. Debris and litter should be removed periodically from the BMP's and surrounding areas to prevent clogging of pipes and structures. All construction material shall be stored in designated staging areas. Roll-off containers shall be placed on site and all empty containers, construction debris and litter shall be placed in the containers.

Portable sanitary units may be utilized on-site or bathrooms will be provided within construction trailers. A sanitation removal company will be hired to pump/remove any sanitary waste. In the event that portable sanitary units are used and then cleaned after being emptied, the rinse water may not be disposed of to the storm drain system. It shall be contained for later disposal if it can't be disposed of on-site. Remove paper and trash before cleaning the portable sanitary units. The portable sanitary units shall be located away from the storm drain system if possible. Provide over head cover for wash areas if possible. Maintain spill response material and equipment on site to eliminate the potential for contaminants and wash water from entering the storm drain system.

Permanent Control Measures and Facilities for Long Term Protection

Towards the completion of construction, permanent sediment and erosion control measures will be developed for long term erosion protection. The following permanent control measures and facilities have been proposed to be implemented for the project:

1. Infiltration Basins will be used to treat the runoff volume generated from the developed area and provide improvement to water quality control. The proposed basins will provide water quality for 90% of the average annual stormwater runoff volume. The water quality volume will be retained and higher storms will be released gradually. Refer to the water quality volume calculations, in Appendix B.

2. A Hydrodynamic Separator will be used to provide treatment of the water quality flow rate from the redeveloped areas to separate sediment, debris, floatables, etc. from the runoff prior to discharge.

3. Catch Basins will be used to remove some of the coarse sand and grit sediment before entering the drainage system. Each catch basin will be constructed with an 18 inch deep sump.

4. Seeding of at least 70% perennial vegetative cover will be used to produce a permanent uniform erosion resistant surface. The seeded areas will be mulched with straw at a rate of 2 tons per acre such that the mulch forms a continuous blanket.

Specifications for Soil Restoration

Prior to the final stabilization of the disturbed areas, soil restoration will be required for all vegetated areas to recover the original properties and porosity of the soil. Soil Restoration Requirements are provided on Table 5 below:

Table 5

Soil Restoration Requirements

<table>
<tr><th>Type of Soil Disturbance</th><th colspan="2">Soil Restoration Requirement</th><th>Comments/Examples</th></tr>
<tr><td>No soil disturbance</td><td colspan="2">Restoration not permitted</td><td>Preservation of Natural Features</td></tr>
<tr><td>Minimal soil disturbance</td><td colspan="2">Restoration not required</td><td>Clearing and grubbing</td></tr>
<tr><td rowspan="2">Areas where topsoil is stripped only – no change in grade</td><td>HSG A&B</td><td>HSG C&D</td><td rowspan="2">Protect area from any ongoing construction activities</td></tr>
<tr><td>apply 6 inches of topsoil</td><td>Aerate* and apply 6 inches of topsoil</td></tr>
<tr><td rowspan="2">Areas of cut or fill</td><td>HSG A&B</td><td>HSG C&D</td><td rowspan="2">Clearing and grubbing</td></tr>
<tr><td>Aerate and apply 6 inches of topsoil</td><td>Apply full Soil Restoration**</td></tr>
<tr><td>Heavy traffic areas on site (especially) in a zone 5-25 feet around buildings but not within a 5 foot perimeter around foundation walls)</td><td colspan="2">Apply full Soil Restoration (decompaction and compost enhancement)</td><td></td></tr>
<tr><td>Areas where Runoff Reduction and/or Infiltration practices are applied</td><td colspan="2">Restoration not required, but may be applied to enhance the reduction specified for appropriate practices.</td><td>Keep construction equipment from crossing these areas. To protect newly installed practice from any ongoing construction activities construct a single phase operation fence area.</td></tr>
<tr><td>Redevelopment projects</td><td colspan="2">Soil Restoration is required on redevelopment projects in areas where existing impervious area will be converted to pervious area.</td><td></td></tr>
</table>

* Aeration includes the use of machines such as tractor-drawn implements with coulters making a narrow slit in the soil, a roller with many spikes making indentations in the soil, or prongs which function like a mini-subsoiler.

** Per "Deep Ripping and De-compaction, DEC 2008."

During periods of relatively low to moderate subsoil moisture, the disturbed subsoils are returned to rough grade and the following full soil restoration steps applied:

1. Apply 3 inches of compost over subsoil.

2. Till compost into subsoil to a depth of at least 12 inches using a cat-mounted ripper, tractor-mounted disc, or tiller, mixing, and circulating air and compost into subsoils.

3. Rock-pick until uplifted stone/rock materials of four inches and larger size are cleaned off the site.

<u>Specifications for Final Stabilization of Graded Areas</u>

Final stabilization of graded areas consists of the placement of topsoil and installation of landscaping (unless the area is to be paved, or a building is to be constructed in the location). Topsoil is to be spread as soon as grading operations are completed. Topsoil is to be placed to a minimum depth of six inches on all embankments, planting areas and seeding/sod areas. The subgrade is to be scarified to a depth of two inches to provide a bond of the topsoil with the subsoil. Topsoil is to be raked to an even surface and cleared of all debris, roots, stones and other unsatisfactory material.

Planting operations shall be conducted under favorable weather conditions as follows:

- Permanent Lawns - April 15 (provided soil is frost-free and not excessively moist) to May 15; August 15 to October 15.
- Temporary Lawn Seeding - if outside of the time periods noted above, the areas shall be seeded immediately on completion of topsoil operations with annual ryegrass (Italian rye) at a rate of six pounds per 1,000 square feet. Temporary lawn installation is permitted provided the soil is frost-free and not excessively moist. The permanent lawn is to be installed the next planting season.

On slopes with a grade of 3 horizontal to 1 vertical or greater, and in swales, a geotextile netting or mat shall be installed for stabilization purposes as shown on the Plans. Seeded areas are to be mulched with straw or hay at an application rate of 70-90 pounds per 1,000 s.f. Straw or hay mulch must be spread uniformly and anchored immediately after spreading to prevent wind blowing. Mulches must be inspected periodically and in particular after rainstorms to check for erosion. If erosion is observed, additional mulch must be applied. Netting shall be inspected after rainstorms for dislocation or failure; any damage shall be repaired immediately.

All denuded surfaces which will be exposed for a period of over two months or more shall be temporarily hydroseeded with (a) perennial ryegrass at a rate of 40 lbs per acre (1.0 lb per 1000 square feet); (b) Certified "Aroostook" winter rye (cereal rye) @ 100 lb per acre (2.5 lb/1000 s.f.) to be used in the months of October and November.

Permanent turfgrass cover is to consist of a seed mixture as follows:

(a) <u>Sunny sites</u>

Kentucky Bluegrass	2.0-2.6 pounds/1000 square feet
Perennial Ryegrass	0.6-0.7 pounds/1000 square feet
Fine Fescue	0.4-0.6 pounds/1000 square feet

(b) <u>Shady sites</u>

Kentucky Bluegrass	0.8-1.0 pounds/1000 square feet
Perennial Ryegrass	0.6-0.7 pounds/1000 square feet
Fine Fescue	2.6-3.3 pounds/1000 square feet

All plant materials shall comply with the standards of the American Association Of Nurserymen with respect to height and caliper as described in its publication American Standard for Nursery Stock, latest edition.

VII. CONSTRUCTION PHASE AND POST-CONSTRUCTION MAINTENANCE

During the construction phase and following construction of the project, a number of maintenance measures will be taken with respect to the site maintenance. Measures to be taken included the following:

1. During Construction

A comprehensive sediment and erosion control plan will be in place during the construction period. Maintenance measures for sediment and erosion controls will include:

A qualified professional acceptable to the municipality will be hired by the owner or operator to monitor the installation and maintenance of the sediment and erosion control plans. The qualified professional shall report directly to the Engineering Consultant and shall be responsible for ensuring compliance with the design of the sediment and erosion control plans.

The qualified professional so hired will inspect all sediment and erosion control measures at least every seven calendar days. In the event that there has been a variance with the design of the sediment and erosion control measures so that the ability of the measures to adequately perform the intended function is lessened or compromised and/or the facilities are not adequately maintained, the qualified professional shall be required to report such variance to the Engineering Consultant within 48 hours and shall be empowered to order immediate repairs to the sediment and erosion control measures.

The qualified professional will also be responsible for observing the adequacy of the vegetation growth (trees, shrubs, groundcovers and turfgrasses) in newly graded areas and for ordering additional plantings in the event that the established plant materials do not adequately protect the ground surface from erosion.

2. Following Construction

Site maintenance activities on the property will include:

- Grounds maintenance, including mowing of lawns;
- Planting of trees, shrubs and groundcovers; pruning of trees and shrubs;
- Application of fertilizer and herbicides;
- Maintenance of stormwater management area;

Grounds maintenance on the site will be performed by landscaping contractor.

Fertilizer is typically applied twice in the year - once in the spring and once in the fall. The application of fertilizer is usually necessary to maintain healthy lawn growth due to competition for nutrients with trees and shrubs and since the clippings are often removed. It is not recommended that fertilizer be applied during the summer. It is at this time that lawns are typically dormant.

Fertilizers come in three basic types: (1) Organic; (2) Soluble synthetic and (3) Slow release.

Organic fertilizers are derived from plant or animal waste. Since they are heavier and bulkier than other fertilizers, it is necessary to apply a much greater amount at one time. Soluble synthetic fertilizers are predictable with determining the exact impact on a lawn. However more applications are necessary since their effect is often short term. Slow release fertilizers have a high percentage of nitrogen so quantities that need be handled at one time are smaller. Slow release fertilizers will be utilized by the project.

A complete fertilizer contains all three of the primary nutrients - nitrogen (N), phosphorus (P) and potassium in the form of potash (K). Typically, a 3-1-2 ratio of nutrients (N-P-K) is used for lawn applications.

Fertilizer shall be applied by the landscape contractor in accordance with the manufacturer's instructions. The application of fertilizer does require some skill on the part of the operator.

Should there be a spill of fertilizer, the landscape contractor shall be required to scrape or vacuum it up. The area will then be watered in accordance with the manufacturer's instructions to ensure that the fertilizer becomes soluble and available to plants and does not run off.

A&R Real Estate Holdings, LLC will be responsible for the long-term operation and maintenance of the permanent stormwater management practices. The permanent stormwater management practices shall be maintained in accordance with the Maintenance Inspection Checklists provided in Appendix E.

VIII. CONCLUSION

This Stormwater Pollution Prevention Plan has been prepared to describe the project's pre and post-development stormwater management improvements and its sediment and erosion control improvements to be utilized during construction. The proposed permanent improvements and the interim improvements to be utilized during construction have been designed in accordance with the requirements of the:

- New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit No. GP-0-20-001, effective January 29, 2020.
- Chapter 267 "Stormwater Management" of the Town of North Castle Code

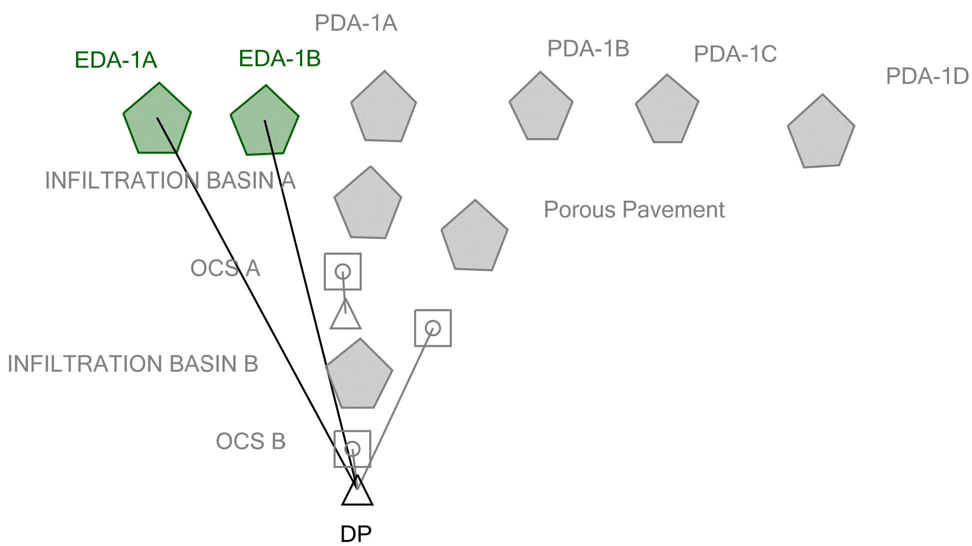
The project employs a variety of practices to enhance stormwater quality and reduce peak rates of runoff associated with the proposed improvements. These measures include an infiltration basin, extensive areas of porous pavement, and a hydrodynamic separator. These improvements will also mitigate runoff volumes from the proposed improvements as runoff volumes will be slightly reduced or maintained in all the analyzed storms.

Based on the foregoing, it is our professional opinion that the proposed improvements will provide water quantity and quality enhancements which exceed the above mentioned requirements and are not anticipated to have any adverse impacts to the site or any surrounding areas.

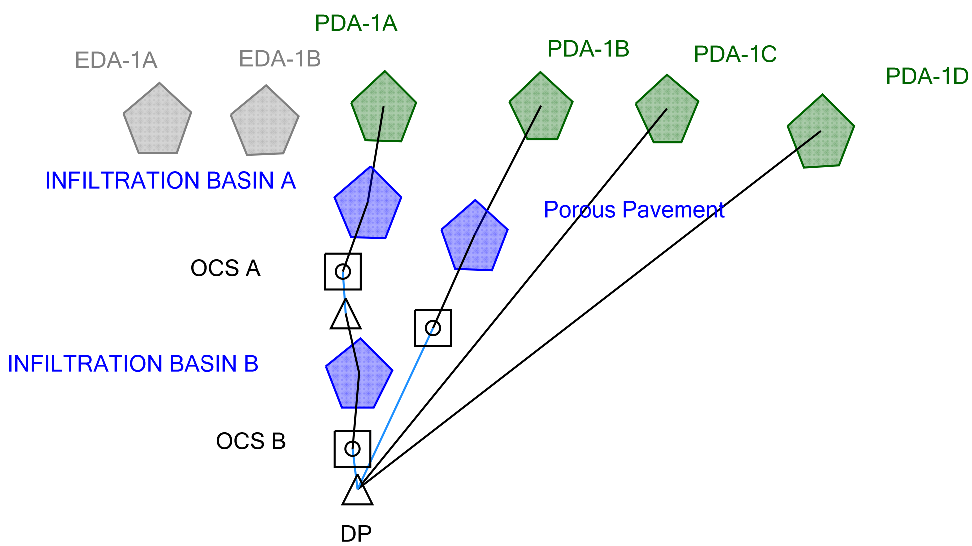
APPENDIX A

HYDROLOGIC CALCULATIONS

Scenario: Existing Conditions 1 Year Storm



Scenario: Proposed Conditions 1 Year Storm



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Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
EDA-1A	Existing Conditions 1 Year Storm	1	29,640.000	12.150	7.71
EDA-1A	Existing Conditions 10 Year Storm	10	67,958.000	12.150	17.11
EDA-1A	Existing Conditions 100 Year Storm	100	138,255.000	12.150	33.35
PDA-1D	Proposed Conditions 1 Year Storm	1	24,860.000	12.150	6.37
PDA-1D	Proposed Conditions 10 Year Storm	10	59,299.000	12.150	14.88
PDA-1D	Proposed Conditions 100 Year Storm	100	123,455.000	12.150	29.81
PDA-1A	Proposed Conditions 1 Year Storm	1	14,470.000	12.100	4.10
PDA-1A	Proposed Conditions 10 Year Storm	10	32,534.000	12.100	8.85
PDA-1A	Proposed Conditions 100 Year Storm	100	65,439.000	12.100	17.02
PDA-1B	Proposed Conditions 1 Year Storm	1	4,090.000	12.100	1.13
PDA-1B	Proposed Conditions 10 Year Storm	10	8,680.000	12.100	2.30
PDA-1B	Proposed Conditions 100 Year Storm	100	16,887.000	12.100	4.28
EDA-1B	Existing Conditions 1 Year Storm	1	1,983.000	12.750	0.12
EDA-1B	Existing Conditions 10 Year Storm	10	13,069.000	12.450	1.96
EDA-1B	Existing Conditions 100 Year Storm	100	44,148.000	12.400	7.62
PDA-1C	Proposed Conditions 1 Year Storm	1	5,002.000	12.100	1.42
PDA-1C	Proposed Conditions 10 Year Storm	10	11,248.000	12.100	3.06
PDA-1C	Proposed Conditions 100 Year Storm	100	22,623.000	12.100	5.88

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
DP	Proposed Conditions 1 Year Storm	1	29,862.000	12.150	7.56
DP	Existing Conditions 1 Year Storm	1	31,623.000	12.150	7.71
DP	Existing Conditions 10 Year Storm	10	81,027.000	12.150	17.98

Subsection: Master Network Summary

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
DP	Proposed Conditions 10 Year Storm	10	70,547.000	12.100	17.45
DP	Existing Conditions 100 Year Storm	100	182,403.000	12.150	38.16
DP	Proposed Conditions 100 Year Storm	100	161,309.000	12.150	37.93

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
INFILTRATION BASIN A (IN)	Proposed Conditions 1 Year Storm	1	14,470.000	12.100	4.10	(N/A)	(N/A)
INFILTRATION BASIN A (OUT)	Proposed Conditions 1 Year Storm	1	5,294.000	12.150	2.67	367.98	2,611.000
INFILTRATION BASIN A (IN)	Proposed Conditions 10 Year Storm	10	32,534.000	12.100	8.85	(N/A)	(N/A)
INFILTRATION BASIN A (OUT)	Proposed Conditions 10 Year Storm	10	13,251.000	12.100	4.27	369.41	7,460.000
INFILTRATION BASIN A (IN)	Proposed Conditions 100 Year Storm	100	65,439.000	12.100	17.02	(N/A)	(N/A)
INFILTRATION BASIN A (OUT)	Proposed Conditions 100 Year Storm	100	36,630.000	12.050	7.78	370.73	12,791.000
Porous Pavement (IN)	Proposed Conditions 1 Year Storm	1	4,090.000	12.100	1.13	(N/A)	(N/A)
Porous Pavement (OUT)	Proposed Conditions 1 Year Storm	1	0.000	0.000	0.00	366.91	1,221.000
Porous Pavement (IN)	Proposed Conditions 10 Year Storm	10	8,680.000	12.100	2.30	(N/A)	(N/A)
Porous Pavement (OUT)	Proposed Conditions 10 Year Storm	10	0.000	0.000	0.00	367.13	2,538.000
Porous Pavement (IN)	Proposed Conditions 100 Year Storm	100	16,887.000	12.100	4.28	(N/A)	(N/A)

Subsection: Master Network Summary

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
Porous Pavement (OUT)	Proposed Conditions 100 Year Storm	100	0.000	0.000	0.00	367.61	5,447.000
INFILTRATION BASIN B (IN)	Proposed Conditions 1 Year Storm	1	5,294.000	12.150	2.67	(N/A)	(N/A)
INFILTRATION BASIN B (OUT)	Proposed Conditions 1 Year Storm	1	0.000	0.000	0.00	367.98	2,498.000
INFILTRATION BASIN B (IN)	Proposed Conditions 10 Year Storm	10	13,251.000	12.100	4.27	(N/A)	(N/A)
INFILTRATION BASIN B (OUT)	Proposed Conditions 10 Year Storm	10	0.000	0.000	0.00	369.40	6,413.000
INFILTRATION BASIN B (IN)	Proposed Conditions 100 Year Storm	100	36,630.000	12.050	7.78	(N/A)	(N/A)
INFILTRATION BASIN B (OUT)	Proposed Conditions 100 Year Storm	100	15,230.000	12.350	5.70	370.57	10,259.000

Time-Depth Curve: 1	
Label	1
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	1 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.0
1.000	0.0	0.0	0.0	0.0	0.0
1.500	0.0	0.0	0.0	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.1
2.500	0.1	0.1	0.1	0.1	0.1
3.000	0.1	0.1	0.1	0.1	0.1
3.500	0.1	0.1	0.1	0.1	0.1
4.000	0.1	0.1	0.1	0.1	0.1
4.500	0.1	0.1	0.1	0.2	0.2
5.000	0.2	0.2	0.2	0.2	0.2
5.500	0.2	0.2	0.2	0.2	0.2
6.000	0.2	0.2	0.2	0.2	0.2
6.500	0.2	0.2	0.2	0.2	0.2
7.000	0.3	0.3	0.3	0.3	0.3
7.500	0.3	0.3	0.3	0.3	0.3
8.000	0.3	0.3	0.3	0.3	0.4
8.500	0.4	0.4	0.4	0.4	0.4
9.000	0.4	0.4	0.4	0.4	0.5
9.500	0.5	0.5	0.5	0.5	0.5
10.000	0.5	0.5	0.6	0.6	0.6
10.500	0.6	0.6	0.6	0.7	0.7
11.000	0.7	0.7	0.7	0.8	0.8
11.500	0.8	0.9	1.0	1.0	1.2
12.000	1.4	1.6	1.8	1.9	1.9
12.500	2.0	2.0	2.0	2.1	2.1
13.000	2.1	2.1	2.1	2.2	2.2
13.500	2.2	2.2	2.2	2.3	2.3
14.000	2.3	2.3	2.3	2.3	2.3
14.500	2.3	2.4	2.4	2.4	2.4
15.000	2.4	2.4	2.4	2.4	2.4
15.500	2.4	2.5	2.5	2.5	2.5
16.000	2.5	2.5	2.5	2.5	2.5
16.500	2.5	2.5	2.5	2.5	2.5
17.000	2.6	2.6	2.6	2.6	2.6

Subsection: Time-Depth Curve	Return Event: 1 years
Label: 1-10-100-90%	Storm Event: 1
Scenario: Existing Conditions 1 Year Storm

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.500	2.6	2.6	2.6	2.6	2.6
18.000	2.6	2.6	2.6	2.6	2.6
18.500	2.6	2.6	2.6	2.6	2.6
19.000	2.7	2.7	2.7	2.7	2.7
19.500	2.7	2.7	2.7	2.7	2.7
20.000	2.7	2.7	2.7	2.7	2.7
20.500	2.7	2.7	2.7	2.7	2.7
21.000	2.7	2.7	2.7	2.7	2.7
21.500	2.7	2.7	2.7	2.7	2.8
22.000	2.8	2.8	2.8	2.8	2.8
22.500	2.8	2.8	2.8	2.8	2.8
23.000	2.8	2.8	2.8	2.8	2.8
23.500	2.8	2.8	2.8	2.8	2.8
24.000	2.8	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time-Depth Curve
Label: 1-10-100-90%
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Time-Depth Curve: 1	
Label	1
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	1 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.0
1.000	0.0	0.0	0.0	0.0	0.0
1.500	0.0	0.0	0.0	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.1
2.500	0.1	0.1	0.1	0.1	0.1
3.000	0.1	0.1	0.1	0.1	0.1
3.500	0.1	0.1	0.1	0.1	0.1
4.000	0.1	0.1	0.1	0.1	0.1
4.500	0.1	0.1	0.1	0.2	0.2
5.000	0.2	0.2	0.2	0.2	0.2
5.500	0.2	0.2	0.2	0.2	0.2
6.000	0.2	0.2	0.2	0.2	0.2
6.500	0.2	0.2	0.2	0.2	0.2
7.000	0.3	0.3	0.3	0.3	0.3
7.500	0.3	0.3	0.3	0.3	0.3
8.000	0.3	0.3	0.3	0.3	0.4
8.500	0.4	0.4	0.4	0.4	0.4
9.000	0.4	0.4	0.4	0.4	0.5
9.500	0.5	0.5	0.5	0.5	0.5
10.000	0.5	0.5	0.6	0.6	0.6
10.500	0.6	0.6	0.6	0.7	0.7
11.000	0.7	0.7	0.7	0.8	0.8
11.500	0.8	0.9	1.0	1.0	1.2
12.000	1.4	1.6	1.8	1.9	1.9
12.500	2.0	2.0	2.0	2.1	2.1
13.000	2.1	2.1	2.1	2.2	2.2
13.500	2.2	2.2	2.2	2.3	2.3
14.000	2.3	2.3	2.3	2.3	2.3
14.500	2.3	2.4	2.4	2.4	2.4
15.000	2.4	2.4	2.4	2.4	2.4
15.500	2.4	2.5	2.5	2.5	2.5
16.000	2.5	2.5	2.5	2.5	2.5
16.500	2.5	2.5	2.5	2.5	2.5
17.000	2.6	2.6	2.6	2.6	2.6

Subsection: Time-Depth Curve | Return Event: 1 years
Label: 1-10-100-90% | Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.500	2.6	2.6	2.6	2.6	2.6
18.000	2.6	2.6	2.6	2.6	2.6
18.500	2.6	2.6	2.6	2.6	2.6
19.000	2.7	2.7	2.7	2.7	2.7
19.500	2.7	2.7	2.7	2.7	2.7
20.000	2.7	2.7	2.7	2.7	2.7
20.500	2.7	2.7	2.7	2.7	2.7
21.000	2.7	2.7	2.7	2.7	2.7
21.500	2.7	2.7	2.7	2.7	2.8
22.000	2.8	2.8	2.8	2.8	2.8
22.500	2.8	2.8	2.8	2.8	2.8
23.000	2.8	2.8	2.8	2.8	2.8
23.500	2.8	2.8	2.8	2.8	2.8
24.000	2.8	(N/A)	(N/A)	(N/A)	(N/A)

Time-Depth Curve: 10	
Label	10
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	10 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.0
1.000	0.1	0.1	0.1	0.1	0.1
1.500	0.1	0.1	0.1	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.1
2.500	0.1	0.1	0.1	0.1	0.2
3.000	0.2	0.2	0.2	0.2	0.2
3.500	0.2	0.2	0.2	0.2	0.2
4.000	0.2	0.2	0.2	0.2	0.2
4.500	0.3	0.3	0.3	0.3	0.3
5.000	0.3	0.3	0.3	0.3	0.3
5.500	0.3	0.3	0.3	0.4	0.4
6.000	0.4	0.4	0.4	0.4	0.4
6.500	0.4	0.4	0.4	0.4	0.5
7.000	0.5	0.5	0.5	0.5	0.5
7.500	0.5	0.5	0.5	0.6	0.6
8.000	0.6	0.6	0.6	0.6	0.6
8.500	0.7	0.7	0.7	0.7	0.7
9.000	0.7	0.8	0.8	0.8	0.8
9.500	0.8	0.9	0.9	0.9	0.9
10.000	1.0	1.0	1.0	1.0	1.1
10.500	1.1	1.1	1.2	1.2	1.2
11.000	1.3	1.3	1.4	1.4	1.5
11.500	1.5	1.6	1.7	1.9	2.1
12.000	2.6	3.0	3.2	3.4	3.5
12.500	3.6	3.7	3.7	3.8	3.8
13.000	3.8	3.9	3.9	3.9	4.0
13.500	4.0	4.0	4.1	4.1	4.1
14.000	4.2	4.2	4.2	4.2	4.2
14.500	4.3	4.3	4.3	4.3	4.4
15.000	4.4	4.4	4.4	4.4	4.4
15.500	4.5	4.5	4.5	4.5	4.5
16.000	4.5	4.5	4.6	4.6	4.6
16.500	4.6	4.6	4.6	4.6	4.6
17.000	4.7	4.7	4.7	4.7	4.7

Subsection: Time-Depth Curve
Label: 1-10-100-90%
Scenario: Existing Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.500	4.7	4.7	4.7	4.7	4.7
18.000	4.8	4.8	4.8	4.8	4.8
18.500	4.8	4.8	4.8	4.8	4.8
19.000	4.8	4.8	4.8	4.9	4.9
19.500	4.9	4.9	4.9	4.9	4.9
20.000	4.9	4.9	4.9	4.9	4.9
20.500	4.9	4.9	4.9	5.0	5.0
21.000	5.0	5.0	5.0	5.0	5.0
21.500	5.0	5.0	5.0	5.0	5.0
22.000	5.0	5.0	5.0	5.0	5.0
22.500	5.0	5.1	5.1	5.1	5.1
23.000	5.1	5.1	5.1	5.1	5.1
23.500	5.1	5.1	5.1	5.1	5.1
24.000	5.1	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time-Depth Curve | Return Event: 10 years
Label: 1-10-100-90% | Storm Event: 10
Scenario: Proposed Conditions 10 Year Storm

Time-Depth Curve: 10	
Label	10
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	10 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.0
1.000	0.1	0.1	0.1	0.1	0.1
1.500	0.1	0.1	0.1	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.1
2.500	0.1	0.1	0.1	0.1	0.2
3.000	0.2	0.2	0.2	0.2	0.2
3.500	0.2	0.2	0.2	0.2	0.2
4.000	0.2	0.2	0.2	0.2	0.2
4.500	0.3	0.3	0.3	0.3	0.3
5.000	0.3	0.3	0.3	0.3	0.3
5.500	0.3	0.3	0.3	0.4	0.4
6.000	0.4	0.4	0.4	0.4	0.4
6.500	0.4	0.4	0.4	0.4	0.5
7.000	0.5	0.5	0.5	0.5	0.5
7.500	0.5	0.5	0.5	0.6	0.6
8.000	0.6	0.6	0.6	0.6	0.6
8.500	0.7	0.7	0.7	0.7	0.7
9.000	0.7	0.8	0.8	0.8	0.8
9.500	0.8	0.9	0.9	0.9	0.9
10.000	1.0	1.0	1.0	1.0	1.1
10.500	1.1	1.1	1.2	1.2	1.2
11.000	1.3	1.3	1.4	1.4	1.5
11.500	1.5	1.6	1.7	1.9	2.1
12.000	2.6	3.0	3.2	3.4	3.5
12.500	3.6	3.7	3.7	3.8	3.8
13.000	3.8	3.9	3.9	3.9	4.0
13.500	4.0	4.0	4.1	4.1	4.1
14.000	4.2	4.2	4.2	4.2	4.2
14.500	4.3	4.3	4.3	4.3	4.4
15.000	4.4	4.4	4.4	4.4	4.4
15.500	4.5	4.5	4.5	4.5	4.5
16.000	4.5	4.5	4.6	4.6	4.6
16.500	4.6	4.6	4.6	4.6	4.6
17.000	4.7	4.7	4.7	4.7	4.7

Subsection: Time-Depth Curve
Label: 1-10-100-90%
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.500	4.7	4.7	4.7	4.7	4.7
18.000	4.8	4.8	4.8	4.8	4.8
18.500	4.8	4.8	4.8	4.8	4.8
19.000	4.8	4.8	4.8	4.9	4.9
19.500	4.9	4.9	4.9	4.9	4.9
20.000	4.9	4.9	4.9	4.9	4.9
20.500	4.9	4.9	4.9	5.0	5.0
21.000	5.0	5.0	5.0	5.0	5.0
21.500	5.0	5.0	5.0	5.0	5.0
22.000	5.0	5.0	5.0	5.0	5.0
22.500	5.0	5.1	5.1	5.1	5.1
23.000	5.1	5.1	5.1	5.1	5.1
23.500	5.1	5.1	5.1	5.1	5.1
24.000	5.1	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time-Depth Curve | Return Event: 100 years
Label: 1-10-100-90% | Storm Event: 100
Scenario: Existing Conditions 100 Year Storm

Time-Depth Curve: 100	
Label	100
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	100 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.1	0.1	0.1	0.1
1.000	0.1	0.1	0.1	0.1	0.1
1.500	0.1	0.1	0.2	0.2	0.2
2.000	0.2	0.2	0.2	0.2	0.2
2.500	0.2	0.2	0.3	0.3	0.3
3.000	0.3	0.3	0.3	0.3	0.3
3.500	0.3	0.3	0.4	0.4	0.4
4.000	0.4	0.4	0.4	0.4	0.4
4.500	0.5	0.5	0.5	0.5	0.5
5.000	0.5	0.5	0.5	0.6	0.6
5.500	0.6	0.6	0.6	0.6	0.6
6.000	0.7	0.7	0.7	0.7	0.7
6.500	0.7	0.8	0.8	0.8	0.8
7.000	0.8	0.8	0.9	0.9	0.9
7.500	0.9	1.0	1.0	1.0	1.0
8.000	1.0	1.1	1.1	1.1	1.1
8.500	1.2	1.2	1.2	1.3	1.3
9.000	1.3	1.4	1.4	1.4	1.5
9.500	1.5	1.6	1.6	1.6	1.7
10.000	1.7	1.8	1.8	1.9	1.9
10.500	2.0	2.0	2.1	2.2	2.2
11.000	2.3	2.4	2.4	2.5	2.6
11.500	2.7	2.9	3.1	3.4	3.8
12.000	4.6	5.3	5.7	6.0	6.3
12.500	6.4	6.5	6.6	6.7	6.8
13.000	6.9	6.9	7.0	7.1	7.1
13.500	7.2	7.2	7.3	7.3	7.4
14.000	7.4	7.5	7.5	7.6	7.6
14.500	7.6	7.7	7.7	7.7	7.8
15.000	7.8	7.9	7.9	7.9	7.9
15.500	8.0	8.0	8.0	8.1	8.1
16.000	8.1	8.1	8.2	8.2	8.2
16.500	8.2	8.2	8.3	8.3	8.3
17.000	8.3	8.3	8.4	8.4	8.4

Subsection: Time-Depth Curve
Label: 1-10-100-90%
Scenario: Existing Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.500	8.4	8.4	8.4	8.5	8.5
18.000	8.5	8.5	8.5	8.5	8.5
18.500	8.6	8.6	8.6	8.6	8.6
19.000	8.6	8.6	8.7	8.7	8.7
19.500	8.7	8.7	8.7	8.7	8.7
20.000	8.8	8.8	8.8	8.8	8.8
20.500	8.8	8.8	8.8	8.8	8.9
21.000	8.9	8.9	8.9	8.9	8.9
21.500	8.9	8.9	8.9	9.0	9.0
22.000	9.0	9.0	9.0	9.0	9.0
22.500	9.0	9.0	9.0	9.0	9.1
23.000	9.1	9.1	9.1	9.1	9.1
23.500	9.1	9.1	9.1	9.1	9.1
24.000	9.2	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time-Depth Curve
Label: 1-10-100-90%
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Time-Depth Curve: 100	
Label	100
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	100 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.1	0.1	0.1	0.1
1.000	0.1	0.1	0.1	0.1	0.1
1.500	0.1	0.1	0.2	0.2	0.2
2.000	0.2	0.2	0.2	0.2	0.2
2.500	0.2	0.2	0.3	0.3	0.3
3.000	0.3	0.3	0.3	0.3	0.3
3.500	0.3	0.3	0.4	0.4	0.4
4.000	0.4	0.4	0.4	0.4	0.4
4.500	0.5	0.5	0.5	0.5	0.5
5.000	0.5	0.5	0.5	0.6	0.6
5.500	0.6	0.6	0.6	0.6	0.6
6.000	0.7	0.7	0.7	0.7	0.7
6.500	0.7	0.8	0.8	0.8	0.8
7.000	0.8	0.8	0.9	0.9	0.9
7.500	0.9	1.0	1.0	1.0	1.0
8.000	1.0	1.1	1.1	1.1	1.1
8.500	1.2	1.2	1.2	1.3	1.3
9.000	1.3	1.4	1.4	1.4	1.5
9.500	1.5	1.6	1.6	1.6	1.7
10.000	1.7	1.8	1.8	1.9	1.9
10.500	2.0	2.0	2.1	2.2	2.2
11.000	2.3	2.4	2.4	2.5	2.6
11.500	2.7	2.9	3.1	3.4	3.8
12.000	4.6	5.3	5.7	6.0	6.3
12.500	6.4	6.5	6.6	6.7	6.8
13.000	6.9	6.9	7.0	7.1	7.1
13.500	7.2	7.2	7.3	7.3	7.4
14.000	7.4	7.5	7.5	7.6	7.6
14.500	7.6	7.7	7.7	7.7	7.8
15.000	7.8	7.9	7.9	7.9	7.9
15.500	8.0	8.0	8.0	8.1	8.1
16.000	8.1	8.1	8.2	8.2	8.2
16.500	8.2	8.2	8.3	8.3	8.3
17.000	8.3	8.3	8.4	8.4	8.4

Subsection: Time-Depth Curve Return Event: 100 years
Label: 1-10-100-90% Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.500	8.4	8.4	8.4	8.5	8.5
18.000	8.5	8.5	8.5	8.5	8.5
18.500	8.6	8.6	8.6	8.6	8.6
19.000	8.6	8.6	8.7	8.7	8.7
19.500	8.7	8.7	8.7	8.7	8.7
20.000	8.8	8.8	8.8	8.8	8.8
20.500	8.8	8.8	8.8	8.8	8.9
21.000	8.9	8.9	8.9	8.9	8.9
21.500	8.9	8.9	8.9	9.0	9.0
22.000	9.0	9.0	9.0	9.0	9.0
22.500	9.0	9.0	9.0	9.0	9.1
23.000	9.1	9.1	9.1	9.1	9.1
23.500	9.1	9.1	9.1	9.1	9.1
24.000	9.2	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time of Concentration Calculations | Return Event: 1 years
Label: EDA-1A | Storm Event: 1
Scenario: Existing Conditions 1 Year Storm

Time of Concentration Results

Segment #1: TR-55 Sheet Flow

Hydraulic Length	110.00 ft
Manning's n	0.150
Slope	0.040 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.24 ft/s
Segment Time of Concentration	0.129 hours

Segment #2: TR-55 Shallow Concentrated Flow

Hydraulic Length	62.00 ft
Is Paved?	True
Slope	0.030 ft/ft
Average Velocity	3.52 ft/s
Segment Time of Concentration	0.005 hours

Segment #3: TR-55 Channel Flow

Flow Area	3.1 ft²
Hydraulic Length	507.00 ft
Manning's n	0.011
Slope	0.003 ft/ft
Wetted Perimeter	6.28 ft
Average Velocity	4.35 ft/s
Segment Time of Concentration	0.032 hours

Time of Concentration (Composite)

Time of Concentration (Composite)	0.166 hours

==== SCS Channel Flow

Tc =	R = Qa / Wp V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n (Lf / V) / 3600
Where:	R= Hydraulic radius Aq= Flow area, square feet Wp= Wetted perimeter, feet V= Velocity, ft/sec Sf= Slope, ft/ft n= Manning's n Tc= Time of concentration, hours Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =	Unpaved surface: V = 16.1345 * (Sf**0.5) Paved Surface: V = 20.3282 * (Sf**0.5) (Lf / V) / 3600
Where:	V= Velocity, ft/sec Sf= Slope, ft/ft Tc= Time of concentration, hours Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc =	(0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))
Where:	Tc= Time of concentration, hours n= Manning's n Lf= Flow length, feet P= 2yr, 24hr Rain depth, inches Sf= Slope, %

Subsection: Time of Concentration Calculations
Label: EDA-1A
Scenario: Existing Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	110.00 ft
Manning's n	0.150
Slope	0.040 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.24 ft/s
Segment Time of Concentration	0.129 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	62.00 ft
Is Paved?	True
Slope	0.030 ft/ft
Average Velocity	3.52 ft/s
Segment Time of Concentration	0.005 hours

Segment #3: TR-55 Channel Flow	
Flow Area	3.1 ft²
Hydraulic Length	507.00 ft
Manning's n	0.011
Slope	0.003 ft/ft
Wetted Perimeter	6.28 ft
Average Velocity	4.35 ft/s
Segment Time of Concentration	0.032 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.166 hours

==== SCS Channel Flow

Tc =	R = Qa / Wp V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n (Lf / V) / 3600
Where:	R= Hydraulic radius Aq= Flow area, square feet Wp= Wetted perimeter, feet V= Velocity, ft/sec Sf= Slope, ft/ft n= Manning's n Tc= Time of concentration, hours Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =	Unpaved surface: V = 16.1345 * (Sf**0.5) Paved Surface: V = 20.3282 * (Sf**0.5) (Lf / V) / 3600
Where:	V= Velocity, ft/sec Sf= Slope, ft/ft Tc= Time of concentration, hours Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc =	(0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))
Where:	Tc= Time of concentration, hours n= Manning's n Lf= Flow length, feet P= 2yr, 24hr Rain depth, inches Sf= Slope, %

Subsection: Time of Concentration Calculations
Label: EDA-1A
Scenario: Existing Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	110.00 ft
Manning's n	0.150
Slope	0.040 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.24 ft/s
Segment Time of Concentration	0.129 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	62.00 ft
Is Paved?	True
Slope	0.030 ft/ft
Average Velocity	3.52 ft/s
Segment Time of Concentration	0.005 hours

Segment #3: TR-55 Channel Flow	
Flow Area	3.1 ft²
Hydraulic Length	507.00 ft
Manning's n	0.011
Slope	0.003 ft/ft
Wetted Perimeter	6.28 ft
Average Velocity	4.35 ft/s
Segment Time of Concentration	0.032 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.166 hours

==== SCS Channel Flow

Tc =	R = Qa / Wp V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n (Lf / V) / 3600
Where:	R= Hydraulic radius Aq= Flow area, square feet Wp= Wetted perimeter, feet V= Velocity, ft/sec Sf= Slope, ft/ft n= Manning's n Tc= Time of concentration, hours Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =	Unpaved surface: V = 16.1345 * (Sf**0.5) Paved Surface: V = 20.3282 * (Sf**0.5) (Lf / V) / 3600
Where:	V= Velocity, ft/sec Sf= Slope, ft/ft Tc= Time of concentration, hours Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc =	(0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))
Where:	Tc= Time of concentration, hours n= Manning's n Lf= Flow length, feet P= 2yr, 24hr Rain depth, inches Sf= Slope, %

Subsection: Time of Concentration Calculations
Label: EDA-1B
Scenario: Existing Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	92.00 ft
Manning's n	0.400
Slope	0.008 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.05 ft/s
Segment Time of Concentration	0.469 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	320.00 ft
Is Paved?	False
Slope	0.008 ft/ft
Average Velocity	1.44 ft/s
Segment Time of Concentration	0.062 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.530 hours

==== SCS Channel Flow

Tc =	R = Qa / Wp V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n (Lf / V) / 3600
Where:	R= Hydraulic radius Aq= Flow area, square feet Wp= Wetted perimeter, feet V= Velocity, ft/sec Sf= Slope, ft/ft n= Manning's n Tc= Time of concentration, hours Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =	Unpaved surface: V = 16.1345 * (Sf**0.5) Paved Surface: V = 20.3282 * (Sf**0.5) (Lf / V) / 3600
Where:	V= Velocity, ft/sec Sf= Slope, ft/ft Tc= Time of concentration, hours Lf= Flow length, feet

Subsection: Time of Concentration Calculations | Return Event: 10 years
Label: EDA-1B | Storm Event: 10
Scenario: Existing Conditions 10 Year Storm

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	92.00 ft
Manning's n	0.400
Slope	0.008 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.05 ft/s
Segment Time of Concentration	0.469 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	320.00 ft
Is Paved?	False
Slope	0.008 ft/ft
Average Velocity	1.44 ft/s
Segment Time of Concentration	0.062 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.530 hours

==== SCS Channel Flow

Tc =	R = Qa / Wp V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n (Lf / V) / 3600
Where:	R= Hydraulic radius Aq= Flow area, square feet Wp= Wetted perimeter, feet V= Velocity, ft/sec Sf= Slope, ft/ft n= Manning's n Tc= Time of concentration, hours Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =	Unpaved surface: V = 16.1345 * (Sf**0.5) Paved Surface: V = 20.3282 * (Sf**0.5) (Lf / V) / 3600
Where:	V= Velocity, ft/sec Sf= Slope, ft/ft Tc= Time of concentration, hours Lf= Flow length, feet

Subsection: Time of Concentration Calculations | Return Event: 100 years
Label: EDA-1B | Storm Event: 100
Scenario: Existing Conditions 100 Year Storm

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	92.00 ft
Manning's n	0.400
Slope	0.008 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.05 ft/s
Segment Time of Concentration	0.469 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	320.00 ft
Is Paved?	False
Slope	0.008 ft/ft
Average Velocity	1.44 ft/s
Segment Time of Concentration	0.062 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.530 hours

==== SCS Channel Flow

Tc =	R = Qa / Wp V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n (Lf / V) / 3600
Where:	R= Hydraulic radius Aq= Flow area, square feet Wp= Wetted perimeter, feet V= Velocity, ft/sec Sf= Slope, ft/ft n= Manning's n Tc= Time of concentration, hours Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =	Unpaved surface: V = 16.1345 * (Sf**0.5) Paved Surface: V = 20.3282 * (Sf**0.5) (Lf / V) / 3600
Where:	V= Velocity, ft/sec Sf= Slope, ft/ft Tc= Time of concentration, hours Lf= Flow length, feet

Time of Concentration Results

Segment #1: User Defined Tc	
Time of Concentration	0.083 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.083 hours

==== User Defined

Tc =	Value entered by user
Where:	Tc= Time of concentration, hours

Time of Concentration Results

Segment #1: User Defined Tc	
Time of Concentration	0.083 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.083 hours

==== User Defined

Tc =	Value entered by user
Where:	Tc= Time of concentration, hours

Time of Concentration Results

Segment #1: User Defined Tc	
Time of Concentration	0.083 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.083 hours

==== User Defined

Tc =	Value entered by user
Where:	Tc= Time of concentration, hours

Time of Concentration Results

Segment #1: User Defined Tc	
Time of Concentration	0.083 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.083 hours

==== User Defined

Tc =	Value entered by user
Where:	Tc= Time of concentration, hours

Time of Concentration Results

Segment #1: User Defined Tc	
Time of Concentration	0.083 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.083 hours

==== User Defined

Tc =	Value entered by user
Where:	Tc= Time of concentration, hours

Subsection: Time of Concentration Calculations
Label: PDA-1B
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Time of Concentration Results

Segment #1: User Defined Tc	
Time of Concentration	0.083 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.083 hours

==== User Defined

Tc =	Value entered by user
Where:	Tc= Time of concentration, hours

Subsection: Time of Concentration Calculations
Label: PDA-1C
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Time of Concentration Results

Segment #1: User Defined Tc	
Time of Concentration	0.083 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.083 hours

Subsection: Time of Concentration Calculations
Label: PDA-1C
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

==== User Defined

Tc =	Value entered by user
Where:	Tc= Time of concentration, hours

Subsection: Time of Concentration Calculations | Return Event: 10 years
Label: PDA-1C | Storm Event: 10
Scenario: Proposed Conditions 10 Year Storm

Time of Concentration Results

Segment #1: User Defined Tc	
Time of Concentration	0.083 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.083 hours

==== User Defined

Tc =	Value entered by user
Where:	Tc= Time of concentration, hours

Time of Concentration Results

Segment #1: User Defined Tc	
Time of Concentration	0.083 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.083 hours

==== User Defined

Tc =	Value entered by user
Where:	Tc= Time of concentration, hours

Subsection: Time of Concentration Calculations
Label: PDA-1D
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	110.00 ft
Manning's n	0.150
Slope	0.040 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.24 ft/s
Segment Time of Concentration	0.130 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	62.00 ft
Is Paved?	True
Slope	0.030 ft/ft
Average Velocity	3.52 ft/s
Segment Time of Concentration	0.005 hours

Segment #3: TR-55 Channel Flow	
Flow Area	3.1 ft²
Hydraulic Length	503.00 ft
Manning's n	0.013
Slope	0.002 ft/ft
Wetted Perimeter	6.28 ft
Average Velocity	2.98 ft/s
Segment Time of Concentration	0.047 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.181 hours

==== SCS Channel Flow

Tc =	R = Qa / Wp V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n (Lf / V) / 3600
Where:	R= Hydraulic radius Aq= Flow area, square feet Wp= Wetted perimeter, feet V= Velocity, ft/sec Sf= Slope, ft/ft n= Manning's n Tc= Time of concentration, hours Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =	Unpaved surface: V = 16.1345 * (Sf**0.5) Paved Surface: V = 20.3282 * (Sf**0.5) (Lf / V) / 3600
Where:	V= Velocity, ft/sec Sf= Slope, ft/ft Tc= Time of concentration, hours Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc =	(0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))
Where:	Tc= Time of concentration, hours n= Manning's n Lf= Flow length, feet P= 2yr, 24hr Rain depth, inches Sf= Slope, %

Subsection: Time of Concentration Calculations
Label: PDA-1D
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	110.00 ft
Manning's n	0.150
Slope	0.040 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.24 ft/s
Segment Time of Concentration	0.130 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	62.00 ft
Is Paved?	True
Slope	0.030 ft/ft
Average Velocity	3.52 ft/s
Segment Time of Concentration	0.005 hours

Segment #3: TR-55 Channel Flow	
Flow Area	3.1 ft²
Hydraulic Length	503.00 ft
Manning's n	0.013
Slope	0.002 ft/ft
Wetted Perimeter	6.28 ft
Average Velocity	2.98 ft/s
Segment Time of Concentration	0.047 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.181 hours

==== SCS Channel Flow

Tc =	R = Qa / Wp V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n (Lf / V) / 3600
Where:	R= Hydraulic radius Aq= Flow area, square feet Wp= Wetted perimeter, feet V= Velocity, ft/sec Sf= Slope, ft/ft n= Manning's n Tc= Time of concentration, hours Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =	Unpaved surface: V = 16.1345 * (Sf**0.5) Paved Surface: V = 20.3282 * (Sf**0.5) (Lf / V) / 3600
Where:	V= Velocity, ft/sec Sf= Slope, ft/ft Tc= Time of concentration, hours Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc =	(0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))
Where:	Tc= Time of concentration, hours n= Manning's n Lf= Flow length, feet P= 2yr, 24hr Rain depth, inches Sf= Slope, %

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	110.00 ft
Manning's n	0.150
Slope	0.040 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.24 ft/s
Segment Time of Concentration	0.130 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	62.00 ft
Is Paved?	True
Slope	0.030 ft/ft
Average Velocity	3.52 ft/s
Segment Time of Concentration	0.005 hours

Segment #3: TR-55 Channel Flow	
Flow Area	3.1 ft²
Hydraulic Length	503.00 ft
Manning's n	0.013
Slope	0.002 ft/ft
Wetted Perimeter	6.28 ft
Average Velocity	2.98 ft/s
Segment Time of Concentration	0.047 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.181 hours

==== SCS Channel Flow

Tc =	R = Qa / Wp V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n (Lf / V) / 3600
Where:	R= Hydraulic radius Aq= Flow area, square feet Wp= Wetted perimeter, feet V= Velocity, ft/sec Sf= Slope, ft/ft n= Manning's n Tc= Time of concentration, hours Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =	Unpaved surface: V = 16.1345 * (Sf**0.5) Paved Surface: V = 20.3282 * (Sf**0.5) (Lf / V) / 3600
Where:	V= Velocity, ft/sec Sf= Slope, ft/ft Tc= Time of concentration, hours Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc =	(0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))
Where:	Tc= Time of concentration, hours n= Manning's n Lf= Flow length, feet P= 2yr, 24hr Rain depth, inches Sf= Slope, %

Subsection: Runoff CN-Area
Label: EDA-1A
Scenario: Existing Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft²)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil A	98.000	138,487.966	0.0	0.0	98.000
Pasture, grassland, or range - good - Soil B	61.000	24,708.545	0.0	0.0	61.000
Pasture, grassland, or range - good - Soil D	80.000	41,513.947	0.0	0.0	80.000
Woods - good - Soil B	55.000	7,825.884	0.0	0.0	55.000
Woods - good - Soil D	77.000	3,348.405	0.0	0.0	77.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	215,884.747	(N/A)	(N/A)	88.419

Subsection: Runoff CN-Area
Label: EDA-1B
Scenario: Existing Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft²)	C (%)	UC (%)	Adjusted CN
Pasture, grassland, or range - good - Soil B	61.000	19,262.670	0.0	0.0	61.000
Pasture, grassland, or range - good - Soil D	80.000	1,637.698	0.0	0.0	80.000
Woods - good - Soil B	55.000	119,963.994	0.0	0.0	55.000
Woods - good - Soil D	77.000	2,477.730	0.0	0.0	77.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	143,342.092	(N/A)	(N/A)	56.472

Subsection: Runoff CN-Area
Label: PDA-1A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft²)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil A	98.000	74,850.000	0.0	0.0	98.000
Pasture, grassland, or range - good - Soil B	61.000	25,667.148	0.0	0.0	61.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	100,517.148	(N/A)	(N/A)	88.552

Subsection: Runoff CN-Area
Label: PDA-1B
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft²)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil B	98.000	20,544.127	0.0	0.0	98.000
Pasture, grassland, or range - good - Soil B	61.000	3,953.153	0.0	0.0	61.000
Pasture, grassland, or range - good - Soil D	80.000	281.913	0.0	0.0	80.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	24,779.193	(N/A)	(N/A)	91.892

Subsection: Runoff CN-Area
Label: PDA-1C
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft²)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil A	98.000	23,394.493	0.0	0.0	98.000
Pasture, grassland, or range - good - Soil B	61.000	5,432.232	0.0	0.0	61.000
Pasture, grassland, or range - good - Soil D	80.000	5,923.610	0.0	0.0	80.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	34,750.336	(N/A)	(N/A)	89.148

Subsection: Runoff CN-Area
Label: PDA-1D
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft²)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil A	98.000	117,926.625	0.0	0.0	98.000
Pasture, grassland, or range - good - Soil B	61.000	32,571.565	0.0	0.0	61.000
Pasture, grassland, or range - good - Soil D	80.000	37,138.274	0.0	0.0	80.000
Woods - good - Soil B	55.000	10,442.771	0.0	0.0	55.000
Woods - good - Soil D	77.000	1,100.928	0.0	0.0	77.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	199,180.163	(N/A)	(N/A)	86.223

Storm Event	1
Return Event	1 years
Duration	24.000 hours
Depth	2.8 in
Time of Concentration (Composite)	0.166 hours
Area (User Defined)	215,884.747 ft²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
7.400	0.00	0.00	0.00	0.00	0.01
7.650	0.01	0.01	0.01	0.01	0.01
7.900	0.02	0.02	0.02	0.02	0.02
8.150	0.03	0.03	0.03	0.03	0.04
8.400	0.04	0.04	0.04	0.05	0.05
8.650	0.05	0.06	0.06	0.06	0.07
8.900	0.07	0.08	0.08	0.08	0.09
9.150	0.09	0.10	0.10	0.11	0.11
9.400	0.12	0.12	0.13	0.13	0.14
9.650	0.14	0.15	0.16	0.16	0.17
9.900	0.17	0.18	0.19	0.19	0.20
10.150	0.21	0.22	0.22	0.23	0.24
10.400	0.25	0.26	0.28	0.29	0.30
10.650	0.31	0.32	0.33	0.35	0.36
10.900	0.37	0.38	0.40	0.41	0.43
11.150	0.46	0.49	0.52	0.56	0.59
11.400	0.63	0.68	0.72	0.79	0.92
11.650	1.10	1.38	1.71	2.09	2.49
11.900	2.94	3.66	5.06	6.50	7.47
12.150	7.71	6.84	5.69	4.81	4.18
12.400	3.63	3.12	2.62	2.18	1.81
12.650	1.54	1.38	1.27	1.20	1.13
12.900	1.08	1.03	0.97	0.93	0.89
13.150	0.85	0.83	0.81	0.80	0.78
13.400	0.77	0.76	0.74	0.73	0.72
13.650	0.70	0.69	0.68	0.66	0.65
13.900	0.64	0.62	0.61	0.60	0.59
14.150	0.58	0.57	0.56	0.55	0.55
14.400	0.54	0.54	0.53	0.52	0.52
14.650	0.51	0.50	0.50	0.49	0.48
14.900	0.48	0.47	0.46	0.46	0.45
15.150	0.44	0.44	0.43	0.42	0.42
15.400	0.41	0.40	0.40	0.39	0.38
15.650	0.38	0.37	0.36	0.36	0.35

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 1 years
Label: EDA-1A Storm Event: 1
Scenario: Existing Conditions 1 Year Storm

HYDROGRAPH ORDINATES (ft^3/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)
15.900	0.34	0.34	0.33	0.32	0.32
16.150	0.31	0.31	0.31	0.30	0.30
16.400	0.30	0.29	0.29	0.29	0.28
16.650	0.28	0.28	0.28	0.27	0.27
16.900	0.27	0.26	0.26	0.26	0.26
17.150	0.25	0.25	0.25	0.24	0.24
17.400	0.24	0.23	0.23	0.23	0.23
17.650	0.22	0.22	0.22	0.21	0.21
17.900	0.21	0.21	0.20	0.20	0.20
18.150	0.19	0.19	0.19	0.19	0.19
18.400	0.19	0.19	0.19	0.19	0.19
18.650	0.19	0.18	0.18	0.18	0.18
18.900	0.18	0.18	0.18	0.18	0.18
19.150	0.18	0.18	0.17	0.17	0.17
19.400	0.17	0.17	0.17	0.17	0.17
19.650	0.17	0.17	0.17	0.16	0.16
19.900	0.16	0.16	0.16	0.16	0.16
20.150	0.16	0.16	0.16	0.16	0.16
20.400	0.16	0.15	0.15	0.15	0.15
20.650	0.15	0.15	0.15	0.15	0.15
20.900	0.15	0.15	0.15	0.15	0.15
21.150	0.15	0.14	0.14	0.14	0.14
21.400	0.14	0.14	0.14	0.14	0.14
21.650	0.14	0.14	0.14	0.14	0.14
21.900	0.14	0.13	0.13	0.13	0.13
22.150	0.13	0.13	0.13	0.13	0.13
22.400	0.13	0.13	0.13	0.13	0.13
22.650	0.13	0.12	0.12	0.12	0.12
22.900	0.12	0.12	0.12	0.12	0.12
23.150	0.12	0.12	0.12	0.12	0.12
23.400	0.11	0.11	0.11	0.11	0.11
23.650	0.11	0.11	0.11	0.11	0.11
23.900	0.11	0.11	0.11	(N/A)	(N/A)

Storm Event	10
Return Event	10 years
Duration	24.000 hours
Depth	5.1 in
Time of Concentration (Composite)	0.166 hours
Area (User Defined)	215,884.747 ft²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
4.850	0.00	0.00	0.00	0.00	0.01
5.100	0.01	0.01	0.01	0.01	0.02
5.350	0.02	0.02	0.02	0.02	0.03
5.600	0.03	0.03	0.03	0.04	0.04
5.850	0.04	0.04	0.04	0.05	0.05
6.100	0.05	0.05	0.06	0.06	0.06
6.350	0.07	0.07	0.07	0.07	0.08
6.600	0.08	0.09	0.09	0.09	0.10
6.850	0.10	0.10	0.11	0.11	0.12
7.100	0.12	0.13	0.13	0.13	0.14
7.350	0.14	0.15	0.15	0.16	0.16
7.600	0.17	0.17	0.18	0.18	0.19
7.850	0.19	0.20	0.20	0.21	0.22
8.100	0.22	0.23	0.24	0.25	0.25
8.350	0.26	0.27	0.28	0.29	0.30
8.600	0.31	0.32	0.33	0.34	0.35
8.850	0.37	0.38	0.39	0.40	0.41
9.100	0.42	0.44	0.45	0.46	0.47
9.350	0.49	0.50	0.51	0.52	0.54
9.600	0.55	0.57	0.58	0.59	0.61
9.850	0.62	0.64	0.65	0.66	0.68
10.100	0.70	0.72	0.74	0.76	0.79
10.350	0.81	0.84	0.86	0.89	0.92
10.600	0.94	0.97	1.00	1.03	1.06
10.850	1.08	1.11	1.14	1.17	1.21
11.100	1.25	1.31	1.39	1.47	1.56
11.350	1.65	1.75	1.85	1.95	2.11
11.600	2.44	2.91	3.59	4.37	5.27
11.850	6.19	7.20	8.78	11.88	14.95
12.100	16.84	17.11	14.99	12.34	10.34
12.350	8.91	7.68	6.58	5.51	4.57
12.600	3.79	3.21	2.86	2.64	2.48
12.850	2.35	2.23	2.12	2.01	1.91
13.100	1.82	1.76	1.71	1.67	1.64

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: EDA-1A Storm Event: 10
Scenario: Existing Conditions 10 Year Storm

HYDROGRAPH ORDINATES (ft^3/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)
13.350	1.61	1.58	1.55	1.52	1.50
13.600	1.47	1.44	1.41	1.38	1.36
13.850	1.33	1.30	1.27	1.24	1.22
14.100	1.19	1.17	1.15	1.14	1.12
14.350	1.11	1.10	1.08	1.07	1.06
14.600	1.04	1.03	1.02	1.00	0.99
14.850	0.98	0.96	0.95	0.94	0.92
15.100	0.91	0.89	0.88	0.87	0.85
15.350	0.84	0.83	0.81	0.80	0.79
15.600	0.77	0.76	0.74	0.73	0.72
15.850	0.70	0.69	0.68	0.66	0.65
16.100	0.64	0.63	0.62	0.61	0.61
16.350	0.60	0.59	0.59	0.58	0.58
16.600	0.57	0.56	0.56	0.55	0.55
16.850	0.54	0.53	0.53	0.52	0.52
17.100	0.51	0.51	0.50	0.49	0.49
17.350	0.48	0.47	0.47	0.46	0.46
17.600	0.45	0.44	0.44	0.43	0.43
17.850	0.42	0.41	0.41	0.40	0.40
18.100	0.39	0.39	0.39	0.38	0.38
18.350	0.38	0.38	0.38	0.37	0.37
18.600	0.37	0.37	0.37	0.36	0.36
18.850	0.36	0.36	0.36	0.36	0.35
19.100	0.35	0.35	0.35	0.35	0.35
19.350	0.34	0.34	0.34	0.34	0.34
19.600	0.33	0.33	0.33	0.33	0.33
19.850	0.33	0.32	0.32	0.32	0.32
20.100	0.32	0.31	0.31	0.31	0.31
20.350	0.31	0.31	0.31	0.31	0.30
20.600	0.30	0.30	0.30	0.30	0.30
20.850	0.30	0.29	0.29	0.29	0.29
21.100	0.29	0.29	0.29	0.29	0.28
21.350	0.28	0.28	0.28	0.28	0.28
21.600	0.28	0.27	0.27	0.27	0.27
21.850	0.27	0.27	0.27	0.26	0.26
22.100	0.26	0.26	0.26	0.26	0.26
22.350	0.25	0.25	0.25	0.25	0.25
22.600	0.25	0.25	0.25	0.24	0.24
22.850	0.24	0.24	0.24	0.24	0.24
23.100	0.23	0.23	0.23	0.23	0.23
23.350	0.23	0.23	0.23	0.22	0.22
23.600	0.22	0.22	0.22	0.22	0.22
23.850	0.21	0.21	0.21	0.21	(N/A)

Storm Event	100
Return Event	100 years
Duration	24.000 hours
Depth	9.2 in
Time of Concentration (Composite)	0.166 hours
Area (User Defined)	215,884.747 ft²

HYDROGRAPH ORDINATES (ft^3/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)
3.000	0.00	0.00	0.01	0.01	0.01
3.250	0.02	0.02	0.02	0.03	0.03
3.500	0.04	0.04	0.05	0.05	0.05
3.750	0.06	0.06	0.07	0.07	0.08
4.000	0.08	0.09	0.09	0.09	0.10
4.250	0.10	0.11	0.11	0.12	0.12
4.500	0.13	0.13	0.14	0.14	0.15
4.750	0.15	0.16	0.16	0.16	0.17
5.000	0.17	0.18	0.18	0.19	0.19
5.250	0.20	0.20	0.21	0.21	0.22
5.500	0.22	0.23	0.23	0.24	0.24
5.750	0.25	0.25	0.26	0.26	0.27
6.000	0.27	0.28	0.29	0.29	0.30
6.250	0.31	0.32	0.32	0.33	0.34
6.500	0.35	0.36	0.37	0.38	0.39
6.750	0.40	0.41	0.42	0.43	0.44
7.000	0.45	0.46	0.47	0.48	0.49
7.250	0.50	0.51	0.52	0.53	0.54
7.500	0.56	0.57	0.58	0.59	0.60
7.750	0.61	0.62	0.64	0.65	0.66
8.000	0.67	0.68	0.70	0.72	0.73
8.250	0.75	0.78	0.80	0.82	0.84
8.500	0.87	0.89	0.91	0.93	0.96
8.750	0.98	1.01	1.03	1.06	1.08
9.000	1.11	1.13	1.16	1.18	1.21
9.250	1.23	1.26	1.29	1.31	1.34
9.500	1.37	1.39	1.42	1.45	1.48
9.750	1.50	1.53	1.56	1.59	1.61
10.000	1.64	1.67	1.71	1.75	1.79
10.250	1.84	1.89	1.94	1.99	2.05
10.500	2.10	2.15	2.21	2.26	2.31
10.750	2.37	2.42	2.48	2.53	2.59
11.000	2.65	2.71	2.81	2.93	3.08
11.250	3.25	3.44	3.63	3.82	4.02

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 100 years
Label: EDA-1A Storm Event: 100
Scenario: Existing Conditions 100 Year Storm

HYDROGRAPH ORDINATES (ft^3/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)
11.500	4.22	4.55	5.22	6.19	7.60
11.750	9.19	10.99	12.81	14.77	17.84
12.000	23.84	29.69	33.12	33.35	29.05
12.250	23.78	19.83	17.03	14.63	12.51
12.500	10.45	8.65	7.16	6.07	5.40
12.750	4.98	4.67	4.42	4.19	3.99
13.000	3.78	3.59	3.42	3.30	3.20
13.250	3.13	3.07	3.01	2.96	2.91
13.500	2.85	2.80	2.75	2.69	2.64
13.750	2.59	2.53	2.48	2.43	2.38
14.000	2.32	2.27	2.23	2.19	2.15
14.250	2.13	2.10	2.07	2.05	2.02
14.500	2.00	1.97	1.95	1.92	1.89
14.750	1.87	1.84	1.82	1.79	1.77
15.000	1.74	1.72	1.69	1.67	1.64
15.250	1.61	1.59	1.56	1.54	1.51
15.500	1.49	1.46	1.44	1.41	1.38
15.750	1.36	1.33	1.31	1.28	1.26
16.000	1.23	1.21	1.19	1.17	1.15
16.250	1.14	1.13	1.12	1.10	1.09
16.500	1.08	1.07	1.06	1.05	1.04
16.750	1.03	1.01	1.00	0.99	0.98
17.000	0.97	0.96	0.95	0.94	0.92
17.250	0.91	0.90	0.89	0.88	0.87
17.500	0.86	0.85	0.84	0.82	0.81
17.750	0.80	0.79	0.78	0.77	0.76
18.000	0.75	0.74	0.73	0.72	0.71
18.250	0.71	0.71	0.70	0.70	0.70
18.500	0.69	0.69	0.69	0.68	0.68
18.750	0.68	0.67	0.67	0.67	0.66
19.000	0.66	0.66	0.65	0.65	0.65
19.250	0.64	0.64	0.64	0.63	0.63
19.500	0.63	0.62	0.62	0.62	0.61
19.750	0.61	0.61	0.60	0.60	0.59
20.000	0.59	0.59	0.59	0.58	0.58
20.250	0.58	0.58	0.57	0.57	0.57
20.500	0.56	0.56	0.56	0.56	0.55
20.750	0.55	0.55	0.55	0.54	0.54
21.000	0.54	0.54	0.54	0.53	0.53
21.250	0.53	0.52	0.52	0.52	0.52
21.500	0.51	0.51	0.51	0.51	0.50
21.750	0.50	0.50	0.50	0.50	0.49
22.000	0.49	0.49	0.48	0.48	0.48

Subsection: Unit Hydrograph (Hydrograph Table)
Label: EDA-1A
Scenario: Existing Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

HYDROGRAPH ORDINATES (ft^3/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)
22.250	0.48	0.47	0.47	0.47	0.47
22.500	0.46	0.46	0.46	0.46	0.45
22.750	0.45	0.45	0.45	0.44	0.44
23.000	0.44	0.44	0.43	0.43	0.43
23.250	0.43	0.42	0.42	0.42	0.42
23.500	0.41	0.41	0.41	0.41	0.40
23.750	0.40	0.40	0.40	0.39	0.39
24.000	0.39	(N/A)	(N/A)	(N/A)	(N/A)

Storm Event	1
Return Event	1 years
Duration	24.000 hours
Depth	2.8 in
Time of Concentration (Composite)	0.530 hours
Area (User Defined)	143,342.092 ft²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
12.100	0.00	0.00	0.01	0.01	0.02
12.350	0.04	0.05	0.07	0.09	0.10
12.600	0.11	0.12	0.12	0.12	0.12
12.850	0.12	0.12	0.11	0.11	0.11
13.100	0.10	0.10	0.10	0.10	0.09
13.350	0.09	0.09	0.09	0.09	0.09
13.600	0.09	0.09	0.08	0.08	0.08
13.850	0.08	0.08	0.08	0.08	0.08
14.100	0.08	0.08	0.08	0.08	0.08
14.350	0.07	0.07	0.07	0.07	0.07
14.600	0.07	0.07	0.07	0.07	0.07
14.850	0.07	0.07	0.07	0.07	0.07
15.100	0.07	0.07	0.07	0.07	0.06
15.350	0.06	0.06	0.06	0.06	0.06
15.600	0.06	0.06	0.06	0.06	0.06
15.850	0.06	0.06	0.06	0.06	0.05
16.100	0.05	0.05	0.05	0.05	0.05
16.350	0.05	0.05	0.05	0.05	0.05
16.600	0.05	0.05	0.05	0.05	0.05
16.850	0.05	0.05	0.04	0.04	0.04
17.100	0.04	0.04	0.04	0.04	0.04
17.350	0.04	0.04	0.04	0.04	0.04
17.600	0.04	0.04	0.04	0.04	0.04
17.850	0.04	0.04	0.04	0.04	0.04
18.100	0.04	0.04	0.03	0.03	0.03
18.350	0.03	0.03	0.03	0.03	0.03
18.600	0.03	0.03	0.03	0.03	0.03
18.850	0.03	0.03	0.03	0.03	0.03
19.100	0.03	0.03	0.03	0.03	0.03
19.350	0.03	0.03	0.03	0.03	0.03
19.600	0.03	0.03	0.03	0.03	0.03
19.850	0.03	0.03	0.03	0.03	0.03
20.100	0.03	0.03	0.03	0.03	0.03
20.350	0.03	0.03	0.03	0.03	0.03

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 1 years
Label: EDA-1B Storm Event: 1
Scenario: Existing Conditions 1 Year Storm

HYDROGRAPH ORDINATES (ft^3/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)
20.600	0.03	0.03	0.03	0.03	0.03
20.850	0.03	0.03	0.03	0.03	0.03
21.100	0.03	0.03	0.03	0.03	0.03
21.350	0.03	0.03	0.03	0.03	0.03
21.600	0.03	0.03	0.03	0.03	0.03
21.850	0.03	0.03	0.03	0.03	0.03
22.100	0.03	0.03	0.02	0.02	0.02
22.350	0.02	0.02	0.02	0.02	0.02
22.600	0.02	0.02	0.02	0.02	0.02
22.850	0.02	0.02	0.02	0.02	0.02
23.100	0.02	0.02	0.02	0.02	0.02
23.350	0.02	0.02	0.02	0.02	0.02
23.600	0.02	0.02	0.02	0.02	0.02
23.850	0.02	0.02	0.02	0.02	(N/A)

Storm Event	10
Return Event	10 years
Duration	24.000 hours
Depth	5.1 in
Time of Concentration (Composite)	0.530 hours
Area (User Defined)	143,342.092 ft²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
11.600	0.00	0.00	0.00	0.01	0.02
11.850	0.05	0.09	0.15	0.26	0.41
12.100	0.62	0.87	1.15	1.42	1.66
12.350	1.81	1.91	1.96	1.94	1.87
12.600	1.77	1.65	1.53	1.40	1.28
12.850	1.17	1.07	0.98	0.90	0.84
13.100	0.78	0.73	0.69	0.65	0.62
13.350	0.59	0.57	0.55	0.53	0.52
13.600	0.50	0.49	0.48	0.47	0.46
13.850	0.45	0.44	0.43	0.42	0.42
14.100	0.41	0.40	0.39	0.39	0.38
14.350	0.38	0.37	0.37	0.36	0.36
14.600	0.35	0.35	0.34	0.34	0.34
14.850	0.33	0.33	0.33	0.32	0.32
15.100	0.31	0.31	0.31	0.30	0.30
15.350	0.30	0.29	0.29	0.28	0.28
15.600	0.28	0.27	0.27	0.26	0.26
15.850	0.26	0.25	0.25	0.24	0.24
16.100	0.24	0.23	0.23	0.22	0.22
16.350	0.22	0.21	0.21	0.21	0.21
16.600	0.20	0.20	0.20	0.20	0.20
16.850	0.19	0.19	0.19	0.19	0.19
17.100	0.18	0.18	0.18	0.18	0.18
17.350	0.18	0.17	0.17	0.17	0.17
17.600	0.17	0.16	0.16	0.16	0.16
17.850	0.16	0.15	0.15	0.15	0.15
18.100	0.15	0.14	0.14	0.14	0.14
18.350	0.14	0.14	0.14	0.13	0.13
18.600	0.13	0.13	0.13	0.13	0.13
18.850	0.13	0.13	0.13	0.13	0.13
19.100	0.13	0.13	0.13	0.13	0.12
19.350	0.12	0.12	0.12	0.12	0.12
19.600	0.12	0.12	0.12	0.12	0.12
19.850	0.12	0.12	0.12	0.12	0.12

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: EDA-1B Storm Event: 10
Scenario: Existing Conditions 10 Year Storm

HYDROGRAPH ORDINATES (ft^3/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)
20.100	0.12	0.12	0.11	0.11	0.11
20.350	0.11	0.11	0.11	0.11	0.11
20.600	0.11	0.11	0.11	0.11	0.11
20.850	0.11	0.11	0.11	0.11	0.11
21.100	0.11	0.11	0.11	0.10	0.10
21.350	0.10	0.10	0.10	0.10	0.10
21.600	0.10	0.10	0.10	0.10	0.10
21.850	0.10	0.10	0.10	0.10	0.10
22.100	0.10	0.10	0.10	0.10	0.10
22.350	0.10	0.09	0.09	0.09	0.09
22.600	0.09	0.09	0.09	0.09	0.09
22.850	0.09	0.09	0.09	0.09	0.09
23.100	0.09	0.09	0.09	0.09	0.09
23.350	0.09	0.09	0.08	0.08	0.08
23.600	0.08	0.08	0.08	0.08	0.08
23.850	0.08	0.08	0.08	0.08	(N/A)

Storm Event	100
Return Event	100 years
Duration	24.000 hours
Depth	9.2 in
Time of Concentration (Composite)	0.530 hours
Area (User Defined)	143,342.092 ft²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
9.800	0.00	0.00	0.00	0.01	0.01
10.050	0.01	0.02	0.02	0.03	0.04
10.300	0.04	0.05	0.06	0.07	0.08
10.550	0.09	0.10	0.11	0.13	0.14
10.800	0.15	0.16	0.18	0.19	0.21
11.050	0.23	0.24	0.26	0.28	0.30
11.300	0.33	0.36	0.39	0.42	0.46
11.550	0.50	0.55	0.62	0.72	0.84
11.800	1.00	1.22	1.51	1.87	2.39
12.050	3.07	3.87	4.81	5.73	6.55
12.300	7.21	7.51	7.62	7.53	7.21
12.550	6.77	6.27	5.74	5.21	4.71
12.800	4.23	3.82	3.45	3.13	2.85
13.050	2.62	2.42	2.25	2.10	1.97
13.300	1.86	1.76	1.68	1.61	1.55
13.550	1.49	1.45	1.40	1.37	1.33
13.800	1.30	1.27	1.24	1.22	1.19
14.050	1.17	1.15	1.12	1.10	1.08
14.300	1.06	1.04	1.03	1.01	1.00
14.550	0.98	0.97	0.96	0.95	0.93
14.800	0.92	0.91	0.90	0.89	0.88
15.050	0.87	0.86	0.85	0.83	0.82
15.300	0.81	0.80	0.79	0.78	0.77
15.550	0.76	0.74	0.73	0.72	0.71
15.800	0.70	0.69	0.68	0.66	0.65
16.050	0.64	0.63	0.62	0.61	0.60
16.300	0.59	0.58	0.57	0.56	0.55
16.550	0.55	0.54	0.54	0.53	0.52
16.800	0.52	0.51	0.51	0.50	0.50
17.050	0.49	0.49	0.48	0.48	0.47
17.300	0.47	0.46	0.46	0.45	0.44
17.550	0.44	0.43	0.43	0.42	0.42
17.800	0.41	0.41	0.40	0.40	0.39
18.050	0.39	0.38	0.38	0.37	0.37

Subsection: Unit Hydrograph (Hydrograph Table)
Label: EDA-1B
Scenario: Existing Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

HYDROGRAPH ORDINATES (ft^3/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)
18.300	0.36	0.36	0.36	0.35	0.35
18.550	0.35	0.35	0.34	0.34	0.34
18.800	0.34	0.34	0.33	0.33	0.33
19.050	0.33	0.33	0.33	0.32	0.32
19.300	0.32	0.32	0.32	0.32	0.32
19.550	0.31	0.31	0.31	0.31	0.31
19.800	0.31	0.30	0.30	0.30	0.30
20.050	0.30	0.30	0.30	0.29	0.29
20.300	0.29	0.29	0.29	0.29	0.29
20.550	0.28	0.28	0.28	0.28	0.28
20.800	0.28	0.28	0.28	0.27	0.27
21.050	0.27	0.27	0.27	0.27	0.27
21.300	0.27	0.27	0.26	0.26	0.26
21.550	0.26	0.26	0.26	0.26	0.26
21.800	0.25	0.25	0.25	0.25	0.25
22.050	0.25	0.25	0.25	0.25	0.24
22.300	0.24	0.24	0.24	0.24	0.24
22.550	0.24	0.24	0.23	0.23	0.23
22.800	0.23	0.23	0.23	0.23	0.23
23.050	0.22	0.22	0.22	0.22	0.22
23.300	0.22	0.22	0.22	0.21	0.21
23.550	0.21	0.21	0.21	0.21	0.21
23.800	0.21	0.21	0.20	0.20	0.20

Storm Event	1
Return Event	1 years
Duration	24.000 hours
Depth	2.8 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	100,517.148 ft²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
7.000	0.00	0.00	0.00	0.00	0.00
7.250	0.00	0.00	0.01	0.01	0.01
7.500	0.01	0.01	0.01	0.01	0.01
7.750	0.01	0.01	0.01	0.02	0.02
8.000	0.02	0.02	0.02	0.02	0.02
8.250	0.02	0.02	0.03	0.03	0.03
8.500	0.03	0.03	0.03	0.04	0.04
8.750	0.04	0.04	0.04	0.05	0.05
9.000	0.05	0.05	0.06	0.06	0.06
9.250	0.06	0.06	0.07	0.07	0.07
9.500	0.08	0.08	0.08	0.08	0.09
9.750	0.09	0.09	0.10	0.10	0.10
10.000	0.10	0.11	0.11	0.12	0.12
10.250	0.13	0.13	0.14	0.14	0.15
10.500	0.15	0.16	0.16	0.17	0.18
10.750	0.18	0.19	0.19	0.20	0.21
11.000	0.21	0.22	0.24	0.25	0.27
11.250	0.29	0.31	0.33	0.35	0.37
11.500	0.39	0.47	0.56	0.72	0.89
11.750	1.09	1.30	1.52	1.75	2.54
12.000	3.55	3.91	4.10	3.44	2.50
12.250	2.12	1.86	1.63	1.41	1.18
12.500	0.95	0.80	0.66	0.61	0.58
12.750	0.56	0.53	0.51	0.48	0.46
13.000	0.43	0.42	0.40	0.39	0.38
13.250	0.38	0.37	0.37	0.36	0.35
13.500	0.35	0.34	0.33	0.33	0.32
13.750	0.32	0.31	0.30	0.30	0.29
14.000	0.28	0.28	0.27	0.27	0.27
14.250	0.26	0.26	0.26	0.25	0.25
14.500	0.25	0.24	0.24	0.24	0.24
14.750	0.23	0.23	0.23	0.22	0.22
15.000	0.22	0.21	0.21	0.21	0.20
15.250	0.20	0.20	0.19	0.19	0.19

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 1 years
Label: PDA-1A Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

HYDROGRAPH ORDINATES (ft^3/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)
15.500	0.18	0.18	0.18	0.18	0.17
15.750	0.17	0.17	0.16	0.16	0.16
16.000	0.15	0.15	0.15	0.15	0.14
16.250	0.14	0.14	0.14	0.14	0.14
16.500	0.14	0.14	0.13	0.13	0.13
16.750	0.13	0.13	0.13	0.13	0.12
17.000	0.12	0.12	0.12	0.12	0.12
17.250	0.12	0.11	0.11	0.11	0.11
17.500	0.11	0.11	0.11	0.10	0.10
17.750	0.10	0.10	0.10	0.10	0.10
18.000	0.09	0.09	0.09	0.09	0.09
18.250	0.09	0.09	0.09	0.09	0.09
18.500	0.09	0.09	0.09	0.09	0.09
18.750	0.09	0.09	0.09	0.09	0.08
19.000	0.08	0.08	0.08	0.08	0.08
19.250	0.08	0.08	0.08	0.08	0.08
19.500	0.08	0.08	0.08	0.08	0.08
19.750	0.08	0.08	0.08	0.08	0.08
20.000	0.08	0.08	0.08	0.07	0.07
20.250	0.07	0.07	0.07	0.07	0.07
20.500	0.07	0.07	0.07	0.07	0.07
20.750	0.07	0.07	0.07	0.07	0.07
21.000	0.07	0.07	0.07	0.07	0.07
21.250	0.07	0.07	0.07	0.07	0.07
21.500	0.07	0.07	0.07	0.07	0.06
21.750	0.06	0.06	0.06	0.06	0.06
22.000	0.06	0.06	0.06	0.06	0.06
22.250	0.06	0.06	0.06	0.06	0.06
22.500	0.06	0.06	0.06	0.06	0.06
22.750	0.06	0.06	0.06	0.06	0.06
23.000	0.06	0.06	0.06	0.06	0.06
23.250	0.06	0.05	0.05	0.05	0.05
23.500	0.05	0.05	0.05	0.05	0.05
23.750	0.05	0.05	0.05	0.05	0.05
24.000	0.05	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: PDA-1A Storm Event: 10
Scenario: Proposed Conditions 10 Year Storm

Storm Event	10
Return Event	10 years
Duration	24.000 hours
Depth	5.1 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	100,517.148 ft²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
4.500	0.00	0.00	0.00	0.00	0.00
4.750	0.01	0.01	0.01	0.01	0.01
5.000	0.01	0.01	0.01	0.01	0.01
5.250	0.02	0.02	0.02	0.02	0.02
5.500	0.02	0.02	0.02	0.02	0.02
5.750	0.03	0.03	0.03	0.03	0.03
6.000	0.03	0.03	0.03	0.04	0.04
6.250	0.04	0.04	0.04	0.04	0.04
6.500	0.05	0.05	0.05	0.05	0.05
6.750	0.06	0.06	0.06	0.06	0.06
7.000	0.07	0.07	0.07	0.07	0.07
7.250	0.08	0.08	0.08	0.08	0.09
7.500	0.09	0.09	0.09	0.10	0.10
7.750	0.10	0.10	0.11	0.11	0.11
8.000	0.11	0.12	0.12	0.13	0.13
8.250	0.13	0.14	0.14	0.15	0.15
8.500	0.16	0.16	0.17	0.17	0.18
8.750	0.18	0.19	0.20	0.20	0.21
9.000	0.21	0.22	0.22	0.23	0.24
9.250	0.24	0.25	0.25	0.26	0.27
9.500	0.27	0.28	0.29	0.29	0.30
9.750	0.31	0.31	0.32	0.33	0.33
10.000	0.34	0.35	0.36	0.37	0.38
10.250	0.39	0.41	0.42	0.43	0.44
10.500	0.46	0.47	0.48	0.50	0.51
10.750	0.52	0.54	0.55	0.56	0.58
11.000	0.59	0.62	0.65	0.69	0.73
11.250	0.77	0.82	0.87	0.91	0.96
11.500	1.01	1.19	1.42	1.79	2.21
11.750	2.65	3.11	3.59	4.07	5.81
12.000	7.95	8.60	8.85	7.32	5.28
12.250	4.43	3.87	3.38	2.91	2.43
12.500	1.95	1.63	1.35	1.25	1.18
12.750	1.13	1.08	1.03	0.98	0.93

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: PDA-1A Storm Event: 10
Scenario: Proposed Conditions 10 Year Storm

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
13.000	0.88	0.84	0.81	0.79	0.78
13.250	0.76	0.75	0.74	0.73	0.71
13.500	0.70	0.69	0.67	0.66	0.65
13.750	0.63	0.62	0.61	0.59	0.58
14.000	0.57	0.56	0.55	0.54	0.53
14.250	0.53	0.52	0.51	0.51	0.50
14.500	0.49	0.49	0.48	0.48	0.47
14.750	0.46	0.46	0.45	0.44	0.44
15.000	0.43	0.43	0.42	0.41	0.41
15.250	0.40	0.39	0.39	0.38	0.37
15.500	0.37	0.36	0.35	0.35	0.34
15.750	0.34	0.33	0.32	0.32	0.31
16.000	0.30	0.30	0.29	0.29	0.29
16.250	0.28	0.28	0.28	0.28	0.27
16.500	0.27	0.27	0.26	0.26	0.26
16.750	0.26	0.25	0.25	0.25	0.24
17.000	0.24	0.24	0.24	0.23	0.23
17.250	0.23	0.23	0.22	0.22	0.22
17.500	0.21	0.21	0.21	0.21	0.20
17.750	0.20	0.20	0.19	0.19	0.19
18.000	0.19	0.18	0.18	0.18	0.18
18.250	0.18	0.18	0.18	0.18	0.18
18.500	0.17	0.17	0.17	0.17	0.17
18.750	0.17	0.17	0.17	0.17	0.17
19.000	0.17	0.17	0.16	0.16	0.16
19.250	0.16	0.16	0.16	0.16	0.16
19.500	0.16	0.16	0.16	0.16	0.15
19.750	0.15	0.15	0.15	0.15	0.15
20.000	0.15	0.15	0.15	0.15	0.15
20.250	0.15	0.15	0.14	0.14	0.14
20.500	0.14	0.14	0.14	0.14	0.14
20.750	0.14	0.14	0.14	0.14	0.14
21.000	0.14	0.14	0.13	0.13	0.13
21.250	0.13	0.13	0.13	0.13	0.13
21.500	0.13	0.13	0.13	0.13	0.13
21.750	0.13	0.13	0.13	0.12	0.12
22.000	0.12	0.12	0.12	0.12	0.12
22.250	0.12	0.12	0.12	0.12	0.12
22.500	0.12	0.12	0.12	0.12	0.11
22.750	0.11	0.11	0.11	0.11	0.11
23.000	0.11	0.11	0.11	0.11	0.11
23.250	0.11	0.11	0.11	0.11	0.11
23.500	0.10	0.10	0.10	0.10	0.10

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: PDA-1A Storm Event: 10
Scenario: Proposed Conditions 10 Year Storm

HYDROGRAPH ORDINATES (ft^3/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)
23.750	0.10	0.10	0.10	0.10	0.10
24.000	0.10	(N/A)	(N/A)	(N/A)	(N/A)

Storm Event	100
Return Event	100 years
Duration	24.000 hours
Depth	9.2 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	100,517.148 ft²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
2.750	0.00	0.00	0.00	0.01	0.01
3.000	0.01	0.01	0.01	0.02	0.02
3.250	0.02	0.02	0.02	0.03	0.03
3.500	0.03	0.03	0.04	0.04	0.04
3.750	0.04	0.04	0.05	0.05	0.05
4.000	0.05	0.05	0.06	0.06	0.06
4.250	0.06	0.07	0.07	0.07	0.07
4.500	0.08	0.08	0.08	0.08	0.08
4.750	0.09	0.09	0.09	0.09	0.10
5.000	0.10	0.10	0.10	0.11	0.11
5.250	0.11	0.11	0.11	0.12	0.12
5.500	0.12	0.12	0.13	0.13	0.13
5.750	0.13	0.14	0.14	0.14	0.14
6.000	0.15	0.15	0.15	0.16	0.16
6.250	0.16	0.17	0.17	0.18	0.18
6.500	0.19	0.19	0.19	0.20	0.20
6.750	0.21	0.21	0.22	0.22	0.23
7.000	0.23	0.24	0.24	0.25	0.25
7.250	0.26	0.26	0.27	0.27	0.28
7.500	0.29	0.29	0.30	0.30	0.31
7.750	0.31	0.32	0.32	0.33	0.34
8.000	0.34	0.35	0.36	0.37	0.38
8.250	0.39	0.40	0.41	0.42	0.43
8.500	0.44	0.45	0.46	0.47	0.49
8.750	0.50	0.51	0.52	0.53	0.54
9.000	0.56	0.57	0.58	0.59	0.60
9.250	0.62	0.63	0.64	0.65	0.67
9.500	0.68	0.69	0.71	0.72	0.73
9.750	0.74	0.76	0.77	0.78	0.80
10.000	0.81	0.83	0.85	0.87	0.89
10.250	0.92	0.94	0.97	0.99	1.02
10.500	1.04	1.07	1.09	1.12	1.14
10.750	1.17	1.19	1.22	1.25	1.27
11.000	1.30	1.35	1.40	1.49	1.57

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
11.250	1.66	1.76	1.85	1.94	2.03
11.500	2.13	2.50	2.96	3.71	4.56
11.750	5.43	6.32	7.23	8.14	11.50
12.000	15.57	16.67	17.02	13.99	10.03
12.250	8.39	7.31	6.38	5.47	4.57
12.500	3.66	3.06	2.53	2.33	2.22
12.750	2.12	2.02	1.93	1.83	1.74
13.000	1.64	1.57	1.51	1.48	1.45
13.250	1.43	1.40	1.38	1.35	1.33
13.500	1.30	1.28	1.25	1.23	1.20
13.750	1.18	1.15	1.13	1.10	1.08
14.000	1.05	1.03	1.01	1.00	0.99
14.250	0.98	0.96	0.95	0.94	0.93
14.500	0.92	0.91	0.89	0.88	0.87
14.750	0.86	0.85	0.83	0.82	0.81
15.000	0.80	0.79	0.77	0.76	0.75
15.250	0.74	0.73	0.71	0.70	0.69
15.500	0.68	0.67	0.66	0.64	0.63
15.750	0.62	0.61	0.60	0.58	0.57
16.000	0.56	0.55	0.54	0.54	0.53
16.250	0.52	0.52	0.51	0.51	0.50
16.500	0.50	0.49	0.49	0.48	0.48
16.750	0.47	0.47	0.46	0.46	0.45
17.000	0.45	0.44	0.44	0.43	0.42
17.250	0.42	0.42	0.41	0.40	0.40
17.500	0.39	0.39	0.38	0.38	0.37
17.750	0.37	0.36	0.36	0.35	0.35
18.000	0.34	0.34	0.33	0.33	0.33
18.250	0.33	0.33	0.33	0.32	0.32
18.500	0.32	0.32	0.32	0.32	0.31
18.750	0.31	0.31	0.31	0.31	0.31
19.000	0.31	0.30	0.30	0.30	0.30
19.250	0.30	0.30	0.29	0.29	0.29
19.500	0.29	0.29	0.29	0.29	0.28
19.750	0.28	0.28	0.28	0.28	0.28
20.000	0.27	0.27	0.27	0.27	0.27
20.250	0.27	0.27	0.27	0.26	0.26
20.500	0.26	0.26	0.26	0.26	0.26
20.750	0.26	0.26	0.25	0.25	0.25
21.000	0.25	0.25	0.25	0.25	0.25
21.250	0.24	0.24	0.24	0.24	0.24
21.500	0.24	0.24	0.24	0.24	0.23
21.750	0.23	0.23	0.23	0.23	0.23

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 100 years
Label: PDA-1A Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

HYDROGRAPH ORDINATES (ft^3/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)
22.000	0.23	0.23	0.22	0.22	0.22
22.250	0.22	0.22	0.22	0.22	0.22
22.500	0.21	0.21	0.21	0.21	0.21
22.750	0.21	0.21	0.21	0.21	0.20
23.000	0.20	0.20	0.20	0.20	0.20
23.250	0.20	0.20	0.20	0.20	0.19
23.500	0.19	0.19	0.19	0.19	0.19
23.750	0.19	0.18	0.18	0.18	0.18
24.000	0.18	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 1 years
Label: PDA-1B Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Storm Event	1
Return Event	1 years
Duration	24.000 hours
Depth	2.8 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	24,779.193 ft²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
5.800	0.00	0.00	0.00	0.00	0.00
6.050	0.00	0.00	0.00	0.00	0.00
6.300	0.00	0.00	0.00	0.00	0.00
6.550	0.00	0.00	0.00	0.00	0.00
6.800	0.00	0.00	0.00	0.00	0.01
7.050	0.01	0.01	0.01	0.01	0.01
7.300	0.01	0.01	0.01	0.01	0.01
7.550	0.01	0.01	0.01	0.01	0.01
7.800	0.01	0.01	0.01	0.01	0.01
8.050	0.01	0.01	0.01	0.01	0.01
8.300	0.01	0.01	0.01	0.02	0.02
8.550	0.02	0.02	0.02	0.02	0.02
8.800	0.02	0.02	0.02	0.02	0.02
9.050	0.02	0.02	0.02	0.02	0.03
9.300	0.03	0.03	0.03	0.03	0.03
9.550	0.03	0.03	0.03	0.03	0.03
9.800	0.03	0.04	0.04	0.04	0.04
10.050	0.04	0.04	0.04	0.04	0.04
10.300	0.05	0.05	0.05	0.05	0.05
10.550	0.05	0.06	0.06	0.06	0.06
10.800	0.06	0.06	0.07	0.07	0.07
11.050	0.07	0.08	0.08	0.09	0.09
11.300	0.10	0.10	0.11	0.12	0.12
11.550	0.14	0.17	0.22	0.27	0.33
11.800	0.38	0.45	0.51	0.73	1.01
12.050	1.09	1.13	0.94	0.68	0.57
12.300	0.50	0.44	0.38	0.32	0.25
12.550	0.21	0.18	0.16	0.15	0.15
12.800	0.14	0.13	0.13	0.12	0.12
13.050	0.11	0.11	0.10	0.10	0.10
13.300	0.10	0.10	0.10	0.09	0.09
13.550	0.09	0.09	0.09	0.08	0.08
13.800	0.08	0.08	0.08	0.08	0.07
14.050	0.07	0.07	0.07	0.07	0.07

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 1 years
Label: PDA-1B Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

HYDROGRAPH ORDINATES (ft^3/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)
14.300	0.07	0.07	0.07	0.07	0.07
14.550	0.06	0.06	0.06	0.06	0.06
14.800	0.06	0.06	0.06	0.06	0.06
15.050	0.06	0.06	0.05	0.05	0.05
15.300	0.05	0.05	0.05	0.05	0.05
15.550	0.05	0.05	0.05	0.04	0.04
15.800	0.04	0.04	0.04	0.04	0.04
16.050	0.04	0.04	0.04	0.04	0.04
16.300	0.04	0.04	0.04	0.04	0.04
16.550	0.04	0.03	0.03	0.03	0.03
16.800	0.03	0.03	0.03	0.03	0.03
17.050	0.03	0.03	0.03	0.03	0.03
17.300	0.03	0.03	0.03	0.03	0.03
17.550	0.03	0.03	0.03	0.03	0.03
17.800	0.03	0.03	0.03	0.02	0.02
18.050	0.02	0.02	0.02	0.02	0.02
18.300	0.02	0.02	0.02	0.02	0.02
18.550	0.02	0.02	0.02	0.02	0.02
18.800	0.02	0.02	0.02	0.02	0.02
19.050	0.02	0.02	0.02	0.02	0.02
19.300	0.02	0.02	0.02	0.02	0.02
19.550	0.02	0.02	0.02	0.02	0.02
19.800	0.02	0.02	0.02	0.02	0.02
20.050	0.02	0.02	0.02	0.02	0.02
20.300	0.02	0.02	0.02	0.02	0.02
20.550	0.02	0.02	0.02	0.02	0.02
20.800	0.02	0.02	0.02	0.02	0.02
21.050	0.02	0.02	0.02	0.02	0.02
21.300	0.02	0.02	0.02	0.02	0.02
21.550	0.02	0.02	0.02	0.02	0.02
21.800	0.02	0.02	0.02	0.02	0.02
22.050	0.02	0.02	0.02	0.02	0.02
22.300	0.02	0.02	0.02	0.02	0.02
22.550	0.02	0.02	0.02	0.02	0.02
22.800	0.01	0.01	0.01	0.01	0.01
23.050	0.01	0.01	0.01	0.01	0.01
23.300	0.01	0.01	0.01	0.01	0.01
23.550	0.01	0.01	0.01	0.01	0.01
23.800	0.01	0.01	0.01	0.01	0.01

Storm Event	10
Return Event	10 years
Duration	24.000 hours
Depth	5.1 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	24,779.193 ft²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
3.550	0.00	0.00	0.00	0.00	0.00
3.800	0.00	0.00	0.00	0.00	0.00
4.050	0.00	0.00	0.00	0.00	0.00
4.300	0.01	0.01	0.01	0.01	0.01
4.550	0.01	0.01	0.01	0.01	0.01
4.800	0.01	0.01	0.01	0.01	0.01
5.050	0.01	0.01	0.01	0.01	0.01
5.300	0.01	0.01	0.01	0.01	0.01
5.550	0.01	0.01	0.01	0.01	0.01
5.800	0.01	0.01	0.01	0.01	0.02
6.050	0.02	0.02	0.02	0.02	0.02
6.300	0.02	0.02	0.02	0.02	0.02
6.550	0.02	0.02	0.02	0.02	0.02
6.800	0.02	0.02	0.02	0.03	0.03
7.050	0.03	0.03	0.03	0.03	0.03
7.300	0.03	0.03	0.03	0.03	0.03
7.550	0.03	0.03	0.03	0.04	0.04
7.800	0.04	0.04	0.04	0.04	0.04
8.050	0.04	0.04	0.04	0.04	0.05
8.300	0.05	0.05	0.05	0.05	0.05
8.550	0.05	0.06	0.06	0.06	0.06
8.800	0.06	0.06	0.06	0.07	0.07
9.050	0.07	0.07	0.07	0.07	0.08
9.300	0.08	0.08	0.08	0.08	0.08
9.550	0.09	0.09	0.09	0.09	0.09
9.800	0.09	0.10	0.10	0.10	0.10
10.050	0.10	0.11	0.11	0.11	0.12
10.300	0.12	0.12	0.13	0.13	0.13
10.550	0.14	0.14	0.14	0.15	0.15
10.800	0.15	0.16	0.16	0.16	0.17
11.050	0.17	0.18	0.19	0.20	0.22
11.300	0.23	0.24	0.25	0.27	0.28
11.550	0.33	0.39	0.49	0.60	0.72
11.800	0.84	0.96	1.09	1.54	2.09

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: PDA-1B Storm Event: 10
Scenario: Proposed Conditions 10 Year Storm

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
12.050	2.24	2.30	1.89	1.36	1.14
12.300	0.99	0.87	0.74	0.62	0.50
12.550	0.42	0.34	0.32	0.30	0.29
12.800	0.28	0.26	0.25	0.24	0.22
13.050	0.21	0.21	0.20	0.20	0.19
13.300	0.19	0.19	0.18	0.18	0.18
13.550	0.17	0.17	0.17	0.16	0.16
13.800	0.16	0.15	0.15	0.15	0.14
14.050	0.14	0.14	0.14	0.14	0.13
14.300	0.13	0.13	0.13	0.13	0.13
14.550	0.12	0.12	0.12	0.12	0.12
14.800	0.12	0.11	0.11	0.11	0.11
15.050	0.11	0.11	0.10	0.10	0.10
15.300	0.10	0.10	0.10	0.09	0.09
15.550	0.09	0.09	0.09	0.09	0.08
15.800	0.08	0.08	0.08	0.08	0.08
16.050	0.08	0.07	0.07	0.07	0.07
16.300	0.07	0.07	0.07	0.07	0.07
16.550	0.07	0.07	0.07	0.07	0.06
16.800	0.06	0.06	0.06	0.06	0.06
17.050	0.06	0.06	0.06	0.06	0.06
17.300	0.06	0.06	0.06	0.05	0.05
17.550	0.05	0.05	0.05	0.05	0.05
17.800	0.05	0.05	0.05	0.05	0.05
18.050	0.05	0.05	0.05	0.05	0.05
18.300	0.04	0.04	0.04	0.04	0.04
18.550	0.04	0.04	0.04	0.04	0.04
18.800	0.04	0.04	0.04	0.04	0.04
19.050	0.04	0.04	0.04	0.04	0.04
19.300	0.04	0.04	0.04	0.04	0.04
19.550	0.04	0.04	0.04	0.04	0.04
19.800	0.04	0.04	0.04	0.04	0.04
20.050	0.04	0.04	0.04	0.04	0.04
20.300	0.04	0.04	0.04	0.04	0.04
20.550	0.04	0.04	0.04	0.04	0.03
20.800	0.03	0.03	0.03	0.03	0.03
21.050	0.03	0.03	0.03	0.03	0.03
21.300	0.03	0.03	0.03	0.03	0.03
21.550	0.03	0.03	0.03	0.03	0.03
21.800	0.03	0.03	0.03	0.03	0.03
22.050	0.03	0.03	0.03	0.03	0.03
22.300	0.03	0.03	0.03	0.03	0.03
22.550	0.03	0.03	0.03	0.03	0.03

HYDROGRAPH ORDINATES (ft^3/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)
22.800	0.03	0.03	0.03	0.03	0.03
23.050	0.03	0.03	0.03	0.03	0.03
23.300	0.03	0.03	0.03	0.03	0.03
23.550	0.03	0.03	0.03	0.03	0.03
23.800	0.03	0.03	0.02	0.02	0.02

Subsection: Unit Hydrograph (Hydrograph Table)
Label: PDA-1B
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	24.000 hours
Depth	9.2 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	24,779.193 ft²

HYDROGRAPH ORDINATES (ft^3/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)
2.050	0.00	0.00	0.00	0.00	0.00
2.300	0.00	0.00	0.00	0.01	0.01
2.550	0.01	0.01	0.01	0.01	0.01
2.800	0.01	0.01	0.01	0.01	0.01
3.050	0.01	0.01	0.01	0.01	0.01
3.300	0.02	0.02	0.02	0.02	0.02
3.550	0.02	0.02	0.02	0.02	0.02
3.800	0.02	0.02	0.02	0.02	0.02
4.050	0.02	0.03	0.03	0.03	0.03
4.300	0.03	0.03	0.03	0.03	0.03
4.550	0.03	0.03	0.03	0.03	0.03
4.800	0.03	0.03	0.04	0.04	0.04
5.050	0.04	0.04	0.04	0.04	0.04
5.300	0.04	0.04	0.04	0.04	0.04
5.550	0.04	0.04	0.04	0.04	0.05
5.800	0.05	0.05	0.05	0.05	0.05
6.050	0.05	0.05	0.05	0.05	0.05
6.300	0.05	0.06	0.06	0.06	0.06
6.550	0.06	0.06	0.06	0.06	0.07
6.800	0.07	0.07	0.07	0.07	0.07
7.050	0.07	0.08	0.08	0.08	0.08
7.300	0.08	0.08	0.08	0.08	0.09
7.550	0.09	0.09	0.09	0.09	0.09
7.800	0.09	0.10	0.10	0.10	0.10
8.050	0.10	0.10	0.11	0.11	0.11
8.300	0.12	0.12	0.12	0.12	0.13
8.550	0.13	0.13	0.14	0.14	0.14
8.800	0.14	0.15	0.15	0.15	0.16
9.050	0.16	0.16	0.17	0.17	0.17
9.300	0.18	0.18	0.18	0.18	0.19
9.550	0.19	0.19	0.20	0.20	0.20
9.800	0.21	0.21	0.21	0.22	0.22
10.050	0.22	0.23	0.23	0.24	0.25
10.300	0.25	0.26	0.27	0.27	0.28

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 100 years
Label: PDA-1B Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
10.550	0.28	0.29	0.30	0.30	0.31
10.800	0.32	0.32	0.33	0.34	0.34
11.050	0.35	0.37	0.39	0.41	0.44
11.300	0.46	0.48	0.51	0.53	0.55
11.550	0.65	0.77	0.96	1.18	1.40
11.800	1.62	1.85	2.08	2.92	3.94
12.050	4.21	4.28	3.51	2.52	2.10
12.300	1.83	1.60	1.37	1.14	0.91
12.550	0.76	0.63	0.58	0.55	0.53
12.800	0.50	0.48	0.46	0.43	0.41
13.050	0.39	0.38	0.37	0.36	0.36
13.300	0.35	0.34	0.34	0.33	0.32
13.550	0.32	0.31	0.31	0.30	0.29
13.800	0.29	0.28	0.27	0.27	0.26
14.050	0.26	0.25	0.25	0.25	0.24
14.300	0.24	0.24	0.23	0.23	0.23
14.550	0.23	0.22	0.22	0.22	0.21
14.800	0.21	0.21	0.20	0.20	0.20
15.050	0.20	0.19	0.19	0.19	0.18
15.300	0.18	0.18	0.17	0.17	0.17
15.550	0.17	0.16	0.16	0.16	0.15
15.800	0.15	0.15	0.14	0.14	0.14
16.050	0.14	0.13	0.13	0.13	0.13
16.300	0.13	0.13	0.13	0.13	0.12
16.550	0.12	0.12	0.12	0.12	0.12
16.800	0.12	0.11	0.11	0.11	0.11
17.050	0.11	0.11	0.11	0.11	0.10
17.300	0.10	0.10	0.10	0.10	0.10
17.550	0.10	0.10	0.09	0.09	0.09
17.800	0.09	0.09	0.09	0.09	0.08
18.050	0.08	0.08	0.08	0.08	0.08
18.300	0.08	0.08	0.08	0.08	0.08
18.550	0.08	0.08	0.08	0.08	0.08
18.800	0.08	0.08	0.08	0.08	0.08
19.050	0.08	0.08	0.07	0.07	0.07
19.300	0.07	0.07	0.07	0.07	0.07
19.550	0.07	0.07	0.07	0.07	0.07
19.800	0.07	0.07	0.07	0.07	0.07
20.050	0.07	0.07	0.07	0.07	0.07
20.300	0.07	0.07	0.07	0.07	0.07
20.550	0.06	0.06	0.06	0.06	0.06
20.800	0.06	0.06	0.06	0.06	0.06
21.050	0.06	0.06	0.06	0.06	0.06

Subsection: Unit Hydrograph (Hydrograph Table)
Label: PDA-1B
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

HYDROGRAPH ORDINATES (ft^3/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)
21.300	0.06	0.06	0.06	0.06	0.06
21.550	0.06	0.06	0.06	0.06	0.06
21.800	0.06	0.06	0.06	0.06	0.06
22.050	0.06	0.06	0.06	0.06	0.05
22.300	0.05	0.05	0.05	0.05	0.05
22.550	0.05	0.05	0.05	0.05	0.05
22.800	0.05	0.05	0.05	0.05	0.05
23.050	0.05	0.05	0.05	0.05	0.05
23.300	0.05	0.05	0.05	0.05	0.05
23.550	0.05	0.05	0.05	0.05	0.05
23.800	0.05	0.05	0.04	0.04	0.04

Storm Event	1
Return Event	1 years
Duration	24.000 hours
Depth	2.8 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	34,750.336 ft²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
7.150	0.00	0.00	0.00	0.00	0.00
7.400	0.00	0.00	0.00	0.00	0.00
7.650	0.00	0.00	0.00	0.00	0.00
7.900	0.01	0.01	0.01	0.01	0.01
8.150	0.01	0.01	0.01	0.01	0.01
8.400	0.01	0.01	0.01	0.01	0.01
8.650	0.01	0.01	0.01	0.01	0.02
8.900	0.02	0.02	0.02	0.02	0.02
9.150	0.02	0.02	0.02	0.02	0.02
9.400	0.02	0.03	0.03	0.03	0.03
9.650	0.03	0.03	0.03	0.03	0.03
9.900	0.03	0.04	0.04	0.04	0.04
10.150	0.04	0.04	0.04	0.05	0.05
10.400	0.05	0.05	0.05	0.05	0.06
10.650	0.06	0.06	0.06	0.06	0.07
10.900	0.07	0.07	0.07	0.08	0.08
11.150	0.09	0.09	0.10	0.11	0.11
11.400	0.12	0.13	0.14	0.16	0.19
11.650	0.25	0.31	0.38	0.45	0.52
11.900	0.60	0.88	1.23	1.35	1.42
12.150	1.19	0.87	0.73	0.64	0.57
12.400	0.49	0.41	0.33	0.28	0.23
12.650	0.21	0.20	0.19	0.18	0.18
12.900	0.17	0.16	0.15	0.14	0.14
13.150	0.14	0.13	0.13	0.13	0.13
13.400	0.12	0.12	0.12	0.12	0.12
13.650	0.11	0.11	0.11	0.11	0.10
13.900	0.10	0.10	0.10	0.10	0.09
14.150	0.09	0.09	0.09	0.09	0.09
14.400	0.09	0.09	0.09	0.08	0.08
14.650	0.08	0.08	0.08	0.08	0.08
14.900	0.08	0.08	0.07	0.07	0.07
15.150	0.07	0.07	0.07	0.07	0.07
15.400	0.07	0.07	0.06	0.06	0.06

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 1 years
Label: PDA-1C Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

HYDROGRAPH ORDINATES (ft^3/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)
15.650	0.06	0.06	0.06	0.06	0.06
15.900	0.06	0.05	0.05	0.05	0.05
16.150	0.05	0.05	0.05	0.05	0.05
16.400	0.05	0.05	0.05	0.05	0.05
16.650	0.05	0.05	0.04	0.04	0.04
16.900	0.04	0.04	0.04	0.04	0.04
17.150	0.04	0.04	0.04	0.04	0.04
17.400	0.04	0.04	0.04	0.04	0.04
17.650	0.04	0.04	0.04	0.03	0.03
17.900	0.03	0.03	0.03	0.03	0.03
18.150	0.03	0.03	0.03	0.03	0.03
18.400	0.03	0.03	0.03	0.03	0.03
18.650	0.03	0.03	0.03	0.03	0.03
18.900	0.03	0.03	0.03	0.03	0.03
19.150	0.03	0.03	0.03	0.03	0.03
19.400	0.03	0.03	0.03	0.03	0.03
19.650	0.03	0.03	0.03	0.03	0.03
19.900	0.03	0.03	0.03	0.03	0.03
20.150	0.03	0.03	0.03	0.03	0.03
20.400	0.03	0.03	0.03	0.03	0.02
20.650	0.02	0.02	0.02	0.02	0.02
20.900	0.02	0.02	0.02	0.02	0.02
21.150	0.02	0.02	0.02	0.02	0.02
21.400	0.02	0.02	0.02	0.02	0.02
21.650	0.02	0.02	0.02	0.02	0.02
21.900	0.02	0.02	0.02	0.02	0.02
22.150	0.02	0.02	0.02	0.02	0.02
22.400	0.02	0.02	0.02	0.02	0.02
22.650	0.02	0.02	0.02	0.02	0.02
22.900	0.02	0.02	0.02	0.02	0.02
23.150	0.02	0.02	0.02	0.02	0.02
23.400	0.02	0.02	0.02	0.02	0.02
23.650	0.02	0.02	0.02	0.02	0.02
23.900	0.02	0.02	0.02	(N/A)	(N/A)

Storm Event	10
Return Event	10 years
Duration	24.000 hours
Depth	5.1 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	34,750.336 ft²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
4.600	0.00	0.00	0.00	0.00	0.00
4.850	0.00	0.00	0.00	0.00	0.00
5.100	0.00	0.00	0.00	0.01	0.01
5.350	0.01	0.01	0.01	0.01	0.01
5.600	0.01	0.01	0.01	0.01	0.01
5.850	0.01	0.01	0.01	0.01	0.01
6.100	0.01	0.01	0.01	0.01	0.01
6.350	0.01	0.01	0.02	0.02	0.02
6.600	0.02	0.02	0.02	0.02	0.02
6.850	0.02	0.02	0.02	0.02	0.02
7.100	0.02	0.03	0.03	0.03	0.03
7.350	0.03	0.03	0.03	0.03	0.03
7.600	0.03	0.03	0.03	0.04	0.04
7.850	0.04	0.04	0.04	0.04	0.04
8.100	0.04	0.04	0.04	0.05	0.05
8.350	0.05	0.05	0.05	0.05	0.06
8.600	0.06	0.06	0.06	0.06	0.07
8.850	0.07	0.07	0.07	0.07	0.08
9.100	0.08	0.08	0.08	0.08	0.09
9.350	0.09	0.09	0.09	0.09	0.10
9.600	0.10	0.10	0.10	0.11	0.11
9.850	0.11	0.11	0.12	0.12	0.12
10.100	0.12	0.13	0.13	0.14	0.14
10.350	0.14	0.15	0.15	0.16	0.16
10.600	0.17	0.17	0.18	0.18	0.19
10.850	0.19	0.20	0.20	0.20	0.21
11.100	0.22	0.24	0.25	0.27	0.28
11.350	0.30	0.32	0.33	0.35	0.41
11.600	0.49	0.62	0.76	0.92	1.08
11.850	1.24	1.41	2.01	2.75	2.97
12.100	3.06	2.53	1.82	1.53	1.34
12.350	1.17	1.01	0.84	0.67	0.56
12.600	0.47	0.43	0.41	0.39	0.37
12.850	0.36	0.34	0.32	0.30	0.29

HYDROGRAPH ORDINATES (ft^3/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)
13.100	0.28	0.27	0.27	0.26	0.26
13.350	0.26	0.25	0.25	0.24	0.24
13.600	0.23	0.23	0.22	0.22	0.21
13.850	0.21	0.21	0.20	0.20	0.19
14.100	0.19	0.19	0.18	0.18	0.18
14.350	0.18	0.18	0.17	0.17	0.17
14.600	0.17	0.16	0.16	0.16	0.16
14.850	0.16	0.15	0.15	0.15	0.15
15.100	0.14	0.14	0.14	0.14	0.14
15.350	0.13	0.13	0.13	0.13	0.12
15.600	0.12	0.12	0.12	0.12	0.11
15.850	0.11	0.11	0.11	0.10	0.10
16.100	0.10	0.10	0.10	0.10	0.10
16.350	0.10	0.10	0.09	0.09	0.09
16.600	0.09	0.09	0.09	0.09	0.09
16.850	0.09	0.09	0.08	0.08	0.08
17.100	0.08	0.08	0.08	0.08	0.08
17.350	0.08	0.08	0.07	0.07	0.07
17.600	0.07	0.07	0.07	0.07	0.07
17.850	0.07	0.07	0.07	0.06	0.06
18.100	0.06	0.06	0.06	0.06	0.06
18.350	0.06	0.06	0.06	0.06	0.06
18.600	0.06	0.06	0.06	0.06	0.06
18.850	0.06	0.06	0.06	0.06	0.06
19.100	0.06	0.06	0.06	0.06	0.06
19.350	0.06	0.06	0.05	0.05	0.05
19.600	0.05	0.05	0.05	0.05	0.05
19.850	0.05	0.05	0.05	0.05	0.05
20.100	0.05	0.05	0.05	0.05	0.05
20.350	0.05	0.05	0.05	0.05	0.05
20.600	0.05	0.05	0.05	0.05	0.05
20.850	0.05	0.05	0.05	0.05	0.05
21.100	0.05	0.05	0.05	0.05	0.05
21.350	0.05	0.05	0.05	0.04	0.04
21.600	0.04	0.04	0.04	0.04	0.04
21.850	0.04	0.04	0.04	0.04	0.04
22.100	0.04	0.04	0.04	0.04	0.04
22.350	0.04	0.04	0.04	0.04	0.04
22.600	0.04	0.04	0.04	0.04	0.04
22.850	0.04	0.04	0.04	0.04	0.04
23.100	0.04	0.04	0.04	0.04	0.04
23.350	0.04	0.04	0.04	0.04	0.04
23.600	0.04	0.04	0.04	0.04	0.03

Subsection: Unit Hydrograph (Hydrograph Table)
Label: PDA-1C
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

HYDROGRAPH ORDINATES (ft^3/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)
23.850	0.03	0.03	0.03	0.03	(N/A)

Storm Event	100
Return Event	100 years
Duration	24.000 hours
Depth	9.2 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	34,750.336 ft²

HYDROGRAPH ORDINATES (ft^3/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)
2.800	0.00	0.00	0.00	0.00	0.00
3.050	0.00	0.00	0.01	0.01	0.01
3.300	0.01	0.01	0.01	0.01	0.01
3.550	0.01	0.01	0.01	0.01	0.01
3.800	0.02	0.02	0.02	0.02	0.02
4.050	0.02	0.02	0.02	0.02	0.02
4.300	0.02	0.02	0.02	0.03	0.03
4.550	0.03	0.03	0.03	0.03	0.03
4.800	0.03	0.03	0.03	0.03	0.03
5.050	0.03	0.04	0.04	0.04	0.04
5.300	0.04	0.04	0.04	0.04	0.04
5.550	0.04	0.04	0.04	0.05	0.05
5.800	0.05	0.05	0.05	0.05	0.05
6.050	0.05	0.05	0.05	0.06	0.06
6.300	0.06	0.06	0.06	0.06	0.06
6.550	0.07	0.07	0.07	0.07	0.07
6.800	0.07	0.08	0.08	0.08	0.08
7.050	0.08	0.08	0.09	0.09	0.09
7.300	0.09	0.09	0.09	0.10	0.10
7.550	0.10	0.10	0.10	0.11	0.11
7.800	0.11	0.11	0.11	0.12	0.12
8.050	0.12	0.12	0.13	0.13	0.13
8.300	0.14	0.14	0.14	0.15	0.15
8.550	0.16	0.16	0.16	0.17	0.17
8.800	0.18	0.18	0.18	0.19	0.19
9.050	0.20	0.20	0.20	0.21	0.21
9.300	0.22	0.22	0.23	0.23	0.24
9.550	0.24	0.24	0.25	0.25	0.26
9.800	0.26	0.27	0.27	0.28	0.28
10.050	0.29	0.29	0.30	0.31	0.32
10.300	0.33	0.33	0.34	0.35	0.36
10.550	0.37	0.38	0.39	0.39	0.40
10.800	0.41	0.42	0.43	0.44	0.45
11.050	0.47	0.49	0.51	0.54	0.58

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 100 years
Label: PDA-1C Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
11.300	0.61	0.64	0.67	0.70	0.74
11.550	0.87	1.02	1.28	1.58	1.88
11.800	2.19	2.50	2.82	3.98	5.38
12.050	5.76	5.88	4.84	3.47	2.90
12.300	2.53	2.20	1.89	1.58	1.26
12.550	1.06	0.88	0.81	0.77	0.73
12.800	0.70	0.67	0.63	0.60	0.57
13.050	0.54	0.52	0.51	0.50	0.49
13.300	0.48	0.48	0.47	0.46	0.45
13.550	0.44	0.43	0.42	0.42	0.41
13.800	0.40	0.39	0.38	0.37	0.36
14.050	0.36	0.35	0.35	0.34	0.34
14.300	0.33	0.33	0.33	0.32	0.32
14.550	0.31	0.31	0.30	0.30	0.30
14.800	0.29	0.29	0.28	0.28	0.28
15.050	0.27	0.27	0.26	0.26	0.26
15.300	0.25	0.25	0.24	0.24	0.23
15.550	0.23	0.23	0.22	0.22	0.21
15.800	0.21	0.21	0.20	0.20	0.19
16.050	0.19	0.19	0.18	0.18	0.18
16.300	0.18	0.18	0.18	0.17	0.17
16.550	0.17	0.17	0.17	0.17	0.16
16.800	0.16	0.16	0.16	0.16	0.15
17.050	0.15	0.15	0.15	0.15	0.15
17.300	0.14	0.14	0.14	0.14	0.14
17.550	0.13	0.13	0.13	0.13	0.13
17.800	0.13	0.12	0.12	0.12	0.12
18.050	0.12	0.12	0.11	0.11	0.11
18.300	0.11	0.11	0.11	0.11	0.11
18.550	0.11	0.11	0.11	0.11	0.11
18.800	0.11	0.11	0.11	0.11	0.11
19.050	0.11	0.10	0.10	0.10	0.10
19.300	0.10	0.10	0.10	0.10	0.10
19.550	0.10	0.10	0.10	0.10	0.10
19.800	0.10	0.10	0.10	0.10	0.09
20.050	0.09	0.09	0.09	0.09	0.09
20.300	0.09	0.09	0.09	0.09	0.09
20.550	0.09	0.09	0.09	0.09	0.09
20.800	0.09	0.09	0.09	0.09	0.09
21.050	0.09	0.09	0.09	0.08	0.08
21.300	0.08	0.08	0.08	0.08	0.08
21.550	0.08	0.08	0.08	0.08	0.08
21.800	0.08	0.08	0.08	0.08	0.08

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 100 years
Label: PDA-1C Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

HYDROGRAPH ORDINATES (ft^3/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)
22.050	0.08	0.08	0.08	0.08	0.08
22.300	0.08	0.08	0.08	0.07	0.07
22.550	0.07	0.07	0.07	0.07	0.07
22.800	0.07	0.07	0.07	0.07	0.07
23.050	0.07	0.07	0.07	0.07	0.07
23.300	0.07	0.07	0.07	0.07	0.07
23.550	0.07	0.07	0.07	0.06	0.06
23.800	0.06	0.06	0.06	0.06	0.06

Storm Event	1
Return Event	1 years
Duration	24.000 hours
Depth	2.8 in
Time of Concentration (Composite)	0.181 hours
Area (User Defined)	199,180.163 ft²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
8.200	0.00	0.00	0.00	0.00	0.01
8.450	0.01	0.01	0.01	0.02	0.02
8.700	0.02	0.02	0.03	0.03	0.03
8.950	0.03	0.04	0.04	0.04	0.05
9.200	0.05	0.05	0.06	0.06	0.07
9.450	0.07	0.07	0.08	0.08	0.09
9.700	0.09	0.10	0.10	0.10	0.11
9.950	0.11	0.12	0.12	0.13	0.14
10.200	0.14	0.15	0.16	0.17	0.17
10.450	0.18	0.19	0.20	0.21	0.22
10.700	0.23	0.24	0.25	0.26	0.27
10.950	0.28	0.29	0.30	0.32	0.34
11.200	0.36	0.38	0.41	0.44	0.48
11.450	0.51	0.55	0.60	0.69	0.83
11.700	1.04	1.29	1.59	1.92	2.28
11.950	2.84	3.92	5.13	6.04	6.37
12.200	5.88	5.02	4.27	3.71	3.23
12.450	2.80	2.37	1.99	1.65	1.40
12.700	1.24	1.13	1.06	1.00	0.95
12.950	0.90	0.86	0.82	0.78	0.75
13.200	0.73	0.71	0.70	0.69	0.67
13.450	0.66	0.65	0.64	0.63	0.62
13.700	0.61	0.60	0.58	0.57	0.56
13.950	0.55	0.54	0.53	0.52	0.51
14.200	0.50	0.49	0.49	0.48	0.48
14.450	0.47	0.46	0.46	0.45	0.45
14.700	0.44	0.44	0.43	0.43	0.42
14.950	0.41	0.41	0.40	0.40	0.39
15.200	0.39	0.38	0.37	0.37	0.36
15.450	0.36	0.35	0.34	0.34	0.33
15.700	0.33	0.32	0.32	0.31	0.30
15.950	0.30	0.29	0.29	0.28	0.28
16.200	0.27	0.27	0.27	0.26	0.26
16.450	0.26	0.26	0.25	0.25	0.25

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 1 years
Label: PDA-1D Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

HYDROGRAPH ORDINATES (ft^3/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)
16.700	0.25	0.24	0.24	0.24	0.24
16.950	0.23	0.23	0.23	0.23	0.22
17.200	0.22	0.22	0.22	0.21	0.21
17.450	0.21	0.21	0.20	0.20	0.20
17.700	0.19	0.19	0.19	0.19	0.18
17.950	0.18	0.18	0.18	0.17	0.17
18.200	0.17	0.17	0.17	0.17	0.17
18.450	0.17	0.17	0.17	0.16	0.16
18.700	0.16	0.16	0.16	0.16	0.16
18.950	0.16	0.16	0.16	0.16	0.16
19.200	0.16	0.15	0.15	0.15	0.15
19.450	0.15	0.15	0.15	0.15	0.15
19.700	0.15	0.15	0.15	0.15	0.14
19.950	0.14	0.14	0.14	0.14	0.14
20.200	0.14	0.14	0.14	0.14	0.14
20.450	0.14	0.14	0.14	0.14	0.13
20.700	0.13	0.13	0.13	0.13	0.13
20.950	0.13	0.13	0.13	0.13	0.13
21.200	0.13	0.13	0.13	0.13	0.13
21.450	0.13	0.12	0.12	0.12	0.12
21.700	0.12	0.12	0.12	0.12	0.12
21.950	0.12	0.12	0.12	0.12	0.12
22.200	0.12	0.12	0.11	0.11	0.11
22.450	0.11	0.11	0.11	0.11	0.11
22.700	0.11	0.11	0.11	0.11	0.11
22.950	0.11	0.11	0.11	0.11	0.10
23.200	0.10	0.10	0.10	0.10	0.10
23.450	0.10	0.10	0.10	0.10	0.10
23.700	0.10	0.10	0.10	0.10	0.10
23.950	0.09	0.09	(N/A)	(N/A)	(N/A)

Storm Event	10
Return Event	10 years
Duration	24.000 hours
Depth	5.1 in
Time of Concentration (Composite)	0.181 hours
Area (User Defined)	199,180.163 ft²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
5.600	0.00	0.00	0.00	0.01	0.01
5.850	0.01	0.01	0.01	0.01	0.02
6.100	0.02	0.02	0.02	0.02	0.03
6.350	0.03	0.03	0.03	0.04	0.04
6.600	0.04	0.04	0.05	0.05	0.05
6.850	0.06	0.06	0.06	0.06	0.07
7.100	0.07	0.07	0.08	0.08	0.09
7.350	0.09	0.09	0.10	0.10	0.10
7.600	0.11	0.11	0.12	0.12	0.13
7.850	0.13	0.13	0.14	0.14	0.15
8.100	0.15	0.16	0.16	0.17	0.18
8.350	0.19	0.19	0.20	0.21	0.22
8.600	0.23	0.23	0.24	0.25	0.26
8.850	0.27	0.28	0.29	0.30	0.31
9.100	0.32	0.33	0.34	0.35	0.36
9.350	0.37	0.38	0.39	0.40	0.41
9.600	0.43	0.44	0.45	0.46	0.47
9.850	0.49	0.50	0.51	0.52	0.54
10.100	0.55	0.57	0.59	0.61	0.63
10.350	0.65	0.67	0.69	0.72	0.74
10.600	0.76	0.79	0.81	0.84	0.86
10.850	0.89	0.91	0.94	0.96	0.99
11.100	1.03	1.08	1.14	1.21	1.29
11.350	1.37	1.45	1.53	1.62	1.76
11.600	2.01	2.38	2.93	3.58	4.34
11.850	5.13	6.00	7.29	9.79	12.50
12.100	14.39	14.88	13.53	11.40	9.59
12.350	8.26	7.14	6.15	5.18	4.31
12.600	3.57	3.02	2.66	2.43	2.27
12.850	2.14	2.03	1.93	1.83	1.74
13.100	1.66	1.59	1.55	1.51	1.48
13.350	1.45	1.43	1.40	1.38	1.35
13.600	1.33	1.30	1.28	1.25	1.23
13.850	1.20	1.18	1.15	1.13	1.10

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: PDA-1D Storm Event: 10
Scenario: Proposed Conditions 10 Year Storm

HYDROGRAPH ORDINATES (ft^3/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)
14.100	1.08	1.06	1.04	1.03	1.02
14.350	1.00	0.99	0.98	0.97	0.96
14.600	0.94	0.93	0.92	0.91	0.90
14.850	0.88	0.87	0.86	0.85	0.84
15.100	0.82	0.81	0.80	0.79	0.77
15.350	0.76	0.75	0.74	0.73	0.71
15.600	0.70	0.69	0.68	0.66	0.65
15.850	0.64	0.63	0.61	0.60	0.59
16.100	0.58	0.57	0.56	0.56	0.55
16.350	0.54	0.54	0.53	0.53	0.52
16.600	0.52	0.51	0.51	0.50	0.50
16.850	0.49	0.48	0.48	0.47	0.47
17.100	0.46	0.46	0.45	0.45	0.44
17.350	0.44	0.43	0.43	0.42	0.42
17.600	0.41	0.40	0.40	0.39	0.39
17.850	0.38	0.38	0.37	0.37	0.36
18.100	0.36	0.35	0.35	0.35	0.35
18.350	0.34	0.34	0.34	0.34	0.34
18.600	0.34	0.33	0.33	0.33	0.33
18.850	0.33	0.33	0.32	0.32	0.32
19.100	0.32	0.32	0.32	0.31	0.31
19.350	0.31	0.31	0.31	0.31	0.30
19.600	0.30	0.30	0.30	0.30	0.30
19.850	0.30	0.29	0.29	0.29	0.29
20.100	0.29	0.29	0.28	0.28	0.28
20.350	0.28	0.28	0.28	0.28	0.28
20.600	0.27	0.27	0.27	0.27	0.27
20.850	0.27	0.27	0.27	0.27	0.26
21.100	0.26	0.26	0.26	0.26	0.26
21.350	0.26	0.26	0.25	0.25	0.25
21.600	0.25	0.25	0.25	0.25	0.25
21.850	0.24	0.24	0.24	0.24	0.24
22.100	0.24	0.24	0.24	0.23	0.23
22.350	0.23	0.23	0.23	0.23	0.23
22.600	0.23	0.23	0.22	0.22	0.22
22.850	0.22	0.22	0.22	0.22	0.21
23.100	0.21	0.21	0.21	0.21	0.21
23.350	0.21	0.21	0.21	0.20	0.20
23.600	0.20	0.20	0.20	0.20	0.20
23.850	0.20	0.19	0.19	0.19	(N/A)

Storm Event	100
Return Event	100 years
Duration	24.000 hours
Depth	9.2 in
Time of Concentration (Composite)	0.181 hours
Area (User Defined)	199,180.163 ft²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
3.500	0.00	0.00	0.00	0.01	0.01
3.750	0.01	0.02	0.02	0.02	0.03
4.000	0.03	0.04	0.04	0.04	0.05
4.250	0.05	0.06	0.06	0.06	0.07
4.500	0.07	0.07	0.08	0.08	0.09
4.750	0.09	0.09	0.10	0.10	0.11
5.000	0.11	0.12	0.12	0.12	0.13
5.250	0.13	0.14	0.14	0.14	0.15
5.500	0.15	0.16	0.16	0.17	0.17
5.750	0.18	0.18	0.18	0.19	0.19
6.000	0.20	0.20	0.21	0.21	0.22
6.250	0.22	0.23	0.24	0.25	0.25
6.500	0.26	0.27	0.28	0.28	0.29
6.750	0.30	0.31	0.32	0.33	0.33
7.000	0.34	0.35	0.36	0.37	0.38
7.250	0.39	0.40	0.41	0.42	0.43
7.500	0.44	0.45	0.46	0.47	0.48
7.750	0.49	0.50	0.51	0.52	0.53
8.000	0.54	0.55	0.56	0.58	0.59
8.250	0.61	0.63	0.65	0.66	0.68
8.500	0.70	0.72	0.74	0.76	0.78
8.750	0.81	0.83	0.85	0.87	0.89
9.000	0.91	0.94	0.96	0.98	1.00
9.250	1.03	1.05	1.07	1.10	1.12
9.500	1.15	1.17	1.20	1.22	1.24
9.750	1.27	1.30	1.32	1.35	1.37
10.000	1.40	1.42	1.45	1.49	1.53
10.250	1.57	1.62	1.66	1.71	1.75
10.500	1.80	1.85	1.90	1.95	2.00
10.750	2.05	2.10	2.15	2.20	2.25
11.000	2.30	2.36	2.44	2.54	2.67
11.250	2.82	2.99	3.15	3.33	3.50
11.500	3.69	3.97	4.50	5.31	6.48
11.750	7.85	9.42	11.03	12.76	15.33

HYDROGRAPH ORDINATES (ft^3/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)
12.000	20.31	25.59	29.11	29.81	26.88
12.250	22.51	18.81	16.13	13.88	11.91
12.500	10.00	8.31	6.88	5.81	5.10
12.750	4.67	4.35	4.10	3.88	3.69
13.000	3.49	3.32	3.16	3.04	2.95
13.250	2.88	2.82	2.77	2.71	2.67
13.500	2.62	2.57	2.52	2.47	2.42
13.750	2.38	2.33	2.28	2.23	2.18
14.000	2.13	2.09	2.05	2.01	1.98
14.250	1.95	1.92	1.90	1.88	1.85
14.500	1.83	1.81	1.78	1.76	1.74
14.750	1.71	1.69	1.67	1.65	1.62
15.000	1.60	1.58	1.55	1.53	1.51
15.250	1.48	1.46	1.44	1.41	1.39
15.500	1.37	1.34	1.32	1.30	1.27
15.750	1.25	1.22	1.20	1.18	1.15
16.000	1.13	1.11	1.09	1.07	1.06
16.250	1.04	1.03	1.02	1.01	1.00
16.500	0.99	0.98	0.97	0.96	0.95
16.750	0.94	0.93	0.92	0.91	0.90
17.000	0.89	0.88	0.87	0.86	0.85
17.250	0.84	0.83	0.82	0.81	0.80
17.500	0.79	0.78	0.77	0.76	0.75
17.750	0.74	0.73	0.72	0.71	0.70
18.000	0.69	0.68	0.67	0.66	0.65
18.250	0.65	0.65	0.64	0.64	0.64
18.500	0.63	0.63	0.63	0.63	0.62
18.750	0.62	0.62	0.61	0.61	0.61
19.000	0.60	0.60	0.60	0.59	0.59
19.250	0.59	0.59	0.58	0.58	0.58
19.500	0.57	0.57	0.57	0.56	0.56
19.750	0.56	0.56	0.55	0.55	0.55
20.000	0.54	0.54	0.54	0.53	0.53
20.250	0.53	0.53	0.52	0.52	0.52
20.500	0.52	0.52	0.51	0.51	0.51
20.750	0.51	0.50	0.50	0.50	0.50
21.000	0.49	0.49	0.49	0.49	0.49
21.250	0.48	0.48	0.48	0.48	0.47
21.500	0.47	0.47	0.47	0.47	0.46
21.750	0.46	0.46	0.46	0.45	0.45
22.000	0.45	0.45	0.44	0.44	0.44
22.250	0.44	0.43	0.43	0.43	0.43
22.500	0.43	0.42	0.42	0.42	0.42

Subsection: Unit Hydrograph (Hydrograph Table)
Label: PDA-1D
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

HYDROGRAPH ORDINATES (ft^3/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)
22.750	0.41	0.41	0.41	0.41	0.41
23.000	0.40	0.40	0.40	0.39	0.39
23.250	0.39	0.39	0.39	0.38	0.38
23.500	0.38	0.38	0.37	0.37	0.37
23.750	0.37	0.37	0.36	0.36	0.36
24.000	0.35	(N/A)	(N/A)	(N/A)	(N/A)

Summary for Hydrograph Addition at 'DP'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA-1A
<Catchment to Outflow Node>	EDA-1B

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EDA-1A	29,639.596	12.150	7.71
Flow (From)	EDA-1B	1,983.144	12.750	0.12
Flow (In)	DP	31,622.741	12.150	7.71

Summary for Hydrograph Addition at 'DP'

Upstream Link	Upstream Node
	Porous Pavement
	INFILTRATION BASIN B
<Catchment to Outflow Node>	PDA-1D
<Catchment to Outflow Node>	PDA-1C

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)		0.000	0.000	0.00
Flow (From)		0.000	0.000	0.00
Flow (From)	PDA-1D	24,859.696	12.150	6.37
Flow (From)	PDA-1C	5,002.433	12.100	1.42
Flow (In)	DP	29,862.128	12.150	7.56

Subsection: Addition Summary | Return Event: 10 years
Label: DP | Storm Event: 10
Scenario: Existing Conditions 10 Year Storm

Summary for Hydrograph Addition at 'DP'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA-1A
<Catchment to Outflow Node>	EDA-1B

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EDA-1A	67,958.090	12.150	17.11
Flow (From)	EDA-1B	13,069.387	12.450	1.96
Flow (In)	DP	81,027.477	12.150	17.98

Summary for Hydrograph Addition at 'DP'

Upstream Link	Upstream Node
	Porous Pavement
	INFILTRATION BASIN B
<Catchment to Outflow Node>	PDA-1D
<Catchment to Outflow Node>	PDA-1C

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)		0.000	0.000	0.00
Flow (From)		0.000	0.000	0.00
Flow (From)	PDA-1D	59,299.250	12.150	14.88
Flow (From)	PDA-1C	11,247.526	12.100	3.06
Flow (In)	DP	70,546.776	12.100	17.45

Subsection: Addition Summary | Return Event: 100 years
Label: DP | Storm Event: 100
Scenario: Existing Conditions 100 Year Storm

Summary for Hydrograph Addition at 'DP'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA-1A
<Catchment to Outflow Node>	EDA-1B

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EDA-1A	138,254.510	12.150	33.35
Flow (From)	EDA-1B	44,148.422	12.400	7.62
Flow (In)	DP	182,402.932	12.150	38.16

Subsection: Addition Summary | Return Event: 100 years
Label: DP | Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Summary for Hydrograph Addition at 'DP'

Upstream Link	Upstream Node
	Porous Pavement
	INFILTRATION BASIN B
<Catchment to Outflow Node>	PDA-1D
<Catchment to Outflow Node>	PDA-1C

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)		0.000	0.000	0.00
Flow (From)		15,230.238	12.350	5.70
Flow (From)	PDA-1D	123,455.282	12.150	29.81
Flow (From)	PDA-1C	22,623.260	12.100	5.88
Flow (In)	DP	161,308.780	12.150	37.93

Subsection: Elevation-Area Volume Curve | Return Event: 1 years
Label: INFILTRATION BASIN A | Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Elevation (ft)	Planimeter (ft^2)	Area (ft^2)	A1+A2+sqr (A1*A2) (ft^2)	Volume (ft^3)	Volume (Total) (ft^3)
366.90	0.0	2,087.059	0.000	0.000	0.000
368.00	0.0	2,750.508	7,233.496	2,652.000	2,652.000
370.00	0.0	4,132.080	10,253.837	6,836.000	9,488.000
371.00	0.0	4,907.689	13,542.987	4,514.000	14,003.000

Subsection: Elevation-Area Volume Curve | Return Event: 10 years
Label: INFILTRATION BASIN A | Storm Event: 10
Scenario: Proposed Conditions 10 Year Storm

Elevation (ft)	Planimeter (ft^2)	Area (ft^2)	A1+A2+sqr (A1*A2) (ft^2)	Volume (ft^3)	Volume (Total) (ft^3)
366.90	0.0	2,087.059	0.000	0.000	0.000
368.00	0.0	2,750.508	7,233.496	2,652.000	2,652.000
370.00	0.0	4,132.080	10,253.837	6,836.000	9,488.000
371.00	0.0	4,907.689	13,542.987	4,514.000	14,003.000

Subsection: Elevation-Area Volume Curve | Return Event: 100 years
Label: INFILTRATION BASIN A | Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Elevation (ft)	Planimeter (ft^2)	Area (ft^2)	A1+A2+sqr (A1*A2) (ft^2)	Volume (ft^3)	Volume (Total) (ft^3)
366.90	0.0	2,087.059	0.000	0.000	0.000
368.00	0.0	2,750.508	7,233.496	2,652.000	2,652.000
370.00	0.0	4,132.080	10,253.837	6,836.000	9,488.000
371.00	0.0	4,907.689	13,542.987	4,514.000	14,003.000

Subsection: Elevation-Area Volume Curve | Return Event: 1 years
Label: INFILTRATION BASIN B | Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Elevation (ft)	Planimeter (ft^2)	Area (ft^2)	A1+A2+sqr (A1*A2) (ft^2)	Volume (ft^3)	Volume (Total) (ft^3)
366.50	0.0	1,290.220	0.000	0.000	0.000
368.00	0.0	2,127.297	5,074.225	2,537.000	2,537.000
370.00	0.0	3,469.428	8,313.433	5,542.000	8,079.000
371.00	0.0	4,225.317	11,523.509	3,841.000	11,921.000

Subsection: Elevation-Area Volume Curve
Label: INFILTRATION BASIN B
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Elevation (ft)	Planimeter (ft^2)	Area (ft^2)	A1+A2+sqr (A1*A2) (ft^2)	Volume (ft^3)	Volume (Total) (ft^3)
366.50	0.0	1,290.220	0.000	0.000	0.000
368.00	0.0	2,127.297	5,074.225	2,537.000	2,537.000
370.00	0.0	3,469.428	8,313.433	5,542.000	8,079.000
371.00	0.0	4,225.317	11,523.509	3,841.000	11,921.000

Subsection: Elevation-Area Volume Curve Return Event: 100 years
Label: INFILTRATION BASIN B Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Elevation (ft)	Planimeter (ft²)	Area (ft²)	A1+A2+sqr (A1*A2) (ft²)	Volume (ft³)	Volume (Total) (ft³)
366.50	0.0	1,290.220	0.000	0.000	0.000
368.00	0.0	2,127.297	5,074.225	2,537.000	2,537.000
370.00	0.0	3,469.428	8,313.433	5,542.000	8,079.000
371.00	0.0	4,225.317	11,523.509	3,841.000	11,921.000

Subsection: Elevation-Area Volume Curve Return Event: 1 years

Label: Porous Pavement Storm Event: 1

Scenario: Proposed Conditions 1 Year Storm

Elevation (ft)	Planimeter (ft²)	Area (ft²)	A1+A2+sqr (A1*A2) (ft²)	Volume (ft³)	Volume (Total) (ft³)
366.71	0.0	15,097.870	0.000	0.000	0.000
368.21	0.0	15,097.870	45,293.609	22,647.000	9,059.000

Volume Complete Filled With Material
(Adjust Volumes for Voids)

Void Space = 40.0 %

Elevation (Headwater) (ft)	Volume (Total) (ft^3)	Volume (Adjusted) (ft^3)
366.71	0.000	0.000
368.21	22,646.804	9,058.722

Subsection: Elevation-Area Volume Curve | Return Event: 10 years
Label: Porous Pavement | Storm Event: 10
Scenario: Proposed Conditions 10 Year Storm

Elevation (ft)	Planimeter (ft²)	Area (ft²)	A1+A2+sqr (A1*A2) (ft²)	Volume (ft³)	Volume (Total) (ft³)
366.71	0.0	15,097.870	0.000	0.000	0.000
368.21	0.0	15,097.870	45,293.609	22,647.000	9,059.000

Volume Complete Filled With Material (Adjust Volumes for Voids)

Void Space = 40.0 %

Elevation (Headwater) (ft)	Volume (Total) (ft^3)	Volume (Adjusted) (ft^3)
366.71	0.000	0.000
368.21	22,646.804	9,058.722

Subsection: Elevation-Area Volume Curve | Return Event: 100 years
Label: Porous Pavement | Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Elevation (ft)	Planimeter (ft^2)	Area (ft^2)	A1+A2+sqr (A1*A2) (ft^2)	Volume (ft^3)	Volume (Total) (ft^3)
366.71	0.0	15,097.870	0.000	0.000	0.000
368.21	0.0	15,097.870	45,293.609	22,647.000	9,059.000

Volume Complete Filled With Material (Adjust Volumes for Voids)

Void Space = 40.0 %

Elevation (Headwater) (ft)	Volume (Total) (ft^3)	Volume (Adjusted) (ft^3)
366.71	0.000	0.000
368.21	22,646.804	9,058.722

Requested Pond Water Surface Elevations	
Minimum (Headwater)	366.90 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	371.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Culvert-Circular	Culvert - 1	Forward + Reverse	TW	366.90	371.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Culvert - 1
Structure Type: Culvert-Circular

Number of Barrels	1
Diameter	24.0 in
Length	120.00 ft
Length (Computed Barrel)	120.00 ft
Slope (Computed)	0.003 ft/ft

Outlet Control Data

Manning's n	0.013
Ke	0.200
Kb	0.012
Kr	0.000
Convergence Tolerance	0.00 ft

Inlet Control Data

Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	1.094
T2 ratio (HW/D)	1.196
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...

T1 Elevation	369.09 ft	T1 Flow	15.55 ft³/s
T2 Elevation	369.29 ft	T2 Flow	17.77 ft³/s

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	0.00	366.50	0.00
367.00	0.04	366.50	0.00
367.10	0.17	366.50	0.00
367.20	0.39	366.50	0.00
367.30	0.68	366.50	0.00
367.40	1.05	366.50	0.00
367.50	1.50	366.50	0.00
367.60	2.01	366.50	0.00
367.70	2.59	366.50	0.00
367.80	3.24	366.50	0.00
367.90	3.93	366.50	0.00
368.00	4.70	366.50	0.00
368.10	5.50	366.50	0.00
368.20	6.34	366.50	0.00
368.30	7.21	366.50	0.00
368.40	8.14	366.50	0.00
368.50	9.06	366.50	0.00
368.60	10.00	366.50	0.00
368.70	10.95	366.50	0.00
368.80	11.90	366.50	0.00
368.90	12.82	366.50	0.00
369.00	13.75	366.50	0.00
369.10	14.62	366.50	0.00
369.20	15.45	366.50	0.00
369.30	16.24	366.50	0.00
369.40	16.93	366.50	0.00
369.50	17.51	366.50	0.00
369.60	18.03	366.50	0.00
369.70	18.54	366.50	0.00
369.80	19.06	366.50	0.00
369.90	19.57	366.50	0.00
370.00	20.07	366.50	0.00
370.10	20.58	366.50	0.00
370.20	21.07	366.50	0.00
370.30	21.56	366.50	0.00
370.40	22.04	366.50	0.00
370.50	22.51	366.50	0.00
370.60	22.99	366.50	0.00
370.70	23.46	366.50	0.00
370.80	23.91	366.50	0.00
370.90	24.36	366.50	0.00
371.00	24.81	366.50	0.00

Contributing Structures
None Contributing

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
Culvert - 1
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	0.00	366.60	0.00
367.00	0.04	366.60	0.00
367.10	0.17	366.60	0.00
367.20	0.39	366.60	0.00
367.30	0.68	366.60	0.00
367.40	1.05	366.60	0.00
367.50	1.50	366.60	0.00
367.60	2.01	366.60	0.00
367.70	2.59	366.60	0.00
367.80	3.24	366.60	0.00
367.90	3.93	366.60	0.00
368.00	4.70	366.60	0.00
368.10	5.50	366.60	0.00
368.20	6.34	366.60	0.00
368.30	7.21	366.60	0.00
368.40	8.14	366.60	0.00
368.50	9.06	366.60	0.00
368.60	10.00	366.60	0.00
368.70	10.95	366.60	0.00
368.80	11.90	366.60	0.00
368.90	12.82	366.60	0.00
369.00	13.75	366.60	0.00
369.10	14.62	366.60	0.00
369.20	15.45	366.60	0.00
369.30	16.24	366.60	0.00
369.40	16.93	366.60	0.00
369.50	17.51	366.60	0.00
369.60	18.03	366.60	0.00
369.70	18.54	366.60	0.00
369.80	19.06	366.60	0.00
369.90	19.57	366.60	0.00
370.00	20.07	366.60	0.00
370.10	20.58	366.60	0.00
370.20	21.07	366.60	0.00
370.30	21.56	366.60	0.00
370.40	22.04	366.60	0.00
370.50	22.51	366.60	0.00
370.60	22.99	366.60	0.00
370.70	23.46	366.60	0.00
370.80	23.91	366.60	0.00
370.90	24.36	366.60	0.00
371.00	24.81	366.60	0.00

Contributing Structures
None Contributing

Subsection: Composite Rating Curve | Return Event: 1 years
Label: OCS-A | Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	0.00	366.70	0.00
367.00	0.04	366.70	0.00
367.10	0.17	366.70	0.00
367.20	0.39	366.70	0.00
367.30	0.68	366.70	0.00
367.40	1.05	366.70	0.00
367.50	1.50	366.70	0.00
367.60	2.01	366.70	0.00
367.70	2.59	366.70	0.00
367.80	3.24	366.70	0.00
367.90	3.93	366.70	0.00
368.00	4.70	366.70	0.00
368.10	5.50	366.70	0.00
368.20	6.34	366.70	0.00
368.30	7.21	366.70	0.00
368.40	8.14	366.70	0.00
368.50	9.06	366.70	0.00
368.60	10.00	366.70	0.00
368.70	10.95	366.70	0.00
368.80	11.90	366.70	0.00
368.90	12.82	366.70	0.00
369.00	13.75	366.70	0.00
369.10	14.62	366.70	0.00
369.20	15.45	366.70	0.00
369.30	16.24	366.70	0.00
369.40	16.93	366.70	0.00
369.50	17.51	366.70	0.00
369.60	18.03	366.70	0.00
369.70	18.54	366.70	0.00
369.80	19.06	366.70	0.00
369.90	19.57	366.70	0.00
370.00	20.07	366.70	0.00
370.10	20.58	366.70	0.00
370.20	21.07	366.70	0.00
370.30	21.56	366.70	0.00
370.40	22.04	366.70	0.00
370.50	22.51	366.70	0.00
370.60	22.99	366.70	0.00
370.70	23.46	366.70	0.00
370.80	23.91	366.70	0.00
370.90	24.36	366.70	0.00
371.00	24.81	366.70	0.00

Contributing Structures
None Contributing

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 1 years
Label: OCS-A | Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	0.00	366.80	0.00
367.00	0.04	366.80	0.00
367.10	0.17	366.80	0.00
367.20	0.39	366.80	0.00
367.30	0.68	366.80	0.00
367.40	1.05	366.80	0.00
367.50	1.50	366.80	0.00
367.60	2.01	366.80	0.00
367.70	2.59	366.80	0.00
367.80	3.24	366.80	0.00
367.90	3.93	366.80	0.00
368.00	4.70	366.80	0.00
368.10	5.50	366.80	0.00
368.20	6.34	366.80	0.00
368.30	7.21	366.80	0.00
368.40	8.14	366.80	0.00
368.50	9.06	366.80	0.00
368.60	10.00	366.80	0.00
368.70	10.95	366.80	0.00
368.80	11.90	366.80	0.00
368.90	12.82	366.80	0.00
369.00	13.75	366.80	0.00
369.10	14.62	366.80	0.00
369.20	15.45	366.80	0.00
369.30	16.24	366.80	0.00
369.40	16.93	366.80	0.00
369.50	17.51	366.80	0.00
369.60	18.03	366.80	0.00
369.70	18.54	366.80	0.00
369.80	19.06	366.80	0.00
369.90	19.57	366.80	0.00
370.00	20.07	366.80	0.00
370.10	20.58	366.80	0.00
370.20	21.07	366.80	0.00
370.30	21.56	366.80	0.00
370.40	22.04	366.80	0.00
370.50	22.51	366.80	0.00
370.60	22.99	366.80	0.00
370.70	23.46	366.80	0.00
370.80	23.91	366.80	0.00
370.90	24.36	366.80	0.00
371.00	24.81	366.80	0.00

Contributing Structures
None Contributing

Subsection: Composite Rating Curve
Return Event: 1 years
Label: OCS-A
Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	0.00	366.90	0.00
367.00	0.04	366.90	0.00
367.10	0.17	366.90	0.00
367.20	0.38	366.90	0.00
367.30	0.68	366.90	0.00
367.40	1.06	366.90	0.00
367.50	1.50	366.90	0.00
367.60	2.01	366.90	0.00
367.70	2.59	366.90	0.00
367.80	3.24	366.90	0.00
367.90	3.93	366.90	0.00
368.00	4.70	366.90	0.00
368.10	5.50	366.90	0.00
368.20	6.34	366.90	0.00
368.30	7.21	366.90	0.00
368.40	8.14	366.90	0.00
368.50	9.06	366.90	0.00
368.60	10.00	366.90	0.00
368.70	10.95	366.90	0.00
368.80	11.90	366.90	0.00
368.90	12.82	366.90	0.00
369.00	13.75	366.90	0.00
369.10	14.62	366.90	0.00
369.20	15.45	366.90	0.00
369.30	16.24	366.90	0.00
369.40	16.93	366.90	0.00
369.50	17.51	366.90	0.00
369.60	18.03	366.90	0.00
369.70	18.54	366.90	0.00
369.80	19.06	366.90	0.00
369.90	19.57	366.90	0.00
370.00	20.07	366.90	0.00
370.10	20.58	366.90	0.00
370.20	21.07	366.90	0.00
370.30	21.56	366.90	0.00
370.40	22.04	366.90	0.00
370.50	22.51	366.90	0.00
370.60	22.99	366.90	0.00
370.70	23.46	366.90	0.00
370.80	23.91	366.90	0.00
370.90	24.36	366.90	0.00
371.00	24.81	366.90	0.00

Contributing Structures
None Contributing

Composite Outflow Summary

Contributing Structures
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Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-0.03	367.00	0.00
367.00	0.00	367.00	0.00
367.10	0.17	367.00	0.00
367.20	0.39	367.00	0.00
367.30	0.68	367.00	0.00
367.40	1.05	367.00	0.00
367.50	1.50	367.00	0.00
367.60	2.02	367.00	0.00
367.70	2.59	367.00	0.00
367.80	3.24	367.00	0.00
367.90	3.93	367.00	0.00
368.00	4.70	367.00	0.00
368.10	5.50	367.00	0.00
368.20	6.34	367.00	0.00
368.30	7.21	367.00	0.00
368.40	8.14	367.00	0.00
368.50	9.06	367.00	0.00
368.60	10.00	367.00	0.00
368.70	10.95	367.00	0.00
368.80	11.90	367.00	0.00
368.90	12.82	367.00	0.00
369.00	13.75	367.00	0.00
369.10	14.62	367.00	0.00
369.20	15.45	367.00	0.00
369.30	16.24	367.00	0.00
369.40	16.93	367.00	0.00
369.50	17.51	367.00	0.00
369.60	18.03	367.00	0.00
369.70	18.54	367.00	0.00
369.80	19.06	367.00	0.00
369.90	19.57	367.00	0.00
370.00	20.07	367.00	0.00
370.10	20.58	367.00	0.00
370.20	21.07	367.00	0.00
370.30	21.56	367.00	0.00
370.40	22.04	367.00	0.00
370.50	22.51	367.00	0.00
370.60	22.99	367.00	0.00
370.70	23.46	367.00	0.00
370.80	23.91	367.00	0.00
370.90	24.36	367.00	0.00
371.00	24.81	367.00	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve Return Event: 1 years
Label: OCS-A Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-0.14	367.10	0.00
367.00	-0.14	367.10	0.00
367.10	0.00	367.10	0.00
367.20	0.38	367.10	0.00
367.30	0.68	367.10	0.00
367.40	1.05	367.10	0.00
367.50	1.50	367.10	0.00
367.60	2.01	367.10	0.00
367.70	2.59	367.10	0.00
367.80	3.24	367.10	0.00
367.90	3.93	367.10	0.00
368.00	4.70	367.10	0.00
368.10	5.50	367.10	0.00
368.20	6.34	367.10	0.00
368.30	7.21	367.10	0.00
368.40	8.14	367.10	0.00
368.50	9.06	367.10	0.00
368.60	10.00	367.10	0.00
368.70	10.95	367.10	0.00
368.80	11.90	367.10	0.00
368.90	12.82	367.10	0.00
369.00	13.75	367.10	0.00
369.10	14.62	367.10	0.00
369.20	15.45	367.10	0.00
369.30	16.24	367.10	0.00
369.40	16.93	367.10	0.00
369.50	17.51	367.10	0.00
369.60	18.03	367.10	0.00
369.70	18.54	367.10	0.00
369.80	19.06	367.10	0.00
369.90	19.57	367.10	0.00
370.00	20.07	367.10	0.00
370.10	20.58	367.10	0.00
370.20	21.07	367.10	0.00
370.30	21.56	367.10	0.00
370.40	22.04	367.10	0.00
370.50	22.51	367.10	0.00
370.60	22.99	367.10	0.00
370.70	23.46	367.10	0.00
370.80	23.91	367.10	0.00
370.90	24.36	367.10	0.00
371.00	24.81	367.10	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-0.32	367.20	0.00
367.00	-0.32	367.20	0.00
367.10	-0.32	367.20	0.00
367.20	0.00	367.20	0.00
367.30	0.66	367.20	0.00
367.40	1.05	367.20	0.00
367.50	1.50	367.20	0.00
367.60	2.01	367.20	0.00
367.70	2.59	367.20	0.00
367.80	3.24	367.20	0.00
367.90	3.95	367.20	0.00
368.00	4.70	367.20	0.00
368.10	5.50	367.20	0.00
368.20	6.34	367.20	0.00
368.30	7.21	367.20	0.00
368.40	8.14	367.20	0.00
368.50	9.06	367.20	0.00
368.60	10.00	367.20	0.00
368.70	10.95	367.20	0.00
368.80	11.90	367.20	0.00
368.90	12.82	367.20	0.00
369.00	13.75	367.20	0.00
369.10	14.62	367.20	0.00
369.20	15.45	367.20	0.00
369.30	16.24	367.20	0.00
369.40	16.93	367.20	0.00
369.50	17.51	367.20	0.00
369.60	18.03	367.20	0.00
369.70	18.54	367.20	0.00
369.80	19.06	367.20	0.00
369.90	19.57	367.20	0.00
370.00	20.07	367.20	0.00
370.10	20.58	367.20	0.00
370.20	21.07	367.20	0.00
370.30	21.56	367.20	0.00
370.40	22.04	367.20	0.00
370.50	22.51	367.20	0.00
370.60	22.99	367.20	0.00
370.70	23.46	367.20	0.00
370.80	23.91	367.20	0.00
370.90	24.36	367.20	0.00
371.00	24.81	367.20	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 1 years
Label: OCS-A | Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-0.58	367.30	0.00
367.00	-0.58	367.30	0.00
367.10	-0.58	367.30	0.00
367.20	-0.56	367.30	0.00
367.30	0.00	367.30	0.00
367.40	0.98	367.30	0.00
367.50	1.49	367.30	0.00
367.60	2.01	367.30	0.00
367.70	2.59	367.30	0.00
367.80	3.24	367.30	0.00
367.90	3.94	367.30	0.00
368.00	4.68	367.30	0.00
368.10	5.50	367.30	0.00
368.20	6.34	367.30	0.00
368.30	7.21	367.30	0.00
368.40	8.14	367.30	0.00
368.50	9.06	367.30	0.00
368.60	10.00	367.30	0.00
368.70	10.95	367.30	0.00
368.80	11.90	367.30	0.00
368.90	12.82	367.30	0.00
369.00	13.75	367.30	0.00
369.10	14.62	367.30	0.00
369.20	15.45	367.30	0.00
369.30	16.24	367.30	0.00
369.40	16.93	367.30	0.00
369.50	17.51	367.30	0.00
369.60	18.03	367.30	0.00
369.70	18.54	367.30	0.00
369.80	19.06	367.30	0.00
369.90	19.57	367.30	0.00
370.00	20.07	367.30	0.00
370.10	20.58	367.30	0.00
370.20	21.07	367.30	0.00
370.30	21.56	367.30	0.00
370.40	22.04	367.30	0.00
370.50	22.51	367.30	0.00
370.60	22.99	367.30	0.00
370.70	23.46	367.30	0.00
370.80	23.91	367.30	0.00
370.90	24.36	367.30	0.00
371.00	24.81	367.30	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-0.90	367.40	0.00
367.00	-0.90	367.40	0.00
367.10	-0.90	367.40	0.00
367.20	-0.90	367.40	0.00
367.30	-0.83	367.40	0.00
367.40	0.00	367.40	0.00
367.50	1.33	367.40	0.00
367.60	1.97	367.40	0.00
367.70	2.58	367.40	0.00
367.80	3.24	367.40	0.00
367.90	3.94	367.40	0.00
368.00	4.69	367.40	0.00
368.10	5.50	367.40	0.00
368.20	6.34	367.40	0.00
368.30	7.21	367.40	0.00
368.40	8.14	367.40	0.00
368.50	9.06	367.40	0.00
368.60	10.00	367.40	0.00
368.70	10.95	367.40	0.00
368.80	11.90	367.40	0.00
368.90	12.82	367.40	0.00
369.00	13.75	367.40	0.00
369.10	14.62	367.40	0.00
369.20	15.45	367.40	0.00
369.30	16.24	367.40	0.00
369.40	16.93	367.40	0.00
369.50	17.51	367.40	0.00
369.60	18.03	367.40	0.00
369.70	18.54	367.40	0.00
369.80	19.06	367.40	0.00
369.90	19.57	367.40	0.00
370.00	20.07	367.40	0.00
370.10	20.58	367.40	0.00
370.20	21.07	367.40	0.00
370.30	21.56	367.40	0.00
370.40	22.04	367.40	0.00
370.50	22.51	367.40	0.00
370.60	22.99	367.40	0.00
370.70	23.46	367.40	0.00
370.80	23.91	367.40	0.00
370.90	24.36	367.40	0.00
371.00	24.81	367.40	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve | Return Event: 1 years
Label: OCS-A | Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 1 years
Label: OCS-A | Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-1.29	367.50	0.00
367.00	-1.29	367.50	0.00
367.10	-1.29	367.50	0.00
367.20	-1.29	367.50	0.00
367.30	-1.29	367.50	0.00
367.40	-1.14	367.50	0.00
367.50	0.00	367.50	0.00
367.60	1.71	367.50	0.00
367.70	2.50	367.50	0.00
367.80	3.21	367.50	0.00
367.90	3.93	367.50	0.00
368.00	4.68	367.50	0.00
368.10	5.50	367.50	0.00
368.20	6.34	367.50	0.00
368.30	7.21	367.50	0.00
368.40	8.14	367.50	0.00
368.50	9.06	367.50	0.00
368.60	10.00	367.50	0.00
368.70	10.95	367.50	0.00
368.80	11.90	367.50	0.00
368.90	12.82	367.50	0.00
369.00	13.75	367.50	0.00
369.10	14.62	367.50	0.00
369.20	15.45	367.50	0.00
369.30	16.24	367.50	0.00
369.40	16.93	367.50	0.00
369.50	17.51	367.50	0.00
369.60	18.03	367.50	0.00
369.70	18.54	367.50	0.00
369.80	19.06	367.50	0.00
369.90	19.57	367.50	0.00
370.00	20.07	367.50	0.00
370.10	20.58	367.50	0.00
370.20	21.07	367.50	0.00
370.30	21.56	367.50	0.00
370.40	22.04	367.50	0.00
370.50	22.51	367.50	0.00
370.60	22.99	367.50	0.00
370.70	23.46	367.50	0.00
370.80	23.91	367.50	0.00
370.90	24.36	367.50	0.00
371.00	24.81	367.50	0.00

Contributing Structures
Culvert - 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 1 years
Label: OCS-A | Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-1.74	367.60	0.00
367.00	-1.74	367.60	0.00
367.10	-1.74	367.60	0.00
367.20	-1.74	367.60	0.00
367.30	-1.74	367.60	0.00
367.40	-1.73	367.60	0.00
367.50	-1.48	367.60	0.00
367.60	0.00	367.60	0.00
367.70	2.09	367.60	0.00
367.80	3.05	367.60	0.00
367.90	3.86	367.60	0.00
368.00	4.66	367.60	0.00
368.10	5.47	367.60	0.00
368.20	6.34	367.60	0.00
368.30	7.21	367.60	0.00
368.40	8.12	367.60	0.00
368.50	9.06	367.60	0.00
368.60	10.00	367.60	0.00
368.70	10.95	367.60	0.00
368.80	11.90	367.60	0.00
368.90	12.82	367.60	0.00
369.00	13.75	367.60	0.00
369.10	14.62	367.60	0.00
369.20	15.45	367.60	0.00
369.30	16.24	367.60	0.00
369.40	16.93	367.60	0.00
369.50	17.51	367.60	0.00
369.60	18.03	367.60	0.00
369.70	18.54	367.60	0.00
369.80	19.06	367.60	0.00
369.90	19.57	367.60	0.00
370.00	20.07	367.60	0.00
370.10	20.58	367.60	0.00
370.20	21.07	367.60	0.00
370.30	21.56	367.60	0.00
370.40	22.04	367.60	0.00
370.50	22.51	367.60	0.00
370.60	22.99	367.60	0.00
370.70	23.46	367.60	0.00
370.80	23.91	367.60	0.00
370.90	24.36	367.60	0.00
371.00	24.81	367.60	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 1 years
Label: OCS-A | Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-2.25	367.70	0.00
367.00	-2.25	367.70	0.00
367.10	-2.25	367.70	0.00
367.20	-2.25	367.70	0.00
367.30	-2.25	367.70	0.00
367.40	-2.25	367.70	0.00
367.50	-2.19	367.70	0.00
367.60	-1.81	367.70	0.00
367.70	0.00	367.70	0.00
367.80	2.48	367.70	0.00
367.90	3.59	367.70	0.00
368.00	4.54	367.70	0.00
368.10	5.43	367.70	0.00
368.20	6.30	367.70	0.00
368.30	7.20	367.70	0.00
368.40	8.12	367.70	0.00
368.50	9.04	367.70	0.00
368.60	9.99	367.70	0.00
368.70	10.95	367.70	0.00
368.80	11.90	367.70	0.00
368.90	12.82	367.70	0.00
369.00	13.75	367.70	0.00
369.10	14.62	367.70	0.00
369.20	15.45	367.70	0.00
369.30	16.24	367.70	0.00
369.40	16.93	367.70	0.00
369.50	17.51	367.70	0.00
369.60	18.03	367.70	0.00
369.70	18.54	367.70	0.00
369.80	19.06	367.70	0.00
369.90	19.57	367.70	0.00
370.00	20.07	367.70	0.00
370.10	20.58	367.70	0.00
370.20	21.07	367.70	0.00
370.30	21.56	367.70	0.00
370.40	22.04	367.70	0.00
370.50	22.51	367.70	0.00
370.60	22.99	367.70	0.00
370.70	23.46	367.70	0.00
370.80	23.91	367.70	0.00
370.90	24.36	367.70	0.00
371.00	24.81	367.70	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-2.81	367.80	0.00
367.00	-2.81	367.80	0.00
367.10	-2.81	367.80	0.00
367.20	-2.81	367.80	0.00
367.30	-2.81	367.80	0.00
367.40	-2.81	367.80	0.00
367.50	-2.81	367.80	0.00
367.60	-2.68	367.80	0.00
367.70	-2.17	367.80	0.00
367.80	0.00	367.80	0.00
367.90	2.88	367.80	0.00
368.00	4.17	367.80	0.00
368.10	5.22	367.80	0.00
368.20	6.18	367.80	0.00
368.30	7.12	367.80	0.00
368.40	8.07	367.80	0.00
368.50	9.02	367.80	0.00
368.60	9.99	367.80	0.00
368.70	10.93	367.80	0.00
368.80	11.90	367.80	0.00
368.90	12.82	367.80	0.00
369.00	13.75	367.80	0.00
369.10	14.62	367.80	0.00
369.20	15.45	367.80	0.00
369.30	16.24	367.80	0.00
369.40	16.93	367.80	0.00
369.50	17.51	367.80	0.00
369.60	18.03	367.80	0.00
369.70	18.54	367.80	0.00
369.80	19.06	367.80	0.00
369.90	19.57	367.80	0.00
370.00	20.07	367.80	0.00
370.10	20.58	367.80	0.00
370.20	21.07	367.80	0.00
370.30	21.56	367.80	0.00
370.40	22.04	367.80	0.00
370.50	22.51	367.80	0.00
370.60	22.99	367.80	0.00
370.70	23.46	367.80	0.00
370.80	23.91	367.80	0.00
370.90	24.36	367.80	0.00
371.00	24.81	367.80	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 1 years
Label: OCS-A | Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-3.43	367.90	0.00
367.00	-3.43	367.90	0.00
367.10	-3.43	367.90	0.00
367.20	-3.43	367.90	0.00
367.30	-3.43	367.90	0.00
367.40	-3.43	367.90	0.00
367.50	-3.43	367.90	0.00
367.60	-3.42	367.90	0.00
367.70	-3.18	367.90	0.00
367.80	-2.53	367.90	0.00
367.90	0.00	367.90	0.00
368.00	3.25	367.90	0.00
368.10	4.71	367.90	0.00
368.20	5.86	367.90	0.00
368.30	6.93	367.90	0.00
368.40	7.93	367.90	0.00
368.50	8.93	367.90	0.00
368.60	9.91	367.90	0.00
368.70	10.90	367.90	0.00
368.80	11.86	367.90	0.00
368.90	12.81	367.90	0.00
369.00	13.75	367.90	0.00
369.10	14.62	367.90	0.00
369.20	15.45	367.90	0.00
369.30	16.24	367.90	0.00
369.40	16.93	367.90	0.00
369.50	17.51	367.90	0.00
369.60	18.03	367.90	0.00
369.70	18.54	367.90	0.00
369.80	19.06	367.90	0.00
369.90	19.57	367.90	0.00
370.00	20.07	367.90	0.00
370.10	20.58	367.90	0.00
370.20	21.07	367.90	0.00
370.30	21.56	367.90	0.00
370.40	22.04	367.90	0.00
370.50	22.51	367.90	0.00
370.60	22.99	367.90	0.00
370.70	23.46	367.90	0.00
370.80	23.91	367.90	0.00
370.90	24.36	367.90	0.00
371.00	24.81	367.90	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 1 years
Label: OCS-A | Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-4.10	368.00	0.00
367.00	-4.10	368.00	0.00
367.10	-4.10	368.00	0.00
367.20	-4.10	368.00	0.00
367.30	-4.10	368.00	0.00
367.40	-4.10	368.00	0.00
367.50	-4.10	368.00	0.00
367.60	-4.10	368.00	0.00
367.70	-4.03	368.00	0.00
367.80	-3.70	368.00	0.00
367.90	-2.91	368.00	0.00
368.00	0.00	368.00	0.00
368.10	3.64	368.00	0.00
368.20	5.22	368.00	0.00
368.30	6.49	368.00	0.00
368.40	7.64	368.00	0.00
368.50	8.72	368.00	0.00
368.60	9.76	368.00	0.00
368.70	10.77	368.00	0.00
368.80	11.77	368.00	0.00
368.90	12.74	368.00	0.00
369.00	13.69	368.00	0.00
369.10	14.59	368.00	0.00
369.20	15.44	368.00	0.00
369.30	16.24	368.00	0.00
369.40	16.93	368.00	0.00
369.50	17.51	368.00	0.00
369.60	18.03	368.00	0.00
369.70	18.54	368.00	0.00
369.80	19.06	368.00	0.00
369.90	19.57	368.00	0.00
370.00	20.07	368.00	0.00
370.10	20.58	368.00	0.00
370.20	21.07	368.00	0.00
370.30	21.56	368.00	0.00
370.40	22.04	368.00	0.00
370.50	22.51	368.00	0.00
370.60	22.99	368.00	0.00
370.70	23.46	368.00	0.00
370.80	23.91	368.00	0.00
370.90	24.36	368.00	0.00
371.00	24.81	368.00	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-4.79	368.10	0.00
367.00	-4.79	368.10	0.00
367.10	-4.79	368.10	0.00
367.20	-4.79	368.10	0.00
367.30	-4.79	368.10	0.00
367.40	-4.79	368.10	0.00
367.50	-4.79	368.10	0.00
367.60	-4.79	368.10	0.00
367.70	-4.79	368.10	0.00
367.80	-4.65	368.10	0.00
367.90	-4.20	368.10	0.00
368.00	-3.24	368.10	0.00
368.10	0.00	368.10	0.00
368.20	4.00	368.10	0.00
368.30	5.70	368.10	0.00
368.40	7.09	368.10	0.00
368.50	8.33	368.10	0.00
368.60	9.45	368.10	0.00
368.70	10.54	368.10	0.00
368.80	11.57	368.10	0.00
368.90	12.58	368.10	0.00
369.00	13.55	368.10	0.00
369.10	14.48	368.10	0.00
369.20	15.35	368.10	0.00
369.30	16.16	368.10	0.00
369.40	16.88	368.10	0.00
369.50	17.48	368.10	0.00
369.60	18.01	368.10	0.00
369.70	18.54	368.10	0.00
369.80	19.06	368.10	0.00
369.90	19.57	368.10	0.00
370.00	20.07	368.10	0.00
370.10	20.58	368.10	0.00
370.20	21.07	368.10	0.00
370.30	21.56	368.10	0.00
370.40	22.04	368.10	0.00
370.50	22.51	368.10	0.00
370.60	22.99	368.10	0.00
370.70	23.46	368.10	0.00
370.80	23.91	368.10	0.00
370.90	24.36	368.10	0.00
371.00	24.81	368.10	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve Return Event: 1 years
Label: OCS-A Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 1 years
Label: OCS-A | Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-5.53	368.20	0.00
367.00	-5.53	368.20	0.00
367.10	-5.53	368.20	0.00
367.20	-5.53	368.20	0.00
367.30	-5.53	368.20	0.00
367.40	-5.53	368.20	0.00
367.50	-5.53	368.20	0.00
367.60	-5.53	368.20	0.00
367.70	-5.53	368.20	0.00
367.80	-5.51	368.20	0.00
367.90	-5.25	368.20	0.00
368.00	-4.70	368.20	0.00
368.10	-3.60	368.20	0.00
368.20	0.00	368.20	0.00
368.30	4.28	368.20	0.00
368.40	6.17	368.20	0.00
368.50	7.63	368.20	0.00
368.60	8.93	368.20	0.00
368.70	10.11	368.20	0.00
368.80	11.23	368.20	0.00
368.90	12.29	368.20	0.00
369.00	13.29	368.20	0.00
369.10	14.25	368.20	0.00
369.20	15.14	368.20	0.00
369.30	15.96	368.20	0.00
369.40	16.69	368.20	0.00
369.50	17.28	368.20	0.00
369.60	17.85	368.20	0.00
369.70	18.41	368.20	0.00
369.80	18.96	368.20	0.00
369.90	19.50	368.20	0.00
370.00	20.03	368.20	0.00
370.10	20.55	368.20	0.00
370.20	21.06	368.20	0.00
370.30	21.55	368.20	0.00
370.40	22.04	368.20	0.00
370.50	22.52	368.20	0.00
370.60	22.99	368.20	0.00
370.70	23.46	368.20	0.00
370.80	23.91	368.20	0.00
370.90	24.36	368.20	0.00
371.00	24.81	368.20	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 1 years
Label: OCS-A | Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-6.29	368.30	0.00
367.00	-6.29	368.30	0.00
367.10	-6.29	368.30	0.00
367.20	-6.29	368.30	0.00
367.30	-6.29	368.30	0.00
367.40	-6.29	368.30	0.00
367.50	-6.29	368.30	0.00
367.60	-6.29	368.30	0.00
367.70	-6.29	368.30	0.00
367.80	-6.29	368.30	0.00
367.90	-6.20	368.30	0.00
368.00	-5.84	368.30	0.00
368.10	-5.17	368.30	0.00
368.20	-3.91	368.30	0.00
368.30	0.00	368.30	0.00
368.40	4.58	368.30	0.00
368.50	6.55	368.30	0.00
368.60	8.10	368.30	0.00
368.70	9.45	368.30	0.00
368.80	10.66	368.30	0.00
368.90	11.81	368.30	0.00
369.00	12.86	368.30	0.00
369.10	13.85	368.30	0.00
369.20	14.76	368.30	0.00
369.30	15.59	368.30	0.00
369.40	16.31	368.30	0.00
369.50	16.90	368.30	0.00
369.60	17.51	368.30	0.00
369.70	18.09	368.30	0.00
369.80	18.67	368.30	0.00
369.90	19.26	368.30	0.00
370.00	19.81	368.30	0.00
370.10	20.36	368.30	0.00
370.20	20.90	368.30	0.00
370.30	21.42	368.30	0.00
370.40	21.93	368.30	0.00
370.50	22.43	368.30	0.00
370.60	22.93	368.30	0.00
370.70	23.41	368.30	0.00
370.80	23.88	368.30	0.00
370.90	24.35	368.30	0.00
371.00	24.79	368.30	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-7.08	368.40	0.00
367.00	-7.08	368.40	0.00
367.10	-7.08	368.40	0.00
367.20	-7.08	368.40	0.00
367.30	-7.08	368.40	0.00
367.40	-7.08	368.40	0.00
367.50	-7.08	368.40	0.00
367.60	-7.08	368.40	0.00
367.70	-7.08	368.40	0.00
367.80	-7.08	368.40	0.00
367.90	-7.06	368.40	0.00
368.00	-6.87	368.40	0.00
368.10	-6.41	368.40	0.00
368.20	-5.63	368.40	0.00
368.30	-4.24	368.40	0.00
368.40	0.00	368.40	0.00
368.50	4.82	368.40	0.00
368.60	6.85	368.40	0.00
368.70	8.45	368.40	0.00
368.80	9.85	368.40	0.00
368.90	11.06	368.40	0.00
369.00	12.20	368.40	0.00
369.10	13.22	368.40	0.00
369.20	14.16	368.40	0.00
369.30	14.96	368.40	0.00
369.40	15.61	368.40	0.00
369.50	16.26	368.40	0.00
369.60	16.91	368.40	0.00
369.70	17.56	368.40	0.00
369.80	18.19	368.40	0.00
369.90	18.81	368.40	0.00
370.00	19.41	368.40	0.00
370.10	19.98	368.40	0.00
370.20	20.55	368.40	0.00
370.30	21.11	368.40	0.00
370.40	21.65	368.40	0.00
370.50	22.17	368.40	0.00
370.60	22.69	368.40	0.00
370.70	23.19	368.40	0.00
370.80	23.69	368.40	0.00
370.90	24.18	368.40	0.00
371.00	24.65	368.40	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 1 years
Label: OCS-A | Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-7.87	368.50	0.00
367.00	-7.87	368.50	0.00
367.10	-7.87	368.50	0.00
367.20	-7.87	368.50	0.00
367.30	-7.87	368.50	0.00
367.40	-7.87	368.50	0.00
367.50	-7.87	368.50	0.00
367.60	-7.87	368.50	0.00
367.70	-7.87	368.50	0.00
367.80	-7.87	368.50	0.00
367.90	-7.87	368.50	0.00
368.00	-7.80	368.50	0.00
368.10	-7.51	368.50	0.00
368.20	-6.94	368.50	0.00
368.30	-6.01	368.50	0.00
368.40	-4.48	368.50	0.00
368.50	0.00	368.50	0.00
368.60	4.94	368.50	0.00
368.70	7.00	368.50	0.00
368.80	8.64	368.50	0.00
368.90	10.00	368.50	0.00
369.00	11.18	368.50	0.00
369.10	12.21	368.50	0.00
369.20	13.03	368.50	0.00
369.30	13.74	368.50	0.00
369.40	14.58	368.50	0.00
369.50	15.36	368.50	0.00
369.60	16.12	368.50	0.00
369.70	16.84	368.50	0.00
369.80	17.53	368.50	0.00
369.90	18.18	368.50	0.00
370.00	18.82	368.50	0.00
370.10	19.44	368.50	0.00
370.20	20.04	368.50	0.00
370.30	20.62	368.50	0.00
370.40	21.18	368.50	0.00
370.50	21.74	368.50	0.00
370.60	22.27	368.50	0.00
370.70	22.79	368.50	0.00
370.80	23.30	368.50	0.00
370.90	23.80	368.50	0.00
371.00	24.30	368.50	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 1 years
Label: OCS-A | Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-8.65	368.60	0.00
367.00	-8.65	368.60	0.00
367.10	-8.65	368.60	0.00
367.20	-8.65	368.60	0.00
367.30	-8.65	368.60	0.00
367.40	-8.65	368.60	0.00
367.50	-8.65	368.60	0.00
367.60	-8.65	368.60	0.00
367.70	-8.65	368.60	0.00
367.80	-8.65	368.60	0.00
367.90	-8.65	368.60	0.00
368.00	-8.64	368.60	0.00
368.10	-8.48	368.60	0.00
368.20	-8.08	368.60	0.00
368.30	-7.39	368.60	0.00
368.40	-6.34	368.60	0.00
368.50	-4.63	368.60	0.00
368.60	0.00	368.60	0.00
368.70	4.95	368.60	0.00
368.80	6.98	368.60	0.00
368.90	8.53	368.60	0.00
369.00	9.82	368.60	0.00
369.10	10.89	368.60	0.00
369.20	11.90	368.60	0.00
369.30	12.85	368.60	0.00
369.40	13.74	368.60	0.00
369.50	14.58	368.60	0.00
369.60	15.36	368.60	0.00
369.70	16.12	368.60	0.00
369.80	16.83	368.60	0.00
369.90	17.52	368.60	0.00
370.00	18.19	368.60	0.00
370.10	18.83	368.60	0.00
370.20	19.44	368.60	0.00
370.30	20.03	368.60	0.00
370.40	20.62	368.60	0.00
370.50	21.18	368.60	0.00
370.60	21.73	368.60	0.00
370.70	22.27	368.60	0.00
370.80	22.79	368.60	0.00
370.90	23.31	368.60	0.00
371.00	23.80	368.60	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 1 years
Label: OCS-A | Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-9.42	368.70	0.00
367.00	-9.42	368.70	0.00
367.10	-9.42	368.70	0.00
367.20	-9.42	368.70	0.00
367.30	-9.42	368.70	0.00
367.40	-9.42	368.70	0.00
367.50	-9.42	368.70	0.00
367.60	-9.42	368.70	0.00
367.70	-9.42	368.70	0.00
367.80	-9.42	368.70	0.00
367.90	-9.42	368.70	0.00
368.00	-9.42	368.70	0.00
368.10	-9.35	368.70	0.00
368.20	-9.06	368.70	0.00
368.30	-8.56	368.70	0.00
368.40	-7.75	368.70	0.00
368.50	-6.56	368.70	0.00
368.60	-4.77	368.70	0.00
368.70	0.00	368.70	0.00
368.80	4.89	368.70	0.00
368.90	6.93	368.70	0.00
369.00	8.45	368.70	0.00
369.10	9.71	368.70	0.00
369.20	10.86	368.70	0.00
369.30	11.91	368.70	0.00
369.40	12.86	368.70	0.00
369.50	13.74	368.70	0.00
369.60	14.57	368.70	0.00
369.70	15.37	368.70	0.00
369.80	16.12	368.70	0.00
369.90	16.84	368.70	0.00
370.00	17.52	368.70	0.00
370.10	18.19	368.70	0.00
370.20	18.82	368.70	0.00
370.30	19.43	368.70	0.00
370.40	20.04	368.70	0.00
370.50	20.62	368.70	0.00
370.60	21.18	368.70	0.00
370.70	21.73	368.70	0.00
370.80	22.26	368.70	0.00
370.90	22.80	368.70	0.00
371.00	23.31	368.70	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve | Return Event: 1 years
Label: OCS-A | Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-10.16	368.80	0.00
367.00	-10.16	368.80	0.00
367.10	-10.16	368.80	0.00
367.20	-10.16	368.80	0.00
367.30	-10.16	368.80	0.00
367.40	-10.16	368.80	0.00
367.50	-10.16	368.80	0.00
367.60	-10.16	368.80	0.00
367.70	-10.16	368.80	0.00
367.80	-10.16	368.80	0.00
367.90	-10.16	368.80	0.00
368.00	-10.16	368.80	0.00
368.10	-10.13	368.80	0.00
368.20	-9.95	368.80	0.00
368.30	-9.56	368.80	0.00
368.40	-8.94	368.80	0.00
368.50	-8.01	368.80	0.00
368.60	-6.72	368.80	0.00
368.70	-4.82	368.80	0.00
368.80	0.00	368.80	0.00
368.90	4.85	368.80	0.00
369.00	6.87	368.80	0.00
369.10	8.43	368.80	0.00
369.20	9.72	368.80	0.00
369.30	10.86	368.80	0.00
369.40	11.91	368.80	0.00
369.50	12.86	368.80	0.00
369.60	13.74	368.80	0.00
369.70	14.58	368.80	0.00
369.80	15.37	368.80	0.00
369.90	16.12	368.80	0.00
370.00	16.83	368.80	0.00
370.10	17.52	368.80	0.00
370.20	18.19	368.80	0.00
370.30	18.82	368.80	0.00
370.40	19.44	368.80	0.00
370.50	20.04	368.80	0.00
370.60	20.62	368.80	0.00
370.70	21.18	368.80	0.00
370.80	21.73	368.80	0.00
370.90	22.27	368.80	0.00
371.00	22.79	368.80	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-10.87	368.90	0.00
367.00	-10.87	368.90	0.00
367.10	-10.87	368.90	0.00
367.20	-10.87	368.90	0.00
367.30	-10.87	368.90	0.00
367.40	-10.87	368.90	0.00
367.50	-10.87	368.90	0.00
367.60	-10.87	368.90	0.00
367.70	-10.87	368.90	0.00
367.80	-10.87	368.90	0.00
367.90	-10.87	368.90	0.00
368.00	-10.87	368.90	0.00
368.10	-10.87	368.90	0.00
368.20	-10.78	368.90	0.00
368.30	-10.49	368.90	0.00
368.40	-9.99	368.90	0.00
368.50	-9.25	368.90	0.00
368.60	-8.20	368.90	0.00
368.70	-6.82	368.90	0.00
368.80	-4.86	368.90	0.00
368.90	0.00	368.90	0.00
369.00	4.87	368.90	0.00
369.10	6.86	368.90	0.00
369.20	8.42	368.90	0.00
369.30	9.73	368.90	0.00
369.40	10.87	368.90	0.00
369.50	11.91	368.90	0.00
369.60	12.86	368.90	0.00
369.70	13.74	368.90	0.00
369.80	14.58	368.90	0.00
369.90	15.37	368.90	0.00
370.00	16.12	368.90	0.00
370.10	16.84	368.90	0.00
370.20	17.52	368.90	0.00
370.30	18.18	368.90	0.00
370.40	18.82	368.90	0.00
370.50	19.44	368.90	0.00
370.60	20.04	368.90	0.00
370.70	20.61	368.90	0.00
370.80	21.18	368.90	0.00
370.90	21.74	368.90	0.00
371.00	22.27	368.90	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-11.58	369.00	0.00
367.00	-11.58	369.00	0.00
367.10	-11.58	369.00	0.00
367.20	-11.58	369.00	0.00
367.30	-11.58	369.00	0.00
367.40	-11.58	369.00	0.00
367.50	-11.58	369.00	0.00
367.60	-11.58	369.00	0.00
367.70	-11.58	369.00	0.00
367.80	-11.58	369.00	0.00
367.90	-11.58	369.00	0.00
368.00	-11.58	369.00	0.00
368.10	-11.58	369.00	0.00
368.20	-11.54	369.00	0.00
368.30	-11.34	369.00	0.00
368.40	-10.94	369.00	0.00
368.50	-10.32	369.00	0.00
368.60	-9.47	369.00	0.00
368.70	-8.34	369.00	0.00
368.80	-6.87	369.00	0.00
368.90	-4.86	369.00	0.00
369.00	0.00	369.00	0.00
369.10	4.84	369.00	0.00
369.20	6.88	369.00	0.00
369.30	8.41	369.00	0.00
369.40	9.72	369.00	0.00
369.50	10.86	369.00	0.00
369.60	11.90	369.00	0.00
369.70	12.85	369.00	0.00
369.80	13.74	369.00	0.00
369.90	14.58	369.00	0.00
370.00	15.37	369.00	0.00
370.10	16.12	369.00	0.00
370.20	16.84	369.00	0.00
370.30	17.52	369.00	0.00
370.40	18.18	369.00	0.00
370.50	18.82	369.00	0.00
370.60	19.43	369.00	0.00
370.70	20.04	369.00	0.00
370.80	20.62	369.00	0.00
370.90	21.18	369.00	0.00
371.00	21.73	369.00	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 1 years
Label: OCS-A | Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-12.25	369.10	0.00
367.00	-12.25	369.10	0.00
367.10	-12.25	369.10	0.00
367.20	-12.25	369.10	0.00
367.30	-12.25	369.10	0.00
367.40	-12.25	369.10	0.00
367.50	-12.25	369.10	0.00
367.60	-12.25	369.10	0.00
367.70	-12.25	369.10	0.00
367.80	-12.25	369.10	0.00
367.90	-12.25	369.10	0.00
368.00	-12.25	369.10	0.00
368.10	-12.25	369.10	0.00
368.20	-12.25	369.10	0.00
368.30	-12.12	369.10	0.00
368.40	-11.80	369.10	0.00
368.50	-11.30	369.10	0.00
368.60	-10.56	369.10	0.00
368.70	-9.61	369.10	0.00
368.80	-8.39	369.10	0.00
368.90	-6.87	369.10	0.00
369.00	-4.86	369.10	0.00
369.10	0.00	369.10	0.00
369.20	4.85	369.10	0.00
369.30	6.87	369.10	0.00
369.40	8.42	369.10	0.00
369.50	9.72	369.10	0.00
369.60	10.86	369.10	0.00
369.70	11.90	369.10	0.00
369.80	12.86	369.10	0.00
369.90	13.74	369.10	0.00
370.00	14.58	369.10	0.00
370.10	15.37	369.10	0.00
370.20	16.12	369.10	0.00
370.30	16.84	369.10	0.00
370.40	17.53	369.10	0.00
370.50	18.18	369.10	0.00
370.60	18.82	369.10	0.00
370.70	19.43	369.10	0.00
370.80	20.03	369.10	0.00
370.90	20.62	369.10	0.00
371.00	21.18	369.10	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-12.92	369.20	0.00
367.00	-12.92	369.20	0.00
367.10	-12.92	369.20	0.00
367.20	-12.92	369.20	0.00
367.30	-12.92	369.20	0.00
367.40	-12.92	369.20	0.00
367.50	-12.92	369.20	0.00
367.60	-12.92	369.20	0.00
367.70	-12.92	369.20	0.00
367.80	-12.92	369.20	0.00
367.90	-12.92	369.20	0.00
368.00	-12.92	369.20	0.00
368.10	-12.92	369.20	0.00
368.20	-12.92	369.20	0.00
368.30	-12.85	369.20	0.00
368.40	-12.61	369.20	0.00
368.50	-12.18	369.20	0.00
368.60	-11.56	369.20	0.00
368.70	-10.73	369.20	0.00
368.80	-9.70	369.20	0.00
368.90	-8.42	369.20	0.00
369.00	-6.87	369.20	0.00
369.10	-4.86	369.20	0.00
369.20	0.00	369.20	0.00
369.30	4.88	369.20	0.00
369.40	6.87	369.20	0.00
369.50	8.42	369.20	0.00
369.60	9.71	369.20	0.00
369.70	10.88	369.20	0.00
369.80	11.91	369.20	0.00
369.90	12.87	369.20	0.00
370.00	13.75	369.20	0.00
370.10	14.58	369.20	0.00
370.20	15.37	369.20	0.00
370.30	16.12	369.20	0.00
370.40	16.84	369.20	0.00
370.50	17.52	369.20	0.00
370.60	18.19	369.20	0.00
370.70	18.82	369.20	0.00
370.80	19.43	369.20	0.00
370.90	20.04	369.20	0.00
371.00	20.62	369.20	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 1 years
Label: OCS-A | Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-13.58	369.30	0.00
367.00	-13.58	369.30	0.00
367.10	-13.58	369.30	0.00
367.20	-13.58	369.30	0.00
367.30	-13.58	369.30	0.00
367.40	-13.58	369.30	0.00
367.50	-13.58	369.30	0.00
367.60	-13.58	369.30	0.00
367.70	-13.58	369.30	0.00
367.80	-13.58	369.30	0.00
367.90	-13.58	369.30	0.00
368.00	-13.58	369.30	0.00
368.10	-13.58	369.30	0.00
368.20	-13.58	369.30	0.00
368.30	-13.55	369.30	0.00
368.40	-13.38	369.30	0.00
368.50	-13.02	369.30	0.00
368.60	-12.48	369.30	0.00
368.70	-11.75	369.30	0.00
368.80	-10.82	369.30	0.00
368.90	-9.73	369.30	0.00
369.00	-8.42	369.30	0.00
369.10	-6.87	369.30	0.00
369.20	-4.86	369.30	0.00
369.30	0.00	369.30	0.00
369.40	4.86	369.30	0.00
369.50	6.86	369.30	0.00
369.60	8.41	369.30	0.00
369.70	9.72	369.30	0.00
369.80	10.87	369.30	0.00
369.90	11.90	369.30	0.00
370.00	12.86	369.30	0.00
370.10	13.75	369.30	0.00
370.20	14.58	369.30	0.00
370.30	15.36	369.30	0.00
370.40	16.12	369.30	0.00
370.50	16.83	369.30	0.00
370.60	17.52	369.30	0.00
370.70	18.19	369.30	0.00
370.80	18.82	369.30	0.00
370.90	19.44	369.30	0.00
371.00	20.04	369.30	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve | Return Event: 1 years
Label: OCS-A | Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-14.22	369.40	0.00
367.00	-14.22	369.40	0.00
367.10	-14.22	369.40	0.00
367.20	-14.22	369.40	0.00
367.30	-14.22	369.40	0.00
367.40	-14.22	369.40	0.00
367.50	-14.22	369.40	0.00
367.60	-14.22	369.40	0.00
367.70	-14.22	369.40	0.00
367.80	-14.22	369.40	0.00
367.90	-14.22	369.40	0.00
368.00	-14.22	369.40	0.00
368.10	-14.22	369.40	0.00
368.20	-14.22	369.40	0.00
368.30	-14.22	369.40	0.00
368.40	-14.09	369.40	0.00
368.50	-13.80	369.40	0.00
368.60	-13.33	369.40	0.00
368.70	-12.68	369.40	0.00
368.80	-11.86	369.40	0.00
368.90	-10.87	369.40	0.00
369.00	-9.73	369.40	0.00
369.10	-8.42	369.40	0.00
369.20	-6.87	369.40	0.00
369.30	-4.86	369.40	0.00
369.40	0.00	369.40	0.00
369.50	4.88	369.40	0.00
369.60	6.86	369.40	0.00
369.70	8.43	369.40	0.00
369.80	9.72	369.40	0.00
369.90	10.87	369.40	0.00
370.00	11.90	369.40	0.00
370.10	12.86	369.40	0.00
370.20	13.74	369.40	0.00
370.30	14.58	369.40	0.00
370.40	15.37	369.40	0.00
370.50	16.12	369.40	0.00
370.60	16.83	369.40	0.00
370.70	17.51	369.40	0.00
370.80	18.19	369.40	0.00
370.90	18.82	369.40	0.00
371.00	19.44	369.40	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-14.84	369.50	0.00
367.00	-14.84	369.50	0.00
367.10	-14.84	369.50	0.00
367.20	-14.84	369.50	0.00
367.30	-14.84	369.50	0.00
367.40	-14.84	369.50	0.00
367.50	-14.84	369.50	0.00
367.60	-14.84	369.50	0.00
367.70	-14.84	369.50	0.00
367.80	-14.84	369.50	0.00
367.90	-14.84	369.50	0.00
368.00	-14.84	369.50	0.00
368.10	-14.84	369.50	0.00
368.20	-14.84	369.50	0.00
368.30	-14.84	369.50	0.00
368.40	-14.77	369.50	0.00
368.50	-14.53	369.50	0.00
368.60	-14.13	369.50	0.00
368.70	-13.55	369.50	0.00
368.80	-12.80	369.50	0.00
368.90	-11.90	369.50	0.00
369.00	-10.87	369.50	0.00
369.10	-9.73	369.50	0.00
369.20	-8.42	369.50	0.00
369.30	-6.87	369.50	0.00
369.40	-4.86	369.50	0.00
369.50	0.00	369.50	0.00
369.60	4.84	369.50	0.00
369.70	6.87	369.50	0.00
369.80	8.42	369.50	0.00
369.90	9.73	369.50	0.00
370.00	10.86	369.50	0.00
370.10	11.90	369.50	0.00
370.20	12.86	369.50	0.00
370.30	13.75	369.50	0.00
370.40	14.58	369.50	0.00
370.50	15.36	369.50	0.00
370.60	16.11	369.50	0.00
370.70	16.83	369.50	0.00
370.80	17.52	369.50	0.00
370.90	18.18	369.50	0.00
371.00	18.82	369.50	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 1 years
Label: OCS-A | Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-15.46	369.60	0.00
367.00	-15.46	369.60	0.00
367.10	-15.46	369.60	0.00
367.20	-15.46	369.60	0.00
367.30	-15.46	369.60	0.00
367.40	-15.46	369.60	0.00
367.50	-15.46	369.60	0.00
367.60	-15.46	369.60	0.00
367.70	-15.46	369.60	0.00
367.80	-15.46	369.60	0.00
367.90	-15.46	369.60	0.00
368.00	-15.46	369.60	0.00
368.10	-15.46	369.60	0.00
368.20	-15.46	369.60	0.00
368.30	-15.46	369.60	0.00
368.40	-15.43	369.60	0.00
368.50	-15.23	369.60	0.00
368.60	-14.88	369.60	0.00
368.70	-14.36	369.60	0.00
368.80	-13.69	369.60	0.00
368.90	-12.85	369.60	0.00
369.00	-11.90	369.60	0.00
369.10	-10.87	369.60	0.00
369.20	-9.73	369.60	0.00
369.30	-8.42	369.60	0.00
369.40	-6.87	369.60	0.00
369.50	-4.86	369.60	0.00
369.60	0.00	369.60	0.00
369.70	4.85	369.60	0.00
369.80	6.87	369.60	0.00
369.90	8.41	369.60	0.00
370.00	9.73	369.60	0.00
370.10	10.87	369.60	0.00
370.20	11.90	369.60	0.00
370.30	12.87	369.60	0.00
370.40	13.75	369.60	0.00
370.50	14.58	369.60	0.00
370.60	15.36	369.60	0.00
370.70	16.12	369.60	0.00
370.80	16.83	369.60	0.00
370.90	17.52	369.60	0.00
371.00	18.19	369.60	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 1 years
Label: OCS-A | Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-16.06	369.70	0.00
367.00	-16.06	369.70	0.00
367.10	-16.06	369.70	0.00
367.20	-16.06	369.70	0.00
367.30	-16.06	369.70	0.00
367.40	-16.06	369.70	0.00
367.50	-16.06	369.70	0.00
367.60	-16.06	369.70	0.00
367.70	-16.06	369.70	0.00
367.80	-16.06	369.70	0.00
367.90	-16.06	369.70	0.00
368.00	-16.06	369.70	0.00
368.10	-16.06	369.70	0.00
368.20	-16.06	369.70	0.00
368.30	-16.06	369.70	0.00
368.40	-16.05	369.70	0.00
368.50	-15.90	369.70	0.00
368.60	-15.59	369.70	0.00
368.70	-15.14	369.70	0.00
368.80	-14.52	369.70	0.00
368.90	-13.74	369.70	0.00
369.00	-12.85	369.70	0.00
369.10	-11.90	369.70	0.00
369.20	-10.87	369.70	0.00
369.30	-9.73	369.70	0.00
369.40	-8.42	369.70	0.00
369.50	-6.87	369.70	0.00
369.60	-4.86	369.70	0.00
369.70	0.00	369.70	0.00
369.80	4.85	369.70	0.00
369.90	6.87	369.70	0.00
370.00	8.41	369.70	0.00
370.10	9.73	369.70	0.00
370.20	10.87	369.70	0.00
370.30	11.91	369.70	0.00
370.40	12.86	369.70	0.00
370.50	13.75	369.70	0.00
370.60	14.58	369.70	0.00
370.70	15.37	369.70	0.00
370.80	16.12	369.70	0.00
370.90	16.84	369.70	0.00
371.00	17.52	369.70	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-16.64	369.80	0.00
367.00	-16.64	369.80	0.00
367.10	-16.64	369.80	0.00
367.20	-16.64	369.80	0.00
367.30	-16.64	369.80	0.00
367.40	-16.64	369.80	0.00
367.50	-16.64	369.80	0.00
367.60	-16.64	369.80	0.00
367.70	-16.64	369.80	0.00
367.80	-16.64	369.80	0.00
367.90	-16.64	369.80	0.00
368.00	-16.64	369.80	0.00
368.10	-16.64	369.80	0.00
368.20	-16.64	369.80	0.00
368.30	-16.64	369.80	0.00
368.40	-16.64	369.80	0.00
368.50	-16.55	369.80	0.00
368.60	-16.28	369.80	0.00
368.70	-15.85	369.80	0.00
368.80	-15.29	369.80	0.00
368.90	-14.58	369.80	0.00
369.00	-13.74	369.80	0.00
369.10	-12.85	369.80	0.00
369.20	-11.90	369.80	0.00
369.30	-10.87	369.80	0.00
369.40	-9.73	369.80	0.00
369.50	-8.42	369.80	0.00
369.60	-6.87	369.80	0.00
369.70	-4.86	369.80	0.00
369.80	0.00	369.80	0.00
369.90	4.87	369.80	0.00
370.00	6.88	369.80	0.00
370.10	8.42	369.80	0.00
370.20	9.73	369.80	0.00
370.30	10.86	369.80	0.00
370.40	11.90	369.80	0.00
370.50	12.86	369.80	0.00
370.60	13.75	369.80	0.00
370.70	14.58	369.80	0.00
370.80	15.37	369.80	0.00
370.90	16.11	369.80	0.00
371.00	16.84	369.80	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 1 years
Label: OCS-A | Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-17.21	369.90	0.00
367.00	-17.21	369.90	0.00
367.10	-17.21	369.90	0.00
367.20	-17.21	369.90	0.00
367.30	-17.21	369.90	0.00
367.40	-17.21	369.90	0.00
367.50	-17.21	369.90	0.00
367.60	-17.21	369.90	0.00
367.70	-17.21	369.90	0.00
367.80	-17.21	369.90	0.00
367.90	-17.21	369.90	0.00
368.00	-17.21	369.90	0.00
368.10	-17.21	369.90	0.00
368.20	-17.21	369.90	0.00
368.30	-17.21	369.90	0.00
368.40	-17.21	369.90	0.00
368.50	-17.15	369.90	0.00
368.60	-16.94	369.90	0.00
368.70	-16.57	369.90	0.00
368.80	-16.03	369.90	0.00
368.90	-15.37	369.90	0.00
369.00	-14.58	369.90	0.00
369.10	-13.74	369.90	0.00
369.20	-12.85	369.90	0.00
369.30	-11.90	369.90	0.00
369.40	-10.87	369.90	0.00
369.50	-9.73	369.90	0.00
369.60	-8.42	369.90	0.00
369.70	-6.87	369.90	0.00
369.80	-4.86	369.90	0.00
369.90	0.00	369.90	0.00
370.00	4.84	369.90	0.00
370.10	6.89	369.90	0.00
370.20	8.41	369.90	0.00
370.30	9.73	369.90	0.00
370.40	10.87	369.90	0.00
370.50	11.90	369.90	0.00
370.60	12.86	369.90	0.00
370.70	13.75	369.90	0.00
370.80	14.57	369.90	0.00
370.90	15.36	369.90	0.00
371.00	16.11	369.90	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 1 years
Label: OCS-A | Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-17.79	370.00	0.00
367.00	-17.79	370.00	0.00
367.10	-17.79	370.00	0.00
367.20	-17.79	370.00	0.00
367.30	-17.79	370.00	0.00
367.40	-17.79	370.00	0.00
367.50	-17.79	370.00	0.00
367.60	-17.79	370.00	0.00
367.70	-17.79	370.00	0.00
367.80	-17.79	370.00	0.00
367.90	-17.79	370.00	0.00
368.00	-17.79	370.00	0.00
368.10	-17.79	370.00	0.00
368.20	-17.79	370.00	0.00
368.30	-17.79	370.00	0.00
368.40	-17.79	370.00	0.00
368.50	-17.75	370.00	0.00
368.60	-17.57	370.00	0.00
368.70	-17.24	370.00	0.00
368.80	-16.75	370.00	0.00
368.90	-16.12	370.00	0.00
369.00	-15.37	370.00	0.00
369.10	-14.58	370.00	0.00
369.20	-13.74	370.00	0.00
369.30	-12.85	370.00	0.00
369.40	-11.90	370.00	0.00
369.50	-10.87	370.00	0.00
369.60	-9.73	370.00	0.00
369.70	-8.42	370.00	0.00
369.80	-6.87	370.00	0.00
369.90	-4.86	370.00	0.00
370.00	0.00	370.00	0.00
370.10	4.84	370.00	0.00
370.20	6.88	370.00	0.00
370.30	8.43	370.00	0.00
370.40	9.72	370.00	0.00
370.50	10.87	370.00	0.00
370.60	11.90	370.00	0.00
370.70	12.86	370.00	0.00
370.80	13.74	370.00	0.00
370.90	14.58	370.00	0.00
371.00	15.37	370.00	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 1 years
Label: OCS-A | Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-18.33	370.10	0.00
367.00	-18.33	370.10	0.00
367.10	-18.33	370.10	0.00
367.20	-18.33	370.10	0.00
367.30	-18.33	370.10	0.00
367.40	-18.33	370.10	0.00
367.50	-18.33	370.10	0.00
367.60	-18.33	370.10	0.00
367.70	-18.33	370.10	0.00
367.80	-18.33	370.10	0.00
367.90	-18.33	370.10	0.00
368.00	-18.33	370.10	0.00
368.10	-18.33	370.10	0.00
368.20	-18.33	370.10	0.00
368.30	-18.33	370.10	0.00
368.40	-18.33	370.10	0.00
368.50	-18.32	370.10	0.00
368.60	-18.17	370.10	0.00
368.70	-17.88	370.10	0.00
368.80	-17.43	370.10	0.00
368.90	-16.83	370.10	0.00
369.00	-16.12	370.10	0.00
369.10	-15.37	370.10	0.00
369.20	-14.58	370.10	0.00
369.30	-13.74	370.10	0.00
369.40	-12.85	370.10	0.00
369.50	-11.90	370.10	0.00
369.60	-10.87	370.10	0.00
369.70	-9.73	370.10	0.00
369.80	-8.42	370.10	0.00
369.90	-6.87	370.10	0.00
370.00	-4.86	370.10	0.00
370.10	0.00	370.10	0.00
370.20	4.88	370.10	0.00
370.30	6.86	370.10	0.00
370.40	8.41	370.10	0.00
370.50	9.71	370.10	0.00
370.60	10.87	370.10	0.00
370.70	11.91	370.10	0.00
370.80	12.86	370.10	0.00
370.90	13.74	370.10	0.00
371.00	14.58	370.10	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-18.87	370.20	0.00
367.00	-18.87	370.20	0.00
367.10	-18.87	370.20	0.00
367.20	-18.87	370.20	0.00
367.30	-18.87	370.20	0.00
367.40	-18.87	370.20	0.00
367.50	-18.87	370.20	0.00
367.60	-18.87	370.20	0.00
367.70	-18.87	370.20	0.00
367.80	-18.87	370.20	0.00
367.90	-18.87	370.20	0.00
368.00	-18.87	370.20	0.00
368.10	-18.87	370.20	0.00
368.20	-18.87	370.20	0.00
368.30	-18.87	370.20	0.00
368.40	-18.87	370.20	0.00
368.50	-18.87	370.20	0.00
368.60	-18.76	370.20	0.00
368.70	-18.50	370.20	0.00
368.80	-18.08	370.20	0.00
368.90	-17.52	370.20	0.00
369.00	-16.83	370.20	0.00
369.10	-16.12	370.20	0.00
369.20	-15.37	370.20	0.00
369.30	-14.58	370.20	0.00
369.40	-13.74	370.20	0.00
369.50	-12.85	370.20	0.00
369.60	-11.90	370.20	0.00
369.70	-10.87	370.20	0.00
369.80	-9.73	370.20	0.00
369.90	-8.42	370.20	0.00
370.00	-6.87	370.20	0.00
370.10	-4.86	370.20	0.00
370.20	0.00	370.20	0.00
370.30	4.85	370.20	0.00
370.40	6.88	370.20	0.00
370.50	8.43	370.20	0.00
370.60	9.72	370.20	0.00
370.70	10.86	370.20	0.00
370.80	11.91	370.20	0.00
370.90	12.86	370.20	0.00
371.00	13.74	370.20	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 1 years
Label: OCS-A | Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-19.42	370.30	0.00
367.00	-19.42	370.30	0.00
367.10	-19.42	370.30	0.00
367.20	-19.42	370.30	0.00
367.30	-19.42	370.30	0.00
367.40	-19.42	370.30	0.00
367.50	-19.42	370.30	0.00
367.60	-19.42	370.30	0.00
367.70	-19.42	370.30	0.00
367.80	-19.42	370.30	0.00
367.90	-19.42	370.30	0.00
368.00	-19.42	370.30	0.00
368.10	-19.42	370.30	0.00
368.20	-19.42	370.30	0.00
368.30	-19.42	370.30	0.00
368.40	-19.42	370.30	0.00
368.50	-19.42	370.30	0.00
368.60	-19.34	370.30	0.00
368.70	-19.10	370.30	0.00
368.80	-18.73	370.30	0.00
368.90	-18.18	370.30	0.00
369.00	-17.52	370.30	0.00
369.10	-16.83	370.30	0.00
369.20	-16.12	370.30	0.00
369.30	-15.37	370.30	0.00
369.40	-14.58	370.30	0.00
369.50	-13.74	370.30	0.00
369.60	-12.85	370.30	0.00
369.70	-11.90	370.30	0.00
369.80	-10.87	370.30	0.00
369.90	-9.73	370.30	0.00
370.00	-8.42	370.30	0.00
370.10	-6.87	370.30	0.00
370.20	-4.86	370.30	0.00
370.30	0.00	370.30	0.00
370.40	4.87	370.30	0.00
370.50	6.89	370.30	0.00
370.60	8.40	370.30	0.00
370.70	9.71	370.30	0.00
370.80	10.87	370.30	0.00
370.90	11.90	370.30	0.00
371.00	12.85	370.30	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-19.94	370.40	0.00
367.00	-19.94	370.40	0.00
367.10	-19.94	370.40	0.00
367.20	-19.94	370.40	0.00
367.30	-19.94	370.40	0.00
367.40	-19.94	370.40	0.00
367.50	-19.94	370.40	0.00
367.60	-19.94	370.40	0.00
367.70	-19.94	370.40	0.00
367.80	-19.94	370.40	0.00
367.90	-19.94	370.40	0.00
368.00	-19.94	370.40	0.00
368.10	-19.94	370.40	0.00
368.20	-19.94	370.40	0.00
368.30	-19.94	370.40	0.00
368.40	-19.94	370.40	0.00
368.50	-19.94	370.40	0.00
368.60	-19.88	370.40	0.00
368.70	-19.68	370.40	0.00
368.80	-19.34	370.40	0.00
368.90	-18.82	370.40	0.00
369.00	-18.18	370.40	0.00
369.10	-17.52	370.40	0.00
369.20	-16.83	370.40	0.00
369.30	-16.12	370.40	0.00
369.40	-15.37	370.40	0.00
369.50	-14.58	370.40	0.00
369.60	-13.74	370.40	0.00
369.70	-12.85	370.40	0.00
369.80	-11.90	370.40	0.00
369.90	-10.87	370.40	0.00
370.00	-9.73	370.40	0.00
370.10	-8.42	370.40	0.00
370.20	-6.87	370.40	0.00
370.30	-4.86	370.40	0.00
370.40	0.00	370.40	0.00
370.50	4.88	370.40	0.00
370.60	6.88	370.40	0.00
370.70	8.42	370.40	0.00
370.80	9.72	370.40	0.00
370.90	10.87	370.40	0.00
371.00	11.90	370.40	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve — Return Event: 1 years
Label: OCS-A — Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-20.46	370.50	0.00
367.00	-20.46	370.50	0.00
367.10	-20.46	370.50	0.00
367.20	-20.46	370.50	0.00
367.30	-20.46	370.50	0.00
367.40	-20.46	370.50	0.00
367.50	-20.46	370.50	0.00
367.60	-20.46	370.50	0.00
367.70	-20.46	370.50	0.00
367.80	-20.46	370.50	0.00
367.90	-20.46	370.50	0.00
368.00	-20.46	370.50	0.00
368.10	-20.46	370.50	0.00
368.20	-20.46	370.50	0.00
368.30	-20.46	370.50	0.00
368.40	-20.46	370.50	0.00
368.50	-20.46	370.50	0.00
368.60	-20.43	370.50	0.00
368.70	-20.25	370.50	0.00
368.80	-19.93	370.50	0.00
368.90	-19.44	370.50	0.00
369.00	-18.82	370.50	0.00
369.10	-18.18	370.50	0.00
369.20	-17.52	370.50	0.00
369.30	-16.83	370.50	0.00
369.40	-16.12	370.50	0.00
369.50	-15.37	370.50	0.00
369.60	-14.58	370.50	0.00
369.70	-13.74	370.50	0.00
369.80	-12.85	370.50	0.00
369.90	-11.90	370.50	0.00
370.00	-10.87	370.50	0.00
370.10	-9.73	370.50	0.00
370.20	-8.42	370.50	0.00
370.30	-6.87	370.50	0.00
370.40	-4.86	370.50	0.00
370.50	0.00	370.50	0.00
370.60	4.86	370.50	0.00
370.70	6.87	370.50	0.00
370.80	8.43	370.50	0.00
370.90	9.71	370.50	0.00
371.00	10.86	370.50	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-20.96	370.60	0.00
367.00	-20.96	370.60	0.00
367.10	-20.96	370.60	0.00
367.20	-20.96	370.60	0.00
367.30	-20.96	370.60	0.00
367.40	-20.96	370.60	0.00
367.50	-20.96	370.60	0.00
367.60	-20.96	370.60	0.00
367.70	-20.96	370.60	0.00
367.80	-20.96	370.60	0.00
367.90	-20.96	370.60	0.00
368.00	-20.96	370.60	0.00
368.10	-20.96	370.60	0.00
368.20	-20.96	370.60	0.00
368.30	-20.96	370.60	0.00
368.40	-20.96	370.60	0.00
368.50	-20.96	370.60	0.00
368.60	-20.95	370.60	0.00
368.70	-20.80	370.60	0.00
368.80	-20.50	370.60	0.00
368.90	-20.04	370.60	0.00
369.00	-19.44	370.60	0.00
369.10	-18.82	370.60	0.00
369.20	-18.18	370.60	0.00
369.30	-17.52	370.60	0.00
369.40	-16.83	370.60	0.00
369.50	-16.12	370.60	0.00
369.60	-15.37	370.60	0.00
369.70	-14.58	370.60	0.00
369.80	-13.74	370.60	0.00
369.90	-12.85	370.60	0.00
370.00	-11.90	370.60	0.00
370.10	-10.87	370.60	0.00
370.20	-9.73	370.60	0.00
370.30	-8.42	370.60	0.00
370.40	-6.87	370.60	0.00
370.50	-4.86	370.60	0.00
370.60	0.00	370.60	0.00
370.70	4.88	370.60	0.00
370.80	6.87	370.60	0.00
370.90	8.43	370.60	0.00
371.00	9.73	370.60	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 1 years
Label: OCS-A | Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-21.46	370.70	0.00
367.00	-21.46	370.70	0.00
367.10	-21.46	370.70	0.00
367.20	-21.46	370.70	0.00
367.30	-21.46	370.70	0.00
367.40	-21.46	370.70	0.00
367.50	-21.46	370.70	0.00
367.60	-21.46	370.70	0.00
367.70	-21.46	370.70	0.00
367.80	-21.46	370.70	0.00
367.90	-21.46	370.70	0.00
368.00	-21.46	370.70	0.00
368.10	-21.46	370.70	0.00
368.20	-21.46	370.70	0.00
368.30	-21.46	370.70	0.00
368.40	-21.46	370.70	0.00
368.50	-21.46	370.70	0.00
368.60	-21.46	370.70	0.00
368.70	-21.33	370.70	0.00
368.80	-21.06	370.70	0.00
368.90	-20.62	370.70	0.00
369.00	-20.04	370.70	0.00
369.10	-19.44	370.70	0.00
369.20	-18.82	370.70	0.00
369.30	-18.18	370.70	0.00
369.40	-17.52	370.70	0.00
369.50	-16.83	370.70	0.00
369.60	-16.12	370.70	0.00
369.70	-15.37	370.70	0.00
369.80	-14.58	370.70	0.00
369.90	-13.74	370.70	0.00
370.00	-12.85	370.70	0.00
370.10	-11.90	370.70	0.00
370.20	-10.87	370.70	0.00
370.30	-9.73	370.70	0.00
370.40	-8.42	370.70	0.00
370.50	-6.87	370.70	0.00
370.60	-4.86	370.70	0.00
370.70	0.00	370.70	0.00
370.80	4.87	370.70	0.00
370.90	6.86	370.70	0.00
371.00	8.42	370.70	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 1 years
Label: OCS-A | Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-21.95	370.80	0.00
367.00	-21.95	370.80	0.00
367.10	-21.95	370.80	0.00
367.20	-21.95	370.80	0.00
367.30	-21.95	370.80	0.00
367.40	-21.95	370.80	0.00
367.50	-21.95	370.80	0.00
367.60	-21.95	370.80	0.00
367.70	-21.95	370.80	0.00
367.80	-21.95	370.80	0.00
367.90	-21.95	370.80	0.00
368.00	-21.95	370.80	0.00
368.10	-21.95	370.80	0.00
368.20	-21.95	370.80	0.00
368.30	-21.95	370.80	0.00
368.40	-21.95	370.80	0.00
368.50	-21.95	370.80	0.00
368.60	-21.95	370.80	0.00
368.70	-21.86	370.80	0.00
368.80	-21.61	370.80	0.00
368.90	-21.18	370.80	0.00
369.00	-20.62	370.80	0.00
369.10	-20.04	370.80	0.00
369.20	-19.44	370.80	0.00
369.30	-18.82	370.80	0.00
369.40	-18.18	370.80	0.00
369.50	-17.52	370.80	0.00
369.60	-16.83	370.80	0.00
369.70	-16.12	370.80	0.00
369.80	-15.37	370.80	0.00
369.90	-14.58	370.80	0.00
370.00	-13.74	370.80	0.00
370.10	-12.85	370.80	0.00
370.20	-11.90	370.80	0.00
370.30	-10.87	370.80	0.00
370.40	-9.73	370.80	0.00
370.50	-8.42	370.80	0.00
370.60	-6.87	370.80	0.00
370.70	-4.86	370.80	0.00
370.80	0.00	370.80	0.00
370.90	4.86	370.80	0.00
371.00	6.88	370.80	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-22.47	370.90	0.00
367.00	-22.47	370.90	0.00
367.10	-22.47	370.90	0.00
367.20	-22.47	370.90	0.00
367.30	-22.47	370.90	0.00
367.40	-22.47	370.90	0.00
367.50	-22.47	370.90	0.00
367.60	-22.47	370.90	0.00
367.70	-22.47	370.90	0.00
367.80	-22.47	370.90	0.00
367.90	-22.47	370.90	0.00
368.00	-22.47	370.90	0.00
368.10	-22.47	370.90	0.00
368.20	-22.47	370.90	0.00
368.30	-22.47	370.90	0.00
368.40	-22.47	370.90	0.00
368.50	-22.47	370.90	0.00
368.60	-22.47	370.90	0.00
368.70	-22.38	370.90	0.00
368.80	-22.14	370.90	0.00
368.90	-21.73	370.90	0.00
369.00	-21.18	370.90	0.00
369.10	-20.62	370.90	0.00
369.20	-20.04	370.90	0.00
369.30	-19.44	370.90	0.00
369.40	-18.82	370.90	0.00
369.50	-18.18	370.90	0.00
369.60	-17.52	370.90	0.00
369.70	-16.83	370.90	0.00
369.80	-16.12	370.90	0.00
369.90	-15.37	370.90	0.00
370.00	-14.58	370.90	0.00
370.10	-13.74	370.90	0.00
370.20	-12.85	370.90	0.00
370.30	-11.90	370.90	0.00
370.40	-10.87	370.90	0.00
370.50	-9.73	370.90	0.00
370.60	-8.42	370.90	0.00
370.70	-6.87	370.90	0.00
370.80	-4.86	370.90	0.00
370.90	0.00	370.90	0.00
371.00	4.86	370.90	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-22.94	371.00	0.00
367.00	-22.94	371.00	0.00
367.10	-22.94	371.00	0.00
367.20	-22.94	371.00	0.00
367.30	-22.94	371.00	0.00
367.40	-22.94	371.00	0.00
367.50	-22.94	371.00	0.00
367.60	-22.94	371.00	0.00
367.70	-22.94	371.00	0.00
367.80	-22.94	371.00	0.00
367.90	-22.94	371.00	0.00
368.00	-22.94	371.00	0.00
368.10	-22.94	371.00	0.00
368.20	-22.94	371.00	0.00
368.30	-22.94	371.00	0.00
368.40	-22.94	371.00	0.00
368.50	-22.94	371.00	0.00
368.60	-22.94	371.00	0.00
368.70	-22.88	371.00	0.00
368.80	-22.66	371.00	0.00
368.90	-22.27	371.00	0.00
369.00	-21.73	371.00	0.00
369.10	-21.18	371.00	0.00
369.20	-20.62	371.00	0.00
369.30	-20.04	371.00	0.00
369.40	-19.44	371.00	0.00
369.50	-18.82	371.00	0.00
369.60	-18.18	371.00	0.00
369.70	-17.52	371.00	0.00
369.80	-16.83	371.00	0.00
369.90	-16.12	371.00	0.00
370.00	-15.37	371.00	0.00
370.10	-14.58	371.00	0.00
370.20	-13.74	371.00	0.00
370.30	-12.85	371.00	0.00
370.40	-11.90	371.00	0.00
370.50	-10.87	371.00	0.00
370.60	-9.73	371.00	0.00
370.70	-8.42	371.00	0.00
370.80	-6.87	371.00	0.00
370.90	-4.86	371.00	0.00
371.00	0.00	371.00	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve | Return Event: 1 years
Label: OCS-A | Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Composite Outflow Summary

Contributing Structures
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Subsection: Outlet Input Data
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Requested Pond Water Surface Elevations	
Minimum (Headwater)	366.90 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	371.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Culvert-Circular	Culvert - 1	Forward + Reverse	TW	366.90	371.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Culvert - 1 Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	24.0 in
Length	120.00 ft
Length (Computed Barrel)	120.00 ft
Slope (Computed)	0.003 ft/ft

Outlet Control Data	
Manning's n	0.013
Ke	0.200
Kb	0.012
Kr	0.000
Convergence Tolerance	0.00 ft

Inlet Control Data	
Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	1.094
T2 ratio (HW/D)	1.196
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...

T1 Elevation	369.09 ft	T1 Flow	15.55 ft³/s
T2 Elevation	369.29 ft	T2 Flow	17.77 ft³/s

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	0.00	366.50	0.00
367.00	0.04	366.50	0.00
367.10	0.17	366.50	0.00
367.20	0.39	366.50	0.00
367.30	0.68	366.50	0.00
367.40	1.05	366.50	0.00
367.50	1.50	366.50	0.00
367.60	2.01	366.50	0.00
367.70	2.59	366.50	0.00
367.80	3.24	366.50	0.00
367.90	3.93	366.50	0.00
368.00	4.70	366.50	0.00
368.10	5.50	366.50	0.00
368.20	6.34	366.50	0.00
368.30	7.21	366.50	0.00
368.40	8.14	366.50	0.00
368.50	9.06	366.50	0.00
368.60	10.00	366.50	0.00
368.70	10.95	366.50	0.00
368.80	11.90	366.50	0.00
368.90	12.82	366.50	0.00
369.00	13.75	366.50	0.00
369.10	14.62	366.50	0.00
369.20	15.45	366.50	0.00
369.30	16.24	366.50	0.00
369.40	16.93	366.50	0.00
369.50	17.51	366.50	0.00
369.60	18.03	366.50	0.00
369.70	18.54	366.50	0.00
369.80	19.06	366.50	0.00
369.90	19.57	366.50	0.00
370.00	20.07	366.50	0.00
370.10	20.58	366.50	0.00
370.20	21.07	366.50	0.00
370.30	21.56	366.50	0.00
370.40	22.04	366.50	0.00
370.50	22.51	366.50	0.00
370.60	22.99	366.50	0.00
370.70	23.46	366.50	0.00
370.80	23.91	366.50	0.00
370.90	24.36	366.50	0.00
371.00	24.81	366.50	0.00

Contributing Structures
None Contributing

Subsection: Composite Rating Curve Return Event: 10 years
Label: OCS-A Storm Event: 10
Scenario: Proposed Conditions 10 Year Storm

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	0.00	366.60	0.00
367.00	0.04	366.60	0.00
367.10	0.17	366.60	0.00
367.20	0.39	366.60	0.00
367.30	0.68	366.60	0.00
367.40	1.05	366.60	0.00
367.50	1.50	366.60	0.00
367.60	2.01	366.60	0.00
367.70	2.59	366.60	0.00
367.80	3.24	366.60	0.00
367.90	3.93	366.60	0.00
368.00	4.70	366.60	0.00
368.10	5.50	366.60	0.00
368.20	6.34	366.60	0.00
368.30	7.21	366.60	0.00
368.40	8.14	366.60	0.00
368.50	9.06	366.60	0.00
368.60	10.00	366.60	0.00
368.70	10.95	366.60	0.00
368.80	11.90	366.60	0.00
368.90	12.82	366.60	0.00
369.00	13.75	366.60	0.00
369.10	14.62	366.60	0.00
369.20	15.45	366.60	0.00
369.30	16.24	366.60	0.00
369.40	16.93	366.60	0.00
369.50	17.51	366.60	0.00
369.60	18.03	366.60	0.00
369.70	18.54	366.60	0.00
369.80	19.06	366.60	0.00
369.90	19.57	366.60	0.00
370.00	20.07	366.60	0.00
370.10	20.58	366.60	0.00
370.20	21.07	366.60	0.00
370.30	21.56	366.60	0.00
370.40	22.04	366.60	0.00
370.50	22.51	366.60	0.00
370.60	22.99	366.60	0.00
370.70	23.46	366.60	0.00
370.80	23.91	366.60	0.00
370.90	24.36	366.60	0.00
371.00	24.81	366.60	0.00

Contributing Structures
None Contributing

Subsection: Composite Rating Curve | Return Event: 10 years
Label: OCS-A | Storm Event: 10
Scenario: Proposed Conditions 10 Year Storm

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 10 years
Label: OCS-A | Storm Event: 10
Scenario: Proposed Conditions 10 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	0.00	366.70	0.00
367.00	0.04	366.70	0.00
367.10	0.17	366.70	0.00
367.20	0.39	366.70	0.00
367.30	0.68	366.70	0.00
367.40	1.05	366.70	0.00
367.50	1.50	366.70	0.00
367.60	2.01	366.70	0.00
367.70	2.59	366.70	0.00
367.80	3.24	366.70	0.00
367.90	3.93	366.70	0.00
368.00	4.70	366.70	0.00
368.10	5.50	366.70	0.00
368.20	6.34	366.70	0.00
368.30	7.21	366.70	0.00
368.40	8.14	366.70	0.00
368.50	9.06	366.70	0.00
368.60	10.00	366.70	0.00
368.70	10.95	366.70	0.00
368.80	11.90	366.70	0.00
368.90	12.82	366.70	0.00
369.00	13.75	366.70	0.00
369.10	14.62	366.70	0.00
369.20	15.45	366.70	0.00
369.30	16.24	366.70	0.00
369.40	16.93	366.70	0.00
369.50	17.51	366.70	0.00
369.60	18.03	366.70	0.00
369.70	18.54	366.70	0.00
369.80	19.06	366.70	0.00
369.90	19.57	366.70	0.00
370.00	20.07	366.70	0.00
370.10	20.58	366.70	0.00
370.20	21.07	366.70	0.00
370.30	21.56	366.70	0.00
370.40	22.04	366.70	0.00
370.50	22.51	366.70	0.00
370.60	22.99	366.70	0.00
370.70	23.46	366.70	0.00
370.80	23.91	366.70	0.00
370.90	24.36	366.70	0.00
371.00	24.81	366.70	0.00

Contributing Structures
None Contributing

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	0.00	366.80	0.00
367.00	0.04	366.80	0.00
367.10	0.17	366.80	0.00
367.20	0.39	366.80	0.00
367.30	0.68	366.80	0.00
367.40	1.05	366.80	0.00
367.50	1.50	366.80	0.00
367.60	2.01	366.80	0.00
367.70	2.59	366.80	0.00
367.80	3.24	366.80	0.00
367.90	3.93	366.80	0.00
368.00	4.70	366.80	0.00
368.10	5.50	366.80	0.00
368.20	6.34	366.80	0.00
368.30	7.21	366.80	0.00
368.40	8.14	366.80	0.00
368.50	9.06	366.80	0.00
368.60	10.00	366.80	0.00
368.70	10.95	366.80	0.00
368.80	11.90	366.80	0.00
368.90	12.82	366.80	0.00
369.00	13.75	366.80	0.00
369.10	14.62	366.80	0.00
369.20	15.45	366.80	0.00
369.30	16.24	366.80	0.00
369.40	16.93	366.80	0.00
369.50	17.51	366.80	0.00
369.60	18.03	366.80	0.00
369.70	18.54	366.80	0.00
369.80	19.06	366.80	0.00
369.90	19.57	366.80	0.00
370.00	20.07	366.80	0.00
370.10	20.58	366.80	0.00
370.20	21.07	366.80	0.00
370.30	21.56	366.80	0.00
370.40	22.04	366.80	0.00
370.50	22.51	366.80	0.00
370.60	22.99	366.80	0.00
370.70	23.46	366.80	0.00
370.80	23.91	366.80	0.00
370.90	24.36	366.80	0.00
371.00	24.81	366.80	0.00

Contributing Structures
None Contributing

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 10 years
Label: OCS-A | Storm Event: 10
Scenario: Proposed Conditions 10 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	0.00	366.90	0.00
367.00	0.04	366.90	0.00
367.10	0.17	366.90	0.00
367.20	0.38	366.90	0.00
367.30	0.68	366.90	0.00
367.40	1.06	366.90	0.00
367.50	1.50	366.90	0.00
367.60	2.01	366.90	0.00
367.70	2.59	366.90	0.00
367.80	3.24	366.90	0.00
367.90	3.93	366.90	0.00
368.00	4.70	366.90	0.00
368.10	5.50	366.90	0.00
368.20	6.34	366.90	0.00
368.30	7.21	366.90	0.00
368.40	8.14	366.90	0.00
368.50	9.06	366.90	0.00
368.60	10.00	366.90	0.00
368.70	10.95	366.90	0.00
368.80	11.90	366.90	0.00
368.90	12.82	366.90	0.00
369.00	13.75	366.90	0.00
369.10	14.62	366.90	0.00
369.20	15.45	366.90	0.00
369.30	16.24	366.90	0.00
369.40	16.93	366.90	0.00
369.50	17.51	366.90	0.00
369.60	18.03	366.90	0.00
369.70	18.54	366.90	0.00
369.80	19.06	366.90	0.00
369.90	19.57	366.90	0.00
370.00	20.07	366.90	0.00
370.10	20.58	366.90	0.00
370.20	21.07	366.90	0.00
370.30	21.56	366.90	0.00
370.40	22.04	366.90	0.00
370.50	22.51	366.90	0.00
370.60	22.99	366.90	0.00
370.70	23.46	366.90	0.00
370.80	23.91	366.90	0.00
370.90	24.36	366.90	0.00
371.00	24.81	366.90	0.00

Contributing Structures
None Contributing

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-0.03	367.00	0.00
367.00	0.00	367.00	0.00
367.10	0.17	367.00	0.00
367.20	0.39	367.00	0.00
367.30	0.68	367.00	0.00
367.40	1.05	367.00	0.00
367.50	1.50	367.00	0.00
367.60	2.02	367.00	0.00
367.70	2.59	367.00	0.00
367.80	3.24	367.00	0.00
367.90	3.93	367.00	0.00
368.00	4.70	367.00	0.00
368.10	5.50	367.00	0.00
368.20	6.34	367.00	0.00
368.30	7.21	367.00	0.00
368.40	8.14	367.00	0.00
368.50	9.06	367.00	0.00
368.60	10.00	367.00	0.00
368.70	10.95	367.00	0.00
368.80	11.90	367.00	0.00
368.90	12.82	367.00	0.00
369.00	13.75	367.00	0.00
369.10	14.62	367.00	0.00
369.20	15.45	367.00	0.00
369.30	16.24	367.00	0.00
369.40	16.93	367.00	0.00
369.50	17.51	367.00	0.00
369.60	18.03	367.00	0.00
369.70	18.54	367.00	0.00
369.80	19.06	367.00	0.00
369.90	19.57	367.00	0.00
370.00	20.07	367.00	0.00
370.10	20.58	367.00	0.00
370.20	21.07	367.00	0.00
370.30	21.56	367.00	0.00
370.40	22.04	367.00	0.00
370.50	22.51	367.00	0.00
370.60	22.99	367.00	0.00
370.70	23.46	367.00	0.00
370.80	23.91	367.00	0.00
370.90	24.36	367.00	0.00
371.00	24.81	367.00	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 10 years
Label: OCS-A | Storm Event: 10
Scenario: Proposed Conditions 10 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-0.14	367.10	0.00
367.00	-0.14	367.10	0.00
367.10	0.00	367.10	0.00
367.20	0.38	367.10	0.00
367.30	0.68	367.10	0.00
367.40	1.05	367.10	0.00
367.50	1.50	367.10	0.00
367.60	2.01	367.10	0.00
367.70	2.59	367.10	0.00
367.80	3.24	367.10	0.00
367.90	3.93	367.10	0.00
368.00	4.70	367.10	0.00
368.10	5.50	367.10	0.00
368.20	6.34	367.10	0.00
368.30	7.21	367.10	0.00
368.40	8.14	367.10	0.00
368.50	9.06	367.10	0.00
368.60	10.00	367.10	0.00
368.70	10.95	367.10	0.00
368.80	11.90	367.10	0.00
368.90	12.82	367.10	0.00
369.00	13.75	367.10	0.00
369.10	14.62	367.10	0.00
369.20	15.45	367.10	0.00
369.30	16.24	367.10	0.00
369.40	16.93	367.10	0.00
369.50	17.51	367.10	0.00
369.60	18.03	367.10	0.00
369.70	18.54	367.10	0.00
369.80	19.06	367.10	0.00
369.90	19.57	367.10	0.00
370.00	20.07	367.10	0.00
370.10	20.58	367.10	0.00
370.20	21.07	367.10	0.00
370.30	21.56	367.10	0.00
370.40	22.04	367.10	0.00
370.50	22.51	367.10	0.00
370.60	22.99	367.10	0.00
370.70	23.46	367.10	0.00
370.80	23.91	367.10	0.00
370.90	24.36	367.10	0.00
371.00	24.81	367.10	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 10 years
Label: OCS-A | Storm Event: 10
Scenario: Proposed Conditions 10 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-0.32	367.20	0.00
367.00	-0.32	367.20	0.00
367.10	-0.32	367.20	0.00
367.20	0.00	367.20	0.00
367.30	0.66	367.20	0.00
367.40	1.05	367.20	0.00
367.50	1.50	367.20	0.00
367.60	2.01	367.20	0.00
367.70	2.59	367.20	0.00
367.80	3.24	367.20	0.00
367.90	3.95	367.20	0.00
368.00	4.70	367.20	0.00
368.10	5.50	367.20	0.00
368.20	6.34	367.20	0.00
368.30	7.21	367.20	0.00
368.40	8.14	367.20	0.00
368.50	9.06	367.20	0.00
368.60	10.00	367.20	0.00
368.70	10.95	367.20	0.00
368.80	11.90	367.20	0.00
368.90	12.82	367.20	0.00
369.00	13.75	367.20	0.00
369.10	14.62	367.20	0.00
369.20	15.45	367.20	0.00
369.30	16.24	367.20	0.00
369.40	16.93	367.20	0.00
369.50	17.51	367.20	0.00
369.60	18.03	367.20	0.00
369.70	18.54	367.20	0.00
369.80	19.06	367.20	0.00
369.90	19.57	367.20	0.00
370.00	20.07	367.20	0.00
370.10	20.58	367.20	0.00
370.20	21.07	367.20	0.00
370.30	21.56	367.20	0.00
370.40	22.04	367.20	0.00
370.50	22.51	367.20	0.00
370.60	22.99	367.20	0.00
370.70	23.46	367.20	0.00
370.80	23.91	367.20	0.00
370.90	24.36	367.20	0.00
371.00	24.81	367.20	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-0.58	367.30	0.00
367.00	-0.58	367.30	0.00
367.10	-0.58	367.30	0.00
367.20	-0.56	367.30	0.00
367.30	0.00	367.30	0.00
367.40	0.98	367.30	0.00
367.50	1.49	367.30	0.00
367.60	2.01	367.30	0.00
367.70	2.59	367.30	0.00
367.80	3.24	367.30	0.00
367.90	3.94	367.30	0.00
368.00	4.68	367.30	0.00
368.10	5.50	367.30	0.00
368.20	6.34	367.30	0.00
368.30	7.21	367.30	0.00
368.40	8.14	367.30	0.00
368.50	9.06	367.30	0.00
368.60	10.00	367.30	0.00
368.70	10.95	367.30	0.00
368.80	11.90	367.30	0.00
368.90	12.82	367.30	0.00
369.00	13.75	367.30	0.00
369.10	14.62	367.30	0.00
369.20	15.45	367.30	0.00
369.30	16.24	367.30	0.00
369.40	16.93	367.30	0.00
369.50	17.51	367.30	0.00
369.60	18.03	367.30	0.00
369.70	18.54	367.30	0.00
369.80	19.06	367.30	0.00
369.90	19.57	367.30	0.00
370.00	20.07	367.30	0.00
370.10	20.58	367.30	0.00
370.20	21.07	367.30	0.00
370.30	21.56	367.30	0.00
370.40	22.04	367.30	0.00
370.50	22.51	367.30	0.00
370.60	22.99	367.30	0.00
370.70	23.46	367.30	0.00
370.80	23.91	367.30	0.00
370.90	24.36	367.30	0.00
371.00	24.81	367.30	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 10 years
Label: OCS-A | Storm Event: 10
Scenario: Proposed Conditions 10 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-0.90	367.40	0.00
367.00	-0.90	367.40	0.00
367.10	-0.90	367.40	0.00
367.20	-0.90	367.40	0.00
367.30	-0.83	367.40	0.00
367.40	0.00	367.40	0.00
367.50	1.33	367.40	0.00
367.60	1.97	367.40	0.00
367.70	2.58	367.40	0.00
367.80	3.24	367.40	0.00
367.90	3.94	367.40	0.00
368.00	4.69	367.40	0.00
368.10	5.50	367.40	0.00
368.20	6.34	367.40	0.00
368.30	7.21	367.40	0.00
368.40	8.14	367.40	0.00
368.50	9.06	367.40	0.00
368.60	10.00	367.40	0.00
368.70	10.95	367.40	0.00
368.80	11.90	367.40	0.00
368.90	12.82	367.40	0.00
369.00	13.75	367.40	0.00
369.10	14.62	367.40	0.00
369.20	15.45	367.40	0.00
369.30	16.24	367.40	0.00
369.40	16.93	367.40	0.00
369.50	17.51	367.40	0.00
369.60	18.03	367.40	0.00
369.70	18.54	367.40	0.00
369.80	19.06	367.40	0.00
369.90	19.57	367.40	0.00
370.00	20.07	367.40	0.00
370.10	20.58	367.40	0.00
370.20	21.07	367.40	0.00
370.30	21.56	367.40	0.00
370.40	22.04	367.40	0.00
370.50	22.51	367.40	0.00
370.60	22.99	367.40	0.00
370.70	23.46	367.40	0.00
370.80	23.91	367.40	0.00
370.90	24.36	367.40	0.00
371.00	24.81	367.40	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve | Return Event: 10 years
Label: OCS-A | Storm Event: 10
Scenario: Proposed Conditions 10 Year Storm

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-1.29	367.50	0.00
367.00	-1.29	367.50	0.00
367.10	-1.29	367.50	0.00
367.20	-1.29	367.50	0.00
367.30	-1.29	367.50	0.00
367.40	-1.14	367.50	0.00
367.50	0.00	367.50	0.00
367.60	1.71	367.50	0.00
367.70	2.50	367.50	0.00
367.80	3.21	367.50	0.00
367.90	3.93	367.50	0.00
368.00	4.68	367.50	0.00
368.10	5.50	367.50	0.00
368.20	6.34	367.50	0.00
368.30	7.21	367.50	0.00
368.40	8.14	367.50	0.00
368.50	9.06	367.50	0.00
368.60	10.00	367.50	0.00
368.70	10.95	367.50	0.00
368.80	11.90	367.50	0.00
368.90	12.82	367.50	0.00
369.00	13.75	367.50	0.00
369.10	14.62	367.50	0.00
369.20	15.45	367.50	0.00
369.30	16.24	367.50	0.00
369.40	16.93	367.50	0.00
369.50	17.51	367.50	0.00
369.60	18.03	367.50	0.00
369.70	18.54	367.50	0.00
369.80	19.06	367.50	0.00
369.90	19.57	367.50	0.00
370.00	20.07	367.50	0.00
370.10	20.58	367.50	0.00
370.20	21.07	367.50	0.00
370.30	21.56	367.50	0.00
370.40	22.04	367.50	0.00
370.50	22.51	367.50	0.00
370.60	22.99	367.50	0.00
370.70	23.46	367.50	0.00
370.80	23.91	367.50	0.00
370.90	24.36	367.50	0.00
371.00	24.81	367.50	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve | Return Event: 10 years
Label: OCS-A | Storm Event: 10
Scenario: Proposed Conditions 10 Year Storm

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 10 years
Label: OCS-A | Storm Event: 10
Scenario: Proposed Conditions 10 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-1.74	367.60	0.00
367.00	-1.74	367.60	0.00
367.10	-1.74	367.60	0.00
367.20	-1.74	367.60	0.00
367.30	-1.74	367.60	0.00
367.40	-1.73	367.60	0.00
367.50	-1.48	367.60	0.00
367.60	0.00	367.60	0.00
367.70	2.09	367.60	0.00
367.80	3.05	367.60	0.00
367.90	3.86	367.60	0.00
368.00	4.66	367.60	0.00
368.10	5.47	367.60	0.00
368.20	6.34	367.60	0.00
368.30	7.21	367.60	0.00
368.40	8.12	367.60	0.00
368.50	9.06	367.60	0.00
368.60	10.00	367.60	0.00
368.70	10.95	367.60	0.00
368.80	11.90	367.60	0.00
368.90	12.82	367.60	0.00
369.00	13.75	367.60	0.00
369.10	14.62	367.60	0.00
369.20	15.45	367.60	0.00
369.30	16.24	367.60	0.00
369.40	16.93	367.60	0.00
369.50	17.51	367.60	0.00
369.60	18.03	367.60	0.00
369.70	18.54	367.60	0.00
369.80	19.06	367.60	0.00
369.90	19.57	367.60	0.00
370.00	20.07	367.60	0.00
370.10	20.58	367.60	0.00
370.20	21.07	367.60	0.00
370.30	21.56	367.60	0.00
370.40	22.04	367.60	0.00
370.50	22.51	367.60	0.00
370.60	22.99	367.60	0.00
370.70	23.46	367.60	0.00
370.80	23.91	367.60	0.00
370.90	24.36	367.60	0.00
371.00	24.81	367.60	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 10 years
Label: OCS-A | Storm Event: 10
Scenario: Proposed Conditions 10 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-2.25	367.70	0.00
367.00	-2.25	367.70	0.00
367.10	-2.25	367.70	0.00
367.20	-2.25	367.70	0.00
367.30	-2.25	367.70	0.00
367.40	-2.25	367.70	0.00
367.50	-2.19	367.70	0.00
367.60	-1.81	367.70	0.00
367.70	0.00	367.70	0.00
367.80	2.48	367.70	0.00
367.90	3.59	367.70	0.00
368.00	4.54	367.70	0.00
368.10	5.43	367.70	0.00
368.20	6.30	367.70	0.00
368.30	7.20	367.70	0.00
368.40	8.12	367.70	0.00
368.50	9.04	367.70	0.00
368.60	9.99	367.70	0.00
368.70	10.95	367.70	0.00
368.80	11.90	367.70	0.00
368.90	12.82	367.70	0.00
369.00	13.75	367.70	0.00
369.10	14.62	367.70	0.00
369.20	15.45	367.70	0.00
369.30	16.24	367.70	0.00
369.40	16.93	367.70	0.00
369.50	17.51	367.70	0.00
369.60	18.03	367.70	0.00
369.70	18.54	367.70	0.00
369.80	19.06	367.70	0.00
369.90	19.57	367.70	0.00
370.00	20.07	367.70	0.00
370.10	20.58	367.70	0.00
370.20	21.07	367.70	0.00
370.30	21.56	367.70	0.00
370.40	22.04	367.70	0.00
370.50	22.51	367.70	0.00
370.60	22.99	367.70	0.00
370.70	23.46	367.70	0.00
370.80	23.91	367.70	0.00
370.90	24.36	367.70	0.00
371.00	24.81	367.70	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 10 years
Label: OCS-A | Storm Event: 10
Scenario: Proposed Conditions 10 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-2.81	367.80	0.00
367.00	-2.81	367.80	0.00
367.10	-2.81	367.80	0.00
367.20	-2.81	367.80	0.00
367.30	-2.81	367.80	0.00
367.40	-2.81	367.80	0.00
367.50	-2.81	367.80	0.00
367.60	-2.68	367.80	0.00
367.70	-2.17	367.80	0.00
367.80	0.00	367.80	0.00
367.90	2.88	367.80	0.00
368.00	4.17	367.80	0.00
368.10	5.22	367.80	0.00
368.20	6.18	367.80	0.00
368.30	7.12	367.80	0.00
368.40	8.07	367.80	0.00
368.50	9.02	367.80	0.00
368.60	9.99	367.80	0.00
368.70	10.93	367.80	0.00
368.80	11.90	367.80	0.00
368.90	12.82	367.80	0.00
369.00	13.75	367.80	0.00
369.10	14.62	367.80	0.00
369.20	15.45	367.80	0.00
369.30	16.24	367.80	0.00
369.40	16.93	367.80	0.00
369.50	17.51	367.80	0.00
369.60	18.03	367.80	0.00
369.70	18.54	367.80	0.00
369.80	19.06	367.80	0.00
369.90	19.57	367.80	0.00
370.00	20.07	367.80	0.00
370.10	20.58	367.80	0.00
370.20	21.07	367.80	0.00
370.30	21.56	367.80	0.00
370.40	22.04	367.80	0.00
370.50	22.51	367.80	0.00
370.60	22.99	367.80	0.00
370.70	23.46	367.80	0.00
370.80	23.91	367.80	0.00
370.90	24.36	367.80	0.00
371.00	24.81	367.80	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve Return Event: 10 years
Label: OCS-A Storm Event: 10
Scenario: Proposed Conditions 10 Year Storm

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-3.43	367.90	0.00
367.00	-3.43	367.90	0.00
367.10	-3.43	367.90	0.00
367.20	-3.43	367.90	0.00
367.30	-3.43	367.90	0.00
367.40	-3.43	367.90	0.00
367.50	-3.43	367.90	0.00
367.60	-3.42	367.90	0.00
367.70	-3.18	367.90	0.00
367.80	-2.53	367.90	0.00
367.90	0.00	367.90	0.00
368.00	3.25	367.90	0.00
368.10	4.71	367.90	0.00
368.20	5.86	367.90	0.00
368.30	6.93	367.90	0.00
368.40	7.93	367.90	0.00
368.50	8.93	367.90	0.00
368.60	9.91	367.90	0.00
368.70	10.90	367.90	0.00
368.80	11.86	367.90	0.00
368.90	12.81	367.90	0.00
369.00	13.75	367.90	0.00
369.10	14.62	367.90	0.00
369.20	15.45	367.90	0.00
369.30	16.24	367.90	0.00
369.40	16.93	367.90	0.00
369.50	17.51	367.90	0.00
369.60	18.03	367.90	0.00
369.70	18.54	367.90	0.00
369.80	19.06	367.90	0.00
369.90	19.57	367.90	0.00
370.00	20.07	367.90	0.00
370.10	20.58	367.90	0.00
370.20	21.07	367.90	0.00
370.30	21.56	367.90	0.00
370.40	22.04	367.90	0.00
370.50	22.51	367.90	0.00
370.60	22.99	367.90	0.00
370.70	23.46	367.90	0.00
370.80	23.91	367.90	0.00
370.90	24.36	367.90	0.00
371.00	24.81	367.90	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-4.10	368.00	0.00
367.00	-4.10	368.00	0.00
367.10	-4.10	368.00	0.00
367.20	-4.10	368.00	0.00
367.30	-4.10	368.00	0.00
367.40	-4.10	368.00	0.00
367.50	-4.10	368.00	0.00
367.60	-4.10	368.00	0.00
367.70	-4.03	368.00	0.00
367.80	-3.70	368.00	0.00
367.90	-2.91	368.00	0.00
368.00	0.00	368.00	0.00
368.10	3.64	368.00	0.00
368.20	5.22	368.00	0.00
368.30	6.49	368.00	0.00
368.40	7.64	368.00	0.00
368.50	8.72	368.00	0.00
368.60	9.76	368.00	0.00
368.70	10.77	368.00	0.00
368.80	11.77	368.00	0.00
368.90	12.74	368.00	0.00
369.00	13.69	368.00	0.00
369.10	14.59	368.00	0.00
369.20	15.44	368.00	0.00
369.30	16.24	368.00	0.00
369.40	16.93	368.00	0.00
369.50	17.51	368.00	0.00
369.60	18.03	368.00	0.00
369.70	18.54	368.00	0.00
369.80	19.06	368.00	0.00
369.90	19.57	368.00	0.00
370.00	20.07	368.00	0.00
370.10	20.58	368.00	0.00
370.20	21.07	368.00	0.00
370.30	21.56	368.00	0.00
370.40	22.04	368.00	0.00
370.50	22.51	368.00	0.00
370.60	22.99	368.00	0.00
370.70	23.46	368.00	0.00
370.80	23.91	368.00	0.00
370.90	24.36	368.00	0.00
371.00	24.81	368.00	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-4.79	368.10	0.00
367.00	-4.79	368.10	0.00
367.10	-4.79	368.10	0.00
367.20	-4.79	368.10	0.00
367.30	-4.79	368.10	0.00
367.40	-4.79	368.10	0.00
367.50	-4.79	368.10	0.00
367.60	-4.79	368.10	0.00
367.70	-4.79	368.10	0.00
367.80	-4.65	368.10	0.00
367.90	-4.20	368.10	0.00
368.00	-3.24	368.10	0.00
368.10	0.00	368.10	0.00
368.20	4.00	368.10	0.00
368.30	5.70	368.10	0.00
368.40	7.09	368.10	0.00
368.50	8.33	368.10	0.00
368.60	9.45	368.10	0.00
368.70	10.54	368.10	0.00
368.80	11.57	368.10	0.00
368.90	12.58	368.10	0.00
369.00	13.55	368.10	0.00
369.10	14.48	368.10	0.00
369.20	15.35	368.10	0.00
369.30	16.16	368.10	0.00
369.40	16.88	368.10	0.00
369.50	17.48	368.10	0.00
369.60	18.01	368.10	0.00
369.70	18.54	368.10	0.00
369.80	19.06	368.10	0.00
369.90	19.57	368.10	0.00
370.00	20.07	368.10	0.00
370.10	20.58	368.10	0.00
370.20	21.07	368.10	0.00
370.30	21.56	368.10	0.00
370.40	22.04	368.10	0.00
370.50	22.51	368.10	0.00
370.60	22.99	368.10	0.00
370.70	23.46	368.10	0.00
370.80	23.91	368.10	0.00
370.90	24.36	368.10	0.00
371.00	24.81	368.10	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-5.53	368.20	0.00
367.00	-5.53	368.20	0.00
367.10	-5.53	368.20	0.00
367.20	-5.53	368.20	0.00
367.30	-5.53	368.20	0.00
367.40	-5.53	368.20	0.00
367.50	-5.53	368.20	0.00
367.60	-5.53	368.20	0.00
367.70	-5.53	368.20	0.00
367.80	-5.51	368.20	0.00
367.90	-5.25	368.20	0.00
368.00	-4.70	368.20	0.00
368.10	-3.60	368.20	0.00
368.20	0.00	368.20	0.00
368.30	4.28	368.20	0.00
368.40	6.17	368.20	0.00
368.50	7.63	368.20	0.00
368.60	8.93	368.20	0.00
368.70	10.11	368.20	0.00
368.80	11.23	368.20	0.00
368.90	12.29	368.20	0.00
369.00	13.29	368.20	0.00
369.10	14.25	368.20	0.00
369.20	15.14	368.20	0.00
369.30	15.96	368.20	0.00
369.40	16.69	368.20	0.00
369.50	17.28	368.20	0.00
369.60	17.85	368.20	0.00
369.70	18.41	368.20	0.00
369.80	18.96	368.20	0.00
369.90	19.50	368.20	0.00
370.00	20.03	368.20	0.00
370.10	20.55	368.20	0.00
370.20	21.06	368.20	0.00
370.30	21.55	368.20	0.00
370.40	22.04	368.20	0.00
370.50	22.52	368.20	0.00
370.60	22.99	368.20	0.00
370.70	23.46	368.20	0.00
370.80	23.91	368.20	0.00
370.90	24.36	368.20	0.00
371.00	24.81	368.20	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Contributing Structures
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Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-6.29	368.30	0.00
367.00	-6.29	368.30	0.00
367.10	-6.29	368.30	0.00
367.20	-6.29	368.30	0.00
367.30	-6.29	368.30	0.00
367.40	-6.29	368.30	0.00
367.50	-6.29	368.30	0.00
367.60	-6.29	368.30	0.00
367.70	-6.29	368.30	0.00
367.80	-6.29	368.30	0.00
367.90	-6.20	368.30	0.00
368.00	-5.84	368.30	0.00
368.10	-5.17	368.30	0.00
368.20	-3.91	368.30	0.00
368.30	0.00	368.30	0.00
368.40	4.58	368.30	0.00
368.50	6.55	368.30	0.00
368.60	8.10	368.30	0.00
368.70	9.45	368.30	0.00
368.80	10.66	368.30	0.00
368.90	11.81	368.30	0.00
369.00	12.86	368.30	0.00
369.10	13.85	368.30	0.00
369.20	14.76	368.30	0.00
369.30	15.59	368.30	0.00
369.40	16.31	368.30	0.00
369.50	16.90	368.30	0.00
369.60	17.51	368.30	0.00
369.70	18.09	368.30	0.00
369.80	18.67	368.30	0.00
369.90	19.26	368.30	0.00
370.00	19.81	368.30	0.00
370.10	20.36	368.30	0.00
370.20	20.90	368.30	0.00
370.30	21.42	368.30	0.00
370.40	21.93	368.30	0.00
370.50	22.43	368.30	0.00
370.60	22.93	368.30	0.00
370.70	23.41	368.30	0.00
370.80	23.88	368.30	0.00
370.90	24.35	368.30	0.00
371.00	24.79	368.30	0.00

Contributing Structures
Culvert - 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-7.08	368.40	0.00
367.00	-7.08	368.40	0.00
367.10	-7.08	368.40	0.00
367.20	-7.08	368.40	0.00
367.30	-7.08	368.40	0.00
367.40	-7.08	368.40	0.00
367.50	-7.08	368.40	0.00
367.60	-7.08	368.40	0.00
367.70	-7.08	368.40	0.00
367.80	-7.08	368.40	0.00
367.90	-7.06	368.40	0.00
368.00	-6.87	368.40	0.00
368.10	-6.41	368.40	0.00
368.20	-5.63	368.40	0.00
368.30	-4.24	368.40	0.00
368.40	0.00	368.40	0.00
368.50	4.82	368.40	0.00
368.60	6.85	368.40	0.00
368.70	8.45	368.40	0.00
368.80	9.85	368.40	0.00
368.90	11.06	368.40	0.00
369.00	12.20	368.40	0.00
369.10	13.22	368.40	0.00
369.20	14.16	368.40	0.00
369.30	14.96	368.40	0.00
369.40	15.61	368.40	0.00
369.50	16.26	368.40	0.00
369.60	16.91	368.40	0.00
369.70	17.56	368.40	0.00
369.80	18.19	368.40	0.00
369.90	18.81	368.40	0.00
370.00	19.41	368.40	0.00
370.10	19.98	368.40	0.00
370.20	20.55	368.40	0.00
370.30	21.11	368.40	0.00
370.40	21.65	368.40	0.00
370.50	22.17	368.40	0.00
370.60	22.69	368.40	0.00
370.70	23.19	368.40	0.00
370.80	23.69	368.40	0.00
370.90	24.18	368.40	0.00
371.00	24.65	368.40	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve Return Event: 10 years
Label: OCS-A Storm Event: 10
Scenario: Proposed Conditions 10 Year Storm

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 10 years
Label: OCS-A | Storm Event: 10
Scenario: Proposed Conditions 10 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-7.87	368.50	0.00
367.00	-7.87	368.50	0.00
367.10	-7.87	368.50	0.00
367.20	-7.87	368.50	0.00
367.30	-7.87	368.50	0.00
367.40	-7.87	368.50	0.00
367.50	-7.87	368.50	0.00
367.60	-7.87	368.50	0.00
367.70	-7.87	368.50	0.00
367.80	-7.87	368.50	0.00
367.90	-7.87	368.50	0.00
368.00	-7.80	368.50	0.00
368.10	-7.51	368.50	0.00
368.20	-6.94	368.50	0.00
368.30	-6.01	368.50	0.00
368.40	-4.48	368.50	0.00
368.50	0.00	368.50	0.00
368.60	4.94	368.50	0.00
368.70	7.00	368.50	0.00
368.80	8.64	368.50	0.00
368.90	10.00	368.50	0.00
369.00	11.18	368.50	0.00
369.10	12.21	368.50	0.00
369.20	13.03	368.50	0.00
369.30	13.74	368.50	0.00
369.40	14.58	368.50	0.00
369.50	15.36	368.50	0.00
369.60	16.12	368.50	0.00
369.70	16.84	368.50	0.00
369.80	17.53	368.50	0.00
369.90	18.18	368.50	0.00
370.00	18.82	368.50	0.00
370.10	19.44	368.50	0.00
370.20	20.04	368.50	0.00
370.30	20.62	368.50	0.00
370.40	21.18	368.50	0.00
370.50	21.74	368.50	0.00
370.60	22.27	368.50	0.00
370.70	22.79	368.50	0.00
370.80	23.30	368.50	0.00
370.90	23.80	368.50	0.00
371.00	24.30	368.50	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Contributing Structures
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Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-8.65	368.60	0.00
367.00	-8.65	368.60	0.00
367.10	-8.65	368.60	0.00
367.20	-8.65	368.60	0.00
367.30	-8.65	368.60	0.00
367.40	-8.65	368.60	0.00
367.50	-8.65	368.60	0.00
367.60	-8.65	368.60	0.00
367.70	-8.65	368.60	0.00
367.80	-8.65	368.60	0.00
367.90	-8.65	368.60	0.00
368.00	-8.64	368.60	0.00
368.10	-8.48	368.60	0.00
368.20	-8.08	368.60	0.00
368.30	-7.39	368.60	0.00
368.40	-6.34	368.60	0.00
368.50	-4.63	368.60	0.00
368.60	0.00	368.60	0.00
368.70	4.95	368.60	0.00
368.80	6.98	368.60	0.00
368.90	8.53	368.60	0.00
369.00	9.82	368.60	0.00
369.10	10.89	368.60	0.00
369.20	11.90	368.60	0.00
369.30	12.85	368.60	0.00
369.40	13.74	368.60	0.00
369.50	14.58	368.60	0.00
369.60	15.36	368.60	0.00
369.70	16.12	368.60	0.00
369.80	16.83	368.60	0.00
369.90	17.52	368.60	0.00
370.00	18.19	368.60	0.00
370.10	18.83	368.60	0.00
370.20	19.44	368.60	0.00
370.30	20.03	368.60	0.00
370.40	20.62	368.60	0.00
370.50	21.18	368.60	0.00
370.60	21.73	368.60	0.00
370.70	22.27	368.60	0.00
370.80	22.79	368.60	0.00
370.90	23.31	368.60	0.00
371.00	23.80	368.60	0.00

Contributing Structures
Culvert - 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-9.42	368.70	0.00
367.00	-9.42	368.70	0.00
367.10	-9.42	368.70	0.00
367.20	-9.42	368.70	0.00
367.30	-9.42	368.70	0.00
367.40	-9.42	368.70	0.00
367.50	-9.42	368.70	0.00
367.60	-9.42	368.70	0.00
367.70	-9.42	368.70	0.00
367.80	-9.42	368.70	0.00
367.90	-9.42	368.70	0.00
368.00	-9.42	368.70	0.00
368.10	-9.35	368.70	0.00
368.20	-9.06	368.70	0.00
368.30	-8.56	368.70	0.00
368.40	-7.75	368.70	0.00
368.50	-6.56	368.70	0.00
368.60	-4.77	368.70	0.00
368.70	0.00	368.70	0.00
368.80	4.89	368.70	0.00
368.90	6.93	368.70	0.00
369.00	8.45	368.70	0.00
369.10	9.71	368.70	0.00
369.20	10.86	368.70	0.00
369.30	11.91	368.70	0.00
369.40	12.86	368.70	0.00
369.50	13.74	368.70	0.00
369.60	14.57	368.70	0.00
369.70	15.37	368.70	0.00
369.80	16.12	368.70	0.00
369.90	16.84	368.70	0.00
370.00	17.52	368.70	0.00
370.10	18.19	368.70	0.00
370.20	18.82	368.70	0.00
370.30	19.43	368.70	0.00
370.40	20.04	368.70	0.00
370.50	20.62	368.70	0.00
370.60	21.18	368.70	0.00
370.70	21.73	368.70	0.00
370.80	22.26	368.70	0.00
370.90	22.80	368.70	0.00
371.00	23.31	368.70	0.00

Contributing Structures
Culvert - 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-10.16	368.80	0.00
367.00	-10.16	368.80	0.00
367.10	-10.16	368.80	0.00
367.20	-10.16	368.80	0.00
367.30	-10.16	368.80	0.00
367.40	-10.16	368.80	0.00
367.50	-10.16	368.80	0.00
367.60	-10.16	368.80	0.00
367.70	-10.16	368.80	0.00
367.80	-10.16	368.80	0.00
367.90	-10.16	368.80	0.00
368.00	-10.16	368.80	0.00
368.10	-10.13	368.80	0.00
368.20	-9.95	368.80	0.00
368.30	-9.56	368.80	0.00
368.40	-8.94	368.80	0.00
368.50	-8.01	368.80	0.00
368.60	-6.72	368.80	0.00
368.70	-4.82	368.80	0.00
368.80	0.00	368.80	0.00
368.90	4.85	368.80	0.00
369.00	6.87	368.80	0.00
369.10	8.43	368.80	0.00
369.20	9.72	368.80	0.00
369.30	10.86	368.80	0.00
369.40	11.91	368.80	0.00
369.50	12.86	368.80	0.00
369.60	13.74	368.80	0.00
369.70	14.58	368.80	0.00
369.80	15.37	368.80	0.00
369.90	16.12	368.80	0.00
370.00	16.83	368.80	0.00
370.10	17.52	368.80	0.00
370.20	18.19	368.80	0.00
370.30	18.82	368.80	0.00
370.40	19.44	368.80	0.00
370.50	20.04	368.80	0.00
370.60	20.62	368.80	0.00
370.70	21.18	368.80	0.00
370.80	21.73	368.80	0.00
370.90	22.27	368.80	0.00
371.00	22.79	368.80	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-10.87	368.90	0.00
367.00	-10.87	368.90	0.00
367.10	-10.87	368.90	0.00
367.20	-10.87	368.90	0.00
367.30	-10.87	368.90	0.00
367.40	-10.87	368.90	0.00
367.50	-10.87	368.90	0.00
367.60	-10.87	368.90	0.00
367.70	-10.87	368.90	0.00
367.80	-10.87	368.90	0.00
367.90	-10.87	368.90	0.00
368.00	-10.87	368.90	0.00
368.10	-10.87	368.90	0.00
368.20	-10.78	368.90	0.00
368.30	-10.49	368.90	0.00
368.40	-9.99	368.90	0.00
368.50	-9.25	368.90	0.00
368.60	-8.20	368.90	0.00
368.70	-6.82	368.90	0.00
368.80	-4.86	368.90	0.00
368.90	0.00	368.90	0.00
369.00	4.87	368.90	0.00
369.10	6.86	368.90	0.00
369.20	8.42	368.90	0.00
369.30	9.73	368.90	0.00
369.40	10.87	368.90	0.00
369.50	11.91	368.90	0.00
369.60	12.86	368.90	0.00
369.70	13.74	368.90	0.00
369.80	14.58	368.90	0.00
369.90	15.37	368.90	0.00
370.00	16.12	368.90	0.00
370.10	16.84	368.90	0.00
370.20	17.52	368.90	0.00
370.30	18.18	368.90	0.00
370.40	18.82	368.90	0.00
370.50	19.44	368.90	0.00
370.60	20.04	368.90	0.00
370.70	20.61	368.90	0.00
370.80	21.18	368.90	0.00
370.90	21.74	368.90	0.00
371.00	22.27	368.90	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 10 years
Label: OCS-A | Storm Event: 10
Scenario: Proposed Conditions 10 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-11.58	369.00	0.00
367.00	-11.58	369.00	0.00
367.10	-11.58	369.00	0.00
367.20	-11.58	369.00	0.00
367.30	-11.58	369.00	0.00
367.40	-11.58	369.00	0.00
367.50	-11.58	369.00	0.00
367.60	-11.58	369.00	0.00
367.70	-11.58	369.00	0.00
367.80	-11.58	369.00	0.00
367.90	-11.58	369.00	0.00
368.00	-11.58	369.00	0.00
368.10	-11.58	369.00	0.00
368.20	-11.54	369.00	0.00
368.30	-11.34	369.00	0.00
368.40	-10.94	369.00	0.00
368.50	-10.32	369.00	0.00
368.60	-9.47	369.00	0.00
368.70	-8.34	369.00	0.00
368.80	-6.87	369.00	0.00
368.90	-4.86	369.00	0.00
369.00	0.00	369.00	0.00
369.10	4.84	369.00	0.00
369.20	6.88	369.00	0.00
369.30	8.41	369.00	0.00
369.40	9.72	369.00	0.00
369.50	10.86	369.00	0.00
369.60	11.90	369.00	0.00
369.70	12.85	369.00	0.00
369.80	13.74	369.00	0.00
369.90	14.58	369.00	0.00
370.00	15.37	369.00	0.00
370.10	16.12	369.00	0.00
370.20	16.84	369.00	0.00
370.30	17.52	369.00	0.00
370.40	18.18	369.00	0.00
370.50	18.82	369.00	0.00
370.60	19.43	369.00	0.00
370.70	20.04	369.00	0.00
370.80	20.62	369.00	0.00
370.90	21.18	369.00	0.00
371.00	21.73	369.00	0.00

Contributing Structures
Culvert - 1

Composite Outflow Summary

Contributing Structures
Culvert - 1
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-12.25	369.10	0.00
367.00	-12.25	369.10	0.00
367.10	-12.25	369.10	0.00
367.20	-12.25	369.10	0.00
367.30	-12.25	369.10	0.00
367.40	-12.25	369.10	0.00
367.50	-12.25	369.10	0.00
367.60	-12.25	369.10	0.00
367.70	-12.25	369.10	0.00
367.80	-12.25	369.10	0.00
367.90	-12.25	369.10	0.00
368.00	-12.25	369.10	0.00
368.10	-12.25	369.10	0.00
368.20	-12.25	369.10	0.00
368.30	-12.12	369.10	0.00
368.40	-11.80	369.10	0.00
368.50	-11.30	369.10	0.00
368.60	-10.56	369.10	0.00
368.70	-9.61	369.10	0.00
368.80	-8.39	369.10	0.00
368.90	-6.87	369.10	0.00
369.00	-4.86	369.10	0.00
369.10	0.00	369.10	0.00
369.20	4.85	369.10	0.00
369.30	6.87	369.10	0.00
369.40	8.42	369.10	0.00
369.50	9.72	369.10	0.00
369.60	10.86	369.10	0.00
369.70	11.90	369.10	0.00
369.80	12.86	369.10	0.00
369.90	13.74	369.10	0.00
370.00	14.58	369.10	0.00
370.10	15.37	369.10	0.00
370.20	16.12	369.10	0.00
370.30	16.84	369.10	0.00
370.40	17.53	369.10	0.00
370.50	18.18	369.10	0.00
370.60	18.82	369.10	0.00
370.70	19.43	369.10	0.00
370.80	20.03	369.10	0.00
370.90	20.62	369.10	0.00
371.00	21.18	369.10	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-12.92	369.20	0.00
367.00	-12.92	369.20	0.00
367.10	-12.92	369.20	0.00
367.20	-12.92	369.20	0.00
367.30	-12.92	369.20	0.00
367.40	-12.92	369.20	0.00
367.50	-12.92	369.20	0.00
367.60	-12.92	369.20	0.00
367.70	-12.92	369.20	0.00
367.80	-12.92	369.20	0.00
367.90	-12.92	369.20	0.00
368.00	-12.92	369.20	0.00
368.10	-12.92	369.20	0.00
368.20	-12.92	369.20	0.00
368.30	-12.85	369.20	0.00
368.40	-12.61	369.20	0.00
368.50	-12.18	369.20	0.00
368.60	-11.56	369.20	0.00
368.70	-10.73	369.20	0.00
368.80	-9.70	369.20	0.00
368.90	-8.42	369.20	0.00
369.00	-6.87	369.20	0.00
369.10	-4.86	369.20	0.00
369.20	0.00	369.20	0.00
369.30	4.88	369.20	0.00
369.40	6.87	369.20	0.00
369.50	8.42	369.20	0.00
369.60	9.71	369.20	0.00
369.70	10.88	369.20	0.00
369.80	11.91	369.20	0.00
369.90	12.87	369.20	0.00
370.00	13.75	369.20	0.00
370.10	14.58	369.20	0.00
370.20	15.37	369.20	0.00
370.30	16.12	369.20	0.00
370.40	16.84	369.20	0.00
370.50	17.52	369.20	0.00
370.60	18.19	369.20	0.00
370.70	18.82	369.20	0.00
370.80	19.43	369.20	0.00
370.90	20.04	369.20	0.00
371.00	20.62	369.20	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-13.58	369.30	0.00
367.00	-13.58	369.30	0.00
367.10	-13.58	369.30	0.00
367.20	-13.58	369.30	0.00
367.30	-13.58	369.30	0.00
367.40	-13.58	369.30	0.00
367.50	-13.58	369.30	0.00
367.60	-13.58	369.30	0.00
367.70	-13.58	369.30	0.00
367.80	-13.58	369.30	0.00
367.90	-13.58	369.30	0.00
368.00	-13.58	369.30	0.00
368.10	-13.58	369.30	0.00
368.20	-13.58	369.30	0.00
368.30	-13.55	369.30	0.00
368.40	-13.38	369.30	0.00
368.50	-13.02	369.30	0.00
368.60	-12.48	369.30	0.00
368.70	-11.75	369.30	0.00
368.80	-10.82	369.30	0.00
368.90	-9.73	369.30	0.00
369.00	-8.42	369.30	0.00
369.10	-6.87	369.30	0.00
369.20	-4.86	369.30	0.00
369.30	0.00	369.30	0.00
369.40	4.86	369.30	0.00
369.50	6.86	369.30	0.00
369.60	8.41	369.30	0.00
369.70	9.72	369.30	0.00
369.80	10.87	369.30	0.00
369.90	11.90	369.30	0.00
370.00	12.86	369.30	0.00
370.10	13.75	369.30	0.00
370.20	14.58	369.30	0.00
370.30	15.36	369.30	0.00
370.40	16.12	369.30	0.00
370.50	16.83	369.30	0.00
370.60	17.52	369.30	0.00
370.70	18.19	369.30	0.00
370.80	18.82	369.30	0.00
370.90	19.44	369.30	0.00
371.00	20.04	369.30	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve

Label: OCS-A

Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years

Storm Event: 10

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 10 years
Label: OCS-A | Storm Event: 10
Scenario: Proposed Conditions 10 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-14.22	369.40	0.00
367.00	-14.22	369.40	0.00
367.10	-14.22	369.40	0.00
367.20	-14.22	369.40	0.00
367.30	-14.22	369.40	0.00
367.40	-14.22	369.40	0.00
367.50	-14.22	369.40	0.00
367.60	-14.22	369.40	0.00
367.70	-14.22	369.40	0.00
367.80	-14.22	369.40	0.00
367.90	-14.22	369.40	0.00
368.00	-14.22	369.40	0.00
368.10	-14.22	369.40	0.00
368.20	-14.22	369.40	0.00
368.30	-14.22	369.40	0.00
368.40	-14.09	369.40	0.00
368.50	-13.80	369.40	0.00
368.60	-13.33	369.40	0.00
368.70	-12.68	369.40	0.00
368.80	-11.86	369.40	0.00
368.90	-10.87	369.40	0.00
369.00	-9.73	369.40	0.00
369.10	-8.42	369.40	0.00
369.20	-6.87	369.40	0.00
369.30	-4.86	369.40	0.00
369.40	0.00	369.40	0.00
369.50	4.88	369.40	0.00
369.60	6.86	369.40	0.00
369.70	8.43	369.40	0.00
369.80	9.72	369.40	0.00
369.90	10.87	369.40	0.00
370.00	11.90	369.40	0.00
370.10	12.86	369.40	0.00
370.20	13.74	369.40	0.00
370.30	14.58	369.40	0.00
370.40	15.37	369.40	0.00
370.50	16.12	369.40	0.00
370.60	16.83	369.40	0.00
370.70	17.51	369.40	0.00
370.80	18.19	369.40	0.00
370.90	18.82	369.40	0.00
371.00	19.44	369.40	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-14.84	369.50	0.00
367.00	-14.84	369.50	0.00
367.10	-14.84	369.50	0.00
367.20	-14.84	369.50	0.00
367.30	-14.84	369.50	0.00
367.40	-14.84	369.50	0.00
367.50	-14.84	369.50	0.00
367.60	-14.84	369.50	0.00
367.70	-14.84	369.50	0.00
367.80	-14.84	369.50	0.00
367.90	-14.84	369.50	0.00
368.00	-14.84	369.50	0.00
368.10	-14.84	369.50	0.00
368.20	-14.84	369.50	0.00
368.30	-14.84	369.50	0.00
368.40	-14.77	369.50	0.00
368.50	-14.53	369.50	0.00
368.60	-14.13	369.50	0.00
368.70	-13.55	369.50	0.00
368.80	-12.80	369.50	0.00
368.90	-11.90	369.50	0.00
369.00	-10.87	369.50	0.00
369.10	-9.73	369.50	0.00
369.20	-8.42	369.50	0.00
369.30	-6.87	369.50	0.00
369.40	-4.86	369.50	0.00
369.50	0.00	369.50	0.00
369.60	4.84	369.50	0.00
369.70	6.87	369.50	0.00
369.80	8.42	369.50	0.00
369.90	9.73	369.50	0.00
370.00	10.86	369.50	0.00
370.10	11.90	369.50	0.00
370.20	12.86	369.50	0.00
370.30	13.75	369.50	0.00
370.40	14.58	369.50	0.00
370.50	15.36	369.50	0.00
370.60	16.11	369.50	0.00
370.70	16.83	369.50	0.00
370.80	17.52	369.50	0.00
370.90	18.18	369.50	0.00
371.00	18.82	369.50	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-15.46	369.60	0.00
367.00	-15.46	369.60	0.00
367.10	-15.46	369.60	0.00
367.20	-15.46	369.60	0.00
367.30	-15.46	369.60	0.00
367.40	-15.46	369.60	0.00
367.50	-15.46	369.60	0.00
367.60	-15.46	369.60	0.00
367.70	-15.46	369.60	0.00
367.80	-15.46	369.60	0.00
367.90	-15.46	369.60	0.00
368.00	-15.46	369.60	0.00
368.10	-15.46	369.60	0.00
368.20	-15.46	369.60	0.00
368.30	-15.46	369.60	0.00
368.40	-15.43	369.60	0.00
368.50	-15.23	369.60	0.00
368.60	-14.88	369.60	0.00
368.70	-14.36	369.60	0.00
368.80	-13.69	369.60	0.00
368.90	-12.85	369.60	0.00
369.00	-11.90	369.60	0.00
369.10	-10.87	369.60	0.00
369.20	-9.73	369.60	0.00
369.30	-8.42	369.60	0.00
369.40	-6.87	369.60	0.00
369.50	-4.86	369.60	0.00
369.60	0.00	369.60	0.00
369.70	4.85	369.60	0.00
369.80	6.87	369.60	0.00
369.90	8.41	369.60	0.00
370.00	9.73	369.60	0.00
370.10	10.87	369.60	0.00
370.20	11.90	369.60	0.00
370.30	12.87	369.60	0.00
370.40	13.75	369.60	0.00
370.50	14.58	369.60	0.00
370.60	15.36	369.60	0.00
370.70	16.12	369.60	0.00
370.80	16.83	369.60	0.00
370.90	17.52	369.60	0.00
371.00	18.19	369.60	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-16.06	369.70	0.00
367.00	-16.06	369.70	0.00
367.10	-16.06	369.70	0.00
367.20	-16.06	369.70	0.00
367.30	-16.06	369.70	0.00
367.40	-16.06	369.70	0.00
367.50	-16.06	369.70	0.00
367.60	-16.06	369.70	0.00
367.70	-16.06	369.70	0.00
367.80	-16.06	369.70	0.00
367.90	-16.06	369.70	0.00
368.00	-16.06	369.70	0.00
368.10	-16.06	369.70	0.00
368.20	-16.06	369.70	0.00
368.30	-16.06	369.70	0.00
368.40	-16.05	369.70	0.00
368.50	-15.90	369.70	0.00
368.60	-15.59	369.70	0.00
368.70	-15.14	369.70	0.00
368.80	-14.52	369.70	0.00
368.90	-13.74	369.70	0.00
369.00	-12.85	369.70	0.00
369.10	-11.90	369.70	0.00
369.20	-10.87	369.70	0.00
369.30	-9.73	369.70	0.00
369.40	-8.42	369.70	0.00
369.50	-6.87	369.70	0.00
369.60	-4.86	369.70	0.00
369.70	0.00	369.70	0.00
369.80	4.85	369.70	0.00
369.90	6.87	369.70	0.00
370.00	8.41	369.70	0.00
370.10	9.73	369.70	0.00
370.20	10.87	369.70	0.00
370.30	11.91	369.70	0.00
370.40	12.86	369.70	0.00
370.50	13.75	369.70	0.00
370.60	14.58	369.70	0.00
370.70	15.37	369.70	0.00
370.80	16.12	369.70	0.00
370.90	16.84	369.70	0.00
371.00	17.52	369.70	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-16.64	369.80	0.00
367.00	-16.64	369.80	0.00
367.10	-16.64	369.80	0.00
367.20	-16.64	369.80	0.00
367.30	-16.64	369.80	0.00
367.40	-16.64	369.80	0.00
367.50	-16.64	369.80	0.00
367.60	-16.64	369.80	0.00
367.70	-16.64	369.80	0.00
367.80	-16.64	369.80	0.00
367.90	-16.64	369.80	0.00
368.00	-16.64	369.80	0.00
368.10	-16.64	369.80	0.00
368.20	-16.64	369.80	0.00
368.30	-16.64	369.80	0.00
368.40	-16.64	369.80	0.00
368.50	-16.55	369.80	0.00
368.60	-16.28	369.80	0.00
368.70	-15.85	369.80	0.00
368.80	-15.29	369.80	0.00
368.90	-14.58	369.80	0.00
369.00	-13.74	369.80	0.00
369.10	-12.85	369.80	0.00
369.20	-11.90	369.80	0.00
369.30	-10.87	369.80	0.00
369.40	-9.73	369.80	0.00
369.50	-8.42	369.80	0.00
369.60	-6.87	369.80	0.00
369.70	-4.86	369.80	0.00
369.80	0.00	369.80	0.00
369.90	4.87	369.80	0.00
370.00	6.88	369.80	0.00
370.10	8.42	369.80	0.00
370.20	9.73	369.80	0.00
370.30	10.86	369.80	0.00
370.40	11.90	369.80	0.00
370.50	12.86	369.80	0.00
370.60	13.75	369.80	0.00
370.70	14.58	369.80	0.00
370.80	15.37	369.80	0.00
370.90	16.11	369.80	0.00
371.00	16.84	369.80	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 10 years
Label: OCS-A | Storm Event: 10
Scenario: Proposed Conditions 10 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-17.21	369.90	0.00
367.00	-17.21	369.90	0.00
367.10	-17.21	369.90	0.00
367.20	-17.21	369.90	0.00
367.30	-17.21	369.90	0.00
367.40	-17.21	369.90	0.00
367.50	-17.21	369.90	0.00
367.60	-17.21	369.90	0.00
367.70	-17.21	369.90	0.00
367.80	-17.21	369.90	0.00
367.90	-17.21	369.90	0.00
368.00	-17.21	369.90	0.00
368.10	-17.21	369.90	0.00
368.20	-17.21	369.90	0.00
368.30	-17.21	369.90	0.00
368.40	-17.21	369.90	0.00
368.50	-17.15	369.90	0.00
368.60	-16.94	369.90	0.00
368.70	-16.57	369.90	0.00
368.80	-16.03	369.90	0.00
368.90	-15.37	369.90	0.00
369.00	-14.58	369.90	0.00
369.10	-13.74	369.90	0.00
369.20	-12.85	369.90	0.00
369.30	-11.90	369.90	0.00
369.40	-10.87	369.90	0.00
369.50	-9.73	369.90	0.00
369.60	-8.42	369.90	0.00
369.70	-6.87	369.90	0.00
369.80	-4.86	369.90	0.00
369.90	0.00	369.90	0.00
370.00	4.84	369.90	0.00
370.10	6.89	369.90	0.00
370.20	8.41	369.90	0.00
370.30	9.73	369.90	0.00
370.40	10.87	369.90	0.00
370.50	11.90	369.90	0.00
370.60	12.86	369.90	0.00
370.70	13.75	369.90	0.00
370.80	14.57	369.90	0.00
370.90	15.36	369.90	0.00
371.00	16.11	369.90	0.00

Contributing Structures
Culvert - 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-17.79	370.00	0.00
367.00	-17.79	370.00	0.00
367.10	-17.79	370.00	0.00
367.20	-17.79	370.00	0.00
367.30	-17.79	370.00	0.00
367.40	-17.79	370.00	0.00
367.50	-17.79	370.00	0.00
367.60	-17.79	370.00	0.00
367.70	-17.79	370.00	0.00
367.80	-17.79	370.00	0.00
367.90	-17.79	370.00	0.00
368.00	-17.79	370.00	0.00
368.10	-17.79	370.00	0.00
368.20	-17.79	370.00	0.00
368.30	-17.79	370.00	0.00
368.40	-17.79	370.00	0.00
368.50	-17.75	370.00	0.00
368.60	-17.57	370.00	0.00
368.70	-17.24	370.00	0.00
368.80	-16.75	370.00	0.00
368.90	-16.12	370.00	0.00
369.00	-15.37	370.00	0.00
369.10	-14.58	370.00	0.00
369.20	-13.74	370.00	0.00
369.30	-12.85	370.00	0.00
369.40	-11.90	370.00	0.00
369.50	-10.87	370.00	0.00
369.60	-9.73	370.00	0.00
369.70	-8.42	370.00	0.00
369.80	-6.87	370.00	0.00
369.90	-4.86	370.00	0.00
370.00	0.00	370.00	0.00
370.10	4.84	370.00	0.00
370.20	6.88	370.00	0.00
370.30	8.43	370.00	0.00
370.40	9.72	370.00	0.00
370.50	10.87	370.00	0.00
370.60	11.90	370.00	0.00
370.70	12.86	370.00	0.00
370.80	13.74	370.00	0.00
370.90	14.58	370.00	0.00
371.00	15.37	370.00	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-18.33	370.10	0.00
367.00	-18.33	370.10	0.00
367.10	-18.33	370.10	0.00
367.20	-18.33	370.10	0.00
367.30	-18.33	370.10	0.00
367.40	-18.33	370.10	0.00
367.50	-18.33	370.10	0.00
367.60	-18.33	370.10	0.00
367.70	-18.33	370.10	0.00
367.80	-18.33	370.10	0.00
367.90	-18.33	370.10	0.00
368.00	-18.33	370.10	0.00
368.10	-18.33	370.10	0.00
368.20	-18.33	370.10	0.00
368.30	-18.33	370.10	0.00
368.40	-18.33	370.10	0.00
368.50	-18.32	370.10	0.00
368.60	-18.17	370.10	0.00
368.70	-17.88	370.10	0.00
368.80	-17.43	370.10	0.00
368.90	-16.83	370.10	0.00
369.00	-16.12	370.10	0.00
369.10	-15.37	370.10	0.00
369.20	-14.58	370.10	0.00
369.30	-13.74	370.10	0.00
369.40	-12.85	370.10	0.00
369.50	-11.90	370.10	0.00
369.60	-10.87	370.10	0.00
369.70	-9.73	370.10	0.00
369.80	-8.42	370.10	0.00
369.90	-6.87	370.10	0.00
370.00	-4.86	370.10	0.00
370.10	0.00	370.10	0.00
370.20	4.88	370.10	0.00
370.30	6.86	370.10	0.00
370.40	8.41	370.10	0.00
370.50	9.71	370.10	0.00
370.60	10.87	370.10	0.00
370.70	11.91	370.10	0.00
370.80	12.86	370.10	0.00
370.90	13.74	370.10	0.00
371.00	14.58	370.10	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-18.87	370.20	0.00
367.00	-18.87	370.20	0.00
367.10	-18.87	370.20	0.00
367.20	-18.87	370.20	0.00
367.30	-18.87	370.20	0.00
367.40	-18.87	370.20	0.00
367.50	-18.87	370.20	0.00
367.60	-18.87	370.20	0.00
367.70	-18.87	370.20	0.00
367.80	-18.87	370.20	0.00
367.90	-18.87	370.20	0.00
368.00	-18.87	370.20	0.00
368.10	-18.87	370.20	0.00
368.20	-18.87	370.20	0.00
368.30	-18.87	370.20	0.00
368.40	-18.87	370.20	0.00
368.50	-18.87	370.20	0.00
368.60	-18.76	370.20	0.00
368.70	-18.50	370.20	0.00
368.80	-18.08	370.20	0.00
368.90	-17.52	370.20	0.00
369.00	-16.83	370.20	0.00
369.10	-16.12	370.20	0.00
369.20	-15.37	370.20	0.00
369.30	-14.58	370.20	0.00
369.40	-13.74	370.20	0.00
369.50	-12.85	370.20	0.00
369.60	-11.90	370.20	0.00
369.70	-10.87	370.20	0.00
369.80	-9.73	370.20	0.00
369.90	-8.42	370.20	0.00
370.00	-6.87	370.20	0.00
370.10	-4.86	370.20	0.00
370.20	0.00	370.20	0.00
370.30	4.85	370.20	0.00
370.40	6.88	370.20	0.00
370.50	8.43	370.20	0.00
370.60	9.72	370.20	0.00
370.70	10.86	370.20	0.00
370.80	11.91	370.20	0.00
370.90	12.86	370.20	0.00
371.00	13.74	370.20	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-19.42	370.30	0.00
367.00	-19.42	370.30	0.00
367.10	-19.42	370.30	0.00
367.20	-19.42	370.30	0.00
367.30	-19.42	370.30	0.00
367.40	-19.42	370.30	0.00
367.50	-19.42	370.30	0.00
367.60	-19.42	370.30	0.00
367.70	-19.42	370.30	0.00
367.80	-19.42	370.30	0.00
367.90	-19.42	370.30	0.00
368.00	-19.42	370.30	0.00
368.10	-19.42	370.30	0.00
368.20	-19.42	370.30	0.00
368.30	-19.42	370.30	0.00
368.40	-19.42	370.30	0.00
368.50	-19.42	370.30	0.00
368.60	-19.34	370.30	0.00
368.70	-19.10	370.30	0.00
368.80	-18.73	370.30	0.00
368.90	-18.18	370.30	0.00
369.00	-17.52	370.30	0.00
369.10	-16.83	370.30	0.00
369.20	-16.12	370.30	0.00
369.30	-15.37	370.30	0.00
369.40	-14.58	370.30	0.00
369.50	-13.74	370.30	0.00
369.60	-12.85	370.30	0.00
369.70	-11.90	370.30	0.00
369.80	-10.87	370.30	0.00
369.90	-9.73	370.30	0.00
370.00	-8.42	370.30	0.00
370.10	-6.87	370.30	0.00
370.20	-4.86	370.30	0.00
370.30	0.00	370.30	0.00
370.40	4.87	370.30	0.00
370.50	6.89	370.30	0.00
370.60	8.40	370.30	0.00
370.70	9.71	370.30	0.00
370.80	10.87	370.30	0.00
370.90	11.90	370.30	0.00
371.00	12.85	370.30	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve | Return Event: 10 years
Label: OCS-A | Storm Event: 10
Scenario: Proposed Conditions 10 Year Storm

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-19.94	370.40	0.00
367.00	-19.94	370.40	0.00
367.10	-19.94	370.40	0.00
367.20	-19.94	370.40	0.00
367.30	-19.94	370.40	0.00
367.40	-19.94	370.40	0.00
367.50	-19.94	370.40	0.00
367.60	-19.94	370.40	0.00
367.70	-19.94	370.40	0.00
367.80	-19.94	370.40	0.00
367.90	-19.94	370.40	0.00
368.00	-19.94	370.40	0.00
368.10	-19.94	370.40	0.00
368.20	-19.94	370.40	0.00
368.30	-19.94	370.40	0.00
368.40	-19.94	370.40	0.00
368.50	-19.94	370.40	0.00
368.60	-19.88	370.40	0.00
368.70	-19.68	370.40	0.00
368.80	-19.34	370.40	0.00
368.90	-18.82	370.40	0.00
369.00	-18.18	370.40	0.00
369.10	-17.52	370.40	0.00
369.20	-16.83	370.40	0.00
369.30	-16.12	370.40	0.00
369.40	-15.37	370.40	0.00
369.50	-14.58	370.40	0.00
369.60	-13.74	370.40	0.00
369.70	-12.85	370.40	0.00
369.80	-11.90	370.40	0.00
369.90	-10.87	370.40	0.00
370.00	-9.73	370.40	0.00
370.10	-8.42	370.40	0.00
370.20	-6.87	370.40	0.00
370.30	-4.86	370.40	0.00
370.40	0.00	370.40	0.00
370.50	4.88	370.40	0.00
370.60	6.88	370.40	0.00
370.70	8.42	370.40	0.00
370.80	9.72	370.40	0.00
370.90	10.87	370.40	0.00
371.00	11.90	370.40	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Contributing Structures
Culvert - 1
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-20.46	370.50	0.00
367.00	-20.46	370.50	0.00
367.10	-20.46	370.50	0.00
367.20	-20.46	370.50	0.00
367.30	-20.46	370.50	0.00
367.40	-20.46	370.50	0.00
367.50	-20.46	370.50	0.00
367.60	-20.46	370.50	0.00
367.70	-20.46	370.50	0.00
367.80	-20.46	370.50	0.00
367.90	-20.46	370.50	0.00
368.00	-20.46	370.50	0.00
368.10	-20.46	370.50	0.00
368.20	-20.46	370.50	0.00
368.30	-20.46	370.50	0.00
368.40	-20.46	370.50	0.00
368.50	-20.46	370.50	0.00
368.60	-20.43	370.50	0.00
368.70	-20.25	370.50	0.00
368.80	-19.93	370.50	0.00
368.90	-19.44	370.50	0.00
369.00	-18.82	370.50	0.00
369.10	-18.18	370.50	0.00
369.20	-17.52	370.50	0.00
369.30	-16.83	370.50	0.00
369.40	-16.12	370.50	0.00
369.50	-15.37	370.50	0.00
369.60	-14.58	370.50	0.00
369.70	-13.74	370.50	0.00
369.80	-12.85	370.50	0.00
369.90	-11.90	370.50	0.00
370.00	-10.87	370.50	0.00
370.10	-9.73	370.50	0.00
370.20	-8.42	370.50	0.00
370.30	-6.87	370.50	0.00
370.40	-4.86	370.50	0.00
370.50	0.00	370.50	0.00
370.60	4.86	370.50	0.00
370.70	6.87	370.50	0.00
370.80	8.43	370.50	0.00
370.90	9.71	370.50	0.00
371.00	10.86	370.50	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-20.96	370.60	0.00
367.00	-20.96	370.60	0.00
367.10	-20.96	370.60	0.00
367.20	-20.96	370.60	0.00
367.30	-20.96	370.60	0.00
367.40	-20.96	370.60	0.00
367.50	-20.96	370.60	0.00
367.60	-20.96	370.60	0.00
367.70	-20.96	370.60	0.00
367.80	-20.96	370.60	0.00
367.90	-20.96	370.60	0.00
368.00	-20.96	370.60	0.00
368.10	-20.96	370.60	0.00
368.20	-20.96	370.60	0.00
368.30	-20.96	370.60	0.00
368.40	-20.96	370.60	0.00
368.50	-20.96	370.60	0.00
368.60	-20.95	370.60	0.00
368.70	-20.80	370.60	0.00
368.80	-20.50	370.60	0.00
368.90	-20.04	370.60	0.00
369.00	-19.44	370.60	0.00
369.10	-18.82	370.60	0.00
369.20	-18.18	370.60	0.00
369.30	-17.52	370.60	0.00
369.40	-16.83	370.60	0.00
369.50	-16.12	370.60	0.00
369.60	-15.37	370.60	0.00
369.70	-14.58	370.60	0.00
369.80	-13.74	370.60	0.00
369.90	-12.85	370.60	0.00
370.00	-11.90	370.60	0.00
370.10	-10.87	370.60	0.00
370.20	-9.73	370.60	0.00
370.30	-8.42	370.60	0.00
370.40	-6.87	370.60	0.00
370.50	-4.86	370.60	0.00
370.60	0.00	370.60	0.00
370.70	4.88	370.60	0.00
370.80	6.87	370.60	0.00
370.90	8.43	370.60	0.00
371.00	9.73	370.60	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-21.46	370.70	0.00
367.00	-21.46	370.70	0.00
367.10	-21.46	370.70	0.00
367.20	-21.46	370.70	0.00
367.30	-21.46	370.70	0.00
367.40	-21.46	370.70	0.00
367.50	-21.46	370.70	0.00
367.60	-21.46	370.70	0.00
367.70	-21.46	370.70	0.00
367.80	-21.46	370.70	0.00
367.90	-21.46	370.70	0.00
368.00	-21.46	370.70	0.00
368.10	-21.46	370.70	0.00
368.20	-21.46	370.70	0.00
368.30	-21.46	370.70	0.00
368.40	-21.46	370.70	0.00
368.50	-21.46	370.70	0.00
368.60	-21.46	370.70	0.00
368.70	-21.33	370.70	0.00
368.80	-21.06	370.70	0.00
368.90	-20.62	370.70	0.00
369.00	-20.04	370.70	0.00
369.10	-19.44	370.70	0.00
369.20	-18.82	370.70	0.00
369.30	-18.18	370.70	0.00
369.40	-17.52	370.70	0.00
369.50	-16.83	370.70	0.00
369.60	-16.12	370.70	0.00
369.70	-15.37	370.70	0.00
369.80	-14.58	370.70	0.00
369.90	-13.74	370.70	0.00
370.00	-12.85	370.70	0.00
370.10	-11.90	370.70	0.00
370.20	-10.87	370.70	0.00
370.30	-9.73	370.70	0.00
370.40	-8.42	370.70	0.00
370.50	-6.87	370.70	0.00
370.60	-4.86	370.70	0.00
370.70	0.00	370.70	0.00
370.80	4.87	370.70	0.00
370.90	6.86	370.70	0.00
371.00	8.42	370.70	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-21.95	370.80	0.00
367.00	-21.95	370.80	0.00
367.10	-21.95	370.80	0.00
367.20	-21.95	370.80	0.00
367.30	-21.95	370.80	0.00
367.40	-21.95	370.80	0.00
367.50	-21.95	370.80	0.00
367.60	-21.95	370.80	0.00
367.70	-21.95	370.80	0.00
367.80	-21.95	370.80	0.00
367.90	-21.95	370.80	0.00
368.00	-21.95	370.80	0.00
368.10	-21.95	370.80	0.00
368.20	-21.95	370.80	0.00
368.30	-21.95	370.80	0.00
368.40	-21.95	370.80	0.00
368.50	-21.95	370.80	0.00
368.60	-21.95	370.80	0.00
368.70	-21.86	370.80	0.00
368.80	-21.61	370.80	0.00
368.90	-21.18	370.80	0.00
369.00	-20.62	370.80	0.00
369.10	-20.04	370.80	0.00
369.20	-19.44	370.80	0.00
369.30	-18.82	370.80	0.00
369.40	-18.18	370.80	0.00
369.50	-17.52	370.80	0.00
369.60	-16.83	370.80	0.00
369.70	-16.12	370.80	0.00
369.80	-15.37	370.80	0.00
369.90	-14.58	370.80	0.00
370.00	-13.74	370.80	0.00
370.10	-12.85	370.80	0.00
370.20	-11.90	370.80	0.00
370.30	-10.87	370.80	0.00
370.40	-9.73	370.80	0.00
370.50	-8.42	370.80	0.00
370.60	-6.87	370.80	0.00
370.70	-4.86	370.80	0.00
370.80	0.00	370.80	0.00
370.90	4.86	370.80	0.00
371.00	6.88	370.80	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-22.47	370.90	0.00
367.00	-22.47	370.90	0.00
367.10	-22.47	370.90	0.00
367.20	-22.47	370.90	0.00
367.30	-22.47	370.90	0.00
367.40	-22.47	370.90	0.00
367.50	-22.47	370.90	0.00
367.60	-22.47	370.90	0.00
367.70	-22.47	370.90	0.00
367.80	-22.47	370.90	0.00
367.90	-22.47	370.90	0.00
368.00	-22.47	370.90	0.00
368.10	-22.47	370.90	0.00
368.20	-22.47	370.90	0.00
368.30	-22.47	370.90	0.00
368.40	-22.47	370.90	0.00
368.50	-22.47	370.90	0.00
368.60	-22.47	370.90	0.00
368.70	-22.38	370.90	0.00
368.80	-22.14	370.90	0.00
368.90	-21.73	370.90	0.00
369.00	-21.18	370.90	0.00
369.10	-20.62	370.90	0.00
369.20	-20.04	370.90	0.00
369.30	-19.44	370.90	0.00
369.40	-18.82	370.90	0.00
369.50	-18.18	370.90	0.00
369.60	-17.52	370.90	0.00
369.70	-16.83	370.90	0.00
369.80	-16.12	370.90	0.00
369.90	-15.37	370.90	0.00
370.00	-14.58	370.90	0.00
370.10	-13.74	370.90	0.00
370.20	-12.85	370.90	0.00
370.30	-11.90	370.90	0.00
370.40	-10.87	370.90	0.00
370.50	-9.73	370.90	0.00
370.60	-8.42	370.90	0.00
370.70	-6.87	370.90	0.00
370.80	-4.86	370.90	0.00
370.90	0.00	370.90	0.00
371.00	4.86	370.90	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-22.94	371.00	0.00
367.00	-22.94	371.00	0.00
367.10	-22.94	371.00	0.00
367.20	-22.94	371.00	0.00
367.30	-22.94	371.00	0.00
367.40	-22.94	371.00	0.00
367.50	-22.94	371.00	0.00
367.60	-22.94	371.00	0.00
367.70	-22.94	371.00	0.00
367.80	-22.94	371.00	0.00
367.90	-22.94	371.00	0.00
368.00	-22.94	371.00	0.00
368.10	-22.94	371.00	0.00
368.20	-22.94	371.00	0.00
368.30	-22.94	371.00	0.00
368.40	-22.94	371.00	0.00
368.50	-22.94	371.00	0.00
368.60	-22.94	371.00	0.00
368.70	-22.88	371.00	0.00
368.80	-22.66	371.00	0.00
368.90	-22.27	371.00	0.00
369.00	-21.73	371.00	0.00
369.10	-21.18	371.00	0.00
369.20	-20.62	371.00	0.00
369.30	-20.04	371.00	0.00
369.40	-19.44	371.00	0.00
369.50	-18.82	371.00	0.00
369.60	-18.18	371.00	0.00
369.70	-17.52	371.00	0.00
369.80	-16.83	371.00	0.00
369.90	-16.12	371.00	0.00
370.00	-15.37	371.00	0.00
370.10	-14.58	371.00	0.00
370.20	-13.74	371.00	0.00
370.30	-12.85	371.00	0.00
370.40	-11.90	371.00	0.00
370.50	-10.87	371.00	0.00
370.60	-9.73	371.00	0.00
370.70	-8.42	371.00	0.00
370.80	-6.87	371.00	0.00
370.90	-4.86	371.00	0.00
371.00	0.00	371.00	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Contributing Structures
Culvert - 1
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Subsection: Outlet Input Data | Return Event: 100 years
Label: OCS-A | Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Requested Pond Water Surface Elevations	
Minimum (Headwater)	366.90 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	371.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Culvert-Circular	Culvert - 1	Forward + Reverse	TW	366.90	371.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Culvert - 1
Structure Type: Culvert-Circular

Number of Barrels	1
Diameter	24.0 in
Length	120.00 ft
Length (Computed Barrel)	120.00 ft
Slope (Computed)	0.003 ft/ft

Outlet Control Data

Manning's n	0.013
Ke	0.200
Kb	0.012
Kr	0.000
Convergence Tolerance	0.00 ft

Inlet Control Data

Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	1.094
T2 ratio (HW/D)	1.196
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...

T1 Elevation	369.09 ft	T1 Flow	15.55 ft³/s
T2 Elevation	369.29 ft	T2 Flow	17.77 ft³/s

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	0.00	366.50	0.00
367.00	0.04	366.50	0.00
367.10	0.17	366.50	0.00
367.20	0.39	366.50	0.00
367.30	0.68	366.50	0.00
367.40	1.05	366.50	0.00
367.50	1.50	366.50	0.00
367.60	2.01	366.50	0.00
367.70	2.59	366.50	0.00
367.80	3.24	366.50	0.00
367.90	3.93	366.50	0.00
368.00	4.70	366.50	0.00
368.10	5.50	366.50	0.00
368.20	6.34	366.50	0.00
368.30	7.21	366.50	0.00
368.40	8.14	366.50	0.00
368.50	9.06	366.50	0.00
368.60	10.00	366.50	0.00
368.70	10.95	366.50	0.00
368.80	11.90	366.50	0.00
368.90	12.82	366.50	0.00
369.00	13.75	366.50	0.00
369.10	14.62	366.50	0.00
369.20	15.45	366.50	0.00
369.30	16.24	366.50	0.00
369.40	16.93	366.50	0.00
369.50	17.51	366.50	0.00
369.60	18.03	366.50	0.00
369.70	18.54	366.50	0.00
369.80	19.06	366.50	0.00
369.90	19.57	366.50	0.00
370.00	20.07	366.50	0.00
370.10	20.58	366.50	0.00
370.20	21.07	366.50	0.00
370.30	21.56	366.50	0.00
370.40	22.04	366.50	0.00
370.50	22.51	366.50	0.00
370.60	22.99	366.50	0.00
370.70	23.46	366.50	0.00
370.80	23.91	366.50	0.00
370.90	24.36	366.50	0.00
371.00	24.81	366.50	0.00

Contributing Structures
None Contributing

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 100 years
Label: OCS-A | Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	0.00	366.60	0.00
367.00	0.04	366.60	0.00
367.10	0.17	366.60	0.00
367.20	0.39	366.60	0.00
367.30	0.68	366.60	0.00
367.40	1.05	366.60	0.00
367.50	1.50	366.60	0.00
367.60	2.01	366.60	0.00
367.70	2.59	366.60	0.00
367.80	3.24	366.60	0.00
367.90	3.93	366.60	0.00
368.00	4.70	366.60	0.00
368.10	5.50	366.60	0.00
368.20	6.34	366.60	0.00
368.30	7.21	366.60	0.00
368.40	8.14	366.60	0.00
368.50	9.06	366.60	0.00
368.60	10.00	366.60	0.00
368.70	10.95	366.60	0.00
368.80	11.90	366.60	0.00
368.90	12.82	366.60	0.00
369.00	13.75	366.60	0.00
369.10	14.62	366.60	0.00
369.20	15.45	366.60	0.00
369.30	16.24	366.60	0.00
369.40	16.93	366.60	0.00
369.50	17.51	366.60	0.00
369.60	18.03	366.60	0.00
369.70	18.54	366.60	0.00
369.80	19.06	366.60	0.00
369.90	19.57	366.60	0.00
370.00	20.07	366.60	0.00
370.10	20.58	366.60	0.00
370.20	21.07	366.60	0.00
370.30	21.56	366.60	0.00
370.40	22.04	366.60	0.00
370.50	22.51	366.60	0.00
370.60	22.99	366.60	0.00
370.70	23.46	366.60	0.00
370.80	23.91	366.60	0.00
370.90	24.36	366.60	0.00
371.00	24.81	366.60	0.00

Contributing Structures
None Contributing

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 100 years
Label: OCS-A | Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	0.00	366.70	0.00
367.00	0.04	366.70	0.00
367.10	0.17	366.70	0.00
367.20	0.39	366.70	0.00
367.30	0.68	366.70	0.00
367.40	1.05	366.70	0.00
367.50	1.50	366.70	0.00
367.60	2.01	366.70	0.00
367.70	2.59	366.70	0.00
367.80	3.24	366.70	0.00
367.90	3.93	366.70	0.00
368.00	4.70	366.70	0.00
368.10	5.50	366.70	0.00
368.20	6.34	366.70	0.00
368.30	7.21	366.70	0.00
368.40	8.14	366.70	0.00
368.50	9.06	366.70	0.00
368.60	10.00	366.70	0.00
368.70	10.95	366.70	0.00
368.80	11.90	366.70	0.00
368.90	12.82	366.70	0.00
369.00	13.75	366.70	0.00
369.10	14.62	366.70	0.00
369.20	15.45	366.70	0.00
369.30	16.24	366.70	0.00
369.40	16.93	366.70	0.00
369.50	17.51	366.70	0.00
369.60	18.03	366.70	0.00
369.70	18.54	366.70	0.00
369.80	19.06	366.70	0.00
369.90	19.57	366.70	0.00
370.00	20.07	366.70	0.00
370.10	20.58	366.70	0.00
370.20	21.07	366.70	0.00
370.30	21.56	366.70	0.00
370.40	22.04	366.70	0.00
370.50	22.51	366.70	0.00
370.60	22.99	366.70	0.00
370.70	23.46	366.70	0.00
370.80	23.91	366.70	0.00
370.90	24.36	366.70	0.00
371.00	24.81	366.70	0.00

Contributing Structures
None Contributing

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 100 years
Label: OCS-A | Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	0.00	366.80	0.00
367.00	0.04	366.80	0.00
367.10	0.17	366.80	0.00
367.20	0.39	366.80	0.00
367.30	0.68	366.80	0.00
367.40	1.05	366.80	0.00
367.50	1.50	366.80	0.00
367.60	2.01	366.80	0.00
367.70	2.59	366.80	0.00
367.80	3.24	366.80	0.00
367.90	3.93	366.80	0.00
368.00	4.70	366.80	0.00
368.10	5.50	366.80	0.00
368.20	6.34	366.80	0.00
368.30	7.21	366.80	0.00
368.40	8.14	366.80	0.00
368.50	9.06	366.80	0.00
368.60	10.00	366.80	0.00
368.70	10.95	366.80	0.00
368.80	11.90	366.80	0.00
368.90	12.82	366.80	0.00
369.00	13.75	366.80	0.00
369.10	14.62	366.80	0.00
369.20	15.45	366.80	0.00
369.30	16.24	366.80	0.00
369.40	16.93	366.80	0.00
369.50	17.51	366.80	0.00
369.60	18.03	366.80	0.00
369.70	18.54	366.80	0.00
369.80	19.06	366.80	0.00
369.90	19.57	366.80	0.00
370.00	20.07	366.80	0.00
370.10	20.58	366.80	0.00
370.20	21.07	366.80	0.00
370.30	21.56	366.80	0.00
370.40	22.04	366.80	0.00
370.50	22.51	366.80	0.00
370.60	22.99	366.80	0.00
370.70	23.46	366.80	0.00
370.80	23.91	366.80	0.00
370.90	24.36	366.80	0.00
371.00	24.81	366.80	0.00

Contributing Structures
None Contributing

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 100 years
Label: OCS-A | Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	0.00	366.90	0.00
367.00	0.04	366.90	0.00
367.10	0.17	366.90	0.00
367.20	0.38	366.90	0.00
367.30	0.68	366.90	0.00
367.40	1.06	366.90	0.00
367.50	1.50	366.90	0.00
367.60	2.01	366.90	0.00
367.70	2.59	366.90	0.00
367.80	3.24	366.90	0.00
367.90	3.93	366.90	0.00
368.00	4.70	366.90	0.00
368.10	5.50	366.90	0.00
368.20	6.34	366.90	0.00
368.30	7.21	366.90	0.00
368.40	8.14	366.90	0.00
368.50	9.06	366.90	0.00
368.60	10.00	366.90	0.00
368.70	10.95	366.90	0.00
368.80	11.90	366.90	0.00
368.90	12.82	366.90	0.00
369.00	13.75	366.90	0.00
369.10	14.62	366.90	0.00
369.20	15.45	366.90	0.00
369.30	16.24	366.90	0.00
369.40	16.93	366.90	0.00
369.50	17.51	366.90	0.00
369.60	18.03	366.90	0.00
369.70	18.54	366.90	0.00
369.80	19.06	366.90	0.00
369.90	19.57	366.90	0.00
370.00	20.07	366.90	0.00
370.10	20.58	366.90	0.00
370.20	21.07	366.90	0.00
370.30	21.56	366.90	0.00
370.40	22.04	366.90	0.00
370.50	22.51	366.90	0.00
370.60	22.99	366.90	0.00
370.70	23.46	366.90	0.00
370.80	23.91	366.90	0.00
370.90	24.36	366.90	0.00
371.00	24.81	366.90	0.00

Contributing Structures
None Contributing

Subsection: Composite Rating Curve Return Event: 100 years
Label: OCS-A Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-0.03	367.00	0.00
367.00	0.00	367.00	0.00
367.10	0.17	367.00	0.00
367.20	0.39	367.00	0.00
367.30	0.68	367.00	0.00
367.40	1.05	367.00	0.00
367.50	1.50	367.00	0.00
367.60	2.02	367.00	0.00
367.70	2.59	367.00	0.00
367.80	3.24	367.00	0.00
367.90	3.93	367.00	0.00
368.00	4.70	367.00	0.00
368.10	5.50	367.00	0.00
368.20	6.34	367.00	0.00
368.30	7.21	367.00	0.00
368.40	8.14	367.00	0.00
368.50	9.06	367.00	0.00
368.60	10.00	367.00	0.00
368.70	10.95	367.00	0.00
368.80	11.90	367.00	0.00
368.90	12.82	367.00	0.00
369.00	13.75	367.00	0.00
369.10	14.62	367.00	0.00
369.20	15.45	367.00	0.00
369.30	16.24	367.00	0.00
369.40	16.93	367.00	0.00
369.50	17.51	367.00	0.00
369.60	18.03	367.00	0.00
369.70	18.54	367.00	0.00
369.80	19.06	367.00	0.00
369.90	19.57	367.00	0.00
370.00	20.07	367.00	0.00
370.10	20.58	367.00	0.00
370.20	21.07	367.00	0.00
370.30	21.56	367.00	0.00
370.40	22.04	367.00	0.00
370.50	22.51	367.00	0.00
370.60	22.99	367.00	0.00
370.70	23.46	367.00	0.00
370.80	23.91	367.00	0.00
370.90	24.36	367.00	0.00
371.00	24.81	367.00	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Contributing Structures
Culvert - 1
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Subsection: Composite Rating Curve | Return Event: 100 years
Label: OCS-A | Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-0.14	367.10	0.00
367.00	-0.14	367.10	0.00
367.10	0.00	367.10	0.00
367.20	0.38	367.10	0.00
367.30	0.68	367.10	0.00
367.40	1.05	367.10	0.00
367.50	1.50	367.10	0.00
367.60	2.01	367.10	0.00
367.70	2.59	367.10	0.00
367.80	3.24	367.10	0.00
367.90	3.93	367.10	0.00
368.00	4.70	367.10	0.00
368.10	5.50	367.10	0.00
368.20	6.34	367.10	0.00
368.30	7.21	367.10	0.00
368.40	8.14	367.10	0.00
368.50	9.06	367.10	0.00
368.60	10.00	367.10	0.00
368.70	10.95	367.10	0.00
368.80	11.90	367.10	0.00
368.90	12.82	367.10	0.00
369.00	13.75	367.10	0.00
369.10	14.62	367.10	0.00
369.20	15.45	367.10	0.00
369.30	16.24	367.10	0.00
369.40	16.93	367.10	0.00
369.50	17.51	367.10	0.00
369.60	18.03	367.10	0.00
369.70	18.54	367.10	0.00
369.80	19.06	367.10	0.00
369.90	19.57	367.10	0.00
370.00	20.07	367.10	0.00
370.10	20.58	367.10	0.00
370.20	21.07	367.10	0.00
370.30	21.56	367.10	0.00
370.40	22.04	367.10	0.00
370.50	22.51	367.10	0.00
370.60	22.99	367.10	0.00
370.70	23.46	367.10	0.00
370.80	23.91	367.10	0.00
370.90	24.36	367.10	0.00
371.00	24.81	367.10	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 100 years
Label: OCS-A | Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-0.32	367.20	0.00
367.00	-0.32	367.20	0.00
367.10	-0.32	367.20	0.00
367.20	0.00	367.20	0.00
367.30	0.66	367.20	0.00
367.40	1.05	367.20	0.00
367.50	1.50	367.20	0.00
367.60	2.01	367.20	0.00
367.70	2.59	367.20	0.00
367.80	3.24	367.20	0.00
367.90	3.95	367.20	0.00
368.00	4.70	367.20	0.00
368.10	5.50	367.20	0.00
368.20	6.34	367.20	0.00
368.30	7.21	367.20	0.00
368.40	8.14	367.20	0.00
368.50	9.06	367.20	0.00
368.60	10.00	367.20	0.00
368.70	10.95	367.20	0.00
368.80	11.90	367.20	0.00
368.90	12.82	367.20	0.00
369.00	13.75	367.20	0.00
369.10	14.62	367.20	0.00
369.20	15.45	367.20	0.00
369.30	16.24	367.20	0.00
369.40	16.93	367.20	0.00
369.50	17.51	367.20	0.00
369.60	18.03	367.20	0.00
369.70	18.54	367.20	0.00
369.80	19.06	367.20	0.00
369.90	19.57	367.20	0.00
370.00	20.07	367.20	0.00
370.10	20.58	367.20	0.00
370.20	21.07	367.20	0.00
370.30	21.56	367.20	0.00
370.40	22.04	367.20	0.00
370.50	22.51	367.20	0.00
370.60	22.99	367.20	0.00
370.70	23.46	367.20	0.00
370.80	23.91	367.20	0.00
370.90	24.36	367.20	0.00
371.00	24.81	367.20	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 100 years
Label: OCS-A | Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-0.58	367.30	0.00
367.00	-0.58	367.30	0.00
367.10	-0.58	367.30	0.00
367.20	-0.56	367.30	0.00
367.30	0.00	367.30	0.00
367.40	0.98	367.30	0.00
367.50	1.49	367.30	0.00
367.60	2.01	367.30	0.00
367.70	2.59	367.30	0.00
367.80	3.24	367.30	0.00
367.90	3.94	367.30	0.00
368.00	4.68	367.30	0.00
368.10	5.50	367.30	0.00
368.20	6.34	367.30	0.00
368.30	7.21	367.30	0.00
368.40	8.14	367.30	0.00
368.50	9.06	367.30	0.00
368.60	10.00	367.30	0.00
368.70	10.95	367.30	0.00
368.80	11.90	367.30	0.00
368.90	12.82	367.30	0.00
369.00	13.75	367.30	0.00
369.10	14.62	367.30	0.00
369.20	15.45	367.30	0.00
369.30	16.24	367.30	0.00
369.40	16.93	367.30	0.00
369.50	17.51	367.30	0.00
369.60	18.03	367.30	0.00
369.70	18.54	367.30	0.00
369.80	19.06	367.30	0.00
369.90	19.57	367.30	0.00
370.00	20.07	367.30	0.00
370.10	20.58	367.30	0.00
370.20	21.07	367.30	0.00
370.30	21.56	367.30	0.00
370.40	22.04	367.30	0.00
370.50	22.51	367.30	0.00
370.60	22.99	367.30	0.00
370.70	23.46	367.30	0.00
370.80	23.91	367.30	0.00
370.90	24.36	367.30	0.00
371.00	24.81	367.30	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 100 years
Label: OCS-A | Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-0.90	367.40	0.00
367.00	-0.90	367.40	0.00
367.10	-0.90	367.40	0.00
367.20	-0.90	367.40	0.00
367.30	-0.83	367.40	0.00
367.40	0.00	367.40	0.00
367.50	1.33	367.40	0.00
367.60	1.97	367.40	0.00
367.70	2.58	367.40	0.00
367.80	3.24	367.40	0.00
367.90	3.94	367.40	0.00
368.00	4.69	367.40	0.00
368.10	5.50	367.40	0.00
368.20	6.34	367.40	0.00
368.30	7.21	367.40	0.00
368.40	8.14	367.40	0.00
368.50	9.06	367.40	0.00
368.60	10.00	367.40	0.00
368.70	10.95	367.40	0.00
368.80	11.90	367.40	0.00
368.90	12.82	367.40	0.00
369.00	13.75	367.40	0.00
369.10	14.62	367.40	0.00
369.20	15.45	367.40	0.00
369.30	16.24	367.40	0.00
369.40	16.93	367.40	0.00
369.50	17.51	367.40	0.00
369.60	18.03	367.40	0.00
369.70	18.54	367.40	0.00
369.80	19.06	367.40	0.00
369.90	19.57	367.40	0.00
370.00	20.07	367.40	0.00
370.10	20.58	367.40	0.00
370.20	21.07	367.40	0.00
370.30	21.56	367.40	0.00
370.40	22.04	367.40	0.00
370.50	22.51	367.40	0.00
370.60	22.99	367.40	0.00
370.70	23.46	367.40	0.00
370.80	23.91	367.40	0.00
370.90	24.36	367.40	0.00
371.00	24.81	367.40	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 100 years
Label: OCS-A | Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-1.29	367.50	0.00
367.00	-1.29	367.50	0.00
367.10	-1.29	367.50	0.00
367.20	-1.29	367.50	0.00
367.30	-1.29	367.50	0.00
367.40	-1.14	367.50	0.00
367.50	0.00	367.50	0.00
367.60	1.71	367.50	0.00
367.70	2.50	367.50	0.00
367.80	3.21	367.50	0.00
367.90	3.93	367.50	0.00
368.00	4.68	367.50	0.00
368.10	5.50	367.50	0.00
368.20	6.34	367.50	0.00
368.30	7.21	367.50	0.00
368.40	8.14	367.50	0.00
368.50	9.06	367.50	0.00
368.60	10.00	367.50	0.00
368.70	10.95	367.50	0.00
368.80	11.90	367.50	0.00
368.90	12.82	367.50	0.00
369.00	13.75	367.50	0.00
369.10	14.62	367.50	0.00
369.20	15.45	367.50	0.00
369.30	16.24	367.50	0.00
369.40	16.93	367.50	0.00
369.50	17.51	367.50	0.00
369.60	18.03	367.50	0.00
369.70	18.54	367.50	0.00
369.80	19.06	367.50	0.00
369.90	19.57	367.50	0.00
370.00	20.07	367.50	0.00
370.10	20.58	367.50	0.00
370.20	21.07	367.50	0.00
370.30	21.56	367.50	0.00
370.40	22.04	367.50	0.00
370.50	22.51	367.50	0.00
370.60	22.99	367.50	0.00
370.70	23.46	367.50	0.00
370.80	23.91	367.50	0.00
370.90	24.36	367.50	0.00
371.00	24.81	367.50	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-1.74	367.60	0.00
367.00	-1.74	367.60	0.00
367.10	-1.74	367.60	0.00
367.20	-1.74	367.60	0.00
367.30	-1.74	367.60	0.00
367.40	-1.73	367.60	0.00
367.50	-1.48	367.60	0.00
367.60	0.00	367.60	0.00
367.70	2.09	367.60	0.00
367.80	3.05	367.60	0.00
367.90	3.86	367.60	0.00
368.00	4.66	367.60	0.00
368.10	5.47	367.60	0.00
368.20	6.34	367.60	0.00
368.30	7.21	367.60	0.00
368.40	8.12	367.60	0.00
368.50	9.06	367.60	0.00
368.60	10.00	367.60	0.00
368.70	10.95	367.60	0.00
368.80	11.90	367.60	0.00
368.90	12.82	367.60	0.00
369.00	13.75	367.60	0.00
369.10	14.62	367.60	0.00
369.20	15.45	367.60	0.00
369.30	16.24	367.60	0.00
369.40	16.93	367.60	0.00
369.50	17.51	367.60	0.00
369.60	18.03	367.60	0.00
369.70	18.54	367.60	0.00
369.80	19.06	367.60	0.00
369.90	19.57	367.60	0.00
370.00	20.07	367.60	0.00
370.10	20.58	367.60	0.00
370.20	21.07	367.60	0.00
370.30	21.56	367.60	0.00
370.40	22.04	367.60	0.00
370.50	22.51	367.60	0.00
370.60	22.99	367.60	0.00
370.70	23.46	367.60	0.00
370.80	23.91	367.60	0.00
370.90	24.36	367.60	0.00
371.00	24.81	367.60	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-2.25	367.70	0.00
367.00	-2.25	367.70	0.00
367.10	-2.25	367.70	0.00
367.20	-2.25	367.70	0.00
367.30	-2.25	367.70	0.00
367.40	-2.25	367.70	0.00
367.50	-2.19	367.70	0.00
367.60	-1.81	367.70	0.00
367.70	0.00	367.70	0.00
367.80	2.48	367.70	0.00
367.90	3.59	367.70	0.00
368.00	4.54	367.70	0.00
368.10	5.43	367.70	0.00
368.20	6.30	367.70	0.00
368.30	7.20	367.70	0.00
368.40	8.12	367.70	0.00
368.50	9.04	367.70	0.00
368.60	9.99	367.70	0.00
368.70	10.95	367.70	0.00
368.80	11.90	367.70	0.00
368.90	12.82	367.70	0.00
369.00	13.75	367.70	0.00
369.10	14.62	367.70	0.00
369.20	15.45	367.70	0.00
369.30	16.24	367.70	0.00
369.40	16.93	367.70	0.00
369.50	17.51	367.70	0.00
369.60	18.03	367.70	0.00
369.70	18.54	367.70	0.00
369.80	19.06	367.70	0.00
369.90	19.57	367.70	0.00
370.00	20.07	367.70	0.00
370.10	20.58	367.70	0.00
370.20	21.07	367.70	0.00
370.30	21.56	367.70	0.00
370.40	22.04	367.70	0.00
370.50	22.51	367.70	0.00
370.60	22.99	367.70	0.00
370.70	23.46	367.70	0.00
370.80	23.91	367.70	0.00
370.90	24.36	367.70	0.00
371.00	24.81	367.70	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-2.81	367.80	0.00
367.00	-2.81	367.80	0.00
367.10	-2.81	367.80	0.00
367.20	-2.81	367.80	0.00
367.30	-2.81	367.80	0.00
367.40	-2.81	367.80	0.00
367.50	-2.81	367.80	0.00
367.60	-2.68	367.80	0.00
367.70	-2.17	367.80	0.00
367.80	0.00	367.80	0.00
367.90	2.88	367.80	0.00
368.00	4.17	367.80	0.00
368.10	5.22	367.80	0.00
368.20	6.18	367.80	0.00
368.30	7.12	367.80	0.00
368.40	8.07	367.80	0.00
368.50	9.02	367.80	0.00
368.60	9.99	367.80	0.00
368.70	10.93	367.80	0.00
368.80	11.90	367.80	0.00
368.90	12.82	367.80	0.00
369.00	13.75	367.80	0.00
369.10	14.62	367.80	0.00
369.20	15.45	367.80	0.00
369.30	16.24	367.80	0.00
369.40	16.93	367.80	0.00
369.50	17.51	367.80	0.00
369.60	18.03	367.80	0.00
369.70	18.54	367.80	0.00
369.80	19.06	367.80	0.00
369.90	19.57	367.80	0.00
370.00	20.07	367.80	0.00
370.10	20.58	367.80	0.00
370.20	21.07	367.80	0.00
370.30	21.56	367.80	0.00
370.40	22.04	367.80	0.00
370.50	22.51	367.80	0.00
370.60	22.99	367.80	0.00
370.70	23.46	367.80	0.00
370.80	23.91	367.80	0.00
370.90	24.36	367.80	0.00
371.00	24.81	367.80	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 100 years
Label: OCS-A | Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-3.43	367.90	0.00
367.00	-3.43	367.90	0.00
367.10	-3.43	367.90	0.00
367.20	-3.43	367.90	0.00
367.30	-3.43	367.90	0.00
367.40	-3.43	367.90	0.00
367.50	-3.43	367.90	0.00
367.60	-3.42	367.90	0.00
367.70	-3.18	367.90	0.00
367.80	-2.53	367.90	0.00
367.90	0.00	367.90	0.00
368.00	3.25	367.90	0.00
368.10	4.71	367.90	0.00
368.20	5.86	367.90	0.00
368.30	6.93	367.90	0.00
368.40	7.93	367.90	0.00
368.50	8.93	367.90	0.00
368.60	9.91	367.90	0.00
368.70	10.90	367.90	0.00
368.80	11.86	367.90	0.00
368.90	12.81	367.90	0.00
369.00	13.75	367.90	0.00
369.10	14.62	367.90	0.00
369.20	15.45	367.90	0.00
369.30	16.24	367.90	0.00
369.40	16.93	367.90	0.00
369.50	17.51	367.90	0.00
369.60	18.03	367.90	0.00
369.70	18.54	367.90	0.00
369.80	19.06	367.90	0.00
369.90	19.57	367.90	0.00
370.00	20.07	367.90	0.00
370.10	20.58	367.90	0.00
370.20	21.07	367.90	0.00
370.30	21.56	367.90	0.00
370.40	22.04	367.90	0.00
370.50	22.51	367.90	0.00
370.60	22.99	367.90	0.00
370.70	23.46	367.90	0.00
370.80	23.91	367.90	0.00
370.90	24.36	367.90	0.00
371.00	24.81	367.90	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve | Return Event: 100 years
Label: OCS-A | Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-4.10	368.00	0.00
367.00	-4.10	368.00	0.00
367.10	-4.10	368.00	0.00
367.20	-4.10	368.00	0.00
367.30	-4.10	368.00	0.00
367.40	-4.10	368.00	0.00
367.50	-4.10	368.00	0.00
367.60	-4.10	368.00	0.00
367.70	-4.03	368.00	0.00
367.80	-3.70	368.00	0.00
367.90	-2.91	368.00	0.00
368.00	0.00	368.00	0.00
368.10	3.64	368.00	0.00
368.20	5.22	368.00	0.00
368.30	6.49	368.00	0.00
368.40	7.64	368.00	0.00
368.50	8.72	368.00	0.00
368.60	9.76	368.00	0.00
368.70	10.77	368.00	0.00
368.80	11.77	368.00	0.00
368.90	12.74	368.00	0.00
369.00	13.69	368.00	0.00
369.10	14.59	368.00	0.00
369.20	15.44	368.00	0.00
369.30	16.24	368.00	0.00
369.40	16.93	368.00	0.00
369.50	17.51	368.00	0.00
369.60	18.03	368.00	0.00
369.70	18.54	368.00	0.00
369.80	19.06	368.00	0.00
369.90	19.57	368.00	0.00
370.00	20.07	368.00	0.00
370.10	20.58	368.00	0.00
370.20	21.07	368.00	0.00
370.30	21.56	368.00	0.00
370.40	22.04	368.00	0.00
370.50	22.51	368.00	0.00
370.60	22.99	368.00	0.00
370.70	23.46	368.00	0.00
370.80	23.91	368.00	0.00
370.90	24.36	368.00	0.00
371.00	24.81	368.00	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 100 years
Label: OCS-A | Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-4.79	368.10	0.00
367.00	-4.79	368.10	0.00
367.10	-4.79	368.10	0.00
367.20	-4.79	368.10	0.00
367.30	-4.79	368.10	0.00
367.40	-4.79	368.10	0.00
367.50	-4.79	368.10	0.00
367.60	-4.79	368.10	0.00
367.70	-4.79	368.10	0.00
367.80	-4.65	368.10	0.00
367.90	-4.20	368.10	0.00
368.00	-3.24	368.10	0.00
368.10	0.00	368.10	0.00
368.20	4.00	368.10	0.00
368.30	5.70	368.10	0.00
368.40	7.09	368.10	0.00
368.50	8.33	368.10	0.00
368.60	9.45	368.10	0.00
368.70	10.54	368.10	0.00
368.80	11.57	368.10	0.00
368.90	12.58	368.10	0.00
369.00	13.55	368.10	0.00
369.10	14.48	368.10	0.00
369.20	15.35	368.10	0.00
369.30	16.16	368.10	0.00
369.40	16.88	368.10	0.00
369.50	17.48	368.10	0.00
369.60	18.01	368.10	0.00
369.70	18.54	368.10	0.00
369.80	19.06	368.10	0.00
369.90	19.57	368.10	0.00
370.00	20.07	368.10	0.00
370.10	20.58	368.10	0.00
370.20	21.07	368.10	0.00
370.30	21.56	368.10	0.00
370.40	22.04	368.10	0.00
370.50	22.51	368.10	0.00
370.60	22.99	368.10	0.00
370.70	23.46	368.10	0.00
370.80	23.91	368.10	0.00
370.90	24.36	368.10	0.00
371.00	24.81	368.10	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 100 years
Label: OCS-A | Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-5.53	368.20	0.00
367.00	-5.53	368.20	0.00
367.10	-5.53	368.20	0.00
367.20	-5.53	368.20	0.00
367.30	-5.53	368.20	0.00
367.40	-5.53	368.20	0.00
367.50	-5.53	368.20	0.00
367.60	-5.53	368.20	0.00
367.70	-5.53	368.20	0.00
367.80	-5.51	368.20	0.00
367.90	-5.25	368.20	0.00
368.00	-4.70	368.20	0.00
368.10	-3.60	368.20	0.00
368.20	0.00	368.20	0.00
368.30	4.28	368.20	0.00
368.40	6.17	368.20	0.00
368.50	7.63	368.20	0.00
368.60	8.93	368.20	0.00
368.70	10.11	368.20	0.00
368.80	11.23	368.20	0.00
368.90	12.29	368.20	0.00
369.00	13.29	368.20	0.00
369.10	14.25	368.20	0.00
369.20	15.14	368.20	0.00
369.30	15.96	368.20	0.00
369.40	16.69	368.20	0.00
369.50	17.28	368.20	0.00
369.60	17.85	368.20	0.00
369.70	18.41	368.20	0.00
369.80	18.96	368.20	0.00
369.90	19.50	368.20	0.00
370.00	20.03	368.20	0.00
370.10	20.55	368.20	0.00
370.20	21.06	368.20	0.00
370.30	21.55	368.20	0.00
370.40	22.04	368.20	0.00
370.50	22.52	368.20	0.00
370.60	22.99	368.20	0.00
370.70	23.46	368.20	0.00
370.80	23.91	368.20	0.00
370.90	24.36	368.20	0.00
371.00	24.81	368.20	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 100 years
Label: OCS-A | Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-6.29	368.30	0.00
367.00	-6.29	368.30	0.00
367.10	-6.29	368.30	0.00
367.20	-6.29	368.30	0.00
367.30	-6.29	368.30	0.00
367.40	-6.29	368.30	0.00
367.50	-6.29	368.30	0.00
367.60	-6.29	368.30	0.00
367.70	-6.29	368.30	0.00
367.80	-6.29	368.30	0.00
367.90	-6.20	368.30	0.00
368.00	-5.84	368.30	0.00
368.10	-5.17	368.30	0.00
368.20	-3.91	368.30	0.00
368.30	0.00	368.30	0.00
368.40	4.58	368.30	0.00
368.50	6.55	368.30	0.00
368.60	8.10	368.30	0.00
368.70	9.45	368.30	0.00
368.80	10.66	368.30	0.00
368.90	11.81	368.30	0.00
369.00	12.86	368.30	0.00
369.10	13.85	368.30	0.00
369.20	14.76	368.30	0.00
369.30	15.59	368.30	0.00
369.40	16.31	368.30	0.00
369.50	16.90	368.30	0.00
369.60	17.51	368.30	0.00
369.70	18.09	368.30	0.00
369.80	18.67	368.30	0.00
369.90	19.26	368.30	0.00
370.00	19.81	368.30	0.00
370.10	20.36	368.30	0.00
370.20	20.90	368.30	0.00
370.30	21.42	368.30	0.00
370.40	21.93	368.30	0.00
370.50	22.43	368.30	0.00
370.60	22.93	368.30	0.00
370.70	23.41	368.30	0.00
370.80	23.88	368.30	0.00
370.90	24.35	368.30	0.00
371.00	24.79	368.30	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-7.08	368.40	0.00
367.00	-7.08	368.40	0.00
367.10	-7.08	368.40	0.00
367.20	-7.08	368.40	0.00
367.30	-7.08	368.40	0.00
367.40	-7.08	368.40	0.00
367.50	-7.08	368.40	0.00
367.60	-7.08	368.40	0.00
367.70	-7.08	368.40	0.00
367.80	-7.08	368.40	0.00
367.90	-7.06	368.40	0.00
368.00	-6.87	368.40	0.00
368.10	-6.41	368.40	0.00
368.20	-5.63	368.40	0.00
368.30	-4.24	368.40	0.00
368.40	0.00	368.40	0.00
368.50	4.82	368.40	0.00
368.60	6.85	368.40	0.00
368.70	8.45	368.40	0.00
368.80	9.85	368.40	0.00
368.90	11.06	368.40	0.00
369.00	12.20	368.40	0.00
369.10	13.22	368.40	0.00
369.20	14.16	368.40	0.00
369.30	14.96	368.40	0.00
369.40	15.61	368.40	0.00
369.50	16.26	368.40	0.00
369.60	16.91	368.40	0.00
369.70	17.56	368.40	0.00
369.80	18.19	368.40	0.00
369.90	18.81	368.40	0.00
370.00	19.41	368.40	0.00
370.10	19.98	368.40	0.00
370.20	20.55	368.40	0.00
370.30	21.11	368.40	0.00
370.40	21.65	368.40	0.00
370.50	22.17	368.40	0.00
370.60	22.69	368.40	0.00
370.70	23.19	368.40	0.00
370.80	23.69	368.40	0.00
370.90	24.18	368.40	0.00
371.00	24.65	368.40	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 100 years
Label: OCS-A | Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-7.87	368.50	0.00
367.00	-7.87	368.50	0.00
367.10	-7.87	368.50	0.00
367.20	-7.87	368.50	0.00
367.30	-7.87	368.50	0.00
367.40	-7.87	368.50	0.00
367.50	-7.87	368.50	0.00
367.60	-7.87	368.50	0.00
367.70	-7.87	368.50	0.00
367.80	-7.87	368.50	0.00
367.90	-7.87	368.50	0.00
368.00	-7.80	368.50	0.00
368.10	-7.51	368.50	0.00
368.20	-6.94	368.50	0.00
368.30	-6.01	368.50	0.00
368.40	-4.48	368.50	0.00
368.50	0.00	368.50	0.00
368.60	4.94	368.50	0.00
368.70	7.00	368.50	0.00
368.80	8.64	368.50	0.00
368.90	10.00	368.50	0.00
369.00	11.18	368.50	0.00
369.10	12.21	368.50	0.00
369.20	13.03	368.50	0.00
369.30	13.74	368.50	0.00
369.40	14.58	368.50	0.00
369.50	15.36	368.50	0.00
369.60	16.12	368.50	0.00
369.70	16.84	368.50	0.00
369.80	17.53	368.50	0.00
369.90	18.18	368.50	0.00
370.00	18.82	368.50	0.00
370.10	19.44	368.50	0.00
370.20	20.04	368.50	0.00
370.30	20.62	368.50	0.00
370.40	21.18	368.50	0.00
370.50	21.74	368.50	0.00
370.60	22.27	368.50	0.00
370.70	22.79	368.50	0.00
370.80	23.30	368.50	0.00
370.90	23.80	368.50	0.00
371.00	24.30	368.50	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 100 years
Label: OCS-A | Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-8.65	368.60	0.00
367.00	-8.65	368.60	0.00
367.10	-8.65	368.60	0.00
367.20	-8.65	368.60	0.00
367.30	-8.65	368.60	0.00
367.40	-8.65	368.60	0.00
367.50	-8.65	368.60	0.00
367.60	-8.65	368.60	0.00
367.70	-8.65	368.60	0.00
367.80	-8.65	368.60	0.00
367.90	-8.65	368.60	0.00
368.00	-8.64	368.60	0.00
368.10	-8.48	368.60	0.00
368.20	-8.08	368.60	0.00
368.30	-7.39	368.60	0.00
368.40	-6.34	368.60	0.00
368.50	-4.63	368.60	0.00
368.60	0.00	368.60	0.00
368.70	4.95	368.60	0.00
368.80	6.98	368.60	0.00
368.90	8.53	368.60	0.00
369.00	9.82	368.60	0.00
369.10	10.89	368.60	0.00
369.20	11.90	368.60	0.00
369.30	12.85	368.60	0.00
369.40	13.74	368.60	0.00
369.50	14.58	368.60	0.00
369.60	15.36	368.60	0.00
369.70	16.12	368.60	0.00
369.80	16.83	368.60	0.00
369.90	17.52	368.60	0.00
370.00	18.19	368.60	0.00
370.10	18.83	368.60	0.00
370.20	19.44	368.60	0.00
370.30	20.03	368.60	0.00
370.40	20.62	368.60	0.00
370.50	21.18	368.60	0.00
370.60	21.73	368.60	0.00
370.70	22.27	368.60	0.00
370.80	22.79	368.60	0.00
370.90	23.31	368.60	0.00
371.00	23.80	368.60	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-9.42	368.70	0.00
367.00	-9.42	368.70	0.00
367.10	-9.42	368.70	0.00
367.20	-9.42	368.70	0.00
367.30	-9.42	368.70	0.00
367.40	-9.42	368.70	0.00
367.50	-9.42	368.70	0.00
367.60	-9.42	368.70	0.00
367.70	-9.42	368.70	0.00
367.80	-9.42	368.70	0.00
367.90	-9.42	368.70	0.00
368.00	-9.42	368.70	0.00
368.10	-9.35	368.70	0.00
368.20	-9.06	368.70	0.00
368.30	-8.56	368.70	0.00
368.40	-7.75	368.70	0.00
368.50	-6.56	368.70	0.00
368.60	-4.77	368.70	0.00
368.70	0.00	368.70	0.00
368.80	4.89	368.70	0.00
368.90	6.93	368.70	0.00
369.00	8.45	368.70	0.00
369.10	9.71	368.70	0.00
369.20	10.86	368.70	0.00
369.30	11.91	368.70	0.00
369.40	12.86	368.70	0.00
369.50	13.74	368.70	0.00
369.60	14.57	368.70	0.00
369.70	15.37	368.70	0.00
369.80	16.12	368.70	0.00
369.90	16.84	368.70	0.00
370.00	17.52	368.70	0.00
370.10	18.19	368.70	0.00
370.20	18.82	368.70	0.00
370.30	19.43	368.70	0.00
370.40	20.04	368.70	0.00
370.50	20.62	368.70	0.00
370.60	21.18	368.70	0.00
370.70	21.73	368.70	0.00
370.80	22.26	368.70	0.00
370.90	22.80	368.70	0.00
371.00	23.31	368.70	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-10.16	368.80	0.00
367.00	-10.16	368.80	0.00
367.10	-10.16	368.80	0.00
367.20	-10.16	368.80	0.00
367.30	-10.16	368.80	0.00
367.40	-10.16	368.80	0.00
367.50	-10.16	368.80	0.00
367.60	-10.16	368.80	0.00
367.70	-10.16	368.80	0.00
367.80	-10.16	368.80	0.00
367.90	-10.16	368.80	0.00
368.00	-10.16	368.80	0.00
368.10	-10.13	368.80	0.00
368.20	-9.95	368.80	0.00
368.30	-9.56	368.80	0.00
368.40	-8.94	368.80	0.00
368.50	-8.01	368.80	0.00
368.60	-6.72	368.80	0.00
368.70	-4.82	368.80	0.00
368.80	0.00	368.80	0.00
368.90	4.85	368.80	0.00
369.00	6.87	368.80	0.00
369.10	8.43	368.80	0.00
369.20	9.72	368.80	0.00
369.30	10.86	368.80	0.00
369.40	11.91	368.80	0.00
369.50	12.86	368.80	0.00
369.60	13.74	368.80	0.00
369.70	14.58	368.80	0.00
369.80	15.37	368.80	0.00
369.90	16.12	368.80	0.00
370.00	16.83	368.80	0.00
370.10	17.52	368.80	0.00
370.20	18.19	368.80	0.00
370.30	18.82	368.80	0.00
370.40	19.44	368.80	0.00
370.50	20.04	368.80	0.00
370.60	20.62	368.80	0.00
370.70	21.18	368.80	0.00
370.80	21.73	368.80	0.00
370.90	22.27	368.80	0.00
371.00	22.79	368.80	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 100 years
Label: OCS-A | Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-10.87	368.90	0.00
367.00	-10.87	368.90	0.00
367.10	-10.87	368.90	0.00
367.20	-10.87	368.90	0.00
367.30	-10.87	368.90	0.00
367.40	-10.87	368.90	0.00
367.50	-10.87	368.90	0.00
367.60	-10.87	368.90	0.00
367.70	-10.87	368.90	0.00
367.80	-10.87	368.90	0.00
367.90	-10.87	368.90	0.00
368.00	-10.87	368.90	0.00
368.10	-10.87	368.90	0.00
368.20	-10.78	368.90	0.00
368.30	-10.49	368.90	0.00
368.40	-9.99	368.90	0.00
368.50	-9.25	368.90	0.00
368.60	-8.20	368.90	0.00
368.70	-6.82	368.90	0.00
368.80	-4.86	368.90	0.00
368.90	0.00	368.90	0.00
369.00	4.87	368.90	0.00
369.10	6.86	368.90	0.00
369.20	8.42	368.90	0.00
369.30	9.73	368.90	0.00
369.40	10.87	368.90	0.00
369.50	11.91	368.90	0.00
369.60	12.86	368.90	0.00
369.70	13.74	368.90	0.00
369.80	14.58	368.90	0.00
369.90	15.37	368.90	0.00
370.00	16.12	368.90	0.00
370.10	16.84	368.90	0.00
370.20	17.52	368.90	0.00
370.30	18.18	368.90	0.00
370.40	18.82	368.90	0.00
370.50	19.44	368.90	0.00
370.60	20.04	368.90	0.00
370.70	20.61	368.90	0.00
370.80	21.18	368.90	0.00
370.90	21.74	368.90	0.00
371.00	22.27	368.90	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Contributing Structures
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Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-11.58	369.00	0.00
367.00	-11.58	369.00	0.00
367.10	-11.58	369.00	0.00
367.20	-11.58	369.00	0.00
367.30	-11.58	369.00	0.00
367.40	-11.58	369.00	0.00
367.50	-11.58	369.00	0.00
367.60	-11.58	369.00	0.00
367.70	-11.58	369.00	0.00
367.80	-11.58	369.00	0.00
367.90	-11.58	369.00	0.00
368.00	-11.58	369.00	0.00
368.10	-11.58	369.00	0.00
368.20	-11.54	369.00	0.00
368.30	-11.34	369.00	0.00
368.40	-10.94	369.00	0.00
368.50	-10.32	369.00	0.00
368.60	-9.47	369.00	0.00
368.70	-8.34	369.00	0.00
368.80	-6.87	369.00	0.00
368.90	-4.86	369.00	0.00
369.00	0.00	369.00	0.00
369.10	4.84	369.00	0.00
369.20	6.88	369.00	0.00
369.30	8.41	369.00	0.00
369.40	9.72	369.00	0.00
369.50	10.86	369.00	0.00
369.60	11.90	369.00	0.00
369.70	12.85	369.00	0.00
369.80	13.74	369.00	0.00
369.90	14.58	369.00	0.00
370.00	15.37	369.00	0.00
370.10	16.12	369.00	0.00
370.20	16.84	369.00	0.00
370.30	17.52	369.00	0.00
370.40	18.18	369.00	0.00
370.50	18.82	369.00	0.00
370.60	19.43	369.00	0.00
370.70	20.04	369.00	0.00
370.80	20.62	369.00	0.00
370.90	21.18	369.00	0.00
371.00	21.73	369.00	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-12.25	369.10	0.00
367.00	-12.25	369.10	0.00
367.10	-12.25	369.10	0.00
367.20	-12.25	369.10	0.00
367.30	-12.25	369.10	0.00
367.40	-12.25	369.10	0.00
367.50	-12.25	369.10	0.00
367.60	-12.25	369.10	0.00
367.70	-12.25	369.10	0.00
367.80	-12.25	369.10	0.00
367.90	-12.25	369.10	0.00
368.00	-12.25	369.10	0.00
368.10	-12.25	369.10	0.00
368.20	-12.25	369.10	0.00
368.30	-12.12	369.10	0.00
368.40	-11.80	369.10	0.00
368.50	-11.30	369.10	0.00
368.60	-10.56	369.10	0.00
368.70	-9.61	369.10	0.00
368.80	-8.39	369.10	0.00
368.90	-6.87	369.10	0.00
369.00	-4.86	369.10	0.00
369.10	0.00	369.10	0.00
369.20	4.85	369.10	0.00
369.30	6.87	369.10	0.00
369.40	8.42	369.10	0.00
369.50	9.72	369.10	0.00
369.60	10.86	369.10	0.00
369.70	11.90	369.10	0.00
369.80	12.86	369.10	0.00
369.90	13.74	369.10	0.00
370.00	14.58	369.10	0.00
370.10	15.37	369.10	0.00
370.20	16.12	369.10	0.00
370.30	16.84	369.10	0.00
370.40	17.53	369.10	0.00
370.50	18.18	369.10	0.00
370.60	18.82	369.10	0.00
370.70	19.43	369.10	0.00
370.80	20.03	369.10	0.00
370.90	20.62	369.10	0.00
371.00	21.18	369.10	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-12.92	369.20	0.00
367.00	-12.92	369.20	0.00
367.10	-12.92	369.20	0.00
367.20	-12.92	369.20	0.00
367.30	-12.92	369.20	0.00
367.40	-12.92	369.20	0.00
367.50	-12.92	369.20	0.00
367.60	-12.92	369.20	0.00
367.70	-12.92	369.20	0.00
367.80	-12.92	369.20	0.00
367.90	-12.92	369.20	0.00
368.00	-12.92	369.20	0.00
368.10	-12.92	369.20	0.00
368.20	-12.92	369.20	0.00
368.30	-12.85	369.20	0.00
368.40	-12.61	369.20	0.00
368.50	-12.18	369.20	0.00
368.60	-11.56	369.20	0.00
368.70	-10.73	369.20	0.00
368.80	-9.70	369.20	0.00
368.90	-8.42	369.20	0.00
369.00	-6.87	369.20	0.00
369.10	-4.86	369.20	0.00
369.20	0.00	369.20	0.00
369.30	4.88	369.20	0.00
369.40	6.87	369.20	0.00
369.50	8.42	369.20	0.00
369.60	9.71	369.20	0.00
369.70	10.88	369.20	0.00
369.80	11.91	369.20	0.00
369.90	12.87	369.20	0.00
370.00	13.75	369.20	0.00
370.10	14.58	369.20	0.00
370.20	15.37	369.20	0.00
370.30	16.12	369.20	0.00
370.40	16.84	369.20	0.00
370.50	17.52	369.20	0.00
370.60	18.19	369.20	0.00
370.70	18.82	369.20	0.00
370.80	19.43	369.20	0.00
370.90	20.04	369.20	0.00
371.00	20.62	369.20	0.00

Contributing Structures
Culvert - 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 100 years
Label: OCS-A | Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-13.58	369.30	0.00
367.00	-13.58	369.30	0.00
367.10	-13.58	369.30	0.00
367.20	-13.58	369.30	0.00
367.30	-13.58	369.30	0.00
367.40	-13.58	369.30	0.00
367.50	-13.58	369.30	0.00
367.60	-13.58	369.30	0.00
367.70	-13.58	369.30	0.00
367.80	-13.58	369.30	0.00
367.90	-13.58	369.30	0.00
368.00	-13.58	369.30	0.00
368.10	-13.58	369.30	0.00
368.20	-13.58	369.30	0.00
368.30	-13.55	369.30	0.00
368.40	-13.38	369.30	0.00
368.50	-13.02	369.30	0.00
368.60	-12.48	369.30	0.00
368.70	-11.75	369.30	0.00
368.80	-10.82	369.30	0.00
368.90	-9.73	369.30	0.00
369.00	-8.42	369.30	0.00
369.10	-6.87	369.30	0.00
369.20	-4.86	369.30	0.00
369.30	0.00	369.30	0.00
369.40	4.86	369.30	0.00
369.50	6.86	369.30	0.00
369.60	8.41	369.30	0.00
369.70	9.72	369.30	0.00
369.80	10.87	369.30	0.00
369.90	11.90	369.30	0.00
370.00	12.86	369.30	0.00
370.10	13.75	369.30	0.00
370.20	14.58	369.30	0.00
370.30	15.36	369.30	0.00
370.40	16.12	369.30	0.00
370.50	16.83	369.30	0.00
370.60	17.52	369.30	0.00
370.70	18.19	369.30	0.00
370.80	18.82	369.30	0.00
370.90	19.44	369.30	0.00
371.00	20.04	369.30	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-14.22	369.40	0.00
367.00	-14.22	369.40	0.00
367.10	-14.22	369.40	0.00
367.20	-14.22	369.40	0.00
367.30	-14.22	369.40	0.00
367.40	-14.22	369.40	0.00
367.50	-14.22	369.40	0.00
367.60	-14.22	369.40	0.00
367.70	-14.22	369.40	0.00
367.80	-14.22	369.40	0.00
367.90	-14.22	369.40	0.00
368.00	-14.22	369.40	0.00
368.10	-14.22	369.40	0.00
368.20	-14.22	369.40	0.00
368.30	-14.22	369.40	0.00
368.40	-14.09	369.40	0.00
368.50	-13.80	369.40	0.00
368.60	-13.33	369.40	0.00
368.70	-12.68	369.40	0.00
368.80	-11.86	369.40	0.00
368.90	-10.87	369.40	0.00
369.00	-9.73	369.40	0.00
369.10	-8.42	369.40	0.00
369.20	-6.87	369.40	0.00
369.30	-4.86	369.40	0.00
369.40	0.00	369.40	0.00
369.50	4.88	369.40	0.00
369.60	6.86	369.40	0.00
369.70	8.43	369.40	0.00
369.80	9.72	369.40	0.00
369.90	10.87	369.40	0.00
370.00	11.90	369.40	0.00
370.10	12.86	369.40	0.00
370.20	13.74	369.40	0.00
370.30	14.58	369.40	0.00
370.40	15.37	369.40	0.00
370.50	16.12	369.40	0.00
370.60	16.83	369.40	0.00
370.70	17.51	369.40	0.00
370.80	18.19	369.40	0.00
370.90	18.82	369.40	0.00
371.00	19.44	369.40	0.00

Contributing Structures
Culvert - 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-14.84	369.50	0.00
367.00	-14.84	369.50	0.00
367.10	-14.84	369.50	0.00
367.20	-14.84	369.50	0.00
367.30	-14.84	369.50	0.00
367.40	-14.84	369.50	0.00
367.50	-14.84	369.50	0.00
367.60	-14.84	369.50	0.00
367.70	-14.84	369.50	0.00
367.80	-14.84	369.50	0.00
367.90	-14.84	369.50	0.00
368.00	-14.84	369.50	0.00
368.10	-14.84	369.50	0.00
368.20	-14.84	369.50	0.00
368.30	-14.84	369.50	0.00
368.40	-14.77	369.50	0.00
368.50	-14.53	369.50	0.00
368.60	-14.13	369.50	0.00
368.70	-13.55	369.50	0.00
368.80	-12.80	369.50	0.00
368.90	-11.90	369.50	0.00
369.00	-10.87	369.50	0.00
369.10	-9.73	369.50	0.00
369.20	-8.42	369.50	0.00
369.30	-6.87	369.50	0.00
369.40	-4.86	369.50	0.00
369.50	0.00	369.50	0.00
369.60	4.84	369.50	0.00
369.70	6.87	369.50	0.00
369.80	8.42	369.50	0.00
369.90	9.73	369.50	0.00
370.00	10.86	369.50	0.00
370.10	11.90	369.50	0.00
370.20	12.86	369.50	0.00
370.30	13.75	369.50	0.00
370.40	14.58	369.50	0.00
370.50	15.36	369.50	0.00
370.60	16.11	369.50	0.00
370.70	16.83	369.50	0.00
370.80	17.52	369.50	0.00
370.90	18.18	369.50	0.00
371.00	18.82	369.50	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve | Return Event: 100 years
Label: OCS-A | Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-15.46	369.60	0.00
367.00	-15.46	369.60	0.00
367.10	-15.46	369.60	0.00
367.20	-15.46	369.60	0.00
367.30	-15.46	369.60	0.00
367.40	-15.46	369.60	0.00
367.50	-15.46	369.60	0.00
367.60	-15.46	369.60	0.00
367.70	-15.46	369.60	0.00
367.80	-15.46	369.60	0.00
367.90	-15.46	369.60	0.00
368.00	-15.46	369.60	0.00
368.10	-15.46	369.60	0.00
368.20	-15.46	369.60	0.00
368.30	-15.46	369.60	0.00
368.40	-15.43	369.60	0.00
368.50	-15.23	369.60	0.00
368.60	-14.88	369.60	0.00
368.70	-14.36	369.60	0.00
368.80	-13.69	369.60	0.00
368.90	-12.85	369.60	0.00
369.00	-11.90	369.60	0.00
369.10	-10.87	369.60	0.00
369.20	-9.73	369.60	0.00
369.30	-8.42	369.60	0.00
369.40	-6.87	369.60	0.00
369.50	-4.86	369.60	0.00
369.60	0.00	369.60	0.00
369.70	4.85	369.60	0.00
369.80	6.87	369.60	0.00
369.90	8.41	369.60	0.00
370.00	9.73	369.60	0.00
370.10	10.87	369.60	0.00
370.20	11.90	369.60	0.00
370.30	12.87	369.60	0.00
370.40	13.75	369.60	0.00
370.50	14.58	369.60	0.00
370.60	15.36	369.60	0.00
370.70	16.12	369.60	0.00
370.80	16.83	369.60	0.00
370.90	17.52	369.60	0.00
371.00	18.19	369.60	0.00

Contributing Structures
Culvert - 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 100 years
Label: OCS-A | Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-16.06	369.70	0.00
367.00	-16.06	369.70	0.00
367.10	-16.06	369.70	0.00
367.20	-16.06	369.70	0.00
367.30	-16.06	369.70	0.00
367.40	-16.06	369.70	0.00
367.50	-16.06	369.70	0.00
367.60	-16.06	369.70	0.00
367.70	-16.06	369.70	0.00
367.80	-16.06	369.70	0.00
367.90	-16.06	369.70	0.00
368.00	-16.06	369.70	0.00
368.10	-16.06	369.70	0.00
368.20	-16.06	369.70	0.00
368.30	-16.06	369.70	0.00
368.40	-16.05	369.70	0.00
368.50	-15.90	369.70	0.00
368.60	-15.59	369.70	0.00
368.70	-15.14	369.70	0.00
368.80	-14.52	369.70	0.00
368.90	-13.74	369.70	0.00
369.00	-12.85	369.70	0.00
369.10	-11.90	369.70	0.00
369.20	-10.87	369.70	0.00
369.30	-9.73	369.70	0.00
369.40	-8.42	369.70	0.00
369.50	-6.87	369.70	0.00
369.60	-4.86	369.70	0.00
369.70	0.00	369.70	0.00
369.80	4.85	369.70	0.00
369.90	6.87	369.70	0.00
370.00	8.41	369.70	0.00
370.10	9.73	369.70	0.00
370.20	10.87	369.70	0.00
370.30	11.91	369.70	0.00
370.40	12.86	369.70	0.00
370.50	13.75	369.70	0.00
370.60	14.58	369.70	0.00
370.70	15.37	369.70	0.00
370.80	16.12	369.70	0.00
370.90	16.84	369.70	0.00
371.00	17.52	369.70	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve | Return Event: 100 years
Label: OCS-A | Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-16.64	369.80	0.00
367.00	-16.64	369.80	0.00
367.10	-16.64	369.80	0.00
367.20	-16.64	369.80	0.00
367.30	-16.64	369.80	0.00
367.40	-16.64	369.80	0.00
367.50	-16.64	369.80	0.00
367.60	-16.64	369.80	0.00
367.70	-16.64	369.80	0.00
367.80	-16.64	369.80	0.00
367.90	-16.64	369.80	0.00
368.00	-16.64	369.80	0.00
368.10	-16.64	369.80	0.00
368.20	-16.64	369.80	0.00
368.30	-16.64	369.80	0.00
368.40	-16.64	369.80	0.00
368.50	-16.55	369.80	0.00
368.60	-16.28	369.80	0.00
368.70	-15.85	369.80	0.00
368.80	-15.29	369.80	0.00
368.90	-14.58	369.80	0.00
369.00	-13.74	369.80	0.00
369.10	-12.85	369.80	0.00
369.20	-11.90	369.80	0.00
369.30	-10.87	369.80	0.00
369.40	-9.73	369.80	0.00
369.50	-8.42	369.80	0.00
369.60	-6.87	369.80	0.00
369.70	-4.86	369.80	0.00
369.80	0.00	369.80	0.00
369.90	4.87	369.80	0.00
370.00	6.88	369.80	0.00
370.10	8.42	369.80	0.00
370.20	9.73	369.80	0.00
370.30	10.86	369.80	0.00
370.40	11.90	369.80	0.00
370.50	12.86	369.80	0.00
370.60	13.75	369.80	0.00
370.70	14.58	369.80	0.00
370.80	15.37	369.80	0.00
370.90	16.11	369.80	0.00
371.00	16.84	369.80	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-17.21	369.90	0.00
367.00	-17.21	369.90	0.00
367.10	-17.21	369.90	0.00
367.20	-17.21	369.90	0.00
367.30	-17.21	369.90	0.00
367.40	-17.21	369.90	0.00
367.50	-17.21	369.90	0.00
367.60	-17.21	369.90	0.00
367.70	-17.21	369.90	0.00
367.80	-17.21	369.90	0.00
367.90	-17.21	369.90	0.00
368.00	-17.21	369.90	0.00
368.10	-17.21	369.90	0.00
368.20	-17.21	369.90	0.00
368.30	-17.21	369.90	0.00
368.40	-17.21	369.90	0.00
368.50	-17.15	369.90	0.00
368.60	-16.94	369.90	0.00
368.70	-16.57	369.90	0.00
368.80	-16.03	369.90	0.00
368.90	-15.37	369.90	0.00
369.00	-14.58	369.90	0.00
369.10	-13.74	369.90	0.00
369.20	-12.85	369.90	0.00
369.30	-11.90	369.90	0.00
369.40	-10.87	369.90	0.00
369.50	-9.73	369.90	0.00
369.60	-8.42	369.90	0.00
369.70	-6.87	369.90	0.00
369.80	-4.86	369.90	0.00
369.90	0.00	369.90	0.00
370.00	4.84	369.90	0.00
370.10	6.89	369.90	0.00
370.20	8.41	369.90	0.00
370.30	9.73	369.90	0.00
370.40	10.87	369.90	0.00
370.50	11.90	369.90	0.00
370.60	12.86	369.90	0.00
370.70	13.75	369.90	0.00
370.80	14.57	369.90	0.00
370.90	15.36	369.90	0.00
371.00	16.11	369.90	0.00

Contributing Structures
Culvert - 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-17.79	370.00	0.00
367.00	-17.79	370.00	0.00
367.10	-17.79	370.00	0.00
367.20	-17.79	370.00	0.00
367.30	-17.79	370.00	0.00
367.40	-17.79	370.00	0.00
367.50	-17.79	370.00	0.00
367.60	-17.79	370.00	0.00
367.70	-17.79	370.00	0.00
367.80	-17.79	370.00	0.00
367.90	-17.79	370.00	0.00
368.00	-17.79	370.00	0.00
368.10	-17.79	370.00	0.00
368.20	-17.79	370.00	0.00
368.30	-17.79	370.00	0.00
368.40	-17.79	370.00	0.00
368.50	-17.75	370.00	0.00
368.60	-17.57	370.00	0.00
368.70	-17.24	370.00	0.00
368.80	-16.75	370.00	0.00
368.90	-16.12	370.00	0.00
369.00	-15.37	370.00	0.00
369.10	-14.58	370.00	0.00
369.20	-13.74	370.00	0.00
369.30	-12.85	370.00	0.00
369.40	-11.90	370.00	0.00
369.50	-10.87	370.00	0.00
369.60	-9.73	370.00	0.00
369.70	-8.42	370.00	0.00
369.80	-6.87	370.00	0.00
369.90	-4.86	370.00	0.00
370.00	0.00	370.00	0.00
370.10	4.84	370.00	0.00
370.20	6.88	370.00	0.00
370.30	8.43	370.00	0.00
370.40	9.72	370.00	0.00
370.50	10.87	370.00	0.00
370.60	11.90	370.00	0.00
370.70	12.86	370.00	0.00
370.80	13.74	370.00	0.00
370.90	14.58	370.00	0.00
371.00	15.37	370.00	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve | Return Event: 100 years
Label: OCS-A | Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 100 years
Label: OCS-A | Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-18.33	370.10	0.00
367.00	-18.33	370.10	0.00
367.10	-18.33	370.10	0.00
367.20	-18.33	370.10	0.00
367.30	-18.33	370.10	0.00
367.40	-18.33	370.10	0.00
367.50	-18.33	370.10	0.00
367.60	-18.33	370.10	0.00
367.70	-18.33	370.10	0.00
367.80	-18.33	370.10	0.00
367.90	-18.33	370.10	0.00
368.00	-18.33	370.10	0.00
368.10	-18.33	370.10	0.00
368.20	-18.33	370.10	0.00
368.30	-18.33	370.10	0.00
368.40	-18.33	370.10	0.00
368.50	-18.32	370.10	0.00
368.60	-18.17	370.10	0.00
368.70	-17.88	370.10	0.00
368.80	-17.43	370.10	0.00
368.90	-16.83	370.10	0.00
369.00	-16.12	370.10	0.00
369.10	-15.37	370.10	0.00
369.20	-14.58	370.10	0.00
369.30	-13.74	370.10	0.00
369.40	-12.85	370.10	0.00
369.50	-11.90	370.10	0.00
369.60	-10.87	370.10	0.00
369.70	-9.73	370.10	0.00
369.80	-8.42	370.10	0.00
369.90	-6.87	370.10	0.00
370.00	-4.86	370.10	0.00
370.10	0.00	370.10	0.00
370.20	4.88	370.10	0.00
370.30	6.86	370.10	0.00
370.40	8.41	370.10	0.00
370.50	9.71	370.10	0.00
370.60	10.87	370.10	0.00
370.70	11.91	370.10	0.00
370.80	12.86	370.10	0.00
370.90	13.74	370.10	0.00
371.00	14.58	370.10	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 100 years
Label: OCS-A | Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-18.87	370.20	0.00
367.00	-18.87	370.20	0.00
367.10	-18.87	370.20	0.00
367.20	-18.87	370.20	0.00
367.30	-18.87	370.20	0.00
367.40	-18.87	370.20	0.00
367.50	-18.87	370.20	0.00
367.60	-18.87	370.20	0.00
367.70	-18.87	370.20	0.00
367.80	-18.87	370.20	0.00
367.90	-18.87	370.20	0.00
368.00	-18.87	370.20	0.00
368.10	-18.87	370.20	0.00
368.20	-18.87	370.20	0.00
368.30	-18.87	370.20	0.00
368.40	-18.87	370.20	0.00
368.50	-18.87	370.20	0.00
368.60	-18.76	370.20	0.00
368.70	-18.50	370.20	0.00
368.80	-18.08	370.20	0.00
368.90	-17.52	370.20	0.00
369.00	-16.83	370.20	0.00
369.10	-16.12	370.20	0.00
369.20	-15.37	370.20	0.00
369.30	-14.58	370.20	0.00
369.40	-13.74	370.20	0.00
369.50	-12.85	370.20	0.00
369.60	-11.90	370.20	0.00
369.70	-10.87	370.20	0.00
369.80	-9.73	370.20	0.00
369.90	-8.42	370.20	0.00
370.00	-6.87	370.20	0.00
370.10	-4.86	370.20	0.00
370.20	0.00	370.20	0.00
370.30	4.85	370.20	0.00
370.40	6.88	370.20	0.00
370.50	8.43	370.20	0.00
370.60	9.72	370.20	0.00
370.70	10.86	370.20	0.00
370.80	11.91	370.20	0.00
370.90	12.86	370.20	0.00
371.00	13.74	370.20	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve Return Event: 100 years
Label: OCS-A Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 100 years
Label: OCS-A | Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-19.42	370.30	0.00
367.00	-19.42	370.30	0.00
367.10	-19.42	370.30	0.00
367.20	-19.42	370.30	0.00
367.30	-19.42	370.30	0.00
367.40	-19.42	370.30	0.00
367.50	-19.42	370.30	0.00
367.60	-19.42	370.30	0.00
367.70	-19.42	370.30	0.00
367.80	-19.42	370.30	0.00
367.90	-19.42	370.30	0.00
368.00	-19.42	370.30	0.00
368.10	-19.42	370.30	0.00
368.20	-19.42	370.30	0.00
368.30	-19.42	370.30	0.00
368.40	-19.42	370.30	0.00
368.50	-19.42	370.30	0.00
368.60	-19.34	370.30	0.00
368.70	-19.10	370.30	0.00
368.80	-18.73	370.30	0.00
368.90	-18.18	370.30	0.00
369.00	-17.52	370.30	0.00
369.10	-16.83	370.30	0.00
369.20	-16.12	370.30	0.00
369.30	-15.37	370.30	0.00
369.40	-14.58	370.30	0.00
369.50	-13.74	370.30	0.00
369.60	-12.85	370.30	0.00
369.70	-11.90	370.30	0.00
369.80	-10.87	370.30	0.00
369.90	-9.73	370.30	0.00
370.00	-8.42	370.30	0.00
370.10	-6.87	370.30	0.00
370.20	-4.86	370.30	0.00
370.30	0.00	370.30	0.00
370.40	4.87	370.30	0.00
370.50	6.89	370.30	0.00
370.60	8.40	370.30	0.00
370.70	9.71	370.30	0.00
370.80	10.87	370.30	0.00
370.90	11.90	370.30	0.00
371.00	12.85	370.30	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 100 years
Label: OCS-A | Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-19.94	370.40	0.00
367.00	-19.94	370.40	0.00
367.10	-19.94	370.40	0.00
367.20	-19.94	370.40	0.00
367.30	-19.94	370.40	0.00
367.40	-19.94	370.40	0.00
367.50	-19.94	370.40	0.00
367.60	-19.94	370.40	0.00
367.70	-19.94	370.40	0.00
367.80	-19.94	370.40	0.00
367.90	-19.94	370.40	0.00
368.00	-19.94	370.40	0.00
368.10	-19.94	370.40	0.00
368.20	-19.94	370.40	0.00
368.30	-19.94	370.40	0.00
368.40	-19.94	370.40	0.00
368.50	-19.94	370.40	0.00
368.60	-19.88	370.40	0.00
368.70	-19.68	370.40	0.00
368.80	-19.34	370.40	0.00
368.90	-18.82	370.40	0.00
369.00	-18.18	370.40	0.00
369.10	-17.52	370.40	0.00
369.20	-16.83	370.40	0.00
369.30	-16.12	370.40	0.00
369.40	-15.37	370.40	0.00
369.50	-14.58	370.40	0.00
369.60	-13.74	370.40	0.00
369.70	-12.85	370.40	0.00
369.80	-11.90	370.40	0.00
369.90	-10.87	370.40	0.00
370.00	-9.73	370.40	0.00
370.10	-8.42	370.40	0.00
370.20	-6.87	370.40	0.00
370.30	-4.86	370.40	0.00
370.40	0.00	370.40	0.00
370.50	4.88	370.40	0.00
370.60	6.88	370.40	0.00
370.70	8.42	370.40	0.00
370.80	9.72	370.40	0.00
370.90	10.87	370.40	0.00
371.00	11.90	370.40	0.00

Contributing Structures
Culvert - 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-20.46	370.50	0.00
367.00	-20.46	370.50	0.00
367.10	-20.46	370.50	0.00
367.20	-20.46	370.50	0.00
367.30	-20.46	370.50	0.00
367.40	-20.46	370.50	0.00
367.50	-20.46	370.50	0.00
367.60	-20.46	370.50	0.00
367.70	-20.46	370.50	0.00
367.80	-20.46	370.50	0.00
367.90	-20.46	370.50	0.00
368.00	-20.46	370.50	0.00
368.10	-20.46	370.50	0.00
368.20	-20.46	370.50	0.00
368.30	-20.46	370.50	0.00
368.40	-20.46	370.50	0.00
368.50	-20.46	370.50	0.00
368.60	-20.43	370.50	0.00
368.70	-20.25	370.50	0.00
368.80	-19.93	370.50	0.00
368.90	-19.44	370.50	0.00
369.00	-18.82	370.50	0.00
369.10	-18.18	370.50	0.00
369.20	-17.52	370.50	0.00
369.30	-16.83	370.50	0.00
369.40	-16.12	370.50	0.00
369.50	-15.37	370.50	0.00
369.60	-14.58	370.50	0.00
369.70	-13.74	370.50	0.00
369.80	-12.85	370.50	0.00
369.90	-11.90	370.50	0.00
370.00	-10.87	370.50	0.00
370.10	-9.73	370.50	0.00
370.20	-8.42	370.50	0.00
370.30	-6.87	370.50	0.00
370.40	-4.86	370.50	0.00
370.50	0.00	370.50	0.00
370.60	4.86	370.50	0.00
370.70	6.87	370.50	0.00
370.80	8.43	370.50	0.00
370.90	9.71	370.50	0.00
371.00	10.86	370.50	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve | Return Event: 100 years
Label: OCS-A | Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-20.96	370.60	0.00
367.00	-20.96	370.60	0.00
367.10	-20.96	370.60	0.00
367.20	-20.96	370.60	0.00
367.30	-20.96	370.60	0.00
367.40	-20.96	370.60	0.00
367.50	-20.96	370.60	0.00
367.60	-20.96	370.60	0.00
367.70	-20.96	370.60	0.00
367.80	-20.96	370.60	0.00
367.90	-20.96	370.60	0.00
368.00	-20.96	370.60	0.00
368.10	-20.96	370.60	0.00
368.20	-20.96	370.60	0.00
368.30	-20.96	370.60	0.00
368.40	-20.96	370.60	0.00
368.50	-20.96	370.60	0.00
368.60	-20.95	370.60	0.00
368.70	-20.80	370.60	0.00
368.80	-20.50	370.60	0.00
368.90	-20.04	370.60	0.00
369.00	-19.44	370.60	0.00
369.10	-18.82	370.60	0.00
369.20	-18.18	370.60	0.00
369.30	-17.52	370.60	0.00
369.40	-16.83	370.60	0.00
369.50	-16.12	370.60	0.00
369.60	-15.37	370.60	0.00
369.70	-14.58	370.60	0.00
369.80	-13.74	370.60	0.00
369.90	-12.85	370.60	0.00
370.00	-11.90	370.60	0.00
370.10	-10.87	370.60	0.00
370.20	-9.73	370.60	0.00
370.30	-8.42	370.60	0.00
370.40	-6.87	370.60	0.00
370.50	-4.86	370.60	0.00
370.60	0.00	370.60	0.00
370.70	4.88	370.60	0.00
370.80	6.87	370.60	0.00
370.90	8.43	370.60	0.00
371.00	9.73	370.60	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-21.46	370.70	0.00
367.00	-21.46	370.70	0.00
367.10	-21.46	370.70	0.00
367.20	-21.46	370.70	0.00
367.30	-21.46	370.70	0.00
367.40	-21.46	370.70	0.00
367.50	-21.46	370.70	0.00
367.60	-21.46	370.70	0.00
367.70	-21.46	370.70	0.00
367.80	-21.46	370.70	0.00
367.90	-21.46	370.70	0.00
368.00	-21.46	370.70	0.00
368.10	-21.46	370.70	0.00
368.20	-21.46	370.70	0.00
368.30	-21.46	370.70	0.00
368.40	-21.46	370.70	0.00
368.50	-21.46	370.70	0.00
368.60	-21.46	370.70	0.00
368.70	-21.33	370.70	0.00
368.80	-21.06	370.70	0.00
368.90	-20.62	370.70	0.00
369.00	-20.04	370.70	0.00
369.10	-19.44	370.70	0.00
369.20	-18.82	370.70	0.00
369.30	-18.18	370.70	0.00
369.40	-17.52	370.70	0.00
369.50	-16.83	370.70	0.00
369.60	-16.12	370.70	0.00
369.70	-15.37	370.70	0.00
369.80	-14.58	370.70	0.00
369.90	-13.74	370.70	0.00
370.00	-12.85	370.70	0.00
370.10	-11.90	370.70	0.00
370.20	-10.87	370.70	0.00
370.30	-9.73	370.70	0.00
370.40	-8.42	370.70	0.00
370.50	-6.87	370.70	0.00
370.60	-4.86	370.70	0.00
370.70	0.00	370.70	0.00
370.80	4.87	370.70	0.00
370.90	6.86	370.70	0.00
371.00	8.42	370.70	0.00

Contributing Structures
Culvert - 1

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve Return Event: 100 years
Label: OCS-A Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-21.95	370.80	0.00
367.00	-21.95	370.80	0.00
367.10	-21.95	370.80	0.00
367.20	-21.95	370.80	0.00
367.30	-21.95	370.80	0.00
367.40	-21.95	370.80	0.00
367.50	-21.95	370.80	0.00
367.60	-21.95	370.80	0.00
367.70	-21.95	370.80	0.00
367.80	-21.95	370.80	0.00
367.90	-21.95	370.80	0.00
368.00	-21.95	370.80	0.00
368.10	-21.95	370.80	0.00
368.20	-21.95	370.80	0.00
368.30	-21.95	370.80	0.00
368.40	-21.95	370.80	0.00
368.50	-21.95	370.80	0.00
368.60	-21.95	370.80	0.00
368.70	-21.86	370.80	0.00
368.80	-21.61	370.80	0.00
368.90	-21.18	370.80	0.00
369.00	-20.62	370.80	0.00
369.10	-20.04	370.80	0.00
369.20	-19.44	370.80	0.00
369.30	-18.82	370.80	0.00
369.40	-18.18	370.80	0.00
369.50	-17.52	370.80	0.00
369.60	-16.83	370.80	0.00
369.70	-16.12	370.80	0.00
369.80	-15.37	370.80	0.00
369.90	-14.58	370.80	0.00
370.00	-13.74	370.80	0.00
370.10	-12.85	370.80	0.00
370.20	-11.90	370.80	0.00
370.30	-10.87	370.80	0.00
370.40	-9.73	370.80	0.00
370.50	-8.42	370.80	0.00
370.60	-6.87	370.80	0.00
370.70	-4.86	370.80	0.00
370.80	0.00	370.80	0.00
370.90	4.86	370.80	0.00
371.00	6.88	370.80	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-22.47	370.90	0.00
367.00	-22.47	370.90	0.00
367.10	-22.47	370.90	0.00
367.20	-22.47	370.90	0.00
367.30	-22.47	370.90	0.00
367.40	-22.47	370.90	0.00
367.50	-22.47	370.90	0.00
367.60	-22.47	370.90	0.00
367.70	-22.47	370.90	0.00
367.80	-22.47	370.90	0.00
367.90	-22.47	370.90	0.00
368.00	-22.47	370.90	0.00
368.10	-22.47	370.90	0.00
368.20	-22.47	370.90	0.00
368.30	-22.47	370.90	0.00
368.40	-22.47	370.90	0.00
368.50	-22.47	370.90	0.00
368.60	-22.47	370.90	0.00
368.70	-22.38	370.90	0.00
368.80	-22.14	370.90	0.00
368.90	-21.73	370.90	0.00
369.00	-21.18	370.90	0.00
369.10	-20.62	370.90	0.00
369.20	-20.04	370.90	0.00
369.30	-19.44	370.90	0.00
369.40	-18.82	370.90	0.00
369.50	-18.18	370.90	0.00
369.60	-17.52	370.90	0.00
369.70	-16.83	370.90	0.00
369.80	-16.12	370.90	0.00
369.90	-15.37	370.90	0.00
370.00	-14.58	370.90	0.00
370.10	-13.74	370.90	0.00
370.20	-12.85	370.90	0.00
370.30	-11.90	370.90	0.00
370.40	-10.87	370.90	0.00
370.50	-9.73	370.90	0.00
370.60	-8.42	370.90	0.00
370.70	-6.87	370.90	0.00
370.80	-4.86	370.90	0.00
370.90	0.00	370.90	0.00
371.00	4.86	370.90	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Contributing Structures
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Subsection: Composite Rating Curve
Label: OCS-A
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.90	-22.94	371.00	0.00
367.00	-22.94	371.00	0.00
367.10	-22.94	371.00	0.00
367.20	-22.94	371.00	0.00
367.30	-22.94	371.00	0.00
367.40	-22.94	371.00	0.00
367.50	-22.94	371.00	0.00
367.60	-22.94	371.00	0.00
367.70	-22.94	371.00	0.00
367.80	-22.94	371.00	0.00
367.90	-22.94	371.00	0.00
368.00	-22.94	371.00	0.00
368.10	-22.94	371.00	0.00
368.20	-22.94	371.00	0.00
368.30	-22.94	371.00	0.00
368.40	-22.94	371.00	0.00
368.50	-22.94	371.00	0.00
368.60	-22.94	371.00	0.00
368.70	-22.88	371.00	0.00
368.80	-22.66	371.00	0.00
368.90	-22.27	371.00	0.00
369.00	-21.73	371.00	0.00
369.10	-21.18	371.00	0.00
369.20	-20.62	371.00	0.00
369.30	-20.04	371.00	0.00
369.40	-19.44	371.00	0.00
369.50	-18.82	371.00	0.00
369.60	-18.18	371.00	0.00
369.70	-17.52	371.00	0.00
369.80	-16.83	371.00	0.00
369.90	-16.12	371.00	0.00
370.00	-15.37	371.00	0.00
370.10	-14.58	371.00	0.00
370.20	-13.74	371.00	0.00
370.30	-12.85	371.00	0.00
370.40	-11.90	371.00	0.00
370.50	-10.87	371.00	0.00
370.60	-9.73	371.00	0.00
370.70	-8.42	371.00	0.00
370.80	-6.87	371.00	0.00
370.90	-4.86	371.00	0.00
371.00	0.00	371.00	0.00

Contributing Structures
Culvert - 1

Subsection: Composite Rating Curve

Label: OCS-A

Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years

Storm Event: 100

Composite Outflow Summary

Contributing Structures
Culvert - 1
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Requested Pond Water Surface Elevations	
Minimum (Headwater)	366.50 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	371.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Rectangular Weir	Weir - 1	Forward	Culvert - 1	370.00	371.00
Culvert-Circular	Culvert - 1	Forward	TW	366.50	371.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Weir - 1 Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	370.00 ft
Weir Length	4.00 ft
Weir Coefficient	3.33 (ft^0.5)/s

Structure ID: Culvert - 1 Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	15.0 in
Length	146.50 ft
Length (Computed Barrel)	146.52 ft
Slope (Computed)	0.017 ft/ft

Outlet Control Data	
Manning's n	0.013
Ke	0.200
Kb	0.023
Kr	0.000
Convergence Tolerance	0.00 ft

Inlet Control Data	
Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	1.087
T2 ratio (HW/D)	1.189
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...

T1 Elevation	367.86 ft	T1 Flow	4.80 ft³/s
T2 Elevation	367.99 ft	T2 Flow	5.49 ft³/s

Subsection: Outlet Input Data | Return Event: 1 years
Label: OCS-B | Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Structure ID: TW
Structure Type: TW Setup, DS Channel

Tailwater Type	Free Outfall

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft^3/s
Flow Tolerance (Maximum)	10.000 ft^3/s

Subsection: Composite Rating Curve | Return Event: 1 years
Label: OCS-B | Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.50	0.00	(N/A)	0.00
366.60	0.00	(N/A)	0.00
366.70	0.00	(N/A)	0.00
366.80	0.00	(N/A)	0.00
366.90	0.00	(N/A)	0.00
367.00	0.00	(N/A)	0.00
367.10	0.00	(N/A)	0.00
367.20	0.00	(N/A)	0.00
367.30	0.00	(N/A)	0.00
367.40	0.00	(N/A)	0.00
367.50	0.00	(N/A)	0.00
367.60	0.00	(N/A)	0.00
367.70	0.00	(N/A)	0.00
367.80	0.00	(N/A)	0.00
367.90	0.00	(N/A)	0.00
368.00	0.00	(N/A)	0.00
368.10	0.00	(N/A)	0.00
368.20	0.00	(N/A)	0.00
368.30	0.00	(N/A)	0.00
368.40	0.00	(N/A)	0.00
368.50	0.00	(N/A)	0.00
368.60	0.00	(N/A)	0.00
368.70	0.00	(N/A)	0.00
368.80	0.00	(N/A)	0.00
368.90	0.00	(N/A)	0.00
369.00	0.00	(N/A)	0.00
369.10	0.00	(N/A)	0.00
369.20	0.00	(N/A)	0.00
369.30	0.00	(N/A)	0.00
369.40	0.00	(N/A)	0.00
369.50	0.00	(N/A)	0.00
369.60	0.00	(N/A)	0.00
369.70	0.00	(N/A)	0.00
369.80	0.00	(N/A)	0.00
369.90	0.00	(N/A)	0.00
370.00	0.00	(N/A)	0.00
370.10	0.42	(N/A)	0.00
370.20	1.19	(N/A)	0.00
370.30	2.19	(N/A)	0.00
370.40	3.37	(N/A)	0.00
370.50	4.71	(N/A)	0.00
370.60	6.19	(N/A)	0.00
370.70	7.80	(N/A)	0.00
370.80	9.53	(N/A)	0.00

Subsection: Composite Rating Curve
Label: OCS-B
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
370.90	10.36	(N/A)	0.00
371.00	10.62	(N/A)	0.00

Contributing Structures
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
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(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)

Subsection: Composite Rating Curve
Label: OCS-B
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Contributing Structures
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
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Weir - 1,Culvert - 1
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Weir - 1,Culvert - 1
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1

Requested Pond Water Surface Elevations	
Minimum (Headwater)	366.50 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	371.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Rectangular Weir	Weir - 1	Forward	Culvert - 1	370.00	371.00
Culvert-Circular	Culvert - 1	Forward	TW	366.50	371.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Weir - 1 Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	370.00 ft
Weir Length	4.00 ft
Weir Coefficient	3.33 (ft^0.5)/s

Structure ID: Culvert - 1 Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	15.0 in
Length	146.50 ft
Length (Computed Barrel)	146.52 ft
Slope (Computed)	0.017 ft/ft

Outlet Control Data	
Manning's n	0.013
Ke	0.200
Kb	0.023
Kr	0.000
Convergence Tolerance	0.00 ft

Inlet Control Data	
Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	1.087
T2 ratio (HW/D)	1.189
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...

T1 Elevation	367.86 ft	T1 Flow	4.80 ft³/s
T2 Elevation	367.99 ft	T2 Flow	5.49 ft³/s

Structure ID: TW
Structure Type: TW Setup, DS Channel

Tailwater Type	Free Outfall

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s

Subsection: Composite Rating Curve
Label: OCS-B
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.50	0.00	(N/A)	0.00
366.60	0.00	(N/A)	0.00
366.70	0.00	(N/A)	0.00
366.80	0.00	(N/A)	0.00
366.90	0.00	(N/A)	0.00
367.00	0.00	(N/A)	0.00
367.10	0.00	(N/A)	0.00
367.20	0.00	(N/A)	0.00
367.30	0.00	(N/A)	0.00
367.40	0.00	(N/A)	0.00
367.50	0.00	(N/A)	0.00
367.60	0.00	(N/A)	0.00
367.70	0.00	(N/A)	0.00
367.80	0.00	(N/A)	0.00
367.90	0.00	(N/A)	0.00
368.00	0.00	(N/A)	0.00
368.10	0.00	(N/A)	0.00
368.20	0.00	(N/A)	0.00
368.30	0.00	(N/A)	0.00
368.40	0.00	(N/A)	0.00
368.50	0.00	(N/A)	0.00
368.60	0.00	(N/A)	0.00
368.70	0.00	(N/A)	0.00
368.80	0.00	(N/A)	0.00
368.90	0.00	(N/A)	0.00
369.00	0.00	(N/A)	0.00
369.10	0.00	(N/A)	0.00
369.20	0.00	(N/A)	0.00
369.30	0.00	(N/A)	0.00
369.40	0.00	(N/A)	0.00
369.50	0.00	(N/A)	0.00
369.60	0.00	(N/A)	0.00
369.70	0.00	(N/A)	0.00
369.80	0.00	(N/A)	0.00
369.90	0.00	(N/A)	0.00
370.00	0.00	(N/A)	0.00
370.10	0.42	(N/A)	0.00
370.20	1.19	(N/A)	0.00
370.30	2.19	(N/A)	0.00
370.40	3.37	(N/A)	0.00
370.50	4.71	(N/A)	0.00
370.60	6.19	(N/A)	0.00
370.70	7.80	(N/A)	0.00
370.80	9.53	(N/A)	0.00

Subsection: Composite Rating Curve | Return Event: 10 years
Label: OCS-B | Storm Event: 10
Scenario: Proposed Conditions 10 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)
370.90	10.36	(N/A)	0.00
371.00	10.62	(N/A)	0.00

Contributing Structures
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)

Subsection: Composite Rating Curve
Label: OCS-B
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Composite Outflow Summary

Contributing Structures
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1

Requested Pond Water Surface Elevations	
Minimum (Headwater)	366.50 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	371.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Rectangular Weir	Weir - 1	Forward	Culvert - 1	370.00	371.00
Culvert-Circular	Culvert - 1	Forward	TW	366.50	371.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Weir - 1
Structure Type: Rectangular Weir

Number of Openings	1
Elevation	370.00 ft
Weir Length	4.00 ft
Weir Coefficient	3.33 (ft^0.5)/s

Structure ID: Culvert - 1
Structure Type: Culvert-Circular

Number of Barrels	1
Diameter	15.0 in
Length	146.50 ft
Length (Computed Barrel)	146.52 ft
Slope (Computed)	0.017 ft/ft

Outlet Control Data

Manning's n	0.013
Ke	0.200
Kb	0.023
Kr	0.000
Convergence Tolerance	0.00 ft

Inlet Control Data

Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	1.087
T2 ratio (HW/D)	1.189
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...

T1 Elevation	367.86 ft	T1 Flow	4.80 ft³/s
T2 Elevation	367.99 ft	T2 Flow	5.49 ft³/s

Structure ID: TW
Structure Type: TW Setup, DS Channel

Tailwater Type	Free Outfall

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s

Subsection: Composite Rating Curve
Label: OCS-B
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.50	0.00	(N/A)	0.00
366.60	0.00	(N/A)	0.00
366.70	0.00	(N/A)	0.00
366.80	0.00	(N/A)	0.00
366.90	0.00	(N/A)	0.00
367.00	0.00	(N/A)	0.00
367.10	0.00	(N/A)	0.00
367.20	0.00	(N/A)	0.00
367.30	0.00	(N/A)	0.00
367.40	0.00	(N/A)	0.00
367.50	0.00	(N/A)	0.00
367.60	0.00	(N/A)	0.00
367.70	0.00	(N/A)	0.00
367.80	0.00	(N/A)	0.00
367.90	0.00	(N/A)	0.00
368.00	0.00	(N/A)	0.00
368.10	0.00	(N/A)	0.00
368.20	0.00	(N/A)	0.00
368.30	0.00	(N/A)	0.00
368.40	0.00	(N/A)	0.00
368.50	0.00	(N/A)	0.00
368.60	0.00	(N/A)	0.00
368.70	0.00	(N/A)	0.00
368.80	0.00	(N/A)	0.00
368.90	0.00	(N/A)	0.00
369.00	0.00	(N/A)	0.00
369.10	0.00	(N/A)	0.00
369.20	0.00	(N/A)	0.00
369.30	0.00	(N/A)	0.00
369.40	0.00	(N/A)	0.00
369.50	0.00	(N/A)	0.00
369.60	0.00	(N/A)	0.00
369.70	0.00	(N/A)	0.00
369.80	0.00	(N/A)	0.00
369.90	0.00	(N/A)	0.00
370.00	0.00	(N/A)	0.00
370.10	0.42	(N/A)	0.00
370.20	1.19	(N/A)	0.00
370.30	2.19	(N/A)	0.00
370.40	3.37	(N/A)	0.00
370.50	4.71	(N/A)	0.00
370.60	6.19	(N/A)	0.00
370.70	7.80	(N/A)	0.00
370.80	9.53	(N/A)	0.00

Subsection: Composite Rating Curve
Label: OCS-B
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
370.90	10.36	(N/A)	0.00
371.00	10.62	(N/A)	0.00

Contributing Structures
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)

Subsection: Composite Rating Curve
Label: OCS-B
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Contributing Structures
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
(no Q: Weir - 1,Culvert - 1)
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1
Weir - 1,Culvert - 1

Subsection: Outlet Input Data
Label: Porous Pavement
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Requested Pond Water Surface Elevations	
Minimum (Headwater)	364.71 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	366.21 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Rectangular Weir	Weir - 1	Forward	TW	368.20	368.21
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Weir - 1
Structure Type: Rectangular Weir

Number of Openings	1
Elevation	368.20 ft
Weir Length	100.00 ft
Weir Coefficient	3.33 (ft^0.5)/s

Structure ID: TW
Structure Type: TW Setup, DS Channel

Tailwater Type	Free Outfall

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft^3/s
Flow Tolerance (Maximum)	10.000 ft^3/s

Subsection: Composite Rating Curve
Label: Porous Pavement
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.71	0.00	(N/A)	0.00
367.21	0.00	(N/A)	0.00
367.71	0.00	(N/A)	0.00
368.20	0.00	(N/A)	0.00
368.21	0.33	(N/A)	0.00

Contributing Structures
None Contributing
None Contributing
None Contributing
Weir - 1
Weir - 1

Subsection: Outlet Input Data
Label: Porous Pavement
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Requested Pond Water Surface Elevations	
Minimum (Headwater)	364.71 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	366.21 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Rectangular Weir	Weir - 1	Forward	TW	368.20	368.21
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Weir - 1
Structure Type: Rectangular Weir

Number of Openings	1
Elevation	368.20 ft
Weir Length	100.00 ft
Weir Coefficient	3.33 (ft^0.5)/s

Structure ID: TW
Structure Type: TW Setup, DS Channel

Tailwater Type	Free Outfall

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft^3/s
Flow Tolerance (Maximum)	10.000 ft^3/s

Subsection: Composite Rating Curve | Return Event: 10 years
Label: Porous Pavement | Storm Event: 10
Scenario: Proposed Conditions 10 Year Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.71	0.00	(N/A)	0.00
367.21	0.00	(N/A)	0.00
367.71	0.00	(N/A)	0.00
368.20	0.00	(N/A)	0.00
368.21	0.33	(N/A)	0.00

Contributing Structures
None Contributing
None Contributing
None Contributing
Weir - 1
Weir - 1

Subsection: Outlet Input Data | Return Event: 100 years
Label: Porous Pavement | Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Requested Pond Water Surface Elevations	
Minimum (Headwater)	364.71 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	366.21 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Rectangular Weir	Weir - 1	Forward	TW	368.20	368.21
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Weir - 1
Structure Type: Rectangular Weir

Number of Openings	1
Elevation	368.20 ft
Weir Length	100.00 ft
Weir Coefficient	3.33 (ft^0.5)/s

Structure ID: TW
Structure Type: TW Setup, DS Channel

Tailwater Type	Free Outfall

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft^3/s
Flow Tolerance (Maximum)	10.000 ft^3/s

Subsection: Composite Rating Curve
Label: Porous Pavement
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
366.71	0.00	(N/A)	0.00
367.21	0.00	(N/A)	0.00
367.71	0.00	(N/A)	0.00
368.20	0.00	(N/A)	0.00
368.21	0.33	(N/A)	0.00

Contributing Structures
None Contributing
None Contributing
None Contributing
Weir - 1
Weir - 1

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft^2)	Flow (Infiltration) (ft^3/s)
366.90	2,087.1	0.00
367.00	2,143.6	0.30
367.10	2,200.9	0.31
367.20	2,258.9	0.31
367.30	2,317.7	0.32
367.40	2,377.3	0.33
367.50	2,437.6	0.34
367.60	2,498.7	0.35
367.70	2,560.5	0.36
367.80	2,623.1	0.36
367.90	2,686.4	0.37
368.00	2,750.5	0.38
368.10	2,812.9	0.39
368.20	2,876.1	0.40
368.30	2,939.9	0.41
368.40	3,004.4	0.42
368.50	3,069.6	0.43
368.60	3,135.6	0.44
368.70	3,202.2	0.44
368.80	3,269.5	0.45
368.90	3,337.5	0.46
369.00	3,406.3	0.47
369.10	3,475.7	0.48
369.20	3,545.8	0.49
369.30	3,616.7	0.50
369.40	3,688.2	0.51
369.50	3,760.4	0.52
369.60	3,833.4	0.53
369.70	3,907.0	0.54
369.80	3,981.3	0.55
369.90	4,056.3	0.56
370.00	4,132.1	0.57
370.10	4,206.6	0.58
370.20	4,281.9	0.59
370.30	4,357.8	0.61
370.40	4,434.3	0.62
370.50	4,511.6	0.63
370.60	4,589.4	0.64
370.70	4,668.0	0.65
370.80	4,747.2	0.66
370.90	4,827.1	0.67
371.00	4,907.7	0.68

Subsection: Interconnected Pond Routing Summary | Return Event: 1 years
Label: INFILTRATION BASIN A | Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	6.0000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	366.90	ft	Flow Tolerance (Minimum)	0.000	ft^3/s
Volume (Starting)	0.000	ft^3	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft^3/s	ICPM Time Step	0.050	hours
Outflow (Starting)	0.00	ft^3/s	Output Increment	0.050	hours

	Maximum Storage	
Time to Peak (hours)	Elevation (ft)	Volume (ft^3)
12.550	367.98	2,611.000

	Forward Flow Peaks		Reverse Flow Peaks	
	Time to Peak (hours)	Flow (Peak) (ft^3/s)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Pond Inflow....	12.100	4.10	0.000	0.00
Infiltration...	12.550	0.38	0.000	0.00
Pond Outflow...	12.150	2.67	0.000	0.00

	Total Volume In		Total Volume Out	
	Volume (ft^3)	Direction	Volume (ft^3)	Direction
Pond Inflow....	14,470.000	Forward	0.000	Reverse
Infiltration...	0.000	Reverse	9,135.000	Forward
Pond Outflow...	0.000	Reverse	5,294.000	Forward

Mass Balance (ft^3)	
Volume (Initial ICPM)	0.000 ft^3
Volume (Total In ICPM)	14,470.000 ft^3
Volume (Total Out ICPM)	14,429.000 ft^3
Volume (Ending)	37.000 ft^3
Elevation (Ending)	366.92 ft
Difference	5.000 ft^3
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.0 %

Subsection: Interconnected Pond Routing Summary
Label: INFILTRATION BASIN A
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Infiltration

Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	6.0000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	366.90	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.000	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.050	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

	Maximum Storage	
Time to Peak (hours)	Elevation (ft)	Volume (ft³)
12.950	369.41	7,460.000

	Forward Flow Peaks		Reverse Flow Peaks	
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Pond Inflow....	12.100	8.85	0.000	0.00
Infiltration...	12.950	0.51	0.000	0.00
Pond Outflow...	12.100	4.27	0.000	0.00

	Total Volume In		Total Volume Out	
	Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	32,534.000	Forward	0.000	Reverse
Infiltration...	0.000	Reverse	19,234.000	Forward
Pond Outflow...	0.000	Reverse	13,251.000	Forward

Mass Balance (ft³)

Volume (Initial ICPM)	0.000 ft³
Volume (Total In ICPM)	32,534.000 ft³
Volume (Total Out ICPM)	32,485.000 ft³
Volume (Ending)	71.000 ft³
Elevation (Ending)	366.93 ft
Difference	-22.000 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.1 %

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	6.0000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	366.90	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.000	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.050	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

	Maximum Storage	
Time to Peak (hours)	Elevation (ft)	Volume (ft³)
12.350	370.73	12,791.000

	Forward Flow Peaks		Reverse Flow Peaks	
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Pond Inflow....	12.100	17.02	0.000	0.00
Infiltration...	12.350	0.65	0.000	0.00
Pond Outflow...	12.050	7.78	0.000	0.00

	Total Volume In		Total Volume Out	
	Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	65,439.000	Forward	0.000	Reverse
Infiltration...	0.000	Reverse	27,770.000	Forward
Pond Outflow...	0.000	Reverse	36,630.000	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.000 ft³
Volume (Total In ICPM)	65,439.000 ft³
Volume (Total Out ICPM)	64,400.000 ft³
Volume (Ending)	1,008.000 ft³
Elevation (Ending)	367.32 ft
Difference	30.000 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.0 %

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
366.50	1,290.2	0.00
366.60	1,339.5	0.19
366.70	1,389.8	0.19
366.80	1,441.0	0.20
366.90	1,493.1	0.21
367.00	1,546.1	0.21
367.10	1,600.1	0.22
367.20	1,654.9	0.23
367.30	1,710.8	0.24
367.40	1,767.5	0.25
367.50	1,825.1	0.25
367.60	1,883.7	0.26
367.70	1,943.2	0.27
367.80	2,003.7	0.28
367.90	2,065.0	0.29
368.00	2,127.3	0.30
368.10	2,186.6	0.30
368.20	2,246.8	0.31
368.30	2,307.8	0.32
368.40	2,369.6	0.33
368.50	2,432.2	0.34
368.60	2,495.6	0.35
368.70	2,559.9	0.36
368.80	2,625.0	0.36
368.90	2,690.8	0.37
369.00	2,757.5	0.38
369.10	2,825.1	0.39
369.20	2,893.4	0.40
369.30	2,962.5	0.41
369.40	3,032.5	0.42
369.50	3,103.3	0.43
369.60	3,174.9	0.44
369.70	3,247.3	0.45
369.80	3,320.5	0.46
369.90	3,394.6	0.47
370.00	3,469.4	0.48
370.10	3,541.7	0.49
370.20	3,614.7	0.50
370.30	3,688.4	0.51
370.40	3,762.9	0.52
370.50	3,838.1	0.53
370.60	3,914.0	0.54
370.70	3,990.7	0.55
370.80	4,068.2	0.57

Subsection: Pond Infiltration Calculations
Label: INFILTRATION BASIN B (IN)
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft^2)	Flow (Infiltration) (ft^3/s)
370.90	4,146.4	0.58
371.00	4,225.3	0.59

Subsection: Interconnected Pond Routing Summary
Label: INFILTRATION BASIN B
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	6.0000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	366.50	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.000	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.050	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

	Maximum Storage	
Time to Peak (hours)	Elevation (ft)	Volume (ft³)
12.500	367.98	2,498.000

	Forward Flow Peaks		Reverse Flow Peaks	
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Pond Inflow....	12.150	2.67	0.000	0.00
Infiltration...	12.500	0.29	0.000	0.00
Pond Outflow...	0.000	0.00	0.000	0.00

	Total Volume In		Total Volume Out	
	Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	5,294.000	Forward	0.000	Reverse
Infiltration...	0.000	Reverse	5,287.000	Forward
Pond Outflow...	0.000	Reverse	0.000	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.000 ft³
Volume (Total In ICPM)	5,294.000 ft³
Volume (Total Out ICPM)	5,287.000 ft³
Volume (Ending)	6.000 ft³
Elevation (Ending)	366.50 ft
Difference	1.000 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.0 %

Subsection: Interconnected Pond Routing Summary | Return Event: 10 years
Label: INFILTRATION BASIN B | Storm Event: 10
Scenario: Proposed Conditions 10 Year Storm

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	6.0000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	366.50	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.000	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.050	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

Time to Peak (hours)	Maximum Storage Elevation (ft)	Maximum Storage Volume (ft³)
12.950	369.40	6,413.000

	Forward Flow Peaks		Reverse Flow Peaks	
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Pond Inflow....	12.100	4.27	0.000	0.00
Infiltration...	12.950	0.42	0.000	0.00
Pond Outflow...	0.000	0.00	0.000	0.00

	Total Volume In		Total Volume Out	
	Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	13,251.000	Forward	0.000	Reverse
Infiltration...	0.000	Reverse	13,238.000	Forward
Pond Outflow...	0.000	Reverse	0.000	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.000 ft³
Volume (Total In ICPM)	13,251.000 ft³
Volume (Total Out ICPM)	13,238.000 ft³
Volume (Ending)	12.000 ft³
Elevation (Ending)	366.51 ft
Difference	1.000 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.0 %

Subsection: Interconnected Pond Routing Summary	Return Event: 100 years
Label: INFILTRATION BASIN B	Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm	

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	6.0000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	366.50	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.000	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.050	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

Time to Peak (hours)	Maximum Storage Elevation (ft)	Maximum Storage Volume (ft³)
12.350	370.57	10,259.000

	Forward Flow Peaks Time to Peak (hours)	Forward Flow Peaks Flow (Peak) (ft³/s)	Reverse Flow Peaks Time to Peak (hours)	Reverse Flow Peaks Flow (Peak) (ft³/s)
Pond Inflow....	12.050	7.78	0.000	0.00
Infiltration...	12.350	0.54	0.000	0.00
Pond Outflow...	12.350	5.70	0.000	0.00

	Total Volume In Volume (ft³)	Total Volume In Direction	Total Volume Out Volume (ft³)	Total Volume Out Direction
Pond Inflow....	36,630.000	Forward	0.000	Reverse
Infiltration...	0.000	Reverse	20,034.000	Forward
Pond Outflow...	0.000	Reverse	15,230.000	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.000 ft³
Volume (Total In ICPM)	36,630.000 ft³
Volume (Total Out ICPM)	35,264.000 ft³
Volume (Ending)	1,345.000 ft³
Elevation (Ending)	367.30 ft
Difference	21.000 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.1 %

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Porous Pavement
Scenario: Proposed Conditions 1 Year Storm

Return Event: 1 years
Storm Event: 1

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	3.0000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	366.71 ft
Volume (Initial)	0.000 ft^3
Flow (Initial Outlet)	0.00 ft^3/s
Flow (Initial Infiltration)	0.00 ft^3/s
Flow (Initial, Total)	0.00 ft^3/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft^3/s)	Storage (ft^3)	Area (ft^2)	Infiltration (ft^3/s)	Flow (Total) (ft^3/s)	2S/t + O (ft^3/s)
366.71	0.00	0.000	15,097.870	0.00	0.00	0.00
367.21	0.00	3,019.574	15,097.870	1.05	1.05	34.60
367.71	0.00	6,039.148	15,097.870	1.05	1.05	68.15
368.20	0.00	8,998.330	15,097.870	1.05	1.05	101.03
368.21	0.33	9,058.722	15,097.870	1.05	1.38	102.03

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Porous Pavement
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	3.0000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	366.71 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (ft²)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
366.71	0.00	0.000	15,097.870	0.00	0.00	0.00
367.21	0.00	3,019.574	15,097.870	1.05	1.05	34.60
367.71	0.00	6,039.148	15,097.870	1.05	1.05	68.15
368.20	0.00	8,998.330	15,097.870	1.05	1.05	101.03
368.21	0.33	9,058.722	15,097.870	1.05	1.38	102.03

Subsection: Elevation-Volume-Flow Table (Pond) | Return Event: 100 years
Label: Porous Pavement | Storm Event: 100
Scenario: Proposed Conditions 100 Year Storm

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	3.0000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	366.71 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (ft²)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
366.71	0.00	0.000	15,097.870	0.00	0.00	0.00
367.21	0.00	3,019.574	15,097.870	1.05	1.05	34.60
367.71	0.00	6,039.148	15,097.870	1.05	1.05	68.15
368.20	0.00	8,998.330	15,097.870	1.05	1.05	101.03
368.21	0.33	9,058.722	15,097.870	1.05	1.38	102.03

Subsection: Pond Routed Hydrograph (total out) Return Event: 1 years
Label: Porous Pavement (OUT) Storm Event: 1
Scenario: Proposed Conditions 1 Year Storm

Peak Discharge	0.00 ft^3/s
Time to Peak	8.000 hours
Hydrograph Volume	0.000 ft^3

HYDROGRAPH ORDINATES (ft^3/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)
0.000	0.00	0.00	(N/A)	(N/A)	(N/A)

Subsection: Pond Routed Hydrograph (total out)
Label: Porous Pavement (OUT)
Scenario: Proposed Conditions 10 Year Storm

Return Event: 10 years
Storm Event: 10

Peak Discharge	0.00 ft^3/s
Time to Peak	8.000 hours
Hydrograph Volume	0.000 ft^3

HYDROGRAPH ORDINATES (ft^3/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)	Flow (ft^3/s)
0.000	0.00	0.00	(N/A)	(N/A)	(N/A)

Subsection: Pond Routed Hydrograph (total out)
Label: Porous Pavement (OUT)
Scenario: Proposed Conditions 100 Year Storm

Return Event: 100 years
Storm Event: 100

Peak Discharge	0.00 ft³/s
Time to Peak	8.000 hours
Hydrograph Volume	0.000 ft³

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
0.000	0.00	0.00	(N/A)	(N/A)	(N/A)

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APPENDIX B

NYSDEC STORMWATER SIZING CALCULATIONS

INFILTRATION WORKSHEET

JMC Project:	**19124**
Design Point:	**DL-1**
Drainage Area:	**PDA-1A**

Infiltration Basins A and B

Site Data for Drainage Area to be Treated by Practice			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Design Storm [90% Rainfall Event Number]	P	1.5	In
Impervious Area	I	1.72	Ac
Area	A	2.31	Ac
Percent Impervious	%I	74.46	%
Runoff Coefficient [0.05 + 0.009 x %I]	R_V	0.72	CF
TOTAL VOLUME Required [WQ_V = (P x R_V x A) / 12]	WQ_V	**9,049**	CF

Minimum Infiltration Basin Area			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Water Quality Volume	WQ_V	9,049	CF
Depth of the Basin	d_b	3.50	Ft
Required Bottom Area of Infiltration Basin [A_p = WQ_V / d_b]	A_p	**2,585**	SF

Proposed Infiltration Basin			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Provided Bottom Area of Infiltration Basin		3,313.62	SF
Total Area of Infiltration Basin Provided	A_p	9,133.01	SF

Runoff Reduction			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
90% Runoff Reduction capacity	RR_V	**8,144**	CF

INFILTRATION WORKSHEET

JMC Project:	**19124**
Design Point:	**DL-1**
Drainage Area:	**PDA-1B**

Porous Pavement #1

Site Data for Drainage Area to be Treated by Practice			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Design Storm [90% Rainfall Event Number]	P	1.5	In
Impervious Area	I	0.47	Ac
Area	A	0.57	Ac
Percent Impervious	%I	82.91	%
Runoff Coefficient [0.05 + 0.009 x %I]	R_V	0.80	CF
TOTAL VOLUME Required [$WQ_V = (P \times R_V \times A) / 12$]	WQ_V	**2,466**	CF

Minimum Porous Pavement Area			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Water Quality Volume	WQ_V	2,466	CF
Porosity	*n*	0.40	Ft / Day
Trench Depth	d_t	1.50	Ft
Surface Area Required [$A_R = WQ_v / (n \times d_t)$]	A_R	**4,110**	SF

Proposed Porous Pavement			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Surface Area of Porous Pavement Provided [A_p]	A_p	**15,098**	SF
Actual Volume Provided	WQ_{VP}	9,049	CF

Runoff Reduction			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
100% Runoff Reduction capacity	RR_V	**2,466**	CF

PROPRIETARY PRACTICE WORKSHEET

JMC Project:	**19124**
Design Point:	**DL-1**
Drainage Area:	**PDA-1A**

Continuous Deflective Separation Unit

Rainfall Distribution Type: **III**

Coefficients for the equation unit peak $[R = I_a / P]$ $[C_i = A \times R^2 + B \times R + C]$		A	B	C
	C_0	-1.774	0.3301	2.4577
	C_1	1.8622	-0.7397	-0.4627
	C_2	-0.0648	0.2276	-0.1932

Site Data for Drainage Area to be Treated by Practice

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Design Storm [90% Rainfall Event Number]	P	1.5	In
Impervious Area	I	1.72	Ac
Area	A	2.31	Ac
Percent Impervious	%I	74.46	%
Runoff Coefficient [0.05 + 0.009 x %I]	R_V	0.72	CF
TOTAL VOLUME Required $[WQ_V = (P \times R_V \times A) / 12]$	WQ_V	**9,049**	CF

Water Quality Peak Flow Calculation

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Water Quality Volume	WQ_V	9,049	CF
Design Storm [90% Rainfall Event Number] **or** [1-yr Storm Depth]	P	1.5	In
Time of Concentration	t_c	0.0833	Hr
Runoff Volume $[Q = WQ_V / (A \times 3630)]$	Q	1.08	In
Curve Number $[CN = 1000 / (10 + 5P + 10Q - 10 \times (Q^2 + 1.25\ QP)^{½}]$	CN	95.83	
Curve Number	CN	96	
Initial Abstraction $[I_a = 200 / CN - 2]$	I_a	0.09	In
Ratio $[R = I_a / P]$	R	0.06	
$C_0 = A \times R^2 + B \times R + C$	C_0	2.47	
$C_1 = A \times R2 + B \times R + C$	C_1	-0.50	
$C_2 = A \times R2 + B \times R + C$	C_2	-0.18	
Unit Peak Discharge	q_u	630.80	cfs/mi^2/in
Peak Discharge $[Q_p = q_u \times A \times Q / 640]$	Q_p	**2.46**	cfs

Proposed Device

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Water Quality Peak Flow Provided	Q_p	**3.38**	cfs
Water Quality Volume Provided $[WQ_V = 640 \times 3600 \times Q_P / q_u]$	WQ_V	**12,346**	CF
Model Designation		**Hydro International First Defense FD-6HC**	
Quantity		**1**	

Peak Bypass Rate

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Peak Bypass Rate (100 Year Storm - See Hydrologic Calculations)	Q_{p100}	**17.02**	cfs
Provided Bypass Rate (First Defense FD-6HC)	Q_{bp}	**32.00**	cfs

PROPRIETARY PRACTICE WORKSHEET

JMC Project:	**19124**
Design Point:	**DL-1**
Drainage Area:	**PDA-1C**

Continuous Deflective Separation Unit

Rainfall Distribution Type: **III**

Coefficients for the equation unit peak $[R = I_a / P]$ $[C_i = A \times R^2 + B \times R + C]$

	A	B	C
C_0	-1.774	0.3301	2.4577
C_1	1.8622	-0.7397	-0.4627
C_2	-0.0648	0.2276	-0.1932

Site Data for Drainage Area to be Treated by Practice

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Design Storm [90% Rainfall Event Number]	P	1.5	In
Impervious Area	I	0.51	Ac
Area	A	0.80	Ac
Percent Impervious	%I	64.44	%
Runoff Coefficient [0.05 + 0.009 x %I]	R_V	0.63	CF
TOTAL VOLUME Required $[WQ_V = (P \times R_V \times A) / 12]$	WQ_V	**2,737**	CF

Water Quality Peak Flow Calculation

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Water Quality Volume	WQ_V	2,737	CF
Design Storm [90% Rainfall Event Number] **or** [1-yr Storm Depth]	P	1.5	In
Time of Concentration	t_c	0.0833	Hr
Runoff Volume $[Q = WQ_V / (A \times 3630)]$	Q	0.94	In
Curve Number $[CN = 1000 / (10 + 5P + 10Q - 10 \times (Q^2 + 1.25\,QP)^{½}]$	CN	94.11	
Curve Number	CN	94	
Initial Abstraction $[I_a = 200 / CN - 2]$	I_a	0.13	In
Ratio $[R = I_a / P]$	R	0.08	
$C_0 = A \times R^2 + B \times R + C$	C_0	2.47	
$C_1 = A \times R2 + B \times R + C$	C_1	-0.51	
$C_2 = A \times R2 + B \times R + C$	C_2	-0.17	
Unit Peak Discharge	q_u	662.83	$cfs/mi^2/in$
Peak Discharge $[Q_p = q_u \times A \times Q / 640]$	Q_p	**0.78**	cfs

Proposed Device

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Water Quality Peak Flow Provided	Q_p	**0.84**	cfs
Water Quality Volume Provided $[WQ_V = 640 \times 3600 \times Q_P / q_u]$	WQ_V	**2,920**	CF
Model Designation		**Hydro International First Defense FD-3HC**	
Quantity		**1**	

Peak Bypass Rate

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Peak Bypass Rate (100 Year Storm - See Hydrologic Calculations)	Q_{p100}	**5.88**	cfs
Provided Bypass Rate (First Defense FD-3HC)	Q_{bp}	**15.00**	cfs

RUNOFF REDUCTION VOLUME WORKSHEET

JMC Project:	**19124**
Design Point:	**DL-1**

Proposed Warehouse	Drainage Area:	**PDA-1A, PDA-1B, PDA-1C**

Total Water Quality Treatment Volume

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Initial Water Quality Volume	WQ_V	**14,252**	CF
Adjusted Water Quality Volume	WQ_V	**3,641**	CF

Minimum Runoff Reduction Volume

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Design Storm [90% Rainfall Event Number] **or** [1-yr Storm Depth]	P	1.5	In
Total Area of *new* Impervious Cover (B Soils)	Aic	2.19	Ac
Hydrologic Soil Group (HSG) Specific Reduction Factor	S	0.40	
Total Area of *new* Impervious Cover (D Soils)	Aic	0.15	Ac
Hydrologic Soil Group (HSG) Specific Reduction Factor	S	0.20	
Runoff Coefficient [0.05 + 0.009 x %I]	R_V	0.95	CF
Impervious Cover targeted for Runoff Reduction [S x Aic]	Ai	0.91	Ac
TOTAL VOLUME Required [RR_V = (P x R_V x Ai) / 12]	RR_V	**4,687**	CF

Runoff Reduction Techniques (Volume)

GREEN INFRASTRUCTURE PRACTICE / SMP	*SYMBOL*	*VALUE*	*UNITS*
Infiltration Basin	RR_V	**8,144**	CF
Porous Pavement	RR_V	**2,466**	CF
TOTAL	RR_V	**10,610**	CF

Runoff Reduction

Is Total RR_V > Adjusted WQ_V ?	**YES**
Is Total RR_V > Minimum RR_V ?	**YES**

APPENDIX C

SOIL TESTING DATA

DESIGN DATA SHEET - STORMWATER INFILTRATION SYSTEM JOB NO. 19124

Owner A&R Real Estate Holdings, LLC Address 100 Business Park Drive

Located at (Street) Business Park Drive Sec.108.03 Block 1 Lot 51
(Indicate nearest cross st.)
Municipality Armonk Watershed Inland Long Island Sound Basin

SOIL INFILTRATION TEST DATA

Presoak Date: 11/15/2019 Run Date: 11/15/2019

Hole #	CLOCK TIME				INFILTRATION			
Hole Number	Run No.	Start	Stop	Elapse Time Min.	Depth From Grd	To surface water	Water Level Drop In Inches	Soil Rate In/Hr Drop
PT-1	1	1:00 PM	2:00 PM	60	30"	24"	18"	18"
	2	2:05 PM	3:05 PM	60	30"	24"	6"	6"
	3	3:05 PM	4:05 PM	60	30"	24"	6"	6"
	4							
PT-2	1	1:05 PM	2:05 PM	60	42"	24"	24"	24"
	2	2:10 PM	2:50 PM	40	42"	24"	24"	36"
	3	3:06 PM	3:46 PM	40	42"	24"	24"	36"
	4	3:46 PM	4:26 PM	40	42"	24"	24"	36"
PT-3	1	1:10 PM	2:10 PM	60	36"	24"	19"	19"
	2	2:15 PM	3:15 PM	60	36"	24"	13"	13"
	3	3:15 PM	4:15 PM	60	36"	24"	9"	9"
	4	4:16 PM	5:16 PM	60	36"	24"	7"	7"
PT-4	1							
	2							
	3							
	4							

Notes: Perc test done by: RAR

1) Tests to be repeated at same depth until approximately equal soil rates are obtained at each infiltration test hole. All data to be submitted for review.
2) Depth measurements to be made from top of hole. DO NOT REPORT INCREMENTS OF LESS THAN ONE INCH.

DESCRIPTION OF SOILS ENCOUNTERED IN TEST HOLES

DEPTH	HOLE NO. DH-1	HOLE NO. DH-2	HOLE NO. DH-3	HOLE NO. DH-4
G.L.	0"-6" Topsoil	0"-6" Topsoil	0"-6" Topsoil	0"-6" Topsoil
6"				
12"			6"-18" Light Brown Sandy Loam	
18"				
24"				
30"				
36"				
42"	6"-96" Light Brown Sandy Loam	6"-72" Dark Sandy Loam	18"-42" Dark Sandy Loam	6"-90" Light Brown Sandy Loam
48"				
60"			42"-72" Gray Sand	
66"				
72"				
78"				
84"				
90"				
96"				

WAS GROUNDWATER ENCOUNTERED? Yes

INDICATE LEVEL AT WHICH GROUND WATER IS ENCOUNTERED DH-1 @ 8', DH-2 @ 6', DH-3 @ 6', DH-4 @ 7.5'

INDICATE LEVEL AT WHICH WATER RISES AFTER BEING ENCOUNTERED DH-1 @ 3.5', DH-2 @ 3.5', DH-3 @ 5.5', DH-4 @ 6.5'

DEEP TESTS MADE BY Pecord DATE OF DEEP TESTS 11/15/2019

DESIGN

Soil Rate Used: ________ Min/1" Drop:

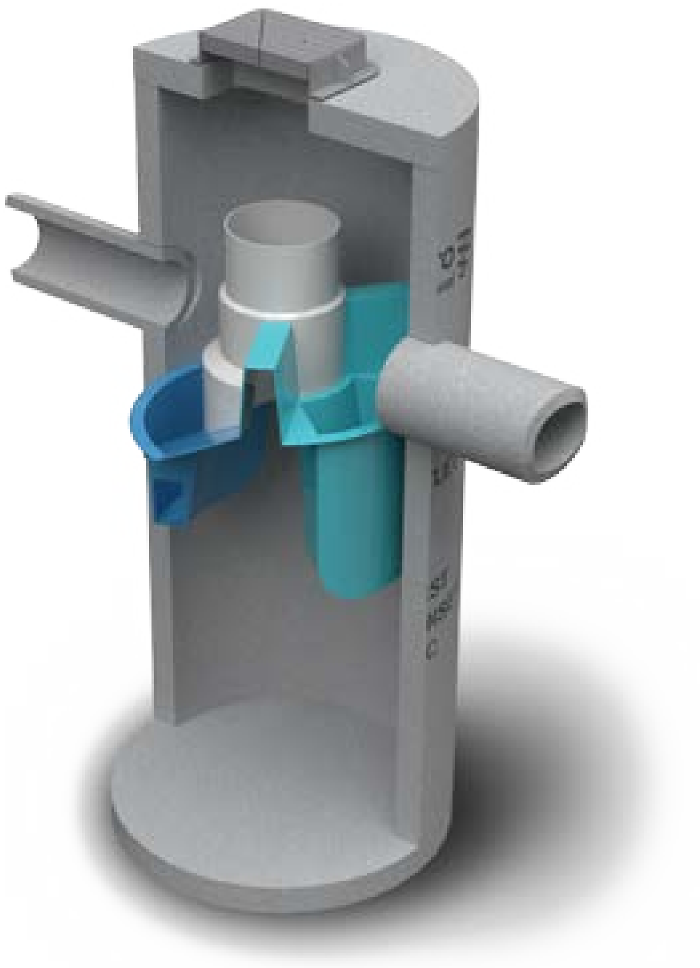
Name ________________ Signature ________________

Address JMC Planning Engineering Landscape Architecture & Land Surveying, PLLC
120 Bedford Road
Armonk, NY 10504 SEAL

APPENDIX D

HYDRO INTERNATIONAL FIRST DEFENSE OPERATION AND MAINTENANCE MANUAL

Hydro International



Operation and Maintenance Manual

First Defense® and First Defense® High Capacity

Vortex Separator for Stormwater Treatment

Table of Contents

Hydro International (Stormwater), 94 Hutchins Drive, Portland ME 04102
Tel: (207) 756-6200 Fax: (207) 756-6212 Web: www.hydro-int.com

Hydro Maintenance Services

Hydro International has been engineering stormwater treatment systems for over 30 years. We understand the mechanics of removing pollutants from stormwater and how to keep systems running at an optimal level.

Nobody Knows our Systems Better than we do

Avoid Service Negligence

Sanitation services providers not intimately familiar with stormwater treatment systems are at risk of the following:

- Inadvertently breaking parts or failing to clean/replace system components appropriately.
- Charging you for more frequent maintenance because they lacked the tools to service your system properly in the first place.
- Billing you for replacement parts that might have been covered under your Hydro warranty plan
- Charging for maintenance that may not yet have been required.

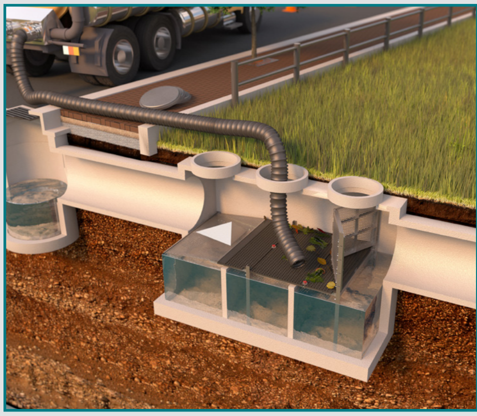
Leave the Dirty Work to us

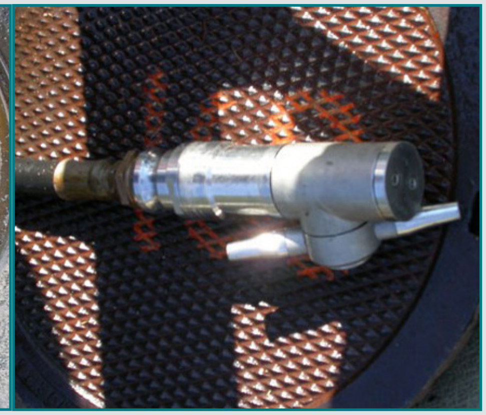
Trash, sediment and polluted water is stored inside treatment systems until they are removed by our team with a vactor truck. Sometimes teams must physically enter the system chambers in order to prepare the system for maintenance and install any replacement parts. Services include but are not limited to:

- Solids removal
- Removal of liquid pollutants
- Replacement media installation (when applicable)

Better Tools, Better Results

Not all vactor trucks are created equal. Appropriate tools and suction power are needed to service stormwater systems appropriately. Companies who don't specialize in stormwater treatment won't have the tools to properly clean systems or install new parts.



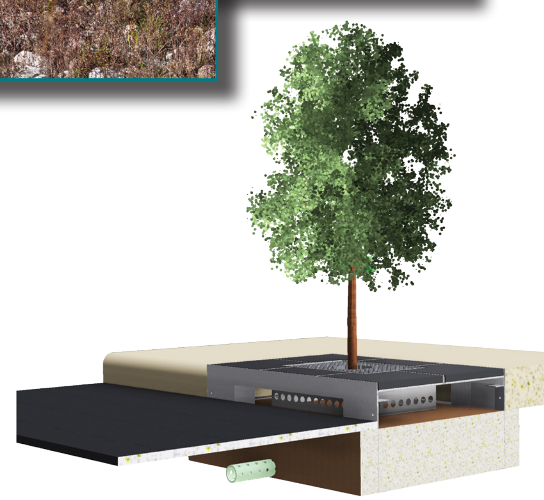


Service Warranty

Make sure you're not paying for service that is covered under your warranty plan. Only Hydro International's service teams can identify tune-ups that should be on us, not you.

Treatment Systems Serviced by Hydro:

- Stormwwater filters
- Stormwater separators
- Baffle boxes
- Biofilters/biorention systems
- Storage structures
- Catch basins
- Stormwater ponds
- Permeable pavement



SAVE TIME & MONEY: CALL HYDRO FOR A QUOTE

1 (888) 382-7808

LEARN MORE AT HYDRO-INT.COM/SERVICE

I. First Defense® by Hydro International

Introduction

The First Defense® is an enhanced vortex separator that combines an effective and economical stormwater treatment chamber with an integral peak flow bypass. It efficiently removes total suspended solids (TSS), trash and hydrocarbons from stormwater runoff without washing out previously captured pollutants. The First Defense® is available in several model configurations (refer to *Section II. Model Sizes & Configurations*, page 4) to accommodate a wide range of pipe sizes, peak flows and depth constraints.

Operation

The First Defense® operates on simple fluid hydraulics. It is self-activating, has no moving parts, no external power requirement and is fabricated with durable non-corrosive components. No manual procedures are required to operate the unit and maintenance is limited to monitoring accumulations of stored pollutants and periodic clean-outs. The First Defense® has been designed to allow for easy and safe access for inspection, monitoring and clean-out procedures. Neither entry into the unit nor removal of the internal components is necessary for maintenance, thus safety concerns related to confined-space-entry are avoided.

Pollutant Capture and Retention

The internal components of the First Defense® have been designed to optimize pollutant capture. Sediment is captured and retained in the base of the unit, while oil and floatables are stored on the water surface in the inner volume (Fig.1).

The pollutant storage volumes are isolated from the built-in bypass chamber to prevent washout during high-flow storm events. The sump of the First Defense® retains a standing water level between storm events. This ensures a quiescent flow regime at the onset of a storm, preventing resuspension and washout of pollutants captured during previous events.

Accessories such as oil absorbent pads are available for enhanced oil removal and storage. Due to the separation of the oil and floatable storage volume from the outlet, the potential for washout of stored pollutants between clean-outs is minimized.

Applications

- Stormwater treatment at the point of entry into the drainage line
- Sites constrained by space, topography or drainage profiles with limited slope and depth of cover
- Retrofit installations where stormwater treatment is placed on or tied into an existing storm drain line
- Pretreatment for filters, infiltration and storage

Advantages

- Inlet options include surface grate or multiple inlet pipes
- Integral high capacity bypass conveys large peak flows without the need for “offline” arrangements using separate junction manholes
- Proven to prevent pollutant washout at up to 500% of its treatment flow
- Long flow path through the device ensures a long residence time within the treatment chamber, enhancing pollutant settling
- Delivered to site pre-assembled and ready for installation

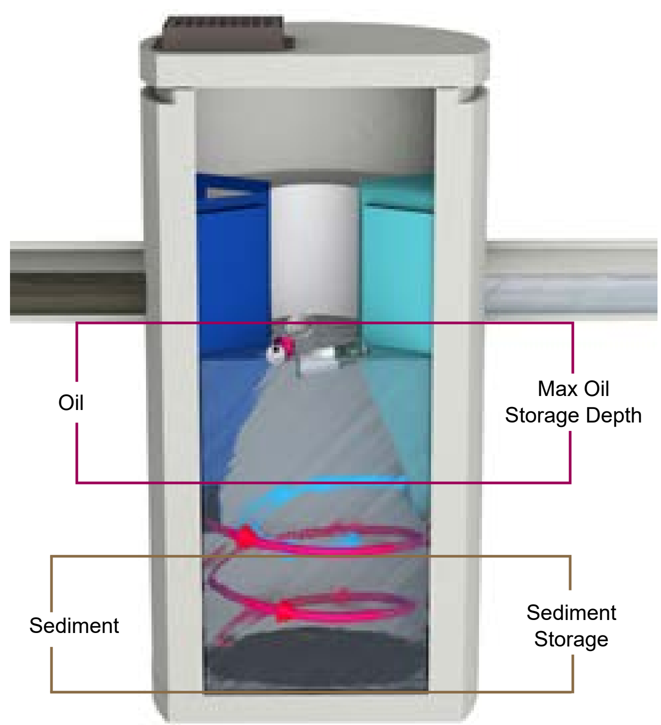


Fig.1 Pollutant storage volumes in the First Defense®.

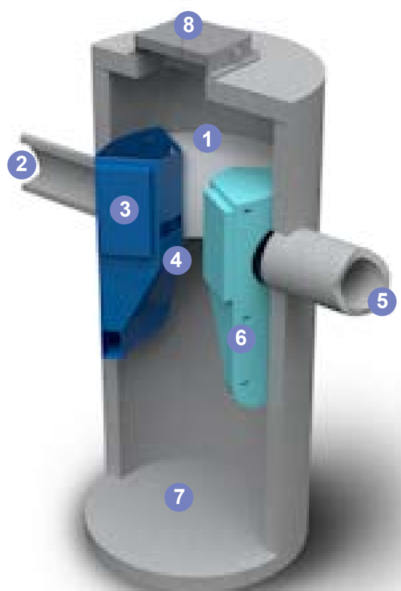
II. Model Sizes & Configurations

The First Defense® inlet and internal bypass arrangements are available in several model sizes and configurations. The components of the First Defense®-4HC and First Defense®-6HC have modified geometries as to allow greater design flexibility needed to accommodate various site constraints.

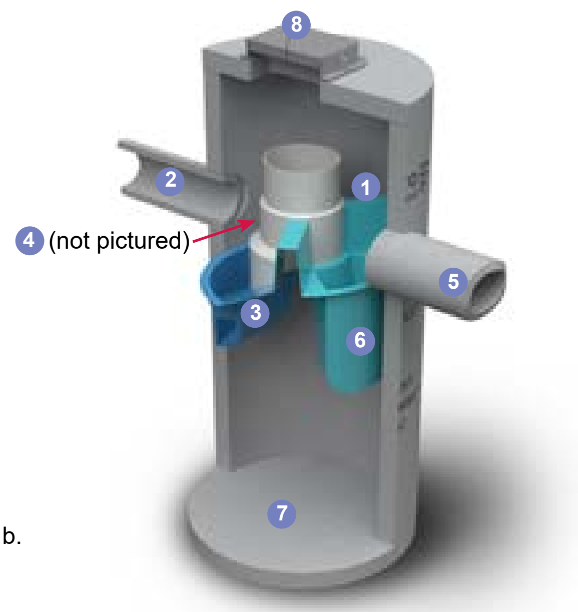
All First Defense® models include the internal components that are designed to remove and retain total suspended solids (TSS), gross solids, floatable trash and hydrocarbons (Fig.2a - 2b). First Defense® model parameters and design criteria are shown in Table 1.

First Defense® Components

1. **Built-In Bypass**
2. **Inlet Pipe**
3. **Inlet Chute**
4. **Floatables Draw-off Port**
5. **Outlet Pipe**
6. **Floatables Storage**
7. **Sediment Storage**
8. **Inlet Grate or Cover**



a.



b.

Fig.2a) First Defense®-4 and First Defense®-6; b) First Defense®-4HC and First Defense®-6HC, with higher capacity dual internal bypass and larger maximum pipe diameter.

First Defense® High Capacity Model Number	Diameter	Typical TSS Treatment Flow Rates		Peak Online Flow Rate	Maximum Pipe Diameter[1]	Oil Storage Capacity	Typical Sediment Storage Capacity[2]	Minimum Distance from Outlet Invert to Top of Rim[3]	Standard Distance from Outlet Invert to Sump Floor
		NJDEP Certified	106µm						
	(ft / m)	(cfs / L/s)	(cfs / L/s)	(cfs / L/s)	(in / mm)	(gal / L)	(yd^3 / m^3)	(ft / m)	(ft / m)
FD-3HC	3 / 0.9	0.84 / 23.7	1.60 / 45.3	15 / 424	18 / 457	125 / 473	0.4 / 0.3	2.0 - 3.5 / 0.6 - 1.0	3.71 / 1.13
FD-4HC	4 / 1.2	1.50 / 42.4	1.88 / 50.9	18 / 510	24 / 600	191 / 723	0.7 / 0.5	2.3 - 3.9 / 0.7 - 1.2	4.97 / 1.5
FD-5HC	5 / 1.5	2.34 / 66.2	2.94 / 82.1	20 / 566	24 / 609	300 / 1135	1.1 / .84	2.5 - 4.5 / 0.7 - 1.3	5.19 / 1.5
FD-6HC	6 / 1.8	3.38 / 95.7	4.73 / 133.9	32 / 906	30 / 750	496 / 1,878	1.6 / 1.2	3.0 - 5.1 / 0.9 - 1.6	5.97 / 1.8
FD-8HC	8 / 2.4	6.00 / 169.9	7.52 / 212.9	50 / 1,415	48 / 1219	1120 / 4239	2.8 / 2.1	3.0 - 6.0 / 0.9 -1.8	7.40 / 2.2

[1]Contact Hydro International when larger pipe sizes are required.
[2]Contact Hydro International when custom sediment storage capacity is required.
[3]Minimum distance for models depends on pipe diameter.

III. Maintenance

Overview

The First Defense® protects the environment by removing a wide range of pollutants from stormwater runoff. Periodic removal of these captured pollutants is essential to the continuous, long-term functioning of the First Defense®. The First Defense® will capture and retain sediment and oil until the sediment and oil storage volumes are full to capacity. When sediment and oil storage capacities are reached, the First Defense® will no longer be able to store removed sediment and oil. Maximum pollutant storage capacities are provided in Table 1.

The First Defense® allows for easy and safe inspection, monitoring and clean-out procedures. A commercially or municipally owned sump-vac is used to remove captured sediment and floatables. Access ports are located in the top of the manhole.

Maintenance events may include Inspection, Oil & Floatables Removal, and Sediment Removal. Maintenance events do not require entry into the First Defense®, nor do they require the internal components of the First Defense® to be removed. In the case of inspection and floatables removal, a vactor truck is not required. However, a vactor truck is required if the maintenance event is to include oil removal and/or sediment removal.

Maintenance Equipment Considerations

The internal components of the First Defense®-HC have a centrally located circular shaft through which the sediment storage sump can be accessed with a sump vac hose. The open diameter of this access shaft is 15 inches in diameter (Fig.3). Therefore, the nozzle fitting of any vactor hose used for maintenance should be less than 15 inches in diameter.

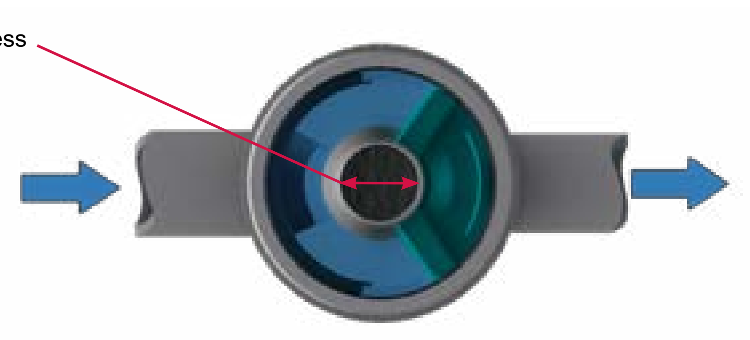


Fig.3 The central opening to the sump of the First Defense®-HC is 15 inches in diameter.

Determining Your Maintenance Schedule

The frequency of clean out is determined in the field after installation. During the first year of operation, the unit should be inspected every six months to determine the rate of sediment and floatables accumulation. A simple probe such as a Sludge-Judge® can be used to determine the level of accumulated solids stored in the sump. This information can be recorded in the maintenance log (see page 9) to establish a routine maintenance schedule.

The vactor procedure, including both sediment and oil / flotables removal, for a 6-ft First Defense® typically takes less than 30 minutes and removes a combined water/oil volume of about 765 gallons.

Inspection Procedures

1. Set up any necessary safety equipment around the access port or grate of the First Defense® as stipulated by local ordinances. Safety equipment should notify passing pedestrian and road traffic that work is being done.

2. Remove the grate or lid to the manhole.

3. Without entering the vessel, look down into the chamber to inspect the inside. Make note of any irregularities. Fig.4 shows the standing water level that should be observed.

4. Without entering the vessel, use the pole with the skimmer net to remove floatables and loose debris from the components and water surface.

5. Using a sediment probe such as a Sludge Judge®, measure the depth of sediment that has collected in the sump of the vessel.

6. On the Maintenance Log (see page 9), record the date, unit location, estimated volume of floatables and gross debris removed, and the depth of sediment measured. Also note any apparent irregularities such as damaged components or blockages.

7. Securely replace the grate or lid.

8. Take down safety equipment.

9. Notify Hydro International of any irregularities noted during inspection.

Fig.4 Floatables are removed with a vactor hose (First Defense model FD-4, shown).

Floatables and Sediment Clean Out

Floatables clean out is typically done in conjunction with sediment removal. A commercially or municipally owned sump-vac is used to remove captured sediment and floatables (Fig.5).

Floatables and loose debris can also be netted with a skimmer and pole. The access port located at the top of the manhole provides unobstructed access for a vactor hose and skimmer pole to be lowered to the base of the sump.

Scheduling

- Floatables and sump clean out are typically conducted once a year during any season.

- Floatables and sump clean out should occur as soon as possible following a spill in the contributing drainage area.

Recommended Equipment

- Safety Equipment (traffic cones, etc)

- Crow bar or other tool to remove grate or lid

- Pole with skimmer or net (if only floatables are being removed)

- Sediment probe (such as a Sludge Judge®)

- Vactor truck (flexible hose recommended)

- First Defense® Maintenance Log

Floatables and sediment Clean Out Procedures

1. Set up any necessary safety equipment around the access port or grate of the First Defense® as stipulated by local ordinances. Safety equipment should notify passing pedestrian and road traffic that work is being done.

2. Remove the grate or lid to the manhole.

3. Without entering the vessel, look down into the chamber to inspect the inside. Make note of any irregularities.

4. Remove oil and floatables stored on the surface of the water with the vactor hose (Fig.5) or with the skimmer or net (not pictured).

5. Using a sediment probe such as a Sludge Judge®, measure the depth of sediment that has collected in the sump of the vessel and record it in the Maintenance Log (page 9).

6. Once all floatables have been removed, drop the vactor hose to the base of the sump. Vactor out the sediment and gross debris off the sump floor (Fig.5).

7. Retract the vactor hose from the vessel.

8. On the Maintenance Log provided by Hydro International, record the date, unit location, estimated volume of floatables and gross debris removed, and the depth of sediment measured. Also note any apparent irregularities such as damaged components, blockages, or irregularly high or low water levels.

9. Securely replace the grate or lid.

Fig.5 Sediment is removed with a vactor hose (First Defense model FD-4, shown).

Maintenance at a Glance

Inspection	- Regularly during first year of installation - Every 6 months after the first year of installation
Oil and Floatables Removal	- Once per year, with sediment removal - Following a spill in the drainage area
Sediment Removal	- Once per year or as needed - Following a spill in the drainage area
NOTE: For most clean outs the entire volume of liquid does not need to be removed from the manhole. Only remove the first few inches of oils and floatables from the water surface to reduce the total volume of liquid removed during a clean out.	

First Defense® Installation Log

HYDRO INTERNATIONAL REFERENCE NUMBER:	
SITE NAME:	
SITE LOCATION:	
OWNER:	CONTRACTOR:
CONTACT NAME:	CONTACT NAME:
COMPANY NAME:	COMPANY NAME:
ADDRESS:	ADDRESS:
TELEPHONE:	TELEPHONE:
FAX:	FAX:

INSTALLATION DATE: / /

MODEL SIZE (CIRCLE ONE): FD-4 FD-4HC FD-6 FD-6HC

INLET (CIRCLE ALL THAT APPLY): GRATED INLET (CATCH BASIN) INLET PIPE (FLOW THROUGH)

Hydro International (Stormwater), 94 Hutchins Drive, Portland ME 04102
Tel: (207) 756-6200 Fax: (207) 756-6212 Web: www.hydro-int.com

Hydro International®

First Defense® Inspection and Maintenance Log

Date	Initials	Depth of Floatables and Oils	Sediment Depth Measured	Volume of Sediment Removed	Site Activity and Comments

Hydro International (Stormwater), 94 Hutchins Drive, Portland ME 04102
Tel: (207) 756-6200 Fax: (207) 756-6212 Web: www.hydro-int.com

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CALL **1 (888) 382-7808** TO SCHEDULE AN INSPECTION

Stormwater Solutions

94 Hutchins Drive
Portland, ME 04102

Tel: (207) 756-6200
Fax: (207) 756-6212
stormwaterinquiry@hydro-int.com

www.hydro-int.com

Turning Water Around...®

APPENDIX E

TEMPORARY EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE CHECKLIST
PERMANENT STORMWATER PRACTICE OPERATION, MAINTENANCE AND MANAGEMENT INSPECTION CHECKLISTS

Temporary Erosion and Sediment Control Inspection and Maintenance Checklist

Erosion and Sediment Control Measure	Inspection/Maintenance Intervals	Inspection/Maintenance Requirements
Stabilized Construction Access	Daily	• Periodic top dressing with additional aggregate as required • Clean sediment in public right-of-ways immediately
Silt Fence	Weekly + After Each Rain	• Remove & redistribute sediment when bulges develop in the silt fence.
Inlet Protection	Weekly + After Each Rain	• Remove sediment as necessary and replace filter fabric, crushed stone etc. • Any broken and damaged components should be replaced. • Check all materials for proper anchorage and secure as necessary.

Permanent Stormwater Management Practice Inspection and Maintenance Checklist

Stormwater Management Practice	Inspection/Maintenance Intervals	Inspection/Maintenance Requirements
Stormwater Management Basin	Annually + After Major Storms	• Check adequacy of vegetation and ground cover; for evidence of embankment erosion, animal burrows, unauthorized plantings and cracking, bulging or sliding of dam, clear/properly functioning drains, seeps/leaks on downstream face, failure of slope protection or riprap. Repair/remove as necessary. • Confirm emergency spillway is clear of obstructions and debris. • Confirm all inlets and outlet structures/pipes are operating properly.
Drain Inlets	Monthly	• Check for blockage and/or erosion at top of each inlet. Repair/remove as necessary. • Check for sediment and debris collected within sumps and clean out as necessary.

Permanent Stormwater Management Practice Inspection and Maintenance Checklist (Cont'd)

Stormwater Management Practice	Inspection/Maintenance Intervals	Inspection/Maintenance Requirements
Porous Pavement	Monthly and As Needed	• Ensure that paving area is clean of debris • Ensure that paving dewaters between storms • Ensure that the area is clean of sediments • Mow upland and adjacent areas, and seed bare areas
	Quarterly	• Vacuum sweep frequently to keep surface free of sediments
	Annually	• Inspect the surface for deterioration or spalling
Hydro International First Defense Hydrodynamic Separator	(See Maintenance Guidelines in Appendix D)	• See Maintenance Guidelines Appendix D

The owner/operator responsible for inspection and maintenance as outlined above:

A&R Real Estate Holdings, LLC
Mr. Robert Troccoli
100 Business Park Drive
Armonk, NY 10504
Phone: (718) 655-5450
Email: Rob@Jantile.com

APPENDIX F

CONTRACTOR'S CERTIFICATION

JMC Project 19124
Proposed Warehouse
100 Business Park Drive
Town of North Castle, NY

CONTRACTOR'S CERTIFICATION

"I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the owner or operator must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations"

Company Name: ____

Address: ____

Telephone Number: ____

Name and Title: ____

Signature: ___________________________________Date: ______________

Permit Identification No.:_______________________________________

Name and Title of Trained Contractor:_________________________________

Elements of the SWPPP Contractor is responsible for:______________________

JMC Planning Engineering Landscape Architecture & Land Surveying, PLLC | JMC Site Development Consultants, LLC
120 BEDFORD ROAD | ARMONK, NY 10504 | 914.273.5225 | MAIL@JMCPLLC.COM | JMCPLLC.COM

APPENDIX G

DRAWINGS

COVERAGE SUMMARY LEGEND

- EXISTING IMPERVIOUS AREAS
- EXISTING GRASSED AREA (HYDROLOGIC SOIL GROUP B)
- EXISTING GRASSED AREA (HYDROLOGIC SOIL GROUP D)
- EXISTING WOODED AREA (HYDROLOGIC SOIL GROUP B)
- EXISTING WOODED AREA (HYDROLOGIC SOIL GROUP D)

LEGEND

- EXISTING PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING EASEMENT LINE
- WF-A20 WF-A21 WF-A22 EXISTING WETLAND LINE AND DELINEATION
- EXISTING BUILDING OVERHANG
- EXISTING BUILDING LINE
- EXISTING PAVEMENT EDGE
- EXISTING CURB LINE
- 372 EXISTING CONTOUR
- 370 EXISTING INDEX CONTOUR
- EXISTING STONE WALL
- EXISTING RETAINING WALL
- EXISTING GUIDE RAIL
- EXISTING FENCE
- T10 M EXISTING TREE AND DESIGNATION
- EXISTING TREE LINE
- EXISTING DIRECTIONAL ARROWS
- EXISTING PAINT
- 5 EXISTING PARKING WITH NUMBER OF SPACES
- 2H EXISTING ACCESSIBLE PARKING WITH NUMBER OF SPACES
- EXISTING PEDESTRIAN CROSSING
- 36" RCP EXISTING STORM DRAIN LINE AND SIZE
- 8" SAN EXISTING SANITARY LINE AND SIZE
- W EXISTING WATER LINE
- G EXISTING GAS LINE
- OHW EXISTING OVERHEAD WIRES
- EXISTING DRAIN INLET
- EXISTING MANHOLE
- EXISTING FIRE HYDRANT
- GV EXISTING GAS VALVE
- WV EXISTING WATER VALVE
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING SIGN
- DH-1 TP-2 DEEP HOLE AND TEST PIT LOCATION AND DESIGNATION
- EXISTING DRAINAGE DIVIDE
- LIMIT OF SOIL GROUPS LINE
- DRAINAGE DESIGN LINE
- TIME OF CONCENTRATION FLOW PATH
- Ub (B) SOIL DESIGNATION AND HYDROLOGIC SOIL GROUP

NOTES:

1. EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY TITLED, "TOPOGRAPHIC AND UTILITY SURVEY," PREPARED BY JMC, PLLC, DATED NOVEMBER 26, 2019.
2. GEOTECHNICAL BORING/TEST PIT LOCATIONS DEPICTED ON THIS PLAN WERE TAKEN FROM A FIELD INVESTIGATION CONDUCTED BY JMC, PLLC ON 11/15/2019.
3. THE WETLAND LIMITS DEPICTED ON THIS PLAN HAVE BEEN FIELD DELINEATED BY ECOLOGICAL SOLUTIONS, LLC ON 10/17/2019.

No.	Revision	Date	By
1.	REVISED PER TOWN COMMENTS	01/25/2021	PD

Previous Editions Obsolete

APPLICANT/OWNER:
A & R REAL ESTATE HOLDINGS, LLC
100 BUSINESS PARK DRIVE
ARMONK, NY 10504

ARCHITECT:
J GROUP DESIGNS, LLC
63 EAST MAIN STREET
PAWLING, NY 12564

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

JMC

EXISTING DRAINAGE AREA MAP

PROPOSED WAREHOUSE

100 BUSINESS PARK DRIVE
TOWN OF NORTH CASTLE, NEW YORK

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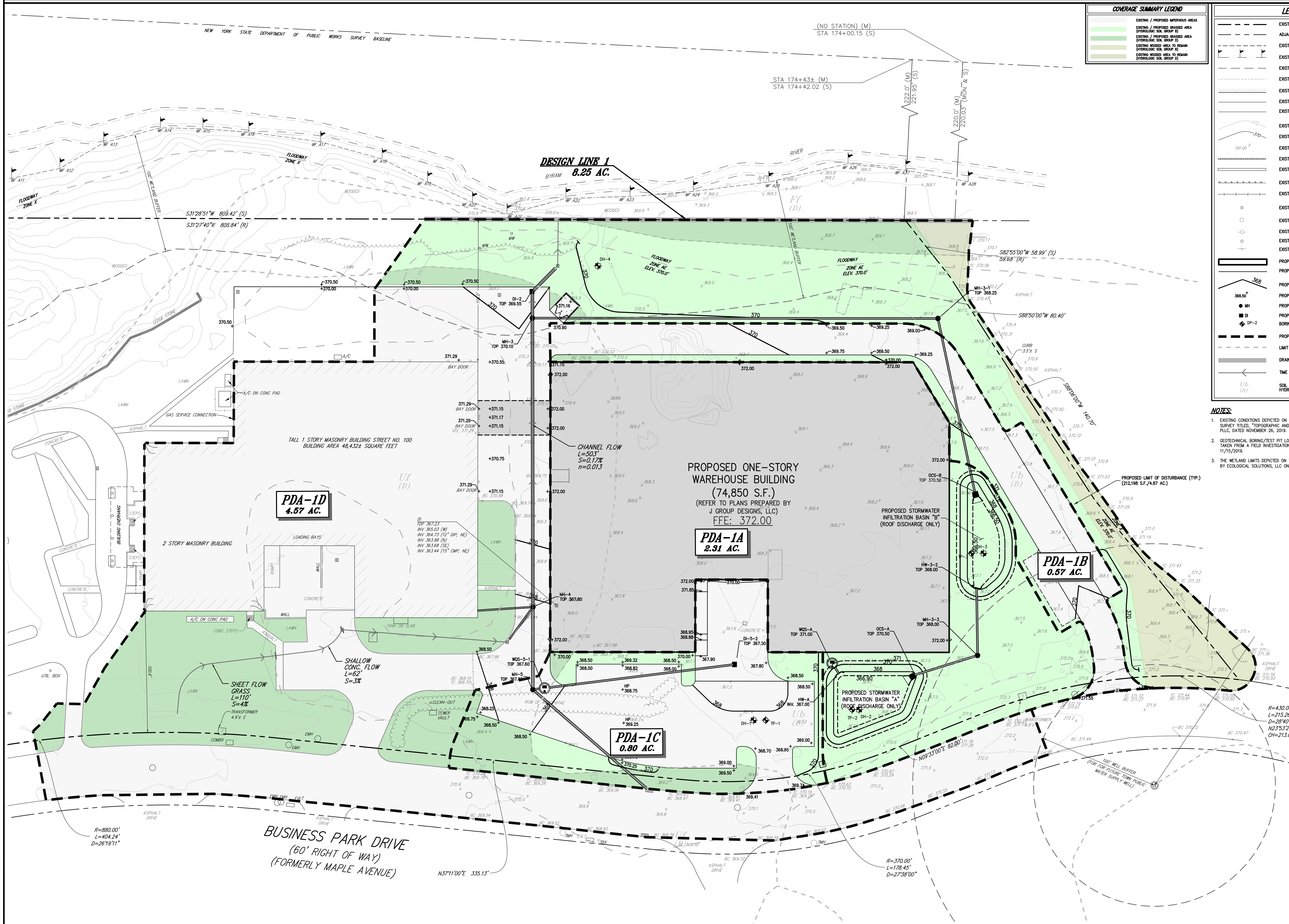
Drawn:	NC	Approved:	DL
Scale:	1" = 40'		
Date:	03/23/2020		
Project No:	19124		
19124-DRAINAGE	EDA	--	

DA-1

NOT FOR CONSTRUCTION



COVERAGE SUMMARY LEGEND

- EXISTING / PROPOSED IMPERVIOUS AREAS
- EXISTING / PROPOSED GRASSED AREA (HYDROLOGIC SOIL GROUP B)
- EXISTING / PROPOSED GRASSED AREA (HYDROLOGIC SOIL GROUP D)
- EXISTING WOODED AREA TO REMAIN (HYDROLOGIC SOIL GROUP B)
- EXISTING WOODED AREA TO REMAIN (HYDROLOGIC SOIL GROUP D)

LEGEND

- EXISTING PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING EASEMENT LINE
- EXISTING WETLAND LINE AND DELINEATION
- EXISTING WETLAND BUFFER
- EXISTING BUILDING OVERHANG
- EXISTING BUILDING LINE
- EXISTING PAVEMENT EDGE
- EXISTING CURB LINE
- 372 EXISTING CONTOUR
- 370 EXISTING INDEX CONTOUR
- 191.00 X EXISTING SPOT GRADE
- EXISTING STONE WALL
- EXISTING RETAINING WALL
- EXISTING GUIDE RAIL
- EXISTING FENCE
- EXISTING DRAIN INLET
- EXISTING MANHOLE
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING SIGN
- PROPOSED BUILDING LINE
- PROPOSED CONCRETE CURB
- 368 PROPOSED FINISHED GRADE
- 368.50+ PROPOSED SPOT GRADE
- MH PROPOSED STORM DRAIN MANHOLE
- DI PROPOSED TYPE DI DRAIN INLET
- DP-2 BORING LOCATION AND DESIGNATION
- PROPOSED DRAINAGE DIVIDE
- LIMIT OF SOIL GROUPS LINE
- DRAINAGE DESIGN LINE
- TIME OF CONCENTRATION FLOW PATH
- Ub (B) SOIL DESIGNATION AND HYDROLOGIC SOIL GROUP

NOTES:

1. EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY TITLED, "TOPOGRAPHIC AND UTILITY SURVEY," PREPARED BY JMC, PLLC, DATED NOVEMBER 26, 2019.
2. GEOTECHNICAL BORING/TEST PIT LOCATIONS DEPICTED ON THIS PLAN WERE TAKEN FROM A FIELD INVESTIGATION CONDUCTED BY JMC, PLLC ON 11/15/2019.
3. THE WETLAND LIMITS DEPICTED ON THIS PLAN HAVE BEEN FIELD DELINEATED BY ECOLOGICAL SOLUTIONS, LLC ON 10/17/2019.

No.	Revision	Date	By
1.	REVISED PER TOWN COMMENTS	01/25/2021	PD

Previous Editions Obsolete

APPLICANT/OWNER:
A & R REAL ESTATE HOLDINGS, LLC
100 BUSINESS PARK DRIVE
ARMONK, NY 10504

ARCHITECT:
J GROUP DESIGNS, LLC
63 EAST MAIN STREET
PAWLING, NY 12564

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

JMC

PROPOSED DRAINAGE AREA MAP

PROPOSED WAREHOUSE
100 BUSINESS PARK DRIVE
TOWN OF NORTH CASTLE, NEW YORK

Drawn:	NC	Approved:	DL
Scale:	1" = 40'		
Date:	03/23/2020		
Project No:	19124		
19124-DRAINAGE	PDA	--	
Drawing No:	DA-2		

NOT FOR CONSTRUCTION

From:	Michael Nowicki
To:	Paul J. Dumont, EIT; Paul R. Sysak, RLA, ASLA
Subject:	Fwd: 3-5538-00238_00001 (SD) PERMIT JURISDICTION REVIEW
Date:	Friday, May 29, 2020 9:13:26 AM

-----Original Message-----
From: Michael Nowicki <ecolsol@aol.com>
To: Christina.Pacella@dec.ny.gov
Sent: Tue, Apr 28, 2020 9:38 am
Subject: Re: 3-5538-00238_00001 (SD) PERMIT JURISDICTION REVIEW

thanks Christina

Mike

-----Original Message-----
From: Pacella, Christina (DEC) <Christina.Pacella@dec.ny.gov>
To: 'Michael Nowicki' <ecolsol@aol.com>
Cc: dec. sm. DEP. R3 <DEP.R3@dec.ny.gov>; Fisher, Joshua M (DEC) <Joshua.Fisher@dec.ny.gov>; townclerk@northcastleny.com <townclerk@northcastleny.com>
Sent: Tue, Apr 28, 2020 9:36 am
Subject: 3-5538-00238_00001 (SD) PERMIT JURISDICTION REVIEW

Michael Nowicki
Ecological Solutions, LLC
Via email (ecolsol@aol.com)

RE: Proposed Warehouse - 100 Business Park Drive
Town of North Castle, Westchester County
DEC Facility ID# 3-5538-00238/00001
Permit Jurisdiction Screening

Dear Mr. Nowicki:

The New York State Department of Environmental Conservation (DEC or Department) has reviewed your inquiry received by this office on March 27, 2020. The project involves the construction of a 74,850-square-foot (SF), one-store warehouse building at the above-referenced address. Based upon our review of your inquiry and submitted materials, the Department offers the following comments:

PROTECTION OF WATERS

The following stream is located within or near the site you indicated:

Name	Class	DEC Water Index Number	Status
Byram River	C(T)	LIS 13	Protected

A Protection of Waters permit is required to physically disturb the bed or banks (up to 50 feet from stream) of any streams identified above as “protected.” A time restriction may be required for protection of cold-water trout fisheries (waters classified under Article 15 of the Environmental Conservation Law (ECL) with a “T” or “TS” designation), beginning October 1 and ending April 30.

If a permit is not required, please note, however, you are still responsible for ensuring that work shall not pollute any stream or waterbody. Care shall be taken to stabilize any disturbed areas promptly after construction, and all necessary precautions shall be taken to prevent contamination of the stream or waterbody by silt, sediment, fuels, solvents, lubricants, or any other pollutant associated with the project.

FRESHWATER WETLANDS

The project site is not within a New York State protected Freshwater Wetland.

WATER QUALITY CERTIFICATION

If the United States Army Corps of Engineers (ACOE) requires a permit for work completed in or impacting a federal wetland or waters of the U.S., you will need a Section 401 Water Quality Certification from the Department. Please contact the ACOE at (917) 790-8411 for a determination.

STATE-LISTED SPECIES

The DEC has reviewed the State's Natural Heritage records. No records of sensitive resources were identified by this review.

The absence of data does not necessarily mean that rare or state-listed species, natural communities, or other significant habitats do not exist on or adjacent to the proposed site. Rather, our files currently do not contain information which indicates their presence. For most sites, comprehensive field surveys have not been conducted. We cannot provide a definitive statement on the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

STATE POLLUTION DISCHARGE ELIMINATION SYSTEM (SPDES) CONSTRUCTION

Since project activities will disturb over one acre of land, the project sponsor must obtain coverage under the current SPDES General Permit for Stormwater Discharge from Construction Activity (GP-0-20-001) and develop a Stormwater Pollution Prevention Plan (SWPPP) that conforms to requirements of the General Permit.

As this site is within a Municipal Separate Storm Sewer System (MS4) community, the municipality is responsible for review and acceptance of the SWPPP, and the MS-4 Acceptance Form must be submitted to the Department. For information on stormwater and the general permits, see the DEC website at http://www.dec.ny.gov/chemical/8468.html.

CULTURAL RESOURCES

We have reviewed the statewide inventory of archaeological resources maintained by the New York State Museum and the New York State Office of Parks, Recreation, and Historic Preservation. These records indicate that the project is located within an area considered to be sensitive with regard to archaeological resources. The project sponsor should submit project materials to the New York State Historic Preservation Office's online Cultural Resource Information System (CRIS) to initiate the review process. Information on submitting to the system and access to it are available at http://www.nysparks.com/shpo/.

FEMA FLOODPLAIN

The project site is located within a Federal Emergency Management Agency (FEMA) Floodplain. The municipality will determine if any additional jurisdictions are applicable to the proposal.

AIR RESOURCES

If the project activities include the installation of a stationary or portable combustion system that exceeds one of the following thresholds, then an air facility registration may be required:

- A maximum rated heat input capacity less than 10 million British Thermal Units (Btu) per hour burning fuels other than coal or wood; or
- A maximum rated heat input capacity of less than 1 million Btu/hr burning coal or wood.

For more information, please contact the DEC Division of Air Resources at (845) 256-3185.

OTHER

Other permits from this Department or other agencies may be required for projects conducted on this property now or in the future. Also, regulations applicable to the location subject to this determination occasionally are revised and the project sponsor should, therefore, verify the need for permits if your project is delayed or postponed. This determination regarding the need for permits will remain effective for a maximum of one year. More information about DEC permits may be found on our website, www.dec.ny.gov, under "Regulatory" then "Permits and Licenses." Application forms may be downloaded at http://www.dec.ny.gov/permits/6081.html.

Please contact this office if you have questions regarding the above information. Thank you.

Sincerely,
Christina Pacella
Division of Environmental Permits
Region 3, Telephone No. (845) 256-2250

Ecc: Joshua Fisher, NYSDEC Bureau of Ecosystem Health

Town of North Castle Town Clerk

Christina Pacella
Environmental Engineering Technician, Division of Environmental Permits
New York State Department of Environmental Conservation
21 South Putt Corners Road, New Paltz, NY 12561
P: (845) 256-2250 | F: (845) 255-4659 | christina.pacella@dec.ny.gov
www.dec.ny.gov

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, NEW YORK DISTRICT
JACOB K. JAVITS FEDERAL BUILDING
26 FEDERAL PLAZA
NEW YORK, NEW YORK 10278-0090

August 10, 2020

Regulatory Branch

SUBJECT: Permit Application Number NAN-2020-00781-WRY
by A&R Real Estate Holdings LLC

A&R Real Estate Holdings LLC
100 Business Park Drive
Armonk, NY 10504

Dear Mr. Casola:

On August 3, 2020, the New York District, U.S. Army Corps of Engineers (Corps), received a request for Department of the Army authorization for the construction of a warehouse and attending features along the Byram River, in the Town of North Castle, Westchester County, New York.

The submittal entitled, “Proposed Warehouse, 100 Business Park Drive, Town of North Castle, New York” by JMC Planning, Engineering, Landscape Architecture, & Land Surveying, PLLC dated January 13, 2020 indicates the construction of a 74,850 square foot warehouse and attending features would occur above Ordinary High Water. The proposed activity would not involve the discharge of fill material into the Byram River or within the delineated adjacent wetland boundary.

Our review indicates that since the proposed work does not appear to include dredging or construction activities in or over any navigable waters of the United States, the placement of any dredged or fill material in any waters of the United States (including coastal or inland wetlands) or the accomplishment of any work affecting the course, location, condition or capacity of such areas, a Department of the Army permit, in accordance with 33 CFR 320-330, will not be required provided the proposed work is executed in accordance with the referenced material.

Care should be taken so that any fill or construction materials, including debris, do not enter the waterway to become a drift or pollution hazard. A No Permit Required (NPR) determination by the Corps:

- Does not obviate the requirement to obtain any other Federal, State, or local permits which may be necessary for your project;

- Does not constitute a federal evaluation of possible impacts to species protected under the Endangered Species Act. Projects that have the potential to impact federally listed species should contact the U.S. Fish and Wildlife Service and/or NOAA Fisheries Service; and,

- Does not constitute a federal evaluation of possible impacts to historic resources protected under Section 106 of the Natural Historic Preservation Act. Projects that have the potential to impact historic sites should contact the State Historic Preservation Officer in New York.

This NPR determination neither addresses nor includes any consideration for geographic jurisdiction on aquatic resources and shall not be interpreted as such.

In order for us to better serve you, please complete our Customer Service Survey located at http://www.nan.usace.army.mil/Missions/Regulatory/CustomerSurvey.aspx.

If any questions should arise concerning this matter, please contact Alexandra Ryan, of my staff, at (917) 790-8518.

Sincerely,

Rosita Miranda
Chief, Western Section

Enclosures

cc: NYSDEC - Region 3
Town of North Castle

LJA Leonard Jackson Associates Consulting Engineers

26 Firemens Memorial Drive. Pomona, New York 10970. (845) 354-4382. FAX (845) 354-4401

100 BUSINESS PARK WAREHOUSE PROJECT

Hydrologic & Hydraulic Report

LJA # 19063

DATE: 10/12/2020

Leonard Jackson PE PLLC dba Leonard Jackson Associates

LJA | **Leonard Jackson Associates** **Consulting Engineers**

26 Firemens Memorial Drive . Pomona, New York 10970 . (845) 354-4382 . FAX (845) 354-4401

October 13, 2020

Town of North Castle Town Board
15 Bedford Road
Armonk, NY 10504

Re: **Warehouse Project**
100 Business Park Drive
North Castle, NY
Hydrologic and Hydraulic Analyses of the Byram River – Reach 2
LJA # 19063

Dear Members of the Town Board:

Hydrologic and Hydraulic analyses were prepared to define the affects of the construction of the subject warehouse project on Base (100-year) Discharges and Flood Elevations on the Byram River and to address compliance with local Floodplain regulations which incorporate the regulations promulgated by the Federal Emergency Management Agency (FEMA).

The results of these analyses are numerically summarized in the attached tables. These results support the following conclusions.

Conclusions

1. The proposed project complies with Town of North Castle Floodplain regulations which include the regulations promulgated by the Federal Emergency Management Agency (FEMA).
2. The Hydraulic affect of the project is to yield minimal Base (100-year) flood elevation increases on the Byram River that only affect the project site. These increases are anticipated and comply with Floodplain regulations. No offsite structures are affected by these increases.
3. The Hydrologic affect of the project is to yield a deminimus increase in the Base (100-year) discharge rate on the Byram River that has no measurable affect on flood elevations.
4. The provision of compensating flood storage on the site to mitigate against flood storage displacement yields no measurable benefit on the Byram River. A waiver of this requirement from the Town Board has been requested.

Hydrologic Analysis Summary

The existing Base (100-year) Discharge rate on the Byram River in the reach of the proposed warehouse project is 996.0 cubic feet per second. Downstream of the confluence with the Wampus River it is 2576 cfs.

The displacement of flood storage resulting from the project, if not mitigated, will increase this Base (100-year) Discharge rate to 998.0 cfs; an increase of 2.0 cfs. The increase has been added downstream of the confluence to be 2580 cfs.

This increase in discharge rate can theoretically raise Base (100-year) flood elevations on the Byram River downstream of the project site in the range of 0.00 ft to 0.01ft (0 inches to 1/8 inch) during a Base (100-year) flood event. This theoretical increase in flood elevation range is academic. Our analysis procedures and theory are not accurate to 0.01 foot, nor can a flood elevation actually be measured to 0.01 foot. As a matter of perspective, a branch falling from a tree yields a ripple that exceeds 0.01-foot rise in 100-year flood elevation. The number 0.01 feet is therefore meaningless other than to suggest that any increase in discharge rate must result in some theoretical increase in Base (100-year) flood elevation even though it cannot be measured and has no actual affect on flooding.

This theoretical increase in 100-year flood elevation could be mitigated by the provision of compensating flood storage. The cost of this mitigation however is great whereas it yields no measurable benefit. The Byram River system which conveys runoff from a twenty nine square mile drainage area at its mouth in Connecticut is simply too large to be hydrologically affected by the proposed warehouse project.

Hydraulic Analysis Summary

The hydraulic affects of the proposed warehouse project on Base (100-year) Flood Elevations on the Byram River were analyzed. Post project flood elevations were compared to existing condition Base (100-year) Flood Elevations.

Analyses were prepared for the project with and without the provision of compensating flood storage.

The results of these analyses show that whether or not compensating flood storage is provided, the proposed project will yield hydraulic increases in Base (100-year) flood elevations on the project site ranging from 0.2 to 0.4 feet and will affect no offsite structures.

These rises on the project site are permitted and conform to the FEMA regulations adopted within the Town of North Castle Floodplain Ordinance which permit 100-year Flood Elevation rises of up to one foot. The Floodplain Ordinance specifies that any proposed work within the "Fringe" segment of a "Floodplain" is permitted to yield a rise of up to one foot. Any proposed work within the "Floodway" segment of a "Floodplain" is permitted zero rise.

As no project work is proposed within the "Floodway"; by inspection the project yields zero rise for work within a Floodway, in compliance with the law.

The entire proposed project construction is located within the "Fringe" segment of the Floodplain where the resultant flood elevation increases on the site of 0.2 to 0.4 feet are less than half of the one foot rise permitted, hence the project complies with Floodplain regulations while not adversely affecting any offsite structures.

The following supporting summary tables are attached:

Table 1. Byram River Reach 2, 100 year Flood Elevations Existing versus Post Project Conditions with compensating Flood Storage provided.

Table 2. Byram River Reach 2, 100 year Flood Elevations Existing versus Post Project Conditions with No Compensating Flood Storage provided.

Table 3. Byram River Reach 2, 100 year Flood Elevations Post Project conditions with and without Compensating Flood Storage provided.

Also attached is our Byram River Reach 2 Hydrologic and Hydraulic analyses report detailing and documenting the methodology and the results of these analyses.

Very truly yours,

LEONARD JACKSON ASSOCIATES
Leonard Jackson, P.E.
LJ/ks
P:\PROJECTS\19\19063\MGMTDOCS\CorrespondenceOut\2020-9-17 Analyses letter of the Byram River.doc

Table 1

Byram River Reach 2
100 Year Flood Elevations
Existing Versus Post-Project Conditions
With Compensating Flood Storage

	Section Number	Existing	Post-Project with Comp Storage	Δ
		Q = 996&2576 CFS	Q = 996&2576 CFS	
	6350	372.77	372.77	0
	6283	372.36	372.36	0
	5968	371.95	371.95	0
	5656	371.28	371.27	-0.01
	5380	371.18	371.18	0
	5156	371.07	371.07	0
	5064	370.4	370.33	-0.07
	4996	370.24	370.13	-0.11
Project	4959	370.13	370.54	0.41
Site	4788	370.23	370.53	0.3
	4731	370.24	370.49	0.25
	4699	370.15	370.51	0.36
	4500	370.18	370.51	0.33
	4441	370.18	370.51	0.33
	4393	370.18	370.48	0.3
	4268	370.1	370.29	0.19
	4080	369.05	369.05	0
	3575	369.23	369.23	0
	3290	369.2	369.2	0
	2949	369.24	369.24	0
	2600	369.23	369.23	0
	2383	369.22	369.22	0
	2079	369.21	369.21	0
	1851	369.19	369.19	0
	1418	369.11	369.11	0
	1121	369.09	369.09	0
	661	369.05	369.05	0
	425	369.03	369.03	0
	50	367.45	367.45	0

Table 2

Byram River Reach 2
100 Year Flood Elevations
Existing Versus Post-Project Conditions
No Compensating Flood Storage

	Section Number	**Existing**	**Post-Project no Comp Storage**	**Δ**
		Q = 996&2576 CFS	**Q = 998 & 2580 CFS**	
	6350	372.77	372.77	0
	6283	372.36	372.36	0
	5968	371.95	371.96	0.01
	5656	371.28	371.3	0.02
	5380	371.18	371.21	0.03
	5156	371.07	371.11	0.04
	5064	370.4	370.54	0.14
	4996	370.24	370.44	0.2
Project Site	4959	370.13	370.5	0.37
	4788	370.23	370.55	0.32
	4731	370.24	370.52	0.28
	4699	370.15	370.48	0.33
	4500	370.18	370.49	0.31
	4441	370.18	370.5	0.32
	4393	370.18	370.48	0.3
	4268	370.1	370.3	0.2
	4080	369.05	369.05	0
	3575	369.23	369.24	0.01
	3290	369.2	369.21	0.01
	2949	369.24	369.24	0
	2600	369.23	369.23	0
	2383	369.22	369.23	0.01
	2079	369.21	369.22	0.01
	1851	369.19	369.19	0
	1418	369.11	369.12	0.01
	1121	369.09	369.09	0
	661	369.05	369.05	0
	425	369.03	369.03	0
	50	367.45	367.45	0

Table 3

Byram River Reach 2
100 Year Flood Elevations
Post-Project Conditions
With and Without Compensating Flood Storage

	Section Number	Post-Project without Comp Storage Q = 998&2580 CFS	Post-Project with Comp Storage Q = 996&2576 CFS	Δ
	6350	372.77	372.77	0
	6283	372.36	372.36	0
	5968	371.96	371.95	-0.01
	5656	371.3	371.27	-0.03
Project Site	5380	371.21	371.18	-0.03
Project Site	5156	371.11	371.07	-0.04
Project Site	5064	370.54	370.33	-0.21
Project Site	4996	370.44	370.13	-0.31
Project Site	4959	370.5	370.54	0.04
Project Site	4788	370.55	370.53	-0.02
Project Site	4731	370.52	370.49	-0.03
Project Site	4699	370.48	370.51	0.03
Project Site	4500	370.49	370.51	0.02
Project Site	4441	370.5	370.51	0.01
Project Site	4393	370.48	370.48	0
Project Site	4268	370.3	370.29	-0.01
	4080	369.05	369.05	0
	3575	369.24	369.23	-0.01
	3290	369.21	369.2	-0.01
	2949	369.24	369.24	0
	2600	369.23	369.23	0
	2383	369.23	369.22	-0.01
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LJA Leonard Jackson Associates Consulting Engineers

26 Firemens Memorial Drive. Pomona, New York 10970. (845) 354-4382. FAX (845) 354-4401

100 BUSINESS PARK WAREHOUSE PROJECT

Hydrologic & Hydraulic Report

LJA # 19063

DATE: 10/12/2020

Leonard Jackson PE PLLC dba Leonard Jackson Associates

Leonard Jackson Associates

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7. HEC-RAS Hydraulic Analyses

    a) Existing Conditions - Multiple Discharges
    b) Post Project Conditions - Multiple Discharges
    c) Existing Conditions Existing 100 - year Discharges Q=996 & 2567 cfs.
    d) Post Project Conditions - Existing 100 year Discharges (With compensating Flood Storage Provided) Q=996 & 2576 cfs (Unchanged).
    e) Post Project Conditions - Post Project Discharges (No Compensating Flood Storage Provided). Q= 998 & 2580 cfs (Increased)

8. HEC-HMS Hydrologic Analyses

    a) HEC-HMS Hydrologic Analayses Summary Existing versus Post Project (No Comp Storage) 100 year discharges.
    b) Existing Conditions Routing 100 year Q=996 cfs
    c) Post Project Routing 100 year No Compensating Storage provided Q=998 cfs

LJA | **Leonard Jackson Associates** **Consulting Engineers**

26 Firemens Memorial Drive . Pomona, New York 10970 . (845) 354-4382 . FAX (845) 354-4401

Summary Letter
&
Results

LJA **Leonard Jackson Associates** **Consulting Engineers**

26 Firemens Memorial Drive . Pomona, New York 10970 . (845) 354-4382 . FAX (845) 354-4401

October 13, 2020

Town of North Castle Town Board
15 Bedford Road
Armonk, NY 10504

Re: **Warehouse Project**
100 Business Park Drive
North Castle, NY
Hydrologic and Hydraulic Analyses of the Byram River – Reach 2
LJA # 19063

Dear Members of the Town Board:

Hydrologic and Hydraulic analyses were prepared to define the affects of the construction of the subject warehouse project on Base (100-year) Discharges and Flood Elevations on the Byram River and to address compliance with local Floodplain regulations which incorporate the regulations promulgated by the Federal Emergency Management Agency (FEMA).

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Table 3. Byram River Reach 2, 100 year Flood Elevations Post Project conditions with and without Compensating Flood Storage provided.

Also attached is our Byram River Reach 2 Hydrologic and Hydraulic analyses report detailing and documenting the methodology and the results of these analyses.

Very truly yours,

LEONARD JACKSON ASSOCIATES
Leonard Jackson, P.E.
LJ/ks
P:\PROJECTS\19\19063\MGMTDOCS\CorrespondenceOut\2020-9-17 Analyses letter of the Byram River.doc

Table 1

Byram River Reach 2
100 Year Flood Elevations
Existing Versus Post-Project Conditions
With Compensating Flood Storage

	Section Number	Existing	Post-Project with Comp Storage	Δ
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	5380	371.18	371.18	0
	5156	371.07	371.07	0
	5064	370.4	370.33	-0.07
	4996	370.24	370.13	-0.11
Project	4959	370.13	370.54	0.41
Site	4788	370.23	370.53	0.3
	4731	370.24	370.49	0.25
	4699	370.15	370.51	0.36
	4500	370.18	370.51	0.33
	4441	370.18	370.51	0.33
	4393	370.18	370.48	0.3
	4268	370.1	370.29	0.19
	4080	369.05	369.05	0
	3575	369.23	369.23	0
	3290	369.2	369.2	0
	2949	369.24	369.24	0
	2600	369.23	369.23	0
	2383	369.22	369.22	0
	2079	369.21	369.21	0
	1851	369.19	369.19	0
	1418	369.11	369.11	0
	1121	369.09	369.09	0
	661	369.05	369.05	0
	425	369.03	369.03	0
	50	367.45	367.45	0

Table 2

Byram River Reach 2
100 Year Flood Elevations
Existing Versus Post-Project Conditions
No Compensating Flood Storage

	Section Number	Existing Q = 996&2576 CFS	Post-Project no Comp Storage Q = 998 & 2580 CFS	Δ
	6350	372.77	372.77	0
	6283	372.36	372.36	0
	5968	371.95	371.96	0.01
	5656	371.28	371.3	0.02
	5380	371.18	371.21	0.03
	5156	371.07	371.11	0.04
	5064	370.4	370.54	0.14
	4996	370.24	370.44	0.2
Project	4959	370.13	370.5	0.37
Site	4788	370.23	370.55	0.32
	4731	370.24	370.52	0.28
	4699	370.15	370.48	0.33
	4500	370.18	370.49	0.31
	4441	370.18	370.5	0.32
	4393	370.18	370.48	0.3
	4268	370.1	370.3	0.2
	4080	369.05	369.05	0
	3575	369.23	369.24	0.01
	3290	369.2	369.21	0.01
	2949	369.24	369.24	0
	2600	369.23	369.23	0
	2383	369.22	369.23	0.01
	2079	369.21	369.22	0.01
	1851	369.19	369.19	0
	1418	369.11	369.12	0.01
	1121	369.09	369.09	0
	661	369.05	369.05	0
	425	369.03	369.03	0
	50	367.45	367.45	0

Table 3

Byram River Reach 2
100 Year Flood Elevations
Post-Project Conditions
With and Without Compensating Flood Storage

	Section Number	Post-Project without Comp Storage Q = 998&2580 CFS	Post-Project with Comp Storage Q = 996&2576 CFS	Δ
	6350	372.77	372.77	0
	6283	372.36	372.36	0
	5968	371.96	371.95	-0.01
	5656	371.3	371.27	-0.03
	5380	371.21	371.18	-0.03
	5156	371.11	371.07	-0.04
	5064	370.54	370.33	-0.21
	4996	370.44	370.13	-0.31
Project	4959	370.5	370.54	0.04
Site	4788	370.55	370.53	-0.02
	4731	370.52	370.49	-0.03
	4699	370.48	370.51	0.03
	4500	370.49	370.51	0.02
	4441	370.5	370.51	0.01
	4393	370.48	370.48	0
	4268	370.3	370.29	-0.01
	4080	369.05	369.05	0
	3575	369.24	369.23	-0.01
	3290	369.21	369.2	-0.01
	2949	369.24	369.24	0
	2600	369.23	369.23	0
	2383	369.23	369.22	-0.01
	2079	369.22	369.21	-0.01
	1851	369.19	369.19	0
	1418	369.12	369.11	-0.01
	1121	369.09	369.09	0
	661	369.05	369.05	0
	425	369.03	369.03	0
	50	367.45	367.45	0

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Methodology

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Methodology

The Hydrologic and Hydraulic affects of the warehouse project on Reach 2 of the Byram River were analyzed utilizing the US Army Corps of Engineers programs HEC-HMS (Hydrologic) and HEC-RAS (Hydraulics).

To determine the Hydrologic affects of the project on Byram River discharge rates a hydrograph encompassing the Byram River from its confluence with the Wampus River up to and through the project site was prepared utilizing Soil Conservation Service (SCS) methodology. This hydrograph was calibrated so that, when routed through the existing condition flood storage volume versus discharge relationship on the studied reach of the Byram River, its 100-year peak discharge rate would match the FEMA 100-year discharge rate of 996 cubic feet per second (cfs) through that reach, as published in the Effective Flood Insurance Study (FIS) of Westchester County.

This hydrograph routing model is the basis for defining the effects of reducing the flood storage volume of the routing which yields a minor increase in discharge rate.

The next step in the analysis was to route this calibrated inflow hydrograph through the post-project condition reduced flood storage volume versus discharge relationship resulting from the projects construction where no compensating flood storage is provided. If compensating flood storage is provided there is no change in discharge and no hydrologic analysis is necessary.

The analysis subsequently showed that the reduced flood storage volume versus discharge relationship resulting from constructing the warehouse project increased the peak 100-year discharge rate on the Byram River from an existing 996.0 cfs to a post-project 998.0 cfs an increase of 2.0 cfs.

In order to prepare this Hydrologic Analysis it was necessary to derive the existing condition and post-project condition flood storage volume vs, discharge relationships on the studied Byram River Reach 2 from its confluence with the Wampus River to just above the project site. To do this a HEC-RAS Hydraulic model was prepared by stripping off cross sections from available topographic mapping.

On the site the existing topographic survey and post-project grading plan prepared for the project's design by JMC was utilized for stripping off HEC-RAS model cross sections. Off the site, Westchester County topographic mapping was utilized. In this manner HEC-RAS models were prepared for existing conditions and post-project with no compensating storage conditions.

The existing condition HEC-RAS model was then utilized to derive the existing condition flood storage volume versus discharge relationship on the river by running a multiple series of discharge rates.

HEC-RAS models calculate a backwater flood elevation profile and records the cumulative flood storage volume within the waterway starting from the first (downstream) cross section in the model up to each cross section within the model. The cumulative flood storage volume within the studied reach of the waterway for each of the multiple discharge rates is found in the detailed output data at the uppermost (last) cross section 6350 within the existing condition HEC-RAS model.

Deducting the cumulative flood storage at the confluence (section 2600) yields the cumulative flood storage between these cross sections in the study reach for each discharge rate.

This data yielded the flood storage volume versus discharge rate relationship tabulation for the existing condition routing of the study reach.

For post-project conditions it is was then necessary to reduce the flood storage volume at each discharge rate by deducting the flood storage volume displaced by the project at each discharge rate resulting from the project's construction.

The series of multiple discharge HEC-RAS runs also provides us with the elevation versus discharge rate at any cross section in the model. At a selected representative cross section on mid site, the elevation versus discharge rate on the site was defined.

Utilizing their site design drawings, JMC calculated the flood storage volume versus elevation on the site for existing conditions, and the reduced flood storage volume versus elevation on the site for post-project conditions when no compensating flood storage is provided. If compensating flood storage is provided, it is underground and discharge rates and flood storage volumes are unchanged by the project.

The JMC tabulation of flood storage volume versus elevation for existing and post-project conditions yields a tabulation and curve of the reduction in flood storage volume versus elevation at the site, resulting from the project.

Since the elevation versus discharge rate and elevation versus storage reduction at the site from the multiple discharge HEC-RAS runs, we therefore read off the reduction in flood storage volume versus any discharge rate for post-project conditions.

The reduction in flood storage volume versus discharge rate curve was then applied to the existing condition flood storage volume versus discharge rate on the studied Byram River Reach to derive the post-project flood storage volume versus discharge tabulation necessary to perform the post-project routing of the calibrated Byram River Reach 2 Hydrograph. This post-project routing shows the increased 100-year peak discharge rate at the river of 998.0 cfs and increases of 2.0 cfs.

Having defined the existing and post-project condition discharge rates (996 cfs & 998 cfs respectively) and having prepared existing condition and post-project HEC-RAS hydraulic models, we performed the following analyses for which elevation comparison tables were prepared.

A. HEC-RAS Hydraulic Analyses
   1. Existing Conditions – Multiple Discharges
   2. Post Project Conditions – Multiple Discharges
   3. Existing Condition – Existing 100-year Discharges
      Q=996 & 2576
   4. Post-Project Conditions – Existing 100 year Discharges (with Compensating Flood Storage Provided)
      Q= 996 & 2576 cfs (Unchanged)
   5. Post-Project Conditions – Post Project 100 year Discharges No Compensating Flood Storage provided.

B. HEC-RAS Hydrologic Analyses
   a) Existing Conditions Routing (Q=996 cfs)
   b) Post-Project No Compensating Storage provided (Q= 998cfs)

These analyses show that the small rises on the project site for post-project conditions results from site grading, not from the deminimus increase in discharge rate on the Byram River resulting from flood storage displacement. They also show that the deminimus increases in discharge rate (if compensating flood storage is not provided) does not measurably affect flood elevations on the river.

We note that any rise in flood elevation yields an increased flood storage volume that will in turn reduce discharge rates that will reduce flood elevations. This effect has been ignored because the analyzed increase in discharge rate and flood elevations on the Byram River resulting from volume displacement are too small to have any meaning.

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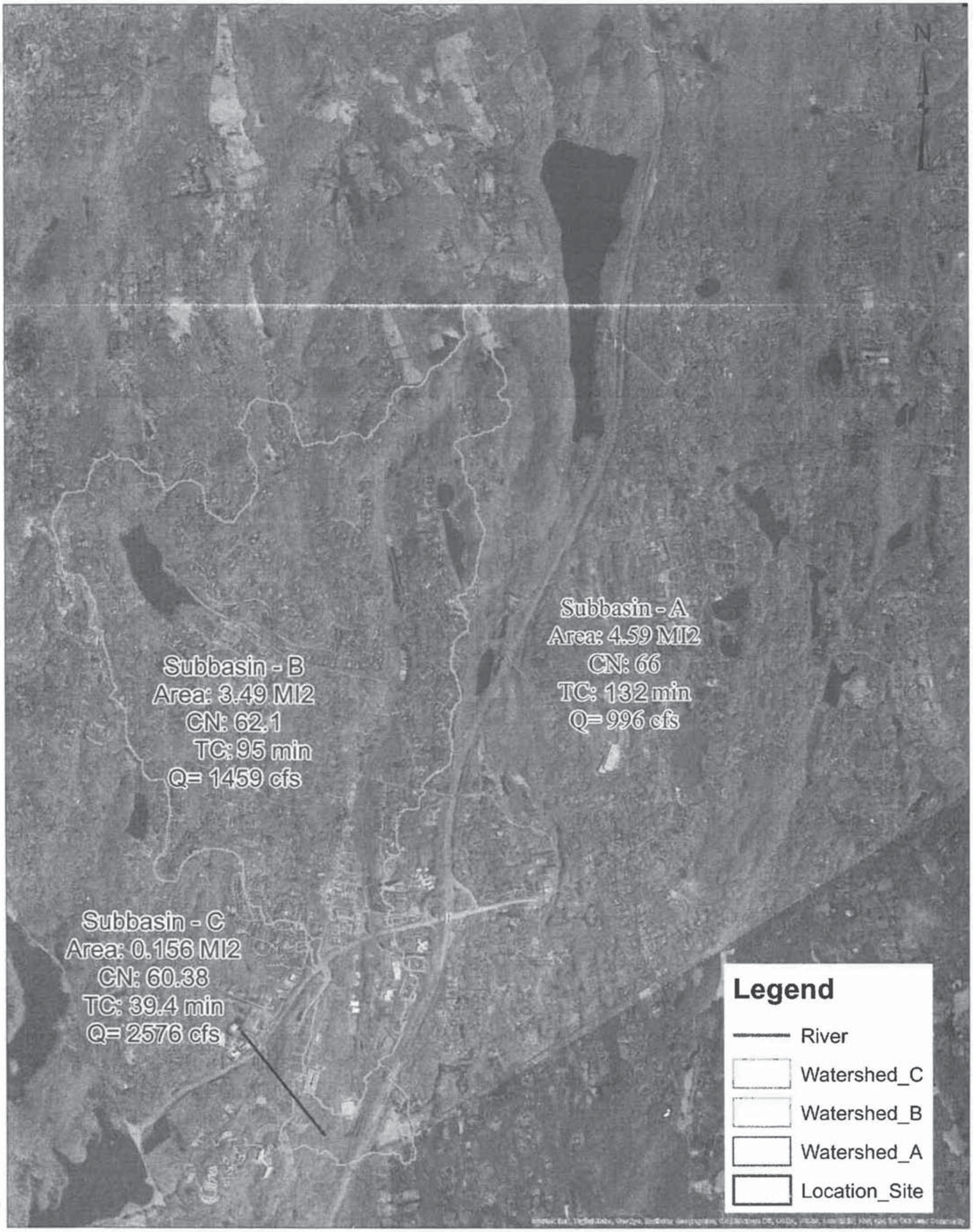
Appendix

SCS HYDROGRAPH DATA

DRAINAGE BASIN MAP



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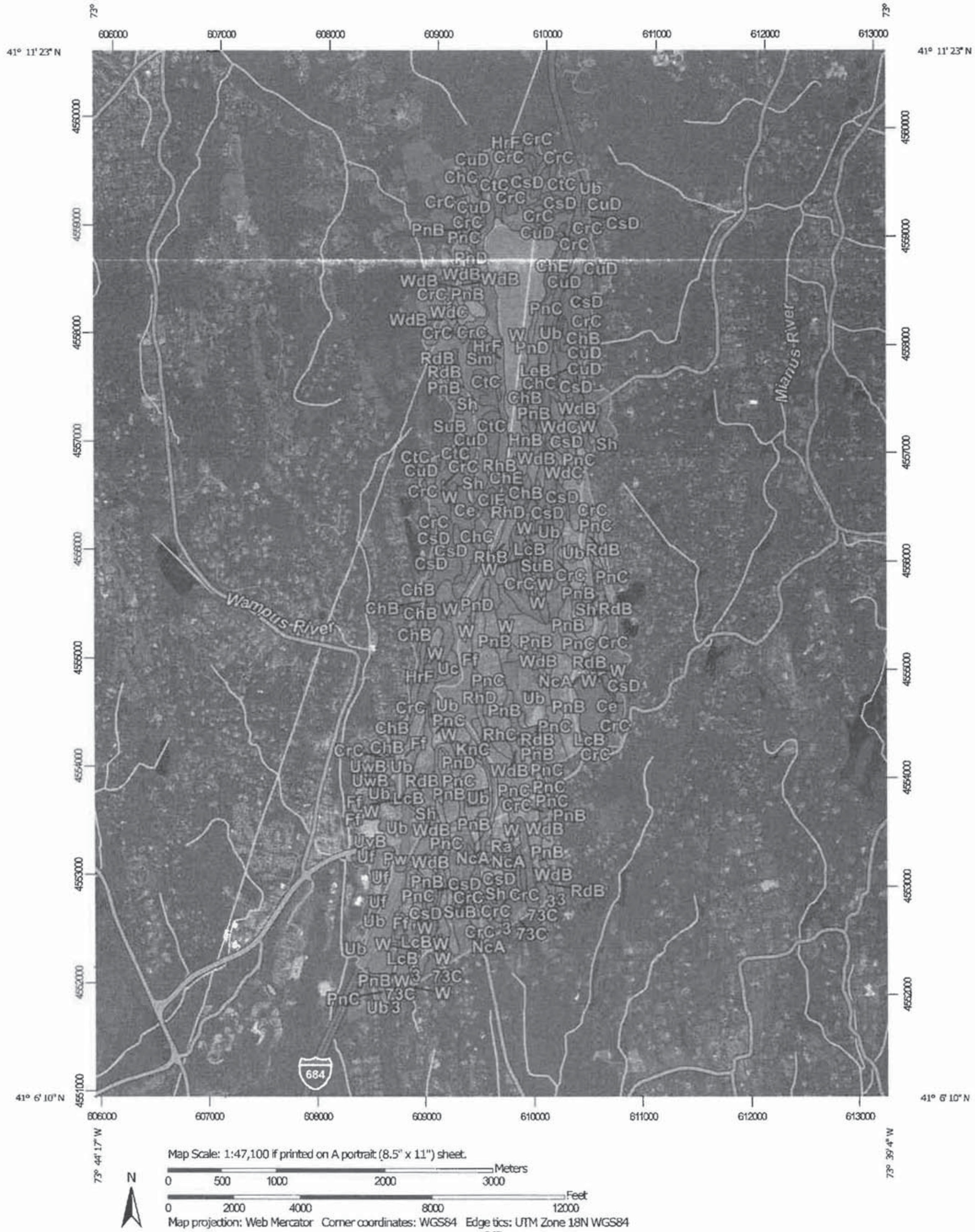
0 1,500 3,000
Feet

SOILS MAP


73° 44' 17" W
73° 39' 4" W
41° 11' 23" N
41° 6' 10" N
606000
607000
608000
609000
610000
611000
612000
613000
4551000
4552000
4553000
4554000
4555000
4556000
4557000
4558000
4559000
4560000
Wampus River
Mianus River
684
Map Scale: 1:47,100 if printed on A portrait (8.5" x 11") sheet.
Meters
0 500 1000 2000 3000
Feet
0 2000 4000 8000 12000
N
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut
Survey Area Data: Version 20, Jun 9, 2020

Soil Survey Area: Westchester County, New York
Survey Area Data: Version 16, Jun 11, 2020

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Oct 16, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	D	0.0	0.0%
45B	Woodbridge fine sandy loam, 3 to 8 percent slopes	C/D	0.0	0.0%
73C	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	B	0.1	0.0%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	B	0.0	0.0%
84B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes	C	0.0	0.0%
84C	Paxton and Montauk fine sandy loams, 8 to 15 percent slopes	C	0.0	0.0%
308	Udorthents, smoothed	C	0.0	0.0%
W	Water		0.0	0.0%
Subtotals for Soil Survey Area			**0.3**	**0.0%**
Totals for Area of Interest			**2,955.3**	**100.0%**

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Ce	Catden muck, 0 to 2 percent slopes	B/D	54.9	1.9%
ChB	Charlton fine sandy loam, 3 to 8 percent slopes	B	31.9	1.1%
ChC	Charlton fine sandy loam, 8 to 15 percent slopes	B	37.4	1.3%
ChD	Charlton fine sandy loam, 15 to 25 percent slopes	B	26.4	0.9%
ChE	Charlton loam, 25 to 35 percent slopes	B	17.6	0.6%
ClE	Charlton loam, 25 to 35 percent slopes, very stony	B	4.6	0.2%
CrC	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	B	429.2	14.5%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
CsD	Chatfield-Charlton complex, 15 to 35 percent slopes, very rocky	B	216.6	7.3%
CtC	Chatfield-Hollis-Rock outcrop complex, 0 to 15 percent slopes	B	74.8	2.5%
CuD	Chatfield-Hollis-Rock outcrop complex, 15 to 35 percent slopes	D	160.3	5.4%
Ff	Fluvaquents-Udifluvents complex, frequently flooded	A/D	225.9	7.6%
HnB	Hinckley loamy sand, 3 to 8 percent slopes	A	2.1	0.1%
HrF	Hollis-Rock outcrop complex, 35 to 60 percent slopes	D	72.8	2.5%
KnB	Knickerbocker fine sandy loam, 2 to 8 percent slopes	A	9.2	0.3%
KnC	Knickerbocker fine sandy loam, 8 to 15 percent slopes	A	3.4	0.1%
LcB	Leicester loam, 3 to 8 percent slopes, stony	A/D	109.0	3.7%
LeB	Leicester loam, 2 to 8 percent slopes, very stony	A/D	7.0	0.2%
NcA	Natchaug muck, 0 to 2 percent slopes	B/D	19.3	0.7%
PnB	Paxton fine sandy loam, 3 to 8 percent slopes	C	306.3	10.4%
PnC	Paxton fine sandy loam, 8 to 15 percent slopes	C	279.7	9.5%
PnD	Paxton fine sandy loam, 15 to 25 percent slopes	C	40.3	1.4%
Pw	Pompton silt loam, loamy substratum	B/D	12.3	0.4%
Ra	Raynham silt loam	C/D	9.2	0.3%
RdB	Ridgebury complex, 3 to 8 percent slopes	D	57.9	2.0%
RhB	Riverhead loam, 3 to 8 percent slopes	A	28.5	1.0%
RhC	Riverhead loam, 8 to 15 percent slopes	A	16.5	0.6%
RhD	Riverhead loam, 15 to 25 percent slopes	A	15.5	0.5%
Sh	Sun loam	C/D	38.9	1.3%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Sm	Sun loam, extremely stony	C/D	1.0	0.0%
SuB	Sutton loam, 3 to 8 percent slopes	B/D	29.5	1.0%
Ub	Udorthents, smoothed	B	224.5	7.6%
Uc	Udorthents, wet substratum	A/D	12.0	0.4%
Uf	Urban land		7.3	0.2%
UvB	Urban land-Riverhead complex, 2 to 8 percent slopes		11.7	0.4%
UwB	Urban land-Woodbridge complex, 3 to 8 percent slopes	D	2.8	0.1%
W	Water		199.4	6.7%
WdB	Woodbridge loam, 3 to 8 percent slopes	C/D	124.3	4.2%
WdC	Woodbridge loam, 8 to 15 percent slopes	C/D	34.9	1.2%
Subtotals for Soil Survey Area			**2,955.0**	**100.0%**
Totals for Area of Interest			**2,955.3**	**100.0%**

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

CURVE NUMBER CALCULATION

OBJECTID	HSG	Shape_Area (square meter)	Shape_Area (square mi2)	CN	**AreaxCN**
1	A	8198.555176	0.003165	98	0.067599
2	A/D	1675.58426	0.000646947	98	0.013816
3	B	18366.01272	0.007091157	98	0.151432
4	B/D	61.262541	2.36536E-05	98	0.000505
5	C	656968.3067	0.253656881	98	5.416871
6	C/D	2708.146581	0.001045621	98	0.022329
7	D	968.795287	0.000374054	98	0.007988
8	A	79311.04926	0.030622167	39	0.260241
9	A/D	424807.6538	0.164019152	39	1.393911
10	B	988518.7047	0.381669206	61	5.073325
11	B/D	108928.5782	0.042057559	61	0.559049
12	C	740450.4733	0.285889526	74	4.610051
13	C/D	243381.1614	0.093969992	74	1.515293
14	D	89014.96998	0.034368872	80	0.599144
15	A	21145.78624	0.008164434	51	0.090734
16	A/D	145662.5711	0.056240633	51	0.625023
17	B	349354.0641	0.134886358	68	1.998723
18	B/D	9585.993789	0.003701173	68	0.054843
19	C	134852.6123	0.052066885	79	0.896323
20	C/D	60264.47564	0.023268244	79	0.400559
21	D	35531.18069	0.013718666	84	0.251112
22	A	15812.87226	0.006105384	57	0.075834
23	A/D	60984.49187	0.023546244	57	0.292464
24	B	185964.9706	0.071801477	72	1.126527
25	B/D	12882.39203	0.004973919	72	0.078038
26	C	40354.12284	0.015580814	81	0.275012
27	C/D	20942.98724	0.008086133	81	0.142726
28	D	44042.09091	0.017004746	86	0.318672
29	A/D	5096.71259	0.001967852	77	0.033019
30	B	47173.75237	0.018213888	85	0.337363
31	B/D	3507.857267	0.001354391	85	0.025086
32	C	4676.276441	0.00180552	90	0.03541
33	C/D	2655.377192	0.001025247	90	0.020107
34	D	7366.147091	0.002844085	92	0.057017
35	B	1524.710079	0.000588694	96	0.012315
36	C	4214.763873	0.001627329	96	0.034043
37	D	130.665349	5.04502E-05	96	0.001055
38	A	140065.602	0.054079631	36	0.42424
39	A/D	469297.5688	0.181196804	36	1.421441
40	B	2150207.408	0.830199722	60	10.85449
41	B/D	76291.10911	0.029456162	60	0.385126
42	C	1113355.996	0.429869153	73	6.838091
43	C/D	344066.8784	0.132844964	73	2.113215
44	D	965197.7076	0.372664918	79	6.415365
45	A	3148.995298	0.001215834	30	0.007948
46	A/D	12061.13343	0.00465683	30	0.030443

47	B	56334.58593	0.021750905	55	0.260685
48	B/D	1800	0.000694984	55	0.008329
49	C	56026.76784	0.021632056	70	0.329968
50	C/D	9377.762843	0.003620774	70	0.05523
51	D	5180.205247	0.002000088	77	0.03356
52	A	28406.53047	0.010967823	30	0.0717
53	A/D	41123.20237	0.015877757	30	0.103797
54	B	335507.965	0.12954035	55	1.552542
55	B/D	27105.63426	0.010465544	55	0.12543
56	C	426729.4547	0.164761164	70	2.513209
57	C/D	104400.8164	0.040309381	70	0.614865
58	D	83603.90491	0.032279648	77	0.541621
59	A/D	4488.523864	0.001733029	48	0.018127
60	B/D	336.616992	0.000129969	67	0.001898
61	C	1783.753308	0.000688711	77	0.011556
62	C/D	267.450283	0.000103263	83	0.001868
63	A/D	564.974847	0.000218138	62	0.002947
64	B	3062.49959	0.001182438	62	0.015975
65	C	12417.83731	0.004794554	74	0.077314
66	A/D	1967.997518	0.000759848	39	0.006458
67	B	95001.34557	0.036680225	61	0.487571
68	B/D	16180.40772	0.00624729	61	0.083042
69	C	94009.45941	0.036297255	74	0.585304
70	C/D	4712.183337	0.001819384	74	0.029338
71	D	25024.11748	0.009661866	80	0.168433
72	A	8541.889075	0.003298042	45	0.03234
73	A/D	261051.1127	0.100792398	45	0.988362
74	B	23854.03107	0.009210093	66	0.13246
75	B/D	211432.5245	0.081634554	66	1.174069
76	C	41067.83194	0.015856379	77	0.266054
77	C/D	46386.01256	0.01790974	77	0.300508
78	D	5622.992831	0.00217105	83	0.039267
79	B	847.1325	0.00032708	71	0.00506
80	C	629.214	0.000242941	81	0.004288
		Total Area=	**4.58906557**	**CN**	**66.00709**

TIME OF CONCENTRATION CALCULATION

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Worksheet 3: Time of Concentration (Tc) Calculations

PROJECT: Warehouse JOB #: 19063 BY: SB
LOCATION: Westchester, NY DATE: Jan, 17
Mark One: Existing Developed

To Design Point: #1
Time of Concentration thru Sub-Area: Byram River

Notes: Space for as many as two segments per flow type can be used for each worksheet.
Include a map, schematic or description of flow segments.

Sheet Flow:				
Segment ID:				
1. Surface description (table 3-1)........................	forest			
2. Manning's Roughness Coeff., n (table 3-1)..........	0.45			
3. Flow Length, L (total < or = to 100 ft.)..........(ft.)	250			
4. Two year, 24 hr rainfall, P_2......................(in.)	3.58			
5. Land Slope, S.................................(ft./ft.)	0.008			
6. $T_t = \frac{0.007\,(nL)^{0.8}}{P_2^{0.5}\,S^{0.4}}$ Compute T_t = ...(hr.)	1.12		=	1.12 (hrs.)

Shallow Concentrated Flow:				
Segment ID:				
7. Surface description (paved or unpaved)...............	unpaved	paved		
8. Flow Length, L .... (ft.)	14000			
9. Watercourse Slope, s.............................(ft./ft.)	0.024			
10. Average Velocity, V (figure 3-1)........... (ft./s)	2.5			
11. $T_t = \frac{L}{3600\,V}$ Compute T_t = ...(hr.)	1.56		=	1.56 (hrs.)

Channel Flow (SCS Method):				
Segment ID:				
12. Cross Sectional Flow Area, a.....................(ft^2)	145.750			*Assumed
13. Wetted Perimeter, P_w .... (ft.)	44.785			10' wide channel
14. Hydraulic Radius, r = a/P_w........................(ft.)	3.254			with 1:3 sideslopes
15. Channel Slope, s.................................(ft./ft.)	0.002			
16. Mannings Roughness Coefficient, n...............	0.035			
17. $V=1.49\, r^{2/3}\, s^{1/2}/n$ Compute V ....(ft/s)	4.4			
18. Flow Length, L .... (ft.)	15860			
19. $T_t = \frac{L}{3600\,V}$ Compute T_t = ...(hr.)	0.99		=	0.99 (hrs.)

20. Total Watershed T_t or T_c = 3.66 (hrs.) 219.8 (min.)

Lag Time 131.9

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Work Map
Section
Location Plan

WORKMAP SECTION LOCATION MAP

Job Number: 19063	WAREHOUSE PROJECT TOWN OF NORTH CASTLE WESTCHESTER COUNTY, NEW YORK
Drawn by: SB	EXISTING CONDITION WORKMAP
Date: 09/29/2020	
Scale: 1" = 200'	
Drawing Number: FP	

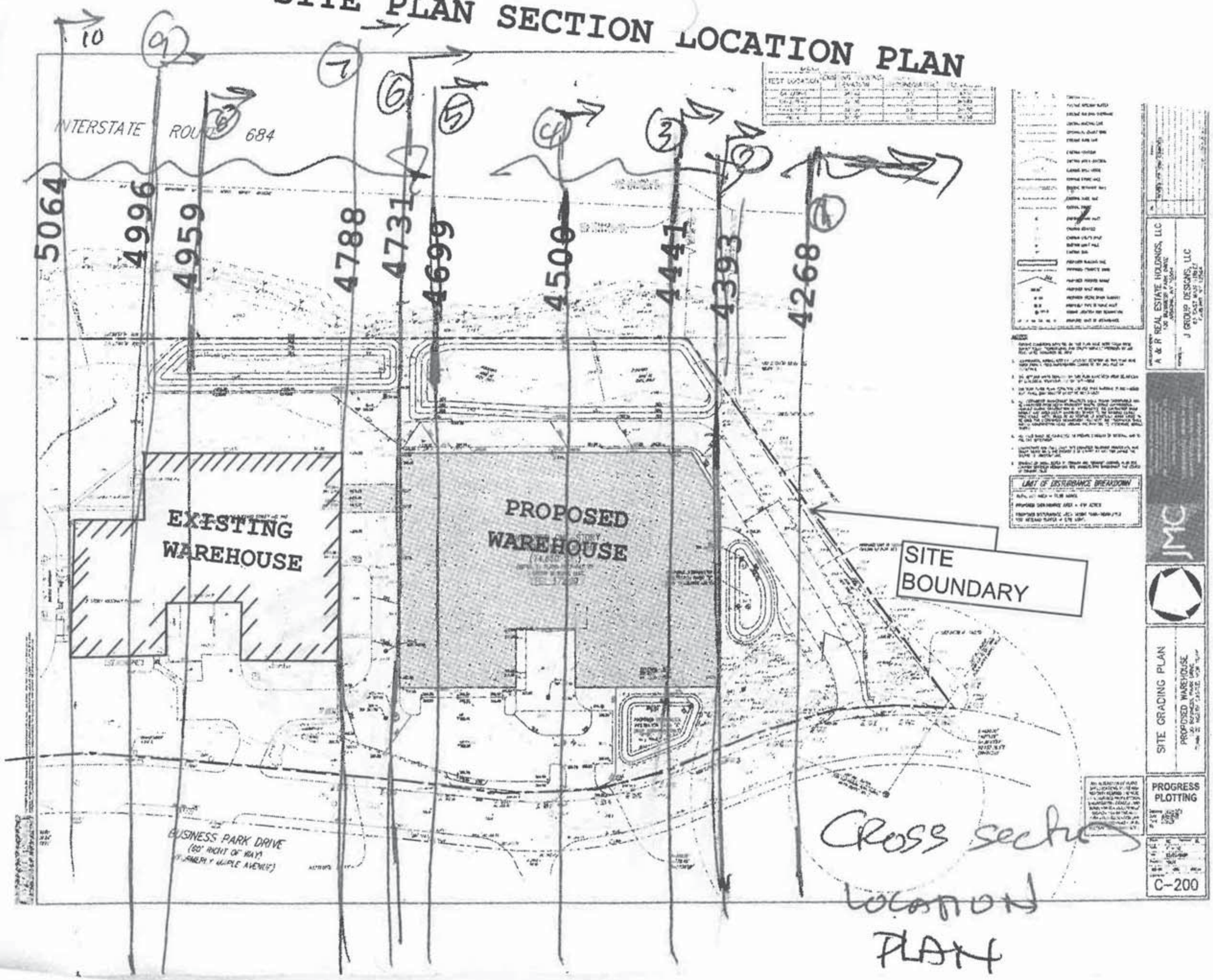
LJA

LEONARD JACKSON ASSOCIATES

CONSULTING ENGINEERS
26 FIREMENS MEMORIAL DRIVE, POMONA, NY 10970
Phone: (845) 354-4382 Fax: (845) 354-4401
www.leonardjackson.net

Site Plan
Section
Location Plan

SITE PLAN SECTION LOCATION PLAN



LJA | **Leonard Jackson Associates** **Consulting Engineers**

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Site Plan Non-Effective Flow Areas

Leonard Jackson PE PLLC dba Leonard Jackson Associates

SITE PLAN

~~SITE PLAN~~ NON EFFECTIVE FLOW AREAS ~~PLAN~~

LJA Leonard Jackson Associates Consulting Engineers

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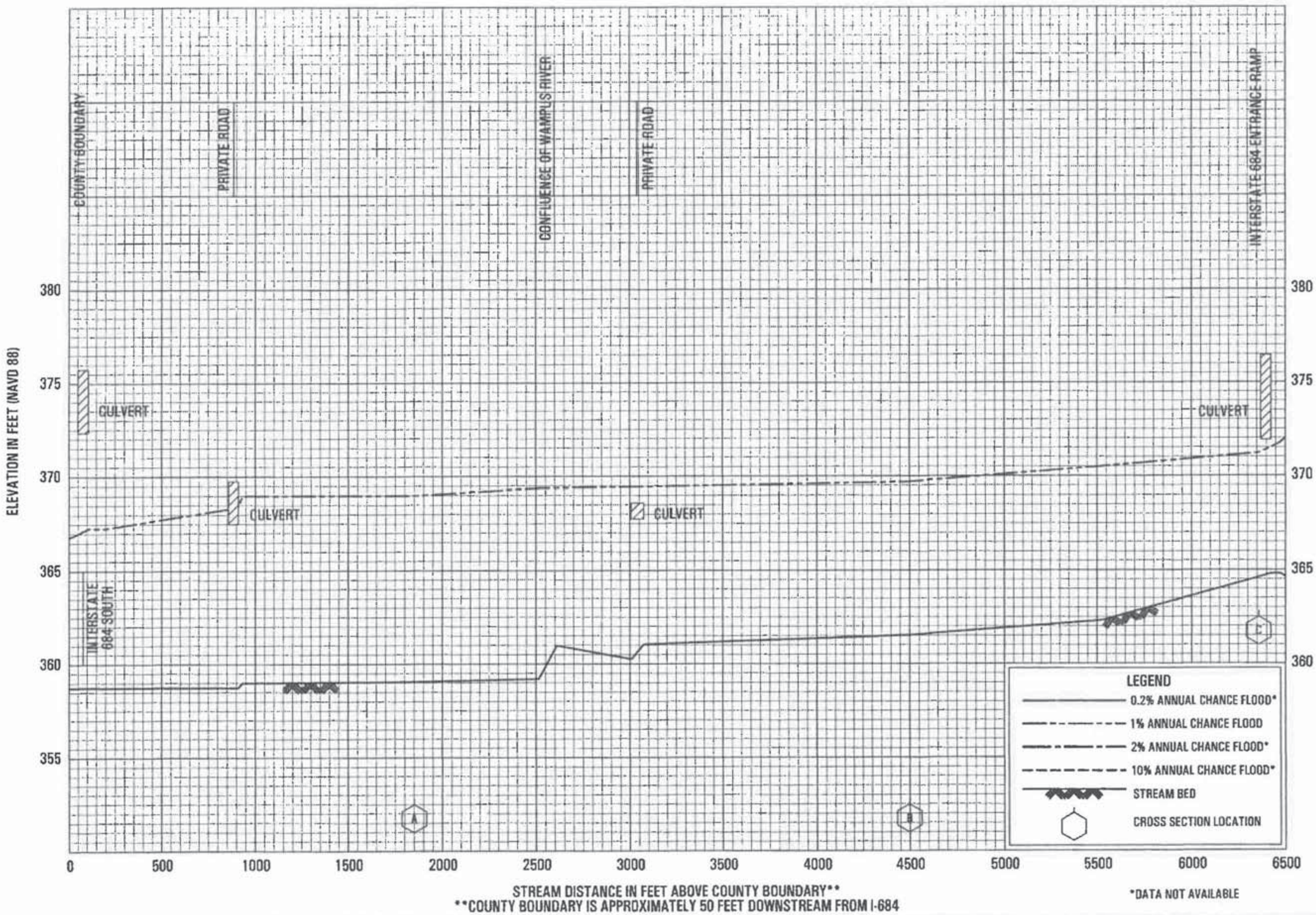
FEMA Data From Effective Flood Insurance Study

TABLE 4 - SUMMARY OF DISCHARGES - continued

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
BROWN BROOK					
Upstream of Muscoot Reservoir	3.58	464	736	888	1,469
Upstream of Somertown Road	3.07	410	657	796	1,314
Upstream of Mill Street/Old Somers Road	2.16	330	525	632	1,016
Upstream of Unnamed Tributary near Hachaliah Brown Drive and Warren Street	1.69	263	419	504	849
Upstream of Green Brier Drive	1.18	182	298	362	652
Upstream of Warren Street (first crossing)	1.01	162	259	312	581
BYRAM RIVER REACH 1					
At mouth	30.4	2,719	4,442	5,439	7,259
Upstream Metro North Railroad bridge	29.0	2,567	4,222	5,180	6,796
BYRAM RIVER REACH 2					
At county boundary	8.39	1,171	2,164	2,576	*
Upstream of confluence of Wampus River	4.59	436	796	996	*
Upstream of State Route 22	4.10	400	745	927	*
Approximately 900 feet downstream of Tributary 1 to Byram River	3.73	376	708	886	*
Upstream of confluence of Tributary 1 to Byram River	2.87	281	521	656	*
Upstream of Byram Lake Road	0.28	114	224	289	*
CANEY BRÓOK					
Upstream of confluence with Pocantico River	1.4	328	482	552	706
Upstream of Leroy Road	1.0	234	342	390	494
CLOVE BROOK					
At downstream limit of Study	1.3	460	760	945	1,450

*Data not available

FLOOD PROFILE - EFFECTIVE FIS DATA



FLOOD PROFILES

BYRAM RIVER REACH 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY

(ALL JURISDICTIONS)

67P

34

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or floodways have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was Universal Transverse Mercator (UTM) zone 18. The horizontal datum was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at http://www.ngs.noaa.gov.

Base map information shown on this FIRM was derived from digital orthophotography provided by the New York State Office of Cyber Security & Critical Infrastructure Coordination. This information was produced as 30-centimeter resolution natural color orthoimagery from photography dated April 2004.

Based on updated topographic information, this map reflects more detailed and up-to-date stream channel configurations and floodplain delineations than those shown on the previous FIRM for this jurisdiction. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map. Also, the road to floodplain relationships for unrevised streams may differ from what is shown on previous maps.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed Map Index for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at http://msc.fema.gov.

If you have questions about this map or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA MAP (1-877-336-2627) or visit the FEMA website at http://www.fema.gov.

ANNOTATED FIRM

LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	1% annual chance floodplain boundary
	0.2% annual chance floodplain boundary
	Floodway boundary
	Zone D boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

(A)—(A)	Cross section line
(3)—(3)	Limited detail cross section line
(23)- - -(23)	Transect line
87°07'45", 32°22'30"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
$^{42}76^{000}$N	1000-meter Universal Transverse Mercator grid values, zone 18N
600000 FT	5000-foot grid ticks: New York State Plane coordinate system, East zone (FIPSZONE 3101), Transverse Mercator projection
DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
• M1.5	River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
September 28, 2007

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 800'

250 0 800 1600 FEET

150 0 150 300 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0277F

FIRM
FLOOD INSURANCE RATE MAP

for WESTCHESTER COUNTY, NEW YORK
(ALL JURISDICTIONS)

CONTAINS:

COMMUNITY	NUMBER
NORTH CASTLE, TOWN OF	360923

PANEL 277 OF 426
MAP SUFFIX: F
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
36119C0277F

EFFECTIVE DATE
SEPTEMBER 28, 2007

Federal Emergency Management Agency

LJA | Leonard Jackson Associates Consulting Engineers

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Storage vs. Discharge vs. Elevation Calculations

Leonard Jackson PE PLLC dba Leonard Jackson Associates

SUMMARY

Discharge Versus Flood Storage Volume
on Byram River Reach 2 for
Existing and Post Project Conditions

Discharge (CFS)	**Existing Storage Volume (Acre-Feet)**	**Post-Project no Comp Storage Storage Volume (Acre-Feet)**
1200	83.3	77.9
996	71.15	66.15
796	60.69	56.29
436	37.6	35
100	13.16	12.98
0	0	0

Summary of Existing and Post Project Conditions
Cummulative Flood Storage Volumes
within Study Reach (Acre-Feet)

1	2	3	4
Discharge (CFS)	**Existing Storage Volume**	**Volume Reduction from Post Project Construction**	**Post-Project no Comp Storage Storage Volume**
1200	83.3	(-)5.40	77.9
996	71.15	(-)5.00	66.15
796	60.69	(-)4.40	56.29
436	37.6	(-)2.60	35
100	13.16	(-)0.18	12.98
0	0	(-)0.00	0

Notes:

Columns 1&2: Obtained from multiple discharge HEC-RAS series for Existing Conditions

Column 3: Derived from JMC OnSite calculations for Existing and Post Project Conditions

Existing Discharge versus Cummulative Volume(Acre-Feet)
Between Sections 6350 to 2600 within Study Reach
From Multiple HEC-RAS Runs for Existing Conditions

Discharge (CFS)	Cummulative Volume Section 6350 (Acre-Feet)	Cummulative Volume Section 2600 (Acre-Feet)	Net Volume
1200	233.73	150.43	83.3
996	203.84	132.69	71.15
796	179	118.31	60.69
436	116.91	79.31	37.6
100	46.08	32.92	13.16

Elevation versus Storage
JMC-Data Measurement

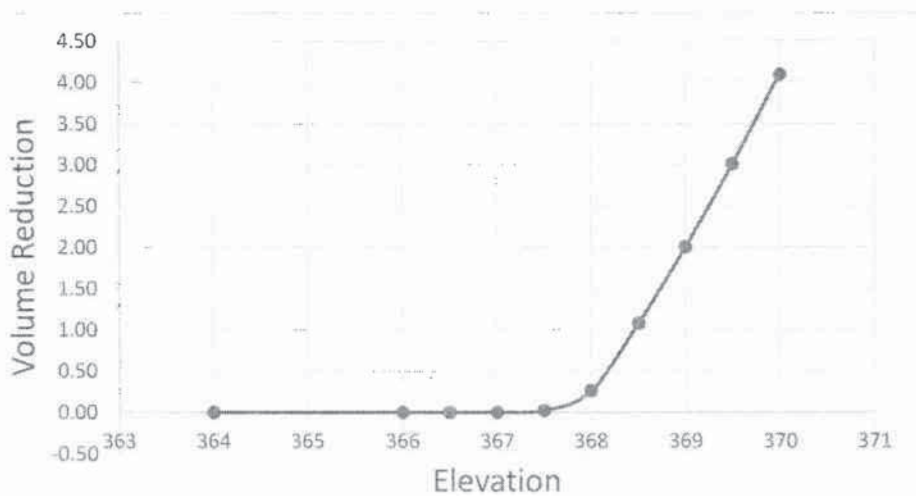
Elevation	Existing Floodplain Storage Volume (CY)	Proposed Floodplain Storage Volume with Compensating Storage Basins	Proposed Floodplain Storage Volume without Compensating Storage Basins
370	11582.77	10512.37	4977.53
369.5	8116.74	8489.28	3256.84
369	5111.48	6754.4	1861.11
368.5	2555.97	5301.44	812.3
368	634.13	4146.15	216.06
367.5	95.08	3379.45	54.29
367	8.07	2764.74	6.16
366.5	0.53	2218.86	0
366	0	1708.97	0
365.5	0	1232.89	0
365	0	789.8	0
364.5	0	379.06	0
364	0	0	0

Existing and Post Project OnSite Flood Storage
Volume Vs Elevation (JMC Data)

Elevation	Existing Storage Volume		Post-Project no Comp Storage Storage Volume	
	(CY)	(ACRE-FT)	(CY)	(ACRE-FT)
370	11582.77	7.18	4977.53	3.09
369.5	8116.74	5.03	3256.84	2.02
369	5111.48	3.17	1861.11	1.15
368.5	2555.97	1.58	812.3	0.50
368	634.13	0.39	216.06	0.13
367.5	95.08	0.06	54.29	0.03
367	8.07	0.01	6.16	0.00
366.5	0.53	0.00	0	0.00
366	0	0.00	0	0.00

Elevation versus Volume Reduction
At Site (Section 4500)
(Acre-Feet)

Elevation	Existing Volume	Post-Project no Comp Storage Volume	Δ Volume Reduction
370	7.18	3.09	4.09
369.5	5.03	2.02	3.01
369	3.17	1.15	2.01
368.5	1.58	0.50	1.08
368	0.39	0.13	0.26
367.5	0.06	0.03	0.03
367	0.01	0.00	0.00
366.5	0.00	0.00	0.00
366	0.00	0.00	0.00
364	0	0	0.00



CURVE 1
ELEVATION VERSUS VOLUME REDUCTION AT SITE

Post-Project Elevation versus Discharge versus Volume Reduction
At Site (Section 4500)

1	2	3
Discharge	**Elevation**	**Volume Reduction**
1200	370.69	5.40
996	370.49	5.00
796	370.18	4.40
436	369.3	2.60
100	367.84	0.18
50	367.42	Neligible
40	367.3	Neligible
10	366.72	Neligible

Notes:

a) Columns 1&2 from post-project HEC-RAS multiple runs at section 4500 (On Site)

b) Column 3 from Curve 1: "Elevation versus Volume Reduction at site"

Discharge versus Flood Storage Volume
On Study Reach (Acre-Feet)

Discharge	Existing Volume	Volume Reduction from Post-Project Construction	Post-Project no Comp Storage Volume
1200	83.30	5.40	77.90
996	71.15	5.00	66.15
796	60.69	4.40	56.29
4[illegible]6	37.60	2.60	35.00
100	13.16	0.18	12.98
0	0.00	0.00	0.00

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HEC-RAS
Existing Conditions
Multiple Run Series

Multiple Run Series

Existing 100, 270 CFS

HEC-RAS Plan: EXISTING River: River 1 Reach: Reach 1

Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Volume
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	(acre-ft)
Reach 1	6350	100.00	368.00	369.83		369.88	0.001240	1.91	52.32	39.52	46.08
Reach 1	6283	100.00	368.00	369.41		369.50	0.002799	2.37	42.27	38.87	45.85
Reach 1	5968	100.00	366.49	368.81		368.88	0.001449	2.05	48.74	33.66	45.52
Reach 1	5656	100.00	366.00	368.32		368.39	0.001684	2.18	45.87	32.36	45.18
Reach 1	5380	100.00	366.00	368.27		368.28	0.000135	0.75	132.70	69.78	44.61
Reach 1	5156	100.00	366.00	368.24		368.25	0.000160	0.78	128.85	75.91	43.92
Reach 1	5064	100.00	366.00	368.18		368.22	0.000413	1.29	67.14	41.25	43.73
Reach 1	4996	100.00	366.00	368.14		368.18	0.000771	1.65	60.56	37.96	43.63
Reach 1	4959	100.00	366.00	368.09		368.15	0.001344	1.82	54.90	42.87	43.58
Reach 1	4788	100.00	365.18	368.02		368.03	0.000284	1.05	95.54	55.72	43.25
Reach 1	4731	100.00	365.29	367.98		368.02	0.000280	1.08	81.08	45.99	43.14
Reach 1	4699	100.00	366.00	367.96		368.00	0.000657	1.52	64.39	42.06	43.08
Reach 1	4500	100.00	366.00	367.90		367.93	0.000516	1.34	74.09	54.34	42.89
Reach 1	4441	100.00	365.53	367.84		367.87	0.000374	1.26	74.50	52.43	42.66
Reach 1	4393	100.00	366.00	367.80		367.84	0.000815	1.59	62.80	69.68	42.58
Reach 1	4268	100.00	366.00	367.67		367.72	0.001101	1.79	56.05	43.93	42.41
Reach 1	4080	100.00	366.00	366.80	366.80	367.14	0.020803	4.66	21.46	32.21	42.24
Reach 1	3575	100.00	364.00	365.90		365.92	0.000682	1.15	87.14	86.09	41.61
Reach 1	3290	100.00	364.00	365.41		365.51	0.004081	2.62	38.21	40.15	41.20
Reach 1	2949	100.00	364.00	365.48	364.12	365.48	0.000001	0.05	624.02	444.20	38.61
Reach 1	2600	270.00	362.00	365.48		365.48	0.000006	0.21	819.54	519.24	32.92
Reach 1	2383	270.00	364.00	365.47	364.21	365.48	0.000041	0.34	802.34	586.57	28.78
Reach 1	2079	270.00	364.00	365.46	364.21	365.46	0.000043	0.34	783.48	572.20	23.24
Reach 1	1851	270.00	363.65	365.45	364.23	365.45	0.000074	0.45	597.92	437.49	19.63
Reach 1	1418	270.00	362.13	365.40		365.41	0.000141	0.68	399.57	257.93	14.68
Reach 1	1121	270.00	363.13	365.33		365.35	0.000288	0.77	302.75	280.19	12.28
Reach 1	661	270.00	362.00	365.31		365.31	0.000026	0.40	680.61	286.81	7.09
Reach 1	425	270.00	362.00	365.31		365.31	0.000020	0.38	715.99	262.57	3.31
Reach 1	50	270.00	364.00	364.85	364.85	365.24	0.019694	5.03	53.72	69.23	

Multiple Run Series
Existing 436, 1171 CFS (10YR)

HEC-RAS Plan: EXISTING River: River 1 Reach: Reach 1 Profile: 10 YR

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Volume
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	(acre-ft)
Reach 1	6350	10 YR	436.00	368.00	371.55		371.72	0.001141	3.09	133.93	55.32	116.91
Reach 1	6283	10 YR	436.00	368.00	371.21		371.39	0.002263	3.36	129.80	59.95	116.26
Reach 1	5968	10 YR	436.00	366.49	370.63		370.79	0.001585	3.32	134.76	77.57	115.30
Reach 1	5656	10 YR	436.00	366.00	369.89		370.14	0.002901	3.95	110.49	49.79	114.43
Reach 1	5380	10 YR	436.00	366.00	369.80		369.84	0.000390	1.76	247.26	79.96	113.28
Reach 1	5156	10 YR	436.00	366.00	369.72		369.76	0.000316	1.62	263.38	100.11	111.95
Reach 1	5064	10 YR	436.00	366.00	369.42		369.69	0.001174	2.83	123.69	50.25	111.57
Reach 1	4996	10 YR	436.00	366.00	369.33		369.58	0.002280	3.91	109.68	44.71	111.39
Reach 1	4959	10 YR	436.00	366.00	369.22		369.48	0.003116	4.06	107.74	50.39	111.29
Reach 1	4788	10 YR	436.00	365.18	369.14		369.21	0.000566	2.03	209.27	126.21	110.60
Reach 1	4731	10 YR	436.00	365.29	369.13		369.18	0.000313	1.50	270.14	225.12	110.29
Reach 1	4699	10 YR	436.00	366.00	369.01		369.15	0.001400	2.97	220.51	208.16	110.10
Reach 1	4500	10 YR	436.00	366.00	369.04		369.06	0.000226	1.26	346.88	341.68	109.30
Reach 1	4441	10 YR	436.00	365.53	369.02		369.04	0.000101	0.90	446.64	389.50	108.07
Reach 1	4393	10 YR	436.00	366.00	369.02		369.03	0.000060	0.64	511.42	447.67	107.54
Reach 1	4268	10 YR	436.00	366.00	368.94	367.86	369.01	0.000634	2.07	201.26	179.82	106.52
Reach 1	4080	10 YR	436.00	366.00	367.91	367.91	368.61	0.016242	6.71	65.02	46.83	105.94
Reach 1	3575	10 YR	436.00	364.00	367.44		367.47	0.000180	1.07	328.69	173.24	103.66
Reach 1	3290	10 YR	436.00	364.00	367.38		367.42	0.000190	1.11	289.35	170.56	101.64
Reach 1	2949	10 YR	436.00	364.00	367.40	364.33	367.41	0.000001	0.09	1598.49	660.59	93.89
Reach 1	2600	10 YR	1171.00	362.00	367.40		367.40	0.000007	0.32	2011.14	692.91	79.31
Reach 1	2383	10 YR	1171.00	364.00	367.40	364.55	367.40	0.000040	0.58	2005.36	809.48	68.53
Reach 1	2079	10 YR	1171.00	364.00	367.38	364.55	367.39	0.000042	0.60	1929.74	751.04	53.46
Reach 1	1851	10 YR	1171.00	363.65	367.36	364.65	367.38	0.000072	0.80	1457.19	508.35	44.06
Reach 1	1418	10 YR	1171.00	362.13	367.30		367.33	0.000172	1.22	957.16	305.80	31.90
Reach 1	1121	10 YR	1171.00	363.13	367.26		367.28	0.000150	0.99	1046.44	471.71	25.07
Reach 1	661	10 YR	1171.00	362.00	367.22		367.23	0.000066	0.92	1251.53	310.35	12.93
Reach 1	425	10 YR	1171.00	362.00	367.20		367.22	0.000061	0.92	1268.80	322.73	6.11
Reach 1	50	10 YR	1171.00	364.00	366.13	366.13	367.05	0.014900	7.68	152.46	84.16	

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Multiple Run Series

Existing 796, 2164 CFS (50 YR)

HEC-RAS Plan: EXISTING River: River 1 Reach: Reach 1 Profile: 50 YR

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Volume
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	(acre-ft)
Reach 1	6350	50 YR	796.00	368.00	372.44		372.73	0.001339	3.95	187.17	66.12	179.00
Reach 1	6283	50 YR	796.00	368.00	372.05		372.34	0.002697	4.31	186.24	96.30	178.09
Reach 1	5968	50 YR	796.00	366.49	371.59		371.77	0.001174	3.35	233.82	130.29	176.56
Reach 1	5656	50 YR	796.00	366.00	370.90		371.23	0.002570	4.71	172.40	77.75	175.12
Reach 1	5380	50 YR	796.00	366.00	370.79		370.88	0.000535	2.39	366.04	255.14	173.39
Reach 1	5156	50 YR	796.00	366.00	370.70		370.77	0.000355	2.06	365.54	109.14	171.48
Reach 1	5064	50 YR	796.00	366.00	370.09		370.67	0.001851	3.85	162.82	94.08	170.96
Reach 1	4996	50 YR	796.00	366.00	369.96		370.48	0.003615	5.57	139.20	48.86	170.73
Reach 1	4959	50 YR	796.00	366.00	369.82		370.33	0.004604	5.76	138.70	54.29	170.61
Reach 1	4788	50 YR	796.00	365.18	369.86		369.97	0.000572	2.37	312.80	166.28	169.62
Reach 1	4731	50 YR	796.00	365.29	369.88		369.93	0.000256	1.58	469.87	308.14	169.10
Reach 1	4699	50 YR	796.00	366.00	369.79		369.91	0.000996	2.98	416.41	297.50	168.77
Reach 1	4500	50 YR	796.00	366.00	369.82		369.85	0.000130	1.13	661.69	462.63	167.25
Reach 1	4441	50 YR	796.00	365.53	369.82		369.83	0.000063	0.83	781.00	519.71	165.02
Reach 1	4393	50 YR	796.00	366.00	369.82		369.83	0.000034	0.57	894.61	496.31	164.08
Reach 1	4268	50 YR	796.00	366.00	369.73		369.81	0.000344	1.81	364.16	230.76	162.28
Reach 1	4080	50 YR	796.00	366.00	368.70	368.70	369.55	0.011905	7.41	108.49	64.84	161.26
Reach 1	3575	50 YR	796.00	364.00	368.77		368.81	0.000090	1.00	569.59	187.70	157.33
Reach 1	3290	50 YR	796.00	364.00	368.74		368.79	0.000079	0.94	531.80	185.00	153.72
Reach 1	2949	50 YR	796.00	364.00	368.77	364.49	368.77	0.000001	0.12	2386.47	799.94	141.06
Reach 1	2600	50 YR	2164.00	362.00	368.76		368.77	0.000008	0.40	3067.00	844.90	118.32
Reach 1	2383	50 YR	2164.00	364.00	368.76	364.82	368.77	0.000040	0.74	2918.89	880.06	101.88
Reach 1	2079	50 YR	2164.00	364.00	368.74	364.82	368.75	0.000043	0.77	2782.48	807.72	79.04
Reach 1	1851	50 YR	2164.00	363.65	368.72	364.98	368.74	0.000075	1.02	2094.00	627.42	64.84
Reach 1	1418	50 YR	2164.00	362.13	368.65		368.69	0.000177	1.56	1381.49	329.84	46.76
Reach 1	1121	50 YR	2164.00	363.13	368.62		368.65	0.000097	1.05	1771.17	585.04	36.02
Reach 1	661	50 YR	2164.00	362.00	368.58		368.61	0.000085	1.25	1683.82	324.94	17.76
Reach 1	425	50 YR	2164.00	362.00	368.56		368.59	0.000075	1.22	1738.10	363.62	8.51
Reach 1	50	50 YR	2164.00	364.00	367.10	367.10	368.37	0.013423	9.02	240.04	96.24	

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Multiple Run Series
Existing 996, 2576 CFS (100 YR)

HEC-RAS Plan: EXISTING River: River 1 Reach: Reach 1 Profile: 100 YR

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Volume
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	(acre-ft)
Reach 1	6350	100 YR	996.00	368.00	372.77		373.12	0.001506	4.41	212.20	99.02	203.80
Reach 1	6283	100 YR	996.00	368.00	372.36		372.69	0.002743	4.67	221.10	128.22	202.73
Reach 1	5968	100 YR	996.00	366.49	371.95		372.14	0.001043	3.37	285.31	154.20	200.90
Reach 1	5656	100 YR	996.00	366.00	371.28		371.65	0.002449	4.95	205.02	91.15	199.15
Reach 1	5380	100 YR	996.00	366.00	371.18		371.28	0.000567	2.59	482.35	328.55	196.95
Reach 1	5156	100 YR	996.00	366.00	371.07		371.17	0.000387	2.28	406.97	111.57	194.62
Reach 1	5064	100 YR	996.00	366.00	370.40		371.06	0.001946	4.13	194.19	104.89	194.03
Reach 1	4996	100 YR	996.00	366.00	370.24		370.87	0.004000	6.18	162.37	100.05	193.76
Reach 1	4959	100 YR	996.00	366.00	370.13	369.39	370.69	0.004505	6.11	174.23	170.11	193.61
Reach 1	4788	100 YR	996.00	365.18	370.23		370.32	0.000540	2.46	404.99	314.67	192.34
Reach 1	4731	100 YR	996.00	365.29	370.24		370.29	0.000240	1.63	645.09	578.36	191.65
Reach 1	4699	100 YR	996.00	366.00	370.15		370.27	0.000885	3.01	568.13	568.69	191.20
Reach 1	4500	100 YR	996.00	366.00	370.18		370.21	0.000124	1.17	848.72	560.14	189.19
Reach 1	4441	100 YR	996.00	365.53	370.18		370.19	0.000065	0.89	978.76	571.05	186.37
Reach 1	4393	100 YR	996.00	366.00	370.18		370.19	0.000029	0.56	1074.43	503.60	185.23
Reach 1	4268	100 YR	996.00	366.00	370.10		370.18	0.000305	1.82	469.58	420.69	183.02
Reach 1	4080	100 YR	996.00	366.00	369.05	369.05	369.93	0.010155	7.59	132.65	75.49	181.71
Reach 1	3575	100 YR	996.00	364.00	369.23		369.28	0.000087	1.06	656.92	191.89	177.14
Reach 1	3290	100 YR	996.00	364.00	369.20		369.26	0.000074	0.99	618.41	190.27	172.96
Reach 1	2949	100 YR	996.00	364.00	369.24	364.58	369.24	0.000002	0.14	2666.76	823.63	158.48
Reach 1	2600	100 YR	2576.00	362.00	369.23		369.24	0.000007	0.41	3466.62	870.63	132.67
Reach 1	2383	100 YR	2576.00	364.00	369.22	364.92	369.23	0.000040	0.79	3237.21	889.84	114.16
Reach 1	2079	100 YR	2576.00	364.00	369.21	364.93	369.22	0.000043	0.82	3079.30	814.90	88.56
Reach 1	1851	100 YR	2576.00	363.65	369.19	365.10	369.21	0.000075	1.09	2323.09	663.16	72.59
Reach 1	1418	100 YR	2576.00	362.13	369.11		369.16	0.000179	1.67	1536.60	344.77	52.25
Reach 1	1121	100 YR	2576.00	363.13	369.09		369.12	0.000083	1.05	2047.17	601.37	40.04
Reach 1	661	100 YR	2576.00	362.00	369.05		369.08	0.000090	1.36	1835.97	330.46	19.53
Reach 1	425	100 YR	2576.00	362.00	369.03		369.06	0.000079	1.31	1909.70	375.64	9.39
Reach 1	50	100 YR	2576.00	364.00	367.46	367.46	368.82	0.012893	9.36	275.18	101.14	

Multiple Run Series
Existing 1200, 3120 CFS

HEC-RAS Plan: EXISTING River: River 1 Reach: Reach 1

Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Volume
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	(acre-ft)
Reach 1	6350	1200.00	368.00	373.05		373.43	0.001628	4.78	245.52	137.70	233.74
Reach 1	6283	1200.00	368.00	372.64		372.98	0.002608	4.82	260.68	154.80	232.49
Reach 1	5968	1200.00	366.49	372.30		372.46	0.000950	3.41	370.35	264.46	230.21
Reach 1	5656	1200.00	366.00	371.58		371.99	0.002416	5.18	233.30	98.88	228.06
Reach 1	5380	1200.00	366.00	371.50		371.60	0.000586	2.74	590.76	350.76	225.41
Reach 1	5156	1200.00	366.00	371.36		371.49	0.000434	2.51	439.09	113.43	222.72
Reach 1	5064	1200.00	366.00	370.68		371.36	0.001932	4.34	223.93	110.08	222.07
Reach 1	4996	1200.00	366.00	370.34	369.73	371.16	0.005036	7.06	172.84	109.08	221.76
Reach 1	4959	1200.00	366.00	370.44	369.72	370.89	0.003419	5.66	231.43	198.59	221.59
Reach 1	4788	1200.00	365.18	370.51		370.60	0.000432	2.30	496.22	327.64	219.99
Reach 1	4731	1200.00	365.29	370.53		370.57	0.000193	1.53	814.07	580.73	219.14
Reach 1	4699	1200.00	366.00	370.49		370.56	0.000578	2.58	762.58	575.33	218.54
Reach 1	4500	1200.00	366.00	370.50		370.52	0.000096	1.09	1026.29	568.72	216.01
Reach 1	4441	1200.00	365.53	370.49		370.51	0.000054	0.86	1159.86	574.83	212.64
Reach 1	4393	1200.00	366.00	370.49		370.51	0.000027	0.57	1235.24	515.31	211.30
Reach 1	4268	1200.00	366.00	370.44		370.50	0.000267	1.80	618.95	459.27	208.65
Reach 1	4080	1200.00	366.00	369.33	369.33	370.26	0.009173	7.78	155.20	84.02	206.97
Reach 1	3575	1200.00	364.00	369.78		369.83	0.000077	1.08	764.69	198.68	201.64
Reach 1	3290	1200.00	364.00	369.76		369.81	0.000063	0.98	725.78	196.84	196.76
Reach 1	2949	1200.00	364.00	369.79	364.65	369.80	0.000002	0.15	3004.38	851.94	180.03
Reach 1	2600	3120.00	362.00	369.78		369.79	0.000007	0.43	3959.20	900.12	150.44
Reach 1	2383	3120.00	364.00	369.78	365.04	369.79	0.000040	0.85	3619.53	902.36	129.40
Reach 1	2079	3120.00	364.00	369.76	365.04	369.78	0.000044	0.89	3434.95	823.46	100.48
Reach 1	1851	3120.00	363.65	369.74	365.24	369.76	0.000076	1.18	2623.17	760.61	82.28
Reach 1	1418	3120.00	362.13	369.66		369.71	0.000179	1.79	1731.71	365.24	59.01
Reach 1	1121	3120.00	363.13	369.64		369.68	0.000073	1.06	2386.38	621.68	44.98
Reach 1	661	3120.00	362.00	369.60		369.64	0.000097	1.49	2020.35	338.05	21.70
Reach 1	425	3120.00	362.00	369.58		369.61	0.000082	1.41	2120.48	389.35	10.49
Reach 1	50	3120.00	364.00	367.88	367.88	369.36	0.012670	9.76	319.69	110.51	

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HEC-RAS
Post Project
Conditions
Multiple Run Series
No Compensating
Flood Storage

Multiple Run Series
Post-Project
No Compensating Storage 100, 270 CFS

HEC-RAS Plan: Post - No Comp Storage River: River 1 Reach: Reach 1

Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Volume
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	(acre-ft)
Reach 1	6350	100.00	368.00	369.83		369.88	0.001236	1.91	52.38	39.53	46.11
Reach 1	6283	100.00	368.00	369.41		369.50	0.002816	2.37	42.18	38.84	45.87
Reach 1	5968	100.00	366.49	368.80		368.87	0.001473	2.06	48.45	33.58	45.55
Reach 1	5656	100.00	366.00	368.28		368.36	0.001800	2.23	44.78	32.03	45.21
Reach 1	5380	100.00	366.00	368.23		368.24	0.000143	0.77	130.19	69.53	44.66
Reach 1	5156	100.00	366.00	368.20		368.21	0.000171	0.79	126.01	74.93	44.00
Reach 1	5064	100.00	366.00	368.13		368.18	0.000450	1.33	65.38	40.95	43.80
Reach 1	4996	100.00	366.00	368.09		368.14	0.000845	1.70	58.77	37.61	43.70
Reach 1	4959	100.00	366.00	368.04		368.10	0.001526	1.90	52.65	42.48	43.65
Reach 1	4788	100.00	365.18	367.97		367.99	0.000309	1.08	92.93	52.98	43.37
Reach 1	4731	100.00	365.29	367.93		367.97	0.000308	1.11	78.72	45.72	43.26
Reach 1	4699	100.00	366.00	367.91		367.95	0.000733	1.58	62.16	41.63	43.20
Reach 1	4500	100.00	366.00	367.84		367.87	0.000599	1.41	70.69	53.22	43.02
Reach 1	4441	100.00	365.53	367.82		367.83	0.000121	0.71	123.53	182.34	42.72
Reach 1	4393	100.00	366.00	367.79		367.82	0.000523	1.27	77.38	108.72	42.60
Reach 1	4268	100.00	366.00	367.67		367.72	0.001101	1.79	56.05	43.93	42.41
Reach 1	4080	100.00	366.00	366.80	366.80	367.14	0.020803	4.66	21.46	32.21	42.25
Reach 1	3575	100.00	364.00	365.90		365.92	0.000682	1.15	87.14	86.09	41.62
Reach 1	3290	100.00	364.00	365.41		365.51	0.004080	2.62	38.21	40.16	41.21
Reach 1	2949	100.00	364.00	365.48	364.12	365.48	0.000001	0.05	624.03	444.20	38.61
Reach 1	2600	270.00	362.00	365.48		365.48	0.000006	0.21	819.55	519.25	32.94
Reach 1	2383	270.00	364.00	365.47	364.21	365.48	0.000041	0.34	802.34	586.57	28.78
Reach 1	2079	270.00	364.00	365.46	364.21	365.46	0.000043	0.34	783.48	572.20	23.24
Reach 1	1851	270.00	363.65	365.45	364.23	365.45	0.000074	0.45	597.92	437.49	19.63
Reach 1	1418	270.00	362.13	365.40		365.41	0.000141	0.68	399.57	257.93	14.68
Reach 1	1121	270.00	363.13	365.33		365.35	0.000288	0.77	302.75	280.19	12.28
Reach 1	661	270.00	362.00	365.31		365.31	0.000026	0.40	680.61	286.81	7.09
Reach 1	425	270.00	362.00	365.31		365.31	0.000020	0.38	715.99	262.57	3.31
Reach 1	50	270.00	364.00	364.85	364.85	365.24	0.019694	5.03	53.72	69.23	

Multiple Run . -ries
Post-Project
No Compensating Storage 436, 1171 CFS (10 YR)

HEC-RAS Plan: Post - No Comp Storage River: River 1 Reach: Reach 1 Profile: 10 YR

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Volume
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	(acre-ft)
Reach 1	6350	10 YR	436.00	368.00	371.56		371.73	0.001134	3.08	134.20	55.37	116.34
Reach 1	6283	10 YR	436.00	368.00	371.22		371.40	0.002238	3.34	130.35	60.08	115.69
Reach 1	5968	10 YR	436.00	366.49	370.66		370.82	0.001510	3.26	137.28	79.24	114.72
Reach 1	5656	10 YR	436.00	366.00	369.99		370.21	0.002569	3.80	115.11	51.08	113.82
Reach 1	5380	10 YR	436.00	366.00	369.90		369.95	0.000352	1.70	255.89	80.61	112.64
Reach 1	5156	10 YR	436.00	366.00	369.84		369.88	0.000273	1.55	275.28	101.22	111.28
Reach 1	5064	10 YR	436.00	366.00	369.57		369.81	0.000982	2.65	131.30	51.46	110.85
Reach 1	4996	10 YR	436.00	366.00	369.50		369.72	0.001850	3.65	117.28	45.67	110.65
Reach 1	4959	10 YR	436.00	366.00	369.43		369.64	0.002316	3.71	118.10	51.61	110.55
Reach 1	4788	10 YR	436.00	365.18	369.42		369.47	0.000344	1.68	245.64	137.51	109.84
Reach 1	4731	10 YR	436.00	365.29	369.38		369.45	0.000318	1.60	227.44	135.53	109.53
Reach 1	4699	10 YR	436.00	366.00	369.25		369.42	0.001286	3.02	141.24	93.90	109.39
Reach 1	4500	10 YR	436.00	366.00	369.30		369.33	0.000186	1.21	303.06	222.34	108.77
Reach 1	4441	10 YR	436.00	365.53	369.30		369.31	0.000042	0.61	476.52	252.03	107.56
Reach 1	4393	10 YR	436.00	366.00	369.28		369.31	0.000100	0.88	361.49	239.94	107.10
Reach 1	4268	10 YR	436.00	366.00	369.10		369.26	0.001311	3.09	135.58	69.84	106.38
Reach 1	4080	10 YR	436.00	366.00	367.91	367.91	368.61	0.016242	6.71	65.02	46.83	105.95
Reach 1	3575	10 YR	436.00	364.00	367.44		367.47	0.000180	1.07	328.69	173.24	103.67
Reach 1	3290	10 YR	436.00	364.00	367.38		367.42	0.000190	1.11	289.35	170.56	101.65
Reach 1	2949	10 YR	436.00	364.00	367.40	364.33	367.41	0.000001	0.09	1598.51	660.60	93.90
Reach 1	2600	10 YR	1171.00	362.00	367.40		367.40	0.000007	0.32	2011.16	692.91	79.37
Reach 1	2383	10 YR	1171.00	364.00	367.40	364.55	367.40	0.000040	0.58	2005.36	809.48	68.53
Reach 1	2079	10 YR	1171.00	364.00	367.38	364.55	367.39	0.000042	0.60	1929.74	751.04	53.46
Reach 1	1851	10 YR	1171.00	363.65	367.36	364.65	367.38	0.000072	0.80	1457.19	508.35	44.06
Reach 1	1418	10 YR	1171.00	362.13	367.30		367.33	0.000172	1.22	957.16	305.80	31.90
Reach 1	1121	10 YR	1171.00	363.13	367.26		367.28	0.000150	0.99	1046.44	471.71	25.07
Reach 1	661	10 YR	1171.00	362.00	367.22		367.23	0.000066	0.92	1251.53	310.35	12.93
Reach 1	425	10 YR	1171.00	362.00	367.20		367.22	0.000061	0.92	1268.80	322.73	6.11
Reach 1	50	10 YR	1171.00	364.00	366.13	366.13	367.05	0.014900	7.68	152.46	84.16	

Multiple Run Series
Post-Project
No Compensating Storage 796, 2164 CFS (50 YR)

HEC-RAS Plan: Post - No Comp Storage River: River 1 Reach: Reach 1 Profile: 50 YR

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Volume
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	(acre-ft)
Reach 1	6350	50 YR	796.00	368.00	372.44		372.74	0.001334	3.94	187.42	66.19	177.65
Reach 1	6283	50 YR	796.00	368.00	372.06		372.34	0.002671	4.30	186.95	97.09	176.73
Reach 1	5968	50 YR	796.00	366.49	371.61		371.79	0.001122	3.30	237.44	131.92	175.20
Reach 1	5656	50 YR	796.00	366.00	370.97		371.29	0.002332	4.56	178.44	80.67	173.71
Reach 1	5380	50 YR	796.00	366.00	370.88		370.96	0.000490	2.31	391.44	281.74	171.91
Reach 1	5156	50 YR	796.00	366.00	370.80		370.87	0.000321	1.99	376.71	109.80	169.93
Reach 1	5064	50 YR	796.00	366.00	370.32		370.78	0.001390	3.44	185.72	103.01	169.34
Reach 1	4996	50 YR	796.00	366.00	370.23		370.64	0.002567	4.95	162.04	99.88	169.07
Reach 1	4959	50 YR	796.00	366.00	370.21		370.52	0.002490	4.61	187.06	178.77	168.92
Reach 1	4788	50 YR	796.00	365.18	370.26		370.32	0.000318	1.90	416.91	316.17	167.73
Reach 1	4731	50 YR	796.00	365.29	370.23		370.30	0.000294	1.80	392.02	315.32	167.20
Reach 1	4699	50 YR	796.00	366.00	370.15		370.28	0.000790	2.84	292.60	291.96	166.95
Reach 1	4500	50 YR	796.00	366.00	370.18		370.22	0.000119	1.15	538.47	349.21	165.78
Reach 1	4441	50 YR	796.00	365.53	370.19		370.21	0.000039	0.69	712.31	305.36	163.85
Reach 1	4393	50 YR	796.00	366.00	370.17		370.20	0.000066	0.85	586.11	274.50	163.12
Reach 1	4268	50 YR	796.00	366.00	369.94		370.16	0.001304	3.66	215.96	141.50	161.97
Reach 1	4080	50 YR	796.00	366.00	368.70	368.70	369.55	0.011905	7.41	108.49	64.84	161.27
Reach 1	3575	50 YR	796.00	364.00	368.77		368.81	0.000090	1.00	569.59	187.70	157.34
Reach 1	3290	50 YR	796.00	364.00	368.74		368.79	0.000079	0.94	531.81	185.00	153.74
Reach 1	2949	50 YR	796.00	364.00	368.77	364.49	368.77	0.000001	0.12	2386.49	799.95	141.07
Reach 1	2600	50 YR	2164.00	362.00	368.76		368.77	0.000008	0.40	3067.03	844.90	118.41
Reach 1	2383	50 YR	2164.00	364.00	368.76	364.82	368.77	0.000040	0.74	2918.91	880.06	101.88
Reach 1	2079	50 YR	2164.00	364.00	368.74	364.82	368.75	0.000043	0.77	2782.50	807.72	79.04
Reach 1	1851	50 YR	2164.00	363.65	368.72	364.98	368.74	0.000075	1.02	2094.02	627.42	64.84
Reach 1	1418	50 YR	2164.00	362.13	368.65		368.69	0.000177	1.56	1381.50	329.84	46.76
Reach 1	1121	50 YR	2164.00	363.13	368.62		368.65	0.000097	1.05	1771.19	585.04	36.02
Reach 1	661	50 YR	2164.00	362.00	368.58		368.61	0.000085	1.25	1683.84	324.94	17.76
Reach 1	425	50 YR	2164.00	362.00	368.56		368.59	0.000075	1.22	1738.11	363.62	8.51
Reach 1	50	50 YR	2164.00	364.00	367.10	367.10	368.37	0.013424	9.02	240.04	96.24	

Multiple . .an Series
Post-Project
No Compensating Storage 996, 2576 CFS (100 YR)

HEC-RAS Plan: Post - No Comp Storage River: River 1 Reach: Reach 1 Profile: 100 YR

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Volume
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	(acre-ft)
Reach 1	6350	100 YR	996.00	368.00	372.77		373.12	0.001505	4.40	212.25	99.09	201.57
Reach 1	6283	100 YR	996.00	368.00	372.36		372.69	0.002734	4.66	221.40	128.43	200.51
Reach 1	5968	100 YR	996.00	366.49	371.96		372.15	0.001030	3.36	286.68	154.98	198.67
Reach 1	5656	100 YR	996.00	366.00	371.30		371.66	0.002390	4.91	206.73	91.62	196.90
Reach 1	5380	100 YR	996.00	366.00	371.21		371.31	0.000551	2.56	491.54	331.32	194.69
Reach 1	5156	100 YR	996.00	366.00	371.10		371.20	0.000376	2.25	410.49	111.77	192.37
Reach 1	5064	100 YR	996.00	366.00	370.54		371.10	0.001604	3.86	209.09	107.59	191.72
Reach 1	4996	100 YR	996.00	366.00	370.43		370.94	0.002991	5.54	183.79	113.78	191.41
Reach 1	4959	100 YR	996.00	366 00	370.50		370.78	0.002074	4.46	243.05	203.23	191.23
Reach 1	4788	100 YR	996.00	365.18	370.55		370.61	0.000275	1.85	508.85	329.65	189.75
Reach 1	4731	100 YR	996.00	365.29	370.52		370.59	0.000254	1.76	486.14	322.52	189.10
Reach 1	4699	100 YR	996.00	366.00	370.47		370.58	0.000557	2.52	390.34	304.22	188.78
Reach 1	4500	100 YR	996.00	366.00	370.49		370.53	0.000109	1.16	647.73	360.00	187.31
Reach 1	4441	100 YR	996.00	365.53	370.49		370.52	0.000042	0.76	807.49	314.93	185.07
Reach 1	4393	100 YR	996.00	366.00	370.48		370.52	0.000068	0.90	674.58	298.62	184.24
Reach 1	4268	100 YR	996.00	366.00	370.29	368.97	370.48	0.001136	3.63	350.79	455.59	182.77
Reach 1	4080	100 YR	996.00	366.00	369.05	369.05	369.93	0.010155	7.59	132.65	75.49	181.73
Reach 1	3575	100 YR	996.00	364.00	369.23		369.28	0.000087	1.06	656.93	191.89	177.15
Reach 1	3290	100 YR	996.00	364.00	369.20		369.26	0.000074	0.99	618.42	190.27	172.98
Reach 1	2949	100 YR	996.00	364.00	369.24	364.58	369.24	0.000002	0.14	2666.80	823.63	158.49
Reach 1	2600	100 YR	2576.00	362.00	369.23		369.24	0.000007	0.41	3466.68	870.63	132.77
Reach 1	2383	100 YR	2576.00	364.00	369.22	364.92	369.23	0.000040	0.79	3237.23	889.84	114.16
Reach 1	2079	100 YR	2576.00	364.00	369.21	364.93	369.22	0.000043	0.82	3079.32	814.90	88.57
Reach 1	1851	100 YR	2576.00	363.65	369.19	365.10	369.21	0.000075	1.09	2323.11	663.16	72.59
Reach 1	1418	100 YR	2576.00	362.13	369.11		369.16	0.000179	1.67	1536.61	344.77	52.25
Reach 1	1121	100 YR	2576.00	363.13	369.09		369.12	0.000083	1.05	2047.19	601.37	40.05
Reach 1	661	100 YR	2576.00	362.00	369.05		369.08	0.000090	1.36	1835.98	330.46	19.53
Reach 1	425	100 YR	2576.00	362.00	369.03		369.06	0.000079	1.31	1909.71	375.64	9.39
Reach 1	50	100 YR	2576.00	364.00	367.46	367.46	368.82	0.012893	9.36	275.18	101.14	

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Multiple Run Series
Post-Project
No Compensating Storage 1200, 3120 CFS

HEC-RAS Plan: Post - No Comp Storage River: River 1 Reach: Reach 1

Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Volume
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	(acre-ft)
Reach 1	6350	1200.00	368.00	373.05		373.43	0.001630	4.78	245.38	137.54	230.06
Reach 1	6283	1200.00	368.00	372.64		372.98	0.002611	4.82	260.55	154.71	228.82
Reach 1	5968	1200.00	366.49	372.30		372.46	0.000946	3.40	370.88	264.52	226.54
Reach 1	5656	1200.00	366.00	371.58		371.99	0.002420	5.19	233.18	98.85	224.38
Reach 1	5380	1200.00	366.00	371.50		371.61	0.000583	2.73	592.30	351.03	221.76
Reach 1	5156	1200.00	366.00	371.36		371.49	0.000432	2.51	439.87	113.48	219.11
Reach 1	5064	1200.00	366.00	370.69		371.37	0.001900	4.32	225.30	110.31	218.40
Reach 1	4996	1200.00	366.00	370.55	369.73	371.18	0.003603	6.21	197.70	118.32	218.08
Reach 1	4959	1200.00	366.00	370.69		370.98	0.001980	4.51	283.91	219.41	217.87
Reach 1	4788	1200.00	365.18	370.74		370.81	0.000274	1.90	573.74	335.47	216.18
Reach 1	4731	1200.00	365.29	370.72		370.80	0.000256	1.82	549.92	326.43	215.45
Reach 1	4699	1200.00	366.00	370.67		370.78	0.000520	2.52	451.40	312.19	215.08
Reach 1	4500	1200.00	366.00	370.69		370.74	0.000116	1.23	719.51	367.03	213.43
Reach 1	4441	1200.00	365.53	370.69		370.72	0.000049	0.84	870.12	321.62	210.97
Reach 1	4393	1200.00	366.00	370.67		370.72	0.000076	0.99	733.31	306.72	210.08
Reach 1	4268	1200.00	366.00	370.56	369.28	370.69	0.000764	3.11	474.67	461.79	208.35
Reach 1	4080	1200.00	366.00	369.33	369.33	370.26	0.009173	7.78	155.20	84.02	206.99
Reach 1	3575	1200.00	364.00	369.78		369.83	0.000077	1.08	764.70	198.68	201.65
Reach 1	3290	1200.00	364.00	369.76		369.81	0.000063	0.98	725.80	196.84	196.78
Reach 1	2949	1200.00	364.00	369.79	364.65	369.80	0.000002	0.15	3004.43	851.95	180.05
Reach 1	2600	3120.00	362.00	369.78		369.79	0.000007	0.43	3959.28	900.12	150.56
Reach 1	2383	3120.00	364.00	369.78	365.04	369.79	0.000040	0.85	3619.59	902.37	129.40
Reach 1	2079	3120.00	364.00	369.76	365.04	369.78	0.000044	0.89	3435.03	823.46	100.48
Reach 1	1851	3120.00	363.65	369.74	365.24	369.76	0.000076	1.18	2623.24	760.63	82.28
Reach 1	1418	3120.00	362.13	369.66		369.71	0.000179	1.79	1731.76	365.25	59.01
Reach 1	1121	3120.00	363.13	369.64		369.68	0.000073	1.06	2386.47	621.68	44.98
Reach 1	661	3120.00	362.00	369.60		369.64	0.000097	1.49	2020.40	338.06	21.70
Reach 1	425	3120.00	362.00	369.58		369.61	0.000082	1.41	2120.54	389.35	10.49
Reach 1	50	3120.00	364.00	367.88	367.88	369.36	0.012688	9.77	319.53	110.47	

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HEC-RAS
100 Year
Existing Conditions
Q=996, 2576 cfs

100 Year -
Existing Conditions
Existing Discharges (996, 2576 CFS)

HEC-RAS Plan: EXISTING River: River 1 Reach: Reach 1 Profile: 100 YR

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Volume
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	(acre-ft)
Reach 1	6350	100 YR	996.00	368.00	372.77		373.12	0.001506	4.41	212.20	99.02	203.80
Reach 1	6283	100 YR	996.00	368.00	372.36		372.69	0.002743	4.67	221.10	128.22	202.73
Reach 1	5968	100 YR	996.00	366.49	371.95		372.14	0.001043	3.37	285.31	154.20	200.90
Reach 1	5656	100 YR	996.00	366.00	371.28		371.65	0.002449	4.95	205.02	91.15	199.15
Reach 1	5380	100 YR	996.00	366.00	371.18		371.28	0.000567	2.59	482.35	328.55	196.95
Reach 1	5156	100 YR	996.00	366.00	371.07		371.17	0.000387	2.28	406.97	111.57	194.62
Reach 1	5064	100 YR	996.00	366.00	370.40		371.06	0.001946	4.13	194.19	104.89	194.03
Reach 1	4996	100 YR	996.00	366.00	370.24		370.87	0.004000	6.18	162.37	100.05	193.76
Reach 1	4959	100 YR	996.00	366.00	370.13	369.39	370.69	0.004505	6.11	174.23	170.11	193.61
Reach 1	4788	100 YR	996.00	365.18	370.23		370.32	0.000540	2.46	404.99	314.67	192.34
Reach 1	4731	100 YR	996.00	365.29	370.24		370.29	0.000240	1.63	645.09	578.36	191.65
Reach 1	4699	100 YR	996.00	366.00	370.15		370.27	0.000885	3.01	568.13	568.69	191.20
Reach 1	4500	100 YR	996.00	366.00	370.18		370.21	0.000124	1.17	848.72	560.14	189.19
Reach 1	4441	100 YR	996.00	365.53	370.18		370.19	0.000065	0.89	978.76	571.05	186.37
Reach 1	4393	100 YR	996.00	366.00	370.18		370.19	0.000029	0.56	1074.43	503.60	185.23
Reach 1	4268	100 YR	996.00	366.00	370.10		370.18	0.000305	1.82	469.58	420.69	183.02
Reach 1	4080	100 YR	996.00	366.00	369.05	369.05	369.93	0.010155	7.59	132.65	75.49	181.71
Reach 1	3575	100 YR	996.00	364.00	369.23		369.28	0.000087	1.06	656.92	191.89	177.14
Reach 1	3290	100 YR	996.00	364.00	369.20		369.26	0.000074	0.99	618.41	190.27	172.96
Reach 1	2949	100 YR	996.00	364.00	369.24	364.58	369.24	0.000002	0.14	2666.76	823.63	158.48
Reach 1	2600	100 YR	2576.00	362.00	369.23		369.24	0.000007	0.41	3466.62	870.63	132.67
Reach 1	2383	100 YR	2576.00	364.00	369.22	364.92	369.23	0.000040	0.79	3237.21	889.84	114.16
Reach 1	2079	100 YR	2576.00	364.00	369.21	364.93	369.22	0.000043	0.82	3079.30	814.90	88.56
Reach 1	1851	100 YR	2576.00	363.65	369.19	365.10	369.21	0.000075	1.09	2323.09	663.16	72.59
Reach 1	1418	100 YR	2576.00	362.13	369.11		369.16	0.000179	1.67	1536.60	344.77	52.25
Reach 1	1121	100 YR	2576.00	363.13	369.09		369.12	0.000083	1.05	2047.17	601.37	40.04
Reach 1	661	100 YR	2576.00	362.00	369.05		369.08	0.000090	1.36	1835.97	330.46	19.53
Reach 1	425	100 YR	2576.00	362.00	369.03		369.06	0.000079	1.31	1909.70	375.64	9.39
Reach 1	50	100 YR	2576.00	364.00	367.46	367.46	368.82	0.012893	9.36	275.18	101.14	

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HEC-RAS
Post Project
Conditions
Existing Discharges
Q=996, 2576 cfs

100 Year -
Post-Project Conditions (With Compensating Storage)
Existing Discharges (996, 2576 CFS)

HEC-RAS Plan: Post with CompStorage River: River 1 Reach: Reach 1 Profile: 100 YR

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach 1	6350	100 YR	996.00	368.00	372.77		373.12	0.001507	4.41	212.09	98.84	0.37
Reach 1	6283	100 YR	996.00	368.00	372.36		372.69	0.002748	4.67	220.97	128.12	0.47
Reach 1	5968	100 YR	996.00	366.49	371.95		372.14	0.001042	3.37	285.39	154.24	0.30
Reach 1	5656	100 YR	996.00	366.00	371.27		371.65	0.002472	4.97	204.37	90.97	0.46
Reach 1	5380	100 YR	996.00	366.00	371.18		371.28	0.000569	2.59	481.33	328.24	0.22
Reach 1	5156	100 YR	996.00	366.00	371.07		371.17	0.000387	2.28	406.83	111.56	0.19
Reach 1	5064	100 YR	996.00	366.00	370.33	369.46	371.04	0.002150	4.28	186.65	103.22	0.42
Reach 1	4996	100 YR	996.00	366.00	370.13	369.34	370.84	0.004658	6.53	152.09	90.76	0.62
Reach 1	4959	100 YR	996.00	364.64	370.54		370.61	0.000385	2.11	463.48	213.35	0.18
Reach 1	4788	100 YR	996.00	364.29	370.53		370.56	0.000112	1.23	727.78	320.41	0.10
Reach 1	4731	100 YR	996.00	364.79	370.49		370.55	0.000224	1.62	514.60	321.45	0.14
Reach 1	4699	100 YR	996.00	366.00	370.51		370.54	0.000085	1.03	755.55	324.43	0.09
Reach 1	4500	100 YR	996.00	366.00	370.51		370.53	0.000045	0.76	965.72	359.98	0.06
Reach 1	4441	100 YR	996.00	365.76	370.51		370.52	0.000028	0.61	1058.83	314.80	0.05
Reach 1	4393	100 YR	996.00	366.00	370.48		370.52	0.000068	0.90	674.58	298.62	0.08
Reach 1	4268	100 YR	996.00	366.00	370.29	368.97	370.48	0.001136	3.63	350.79	455.59	0.32
Reach 1	4080	100 YR	996.00	366.00	369.05	369.05	369.93	0.010155	7.59	132.65	75.49	0.87
Reach 1	3575	100 YR	996.00	364.00	369.23		369.28	0.000087	1.06	657.11	191.90	0.09
Reach 1	3290	100 YR	996.00	364.00	369.20		369.26	0.000074	0.99	618.60	190.28	0.08
Reach 1	2949	100 YR	996.00	364.00	369.24	364.58	369.24	0.000002	0.14	2667.37	823.68	0.01
Reach 1	2600	100 YR	2576.00	362.00	369.23		369.24	0.000007	0.41	3467.50	870.68	0.03
Reach 1	2383	100 YR	2576.00	364.00	369.22	364.92	369.23	0.000040	0.79	3237.88	889.86	0.06
Reach 1	2079	100 YR	2576.00	364.00	369.21	364.93	369.22	0.000043	0.82	3079.92	814.91	0.06
Reach 1	1851	100 YR	2576.00	363.65	369.19	365.10	369.21	0.000075	1.09	2323.60	663.24	0.09
Reach 1	1418	100 YR	2576.00	362.13	369.11		369.16	0.000178	1.67	1536.97	344.81	0.13
Reach 1	1121	100 YR	2576.00	363.13	369.09		369.12	0.000083	1.05	2047.85	601.41	0.09
Reach 1	661	100 YR	2576.00	362.00	369.05		369.08	0.000090	1.36	1836.34	330.47	0.10
Reach 1	425	100 YR	2576.00	362.00	369.03		369.06	0.000079	1.31	1910.14	375.66	0.09
Reach 1	50	100 YR	2576.00	364.00	367.45	367.45	368.82	0.013073	9.41	273.84	100.96	1.01

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HEC-RAS
Post Project
Conditions
Post No Compensating
Storage Discharges
Q=998, 2580 cfs

100 Year -
Post-Project Conditions (No Compensating Storage)
Post-Project Discharges (998, 2580 CFS)

HEC-RAS Plan: Post - No Comp Storage River: River 1 Reach: Reach 1 Profile: 100 YR

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Volume
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	(acre-ft)
Reach 1	6350	100 YR	998.00	368.00	372.77		373.12	0.001506	4.41	212.56	99.57	201.79
Reach 1	6283	100 YR	998.00	368.00	372.36		372.69	0.002733	4.66	221.77	128.71	200.72
Reach 1	5968	100 YR	998.00	366.49	371.96		372.15	0.001030	3.36	287.17	155.26	198.88
Reach 1	5656	100 YR	998.00	366.00	371.30		371.67	0.002390	4.91	206.99	91.69	197.11
Reach 1	5380	100 YR	998.00	366.00	371.21		371.31	0.000551	2.56	492.51	331.61	194.90
Reach 1	5156	100 YR	998.00	366.00	371.11		371.21	0.000376	2.26	410.78	111.79	192.58
Reach 1	5064	100 YR	998.00	366.00	370.54		371.10	0.001607	3.86	209.24	107.61	191.92
Reach 1	4996	100 YR	998.00	366.00	370.44		370.94	0.002998	5.55	183.90	113.82	191.62
Reach 1	4959	100 YR	998.00	366.00	370.50		370.78	0.002074	4.46	243.41	203.37	191.43
Reach 1	4788	100 YR	998.00	365.18	370.55		370.61	0.000275	1.85	509.43	329.74	189.95
Reach 1	4731	100 YR	998.00	365.29	370.52		370.60	0.000255	1.76	486.71	322.56	189.30
Reach 1	4699	100 YR	998.00	366.00	370.48		370.58	0.000557	2.52	390.88	304.29	188.98
Reach 1	4500	100 YR	998.00	366.00	370.49		370.53	0.000109	1.16	648.36	360.06	187.51
Reach 1	4441	100 YR	998.00	365.53	370.50		370.52	0.000043	0.76	808.04	314.98	185.26
Reach 1	4393	100 YR	998.00	366.00	370.48		370.52	0.000068	0.90	675.09	298.69	184.44
Reach 1	4268	100 YR	998.00	366.00	370.30	368.98	370.48	0.001131	3.63	352.04	455.66	182.96
Reach 1	4080	100 YR	998.00	366.00	369.05	369.05	369.93	0.010137	7.59	132.91	75.59	181.92
Reach 1	3575	100 YR	998.00	364.00	369.23		369.28	0.000087	1.06	657.73	191.94	177.33
Reach 1	3290	100 YR	998.00	364.00	369.21		369.26	0.000074	0.99	619.22	190.32	173.15
Reach 1	2949	100 YR	998.00	364.00	369.24	364.58	369.24	0.000002	0.14	2669.36	823.84	158.65
Reach 1	2600	100 YR	2580.00	362.00	369.23		369.24	0.000007	0.41	3470.37	870.86	132.91
Reach 1	2383	100 YR	2580.00	364.00	369.23	364.92	369.24	0.000040	0.79	3240.16	889.93	114.27
Reach 1	2079	100 YR	2580.00	364.00	369.21	364.92	369.23	0.000043	0.82	3082.03	814.96	88.65
Reach 1	1851	100 YR	2580.00	363.65	369.19	365.10	369.21	0.000075	1.10	2325.25	663.83	72.66
Reach 1	1418	100 YR	2580.00	362.13	369.12		369.16	0.000179	1.67	1538.09	344.94	52.31
Reach 1	1121	100 YR	2580.00	363.13	369.09		369.12	0.000083	1.05	2049.79	601.52	40.08
Reach 1	661	100 YR	2580.00	362.00	369.05		369.08	0.000090	1.36	1837.40	330.51	19.55
Reach 1	425	100 YR	2580.00	362.00	369.03		369.06	0.000079	1.31	1911.34	375.74	9.40
Reach 1	50	100 YR	2580.00	364.00	367.46	367.46	368.83	0.012891	9.36	275.50	101.19	

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HEC-HMS
(100 Year Summary Table)

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HEC-HMS
100 Year
Existing Conditions

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EXISTING CONDITION
HEC-HMS

File Edit View Components GIS Parameters Compute Results Tools

--None Select

- BYRAM
  - Basin Models
    - Post Project
      - Byram river
      - Routed
    - Pre Project
      - Byram River
      - Routed
  - Meteorologic Models
    - 100 year
      - Hypothetical Storm
  - Control Specifications
  - Paired Data
    - Storage-Discharge Functions
      - Storage-Discharge(Existing)
      - Storage-Discharge(PostProje)

Components Compute Results

Paired Data Table Graph

Storage (ACRE-FT)	Discharge (CFS)
0.00	0
13.16	100
37.60	436
60.69	796
71.15	996
83.30	1200

EXISTING

Project: Byram
Simulation Run: Run 1
Simulation Start: 8 September 2020, 24:00
Simulation End: 10 September 2020, 00:04

HMS Version: 4.6.1
Executed: 09 October 2020, 21:17

Global Parameter Summary - Subbasin

Area

Element Name	Area
Byram River	4.59

Downstream

Element Name	Downstream
Byram River	Routed

Loss Rate: Scs

Element Name	Percent Impervious Area	Curve Number	Initial Abstraction
Byram River	2.95	66	1

Transform: Scs

Element Name	Lag	Unitgraph Type
Byram River	132	Prf150

Global Results Summary

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Byram River	4.59	1010.21	09Sep2020, 15:20	3.35
Routed	4.59	996.03	09Sep2020, 16:12	3.16

EXISTING

Subbasin: Byram River

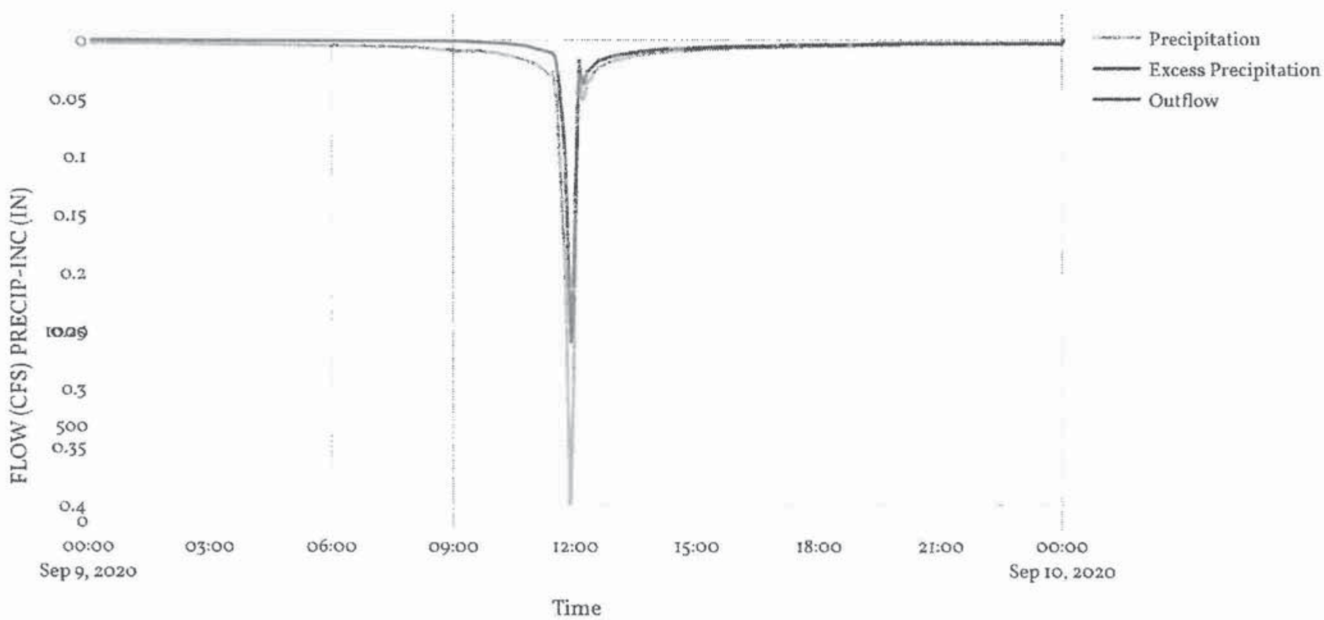
Area : 4.59
Downstream : Routed

Loss Rate: Scs	
Percent Impervious Area	2.95
Curve Number	66
Initial Abstraction	1

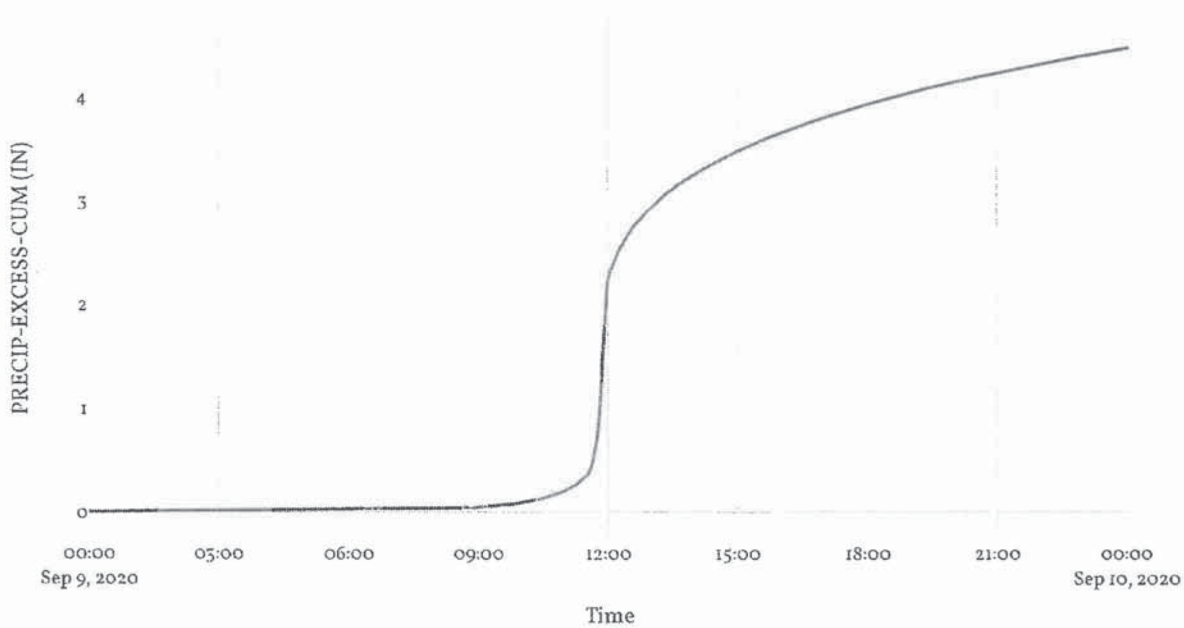
Transform: Scs	
Lag	132
Unitgraph Type	Prf150

Results: Byram River	
Peak Discharge (CFS)	1010.21
Time of Peak Discharge	09Sep2020, 15:20
Volume (IN)	3.35
Precipitation Volume (AC - FT)	2053.47
Loss Volume (AC - FT)	958.56
Excess Volume (AC - FT)	1094.91
Direct Runoff Volume (AC - FT)	820.65
Baseflow Volume (AC - FT)	0

Precipitation and Outflow

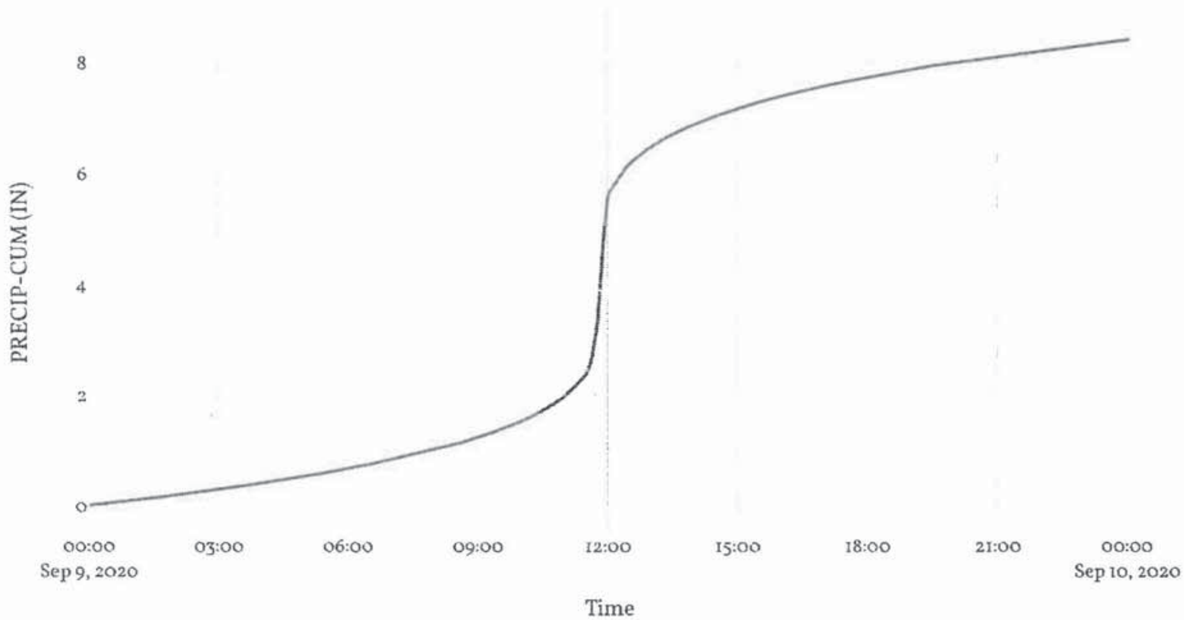


Cumulative Excess Precipitation

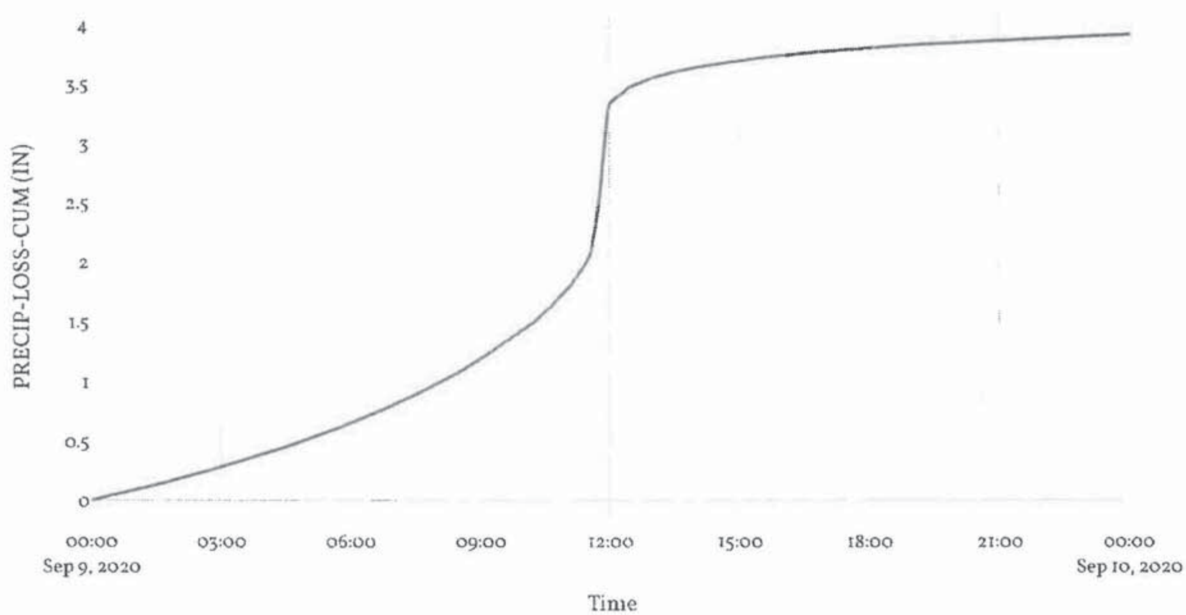


68

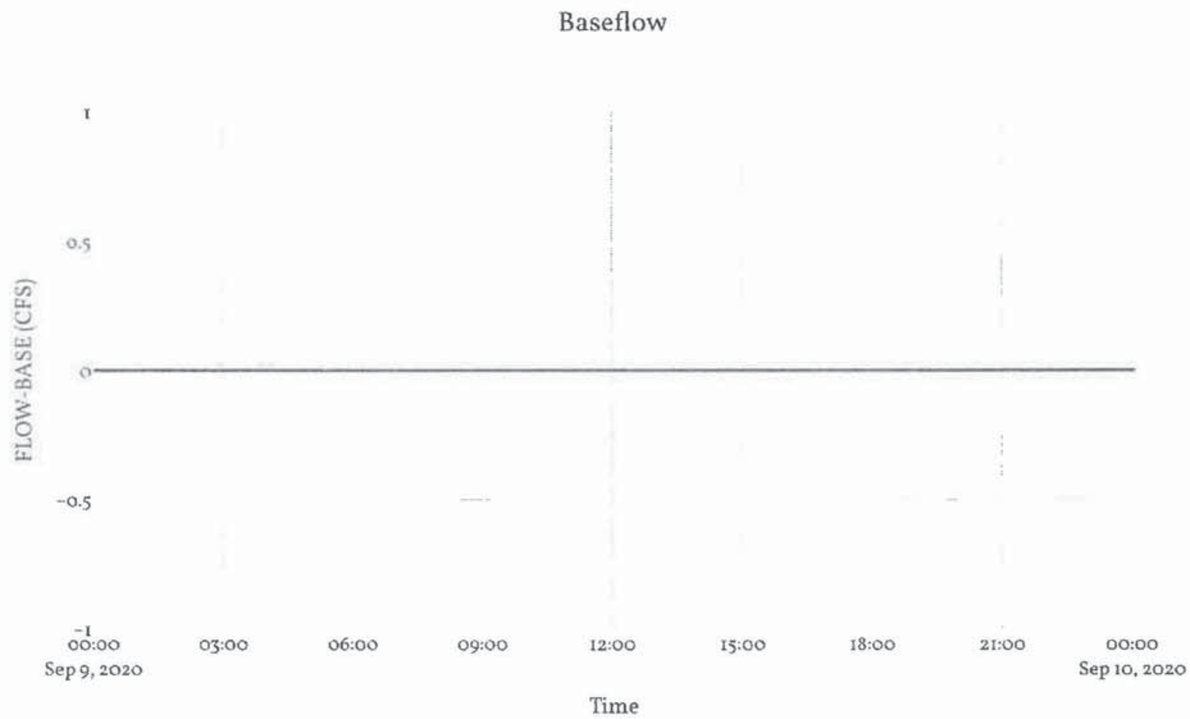
Cumulative Precipitation

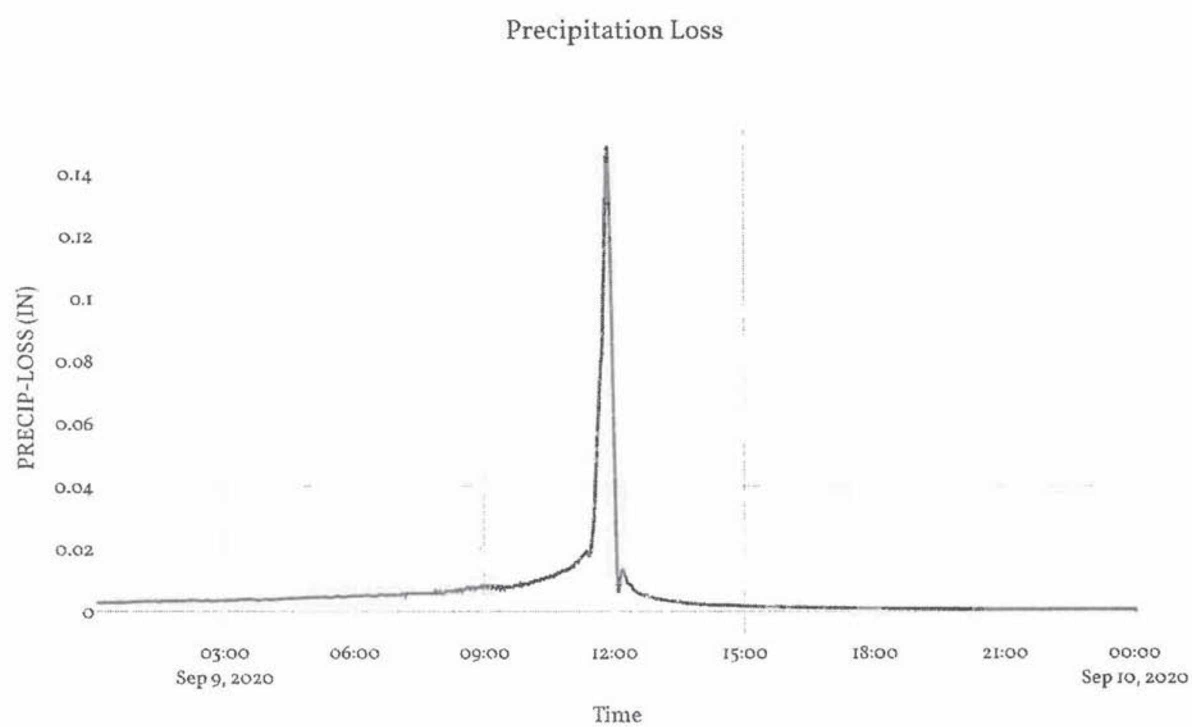


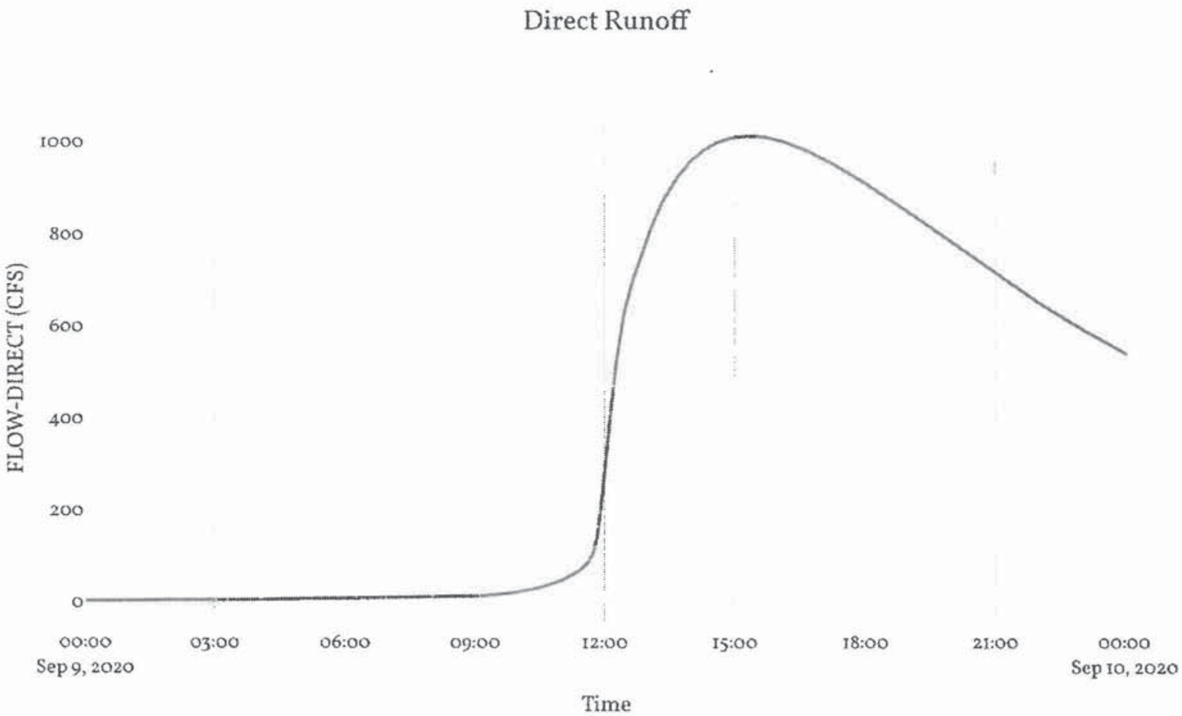
Cumulative Precipitation Loss

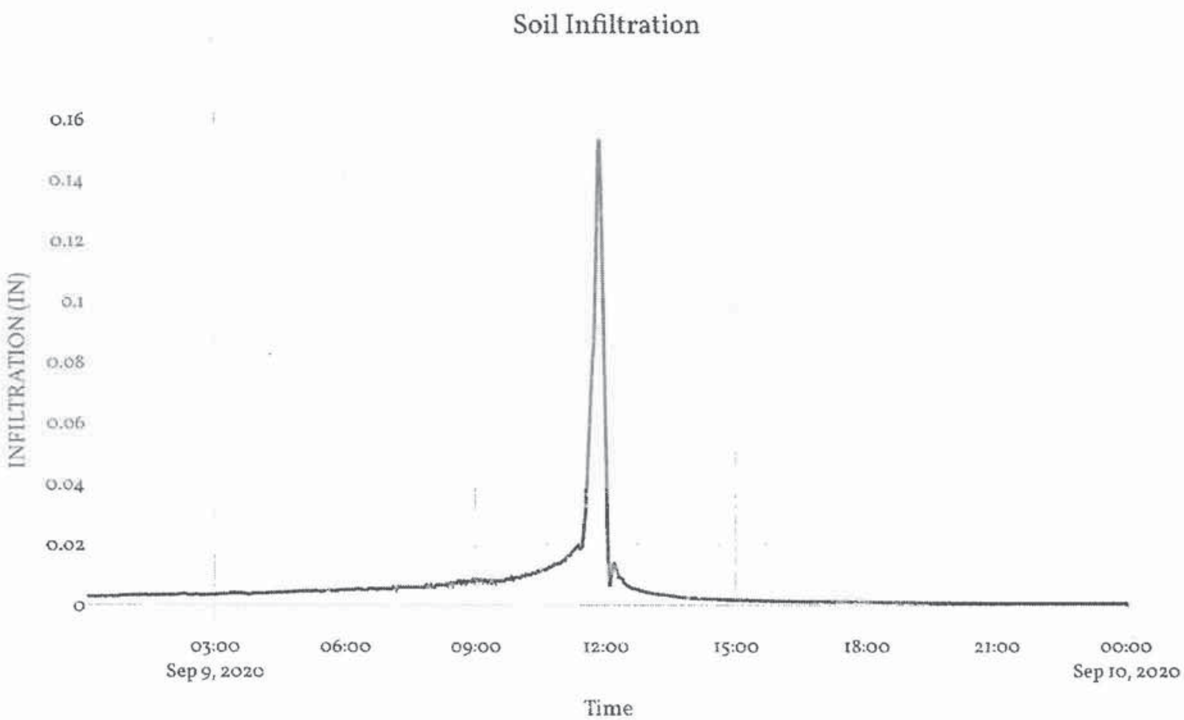


69


Baseflow
1
0.5
0
−0.5
−1
FLOW-BASE (CFS)
00:00
Sep 9, 2020
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
Sep 10, 2020
Time


Precipitation Loss
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
PRECIP-LOSS (IN)
03:00
Sep 9, 2020
06:00
09:00
12:00
15:00
18:00
21:00
00:00
Sep 10, 2020
Time


Direct Runoff
1000
800
600
400
200
0
FLOW-DIRECT (CFS)
00:00
Sep 9, 2020
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
Sep 10, 2020
Time

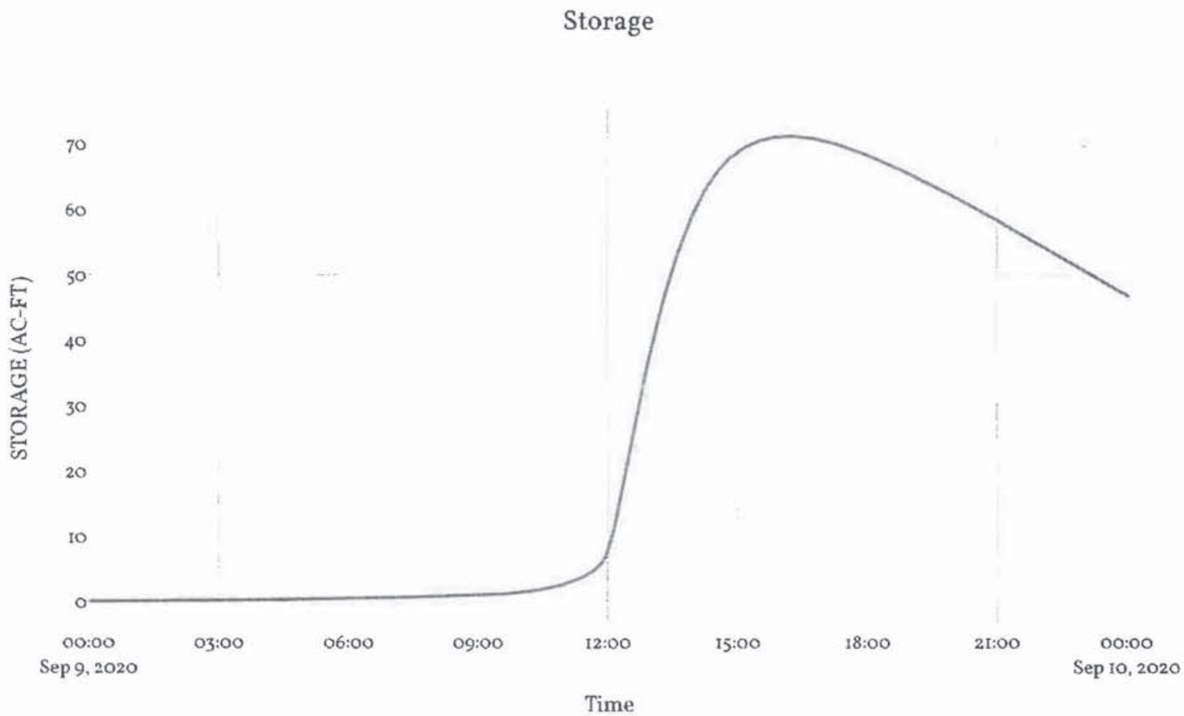

Soil Infiltration
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
INFILTRATION (IN)
03:00
Sep 9, 2020
06:00
09:00
12:00
15:00
18:00
21:00
00:00
Sep 10, 2020
Time

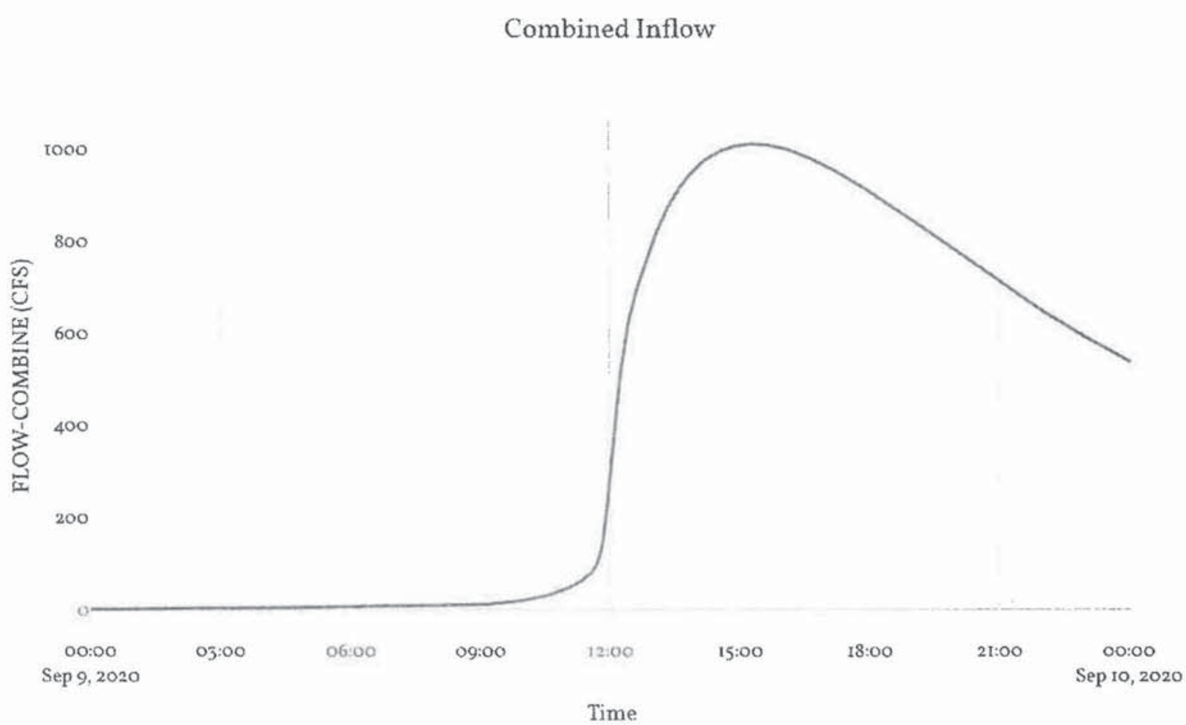
71

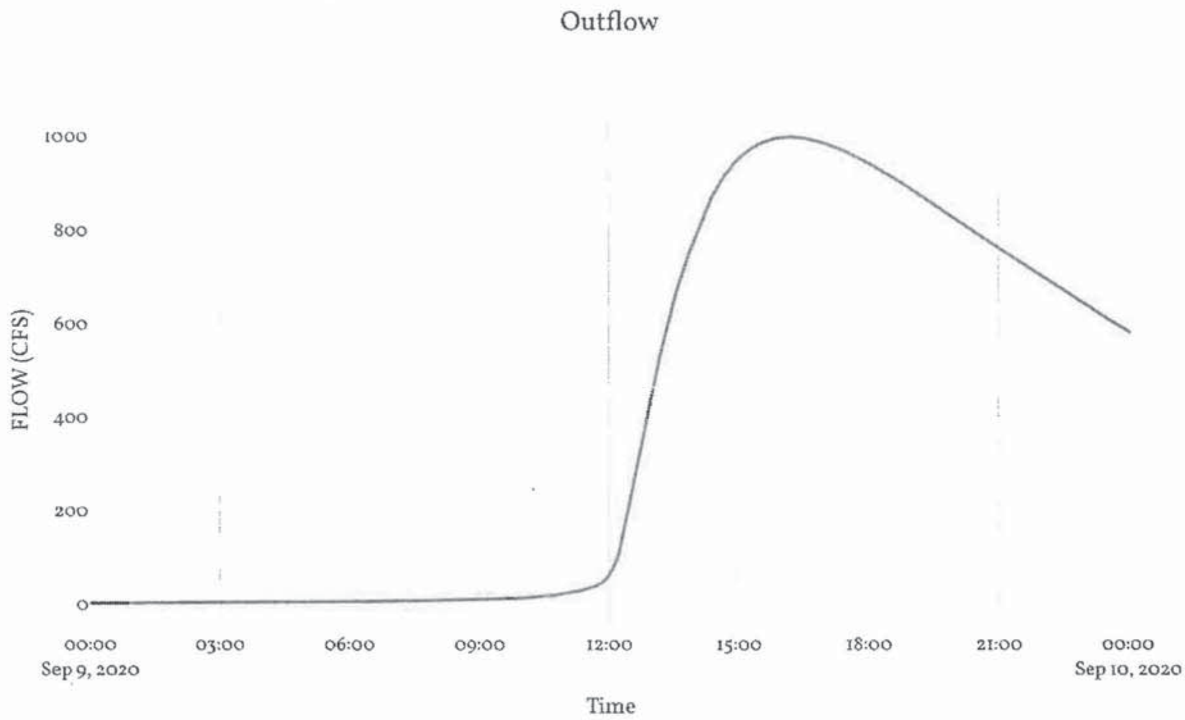
Reservoir: Routed

EXISTING

	Results: Routed
Peak Discharge (CFS)	$\boxed{996.03}$
Time of Peak Discharge	09Sep2020, 16:12
Volume (IN)	3.16
Peak Inflow (CFS)	1010.21
Time of Peak Inflow	09Sep2020, 15:20
Inflow Volume (AC - FT)	820.65
Maximum Storage (AC - FT)	71.15
Peak Elevation (FT)	Not specified
Discharge Volume (AC - FT)	773.96
Observed Pool Elevation Gage	Not specified
Observed Peak Pool Elevation (FT)	Not specified
Observed Pool Elevation RMSE Stdev	Not specified
Observed Pool Elevation Percent Bias	Not specified
Time of Maximum Observed Pool Elevation	Not specified
Observed Pool Elevation Nash Sutcliffe	Not specified


Storage
70
60
50
40
30
20
10
0
STORAGE (AC-FT)
00:00
Sep 9, 2020
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
Sep 10, 2020
Time


Combined Inflow
1000
800
600
400
200
0
FLOW-COMBINE (CFS)
00:00
Sep 9, 2020
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
Sep 10, 2020
Time


Outflow
1000
800
600
400
200
0
FLOW (CFS)
00:00
Sep 9, 2020
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
Sep 10, 2020
Time

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HEC-HMS
100 Year
Post Project
Conditions
No Compensating
Flood Storage

Leonard Jackson PE PLLC dba Leonard Jackson Associates

Post Project

HEC-HMS

File Edit View Components GIS Parameters Compute Results Tools

--None Selec

- BYRAM
  - Basin Models
    - Post Project
      - Byram river
      - Routed
    - Pre Project
      - Byram River
      - Routed
  - Meteorologic Models
    - 100 year
      - Hypothetical Storm
  - Control Specifications
  - Paired Data
    - Storage-Discharge Functions
      - Storage-Discharge(Existing)
      - Storage-Discharge(PostProje)

Components Compute Results

Paired Data Table Graph

Storage (ACRE-FT)	Discharge (CFS)
0.00	0
12.98	100
35.00	436
56.29	796
66.15	996
77.90	1200

Post Project

Project: Byram
Simulation Run: Run 1
Simulation Start: 8 September 2020, 24:00
Simulation End: 10 September 2020, 00:04

HMS Version: 4.6.1
Executed: 09 October 2020, 22:13

Global Parameter Summary - Subbasin

Area

Element Name	Area
Byram River	4.59

Downstream

Element Name	Downstream
Byram River	Routed

Loss Rate: Scs

Element Name	Percent Impervious Area	Curve Number	Initial Abstraction
Byram River	2.95	66	1

Transform: Scs

Element Name	Lag	Unitgraph Type
Byram River	132	Prf150

Global Results Summary

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Byram River	4.59	1010.21	09Sep2020, 15:20	3.35
Routed	4.59	997.96	09Sep2020, 16:08	3.18

Post Project

Subbasin: Byram River

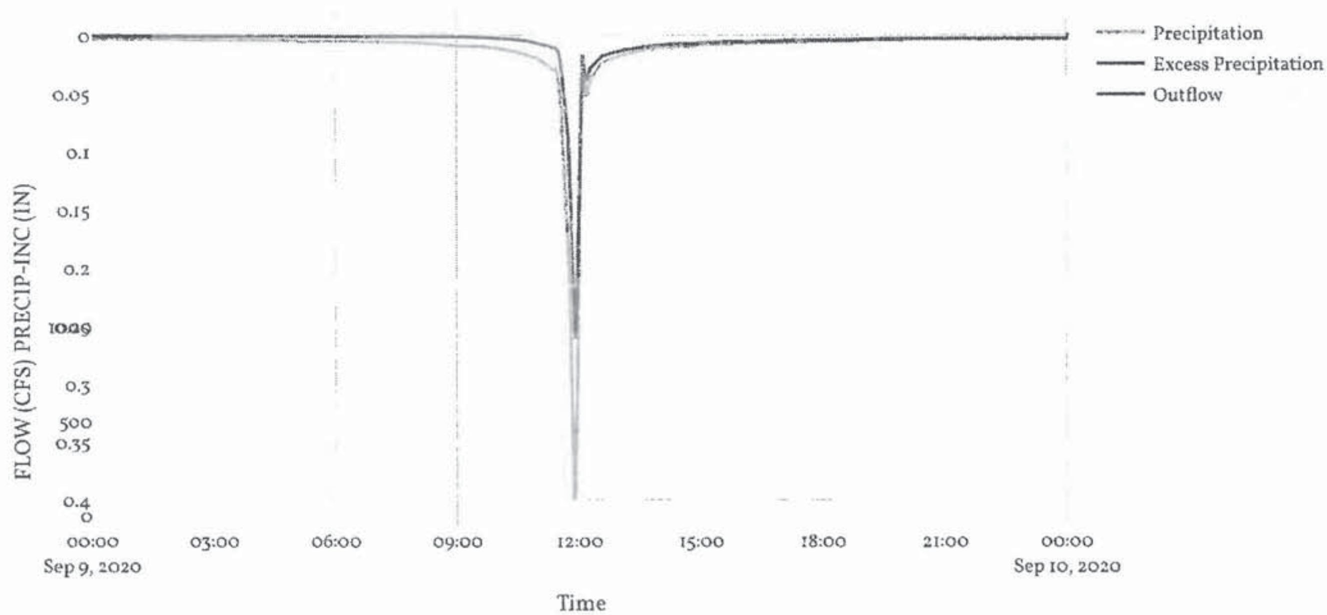
Area : 4.59
Downstream : Routed

Loss Rate: Scs	
Percent Impervious Area	2.95
Curve Number	66
Initial Abstraction	1

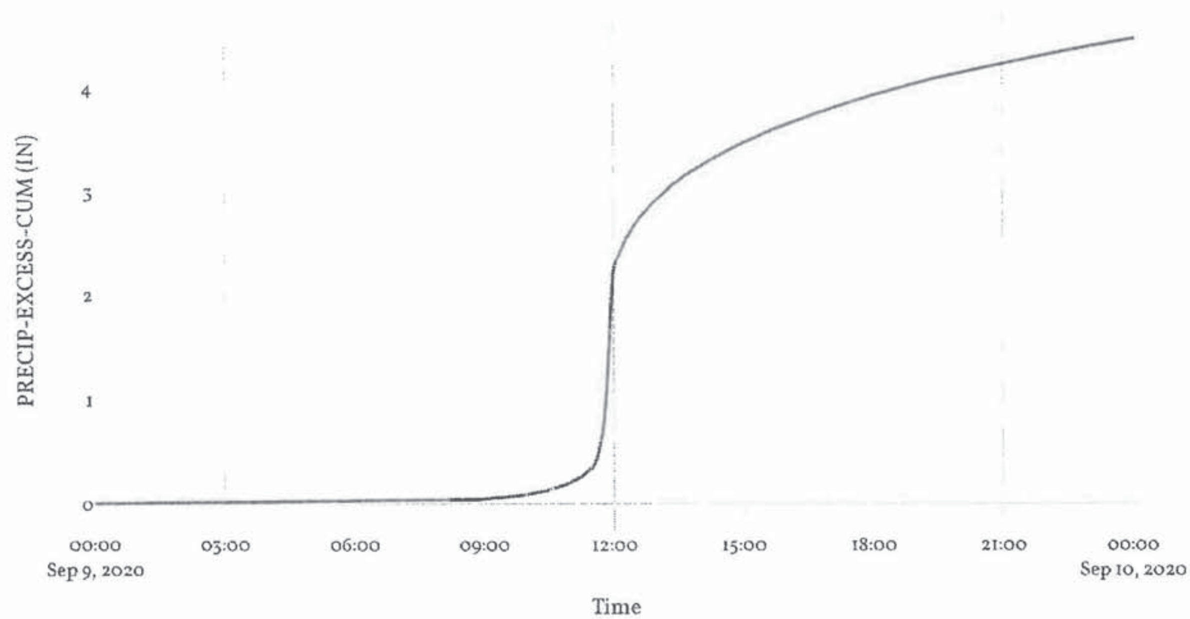
Transform: Scs	
Lag	132
Unitgraph Type	Prf150

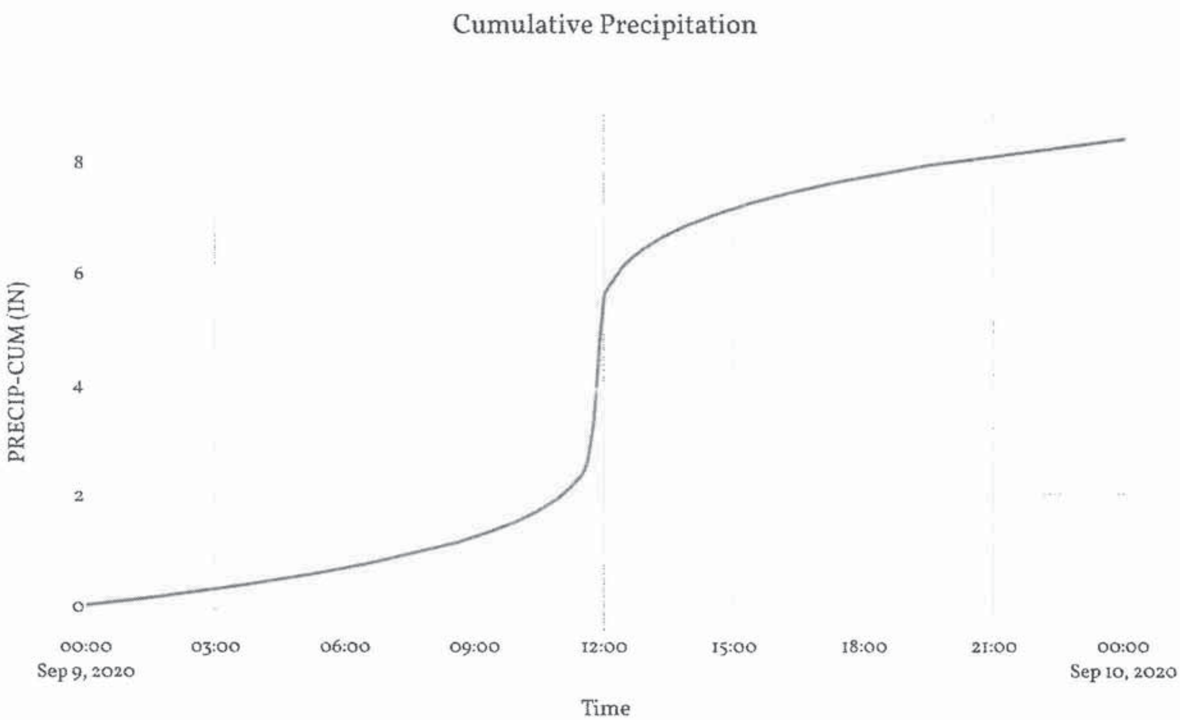
Results: Byram River	
Peak Discharge (CFS)	1010.21
Time of Peak Discharge	09Sep2020, 15:20
Volume (IN)	3.35
Precipitation Volume (AC - FT)	2053.47
Loss Volume (AC - FT)	958.56
Excess Volume (AC - FT)	1094.91
Direct Runoff Volume (AC - FT)	820.65
Baseflow Volume (AC - FT)	0

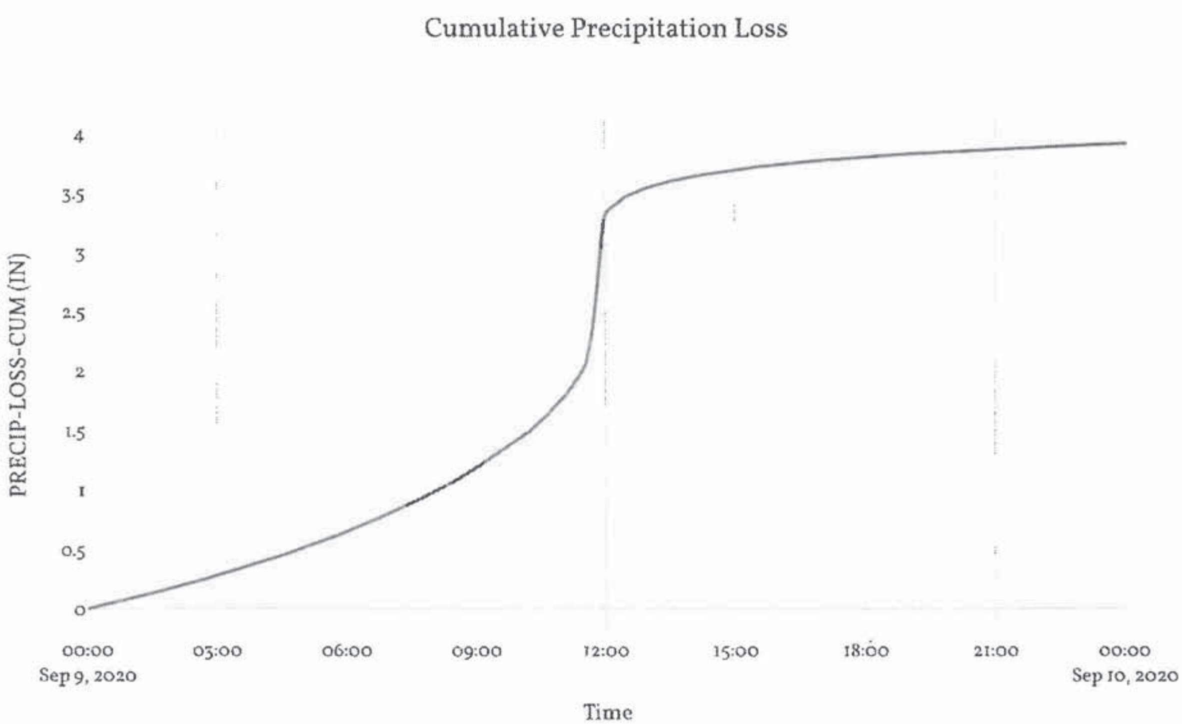
Precipitation and Outflow



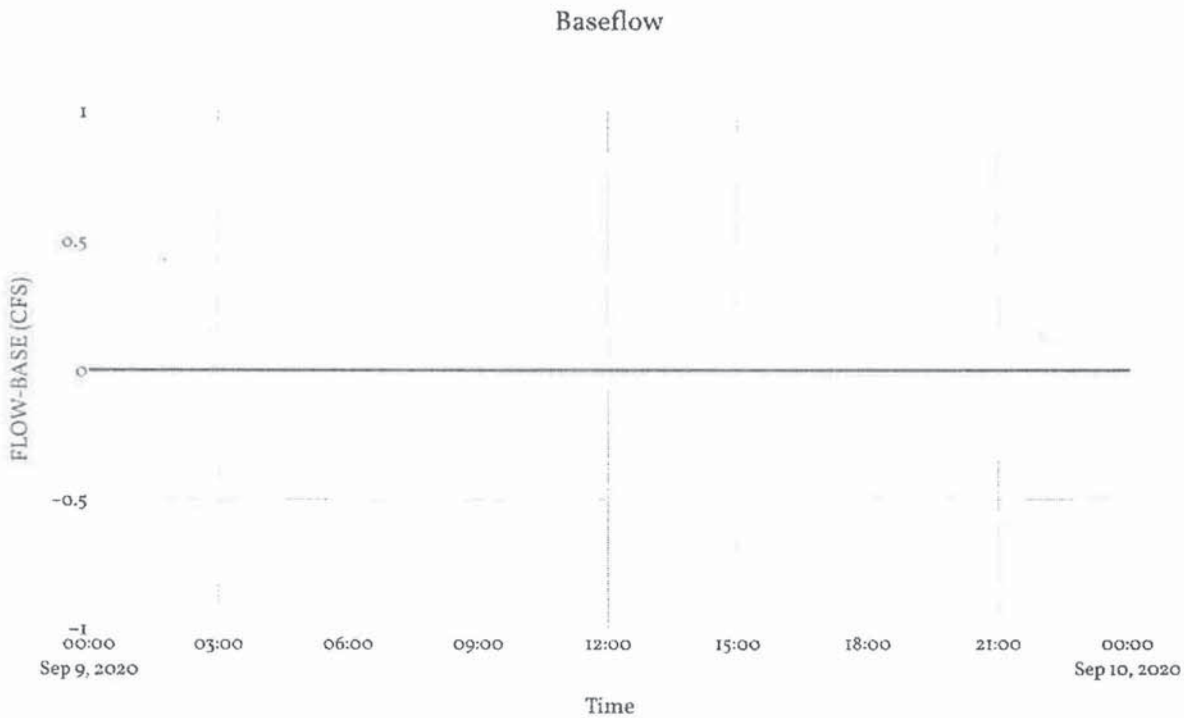
Cumulative Excess Precipitation

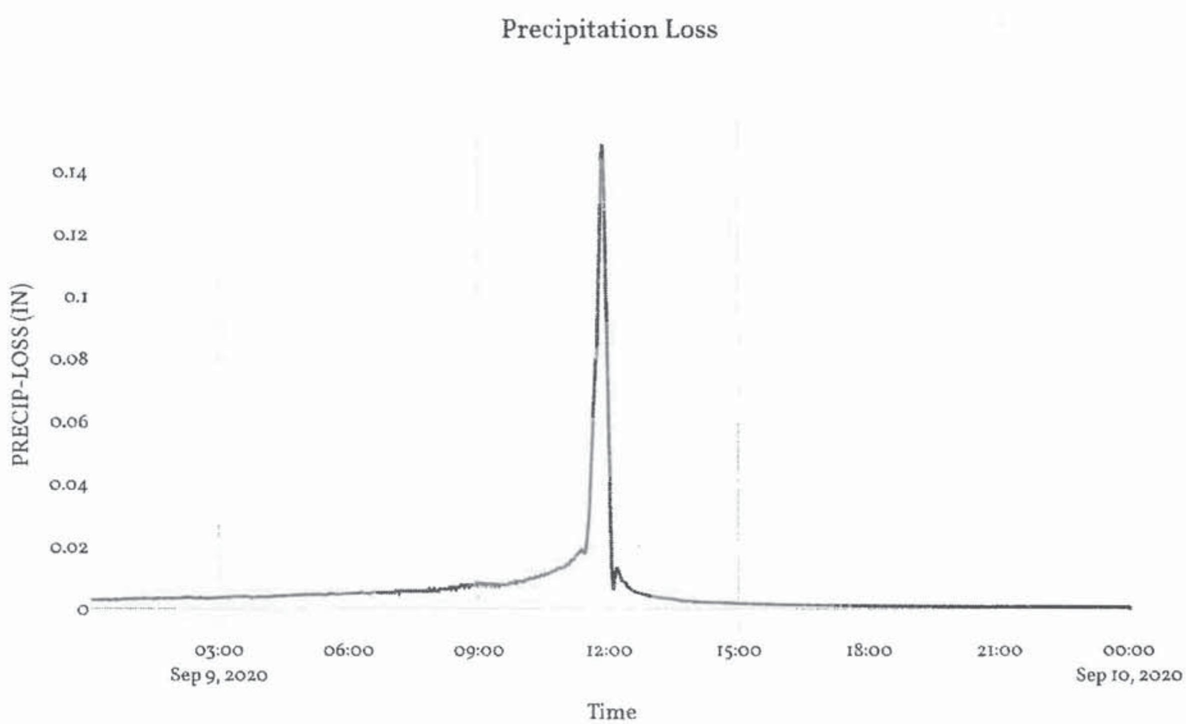



Cumulative Precipitation
PRECIP-CUM (IN)
0
2
4
6
8
00:00
Sep 9, 2020
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
Sep 10, 2020
Time

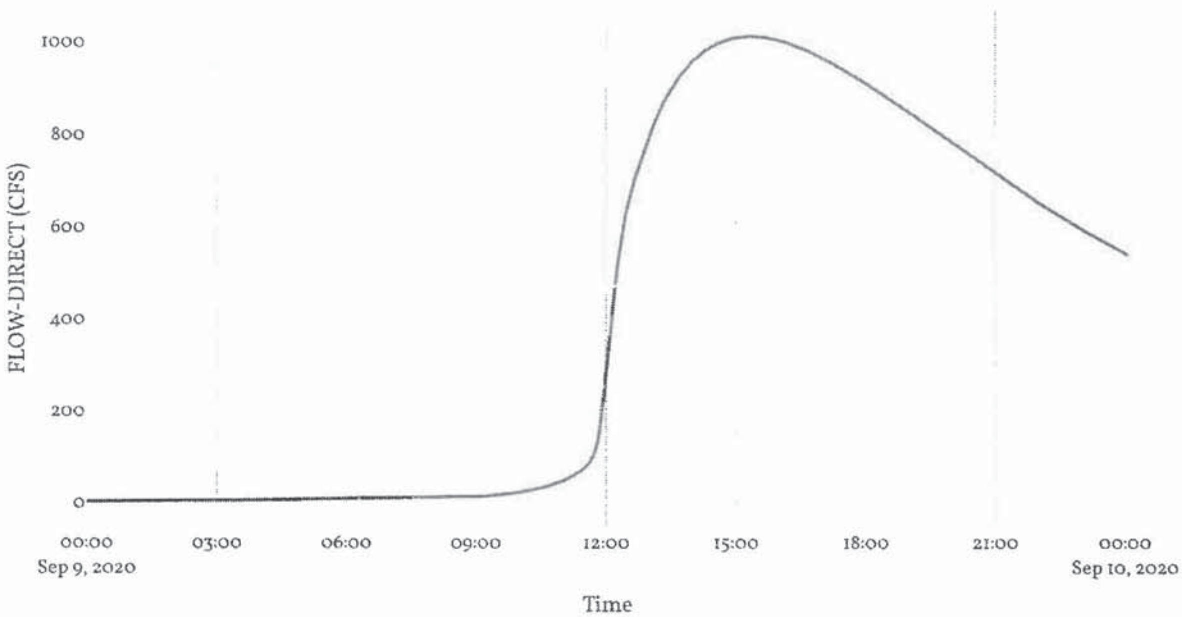

Cumulative Precipitation Loss
PRECIP-LOSS-CUM (IN)
0
0.5
1
1.5
2
2.5
3
3.5
4
00:00
Sep 9, 2020
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
Sep 10, 2020
Time

680

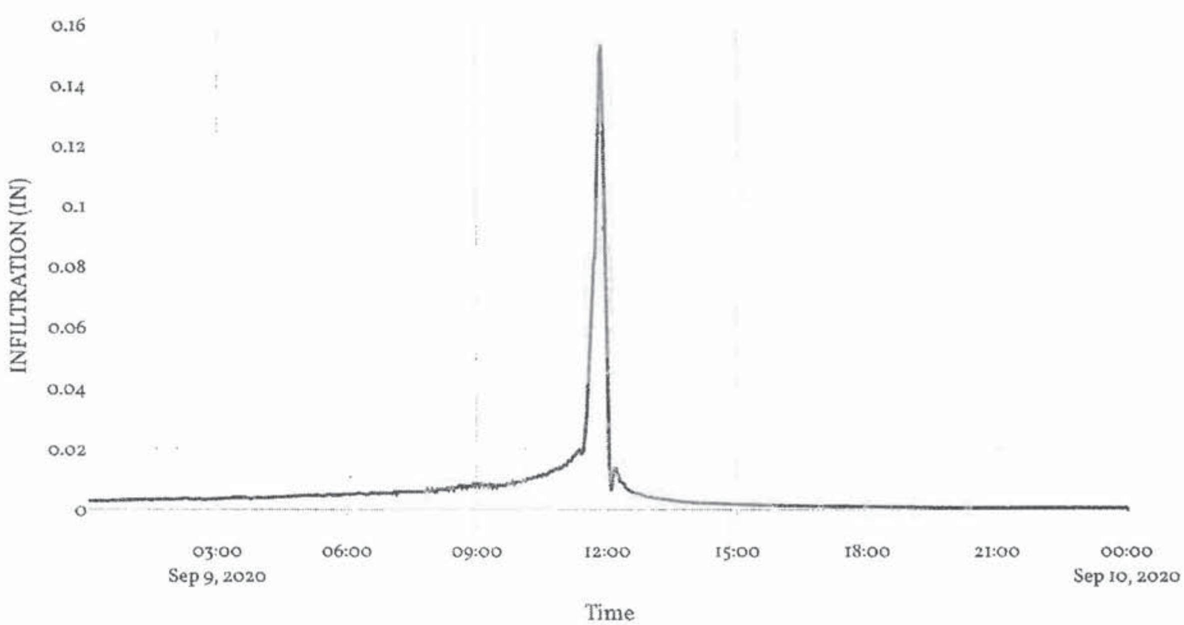

Baseflow
1
0.5
0
-0.5
-1
FLOW-BASE (CFS)
00:00
Sep 9, 2020
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
Sep 10, 2020
Time


Precipitation Loss
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
PRECIP-LOSS (IN)
03:00
Sep 9, 2020
06:00
09:00
12:00
15:00
18:00
21:00
00:00
Sep 10, 2020
Time

Direct Runoff



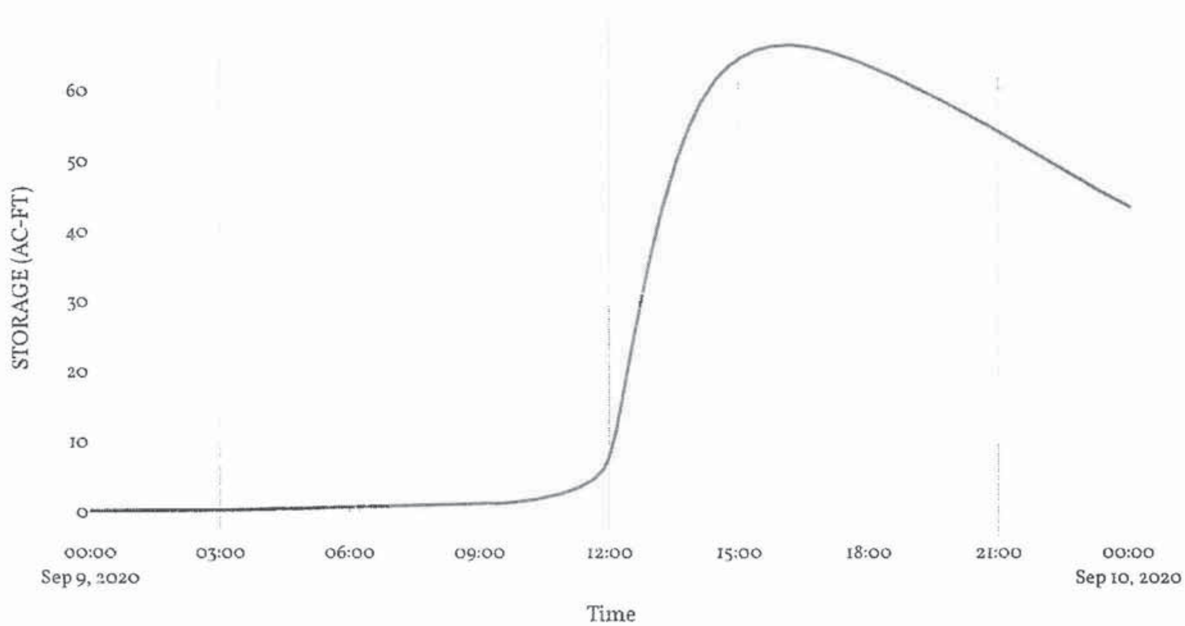
Soil Infiltration



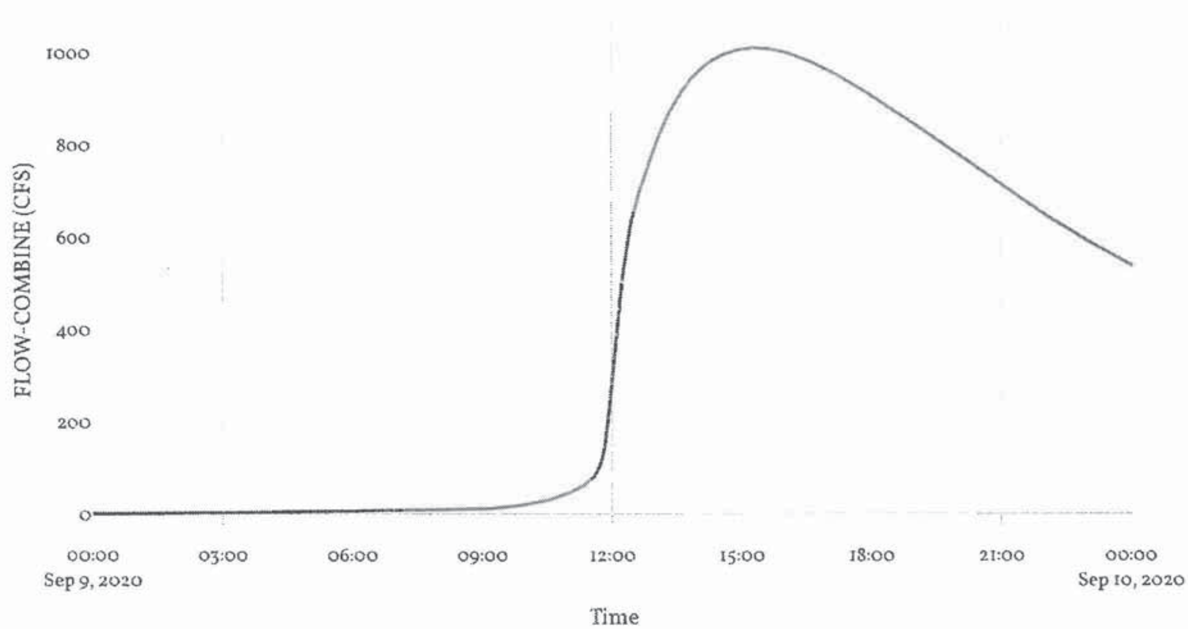
Reservoir: Routed

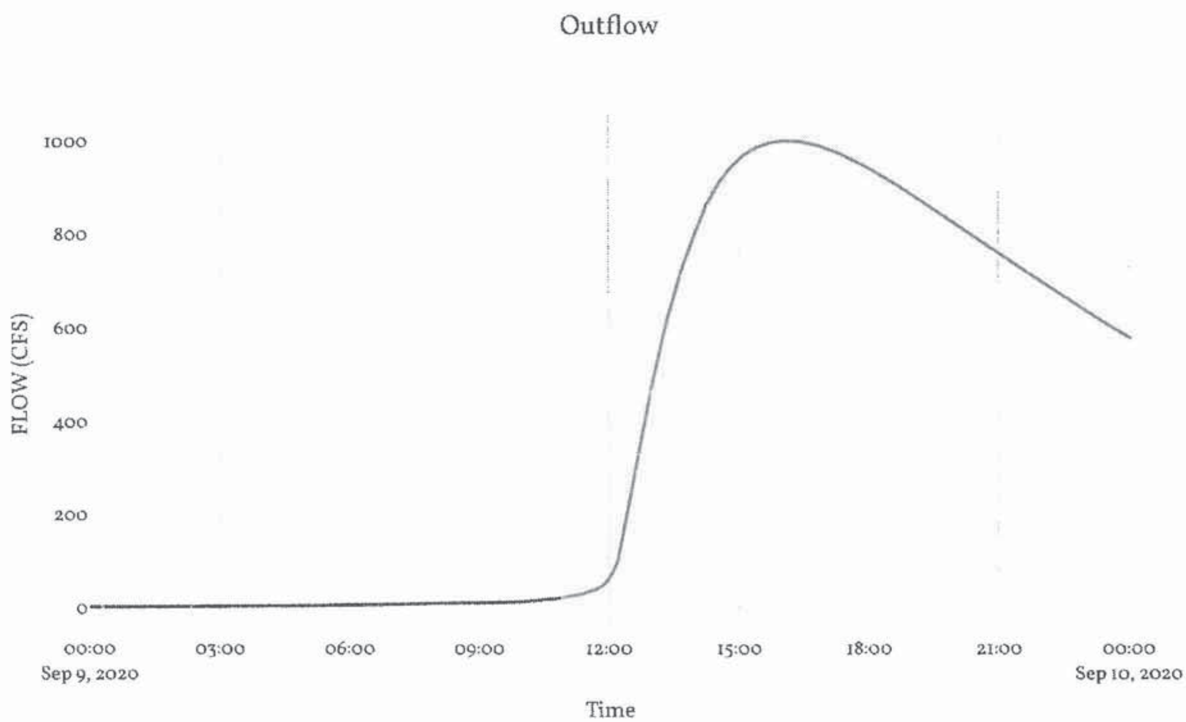
Results: Routed	
Peak Discharge (CFS)	997.96
Time of Peak Discharge	09Sep2020, 16:08
Volume (IN)	3.18
Peak Inflow (CFS)	1010.21
Time of Peak Inflow	09Sep2020, 15:20
Inflow Volume (AC - FT)	820.65
Maximum Storage (AC - FT)	66.26
Peak Elevation (FT)	Not specified
Discharge Volume (AC - FT)	777.47
Observed Pool Elevation Gage	Not specified
Observed Peak Pool Elevation (FT)	Not specified
Observed Pool Elevation RMSE Stdev	Not specified
Observed Pool Elevation Percent Bias	Not specified
Time of Maximum Observed Pool Elevation	Not specified
Observed Pool Elevation Nash Sutcliffe	Not specified

Storage



Combined Inflow




Outflow
1000
800
600
400
200
0
FLOW (CFS)
00:00
Sep 9, 2020
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
Sep 10, 2020
Time

From:	Alison Simon
To:	Paul R. Sysak, RLA, ASLA; Paul J. Dumont, EIT
Cc:	Kevin Hay; "Roland Baroni (RBaroni@SBRLLaw.com)"; Barbara Pesquera; Maria Scharf; Robert Melillo; "John Kellard"; "Joe Cermele"; Adam Kaufman
Subject:	12/9/2020 TB Action Re 100 Business Park Drive - Application for Variance
Date:	Thursday, December 10, 2020 2:54:23 PM
Attachments:	IV.E 100 Business Park Drive_Flood Study_Review Kellard Memo_Signed 2020-12-03_NCTB_.pdf

At the 12/9/2020 meeting the Town Board moved receipt of Memo from Town Engineers Kellard Sessions, dated December 3, 2020, regarding the application from A&R Real Estate Holdings LLC for Variance from Town Code Section 177-14(3) Floodplain Compensatory Storage for a new warehouse at 100 Business Park Drive, Armonk, and further moved approval of requested variance.

Alison Simon

North Castle Town Clerk

From: Alison Simon
Sent: Thursday, November 19, 2020 12:33 PM
To: 'Paul R. Sysak, RLA, ASLA' <PSysak@jmcpllc.com>; 'Paul J. Dumont, EIT' <PDumont@jmcpllc.com>; 'Joe Cermele' <jcermele@kelses.com>; Adam Kaufman <akaufman@northcastleny.com>
Cc: Kevin Hay <khay@northcastleny.com>; Roland Baroni (RBaroni@SBRLLaw.com) <RBaroni@SBRLLaw.com>; Barbara Pesquera <bpesquera@northcastleny.com>; Maria Scharf <mscharf@northcastleny.com>
Subject: 11/18/2020 TB Action Re 100 Business Park Drive - Application for Variance

At the 11/18/2020 meeting the Town Board moved receipt of the application from A&R Real Estate Holdings LLC for Variance from Town Code Section 177-14(3) Floodplain Compensatory Storage for a new warehouse at 100 Business Park Drive, Armonk; and receipt of Memo from Town Engineers Kellard Sessions, dated November 12, 2020. The Town Board requested that Kellard Sessions review specifics of the application with the applicant and provide the Board with a revised memo at the December 9, 2020 Town Board Meeting.

Please provide revised memo by 12/2/20 for inclusion on the 12/9/20 TBM Agenda.

Thank you,

Alison Simon

North Castle Town Clerk
15 Bedford Road
Armonk, NY 10504
914-273-3000 ext. 42
asimon@northcastleny.com

STORMWATER CONTROL FACILITY MAINTENANCE AGREEMENT WITH THE TOWN OF NORTH CASTLE

THIS AGREEMENT, entered into this ____ day of _____________, 2021, by and between the Town of North Castle, New York ("Town"), a municipal corporation organized and existing under the laws of the State of New York with offices at 15 Bedford Road, North Castle, New York 10504 and A&R Real Estate Holdings LLC ("Company"), a domestic limited liability company organized and existing under the laws of the State of New York with offices at 100 Business Park Drive, Armonk, NY 10504;

WHEREAS, that the Town and the Company (collectively "Parties"), for the consideration hereinafter named, agree as follows:

WHEREAS, the Town and the Company wish to enter into an agreement to provide for the long term maintenance and continuation of stormwater control measures approved by the Town for the project located on 100 Business Park Drive, Armonk, NY 10567 and Section Block and Lot Number 108.03-1-51 ("Project");

WHEREAS, the Town and the Company desire that the storm water control measures be built in accordance with the approved project plans and thereafter be maintained, cleaned, repaired, replaced and continued in perpetuity in order to ensure optimum performance of the components.

THEREFORE, the Town and the Company agree as follows:

1. This Agreement binds the Town and the Company, its successors and assigns, to the maintenance provisions depicted in the approved project plans which are attached as Schedule A of this Agreement.

2. The Company shall maintain, clean, repair, replace and continue the stormwater control measures depicted in the Maintenace Schedule provided within the approved Stormwater Pollution Prevention Plan (SWPPP) as necessary to ensure optimum performance of the measures to design specifications. The stormwater control measures shall include, but shall not be limited to, the following: infiltration basin, hydrodynamic separators, porous pavement sections, and conveyance systems.

3. The Company shall be responsible for all expenses related to the maintenance of the stormwater control measures and shall establish a means for the collection and distribution of expenses among parties for any commonly owned facilities.

4. The Company shall provide for the periodic inspection of the stormwater control measures, not less than once in every five year period, to determine the condition and integrity of the measures.

5. The Company shall not authorize, undertake or permit alteration, abandonment,

modification or discontinuation of the stormwater control measures except in accordance with written approval of the Town.

6. The Company shall undertake necessary repairs and replacement of the stormwater control measures at the direction of the Town or in accordance with the recommendations of the Town Engineer.

7. This Agreement shall be recorded in the Office of the County Clerk, County of Westchester together with the deed for the common property and shall be included in the offering plan and/or prospectus in connection with the Project. The Company shall be responsible for payment of any fees in connection with the recording with the Office of the County Clerk.

8. If ever the Town determines that the Company has failed to construct or maintain the stormwater control measures in accordance with the project plan or has failed to undertake corrective action specified by the Town or by the Town Engineer, the Town shall serve on the Company the notice to cure on thirty (30) days' notice. If the Company fails to comply with the notice to cure to the discretion of the Town Engineer, the Company hereby consents to the Town undertaking such measures and steps as reasonably necessary for the preservation, continuation or maintenance of the stormwater control measures and to affix the expenses thereof as a lien against the property. In the event that the Town is required to undertake such measures as a result of the Company failing to comply with the notice to cure, the Company shall be required to deposit with the Town an escrow amount determined by the Town Engineer. Nothing in this Agreement prevents the Town from immediately undertaking such measures and steps as reasonably necessary for the preservation, continuation or maintenance of the stormwater control measures in the event of an emergency in the discretion of the Town Engineer and to affix the expenses thereof as a lien against the property.

9. Any and all notices required hereunder shall be addressed as follows, or to such other address as may hereafter be designated in writing by either party hereto:

<u>To Town of Yorktown</u>:

Town Clerk
Town Hall
15 Bedford Road
Armonk, New York 10504

<u>With a copy to</u>:

Town Consulting Engineer
Town Hall
15 Bedford Road
Armonk, New York 10504

Town Attorney
Town Hall
15 Bedford Road
Armonk, New York 10504

To Company:

At the address first above written

10. The Company hereby agrees to indemnify and save harmless the Town, its officers, employees, elected officials, and agents from and against all liability, loss or damage the Town may suffer, arising directly or indirectly out of the contract between the Company and the Town. The Company further agrees to provide defense for and defend any claims or causes of action of any kind or character directly or indirectly arising out of this Agreement at its sole expense and agrees to bear all other costs and expenses relating thereto.

11. This Agreement constitutes the entire Agreement between the Parties in connection with the long term maintenance and continuation of stormwater control measures approved by the Town for the Project and supersedes any and all prior agreements, whether oral or written. If one or more of the provisions in this Agreement are deemed by a Court of competent jurisdiction to be void by law, then the remaining provisions will continue in full force and effect. This Agreement may not be amended or modified except by an instrument in writing signed by all Parties. There will be no presumption against any Party (or its counsel) on the ground that such Party (or its counsel) was responsible for preparing this Agreement or any part of it.

12. Each and every provision of law and clause required by law to be inserted in this Agreement shall be deemed to have been inserted herein. If any required contractual provision is not inserted, through mistake or otherwise, then upon the application of either party, this Contract shall be physically amended forthwith to make such insertion.

13. This Agreement shall be governed by and construed in accordance with the laws of the State of New York without giving effect to that State's choice of law rules. The Parties hereby submit to the exclusive jurisdiction of the Supreme Court of the State of New York, County of Westchester, in any action or proceeding arising out of or relating to this Agreement.

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement:

TOWN OF NORTH CASTLE

By:______________________________

Michael Schiliro, Town Supervisor

A&R REAL ESTATE HOLDINGS LLC

By:______________________________

Robert Troccoli, Member

STATE OF NEW YORK)

) ss.:

COUNTY OF WESTCHESTER)

On the _____ day of __________ in the year 2021, before me, the undersigned, personally appeared Matthew Slater personally known to me or proved to me on the same basis of satisfactory evidence to be the individual(s) whose names(s) is (are) subscribed to the within instrument and acknowledge to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

____

Notary Public

Commission Expires:_______________

STATE OF NEW YORK)

) ss.:

COUNTY OF WESTCHESTER)

On the _____ day of __________ in the year 2021 before me, the undersigned, personally appeared Robert Troccoli personally known to me or proved to me on the same basis of satisfactory evidence to be the individual(s) whose names(s) is (are) subscribed to the within instrument and acknowledge to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

____

Notary Public

Commission Expires:_______________

APPROVED AS TO FORM

____

____

Town Attorney

NOI for coverage under Stormwater General Permit for Construction Activity

Alternate ID Proposed Warehouse **Submission** HP5-P8KT-1VHTK **Revision** 1 **Form Version** 1.29

Review

This step allows you to review the form to confirm the form is populated completely and accurately, prior to certification and submission.

Please note: Any work you perform filling out a form will not be accessible by NYSDEC staff or the public until you actually submit the form in the 'Certify & Submit' step.

OWNER/OPERATOR INFORMATION

Owner/Operator Name (Company/Private Owner/Municipality/Agency/Institution, etc.)
A&R Real Estate Holdings LLC

Owner/Operator Contact Person Last Name (NOT CONSULTANT)
Troccoli

Owner/Operator Contact Person First Name
Robert

Owner/Operator Mailing Address
100 Business Park Drive

City
Armonk

State
New York

Zip
10504

Phone
7186555450

Email
Rob@Jantile.com

Federal Tax ID

None Specified

PROJECT LOCATION

Project/Site Name
Proposed Warehouse

Street Address (Not P.O. Box)
100 Business Park Drive

Side of Street
East

City/Town/Village (THAT ISSUES BUILDING PERMIT)
North Castle

State
NY

Zip
10504

County
WESTCHESTER

DEC Region
3

Name of Nearest Cross Street
Bedford Road (Route 22)

Distance to Nearest Cross Street (Feet)
1000

Project In Relation to Cross Street
South

Tax Map Numbers Section-Block-Parcel
108.03-1-51

Tax Map Numbers
108.03

1. Coordinates

Provide the Geographic Coordinates for the project site. The two methods are:
- Navigate to the project location on the map (below) and click to place a marker and obtain the XY coordinates.
- The "Find Me" button will provide the lat/long for the person filling out this form. Then pan the map to the correct location and click the map to place a marker and obtain the XY coordinates.

Navigate to your location and click on the map to get the X,Y coordinates

Latitude	**Longitude**
41.11839442588413	-73.7080564787985

PROJECT DETAILS

2. What is the nature of this project?
New Construction

3. Select the predominant land use for both pre and post development conditions.

Pre-Development Existing Landuse
Forest

Post-Development Future Land Use
Commercial

3a. If Single Family Subdivision was selected in question 3, enter the number of subdivision lots.
None Specified

4. In accordance with the larger common plan of development or sale, enter the total project site acreage, the acreage to be disturbed and the future impervious area (acreage)within the disturbed area.

*** ROUND TO THE NEAREST TENTH OF AN ACRE. ***

Total Site Area (acres)
11.26

Total Area to be Disturbed (acres)
4.60

Existing Impervious Area to be Disturbed (acres)
1.11

Future Impervious Area Within Disturbed Area (acres)
2.34

5. Do you plan to disturb more than 5 acres of soil at any one time?
No

6. Indicate the percentage (%) of each Hydrologic Soil Group(HSG) at the site.

A (%)
0

B (%)
37.1

C (%)
0

D (%)
62.9

7. Is this a phased project?
No

8. Enter the planned start and end dates of the disturbance activities.

Start Date
1/1/2022

End Date
6/1/2021

9. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.
Byram River

9a. Type of waterbody identified in question 9?
River Off Site

Other Waterbody Type Off Site Description
None Specified

9b. If "wetland" was selected in 9A, how was the wetland identified?
None Specified

10. Has the surface waterbody(ies in question 9 been identified as a 303(d) segment in Appendix E of GP-0-20-001?
No

11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-20-001?
No

12. Is the project located in one of the watershed areas associated with AA and AA-S classified waters?
No

If No, skip question 13.

13. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey?
None Specified

If Yes, what is the acreage to be disturbed?
None Specified

14. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area?
No

15. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)?
Yes

16. What is the name of the municipality/entity that owns the separate storm sewer system?
North Castle

17. Does any runoff from the site enter a sewer classified as a Combined Sewer?
No

18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law?
No

19. Is this property owned by a state authority, state agency, federal government or local government?
No

20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.)
No

REQUIRED SWPPP COMPONENTS

21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)?
Yes

22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)?
Yes

If you answered No in question 22, skip question 23 and the Post-construction Criteria and Post-construction SMP Identification sections.

23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the current NYS Stormwater Management Design Manual?
Yes

24. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:
Professional Engineer (P.E.)

SWPPP Preparer
JMC Planning Engineering Landscape Architecture & Land Surveying, PLLC

Contact Name (Last, Space, First)
Lombardi, , David

Mailing Address
120 Bedford Road

City
Armonk

State
NY

Zip
10504

Phone
9142735225

Email
DLombardi@JMCPLLC.com

Download SWPPP Preparer Certification Form

Please take the following steps to prepare and upload your preparer certification form:

1) Click on the link below to download a blank certification form
2) The certified SWPPP preparer should sign this form
3) Scan the signed form
4) Upload the scanned document

Download SWPPP Preparer Certification Form

Please upload the SWPPP Preparer Certification

No files uploaded

Comment

None Specified

At least one file is required.

EROSION & SEDIMENT CONTROL CRITERIA

25. Has a construction sequence schedule for the planned management practices been prepared?
Yes

26. Select all of the erosion and sediment control practices that will be employed on the project site:

Temporary Structural
Dust Control
Silt Fence
Stabilized Construction Entrance
Storm Drain Inlet Protection

Biotechnical
None

Vegetative Measures
Mulching
Protecting Vegetation
Seeding

Permanent Structural
None

Other
None Specified

POST-CONSTRUCTION CRITERIA

*** IMPORTANT: Completion of Questions 27-39 is not required if response to Question 22 is No.**

27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.
Preservation of Undisturbed Area
Preservation of Buffers

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).
All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout). (Acre-feet)
0.33

29. Post-construction SMP Identification

Use the Post-construction SMP Identification section to identify the RR techniques (Area Reduction), RR techniques(Volume Reduction) and Standard SMPs with RRv Capacity that were used to reduce the Total WQv Required (#28).

Identify the SMPs to be used by providing the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

Note: Redevelopment projects shall use the Post-Construction SMP Identification section to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

30. Indicate the Total RRv provided by the RR techniques (Area/Volume Reduction) and Standard SMPs with RRv capacity identified in question 29. (acre-feet)
0.24

31. Is the Total RRv provided (#30) greater than or equal to the total WQv required (#28)?
No

If Yes, go to question 36. If No, go to question 32.

32. Provide the Minimum RRv required based on HSG. [Minimum RRv Required = (P) (0.95) (Ai) / 12, Ai=(s) (Aic)] (acre-feet)
0.11

32a. Is the Total RRv provided (#30) greater than or equal to the Minimum RRv Required (#32)?
Yes

If Yes, go to question 33.

Note: Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQv required (#28) must also be included in the SWPPP.

If No, sizing criteria has not been met; therefore, NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

33. SMPs

Use the Post-construction SMP Identification section to identify the Standard SMPs and, if applicable, the Alternative SMPs to be used to treat the remaining total WQv (=Total WQv Required in #28 - Total RRv Provided in #30).

Also, provide the total impervious area that contributes runoff to each practice selected.

NOTE: Use the Post-construction SMP Identification section to identify the SMPs used on Redevelopment projects.

33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question #29. (acre-feet)
0.33

Note: For the standard SMPs with RRv capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - provided by the practice. (See Table 3.5 in Design Manual)

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a).
0.57

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)?
Yes

If Yes, go to question 36.

If No, sizing criteria has not been met; therefore, NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

36. Provide the total Channel Protection Storage Volume (CPv required and provided or select waiver (#36a), if applicable.

CPv Required (acre-feet)
None Specified

CPv Provided (acre-feet)
None Specified

36a. The need to provide channel protection has been waived because:
Reduction of the total CPv is achieved on site through runoff reduction techniques or infiltration systems.

37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (#37a), if applicable.

Overbank Flood Control Criteria (Qp)

Pre-Development (CFS)
17.98

Post-Development (CFS)
17.45

Total Extreme Flood Control Criteria (Qf)

Pre-Development (CFS)
38.16

Post-Development (CFS)
37.93

37a. The need to meet the Qp and Qf criteria has been waived because:
None Specified

38. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed?
Yes

If Yes, Identify the entity responsible for the long term Operation and Maintenance
A&R Real Estate Holdings LLC

39. Use this space to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). (See question #32a) This space can also be used for other pertinent project information.
None Specified

POST-CONSTRUCTION SMP IDENTIFICATION

Runoff Reduction (RR) Techniques, Standard Stormwater Management Practices (SMPs) and Alternative SMPs

Identify the Post-construction SMPs to be used by providing the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

RR Techniques (Area Reduction)

Round to the nearest tenth

Total Contributing Acres for Conservation of Natural Area (RR-1)
None Specified

Total Contributing Impervious Acres for Conservation of Natural Area (RR-1)
None Specified

Total Contributing Acres for Sheetflow to Riparian Buffers/Filter Strips (RR-2)
None Specified

Total Contributing Impervious Acres for Sheetflow to Riparian Buffers/Filter Strips (RR-2)
None Specified

Total Contributing Acres for Tree Planting/Tree Pit (RR-3)
None Specified

Total Contributing Impervious Acres for Tree Planting/Tree Pit (RR-3)
None Specified

Total Contributing Acres for Disconnection of Rooftop Runoff (RR-4)

None Specified

RR Techniques (Volume Reduction)

Total Contributing Impervious Acres for Disconnection of Rooftop Runoff (RR-4)
None Specified

Total Contributing Impervious Acres for Vegetated Swale (RR-5)
None Specified

Total Contributing Impervious Acres for Rain Garden (RR-6)
None Specified

Total Contributing Impervious Acres for Stormwater Planter (RR-7)
None Specified

Total Contributing Impervious Acres for Rain Barrel/Cistern (RR-8)
None Specified

Total Contributing Impervious Acres for Porous Pavement (RR-9)
0.47

Total Contributing Impervious Acres for Green Roof (RR-10)
None Specified

Standard SMPs with RRv Capacity

Total Contributing Impervious Acres for Infiltration Trench (I-1)
None Specified

Total Contributing Impervious Acres for Infiltration Basin (I-2)
1.72

Total Contributing Impervious Acres for Dry Well (I-3)
None Specified

Total Contributing Impervious Acres for Underground Infiltration System (I-4)
None Specified

Total Contributing Impervious Acres for Bioretention (F-5)
None Specified

Total Contributing Impervious Acres for Dry Swale (O-1)
None Specified

Standard SMPs

Total Contributing Impervious Acres for Micropool Extended Detention (P-1)
None Specified

Total Contributing Impervious Acres for Wet Pond (P-2)
None Specified

Total Contributing Impervious Acres for Wet Extended Detention (P-3)
None Specified

Total Contributing Impervious Acres for Multiple Pond System (P-4)
None Specified

Total Contributing Impervious Acres for Pocket Pond (P-5)
None Specified

Total Contributing Impervious Acres for Surface Sand Filter (F-1)
None Specified

Total Contributing Impervious Acres for Underground Sand Filter (F-2)
None Specified

Total Contributing Impervious Acres for Perimeter Sand Filter (F-3)
None Specified

Total Contributing Impervious Acres for Organic Filter (F-4)
None Specified

Total Contributing Impervious Acres for Shallow Wetland (W-1)
None Specified

Total Contributing Impervious Acres for Extended Detention Wetland (W-2)
None Specified

Total Contributing Impervious Acres for Pond/Wetland System (W-3)
None Specified

Total Contributing Impervious Acres for Pocket Wetland (W-4)
None Specified

Total Contributing Impervious Acres for Wet Swale (O-2)
None Specified

Alternative SMPs (DO NOT INCLUDE PRACTICES BEING USED FOR PRETREATMENT ONLY)

Total Contributing Impervious Area for Hydrodynamic
0.51

Total Contributing Impervious Area for Wet Vault
None Specified

Total Contributing Impervious Area for Media Filter
None Specified

"Other" Alternative SMP?
None Specified

Total Contributing Impervious Area for "Other"
None Specified

Provide the name and manufaturer of the alternative SMPs (i.e. proprietary practice(s)) being used for WQv treatment.

Note: Redevelopment projects which do not use RR techniques, shall use questions 28, 29, 33 and 33a to provide SMPs used, total WQv required and total WQv provided for the project.

Manufacturer of Alternative SMP
Hydro International

Name of Alternative SMP
First Defense

OTHER PERMITS

40. Identify other DEC permits, existing and new, that are required for this project/facility.
None

If SPDES Multi-Sector GP, then give permit ID
None Specified

If Other, then identify
None Specified

41. Does this project require a US Army Corps of Engineers Wetland Permit?
No

If "Yes," then indicate Size of Impact, in acres, to the nearest tenth
None Specified

42. If this NOI is being submitted for the purpose of continuing or transferring coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned.
None Specified

MS4 SWPPP ACCEPTANCE

43. Is this project subject to the requirements of a regulated, traditional land use control MS4?
Yes - Please attach the MS4 Acceptance form below

If No, skip question 44

44. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI?
Yes

MS4 SWPPP Acceptance Form Download

Download form from the link below. Complete, sign, and upload.

MS4 SWPPP Acceptance Form

MS4 Acceptance Form Upload

No files uploaded

Comment

None Specified

OWNER/OPERATOR CERTIFICATION

The owner/operator must download, sign, and upload the certification form in order to complete this application.

Owner/Operator Certification Form Download

Download the certification form by clicking the link below. Complete, sign, scan, and upload the form.

Owner/Operator Certification Form (PDF, 45KB)

Upload Owner/Operator Certification Form

No files uploaded

Comment

None Specified

At least one file is required.

Permit No.____________________
Stream________________________

COUNTY OF WESTCHESTER
DEPARTMENT OF PUBLIC WORKS
AND TRANSPORTATION
148 MARTINE AVENUE
WHITE PLAINS, NEW YORK 10601

APPLICATION FOR PERMIT TO DO WORK
WITHIN CHANNEL LINES OR WITHIN 100 FEET THEREFROM
(To Be Executed in Triplicate)

TO: Hugh J. Greechan, Jr., P.E.
Commissioner, Public Works and Transportation

Application is hereby made for a permit, under Chapter 241, Article III of the Westchester County Administrative Code, to carry out the following described project within channel lines or within 100 feet therefrom.

1. Applicant A&R Real Estate Holdings LLC
(Owner or Agent)
2. Address 100 Business Park Drive, Armonk, NY
(Business or Residence)
10504
Zip Code Telephone
3. Owner A&R Real Estate Holdings LLC Deed recorded in Liber 10972 Page 309
4. Tax Lot(s) 51 Tax Block(s) 1 Sheet No.(s) 108.03
5. Name and Location of Stream Byram River North Castle
(Stream) (Municipality)
6. Location of Stream 4,500± feet downstream from Interstate 684
(Highway)
7. Proposed project and extent Construction of a 74,850 square foot warehouse with associated improvements consisting of off-street parking, access driveways, loading areas, stormwater management facilities, landscaping, and wetland mitigation. The building is proposed to be constructed in the undeveloped southern portion of the site, and the existing building is proposed to remain.
8. Work To Be Started TBD To Be Completed TBD
9. Water Elevations (F.E.M.A. Flood Insurance) 10 Yr. N/A 100 Yr. 370.00
10. Applicant attaches herewith THREE copies of the plans showing location of work, distances to nearest highway crossings, and details of design stamped by a Professional Engineer or Registered Architect. Applicant will furnish additional data when required by the Commissioner.
11. List all approvals, certifications or permits required by Federal, State or Local Agencies:
Westchester County Department of Public Works and Transportation
Town of North Castle - Site Plan Approval, Area Variance, Building Permit
NYSDEC - SPDES Permit

Witness:______________________________
(Applicant's Signature)

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Approval and consent to grant the permit requested by this applicant is hereby given by the duly authorized municipal representative.

NOTE: Application must be signed by municipality prior to submission.

______________________ ______________________ ____________
Signature and Title Municipality Date

THE PERMIT IS ISSUED SUBJECT TO THE FOLLOWING TERMS, AGREEMENTS, COVENANTS AND CONDITIONS

1) The term “Commissioner” shall mean the Commissioner of Public Works and Transportation of the County of Westchester or his authorized representative.

2) The term “Permittee” shall mean the applicant obtaining the permit, or his or its duly authorized agents or representatives.

3) The Commissioner, by issuing the permit, assumes no liability or responsibility on his part or on the part of the County of Westchester of any kind or nature for this sufficiency of the design or the operations covered by the Permit.

4) The Permittee assumes all risks in the operations covered by the permit and shall be solely responsible and answerable in damages for all accidents or injuries to persons or property.

5) The Permittee shall indemnify and save harmless the County of Westchester and the Commissioner of Public Works and Transportation from any and all claims, suits, losses, damage to property or injury to persons of whatsoever kind and nature, whether direct or indirect, arising out of the Permittee’s operations under the permit, and the Permittee agrees to reimburse the County of Westchester and the Commissioner of Public Works and Transportation for all expenses, costs of judgments to which they may be put arising from such operation.

6) No changes in the plans or in the nature and extent of the work shall be made without the Commissioner’s written consent. The project shall be subject at all times to inspection by the Commissioner.

7) The Permittee agrees that, during the performance of the work, the Permittee will not cause or allow in any way or manner any unreasonable interference with the free flow of the stream, and that the Permittee will not place, store or dump any materials, equipment or debris in or about the stream or channel in any way which may cause interference with the free flow of water.

8) The Permittee, upon completion of the work, shall cause to be removed from within the channel lines and within 100 feet therefrom all equipment, surplus materials, debris and structures not shown on the approved plans.

9) Within 30 days after completion, the Permittee shall certify that the work has been completed in accordance with the permit and the approved plans and that all unauthorized channel obstructions have been removed.

10) Final inspection of all work authorized by the permit will be made by the Commissioner to determine that the work has been performed in compliance with the permit.

11) Completed work shall be diligently maintained by the owner of the land to prevent any danger of obstruction of the stream, water course, easement or right-of-way bounded by channel lines by reason of erosion or the collapse or other impairment of the completed work.

12) The permit shall be subject to all applicable zoning regulations of the municipality within which the land to which the permit applies is located, to Workmen’s Compensation Law, Disability Benefits Law and to all other regulations thereof applying to the construction of buildings and other structures. Every building permit or certificate of occupancy issued by any municipality shall be subject to the limitations and requirements imposed by or pursuant to the Westchester County Stream Control Law, with respect to any work covered by such permit or certificate. In event of any conflict, the more restrictive provision shall prevail.

13) The Commissioner reserves the right to revoke or cancel the permit at any time should the Permittee fail to comply with any of the terms, agreements, covenants and conditions of the permit.

14) The permit does not give any property rights, either in real property or material, or any exclusive privileges. It does not authorize any injury to public or private property, any invasion of property rights, any occupation of riparian or County property, or any infringement of State or local laws or regulations. Local and State permits and consents must be obtained when necessary.

15) The work must be completed on or before the stated completion date and shall be under the direction of a licensed professional engineer or licensed architect until it is completed.

16) The Permit is not in force and effect until the executed acceptance form is received by the Commissioner.

17) SPECIAL CONDITIONS for this Permit are set forth on the attached sheet.

18) The application, the Special conditions and the following approved plans are part of the permit: